

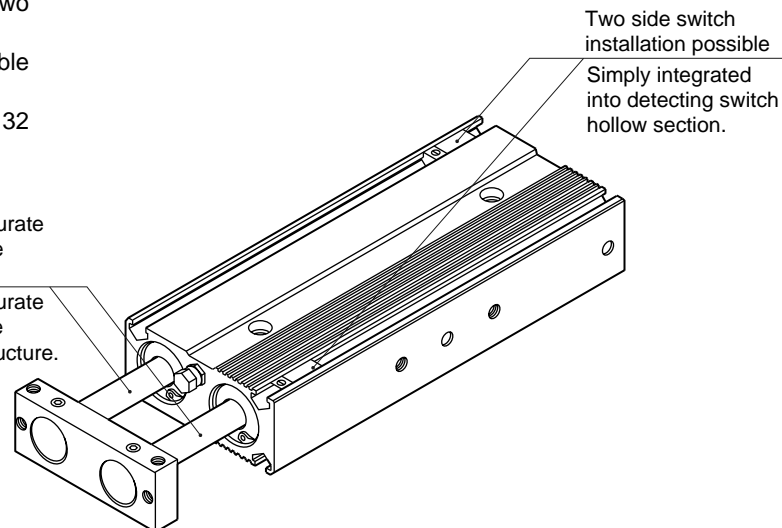
● : Standard, ◎ : Option, ○ : Custom order, ■ : Not available

Variation	Model no. JIS symbol	Bore size (mm)	Standard stroke length (mm)										Stroke length (mm)	Min. stroke length (mm)	Max. stroke length (mm)	Custom stroke length (per mm)	Bearing method		Option				Switch	Page			
			10	20	30	40	50	60	70	80	90	100					Metal bush bearing	Ball bearing	Material of end plate steel	Copper and PTFE free	Piping port position 180° change	Rear piping type					
			M	B	F	P6	O	R																			
Double acting standard type	STR2-M <sub>B</sub>	φ 6, φ 10	●	●	●	●	●	■	■	■	■	■	■	■	5	50	1	●	●	◎	◎	◎	◎	◎	◎	◎	1872
		φ 16, φ 20, φ 25, φ 32	●	●	●	●	●	●	●	●	●	●	●	●	●	5	100	-	●	●	◎	◎	◎	◎	◎	◎	
Double acting position locking type	STR2-M <sub>B</sub> Q	φ 16, φ 20, φ 25, φ 32	●	●	●	●	●	●	●	●	●	●	●	●	5	100	-	●	●	◎	○	◎	◎	◎	◎	◎	1884
		φ 6, φ 10	●	●	●	●	●	●	●	●	●	●	●	●	5	50	1	●	●	◎	◎	◎	◎	◎	◎	◎	
Double acting low speed type	STR2-M <sub>B</sub> O	φ 6, φ 10	●	●	●	●	●	●	●	●	●	●	●	●	5	50	1	●	●	◎	◎	◎	◎	◎	◎	◎	1894
		φ 16, φ 20, φ 25, φ 32	●	●	●	●	●	●	●	●	●	●	●	●	5	100	-	●	●	◎	◎	◎	◎	◎	◎	◎	
Double acting fine speed type	STR2-M <sub>B</sub> F	φ 10	●	●	●	●	●	●	●	●	●	●	●	●	5	50	1	●	●	◎	◎	◎	◎	◎	◎	◎	1902
		φ 16, φ 20, φ 25, φ 32	●	●	●	●	●	●	●	●	●	●	●	●	5	100	-	●	●	◎	◎	◎	◎	◎	◎	◎	
Double acting double rod type	STR2-M <sub>B</sub> D	φ 6, φ 10	●	●	●	●	●	●	●	●	●	●	●	●	5	50	-	●	●	◎	○	◎	◎	◎	◎	◎	1904
		φ 16, φ 20, φ 25, φ 32	●	●	●	●	●	●	●	●	●	●	●	●	5	100	-	●	●	◎	○	◎	◎	◎	◎	◎	

### Product introduction

For CKD twin rod cylinder STR2-M, STR2-B Series, two single rod cylinders are jointed in parallel.  
 Double accurate revolvable angle tolerance and double cylinder thrust are realized.  
 This series provides 6 types of bore size form 6 to 32 mm, with wide option and variation.

Double thrust and double accurate revolvable angle tolerance are realized by twin rod.  
 Double thrust and double accurate revolvable angle tolerance are realized by double pistons structure.



Twin rod cylinder  
 Combined functions

# STR2-M (metal bush bearing) Series

Variation and option selection table (metal bush bearing)

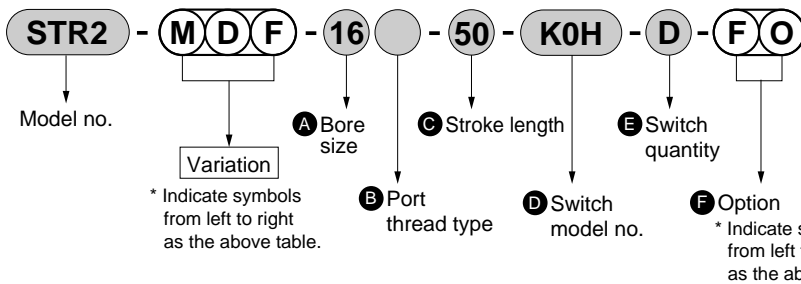
SCP\*2  
CMK2  
CMA2  
SCM  
SCG  
SCA2  
SCS  
CKV2  
CA/OV2  
SSD  
CAT  
MDC2  
MVC  
SMD2  
MSD\*  
FC\*  
STK  
ULK\*  
JSK/M2  
JSG  
JSC3  
USSD  
USC  
JSB3  
LMB  
STG  
STS/L  
LCS  
LCG  
LCM  
LCT  
LCY  
STR2  
UCA2  
HCM  
HCA  
SRL2  
SRG  
SRM  
SRT  
MRL2  
MRG2  
SM-25  
CAC3  
UCAC  
RCC2  
MFC  
SHC  
GLC  
Ending

- : Standard
- ◎ : Option
- : Available (custom order)
- △ : Available depending on conditions (consult with CKD)
- X : Not available

Code	Code	Variation					Port thread		Option						
		Symbol	M	D	Q	O	F	N	G	F	P6	P72	P73	O	R
Variation	Double acting basic type (metal bush type)	M	◎	◎	◎	◎	○	○	◎	◎	○	○	◎	◎	
	Double rod type	D		◎	○	○	○	○	◎	○	△	△	◎	X	
	Position locking type	Q				X	X	○	◎	○	△	△	◎	X	
	Low speed type	O					X	○	◎	X	○	○	◎	○	
	Fine speed type	F						○	◎	X	○	○	○	◎	
Port thread	NPT	N						X	○	○	○	○	○	○	
	G	G							○	○	○	○	○	○	
Option	Material of end plate steel	F							◎	○	○	○	○	○	
	Copper and PTFE free type	P6								Note 1	Note 1	○	○		
	Clean room specifications (exhaust treatment)	P72									X	○	X		
	Clean room specifications (vacuum treatment)	P73										○	X		
	Piping port position 180° change	O												X	
	Rear piping type	R													
Accessory	Cylinder switch	Listed on Ending	◎	◎	◎	◎	○	○	◎	◎	◎	◎	◎	◎	

Note 1: Refer to the "Clean Component System" (No. CB-033SA) for details on the clean specifications (P72, P73, P52, P53).

## <Example of model number>



# STR2-B (ball bearing) Series

## Variation and option selection table

### Variation and option selection table (ball bearing)

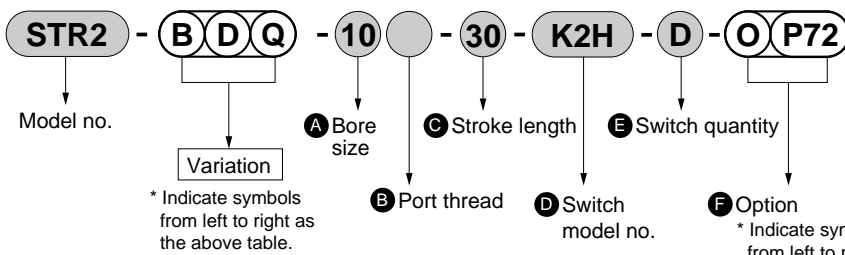
- : Standard
- ◎ : Option
- : Available (custom order)
- △ : Available depending on conditions (consult with CKD.)
- X : Not available

Code	Code	Variation					Port thread		Option						
		Symbol	B	D	Q	O	F	N	G	F	P6	P72	P73	O	R
Variation	Double acting basic type (bearing bush type)	B	◎	◎	◎	◎	○	○	◎	Note 2	◎	◎	◎	◎	
	Double rod type	D		◎	○	○	○	○	◎	Note 2	△	△	◎	X	
	Position locking type	Q				X	X	○	○	◎	Note 2	△	△	◎	X
	Low speed type	O					X	○	○	◎	X	○	◎	○	
	Fine speed type	F						○	○	◎	X	○	○	◎	
Port thread	NPT	N						X	○	Note 2	○	○	○	○	
	G	G							○	Note 2	○	○	○	○	
Option	Material of end plate steel	F								Note 2	○	○	○	○	
	Copper and PTFE free type	P6								Note 1	Note 1	Note 2	Note 2		
	Clean room specifications (exhaust treatment)	P72									X	○	X		
	Clean room specifications (vacuum treatment)	P73										○	X		
	Piping port position 180° change	O												X	
	Rear piping type	R													
Accessory	Cylinder switch	Listed on Ending	◎	◎	◎	◎	◎	○	○	◎	◎	◎	◎	◎	

Note 1: Refer to the "Clean Component System" (No. CB-033SA) for details on the clean specifications (P72, P73, P52, P53).

Note 2: Copper and PTFE free type. (P6 symbol is not required.)

### <Example of model number>



Model no.: Twin rod cylinder

● Variation : Ball bearing, double rod type, position locking type

◎ Bore size : φ10mm

◎ Port thread type : Rc thread

◎ Stroke length : 30mm

◎ Switch model no. : Proximity, K2H switch, lead wire 1m

◎ Switch quantity : 2

◎ Option : Piping port position 180° change, Clean room specifications (exhaust treatment)

SCP*2
CMK2
CMA2
SCM
SCG
SCA2
SCS
CKV2
CA/OV2
SSD
CAT
MDC2
MVC
SMD2
MSD*
FC*
STK
ULK*
JSK/M2
JSG
JSC3
USSD
USC
JSB3
LMB
STG
STS/L
LCS
LCG
LCM
LCT
LCY
STR2
UCA2
HCM
HCA
SRL2
SRG
SRM
SRT
MRL2
MRG2
SM-25
CAC3
UCAC
RCC2
MFC
SHC
GLC
Ending

Twin rod cylinder  
Combined functions



# Safety precautions

Always read this section before starting use.

Refer to Intro 71 for general precautions of the cylinder, and to Intro 78 for general precautions of the cylinder switch.

## Twin rod cylinder STR2 Series

### Design & Selection

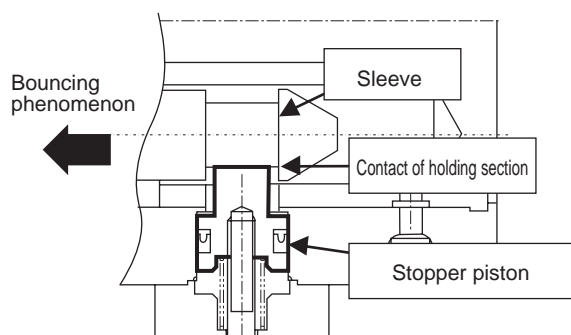
#### 1. Position locking type STR2-Q

##### ⚠ WARNING

■ If pressure is supplied to the port having the lock in the locked state with neither port pressurized, locks may not be releasable or may be released suddenly, causing the piston rod to pop out, which is extremely dangerous.

Always supply pressure to the port on the opposite side, and release the lock after removing the load applied on the lock mechanism.

■ If lowering speed is to be increased with the quick exhaust valve, the cylinder may move out faster than the lock pin and prevent the locking pin from being released correctly. Do not use the quick exhaust valve for a position locking cylinder. When stopping with an external shock absorber, etc., adjust so that there is no bouncing. If the piston bounces, the sleeve and stopper position could contact with impact, and cause damage to the lock mechanism. Regularly (once/twice a year) check that the holding section is not damaged by this symptom.



■ Do not use 3-position valve.

Do not use this cylinder with a 3-position valve, especially with a closed center metal seal. The lock is not applied if pressure is sealed on the port having the lock. Even if locked once, air leakage from the valve may enter the cylinder then the lock may be released over time.

##### ⚠ CAUTION

■ Cylinder load factor must be 50% or less.

If the load factor is high, the lock may not be released or the lock section could be damaged.

■ If back pressure is applied to the locking mechanism, the lock may be released. Use the solenoid valve as a discrete unit, or use an independently exhausted manifold.

■ Do not use multiple cylinders synchronized.

● Do not move more than one workpiece using more than two cylinders with position locking mechanism simultaneously. One of the cylinder's locks may not be released.

#### 2. Fine speed type STR2-F

##### ⚠ CAUTION

■ Use with oil-free specifications.

Lubrication may change characteristics.

■ Install a speed control valve close to a cylinder.

Adjustments become unstable if installed away from the cylinder.

Use the SC-M3/M5, SC3W, SCD-M3/M5, or SC3WU Series speed control valve.

■ Generally, the higher air pressure, and the smaller load result in the more stable operation.

Keep the load factor at 50% or less.

■ Do not apply lateral load to a cylinder.

Install the cylinder to avoid the sliding guide to be twisted. The presence of load or resistance variation may result in unstable operations.

Large differential between static friction and dynamic friction of guide results in unstable operation.

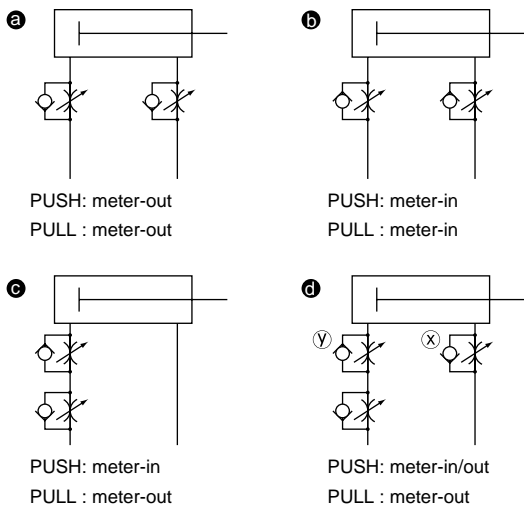
■ Avoid use with vibration.

The product will be adversely affected by vibration and operation will become unstable.

## Stable speed control is achieved with a meter-out circuit.

When driving the single rod cylinder at fine speed with the operation direction set to PUSH, popping-out may occur if operation is started when load resistance is small. As a corrective action, use a **(b)**, **(c)**, or **(d)** circuit.

**(c)** circuit is the most stable.

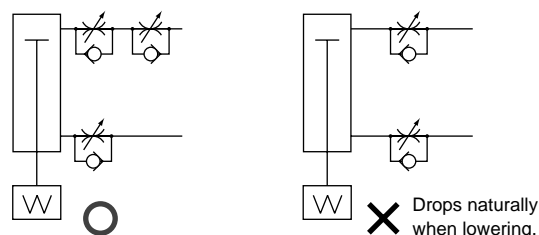


Speed adjustment method of PUSH operation of circuit: **(d)**

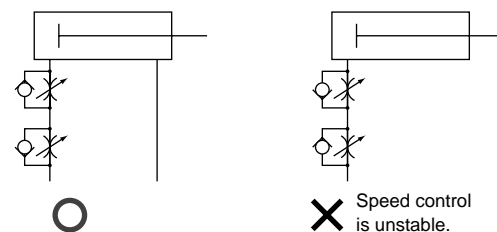
1. Set the speed with the x speed control valve.
2. Lower the flow rate with they speed control valve until popping out no longer occurs.
3. Reconfirm speed.

Note 1: When circuits **(b)**, **(c)**, and **(d)** are compared, **(d)** circuit operation is most stable.

Note 2: When installed vertically, the unit will drop naturally if the meter-in circuit is used. Use the meter-out circuit in this case.



Note 3: Connect the flow control valve in parallel with the following circuit:



(Popping out phenomenon causes)

- Reduce the flow rate to reach a fine speed at the exhaust side in a meter-out circuit. This results in the same pressure level on the both sides immediately after valve switched. The thrust caused by the differential of pressurized area of piston is applied to the PUSH direction and a popping-out of piston rod occurs.

(Guide to popping out occurrence)

- Occurs when a piston rod area x air pressure > load resistance.

## Installation & Adjustment

### 1. Common

#### CAUTION

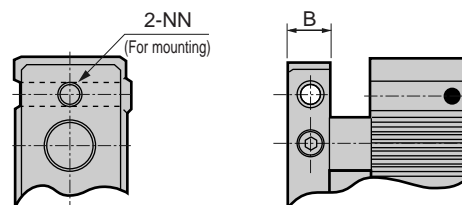
- Twin rod cylinder has two piping ports to operating direction. Change the position of the plug based on actual use.

After making any changes, check that no air leaks from the plug section.

- Check that no dents or scratches are made on main tubing installation or end plates that may adversely affect flatness.

Flatness on the counterpart onto which the end plate is installed must be 0.05 mm or less.

- When using the screw hole NN on the end plate, check that the bolt length is equivalent to the B dimension. Failure to observe this may damage the end plate.



Bore size (mm)	Dimension B
φ 6	6
φ 10	6
φ 16	8
φ 20	10
φ 25	12
φ 32	12

- SCP\*2
- CMK2
- CMA2
- SCM
- SCG
- SCA2
- SCS
- CKV2
- CA/OV2
- SSD
- CAT
- MDC2
- MVC
- SMD2
- MSD\*
- FC\*
- STK
- ULK\*
- JSK/M2
- JSG
- JSC3
- USSD
- USC
- JSB3
- LMB
- STG
- STS/L
- LCS
- LCG
- LCM
- LCT
- LCY
- STR2**
- UCA2
- HCM
- HCA
- SRL2
- SRG
- SRM
- SRT
- MRL2
- MRG2
- SM-25
- CAC3
- UCAC
- RCC2
- MFC
- SHC
- GLC
- Ending

Twin rod cylinder  
Combined functions

SCP\*2  
CMK2  
CMA2  
SCM  
SCG  
SCA2  
SCS  
CKV2  
CA/OV2  
SSD  
CAT  
MDC2  
MVC  
SMD2  
MSD\*  
FC\*  
STK  
ULK\*  
JSK/M2  
JSG  
JSC3  
USSD  
USC  
JSB3  
LMB  
STG  
STS/L  
LCS  
LCG  
LCM  
LCT  
LCY  
STR2  
UCA2  
HCM  
HCA  
SRL2  
SRG  
SRM  
SRT  
MRL2  
MRG2  
SM-25  
CAC3  
UCAC  
RCC2  
MFC  
SHC  
GLC  
Ending

■ A rubber cushion is assembled into the cylinder. The table below shows kinetic energy which can be absorbed by the rubber cushion. If the energy exceeds these values, consider using another shock absorber.

Bore size (mm)	Allowable energy absorption J	
	PUSH	PULL
φ 6	0.008	0.059
φ 10	0.061	0.083
φ 16	0.181	0.083
φ 20	0.303	0.127
φ 25	0.68	0.237
φ 32	1.3	0.311

■ When the counter bore surface (JJ) is the mounting surface, this cylinder has a step which could cause the cylinder to tilt. In this case, change the port position or use the option with port position changed 180° (O) so that the counter bore surface is not the mounting surface.

■ The cylinder may be damaged or may malfunction if a unit with excessive inertia, etc., is moved. Use within the allowable energy absorption range.

■ The twin rod cylinder has a 0 to -5 mm stroke adjustment bolt on the piston rod's return side. Loosen the hexagon nut and adjust to the required stroke. Then, tighten the hexagon nut to prevent loosening.

■ If cylinders are installed adjacently, the cylinder switch may malfunction. Separate cylinders by the following distances.

Adjacent conditions		Switch type	φ 6	φ 10	φ 16	φ 20	φ 25	φ 32	
2 cylinders / parallel	Horizontal installation Switch	A	K2, K3	43	45	56	66	75	111
		B	K0, K5	40*1	47*1	62	81	85	111
	Vertical placement Install switch at side of adjacent cylinder	A	K2, K3	7	1	2	4	3	15
		B	K0, K5	4*1	3*1	8	19	12	15
		A	K2, K3	28	27	36	47	47	58
		B	K0, K5	27*1	26*1	36	53	53	58
Vertical placement Install switch on the opposite side of the cylinder at the side	A	K2, K3	15	12	15	20	14	20	
	B	K0, K5	14*1	11*1	15	26	20	20	
	A	K2, K3	19	16	22	28	34	39	
	B	K0, K5	14*1	16*1	22	33	34	39	
3 and more cylinders / parallel	Horizontal installation	A	K2, K3	6	1	1	1	1	1
		B	K0, K5	1*1	1*1	1	6	1	1
	Vertical placement	A	K2, K3	44	45	57	67	77	111
		B	K0, K5	41*1	47*1	64	83	86	111
		A	K2, K3	8	1	3	5	5	15
		B	K0, K5	5*1	3*1	10	21	14	15
Vertical placement	A	K2, K3	33	30	40	51	49	58	
	B	K0, K5	30*1	28*1	42	60	97	58	
Vertical placement	A	K2, K3	20	15	19	24	16	20	
	B	K0, K5	17*1	13*1	21	33	25	20	

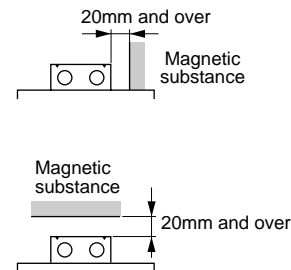
■ Avoid using a bolt for adjustable stroke out.

## 1. Common; with switch

### ⚠ CAUTION

■ Reed switch can not be used for STR2-B-6, 10.  
STR2-B-6 with proximity switches must not be installed on a magnetic body such as a steel plate, or the switch may malfunction.

■ If a magnetized device (steel plate, etc.) is near the cylinder switch, the cylinder switch could malfunction. Keep 20mm distance and over from a cylinder surface. (Same for all bore size)



\*1: Dimensions for STR2-M.

The reed switch cannot be used with STR2-B-6 or 10.

SCP*2
CMK2
CMA2
SCM
SCG
SCA2
SCS
CKV2
CA/OV2
SSD
CAT
MDC2
MVC
SMD2
MSD*
FC*
STK
ULK*
JSK/M2
JSG
JSC3
USSD
USC
JSB3
LMB
STG
STS/L
LCS
LCG
LCM
LCT
LCY
<b>STR2</b>
UCA2
HCM
HCA
SRL2
SRG
SRM
SRT
MRL2
MRG2
SM-25
CAC3
UCAC
RCC2
MFC
SHC
GLC

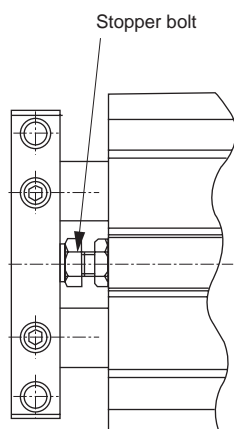
Ending

Twin rod cylinder  
Combined functions

### 3. Position locking type STR2-Q

#### ⚠ CAUTION

- The lock functions at the stroke end. If the stopper is applied with an external stopper in the middle of the stroke, the lock may not function and result in dropping. Before setting the load, check that the locking mechanism functions correctly.
- If the position locking mechanism is mounted on the head end, never change the retracting stroke by adjusting or changing the stopper bolt. The locking mechanism could be disabled.



- If the piping on the side where the locking mechanism is provided is long and thin, or if the speed controller is separated from the cylinder port, the exhaust speed will drop and it may take longer for the lock to be applied. This may also occur if the silencer on the solenoid valve's EXH port is clogged.

### 4. Fine speed type STR2-F

#### ⚠ CAUTION

- Adjust the alignment, etc., so lateral load is not applied to the cylinder. Adjust so that the cylinder does not twist in relation to the sliding guide.
  - The presence of load or resistance variation may result in unstable operations.
  - Large differential between static friction and dynamic friction of guide results in unstable operation.

## During Use & Maintenance

### 1. Position locking type STR2-Q

#### ⚠ WARNING

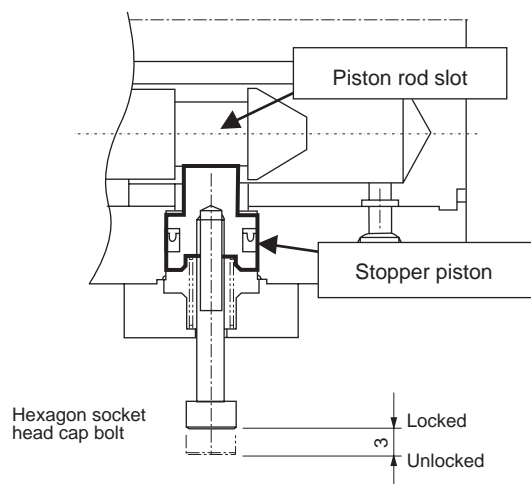
- For safety purposes, prevent the load from dropping down of its own weight during maintenance.

#### ⚠ CAUTION

- After manually operating the locking mechanism, return the locking mechanism to the original position. Do not use a manual override except during adjustment. It is dangerous.
- Release the lock when installing or adjusting the cylinder. The lock could be damaged if the cylinder is installed while the lock is applied.
- Use the speed control valve with meter-out control.
  - Locks may not be released during meter-in control.

#### ■ How to release

- The stopper pin moves and the lock is released when the hexagon socket head bolt (M3 x 20) is screwed into the stopper piston and the bolt is pulled up 3 mm with a force of 20 N or more. When the hand is released, if the stopper piston returns by the internal spring and enters the piston rod groove, the piston is locked.







