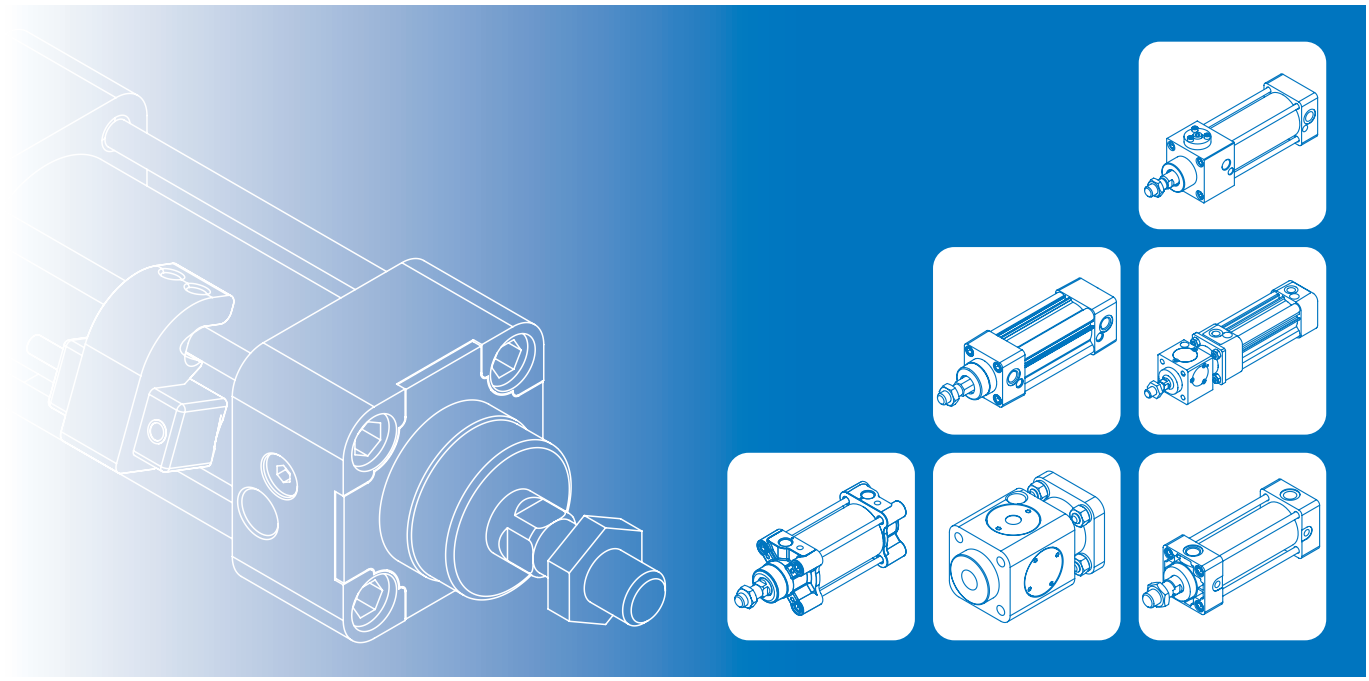
STANDARD CYLINDER



STANDARD CYLINDER

MCQA ø40~ø200 1-2
MCQA-AH ø40~ø150 1-22
MCQN ø1 1/2"~ø4" 1-25

ISO 15552 STANDARD CYLINDER

MCQV ø125~ø200 1-34
MCQV3 ø32~ø100 1-46
MCQVS ø32~ø100 Stainless steel 1-63

END LOCK CYLINDER

MCQV3L ø63, ø80 1-74

ISO 15552 STANDARD PROFILE CYLINDER

MCQI3 ø32~ø100 1-80
MCKQI3 ø32, ø40 No Rotating 1-96

ROD LOCKING CYLINDER

MCB* ø20~ø125 1-100
MCB ø20~ø125 1-103

POWER CYLINDER

MHPD 1-106

MCQA series

STANDARD CYLINDER

Special spec

Rod end shape

Technical data

Caution for safety
(Read before installing)



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 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		RDC(V), RQC(V)				RDT, RQT
		RCA				
Sensor switch holder	R*C(V)	DT7-1	DT7-3			–
	R*T	–				DT-5
	RCA	HV2	HV4	PM14	PM16	HA5

Table for standard stroke

Tube I.D.	Stroke (mm)	Max. stroke (mm)	
		Style 11	Style 21/27
ø40	50,75,100,125,150, 175, 200,250,300, 400,500	1800	850
ø50,63		2000	950
ø80,100		2500	1200
ø125,150		2000	950
ø200		1500	700

* Intermediate stroke are available, please contact us.

Order example

MCQA — 11 — 40 — 100M — 10 — T — □

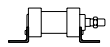
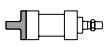
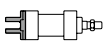
- MODEL
- **1**: Single rod **2**: Double rod
- TUBE I.D.
- STROKE
- **M**: Magnet
- ADJUSTABLE STROKE
  * Only for STYLE 27.
- TYPE
  T: Add "T" when both M and TA / TB are selected.
  * When both magnet (M) and mounting accessories (TA or TB) are selected, please add the suffix "T" at the end of the model number.
- PORT THREAD
  Blank: Rc thread
  G: G thread
  NPT: NPT thread

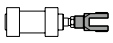
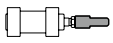
STYLE

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

Accessories & Connector

Accessories ⚠ ø125~ø200: Factory-installed (Field assembly is not recommended)

Code	LB (Purchase 2 pcs)	CA	CB	FA	FB	FAC	FBC
Mounting / Tube I.D.							
ø40	LB-Q1-40	CA-Q1-40	CB-Q1-40	FA-Q1-40		FAC-Q1-40	
ø50	LB-Q1-50	CA-Q1-50	CB-Q1-50	FA-Q1-50		FAC-Q1-50	
ø63	LB-Q1-63	CA-Q1-63	CB-Q1-63	FA-Q1-63		FAC-Q1-63	
ø80	LB-Q1-80	CA-Q1-80	CB-Q1-80	–		FAC-Q1-80	
ø100	LB-Q1-100	CA-Q1-100	CB-Q1-100	–		FAC-Q1-100	
ø125	LB-Q1-125	CA-Q1-125	CB-Q1-125	–		FAC-Q1-125	
ø150	LB-Q1-150	CA-Q1-150	CB-Q1-150	–		FAC-Q1-150	
ø200	LB-Q1-200	CA-Q1-200	CB-Q1-200	–		FAC-Q1-200	

	Accessories ⚠ Factory-installed, not available for separate purchase or field assembly				Connector		Rod nut
Code	TA	TB	TC	SDS Mid section support (Stroke over 1000mm)	Y	I	NUT
Mounting / Tube I.D.							
ø40	TC-Q1-40			SDS-Q1-40	Y-Q1-40	I-Q1-40	NUT-M14x1.5x8Hx22B
ø50	TC-Q1-50			SDS-Q1-50	Y-Q1-50	I-Q1-50	NUT-M18x1.5x11Hx26B
ø63	TC-Q1-63			SDS-Q1-63			
ø80	TC-Q1-80			SDS-Q1-80	Y-Q1-80	I-Q1-80	NUT-M22x1.5x13Hx32B
ø100	TC-Q1-100			SDS-Q1-100	Y-Q1-100	I-Q1-100	NUT-M26x1.5x14Hx35B
ø125	TC-Q1-125			SDS-Q1-125	Y-Q1-125	I-Q1-125	NUT-M30x1.5x15Hx41B
ø150	TC-Q1-150			SDS-Q1-150	Y-Q1-150	I-Q1-150	
ø200	TC-Q1-200			SDS-Q1-200	Y-Q1-200	I-Q1-200	NUT-M45x1.5x27Hx70B

Pin

Applicable	Y&I connector	CA&CB accessories
Code	PIN-Y-P (with split pin)	PIN-CB-P (with split pin)
Fig / Tube I.D.		
ø40	PIN-Q1-50-1-P	PIN-Q1-40-1-P
ø50		PIN-Q1-50-1-P
ø63		PIN-Q1-63-1-P
ø80	PIN-Q1-80-2-P	PIN-Q1-80-1-P
ø100	PIN-Q1-80-1-P	PIN-Q1-100-1-P
ø125	PIN-Q1-125-2-P	PIN-Q1-125-1-P
ø150	PIN-Q1-125-1-P	PIN-Q1-150-1-P
ø200	PIN-Q1-200-1-P	PIN-Q1-200-1-P

Order example of self-assembled

The tube I.D. ø63 of LB accessories, Y connector and pin.

No.	Order number	Qty
1	LB-Q1-63	2
2	Y-Q1-63	1
3	PIN-Q1-50-1-P	1

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

Order example of factory assembled

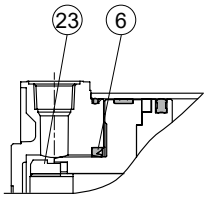
⚠ Cylinders and accessories are distinguished by the symbol " + ".

MCQA – Standard model no. + TA

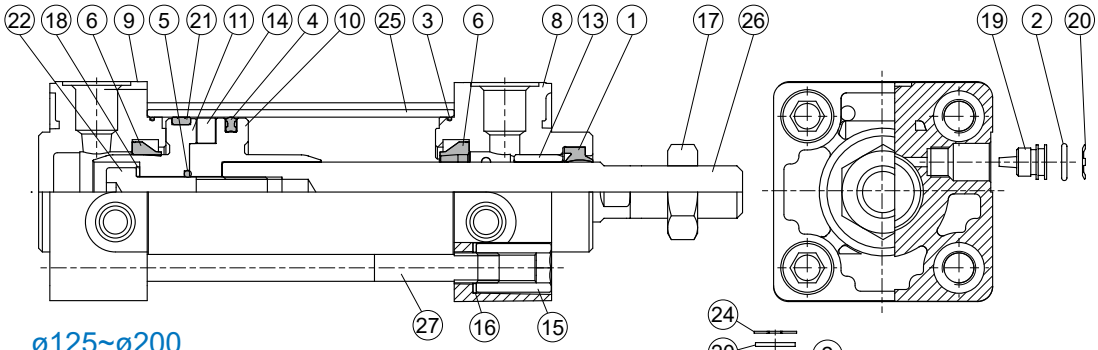
CYLINDER ACCESSORIES

Single rod 11 type

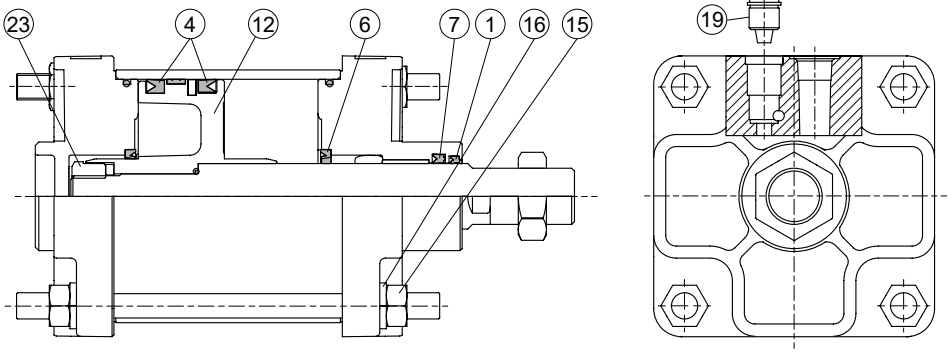
ø80, ø100



ø40~ø63



ø125~ø200

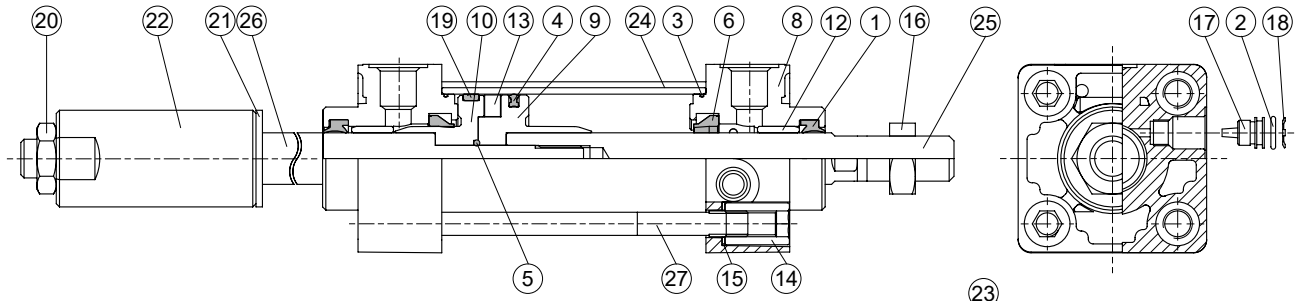


No.	Part name	Material	Q'y	Component parts (inclusion)		Repair kits (inclusion)	Note
				ø40~ø100	ø125~ø200		
1	Rod packing	NBR	1	●	●	●	
2	O-ring	NBR	2	●	●	●	
3	O-ring	NBR	2	●	●	●	
4	Piston packing	NBR	1 or 2	●	●	●	ø125~ø200 (Q'y=2)
5	O-ring	NBR	1	●	●	●	
6	Cushion packing	NBR	2	●	●	●	Repair kits ø40~ø80 (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	Rod 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				

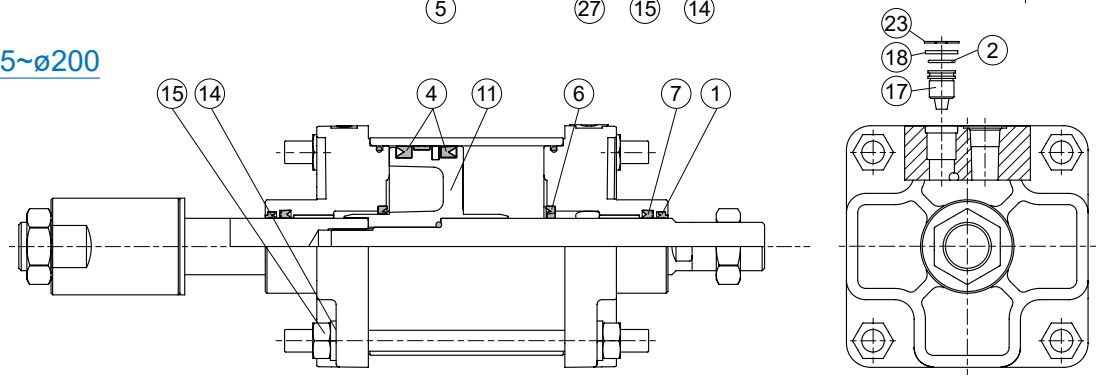
*1. ø40~ø100: Spring steel, ø125~ø200: Carbon steel
*2. When customized material is bearing steel, only two-side across flat (wrench flat) is available.

Double rod 21 / 27 type

A: ø40~ø100



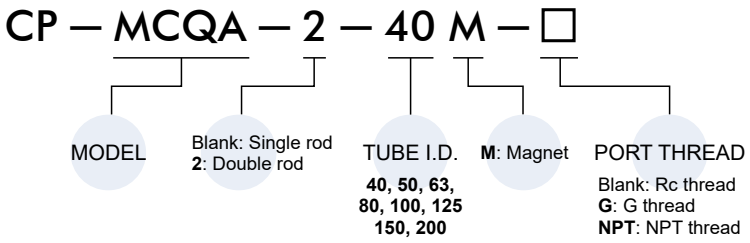
B: ø125~ø200



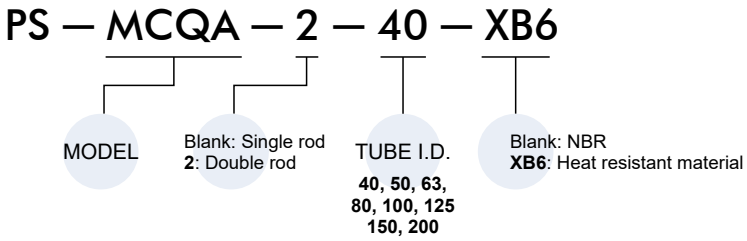
No.	21 type		27 type		Part name	Material	Q'ty	Component parts (inclusion)		Repair kits (inclusion)		Note
	A	B	A	B				ø40~ø100	ø125~ø200	ø40~ø100	ø125~ø200	
1	●	●	●	●	Rod packing	NBR	2	●	●	●	●	
2	●	●	●	●	O-ring	NBR	2	●	●	●	●	
3	●	●	●	●	O-ring	NBR	2	●	●	●	●	
4	●	●	●	●	Piston packing	NBR	1 or 2	●	●	●	●	ø125~ø200 (Q'y=2)
5	●	●	●	●	O-ring	NBR	1	●	●	●	●	
6	●	●	●	●	Cushion packing	NBR	2	●	●	●		Repair kits ø40~ø80 (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	●	●	●	●	Rod nut	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: ø40~ø100, **B**: ø125~ø200
*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.

