



### Features

#### ■ Non lubrication

Special housing and bushing enables self lubrication of piston rod.

#### ■ High quality long service life

Hard anodised aluminium cylinder tubes offer a high resistance to corrosion and low internal friction.

#### ■ ISO 15552 standard specification

Conforms to ISO 15552 specification enabling worldwide interchangeability.

#### ■ Cylinder mountings

Available with comprehensive internationally recognised range of fixed and flexible mountings.

### Specification

Model	MCQV		
Tube I.D. (mm)	125	160	200
Medium	Air		
Operating pressure range	0.05~1 MPa		
Proof pressure	1.5 MPa		
Ambient temperature	-5~+60°C (No freezing)		
Available speed range	50~500 mm/sec		
Sensor switch	RCA (Please refer to page 8-8)		
Sensor switch holder	HV4	PM16	HA5

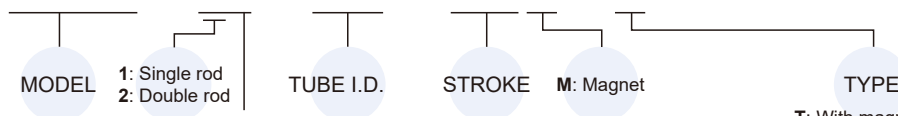
### Table for standard stroke

Tube I.D.	Stroke (mm)	Max. stroke (mm)
ø125	50,75,100,125,150,175,	2000
ø160	200,250,300,350,400,	
ø200	450,500	1500




\* Intermediate stroke are available, please contact us.

### Order example

**MCQV – 11 – 125 – 100M – T**



#### STYLE

Code	Symbol	Description
1 1		Double acting / Male thread
2 1		Double rod / Male thread
2 7		Double rod / Adjustable male thread Please mark "adjustable stroke" at order list







T: With magnet, TA/TB is assembled







\* Tube, piston rod and tie rod are extended, and an extra piston is added.

\* Order example for special specification, refer to page 0-7.



\* Rc or NPT thread are also available, please contact us.

### Accessories & Connector

Code	Accessories					Rod nut
	LB (Purchase 2 pcs)	CA	CB	FAC	FBC	NUT
Mounting Tube I.D.						
ø125	<b>LB-Q2-125</b>	<b>CA-Q2-125</b>	<b>CB-Q2-125</b>	<b>FAC-Q2-125</b>		<b>NUT-M27x2.0x13.5Hx41B</b>
ø160	<b>LB-Q2-160</b>	<b>CA-Q2-160</b>	<b>CB-Q2-160</b>	<b>FAC-Q2-160</b>		<b>NUT-M36x2.0x18Hx55B</b>
ø200	<b>LB-Q2-200</b>	<b>CA-Q2-200</b>	<b>CB-Q2-200</b>	<b>FAC-Q2-200</b>		

Code	Accessories <small>⚠ Factory assembled and shipped (self-assembled is not recommended)</small>				Connector	
	TA	TB	TC	SDS Mid section support (Stroke over 1000mm)	Y	I
Mounting Tube I.D.						
ø125	<b>TC-Q2-125</b>			<b>SDS-Q2-125</b>	<b>Y-Q2-125</b>	<b>I-Q2-125</b>
ø160	<b>TC-Q2-160</b>			<b>SDS-Q2-160</b>	<b>Y-Q2-160</b>	<b>I-Q2-160</b>
ø200	<b>TC-Q2-200</b>			<b>SDS-Q2-200</b>		

### Pin

Applicable	Y&I connector	CA&CB accessories
Code	<b>PIN-Y-P</b> (with split pin)	<b>PIN-CB-P</b> (with split pin)
Fig Tube I.D.		
ø125	<b>PIN-Q2-125-2-P</b>	<b>PIN-Q2-125-1-P</b>
ø160	<b>PIN-Q2-160-2-P</b>	<b>PIN-Q2-160-1-P</b>
ø200	<b>PIN-Q2-200-2-P</b>	

### Order example of self-assembled

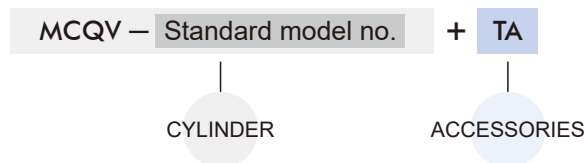
The tube I.D. ø125 of LB accessories, Y connector and pin.

No.	Order number	Qty
1	<b>LB-Q2-125</b>	2
2	<b>Y-Q2-125</b>	1
3	<b>PIN-Q2-125-2-P</b>	1

\* To order accessories/ connectors/ pin separately, please place orders separately according to the order codes in the above table.

### Order example of factory assembled

⚠ Cylinders and accessories are distinguished by the symbol "+".