Twin rod cylinder Double acting standard type

# STR2-M<sub>B</sub> Series

● Bore size:  $\phi$  6,  $\phi$  10,  $\phi$  16,  $\phi$  20,  $\phi$  25,  $\phi$  32

JIS symbol



## Specifications

Descriptions		STR2-M (metal bush bearing) STR2-B (ball bearing)					
Bore size	mm	$\phi$ 6	$\phi$ 10	$\phi$ 16	$\phi$ 20	$\phi$ 25	$\phi$ 32
Actuation		Double acting					
Working fluid		Compressed air					
Max. working pressure	MPa	0.7					
Min. working pressure	MPa	0.2	0.15	0.1			
Withstanding pressure	MPa	1.05					
Ambient temperature	°C	-10 to 60 (no freezing)					
Port size		M5					Rc1/8
Stroke tolerance	mm	+2.0					
		0					
Adjustable stroke range	mm	0 to -5					
Working piston speed	mm/s	50 to 500					
Revolvable angle tolerance	STR2-M	$\pm 0.4^\circ$	$\pm 0.3^\circ$			$\pm 0.2^\circ$	
	STR2-B	$\pm 0.2^\circ$	$\pm 0.1^\circ$			$\pm 0.3^\circ$	
Piston rod bearing type	STR2-M	Metal bush bearing					
	STR2-B	Ball bearing					
Cushion		Rubber cushion					
Lubrication		Not required (when lubricating, use turbine oil Class 1 ISOVG 32.)					
Allowable energy absorption J	PUSH	0.008	0.061	0.181	0.303	0.68	1.3
	PULL	0.059	0.083	0.083	0.127	0.237	0.311

## Stroke length

Bore size	Stroke length (mm)	Max. stroke length (mm)	Min. stroke length (mm)	Min. stroke length with switch (mm)
$\phi$ 6	10, 20, 30, 40, 50	50	5	10
$\phi$ 10				
$\phi$ 16	10, 20, 30, 40, 50, 60, 70, 80, 90, 100	100	5	10
$\phi$ 20				
$\phi$ 25				
$\phi$ 32				

Note 1: For rear piping type

- $\phi$  16: 70
- $\phi$  20,  $\phi$  25: 60
- $\phi$  32: 50

Note 2: Custom stroke length is available per 1mm increment.

Note that the total length is the same as the next longer standard stroke length.



### Switch specifications

- 1 color/2 color indicator

Descriptions	Proximity 2 wire		Proximity 3 wire			Reed 2 wire				
	K2H/K2V	K2YH/K2YV	K3H/K3V	K3PH/K3PV (Custom order)	K3YH/K3YV	K0H/K0V		K5H/K5V		
Applications	Programmable controller		Programmable controller, relay			Programmable controller, relay		Programmable controller, relay (IC circuit (without indicator light), serial connection)		
Output method	-		NPN output	PNP output	NPN output	-				
Power voltage	-		10 to 28 VDC			-				
Load voltage	10 to 30 VDC		30 VDC or less			12 VDC /24 VDC	110 VAC	5/12/24 VDC	110 VAC	
Load current	5 to 20mA (Note 1)		50mA or less			5 to 50mA	7 to 20mA	50mA or less	20mA or less	
Light	LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)	Yellow LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)		-		
Leakage current	1mA or less		10 μA or less			0mA				

Note 1: The maximum load current: above 20mA applies at 25°C. When ambient temperature around a switch is higher than 25°C, the value is lower than 20mA. (5 to 10mA. when 60°C)

- With preventive maintenance output

Descriptions	Proximity 3 wire		Proximity 4 wire		Proximity 3 wire		Proximity 4 wire		
	K2YFH/V		K3YFH/V		K2YMH/V		K3YMH/V		
Applications	Programmable controller		Programmable controller, relay		Programmable controller		Programmable controller, relay		
Output method	NPN output								
Light	Installation position adjustment	Red/green LED (ON lighting)							
	Preventive maintenance output	-			Yellow LED (ON lighting)				
Output section	Power voltage	-		10 to 28 VDC		-		10 to 28 VDC	
	Load voltage	10 to 30 VDC		30 VDC or less		10 to 30 VDC		30 VDC or less	
	Load current	5 to 20mA		50mA or less		5 to 20mA		50mA or less	
	Leakage current	1mA or less		10 μA or less		1.2mA or less		10 μA or less	
Preventive maintenance output	Load voltage	30 VDC or less							
	Load current	20mA or less		50mA or less		5 to 20mA or less		50mA or less	
	Leakage current	10 μA or less							

### Cylinder weight

Unit: g

Bore size	Product weight when stroke length 0mm		Additional weight per S=10mm
	STR2-M	STR2-B	
φ 6	60	64	10
φ 10	140	155	14
φ 16	240	300	20
φ 20	340	405	40
φ 25	580	610	52
φ 32	1300	1150	83

### Discrete cylinder switch weight

Unit (g)

Name	Model no.	Lead wire length		
		1m	3m	5m
Cylinder switch	K0	18	52	86
	K2	18	52	86
	K3	18	52	86
	K5	18	52	86

#### (Example) Product weight STR2-M-6-10-K2H-D

- Product weight when stroke length = 0mm: 60g
- Additional weight when stroke length is 10mm: 10g x 1 = 10g
- Weight of cylinder switch (2 pcs.): 18g x 2 = 36g
- Product weight: 60g + 10g + 36g = 106g

### Clean room specifications

(Catalog No. CB-033SA)

- Dust preventive structure for inside the clean room

STR2-B - ..... - **P7\***

STR2-B - ..... - **P5\***

SCP\*2  
CMK2  
CMA2  
SCM  
SCG  
SCA2  
SCS  
CKV2  
CA/OV2  
SSD  
CAT  
MDC2  
MVC  
SMD2  
MSD\*  
FC\*  
STK  
ULK\*  
JSK/M2  
JSG  
JSC3  
USSD  
USC  
JSB3  
LMB  
STG  
STS/L  
LCS  
LCG  
LCM  
LCT  
LCY  
**STR2**  
UCA2  
HCM  
HCA  
SRL2  
SRG  
SRM  
SRT  
MRL2  
MRG2  
SM-25  
CAC3  
UCAC  
RCC2  
MFC  
SHC  
GLC  
Ending

Twin rod cylinder  
Combined functions

## How to order

Without switch

**STR2** - **M** - **16** - **30** - **F**

With switch

**STR2** - **M** - **16** - **30** - **K0H** - **R** - **F**

Model no.

**A** Bearing method

**B** Bore size

**C** Port thread type

**D** Stroke length  
Note 1  
■ Custom stroke length

**E** Switch model no.  
Note 2

**F** Switch quantity

**G** Option  
Note 3  
Note 4

Symbol	Descriptions			
<b>A Bearing method</b>				
<b>M</b>	Metal bush bearing			
<b>B</b>	Ball bearing			
<b>B Bore size (mm)</b>				
<b>6</b>	φ 6			
<b>10</b>	φ 10			
<b>16</b>	φ 16			
<b>20</b>	φ 20			
<b>25</b>	φ 25			
<b>32</b>	φ 32			
<b>C Port thread type</b>				
<b>Blank</b>	Rc thread			
<b>NN</b>	NPT thread (only φ32) (custom order)			
<b>GN</b>	G thread (only φ32) (custom order)			
<b>D Stroke length (mm)</b>				
Bore size	Stroke length	Custom stroke length		
φ 6	5 to 50	By 1 mm increment		
φ 10	5 to 50			
φ 16	5 to 100			
φ 20	5 to 100			
φ 25	5 to 100			
φ 32	5 to 100			
<b>E Switch model no.</b>				
Axial lead wire	Radial lead wire	Contact	Indicator	Lead wire
<b>K0H*</b>	<b>K0V*</b>	Reed	1 color indicator type	2-wire
<b>K5H*</b>	<b>K5V*</b>		Without indicator light	
<b>K2H*</b>	<b>K2V*</b>	Proximity	1 color indicator type	2-wire
<b>K3H*</b>	<b>K3V*</b>		1 color indicator type (custom order)	3-wire
<b>K3PH*</b>	<b>K3PV*</b>		2 color indicator type	3-wire
<b>K2YH*</b>	<b>K2YV*</b>		2 color indicator type (custom order) (w/o indicator light for preventive maintenance output)	2-wire
<b>K3YH*</b>	<b>K3YV*</b>	Proximity	2 color indicator type (custom order) (w/ indicator light for preventive maintenance output (1 color))	3-wire
<b>K2YFH*</b>	<b>K2YFV*</b>		2 color indicator type (custom order) (w/ indicator light for preventive maintenance output (1 color))	4-wire
<b>K3YFH*</b>	<b>K3YFV*</b>		2 color indicator type (custom order) (w/ indicator light for preventive maintenance output (1 color))	3-wire
<b>K2YMH*</b>	<b>K2YMV*</b>		2 color indicator type (custom order) (w/ indicator light for preventive maintenance output (1 color))	4-wire
<b>K3YMH*</b>	<b>K3YMV*</b>			
<b>*Lead wire length</b>				
<b>Blank</b>	1m (standard)			
<b>3</b>	3m (option)			
<b>5</b>	5m (option)			
<b>F Switch quantity</b>				
<b>R</b>	One on rod end			
<b>H</b>	One on head end			
<b>D</b>	Two			
<b>G Option</b>				
<b>F</b>	Material of end plate: Steel			
<b>P6</b>	Copper and PTFE free type			
<b>O</b>	Piping port position 180° change			
<b>R</b>	Rear piping type			

### Note on model no. selection

Note 1: Max. stroke length of rear piping type "R"

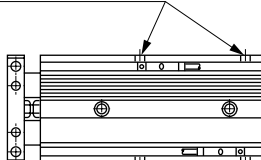
- φ 6, 10 : 50 mm stroke
- φ 16 : 70 mm stroke
- φ 20, 25 : 60 mm stroke
- φ 32 : 50 mm stroke length.

Note 2: Reed switch can not be used for STR2-B-6/10.

Note 3: Ball bearing type is copper and PTFE free "P6" specifications by standard type.

Note 4: A piping port position of "O" is as the following.

Standard (blank) piping port



Piping port position 180° change  
(Symbol: O) piping port

<Example of model number>

**STR2-M-16-30-K0H-R-F**

Model: Twin rod cylinder standard type

- A** Bearing method : Metal bush bearing
- B** Bore size : φ16mm
- C** Port thread type : Rc thread
- D** Stroke length : 30mm
- E** Switch model no. : Reed switch K0H
- F** Switch quantity : One on rod end
- G** Option : Material of end plate: Steel

## How to order switch discrete

**SW** - **K0H\***

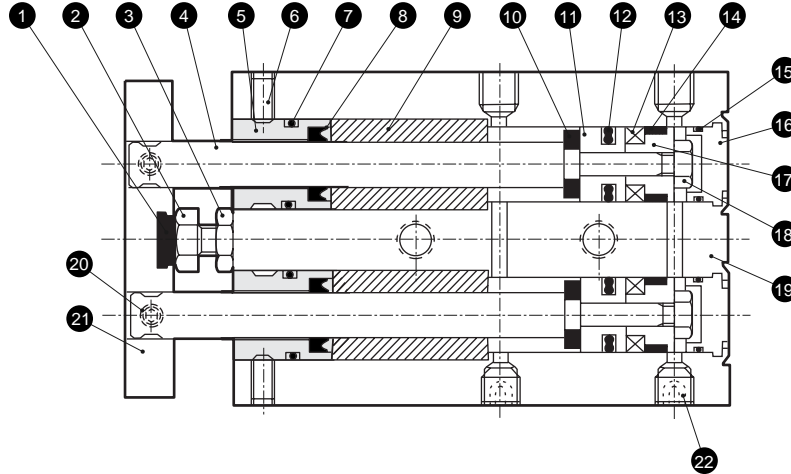
Switch model no.  
(Item **E** above)

# STR2-M Series

## Internal structure and parts list (metal bush bearing type $\phi 6, \phi 10$ )

- SCP\*2
- CMK2
- CMA2
- SCM
- SCG
- SCA2
- SCS
- CKV2
- CA/OV2
- SSD
- CAT
- MDC2
- MVC
- SMD2
- MSD\*
- FC\*
- STK
- ULK\*
- JSK/M2
- JSG
- JSC3
- USSD
- USC
- JSB3
- LMB
- STG
- STS/L
- LCS
- LCG
- LCM
- LCT
- LCY
- STR2**
- UCA2
- HCM
- HCA
- SRL2
- SRG
- SRM
- SRT
- MRL2
- MRG2
- SM-25
- CAC3
- UCAC
- RCC2
- MFC
- SHC
- GLC
- Ending

- Standard type  
STR2-M
- Material of end plate: Steel  
STR2-M-F
- Copper and PTFE free type  
STR2-M-P6
- Piping port position 180° change  
STR2-M-...-O



No.	Parts name	Material	Remarks	No.	Parts name	Material	Remarks
1	Cushion rubber (H)	Urethane rubber		12	Piston packing seal	Nitrile rubber	
2	Hexagon head bolt	Stainless steel		13	Magnet	Plastic	
3	Hexagon nut	Stainless steel		14	Wear ring	Acetar resin	
4	Piston rod	Stainless steel		15	O ring	Nitrile rubber	
5	Housing	Stainless steel		16	Cap	Aluminum alloy	Chromate
6	Hexagon head hole set screw	Stainless steel		17	Spacer	Aluminum alloy	Chromate
7	O ring	Nitrile rubber		18	Hexagon nut	Steel	Galvanizing
8	Rod packing seal	Nitrile rubber		19	Cylinder body	Aluminum alloy	Hard alumite
9	Bush Note 1	Copper alloy		20	Hexagon head hole set screw	Stainless steel	
10	Cushion rubber (R)	Urethane rubber		21	End plate Note 2	Aluminum alloy	Alumite
11	Piston	Aluminum alloy	Chromate	22	Hexagon head hole set screw	Stainless steel	

Note 1: For copper and PTFE free specifications, cast iron system oil impregnated bearing is used.  
 Note 2: For material of end plate steel, galvanized steel is used.

### Repair parts list

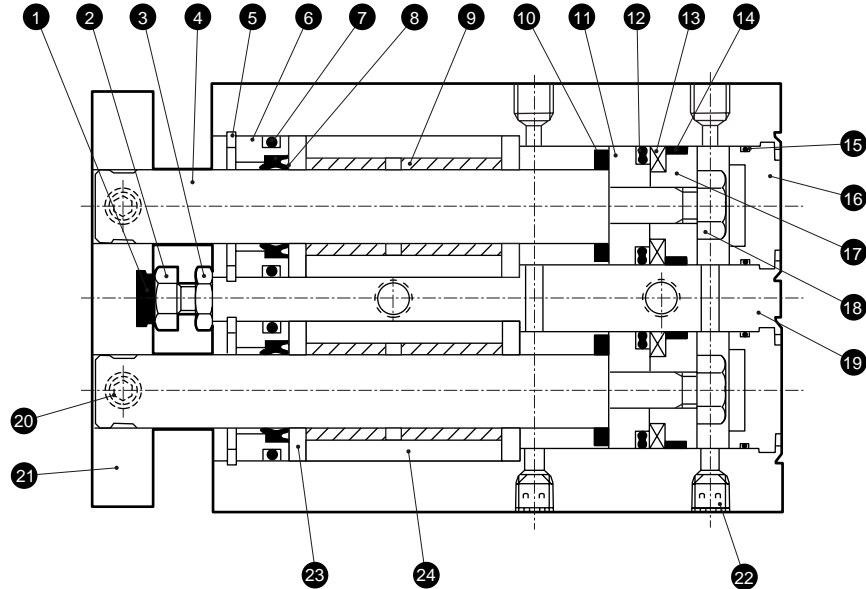
STR2-M (standard type), STR2-M-F (material of end plate: steel), STR2-M-P6 (copper and PTFE free type)

Bore size (mm)	Kit No.	Repair parts number
$\phi 6$	STR2-6K	1 7 8 10 12 14
$\phi 10$	STR2-10K	

Note: Specify the kit No. when placing an order.

### Internal structure drawing and parts list (metal bush bearing type $\phi 16$ , $\phi 20$ , $\phi 25$ , $\phi 32$ )

- Standard type  
STR2-M
- Material of end plate: Steel  
STR2-M-F
- Copper and PTFE free type  
STR2-M-P6
- Piping port position 180° change  
STR2-M...-O



No.	Parts name	Material	Remarks	No.	Parts name	Material	Remarks
1	Cushion rubber (H)	Urethane rubber		13	Magnet	Plastic	
2	Hexagon head bolt	Stainless steel		14	Wear ring	Acetar resin	
3	Hexagon nut	Stainless steel		15	O ring	Nitrile rubber	
4	Piston rod	Stainless steel ( $\phi 16$ , $\phi 20$ ) Steel ( $\phi 25$ , $\phi 32$ )	Industrial chrome plating	16	Cap	Aluminum alloy	Chromate
5	C ring for hole	Stainless steel		17	Spacer	Aluminum alloy	Chromate
6	Housing	Aluminum alloy	Chromate	18	Hexagon nut	Steel	Galvanizing
7	O ring	Nitrile rubber		19	Cylinder body	Aluminum alloy	Hard alumite
8	Rod packing seal	Nitrile rubber		20	Hexagon socket head set screw	Stainless steel	
9	Bush Note 1	Copper alloy		21	End plate Note 2	Aluminum alloy	Alumite
10	Cushion rubber (R)	Urethane rubber		22	Hexagon socket head set screw	Stainless steel	
11	Piston	Aluminum alloy	Chromate	23	Spacer	Aluminum alloy	Chromate
12	Piston packing seal	Nitrile rubber		24	Aluminum housing	Aluminum alloy	Chromate

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

Note 2: For material of end plate steel, galvanized steel is used.

### Repair parts list

STR2-M (standard type), STR2-M-F (material of end plate: steel), STR2-M-P6 (copper and PTFE free type)

Bore size (mm)	Kit No.	Repair parts number
$\phi 16$	STR2-16K	1 7 8
$\phi 20$	STR2-20K	
$\phi 25$	STR2-25K	10 12 14
$\phi 32$	STR2-32K	

Note: Specify the kit No. when placing an order.

SCP\*2  
CMK2  
CMA2  
SCM  
SCG  
SCA2  
SCS  
CKV2  
CA/OV2  
SSD  
CAT  
MDC2  
MVC  
SMD2  
MSD\*  
FC\*  
STK  
ULK\*  
JSK/M2  
JSG  
JSC3  
USSD  
USC  
JSB3  
LMB  
STG  
STS/L  
LCS  
LCG  
LCM  
LCT  
LCY  
**STR2**  
UCA2  
HCM  
HCA  
SRL2  
SRG  
SRM  
SRT  
MRL2  
MRG2  
SM-25  
CAC3  
UCAC  
RCC2  
MFC  
SHC  
GLC  
Ending

Twin rod cylinder  
Combined functions

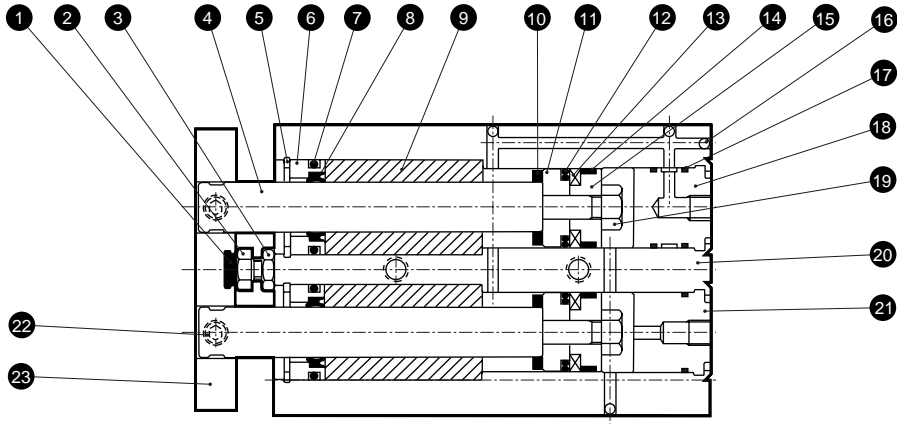
# STR2-M-R Series

## Internal structure and parts list (metal bush bearing type $\phi 6$ , $\phi 10$ , $\phi 16$ , $\phi 20$ , $\phi 25$ , $\phi 32$ )

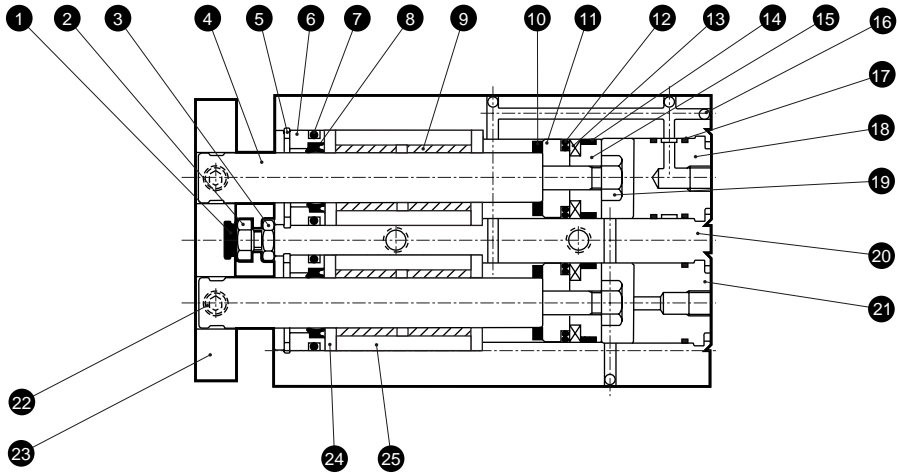
- SCP\*2
- CMK2
- CMA2
- SCM
- SCG
- SCA2
- SCS
- CKV2
- CA/OV2
- SSD
- CAT
- MDC2
- MVC
- SMD2
- MSD\*
- FC\*
- STK
- ULK\*
- JSK/M2
- JSG
- JSC3
- USSD
- USC
- JSB3
- LMB
- STG
- STS/L
- LCS
- LCG
- LCM
- LCT
- LCY
- STR2**
- UCA2
- HCM
- HCA
- SRL2
- SRG
- SRM
- SRT
- MRL2
- MRG2
- SM-25
- CAC3
- UCAC
- RCC2
- MFC
- SHC
- GLC
- Ending

● Rear piping  
STR2-M-R

$\phi 6, \phi 10$



$\phi 16$  to  $\phi 32$



No.	Parts name	Material	Remarks	No.	Parts name	Material	Remarks
1	Cushion rubber (H)	Urethane rubber		13	Magnet	Plastic	
2	Hexagon head bolt	Stainless steel		14	Wear ring	Acetar resin	
3	Hexagon nut	Stainless steel		15	Spacer	Aluminum alloy	Chromate
4	Piston rod	Stainless steel ( $\phi 6$ to $\phi 20$ ) Steel ( $\phi 25, \phi 32$ )	Industrial chrome plating ( $\phi 16$ to $\phi 32$ )	16	Steel ball	Steel	
5	C ring for hole	Stainless steel		17	O ring	Nitrile rubber	
6	Housing	Stainless steel ( $\phi 6, \phi 10$ ) Aluminum alloy ( $\phi 16$ to $\phi 32$ )	Chromate	18	Cap (A)	Aluminum alloy	Chromate
7	O ring	Nitrile rubber		19	Hexagon nut	Steel	Galvanizing
8	Rod packing seal	Nitrile rubber		20	Cylinder body	Aluminum alloy	Hard alumite
9	Bush	Copper alloy		21	Cap (B)	Aluminum alloy	Chromate
10	Cushion rubber (R)	Urethane rubber		22	Hexagon socket head set screw	Stainless steel	
11	Piston	Aluminum alloy	Chromate	23	End plate	Aluminum alloy	Alumite
12	Piston packing seal	Nitrile rubber		24	Spacer	Aluminum alloy	Chromate
				25	Aluminum housing	Aluminum alloy	Chromate

### Repair parts list

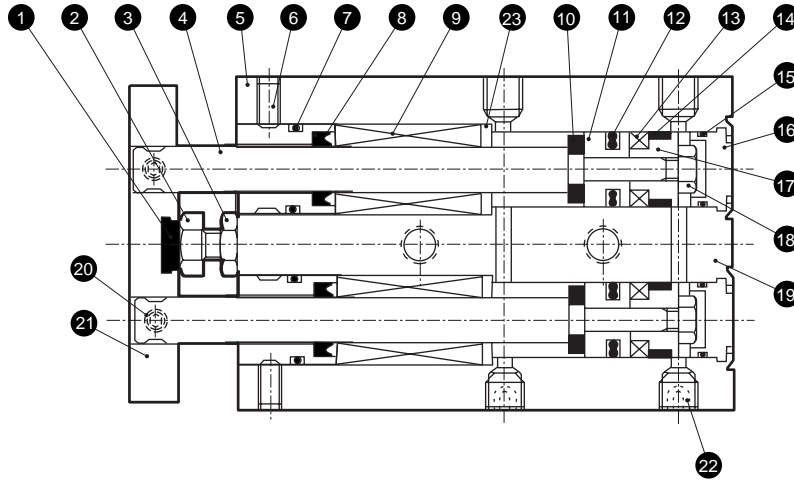
STR2-M-R (rear piping)

Bore size (mm)	Kit No.	Repair parts number
$\phi 6$	STR2-6K	
$\phi 10$	STR2-10K	1 7 8
$\phi 16$	STR2-16K	10 12 14
$\phi 20$	STR2-20K	
$\phi 25$	STR2-25K	
$\phi 32$	STR2-32K	

Note: Specify the kit No. when placing an order.