Order example of component parts



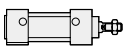
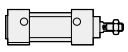
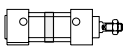
Order example of repair kits



Cylinder & accessories weight

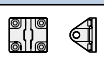
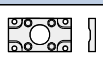
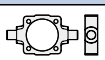
Cylinder weight

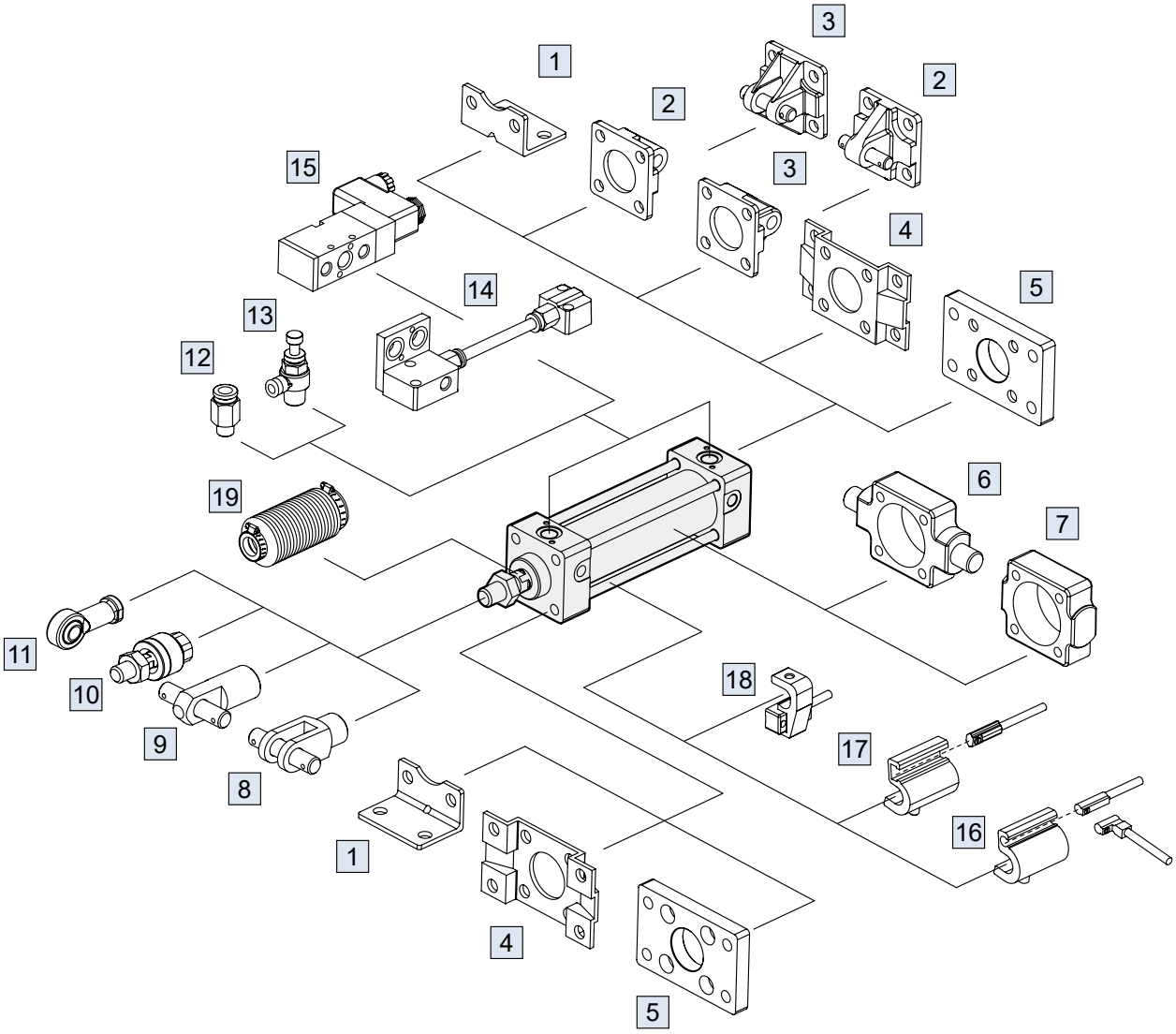
Unit: kg

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

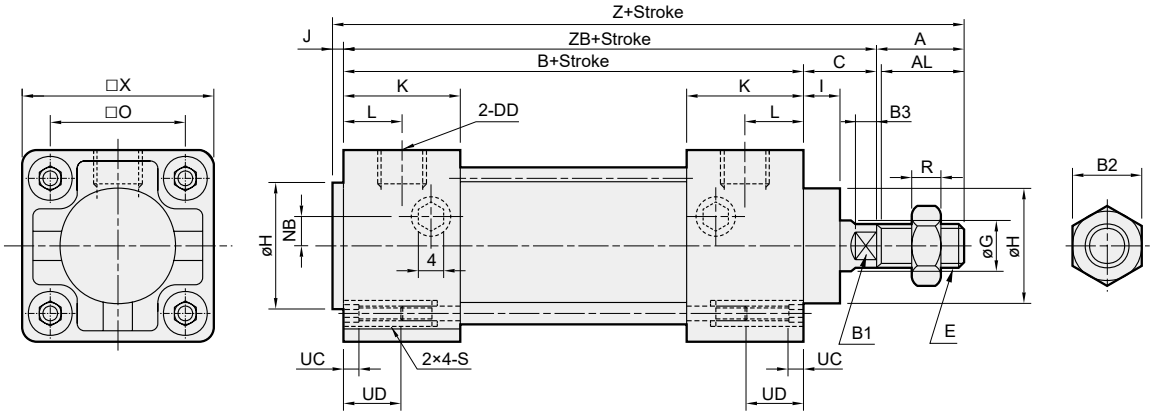


No.	Accessories	Material	Page link
1	Mounting accessories LB	Carbon steel	
2	Mounting accessories CA+PIN	Cast iron / *	
3	Mounting accessories CB+PIN	Cast iron / *	
4	Mounting accessories FA/FB	Carbon steel	
5	Mounting accessories FAC/FBC	Carbon steel	
6	Mounting accessories TA/TB/TC	Cast iron	
7	Mounting accessories SDS	Cast iron	
8	Accessories Y+PIN	Cast iron / *	
9	Accessories I+PIN	Carbon steel	

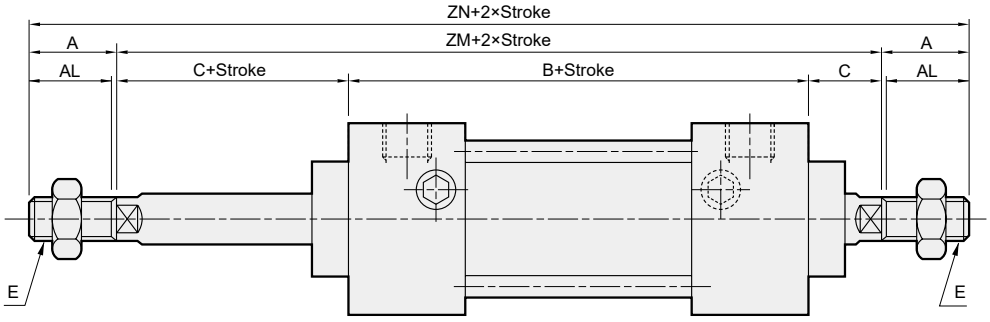
* PIN material is carbon steel.

No.	Accessories	Material	Page link
10	Floating joint MFC	Carbon steel	
11	Female rod ends PHS	Carbon steel	
12	Fitting PC (PISCO)	–	
13	Speed controller JSC (PISCO)	–	
14	Solenoid valve link seats VR/VH	Aluminum alloy	
15	Solenoid valve MVSC-260/300	–	
16	Sensor switch R*C(V)+DT7-*	–	
17	Sensor switch R*T+DT-*	–	
18	Sensor switch RCA+HV*	–	
19	Protective bellows kit	NBR	–

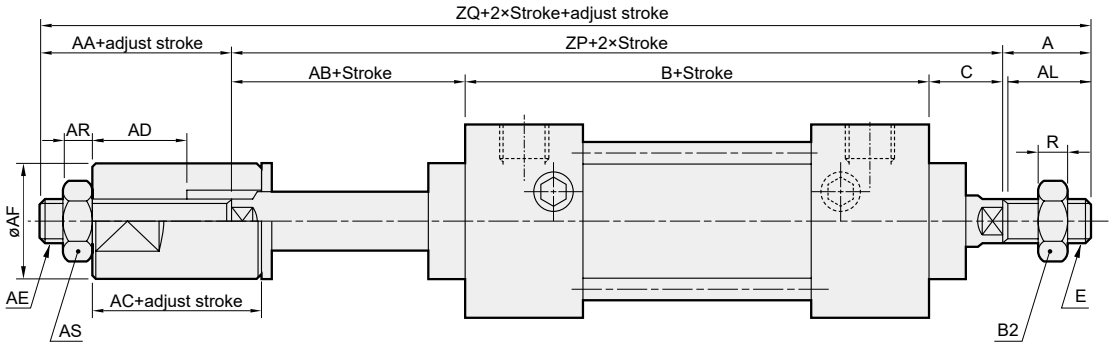
11



21

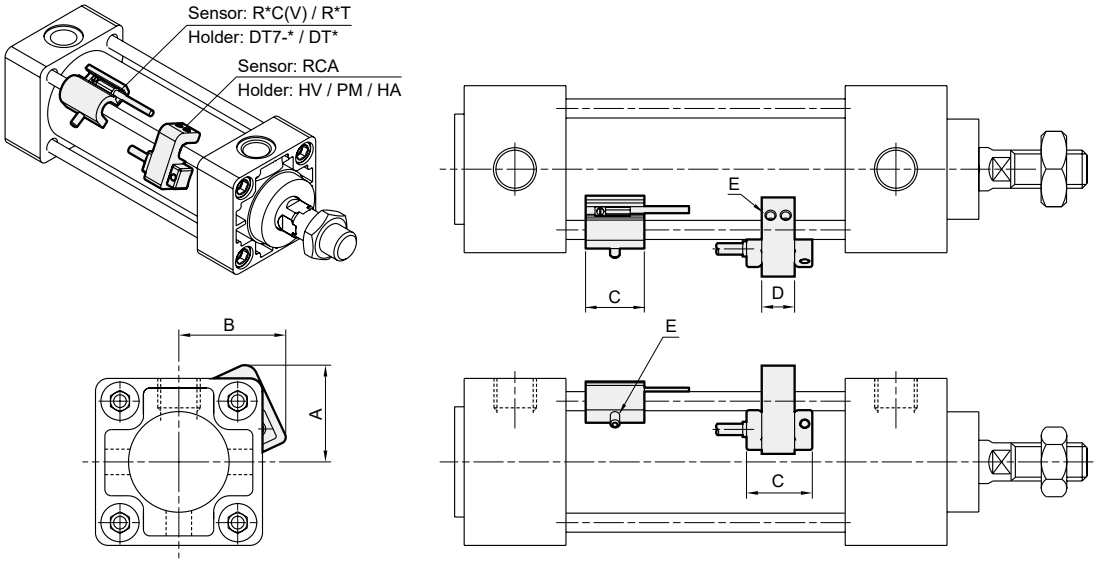


27



Code / Tube I.D.	A	AA	AB	AC	AD	AE	AF	AL	AR	AS	B	B1	B2	B3	C	DD	E	G	H	I	J	K	L	NB
40	30	21	18	12	7	M12×1.25	30	27	7	19	84	14	22	7	21	Rc1/4	M14×1.5	16	32	11	3	26	13	8
50	35	23	18	15	10	M16×1.5	40	32	8	24	90	17	26	8	23	Rc3/8	M18×1.5	20	40	11	3	28	14	0
63	35	23	18	15	10	M16×1.5	40	32	8	24	98	17	26	8	23	Rc3/8	M18×1.5	20	40	11	3	30	15	0
80	40	33	24	20	14	M22×1.5	50	37	13	32	116	22	32	11	31	Rc1/2	M22×1.5	25	45	15	4	34	17	0
100	40	33	24	20	14	M22×1.5	50	37	13	32	126	27	36	13	32	Rc1/2	M26×1.5	30	52	15	5	37	18.5	0

Code / Tube I.D.	O	R	S	UC	UD	X	Z	ZB	ZM	ZN	ZP	ZQ
40	40.5	8	M8×1.25	4	12	58	138	105	126	186	123	174
50	48	11	M8×1.25	4	12	66	151	113	136	206	131	189
63	59	11	M8×1.25	4	12	80	159	121	144	214	139	197
80	74	13	M12×1.75	4	15	100	191	147	178	258	171	244
100	90	14	M12×1.75	4	15	118	203	158	190	270	182	255

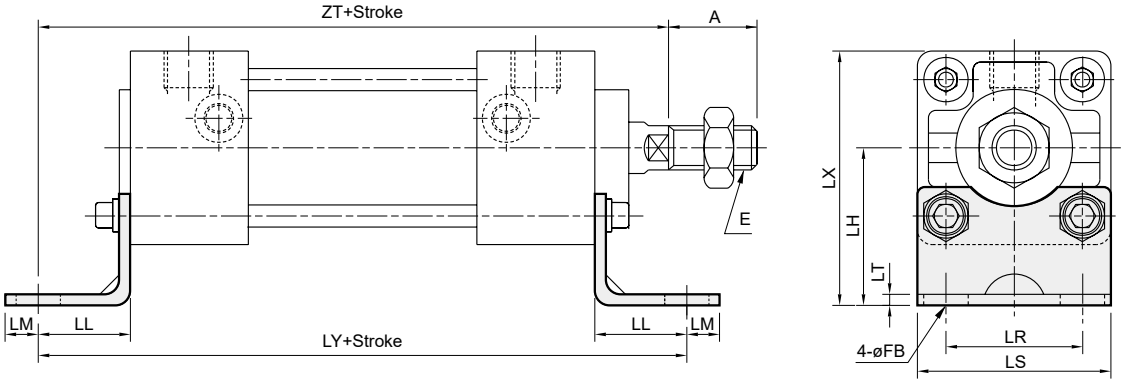


Code / Tube I.D.	Sensor switch	Holder	A	B	C	D	E
40	RCA	HV2	36	41	26	13	M4×10L
50	RCA	HV2	38	43	26	13	M4×10L
63	RCA	HV2	46	49	26	13	M4×10L
80	RCA	HV4	52	55	26	13	M4×10L
100	RCA	HV4	59	62	26	13	M4×10L
125	RCA	PM14	–	–	26	12	M4×10L
150	RCA	PM16	–	–	26	12	M4×10L
200	RCA	HA5	–	–	26	15	M4×10L