# MCQV-11 Inside structure & Parts list

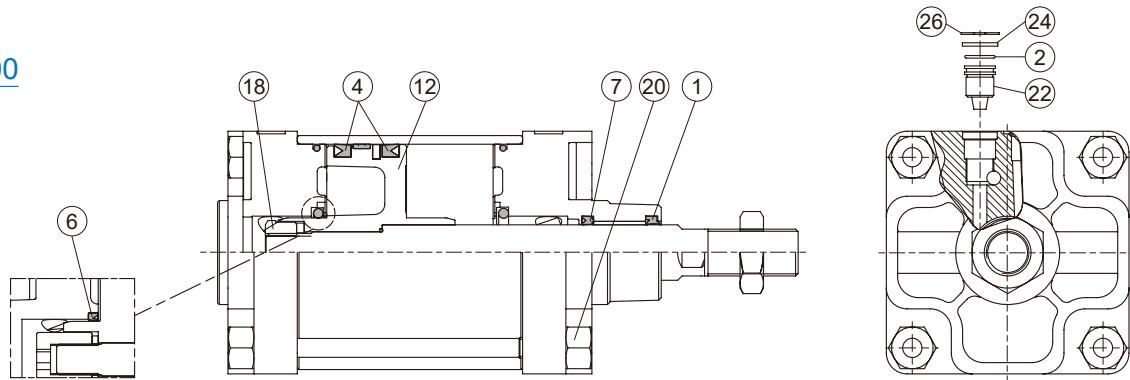
ISO 15552 STANDARD CYLINDER



## Single rod 11 type

ø125~ø200

ø200



No.	Part name	Material	Q'y	Component parts (inclusion)	Repair kits (inclusion)	Note
1	Rod packing	NBR	1	●	●	
2	O-ring	NBR	2	●	●	
3	O-ring	NBR	2	●	●	
4	Piston packing	NBR	2	●	●	
5	O-ring	NBR	1	●	●	
6	Cushion packing	NBR	2	●	●*1	
7	Rod packing	NBR	1	●	●	
8	Rod cover	Aluminum alloy	1	●		
9	Head cover	Aluminum alloy	1	●		
10	Piston-R	Aluminum alloy	1			
11	Piston-H	Aluminum alloy	1			
12	Piston	Aluminum alloy	1	●		
13	Bush	Bearing alloy	1	●		
14	Magnet ring	Magnet material	1	◎		◎ Option
15	Wear ring	Resin	1	●		
16	Hex nut	Carbon steel	1	●		
17	Bolt	Carbon steel	1	●		
18	Piston nut	Carbon steel	1	●		
19	Washer	Carbon steel	1	●		
20	Tie rod nut	Carbon steel	8	●		
21	Tie rod washer	Carbon steel	8			
22	Needle valve	Copper alloy	2	●		
23	Insert nut	Copper alloy	2			
24	Needle valve washer	Carbon steel	2	●		
25	Cover plate	Plastic	2			
26	Snap ring	Carbon steel	2	●		
27	Cylinder tube	Aluminum alloy	1			
28	Piston rod *2	Carbon steel	1			
29	Tie rod	Carbon steel	4			

\*1. Cushion packing is not included in ø200 repair kits.

\*2. When customized material is bearing steel, only two-side across flat (wrench flat) is available.

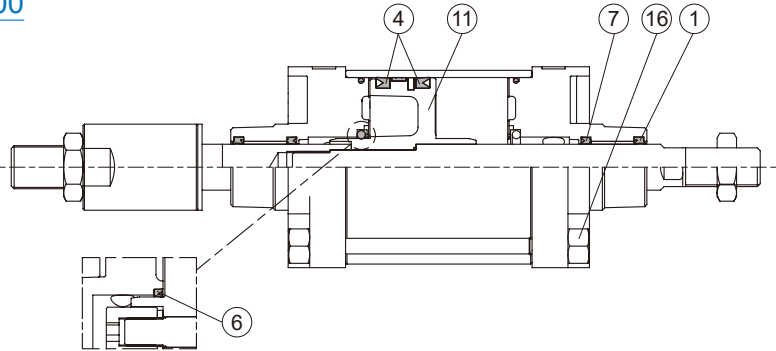
# MCQV-2\* Inside structure & Parts list

ISO 15552 STANDARD CYLINDER

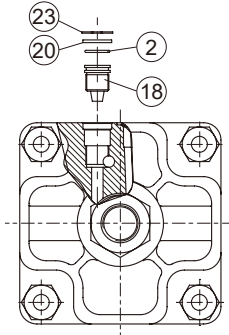


## Double rod 21 / 27 type

ø125~ø200



ø200



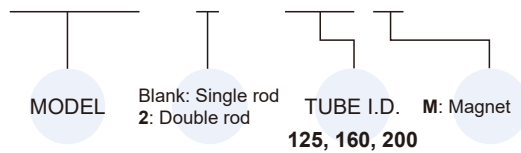
No.	21 type	27 type	Part name	Material	Q'y	Component parts (inclusion)	Repair kits (inclusion)	Note
1	●	●	Rod packing	NBR	2	●	●	
2	●	●	O-ring	NBR	2	●	●	
3	●	●	O-ring	NBR	2	●	●	
4	●	●	Piston packing	NBR	2	●	●	
5	●	●	O-ring	NBR	1	●	●	
6	●	●	Cushion packing	NBR	2	●	● *1	
7	●	●	Rod packing	NBR	2	●	●	
8	●	●	Rod cover	Aluminum alloy	2	●		
9			Piston-R	Aluminum alloy	1			
10			Piston-H	Aluminum alloy	1			
11	●	●	Piston	Aluminum alloy	1	●		
12	●	●	Bush	Bearing alloy	2	●		
13	◎	◎	Magnet ring	Magnet material	1	◎		◎ Option
14	●	●	Wear ring	Resin	1	●		
15	●	●	Screw	Carbon steel	1	●		
16	●	●	Tie rod nut	Carbon steel	8	●		
17			Tie rod washer	Carbon steel	8			
18	●	●	Needle valve	Copper alloy	2	●		
19			Insert nut	Copper alloy	2			
20	●	●	Needle valve washer	Carbon steel	2	●		
21			Cover plate	Plastic	2			
22	●	●	Hex nut	Carbon steel	1	●		
23	●	●	Snap ring	Carbon steel	2	●		
24		●	Adjustable nut	Carbon steel	1			
25		●	Gasket	PU	1			
26	●	●	Cylinder tube	Aluminum alloy	1			
27	●	●	Piston rod #1 *2	Carbon steel	1			
28	●	●	Piston rod #2 *2	Carbon steel	1			
29	●	●	Tie rod	Carbon steel	4			

\*1. Cushion packing is not included in ø200 repair kits.

\*2. When customized material is bearing steel, only two-side across flat (wrench flat) is available.