### Internal structure and parts list (ball bearing type $\phi 6$ , $\phi 10$ )

- Standard type  
STR2-B
- Material of end plate: Steel  
STR2-B-F
- Piping port position 180° change  
STR2-B----O



SCP*2
CMK2
CMA2
SCM
SCG
SCA2
SCS
CKV2
CA/OV2
SSD
CAT
MDC2
MVC
SMD2
MSD*
FC*
STK
ULK*
JSK/M2
JSG
JSC3
USSD
USC
JSB3
LMB
STG
STS/L
LCS
LCG
LCM
LCT
LCY
<b>STR2</b>
UCA2
HCM
HCA
SRL2
SRG
SRM
SRT
MRL2
MRG2
SM-25
CAC3
UCAC
RCC2
MFC
SHC
GLC
Ending

No.	Parts name	Material	Remarks	No.	Parts name	Material	Remarks
1	Cushion rubber (H)	Urethane rubber		13	Magnet	Plastic	
2	Hexagon head bolt	Stainless steel		14	Wear ring	Acetar resin	
3	Hexagon nut	Stainless steel		15	O ring	Nitrile rubber	
4	Piston rod	Steel	Industrial chrome plating	16	Cap	Aluminum alloy	Chromate
5	Housing	Stainless steel		17	Spacer	Aluminum alloy	Chromate
6	Hexagon socket head set screw	Stainless steel		18	Hexagon nut	Steel	Galvanizing
7	O ring	Nitrile rubber		19	Cylinder body	Aluminum alloy	Hard alumite
8	Rod packing seal	Nitrile rubber		20	Hexagon socket head set screw	Stainless steel	
9	Bearing			21	End plate Note 1	Aluminum alloy	Alumite
10	Cushion rubber (R)	Urethane rubber		22	Hexagon head hole set screw	Stainless steel	
11	Piston	Aluminum alloy	Chromate	23	Spacer	Aluminum alloy	Chromate
12	Piston packing seal	Nitrile rubber					

Note 1: Steel and treatment galvanizing is used for material of end plate steel.

### Repair parts list

STR2-B (standard type), STR2-B-F (material of end plate: steel)

Bore size (mm)	Kit No.	Repair parts number
$\phi 6$	STR2-6K	1 7 8 10 12 14
$\phi 10$	STR2-10K	

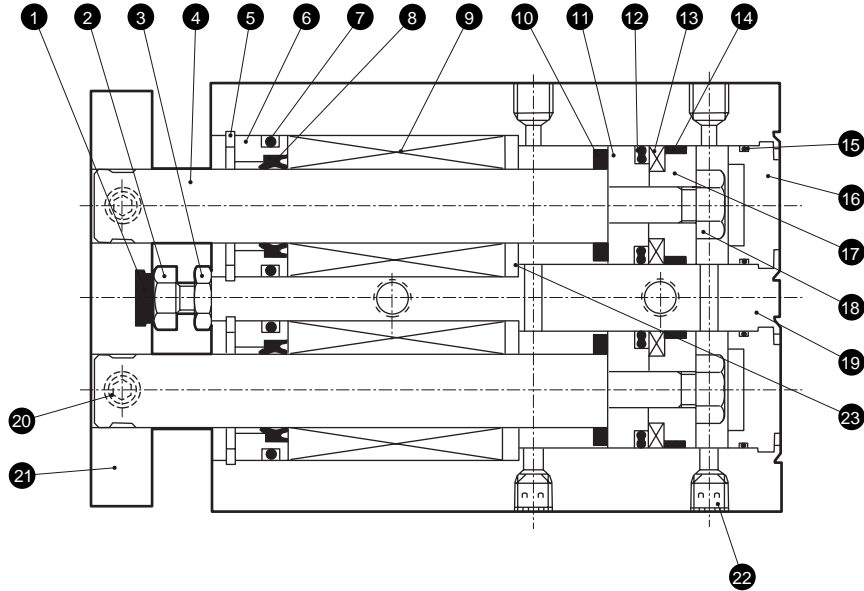
Note: Specify the kit No. when placing an order.

Twin rod cylinder  
Combined functions

# STR2-B Series

## Internal structure and parts list (ball bearing type $\phi 16$ , $\phi 20$ , $\phi 25$ , $\phi 32$ )

- Standard type  
STR2-B
- Material of end plate: Steel  
STR2-B-F
- Piping port position 180° change  
STR2-B....O



No.	Parts name	Material	Remarks	No.	Parts name	Material	Remarks
1	Cushion rubber (H)	Urethane rubber		13	Magnet	Plastic	
2	Hexagon head bolt	Stainless steel		14	Wear ring	Acetar resin	
3	Hexagon nut	Stainless steel		15	O ring	Nitrile rubber	
4	Piston rod	Steel	Industrial chrome plating	16	Cap	Aluminum alloy	Chromate
5	C ring for hole	Stainless steel		17	Spacer	Aluminum alloy	Chromate
6	Housing	Aluminum alloy	Chromate	18	Hexagon nut	Steel	Galvanizing
7	O ring	Nitrile rubber		19	Cylinder body	Aluminum alloy	Hard alumite
8	Rod packing seal	Nitrile rubber		20	Hexagon socket head set screw	Stainless steel	
9	Bearing			21	End plate Note 1	Aluminum alloy	Alumite
10	Cushion rubber (R)	Urethane rubber		22	Hexagon socket head set screw	Stainless steel	
11	Piston	Aluminum alloy	Chromate	23	Spacer	Aluminum alloy	Chromate
12	Piston packing seal	Nitrile rubber					

Note 1: Steel and treatment galvanizing is used for material of end plate steel.

### Repair parts list

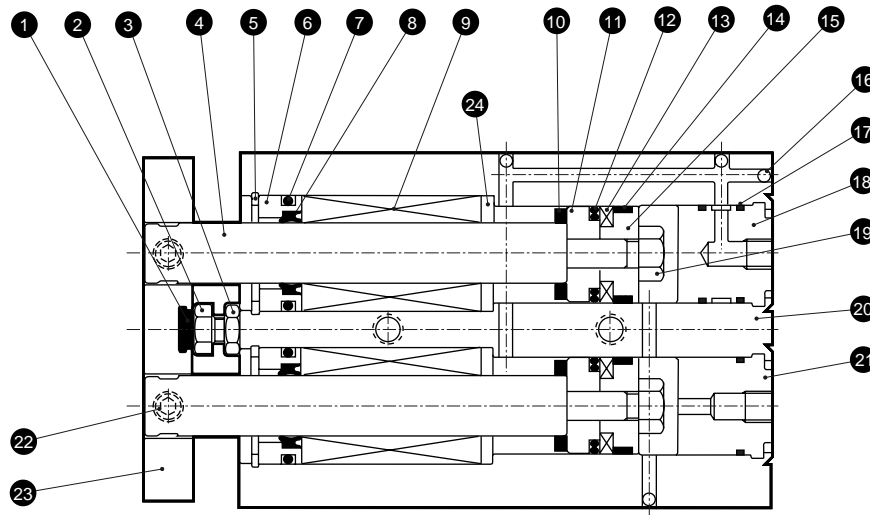
STR2-B (standard type), STR2-B-F (material of end plate: steel)

Bore size (mm)	Kit No.	Repair parts number
$\phi 16$	STR2-16K	
$\phi 20$	STR2-20K	1 7 8
$\phi 25$	STR2-25K	10 12 14
$\phi 32$	STR2-32K	



### Internal structure and parts list (ball bearing type)

- Rear piping  
STR2-B-R



SCP*2
CMK2
CMA2
SCM
SCG
SCA2
SCS
CKV2
CA/OV2
SSD
CAT
MDC2
MVC
SMD2
MSD*
FC*
STK
ULK*
JSK/M2
JSG
JSC3
USSD
USC
JSB3
LMB
STG
STS/L
LCS
LCG
LCM
LCT
LCY
<b>STR2</b>
UCA2
HCM
HCA
SRL2
SRG
SRM
SRT
MRL2
MRG2
SM-25
CAC3
UCAC
RCC2
MFC
SHC
GLC
Ending

No.	Parts name	Material	Remarks	No.	Parts name	Material	Remarks
1	Cushion rubber (H)	Urethane rubber		13	Magnet	Plastic	
2	Hexagon head bolt	Stainless steel		14	Wear ring	Acetar resin	
3	Hexagon nut	Stainless steel		15	Spacer	Aluminum alloy	Chromate
4	Piston rod	Steel	Industrial chrome plating	16	Steel ball	Steel	
5	C ring for hole	Stainless steel		17	O ring	Nitrile rubber	
6	Housing	Stainless steel (φ 6, φ 10) Aluminum alloy (φ 16 to φ 32)	Chromate	18	Cap (A)	Aluminum alloy	Chromate
7	O ring	Nitrile rubber		19	Hexagon nut	Steel	Galvanizing
8	Rod packing seal	Nitrile rubber		20	Cylinder body	Aluminum alloy	Hard alumite
9	Bearing			21	Cap (B)	Aluminum alloy	Chromate
10	Cushion rubber (R)	Urethane rubber	Chromate	22	Hexagon socket head set screw	Stainless steel	
11	Piston	Aluminum alloy		23	End plate	Aluminum alloy	Alumite
12	Piston packing seal	Nitrile rubber		24	Spacer	Aluminum alloy	Chromate

### Repair parts list

STR2-B-R (rear piping)

Bore size (mm)	Kit No.	Repair parts number
φ 6	STR2-6K	
φ 10	STR2-10K	
φ 16	STR2-16K	1 7 8
φ 20	STR2-20K	10 12 14
φ 25	STR2-25K	
φ 32	STR2-32K	

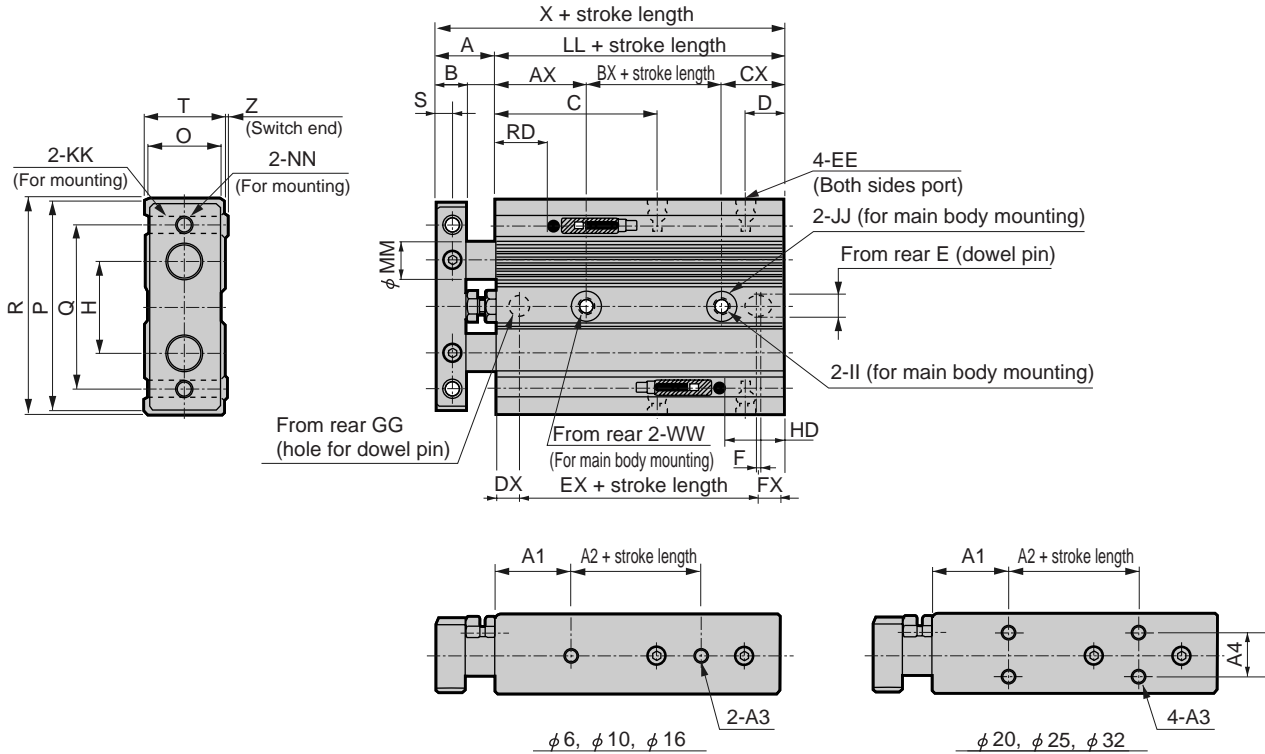
Note: Specify the kit No. when placing an orde.

Twin rod cylinder  
Combined functions



## Dimensions (φ 6 to φ 32)

● Standard type, material of end plate: Steel (F), copper and PTFE free type (P6), piping port position 180° change (O)



Note 1: Note that the HD and RD dimensions at 10 stroke may differ from these dimensions due to the various settings.

Note 2: The total length dimensions for the custom stroke are the same as the longer standard stroke.

Note 3: Refer to page 1910 for 2 color indicator, HD/RD dimensions and projection dimensions of the switch with preventive maintenance output.

Symbol	Basic type, O, F, P6 basic dimensions																		
Bore size (mm)	A	B	C	D	E	EE	F	GG	H	II	JJ	KK	LL	MM	NN	O	P		
φ 6	12	6	24.5	7.5	4 <sup>+0.07</sup> / <sub>+0.02</sub> depth 4	M5	1	4 <sup>+0.07</sup> / <sub>+0.02</sub> depth 4	14	3.4	6.5 spot face depth 3.3	M3 penetrating	44	4	M3 penetrating	11	34		
φ 10	14	6	35	7	4 <sup>+0.07</sup> / <sub>+0.02</sub> depth 4	M5	1	4 <sup>+0.07</sup> / <sub>+0.02</sub> depth 4	20	4.3	8 spot face depth 4.4	M4 penetrating	55	6	M4 penetrating	13	42		
φ 16	16	8	43	9.5	6 <sup>+0.07</sup> / <sub>+0.02</sub> depth 6	M5	1	6 <sup>+0.07</sup> / <sub>+0.02</sub> depth 6	25	4.3	8 spot face depth 4.4	M5 penetrating	66	10	M5 penetrating	19	52		
φ 20	20	10	46	9.5	6 <sup>+0.07</sup> / <sub>+0.02</sub> depth 6	M5	1	6 <sup>+0.07</sup> / <sub>+0.02</sub> depth 6	28	5.2	9.5 spot face depth 5.4	M5 penetrating	75	12	M5 penetrating	24	60		
φ 25	22	12	44	10.5	6 <sup>+0.07</sup> / <sub>+0.02</sub> depth 6	M5	1	6 <sup>+0.07</sup> / <sub>+0.02</sub> depth 6	34	6.3	11 spot face depth 6.5	M6 penetrating	75	14	M6 penetrating	30	70		
φ 32	22	12	56	11	6 <sup>+0.07</sup> / <sub>+0.02</sub> depth 6	Rc1/8	1	6 <sup>+0.07</sup> / <sub>+0.02</sub> depth 6	44	6.3	11 spot face depth 6.5	M6 penetrating	91	16	M6 penetrating	36	94		
Symbol	K0/K5/K2/K3																		
Bore size (mm)	Q	R	S	T	WW	X	AX	BX	CX	DX	EX	FX	Z	A1	A2	A3	A4	HD	RD
φ 6	29	36	3	13	M4 depth 5	56	20	10	14	7	30	7	1.0	15	10	M3 depth 4	-	3.5 Note 1	21 Note 1
φ 10	36	44	3	15	M5 depth 6	69	24	14	17	8	38	9	1.0	15	20	M3 depth 3.5	-	2.5 Note 1	33 Note 1
φ 16	45	58	4	21	M5 depth 6	82	24	26	16	8	50	8	0.5	20	25	M4 depth 4	-	7	39.5
φ 20	50	62	5	27	M6 depth 8	95	24	33	18	9	57	9	0.5	20	30	M4 depth 4	13	10.5	45
φ 25	60	72	6	33	M8 depth 8	97	24	33	18	9	57	9	0.5	20	30	M5 depth 6	18	11.5	43.5
φ 32	75	96	6	38	M8 depth 8	113	24	47	20	9	73	9	0.5	20	40	M5 depth 8	24	15.5	55.5

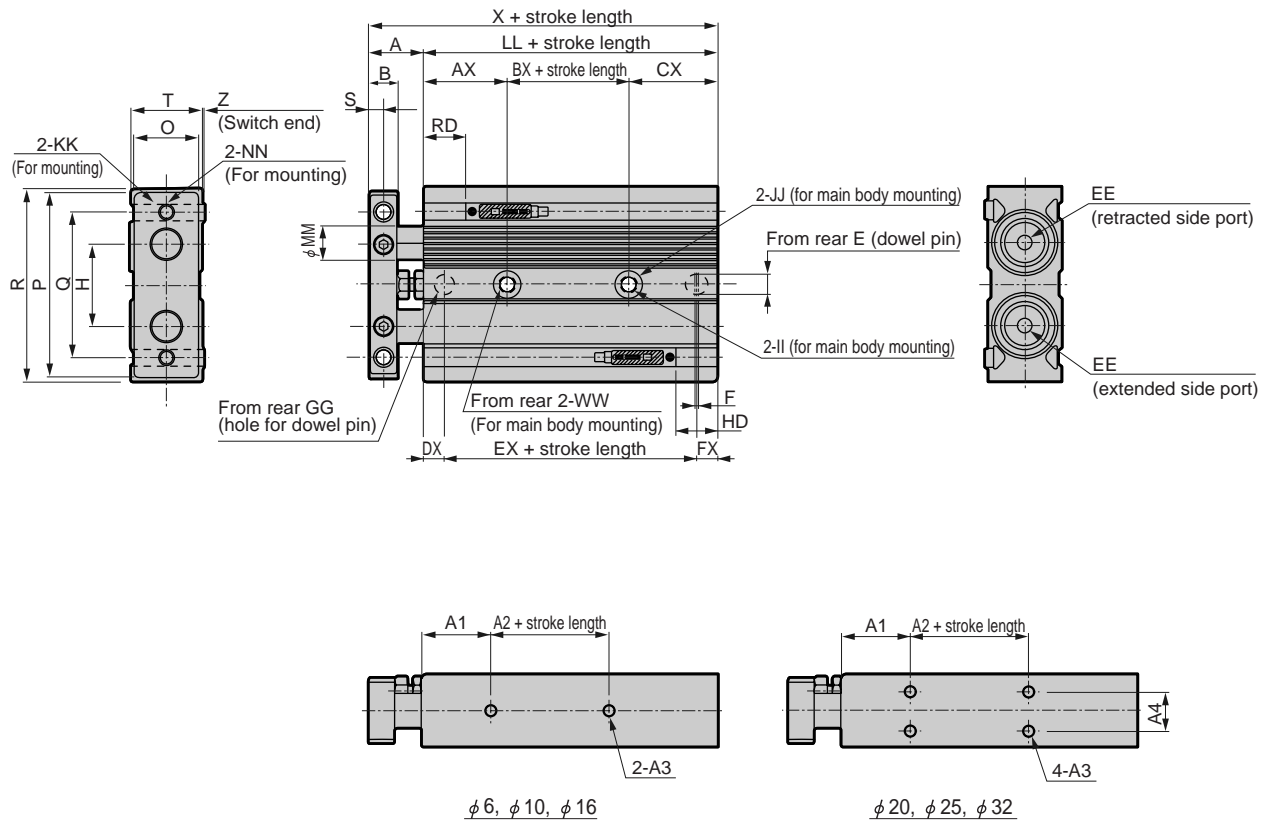
Note 4: STR2-B-6 and 10, reed switch K0/K5 are not available.

Note 5: When the counter bore surface (JJ) is the mounting surface, this cylinder has a step which could cause the cylinder to tilt. In this case, change the port position or use the option with port position changed 180° (O) so that the counter bore surface is not the mounting surface.

### Dimensions (φ6 to φ32)



● Rear piping (R)



Note 1: Note that the HD and RD dimensions at 10 stroke may differ from these dimensions due to the various settings.

Note 2: The total length dimensions for the custom stroke are the same as the longer standard stroke.

Note 3: Refer to page 1910 for 2 color indicator, HD/RD dimensions and projection dimensions of the switch with preventive maintenance output.

Symbol	R basic dimensions															
Bore size (mm)	A	B	E	EE	F	GG	H	II	JJ	KK	LL	MM	NN	O	P	
φ 6	12	6	4 <sup>+0.07</sup> / <sub>+0.02</sub> depth 4	M5	1	4 <sup>+0.07</sup> / <sub>+0.02</sub> depth 4	14	3.4	6.5 spot face depth 3.3	M3 penetrating	54	4	M3 penetrating	11	34	
φ 10	14	6	4 <sup>+0.07</sup> / <sub>+0.02</sub> depth 4	M5	1	4 <sup>+0.07</sup> / <sub>+0.02</sub> depth 4	20	4.3	8 spot face depth 4.4	M4 penetrating	65	6	M4 penetrating	13	42	
φ 16	16	8	6 <sup>+0.07</sup> / <sub>+0.02</sub> depth 6	M5	1	6 <sup>+0.07</sup> / <sub>+0.02</sub> depth 6	25	4.3	8 spot face depth 4.4	M5 penetrating	76	10	M5 penetrating	19	52	
φ 20	20	10	6 <sup>+0.07</sup> / <sub>+0.02</sub> depth 6	M5	1	6 <sup>+0.07</sup> / <sub>+0.02</sub> depth 6	28	5.2	9.5 spot face depth 5.4	M5 penetrating	85	12	M5 penetrating	24	60	
φ 25	22	12	6 <sup>+0.07</sup> / <sub>+0.02</sub> depth 6	M5	1	6 <sup>+0.07</sup> / <sub>+0.02</sub> depth 6	34	6.3	11 spot face depth 6.5	M6 penetrating	85	14	M6 penetrating	30	70	
φ 32	22	12	6 <sup>+0.07</sup> / <sub>+0.02</sub> depth 6	Rc1/8	1	6 <sup>+0.07</sup> / <sub>+0.02</sub> depth 6	44	6.3	11 spot face depth 6.5	M6 penetrating	101	16	M6 penetrating	36	94	

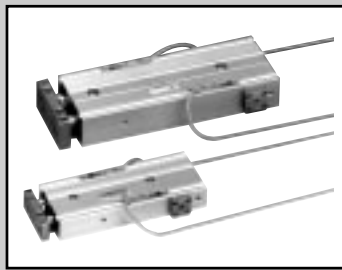
Symbol	K0/K5/K2/K3																		
Bore size (mm)	Q	R	S	T	WW	X	AX	BX	CX	DX	EX	FX	Z	A1	A2	A3	A4	HD	RD
φ 6	29	36	3	13	M4 depth 5	66	20	10	24	7	40	7	1.0	15	10	M3 depth 4	-	13.5	21
φ 10	36	44	3	15	M5 depth 6	79	24	14	27	8	48	9	1.0	15	20	M3 depth 3.5	-	12.5	33
φ 16	45	58	4	21	M5 depth 6	92	24	26	26	8	60	8	0.5	20	25	M4 depth 4	-	17	39.5
φ 20	50	62	5	27	M6 depth 8	105	24	33	28	9	67	9	0.5	20	30	M4 depth 4	13	20.5	45
φ 25	60	72	6	33	M8 depth 8	107	24	33	28	9	67	9	0.5	20	30	M5 depth 6	18	21.5	43.5
φ 32	75	96	6	38	M8 depth 8	123	24	47	30	9	83	9	0.5	20	40	M5 depth 8	24	25.5	55.5

Note 4: STR2-B-6 and 10, reed switch K0/K5 are not available.

Note 5: When the counter bore surface (JJ) is the mounting surface, this cylinder has a step which could cause the cylinder to tilt. In this case, change the port position or use the option with port position changed 180° (O) so that the counter bore surface is not the mounting surface.

- SCP\*2
- CMK2
- CMA2
- SCM
- SCG
- SCA2
- SCS
- CKV2
- CA/OV2
- SSD
- CAT
- MDC2
- MVC
- SMD2
- MSD\*
- FC\*
- STK
- ULK\*
- JSK/M2
- JSG
- JSC3
- USSD
- USC
- JSB3
- LMB
- STG
- STS/L
- LCS
- LCG
- LCM
- LCT
- LCY
- STR2**
- UCA2
- HCM
- HCA
- SRL2
- SRG
- SRM
- SRT
- MRL2
- MRG2
- SM-25
- CAC3
- UCAC
- RCC2
- MFC
- SHC
- GLC
- Ending

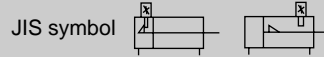
Twin rod cylinder  
Combined functions



Twin rod cylinder Double acting position locking type

# STR2-M<sub>B</sub>Q Series

● Bore size:  $\phi 16$ ,  $\phi 20$ ,  $\phi 25$ ,  $\phi 32$



## Specifications

Descriptions		STR2-MQ(metal bush bearing) STR2-BQ(ball bearing)			
Bore size	mm	$\phi 16$	$\phi 20$	$\phi 25$	$\phi 32$
Actuation		Double acting position locking type			
Working fluid		Compressed air			
Max. working pressure	MPa	0.7			
Min. working pressure	MPa	0.15			
Withstanding pressure	MPa	1.05			
Ambient temperature	°C	-10 to 60 (no freezing)			
Port size		M5			Rc1/8
Stroke tolerance	mm	+2.0 0			
Adjustable stroke range	mm	Cannot be adjusted (only with bed side position locking)			
Working piston speed	mm/s	50 to 500			
Revolvable angle tolerance		STR2-M $\pm 0.3^\circ$			$\pm 0.2^\circ$
		STR2-B $\pm 0.1^\circ$			$\pm 0.3^\circ$
Piston rod bearing type		STR2-M	Metal bush bearing		
		STR2-B	Ball bearing		
Cushion		Rubber cushion			
Lubrication		Not required (when lubricating, use turbine oil Class 1 ISOVG 32)			
Position locking mechanism		Rod end or head end			
Holding force	N	Maximum thrust x 0.7			
Allowable energy absorption					
	PUSH	0.181	0.303	0.68	1.3
	PULL	0.083	0.127	0.237	0.311

## Stroke length

Bore size	Stroke length (mm)	Max. stroke length (mm)	Min. stroke length (mm)	Min. stroke length with switch (mm)
$\phi 16$	10, 20, 30, 40, 50, 60, 70, 80, 90, 100	100	5	10
$\phi 20$				
$\phi 25$				
$\phi 32$				

Note 1: Custom stroke length is custom order.

