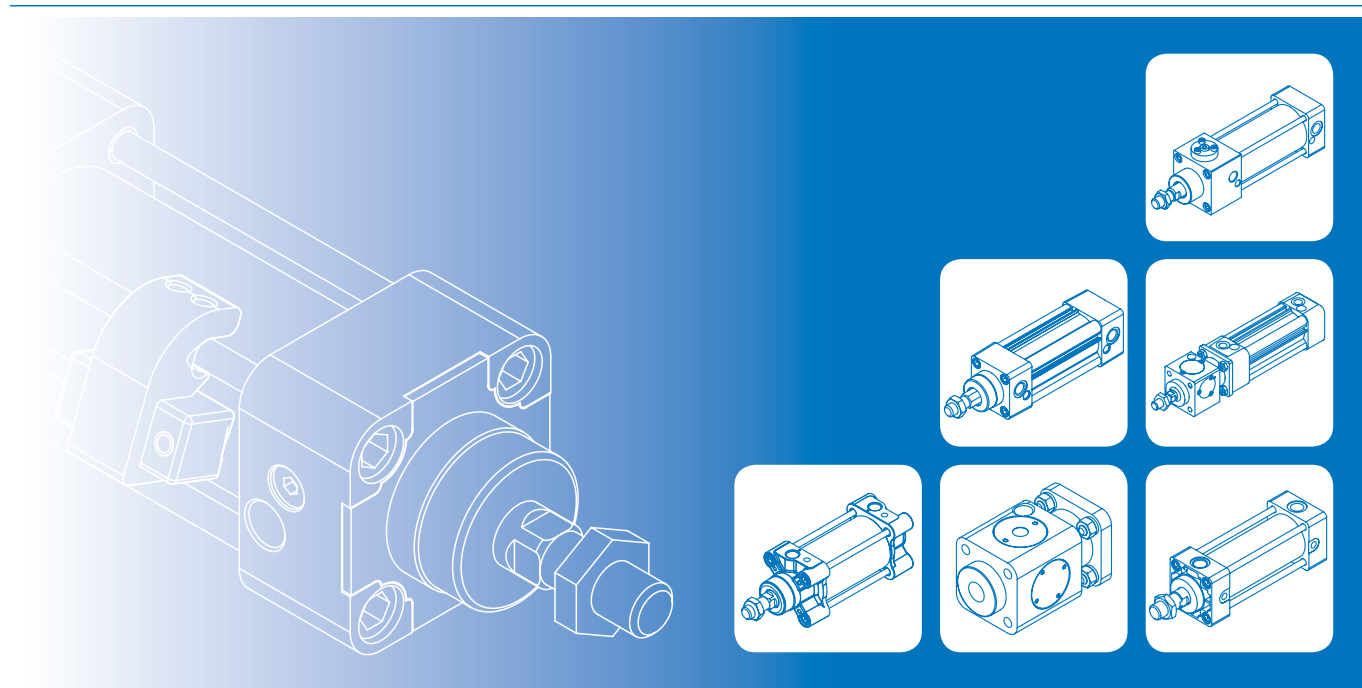


STANDARD CYLINDER



STANDARD CYLINDER

MCQA	ø40~ø200.....	1-2
MCQA-AH	ø40~ø150.....	1-21
MCQN	ø1 1/2"~ø4".....	1-24

ISO 15552 STANDARD CYLINDER

MCQV2	ø32~ø100.....	1-30
MCQV	ø125~ø200.....	1-30
MCQV3	ø63 Cushion Air (Automatic) New	1-48
MCQVS	ø32~ø100 Stainless steel New	1-54

END LOCK CYLINDER

MCQV2L	ø63, ø80.....	1-65
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ISO 15552 STANDARD PROFILE CYLINDER

F MCQI2	ø32~ø100.....	1-69
MCQI3	ø63 Cushion Air (Automatic) New	1-80
MCKQI2	ø32, ø40 No Rotating.....	1-86

ROD LOCKING CYLINDER

MCB*	ø20~ø125.....	1-88
MCB	ø20~ø125.....	1-92

F Fast delivery (11 style)

Our goal is to achieve 3-day lead time, if there is stock of component set. For more information, please go to our **MINDMAN website** (www.mindman.com.tw) and click on the "Component Set Inventory" button.

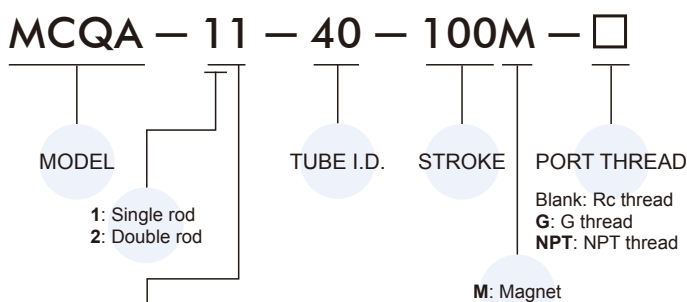


Table for standard stroke

Tube I.D.	Stroke (mm)
ø40	50,75,100,125,150,175,200,250,300,350,400,450,500
ø50,63	↑ 600
ø80,100	↑ 600,700
ø125,150	↑ 600,700,800,900,1000
ø200	↑ 600,700,800,900,1000,1500

- Stroke out of specification is also available.
- Please consult us if stroke out of specification.

Order example



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 distance(mm)" at order list)

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

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.

■ Non standard type

Custom cylinders are available as are non standard strokes, rod extensions and special rod threads.

■ Cylinder mountings

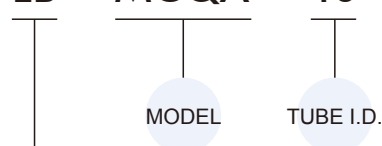
Available with comprehensive internationally recognised range of fixed and flexible mountings.

Specification

Model	MCQA				
Tube I.D. (mm)	40,50,63	80,100	125	150	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	HV2	HV4	PM14	PM16	HA5

Mounting accessories

LB — MCQA — 40



MOUNTING TYPE

	LB
	CA
	CB
	FA
	FB
	FAC
	FBC
	TA
	TB
	TC
	Y
	I

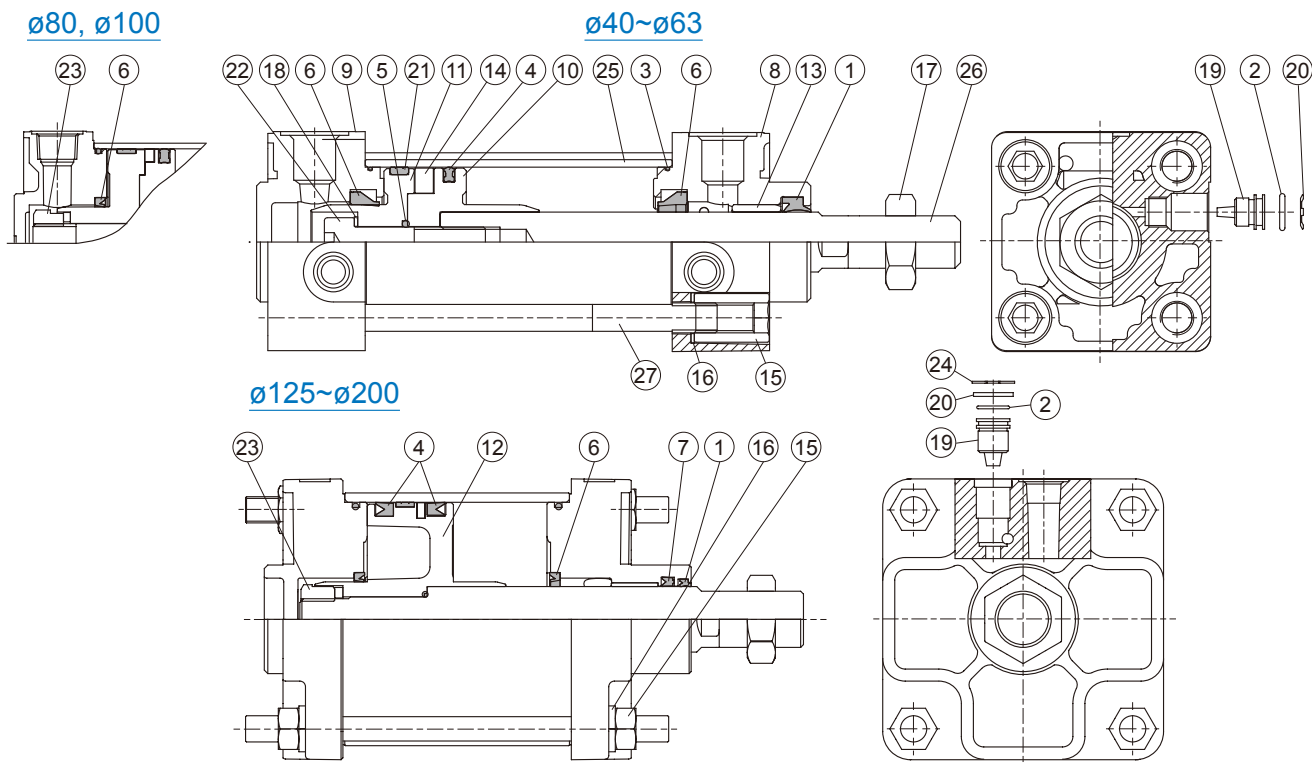
Only for ø40~ø63

MCQA-11 Inside structure & Part list

STANDARD CYLINDER



Single rod 11 type



No.	Part name	Material	Q'y	Component parts (inclusion)		Repair kits (inclusion)	Note
				ø40~ø100	ø125~ø200		
1	Rod packing	NBR	1	●	●	●	
2	O-ring	NBR	2	●	●	●	
3	O-ring	NBR	2	●	●	●	
4	Piston packing	NBR	1 or 2	●	●	●	ø125~ø200 (Q'y=2)
5	O-ring	NBR	1	●	●	●	
6	Cushion packing	NBR	2	●	●	●	Repair kits ø40~ø80 (inclusion)
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	Tie rod nut	Carbon steel	8	●	●		
16	Tie rod washer	Carbon steel	8	●	●		
17	Hex nut	Carbon steel	1	●	●		
18	Washer	Carbon steel	1	●	●		
19	Needle valve	Copper alloy	2	●	●		
20	Needle valve washer	*1	2	●	●		
21	Wear ring	Resin	1	●	●		
22	Bolt	Carbon steel	1	●			for ø40~ø63
23	Piston nut	Carbon steel	1		●		for ø80~ø200
24	Snap ring	Carbon steel	2		●		
25	Cylinder tube	Aluminum alloy	1				
26	Piston rod *2	Carbon steel	1				
27	Tie rod	Carbon steel	4				

*1. ø40~ø100: Spring steel, ø125~ø200: Carbon steel

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

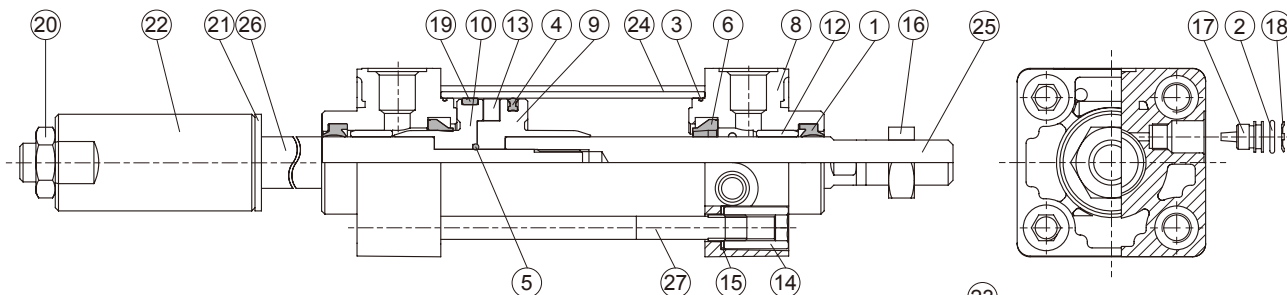
MCQA-2* Inside structure & Part list

STANDARD CYLINDER

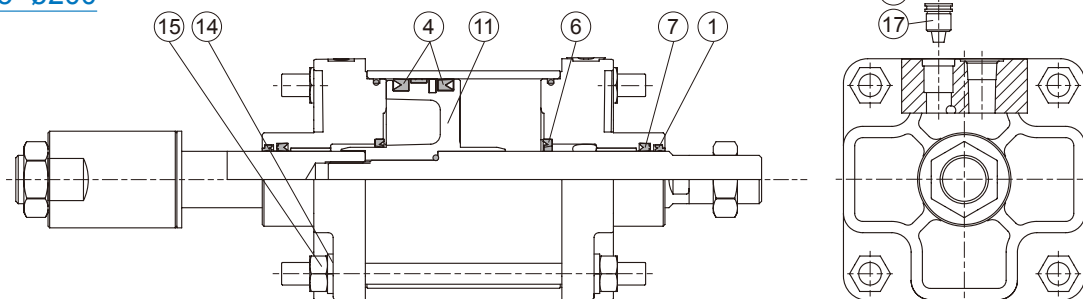


Double rod 21 / 27 type

A: $\phi 40 \sim \phi 100$



B: $\phi 125 \sim \phi 200$



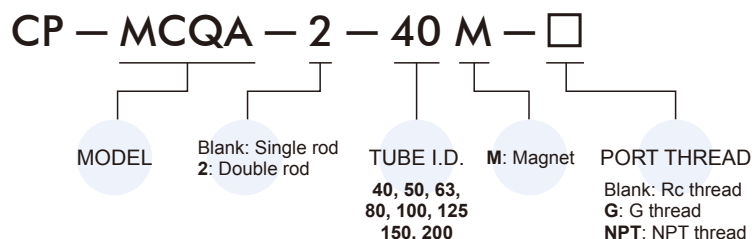
No.	21 type		27 type		Part name	Material	Q'y	Component parts (inclusion)		Repair kits (inclusion)		Note
	A	B	A	B				$\phi 40 \sim \phi 100$	$\phi 125 \sim \phi 200$	$\phi 40 \sim \phi 100$	$\phi 125 \sim \phi 200$	
1	●	●	●	●	Rod packing	NBR	2	●	●	●	●	
2	●	●	●	●	O-ring	NBR	2	●	●	●	●	
3	●	●	●	●	O-ring	NBR	2	●	●	●	●	
4	●	●	●	●	Piston packing	NBR	1 or 2	●	●	●	●	$\phi 125 \sim \phi 200$ (Q'y=2)
5	●	●	●	●	O-ring	NBR	1	●	●	●	●	
6	●	●	●	●	Cushion packing	NBR	2	●	●	●	●	Repair kits $\phi 40 \sim \phi 80$ (inclusion)
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	●	●	●	●	Tie rod nut	Carbon steel	8	●	●	●	●	
15	●	●	●	●	Tie rod washer	Carbon steel	8	●	●	●	●	
16	●	●	●	●	Screw	Carbon steel	1	●	●	●	●	
17	●	●	●	●	Needle valve	Copper alloy	2	●	●	●	●	
18	●	●	●	●	Needle valve washer	*1	2	●	●	●	●	
19	●	●	●	●	Wear ring	Resin	1	●	●	●	●	
20	●	●	●	●	Hex nut	Carbon steel	1	●	●	●	●	
21	●	●	●	●	Gasket	PU	1	●	●	●	●	
22	●	●	●	●	Adjustable nut	Carbon steel	1	●	●	●	●	
23	●	●	●	●	Snap ring	Carbon steel	2	●	●	●	●	
24	●	●	●	●	Cylinder tube	Aluminum alloy	1	●	●	●	●	
25	●	●	●	●	Piston rod #1 *2	Carbon steel	1	●	●	●	●	
26	●	●	●	●	Piston rod #2 *2	Carbon steel	1	●	●	●	●	
27	●	●	●	●	Tie rod	Carbon steel	4	●	●	●	●	

A: $\phi 40 \sim \phi 100$, B: $\phi 125 \sim \phi 200$

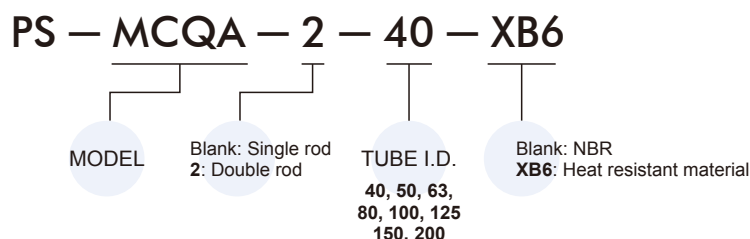
*1. $\phi 40 \sim \phi 100$: Spring steel, $\phi 125 \sim \phi 200$: Carbon steel

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

Order example of component parts



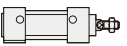
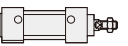
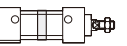
Order example of repair kits



Cylinder & accessories weight

Cylinder weight

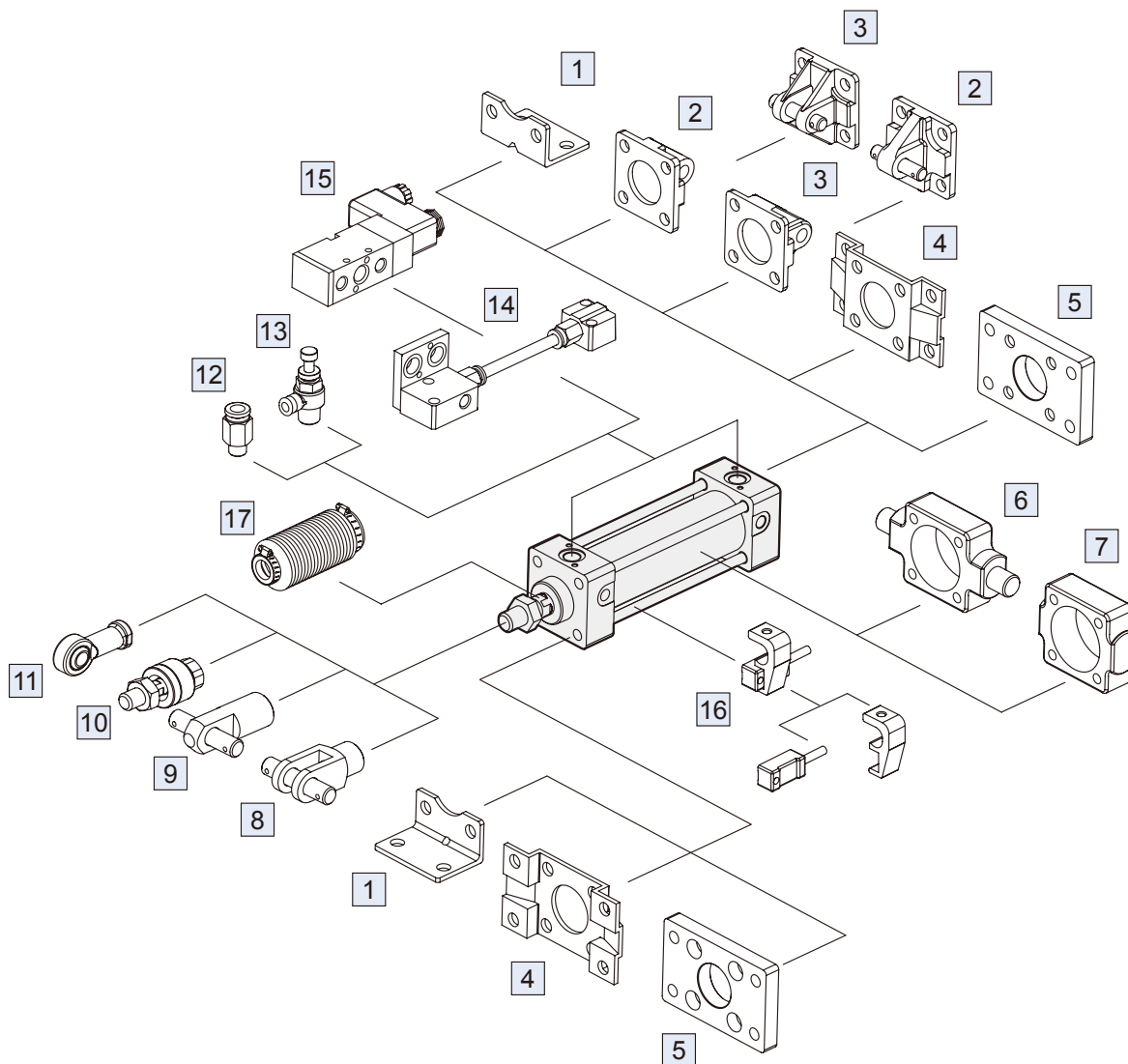
Unit: kg

Model	Basic weight MCQA-11	Basic weight (magnet) MCQA-11	Stroke 25 mm MCQA-11
Tube I.D.			
ø40	0.76	0.772	0.09
ø50	1.07	1.087	0.12
ø63	1.46	1.480	0.13
ø80	2.71	2.737	0.22
ø100	3.97	4.005	0.28
ø125	6.99	7.033	0.46
ø150	10.33	10.410	0.55
ø200	19.00	19.144	0.65

Accessories weight

Unit: kg

Model	LB	CA	CB	FA/FB	FAC/FBC	TA/TB/TC	SDS	Y	I	Pin		Rod nut
										CA/CB	Y / I	
Tube I.D.												
ø40	0.213	0.297	0.295	0.162	0.482	0.420	0.262	0.200	0.158	0.025	0.043	0.020
ø50	0.237	0.411	0.407	0.184	0.584	0.455	0.305	0.285	0.222	0.043	0.043	0.030
ø63	0.446	0.630	0.650	0.346	1.012	0.815	0.572	0.285	0.222	0.097	0.043	0.030
ø80	0.951	1.192	1.178	—	1.922	1.600	1.112	0.518	0.485	0.183	0.134	0.050
ø100	1.212	1.820	1.822	—	2.490	2.380	1.787	0.746	0.670	0.308	0.183	0.060
ø125	1.321	3.412	4.059	—	4.224	3.940	3.312	1.680	1.070	0.372	0.211	0.082
ø150	2.638	5.623	5.939	—	6.437	5.300	4.392	1.630	1.730	0.571	0.372	0.082
ø200	5.083	11.456	11.863	—	13.447	14.720	10.866	3.340	3.010	0.988	0.988	0.501

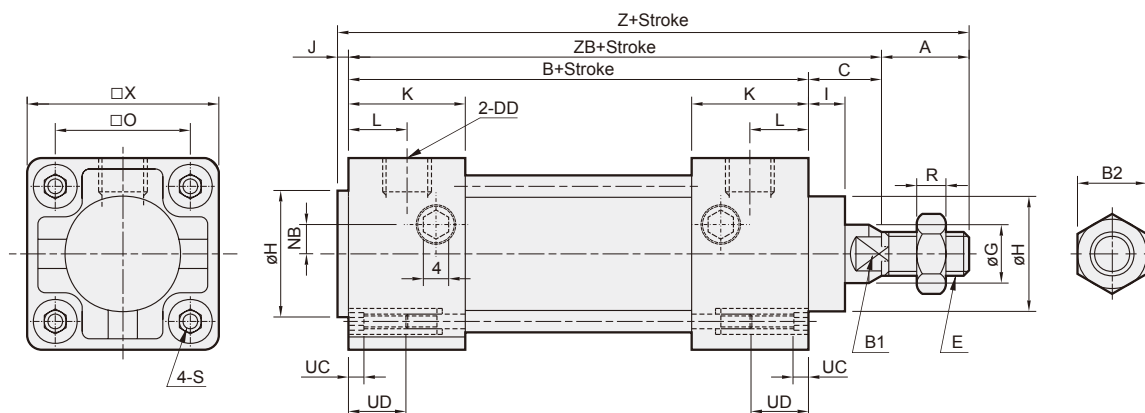


No.	Accessories	Material	Page
1	Mounting accessories LB	Carbon steel	1-8,15
2	Mounting accessories CA+PIN	Cast iron / *	1-11,16,19
3	Mounting accessories CB+PIN	Cast iron / *	1-11,16,19
4	Mounting accessories FA/FB	Carbon steel	1-9
5	Mounting accessories FAC/FBC	Carbon steel	1-10,15
6	Mounting accessories TA/TB/TC	Cast iron	1-12,13,17,18
7	Mounting accessories SDS	Cast iron	1-13,18
8	Accessories Y+PIN	Cast iron / *	1-19
9	Accessories I+PIN	Carbon steel	1-19

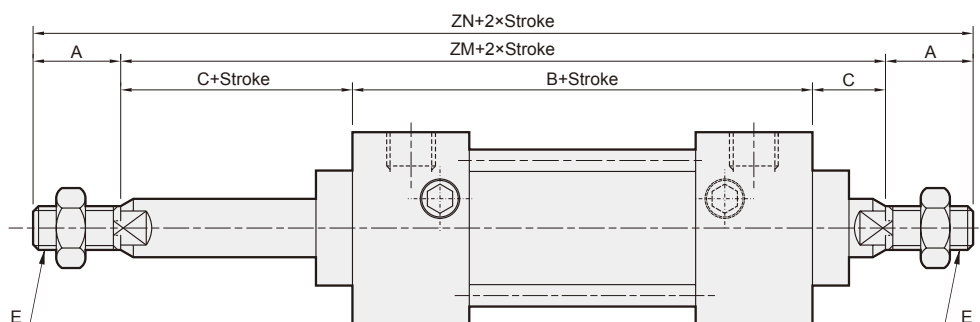
No.	Accessories	Material	Page
10	Floating joint MFC	Carbon steel	8-2
11	Female rod ends PHS	Carbon steel	8-5
12	Fitting PC (PISCO)	—	8-3 (Vol.1)
13	Speed controller JSC (PISCO)	—	8-15 (Vol.1)
14	Solenoid valve link seats VR/VH	Aluminum alloy	1-21
15	Solenoid valve MVSC-260/300	—	1-10,1-13 (Vol.1)
16	Sensor switch RCA+HV*	—	8-8
17	Protective bellows kit	NBR	—

* PIN material is carbon steel.

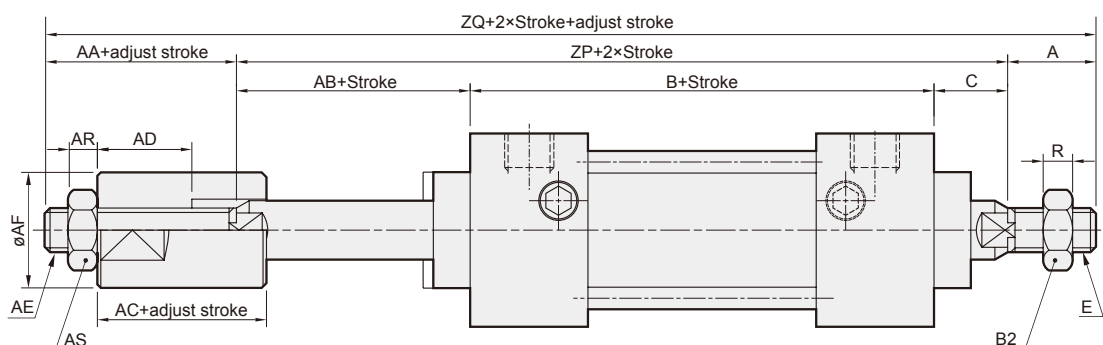
11



21

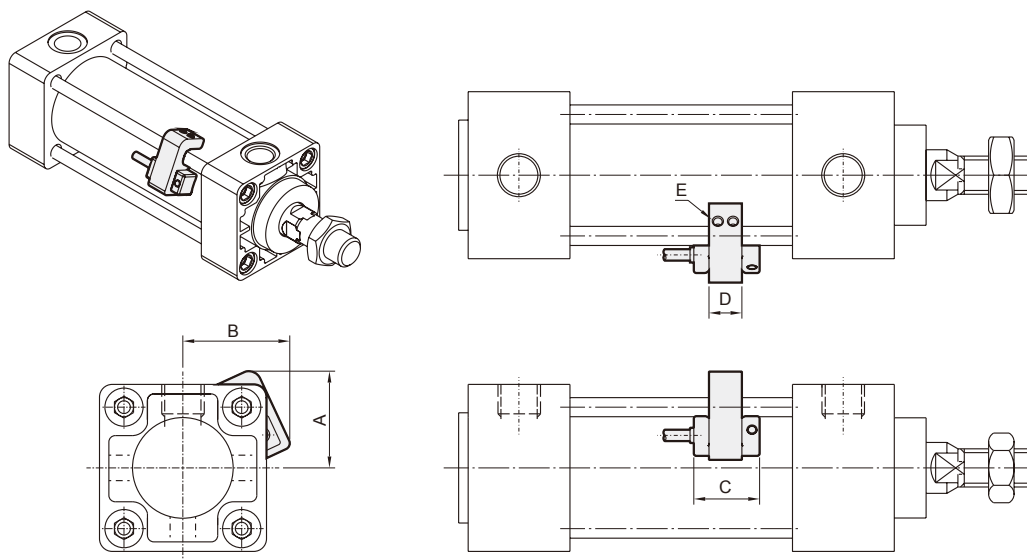


27



Code Tube I.D.	A	AA	AB	AC	AD	AE	AF	AR	AS	B	B1	B2	C	DD	E	G	H	I	J	K	L	NB	O	P
40	30	21	18	12	7	M12×1.25	30	7	19	84	14	22	21	Rc1/4	M14×1.5	16	32	11	3	26	13	8	40.5	8
50	35	23	18	15	10	M16×1.5	40	8	24	90	17	26	23	Rc3/8	M18×1.5	20	40	11	3	28	14	0	48	11
63	35	23	18	15	10	M16×1.5	40	8	24	98	17	26	23	Rc3/8	M18×1.5	20	40	11	3	30	15	0	59	11
80	40	33	24	20	14	M22×1.5	50	13	32	116	22	32	31	Rc1/2	M22×1.5	25	45	15	4	34	17	0	74	13
100	40	33	24	20	14	M22×1.5	50	13	32	126	27	36	32	Rc1/2	M26×1.5	30	52	15	5	37	18.5	0	90	14

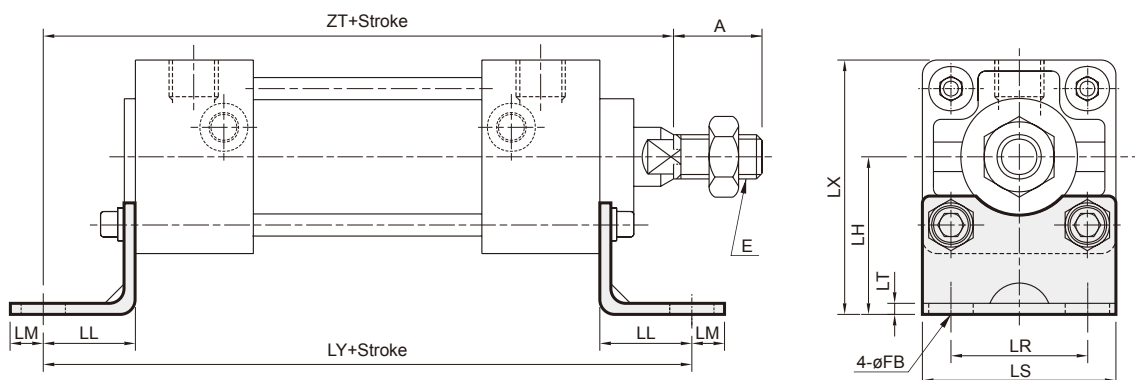
Code Tube I.D.	S	UC	UD	X	Z	ZB	ZM	ZN	ZP	ZQ
40	M8×1.25	4	12	58	138	105	126	186	123	174
50	M8×1.25	4	12	66	151	113	136	206	131	189
63	M8×1.25	4	12	80	159	121	144	214	139	197
80	M12×1.75	4	15	100	191	147	178	258	171	244
100	M12×1.75	4	15	118	203	158	190	270	182	255



Code Tube I.D.	Sensor switch	Hold	A	B	C	D	E
40	RCA	HV2	36	41	26	13	M4×10L
50	RCA	HV2	38	43	26	13	M4×10L
63	RCA	HV2	46	49	26	13	M4×10L
80	RCA	HV4	52	55	26	13	M4×10L
100	RCA	HV4	59	62	26	13	M4×10L
125	RCA	PM14	—	—	26	12	M4×10L
150	RCA	PM16	—	—	26	12	M4×10L
200	RCA	HA5	—	—	26	15	M4×10L

■ Mounting accessories

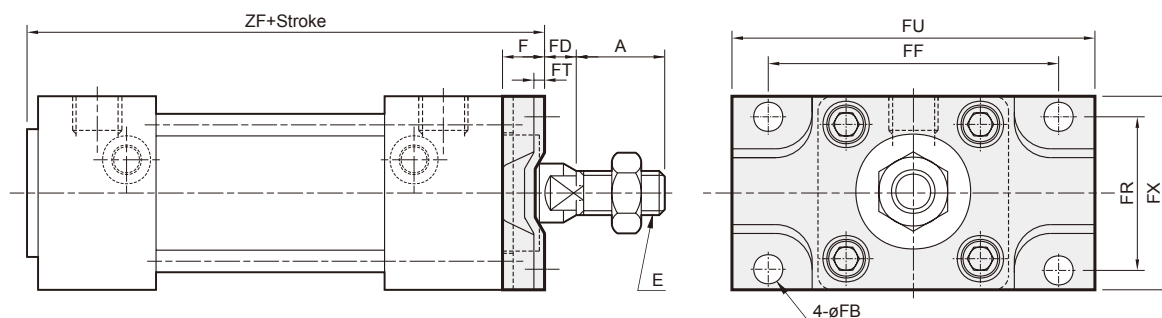
LB



Code Tube I.D.	A	E	FB	LH	LL	LM	LR	LS	LT	LX	LY	ZT
40	30	M14×1.5	9	40	27	13	42	58	3.2	69	138	132
50	35	M18×1.5	9	45	27	13	50	66	3.2	78	144	140
63	35	M18×1.5	11.5	50	34	16	59	80	4.5	90	166	155
80	40	M22×1.5	14	65	44	16	76	100	6	115	204	191
100	40	M26×1.5	14	75	43	17	92	118	6	134	212	201

FA

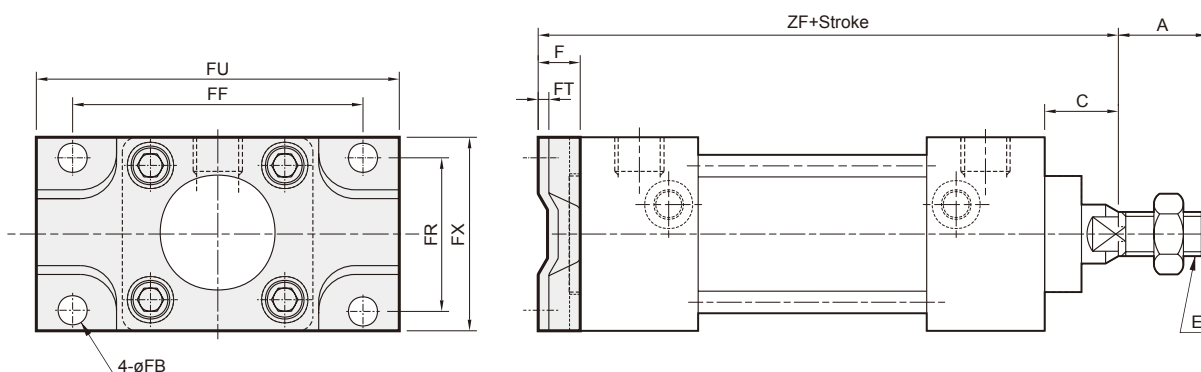
Note. This type is applied to the cylinder which the stroke is within 500mm.
If the stroke is over 500mm, we advise to choose the **FAC** type.



Code Tube I.D.	A	E	F	FB	FD	FF	FR	FT	FU	FX	ZF
40	30	M14×1.5	12	9	9	80	42	3.2	100	58	99
50	35	M18×1.5	12	9	11	90	50	3.2	110	66	105
63	35	M18×1.5	15	11.5	8	105	59	4.5	130	80	116

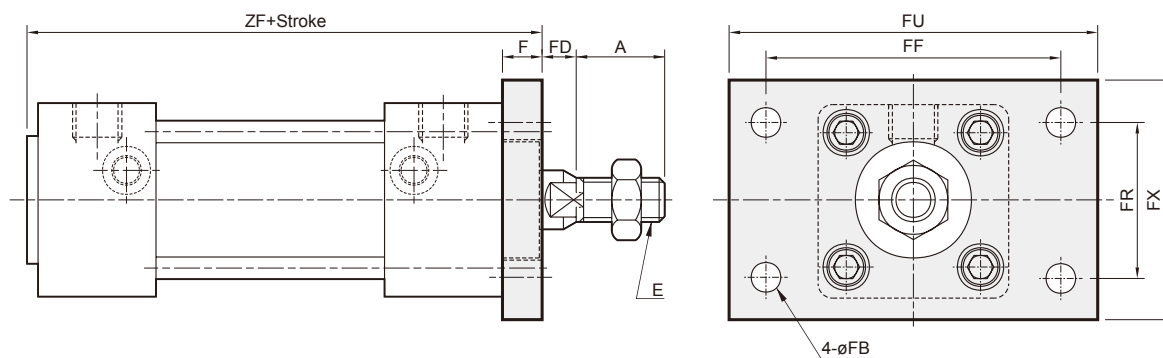
FB

Note. This type is applied to the cylinder which the stroke is within 500mm.
If the stroke is over 500mm, we advise to choose the **FBC** type.



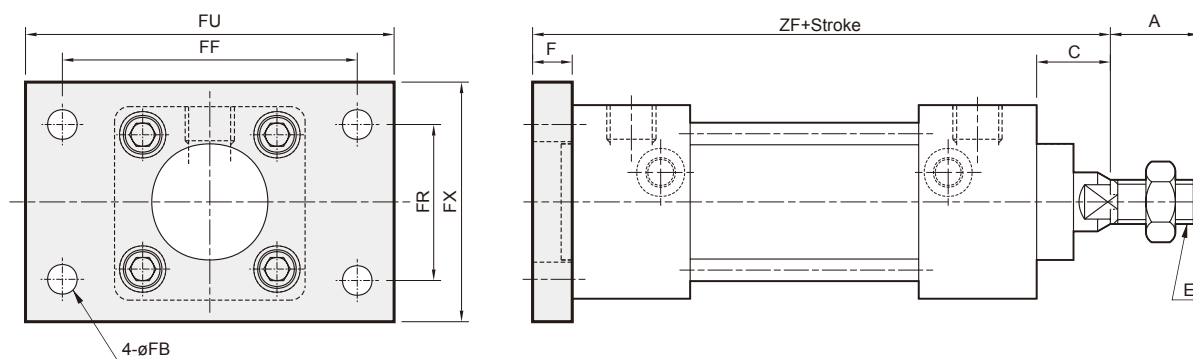
Code Tube I.D.	A	E	C	F	FB	FF	FR	FT	FU	FX	ZF
40	30	M14×1.5	21	12	9	80	42	3.2	100	58	117
50	35	M18×1.5	23	12	9	90	50	3.2	110	66	125
63	35	M18×1.5	23	15	11.5	105	59	4.5	130	80	136

FAC



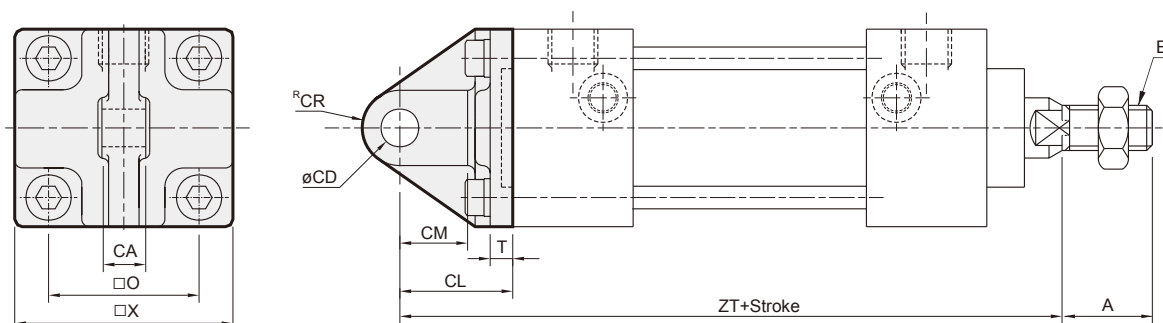
Code Tube I.D.	A	E	F	FB	FD	FF	FR	FU	FX	ZF
40	30	M14×1.5	12	9	9	80	42	100	65	99
50	35	M18×1.5	12	9	11	90	50	110	73	105
63	35	M18×1.5	15	11.5	8	105	59	130	84	116
80	40	M22×1.5	18	14	13	130	76	160	108	138
100	40	M26×1.5	18	14	14	150	92	180	124	149

FBC



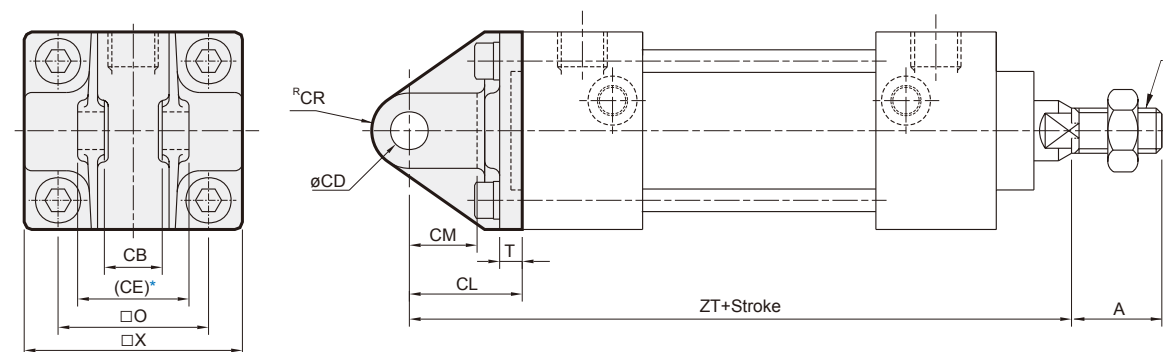
Code Tube I.D.	A	C	E	F	FB	FF	FR	FU	FX	ZF
40	30	21	M14×1.5	12	9	80	42	100	65	117
50	35	23	M18×1.5	12	9	90	50	110	73	125
63	35	23	M18×1.5	15	11.5	105	59	130	84	136
80	40	31	M22×1.5	18	14	130	76	160	108	165
100	40	32	M26×1.5	18	14	150	92	180	124	176

CA



Code Tube I.D.	A	CA	CD	CL	CM	CR	E	O	T	X	ZT
40	30	15 ^{-0.1 -0.3}	10 ^{H10}	30	18	10	M14×1.5	40.5	5	58	135
50	35	18 ^{-0.1 -0.3}	12 ^{H10}	35	22	12	M18×1.5	48	5	66	148
63	35	25 ^{-0.1 -0.3}	16 ^{H10}	40	27	16	M18×1.5	59	5	80	161
80	40	31.5 ^{-0.1 -0.3}	20 ^{H10}	48	30	20	M22×1.5	74	7.5	100	195
100	40	35.5 ^{-0.1 -0.3}	25 ^{H10}	58	38	25	M26×1.5	90	7.5	118	216

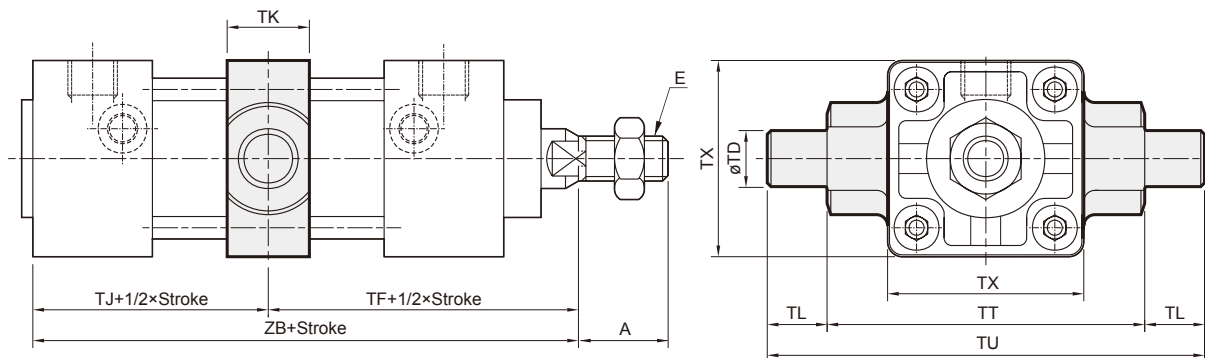
CB



* 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.