### Order example of component parts

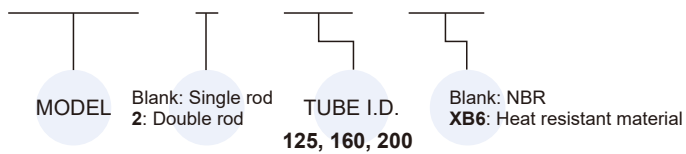
CP – MCQV – 2 – 125 M



\* Order example for Rc or NPT thread please contact us.

### Order example of repair kits



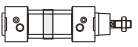
PS – MCQV – 2 – 125 – XB6



### Cylinder & accessories weight











#### Cylinder weight

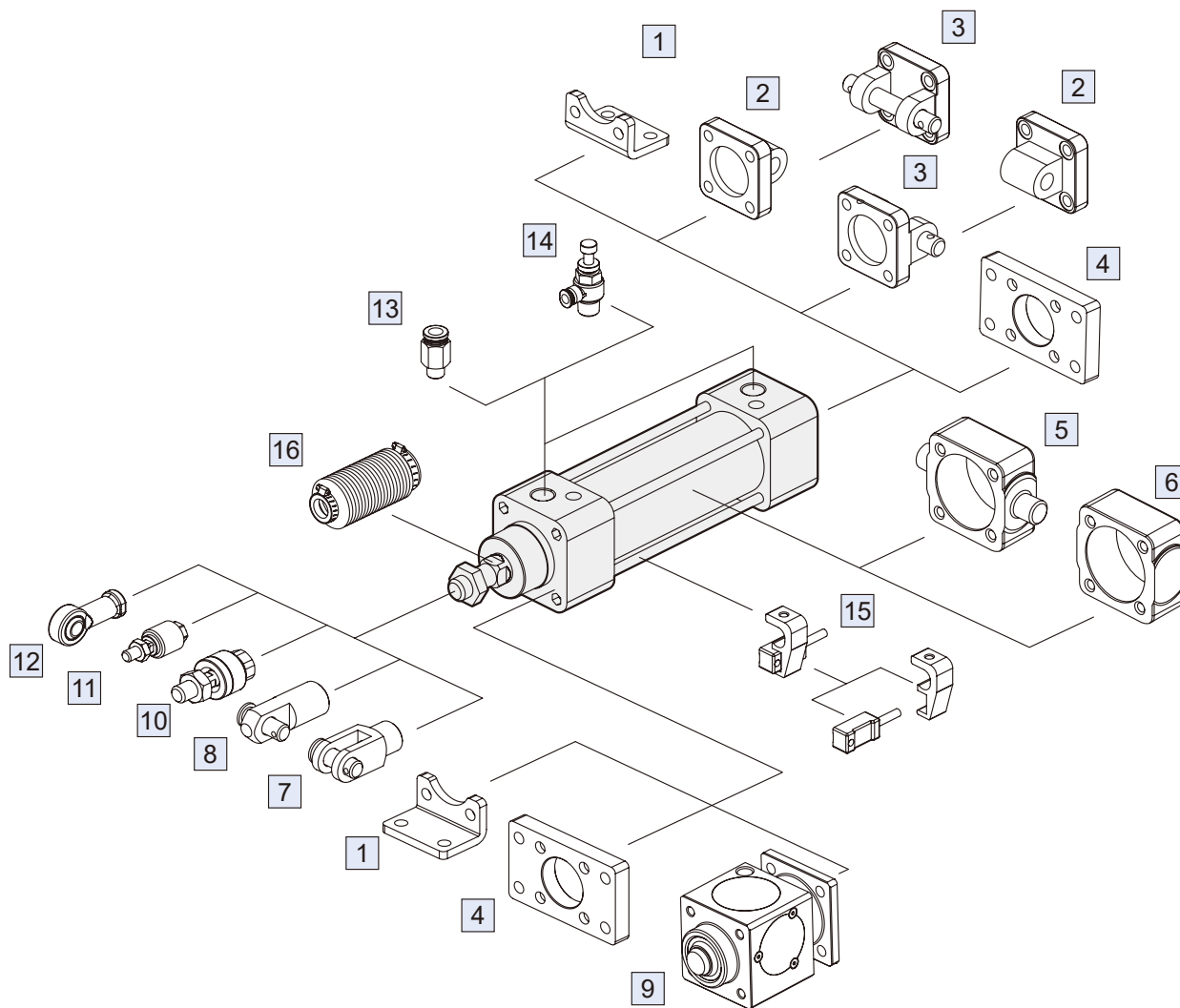
Unit: kg

Model	Basic weight MCQV-11	Basic weight (magnet) MCQV-11	Stroke 25 mm MCQV-11
Tube I.D.			
$\phi 125$	7.345	7.388	0.372
$\phi 160$	13.864	13.974	0.555
$\phi 200$	19.450	19.560	0.570

#### Accessories weight

Unit: kg

Model	LB	CA	CB	FAC/FBC	TA/TB/TC	SDS	Y	I	Pin	
									Y / I	CA / CB
Tube I.D.										
$\phi 125$	2.500	3.780	3.560	4.020	2.750	2.528	1.160	1.400	0.382	0.525
$\phi 160$	4.600	7.400	7.140	7.170	5.130	3.907	2.482	1.727	0.567	0.906
$\phi 200$	7.342	9.440	9.208	10.852	6.981	6.627	2.482	1.727	0.567	0.906