**⚠** Refer to the "Precautions for Use" **Position Locking Type STR2-Q** pages 1868 to 1871 before starting use.

SCP\*2  
CMK2  
CMA2  
SCM  
SCG  
SCA2  
SCS  
CKV2  
CA/OV2  
SSD  
CAT  
MDC2  
MVC  
SMD2  
MSD\*  
FC\*  
STK  
ULK\*  
JSK/M2  
JSG  
JSC3  
USSD  
USC  
JSB3  
LMB  
STG  
STS/L  
LCS  
LCG  
LCM  
LCT  
LCY  
STR2  
UCA2  
HCM  
HCA  
SRL2  
SRG  
SRM  
SRT  
MRL2  
MRG2  
SM-25  
CAC3  
UCAC  
RCC2  
MFC  
SHC  
GLC  
Ending

### Switch specifications

- 1 color/2 color indicator

Descriptions	Proximity 2 wire		Proximity 3 wire			Reed 2 wire				
	K2H/K2V	K2YH/K2YV	K3H/K3V	K3PH/K3PV (Custom order)	K3YH/K3YV	K0H/K0V		K5H/K5V		
Applications	Programmable controller		Programmable controller, relay			Programmable controller, relay		Programmable controller, relay IC circuit (without indicator light), serial connection		
Output method	-		NPN output	PNP output	NPN output	-				
Power voltage	-		10 to 28 VDC			-				
Load voltage	10 to 30 VDC		30 VDC or less			12 VDC/24 VDC	110 VAC	5/12/24 VDC	110 VAC	
Load current	5 to 20mA (Note 1)		50mA or less			5 to 50mA	7 to 20mA	50mA or less		20mA or less
Light	LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)	Yellow LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)		-		
Leakage current	1mA or less		10 μA or less			0mA				

Note 1: The maximum load current: above 20mA applies at 25°C. When ambient temperature around a switch is higher than 25°C, the value is lower than 20mA. (5 to 10mA when 60°C)

- With preventive maintenance output

Descriptions	Proximity 3 wire		Proximity 4 wire		Proximity 3 wire		Proximity 4 wire		
	K2YFH/V		K3YFH/V		K2YMH/V		K3YMH/V		
Applications	Programmable controller		Programmable controller, relay		Programmable controller		Programmable controller, relay		
Output method	NPN output								
Light	Red/green LED (ON lighting)								
	Installation position adjustment		-		Yellow LED (ON lighting)				
Regular output	Power voltage	-		10 to 28 VDC		-		10 to 28 VDC	
	Load voltage	10 to 30 VDC		30 VDC or less		10 to 30 VDC		30 VDC or less	
	Load current	5 to 20mA		50mA or less		5 to 20mA		50mA or less	
	Leakage current	1mA or less		10 μA or less		1.2mA or less		10 μA or less	
Preventive maintenance output	Load voltage	30 VDC or less							
	Load current	20mA or less		50mA or less		5 to 20mA or less		50mA or less	
	Leakage current	10 μA or less							

### Cylinder weight

Unit: g

Bore size	Product weight when stroke length 0mm		Additional weight per S=10mm
	STR2-M	STR2-B	
φ 16	390	405	31
φ 20	605	605	43
φ 25	910	890	59
φ 32	1430	1480	84

### Discrete cylinder switch weight

Unit (g)

Name	Model no.	Lead wire length		
		1m	3m	5m
Cylinder switch	K0	18	52	86
	K2	18	52	86
	K3	18	52	86
	K5	18	52	86

#### (Example) Product weight

STR2-MQ-16-10-H-K2H-D

- Product weight when stroke length = 0mm: 390g
- Additional weight when stroke length is 10mm: 31g x 1 = 31g
- Weight of cylinder switch (2 pcs.): 18g x 2 = 36g
- Product weight: 390g + 31g + 36g = 457g

SCP*2
CMK2
CMA2
SCM
SCG
SCA2
SCS
CKV2
CA/OV2
SSD
CAT
MDC2
MVC
SMD2
MSD*
FC*
STK
ULK*
JSK/M2
JSG
JSC3
USSD
USC
JSB3
LMB
STG
STS/L
LCS
LCG
LCM
LCT
LCY
<b>STR2</b>
UCA2
HCM
HCA
SRL2
SRG
SRM
SRT
MRL2
MRG2
SM-25
CAC3
UCAC
RCC2
MFC
SHC
GLC
Ending

Twin rod cylinder  
Combined functions

## How to order

Without switch

**STR2 - M Q - 16 - 30 - H - O**

With switch

**STR2 - M Q - 16 - 30 - H - K0H - R - O**

Model no.

**A** Bearing method

**B** Bore size

**C** Port thread type

**D** Stroke length  
Refer to page 1884 for the minimum stroke.

■ Custom stroke length is available as custom order.

**E** Position locking mechanism

**F** Switch model no.

**G** Switch quantity

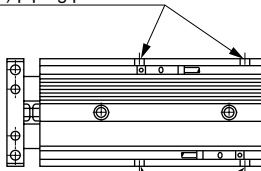
**H** Option  
Note 1

Symbol	Descriptions			
<b>A Bearing method</b>				
M	Metal bush bearing			
B	Ball bearing			
<b>B Bore size (mm)</b>				
16	φ 16			
20	φ 20			
25	φ 25			
32	φ 32			
<b>C Port thread type</b>				
Blank	Rc thread			
NN	NPT thread (only φ 32) (custom order)			
GN	G thread (only φ 32) (custom order)			
<b>D Stroke length (mm)</b>				
10	10			
20	20			
30	30			
40	40			
50	50			
60	60			
70	70			
80	80			
90	90			
100	100			
<b>E Position locking mechanism</b>				
H	Head end position locking			
R	Rod end position locking			
<b>F Switch model no.</b>				
Axial lead wire	Radial lead wire	Contact	Indicator	Lead wire
K0H*	K0V*	Reed	1 color indicator type Without indicator light	2-wire
K5H*	K5V*			
K2H*	K2V*	Proximity	1 color indicator type	2-wire
K3H*	K3V*			
K3PH*	K3PV*			
K2YH*	K2YV*	Proximity	2 color indicator type	3-wire
K3YH*	K3YV*			
K2YFH*	K2YFV*	Proximity	2 color indicator type (custom order) (w/o light for preventive maintenance output)	3-wire
K3YFH*	K3YFV*			
K2YMH*	K2YMV*			
K3YMH*	K3YMV*		2 color indicator type (custom order) (w/ light for preventive maintenance output (1 color))	4-wire
<b>*Lead wire length</b>				
Blank	1m (standard)			
3	3m (option)			
5	5m (option)			
<b>G Switch quantity</b>				
R	One on rod end			
H	One on head end			
D	Two			
<b>H Option</b>				
F	Material of end plate: Steel			
O	Piping port position 180° change			

### Note on model no. selection

Note 1: For "O", the piping port position is as the following diagram.

Piping port position 180° change  
(Symbol: O) piping port



Standard (blank) piping port

<Example of model number>

**STR2-MQ-16-30-H-K0H-R-O**

Model: Twin rod cylinder position locking type

- A** Bearing method : Metal bush bearing
- B** Bore size : φ16mm
- C** Port thread type : Rc thread
- D** Stroke length : 30mm
- E** Position locking mechanism: Head end position locking
- F** Switch model no. : Reed switch K0H
- G** Switch quantity : One on rod end
- H** Option : Piping port position 180° change

## How to order switch discrete

**SW - K0H\***

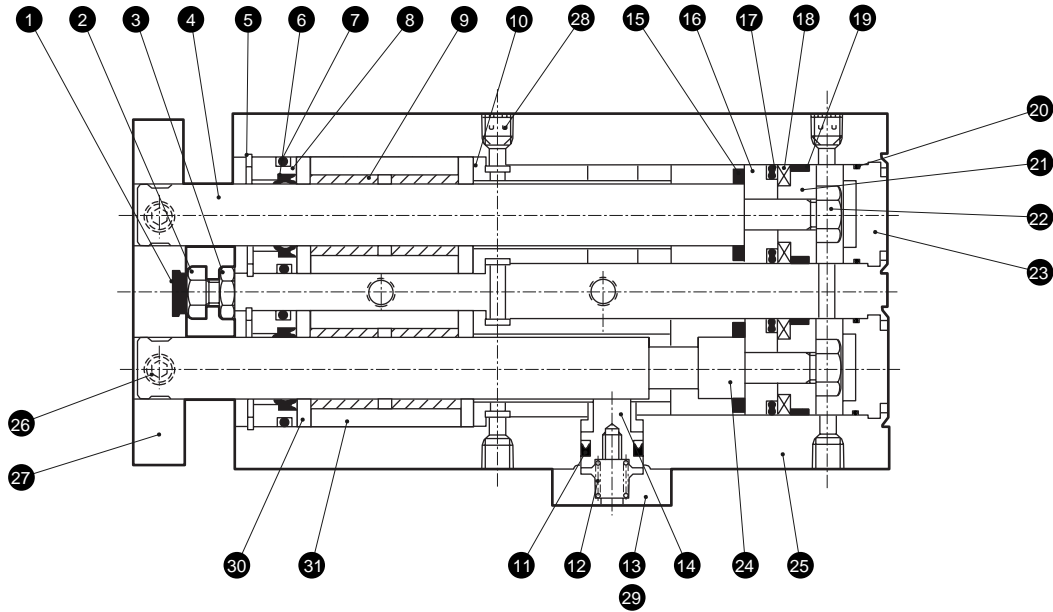
Switch model no.  
(Item **F** above)

# STR2-MQ Series

## Internal structure and parts list (metal bush bearing type)

SCP\*2  
CMK2  
CMA2  
SCM  
SCG  
SCA2  
SCS  
CKV2  
CA/OV2  
SSD  
CAT  
MDC2  
MVC  
SMD2  
MSD\*  
FC\*  
STK  
ULK\*  
JSK/M2  
JSG  
JSC3  
USSD  
USC  
JSB3  
LMB  
STG  
STS/L  
LCS  
LCG  
LCM  
LCT  
LCY  
STR2  
UCA2  
HCM  
HCA  
SRL2  
SRG  
SRM  
SRT  
MRL2  
MRG2  
SM-25  
CAC3  
UCAC  
RCC2  
MFC  
SHC  
GLC  
Ending

- Position locking type  
Rod end position locking  
STR2-MQ-R
- Piping port position 180° change  
STR2-MQ----R----O



No.	Parts name	Material	Remarks	No.	Parts name	Material	Remarks
1	Cushion rubber (H)	Urethane rubber		17	Piston packing seal	Nitrile rubber	
2	Hexagon head bolt	Stainless steel		18	Magnet	Plastic	
3	Hexagon nut	Stainless steel		19	Wear ring	Acetar resin	
4	Piston rod (2)	Stainless steel (φ16, φ20) Steel (φ25, φ32)	Industrial chrome plating	20	O ring	Nitrile rubber	
5	C ring for hole	Stainless steel		21	Spacer	Aluminum alloy	Chromate
6	Rod packing seal	Nitrile rubber		22	Hexagon nut	Steel	Galvanizing
7	O ring	Nitrile rubber		23	Cap	Aluminum alloy	Chromate
8	Housing	Aluminum alloy	Chromate	24	Piston rod (1)	Stainless steel (φ16, φ20) Steel (φ25, φ32)	Industrial chrome plating
9	Bush	Copper alloy		25	Cylinder body	Aluminum alloy	Hard alumite
10	Adaptor	Aluminum alloy	Chromate	26	Hexagon socket head set screw	Stainless steel	
11	Stopper packing seal	Nitrile rubber		27	End plate	Aluminum alloy	Alumite
12	Coil spring	Piano wire	Electrodeposition coating	28	Hexagon socket head set screw	Stainless steel	
13	Stopper guard	Aluminum alloy	Alumite	29	Hexagon socket head cap bolt	Stainless steel	
14	Stopper piston	Stainless steel		30	Spacer	Aluminum alloy	Chromate
15	Cushion rubber (R)	Urethane rubber		31	Aluminum housing	Aluminum alloy	Chromate
16	Piston	Aluminum alloy	Chromate				

## Repair parts list

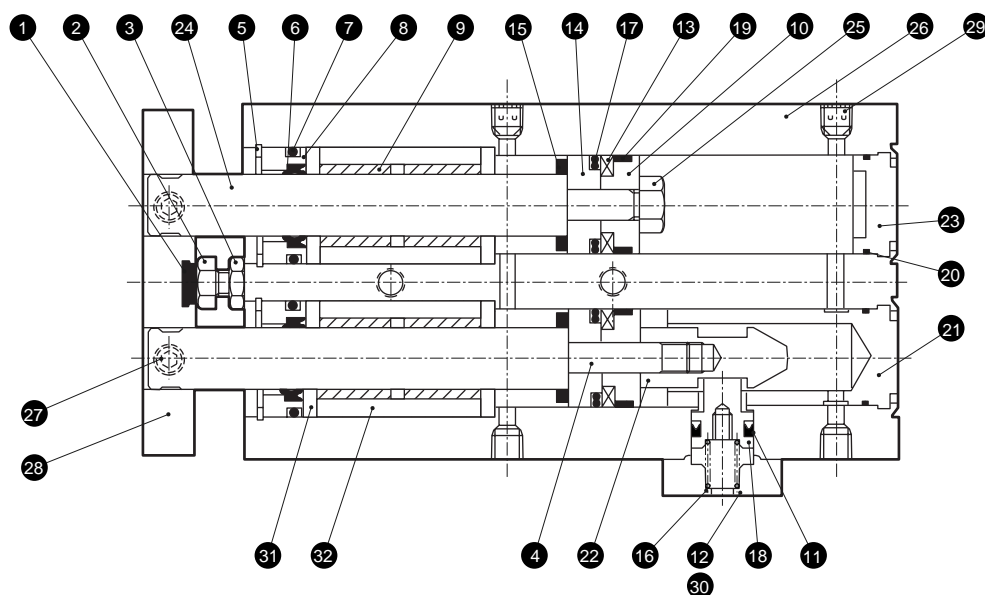
Bore size (mm)	Kit No.	Repair parts number
φ 16	STR2-Q-16K	1 6 7 11
φ 20	STR2-Q-20K	1 6 7 11
φ 25	STR2-Q-25K	15 17 19
φ 32	STR2-Q-32K	15 17 19

Note: Specify the kit No. when placing an order.



### Internal structure and parts list (metal bush bearing type)

- Position locking type  
Head end position locking  
STR2-MQ-H
- Piping port position 180° change  
STR2-MQ-H---O



No.	Parts name	Material	Remarks	No.	Parts name	Material	Remarks
1	Cushion rubber (H)	Urethane rubber		17	Piston packing seal	Nitrile rubber	
2	Hexagon head bolt	Stainless steel		18	Stopper piston	Stainless steel	
3	Hexagon nut	Stainless steel		19	Wear ring	Acetar resin	
4	Piston rod (2)	Stainless steel (φ16, φ20) Steel (φ25, φ32)	Industrial chrome plating	20	O ring	Nitrile rubber	
5	C ring for hole	Stainless steel		21	Head cover	Aluminum alloy	Chromate
6	Rod packing seal	Nitrile rubber		22	Sleeve	Stainless steel	
7	O ring	Nitrile rubber		23	Cap	Aluminum alloy	Chromate
8	Housing	Aluminum alloy	Chromate	24	Piston rod (1)	Stainless steel (φ16, φ20) Steel (φ25, φ32)	Industrial chrome plating
9	Bush	Copper alloy		25	Hexagon nut	Steel	Galvanizing
10	Spacer	Aluminum alloy	Chromate	26	Cylinder body	Aluminum alloy	Hard alumite
11	Stopper packing seal	Nitrile rubber		27	Hexagon socket head set screw	Stainless steel	
12	Stopper guard	Aluminum alloy	Alumite	28	End plate	Aluminum alloy	Alumite
13	Magnet	Plastic		29	Hexagon socket head set screw	Stainless steel	
14	Piston	Aluminum alloy	Chromate	30	Hexagon socket head cap bolt	Stainless steel	
15	Cushion rubber (R)	Urethane rubber		31	Spacer	Aluminum alloy	Chromate
16	Coil spring	Piano wire	Electrodeposition coating	32	Aluminum housing	Aluminum alloy	Chromate

### Repair parts list

Bore size (mm)	Kit No.	Repair parts number
φ 16	STR2-Q-16K	
φ 20	STR2-Q-20K	1 6 7 11
φ 25	STR2-Q-25K	15 17 19
φ 32	STR2-Q-32K	

Note: Specify the kit No. when placing an order.

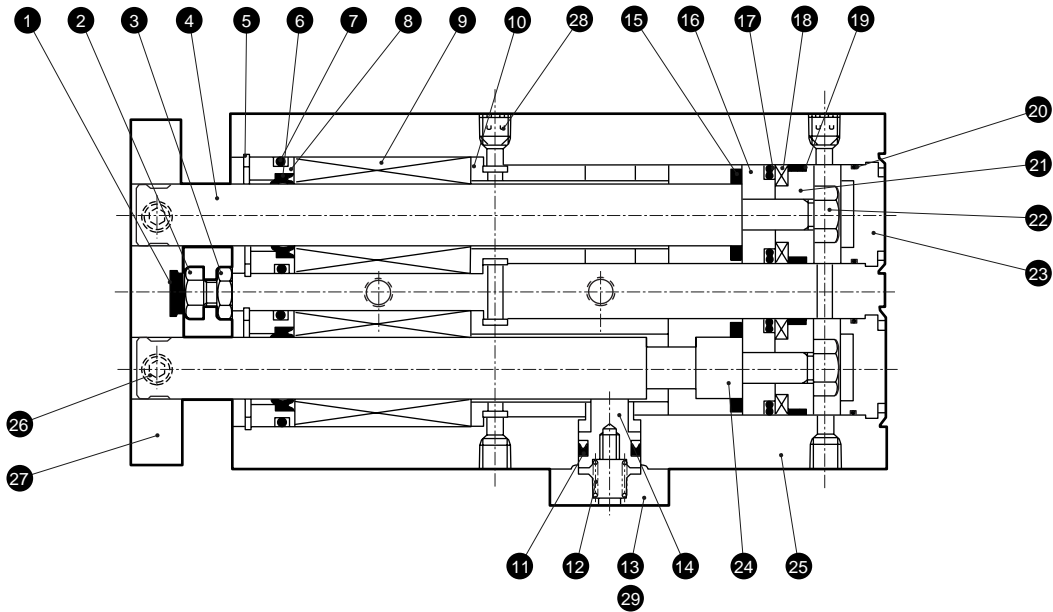
SCP\*2  
CMK2  
CMA2  
SCM  
SCG  
SCA2  
SCS  
CKV2  
CA/OV2  
SSD  
CAT  
MDC2  
MVC  
SMD2  
MSD\*  
FC\*  
STK  
ULK\*  
JSK/M2  
JSG  
JSC3  
USSD  
USC  
JSB3  
LMB  
STG  
STS/L  
LCS  
LCG  
LCM  
LCT  
LCY  
STR2  
UCA2  
HCM  
HCA  
SRL2  
SRG  
SRM  
SRT  
MRL2  
MRG2  
SM-25  
CAC3  
UCAC  
RCC2  
MFC  
SHC  
GLC  
Ending

Twin rod cylinder  
Combined functions

# STR2-BQ Series

## Internal structure and parts list (ball bearing type)

- Position locking type  
Rod end position locking  
STR2-BQ-R
- Piping port position 180° change  
STR2-BQ...-R...-O



No.	Parts name	Material	Remarks	No.	Parts name	Material	Remarks
1	Cushion rubber (H)	Urethane rubber		16	Piston	Aluminum alloy	Chromate
2	Hexagon head bolt	Stainless steel		17	Piston packing seal	Nitrile rubber	
3	Hexagon nut	Stainless steel		18	Magnet	Plastic	
4	Piston rod (2)	Steel	Industrial chrome plating	19	Wear ring	Acetar resin	
5	C ring for hole	Stainless steel		20	O ring	Nitrile rubber	
6	Rod packing seal	Nitrile rubber		21	Spacer	Aluminum alloy	Chromate
7	O ring	Nitrile rubber		22	Hexagon nut	Steel	Galvanizing
8	Housing	Aluminum alloy	Chromate	23	Cap	Aluminum alloy	Chromate
9	Bearing			24	Piston rod (1)	Steel	Industrial chrome plating
10	Adaptor	Aluminum alloy	Chromate	25	Cylinder body	Aluminum alloy	Hard alumite
11	Stopper packing seal	Nitrile rubber		26	Hexagon socket head set screw	Stainless steel	
12	Coil spring	Piano wire	Electrodeposition coating	27	End plate	Aluminum alloy	Alumite
13	Stopper guard	Aluminum alloy	Alumite	28	Hexagon socket head set screw	Stainless steel	
14	Stopper piston	Stainless steel		29	Hexagon socket head cap bolt	Stainless steel	
15	Cushion rubber (R)	Urethane rubber					

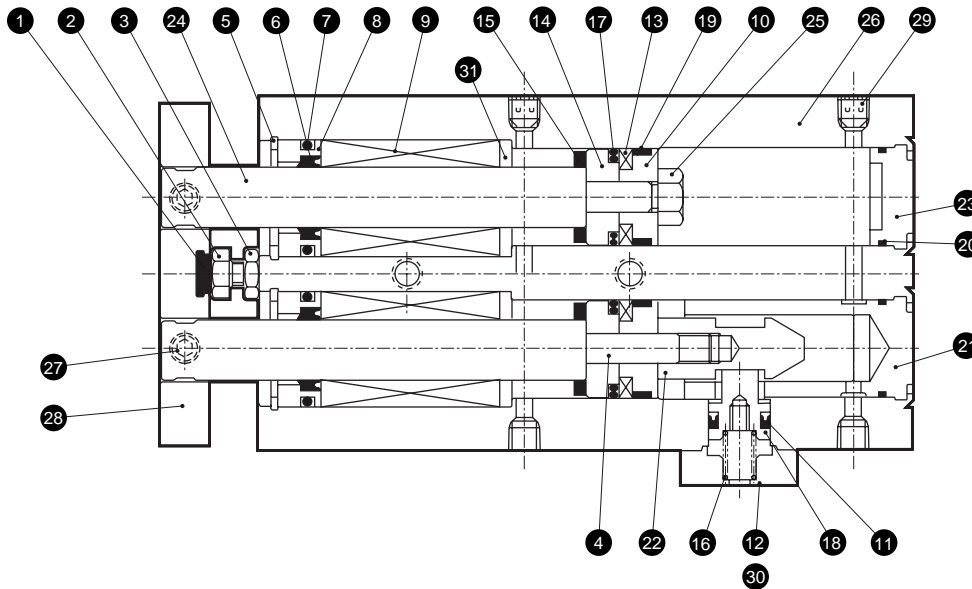
## Repair parts list

Bore size (mm)	Kit No.	Repair parts number
φ 16	STR2-Q-16K	
φ 20	STR2-Q-20K	1 6 7 11
φ 25	STR2-Q-25K	15 17 19
φ 32	STR2-Q-32K	

Note: Specify the kit No. when placing an order.

### Internal structure and parts list (ball bearing type)

- Position locking type  
Head end position locking  
STR2-BQ-H
- Piping port position 180° change  
STR2-BQ-H---O



No.	Parts name	Material	Remarks	No.	Parts name	Material	Remarks
1	Cushion rubber (H)	Urethane rubber		17	Piston packing seal	Nitrile rubber	
2	Hexagon head bolt	Stainless steel		18	Stopper piston	Stainless steel	
3	Hexagon nut	Stainless steel		19	Wear ring	Acetar resin	
4	Piston rod (2)	Steel	Industrial chrome plating	20	O ring	Nitrile rubber	
5	C ring for hole	Stainless steel		21	Head cover	Aluminum alloy	Chromate
6	Rod packing seal	Nitrile rubber		22	Sleeve	Stainless steel	
7	O ring	Nitrile rubber		23	Cap	Aluminum alloy	Chromate
8	Housing	Aluminum alloy	Chromate	24	Piston rod (1)	Steel	Industrial chrome plating
9	Bearing			25	Hexagon nut	Steel	Galvanizing
10	Spacer	Aluminum alloy	Chromate	26	Cylinder body	Aluminum alloy	Hard alumite
11	Stopper packing seal	Nitrile rubber		27	Hexagon socket head set screw	Stainless steel	
12	Stopper guard	Aluminum alloy	Alumite	28	End plate	Aluminum alloy	Alumite
13	Magnet	Plastic		29	Hexagon socket head set screw	Stainless steel	
14	Piston	Aluminum alloy	Chromate	30	Hexagon socket head cap bolt	Stainless steel	
15	Cushion rubber (R)	Urethane rubber		31	Spacer	Aluminum alloy	Chromate
16	Coil spring	Piano wire	Electrodeposition coating				

### Repair parts list

Bore size (mm)	Kit No.	Repair parts number
φ 16	STR2-Q-16K	
φ 20	STR2-Q-20K	1 6 7 11
φ 25	STR2-Q-25K	15 17 19
φ 32	STR2-Q-32K	

Note: Specify the kit No. when placing an order.