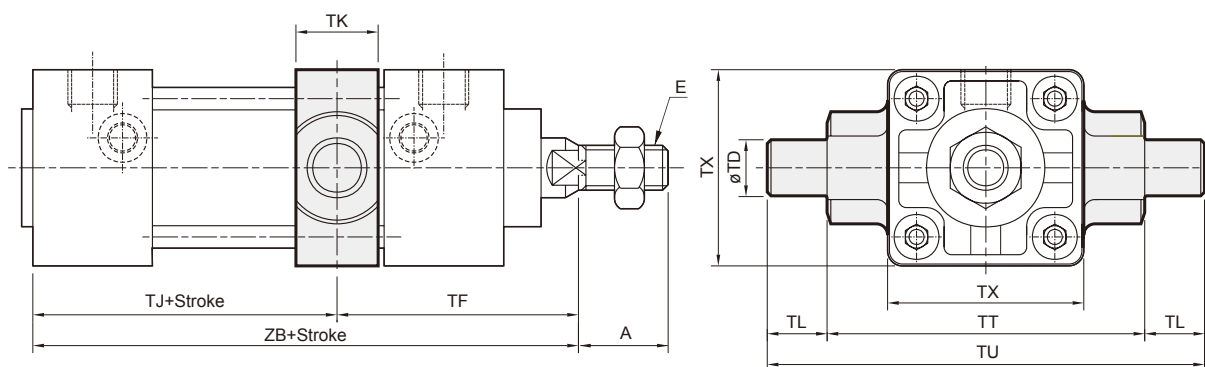
Code Tube I.D.	A	CB	CD	CE	CL	CM	CR	E	O	T	X	ZT
40	30	15 ^{+0.3 +0.1}	10 ^{H10}	29.5	30	18	10	M14×1.5	40.5	5	58	135
50	35	18 ^{+0.3 +0.1}	12 ^{H10}	38	35	22	12	M18×1.5	48	5	66	148
63	35	25 ^{+0.3 +0.1}	16 ^{H10}	49	40	27	16	M18×1.5	59	5	80	161
80	40	31.5 ^{+0.3 +0.1}	20 ^{H10}	59	48	30	20	M22×1.5	74	7.5	100	195
100	40	35.5 ^{+0.3 +0.1}	25 ^{H10}	64	58	38	25	M26×1.5	90	7.5	118	216

TC



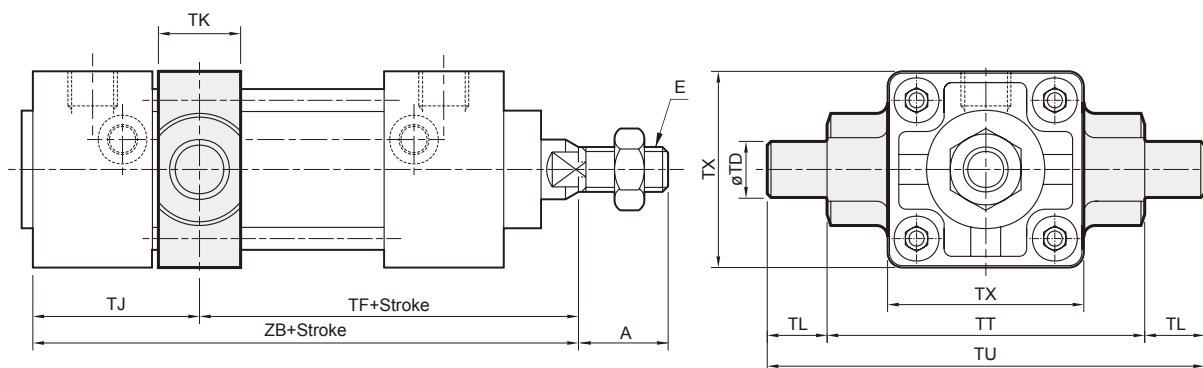
Code Tube I.D.	A	E	TD	TF	TJ	TK	TL	TT	TU	TX	ZB
40	30	M14×1.5	15 ^{es}	63	42	22	16	85	117	58	105
50	35	M18×1.5	15 ^{es}	68	45	22	16	95	127	67	113
63	35	M18×1.5	18 ^{es}	72	49	28	19	110	148	82	121
80	40	M22×1.5	25 ^{es}	89	58	34	26	140	192	102	147
100	40	M26×1.5	25 ^{es}	95	63	40	26	162	214	122	158

TA



Code Tube I.D.	A	E	TD	TF	Without magnet		Magnet		TK	TL	TT	TU	TX
					TJ	ZB	TJ	ZB					
40	30	M14×1.5	15 ^{es}	60	45	105	75	135	22	16	85	117	58
50	35	M18×1.5	15 ^{es}	64	49	113	79	143	22	16	95	127	67
63	35	M18×1.5	18 ^{es}	69	52	121	82	151	28	19	110	148	82
80	40	M22×1.5	25 ^{es}	85	62	147	102	187	34	26	140	192	102
100	40	M26×1.5	25 ^{es}	92	66	158	106	198	40	26	162	214	122

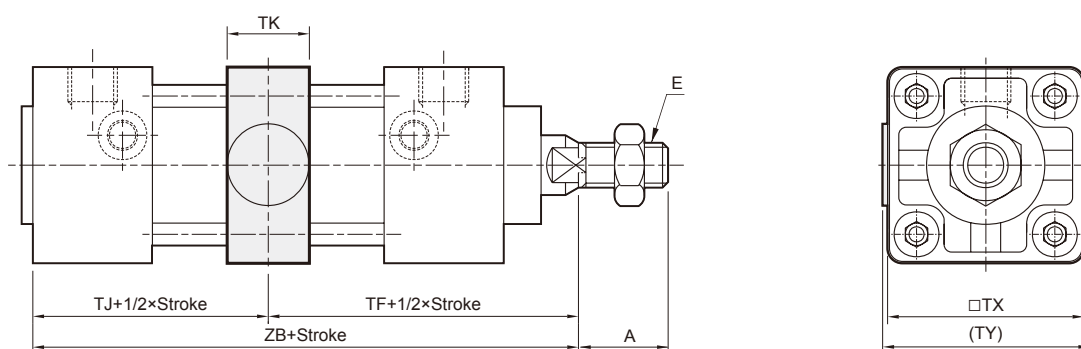
TB



Code Tube I.D.	A	E	TD	Without magnet		Magnet		TJ	TK	TL	TT	TU	TX
				TF	ZB	TF	ZB						
40	30	M14×1.5	15 ^{±0.8}	66	105	96	135	39	22	16	85	117	58
50	35	M18×1.5	15 ^{±0.8}	72	113	102	143	41	22	16	95	127	67
63	35	M18×1.5	18 ^{±0.8}	75	121	105	151	46	28	19	110	148	82
80	40	M22×1.5	25 ^{±0.8}	93	147	133	187	54	34	26	140	192	102
100	40	M26×1.5	25 ^{±0.8}	98	158	138	198	60	40	26	162	214	122

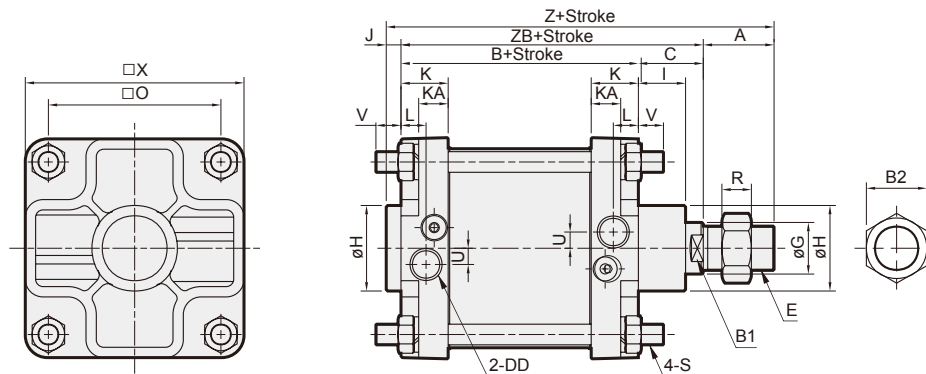
SDS

Stroke over 1000mm



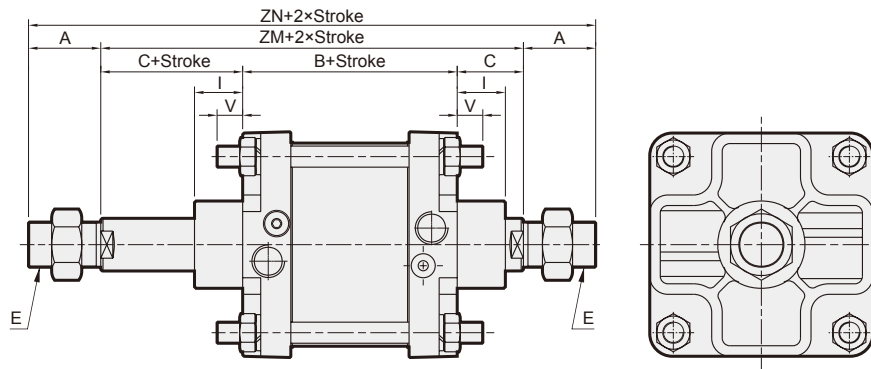
Code Tube I.D.	A	E	TF	TJ	TK	TX	TY	ZB
40	30	M14×1.5	63	42	22	58	60	105
50	35	M18×1.5	68	45	22	67	69	113
63	35	M18×1.5	72	49	28	82	84	121
80	40	M22×1.5	89	58	34	102	110	147
100	40	M26×1.5	95	63	40	122	132	158

11



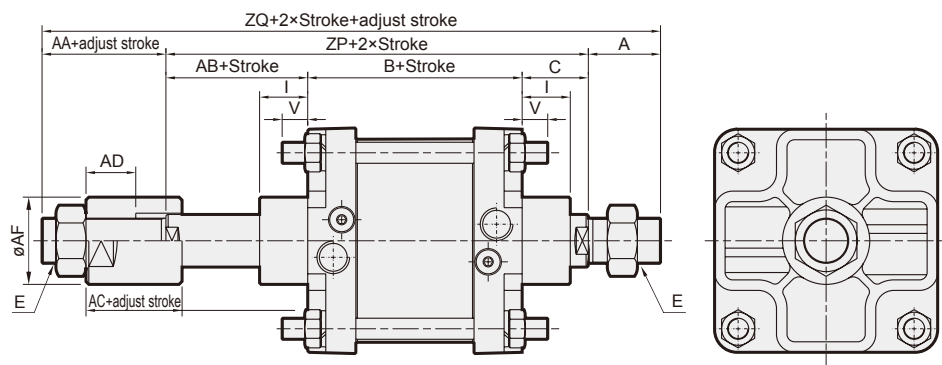
Code Tube I.D.	A	B	B1	B2	C	DD	E	G	H	I	J	K	KA	L	O	R	S	U	V	X	Z	ZB
125	45	136	30	41	47	Rc1/2	M30×1.5	35	58	32	10	32	20	17	117	15	M14×1.5	11	20	150	238	183
150	50	153	36	41	47	Rc1/2	M30×1.5	40	60	32	8	40.5	25	24.5	134	15	M16×1.5	12	26	175	258	200
200	63	154	46	70	67	Rc3/4	M45×1.5	50	74	35	8	42	25	24	182	27	M20×1.5	12	18	226	292	221

21



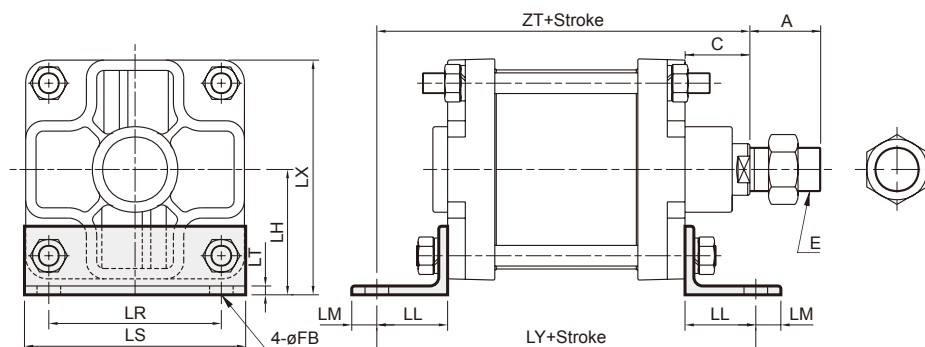
Code Tube I.D.	A	B	C	E	I	V	ZM	ZN
125	45	136	47	M30×1.5	32	20	230	320
150	50	153	47	M30×1.5	32	26	247	347
200	63	154	67	M45×1.5	35	18	288	414

27



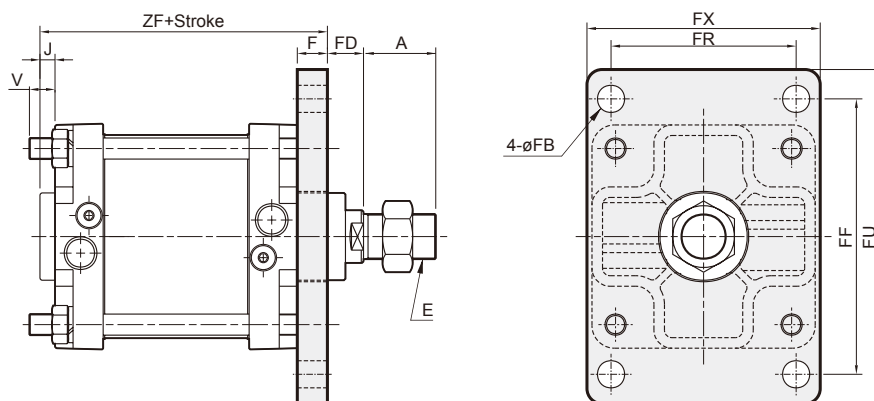
Code Tube I.D.	A	AA	AB	AC	AD	AF	B	C	E	I	V	ZM	ZN	ZP	ZQ
125	45	38	47	30	18	60	136	47	M30×1.5	32	20	230	320	230	313
150	50	38	47	30	18	60	153	47	M30×1.5	32	26	247	347	247	335
200	63	38	50	30	18	70	154	67	M45×1.5	35	18	288	414	271	372

LB



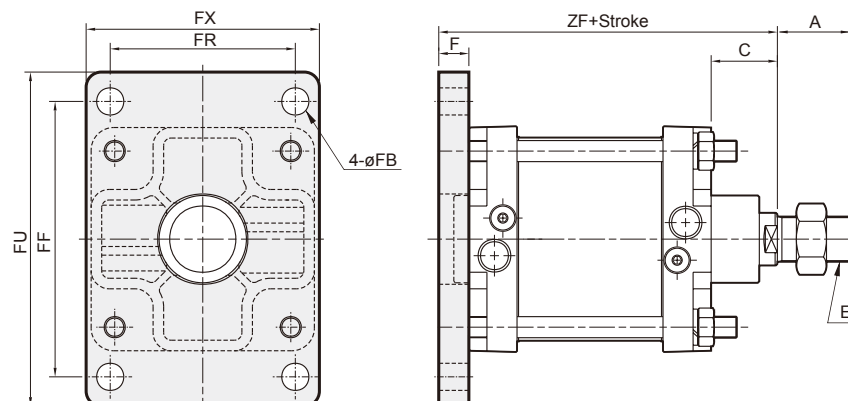
Code Tube I.D.	A	E	FB	LH	LL	LM	LR	LS	LT	LX	LY	ZT
125	45	M30×1.5	16	85	48	17	117	150	6	162	232	231
150	50	M30×1.5	18	96.5	55	20	134	175	9	184	263	255
200	63	M45×1.5	24	132	60	30	150	226	10	245	274	281

FAC



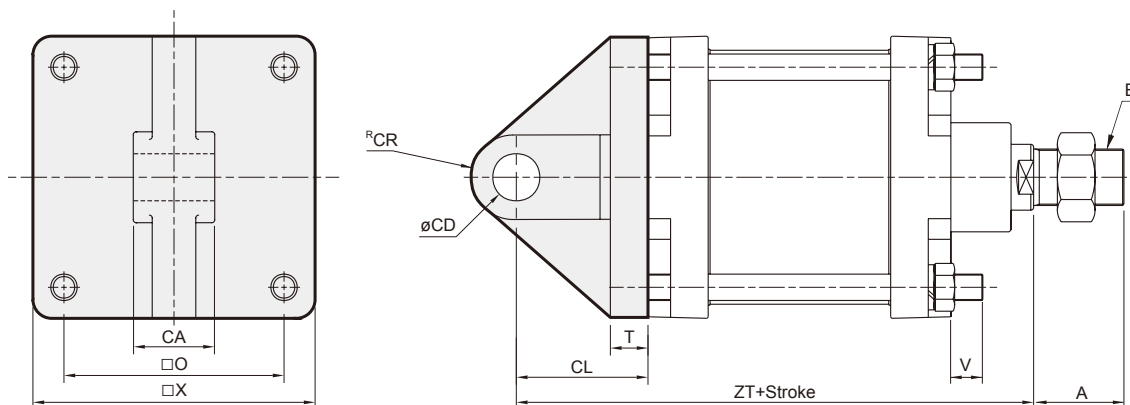
Code Tube I.D.	A	E	F	FB	FD	FF	FR	FU	FX	J	V	ZF
125	45	M30×1.5	20	18	27	183	123	222	155	10	20	166
150	50	M30×1.5	20	18	27	230	134	275	185	8	26	181
200	63	M45×1.5	25	24	42	280	150	335	225	8	11	187

FBC



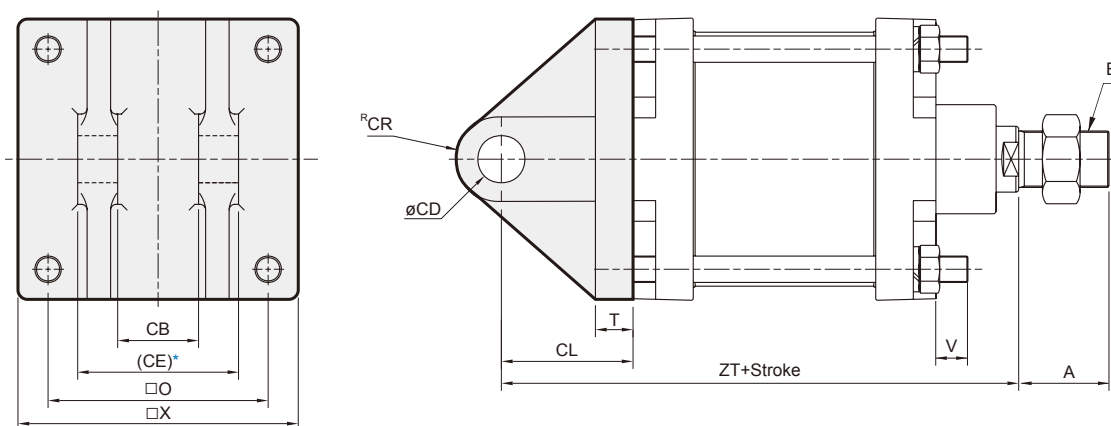
Code Tube I.D.	A	C	E	F	FB	FF	FR	FU	FX	ZF
125	45	47	M30×1.5	20	18	183	123	222	155	203
150	50	47	M30×1.5	20	18	230	134	275	185	220
200	63	67	M45×1.5	25	24	280	150	335	225	246

CA



Code Tube I.D.	A	CA	CD	CL	CR	E	O	T	X	ZT	V
125	45	43 ^{-0.1 -0.3}	25 ^{H10}	65	24	M30×1.5	117	15	150	248	20
150	50	40 ^{-0.1 -0.3}	30 ^{H10}	78	27.5	M30×1.5	134	20	175	278	26
200	63	50 ^{-0.1 -0.3}	40 ^{H10}	85	40	M45×1.5	182	25	226	306	12

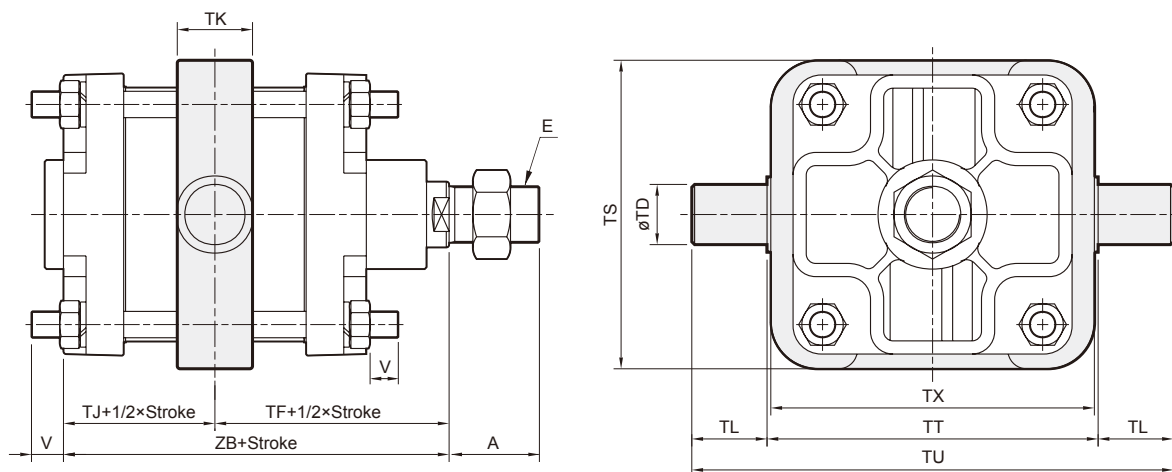
CB



* 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.

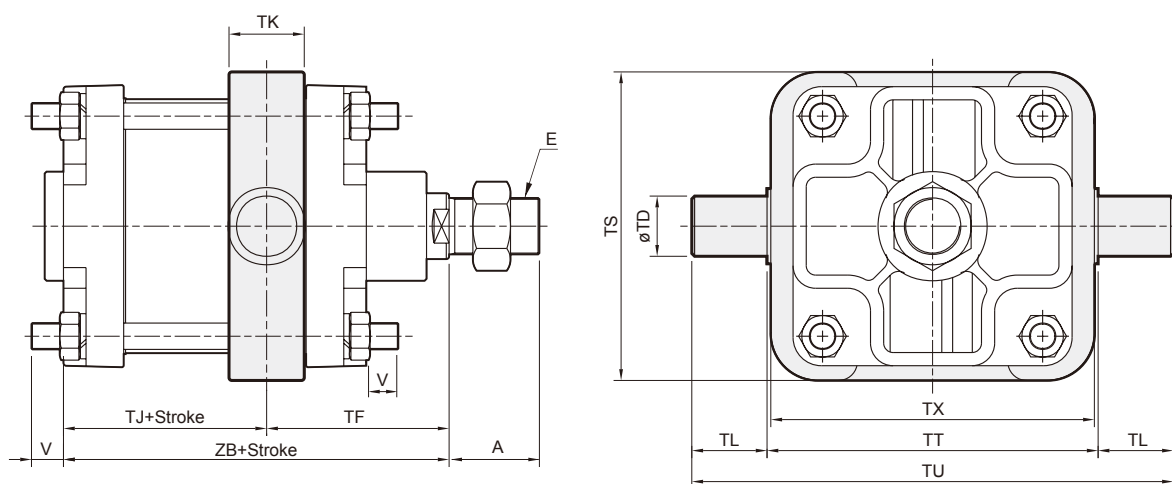
Code Tube I.D.	A	CB	CD	CE	CL	CR	E	O	T	X	ZT	V
125	45	43 ^{+0.3 +0.1}	25 ^{H10}	83	70	24	M30×1.5	117	20	150	253	20
150	50	40 ^{+0.3 +0.1}	30 ^{H10}	90	78	27.5	M30×1.5	134	20	175	278	26
200	63	50 ^{+0.3 +0.1}	40 ^{H10}	100	85	40	M45×1.5	182	25	226	306	12

TC



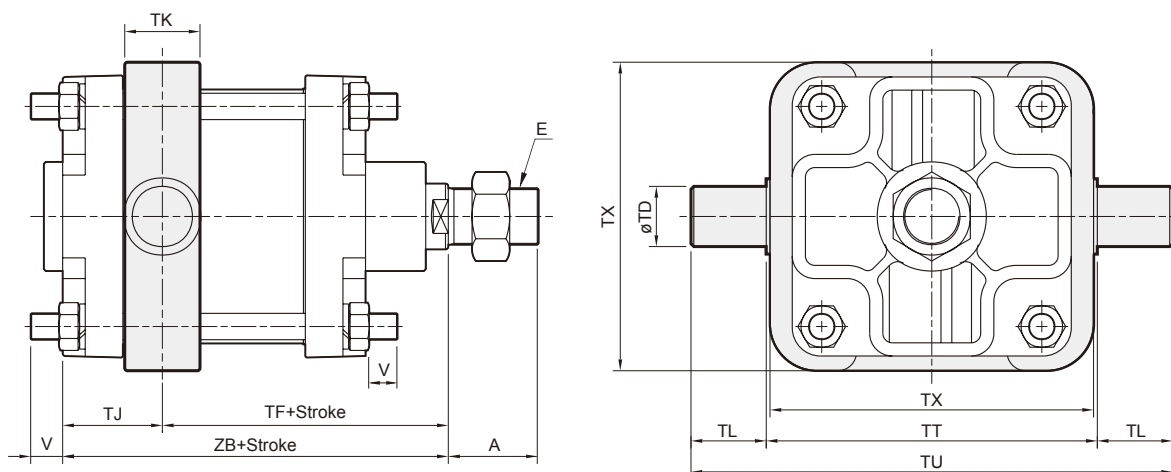
Code Tube I.D.	A	E	TD	TF	TJ	TK	TL	TS	TT	TU	TX	V	ZB
125	45	M30×1.5	32 ^{øB}	115	68	40	40	164	176	256	172	17	183
150	50	M30×1.5	35 ^{øB}	123.5	76.5	41	40	194	200	280	198	16	200
200	63	M45×1.5	45 ^{øB}	144	77	59	45	255	265	355	255	8.5	221

TA



Code Tube I.D.	A	E	TD	TF	Without magnet		Magnet		TK	TL	TS	TT	TU	TX	V
					TJ	ZB	TJ	ZB							
125	45	M30×1.5	32 ^{øB}	100	83	183	129	229	40	40	164	176	256	172	17
150	50	M30×1.5	35 ^{øB}	109	91	200	137	246	41	40	194	200	280	198	16
200	63	M45×1.5	45 ^{øB}	139.5	81.5	221	125.5	265	59	45	255	265	355	255	8.5

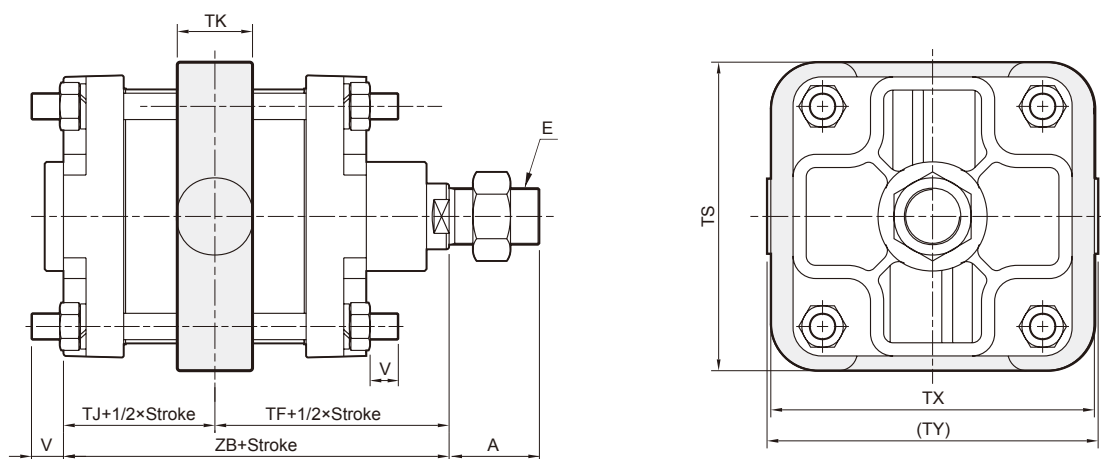
TB



Code Tube I.D.	A	E	TD	Without magnet		Magnet		TJ	TK	TL	TS	TT	TU	TX	V
				TF	ZB	TF	ZB								
125	45	M30×1.5	32 ^{±0.5}	130	183	176	229	53	40	40	164	176	256	172	17
150	50	M30×1.5	35 ^{±0.5}	138	200	184	246	62	41	40	194	200	280	198	16
200	63	M45×1.5	45 ^{±0.5}	148.5	221	192.5	265	72.5	59	45	255	265	355	255	8.5

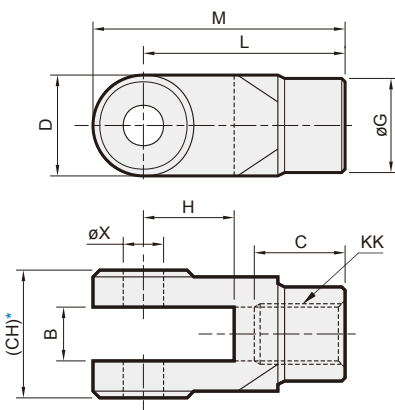
SDS

Stroke over 1000mm

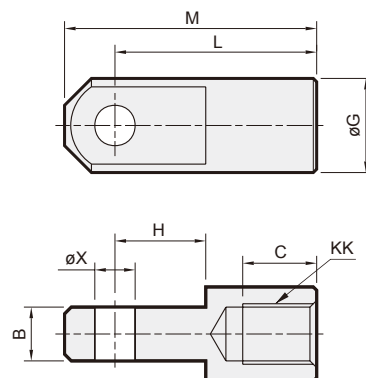


Code Tube I.D.	A	E	TF	TJ	TK	TS	TX	TY	V	ZB
125	45	M30×1.5	115	68	40	164	172	174	17	183
150	50	M30×1.5	123.5	76.5	41	194	198	200	16	200
200	63	M45×1.5	144	77	59	255	255	263	8.5	221

Y connector



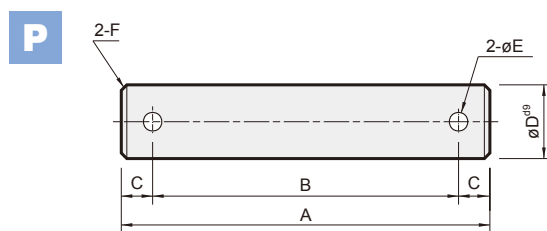
I connector



* 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.

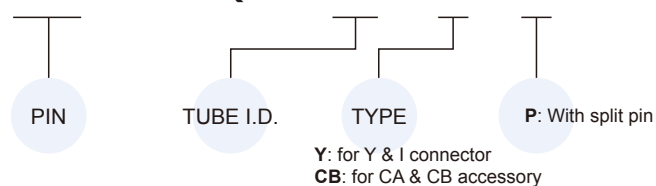
Code Tube I.D.	B		C		CH		D		G		H		KK		L		M		X ^{H10}
	Y	I	Y	I	Y	I	Y	I	Y	I	Y	I	Y	I	Y	I	Y	I	
40	16 ^{+0.3} _{+0.1}	16 ^{-0.1} _{-0.3}	25	20	38	—	26	—	ø24	ø24	25	25	M14×1.5	55	55	68	68	ø12 ^{+0.07} ₀	
50	16 ^{+0.3} _{+0.1}	16 ^{-0.1} _{-0.3}	27	22	38	—	30	—	ø28	ø28	27	27	M18×1.5	60	60	75	75	ø12 ^{+0.07} ₀	
63																			
80	28 ^{+0.3} _{+0.1}	28 ^{-0.1} _{-0.3}	32	27	55	—	38	—	ø36	ø36	32	32	M22×1.5	71	71	90	90	ø18 ^{+0.07} ₀	
100	30 ^{+0.3} _{+0.1}	30 ^{-0.1} _{-0.3}	35	30	59	—	42	—	ø40	ø40	38	38	M26×1.5	83	83	104	104	ø20 ^{+0.08} ₀	
125	32 ^{+0.3} _{+0.1}	32 ^{-0.1} _{-0.3}	35	40	76	—	58	—	ø45	ø50	38	32	M30×1.5	80	80	109	109	ø20 ^{+0.08} ₀	
150	40 ^{+0.3} _{+0.1}	40 ^{-0.1} _{-0.3}	35	40	84	—	54	—	ø45	ø60	39	32	M30×1.5	80	80	107	107	ø25 ^{+0.08} ₀	
200	50 ^{+0.3} _{+0.1}	50 ^{-0.1} _{-0.3}	67	67	100	—	85	—	ø70	ø70	54	44	M45×1.5	125	125	167.5	167.5	ø40 ^{+0.1} ₀	

PIN



Order example

PIN — MCQA — 40 — Y — P



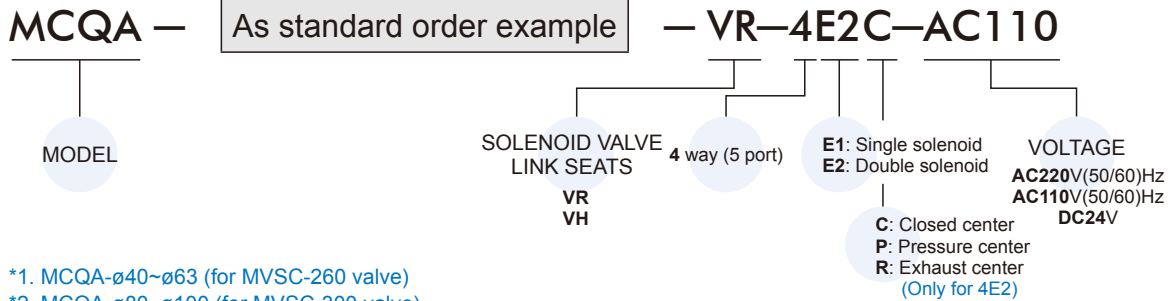
for Y & I connector

Code Tube I.D.	A	B	C	D ^{g9}	E	F	Split pin
40	57	46	5.5	ø12 ^{-0.05} _{-0.09}	3.5	1.0	3.2×20L
50	57	46	5.5	ø12 ^{-0.05} _{-0.09}	3.5	1.0	3.2×20L
63	57	46	5.5	ø12 ^{-0.05} _{-0.09}	3.5	1.0	3.2×20L
80	78	64	7	ø18 ^{-0.05} _{-0.09}	4	1.2	4×25L
100	87	70	8.5	ø20 ^{-0.06} _{-0.12}	5	1.5	5×35L
125	100	83	8.5	ø20 ^{-0.06} _{-0.12}	5	1.5	5×35L
150	112	95	8.5	ø25 ^{-0.06} _{-0.12}	5	2.0	5×35L
200	115	105	5	ø40 ^{-0.08} _{-0.14}	5	2.0	5×55L

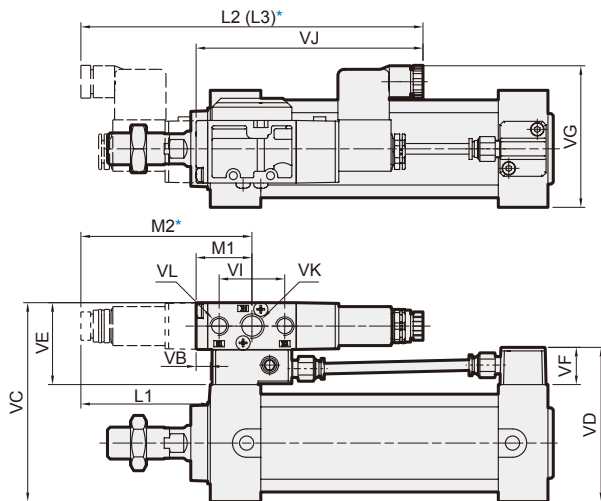
for CA & CB

Code Tube I.D.	A	B	C	D ^{g9}	E	F	Split pin
40	48	37	5.5	ø10 ^{-0.05} _{-0.09}	3.5	1.0	3.2×20L
50	57	46	5.5	ø12 ^{-0.05} _{-0.09}	3.5	1.0	3.2×20L
63	72	58	7	ø16 ^{-0.05} _{-0.09}	4	1.2	4×25L
80	87	70	8.5	ø20 ^{-0.06} _{-0.12}	5	1.5	5×35L
100	93	76	8.5	ø25 ^{-0.06} _{-0.12}	5	1.5	5×35L
125	112	95	8.5	ø25 ^{-0.06} _{-0.12}	5	1.5	5×35L
150	119	102	8.5	ø30 ^{-0.06} _{-0.12}	5	2.0	5×40L
200	115	105	5	ø40 ^{-0.08} _{-0.14}	5	2.0	5×55L

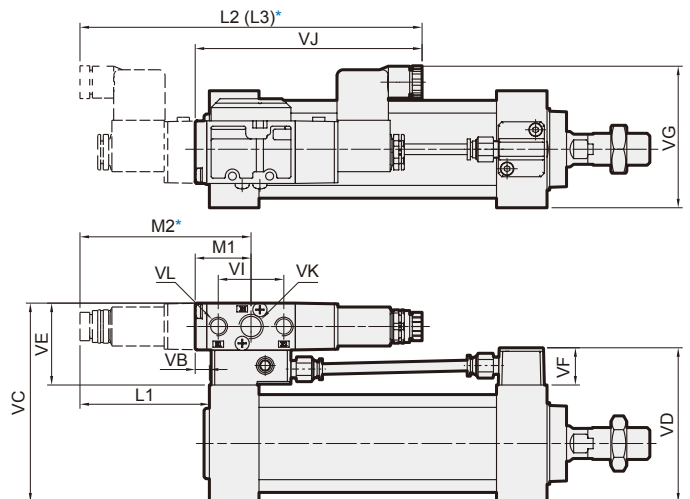
Order example



VR



VH



Code Tube I.D.	L1	L2	L3	M1	M2	VB	VC	VD	VE	VF	VG	VI	VJ	VK	VL	Valve type
40	77.5	199	220	31.5	99.5	9.5	104.2	79	46.2	21	76	37	131	Rc1/4	Rc1/8	MVSC-260
50	78.5	199	220	31.5	99.5	8.5	112.2	87	46.2	21	80	37	131	Rc1/4	Rc1/8	MVSC-260
63	79.5	199	220	31.5	99.5	7.5	126.2	101	46.2	21	87	37	131	Rc1/4	Rc1/8	MVSC-260
80	80.5	222	275	45	111	14.5	159	128	59	28	90	52	156	Rc3/8	Rc3/8	MVSC-300
100	78.5	222	275	45	111	12.5	179	146	59	28	104	52	156	Rc3/8	Rc3/8	MVSC-300

* L2 for 4E2 size, L3 for 4E2C.P.R size, M2 for 4E2 and 4E2C.P.R size.

MCQA-AH series

AIR / OIL CONVERTER



Mindman



Features

- Cylinder thrust should be 70% (50% of Maximum Speed) of theoretical force.
- Displacement should be approximately 50% of total volume.
- Maximum acceleration is approximately 200mm/sec.
- ISO VG32 or an equivalent oil is recommended.
- Oil feed should not exceed 80% of total volume.
- Unit should be installed vertically above the cylinder / actuator.

Specification

Model	MCQA-AH
Tube I.D. (mm)	40,50,63,80,100,125,150
Medium	ISO VG32 Equivalent
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

Order example

MCQA — 50 × 100 — AH

MODEL

TUBE I.D.

LENGTH

TYPE

Mounting accessories

LB — MCQA — 40

MODEL

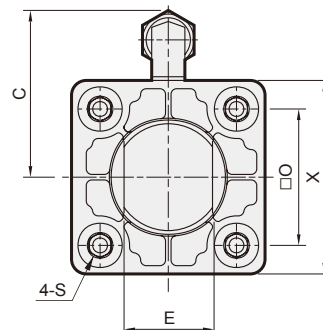
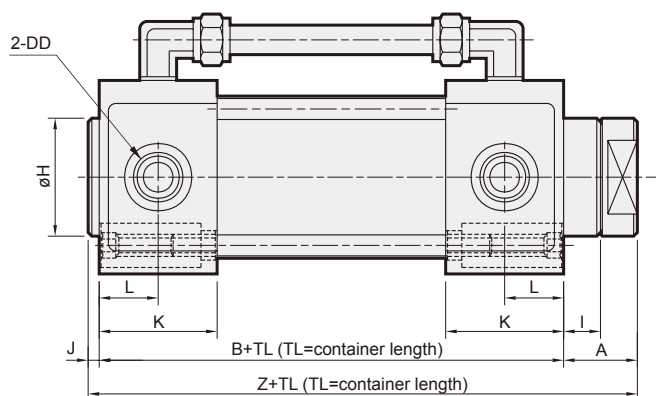
TUBE I.D.

MOUNTING TYPE

	LB
	FBC

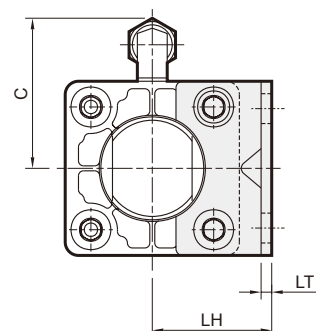
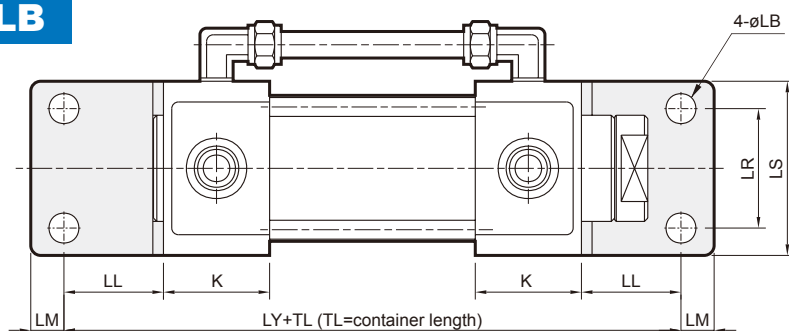
MCQA-AH Dimensions $\varnothing 40 \sim \varnothing 100$

AIR / OIL CONVERTER — INSTALLED UPRIGHTLY

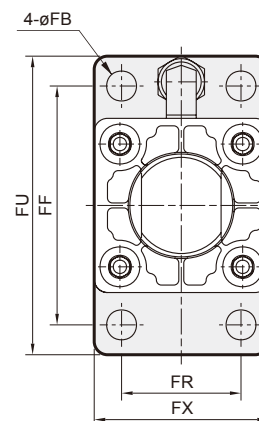
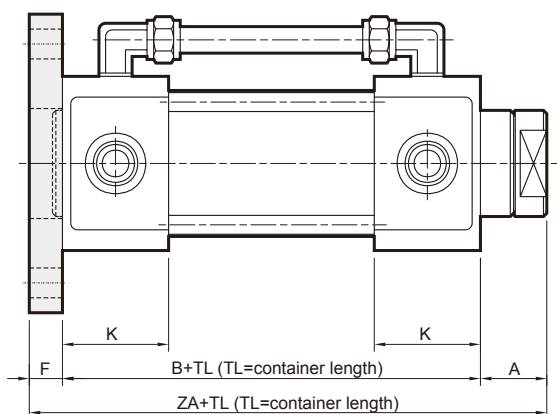


■ Mounting accessories

LB



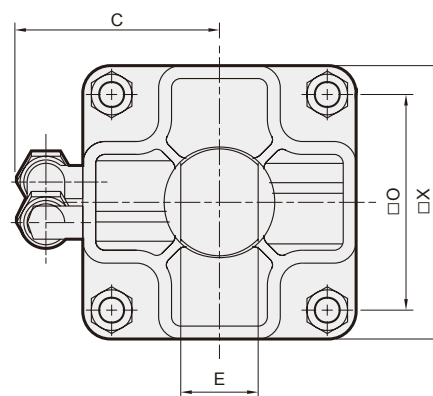
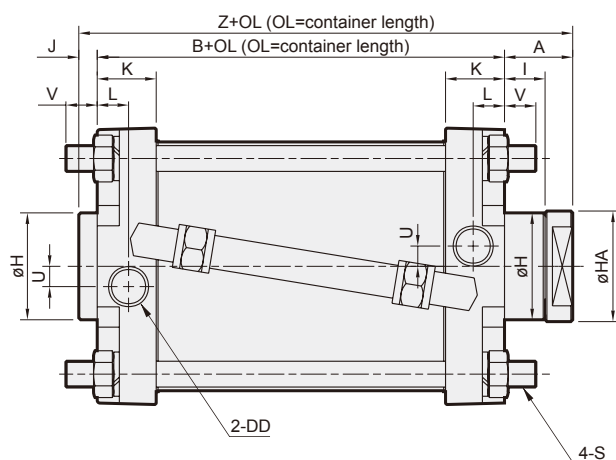
FBC



Code Tube I.D.	A	B	C	DD	E	F	FB	FF	FR	FU	FX	H	I	J	K	L	LB	LH	LL	LM	LR	LS	LT	LY	O	S	X	Z	ZA
40	21	62	49	Rc1/4	24	12	9	80	42	100	65	32	11	3	26	13	9	40	27	13	42	58	3.2	116	40.5	M8×1.25	58	86	95
50	21	66	53	Rc3/8	28	12	9	90	50	110	73	40	11	3	28	14	9	45	27	13	50	66	3.2	120	48	M8×1.25	66	90	99
63	21	72	66	Rc3/8	28	15	11.5	105	59	130	84	40	11	3	30	15	11.5	50	34	16	59	80	4.5	140	59	M8×1.25	80	96	108
80	27	82	70	Rc1/2	36	18	14	130	76	160	108	45	15	4	34	17	14	65	44	16	76	100	6.0	170	74	M12×1.75	100	113	127
100	27	90	79	Rc1/2	40	18	14	150	92	180	124	52	15	5	37	18.5	14	75	43	17	92	118	6.0	176	90	M12×1.75	118	122	135

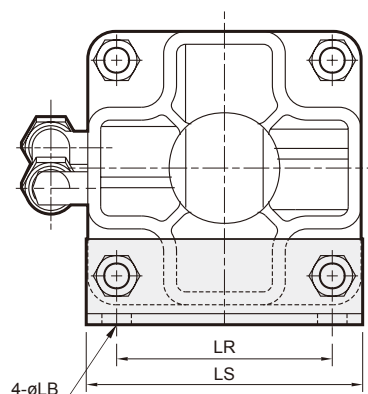
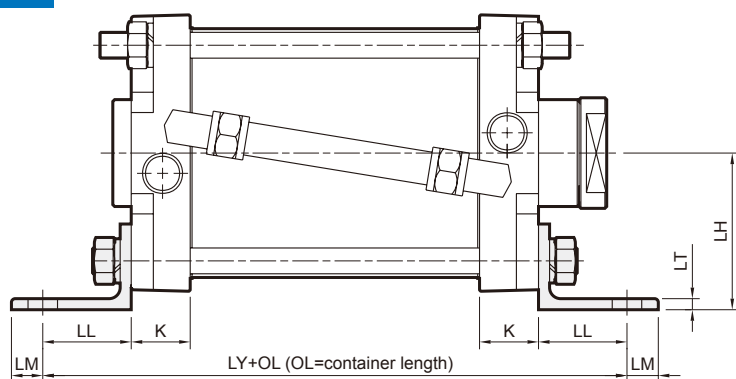
MCQA-AH Dimensions $\varnothing 125, \varnothing 150$

AIR / OIL CONVERTER — INSTALLED UPRIGHTLY

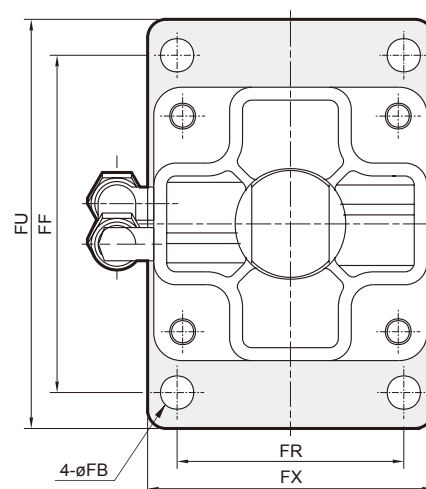
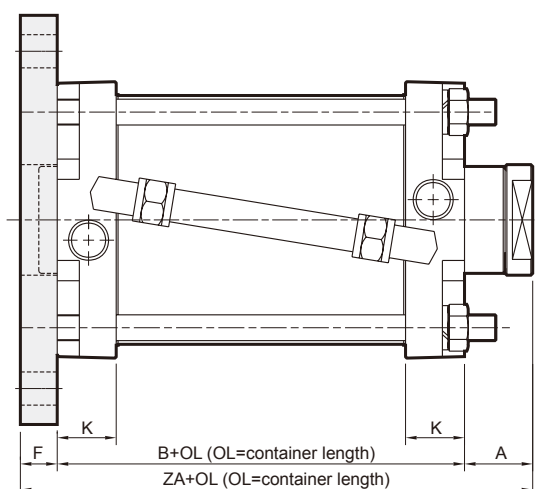


■ Mounting accessories

LB



FBC



Code Tube I.D.	A	B	C	DD	E	F	FB	FF	FR	FU	FX	H	HA	I	J	K	L	LB	LH	LL	LM	LR	LS	LT	LY	O	S	U	V	X	Z	ZA
125	47	90	95	Rc1/2	42	20	18	183	123	222	155	58	60	32	10	32	17	16	85	48	17	115	151	6	186	117	M14×1.5	11	20	150	147	157
150	47	107	108	Rc1/2	42	20	18	230	134	275	185	60	60	32	8	40.5	24.5	18	96.5	55	20	134	175	9	217	134	M16×1.5	12	26	175	162	174



Table for standard stroke

Tube I.D	Stroke (inch)
ø1 1/2"	1, 2, 3, 4, 5, 6, 8, 10, 12, 14, 16, 18, 20
ø2", 2 1/2"	1, 2, 3, 4, 5, 6, 8, 10, 12, 14, 16, 18, 20, 24
ø3 1/4", 4"	1, 2, 3, 4, 5, 6, 8, 10, 12, 14, 16, 18, 20, 24

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.