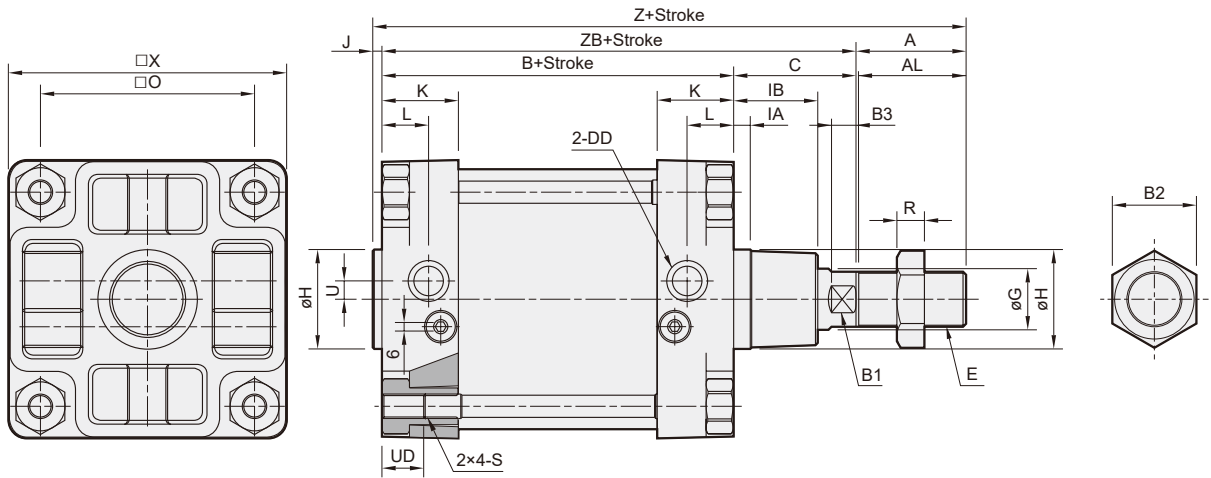
No.	Accessories	Material	Page
1	Mounting accessories LB	Carbon steel	1-37
2	Mounting accessories CA	Cast iron	1-38
3	Mounting accessories CB+PIN	Cast iron / *1	1-38, 41
4	Mounting accessories FAC/FBC	Carbon steel	1-37
5	Mounting accessories TA/TB/TC	Cast iron	1-39, 40
6	Mounting accessories SDS	Cast iron	1-39
7	Accessories Y+PIN	Cast iron / *1	1-41
8	Accessories I+PIN	Carbon steel	1-41

No.	Accessories	Material	Page
9	Locking unit MCBQV	Aluminum alloy+*2	1-88
10	Floating joint MFC	Carbon steel	8-2
11	Floating joint MFCS	Carbon steel	8-5
12	Female rod ends PHS	Carbon steel	8-6
13	Fitting PC (PISCO)	—	8-3 (Vol.1)
14	Speed controller JSC (PISCO)	—	8-15 (Vol.1)
15	Sensor switch RCA+HV*	—	8-8
16	Protective bellows kit	NBR	—

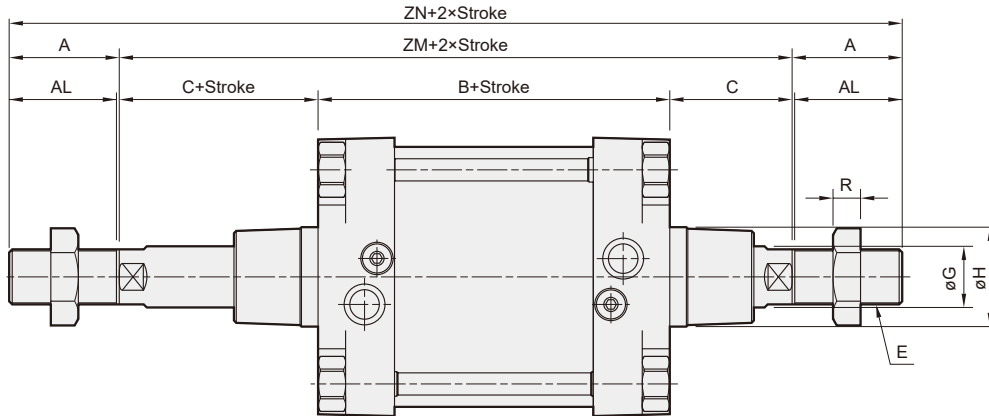
\*1. PIN material is carbon steel.

\*2. Bronze alloy.