Code / Tube I.D.	Sensor switch	Holder	A	B	C	E
40	R*C(V)	DT7-1	28	28.5	25	M4×12L
50	R*C(V)	DT7-1	32	32.5	25	M4×12L
63	R*C(V)	DT7-1	37.5	38.5	25	M4×12L
80	R*C(V)	DT7-3	49	51.5	25	M4×12L
100	R*C(V)	DT7-3	57	59.5	25	M4×12L
125	R*C(V)	DT7-3	69.5	71	25	M4×12L
150	R*C(V)	DT7-3	79	79	25	M4×12L
200	R*T	DT-5	109	112.5	25	M4×12L

Mounting accessories

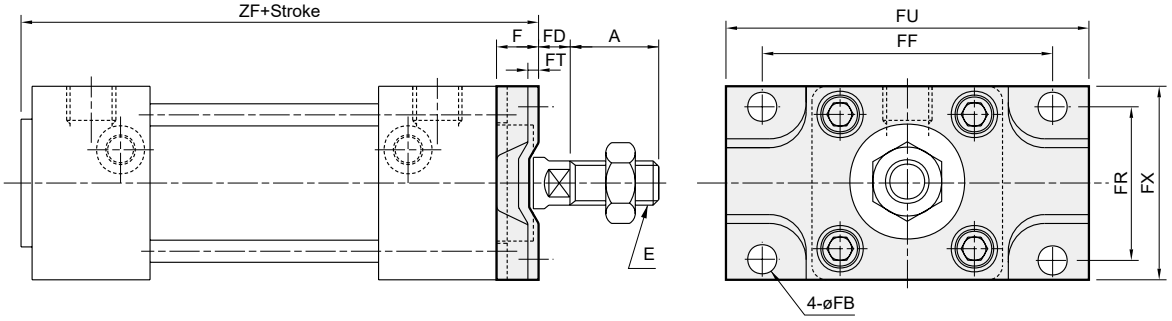
LB



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

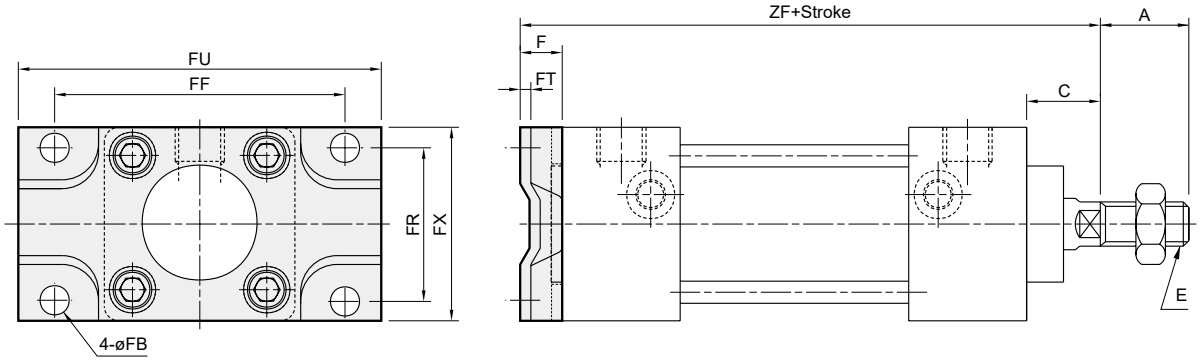
Note. This type is applied to the cylinder which the stroke is within 500mm.
If the stroke is over 500mm, we advise to choose the **FAC** type.



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

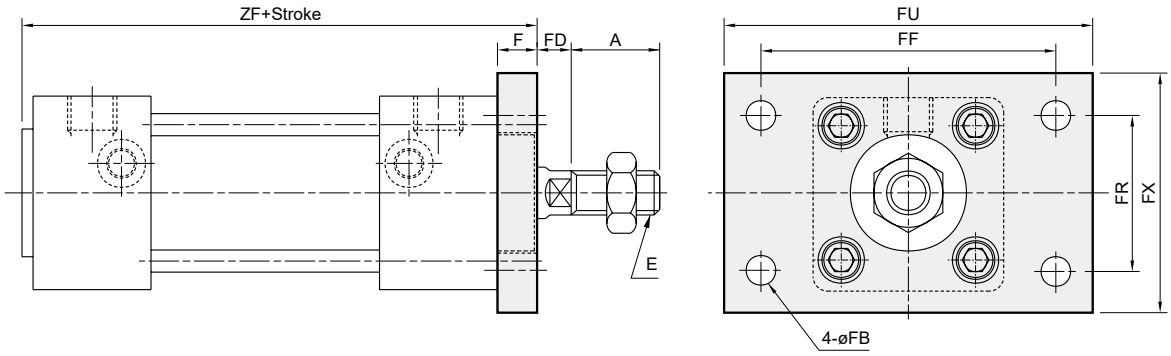
FB

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.



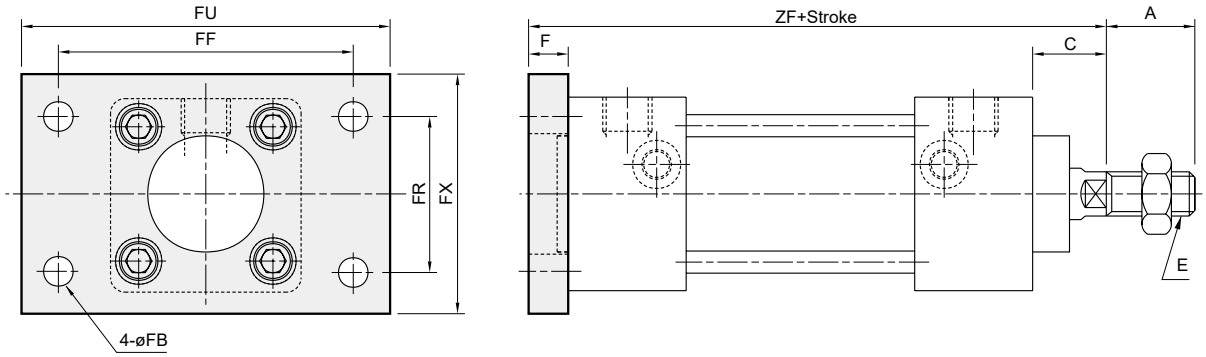
Code / Tube I.D.	A	E	C	F	FB	FF	FR	FT	FU	FX	ZF
40	30	M14×1.5	21	12	9	80	42	3.2	100	58	117
50	35	M18×1.5	23	12	9	90	50	3.2	110	66	125
63	35	M18×1.5	23	15	11.5	105	59	4.5	130	80	136

FAC



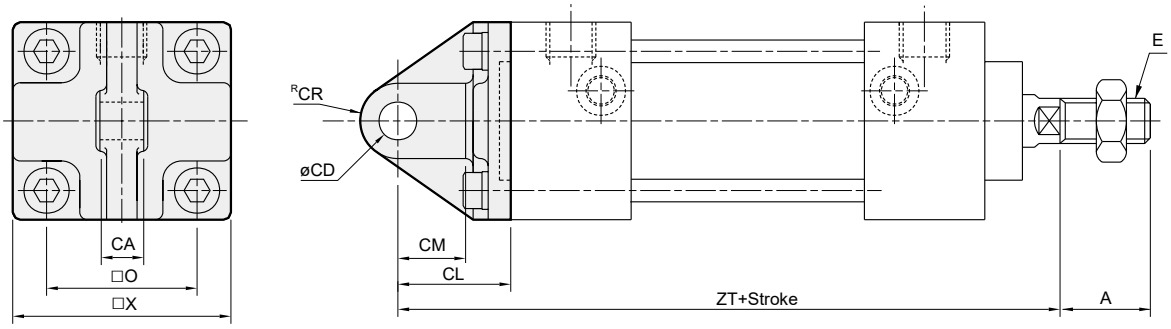
Code / Tube I.D.	A	E	F	FB	FD	FF	FR	FU	FX	ZF
40	30	M14×1.5	12	9	9	80	42	100	65	99
50	35	M18×1.5	12	9	11	90	50	110	73	105
63	35	M18×1.5	15	11.5	8	105	59	130	84	116
80	40	M22×1.5	18	14	13	130	76	160	108	138
100	40	M26×1.5	18	14	14	150	92	180	124	149

FBC



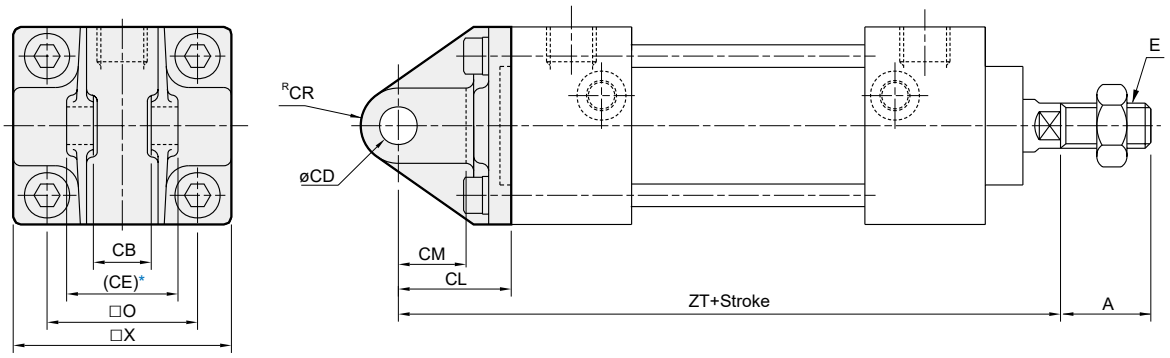
Code / Tube I.D.	A	C	E	F	FB	FF	FR	FU	FX	ZF
40	30	21	M14×1.5	12	9	80	42	100	65	117
50	35	23	M18×1.5	12	9	90	50	110	73	125
63	35	23	M18×1.5	15	11.5	105	59	130	84	136
80	40	31	M22×1.5	18	14	130	76	160	108	165
100	40	32	M26×1.5	18	14	150	92	180	124	176

CA



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

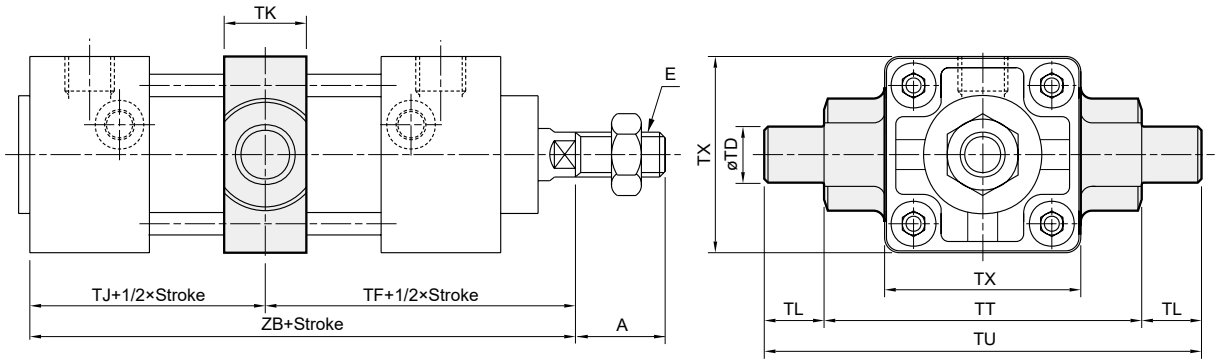
CB



* 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.

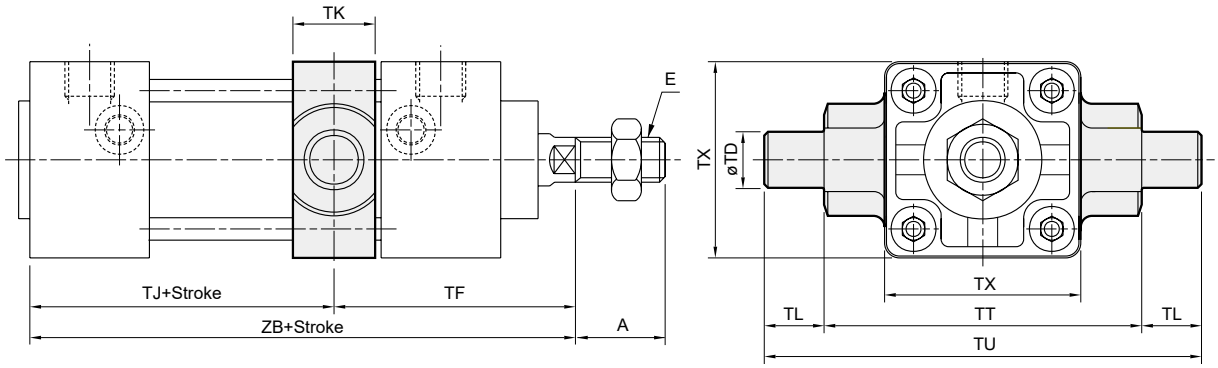
Code / Tube I.D.	A	CB	CD	CE	CL	CM	CR	E	O	X	ZT
40	30	15 $^{+0.3}_{+0.1}$	10^{H10}	29.5	30	18	10	M14×1.5	40.5	58	135
50	35	18 $^{+0.3}_{+0.1}$	12^{H10}	38	35	22	12	M18×1.5	48	66	148
63	35	25 $^{+0.3}_{+0.1}$	16^{H10}	49	40	27	16	M18×1.5	59	80	161
80	40	31.5 $^{+0.3}_{+0.1}$	20^{H10}	59	48	30	20	M22×1.5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

TC



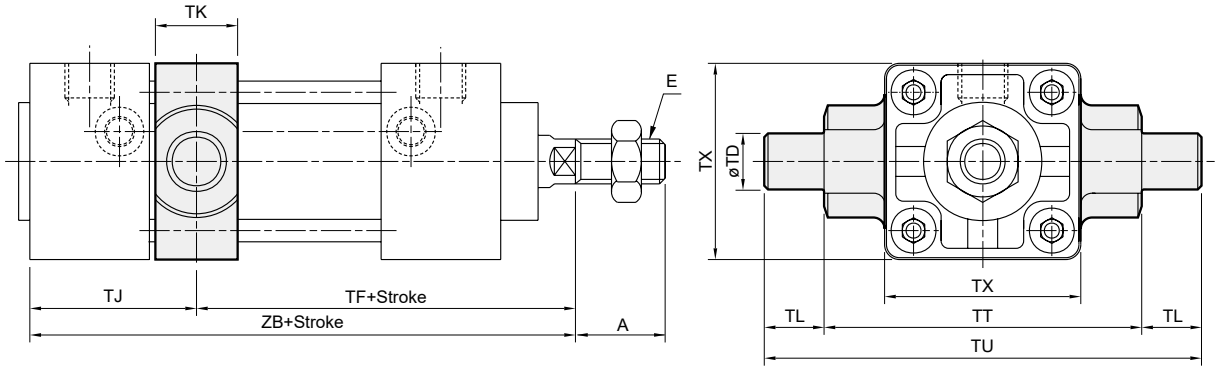
Code / Tube I.D.	A	E	TD	TF	TJ	TK	TL	TT	TU	TX	ZB
40	30	M14×1.5	15^{e8}	63	42	22	16	85	117	58	105
50	35	M18×1.5	15^{e8}	68	45	22	16	95	127	67	113
63	35	M18×1.5	18^{e8}	72	49	28	19	110	148	82	121
80	40	M22×1.5	25^{e8}	89	58	34	26	140	192	102	147
100	40	M26×1.5	25^{e8}	95	63	40	26	162	214	122	158

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^{e8}	60	45	105	75	135	22	16	85	117	58
50	35	M18×1.5	15^{e8}	64	49	113	79	143	22	16	95	127	67
63	35	M18×1.5	18^{e8}	69	52	121	82	151	28	19	110	148	82
80	40	M22×1.5	25^{e8}	85	62	147	102	187	34	26	140	192	102
100	40	M26×1.5	25^{e8}	92	66	158	106	198	40	26	162	214	122