■ Full range of NFPA interchangeable mounting configurations

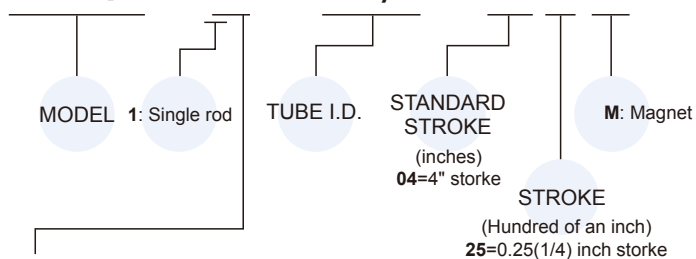
Mounting dimensions are in accordance with ANSI (NFPA) T3.6.7 R2-1996, fluid power systems and products-square head industrial cylinders-mounting dimensions.

Specification

Model	MCQN				
Tube I.D. (inch)	1 1/2"	2"	2 1/2"	3 1/4"	4"
Tube I.D. (mm)	40	50	63	80	100
Port size	NPT3/8			NPT1/2	
Medium	Air				
Operating perssure 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	HV1	HV2	HV2	HV3	HV3

Order example

MCQN — 11 — 1 1/2 — 0425M



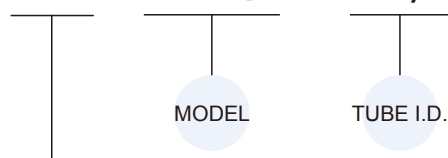
STYLE

Code	Symbol	Description
1 1		Double acting / Male thread

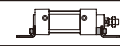
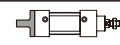
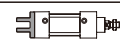
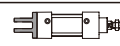
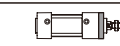
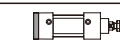
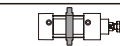
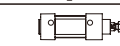
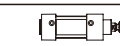
* Order example for special specification, refer to page 0-7.

Mounting accessories

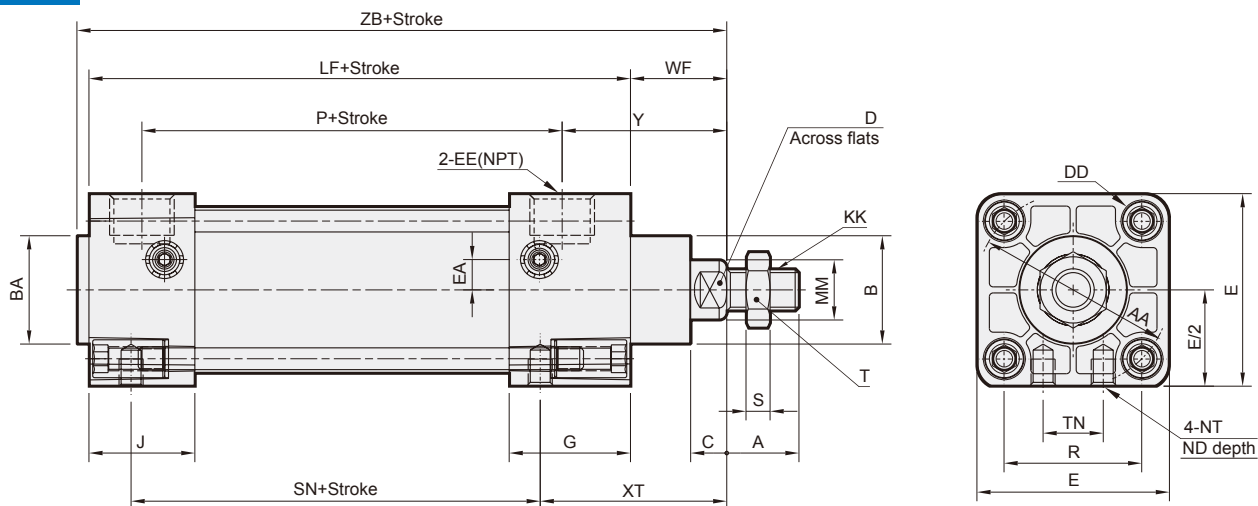
FAC — MCQN — 1 1/2



MOUNTING TYPE

	LB
	CA
	CB
	CB2
	FAC
	FBC
	TC
	Y
	I

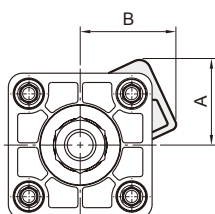
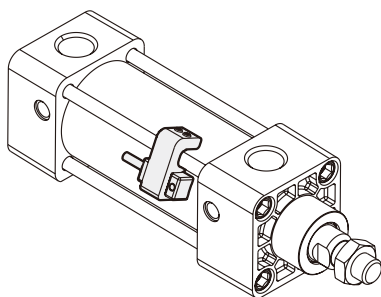
11



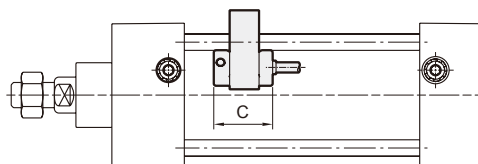
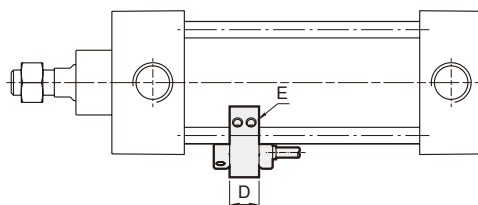
Code Tube I.D.	A	AA	B	BA	C	D	DD	E	EA	EE	G	J	KK	LF	MM	ND	NT	P	R	S	SN
1 1/2"	3/4	2.02	1 1/8	1 1/8	3/8	9/16	1/4-28	2	0.32	3/8	1.26	1.10	7/16-20	3 5/8	5/8	9/32	1/4-20	2.36	1.43	0.26	2 1/4
2"	3/4	2.60	1 1/8	1 1/8	3/8	9/16	5/16-24	2 1/2	0.43	3/8	1.26	1.06	7/16-20	3 5/8	5/8	7/16	5/16-18	2.40	1.84	0.26	2 1/4
2 1/2"	3/4	3.10	1 1/8	1 1/8	3/8	9/16	5/16-24	3	0.47	3/8	1.30	1.06	7/16-20	3 3/4	5/8	19/32	3/8-16	2.48	2.19	0.26	2 3/8
3 1/4"	1 1/8	3.90	1 1/2	1 1/2	1/2	7/8	3/8-24	3 3/4	—	1/2	1.57	1.18	3/4-16	4 1/4	1	5/8	1/2-13	2.72	2.76	0.42	2 5/8
4"	1 1/8	4.70	1 1/2	1 1/2	1/2	7/8	3/8-24	4 1/2	—	1/2	1.57	1.18	3/4-16	4 1/4	1	5/8	1/2-13	2.72	3.32	0.42	2 5/8

Code Tube I.D.	T	TN	WF	XT	Y	ZB
1 1/2"	0.69	0.63	1	1 15/16	1.71	4 3/4
2"	0.69	0.88	1	1 15/16	1.71	4 3/4
2 1/2"	0.69	1.25	1	1 15/16	1.75	4 7/8
3 1/4"	1.12	1.50	1 3/8	2 7/16	2.34	5 53/64
4"	1.12	2.06	1 3/8	2 7/16	2.34	5 53/64

■ Installation of sensor switch



Code Tube I.D.	Sensor switch	Hold	A	B	C	D	E
1 1/2"	RCA	HV1	1.10	1.47	1.02	0.51	M4×10L
2"	RCA	HV2	1.49	1.68	1.02	0.51	M4×10L
2 1/2"	RCA	HV2	1.66	1.86	1.02	0.51	M4×10L
3 1/4"	RCA	HV3	1.87	2.13	1.02	0.51	M4×10L
4"	RCA	HV3	2.15	2.42	1.02	0.51	M4×10L



Cylinder weight

Unit: kg

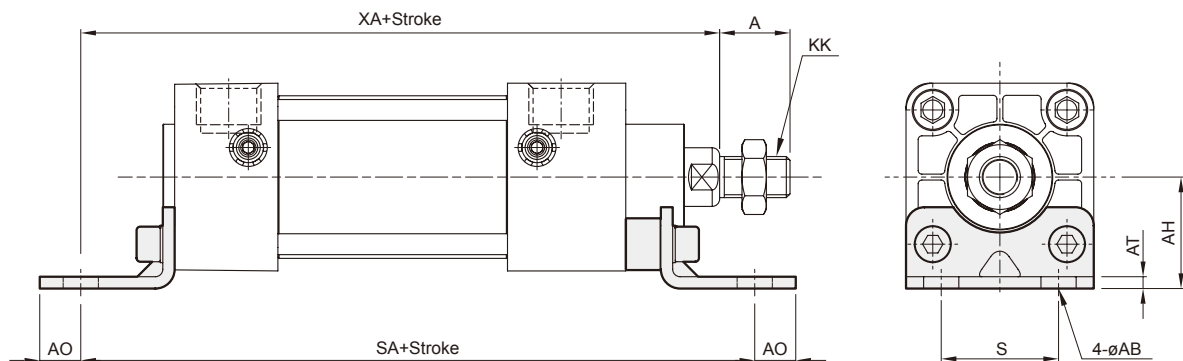
Model	Basic weight MCQN-11	Basic weight (magnet) MCQN-11	Stroke 1 inch MCQN-11
Tube I.D.			
$\varnothing 1\frac{1}{2}"$	0.664	0.676	0.078
$\varnothing 2"$	0.965	0.981	0.096
$\varnothing 2\frac{1}{2}"$	1.314	1.334	0.108
$\varnothing 3\frac{1}{4}"$	2.482	2.510	0.200
$\varnothing 4"$	3.266	3.300	0.220

Accessories weight

Unit: kg

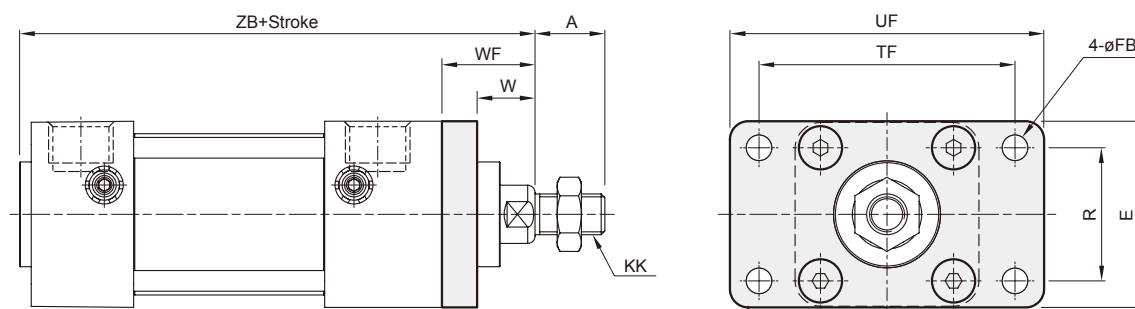
Model	LB	CA	CB	CB2	FAC/FBC	TC	Y	I	PIN
Tube I.D.									
$\varnothing 1\frac{1}{2}"$	0.160	0.285	0.229	0.287	0.246	0.554	0.205	0.150	0.065
$\varnothing 2"$	0.240	0.394	0.377	0.424	0.403	0.644	0.205	0.150	0.065
$\varnothing 2\frac{1}{2}"$	0.300	0.531	0.521	0.563	0.576	0.840	0.205	0.150	0.065
$\varnothing 3\frac{1}{4}"$	0.633	1.511	1.302	1.482	1.408	1.098	0.662	0.522	0.175
$\varnothing 4"$	0.955	2.047	1.821	2.033	2.015	1.450	0.662	0.522	0.175

LB



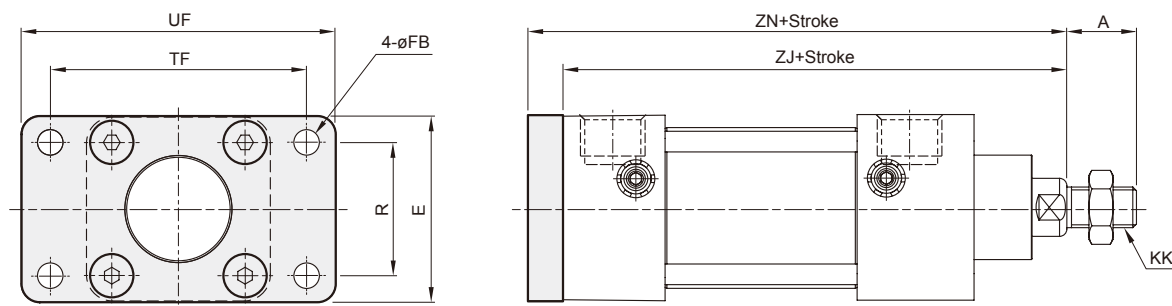
Code Tube I.D.	A	AB	AH	AT	AO	KK	S	SA	XA
1 1/2"	3/4	3/8	1 3/16	1/8	7/16	7/16-20	1 1/4	6	5 5/8
2"	3/4	3/8	1 7/16	1/8	9/16	7/16-20	1 3/4	6	5 5/8
2 1/2"	3/4	3/8	1 5/8	1/8	9/16	7/16-20	2 1/4	6 1/8	5 3/4
3 1/4"	1 1/8	1/2	1 15/16	11/64	3/4	3/4-16	2 3/4	7 3/8	6 7/8
4"	1 1/8	1/2	2 1/4	15/64	3/4	3/4-16	3 1/2	7 3/8	6 7/8

FAC



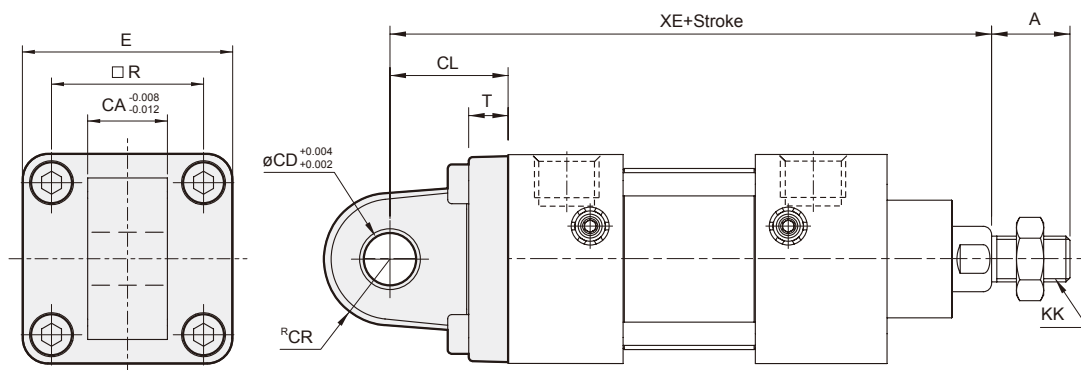
Code Tube I.D.	A	E	FB	KK	R	TF	UF	W	WF	ZB
1 1/2"	3/4	2	0.25	7/16-20	1.43	2.75	3.38	0.63	1	4 3/4
2"	3/4	2 1/2	0.31	7/16-20	1.84	3.38	4.13	0.63	1	4 3/4
2 1/2"	3/4	3	0.31	7/16-20	2.19	3.88	4.63	0.63	1	4 7/8
3 1/4"	1 1/8	3 3/4	0.38	3/4-16	2.76	4.68	5.50	0.75	1 3/8	5 53/64
4"	1 1/8	4 1/2	0.38	3/4-16	3.32	5.44	6.25	0.75	1 3/8	5 53/64

FBC



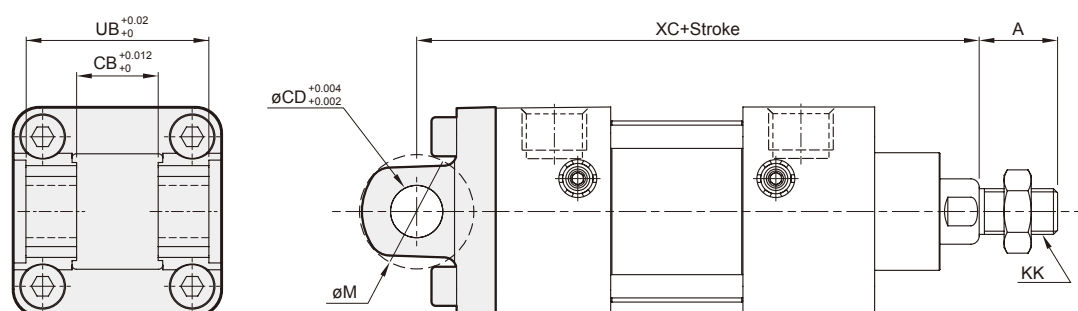
Code Tube I.D.	A	E	FB	KK	R	TF	UF	ZJ	ZN
1 1/2"	3/4	2	0.25	7/16-20	1.43	2.75	3.38	4.63	5.00
2"	3/4	2 1/2	0.31	7/16-20	1.84	3.38	4.13	4.63	5.00
2 1/2"	3/4	3	0.31	7/16-20	2.19	3.88	4.63	4.75	5.13
3 1/4"	1 1/8	3 3/4	0.38	3/4-16	2.76	4.68	5.50	5.63	6.25
4"	1 1/8	4 1/2	0.38	3/4-16	3.32	5.44	6.25	5.63	6.25

CA



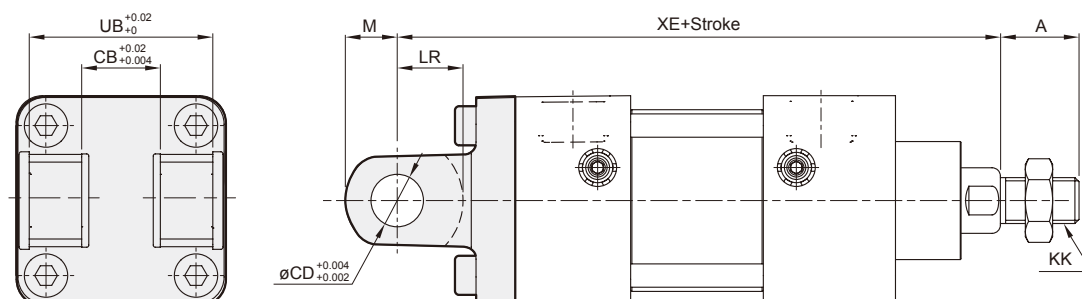
Code Tube I.D.	A	CA	CD	CL	CR	E	KK	R	T	XE
1 1/2"	3/4	0.75	0.50	1.125	0.63	2	7/16-20	1.43	0.375	5 3/4
2"	3/4	0.75	0.50	1.125	0.63	2 1/2	7/16-20	1.84	0.375	5 3/4
2 1/2"	3/4	0.75	0.50	1.125	0.63	3	7/16-20	2.19	0.375	5 7/8
3 1/4"	1 1/8	1.25	0.75	1.875	0.87	3 3/4	3/4-16	2.76	0.625	7 1/2
4"	1 1/8	1.25	0.75	1.875	0.87	4 1/2	3/4-16	3.32	0.625	7 1/2

CB



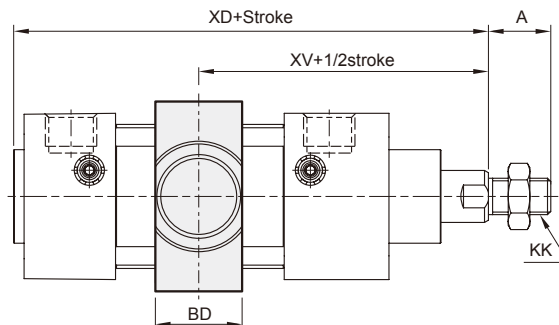
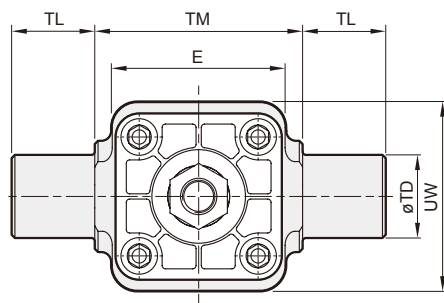
Code Tube I.D.	A	CB	CD	KK	M	UB	XC
1 1/2"	3/4	0.78	0.50	7/16-20	1.24	1.75	5.38
2"	3/4	0.78	0.50	7/16-20	1.24	1.75	5.38
2 1/2"	3/4	0.78	0.50	7/16-20	1.24	1.75	5.50
3 1/4"	1 1/8	1.28	0.75	3/4-16	1.88	2.50	6.88
4"	1 1/8	1.28	0.75	3/4-16	1.88	2.50	6.88

CB2



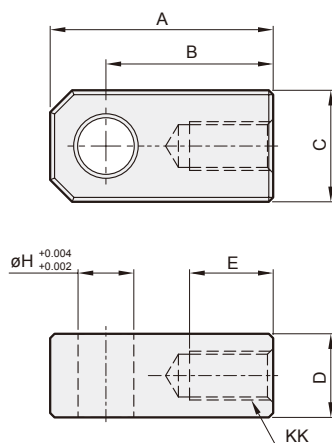
Code Tube I.D.	A	CB	CD	KK	LR	M	UB	XE
1 1/2"	3/4	0.75	0.50	7/16-20	5/8	0.5	1.75	5 3/4
2"	3/4	0.75	0.50	7/16-20	5/8	0.5	1.75	5 3/4
2 1/2"	3/4	0.75	0.50	7/16-20	5/8	0.5	1.75	5 7/8
3 1/4"	1 1/8	1.25	0.75	3/4-16	1	0.75	2.50	7 1/2
4"	1 1/8	1.25	0.75	3/4-16	1	0.75	2.50	7 1/2

TC



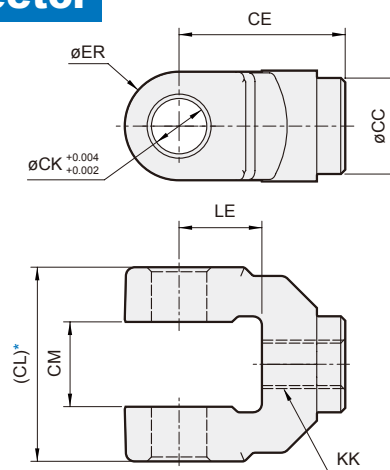
Code Tube I.D.	A	BD	E	KK	TD	TM	TL	UW	XD	XV
1 1/2"	3/4	1.04	2.11	7/16-20	1	2.50	1	2.28	4.94	3.20
2"	3/4	1.04	2.60	7/16-20	1	3.00	1	2.60	5.03	3.32
2 1/2"	3/4	1.10	3.09	7/16-20	1	3.50	1	3.23	5.07	3.33
3 1/4"	1 1/8	1.18	3.70	3/4-16	1	4.50	1	4.17	6.16	4.19
4"	1 1/8	1.22	4.49	3/4-16	1	5.25	1	4.96	6.18	4.19

I connector



Code Tube I.D.	A	B	C	D	E	H	KK
1 1/2"~2 1/2"	2.00	1.50	1.0	0.75	0.75	0.50	7/16-20
3 1/4"~4"	2.81	2.06	1.5	1.25	1.13	0.75	3/4-16

Y connector



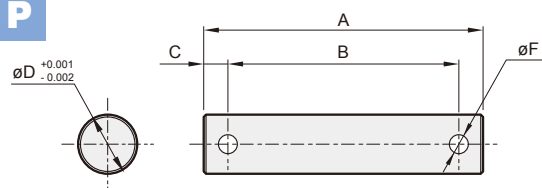
* Please do not take the sand casting plate as the mounting plate, because we do not machine it. If you have this special demand, please contact our sales representative.

Code Tube I.D.	CC	CE	CL	CM	CK	ER	KK	LE
1 1/2"~2 1/2"	0.87	1.50	1.75	0.765	0.50	1	7/16-20	0.75
3 1/4"~4"	1.34	2.38	2.50	1.265	0.75	1.5	3/4-16	1.25

PIN

for CB & CB2 accessory and Y & I connector.

P



Code Tube I.D.	A	B	C	D	F
1 1/2"~2 1/2"	2.36	1.95	0.20	0.50	0.16
3 1/4"~4"	3.13	2.74	0.19	0.75	0.20

Order example

PIN — MCQN — 1 1/2 — P

MODEL

TUBE I.D.

P: With split pin

MCQV / MCQV2 series

ISO 15552 **STANDARD CYLINDER**

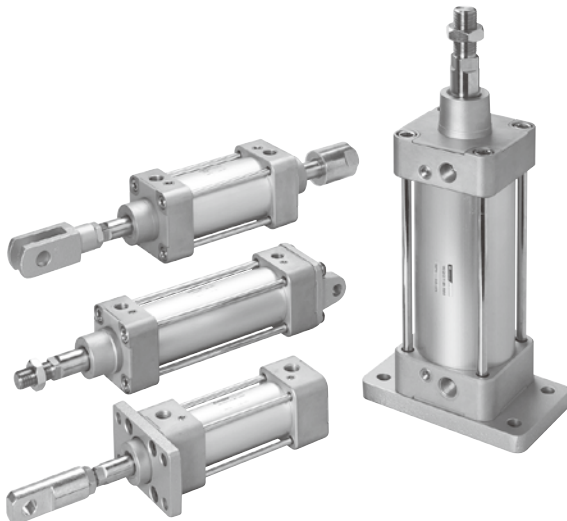


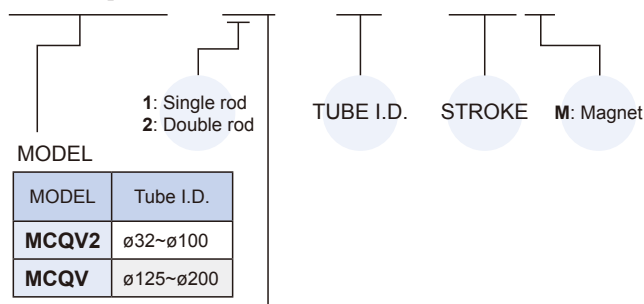
Table for standard stroke

Tube I.D.	Stroke (mm)
ø32,40	50,75,100,125,150,175,200,250,300,350,400,450,500
ø50,63	↑ 600
ø80,100,125,160	↑ 600,700
ø200	↑ 600,700,800,900,1000,1500

- Stroke out of specification is also available.
- Please consult us if stroke out of specification.

Order example

MCQV2 — 11 — 40 — 100M



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 distance(mm)" at order list.
- * Order example for special specification, refer to page 0-7.
- * Order example for Rc or NPT thread please consult us.

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

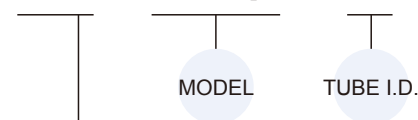
Available with comprehensive internationally recognised range of fixed and flexible mountings.

Specification

Model	MCQV2			MCQV		
Tube I.D. (mm)	32,40	50,63	80,100	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	HV1	HV2	HV3	HV4	PM16	HA5V

Mounting accessories

FAC — MCQV — 40



MOUNTING TYPE

	LB
	CA
	CB
	CDB (+CB+PIN)
	FAC
	FBC
	TA
	TB
	TC
	Y
	I
	YS (Y+Floating+PIN)

* for ø32~ø100
CB+PIN have to
extra purchase.

* for ø32~ø100

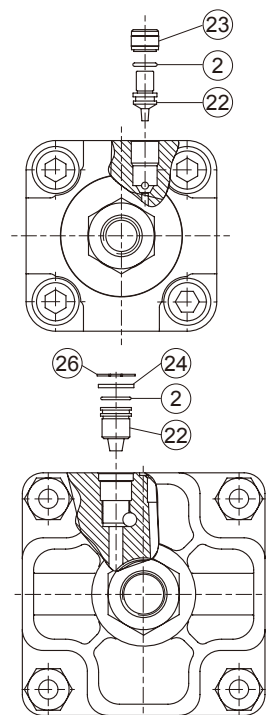
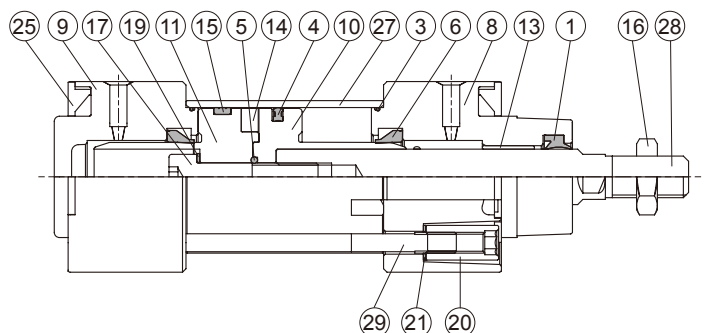
MCQV*-11 Inside structure & Parts list

ISO 15552 **STANDARD CYLINDER**

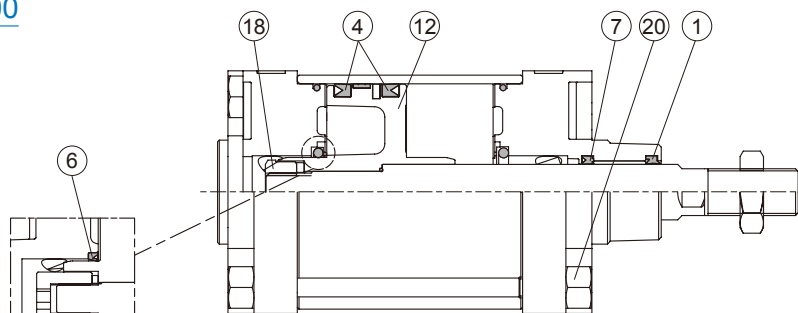


Single rod 11 type

ø32~ø100



ø125~ø200



ø200

No.	Part name	Material	Q'y	Component parts (inclusion)		Repair kits (inclusion)		Note
				ø32~ø100	ø125~ø200	ø32~ø100	ø125~ø200	
1	Rod packing	NBR	1	●	●	●	●	
2	O-ring	NBR	2	●	●	●	●	
3	O-ring	NBR	2	●	●	●	●	
4	Piston packing	NBR	1 or 2	●	●	●	●	ø125~ø200 (Q'y 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	●	●			ø32 does not contain item #19
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.

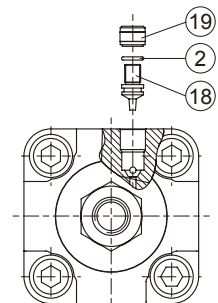
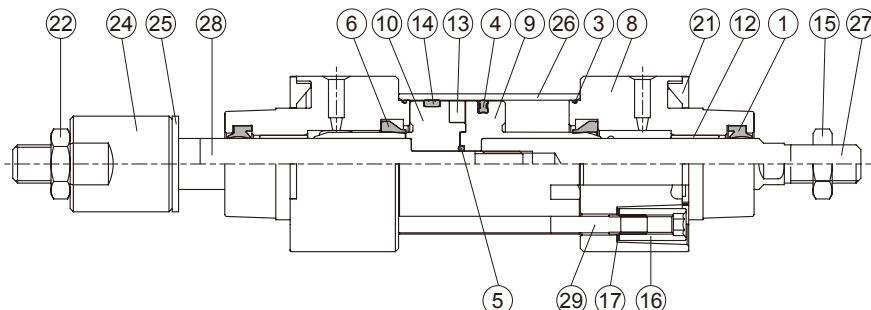
MCQV*-2* Inside structure & Parts list

ISO 15552 STANDARD CYLINDER

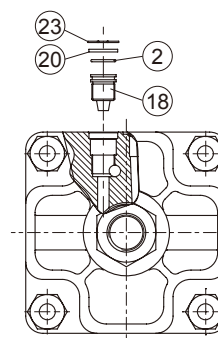
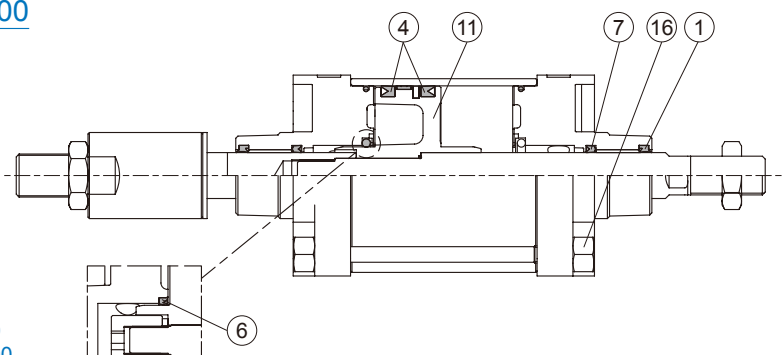


Double rod 21 / 27 type

ø32~ø100



ø125~ø200



A: ø40~ø100
B: ø125~ø200

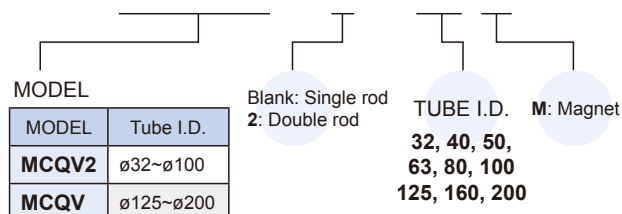
No.	21 type		27 type		Part name	Material	Q'y	Component parts (inclusion)		Repair kits (inclusion)		Note
	A	B	A	B				ø40~ø100	ø125~ø200	ø40~ø100	ø125~ø200	
1	●	●	●	●	Rod packing	NBR	2	●	●	●	●	
2	●	●	●	●	O-ring	NBR	2	●	●		●	
3	●	●	●	●	O-ring	NBR	2	●	●	●	●	
4	●	●	●	●	Piston packing	NBR	1 or 2	●	●	●	●	ø125~ø200 (Q'y 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

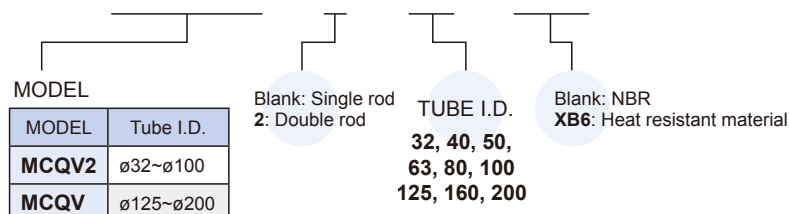
CP — MCQV2 — 2 — 40 M



* Order example for Rc or NPT thread please consult us.

Order example of repair kits

PS — MCQV2 — 2 — 40 — XB6



Cylinder & accessories weight

Cylinder weight

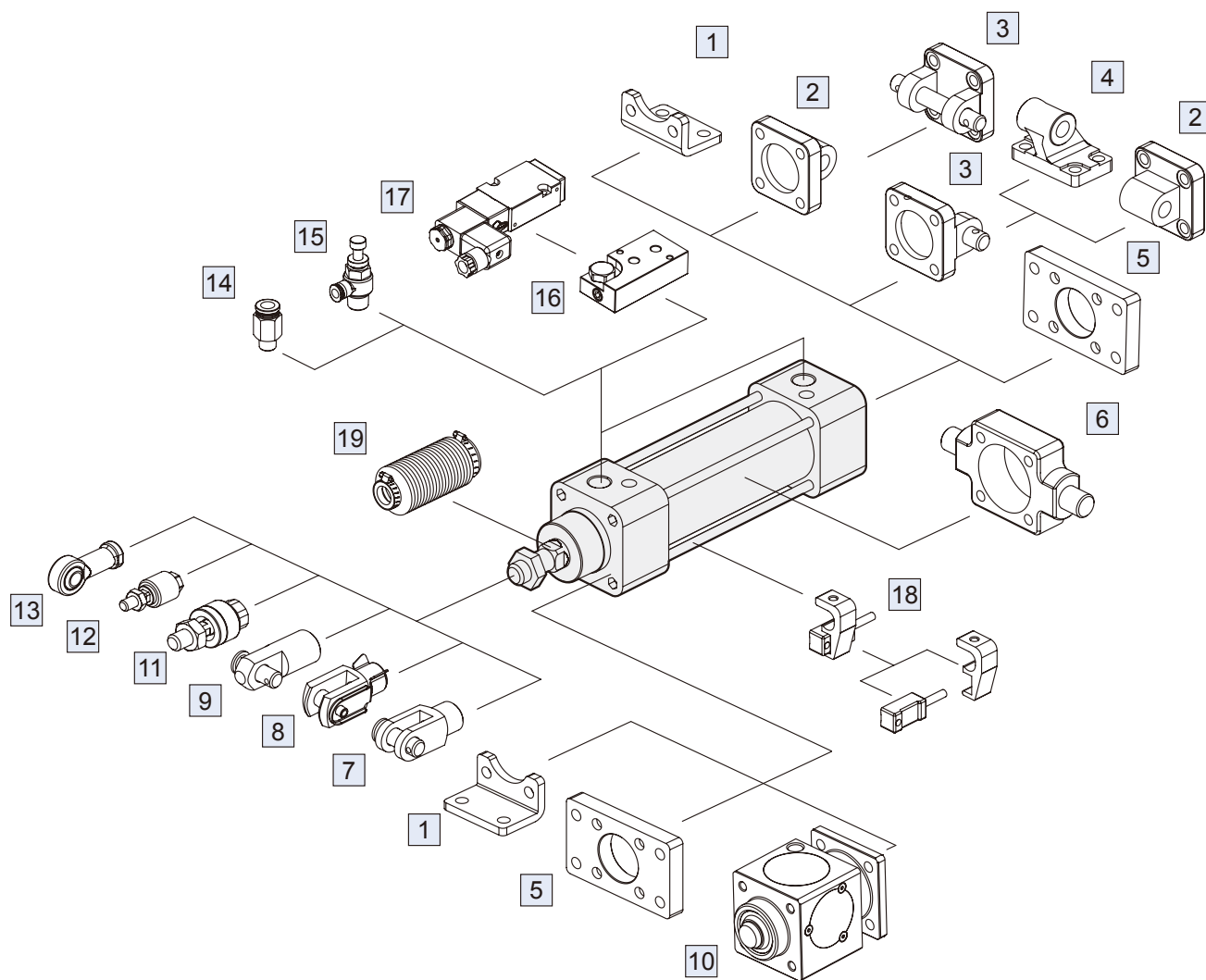
Unit: kg

Model	Basic weight MCQV*-11	Basic weight (magnet) MCQV*-11	Stroke 25 mm MCQV*-11
Tube I.D.			
ø32	0.520	0.526	0.053
ø40	0.770	0.782	0.075
ø50	1.200	1.217	0.115
ø63	1.700	1.720	0.128
ø80	2.770	2.797	0.181
ø100	3.960	3.995	0.220
ø125	7.345	7.388	0.372
ø160	13.864	13.974	0.555
ø200	19.450	19.560	0.570

Accessories weight

Unit: kg

Model	LB	CA	CB	CDB	FAC/FBC	TA/TB/TC	Y	I	Pin		YS
									Y / I	CA / CB	
Tube I.D.											
ø32	0.163	0.213	0.185	0.170	0.235	0.208	0.067	0.082	0.016	0.036	0.018
ø40	0.211	0.253	0.211	0.230	0.265	0.282	0.115	0.141	0.029	0.057	0.031
ø50	0.315	0.390	0.352	0.410	0.460	0.377	0.272	0.334	0.067	0.063	0.070
ø63	0.395	0.670	0.544	0.550	0.684	0.675	0.272	0.334	0.067	0.128	0.070
ø80	0.816	1.076	0.982	0.870	1.508	1.025	0.551	0.553	0.142	0.158	0.150
ø100	1.014	1.587	1.493	1.400	1.975	1.680	0.551	0.553	0.142	0.292	0.150
ø125	2.500	3.780	3.560	—	4.020	2.750	1.160	1.400	0.382	0.525	—
ø160	4.600	7.400	7.140	—	7.170	5.130	2.482	1.727	0.567	0.906	—
ø200	7.342	9.440	9.208	—	10.852	6.981	2.482	1.727	0.567	0.906	—



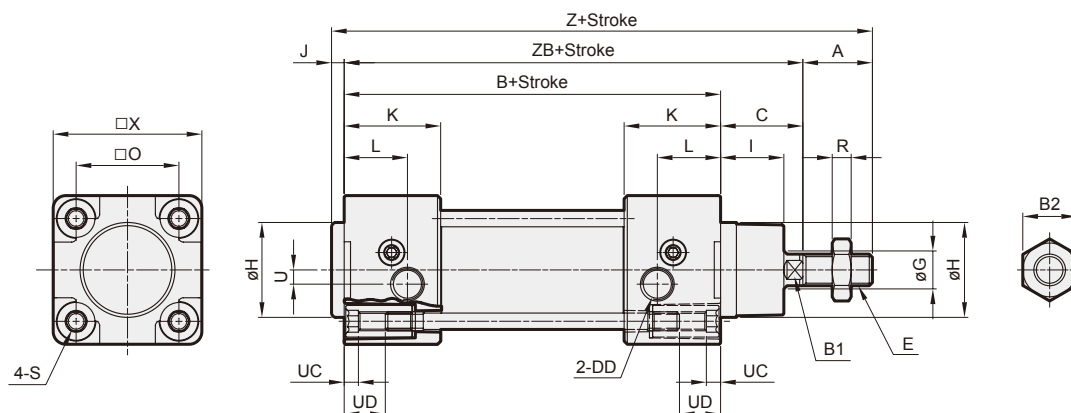
No.	Accessories	Material	Page
1	Mounting accessories LB	Carbon steel	1-36, 42
2	Mounting accessories CA	Cast iron	1-38, 43
3	Mounting accessories CB+PIN	Cast iron / *1	1-38, 43, 46, 47
4	Mounting accessories CDB	Cast iron	1-39
5	Mounting accessories FAC/FBC	Carbon steel	1-37, 42
6	Mounting accessories TA/TB/TC	Cast iron	1-39, 40, 44, 45
7	Accessories Y+PIN	Cast iron / *1	1-46, 47
8	Accessories YS (Y+Floating pin)	Carbon steel	1-46
9	Accessories I+PIN	Carbon steel	1-46, 47
10	Locking unit MCBQV*	Aluminum alloy+*2	1-88

No.	Accessories	Material	Page
11	Floating joint MFC	Carbon steel	8-2
12	Floating joint MFCS	Carbon steel	8-5
13	Female rod ends PHS	Carbon steel	8-6
14	Fitting PC (PISCO)	—	8-3 (Vol.1)
15	Speed controller JSC (PISCO)	—	8-15 (Vol.1)
16	Cylinder link seats MVSN-300-C	Aluminum alloy	1-69 (Vol.1)
17	Solenoid valve MVSN-220 / 300	—	1-65, 67 (Vol.1)
18	Sensor switch RCA+HV*	—	8-8
19	Protective bellows kit	NBR	—

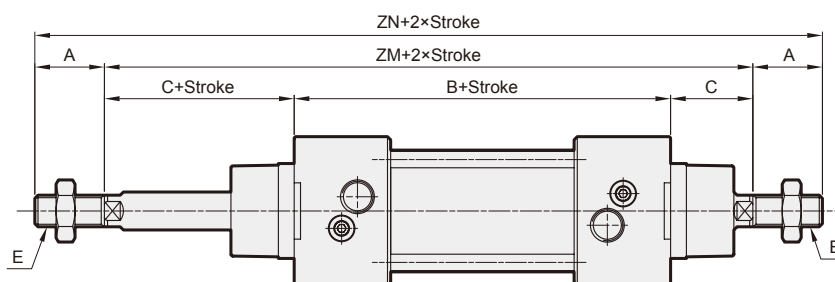
*1. PIN material is carbon steel.