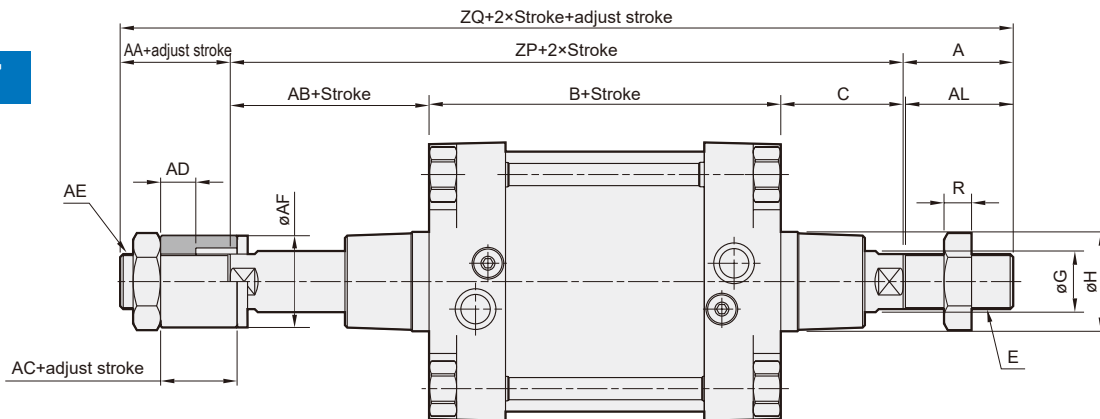
11



21



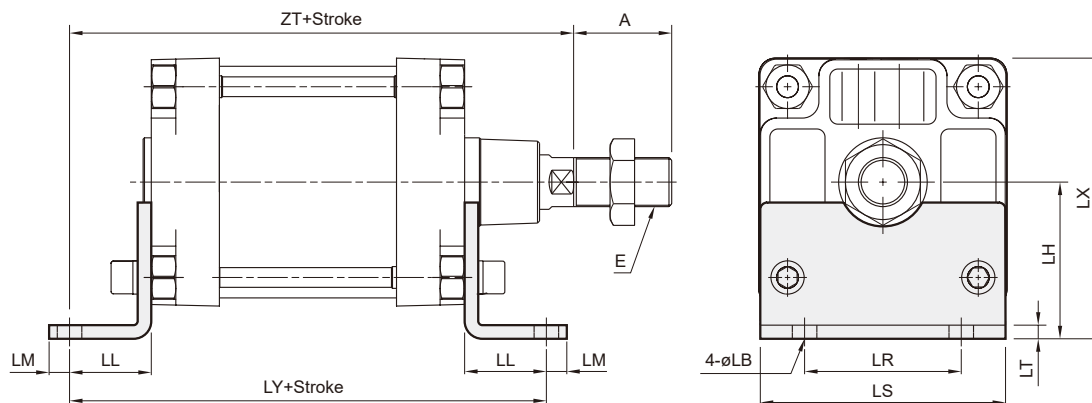
27



Code Tube I.D.	A	AA	AB	AC	AD	AE	AF	AL	B	B1	B2	B3	C	DD	E	G	H	IA	IB	J	K	L	O	R
125	54	38	55	30	18	M30×1.5	60	52	160	27	41	13	65	G1/2	M27×2	32	60e11	10	40	6	40	25	110	13.5
160	72	38	71	30	18	M30×1.5	60	70	180	36	55	16	80	G3/4	M36×2	40	65e11	10	55	6	50	30.5	140	18
200	72	40	70	30	18	M36×2.0	60	70	180	36	55	16	95	G3/4	M36×2	40	75e11	15	55	6	56	36.5	175	18

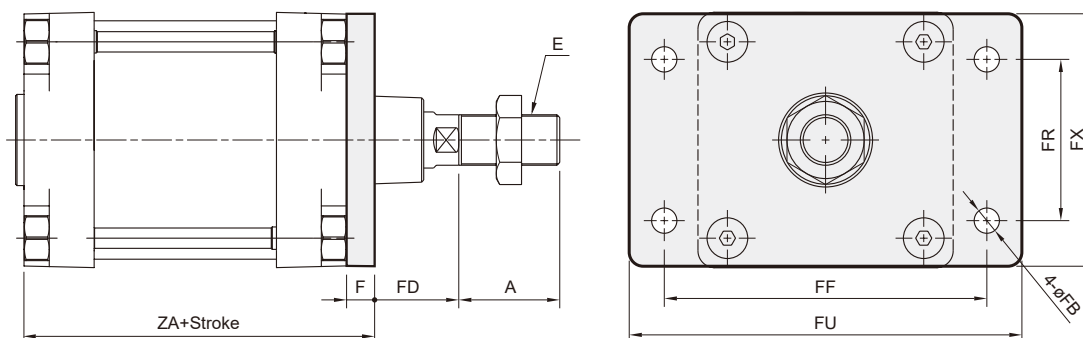
Code Tube I.D.	S	U	UD	X	Z	ZB	ZM	ZN	ZP	ZQ
125	M12×1.75	11	22	140	285	225	290	398	280	372
160	M16×2.0	12	27	182	338	260	340	484	331	441
200	M16×2.0	12	27	220	353	275	370	514	369.5	457

### LB

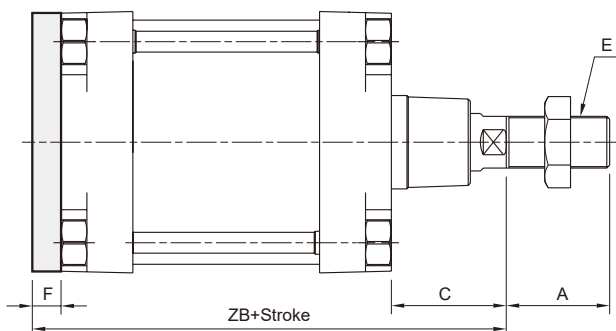


Code Tube I.D.	A	E	LB	LH	LL	LM	LR	LS	LT	LX	LY	ZT
125	54	M27×2.0	16	90	45	25	90	140	9	160	250	270
160	72	M36×2.0	18	115	60	15	115	180	10	206	300	320
200	72	M36×2.0	24	135	70	35	135	220	12	245	320	345