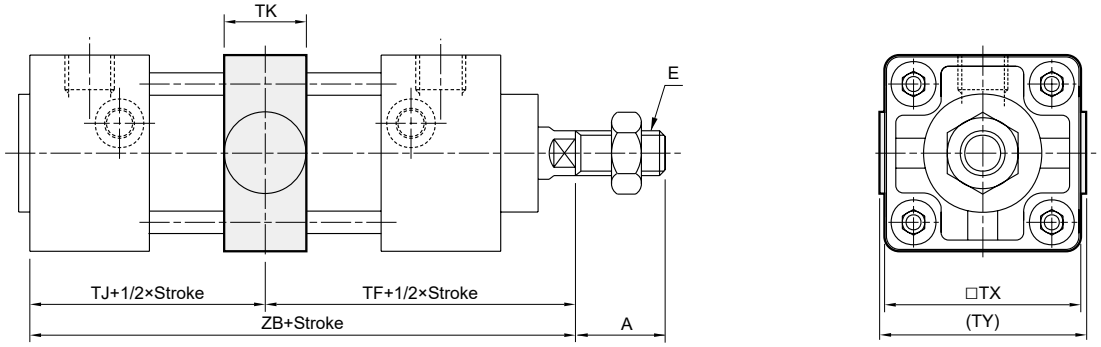
TB



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^{e8}	66	105	96	135	39	22	16	85	117	58
50	35	M18×1.5	15^{e8}	72	113	102	143	41	22	16	95	127	67
63	35	M18×1.5	18^{e8}	75	121	105	151	46	28	19	110	148	82
80	40	M22×1.5	25^{e8}	93	147	133	187	54	34	26	140	192	102
100	40	M26×1.5	25^{e8}	98	158	138	198	60	40	26	162	214	122

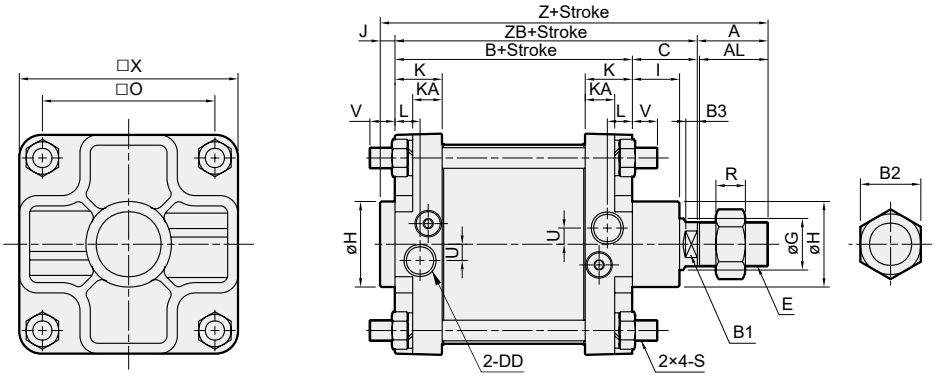
SDS

Stroke over 1000mm



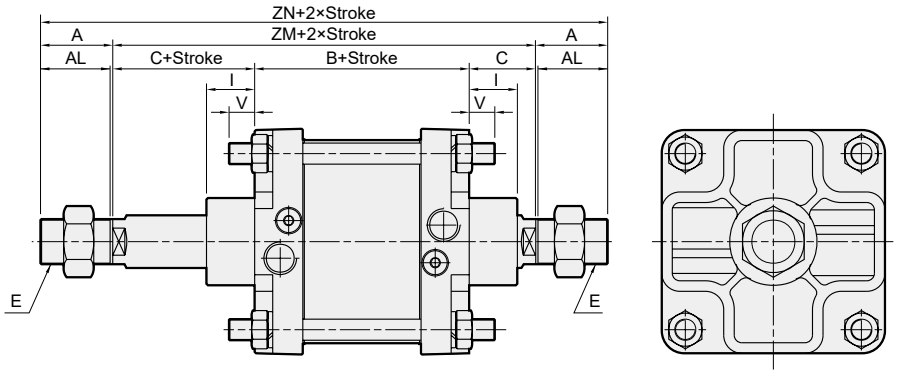
Code / Tube I.D.	A	E	TF	TJ	TK	TX	TY	ZB
40	30	M14×1.5	63	42	22	58	60	105
50	35	M18×1.5	68	45	22	67	69	113
63	35	M18×1.5	72	49	28	82	84	121
80	40	M22×1.5	89	58	34	102	110	147
100	40	M26×1.5	95	63	40	122	132	158

11



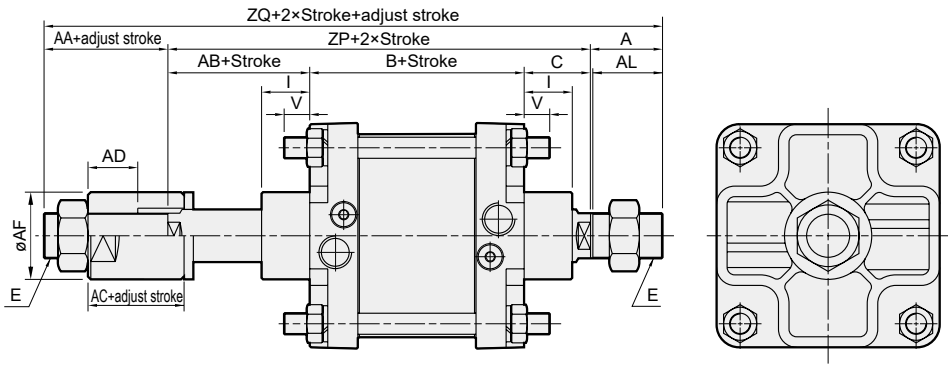
Code / Tube I.D.	A	AL	B	B1	B2	B3	C	DD	E	G	H	I	J	K	KA	L	O	R	S	U	V	X	Z	ZB
125	45	42	136	30	41	9.5	47	Rc1/2	M30×1.5	35	58	32	10	32	20	17	117	15	M14×1.5	11	20	150	238	183
150	50	47	153	36	41	10	47	Rc1/2	M30×1.5	40	60	32	8	40.5	25	24.5	134	15	M16×1.5	12	26	175	258	200
200	63	60	154	46	70	20	67	Rc3/4	M45×1.5	50	74	35	8	42	25	24	182	27	M20×1.5	12	18	226	292	221

21



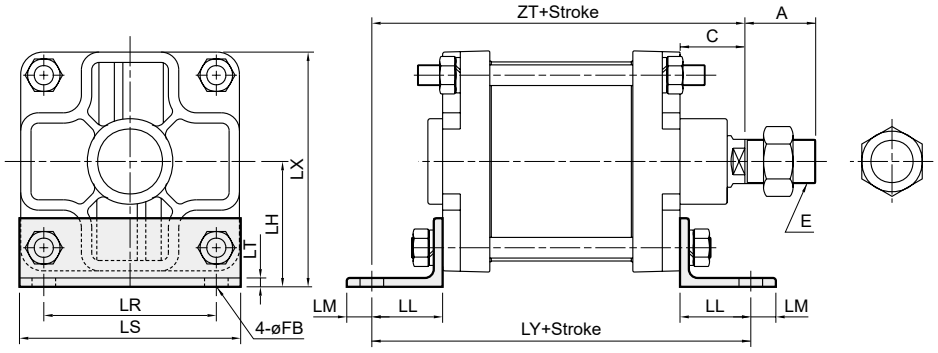
Code / Tube I.D.	A	AL	B	C	E	I	V	ZM	ZN
125	45	42	136	47	M30×1.5	32	20	230	320
150	50	47	153	47	M30×1.5	32	26	247	347
200	63	60	154	67	M45×1.5	35	18	288	414

27



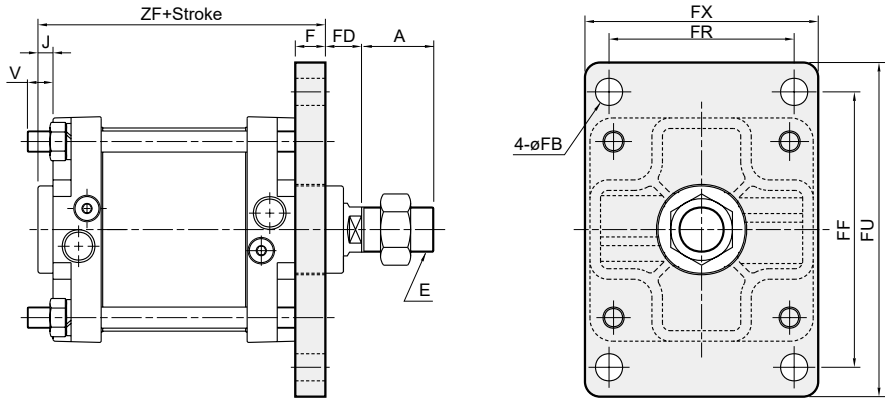
Code / Tube I.D.	A	AA	AB	AC	AD	AF	AL	B	C	E	I	V	ZM	ZN	ZP	ZQ
125	45	38	47	30	18	60	42	136	47	M30×1.5	32	20	230	320	230	313
150	50	38	47	30	18	60	47	153	47	M30×1.5	32	26	247	347	247	335
200	63	38	50	30	18	70	60	154	67	M45×1.5	35	18	288	414	271	372

LB



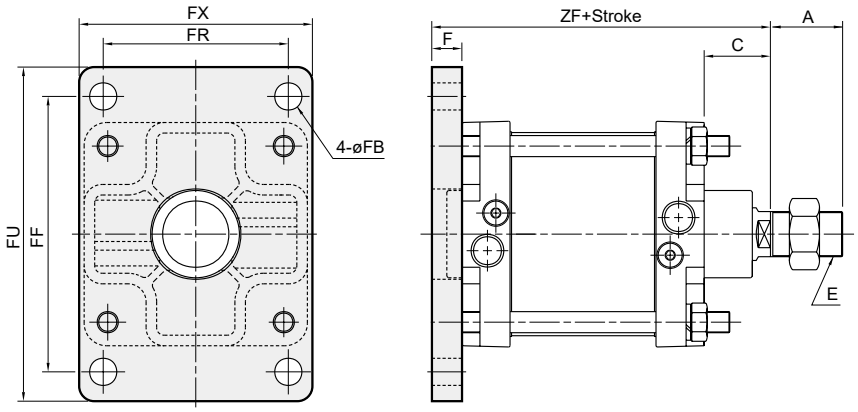
Code / Tube I.D.	A	E	FB	LH	LL	LM	LR	LS	LT	LX	LY	ZT
125	45	M30×1.5	16	85	48	17	117	150	6	162	232	231
150	50	M30×1.5	18	96.5	55	20	134	175	9	184	263	255
200	63	M45×1.5	24	132	60	30	150	226	10	245	274	281

FAC



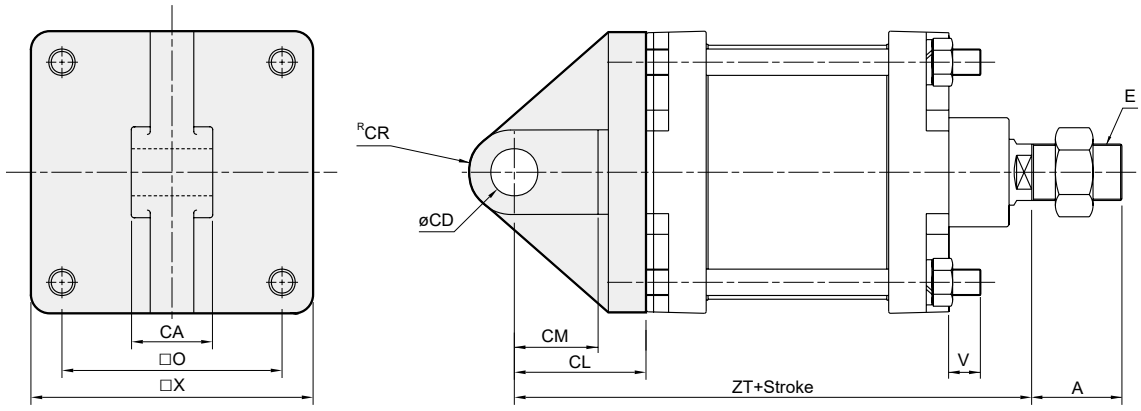
Code / Tube I.D.	A	E	F	FB	FD	FF	FR	FU	FX	J	V	ZF
125	45	M30×1.5	20	18	27	183	123	222	155	10	20	166
150	50	M30×1.5	20	18	27	230	134	275	185	8	26	181
200	63	M45×1.5	25	24	42	280	150	335	225	8	11	187

FBC



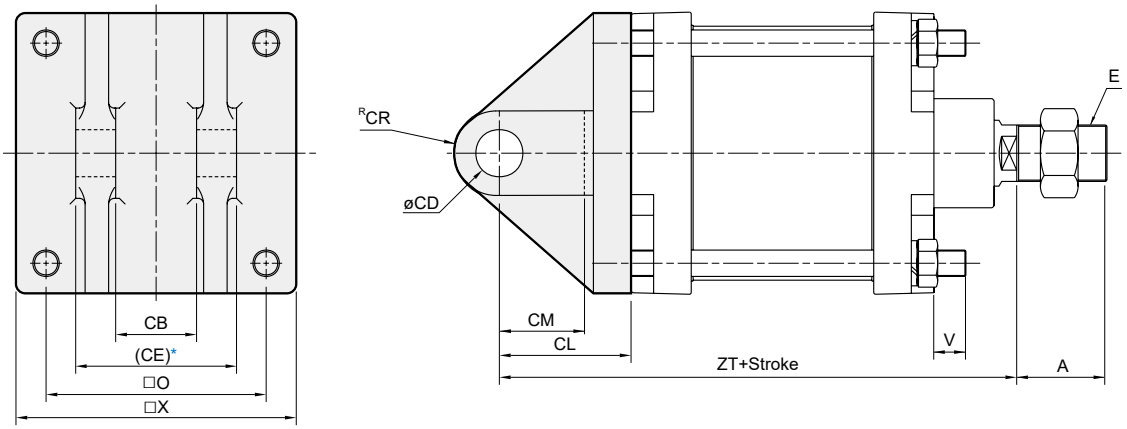
Code / Tube I.D.	A	C	E	F	FB	FF	FR	FU	FX	ZF
125	45	47	M30×1.5	20	18	183	123	222	155	203
150	50	47	M30×1.5	20	18	230	134	275	185	220
200	63	67	M45×1.5	25	24	280	150	335	225	246

CA



Code / Tube I.D.	A	CA	CD	CL	CM	CR	E	O	X	ZT	V
125	45	43 $^{-0.1}_{-0.3}$	25^{H10}	65	45	24	M30×1.5	117	150	248	20
150	50	40 $^{-0.1}_{-0.3}$	30^{H10}	78	53	27.5	M30×1.5	134	175	278	26
200	63	50 $^{-0.1}_{-0.3}$	40^{H10}	85	55	40	M45×1.5	182	226	306	12

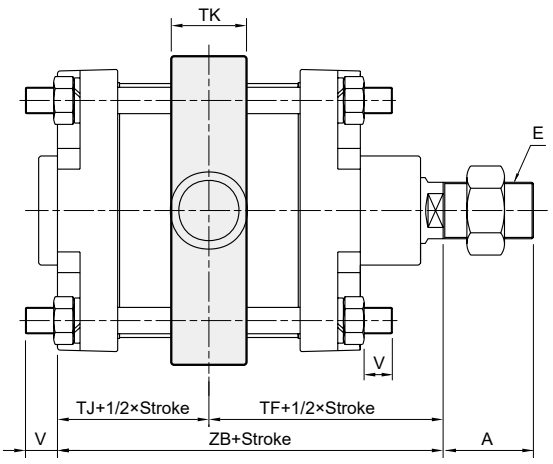
CB

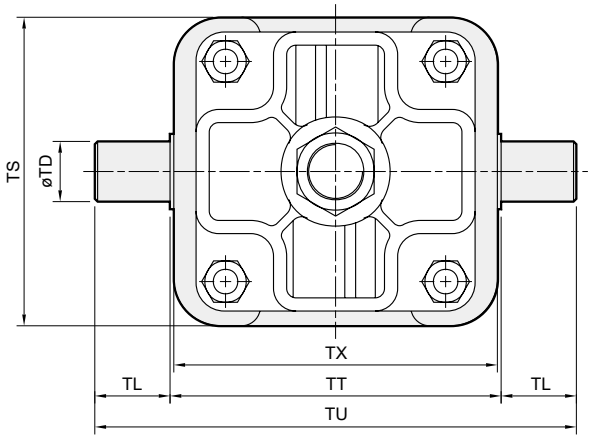


* Please do not take the sand casting plate as the mounting plate, because we do not machine it. If you have this special demand, please contact our sales representative.