*2. Bronze alloy.

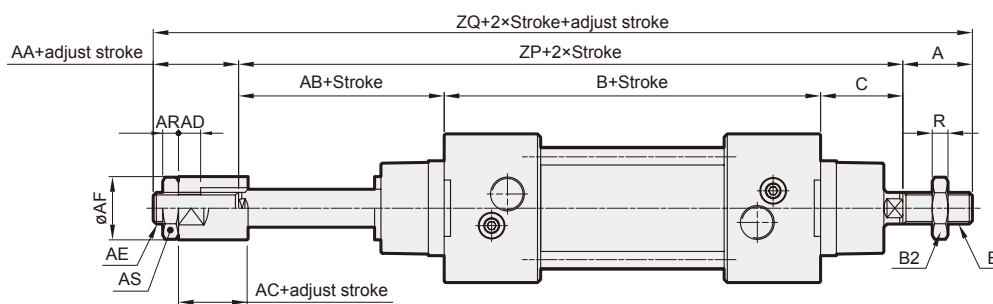
11



21

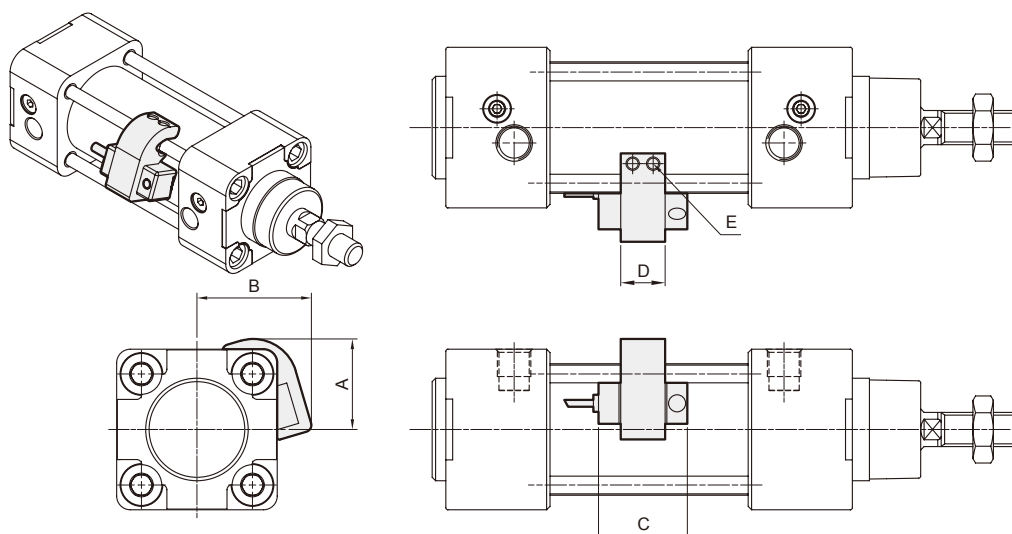


27



Code Tube I.D.	A	AA	AB	AC	AD	AE	AF	AR	AS	B	B1	B2	C	DD	E	G	H	I	J	K	L	O	R
32	22	16	26	12	7	M10×1.25	20	5	17	94	10	17	26	G1/8	M10×1.25	12	30	20	4	30.5	20	32.5	5
40	24	20	27	12	7	M12×1.25	30	6	19	105	13	19	30	G1/4	M12×1.25	16	35	20.5	4	34	14.5	38	6
50	32	18	34	15	10	M16×1.5	40	8	24	106	16	24	37	G1/4	M16×1.5	20	40	28	4	31	16	46.5	8
63	32	20	32	15	10	M16×1.5	40	8	24	121	16	24	37	G3/8	M16×1.5	20	45	26	4	33	16	56.5	8
80	40	32	41	20	14	M22×1.5	50	13	32	128	21	30	46	G3/8	M20×1.5	25	45	32.5	4	35.5	20.5	72	10
100	40	30	46	20	14	M22×1.5	50	13	32	138	21	30	51	G1/2	M20×1.5	25	55	37.5	4	37	19	89	10

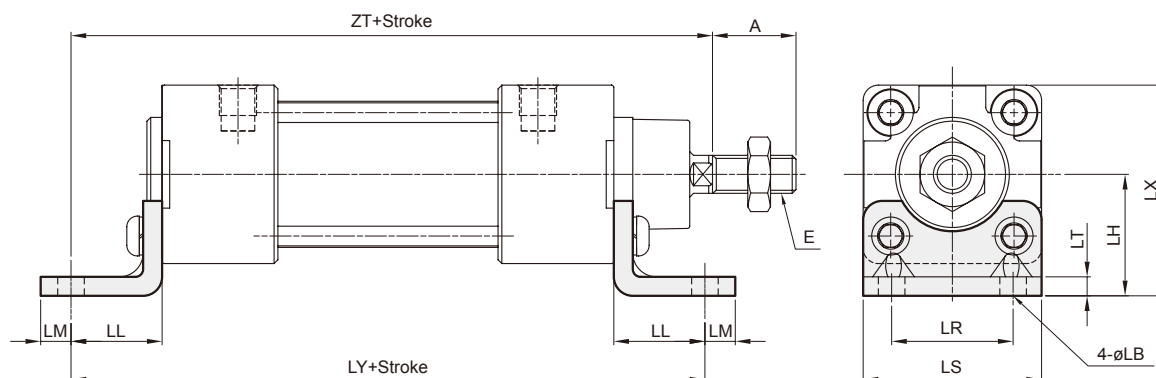
Code Tube I.D.	S	U	UC	UD	X	Z	ZB	ZM	ZN	ZP	ZQ
32	M6×1.0	4.5	4.5	12	47	146	120	146	190	146	184
40	M6×1.0	5.3	4.5	12	55	163	135	165	213	162	206
50	M8×1.25	8.5	4.5	16	65	179	143	180	244	177	227
63	M8×1.25	8	4.5	16	78	194	158	195	259	190	242
80	M10×1.5	9	4.5	18	95	218	174	220	300	215	287
100	M10×1.5	13	4.5	18	115	233	189	240	320	235	305



Code Tube I.D.	Sensor switch	Hold	A	B	C	D	E
MCQV2-32	RCA	HV1	26.5	33.5	26	13	M4×10L
MCQV2-40	RCA	HV1	29.5	36.5	26	13	M4×10L
MCQV2-50	RCA	HV2	37.5	41.5	26	13	M4×10L
MCQV2-63	RCA	HV2	42.5	46.5	26	13	M4×10L
MCQV2-80	RCA	HV3	49.5	54.5	26	13	M5×16L
MCQV2-100	RCA	HV3	57.5	62.5	26	13	M5×16L
MCQV-125	RCA	HV4	—	—	26	13	M4×10L
MCQV-160	RCA	PM16	—	—	26	12	M4×10L
MCQV-200	RCA	HA5V	—	—	26	15	M4×16L

■ Mounting accessories

LB



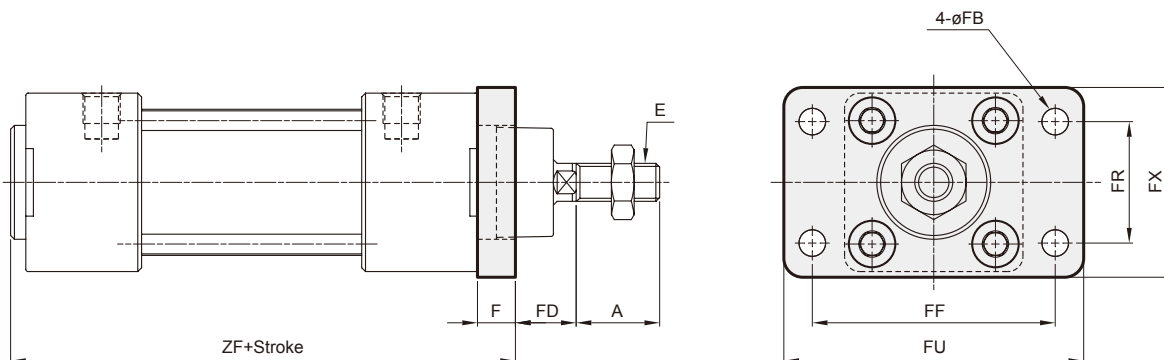
Code Tube I.D.	A	E	LB	LH	LL	LM	LR	LS	LT	LX	LY	ZT
32	22	M10×1.25	7	32	24	8	32	47	5	55.5	142	144
40	24	M12×1.25	9	36	28	10	36	53	5	63.2	161	163
50	32	M16×1.5	9	45	32	10	45	65	5	77.5	170	175
63	32	M16×1.5	9	50	32	10	50	75	5	89.0	185	190
80	40	M20×1.5	12	63	41	13	63	95	6	110.5	210	215
100	40	M20×1.5	14	71	41	13	75	115	6	128.5	220	230

MCQV2 Mounting accessories ø32~ø100

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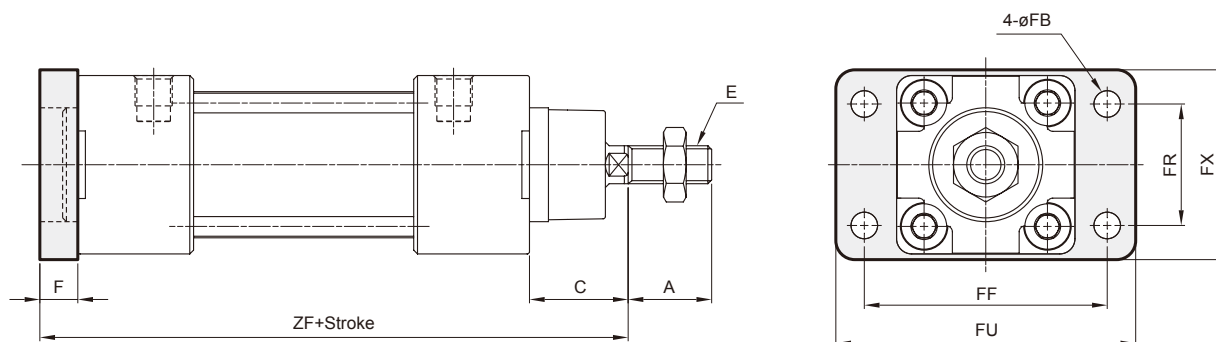


FAC



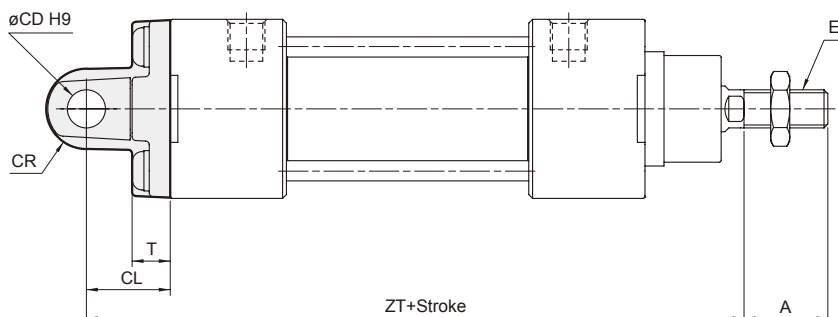
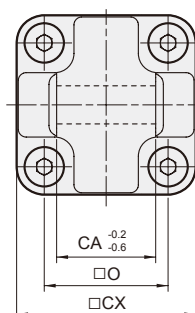
Code Tube I.D.	A	E	F	FB	FD	FF	FR	FU	FX	ZF
32	22	M10×1.25	10	7	16	64	32	79	50	108
40	24	M12×1.25	10	9	20	72	36	90	52	119
50	32	M16×1.5	12	9	25	90	45	110	65	122
63	32	M16×1.5	12	9	25	100	50	125	76	137
80	40	M20×1.5	16	12	30	126	63	154	94	148
100	40	M20×1.5	16	14	35	150	75	180	112	158

FBC



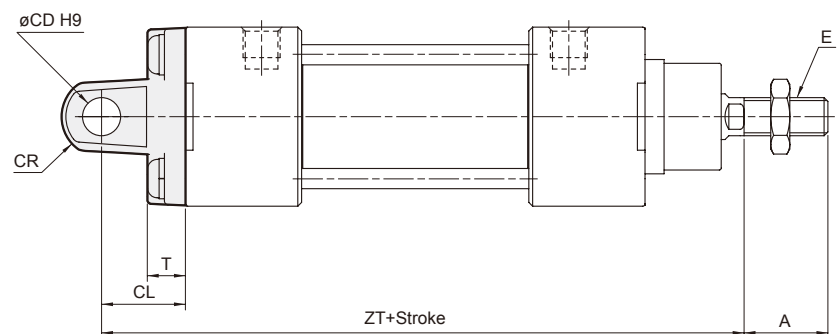
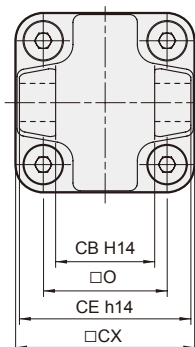
Code Tube I.D.	A	C	E	F	FB	FF	FR	FU	FX	ZF
32	22	26	M10×1.25	10	7	64	32	79	50	130
40	24	30	M12×1.25	10	9	72	36	90	52	145
50	32	37	M16×1.5	12	9	90	45	110	65	155
63	32	37	M16×1.5	12	9	100	50	125	76	170
80	40	46	M20×1.5	16	12	126	63	154	94	190
100	40	51	M20×1.5	16	14	150	75	180	112	205

CA



Code Tube I.D.	A	CA	CD	CL	CR	CX	E	O	T	ZT
32	22	26	10	22	R10.5	46.5	M10×1.25	32.5	10	142
40	24	28	12	25	R12	54	M12×1.25	38	9	160
50	32	32	12	27	R13	64	M16×1.5	46.5	9	170
63	32	40	16	32	R17	75	M16×1.5	56.5	9	190
80	40	50	16	36	R17	93	M20×1.5	72	12	210
100	40	60	20	41	R21	114	M20×1.5	89	11	230

CB



Code Tube I.D.	A	CB	CD	CE	CL	CR	CX	E	O	T	ZT
32	22	26	10	45	22	R10.5	46.5	M10×1.25	32.5	10	142
40	24	28	12	52	25	R12	54	M12×1.25	38	9	160
50	32	32	12	60	27	R14	64	M16×1.5	46.5	9	170
63	32	40	16	70	32	R17	75	M16×1.5	56.5	9	190
80	40	50	16	90	36	R17	93	M20×1.5	72	12	210
100	40	60	20	110	41	R21	114	M20×1.5	89	11	230

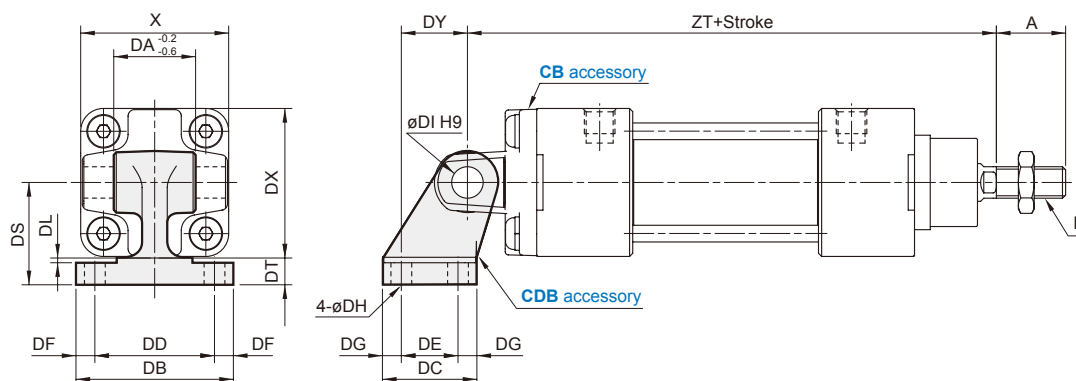
MCQV2 Mounting accessories ø32~ø100

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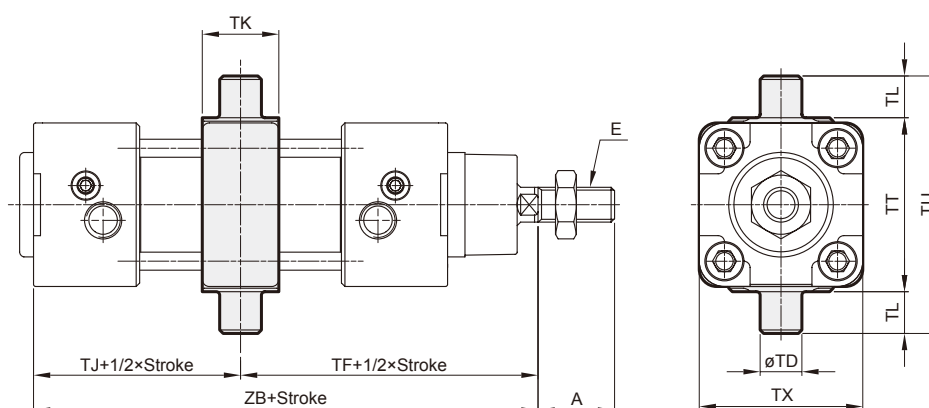
CDB

CB+Pin (Extra purchase)



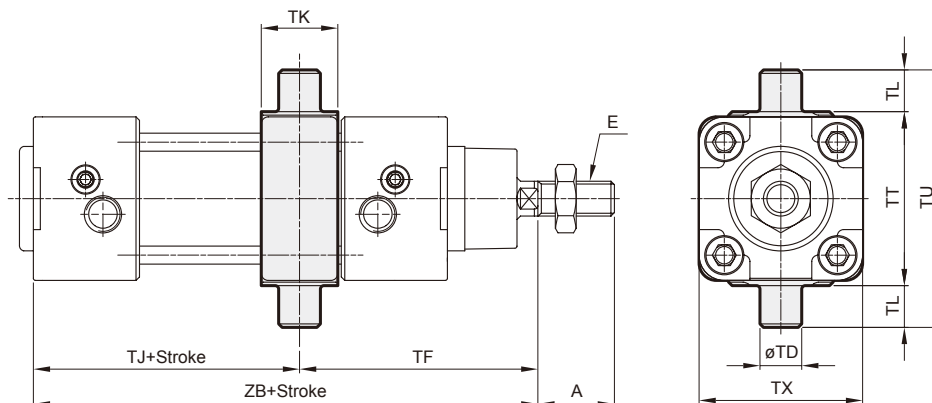
Code Tube I.D.	A	DA	DB	DC	DD	DE	DF	DG	DH	DI	DL	DS	DT	DX	DY	E	X	ZT
32	22	26	50	30	38	18	6	6	6.6	10	1.5	32	8	47.5	21	M10×1.25	47	142
40	24	28	53	34	41	22	6	6	6.6	12	1.5	36	10	53.5	24	M12×1.25	55	160
50	32	32	65	45	50	30	7.5	7.5	9	12	1.5	45	12	65.5	33	M16×1.5	65	170
63	32	40	67	50	52	35	7.5	7.5	9	16	1.5	50	12	77	37	M16×1.5	78	190
80	40	50	86	60	66	40	10	10	11	16	2.5	63	14	96.5	47	M20×1.5	95	210
100	40	60	96	70	76	50	10	10	11	20	2.5	71	15	113.5	55	M20×1.5	115	230

TC



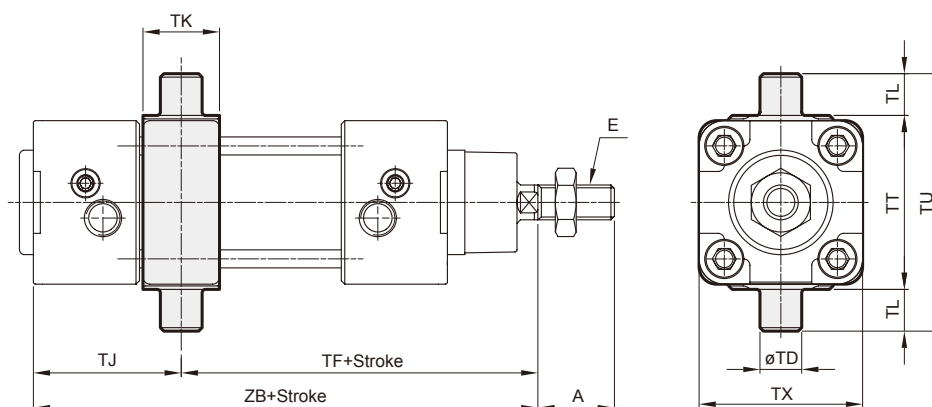
Code Tube I.D.	A	E	TD	TF	TJ	TK	TL	TT	TU	TX	ZB
32	22	M10×1.25	12e8	73	47	22	12	50	74	47	120
40	24	M12×1.25	16e8	82.5	52.5	22	16	63	95	53	135
50	32	M16×1.5	16e8	90	53	22	16	75	107	66	143
63	32	M16×1.5	20e8	97.5	60.5	28	20	90	130	80	158
80	40	M20×1.5	20e8	110	64	34	20	110	150	106	174
100	40	M20×1.5	25e8	120	69	40	25	132	182	126	189

TA



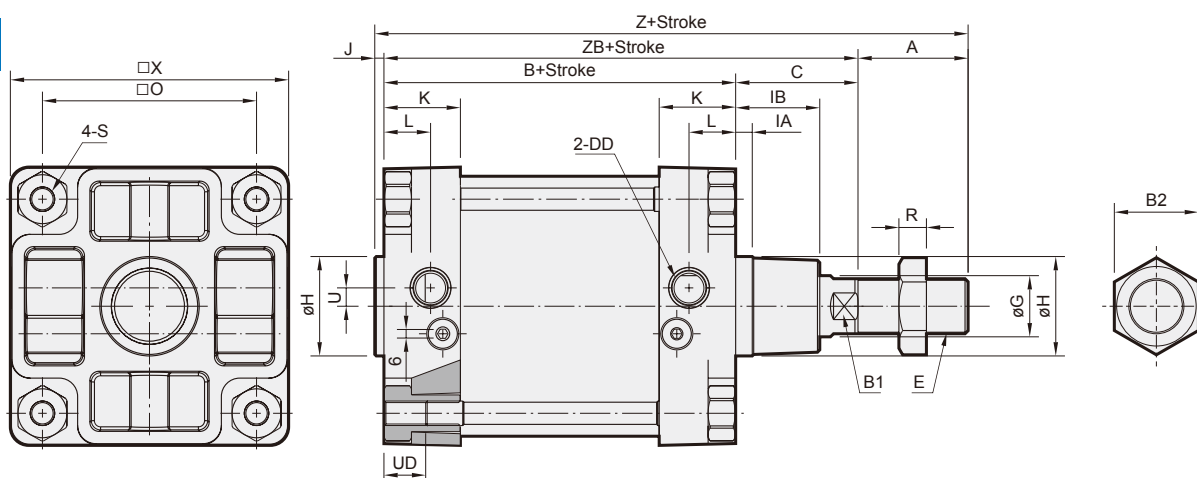
Code Tube I.D.	A	E	TD	TF	Without magnet		Magnet		TK	TL	TT	TU	TX
					TJ	ZB	TJ	ZB					
32	22	M10×1.25	12e8	68.5	51.5	120	81.5	150	22	12	50	74	47
40	24	M12×1.25	16e8	76	59	135	89	165	22	16	63	95	53
50	32	M16×1.5	16e8	80	63	143	93	173	22	16	75	107	66
63	32	M16×1.5	20e8	85	73	158	103	188	28	20	90	130	80
80	40	M20×1.5	20e8	99.5	74.5	174	114.5	214	34	20	110	150	106
100	40	M20×1.5	25e8	109	80	189	120	229	40	25	132	182	126

TB

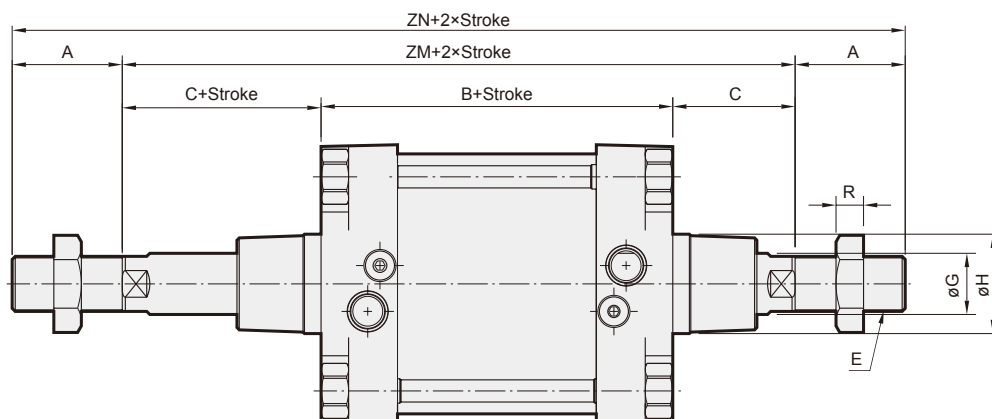


Code Tube I.D.	A	E	TD	Without magnet		Magnet		TJ	TK	TL	TT	TU	TX
				TF	ZB	TF	ZB						
32	22	M10×1.25	12e8	77.5	120	107.5	150	42.5	22	12	50	74	47
40	24	M12×1.25	16e8	89	135	119	165	46	22	16	63	95	53
50	32	M16×1.5	16e8	100	143	130	173	43	22	16	75	107	66
63	32	M16×1.5	20e8	110	158	140	188	48	28	20	90	130	80
80	40	M20×1.5	20e8	120.5	174	160.5	214	53.5	34	20	110	150	106
100	40	M20×1.5	25e8	131	189	171	229	58	40	25	132	182	126

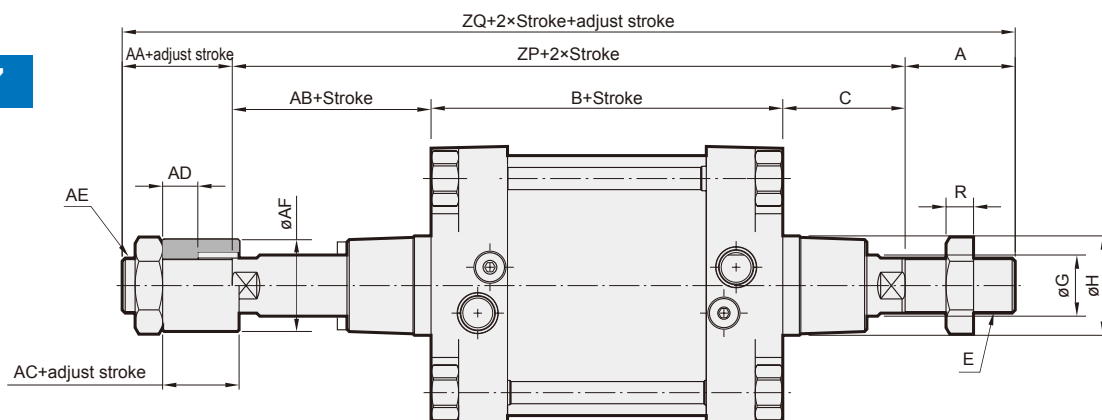
11



21



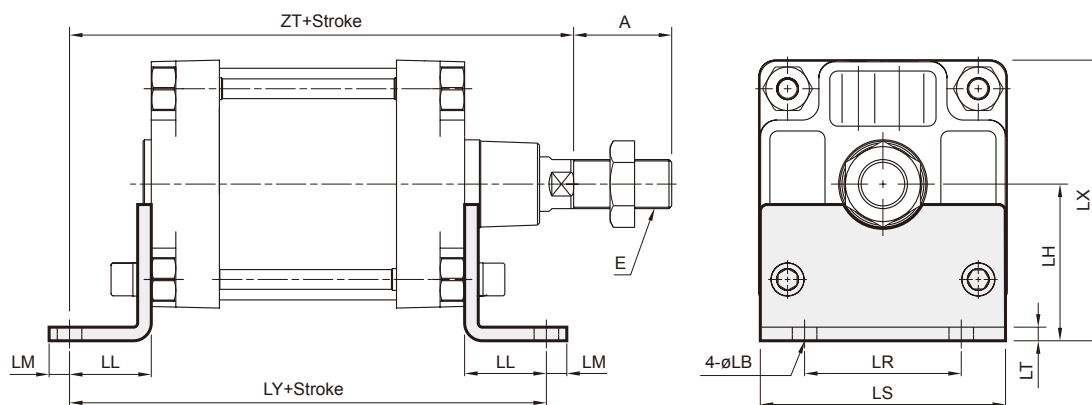
27



Code Tube I.D.	A	AA	AB	AC	AD	AE	AF	B	B1	B2	C	DD	E	G	H	IA	IB	J	K	L	O	R	S
125	54	38	55	30	18	M30×1.5	60	160	27	41	65	G1/2	M27×2	32	60e11	10	40	6	40	25	110	13.5	M12×1.75
160	72	38	71	30	18	M30×1.5	60	180	36	55	80	G3/4	M36×2	40	65e11	10	55	6	50	30.5	140	18	M16×2.0
200	72	40.5	94.5	42.5	20	M36×2.0	60	180	36	55	95	G3/4	M36×2	40	75e11	15	55	6	56	36.5	175	18	M16×2.0

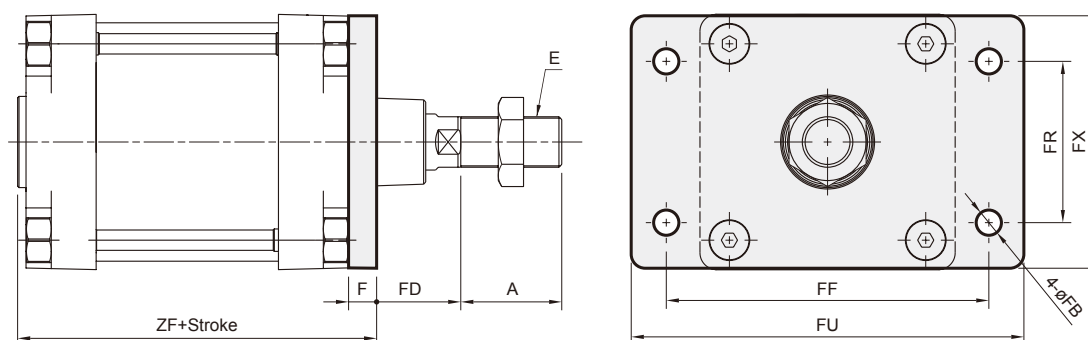
Code Tube I.D.	U	UD	X	Z	ZB	ZM	ZN	ZP	ZQ
125	11	22	140	285	225	290	398	280	372
160	12	27	182	338	260	340	484	331	441
200	12	28	220	353	275	370	514	369.5	482

LB



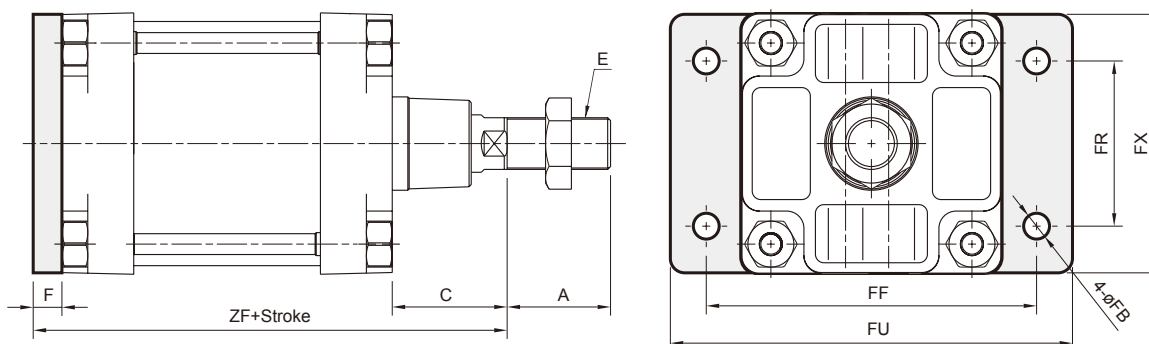
Code Tube I.D.	A	E	LB	LH	LL	LM	LR	LS	LT	LX	LY	ZT
125	54	M27×2.0	16	90	45	25	90	140	9	160	250	270
160	72	M36×2.0	18	115	60	15	115	180	10	206	300	320
200	72	M36×2.0	24	135	70	35	135	220	12	245	320	345

FAC



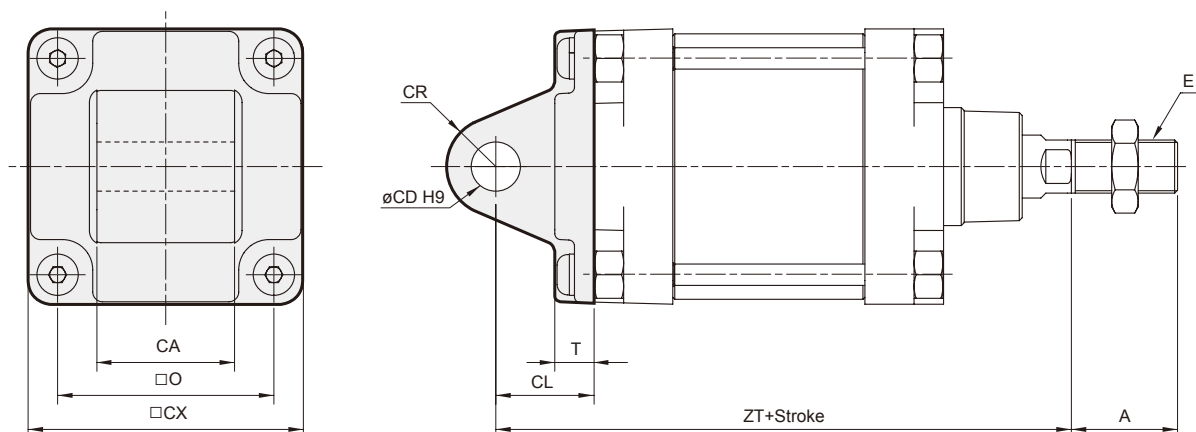
Code Tube I.D.	A	E	F	FB	FD	FF	FR	FU	FX	ZF
125	54	M27×2.0	20	16	45	180	90	210	140	186
160	72	M36×2.0	20	18	60	230	115	280	180	206
200	72	M36×2.0	25	22	70	270	135	320	220	211

FBC



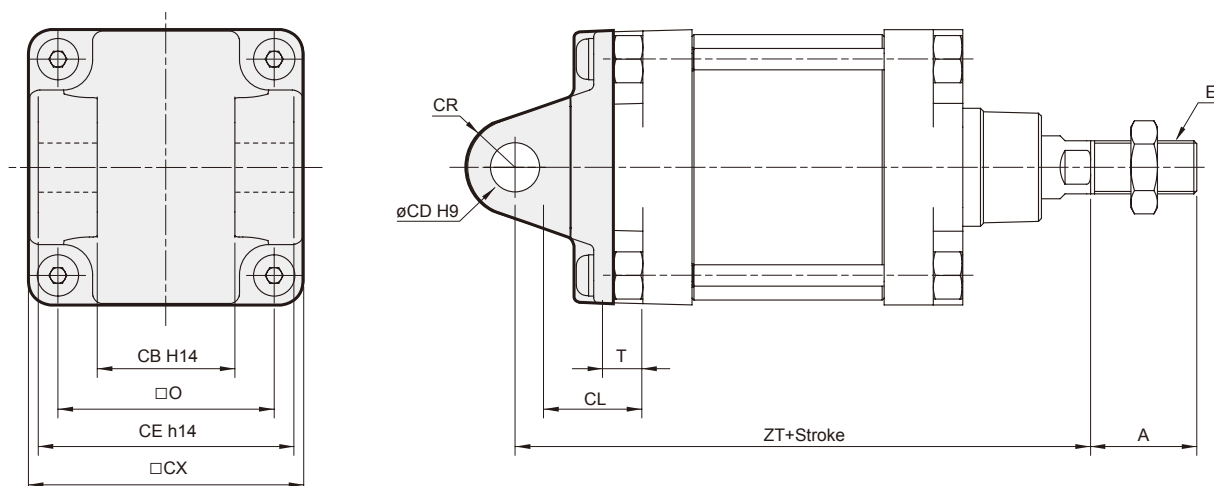
Code Tube I.D.	A	C	E	F	FB	FF	FR	FU	FX	ZF
125	54	65	M27×2.0	20	16	180	90	210	140	245
160	72	80	M36×2.0	20	18	230	115	280	180	280
200	72	95	M36×2.0	25	22	270	135	320	220	300

CA



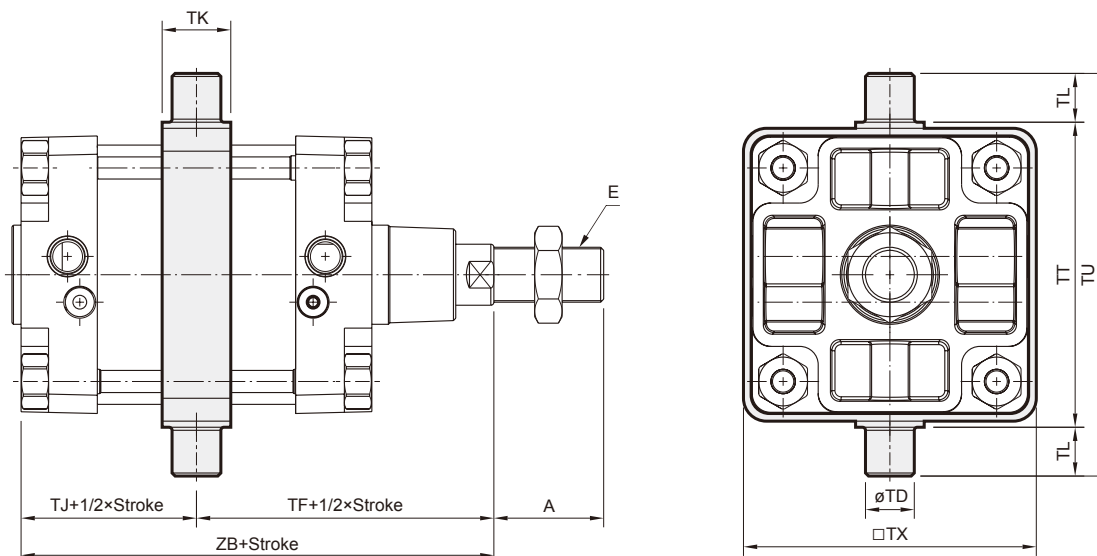
Code Tube I.D.	A	CA	CD	CL	CR	CX	E	O	T	ZT
125	54	69.5 ⁰ _{-0.7}	25	50	R25	139	M27×2.0	110	20	275
160	72	89.5 ⁰ _{-0.7}	30	55	R30	178	M36×2.0	140	20	315
200	72	90 ^{-0.5} _{-1.2}	30	60	R30	218	M36×2.0	175	21	335

CB



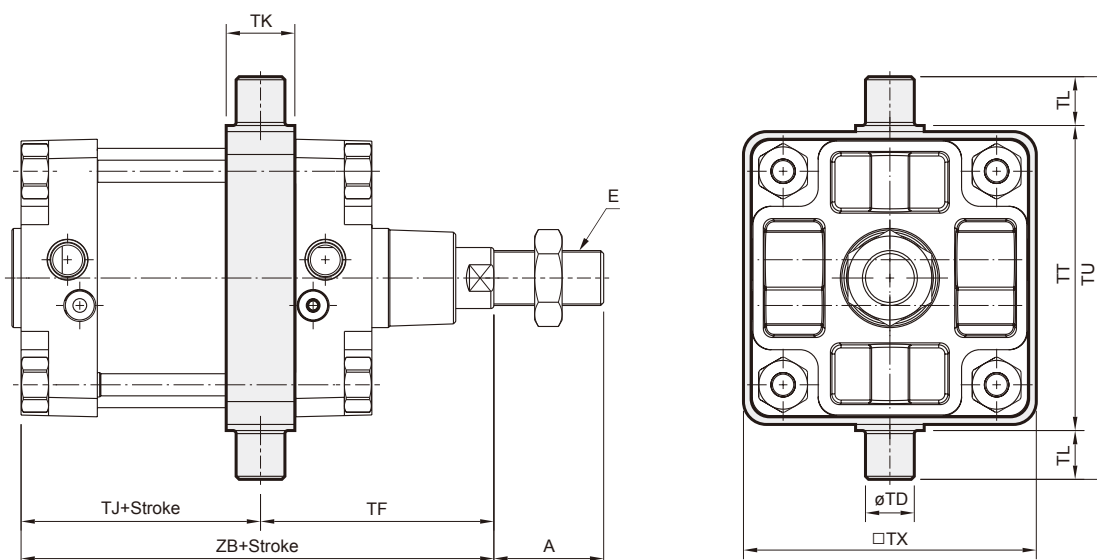
Code Tube I.D.	A	CB	CD	CE	CL	CR	CX	E	O	T	ZT
125	54	70	25	130	50	R25	139	M27×2.0	110	20	275
160	72	90	30	170	55	R30	178	M36×2.0	140	20	315
200	72	90	30	170	60	R30	218	M36×2.0	175	21	335

TC



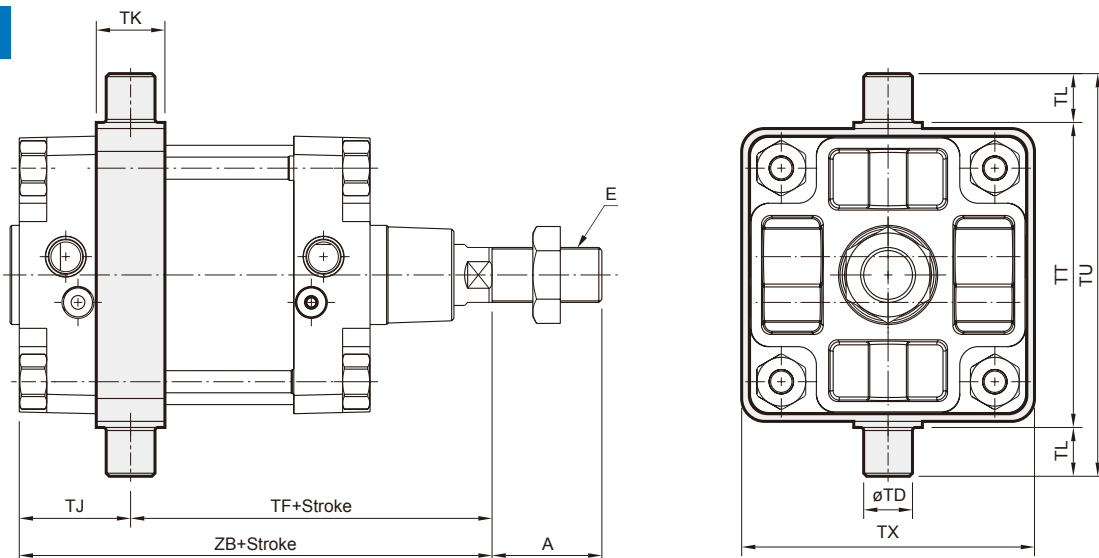
Code Tube I.D.	A	E	TD	TF	TJ	TK	TL	TT	TU	TX	ZB
125	54	M27×2.0	25e9	145	80	40	25	160	210	155	225
160	72	M36×2.0	32e9	170	90	45	32	200	264	192	260
200	72	M36×2.0	32e9	185	90	45	32	250	314	240	275

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

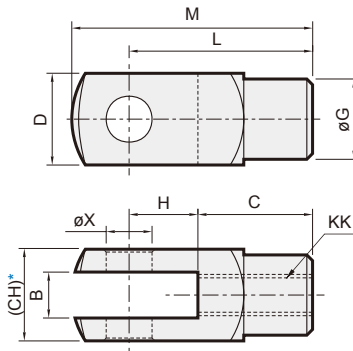
TB



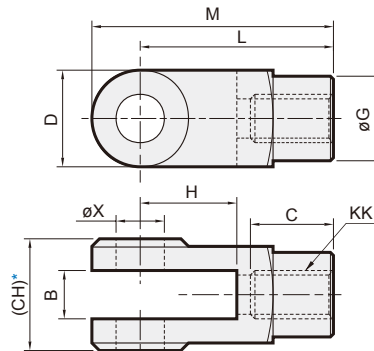
Code Tube I.D.	A	E	TD	TJ	Without magnet		Magnet		TK	TL	TT	TX	TU
					TF	ZB	TF	ZB					
125	54	M27×2.0	25e9	60	165	225	211	271	40	25	160	155	210
160	72	M36×2.0	32e9	72.5	187.5	260	237.5	310	45	32	200	192	264
200	72	M36×2.0	32e9	78.5	196.5	275	240.5	319	45	32	250	240	275

Y connector

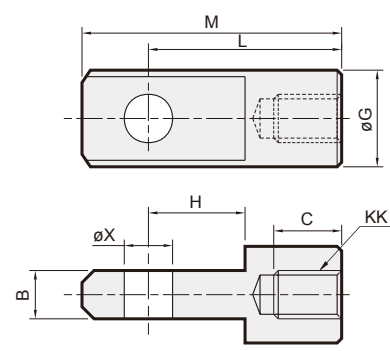
$\varnothing 32 \sim \varnothing 40$



$\varnothing 50 \sim \varnothing 100$



I connector



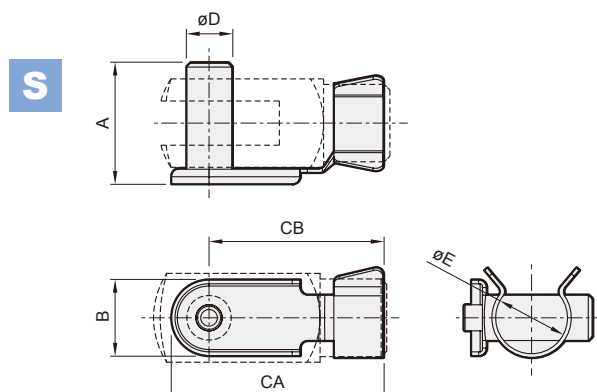
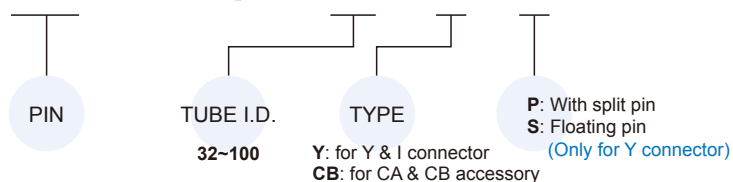
* Please do not take the sand casting plate as the mounting plate, because we do not machine it.
If you have this special demand, please contact our sales representative.