### FAC



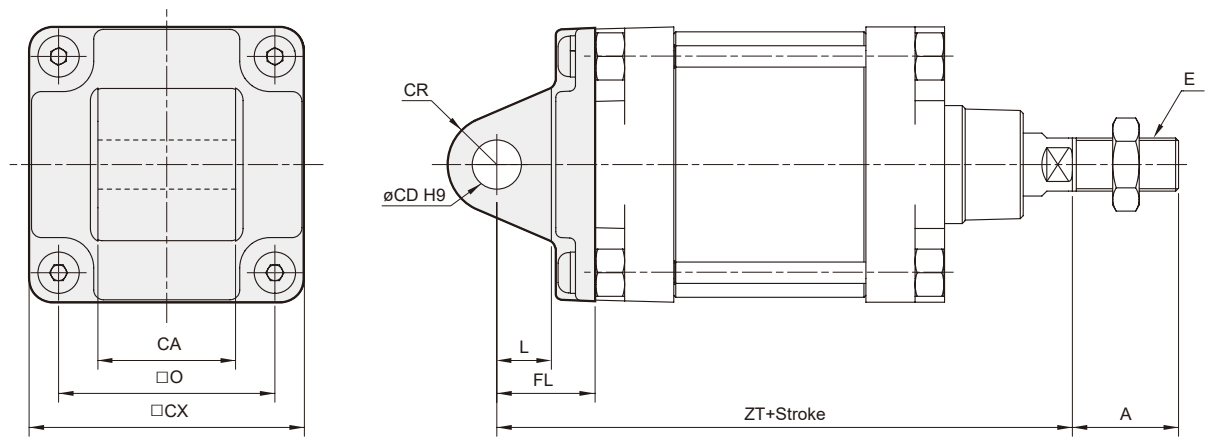
### FBC



Code Tube I.D.	A	E	F	FB	FD	FF	FR	FU	FX	ZA	ZB
125	54	M27×2.0	20	16	45	180	90	210	140	180	245
160	72	M36×2.0	20	18	60	230	115	280	180	200	280
200	72	M36×2.0	25	22	70	270	135	320	220	205	300

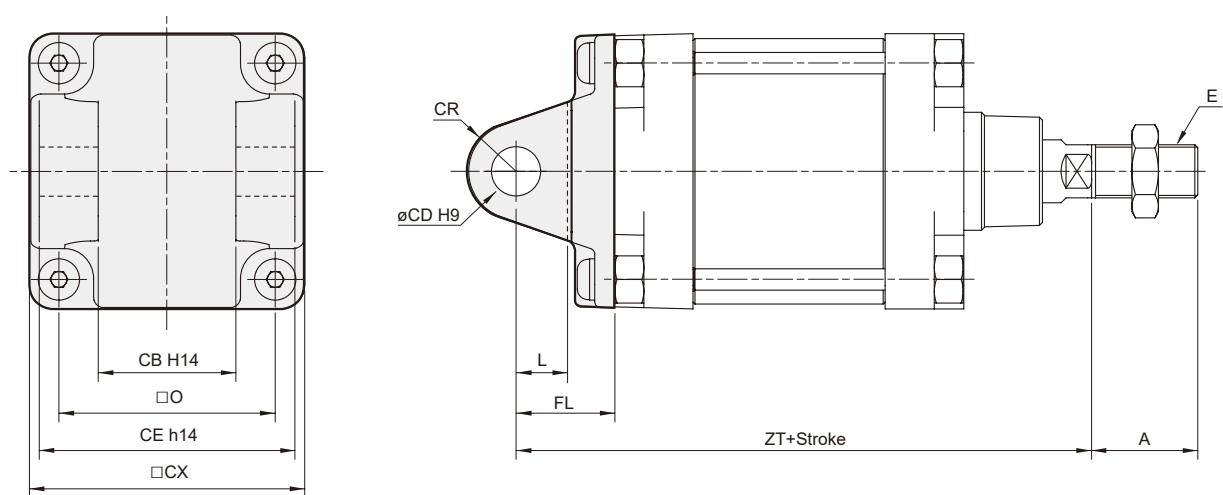


**CA**



Code Tube I.D.	A	CA	CD	CR	CX	E	FL	L	O	ZT
125	54	69.5 <sup>0</sup> <sub>-0.7</sub>	25	R25	139	M27×2.0	50	30	110	275
160	72	89.5 <sup>0</sup> <sub>-0.7</sub>	30	R30	178	M36×2.0	55	35	140	315
200	72	90 <sup>-0.5</sup> <sub>-1.2</sub>	30	R30	218	M36×2.0	60	35	175	335

**CB**

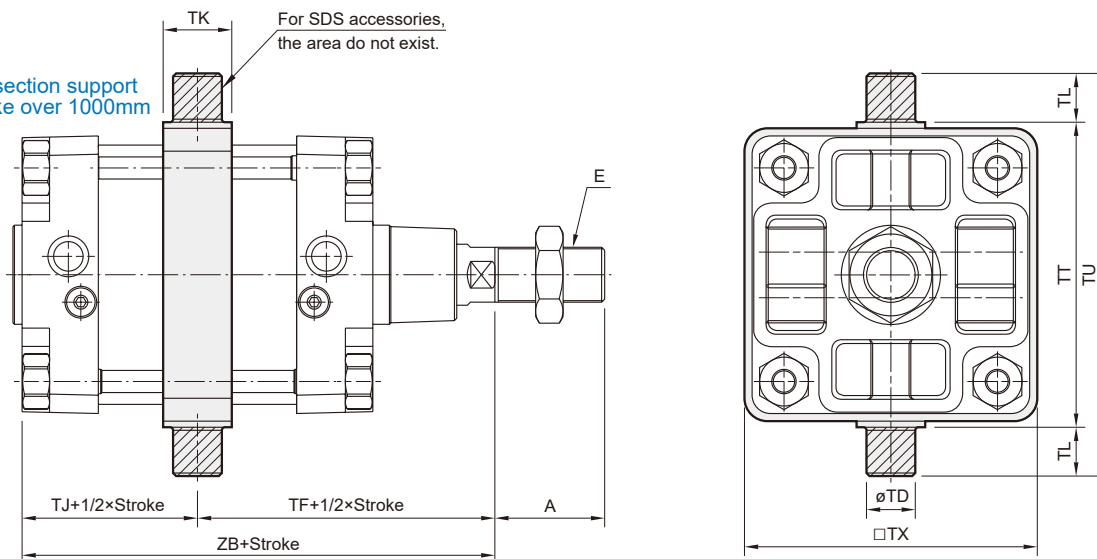


Code Tube I.D.	A	CB	CD	CE	CR	CX	E	FL	L	O	ZT
125	54	70	25	130	R25	139	M27×2.0	50	30	110	275
160	72	90	30	170	R30	178	M36×2.0	55	35	140	315
200	72	90	30	170	R30	218	M36×2.0	60	35	175	335