Code / Tube I.D.	A	CB	CD	CE	CL	CM	CR	E	O	X	ZT	V
125	45	43 $^{+0.3}_{+0.1}$	25^{H10}	83	70	48	24	M30×1.5	117	150	253	20
150	50	40 $^{+0.3}_{+0.1}$	30^{H10}	90	78	53	27.5	M30×1.5	134	175	278	26
200	63	50 $^{+0.3}_{+0.1}$	40^{H10}	100	85	55	40	M45×1.5	182	226	306	12

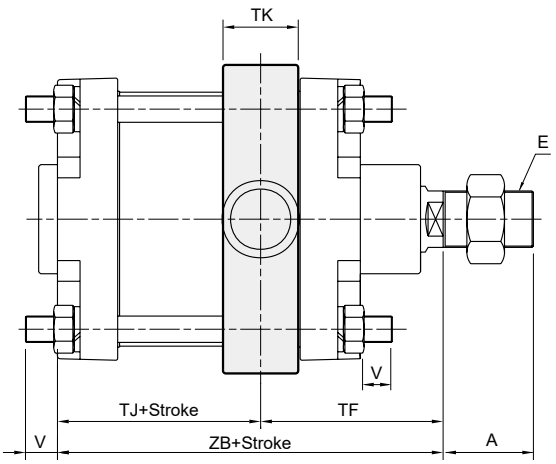
TC

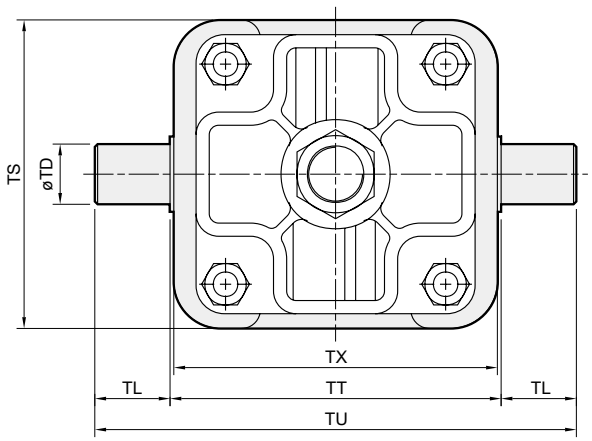




Code / Tube I.D.	A	E	TD	TF	TJ	TK	TL	TS	TT	TU	TX	V	ZB
125	45	M30×1.5	32^{e8}	115	68	40	40	164	176	256	172	17	183
150	50	M30×1.5	35^{e8}	123.5	76.5	41	40	194	200	280	198	16	200
200	63	M45×1.5	45^{e8}	144	77	59	45	255	265	355	255	8.5	221

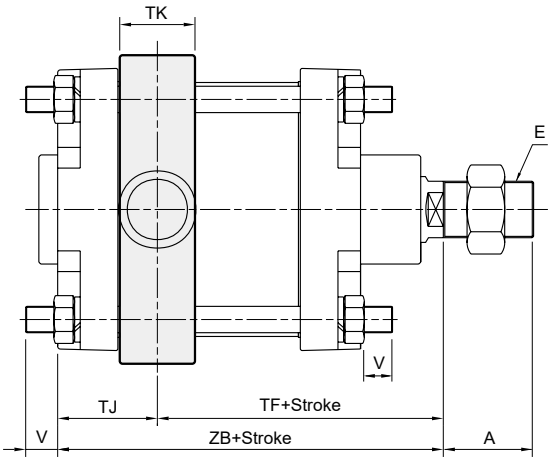
TA

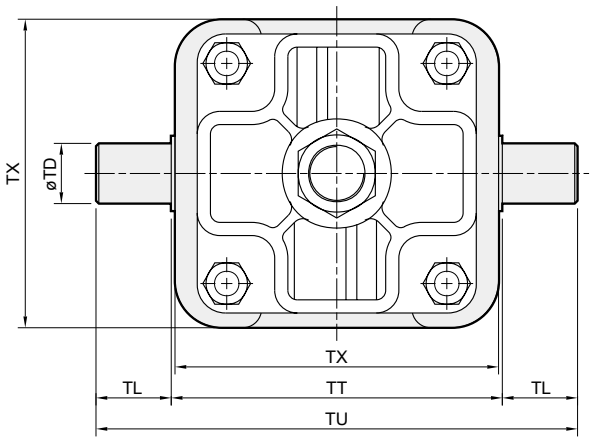




Code / Tube I.D.	A	E	TD	TF	Without magnet		Magnet		TK	TL	TS	TT	TU	TX	V
					TJ	ZB	TJ	ZB							
125	45	M30×1.5	32^{e8}	100	83	183	129	229	40	40	164	176	256	172	17
150	50	M30×1.5	35^{e8}	109	91	200	137	246	41	40	194	200	280	198	16
200	63	M45×1.5	45^{e8}	139.5	81.5	221	125.5	265	59	45	255	265	355	255	8.5

TB

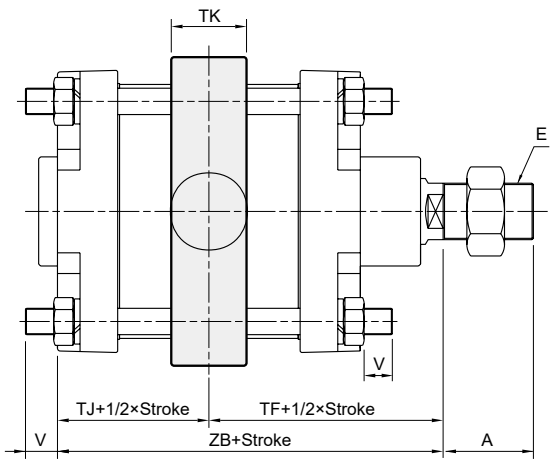


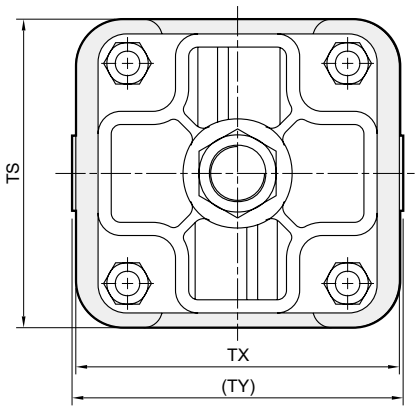


Code / Tube I.D.	A	E	TD	Without magnet		Magnet		TJ	TK	TL	TS	TT	TU	TX	V
				TF	ZB	TF	ZB								
125	45	M30×1.5	32^{e8}	130	183	176	229	53	40	40	164	176	256	172	17
150	50	M30×1.5	35^{e8}	138	200	184	246	62	41	40	194	200	280	198	16
200	63	M45×1.5	45^{e8}	148.5	221	192.5	265	72.5	59	45	255	265	355	255	8.5

SDS

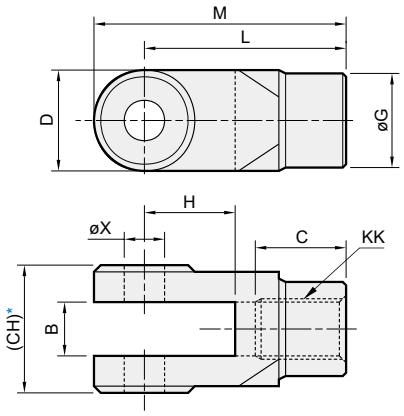
Stroke over 1000mm



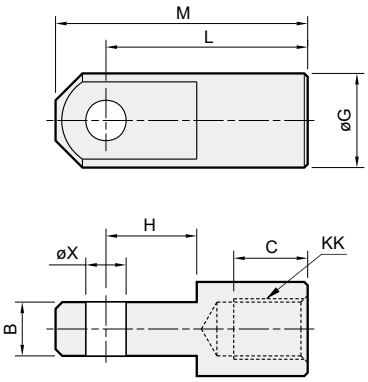


Code / Tube I.D.	A	E	TF	TJ	TK	TS	TX	TY	V	ZB
125	45	M30×1.5	115	68	40	164	172	174	17	183
150	50	M30×1.5	123.5	76.5	41	194	198	200	16	200
200	63	M45×1.5	144	77	59	255	255	263	8.5	221

Y connector



I connector

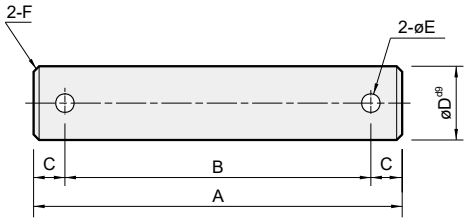


* Please do not take the sand casting plate as the mounting plate, because we do not machine it. If you have this special demand, please contact our sales representative.

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

P



for Y & I connector

Code / Tube I.D.	A	B	C	D^{d9}	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^{d9}	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

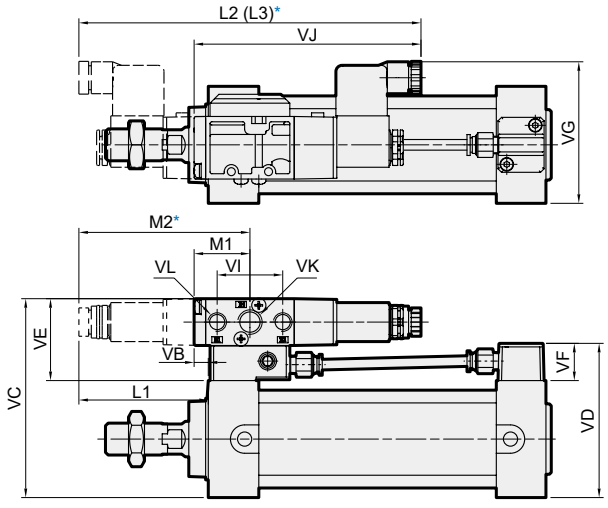
MCQA — As standard order example — VR — 4E2C — AC110 — L

- MCQA — MODEL
- VR — SOLENOID VALVE LINK SEATS: **VR**, **VH**
- 4 — **4** way (5 port)
- 4E2C — **E1**: Single solenoid, **E2**: Double solenoid; **C**: Closed center, **P**: Pressure center, **R**: Exhaust center (Only for 4E2)
- AC110 — VOLTAGE: **AC220**V(50/60)Hz, **AC110**V(50/60)Hz, **DC24**V
- L — ELECTRIC CONNECTION

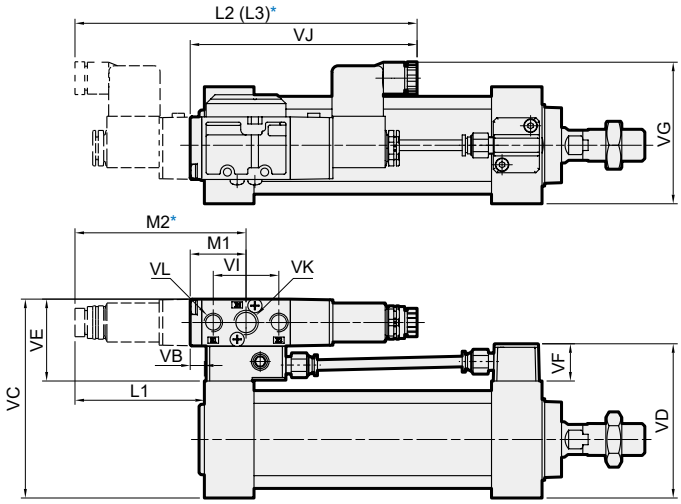
Standard	
Blank	DIN terminal
L	DIN terminal with LED indicator
E	Explosion protection
Power saving (for DC24V)	
KL	DIN terminal with LED indicator

*1. MCQA-ø40~ø63 (for MVSC-260 valve)
*2. MCQA-ø80, ø100 (for MVSC-300 valve)

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

Technical data

Caution for safety
(Read before installing)



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 perssure range	0.05~1 MPa
Proof pressure	1.5 MPa
Ambient temperature	-5~+60°C (No freezing)

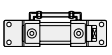
Order example

MCQA — 00 — 50 — 100 — AH

MODEL | STYLE | TUBE I.D. | LENGTH | TYPE

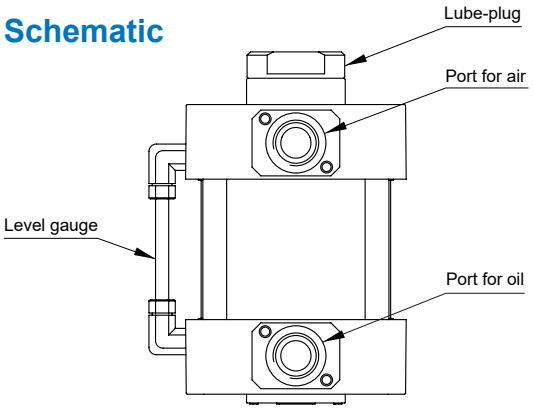
Code		Symbol	Description
0	0		No acting

Order example of mounting accessories

Code	LB (Purchase 2 pcs)	FAC	FBC
Mounting / Tube I.D.			
ø40	LB-Q1-40	FAC-Q1-40	
ø50	LB-Q1-50	FAC-Q1-50	
ø63	LB-Q1-63	FAC-Q1-63	
ø80	LB-Q1-80	FAC-Q1-80	
ø100	LB-Q1-100	FAC-Q1-100	
ø125	LB-Q1-125	FAC-Q1-125	
ø150	LB-Q1-150	FAC-Q1-150	

⚠ ø125, ø150: Factory-installed (Field assembly is not recommended)

Schematic

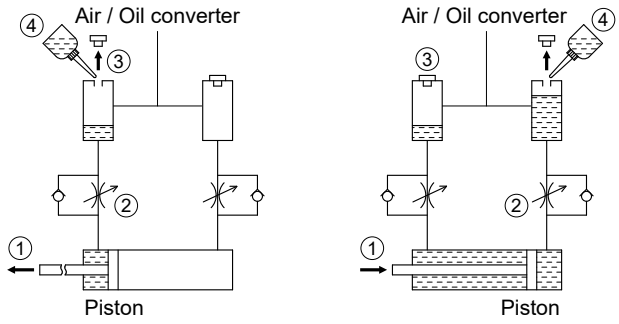


Volume calculation

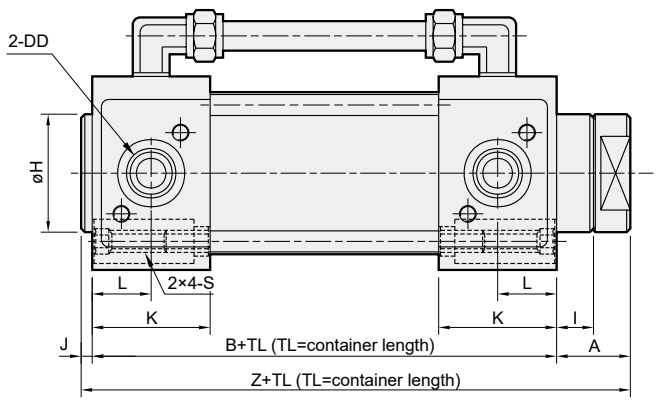
$$V = \frac{\pi D^2}{4} \times L \times 10^{-6}$$