Code	B		C		CH		D		G		H		KK		L		M		X ^{H9}
Tube I.D.	Y	I	Y	I	Y	I	Y	I	Y	I	Y	I	Y	I	Y	I	Y	I	
32	10 ^{+0.5} _{+0.15}	10 ^{-0.1} _{-0.2}	20	17	19	—	19	—	$\varnothing 18$	$\varnothing 20$	20	15	M10×1.25	40	40	52	52	$\varnothing 10$	^{+0.04} ₀
40	12 ^{+0.5} _{+0.15}	12 ^{-0.1} _{-0.2}	24	21	22	—	22	—	$\varnothing 20$	$\varnothing 24$	24	18	M12×1.25	48	48	62	62	$\varnothing 12$	^{+0.04} ₀
50	16 ^{+0.3} _{+0.1}	16 ^{-0.1} _{-0.3}	28	23	32	—	32	—	$\varnothing 28$	$\varnothing 32$	32	32	M16×1.5	64	64	89	86	$\varnothing 16$	^{+0.04} ₀
63	16 ^{+0.3} _{+0.1}	16 ^{-0.1} _{-0.3}	28	23	32	—	32	—	$\varnothing 28$	$\varnothing 32$	32	32	M16×1.5	64	64	89	86	$\varnothing 16$	^{+0.04} ₀
80	20 ^{+0.3} _{+0.1}	20 ^{-0.1} _{-0.3}	33	30	45	—	40	—	$\varnothing 36$	$\varnothing 36$	40	40	M20×1.5	80	80	100	108	$\varnothing 20$	^{+0.05} ₀
100	20 ^{+0.3} _{+0.1}	20 ^{-0.1} _{-0.3}	33	30	45	—	40	—	$\varnothing 36$	$\varnothing 36$	40	40	M20×1.5	80	80	100	108	$\varnothing 20$	^{+0.05} ₀

PIN

Order example * MCQV / MCQI are common accessories.

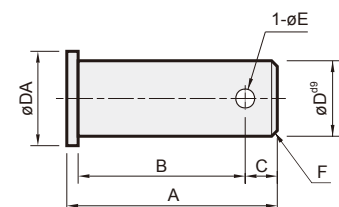
PIN — MCQV — 40 — Y — P



for floating pin

Code	A	B	CA	CB	D ^{d9}	E
Tube I.D.						
32	26	14	45	38	$\varnothing 10$	17
40	31	16	54	46	$\varnothing 12$	19
50,63	42	20	70	60	$\varnothing 16$	27
80,100	56	30	91	76	$\varnothing 20$	35

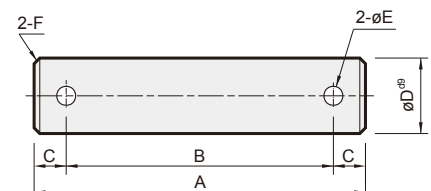
P



for Y & I connector

Code	A	B	C	D ^{d9}	DA	E	F	Split pin
Tube I.D.								
32	30	25	3.5	$\varnothing 10$	14	3.2	1	3.2×20L
40	37	30	5	$\varnothing 12$	16	3.2	1	3.2×20L
50,63	47	37	7	$\varnothing 16$	22	4	1	4×25L
80,100	62	50	8	$\varnothing 20$	30	5	1.5	5×35L

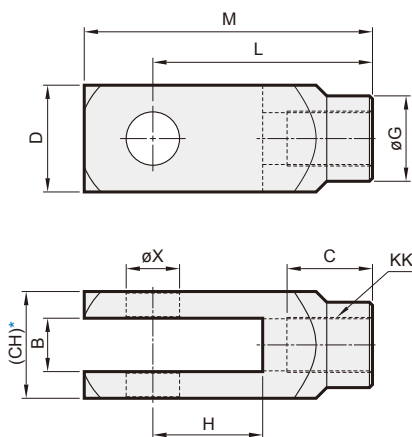
P



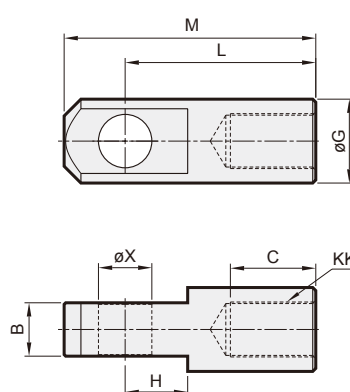
for CA & CB

Code	A	B	C	D ^{d9}	E	F	Split pin
Tube I.D.							
32	69	55	7	$\varnothing 10$	4	1.0	4×20L
40	76	62	7	$\varnothing 12$	4	1.0	4×20L
50	84	70	7	$\varnothing 12$	4	1.0	4×20L
63	94	80	7	$\varnothing 16$	4	1.0	4×30L
80	117	100	8.5	$\varnothing 16$	5	1.5	5×30L
100	137	120	8.5	$\varnothing 20$	5	1.5	5×35L

Y connector



I connector



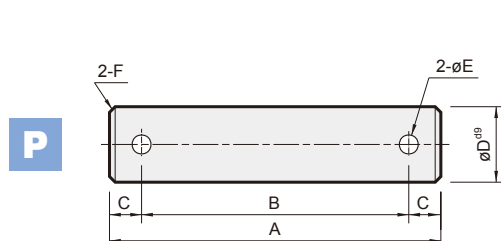
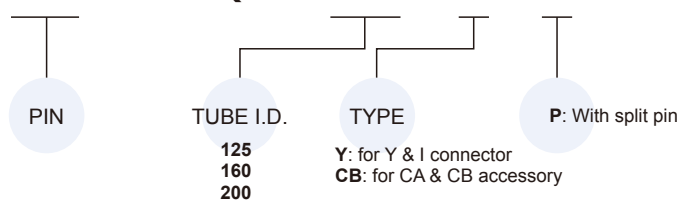
* Please do not take the sand casting plate as the mounting plate, because we do not machine it.
If you have this special demand, please contact our sales representative.

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

PIN

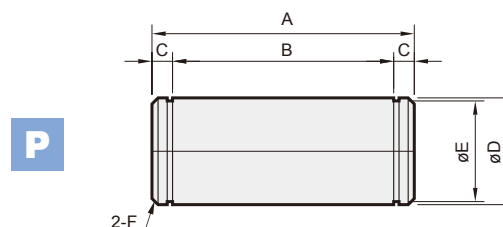
Order example

PIN — MCQV — 125 — Y — P



for $\varnothing 125$

Code	A	B	C	D ^{d9}	E	F	Split pin
CB	157	140	8.5	$\varnothing 25$ ^{-0.07} _{-0.12}	5	1.5	5×36L
Y	81	64	8.5	$\varnothing 30$ ^{-0.07} _{-0.12}	6.3	1.5	6.3×40L



for $\varnothing 160, \varnothing 200$

Code	A	B	C	D	E	F	Snap ring
CB	186	172	7	30 ^{+0.05} _{-0.09}	28.6 ⁰ _{-0.21}	2	STW-30
Y	86	72	7	35 ^{+0.05} _{-0.03}	33 ⁰ _{-0.25}	2	STW-35

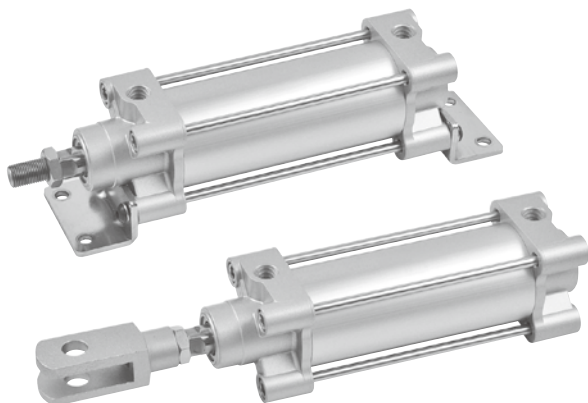


Table for standard stroke

Tube I.D.	Stroke (mm)
ø63	50,75,100,125,150,175,200,250, 300,350,400,450,500,600,700,800

- Stroke out of specification is also available.
- Please consult us if stroke out of specification.

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.

■ Automatic air cushioning

Pneumatic cushioning at both ends without adjusting.

■ 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	MCQV3
Tube I.D. (mm)	63
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	HV2

Order example

MCQV3 — 11 — 63 — 100 M — A

MODEL 1: Single rod
2: Double rod

TUBE I.D. STROKE M: Magnet

A: Cushion air (Adjustable)
S: Cushion air (Automatic)

STYLE

Code	Symbol	Description
1 1		Double acting / Male thread
2 1		Double rod / Male thread

- * Order example for special specification, refer to page 0-7.
- * Order example for Rc or NPT thread please consult us.

Mounting accessories

* Use the same accessories with MCQV2.

FAC — MCQV — 63

MODEL TUBE I.D.

MOUNTING TYPE

	LB
	CA
	CB
	CDB (+CB+PIN)
	FAC
	FBC
	TA
	TB
	TC
	Y
	I
	YS (Y+Floating+PIN)

* CB+PIN have to extra purchase.

* Mounting accessories please refer to page 1-52.

MCQV3-11 Inside structure & Parts list

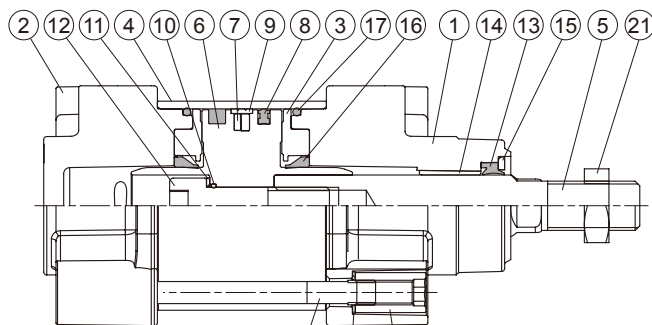
ISO 15552 **STANDARD CYLINDER**



Single rod 11 type

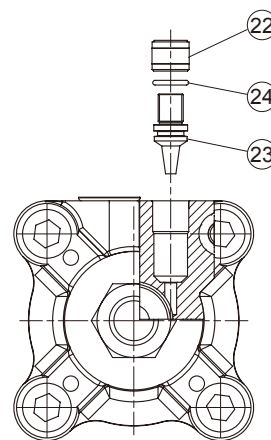
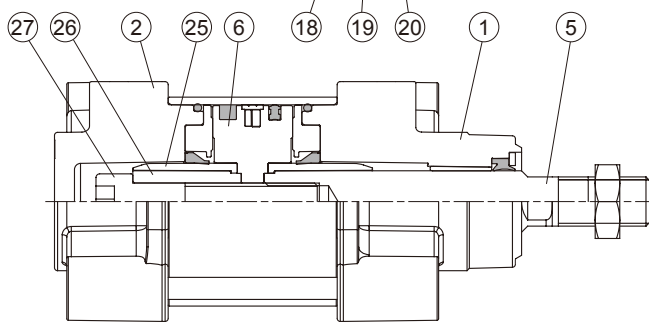
A

Cushion air
(Adjustable)



S

Cushion air
(Automatic)



No.	Part name	Material	Q'ty	Component parts (inclusion)		Repair kits (inclusion)		Note
				Adjustable	Automatic	Adjustable	Automatic	
1	Rod cover	Aluminum alloy	1	●	●			
2	Head cover	Aluminum alloy	1	●	●			
3	Cushion seal holder	Aluminum alloy	2	●	●			
4	Cylinder tube	Aluminum alloy	1					
5	Piston rod *1	Carbon steel	1					
6	Piston	Aluminum alloy	1	●	●			
7	Magnet ring	Magnet material	1	◎	◎			◎ Option
8	Piston packing	NBR	1	●	●	●	●	
9	Wear ring	Resin	1	●	●			
10	O-ring	NBR	1	●		●		
11	Washer	Carbon steel	1	●				
12	Hex bolt	Carbon steel	1	●	●			
13	Rod packing	NBR	1	●	●	●	●	
14	Bush	Bearing alloy	1	●	●			
15	Washer	Carbon steel	1	●	●			
16	Cushion packing	NBR	2	●	●	●	●	
17	O-ring	NBR	2	●	●	●	●	
18	Tie rod	Carbon steel	4					
19	Washer	Carbon steel	8	●	●			
20	Tie rod nut	Carbon steel	8	●	●			
21	Piston rod nut	Carbon steel	1	●	●			
22	Insert nut	Copper alloy	2	●				
23	Needle valve	Copper alloy	2	●				
24	O-ring	NBR	2	●				
25	Shock absorber axis	Resin	2		●			
26	Piston nut	Carbon steel	1		●			
27	Hex bolt	Carbon steel	1		●			

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

MCQV3-21 Inside structure & Parts list

ISO 15552 **STANDARD CYLINDER**

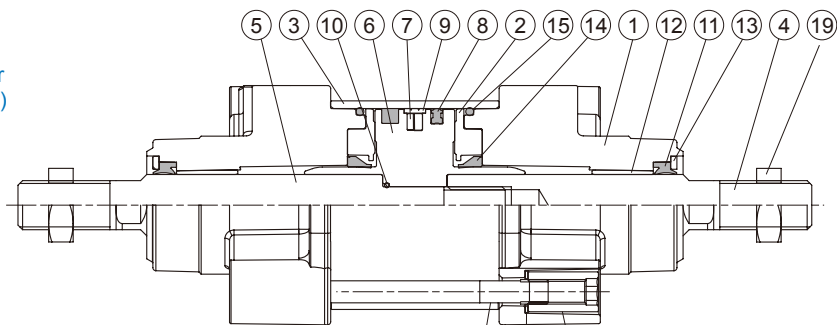


mindman

Double rod 21 type

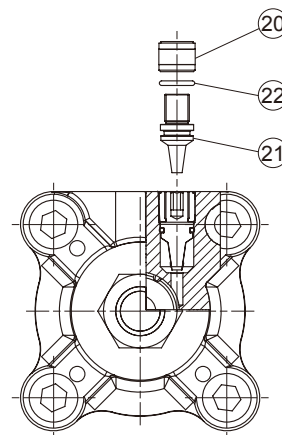
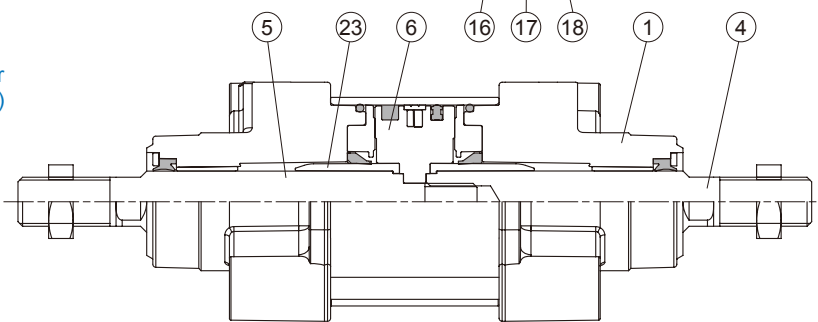
A

Cushion air
(Adjustable)



S

Cushion air
(Automatic)

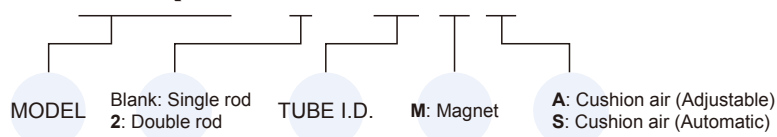


No.	Part name	Material	Q'ty	Component parts (inclusion)		Repair kits (inclusion)		Note
				Adjustable	Automatic	Adjustable	Automatic	
1	Rod cover	Aluminum alloy	2	●	●			
2	Cushion seal holder	Aluminum alloy	2	●	●			
3	Cylinder tube	Aluminum alloy	1					
4	Piston rod #1 *1	Carbon steel	1					
5	Piston rod #2 *1	Carbon steel	1					
6	Piston	Aluminum alloy	1	●	●			
7	Magnet ring	Magnet material	1	◎	◎			◎ Option
8	Piston packing	NBR	1	●	●	●	●	
9	Wear ring	Resin	1	●	●			
10	O-ring	NBR	1	●		●		
11	Rod packing	NBR	2	●	●	●	●	
12	Bush	Bearing alloy	2	●	●			
13	Washer	Carbon steel	2	●	●			
14	Cushion packing	NBR	2	●	●	●	●	
15	O-ring	NBR	2	●	●	●	●	
16	Tie rod	Carbon steel	4					
17	Washer	Carbon steel	8	●	●			
18	Tie rod nut	Carbon steel	8	●	●			
19	Piston rod nut	Carbon steel	2	●	●			
20	Insert nut	Copper alloy	2	●				
21	Needle valve	Copper alloy	2	●				
22	O-ring	NBR	2	●				
23	Shock absorber axis	Resin	2		●			

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

Order example of component parts

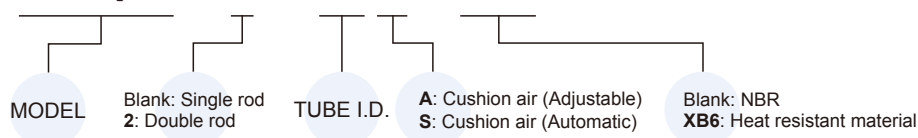
CP — MCQV3 — 2 — 63 M A



* Order example for Rc or NPT thread please consult us.

Order example of repair kits

PS — MCQV3 — 2 — 63 A — XB6



Cylinder & accessories weight

Cylinder weight

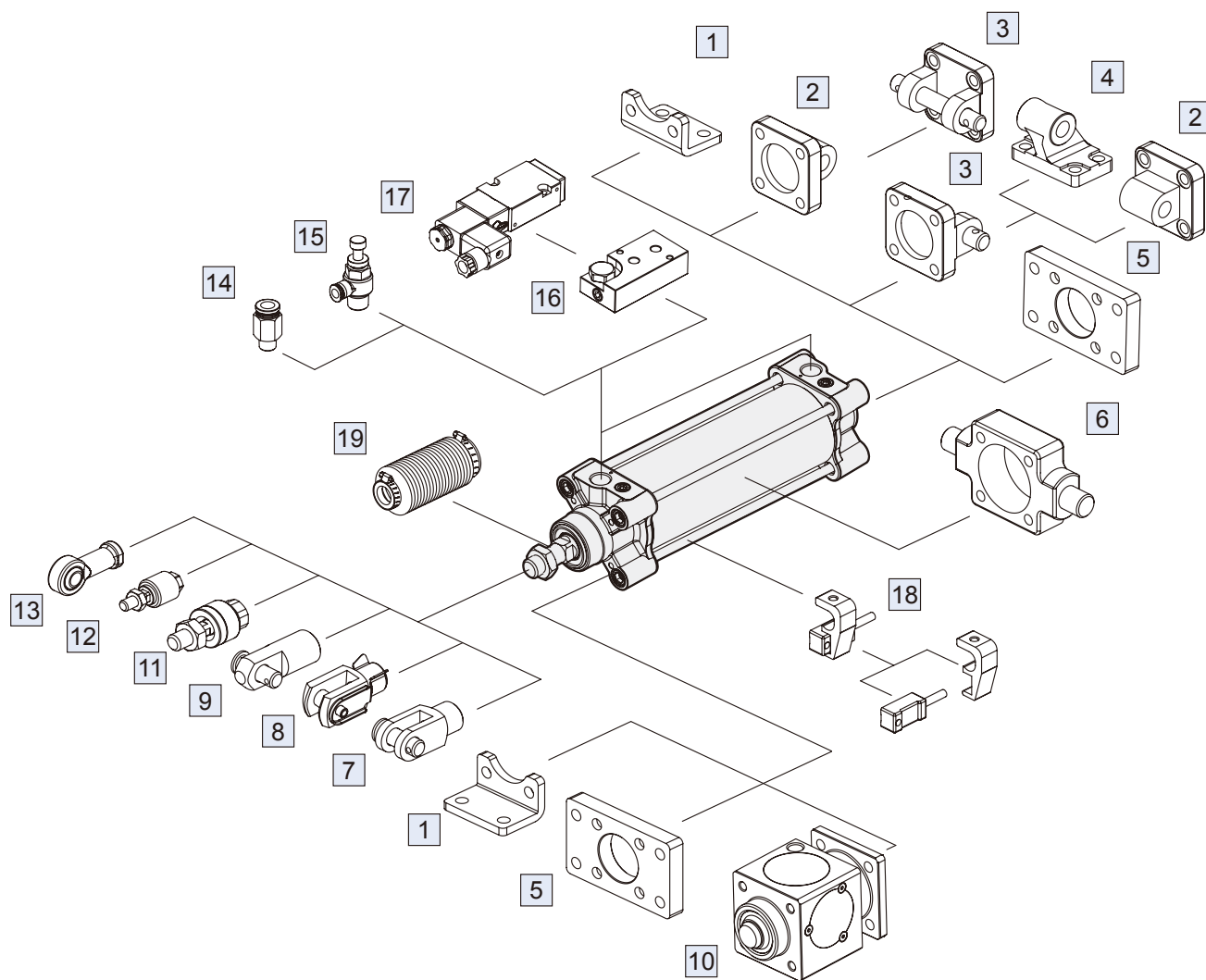
Unit: kg

Model	Basic weight MCQV3-11	Basic weight (magnet) MCQV3-11	Stroke 25 mm MCQV3-11
Tube I.D.			
ø63	1.635	1.655	0.130

Accessories weight

Unit: kg

Model	LB	CA	CB	CDB	FAC/FBC	TA/TB/TC	Y	I	Pin		YS
									Y&I	CA&CB	
Tube I.D.											
ø63	0.395	0.670	0.544	0.550	0.684	0.675	0.272	0.334	0.067	0.128	0.070



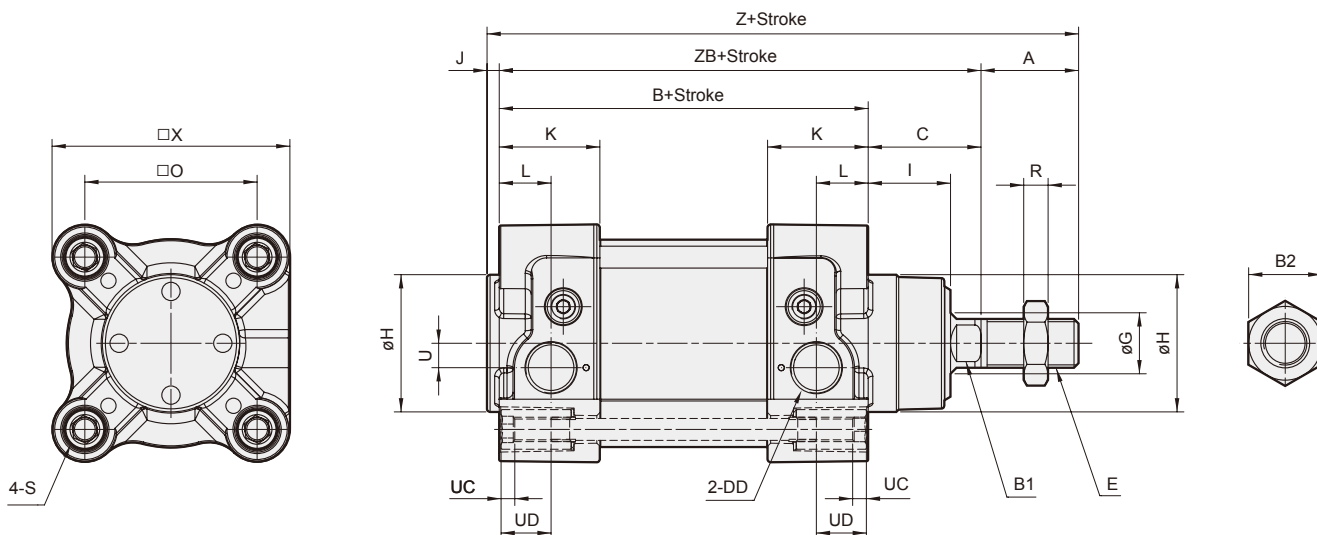
No.	Accessories	Material	Page
1	Mounting accessories LB	Carbon steel	1-36
2	Mounting accessories CA	Cast iron	1-38
3	Mounting accessories CB+PIN	Cast iron / *1	1-38, 46
4	Mounting accessories CDB	Cast iron	1-39
5	Mounting accessories FAC/FBC	Carbon steel	1-37
6	Mounting accessories TA/TB/TC	Cast iron	1-39, 40
7	Accessories Y+PIN	Cast iron / *1	1-46
8	Accessories YS (Y+Floating pin)	Carbon steel	1-46
9	Accessories I+PIN	Carbon steel	1-46
10	Locking unit MCBQV*	Aluminum alloy+*2	1-88

No.	Accessories	Material	Page
11	Floating joint MFC	Carbon steel	8-2
12	Floating joint MFCS	Carbon steel	8-5
13	Female rod ends PHS	Carbon steel	8-6
14	Fitting PC (PISCO)	—	8-3 (Vol.1)
15	Speed controller JSC (PISCO)	—	8-15 (Vol.1)
16	Cylinder link seats MVSN-300-C	Aluminum alloy	1-69 (Vol.1)
17	Solenoid valve MVSN-220 / 300	—	1-65, 67 (Vol.1)
18	Sensor switch RCA+HV*	—	8-8
19	Protective bellows kit	NBR	—

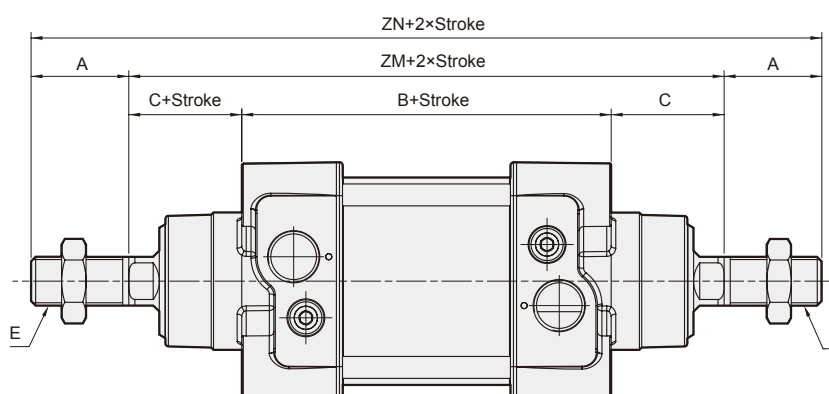
*1. PIN material is carbon steel.

*2. Bronze alloy.

11



21



Code Tube I.D.	A	B	B1	B2	C	DD	E	G	H	I	J	K	L	O	R	S	U	UC	UD	X
63	32	121	16	24	37	G3/8	M16×1.5	20	45	26	4	33	17	56.5	8	M8×1.25	8	4.5	17	78

Code Tube I.D.	Z	ZB	ZM	ZN
63	194	158	195	259

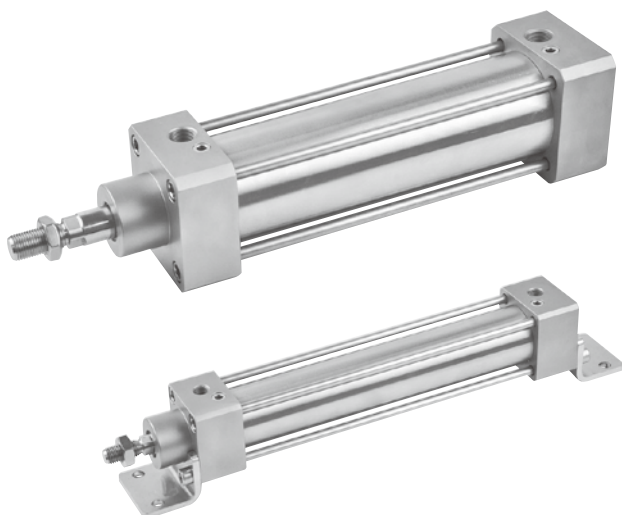


Table for standard stroke

Tube I.D.	Stroke (mm)
ø32~ø100	25,50,75,100,125,150,175,200,250,300,350,400,450,500,600,700,800,900,1000

- Stroke out of specification is also available.
- Please consult us if stroke out of specification.
- Produce after received your orders.

Feature

■ AISI 316 stainless steel

Fits the chemical, food and pharmaceutical environment.

■ 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	MCQVS		
Tube I.D. (mm)	32,40	50,63	80,100
Medium	Air		
Operating pressure range	0.1~1 MPa		
Proof pressure	1.5 MPa		
Ambient temperature	-10~+80°C (No freezing)		
Available speed range	50~1000 mm/sec		
Sensor switch	RCA (Please refer to page 8-8)		
Sensor switch holder	HV1	HV2	HV3

Order example

MCQVS — 11 — 40 — 100M

MODEL

1: Single rod
2: Double rod

TUBE I.D.

STROKE

M: Magnet

STYLE

Code	Symbol	Description
1 1		Double acting / Male thread
2 1		Double rod / Male thread
2 7		Double rod / Adjustable male thread (*)

- * The max adjustable stroke
ø32~ø63: 100mm
ø80, ø100: 150mm

Mounting accessories

FAC — MCQVS — 40

MODEL

TUBE I.D.

MOUNTING TYPE

	LB
	CA
	CB
	CDB (+CB+PIN)
	FAC
	FBC
	TA
	TB
	TC
	YP (Y+PIN)

* CB+PIN have to extra purchase.

* Stainless steel

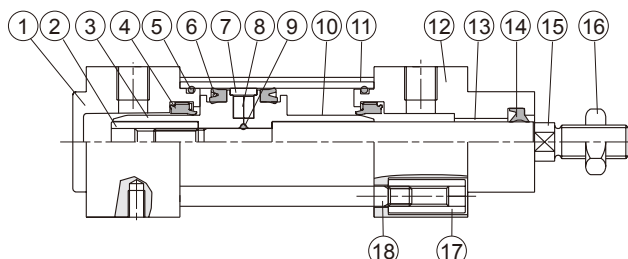
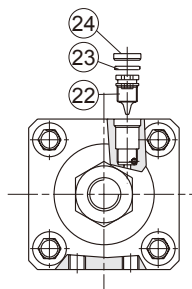
MCQVS-11 Inside structure & Parts list

ISO 15552 **STANDARD CYLINDER (STAINLESS STEEL)**

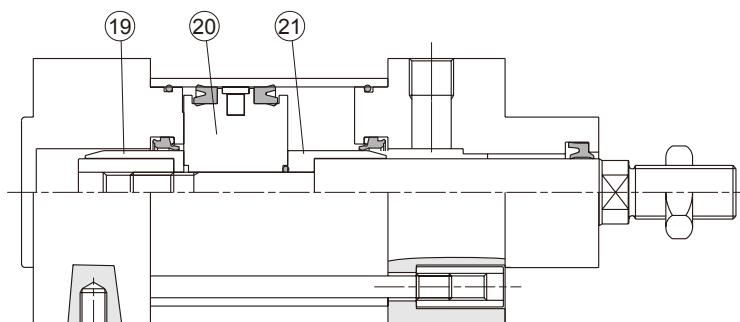
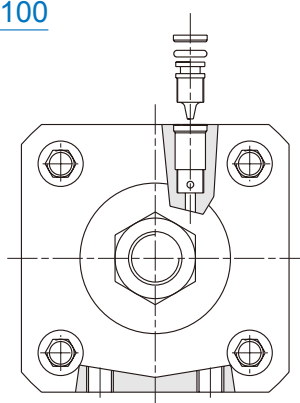


Single rod 11 type

ø32, ø40



ø50~ø100



No.	Part name	Material	Q'y	Component parts (inclusion)		Repair kits (inclusion)	Note
				ø30, ø40	ø50~ø100		
1	Head cover	SUS316	1	●	●		
2	Piston nut	Carboon steel	1	●	●		
3	Piston-H	Aluminum alloy	1	●			
4	Cushion packing	NBR	2	●	●	●	
5	O-ring	NBR	2	●	●	●	
6	Piston packing	NBR	2	●	●	●	
7	Wear ring	Resin	1	●	●		
8	Magnet ring	Magnet material	1 or 2	◎	◎	◎	ø32,40 (Q'y 2) ◎ Option
9	O-ring	NBR	1	●	●	●	
10	Piston-R	Aluminum alloy	1	●			
11	Cylinder tube	SUS316	1	●	●		
12	Rod cover	SUS316	1	●	●		
13	Bush	Resin	1	●	●		
14	Rod packing	NBR	1	●	●	●	
15	Piston rod	SUS316	1	●	●		
16	Hex nut	SUS316	1	●	●		
17	Tie rod nut	SUS316	8	●	●		
18	Tie rod	SUS316	4	●	●		
19	Cushioning rod - H	Aluminum alloy	1		●		
20	Piston	Aluminum alloy	1		●		
21	Cushioning rod - R	Aluminum alloy	1		●		
22	Needle valve	SUS316	2	●	●		
23	O-ring	NBR	2	●	●	●	
24	Needle valve washer	SUS316	2	●	●		

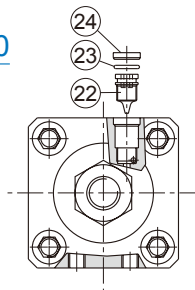
MCQVS-2* Inside structure & Parts list

ISO 15552 **STANDARD CYLINDER (STAINLESS STEEL)**

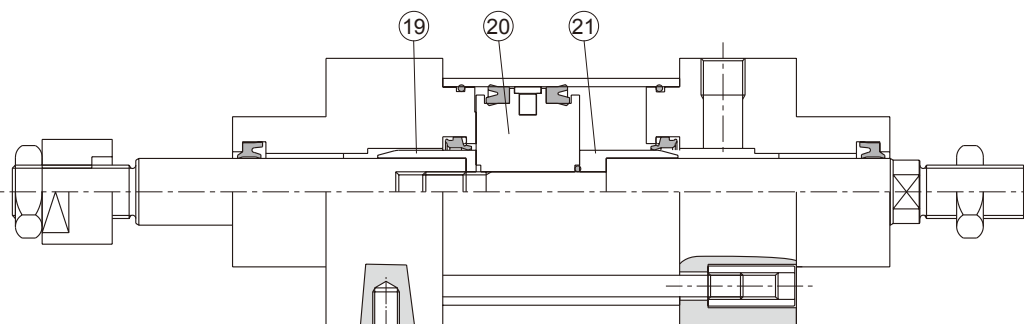
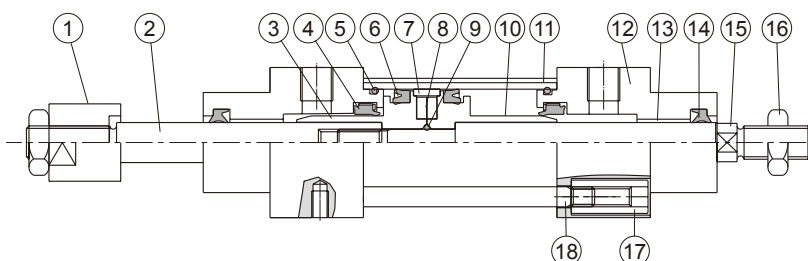
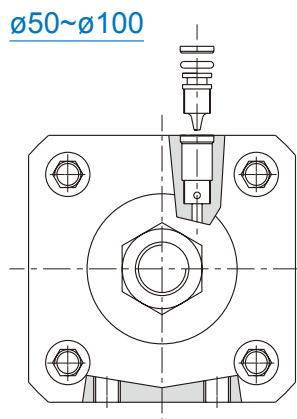


Double rod 21 / 27 type

ø32, ø40



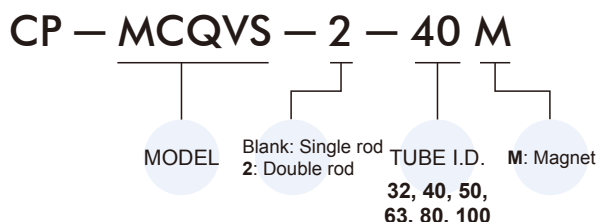
ø50~ø100



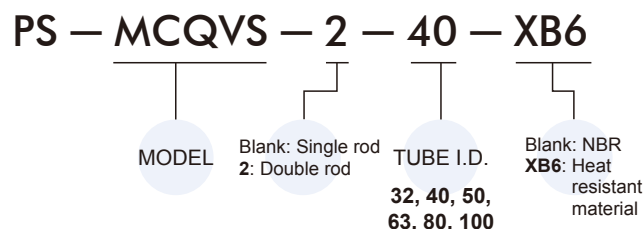
No.	21 type		27 type		Part name	Material	Q'y	Component parts (inclusion)		Repair kits (inclusion)	Note
	A	B	A	B				ø32, ø40	ø50~ø100		
1			●	●	Adjustable nut	SUS316	1				
2	●	●	●	●	Piston rod #2	SUS316	1				
3	●		●		Piston-H	Aluminum alloy	1	●			
4	●	●	●	●	Cushion packing	NBR	2	●	●	●	
5	●	●	●	●	O-ring	NBR	2	●	●	●	
6	●	●	●	●	Piston packing	NBR	2	●	●	●	
7	●	●	●	●	Wear ring	Resin	1	●	●		
8	●	●	●	●	Magnet ring	Magnet material	1 or 2	◎	◎	◎	ø32,40 (Q'y 2) ◎ Option
9	●	●	●	●	O-ring	NBR	1	●	●	●	
10	●		●		Piston-R	Aluminum alloy	1	●			
11	●	●	●	●	Cylinder tube	SUS316	1				
12	●	●	●	●	Rod cover	SUS316	2	●	●		
13	●	●	●	●	Bush	Resin	2	●	●		
14	●	●	●	●	Rod packing	NBR	2	●	●	●	
15	●	●	●	●	Piston rod #1	SUS316	1				
16	●	●	●	●	Hex nut	SUS316	2	●	●		
17	●	●	●	●	Tie rod nut	SUS316	8	●	●		
18	●	●	●	●	Tie rod	SUS316	4				
19		●		●	Cushioning rod - H	Aluminum alloy	1		●		
20		●		●	Piston	Aluminum alloy	1		●		
21		●		●	Cushioning rod - R	Aluminum alloy	1		●		
22	●	●	●	●	Needle valve	SUS316	2	●	●		
23	●	●	●	●	O-ring	NBR	2	●	●	●	
24	●	●	●	●	Needle valve washer	SUS316	2	●	●		

A: ø32, ø40, B: ø50~ø100

Order example of component parts



Order example of repair kits



Cylinder & accessories weight

Cylinder weight

Unit: kg

Model	Basic weight MCQVS-11	Basic weight (magnet) MCQVS-11	Stroke 25 mm MCQVS-11	Basic weight MCQVS-21	Basic weight (magnet) MCQVS-21	Stroke 25 mm MCQVS-21
Tube I.D.						
ø32	1.061	1.067	0.088	1.184	1.19	0.108
ø40	1.797	1.809	0.128	2.008	2.02	0.165
ø50	2.597	2.614	0.180	2.953	2.97	0.243
ø63	4.389	4.409	0.200	4.770	4.79	0.263
ø80	6.750	6.777	0.310	7.425	7.45	0.413
ø100	11.227	11.262	0.350	12.033	12.07	0.443

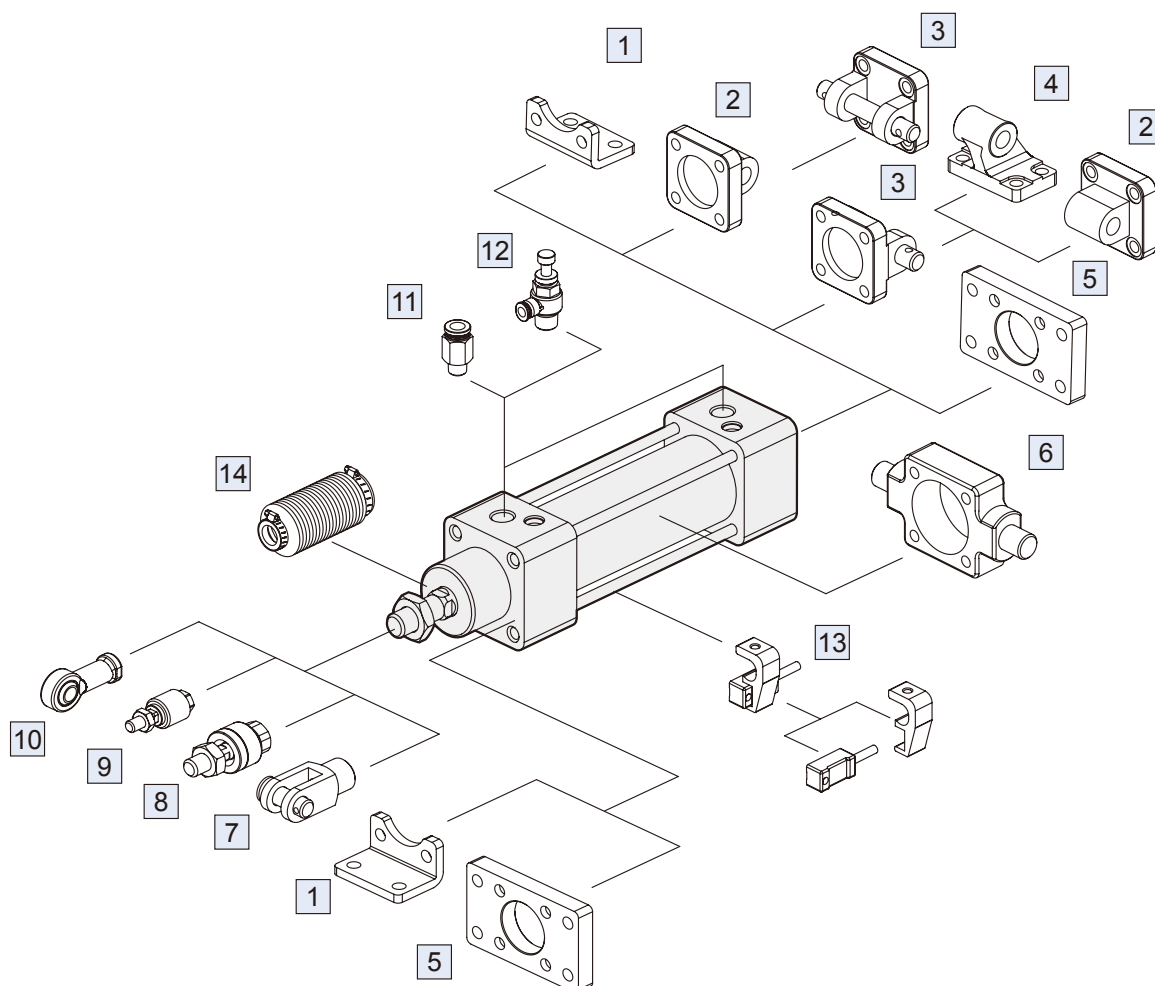
Style 27	Cylinder (A)			Adjustable nut (B)	
Model	Basic weight MCQVS-27	Basic weight (magnet) MCQVS-27	Stroke 25 mm MCQVS-27	Basic weight MCQVS-27	Adjustable stroke 25 mm MCQVS-27
Tube I.D.					
ø32	1.166	1.170	0.108	0.037	0.039
ø40	1.982	1.989	0.166	0.109	0.097
ø50	2.883	2.893	0.242	0.150	0.183
ø63	4.704	4.714	0.262	0.150	0.183
ø80	7.279	7.295	0.405	0.388	0.201
ø100	11.895	11.913	0.442	0.407	0.201