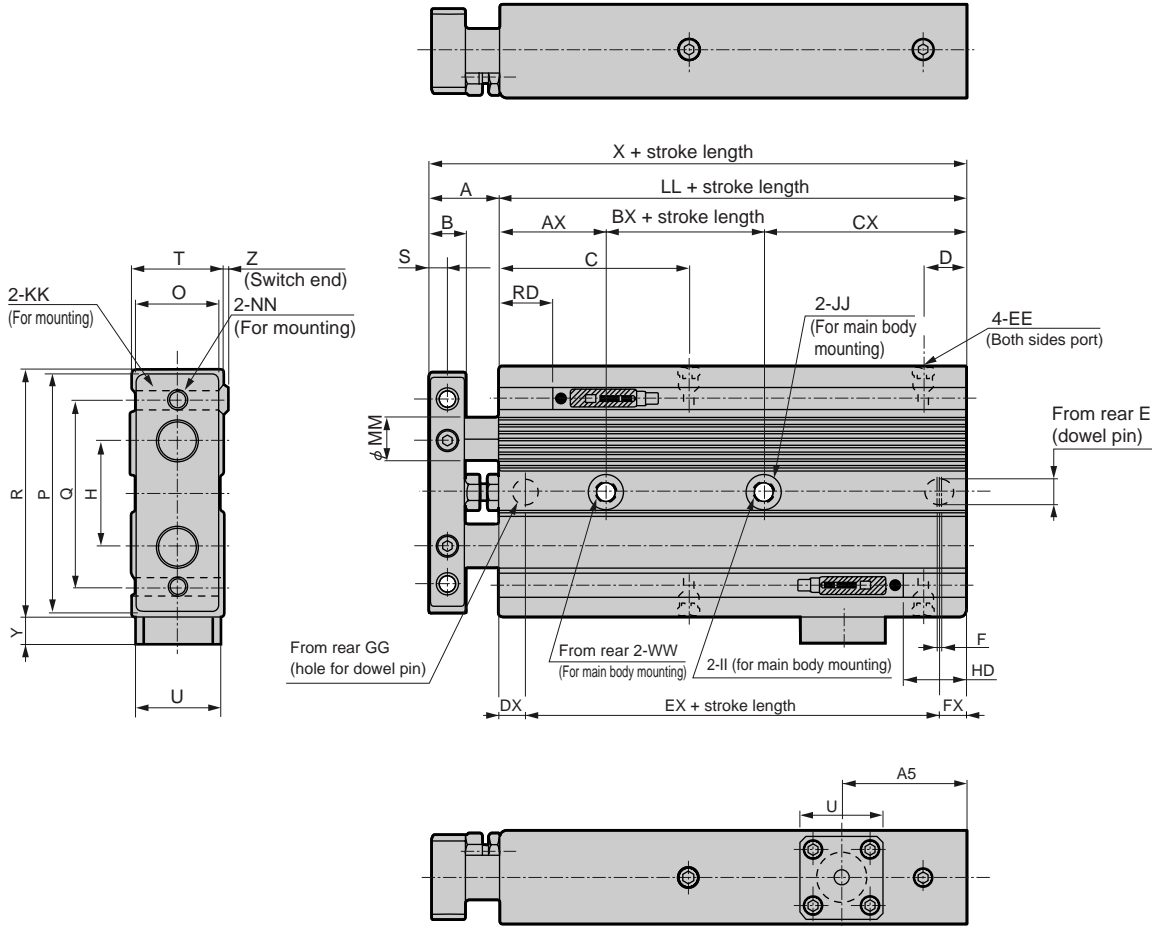
SCP\*2  
CMK2  
CMA2  
SCM  
SCG  
SCA2  
SCS  
CKV2  
CA/OV2  
SSD  
CAT  
MDC2  
MVC  
SMD2  
MSD\*  
FC\*  
STK  
ULK\*  
JSK/M2  
JSG  
JSC3  
USSD  
USC  
JSB3  
LMB  
STG  
STS/L  
LCS  
LCG  
LCM  
LCT  
LCY  
STR2  
UCA2  
HCM  
HCA  
SRL2  
SRG  
SRM  
SRT  
MRL2  
MRG2  
SM-25  
CAC3  
UCAC  
RCC2  
MFC  
SHC  
GLC  
Ending

Twin rod cylinder  
Combined functions



## Dimensions (φ16 to φ32)

● Position locking type (Q) head side position locking (H), piping port position 180° change (O)



Note 1: Note that the HD and RD dimensions at 10 stroke may differ from these dimensions due to the various settings.

Note 2: Refer to page 1910 for 2-color indicator, HD/RD dimensions and projection dimensions of the switch with preventive maintenance output.

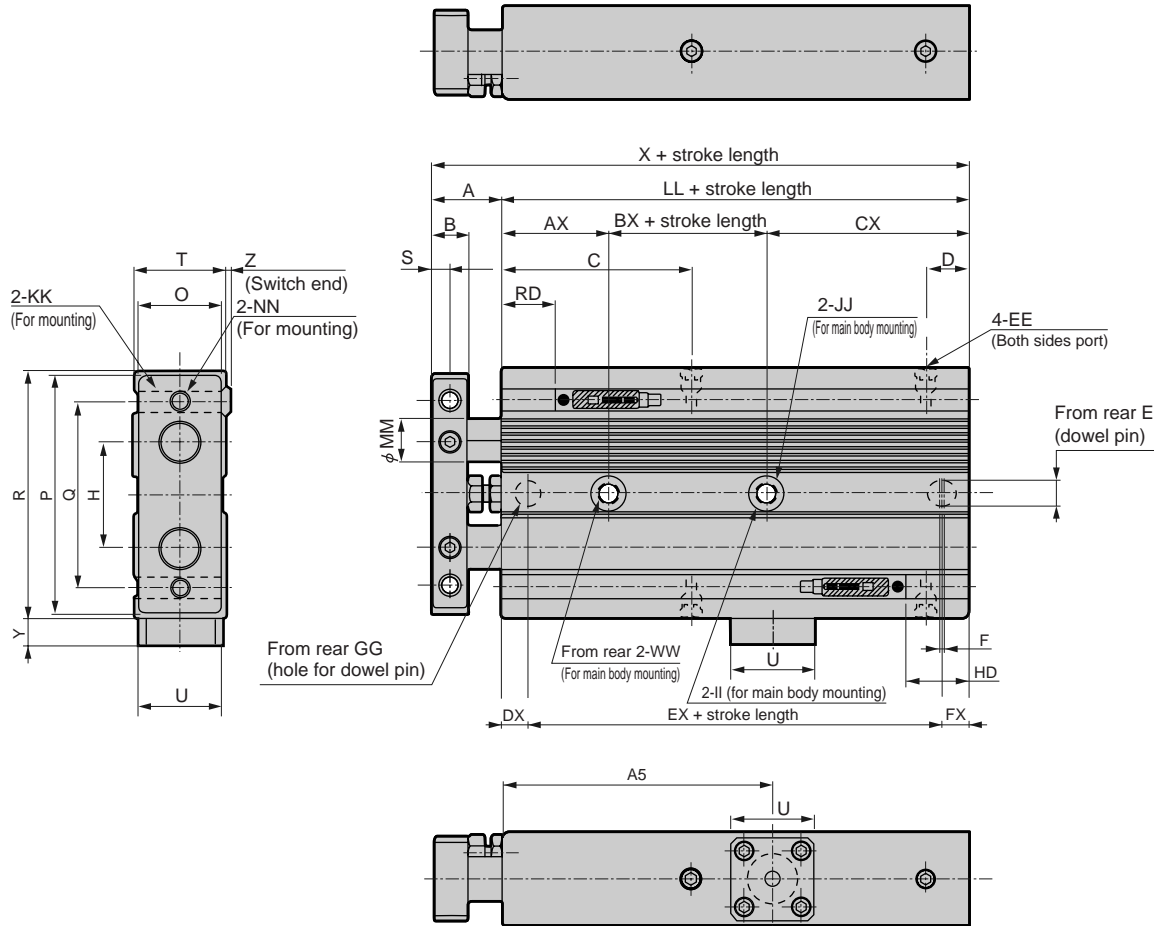
Note 3: When the counter bore surface (JJ) is the mounting surface, this cylinder has a step which could cause the cylinder to tilt. In this case, change the port position or use the option with port position changed 180° (O) so that the counter bore surface is not the mounting surface.

Symbol	Q-H basic dimensions																	
	A	B	C	D	E	EE	F	GG	H	II	JJ	KK	LL	MM	NN	O	P	
φ 16	16	8	43	9.5	6 <sup>+0.07</sup> / <sub>+0.02</sub> depth 6	M5	1	6 <sup>+0.07</sup> / <sub>+0.02</sub> depth 6	25	4.3	8 spot face depth 4.4	M5 penetrating	96	10	M5 penetrating	19	52	
φ 20	20	10	46	9.5	6 <sup>+0.07</sup> / <sub>+0.02</sub> depth 6	M5	1	6 <sup>+0.07</sup> / <sub>+0.02</sub> depth 6	28	5.2	9.5 spot face depth 5.4	M5 penetrating	105	12	M5 penetrating	24	60	
φ 25	22	12	44	10.5	6 <sup>+0.07</sup> / <sub>+0.02</sub> depth 6	M5	1	6 <sup>+0.07</sup> / <sub>+0.02</sub> depth 6	34	6.3	11 spot face depth 6.5	M6 penetrating	105	14	M6 penetrating	30	70	
φ 32	22	12	56	11	6 <sup>+0.07</sup> / <sub>+0.02</sub> depth 6	Rc1/8	1	6 <sup>+0.07</sup> / <sub>+0.02</sub> depth 6	44	6.3	11 spot face depth 6.5	M6 penetrating	121	16	M6 penetrating	36	94	
Symbol	K0/K5/K2/K3																	
	Q	R	S	T	U	WW	X	Y	AX	BX	CX	DX	EX	FX	Z	A5	HD	RD
φ 16	45	58	4	21	19	M5 depth 6	112	6	24	26	46	8	80	8	0.5	28	37	39.5
φ 20	50	62	5	27	23	M6 depth 8	125	7.5	24	33	48	9	87	9	0.5	25	40.5	45
φ 25	60	72	6	33	23	M8 depth 8	127	7.5	24	33	48	9	87	9	0.5	28	41.5	43.5
φ 32	75	96	6	38	23	M8 depth 8	143	7.5	24	47	50	9	103	9	0.5	27.5	45.5	55.5

### Dimensions (φ16 to φ32)



- Position locking type (Q) head side position locking (R), piping port position 180° change (O)



Note 1: Note that the HD and RD dimensions at 10 stroke may differ from these dimensions due to the various settings.

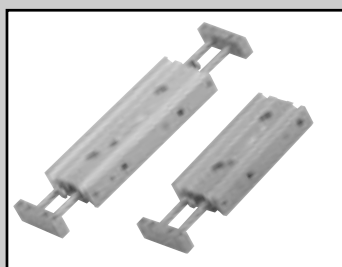
Note 2: Refer to page 1910 for 2-color indicator, HD/RD dimensions and projection dimensions of the switch with preventive maintenance output.

Note 3: When the counter bore surface (JJ) is the mounting surface, this cylinder has a step which could cause the cylinder to tilt. In this case, change the port position or use the option with port position changed 180° (O) so that the counter bore surface is not the mounting surface.

Symbol	Q-R basic dimensions																	
Bore size (mm)	A	B	C	D	E	EE	F	GG	H	II	JJ	KK	LL	MM	NN	O	P	
φ 16	16	8	43	9.5	6 <sup>+0.07</sup> / <sub>+0.02</sub> depth 6	M5	1	6 <sup>+0.07</sup> / <sub>+0.02</sub> depth 6	25	4.3	8 spot face depth 4.4	M5 penetrating	96	10	M5 penetrating	19	52	
φ 20	20	10	46	9.5	6 <sup>+0.07</sup> / <sub>+0.02</sub> depth 6	M5	1	6 <sup>+0.07</sup> / <sub>+0.02</sub> depth 6	28	5.2	9.5 spot face depth 5.4	M5 penetrating	105	12	M5 penetrating	24	60	
φ 25	22	12	44	10.5	6 <sup>+0.07</sup> / <sub>+0.02</sub> depth 6	M5	1	6 <sup>+0.07</sup> / <sub>+0.02</sub> depth 6	34	6.3	11 spot face depth 6.5	M6 penetrating	105	14	M6 penetrating	30	70	
φ 32	22	12	56	11	6 <sup>+0.07</sup> / <sub>+0.02</sub> depth 6	Rc1/8	1	6 <sup>+0.07</sup> / <sub>+0.02</sub> depth 6	44	6.3	11 spot face depth 6.5	M6 penetrating	121	16	M6 penetrating	36	94	
Symbol	K0/K5/K2/K3																	
Bore size (mm)	Q	R	S	T	U	WW	X	Y	AX	BX	CX	DX	EX	FX	Z	A5	HD	RD
φ 16	45	58	4	21	19	M5 depth 6	112	6	24	26	46	8	80	8	0.5	61.5	7	69.5
φ 20	50	62	5	27	23	M6 depth 8	125	7.5	24	33	48	9	87	9	0.5	61.5	10.5	75
φ 25	60	72	6	33	23	M8 depth 8	127	7.5	24	33	48	9	87	9	0.5	61.5	11.5	73.5
φ 32	75	96	6	38	23	M8 depth 8	143	7.5	24	47	50	9	103	9	0.5	72.5	15.5	85.5

- SCP\*2
- CMK2
- CMA2
- SCM
- SCG
- SCA2
- SCS
- CKV2
- CA/OV2
- SSD
- CAT
- MDC2
- MVC
- SMD2
- MSD\*
- FC\*
- STK
- ULK\*
- JSK/M2
- JSG
- JSC3
- USSD
- USC
- JSB3
- LMB
- STG
- STS/L
- LCS
- LCG
- LCM
- LCT
- LCY
- STR2**
- UCA2
- HCM
- HCA
- SRL2
- SRG
- SRM
- SRT
- MRL2
- MRG2
- SM-25
- CAC3
- UCAC
- RCC2
- MFC
- SHC
- GLC
- Ending


Twin rod cylinder  
Combined functions



Twin rod cylinder Double acting low speed type

# STR2-M<sub>B</sub>O Series

● Bore size:  $\phi 6$ ,  $\phi 10$ ,  $\phi 16$ ,  $\phi 20$ ,  $\phi 25$ ,  $\phi 32$

JIS symbol 



## Specifications

Descriptions		STR2-MO(metal bush bearing) STR2-BO(ball bearing)					
Bore size	mm	$\phi 6$	$\phi 10$	$\phi 16$	$\phi 20$	$\phi 25$	$\phi 32$
Actuation		Double acting low speed type					
Working fluid		Compressed air					
Max. working pressure	MPa	0.7					
Min. working pressure	MPa	0.2	0.15	0.1			
Withstanding pressure	MPa	1.05					
Ambient temperature	°C	-10 to 60 (no freezing)					
Port size		M5					Rc1/8
Stroke tolerance	mm	+2.0					
		0					
Adjustable stroke range	mm	0 to -5					
Working piston speed	mm/s	10 to 200					
Revolvable angle tolerance	STR2-M	$\pm 0.4^\circ$	$\pm 0.3^\circ$			$\pm 0.2^\circ$	
	STR2-B	$\pm 0.2^\circ$	$\pm 0.1^\circ$			$\pm 0.3^\circ$	
Piston rod bearing type	STR2-M	Metal bush bearing					
	STR2-B	Ball bearing					
Cushion		Rubber cushion					
Lubrication		Not available					
Allowable energy absorption J	PUSH	0.008	0.061	0.181	0.303	0.68	1.3
	PULL	0.059	0.083	0.083	0.127	0.237	0.311

## Stroke length

Bore size	Stroke length (mm)	Max. stroke length (mm)	Min. stroke length (mm)	Min. stroke length with switch (mm)
$\phi 6$	10, 20, 30, 40, 50	50	5	10
$\phi 10$				
$\phi 16$	10, 20, 30, 40, 50, 60, 70, 80, 90, 100	100	5	10
$\phi 20$				
$\phi 25$				
$\phi 32$				

CAUTION : Custom stroke length is available per 1mm increment.

Note that the total length is the same as the next longer standard stroke length.

SCP\*2  
CMK2  
CMA2  
SCM  
SCG  
SCA2  
SCS  
CKV2  
CA/OV2  
SSD  
CAT  
MDC2  
MVC  
SMD2  
MSD\*  
FC\*  
STK  
ULK\*  
JSK/M2  
JSG  
JSC3  
USSD  
USC  
JSB3  
LMB  
STG  
STS/L  
LCS  
LCG  
LCM  
LCT  
LCY  
STR2  
UCA2  
HCM  
HCA  
SRL2  
SRG  
SRM  
SRT  
MRL2  
MRG2  
SM-25  
CAC3  
UCAC  
RCC2  
MFC  
SHC  
GLC  
Ending

### Switch specifications

- 1 color/2 color indicator

Descriptions	Proximity 2 wire		Proximity 3 wire			Reed 2 wire				
	K2H/K2V	K2YH/K2YV	K3H/K3V	K3PH/K3PV (Custom order)	K3YH/K3YV	K0H/K0V		K5H/K5V		
Applications	Programmable controller		Programmable controller, relay			Programmable controller, relay		Programmable controller, relay IC circuit (without indicator light), serial connection		
Output method	-		NPN output	PNP output	NPN output	-				
Power voltage	-		10 to 28 VDC			-				
Load voltage	10 to 30 VDC		30 VDC or less			12 VDC/24 VDC	110 VAC	5/12/24 VDC	110 VAC	
Load current	5 to 20mA (Note 1)		50mA or less			5 to 50mA	7 to 20mA	50mA or less	20mA or less	
Light	LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)	Yellow LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)		-		
Leakage current	1mA or less		10 μA or less			0mA				

Note 1: The maximum load current: above 20mA applies at 25°C. When ambient temperature around a switch is higher than 25°C, the value is lower than 20mA. (5 to 10mA. when 60°C)

- With preventive maintenance output

Descriptions	Proximity 3 wire		Proximity 4 wire		Proximity 3 wire		Proximity 4 wire		
	K2YFH/V		K3YFH/V		K2YMH/V		K3YMH/V		
Applications	Programmable controller		Programmable controller, relay		Programmable controller		Programmable controller, relay		
Output method	NPN output								
Light	Red/green LED (ON lighting)								
	Installation position adjustment		-		Yellow LED (ON lighting)				
Regular output	Preventive maintenance output		-		-				
	Power voltage	-		10 to 28 VDC		-		10 to 28 VDC	
	Load voltage	10 to 30 VDC		30 VDC or less		10 to 30 VDC		30 VDC or less	
	Load current	5 to 20mA		50mA or less		5 to 20mA		50mA or less	
Preventive maintenance output	Leakage current	1mA or less		10 μA or less		1.2mA or less		10 μA or less	
	Load voltage	30 VDC or less							
	Load current	20mA or less		50mA or less		5 to 20mA or less		50mA or less	
Leakage current	10 μA or less								

### Cylinder weight

Unit: g

Bore size	Product weight when stroke length 0mm		Additional weight per S=10mm
	STR2-M	STR2-B	
φ 6	60	64	10
φ 10	140	155	14
φ 16	240	300	20
φ 20	340	405	40
φ 25	580	610	52
φ 32	1300	1150	83

### Discrete cylinder switch weight

Unit (g)

Name	Model no.	Lead wire length		
		1m	3m	5m
Cylinder switch	K0	18	52	86
	K2	18	52	86
	K3	18	52	86
	K5	18	52	86

#### (Example) Product weight STR2-M-6-10-K2H-D

- Product weight when stroke length = 0mm: 60g
- Additional weight when stroke length is 10mm: 10g x 1 = 10g
- Weight of cylinder switch (2 pcs.): 18g x 2 = 36g
- Product weight: 60g + 10g + 36g = 106g

SCP\*2  
CMK2  
CMA2  
SCM  
SCG  
SCA2  
SCS  
CKV2  
CA/OV2  
SSD  
CAT  
MDC2  
MVC  
SMD2  
MSD\*  
FC\*  
STK  
ULK\*  
JSK/M2  
JSG  
JSC3  
USSD  
USC  
JSB3  
LMB  
STG  
STS/L  
LCS  
LCG  
LCM  
LCT  
LCY  
STR2  
UCA2  
HCM  
HCA  
SRL2  
SRG  
SRM  
SRT  
MRL2  
MRG2  
SM-25  
CAC3  
UCAC  
RCC2  
MFC  
SHC  
GLC  
Ending

Twin rod cylinder  
Combined functions



# STR2-M<sub>B</sub>O Series

## How to order

Without switch

STR2 - M O - 16 - 30 - O

With switch

STR2 - M O - 16 - 30 - K0H - R - O

Model no.

A Bearing method

B Bore size

C Port thread type

D Stroke length

■ Custom stroke length is available 1mm increment. Note that the total length is the same as the next longer standard stroke length.

E Switch model no.  
Note 1

F Switch quantity

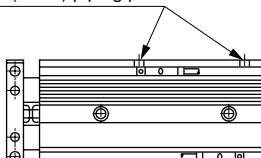
G Option  
Note 2

### Note on model no. selection

Note 1: Reed switch can not be used for STR2-B-6/10.

Note 2: Piping port position of "O" is as the following diagram.

Standard (blank) piping port



Piping port position 180° change  
(Symbol: O) piping port

Symbol	Descriptions			
<b>A Bearing method</b>				
M	Metal bush bearing			
B	Ball bearing			
<b>B Bore size (mm)</b>				
6	φ 6			
10	φ 10			
16	φ 16			
20	φ 20			
25	φ 25			
32	φ 32			
<b>C Port thread type</b>				
Blank	Rc thread			
NN	NPT thread (only φ32) (custom order)			
GN	G thread (only φ32) (custom order)			
<b>D Stroke length (mm)</b>				
Bore size	Stroke length	Custom stroke length		
φ 6	5 to 50	By 1 mm increment		
φ 10	5 to 50			
φ 16	5 to 100			
φ 20	5 to 100			
φ 25	5 to 100			
φ 32	5 to 100			
<b>E Switch model no.</b>				
Axial lead wire	Radial lead wire	Contact	Indicator	Lead wire
K0H*	K0V*	Reed	1 color indicator type	2-wire
K5H*	K5V*		Without indicator light	
K2H*	K2V*	Proximity	1 color indicator type	2-wire
K3H*	K3V*		1 color indicator type (custom order)	3-wire
K3PH*	K3PV*		2 color indicator type	3-wire
K2YH*	K2YV*		2 color indicator type (custom order) (w/o light for preventive maintenance output)	4-wire
K3YH*	K3YV*	Proximity	2 color indicator type (custom order) (w/ light for preventive maintenance output (1 color))	3-wire
K2YFH*	K2YFV*		3-wire	
K3YFH*	K3YFV*		4-wire	
K2YMH*	K2YMV*	Proximity	2 color indicator type (custom order) (w/ light for preventive maintenance output (1 color))	3-wire
K3YMH*	K3YMV*		4-wire	
<b>*Lead wire length</b>				
Blank	1m (standard)			
3	3m (option)			
5	5m (option)			
<b>F Switch quantity</b>				
R	One on rod end			
H	One on head end			
D	Two			
<b>G Option</b>				
F	Material of end plate: Steel			
O	Piping port position 180° change			

<Example of model number>

**STR2-MO-16-30-K0H-R-O**

Model: Twin rod cylinder low speed type

- A Bearing method : Metal bush bearing
- B Bore size : φ16mm
- C Port thread type : Rc thread
- D Stroke length : 30mm
- E Switch model no. : Reed switch K0H
- F Switch quantity : One on rod end
- G Option : Piping port position 180° change

## How to order switch discrete

SW - K0H\*

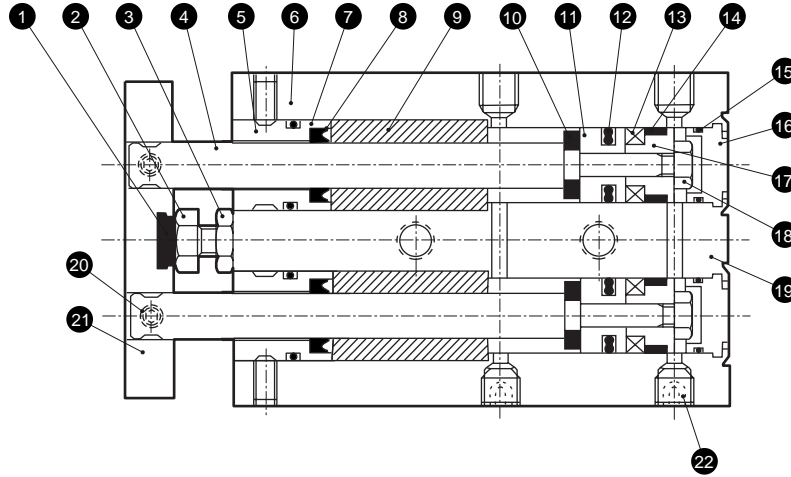
Switch model no.  
(Item E above)

# STR2-MO Series

## Internal structure and parts list (metal bush bearing type $\phi 6$ , $\phi 10$ )

- SCP\*2
- CMK2
- CMA2
- SCM
- SCG
- SCA2
- SCS
- CKV2
- CA/OV2
- SSD
- CAT
- MDC2
- MVC
- SMD2
- MSD\*
- FC\*
- STK
- ULK\*
- JSK/M2
- JSG
- JSC3
- USSD
- USC
- JSB3
- LMB
- STG
- STS/L
- LCS
- LCG
- LCM
- LCT
- LCY
- STR2**
- UCA2

- Low speed type  
STR2-MO
- Piping port position 180° change  
STR2-MO---O



No.	Parts name	Material	Remarks	No.	Parts name	Material	Remarks
1	Cushion rubber (H)	Urethane rubber		12	Piston packing seal	Nitrile rubber	
2	Hexagon head bolt	Stainless steel		13	Magnet	Plastic	
3	Hexagon nut	Stainless steel		14	Wear ring	Acetar resin	
4	Piston rod	Stainless steel		15	O ring	Nitrile rubber	
5	Housing	Stainless steel		16	Cap	Aluminum alloy	Chromate
6	Hexagon head hole set screw	Stainless steel		17	Spacer	Aluminum alloy	Chromate
7	O ring	Nitrile rubber		18	Hexagon nut	Steel	Galvanizing
8	Rod packing seal	Nitrile rubber		19	Cylinder body	Aluminum alloy	Hard alumite
9	Bush Note 1	Copper alloy		20	Hexagon head hole set screw	Stainless steel	
10	Cushion rubber (R)	Urethane rubber		21	End plate Note 2	Aluminum alloy	Alumite
11	Piston	Aluminum alloy	Chromate	22	Hexagon head hole set screw	Stainless steel	

### Repair parts list

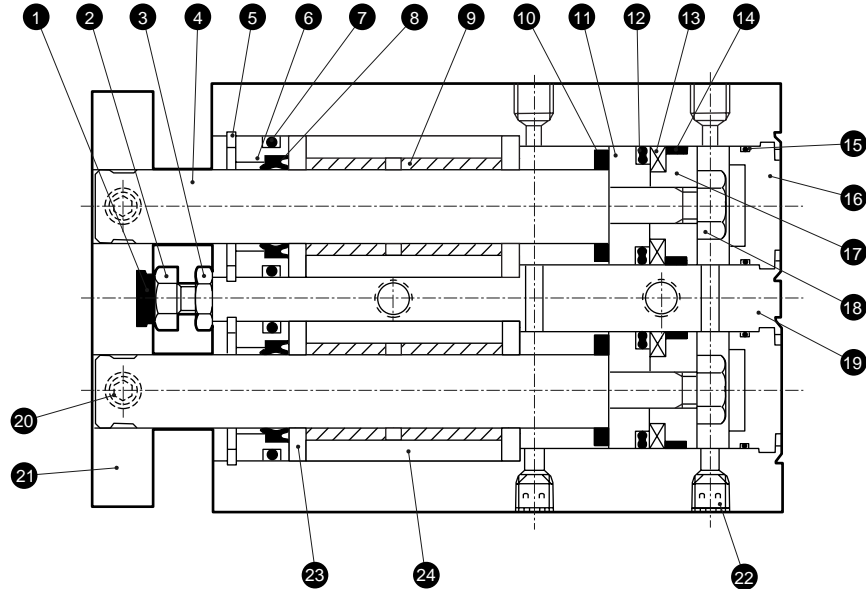
STR2-MO (low speed type) \* All consumable parts other than the piston packing are the same as the standard parts.