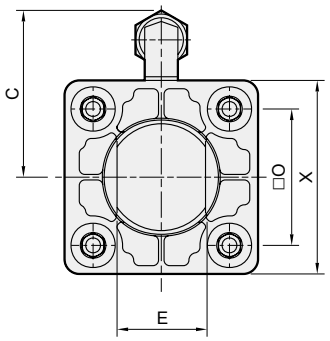
V:	Air/oil converter volume	(L)
D:	Tube I.D.	(mm)
L:	Length of converter	(mm)

Lubricating procedure



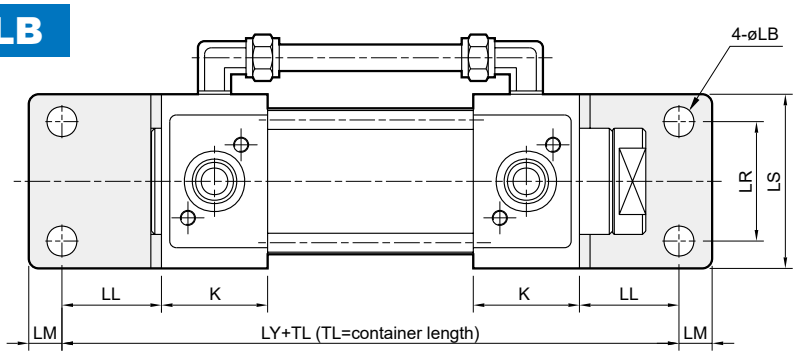
① Pull the piston to the oil supply side.
② Adjust the throttle valve to full-opened.
③ Unscrew the lube plug on the top center of the converter.
④ Fill the oil to the proper level and screw up the lube plug to seal the oil hole.
⑤ Push the piston to another end with a pressure of approximately 0.2 MPa.
⑥ Repeat step ② ~ ④.
⑦ After completion of filling oil, have the piston reciprocate 2~3 times with a pressure of approximately 0.2 MPa.

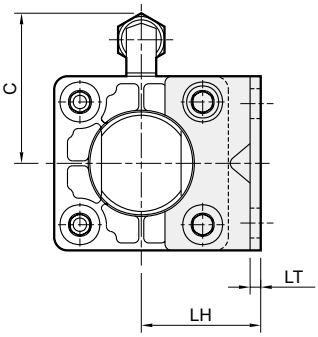




Mounting accessories

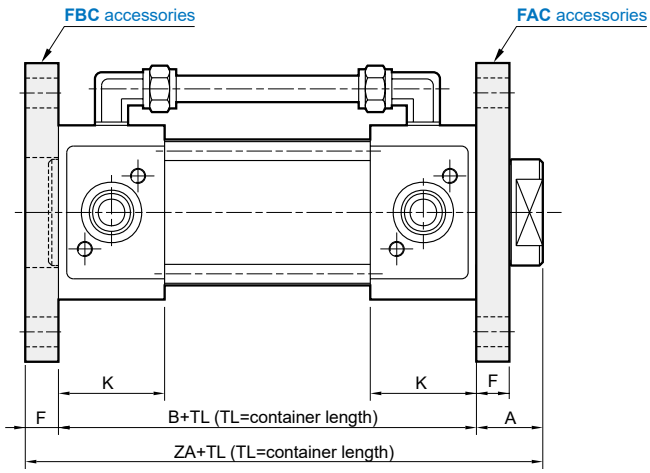
LB

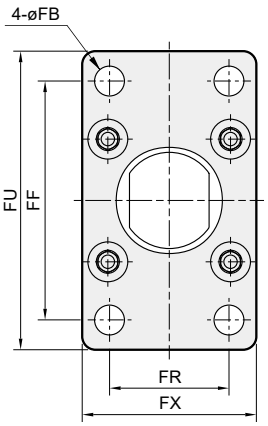




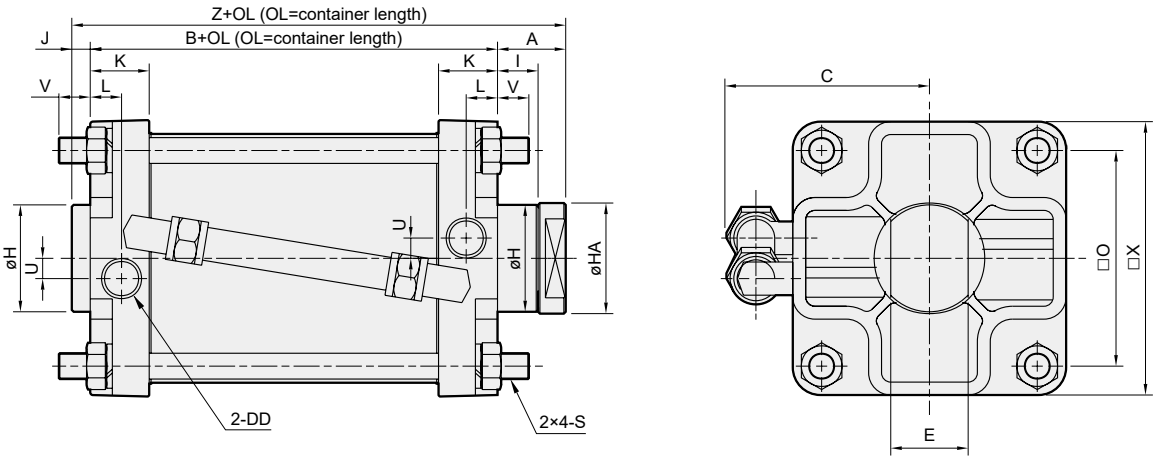
FAC

FBC



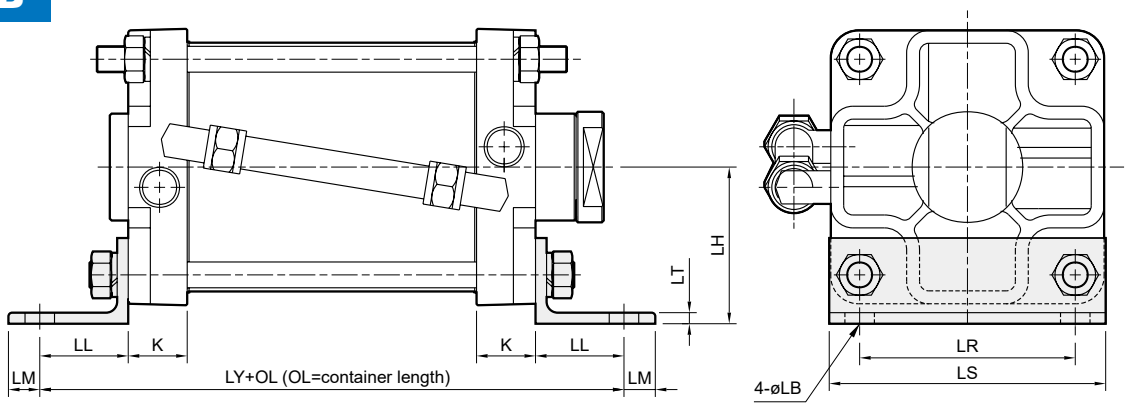


Code / Tube I.D	A	B	C	DD	E	F	FB	FF	FR	FU	FX	H	I	J	K	L	LB	LH	LL	LM	LR	LS	LT	LY	O	S	X	Z	ZA
40	21	62	49	Rc1/4	24	12	9	80	42	100	65	32	11	3	26	13	9	40	27	13	42	58	3.2	116	40.5	M8×1.25	58	86	95
50	21	66	53	Rc3/8	28	12	9	90	50	110	73	40	11	3	28	14	9	45	27	13	50	66	3.2	120	48	M8×1.25	66	90	99
63	21	72	66	Rc3/8	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



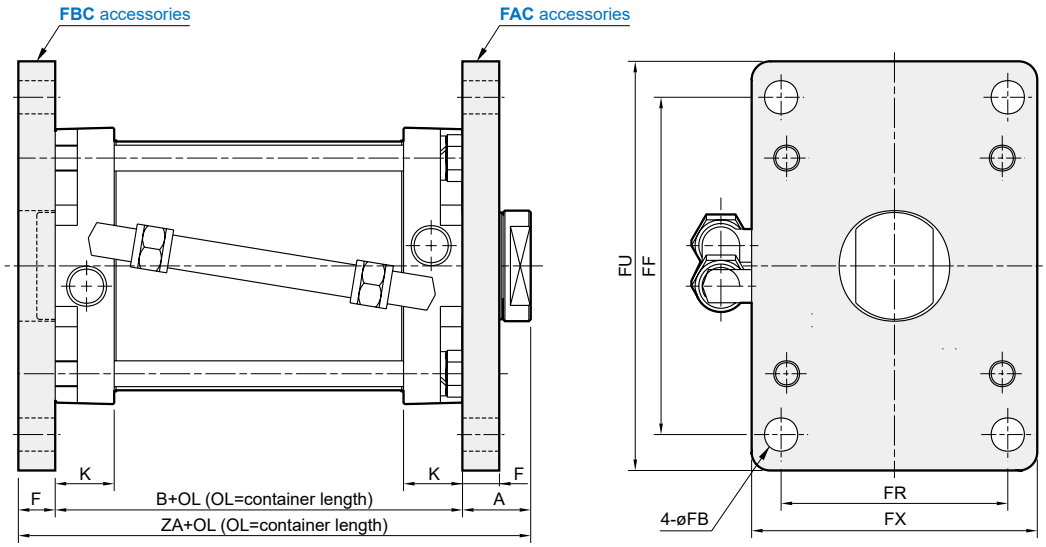
Mounting accessories

LB



FAC

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

Special spec

Technical data

Caution for safety
(Read before installing)



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"
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		RDC(V), RQC(V), RCA				
Sensor switch holder	R*C(V)	DT7-1			DT7-2	
	RCA	HV1	HV2	HV2	HV3	HV3

Table for standard stroke

Tube I.D	Stroke (inch)	Max. stroke (inch)
40: 1 1/2"	1, 2, 3, 4, 5, 6, 8, 10, 12, 14, 16, 18, 20	60
50: 2"	1, 2, 3, 4, 5, 6, 8, 10, 12, 14, 16, 18, 20, 24	60
63: 2 1/2"		
80: 3 1/4"	1, 2, 3, 4, 5, 6, 8, 10, 12, 14, 16, 18, 20, 24	60
100: 4"		

* Intermediate stroke are available, please contact us.

Order example

MCQN — 11 — 40 — 0425M

- MODEL
- **1**: Single rod
- TUBE I.D.
  40: 1 1/2"
  50: 2"
  63: 2 1/2"
  80: 3 1/4"
  100: 4"
- STANDARD STROKE
  (inches)
  04=4" storke
- **M**: Magnet

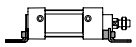
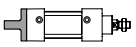
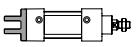
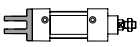
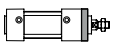
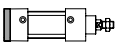
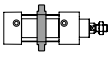
STYLE

Code		Symbol	Description
1	**1**		Double acting / Male thread

STROKE
(Hundred of an inch)
12=0.125 (1/8")
25=0.25 (1/4")
37=0.375 (3/8")
50=0.5 (1/2")

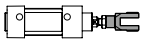
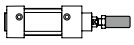
Accessories & Connector

Accessories ⚠ TC accessories are factory-installed, not available for separate purchase or field assembly

Code	LB (LB×2)	CA	CB	CB2	FAC	FBC	TC ⚠
Mounting / Tube I.D.							
ø40	LB-Q5-40x2	CA-Q5-40	CB-Q5-40	CB2-Q5-40	FAC-Q5-40		TC-Q5-40
ø50	LB-Q5-50x2	CA-Q5-50	CB-Q5-50	CB2-Q5-50	FAC-Q5-50		TC-Q5-50
ø63	LB-Q5-63x2	CA-Q5-63	CB-Q5-63	CB2-Q5-63	FAC-Q5-63		TC-Q5-63
ø80	LB-Q5-80x2	CA-Q5-80	CB-Q5-80	CB2-Q5-80	FAC-Q5-80		TC-Q5-80
ø100	LB-Q5-100x2	CA-Q5-100	CB-Q5-100	CB2-Q5-100	FAC-Q5-100		TC-Q5-100

Pin

Connector

Code	Y	I
Mounting / Tube I.D.		
ø40	Y-Q5-40	I-Q5-40
ø50		
ø63		
ø80	Y-Q5-80	I-Q5-80
ø100		

Applicable CA/ CB/ CB2/ Y/ I

Code	PIN (with split pin)
Fig / Tube I.D.	
ø40	PIN-Q5-40-1-P
ø50	
ø63	
ø80	PIN-Q5-80-1-P
ø100	

Order example of self-assembled

The tube I.D. ø63 of LB accessories, Y connector and pin.

No.	Order number	Qty
1	LB-Q5-63x2	1
2	Y-Q5-40	1
3	PIN-Q5-40-1-P	1

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

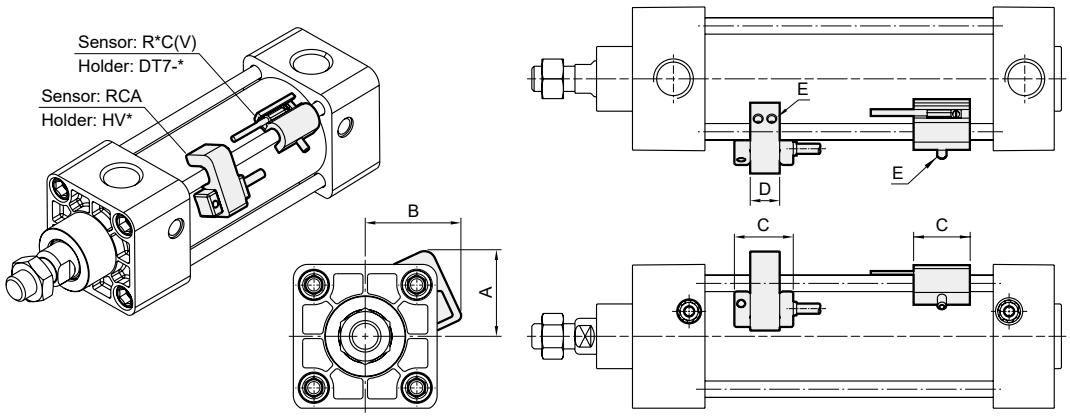
Order example of factory assembled

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

MCQN – Standard model no. + TC

CYLINDER ACCESSORIES

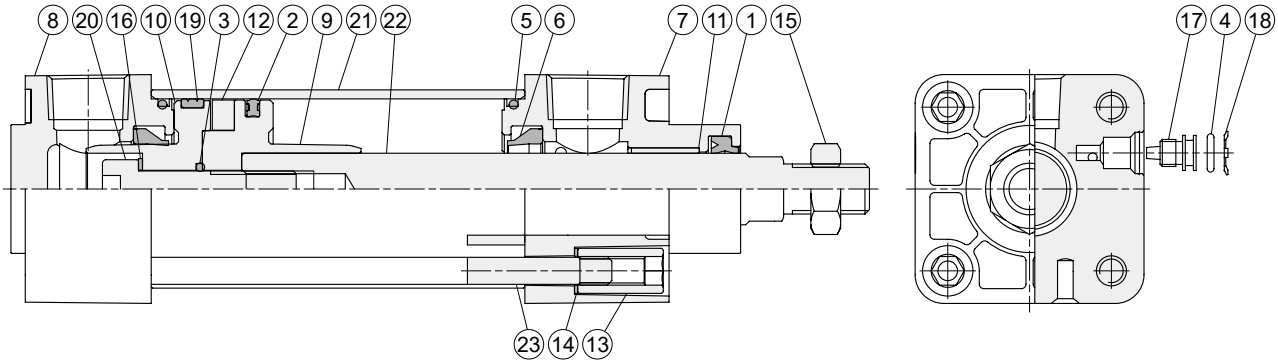
Installation of sensor switch



Unit: inch

Code / Tube I.D.	Sensor switch	Holder	A	B	C	D	E
40	RCA	HV1	1.10	1.47	1.02	0.51	M4×10L
50	RCA	HV2	1.49	1.68	1.02	0.51	M4×10L
63	RCA	HV2	1.66	1.86	1.02	0.51	M4×10L
80	RCA	HV3	1.87	2.13	1.02	0.51	M4×10L
100	RCA	HV3	2.15	2.42	1.02	0.51	M4×10L