* Total weight of style 27 = A + B

Accessories weight

Unit: kg

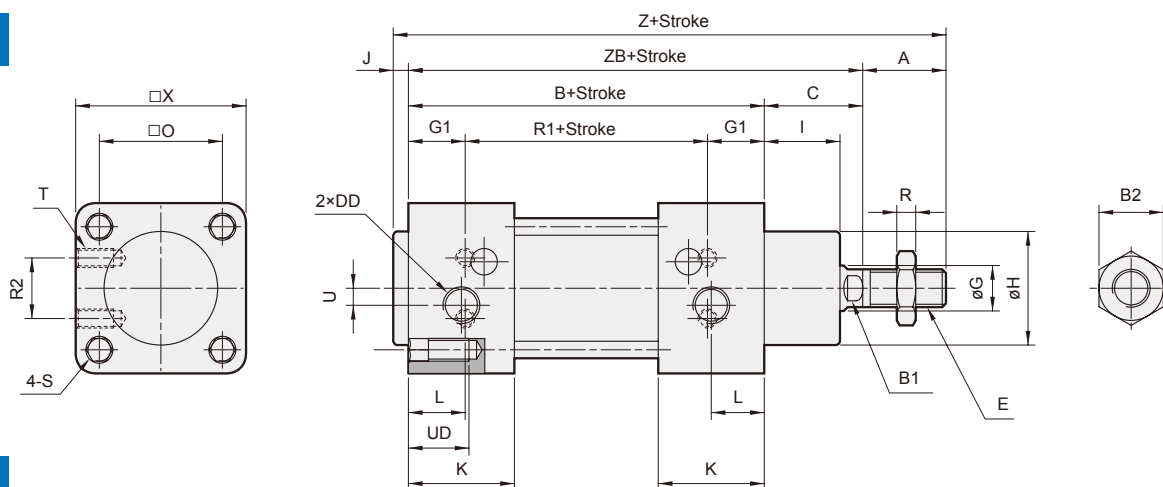
Model	LB	CA	CB	CDB	FAC/FBC	TA/TB/TC	YP	Pin CA / CB
Tube I.D.								
ø32	0.060	0.176	0.138	0.158	0.192	0.128	0.090	0.032
ø40	0.072	0.274	0.230	0.238	0.250	0.308	0.153	0.052
ø50	0.160	0.368	0.338	0.418	0.482	0.370	0.317	0.060
ø63	0.180	0.682	0.540	0.526	0.626	0.690	0.317	0.122
ø80	0.370	1.196	1.000	1.055	1.436	0.894	0.680	0.152
ø100	0.432	2.100	1.700	1.510	1.994	1.584	0.680	0.290



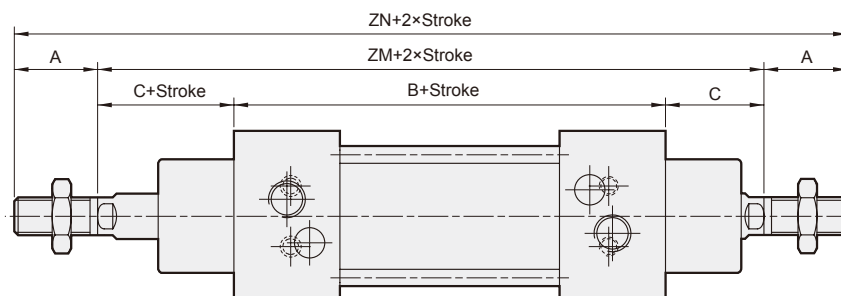
No.	Accessories	Material	Page
1	Mounting accessories LB	SUS316	1-61
2	Mounting accessories CA	SUS316	1-61
3	Mounting accessories CB+PIN	SUS316	1-61, 64
4	Mounting accessories CDB	SUS316	1-60
5	Mounting accessories FAC/FBC	SUS316	1-63
6	Mounting accessories TA/TB/TC	SUS316	1-62
7	Accessories YP (Y+PIN)	SUS316	1-64

No.	Accessories	Material	Page
8	Floating joint MFC	Carbon steel	8-2
9	Floating joint MFCS	Carbon steel	8-5
10	Female rod ends PHS-S	SUS	8-7
11	Fitting PC (PISCO)	—	8-3 (Vol.1)
12	Speed controller JSC (PISCO)	—	8-15 (Vol.1)
13	Sensor switch RCA+HV*	—	8-8
14	Protective bellows kit	NBR	—

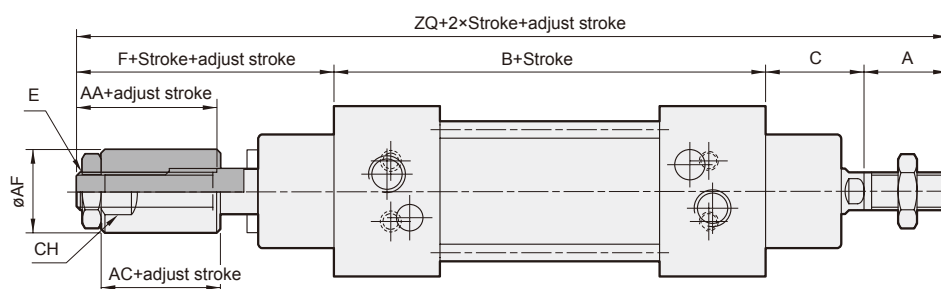
11



21

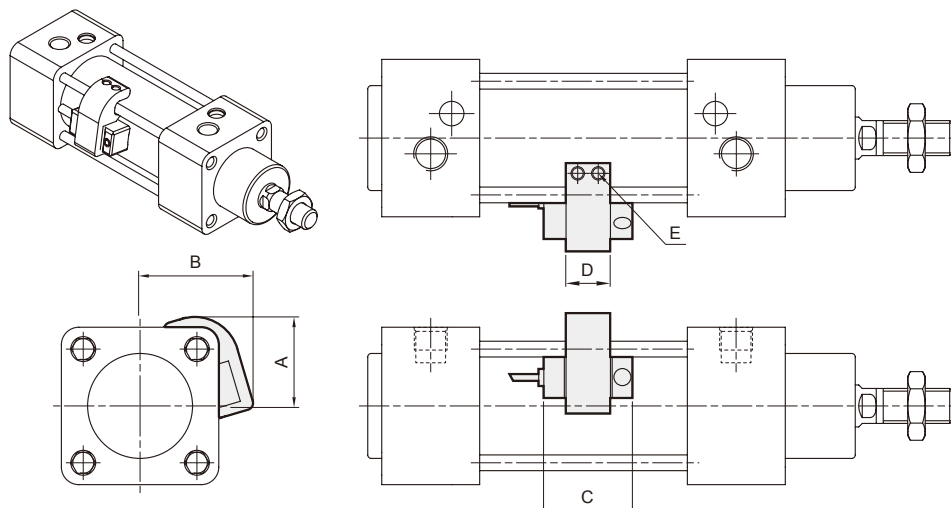


27



Code Tube I.D.	A	AA	AC	AF	B	B1	B2	C	CH	DD	E	F	G	G1	H	I	J	K	L	O	R	R1	R2
32	22	28	20	20	94	10	17	26	17	G1/8	M10×1.25	48	12	15	30	20	4	28	14	32.5	6	64	16
40	24	30.5	24	30	105	13	19	30	27	G1/4	M12×1.25	54	16	17.5	35	22	4	31.5	16	38	7	70	21
50	32	28	19	40	106	17	24	37	36	G1/4	M16×1.5	59	20	16	40	28	4	31.5	21	46.5	8	74	24
63	32	28	19	40	121	17	24	37	36	G3/8	M16×1.5	59	20	18	45	28	4	35	22	56.5	8	85	33
80	40	45	32	50	128	21	30	46	46	G3/8	M20×1.5	81	25	18	45	34	4	36	23	72	9	92	34
100	40	45	35	50	138	21	30	51	46	G1/2	M20×1.5	86	25	19	55	38	4	41	26	89	9	100	58

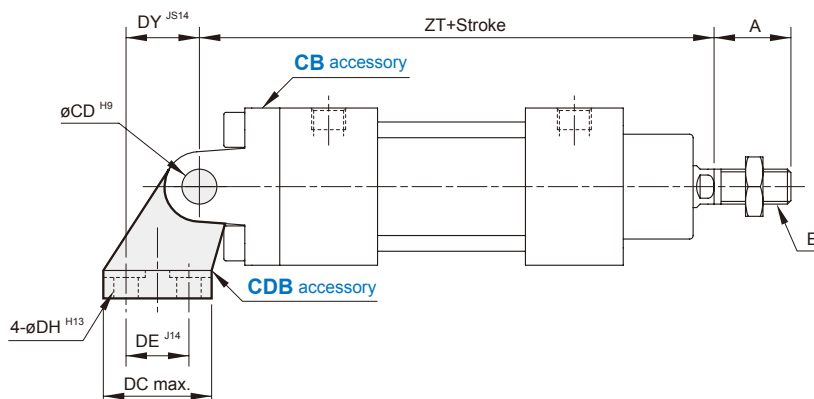
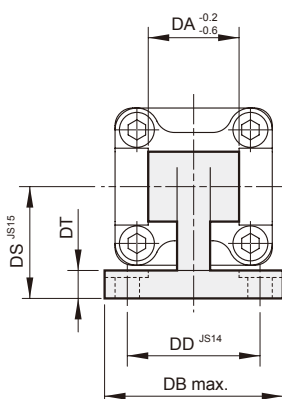
Code Tube I.D.	S	T	U	UD	X	Z	ZB	ZM	ZN	ZQ
32	M6×1.0	M5×0.8×10L	4.5	16	45	146	120	146	190	190
40	M6×1.0	M6×1.0×10L	5.5	16	55	163	135	165	213	213
50	M8×1.25	M8×1.25×12L	8.5	16	65	179	143	180	244	234
63	M8×1.25	M8×1.25×12L	8.5	16	80	194	158	195	259	249
80	M10×1.5	M10×1.5×15L	8.5	16	95	218	174	220	300	295
100	M10×1.5	M10×1.5×15L	10	16	115	233	189	240	320	315



Code Model	Sensor switch	Hold	A	B	C	D	E
MCQVS-32	RCA	HV1	26.5	33.5	26	13	M4×10L
MCQVS-40	RCA	HV1	29.5	36.5	26	13	M4×10L
MCQVS-50	RCA	HV2	37.5	41.5	26	13	M4×10L
MCQVS-63	RCA	HV2	42.5	46.5	26	13	M4×10L
MCQVS-80	RCA	HV3	49.5	54.5	26	13	M5×16L
MCQVS-100	RCA	HV3	57.5	62.5	26	13	M5×16L

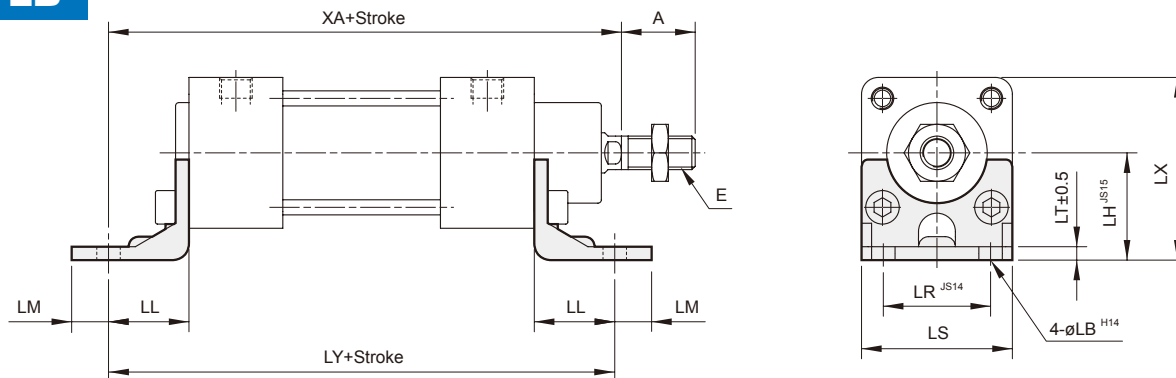
■ Mounting accessories

CDB CB+Pin (Extra purchase)

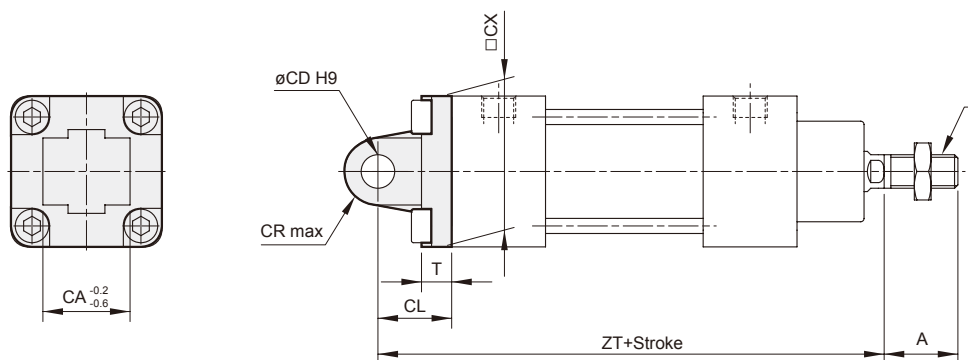


Code Tube I.D.	A	CD	DA	DB	DC	DD	DE	DH	DS	DT	DY	E	ZT
32	22	10	26	51	31	38	18	6.6	32	8	21	M10×1.25	142
40	24	12	28	54	35	41	22	6.6	36	10	24	M12×1.25	160
50	32	12	32	65	45	50	30	9	45	12	33	M16×1.5	170
63	32	16	40	67	50	52	35	9	50	12	37	M16×1.5	190
80	40	16	50	86	60	66	40	11	63	14	47	M20×1.5	210
100	40	20	60	96	70	76	50	11	71	17	55	M20×1.5	230

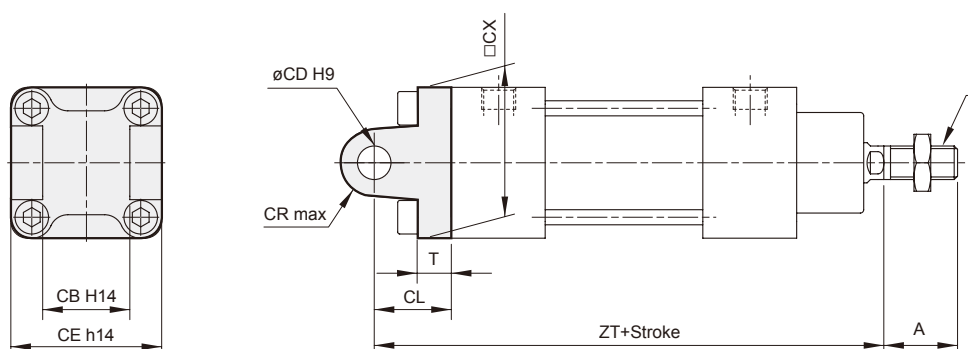
LB



CA

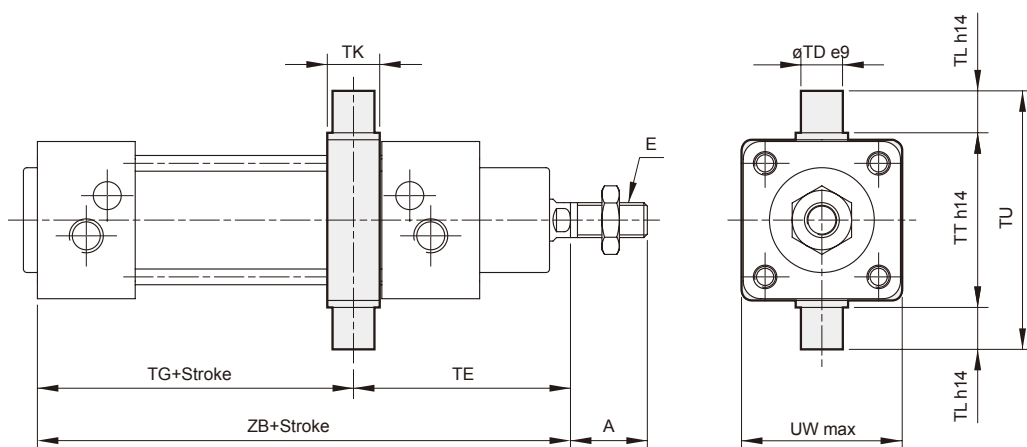


CB

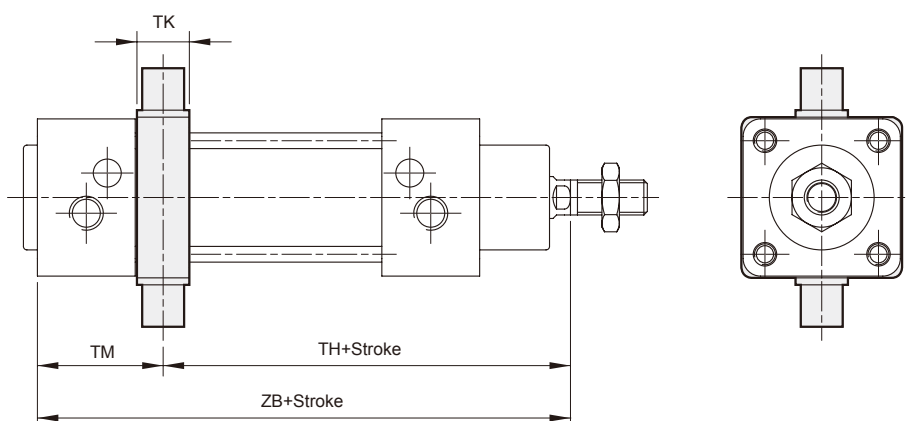


Code Tube I.D.	A	CA	CB	CD	CE	CL	CR	CX	E	LB	LH	LL	LM	LR	LS	LT	LX	LY	T	XA	ZT
32	22	26	26	10	45	22	10	45	M10×1.25	7	32	24	11	32	45	4	54.5	142	10	144	142
40	24	28	28	12	52	25	12	52	M12×1.25	9	36	28	8	36	52	4	63.5	161	10	163	160
50	32	32	32	12	60	27	12	65	M16×1.5	9	45	32	15	45	65	5	77.5	170	10	175	170
63	32	40	40	16	70	32	16	75	M16×1.5	9	50	32	13	50	75	5	90	185	12	190	190
80	40	50	50	16	90	36	16	95	M20×1.5	12	63	41	14	63	95	6	110.5	210	14	215	210
100	40	60	60	20	110	41	20	115	M20×1.5	14	71	41	16	75	115	6	128.5	220	16	230	230

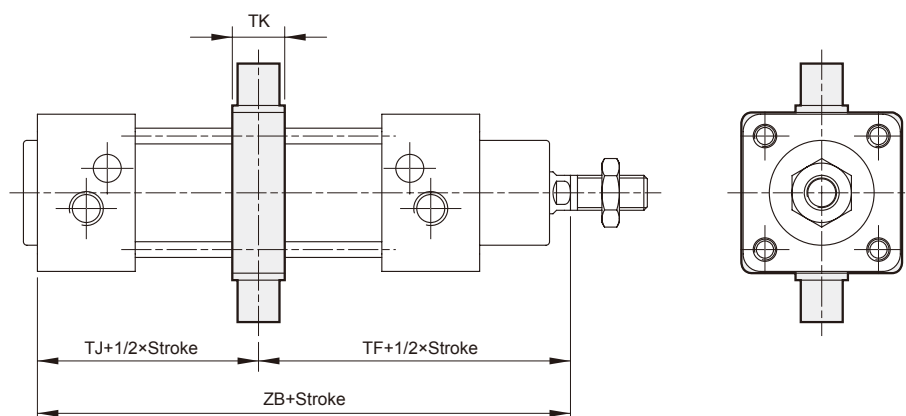
TA



TB

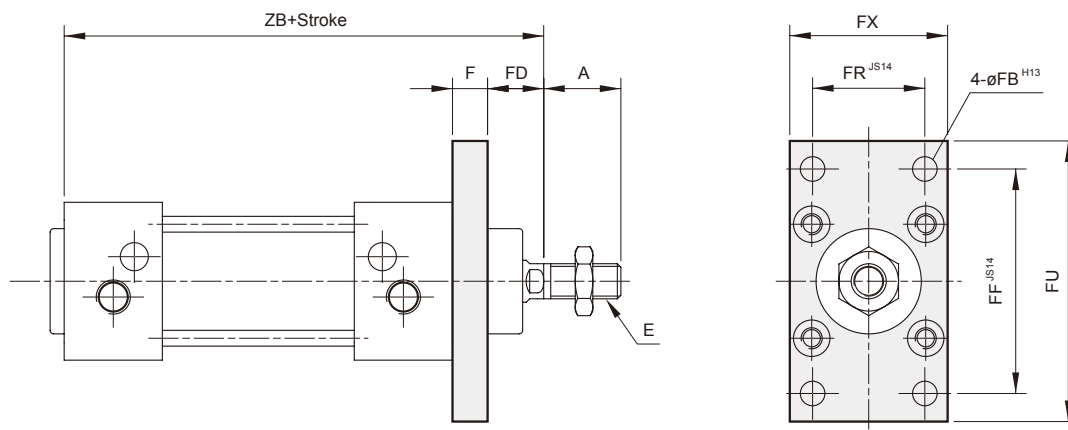


TC

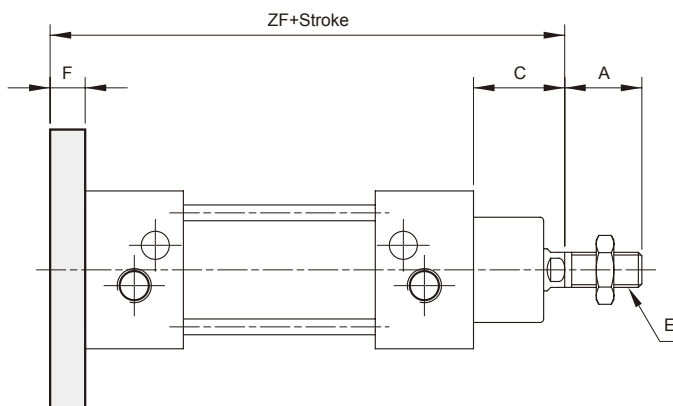


Code Tube I.D.	A	E	TD	TE	TF	TG	TH	TJ	TK	TL	TM	TT	TU	UW	ZB
32	22	M10×1.25	12	63	73	57	83	47	15	12	37	50	74	46	120
40	24	M12×1.25	16	72	82.5	63	93	53	20	16	42	63	95	59	135
50	32	M16×1.5	16	79	90	64	101	53	20	16	42	75	107	69	143
63	32	M16×1.5	20	85	98	73	110	61	25	20	48	90	130	84	158
80	40	M20×1.5	20	95	110	79	125	64	25	20	49	110	150	102	174
100	40	M20×1.5	25	108	120	81	132	69	30	25	57	132	182	125	189

FAC

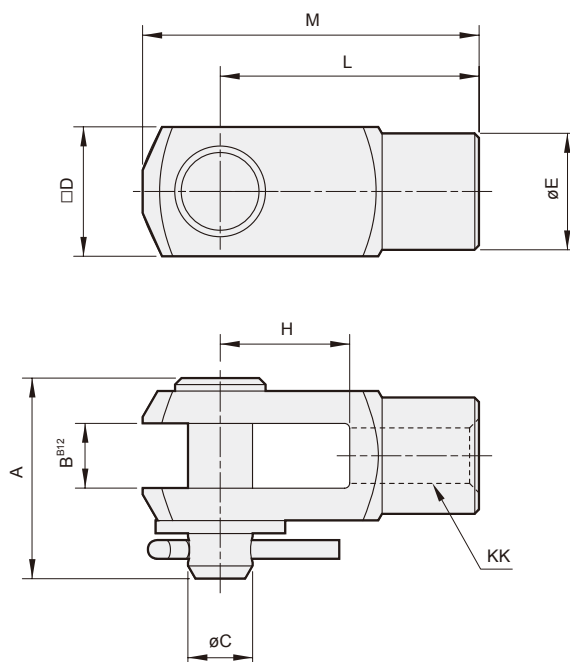


FBC



Code Tube I.D.	A	C	E	F	FB	FD	FF	FR	FU	FX	ZB	ZF
32	22	26	M10×1.25	10	7	16	64	32	80	45	120	130
40	24	30	M12×1.25	10	9	20	72	36	90	52	135	145
50	32	37	M16×1.5	12	9	25	90	45	110	65	143	155
63	32	37	M16×1.5	12	9	25	100	50	120	75	158	170
80	40	46	M20×1.5	16	12	30	126	63	150	95	174	190
100	40	51	M20×1.5	16	14	35	150	75	170	115	189	205

YP connector

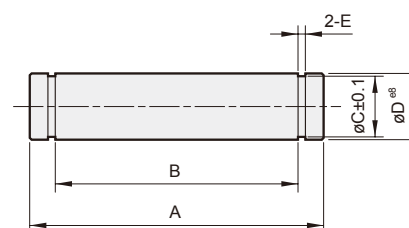
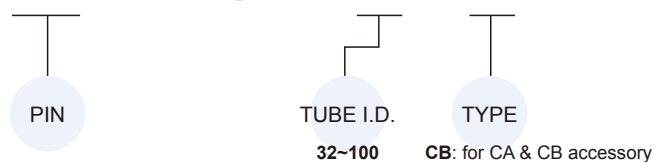


Code Tube I.D.	A	B	C	D	E	H	L	M	KK
32	31	10	10	20	18	20	40	51	M10×1.25
40	38	12	12	24	20	24	48	62	M12×1.25
50	49	16	16	32.5	26	32	64	82	M16×1.5
63	49	16	16	32.5	26	32	64	82	M16×1.5
80	57.5	20	20	40.5	34	40	80	105	M20×1.5
100	57.5	20	20	40.5	34	40	80	105	M20×1.5

PIN

Order example * With C type snap ring.

PIN — MCQVS — 40 — CB

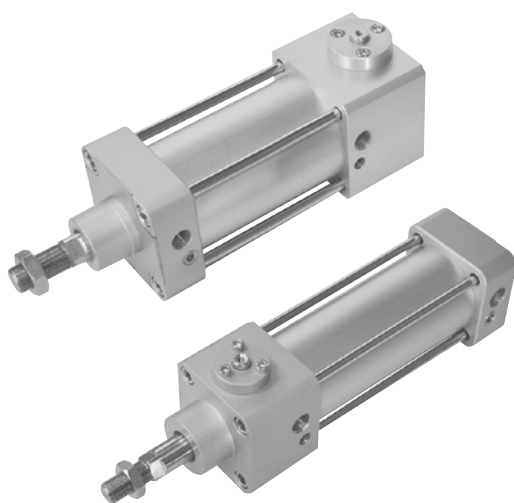


for CA & CB

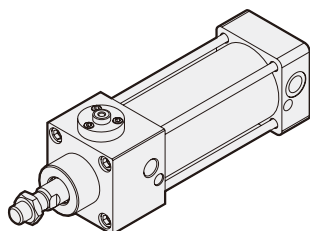
Code Tube I.D.	A	B	C	D	E	Snap ring
32	51	46	9.6	10	1.1	A10
40	59	53	11.5	12	1.1	A12
50	66.5	61	11.5	12	1.1	A12
63	77	71	15.2	16	1.1	A16
80	97	91	15.2	16	1.1	A16
100	120	111	19	20	1.3	A20

MCQV2L series

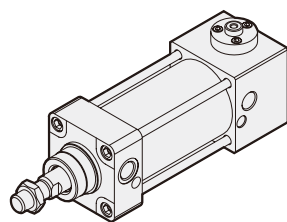
END LOCK CYLINDER



End lock type



R: Rod cover



H: Head cover

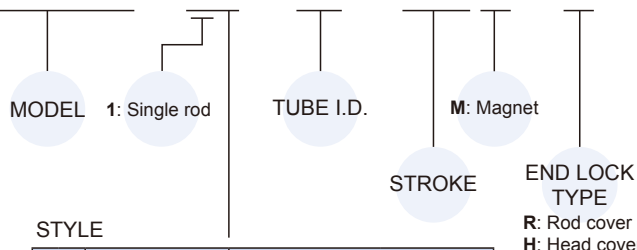
Table for standard stroke

Tube I.D.	Stroke (mm)
ø63,80	50,75,100,125,150,175,200,250,300,350,400,450,500,600

- Stroke out of specification is also available.
- Please consult us if stroke out of specification.

Order example

MCQV2L — 11 — 63 — 100M — R



STYLE

Code	Symbol	Description
1 1		Double acting / Male thread
		Rod cover
		Head cover

* Order example for Rc or NPT thread please consult us.

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.

Specification

Model	MCQV2L	
Tube I.D. (mm)	63	80
Medium	Air	
Operating pressure range	0.15~1 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	HV2	HV3

Mounting accessories

* Use the same accessories with MCQV.

FAC — MCQV — 63

MOUNTING TYPE		MODEL	TUBE I.D.
	LB		TA
	CA		TB
	CB		TC
	CDB (+CB+PIN)		Y
	FAC		I
	FBC		YS (Y+Floating+Pin)

* CB+PIN have to extra purchase.

* Dimension please refer to MCQV2.

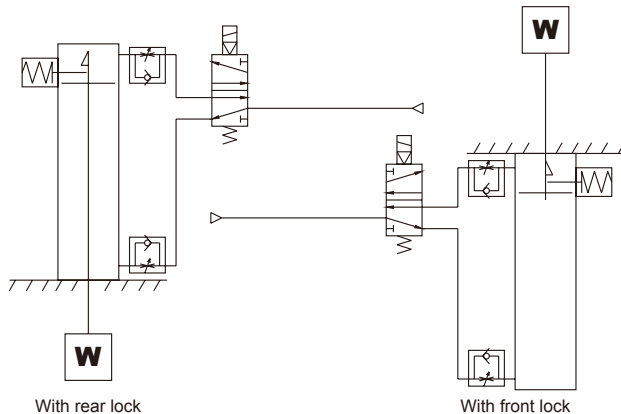
Cylinder weight

Unit: kg

Model		Basic weight MCQV2L-11	Basic weight (magnet) MCQV2L-11	Stroke 25 mm MCQV2L-11
Tube I.D.	End lock type			
ø63	R	2.503	2.523	0.128
	H	2.520	2.540	0.128
ø80	R	4.102	4.130	0.181
	H	4.191	4.219	0.181

Use recommended air pressure circuit

- The circuit layout must be settled properly. The recommended circuit design is shown below.



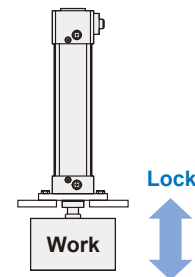
Precautions

- Do not use 3-way solenoid valves. The cylinder cannot be locked when compressed air is trapped in the lock side port. And the lock may be released due to the air leakage of solenoid valve, even it was locked successfully.
- Do not adjust or mount the cylinder when the lock is on.
- The operation load do not exceed 50% of the cylinder maximum output.
- Do not operate a workpiece with multiple end-lock cylinders simultaneously.
- Use an one-way speed control valve with meter-out circuit layout design. The lock cannot be released when the circuit layout is meter-in design.
- Operate the lock only when the cylinder is at the either end-position of stroke.
- The air supply must be higher than 0.15 MPa to operate the lock.
- The lock will be on when automatically when the pressure of the lock is lower than 0.1 MPa or less.
- There are many conditions that will cause the exhaust speed to reduce. The examples are shown below.
 - When the exhausting route length is too long.
 - When the one-way speed control valve is too far from cylinder port.
 - When the silencer of the solenoid valve is blocked or clogged.
- When the cushion needle is fully closed, the piston rod may not be able to reach the end of its stroke. When the cushion needle is fully closed and the cylinder is locked, the lock may not be able to be released.

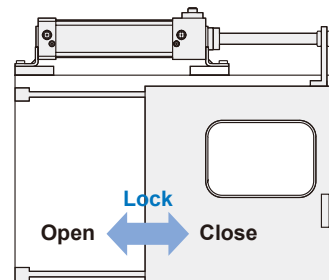
Maintains the cylinder's original position even if the air supply is interrupted.

Prevention of dropping at the rising end

With rear lock



Locking of door With front lock



MCQV2L ⚠ Precautions Read before installing



END LOCK CYLINDER

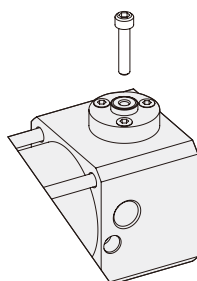
Manual Lock Releasing

- 1 Install a bolt into the locking rod and pull it up by hands. When your hands release, the locking rod will move back by spring force and continue locking.

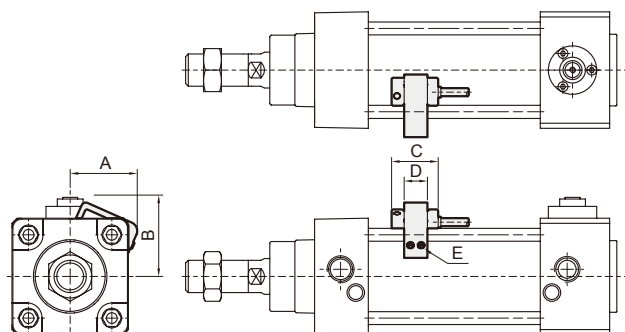
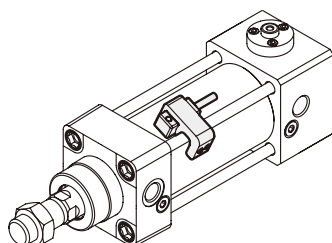
The bolt size, inner spring pulling force and the stroke of locking rod are listed below.

MODEL	Thread size	Pulling force	Stroke (mm)
MCQV2L-63	M6×1.0×20 ℓ	24.5 N	4
MCQV2L-80	M6×1.0×20 ℓ	24.5 N	5

- 2 The bolt must be uninstalled after manual lock releasing, or the weight of bolt may cause some performance problems of the lock.



Installation of sensor switch

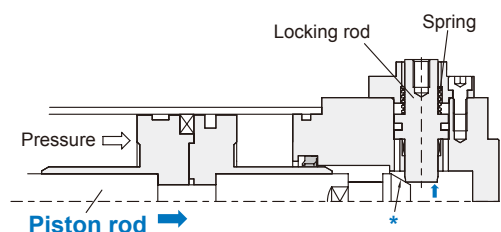


Code Tube I.D.	Sensor switch	Hold	A	B	C	D	E
63	RCA	HV2	42.5	50	26	13	M4×10L
80	RCA	HV3	49.5	60	26	13	M4×10L

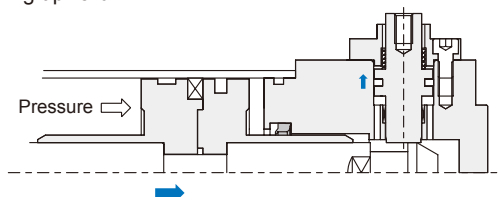
Working Principle

- Both front locking type and rear locking type have the same mechanism. The pictures below shows that how a rear locking type cylinder works.

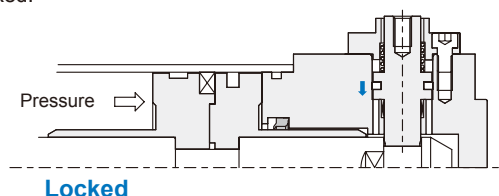
- 1 When the air pressure is input from front cap, the piston will move backward. After the piston nears the end of the stroke, the slope of chamfered rod (the position of *mark) will touch the locking rod.



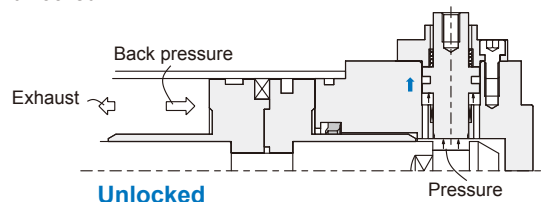
- 2 The locking rod will be guided with the slope and keeps moving upward.



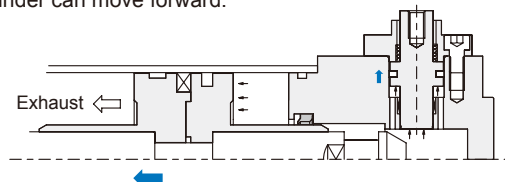
- 3 The locking rod will be pushed into the locking slot of the piston rod by the spring force. At this time, the cylinder is locked.



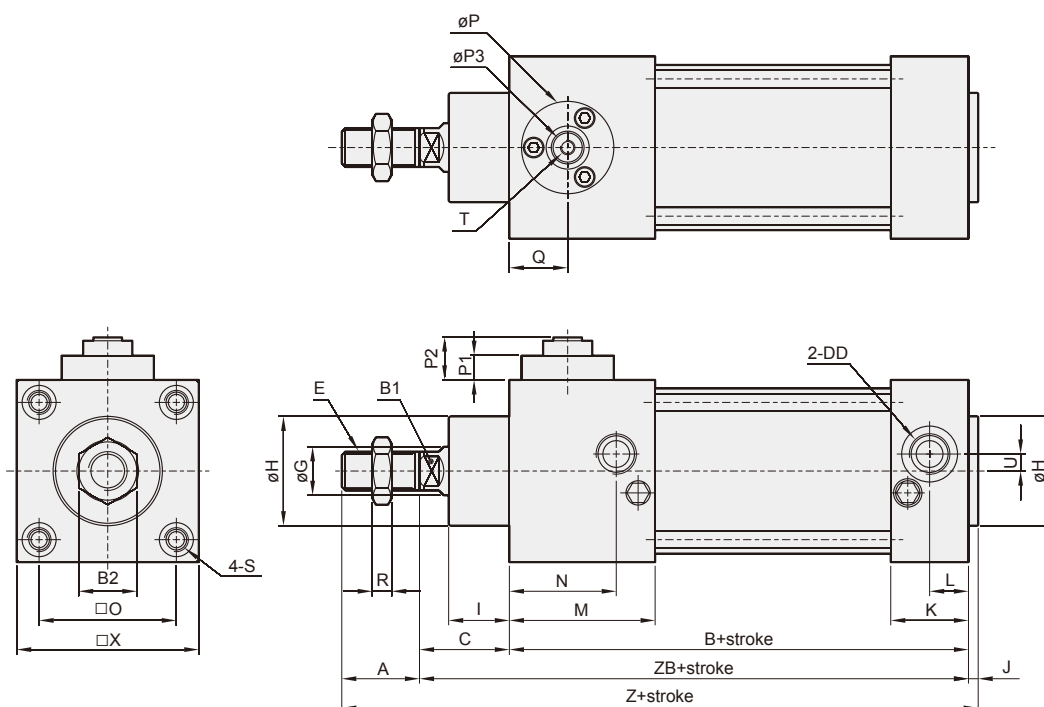
- 4 When the air pressure is input from rear cap, the piston will start moving forward. At the same time, the locking rod will be pushed up by the compressed air and make the piston rod unlocked.



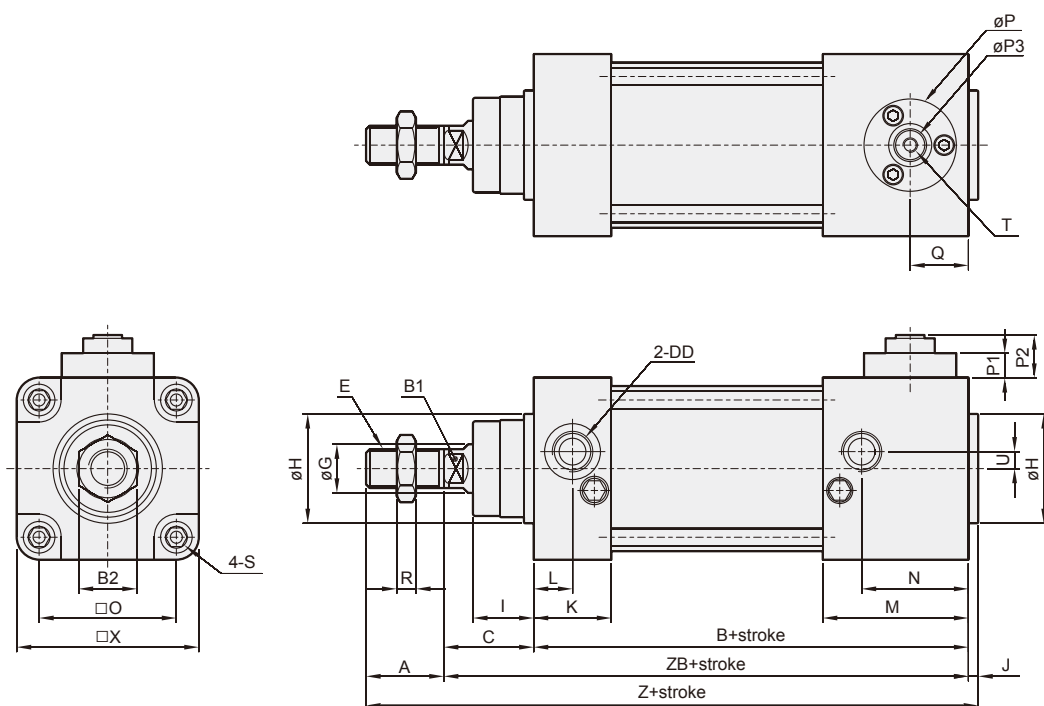
- 5 As the locking rod is no longer locking the piston rod, the cylinder can move forward.



R



H



Code Tube I.D.	A	B	B1	B2	C	DD	E	G	H	I	J	K	L	M	N	O	P	P1	P2	P3	Q	R
63	32	149	16	24	37	G3/8	M16×1.5	20	45	26	4	33	16	61	44	56.5	40	14	24	12	24	8
80	40	168	21	30	46	G3/8	M20×1.5	25	45	32.5	4	35.5	20.5	75.5	60.5	72	50	12	16	14	26	10

Code Tube I.D.	S	T	U	X	Z	ZB
63	M8×1.25	M6×1.0	8	78	222	186
80	M10×1.5	M6×1.0	9	95	258	214

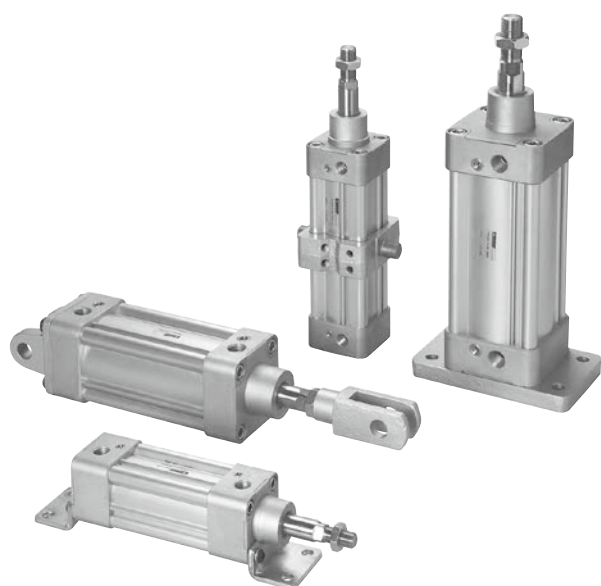


Table for standard stroke

Tube I.D.	Stroke (mm)
ø32,40	50,75,100,125,150,175,200,250,300,350,400,450,500
ø50,63	↑ 600
ø80,100	↑ 600,700

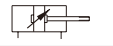
- Stroke out of specification is also available.
- Please consult us if stroke out of specification.

Order example

MCQI2 — 11 — 50 — 100M

MODEL 1: Single rod
2: Double rod TUBE I.D. STROKE M: Magnet

STYLE

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

- * Order example for special specification, refer to page 0-7.
- * Order example for Rc or NPT thread please consult us.

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.

■ Easy to insert reed switch

With four grooves on the tube, proximity and reed sensors can be easily inserted into any position.

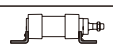
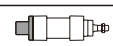
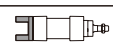
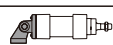
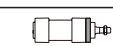
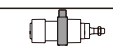
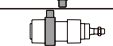
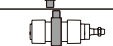
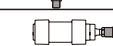
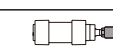
Specification

Model	MCQI2
Tube I.D. (mm)	32,40,50,63,80,100
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	RCI (Please refer to page 8-14)

Mounting accessories

* Use the same accessories with MCQV2.

FAC — MCQV — 50

MOUNTING TYPE	MODEL	TUBE I.D.
	LB	MCQV
	CA	
	CB	
	CDB (+CB+PIN)*	
	FAC	
	FBC	MCQI2
	TA	
	TB	
	TC	
	Y	MCQV
	I	
	YS (Y+Floating+PIN)	

* CB+PIN have to extra purchase.

* Mounting accessories please refer to page 1-72.