Bore size (mm)	Kit No.	Repair parts number
$\phi 6$	STR2-O-6K	1 7 8 10 12 14
$\phi 10$	STR2-O-10K	

Note: Specify the kit No. when placing an order.

### Internal structure drawing and parts list (metal bush bearing type $\phi 16$ , $\phi 20$ , $\phi 25$ , $\phi 32$ )

- Low speed type  
STR2-MO
- Piping port position 180° change  
STR2-MO...-O



No.	Parts name	Material	Remarks	No.	Parts name	Material	Remarks
1	Cushion rubber (H)	Urethane rubber		13	Magnet	Plastic	
2	Hexagon head bolt	Stainless steel		14	Wear ring	Acetar resin	
3	Hexagon nut	Stainless steel		15	O ring	Nitrile rubber	
4	Piston rod	Stainless steel ( $\phi 16$ , $\phi 20$ ) Steel ( $\phi 25$ , $\phi 32$ )	Industrial chrome plating	16	Cap	Aluminum alloy	Chromate
5	C ring for hole	Stainless steel		17	Spacer	Aluminum alloy	Chromate
6	Housing	Aluminum alloy	Chromate	18	Hexagon nut	Steel	Galvanizing
7	O ring	Nitrile rubber		19	Cylinder body	Aluminum alloy	Hard alumite
8	Rod packing seal	Nitrile rubber		20	Hexagon socket head set screw	Stainless steel	
9	Bush Note 1	Copper alloy		21	End plate Note 2	Aluminum alloy	Alumite
10	Cushion rubber (R)	Urethane rubber		22	Hexagon socket head set screw	Stainless steel	
11	Piston	Aluminum alloy	Chromate	23	Spacer	Aluminum alloy	Chromate
12	Piston packing seal	Nitrile rubber		24	Aluminum housing	Aluminum alloy	Chromate

### Repair parts list

STR2-MO (low speed type) \* All consumable parts other than the piston packing are the same as the standard parts.

Bore size (mm)	Kit No.	Repair parts number
$\phi 16$	STR2-O-16K	
$\phi 20$	STR2-O-20K	1 7 8
$\phi 25$	STR2-O-25K	10 12 14
$\phi 32$	STR2-O-32K	

Note: Specify the kit No. when placing an order.

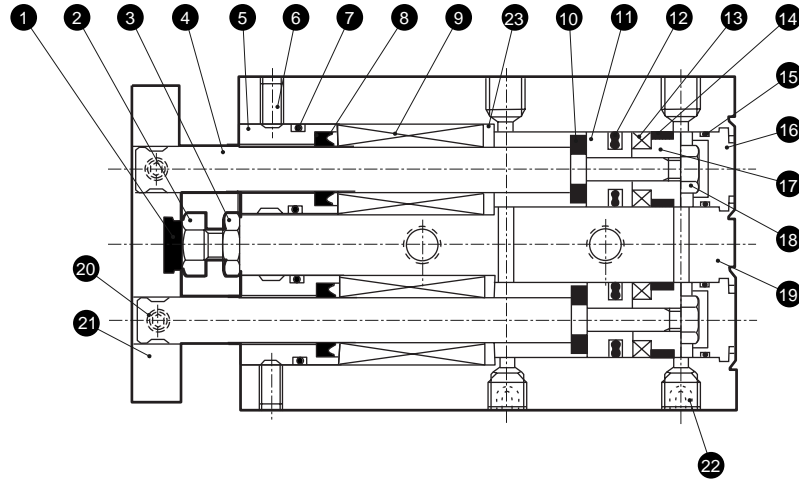
SCP\*2  
CMK2  
CMA2  
SCM  
SCG  
SCA2  
SCS  
CKV2  
CA/OV2  
SSD  
CAT  
MDC2  
MVC  
SMD2  
MSD\*  
FC\*  
STK  
ULK\*  
JSK/M2  
JSG  
JSC3  
USSD  
USC  
JSB3  
LMB  
STG  
STS/L  
LCS  
LCG  
LCM  
LCT  
LCY  
**STR2**  
UCA2  
HCM  
HCA  
SRL2  
SRG  
SRM  
SRT  
MRL2  
MRG2  
SM-25  
CAC3  
UCAC  
RCC2  
MFC  
SHC  
GLC  
Ending

Twin rod cylinder  
Combined functions

# STR2-BO Series

## Internal structure drawing and parts list (ball bearing type $\phi 6$ , $\phi 10$ )

- Low speed type  
STR2-BO
- Piping port position 180° change  
STR2-BO...-O



No.	Parts name	Material	Remarks	No.	Parts name	Material	Remarks
1	Cushion rubber (H)	Urethane rubber		13	Magnet	Plastic	
2	Hexagon head bolt	Stainless steel		14	Wear ring	Acetar resin	
3	Hexagon nut	Stainless steel		15	O ring	Nitrile rubber	
4	Piston rod	Steel	Industrial chrome plating	16	Cap	Aluminum alloy	Chromate
5	Housing	Stainless steel		17	Spacer	Aluminum alloy	Chromate
6	Hexagon socket head set screw	Stainless steel		18	Hexagon nut	Steel	Galvanizing
7	O ring	Nitrile rubber		19	Cylinder body	Aluminum alloy	Hard alumite
8	Rod packing seal	Nitrile rubber		20	Hexagon socket head set screw	Stainless steel	
9	Bearing			21	End plate Note 1	Aluminum alloy	Alumite
10	Cushion rubber (R)	Urethane rubber		22	Hexagon head hole set screw	Stainless steel	
11	Piston	Aluminum alloy	Chromate	23	Spacer	Aluminum alloy	Chromate
12	Piston packing seal	Nitrile rubber					

### Repair parts list

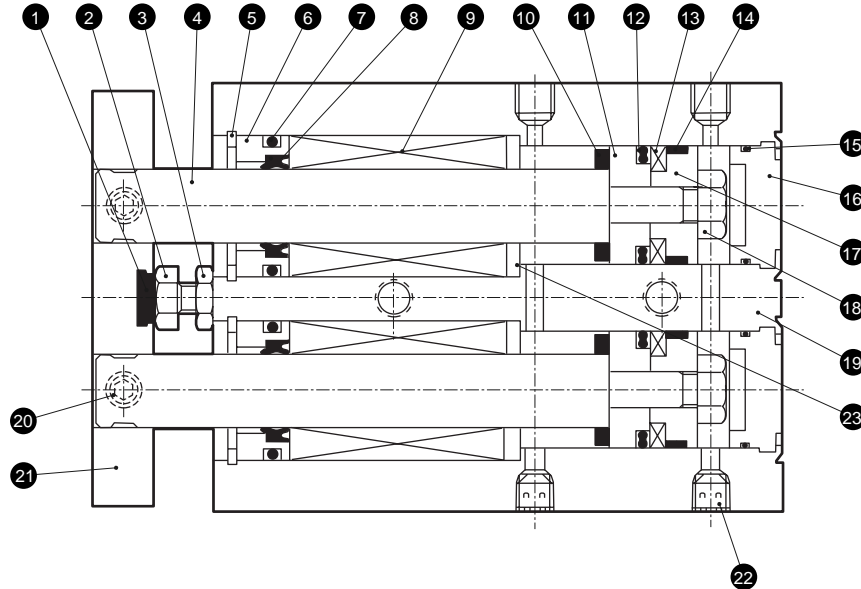
STR2-BO (low speed type) \* All consumable parts other than the piston packing are the same as the standard parts.

Bore size (mm)	Kit No.	Repair parts number
$\phi 6$	STR2-O-6K	1 7 8 10 12 14
$\phi 10$	STR2-O-10K	

Note: Specify the kit No. when placing an order.

### Internal structure and parts list (ball bearing type $\phi 16$ , $\phi 20$ , $\phi 25$ , $\phi 32$ )

- Low speed type  
STR2-BO
- Piping port position 180° change  
STR2-BO....O



No.	Parts name	Material	Remarks	No.	Parts name	Material	Remarks
1	Cushion rubber (H)	Urethane rubber		13	Magnet	Plastic	
2	Hexagon head bolt	Stainless steel		14	Wear ring	Acetar resin	
3	Hexagon nut	Stainless steel		15	O ring	Nitrile rubber	
4	Piston rod	Steel	Industrial chrome plating	16	Cap	Aluminum alloy	Chromate
5	C ring for hole	Stainless steel		17	Spacer	Aluminum alloy	Chromate
6	Housing	Aluminum alloy	Chromate	18	Hexagon nut	Steel	Galvanizing
7	O ring	Nitrile rubber		19	Cylinder body	Aluminum alloy	Hard alumite
8	Rod packing seal	Nitrile rubber		20	Hexagon socket head set screw	Stainless steel	
9	Bearing			21	End plate Note 1	Aluminum alloy	Alumite
10	Cushion rubber (R)	Urethane rubber		22	Hexagon socket head set screw	Stainless steel	
11	Piston	Aluminum alloy	Chromate	23	Spacer	Aluminum alloy	Chromate
12	Piston packing seal	Nitrile rubber					

### Repair parts list

STR2-BO (low speed type) \* All consumable parts other than the piston packing are the same as the standard parts.

Bore size (mm)	Kit No.	Repair parts number
$\phi 16$	STR2-O-16K	
$\phi 20$	STR2-O-20K	1 7 8
$\phi 25$	STR2-O-25K	10 12 14
$\phi 32$	STR2-O-32K	

Note: Specify the kit No. when placing an order.

### Dimensions

As same as double acting/standard type STR2-M<sub>B</sub>Series. Refer to Page 1882.

SCP\*2  
CMK2  
CMA2  
SCM  
SCG  
SCA2  
SCS  
CKV2  
CA/OV2  
SSD  
CAT  
MDC2  
MVC  
SMD2  
MSD\*  
FC\*  
STK  
ULK\*  
JSK/M2  
JSG  
JSC3  
USSD  
USC  
JSB3  
LMB  
STG  
STS/L  
LCS  
LCG  
LCM  
LCT  
LCY  
STR2  
UCA2  
HCM  
HCA  
SRL2  
SRG  
SRM  
SRT  
MRL2  
MRG2  
SM-25  
CAC3  
UCAC  
RCC2  
MFC  
SHC  
GLC  
Ending

Twin rod cylinder  
Combined functions



Twin rod cylinder Double acting fine speed type

# STR2-M<sub>B</sub>F Series

● Bore size:  $\phi 10$ ,  $\phi 16$ ,  $\phi 20$ ,  $\phi 25$ ,  $\phi 32$

JIS symbol



## Specifications

Descriptions		STR2-MF (metal bush bearing) STR2-BF(ball bearing)				
Bore size	mm	$\phi 10$	$\phi 16$	$\phi 20$	$\phi 25$	$\phi 32$
Actuation		Double acting				
Working fluid		Compressed air				
Max. working pressure	MPa	0.70				
Min. working pressure	MPa	0.15				0.1
Ambient temperature	°C	5 to 60				
Port size		M5				Rc1/8
Stroke tolerance	mm	0 to -5				
Working piston speed	mm/s	1 to 200				
Revolvable angle tolerance	STR2-MF	$\pm 0.3^\circ$			$\pm 0.2^\circ$	
	STR2-BF	$\pm 0.1^\circ$			$\pm 0.3^\circ$	
Piston rod bearing type	STR2-MF	Metal bush bearing				
	STR2-BF	Ball bearing				
Cushion		Rubber cushion				
Lubrication		Must be oil free				
Allowable energy absorption	J	0.061	0.181	0.303	0.68	1.3

\* For 6mm bore cylinder, we recommend fine speed type (STR2-0)

## Stroke length

Model no.	Bore size (mm)	Standard stroke length (mm)	Max. stroke length (mm)	Min. stroke length (mm)	Min. stroke length with switch (mm)
STR2-M <sub>B</sub> F	$\phi 10$	10, 20, 30, 40, 50	50	5	10
	$\phi 16, \phi 20, \phi 25, \phi 32$	10, 20, 30, 40, 50, 60, 70, 80, 90, 100	100		

Note 1: Custom stroke length is available per 1mm increment. Note that the total length is the same as the next longer standard stroke length.

## Switch specifications

● 1 color/2 color indicator

Descriptions	Proximity 2 wire		Proximity 3 wire			Reed 2 wire	
	K2H/K2V	K2YH/K2YV	K3H/K3V	K3PH/K3PV (Custom order)	K3YH/K3YV	K0H/K0V	K5H/K5V
Applications	Programmable controller		Programmable controller, relay			Programmable controller, relay	
Output method	-		NPN output	PNP output	NPN output	-	
Power voltage	-		10 to 28 VDC			-	
Load voltage	10 to 30 VDC		30 VDC or less			12 VDC /24 VDC	110 VAC
Load current	5 to 20mA (Note 1)		50mA or less			5 to 50mA	7 to 20mA
Light	LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)	Yellow LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)	
Leakage current	1mA or less		10 $\mu$ A or less			0mA	

Note 1: The maximum load current: above 20mA applies at 25°C. When ambient temperature around a switch is higher than 25°C, the value is lower than 20mA. (5 to 10mA. when 60°C)

● With preventive maintenance output

Descriptions	Proximity 3 wire		Proximity 4 wire		Proximity 3 wire		Proximity 4 wire		
	K2YFH/V		K3YFH/V		K2YMH/V		K3YMH/V		
Applications	Programmable controller		Programmable controller, relay		Programmable controller		Programmable controller, relay		
Output method	NPN output								
Light	Installation position adjustment				Red/green LED (ON lighting)				
	Preventive maintenance output				Yellow LED (ON lighting)				
Regular output	Power voltage	-	10 to 28 VDC		-	10 to 28 VDC			
	Load voltage	10 to 30 VDC		30 VDC or less		10 to 30 VDC		30 VDC or less	
	Load current	5 to 20mA		50mA or less		5 to 20mA		50mA or less	
	Leakage current	1mA or less		10 $\mu$ A or less		1.2mA or less		10 $\mu$ A or less	
Preventive maintenance output	Load voltage	30 VDC or less							
	Load current	20mA or less		50mA or less		5 to 20mA or less		50mA or less	
	Leakage current	10 $\mu$ A or less							

## Clean room specifications

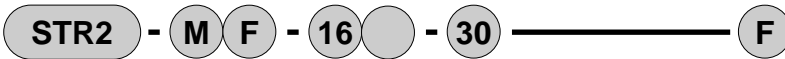
(Catalog No. CB-033SA)

● Dust preventive structure for inside the clean room

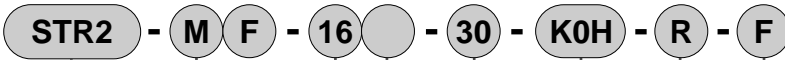
STR2-B - ..... - P7\*

### How to order

● Without switch



● With switch



Model no.

**A** Bearing method

**B** Bore size

**C** Port thread type

**D** Stroke length

Note 1

■ Custom stroke length is available 1mm increment. Note that the total length is the same as the next longer standard stroke length.

**E** Switch model no.

Note 2

### ⚠ Cautions for model No. selection

Note 1: Max. stroke length of backward piping type "R".

- $\phi 16$  : 70 mm stroke
- $\phi 20, \phi 25$  : 60 mm stroke
- $\phi 32$  : 50 mm stroke

Note 2: Reed switches can not be used for STR2-BF-10.

<Example of model number>

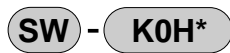
### STR2-MF-16-30-K0H-R-F

Model: Twin rod cylinder fine speed type

- A** Bearing method : Metal bush bearing
- B** Bore size :  $\phi 16$ mm
- C** Port thread type : Rc thread
- D** Stroke length : 30mm
- E** Switch model no. : reed switch K0H, lead wire 1m
- F** Switch quantity : One on rod end
- G** Option : Material of end plate: Steel

### How to order switch discrete

● Only switch body



Switch model no.  
(Item **E** above)

**F** Switch quantity

**G** Option

Symbol	Descriptions
<b>A Bearing method</b>	
<b>M</b>	Metal bush bearing
<b>B</b>	Ball bearing

<b>B Bore size (mm)</b>	
<b>10</b>	$\phi 10$
<b>16</b>	$\phi 16$
<b>20</b>	$\phi 20$
<b>25</b>	$\phi 25$
<b>32</b>	$\phi 32$

<b>C Port thread type</b>	
<b>Blank</b>	Rc thread
<b>NN</b>	NPT thread (only $\phi 32$ ) (custom order)
<b>GN</b>	G thread (only $\phi 32$ ) (custom order)

<b>D Stroke length (mm)</b>		
Bore size	Stroke length	Custom stroke length
$\phi 10$	<b>5 to 50</b>	By 1 mm increment
$\phi 16$	<b>5 to 100</b>	
$\phi 20$	<b>5 to 100</b>	
$\phi 25$	<b>5 to 100</b>	
$\phi 32$	<b>5 to 100</b>	

<b>E Switch model no.</b>				
Axial lead wire	Radial lead wire	Contact	Display	Lead wire
<b>K0H*</b>	<b>K0V*</b>	Reed	1 color indicator type	2-wire
<b>K5H*</b>	<b>K5V*</b>		Without indicator light	
<b>K2H*</b>	<b>K2V*</b>	Proximity	1 color indicator type	2-wire
<b>K3H*</b>	<b>K3V*</b>		1 color indicator (custom order)	3-wire
<b>K3PH*</b>	<b>K3PV*</b>		2 color indicator type	3-wire
<b>K2YH*</b>	<b>K2YV*</b>	Proximity	2 color indicator (custom order) (w/o light for preventive maintenance output)	2-wire
<b>K3YH*</b>	<b>K3YV*</b>		2 color indicator (custom order) (w/ light for preventive maintenance output)	3-wire
<b>K2YFH*</b>	<b>K2YFV*</b>		2 color indicator (custom order) (w/ light for preventive maintenance output)	4-wire
<b>K3YFH*</b>	<b>K3YFV*</b>		2 color indicator (custom order) (w/ light for preventive maintenance output)	3-wire
<b>K2YMH*</b>	<b>K2YMV*</b>	Proximity	2 color indicator (custom order) (w/ light for preventive maintenance output)	3-wire
<b>K3YMH*</b>	<b>K3YMV*</b>		2 color indicator (custom order) (w/ light for preventive maintenance output)	4-wire

<b>*Lead wire length</b>	
<b>Blank</b>	1m (standard)
<b>3</b>	3m (option)
<b>5</b>	5m (option)

<b>F Switch quantity</b>	
<b>R</b>	One on rod end
<b>H</b>	One on head end
<b>D</b>	Two

<b>G Option</b>	
<b>F</b>	Material of end plate: Steel

SCP\*2  
CMK2  
CMA2  
SCM  
SCG  
SCA2  
SCS  
CKV2  
CA/OV2  
SSD  
CAT  
MDC2  
MVC  
SMD2  
MSD\*  
FC\*  
STK  
ULK\*  
JSK/M2  
JSG  
JSC3  
USSD  
USC  
JSB3  
LMB  
STG  
STS/L  
LCS  
LCG  
LCM  
LCT  
LCY  
STR2  
UCA2  
HCM  
HCA  
SRL2  
SRG  
SRM  
SRT  
MRL2  
MRG2  
SM-25  
CAC3  
UCAC  
RCC2  
MFC  
SHC  
GLC  
Ending

Twin rod cylinder  
Combined functions

### Dimensions

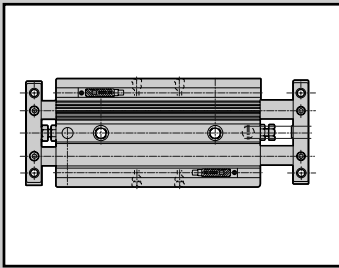
It is the same as the double acting STR2 series. Refer to Page 1882.

### Technical data

Refer to technical data (page 806) for measuring methods.



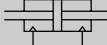
SCP\*2  
 CMK2  
 CMA2  
 SCM  
 SCG  
 SCA2  
 SCS  
 CKV2  
 CA/OV2  
 SSD  
 CAT  
 MDC2  
 MVC  
 SMD2  
 MSD\*  
 FC\*  
 STK  
 ULK\*  
 JSK/M2  
 JSG  
 JSC3  
 USSD  
 USC  
 JSB3  
 LMB  
 STG  
 STS/L  
 LCS  
 LCG  
 LCM  
 LCT  
 LCY  
**STR2**  
 UCA2  
 HCM  
 HCA  
 SRL2  
 SRG  
 SRM  
 SRT  
 MRL2  
 MRG2  
 SM-25  
 CAC3  
 UCAC  
 RCC2  
 MFC  
 SHC  
 GLC  
 Ending



Twin rod cylinder Double acting double rod type

# STR2-M<sub>B</sub>D Series

● Bore size:  $\phi$  6,  $\phi$  10,  $\phi$  16,  $\phi$  20,  $\phi$  25,  $\phi$  32

JIS symbol 



## Specifications

Descriptions		STR2-MD (metal bush bearing) STR2-BD (ball bearing)					
Bore size	mm	$\phi$ 6	$\phi$ 10	$\phi$ 16	$\phi$ 20	$\phi$ 25	$\phi$ 32
Actuation		Double acting double rod type					
Working fluid		Compressed air					
Max. working pressure	MPa	0.7					
Min. working pressure	MPa	0.25	0.2				0.15
Withstanding pressure	MPa	1.05					
Ambient temperature	°C	-10 to 60 (no freezing)					
Port size		M5					Rc1/8
Stroke tolerance	mm	+2.0					
		0					
Adjustable stroke range	mm	0 to -5					
Working piston speed	mm/s	50 to 500					
Revolvable angle tolerance	STR2-M	$\pm 0.4^\circ$	$\pm 0.3^\circ$			$\pm 0.2^\circ$	
	STR2-B	$\pm 0.2^\circ$	$\pm 0.1^\circ$			$\pm 0.3^\circ$	
Piston rod bearing type	STR2-M	Metal bush bearing					
	STR2-B	Ball bearing					
Cushion		Rubber cushion					
Lubrication		Not required (when lubricating, use turbine oil Class 1 ISOVG 32)					
Allowable energy absorption J Note 1	PULL	0.059	0.083	0.083	0.127	0.237	0.311

Note 1: Only PULL side is applied for allowable energy absorption of double rod type.

## Stroke length

Bore size	Stroke length (mm)	Max. stroke length (mm)	Min. stroke length (mm)	Min. stroke length with switch (mm)
$\phi$ 6	10, 20, 30, 40, 50	50		
$\phi$ 10				
$\phi$ 16	10, 20, 30, 40, 50, 60, 70, 80, 90, 100	100	5	10
$\phi$ 20				
$\phi$ 25				
$\phi$ 32				

### Switch specifications

- 1 color/2 color indicator

Descriptions	Proximity 2 wire		Proximity 3 wire			Reed 2 wire				
	K2H/K2V	K2YH/K2YV	K3H/K3V	K3PH/K3PV (Custom order)	K3YH/K3YV	K0H/K0V		K5H/K5V		
Applications	Programmable controller		Programmable controller, relay			Programmable controller, relay		Programmable controller, relay IC circuit (without indicator light), serial connection		
Output method	-		NPN output	PNP output	NPN output	-				
Power voltage	-		10 to 28 VDC			-				
Load voltage	10 to 30 VDC		30 VDC or less			12 VDC/24 VDC	110 VAC	5/12/24 VDC	110 VAC	
Load current	5 to 20mA (Note 1)		50mA or less			5 to 50mA	7 to 20mA	50mA or less		20mA or less
Light	LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)	Yellow LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)		-		
Leakage current	1mA or less		10 μA or less			0mA				

Note 1: The maximum load current: above 20mA applies at 25°C. When ambient temperature around a switch is higher than 25°C, the value is lower than 20mA. (5 to 10mA, when 60°C)

- With preventive maintenance output

Descriptions	Proximity 3 wire		Proximity 4 wire		Proximity 3 wire		Proximity 4 wire		
	K2YFH/V		K3YFH/V		K2YMH/V		K3YMH/V		
Applications	Programmable controller		Programmable controller, relay		Programmable controller		Programmable controller, relay		
Output method	NPN output								
Light	Red/green LED (ON lighting)								
	Installation position adjustment		-		Yellow LED (ON lighting)				
Regular output	Preventive maintenance output		-		-				
	Power voltage	-		10 to 28 VDC		-		10 to 28 VDC	
	Load voltage	10 to 30 VDC		30 VDC or less		10 to 30 VDC		30 VDC or less	
	Load current	5 to 20mA		50mA or less		5 to 20mA		50mA or less	
Preventive maintenance output	Leakage current	1mA or less		10 μA or less		1.2mA or less		10 μA or less	
	Load voltage	30 VDC or less							
	Load current	20mA or less		50mA or less		5 to 20mA or less		50mA or less	
Leakage current	10 μA or less								

### Cylinder weight

Unit: g

Bore size	Product weight when stroke length 0mm		Additional weight per S=10mm
	STR2-M	STR2-B	
6	100	95	13
10	185	200	20
16	450	475	44
20	735	730	60
25	1160	1120	82
32	1960	2060	115

### Discrete cylinder switch weight

Unit (g)

Name	Model no.	Lead wire length		
		1m	3m	5m
Cylinder switch	K0	18	52	86
	K2	18	52	86
	K3	18	52	86
	K5	18	52	86

#### (Example) Product weight

STR2-MD-6-10-K2H-D

- Product weight when stroke length = 0mm: 100g
- Additional weight when stroke length 10mm: 13 x 1 = 13g
- Weight of cylinder switch (2 pcs.): 18g x 2 = 36g
- Product weight: 100g + 13g + 36g = 149g

SCP\*2  
CMK2  
CMA2  
SCM  
SCG  
SCA2  
SCS  
CKV2  
CA/OV2  
SSD  
CAT  
MDC2  
MVC  
SMD2  
MSD\*  
FC\*  
STK  
ULK\*  
JSK/M2  
JSG  
JSC3  
USSD  
USC  
JSB3  
LMB  
STG  
STS/L  
LCS  
LCG  
LCM  
LCT  
LCY  
STR2  
UCA2  
HCM  
HCA  
SRL2  
SRG  
SRM  
SRT  
MRL2  
MRG2  
SM-25  
CAC3  
UCAC  
RCC2  
MFC  
SHC  
GLC  
Ending

Twin rod cylinder  
Combined functions

# STR2-MD Series

## How to order

Without switch

STR2 - M D - 16 - 30 - O

With switch

STR2 - M D - 16 - 30 - K0H - R - O

Model no.