Code / Tube I.D.	Sensor switch	Holder	A	B	C	E
40	R*C(V)	DT7-1	1.04	1.08	0.98	M4×12L
50	R*C(V)	DT7-1	1.24	1.26	0.98	M4×12L
63	R*C(V)	DT7-1	1.42	1.44	0.98	M4×12L
80	R*C(V)	DT7-2	1.75	1.79	0.98	M4×12L
100	R*C(V)	DT7-2	2	2.07	0.98	M4×12L



No.	Part name	Material	Q'y		Component parts (inclusion)	Repair kits (inclusion)	Note
			ø40~ø63	ø80, ø100			
1	Rod packing	NBR	1		●	●	
2	Piston packing	NBR	1		●	●	
3	O-ring	NBR	1		●	●	
4	O-ring	NBR	2		●	●	
5	O-ring	NBR	2		●	●	
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		◎		◎ Optional
13	Tie rod nut	Carbon steel	8		●		
14	Washer	Carbon steel	8	–	●		
15	Rod nut	Carbon steel	1		●		
16	Washer	Carbon steel	1		●		
17	Needle valve	Copper alloy	2		●		
18	Needle valve washer	Spring steel	2		●		
19	Wear ring	Resin	1		●		
20	Bolt	Carbon steel	1		●		
21	Cylinder tube	Aluminum alloy	1				
22	Piston rod	Carbon steel	1				
23	Tie rod	Carbon steel	4				

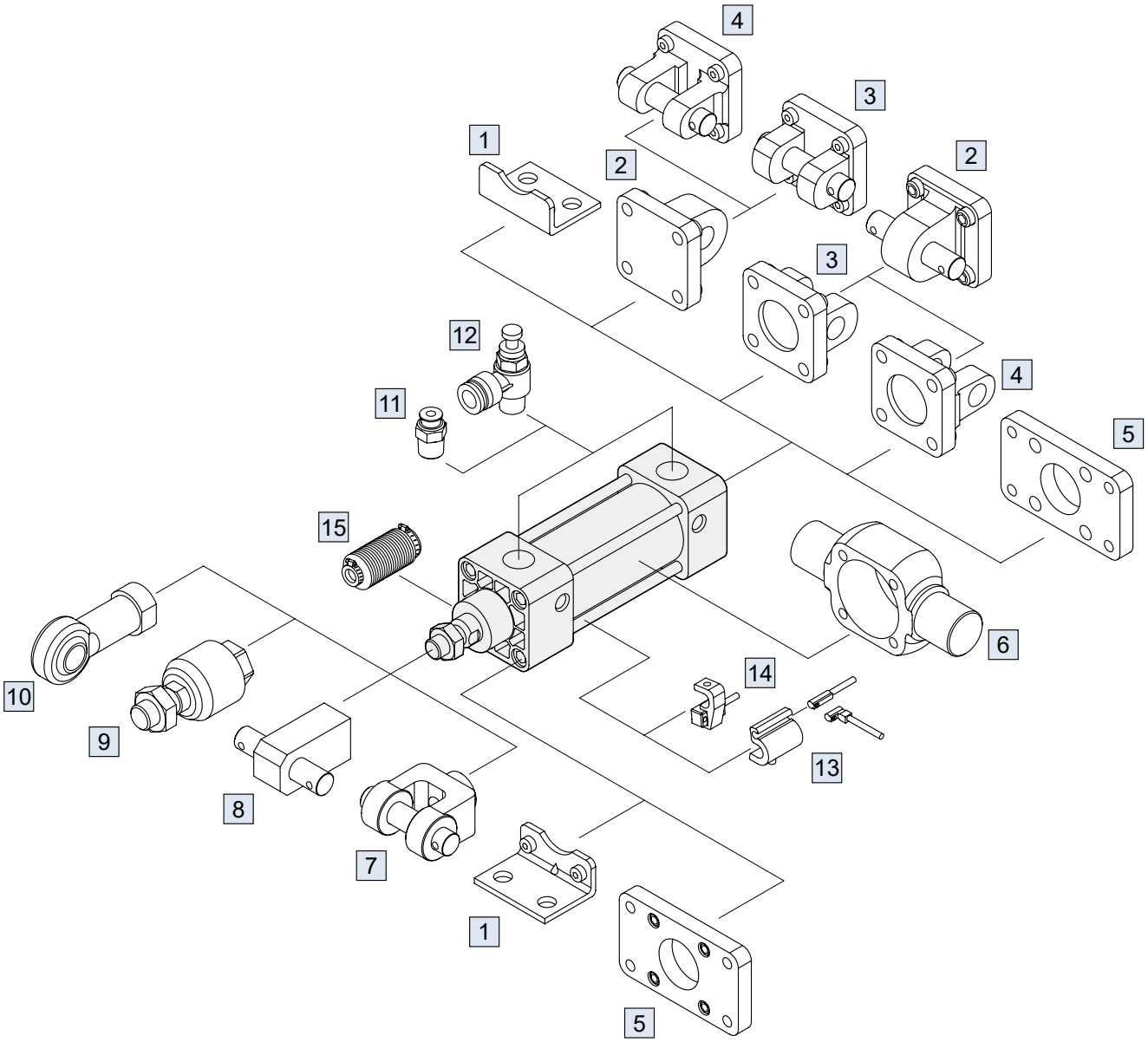
Order example of Repair kits

Tube I.D.	Repair kits
ø40	**PS-MCQN-40**
ø50	**PS-MCQN-50**
ø63	**PS-MCQN-63**
ø80	**PS-MCQN-80**
ø100	**PS-MCQN-100**

Component parts

Tube I.D.	Component parts
ø40	**CP-MCQN-40(M)**
ø50	**CP-MCQN-50(M)**
ø63	**CP-MCQN-63(M)**
ø80	**CP-MCQN-80(M)**
ø100	**CP-MCQN-100(M)**

M: With magnet

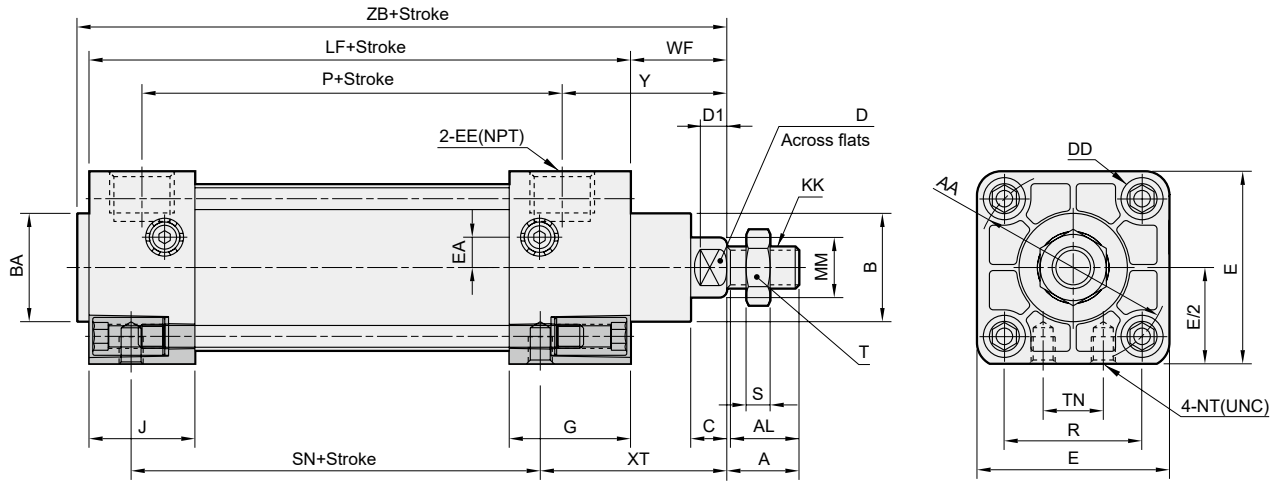


No.	Accessories	Material	Page link
1	Mounting accessories LB	Carbon steel	
2	Mounting accessories CA+PIN	Cast iron / *	,
3	Mounting accessories CB+PIN	Cast iron / *	,
4	Mounting accessories CB2+PIN	Cast iron / *	,
5	Mounting accessories FAC/FBC	Carbon steel	
6	Mounting accessories TC	Cast iron	
7	Accessories Y+PIN	Cast iron / *	
8	Accessories I+PIN	Carbon steel	

No.	Accessories	Material	Page link
9	Floating joint MFC	Carbon steel	
10	Female rod ends PHS	Carbon steel	
11	Fitting PC (PISCO)	–	
12	Speed controller JSC (PISCO)	–	
13	Sensor switch R*C(V)+DT7-*	–	
14	Sensor switch RCA+HV*	–	
15	Protective bellows kit	NBR	–

* PIN material is carbon steel.

11



Unit: inch

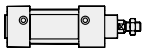
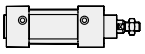
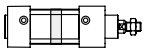
Code / Tube I.D.	A	AA	AL	B	BA	C	D	D1	DD	E	EA	EE	G	J	KK	LF	MM	NT	P	R
40	0.75	2.02	0.673	1.125	1.125	0.375	0.56	0.3	1/4-28	2	0.32	3/8	1.26	1.10	7/16-20	3.625	0.625	1/4-20×0.28 dp	2.36	1.43
50	0.75	2.60	0.673	1.125	1.125	0.375	0.56	0.3	5/16-24	2.5	0.43	3/8	1.26	1.06	7/16-20	3.625	0.625	5/16-18×0.44 dp	2.40	1.84
63	0.75	3.10	0.673	1.125	1.125	0.375	0.56	0.3	5/16-24	3	0.47	3/8	1.30	1.06	7/16-20	3.75	0.625	3/8-16×0.59 dp	2.48	2.19
80	1.125	3.90	1.045	1.5	1.5	0.5	0.88	0.4	3/8-24	3.75	—	1/2	1.57	1.18	3/4-16	4.25	1	1/2-13×0.63 dp	2.72	2.76
100	1.125	4.70	1.045	1.5	1.5	0.5	0.88	0.4	3/8-24	4.5	—	1/2	1.57	1.18	3/4-16	4.25	1	1/2-13×0.63 dp	2.72	3.32

Code / Tube I.D.	S	SN	T	TN	WF	XT	Y	ZB
40	0.26	2.25	0.69	0.63	1	1.94	1.71	4.75
50	0.26	2.25	0.69	0.88	1	1.94	1.71	4.75
63	0.26	2.38	0.69	1.25	1	1.94	1.75	4.88
80	0.42	2.63	1.12	1.50	1.38	2.44	2.34	5.83
100	0.42	2.63	1.12	2.06	1.38	2.44	2.34	5.83

Weight

Cylinder

Unit: kg

Model	Basic weight **MCQN-11**	Basic weight (magnet) **MCQN-11**	Stroke 1 inch **MCQN-11**
Tube I.D.			
40	0.664	0.676	0.078
50	0.965	0.981	0.096
63	1.314	1.334	0.108
80	2.482	2.510	0.200
100	3.266	3.300	0.220

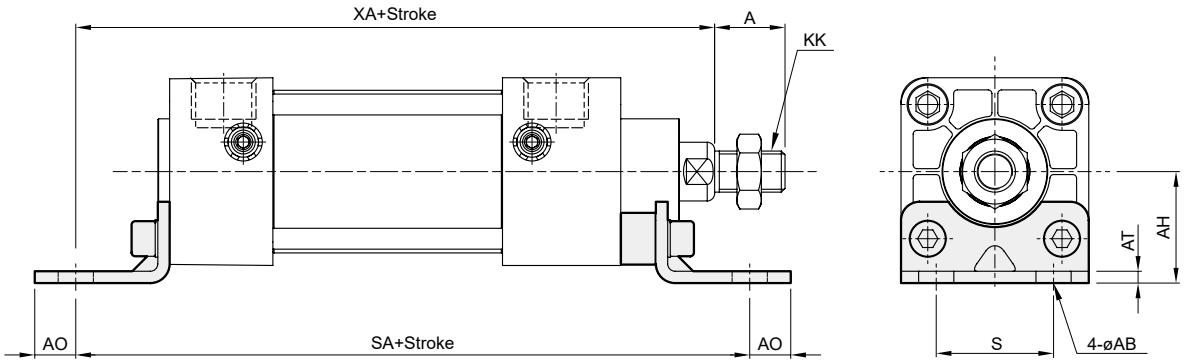
Accessories

Unit: kg

Model	LB	CA	CB	CB2	FAC/FBC	TC	Y	I	PIN
Tube I.D.									
40	0.160	0.285	0.229	0.287	0.246	0.554	0.205	0.150	0.065
50	0.240	0.394	0.377	0.424	0.403	0.644	0.205	0.150	0.065
63	0.300	0.531	0.521	0.563	0.576	0.840	0.205	0.150	0.065
80	0.633	1.511	1.302	1.482	1.408	1.098	0.662	0.522	0.175
100	0.955	2.047	1.821	2.033	2.015	1.450	0.662	0.522	0.175

Mounting accessories

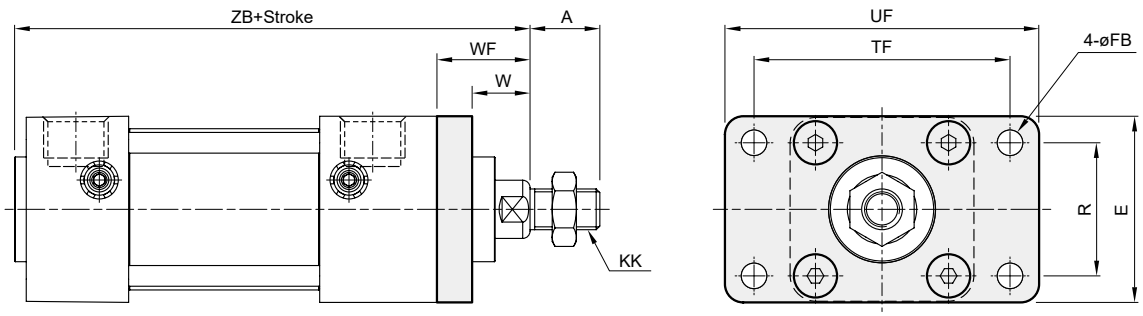
LB



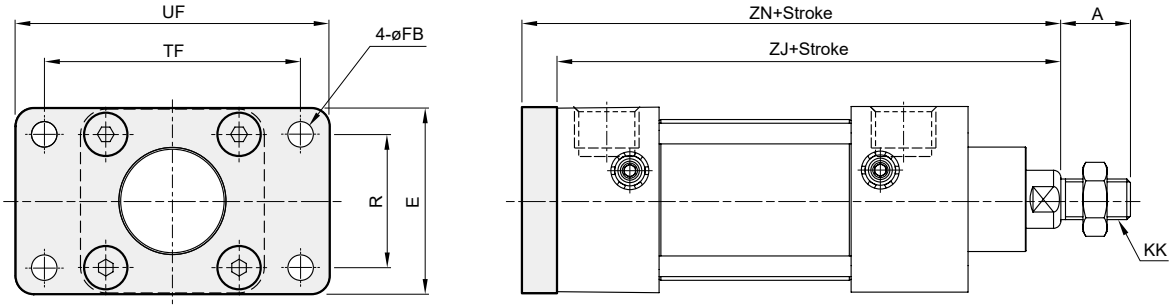
Unit: inch

Code / Tube I.D.	A	AB	AH	AT	AO	KK	S	SA	XA
40	0.75	0.38	1.19	0.13	0.44	7/16-20	1.25	6	5.63
50	0.75	0.38	1.44	0.13	0.56	7/16-20	1.75	6	5.63
63	0.75	0.38	1.63	0.13	0.56	7/16-20	2.25	6.13	5.75
80	1.125	0.5	1.94	0.17	0.75	3/4-16	2.75	7.38	6.88
100	1.125	0.5	2.25	0.23	0.75	3/4-16	3.5	7.38	6.88