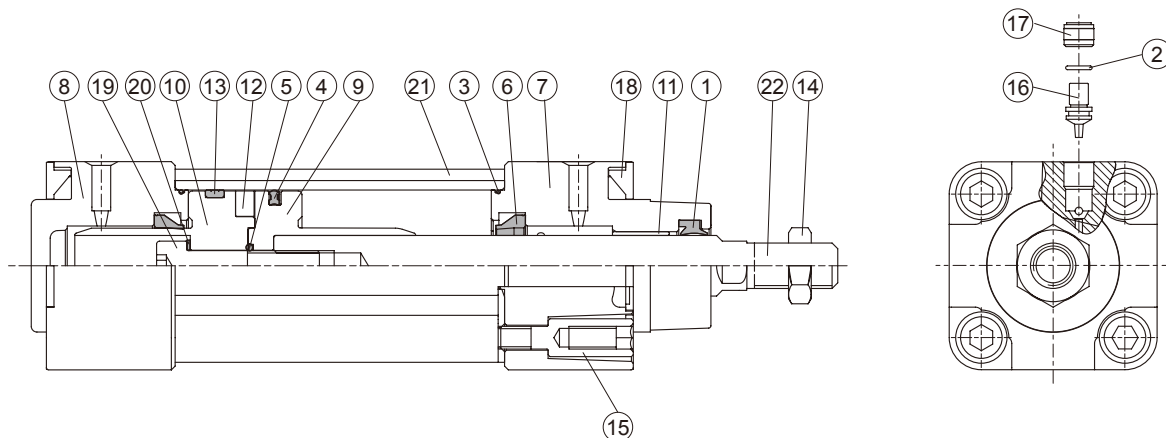
MCQI2-11 Inside structure & Parts list

ISO 15552 **STANDARD PROFILE CYLINDER**



Single rod 11 type

ø32~ø100



Material

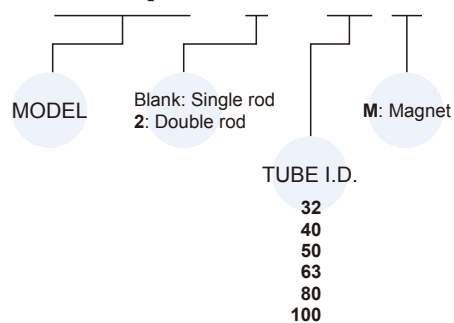
No.	Part name	Material	Q'ty	Component parts (inclusion)	Repair kits (inclusion)
1	Rod packing	NBR	1	●	●
2	O-ring	NBR	2	●	
3	O-ring	NBR	2	●	●
4	Piston packing	NBR	1	●	●
5	O-ring	NBR	1	●	●
6	Cushion packing	NBR	2	●	●
7	Rod cover	Aluminum alloy	1	●	
8	Head cover	Aluminum alloy	1	●	
9	Piston-R	Aluminum alloy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

◎ Option

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

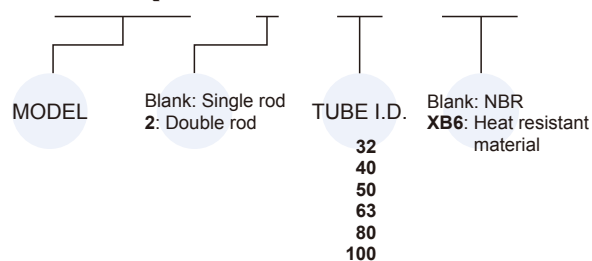
Order example of component parts

CP — MCQI2 — 2 — 40 M



Order example of repair kits

PS — MCQI2 — 2 — 40 — XB6



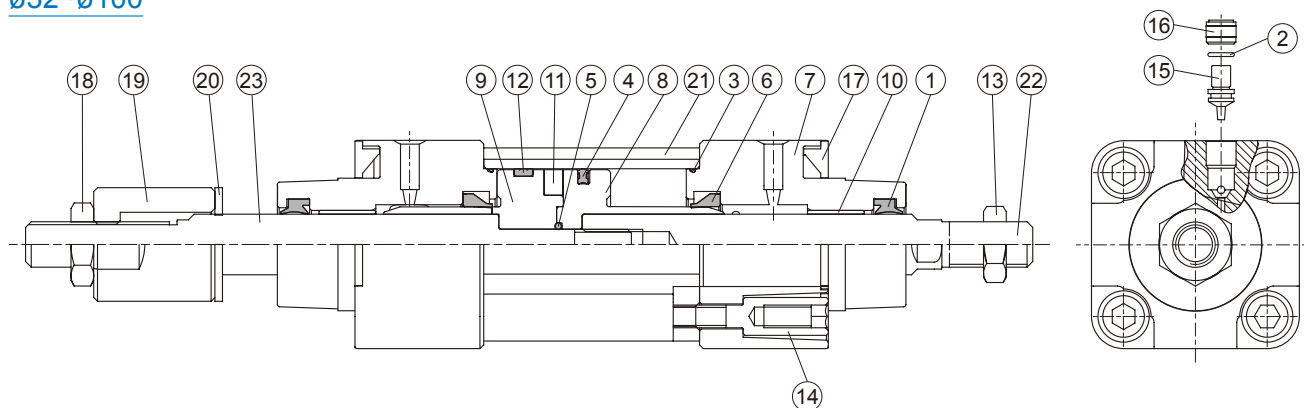
MCQI2-2* Inside structure & Parts list

ISO 15552 **STANDARD PROFILE CYLINDER**



Double rod 21 / 27 type

ø32~ø100



Material

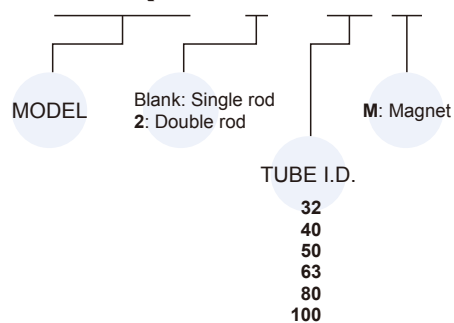
No.	21 type	27 type	Part name	Material	Q'ty	Component parts (inclusion)	Repair kits (inclusion)
1	●	●	Rod packing	NBR	2	●	●
2	●	●	O-ring	NBR	2	●	
3	●	●	O-ring	NBR	2	●	●
4	●	●	Piston packing	NBR	1	●	●
5	●	●	O-ring	NBR	1	●	●
6	●	●	Cushion packing	NBR	2	●	●
7	●	●	Rod cover	Aluminum alloy	2	●	
8	●	●	Piston-R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

◎ Option

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

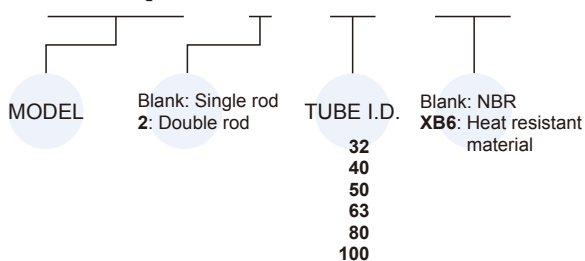
Order example of component parts

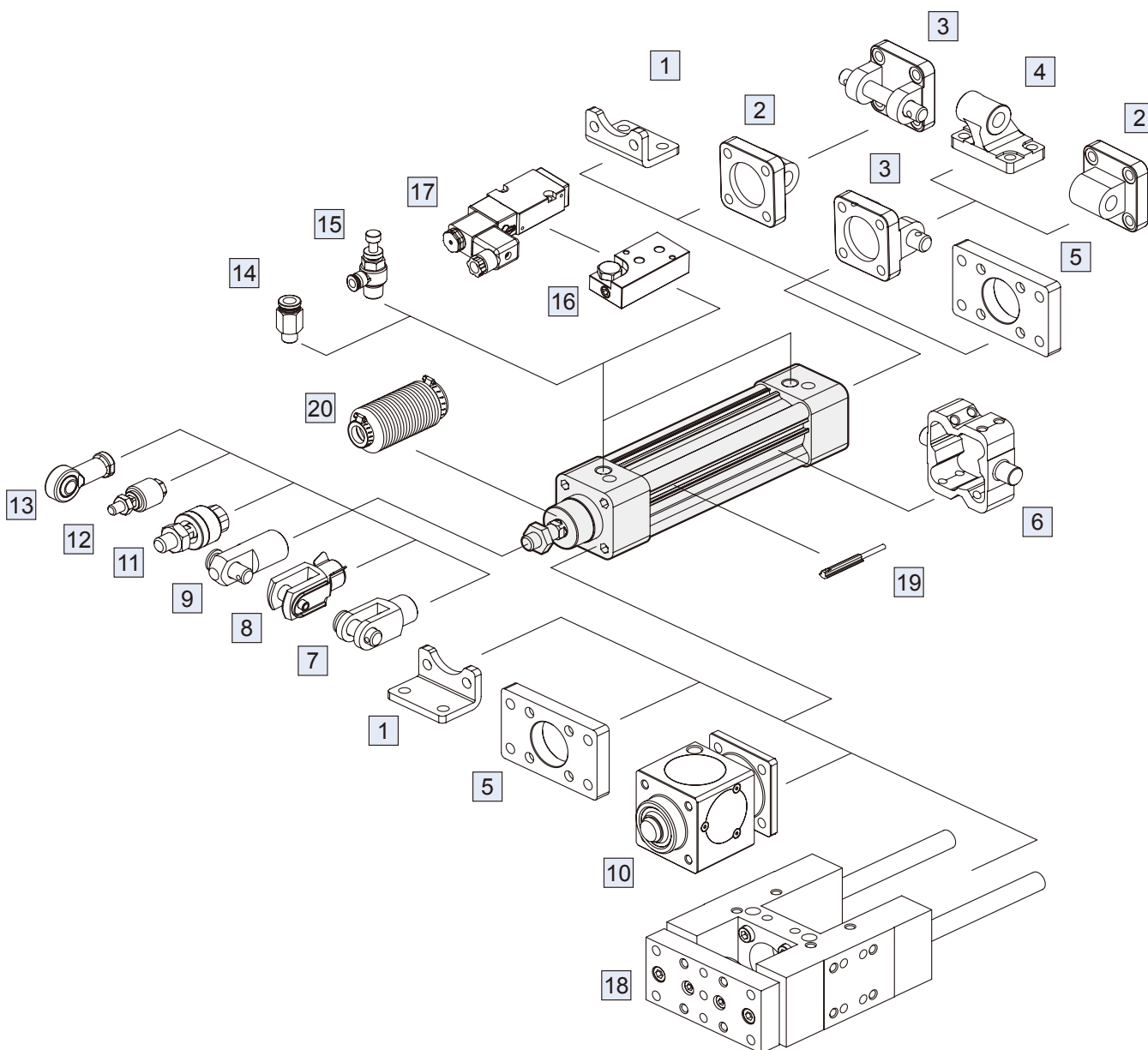
CP — MCQI2 — 2 — 40 M



Order example of repair kits

PS — MCQI2 — 2 — 40 — XB6





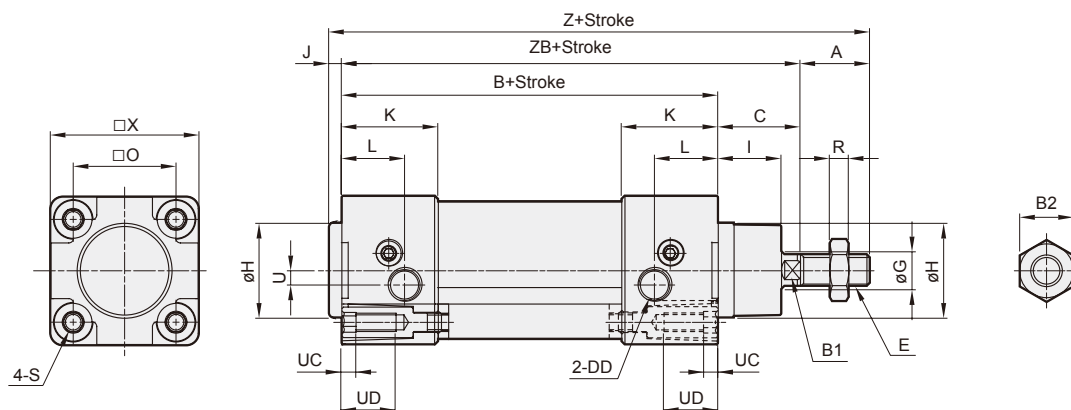
No.	Accessories	Material	Page
1	Mounting accessories LB	Carbon steel	1-74
2	Mounting accessories CA	Cast iron	1-76
3	Mounting accessories CB+PIN	Cast iron / *1	1-76, 46
4	Mounting accessories CDB	Cast iron	1-77
5	Mounting accessories FAC/FBC	Carbon steel	1-75
6	Mounting accessories TA/TB/TC	Cast iron	1-77, 78
7	Accessories Y+PIN	Cast iron / *1	1-46
8	Accessories YS (Y+Floating pin)	Carbon steel	1-46
9	Accessories I+PIN	Carbon steel	1-46
10	Locking unit MCBQI2	Aluminum alloy+*2	1-88

No.	Accessories	Material	Page
11	Floating joint MFC	Carbon steel	8-2
12	Floating joint MFCS	Carbon steel	8-5
13	Female rod ends PHS	Carbon steel	8-7
14	Fitting PC (PISCO)	—	8-3 (Vol.1)
15	Speed controller JSC (PISCO)	—	8-15 (Vol.1)
16	Cylinder link seats MVSN-300-C	Aluminum alloy	1-69 (Vol.1)
17	Solenoid valve MVSN-220 / 300	—	1-65, 67 (Vol.1)
18	Twin-guide cylinders MGTB/TU/TX	—	4-39
19	Sensor switch RCI	—	8-14
20	Protective bellows kit	NBR	—

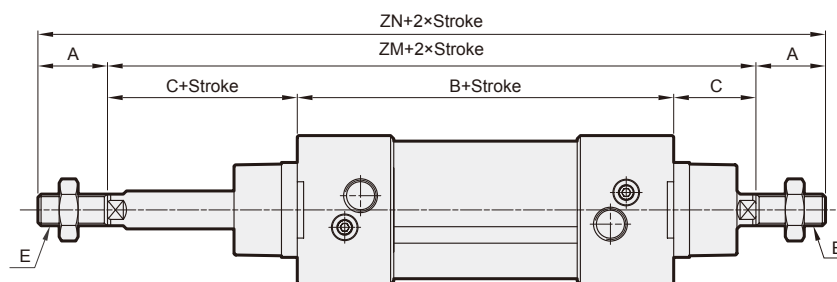
*1. PIN material is carbon steel.

*2. Bronze alloy.

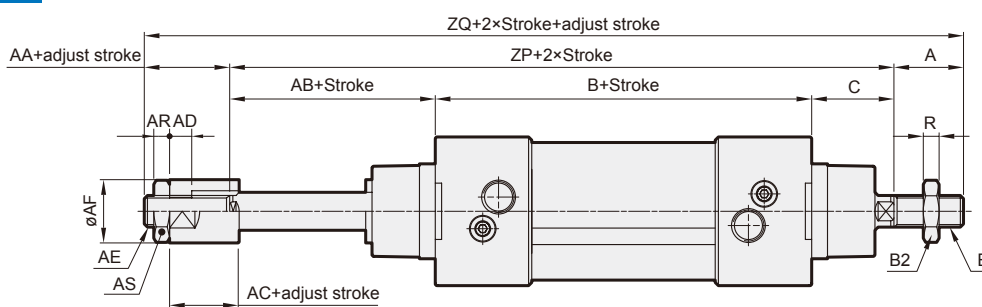
11



21

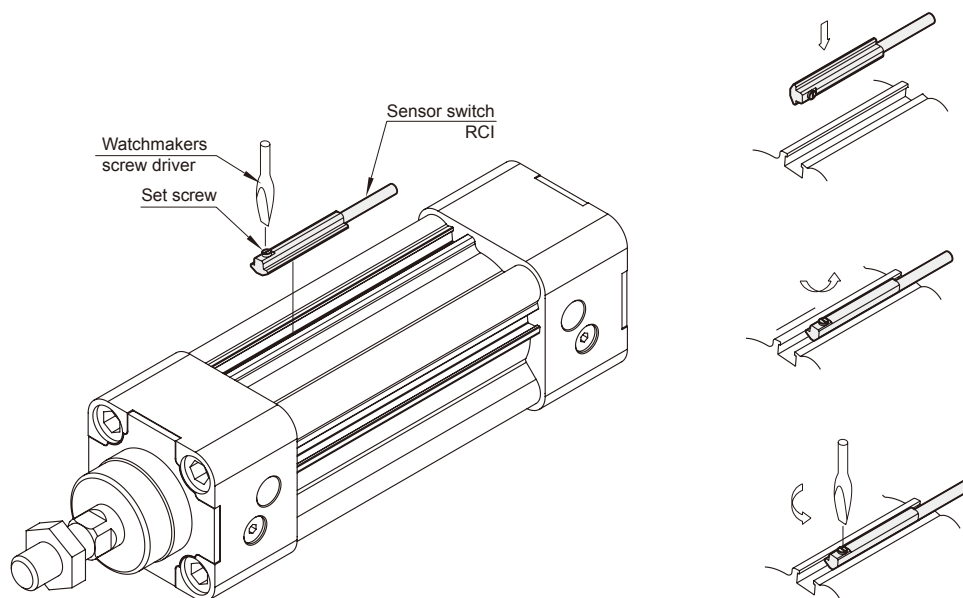


27



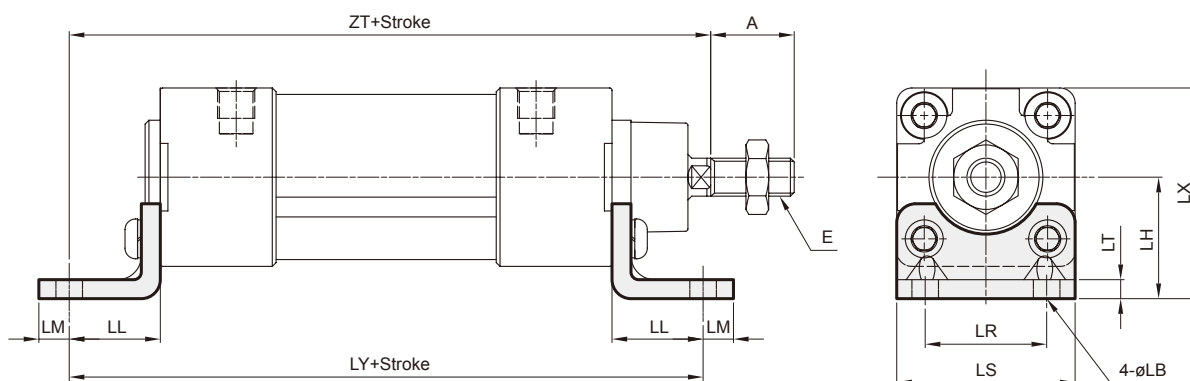
Code Tube I.D.	A	AA	AB	AC	AD	AE	AF	AR	AS	B	B1	B2	C	DD	E	G	H	I	J	K	L	O
32	22	16	26	12	7	M10×1.25	20	5	17	94	10	17	26	G1/8	M10×1.25	12	30	20	4	30.5	20	32.5
40	24	20	27	12	7	M12×1.25	30	6	19	105	13	19	30	G1/4	M12×1.25	16	35	20.5	4	34	14.5	38
50	32	18	34	15	10	M16×1.5	40	8	24	106	16	24	37	G1/4	M16×1.5	20	40	28	4	31	16	46.5
63	32	20	32	15	10	M16×1.5	40	8	24	121	16	24	37	G3/8	M16×1.5	20	45	26	4	33	16	56.5
80	40	32	41	20	14	M22×1.5	50	13	32	128	21	30	46	G3/8	M20×1.5	25	45	32.5	4	35.5	20.5	72
100	40	30	46	20	14	M22×1.5	50	13	32	138	21	30	51	G1/2	M20×1.5	25	55	37.5	4	37	19	89

Code Tube I.D.	R	S	U	UC	UD	X	Z	ZB	ZM	ZN	ZP	ZQ
32	5	M6×1.0	4.5	4.5	17	47	146	120	146	190	146	184
40	6	M6×1.0	5.3	4.5	17	55	163	135	165	213	162	206
50	8	M8×1.25	8.5	4.5	18	65	179	143	180	244	177	227
63	8	M8×1.25	8	4.5	18	78	194	158	195	259	190	242
80	10	M10×1.5	9	5.5	19	95	218	174	220	300	215	287
100	10	M10×1.5	13	5.5	19	115	233	189	240	320	235	305



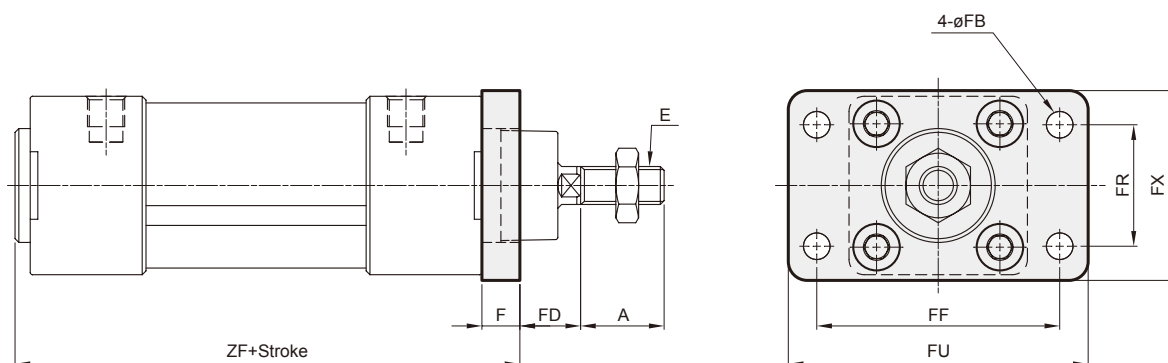
■ Mounting accessories

LB



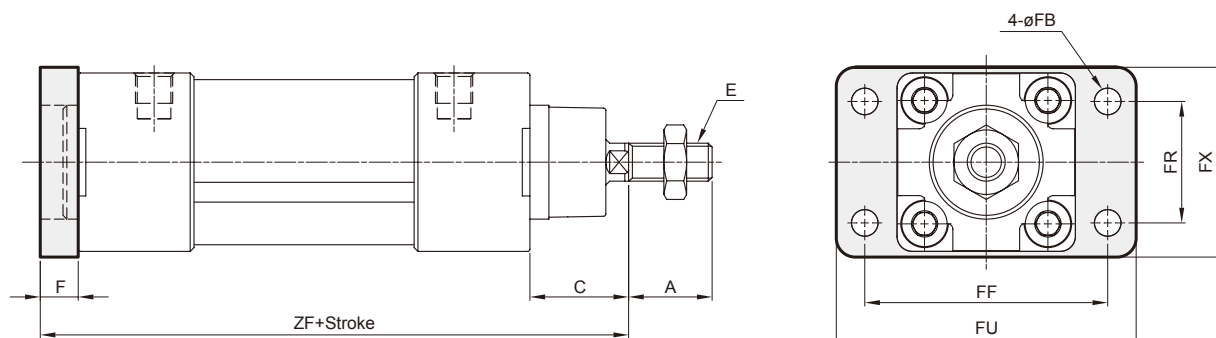
Code Tube I.D.	A	E	LB	LH	LL	LM	LR	LS	LT	LX	LY	ZT
32	22	M10×1.25	7	32	24	8	32	47	5	55.5	142	144
40	24	M12×1.25	9	36	28	10	36	53	5	63.5	161	163
50	32	M16×1.5	9	45	32	10	45	65	5	77.5	170	175
63	32	M16×1.5	9	50	32	10	50	75	5	89	185	190
80	40	M20×1.5	12	63	41	13	63	95	6	110.5	210	215
100	40	M20×1.5	14	71	41	13	75	115	6	128.5	220	230

FAC



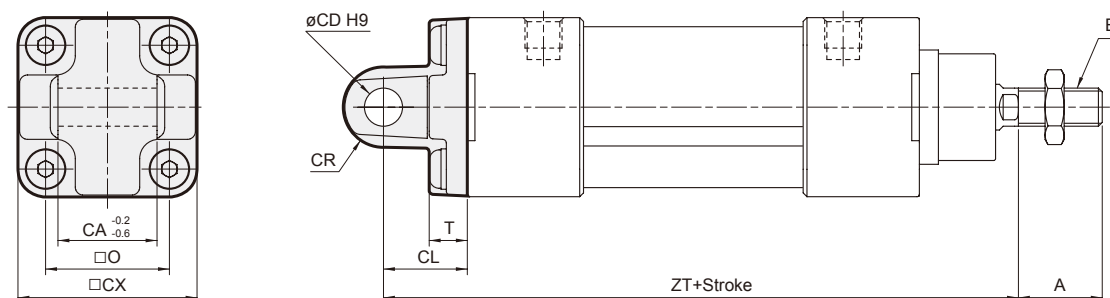
Code Tube I.D.	A	E	F	FB	FD	FF	FR	FU	FX	ZF
32	22	M10×1.25	10	7	16	64	32	79	50	108
40	24	M12×1.25	10	9	20	72	36	90	52	120
50	32	M16×1.5	12	9	25	90	45	110	65	123
63	32	M16×1.5	12	9	25	100	50	125	76	137
80	40	M20×1.5	16	12	30	126	63	154	94	148
100	40	M20×1.5	16	14	35	150	75	180	112	158

FBC



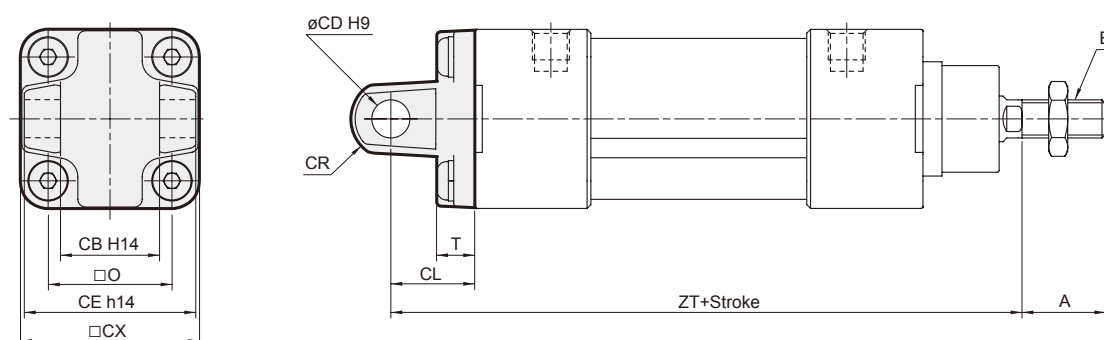
Code Tube I.D.	A	C	E	F	FB	FF	FR	FU	FX	ZF
32	22	26	M10×1.25	10	7	64	32	79	50	130
40	24	30	M12×1.25	10	9	72	36	90	52	145
50	32	37	M16×1.5	12	9	90	45	110	65	155
63	32	37	M16×1.5	12	9	100	50	125	76	170
80	40	46	M20×1.5	16	12	126	63	154	94	190
100	40	51	M20×1.5	16	14	150	75	180	112	205

CA



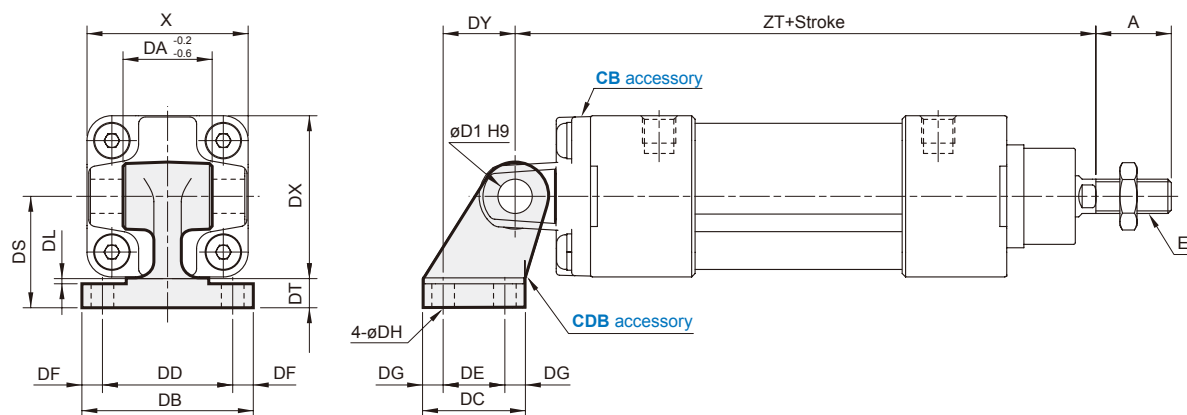
Code Tube I.D.	A	CA	CD	CL	CR	CX	E	O	T	ZT
32	22	26	10	22	R10.5	46.5	M10×1.25	32.5	10	142
40	24	28	12	25	R12	54	M12×1.25	38	9	160
50	32	32	12	27	R13	64	M16×1.5	46.5	9	170
63	32	40	16	32	R17	75	M16×1.5	56.5	9	190
80	40	50	16	36	R17	93	M20×1.5	72	12	210
100	40	60	20	41	R21	114	M20×1.5	89	11	230

CB



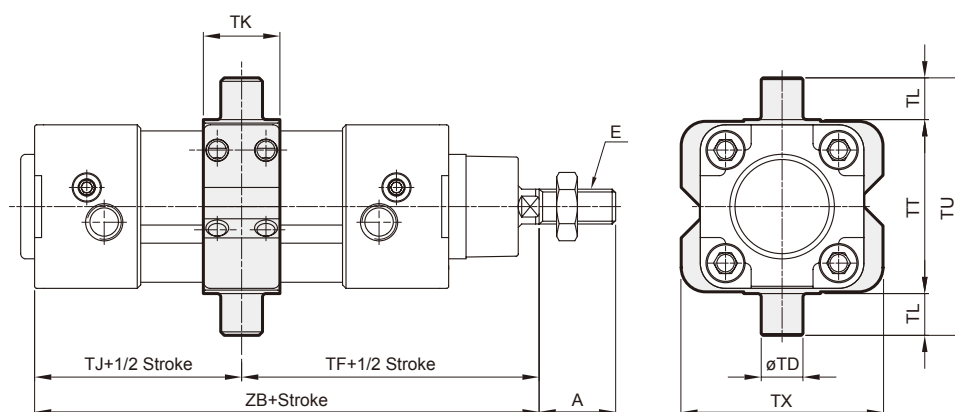
Code Tube I.D.	A	CB	CD	CE	CL	CR	CX	E	O	T	ZT
32	22	26	10	45	22	R10.5	46.5	M10×1.25	32.5	10	142
40	24	28	12	52	25	R12	54	M12×1.25	38	9	160
50	32	32	12	60	27	R14	64	M16×1.5	46.5	9	170
63	32	40	16	70	32	R17	75	M16×1.5	56.5	9	190
80	40	50	16	90	36	R17	93	M20×1.5	72	12	210
100	40	60	20	110	41	R21	114	M20×1.5	89	11	230

CDB CB+Pin (Extra purchase)



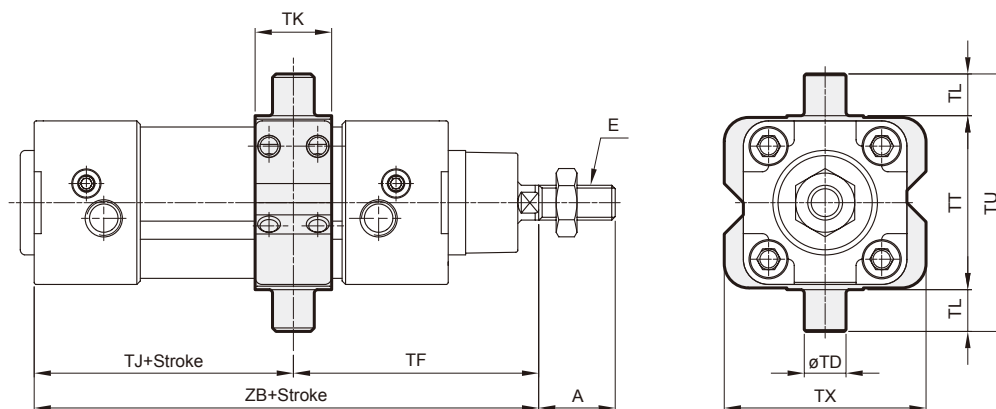
Code Tube I.D.	A	DA	DB	DC	DD	DE	DF	DG	DH	DI	DL	DS	DT	DX	DY	E	X	ZT
32	22	26	50	30	38	18	6	6	6.6	10	1.5	32	8	47.5	21	M10×1.25	47	142
40	24	28	53	34	41	22	6	6	6.6	12	1.5	36	10	52.5	24	M12×1.25	55	160
50	32	32	65	45	50	30	7.5	7.5	9	12	1.5	45	12	65.5	33	M16×1.5	65	170
63	32	40	67	50	52	35	7.5	7.5	9	16	1.5	50	12	75.5	37	M16×1.5	78	190
80	40	50	86	60	66	40	10	10	11	16	2.5	63	14	96.5	47	M20×1.5	95	210
100	40	60	96	70	76	50	10	10	11	20	2.5	71	15	113.5	55	M20×1.5	115	230

TC



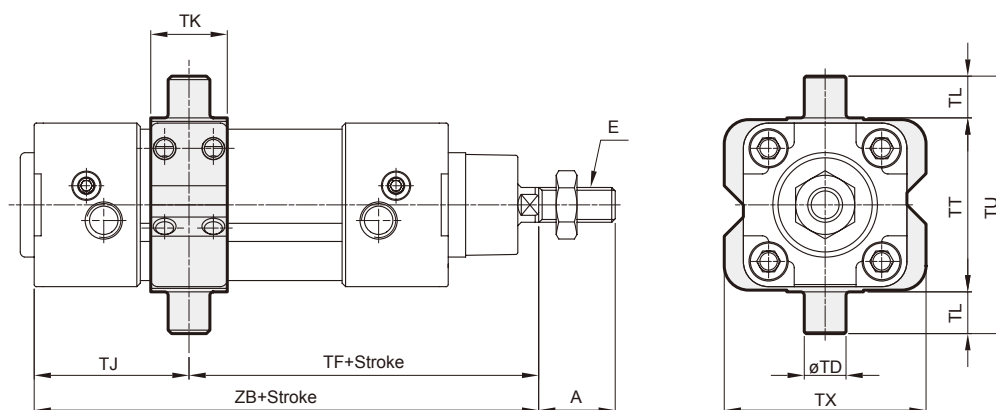
Code Tube I.D.	A	E	TD	TF	TJ	TK	TL	TT	TU	TX	ZB
32	22	M10×1.25	12 ^{øB}	73	47	22	12	50	74	58	120
40	24	M12×1.25	16 ^{øB}	82.5	52.5	28	16	63	95	70	135
50	32	M16×1.5	16 ^{øB}	90	53	32	16	75	107	85	143
63	32	M16×1.5	20 ^{øB}	97.5	60.5	35	20	90	130	100	158
80	40	M20×1.5	20 ^{øB}	110	64	40	20	110	150	120	174
100	40	M20×1.5	25 ^{øB}	120	69	45	25	132	182	145	189

TA



Code Tube I.D.	A	E	TD	TF	Without magnet		Magnet		TK	TL	TT	TU	TX
					TJ	ZB	TJ	ZB					
32	22	M10×1.25	12 ^{øB}	70.5	49.5	120	79.5	150	22	12	50	74	58
40	24	M12×1.25	16 ^{øB}	81	54	135	84	165	28	16	63	95	70
50	32	M16×1.5	16 ^{øB}	87	56	143	86	173	32	16	75	107	85
63	32	M16×1.5	20 ^{øB}	90.5	67.5	158	97.5	188	35	20	90	130	100
80	40	M20×1.5	20 ^{øB}	104.5	69.5	174	109.5	214	40	20	110	150	120
100	40	M20×1.5	25 ^{øB}	113.5	75.5	189	115.5	229	45	25	132	182	145

TB



Code Tube I.D.	A	E	TD	TJ	Without magnet		Magnet		TK	TL	TT	TU	TX
					TF	ZB	TF	ZB					
32	22	M10×1.25	12 ^{øB}	44.5	75.5	120	105.5	150	22	12	50	74	58
40	24	M12×1.25	16 ^{øB}	51	84	135	114	165	28	16	63	95	70
50	32	M16×1.5	16 ^{øB}	50	93	143	123	173	32	16	75	107	85
63	32	M16×1.5	20 ^{øB}	53.5	104.5	158	134.5	188	35	20	90	130	100
80	40	M20×1.5	20 ^{øB}	58.5	115.5	174	155.5	214	40	20	110	150	120
100	40	M20×1.5	25 ^{øB}	62.5	126.5	189	166.5	229	45	25	132	182	145

MCQI2 Cylinder weight $\varnothing 32 \sim \varnothing 100$

ISO 15552 **STANDARD PROFILE CYLINDER**



Cylinder weight

Unit: kg

Model	Basic weight MCQI2-11	Basic weight (magnet) MCQI2-11	Stroke 25 mm MCQI2-11
Tube I.D.			
$\varnothing 32$	0.544	0.550	0.064
$\varnothing 40$	0.822	0.834	0.091
$\varnothing 50$	1.260	1.277	0.128
$\varnothing 63$	1.838	1.858	0.116
$\varnothing 80$	2.754	2.781	0.209
$\varnothing 100$	4.086	4.121	0.234

Accessories weight

Unit: kg

Model	LB	CA	CB	CDB	FAC/FBC	TA/TB/TC	Y	I	Pin		YS
									Y / I	CA / CB	
Tube I.D.											
$\varnothing 32$	0.163	0.213	0.185	0.170	0.235	0.208	0.070	0.080	0.02	0.040	0.018
$\varnothing 40$	0.211	0.253	0.211	0.230	0.265	0.282	0.115	0.141	0.03	0.065	0.031
$\varnothing 50$	0.315	0.390	0.352	0.410	0.460	0.377	0.272	0.334	0.08	0.072	0.070
$\varnothing 63$	0.395	0.670	0.544	0.550	0.684	0.675	0.272	0.334	0.08	0.145	0.070
$\varnothing 80$	0.816	1.076	0.982	0.870	1.508	1.025	0.551	0.553	0.16	0.179	0.150
$\varnothing 100$	1.014	1.587	1.493	1.400	1.975	1.680	0.551	0.553	0.16	0.330	0.150

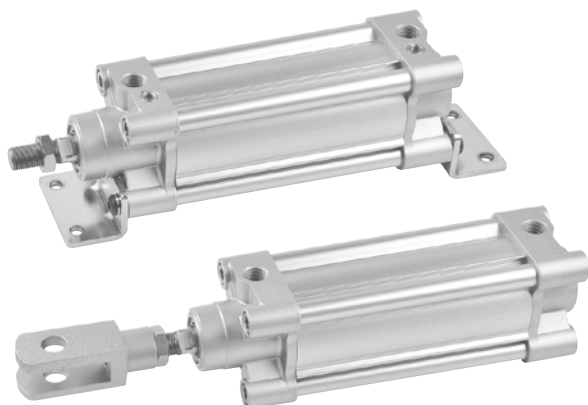


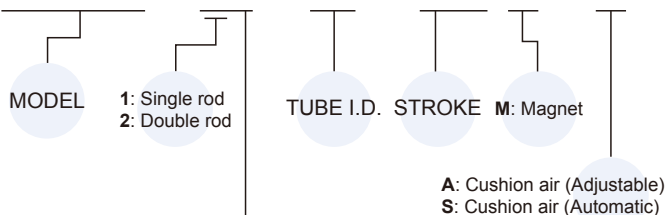
Table for standard stroke

Tube I.D.	Stroke (mm)
ø63	50,75,100,125,150,175,200,250,300,350,400,450,500,600,700,800

- Stroke out of specification is also available.
- Please consult us if stroke out of specification.

Order example

MCQI3 — 11 — 63 — 100 M — A



STYLE

Code	Symbol	Description
1 1		Double acting / Male thread
2 1		Double rod / Double acting / Male thread

- * Order example for special specification, refer to page 0-7.
- * Order example for Rc or NPT thread please consult us.

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.

■ Automatic air cushioning

Pneumatic cushioning at both ends without adjusting.

■ ISO 15552 standard specification

Conforms to ISO 15552 specification enabling worldwide interchangeability.

■ Easy to insert reed switch

With four grooves on the tube, proximity and reed sensors can be easily inserted into any position.

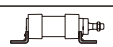
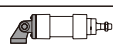
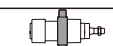
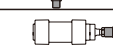
Specification

Model	MCQI3
Tube I.D. (mm)	63
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	RCI (Please refer to page 8-14)

Mounting accessories

* Use the same accessories with MCQV2 and MCQI2.

FAC — MCQV — 63

MOUNTING TYPE	MODEL	TUBE I.D.
	LB	MCQV
	CA	
	CB	
	CDB (+CB+PIN)*	
	FAC	
	FBC	MCQI2
	TA	
	TB	
	TC	MCQV
	Y	
	I	
	YS (Y+Floating+PIN)	

* CB+PIN have to extra purchase.

* Mounting accessories please refer to page 1-84.

MCQI3-11 Inside structure & Parts list

ISO 15552 **STANDARD PROFILE CYLINDER**

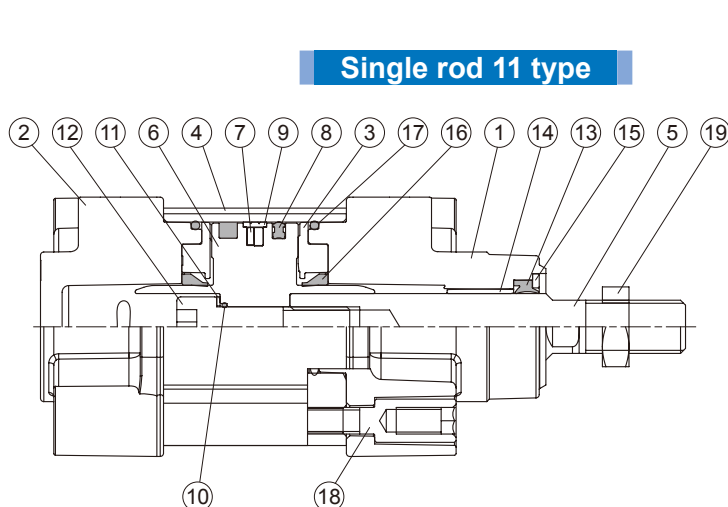


mindman

Single rod 11 type

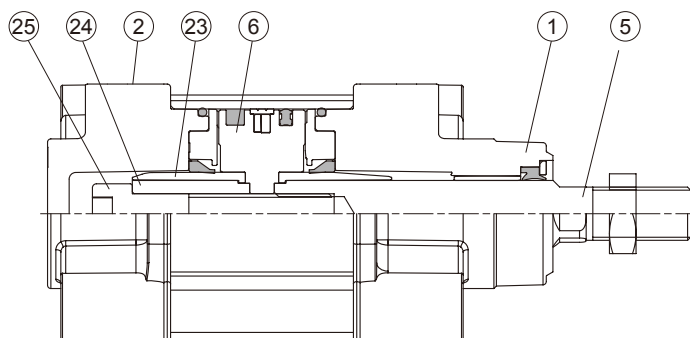
A

Cushion air
(Adjustable)



S

Cushion air
(Automatic)



Material

No.	Part name	Material	Q'y	Component parts (inclusion)		Repair kits (inclusion)		Note
				Adjustable	Automatic	Adjustable	Automatic	
1	Rod cover	Aluminum alloy	1	●	●			
2	Head cover	Aluminum alloy	1	●	●			
3	Cushion seal holder	Aluminum alloy	2	●	●			
4	Cylinder tube	Aluminum alloy	1					
5	Piston rod *1	Carbon steel	1					
6	Piston	Aluminum alloy	1	●	●			
7	Magnet ring	Magnet material	1	◎	◎			◎ Option
8	Piston packing	NBR	1	●	●	●	●	
9	Wear ring	Resin	1	●	●			
10	O-ring	NBR	1	●		●		
11	Washer	Carbon steel	1	●				
12	Hex bolt	Carbon steel	1	●	●			
13	Rod packing	NBR	1	●	●	●	●	
14	Bush	Bearing alloy	1	●	●			
15	Washer	Carbon steel	1	●	●			
16	Cushion packing	NBR	2	●	●	●	●	
17	O-ring	NBR	2	●	●	●	●	
18	Screw	Carbon steel	8					
19	Piston rod nut	Carbon steel	1	●	●			
20	Insert nut	Copper alloy	2	●				
21	Needle valve	Copper alloy	2	●				
22	O-ring	NBR	2	●				
23	Shock absorber axis	Resin	2		●			
24	Piston nut	Carbon steel	1		●			
25	Hex bolt	Carbon steel	1		●			

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

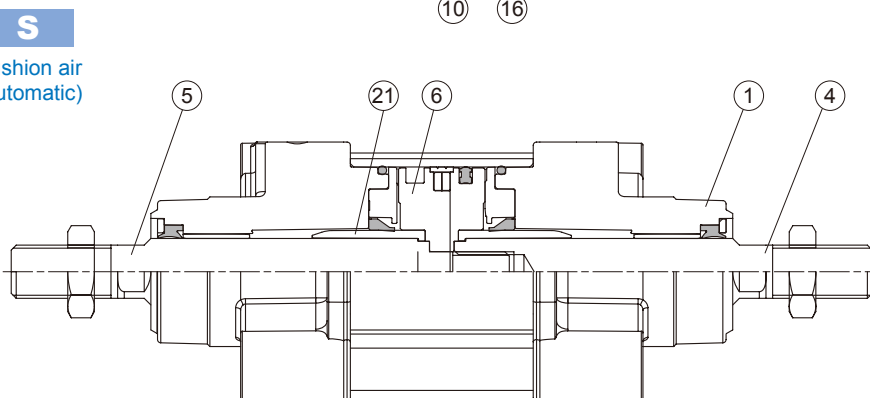
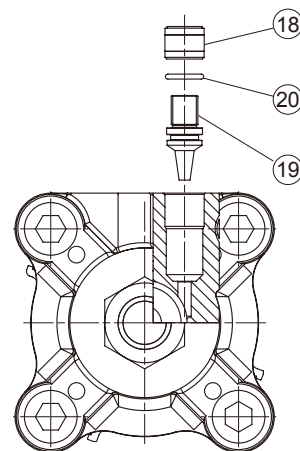
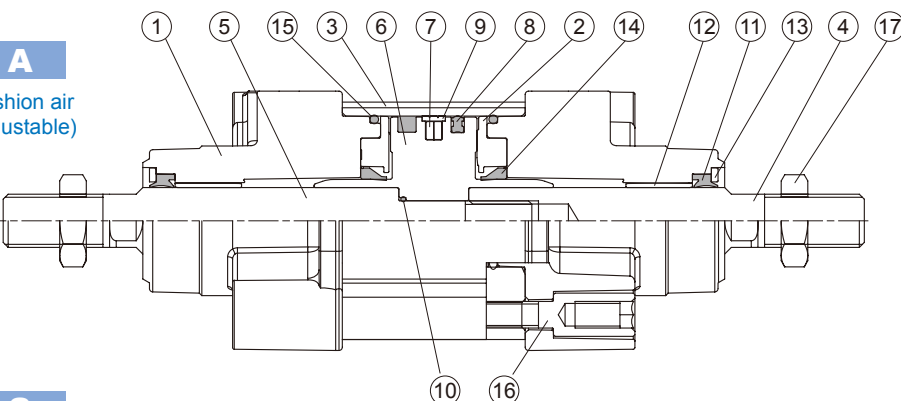
MCQI3-21 Inside structure & Parts list

ISO 15552 **STANDARD PROFILE CYLINDER**



Mindman

Double rod 21 type



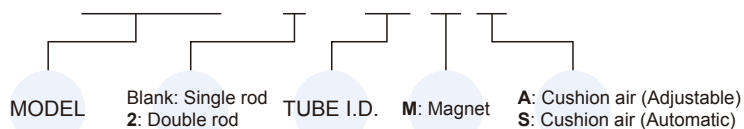
Material

No.	Part name	Material	Q'y	Component parts (inclusion)		Repair kits (inclusion)		Note
				Adjustable	Automatic	Adjustable	Automatic	
1	Rod cover	Aluminum alloy	2	●	●			
2	Cushion seal holder	Aluminum alloy	2	●	●			
3	Cylinder tube	Aluminum alloy	1					
4	Piston rod #1 *1	Carbon steel	1					
5	Piston rod #2 *1	Carbon steel	1					
6	Piston	Aluminum alloy	1	●	●			
7	Magnet ring	Magnet material	1	◎	◎			◎ Option
8	Piston packing	NBR	1	●	●	●	●	
9	Wear ring	Resin	1	●	●			
10	O-ring	NBR	1	●		●		
11	Rod packing	NBR	2	●		●	●	
12	Bush	Bearing alloy	2	●	●			
13	Washer	Carbon steel	2	●	●			
14	Cushion packing	NBR	2	●	●	●	●	
15	O-ring	NBR	2	●	●	●	●	
16	Screw	Carbon steel	8					
17	Piston rod nut	Carbon steel	2	●	●			
18	Insert nut	Copper alloy	2	●	●			
19	Needle valve	Copper alloy	2	●	●			
20	O-ring	NBR	2	●				
21	Shock absorber axis	Resin	2	●				

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

Order example of component parts

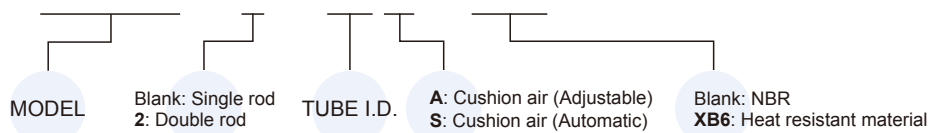
CP — MCQI3 — 2 — 63 M A



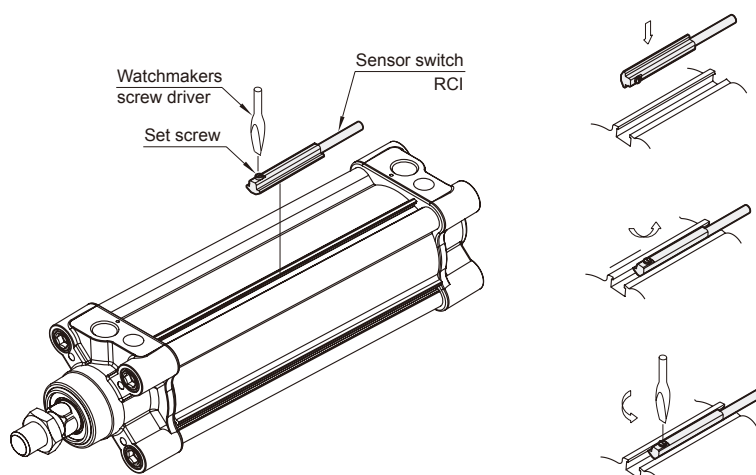
* Order example for Rc or NPT thread please consult us.