A Bearing method

B Bore size

C Port thread type

D Stroke length  
Refer to page 1904 for  
the minimum stroke.

E Switch model no.  
Note 1

F Switch quantity

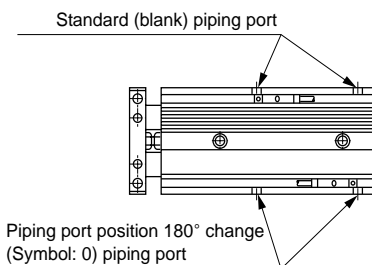
G Option  
Note 2

Symbol	Descriptions			
<b>A Bearing method</b>				
M	Metal bush bearing			
B	Ball bearing			
<b>B Bore size (mm)</b>				
6	φ 6			
10	φ 10			
16	φ 16			
20	φ 20			
25	φ 25			
32	φ 32			
<b>C Port thread type</b>				
Blank	Rc thread			
NN	NPT thread (only φ 32) (custom order)			
GN	G thread (only φ 32) (custom order)			
<b>D Stroke length (mm)</b>				
10	10			
20	20			
30	30			
40	40			
50	50			
60	60			
70	70			
80	80			
90	90			
100	100			
<b>E Switch model no.</b>				
Axial lead wire	Radial lead wire	Contact	Indicator	Lead wire
K0H*	K0V*	Reed	1 color indicator type Without indicator light	2-wire
K5H*	K5V*			
K2H*	K2V*			
K3H*	K3V*	Proximity	1 color indicator type	3-wire
K3PH*	K3PV*		1 color indicator type (custom order)	3-wire
K2YH*	K2YV*		2 color indicator type	2-wire
K3YH*	K3YV*			3-wire
K2YFH*	K2YFV*	Proximity	2 color indicator type (custom order) (w/o light for preventive maintenance output)	3-wire
K3YFH*	K3YFV*		4 wire	
K2YMH*	K2YMV*		2 color indicator type (custom order) (w/ light for preventive maintenance output)	3-wire
K3YMH*	K3YMV*		2 color indicator type (custom order) (w/ light for preventive maintenance output (1 color))	4 wire
<b>*Lead wire length</b>				
Blank	1m (standard)			
3	3m (option)			
5	5m (option)			
<b>F Switch quantity</b>				
R	One on rod end			
H	One on head end			
D	Two			
<b>G Option</b>				
F	Material of end plate: Steel			
O	Piping port position 180° change			

### Note on model no. selection

Note 1: Reed switch can not be used for STR2-B-6/10.

Note 2: Piping port position of "O" is as the following diagram.



<Example of model number>

**STR2-MD-16-30-K0H-R-O**

Model: Twin rod cylinder double rod type

A Bearing method : Metal bush bearing

B Bore size : φ16mm

C Port thread type : Rc thread

D Stroke length : 30mm

E Switch model no. : Reed switch K0H

F Switch quantity : One on rod end

G Option : Piping port position 180° change

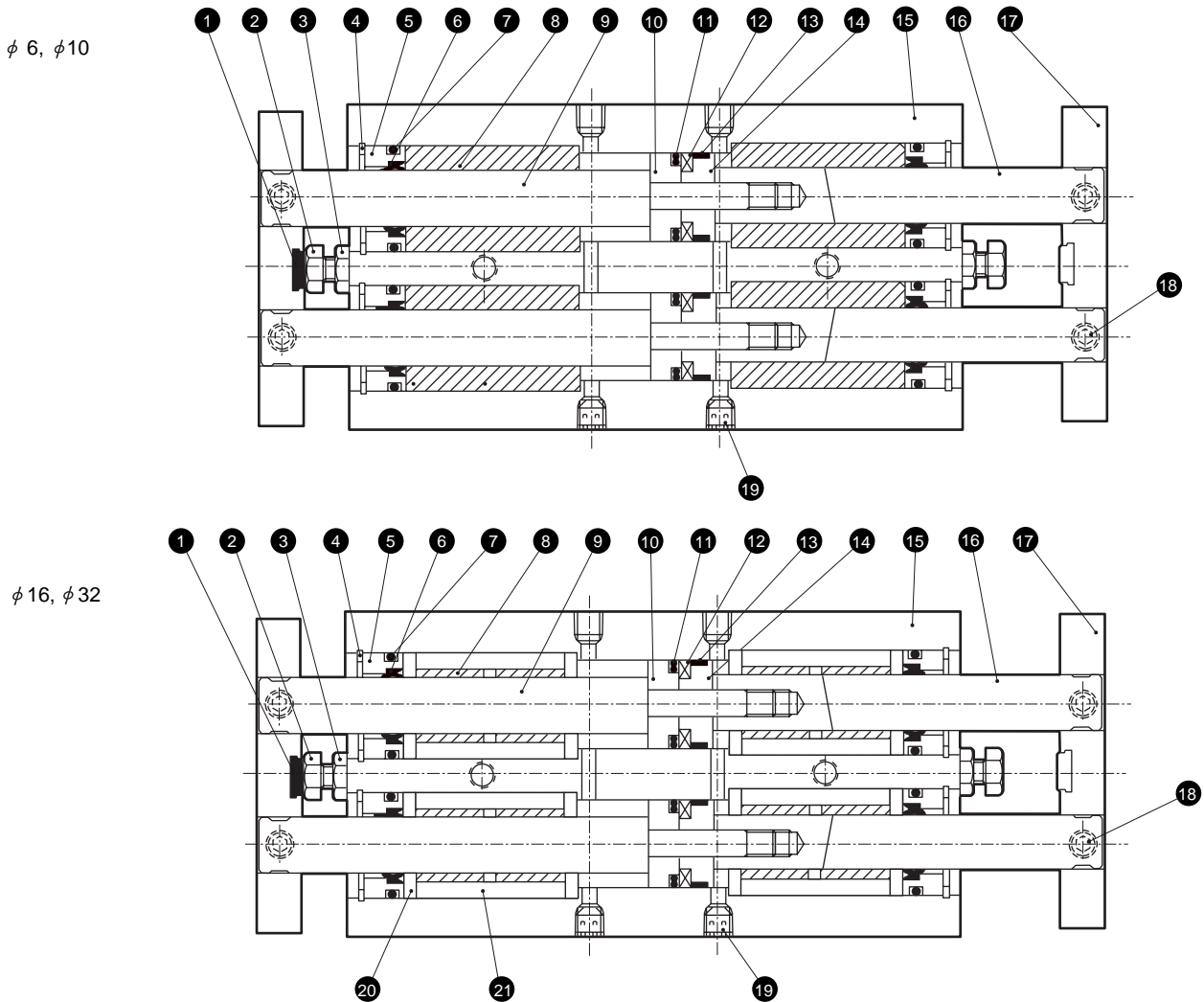
## How to order switch discrete

SW - K0H\*

Switch model no.  
(Item E above)

### Internal structure and parts list (metal bush bearing type)

- Double rod  
STR2-MD
- Piping port position 180° change  
STR2-MD----O



No.	Parts name	Material	Remarks	No.	Parts name	Material	Remarks
1	Cushion rubber (H)	Urethane rubber		12	Magnet	Plastic	
2	Hexagon head bolt	Stainless steel		13	Wear ring	Acetar resin	
3	Hexagon nut	Stainless steel		14	Spacer	Aluminum alloy	Chromate
4	C ring for hole	Stainless steel		15	Cylinder body	Aluminum alloy	Hard alumite
5	Housing	Aluminum alloy	Chromate	16	Piston rod (B)	Stainless steel (φ 6 to φ 20) Steel (φ 25, φ 32)	Industrial chrome plating (φ 16 to φ 32)
6	Rod packing seal	Nitrile rubber		17	End plate	Aluminum alloy	Alumite
7	O ring	Nitrile rubber		18	Hexagon socket head set screw	Stainless steel	
8	Bush	Copper alloy		19	Hexagon socket head set screw	Stainless steel	
9	Piston rod (A)	Stainless steel (φ 6 to φ 20) Steel (φ 25, φ 32)	Industrial chrome plating (φ 16 to φ 32)	20	Spacer (φ 16 to φ 32)	Aluminum alloy	Chromate
10	Piston	Aluminum alloy	Chromate	21	Aluminum housing	Aluminum alloy	Chromate
11	Piston packing seal	Nitrile rubber					

### Repair parts list

Bore size (mm)	Kit No.	Repair parts number
φ 6	STR2-D-6K	
φ 10	STR2-D-10K	
φ 16	STR2-D-16K	1 6 7
φ 20	STR2-D-20K	11 13
φ 25	STR2-D-25K	
φ 32	STR2-D-32K	

Note: Specify the kit No. when placing an order.

SCP\*2  
CMK2  
CMA2  
SCM  
SCG  
SCA2  
SCS  
CKV2  
CA/OV2  
SSD  
CAT  
MDC2  
MVC  
SMD2  
MSD\*  
FC\*  
STK  
ULK\*  
JSK/M2  
JSG  
JSC3  
USSD  
USC  
JSB3  
LMB  
STG  
STS/L  
LCS  
LCG  
LCM  
LCT  
LCY  
**STR2**  
UCA2  
HCM  
HCA  
SRL2  
SRG  
SRM  
SRT  
MRL2  
MRG2  
SM-25  
CAC3  
UCAC  
RCC2  
MFC  
SHC  
GLC  
Ending

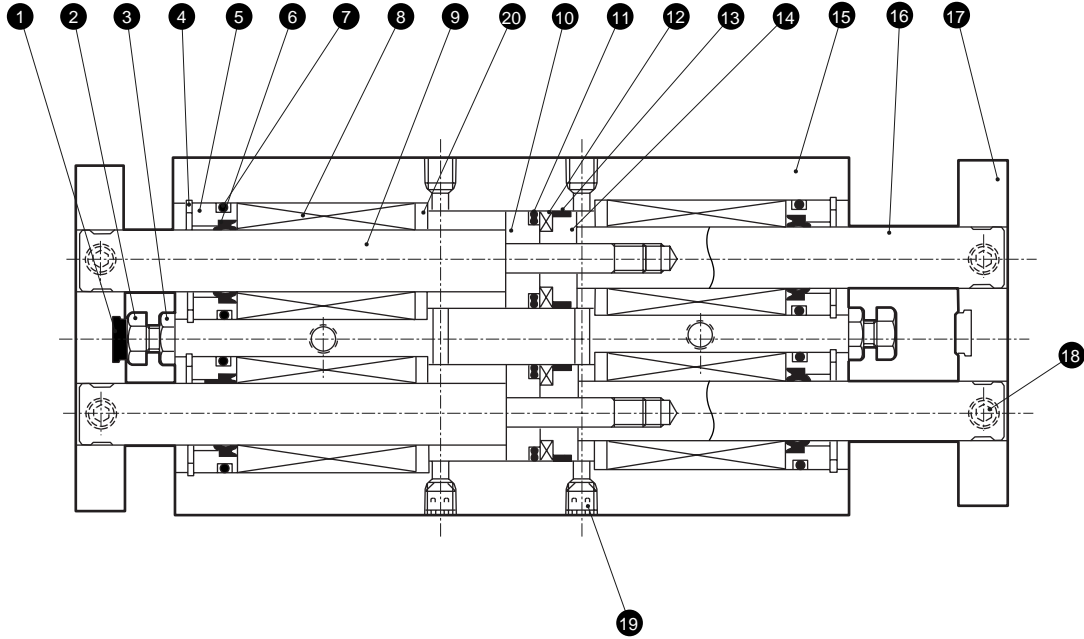
Twin rod cylinder  
Combined functions

# STR2-BD Series

## Internal structure and parts list (ball bearing type)

- SCP\*2
- CMK2
- CMA2
- SCM
- SCG
- SCA2
- SCS
- CKV2
- CA/OV2
- SSD
- CAT
- MDC2
- MVC
- SMD2
- MSD\*
- FC\*
- STK
- ULK\*
- JSK/M2
- JSG
- JSC3
- USSD
- USC
- JSB3
- LMB
- STG
- STS/L
- LCS
- LCG
- LCM
- LCT
- LCY
- STR2**
- UCA2
- HCM
- HCA
- SRL2
- SRG
- SRM
- SRT
- MRL2
- MRG2
- SM-25
- CAC3
- UCAC
- RCC2
- MFC
- SHC
- GLC
- Ending

- Double rod STR2-BD
- Piping port position 180° change STR2-BD....O



No.	Parts name	Material	Remarks	No.	Parts name	Material	Remarks
1	Cushion rubber (H)	Urethane rubber		11	Piston packing seal	Nitrile rubber	
2	Hexagon head bolt	Stainless steel		12	Magnet	Plastic	
3	Hexagon nut	Stainless steel		13	Wear ring	Acetar resin	
4	C ring for hole	Stainless steel		14	Spacer	Aluminum alloy	Chromate
5	Housing	Stainless steel (φ 6, φ 10) Aluminum alloy (φ 16 to φ 32)	Chromate	15	Cylinder body	Aluminum alloy	Hard alumite
6	Rod packing seal	Nitrile rubber		16	Piston rod (B)	Steel	Industrial chrome plating
7	O ring	Nitrile rubber		17	End plate	Aluminum alloy	Alumite
8	Bearing			18	Hexagon socket head set screw	Stainless steel	
9	Piston rod (A)	Steel	Industrial chrome plating	19	Hexagon socket head set screw	Stainless steel	
10	Piston	Aluminum alloy	Chromate	20	Spacer	Aluminum alloy	Chromate

### Repair parts list

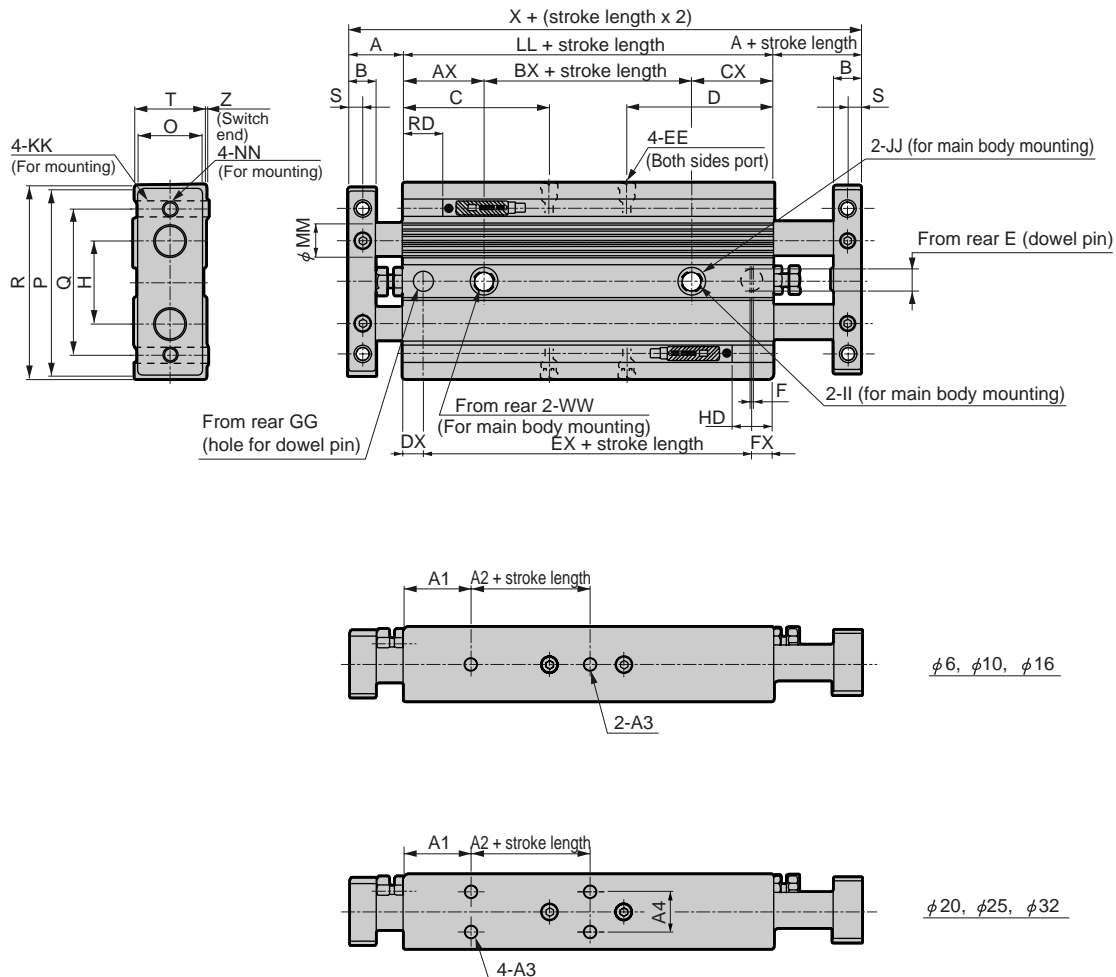
Bore size (mm)	Kit No.	Repair parts number
φ 6	STR2-D-6K	
φ 10	STR2-D-10K	
φ 16	STR2-D-16K	1 6 7
φ 20	STR2-D-20K	11 13
φ 25	STR2-D-25K	
φ 32	STR2-D-32K	

Note: Specify the kit No. when placing an order.

### Dimensions (φ 6 to φ 32)



● Double rod type (D), piping port position 180° change (O)



- Note 1: Note that the HD and RD dimensions at 10 stroke may differ from these dimensions due to the various settings.
- Note 2: Refer to page 1911 for 2 color indicator, HD/RD dimensions and projection dimensions of the switch with preventive maintenance output.
- Note 3: Reed switch K0, K5 can not be used for STR2-B-6/10.
- Note 4: When the counter bore surface (JJ) is the mounting surface, this cylinder has a step which could cause the cylinder to tilt. In this case, change the port position or use the option with port position changed 180° (O) so that the counter bore surface is not the mounting surface.

Symbol	Basic dimensions																				
	Bore size (mm)		A	B	C	D	E	EE	F	GG	H	II	JJ	KK	LL	MM	NN	O	P		
φ 6	12	6	24.5	24.5	4 <sup>+0.07</sup> <sub>+0.02</sub> depth 4	M5	1	4 <sup>+0.07</sup> <sub>+0.02</sub> depth 4	14	3.4	6.5 spot face depth 3.3	M3 penetrating	61	4	M3 penetrating	11	34				
φ 10	14	6	35	35	4 <sup>+0.07</sup> <sub>+0.02</sub> depth 4	M5	1	4 <sup>+0.07</sup> <sub>+0.02</sub> depth 4	20	4.3	8 spot face depth 4.4	M4 penetrating	82.5	6	M4 penetrating	13	42				
φ 16	16	8	43	43	6 <sup>+0.07</sup> <sub>+0.02</sub> depth 6	M5	1	6 <sup>+0.07</sup> <sub>+0.02</sub> depth 6	25	4.3	8 spot face depth 4.4	M5 penetrating	99	10	M5 penetrating	19	52				
φ 20	20	10	46	46	6 <sup>+0.07</sup> <sub>+0.02</sub> depth 6	M5	1	6 <sup>+0.07</sup> <sub>+0.02</sub> depth 6	28	5.2	9.5 spot face depth 5.4	M5 penetrating	108	12	M5 penetrating	24	60				
φ 25	22	12	44	44	6 <sup>+0.07</sup> <sub>+0.02</sub> depth 6	M5	1	6 <sup>+0.07</sup> <sub>+0.02</sub> depth 6	34	6.3	11 spot face depth 6.5	M6 penetrating	108	14	M6 penetrating	30	70				
φ 32	22	12	56	56	6 <sup>+0.07</sup> <sub>+0.02</sub> depth 6/Rc1/8	M5	1	6 <sup>+0.07</sup> <sub>+0.02</sub> depth 6	44	6.3	11 spot face depth 6.5	M6 penetrating	133	16	M6 penetrating	36	94				
Symbol																		K0/K5/K2/K3			
	Bore size (mm)		Q	R	S	T	WW	X	AX	BX	CX	DX	EX	FX	Z	A1	A2	A3	A4	HD	RD
φ 6	29	36	3	13	M4 depth 5	85	20	21	20	7	47	7	1.0	15	10	M3 depth 4	-	20.5	Note 1	21	Note 1
φ 10	36	44	3	15	M5 depth 6	110.5	24	34.5	24	8	65.5	9	1.0	15	20	M3 depth 3.5	-	30.5	Note 1	32.5	Note 1
φ 16	45	58	4	21	M5 depth 6	131	24	51	24	8	83	8	0.5	20	25	M4 depth 4	-	39		40.5	
φ 20	50	62	5	27	M6 depth 8	148	24	60	24	9	90	9	0.5	20	30	M4 depth 4	13	43		45	
φ 25	60	72	6	33	M8 depth 8	152	24	60	24	9	90	9	0.5	20	30	M5 depth 6	18	43.5		44.5	
φ 32	75	96	6	38	M8 depth 8	177	24	85	24	9	115	9	0.5	20	40	M5 depth 8	24	55.5		57.5	

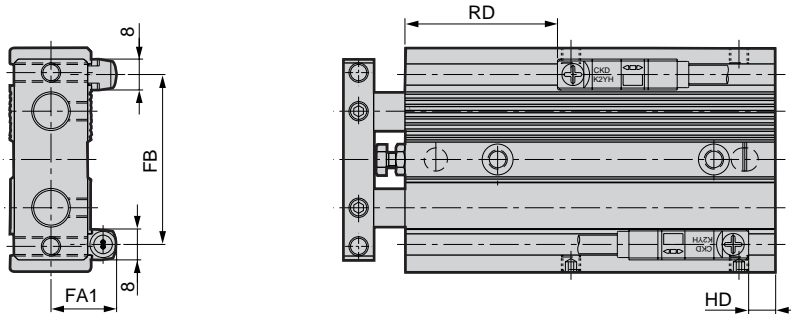
- SCP\*2
- CMK2
- CMA2
- SCM
- SCG
- SCA2
- SCS
- CKV2
- CA/OV2
- SSD
- CAT
- MDC2
- MVC
- SMD2
- MSD\*
- FC\*
- STK
- ULK\*
- JSK/M2
- JSG
- JSC3
- USSD
- USC
- JSB3
- LMB
- STG
- STS/L
- LCS
- LCG
- LCM
- LCT
- LCY
- STR2**
- UCA2
- HCM
- HCA
- SRL2
- SRG
- SRM
- SRT
- MRL2
- MRG2
- SM-25
- CAC3
- UCAC
- RCC2
- MFC
- SHC
- GLC

Ending  
Twin rod cylinder  
Combined functions

## STR2 Series common dimensions of types with switches (2 color indicator type, preventive maintenance output switch)

- Standard type, low speed type (O), position locking type (Q), fine speed type, end plate material: Steel (F)  
Rear piping type R, copper and PTFE free type (P6), piping port position 180° change

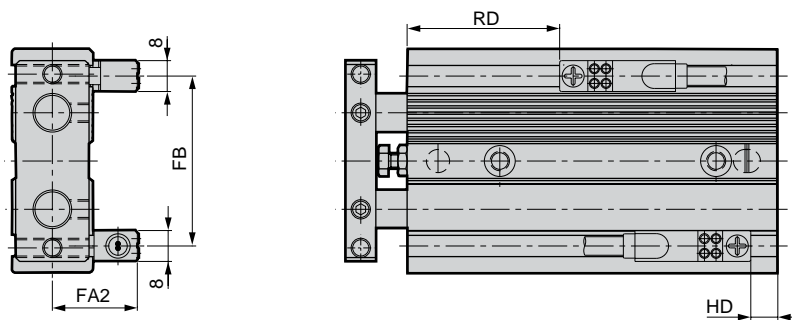
2 color indicator type switch (K2Y<sup>H</sup>/v, K3Y<sup>H</sup>/v)