### TC

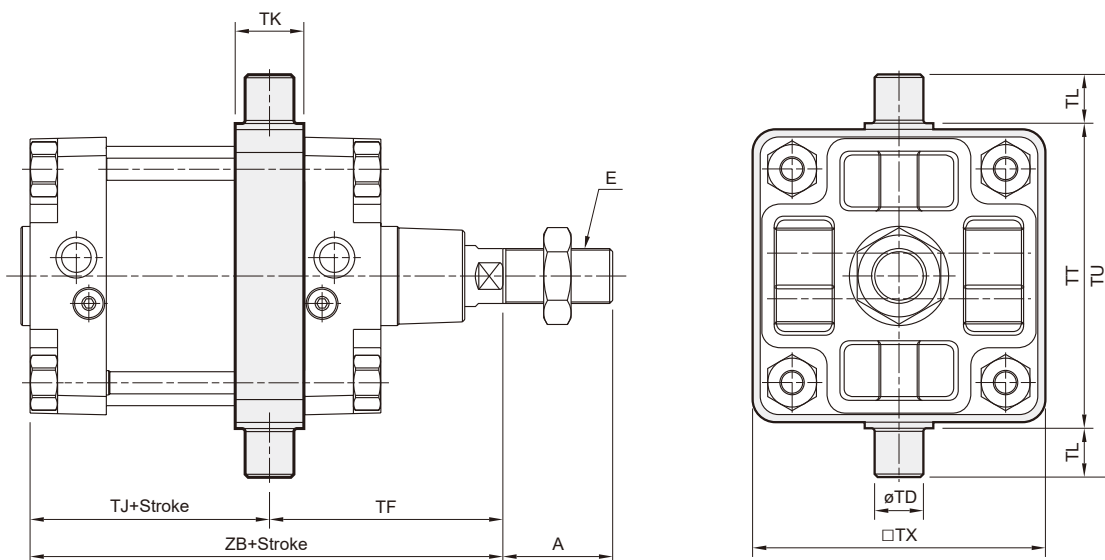
### SDS

Mid section support  
Stroke over 1000mm



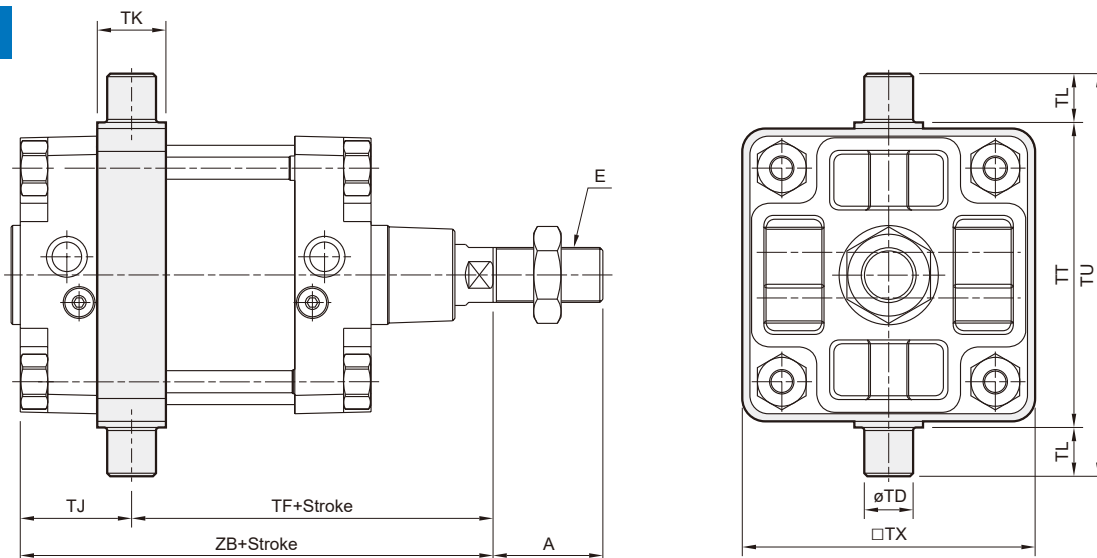
Code Tube I.D.	A	E	TD	TF	TJ	TK	TL	TT		TU	TX	ZB
								TC	SDS			
125	54	M27×2.0	25e9	145	80	40	25	160	158	210	155	225
160	72	M36×2.0	32e9	170	90	45	32	200	198	264	192	260
200	72	M36×2.0	32e9	185	90	45	32	250	250	314	240	275

### TA



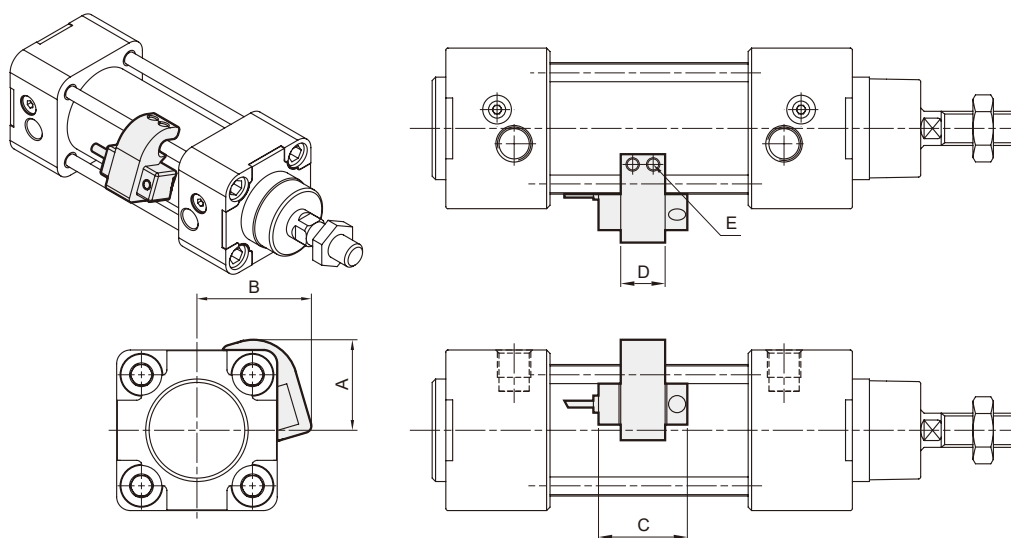
Code Tube I.D.	A	E	TD	TF	Without magnet		Magnet		TK	TL	TT	TX	TU
					TJ	ZB	TJ	ZB					
125	54	M27×2.0	25e9	125	100	225	146	271	40	25	160	155	210
160	72	M36×2.0	32e9	152.5	107.5	260	157.5	310	45	32	200	192	264
200	72	M36×2.0	32e9	173.5	101.5	275	145.5	319	45	32	250	240	275