Order example of repair kits

PS — MCQI3 — 2 — 63 A — XB6



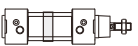
Installation of sensor switch



Cylinder & accessories weight

Cylinder weight

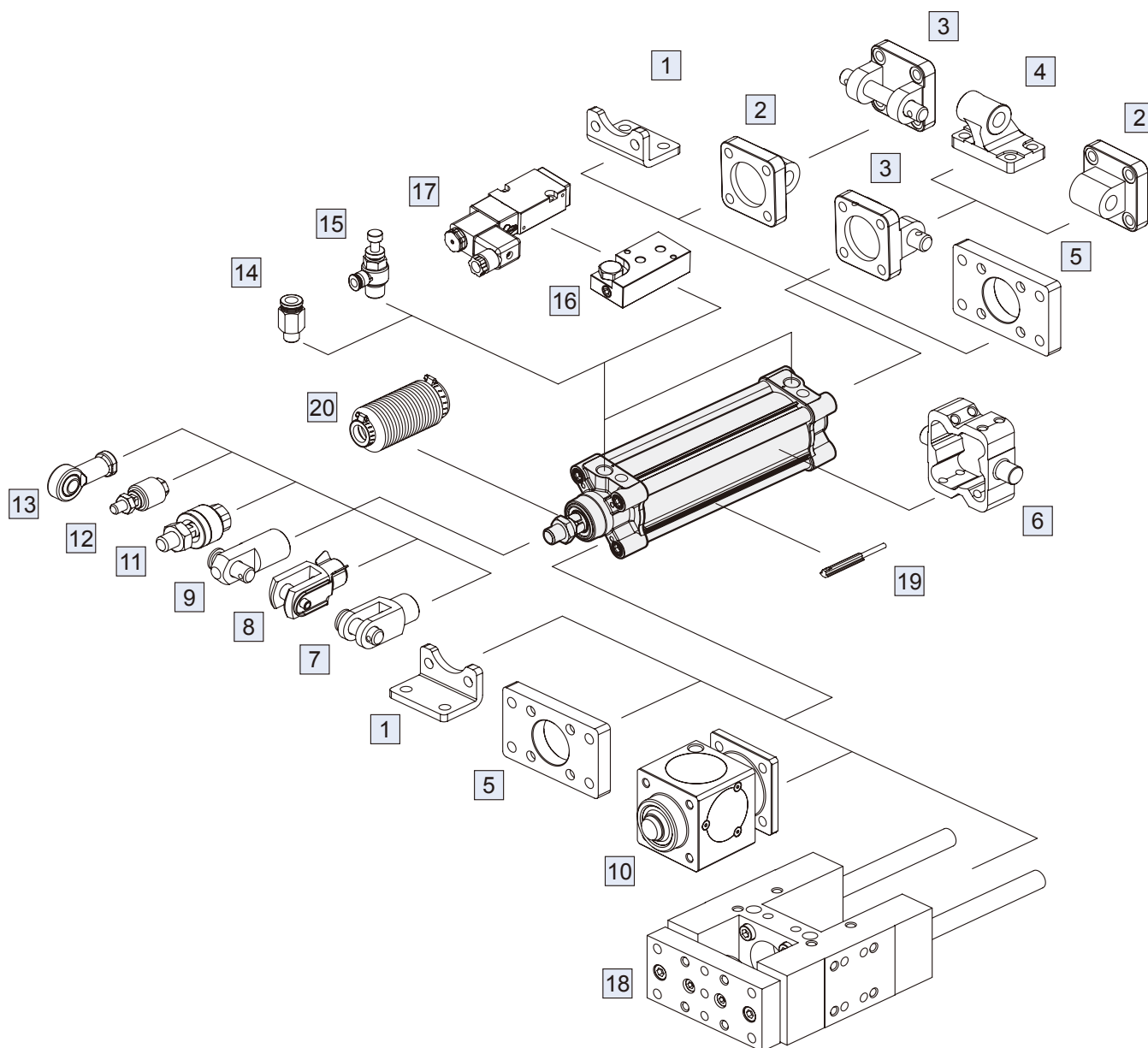
Unit: kg

Model	Basic weight MCQI3-11	Basic weight (magnet) MCQI3-11	Stroke 25 mm MCQI3-11
Tube I.D.			
ø63	1.669	1.689	0.128

Accessories weight

Unit: kg

Model	LB	CA	CB	CDB	FAC/FBC	TA/TB/TC	Y	I	Pin		YS
									Y / I	CA / CB	
Tube I.D.											
ø63	0.395	0.670	0.544	0.550	0.684	0.675	0.272	0.334	0.067	0.128	0.070



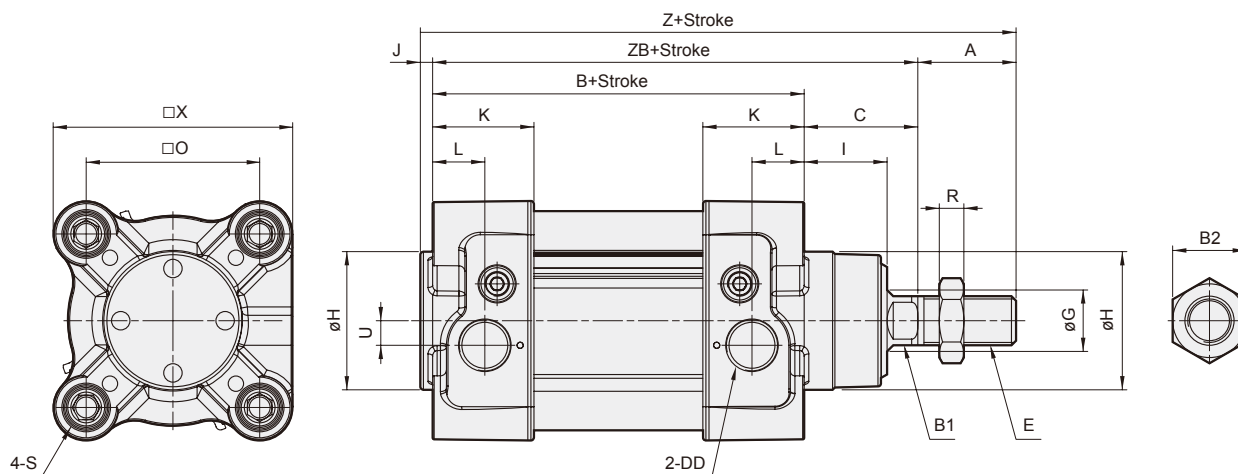
No.	Accessories	Material	Page
1	Mounting accessories LB	Carbon steel	1-74
2	Mounting accessories CA	Cast iron	1-76
3	Mounting accessories CB+PIN	Cast iron / *1	1-76, 46
4	Mounting accessories CDB	Cast iron	1-77
5	Mounting accessories FAC/FBC	Carbon steel	1-75
6	Mounting accessories TA/TB/TC	Cast iron	1-77, 78
7	Accessories Y+PIN	Cast iron / *1	1-46
8	Accessories YS (Y+Floating pin)	Carbon steel	1-46
9	Accessories I+PIN	Carbon steel	1-46
10	Locking unit MCBQI2	Aluminum alloy+*2	1-88

No.	Accessories	Material	Page
11	Floating joint MFC	Carbon steel	8-2
12	Floating joint MFCS	Carbon steel	8-5
13	Female rod ends PHS	Carbon steel	8-7
14	Fitting PC (PISCO)	—	8-3 (Vol.1)
15	Speed controller JSC (PISCO)	—	8-15 (Vol.1)
16	Cylinder link seats MVSN-300-C	Aluminum alloy	1-69 (Vol.1)
17	Solenoid valve MVSN-220 / 300	—	1-65, 67 (Vol.1)
18	Twin-guide cylinders MGTB/TU/TX	—	4-39
19	Sensor switch RCI	—	8-14
20	Protective bellows kit	NBR	—

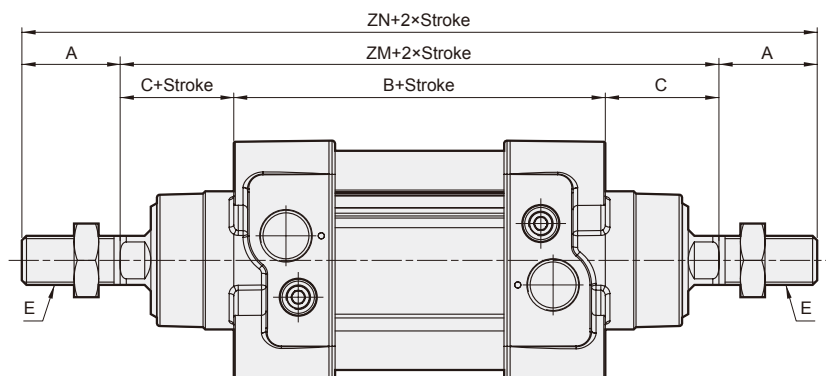
*1. PIN material is carbon steel.

*2. Bronze alloy.

11



21



Code Tube I.D.	A	B	B1	B2	C	DD	E	G	H	I	J	K	L	O	R	S	U	X	Z	ZB	ZM	ZN
63	32	121	16	24	37	G3/8	M16×1.5	20	45	26	4	33	17	56.5	8	M8×1.25	8	78	194	158	195	259



Table for standard stroke

Tube I.D.	Stroke (mm)
ø32,40	50,75,100,125,150,175,200, 250,300,350,400,450,500

- Stroke out of specification is also available.
- Please consult us if stroke out of specification.

Order example

MCKQI2 — 11 — 32 — 100M

MODEL TUBE I.D. STROKE M: Magnet

STYLE

Code	Symbol	Description
1 1		Double acting / Male thread

- * Order example for special specification, refer to page 0-7.
- * Order example for Rc or NPT thread please consult us.

Cylinder weight

Unit: kg

Model	Basic weight	Basic weight (magnet)	Stroke 25 mm
Tube I.D.			
ø32	0.550	0.556	0.067
ø40	0.823	0.829	0.086

Features

■ Hexagonal rod design & Non lubrication

Cylinder with hexagonal rod design for non-rotating feature. Special housing and bushing enables self lubrication of piston rod.

■ High quality long service life

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

■ ISO 15552 standard specification

Conforms to ISO 15552 specification, make worldwide interchangeability.

■ Easy to insert reed switch

With four grooves on the tube, proximity and reed sensors can be easily inserted into any position.

Specification

Model	MCKQI2	
Tube I.D. (mm)	32	40
Medium	Air	
Operating perssure range	0.05~1 MPa	
Proof pressure	1.5 MPa	
Ambient temperature	-5~+60°C (No freezing)	
Available speed range	50~500 mm/sec	
Rod non-rotating accuracy	±0.5°	
Allowable rotational torque	2.5 kgf-cm	4.5 kgf-cm
Sensor switch	RCI (Please refer to page 8-14)	

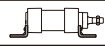
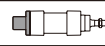
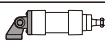
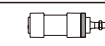
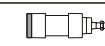
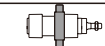
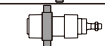
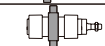
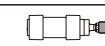
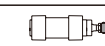
Mounting accessories

* Use the same accessories with MCQV.

FAC — MCQV — 32

MODEL TUBE I.D.

MOUNTING TYPE

	LB
	CA
	CB
	CDB (+CB+PIN)*
	FAC
	FBC
	TA
	TB
	TC
	Y
	I
	YS (Y+Floating+PIN)

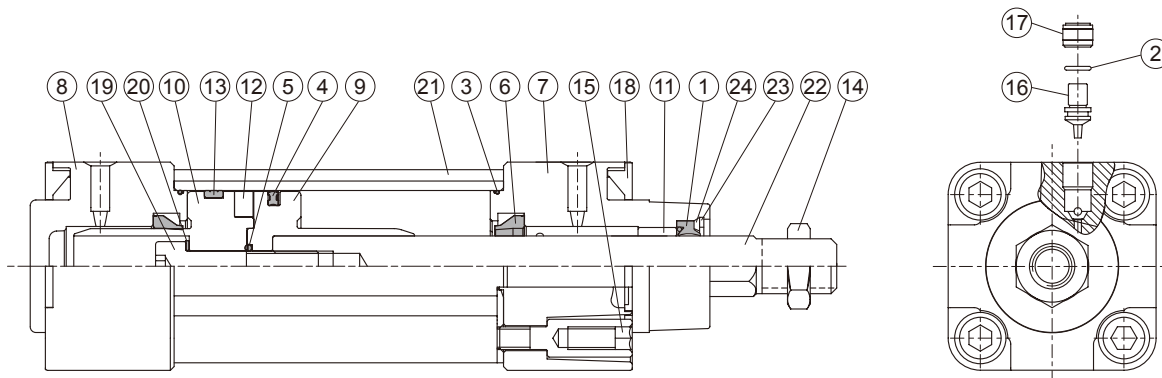
* CB+PIN have to extra purchase.

Model is MCQI2

Refer to MCQV2 dimension

MCKQI2 Inside structure & Parts list / Dimensions

ISO 15552 **STANDARD PROFILE CYLINDER WITH NON-ROTATING ROD**

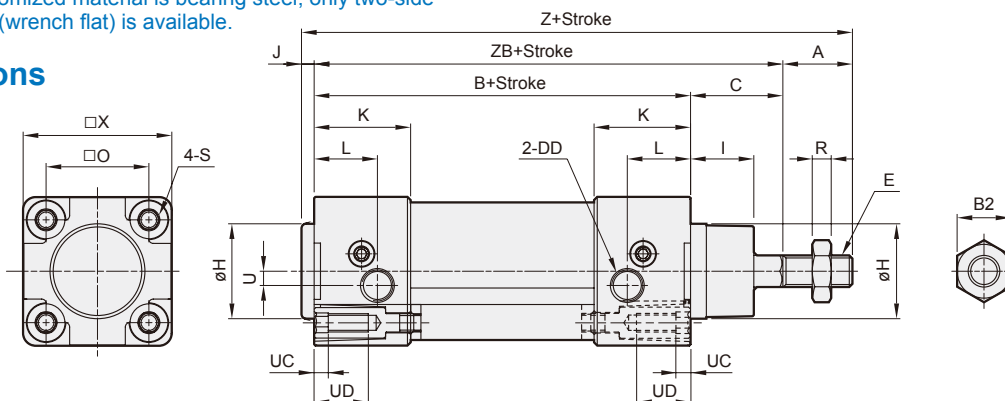


Material

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

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

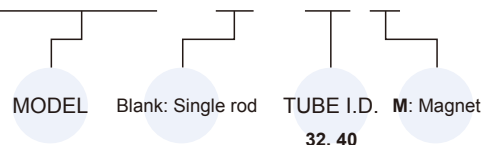
Dimensions



Code Tube I.D.	A	B	B2	C	DD	E	H	I	J	K	L	O	R	S	U	UC	UD	X	Z	ZB
32	22	94	17	26	G1/8	M10×1.25	30	20	4	30.5	20	32.5	5	M6×1.0	4.5	4.5	17	47	146	120
40	24	105	19	30	G1/4	M12×1.25	35	20.5	4	34	14.5	38	6	M6×1.0	5.3	4.5	17	55	163	135

Order example of component parts

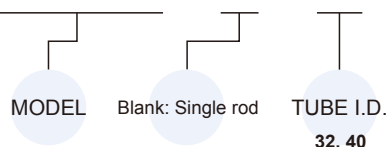
CP — MCKQI2 — □ — 40 M



* Order example for Rc or NPT thread please consult us.

Order example of repair kits

PS — MCKQI2 — □ — 40



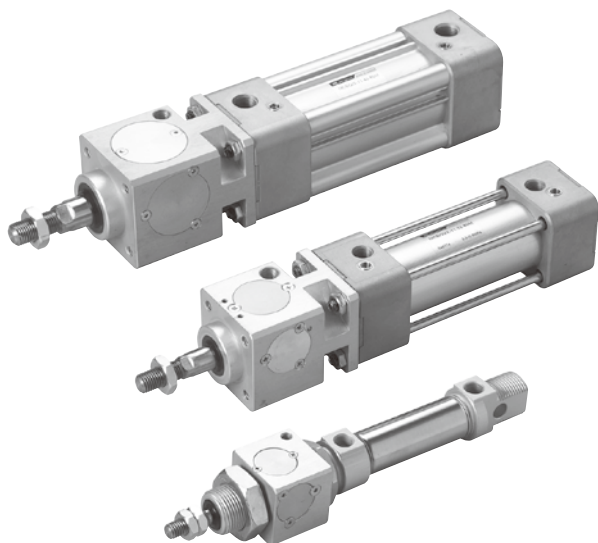


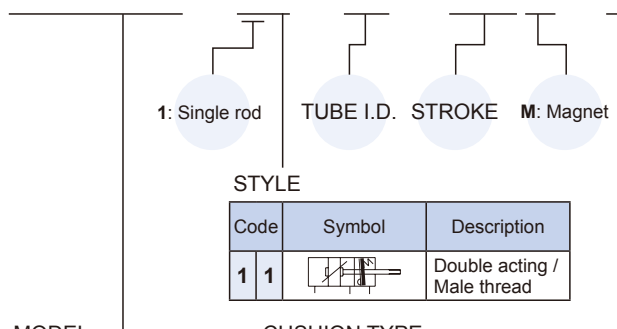
Table for standard stroke

Tube I.D.	Stroke (mm)
ø20,25	15,25,50,75,100,125,150,175,200,250,300,350,400,450,500
ø32,40	50,75,100,125,150,175,200,250,300,350,400,450,500
ø50,63	↑ 600
ø80,100,125	↑ 600,700

- Stroke out of specification is also available.
- Please consult us if stroke out of specification.

Order example

MCBQV2 — 11 — 40 — 100M — A



MODEL	Tube I.D.	Blank: Cushion pad	A: Cushion air (Adjustable)	S: Cushion air (Automatic)
MCBBI	ø20, ø25	●	●	
MCBQV2	ø32~ø100		●*	
MCBQV3	ø63		●	●
MCBQI2	ø32~ø100		●*	
MCBQI3	ø63		●	●
MCBQV	ø125		●*	

* Without code when ordering.

* Rc and NPT thread are also available. Please consult our sales representative for more information.

Features

■ Multi-specification

MCB unit is applicable in 9 different bore sizes (ø20~125), piston rod can be locked at any position within the stroke range.

■ Brake function

Brake function is applicable in both directions.

■ Non lubrication

No lubricant is required for the piston rod. Utilize oil-containing alloys and special bearing bush to eliminate the necessity of lubrication on piston rod.

■ High quality long service life

Hard anodized aluminum tube and stainless steel tube allows cylinder to have better corrosion and abrasion resistance.

■ ISO 15552 & ISO 6432 standard specification

Conform to ISO 15552 & ISO 6432 standards. Unified design, most parts and mounting accessories are interchangeable.

■ Cylinder mountings

Variety of mounting accessories are available for different applications.

Specification

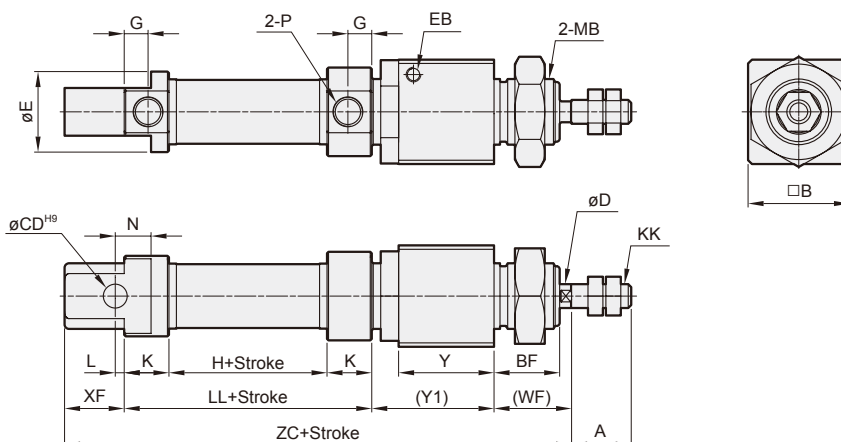
Model	MCBBI		MCBQI2, MCBQI3 * ²					
Tube I.D. (mm)	20	25	32	40	50	63	80	100
Medium	Air							
Operating perssure range	0.3~0.6 MPa							
Proof pressure	1.5 MPa							
Ambient temperature	-5~+60℃ (No freezing)							
Min. working pressure	0.3 MPa							
Available speed range	50~750		50~500 mm/sec					
Locking mode	Secure locking of piston rod in any position							
Lock retention forces (N)	490	490	790	1240	1930	3060	5400	7700
Sensor switch (*)	RCM		RCI					
Sensor switch (band)	BM20	BM25	—					

Model	MCBQV2, MCBQV3 *2							MCBQV
Tube I.D. (mm)	32	40	50	63	80	100	125	
Medium	Air							
Operating pressure range	0.3~0.6 MPa							
Proof pressure	1.5 MPa							
Ambient temperature	-5~+60°C (No freezing)							
Min. working pressure	0.3 MPa							
Available speed range	50~500 mm/sec							
Locking mode	Secure locking of piston rod in any position							
Lock retention forces (N)	790	1240	1930	3060	5400	7700	12040	
Sensor switch (*1)	RCA							
Sensor switch (holder)	HV1	HV2	HV3	HV4				

*1. RCA, RCI, RCM specification, please refer to page 8-8, 14, 16.

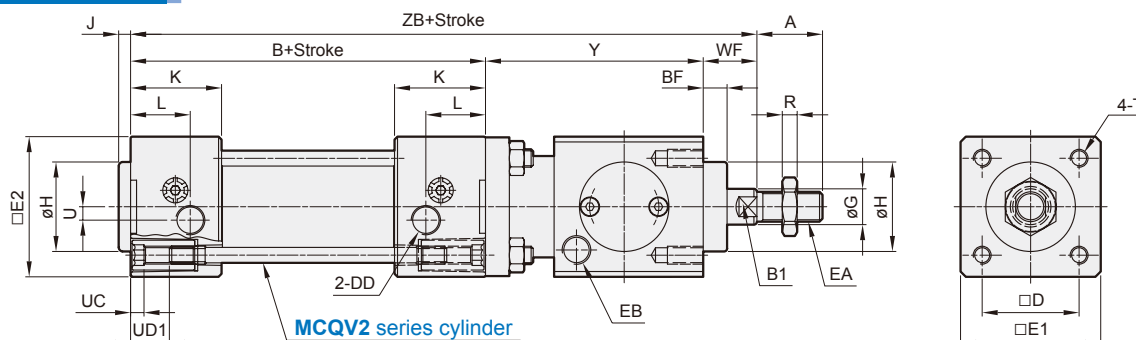
*2. MCBQV3 and MCBQI3 only have tube I.D. 63.

MCBBI

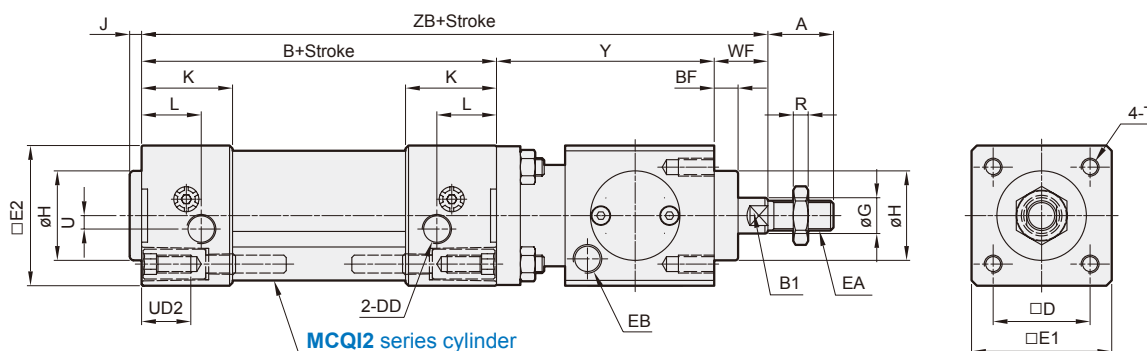


Code Tube I.D.	A	B	BF	CD	D	E	EB	G	H	K	KK	L	LL	MB	N	P	WF	XF	Y	Y1	ZC
20	20	34	22	8	8	27	M5	8	38	15	M8×1.25	3	68	M22×1.5	12	G1/8	26	20	32	43	157
25	22	34	22	8	10	27	M5	7.5	37	15	M10×1.25	9	67	M22×1.5	12	G1/8	28	22	32	45	162

MCBQV2

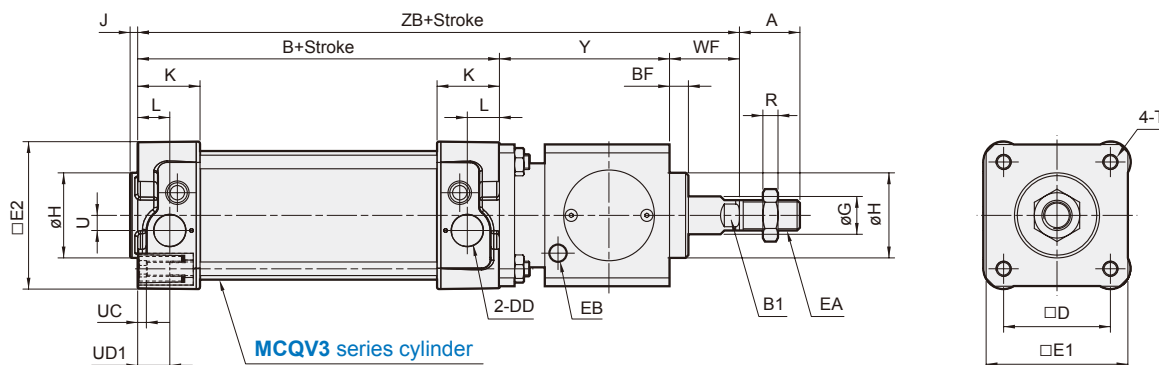


MCBQI2

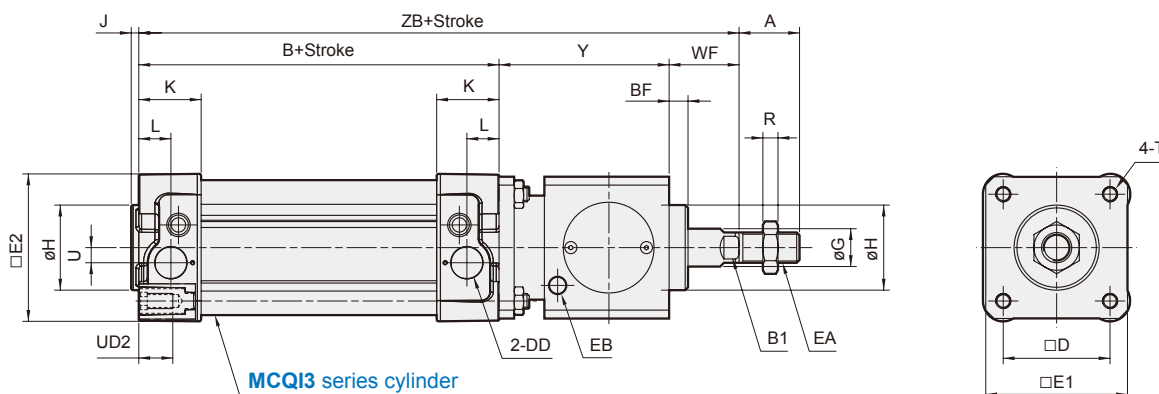


Code Tube I.D.	A	B	BF	B1	D	DD	E1	E2	EA	EB	G	H	J	K	L	R	T	U	UC	UD1	UD2	WF	Y	ZB
32	22	94	7.5	10	32.5	G1/8	47	47	M10×1.25	G1/8	12	30	4	30.5	20	5	M6×12L	4.5	4.5	12	M6×1.0×15L	26	60	180
40	24	105	10	13	38	G1/4	54	53	M12×1.25	G1/8	16	35	4	34	14.5	6	M6×12L	5.3	4.5	12	M6×1.0×15L	30	70	205
50	32	106	10	16	46.5	G1/4	65	65	M16×1.5	G1/8	20	40	4	31	16	8	M8×14L	8.5	4.5	16	M8×1.25×18L	37	90	233
63	32	121	10	16	56.5	G3/8	75	78	M16×1.5	G1/8	20	45	4	33	16	8	M8×14L	8	4.5	16	M8×1.25×18L	37	90	248
80	40	128	10	21	72	G3/8	95	95	M20×1.5	G1/4	25	45	4	35.5	20.5	10	M10×16L	9	4.5	18	M10×1.5×19L	46	110	284
100	40	138	10	21	89	G1/2	114	115	M20×1.5	G1/4	25	55	4	37	19	10	M10×16L	13	4.5	18	M10×1.5×19L	51	110	299

MCBQV3

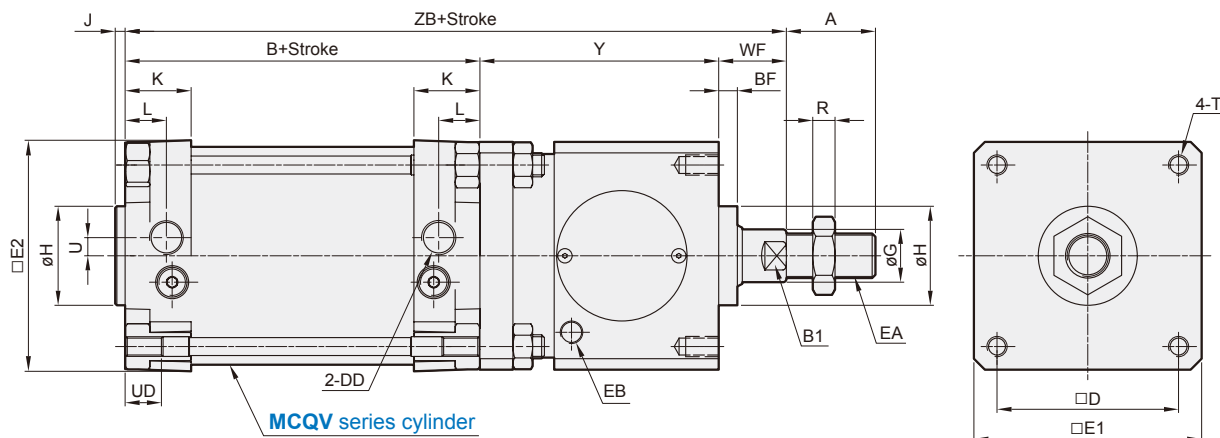


MCBQI3



Code Tube I.D.	A	B	BF	B1	D	DD	E1	E2	EA	EB	G	H	J	K	L	R	T	U	UC	UD1	UD2	WF	Y	ZB
63	32	121	10	16	56.5	G3/8	75	78	M16×1.5	G1/8	20	45	4	33	17	8	M8×14L	8	4.6	17	M8×1.25×18L	37	90	248

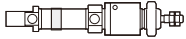
MCBQV

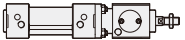
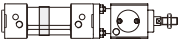


Code Tube I.D.	A	B	BF	B1	D	DD	E1	E2	EA	EB	G	H	J	K	L	R	T	U	UC	UD	WF	Y	ZB
125	54	160	16	27	110	G1/2	138	140	M27×2.0	G1/4	32	60	6	40	25	13.5	M12×20L	11	22	18	65	140	365

Cylinder weight

Unit: kg

Model	Basic weight (magnet) MCBBI-11	Stroke 25 mm MCBBI-11
Tube I.D.		
ø20	0.422	0.028
ø25	0.758	0.050

Model	Basic weight MCBQI2-11	Basic weight (magnet) MCBQI2-11	Stroke 25 mm MCBQI2-11
Tube I.D.			
ø32	0.944	0.950	0.064
ø40	1.422	1.434	0.091
ø50	2.360	2.377	0.128
ø63	3.338	3.358	0.116
ø80	5.354	5.381	0.209
ø100	7.586	7.621	0.234

Model	Basic weight MCBQI3-11	Basic weight (magnet) MCBQI3-11	Stroke 25 mm MCBQI3-11
Tube I.D.			
ø63	3.169	3.189	0.128

Model	Basic weight MCBQV2-11	Basic weight (magnet) MCBQV2-11	Stroke 25 mm MCBQV2-11
Tube I.D.			
ø32	0.920	0.926	0.053
ø40	1.370	1.382	0.075
ø50	2.300	2.317	0.115
ø63	3.200	3.220	0.130
ø80	5.370	5.397	0.210
ø100	7.460	7.495	0.220

Model	Basic weight MCBQV3-11	Basic weight (magnet) MCBQV3-11	Stroke 25 mm MCBQV3-11
Tube I.D.			
ø63	3.135	3.155	0.130

Model	Basic weight MCBQV-11	Basic weight (magnet) MCBQV-11	Stroke 25 mm MCBQV-11
Tube I.D.			
ø125	13.845	13.888	0.372



Order example

MCB — 40

MODEL

TUBE I.D.

Features

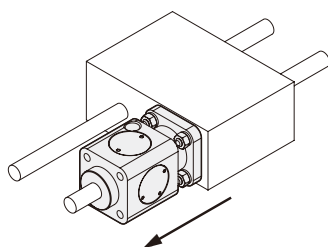
- Locking unit is a mechanical device to apply to cylinders ISO 15552 and ISO 6432 whose scope is to block cylinder's rod in any position. This solution allows to block the race of the cylinder anytime takes place an unexpected fall of pressure.
- The blocking force is always and however greater of the one developed from the respective cylinder at 1 MPa.

Specification

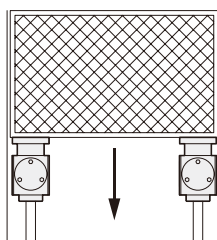
Model	MCB								
Tube I.D. (mm)	20	25	32	40	50	63	80	100	125
Rod diameter (mm)	8	10	12	16	20	20	25	25	32
Medium	Air								
Operating pressure range	0.3~0.6 MPa								
Proof pressure	1.5 MPa								
Ambient temperature	-5~+80°C (No freezing)								
Min. working pressure	0.3 MPa								
Locking mode	Secure locking of piston rod in any position								
Lock retention forces (N) Max. static loading- Horizontal mounting	490	490	790	1240	1930	3060	5400	7700	12040
Weight (kg)	0.19	0.19	0.40	0.60	1.10	1.50	2.60	3.50	6.50

Other examples of locking unit applications

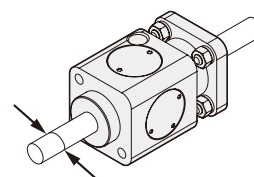
For slides



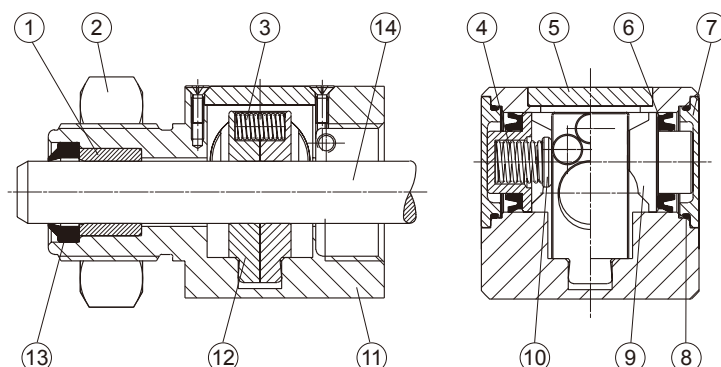
For piling



Chromium-plated shaft



Tolerance	f7
Rod diameter	8, 10, 12, 16, 20, 25, 32



Attention

- Locking unit functioning is static type (cylinder's rod stopped).
- Before using the brake, take care to stop cylinder's rod.

Assemble attention

- Unlocking the locking unit by supplying air to the ⑪ body of locking unit. Please don't take out the ⑭ support pin after unlocking the locking unit.
- Using piston rod to push the ⑭ support pin off until the piston rod replaces the position of the ⑭ support pin. Finally you can lock the piston rod by removing the air supply.

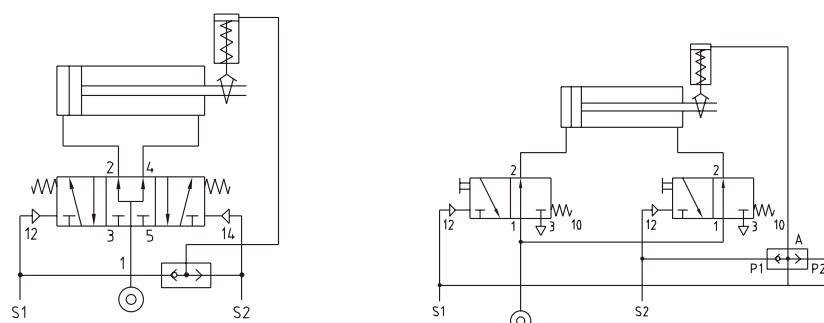
* When the ⑪ body of locking unit is removed the air supply, if there is no ⑭ support pin or piston rod to support inside structure, it will cause the ⑫ jaws deviation. The piston rod can't be mounted anymore.

Material

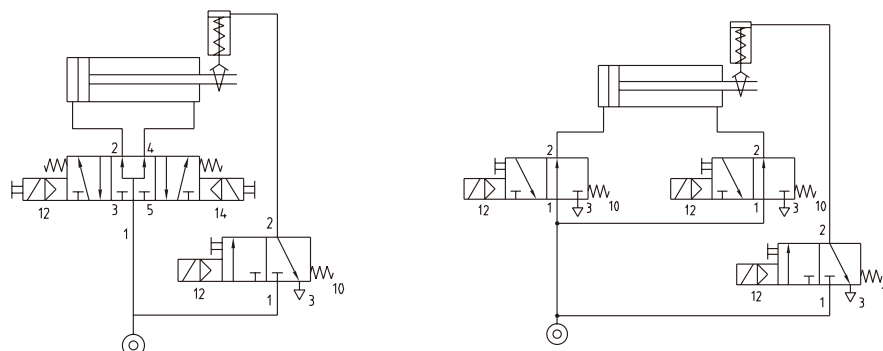
No.	Part name	Material
1	Guida bush	Igolidur
2	Nut	Steel
3	Spring	Steel
4	Spring	Steel
5	Superior cover	Aluminum alloy
6	Seal piston	NBR
7	Lateral cover	Aluminum alloy
8	O-ring	NBR
9	Piston	Delrin
10	Spring cover	Delrin
11	Body	Aluminum alloy
12	Jaws	Bronze
13	Rod seal	NBR
14	Support pin	Carbon steel

Connection scheme

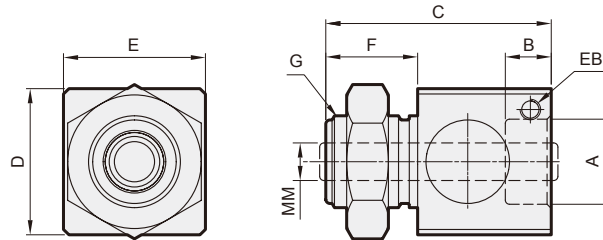
Pneumatic control



Electropneumatic control

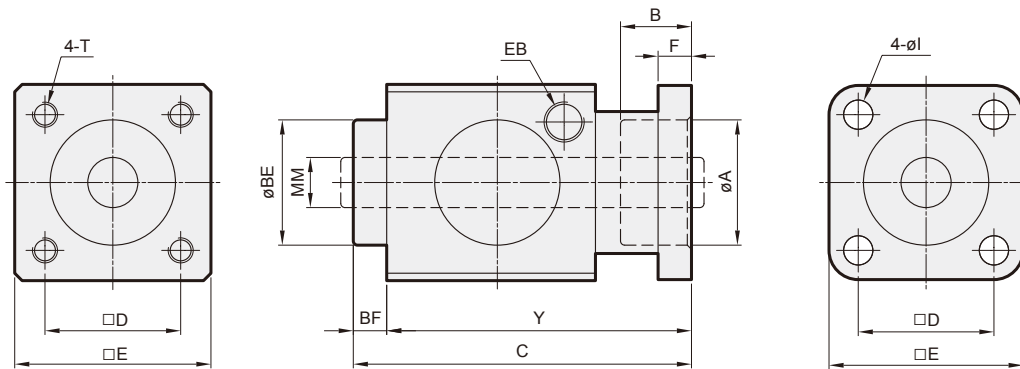


$\phi 20, \phi 25$



Code Tube I.D.	A	B	C	D	E	EB	F	G	MM
20	M22×1.5	11	54	35	34	M5	22	M22×1.5	$\phi 8^{17}$
25	M22×1.5	11	54	35	34	M5	22	M22×1.5	$\phi 10^{17}$

$\phi 32 \sim \phi 125$



Code Tube I.D.	A	B	BE	BF	C	D	E	F	EB	I	MM	T	Y
32	30.5	20.5	30	7.5	67.5	32.5	47	6	G1/8	6.5	$\phi 12^{17}$	M6×8L	60
40	35.5	22.5	34.9	10	80	38	54	6	G1/8	6.5	$\phi 16^{17}$	M6×8L	70
50	40.5	29	40	10	100	46.5	65	8	G1/8	9	$\phi 20^{17}$	M8×12L	90
63	45.5	29	45	10	100	56.5	75	8	G1/8	9	$\phi 20^{17}$	M8×12L	90
80	45.5	37	45	10	120	72	95	12	G1/4	11	$\phi 25^{17}$	M10×16L	110
100	55.5	39	55	10	120	89	114	12	G1/4	11	$\phi 25^{17}$	M10×16L	110
125	60.5	51.5	60	16	156	110	138	20	G1/4	13	$\phi 32^{17}$	M12×20L	140