- 2 color indicator K \*Y<sup>H</sup>/v

Symbol	FA	FB	RD				HD			
			STR2-M <sub>B</sub> -O STR2-M <sub>B</sub> -F STR2-M <sub>B</sub> -P6 STR2-M <sub>B</sub> -O	STR2-M <sub>B</sub> -R	STR2-M <sub>B</sub> -Q-H	STR2-M <sub>B</sub> -Q-R	STR2-M <sub>B</sub> -O STR2-M <sub>B</sub> -F STR2-M <sub>B</sub> -P6 STR2-M <sub>B</sub> -O	STR2-M <sub>B</sub> -R	STR2-M <sub>B</sub> -Q-H	STR2-M <sub>B</sub> -Q-R
φ 6	13.5	24	20	20	-	-	2.5	12.5	-	-
φ 10	14.5	34	32	32	-	-	1	11	-	-
φ 16	17	44	38.5	38.5	38.5	68.5	5.5	15.5	35.5	5.5
φ 20	20	49	44	44	44	74	9.5	19.5	39.5	9.5
φ 25	23	58	42.5	42.5	42.5	72.5	10.5	20.5	40.5	10.5
STR2	φ 32	25.5	71	54.5	54.5	84.5	14.5	24.5	44.5	14.5

Preventive maintenance output switch (K2YF<sup>H</sup>/v, K2YM<sup>H</sup>/v, K3YF<sup>H</sup>/v, K3YM<sup>H</sup>/v)



- With preventive maintenance output K \* Y<sup>H</sup>/v

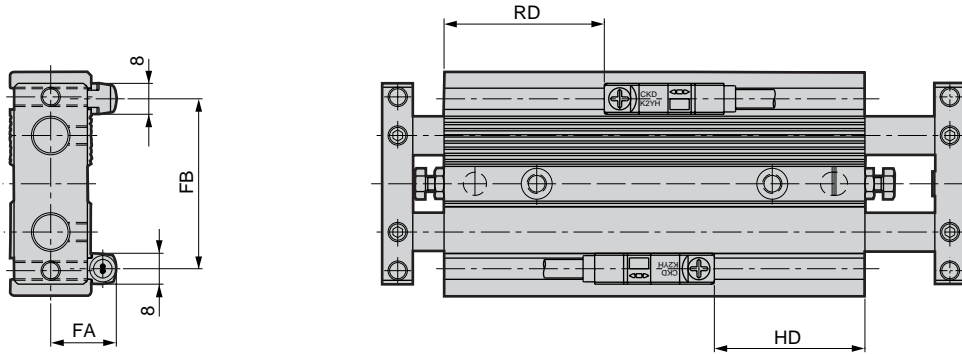
Symbol	FA	FB	RD				HD			
			STR2-M <sub>B</sub> -O STR2-M <sub>B</sub> -F STR2-M <sub>B</sub> -P6 STR2-M <sub>B</sub> -O	STR2-M <sub>B</sub> -R	STR2-M <sub>B</sub> -Q-H	STR2-M <sub>B</sub> -Q-R	STR2-M <sub>B</sub> -O STR2-M <sub>B</sub> -F STR2-M <sub>B</sub> -P6 STR2-M <sub>B</sub> -O	STR2-M <sub>B</sub> -R	STR2-M <sub>B</sub> -Q-H	STR2-M <sub>B</sub> -Q-R
φ 6	18.5	24	20	20	-	-	2.5	12.5	-	-
φ 10	19.5	34	32	32	-	-	1	11	-	-
φ 16	22	44	38.5	38.5	38.5	68.5	5.5	15.5	35.5	5.5
φ 20	25	49	44	44	44	74	9.5	19.5	39.5	9.5
φ 25	28	58	42.5	42.5	42.5	72.5	10.5	20.5	40.5	10.5
φ 32	30.5	71	54.5	54.5	54.5	84.5	14.5	24.5	44.5	14.5



### STR2 Series common dimensions of types with switches (2 color indicator type, preventive maintenance output switch)

● Double rod type (O)

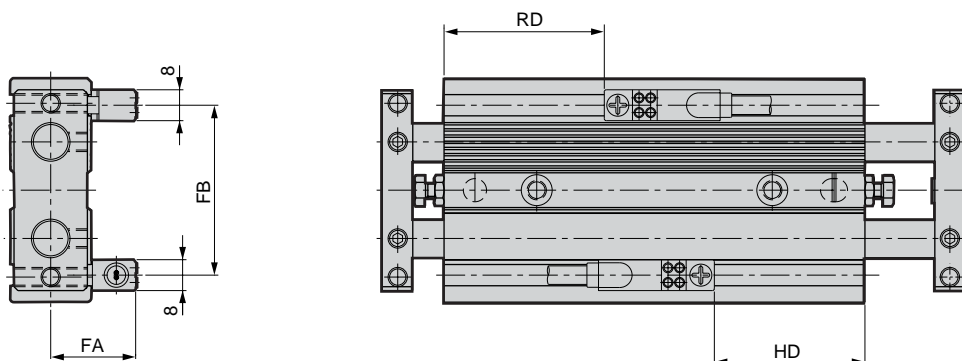
2 color indicator type switch (K2Y<sup>H/v</sup>, K3Y<sup>H/v</sup>)



● 2 color indicator K \*Y<sup>H/v</sup>

Symbol	FA	FB	RD	HD
Bore size (mm)				
φ 6	13.5	24	20	19.5
φ 10	14.5	34	31	29
φ 16	17	44	39	38
φ 20	20	49	44	42
φ 25	23	58	43.5	42.5
φ 32	25.5	71	56.5	54.5

Preventive maintenance output switch (K2YF<sup>H/v</sup>, K2YM<sup>H/v</sup>, K3YF<sup>H/v</sup>, K3YM<sup>H/v</sup>)



● With preventive maintenance output K \* Y<sup>H/v</sup>

Symbol	FA	FB	RD	HD
Bore size (mm)				
φ 6	18.5	24	20	19.5
φ 10	19.5	34	31	29
φ 16	22	44	39	38
φ 20	25	49	44	42
φ 25	28	58	43.5	42.5
φ 32	30.5	71	56.5	54.5

- SCP\*2
- CMK2
- CMA2
- SCM
- SCG
- SCA2
- SCS
- CKV2
- CA/OV2
- SSD
- CAT
- MDC2
- MVC
- SMD2
- MSD\*
- FC\*
- STK
- ULK\*
- JSK/M2
- JSG
- JSC3
- USSD
- USC
- JSB3
- LMB
- STG
- STS/L
- LCS
- LCG
- LCM
- LCT
- LCY
- STR2**
- UCA2
- HCM
- HCA
- SRL2
- SRG
- SRM
- SRT
- MRL2
- MRG2
- SM-25
- CAC3
- UCAC
- RCC2
- MFC
- SHC
- GLC
- Ending

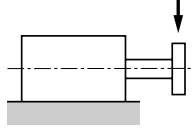
Twin rod cylinder  
Combined functions

# STR2-M<sub>B</sub> Series

## Technical data ① Allowable lateral load

### Allowable lateral load

Lateral load: F



#### ● Metal bush bearing

(N)

Type	Stroke length (mm)										
	10	20	30	40	50	60	70	80	90	100	
STR2-M-6	2.4	1.9	1.5	1.3	1.1	-	-	-	-	-	
STR2-M-10	5.8	4.8	4.1	3.5	3.1	-	-	-	-	-	
STR2-M-16	15.9	13.3	11.5	10.1	8.9	8.1	7.3	6.7	6.2	5.8	
STR2-M-20	20.3	17.3	15.1	13.4	12.1	10.9	10.0	9.2	8.5	7.9	
STR2-M-25	22.1	18.9	16.5	14.7	13.1	11.9	10.9	10.1	9.3	8.7	
STR2-M-32	34.9	30.2	26.7	23.9	21.6	19.7	18.1	16.8	15.7	14.7	

#### ● Ball bearing

(N)

Type	Stroke length (mm)										
	10	20	30	40	50	60	70	80	90	100	
STR2-B-6	2.6	1.9	1.5	1.2	1.0	-	-	-	-	-	
STR2-B-10	6.0	4.4	3.6	3.0	2.6	-	-	-	-	-	
STR2-B-16	11.4	8.5	7.0	5.9	5.1	4.5	4.0	3.7	3.3	3.0	
STR2-B-20	12.7	9.6	7.9	6.8	5.9	5.3	4.7	4.3	3.9	3.6	
STR2-B-25	14.7	11.1	9.2	7.9	6.9	6.1	5.5	5.0	4.6	4.2	
STR2-B-32	24.3	18.5	15.4	13.3	11.7	10.5	9.5	8.7	8.0	7.4	

### STR2-D allowable lateral load

#### ● Metal bush bearing (double rod type)

(N)

Type	Stroke length (mm)										
	10	20	30	40	50	60	70	80	90	100	
STR2-MD-6	3.3	3.2	3.1	3.0	2.9	-	-	-	-	-	
STR2-MD-10	8.0	7.6	7.3	7.1	7.0	-	-	-	-	-	
STR2-MD-16	21.7	20.5	19.7	19.1	18.7	18.3	18.0	17.8	17.6	17.5	
STR2-MD-20	26.7	25.3	24.3	23.7	23.1	22.7	22.4	22.1	21.9	21.7	
STR2-MD-25	29.3	27.8	26.7	26.0	25.4	24.9	24.6	24.3	24.0	23.8	
STR2-MD-32	45.2	42.9	41.3	40.1	39.1	38.3	37.7	37.2	36.7	36.3	

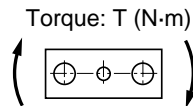
#### ● Ball bearing (double rod type)

(N)

Type	Stroke length (mm)										
	10	20	30	40	50	60	70	80	90	100	
STR2-BD-6	3.7	3.0	2.7	2.5	2.3	-	-	-	-	-	
STR2-BD-10	8.6	6.9	6.2	5.7	5.3	-	-	-	-	-	
STR2-BD-16	16.6	13.3	11.7	10.7	10.0	9.4	9.0	8.6	8.3	8.0	
STR2-BD-20	17.8	14.3	12.6	11.5	10.8	10.2	9.8	9.3	9.0	8.7	
STR2-BD-25	20.8	16.7	14.7	13.5	12.6	11.9	11.4	10.9	10.5	10.2	
STR2-BD-32	34.5	27.6	24.2	22.1	20.6	19.5	18.5	17.8	17.1	16.6	

SCP\*2  
CMK2  
CMA2  
SCM  
SCG  
SCA2  
SCS  
CKV2  
CA/OV2  
SSD  
CAT  
MDC2  
MVC  
SMD2  
MSD\*  
FC\*  
STK  
ULK\*  
JSK/M2  
JSG  
JSC3  
USSD  
USC  
JSB3  
LMB  
STG  
STS/L  
LCS  
LCG  
LCM  
LCT  
LCY  
STR2  
UCA2  
HCM  
HCA  
SRL2  
SRG  
SRM  
SRT  
MRL2  
MRG2  
SM-25  
CAC3  
UCAC  
RCC2  
MFC  
SHC  
GLC  
Ending

### Allowable torque



#### ● Metal bush bearing

Type	Stroke length (mm)									
	10	20	30	40	50	60	70	80	90	100
STR2-M-6	0.008	0.006	0.005	0.004	0.003	-	-	-	-	-
STR2-M-10	0.029	0.024	0.020	0.017	0.015	-	-	-	-	-
STR2-M-16	0.099	0.083	0.071	0.063	0.055	0.050	0.045	0.041	0.038	0.036
STR2-M-20	0.142	0.121	0.105	0.093	0.084	0.076	0.070	0.064	0.059	0.055
STR2-M-25	0.187	0.160	0.140	0.125	0.111	0.101	0.092	0.085	0.079	0.074
STR2-M-32	0.383	0.332	0.293	0.262	0.237	0.216	0.199	0.184	0.172	0.161

#### ● Ball bearing

Type	Stroke length (mm)									
	10	20	30	40	50	60	70	80	90	100
STR2-B-6	0.009	0.006	0.005	0.004	0.003	-	-	-	-	-
STR2-B-10	0.030	0.022	0.018	0.015	0.013	-	-	-	-	-
STR2-B-16	0.071	0.053	0.043	0.036	0.031	0.028	0.025	0.023	0.020	0.018
STR2-B-20	0.088	0.067	0.055	0.047	0.041	0.037	0.032	0.030	0.027	0.025
STR2-B-25	0.125	0.094	0.078	0.067	0.058	0.051	0.046	0.042	0.039	0.035
STR2-B-32	0.267	0.203	0.169	0.146	0.128	0.115	0.104	0.095	0.088	0.081

### STR2-D allowable torque

#### ● Metal bush bearing (double rod type)

Type	Stroke length (mm)									
	10	20	30	40	50	60	70	80	90	100
STR2-MD-6	0.011	0.011	0.010	0.010	0.010	-	-	-	-	-
STR2-MD-10	0.040	0.038	0.036	0.035	0.035	-	-	-	-	-
STR2-MD-16	0.135	0.128	0.123	0.119	0.116	0.114	0.112	0.111	0.110	0.109
STR2-MD-20	0.186	0.177	0.170	0.165	0.161	0.158	0.156	0.154	0.153	0.151
STR2-MD-25	0.249	0.236	0.227	0.221	0.215	0.211	0.209	0.206	0.204	0.202
STR2-MD-32	0.497	0.471	0.454	0.441	0.430	0.421	0.414	0.409	0.403	0.399

#### ● Ball bearing (double rod type)

Type	Stroke length (mm)									
	10	20	30	40	50	60	70	80	90	100
STR2-BD-6	0.013	0.010	0.009	0.008	0.008	-	-	-	-	-
STR2-BD-10	0.043	0.034	0.031	0.028	0.026	-	-	-	-	-
STR2-BD-16	0.103	0.083	0.073	0.066	0.062	0.055	0.056	0.053	0.051	0.050
STR2-BD-20	0.124	0.100	0.088	0.080	0.075	0.071	0.068	0.065	0.063	0.060
STR2-BD-25	0.176	0.142	0.125	0.114	0.107	0.101	0.096	0.092	0.089	0.086
STR2-BD-32	0.379	0.303	0.266	0.243	0.226	0.214	0.203	0.195	0.188	0.182

SCP\*2  
CMK2  
CMA2  
SCM  
SCG  
SCA2  
SCS  
CKV2  
CA/OV2  
SSD  
CAT  
MDC2  
MVC  
SMD2  
MSD\*  
FC\*  
STK  
ULK\*  
JSK/M2  
JSG  
JSC3  
USSD  
USC  
JSB3  
LMB  
STG  
STS/L  
LCS  
LCG  
LCM  
LCT  
LCY  
STR2  
UCA2  
HCM  
HCA  
SRL2  
SRG  
SRM  
SRT  
MRL2  
MRG2  
SM-25  
CAC3  
UCAC  
RCC2  
MFC  
SHC  
GLC

Ending

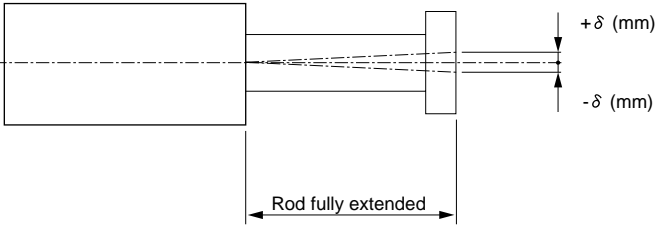
Twin rod cylinder  
Combined functions

# STR2-M<sup>B</sup> Series

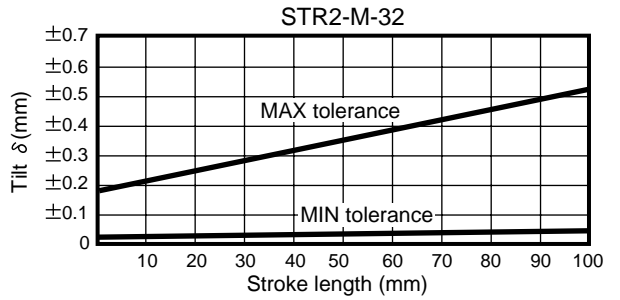
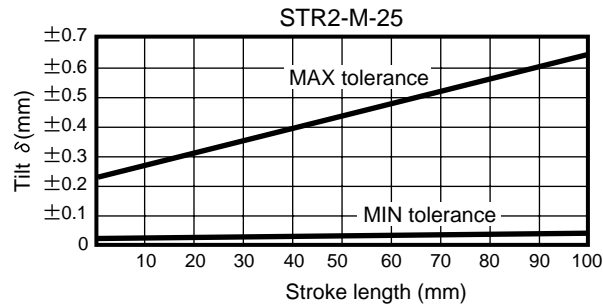
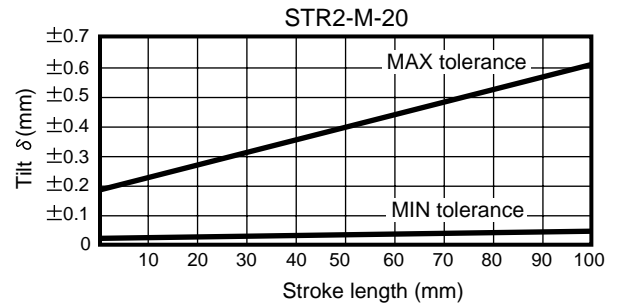
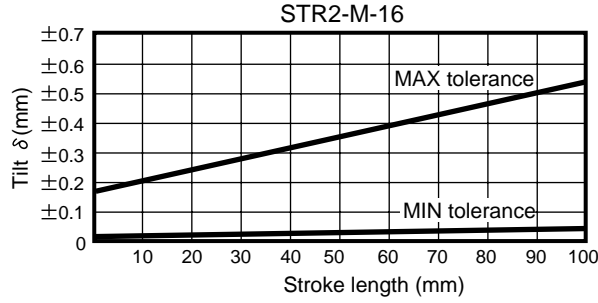
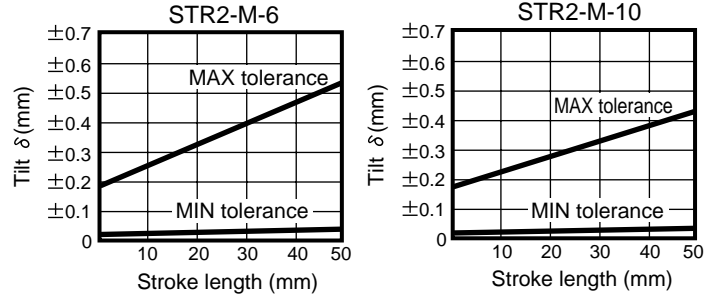
## Technical data ③ Deflection

### Deflection

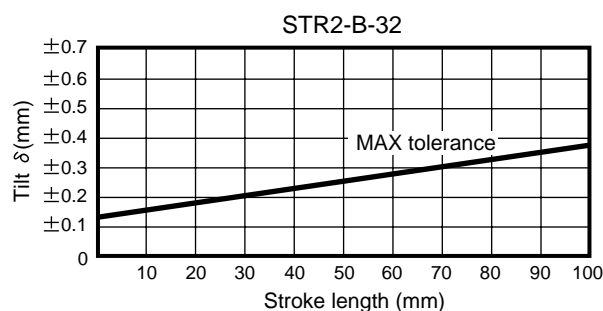
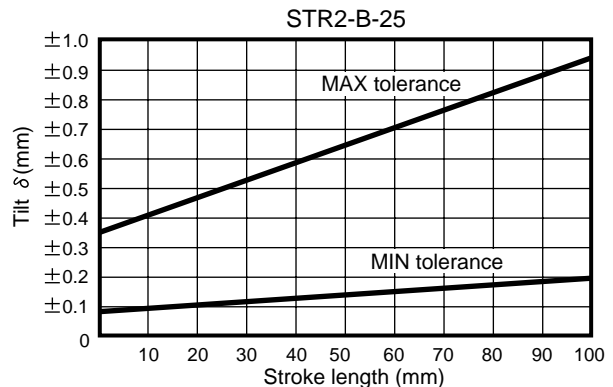
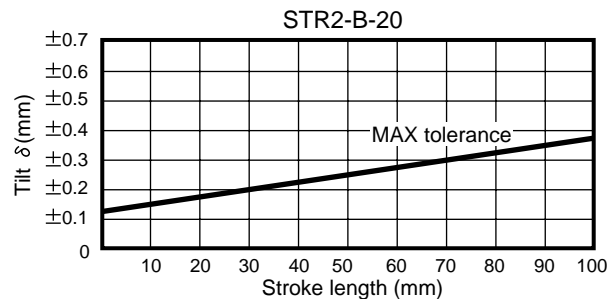
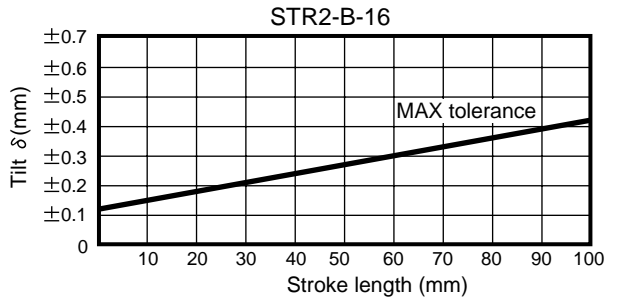
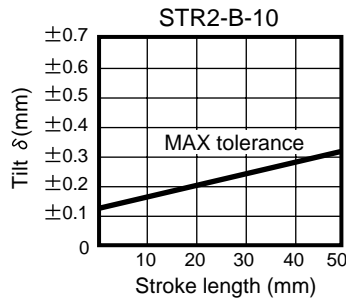
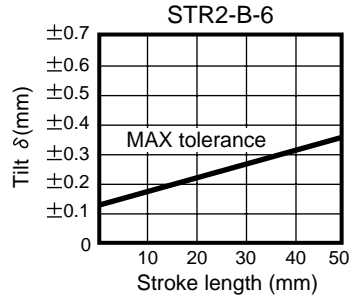
Refer to values on the following graph for end plate end tilt angle at no load.  
(Reference value) (Excluding deflection of piston rod)



### ■ STR2-M



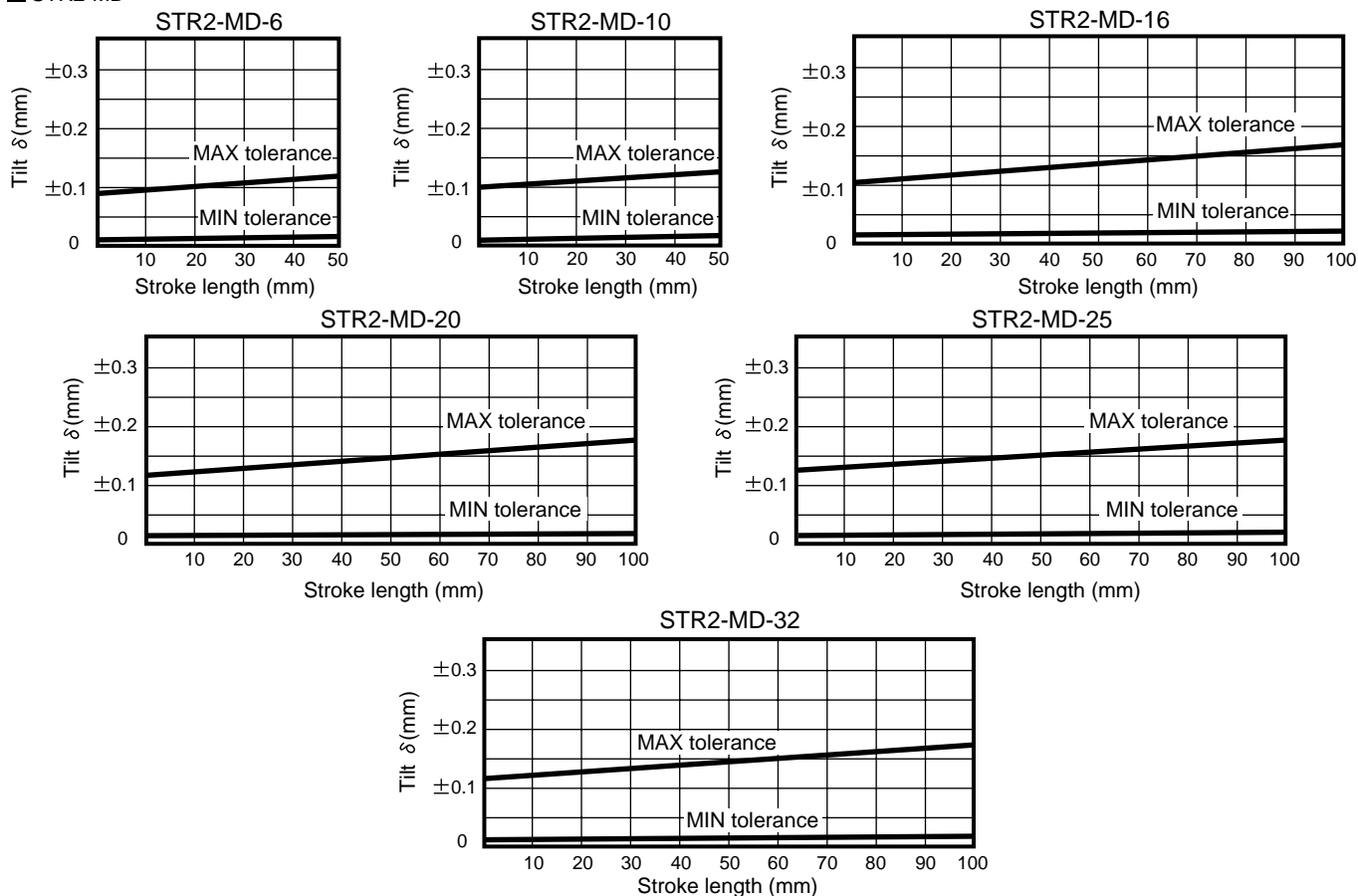
### ■ STR2-B



SCP*2
CMK2
CMA2
SCM
SCG
SCA2
SCS
CKV2
CA/OV2
SSD
CAT
MDC2
MVC
SMD2
MSD*
FC*
STK
ULK*
JSK/M2
JSG
JSC3
USSD
USC
JSB3
LMB
STG
STS/L
LCS
LCG
LCM
LCT
LCY
<b>STR2</b>
UCA2
HCM
HCA
SRL2
SRG
SRM
SRT
MRL2
MRG2
SM-25
CAC3
UCAC
RCC2
MFC
SHC
GLC
Ending

Twin rod cylinder  
Combined functions

■ STR2-MD



■ STR2-BD