**TB**



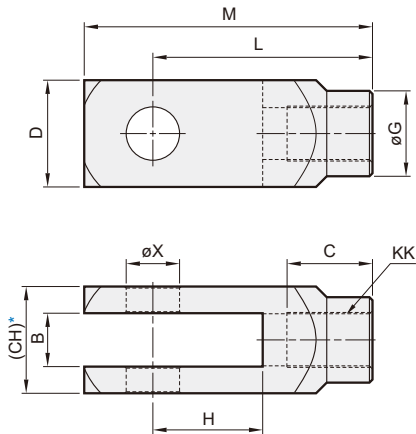
Code Tube I.D.	A	E	TD	TJ	Without magnet		Magnet		TK	TL	TT	TX	TU
					TF	ZB	TF	ZB					
125	54	M27×2.0	25e9	60	165	225	211	271	40	25	160	155	210
160	72	M36×2.0	32e9	72.5	187.5	260	237.5	310	45	32	200	192	264
200	72	M36×2.0	32e9	78.5	196.5	275	240.5	319	45	32	250	240	275

**Installation of sensor switch**

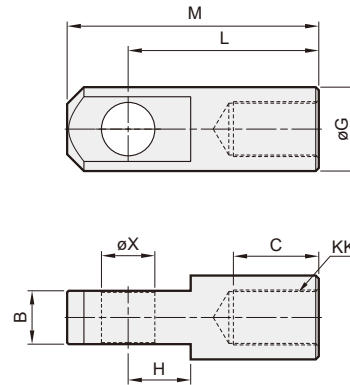


Code Tube I.D.	Sensor switch	Hold	C	D	E
MCQV-125	RCA	HV4	26	13	M4×10L
MCQV-160	RCA	PM16	26	12	M4×10L
MCQV-200	RCA	HA5	26	15	M4×16L

### Y connector



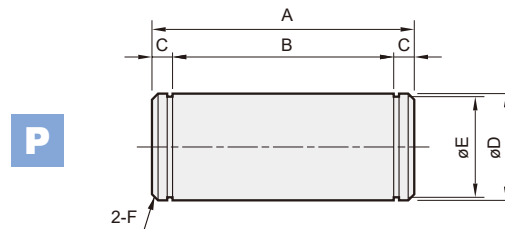
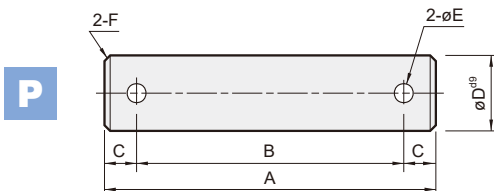
### I connector



\* Please do not take the sand casting plate as the mounting plate, because we do not machine it.  
If you have this special demand, please contact our sales representative.

Code	B		C		CH		D		G		H		KK		L		M		X <sup>F7</sup>	
	Y	I	Y	I	Y	I	Y	I	Y	I	Y	I	Y	I	Y	I	Y	I	Y	I
125	30 <sup>+0.52</sup> <sub>0</sub>	30 <sup>-0.2</sup> <sub>-0.3</sub>	56	51	55	—	55	—	48	55	54	40	M27×2.0	110	110	148	145	30 <sup>+0.04</sup> <sub>+0.02</sub>	30 <sup>+0.04</sup> <sub>+0.02</sub>	
160	35 <sup>+0.62</sup> <sub>0</sub>	35 <sup>-0.2</sup> <sub>-0.3</sub>	56	56	70	—	70	—	56	55	72	41	M36×2.0	144	125	189	165	35 <sup>+0.05</sup> <sub>+0.02</sub>	35 <sup>+0.05</sup> <sub>+0.02</sub>	
200	35 <sup>+0.62</sup> <sub>0</sub>	35 <sup>-0.2</sup> <sub>-0.3</sub>	56	56	70	—	70	—	56	55	72	41	M36×2.0	144	125	189	165	35 <sup>+0.05</sup> <sub>+0.02</sub>	35 <sup>+0.05</sup> <sub>+0.02</sub>	

### PIN



#### for $\phi 125$

Code Type	A	B	C	D <sup>H9</sup>	E	F	Split pin
CB	157	140	8.5	$\phi 25$ <sup>-0.07</sup> <sub>-0.12</sub>	5	1.5	5×36L
Y	81	64	8.5	$\phi 30$ <sup>-0.07</sup> <sub>-0.12</sub>	6.3	1.5	6.3×40L

#### for $\phi 160, \phi 200$

Code Type	A	B	C	D	E	F	Snap ring
CB	186	172	7	30 <sup>H8</sup> <sub>-0.09</sub>	28.6 <sup>0</sup> <sub>-0.21</sub>	2	STW-30
Y	86	72	7	35 <sup>H7</sup> <sub>-0.03</sub>	33 <sup>0</sup> <sub>-0.25</sub>	2	STW-35