FAC



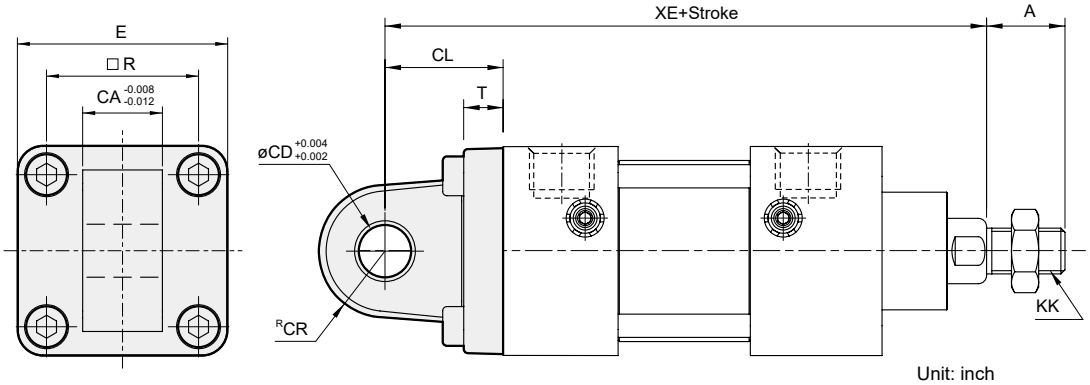
FBC



Unit: inch

Code / Tube I.D.	A	E	FB	KK	R	TF	UF	W	WF	ZB	ZJ	ZN
40	0.75	2	0.25	7/16-20	1.43	2.75	3.38	0.63	1	4.75	4.63	5
50	0.75	2.5	0.31	7/16-20	1.84	3.38	4.13	0.63	1	4.75	4.63	5
63	0.75	3	0.31	7/16-20	2.19	3.88	4.63	0.63	1	4.88	4.75	5.13
80	1.125	3.75	0.38	3/4-16	2.76	4.68	5.50	0.75	1.38	5.83	5.63	6.25
100	1.125	4.5	0.38	3/4-16	3.32	5.44	6.25	0.75	1.38	5.83	5.63	6.25

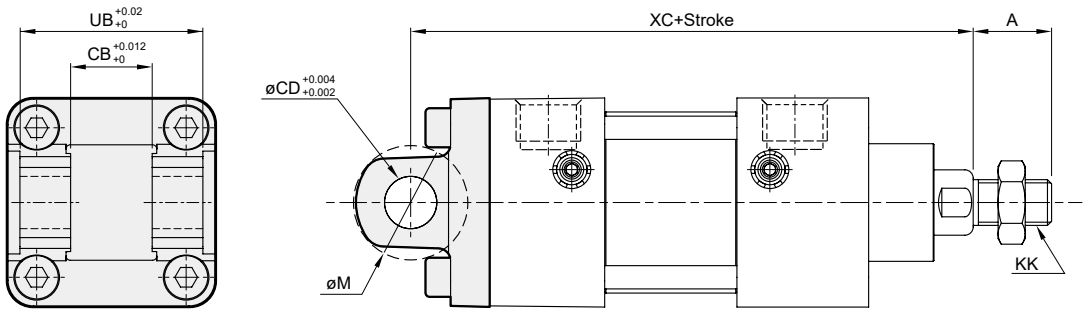
CA



Unit: inch

Code / Tube I.D.	A	CA	CD	CL	CR	E	KK	R	T	XE
40	0.75	0.75	0.5	1.125	0.63	2	7/16-20	1.43	0.375	5.75
50	0.75	0.75	0.5	1.125	0.63	2.5	7/16-20	1.84	0.375	5.75
63	0.75	0.75	0.5	1.125	0.63	3	7/16-20	2.19	0.375	5.88
80	1.125	1.25	0.75	1.875	0.87	3.75	3/4-16	2.76	0.625	7.5
100	1.125	1.25	0.75	1.875	0.87	4.5	3/4-16	3.32	0.625	7.5

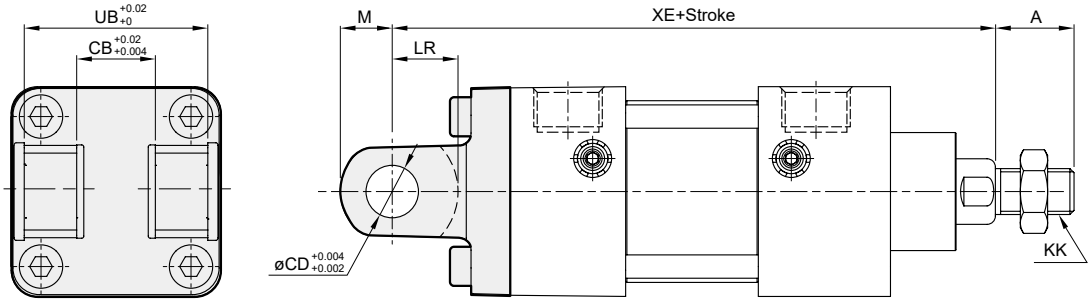
CB



Unit: inch

Code / Tube I.D.	A	CB	CD	KK	M	UB	XC
40	0.75	0.78	0.5	7/16-20	1.24	1.75	5.38
50	0.75	0.78	0.5	7/16-20	1.24	1.75	5.38
63	0.75	0.78	0.5	7/16-20	1.24	1.75	5.5
80	1.125	1.28	0.75	3/4-16	1.88	2.5	6.88
100	1.125	1.28	0.75	3/4-16	1.88	2.5	6.88

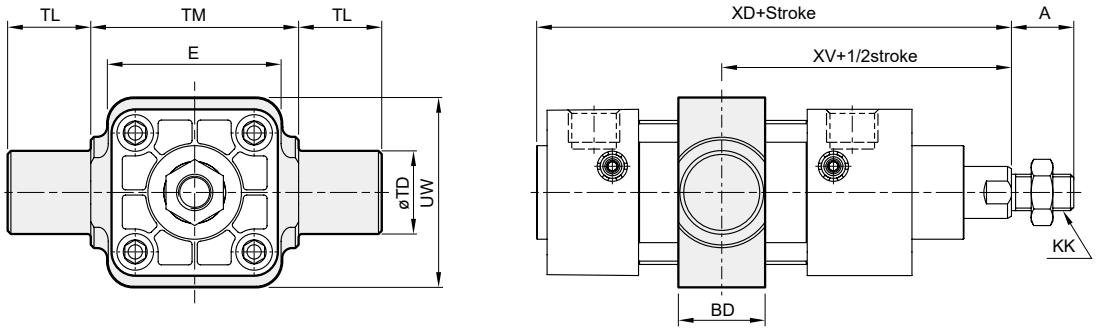
CB2



Unit: inch

Code / Tube I.D.	A	CB	CD	KK	LR	M	UB	XE
40	0.75	0.75	0.5	7/16-20	0.63	0.5	1.75	5.75
50	0.75	0.75	0.5	7/16-20	0.63	0.5	1.75	5.75
63	0.75	0.75	0.5	7/16-20	0.63	0.5	1.75	5.88
80	1.125	1.25	0.75	3/4-16	1	0.75	2.5	7.5
100	1.125	1.25	0.75	3/4-16	1	0.75	2.5	7.5

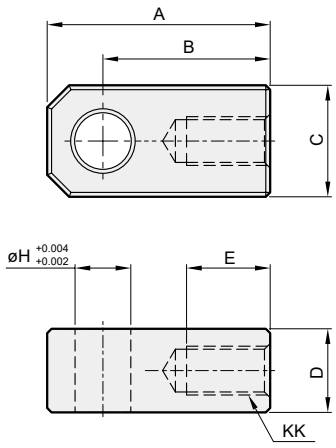
TC



Unit: inch

Code / Tube I.D	A	BD	E	KK	TD	TM	TL	UW	XD	XV
40	0.75	1.04	2.11	7/16-20	1	2.5	1	2.28	4.94	3.2
50	0.75	1.04	2.6	7/16-20	1	3	1	2.60	5.03	3.32
63	0.75	1.1	3.09	7/16-20	1	3.5	1	3.23	5.07	3.33
80	1.125	1.18	3.7	3/4-16	1	4.5	1	4.17	6.16	4.19
100	1.125	1.22	4.49	3/4-16	1	5.25	1	4.96	6.18	4.19

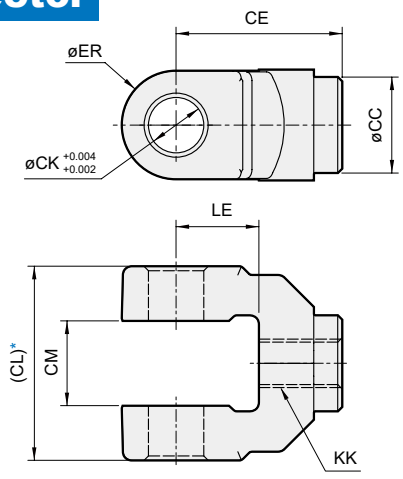
I connector



Unit: inch

Code / Tube I.D.	A	B	C	D	E	H	KK
40~63	2	1.5	1	0.75	0.75	0.5	7/16-20
80~100	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.

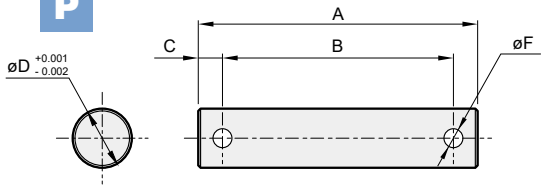
Unit: inch

Code / Tube I.D.	CC	CE	CL	CM	CK	ER	KK	LE
40~63	0.87	1.5	1.75	0.765	0.5	1	7/16-20	0.75
80~100	1.34	2.38	2.5	1.265	0.75	1.5	3/4-16	1.25

PIN

for CB & CB2 accessory and Y & I connector.

P



Unit: inch

Code / Tube I.D.	A	B	C	D	F
40~63	2.36	1.95	0.2	0.5	0.16
80~100	3.13	2.74	0.19	0.75	0.2

MCQV series

ISO 15552 **STANDARD CYLINDER**

Special spec

Rod end shape

Technical data

Caution for safety
(Read before installing)



Features

■ Non lubrication

Special housing and bushing enables self lubrication of piston rod.

■ High quality long service life

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

■ ISO 15552 standard specification

Conforms to ISO 15552 specification enabling worldwide interchangeability.

■ Cylinder mountings

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

Specification

Model		MCQV		
Tube I.D. (mm)		125	160	200
Medium		Air		
Operating 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		RDC(V), RQC(V), RDT, RQT, RCA		
Sensor switch holder	R*C(V)	DT7-3		
	R*T	DT-3		
	RCA	HV4	PM16	HA5

Table for standard stroke

Tube I.D.	Stroke (mm)	Max. stroke (mm)	
		Style 11	Style 21/27
ø125	50,75,100,125,150,175, 200,250,300,350,400, 450,500	2000	950
ø160		1800	850
ø200		1500	700

* Intermediate stroke are available, please contact us.

Order example

MCQV — 11 — 125 — 100M — 10 — T

MODEL

1: Single rod
2: Double rod

TUBE I.D.

STROKE

M: Magnet

ADJUSTABLE STROKE
* Only for STYLE 27.

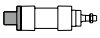
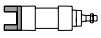
TYPE
T: Add "T" when both M and TA / TB are selected.
* When both magnet (M) and mounting accessories (TA or TB) are selected, please add the suffix "T" at the end of the model number.

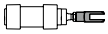
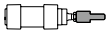
STYLE

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

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

Accessories & Connector

	Accessories ⚠ Factory-installed (Field assembly is not recommended)					Rod nut
Code	LB (Purchase 2 pcs)	CA	CB	FAC	FBC	NUT
Mounting / Tube I.D.						
ø125	LB-Q2-125	CA-Q2-125	CB-Q2-125	FAC-Q2-125		NUT-M27x2.0x13.5Hx41B
ø160	LB-Q2-160	CA-Q2-160	CB-Q2-160	FAC-Q2-160		NUT-M36x2.0x18Hx55B
ø200	LB-Q2-200	CA-Q2-200	CB-Q2-200	FAC-Q2-200		

	Accessories ⚠ Factory-installed, not available for separate purchase or field assembly				Connector	
Code	TA	TB	TC	SDS Mid section support (Stroke over 1000mm)	Y	I
Mounting / Tube I.D.						
ø125	TC-Q2-125			SDS-Q2-125	Y-Q2-125	I-Q2-125
ø160	TC-Q2-160			SDS-Q2-160	Y-Q2-160	I-Q2-160
ø200	TC-Q2-200			SDS-Q2-200		

Pin

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

Order example of self-assembled

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

No.	Order number	Qty
1	LB-Q2-125	2
2	Y-Q2-125	1
3	PIN-Q2-125-2-P	1

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

Order example of factory assembled

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

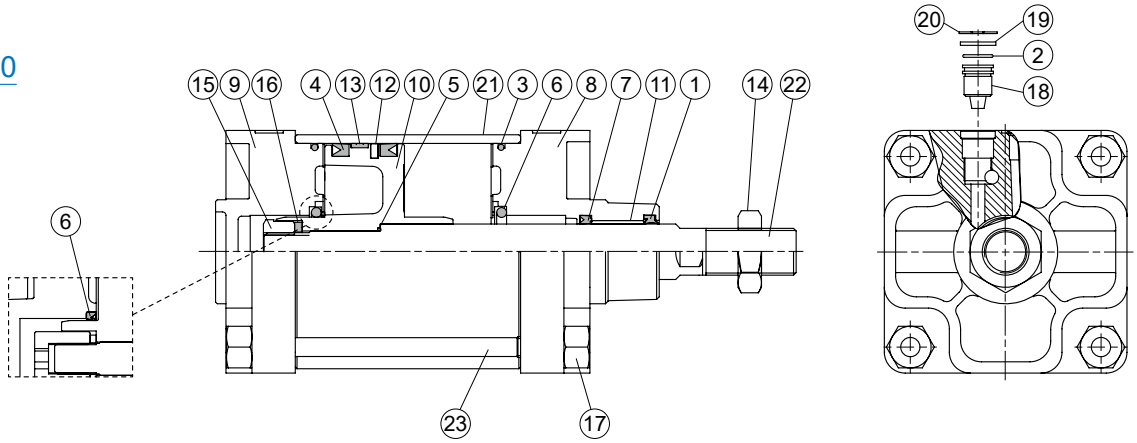
MCQV — Standard model no. + TA

CYLINDER ACCESSORIES

Single rod 11 type

ø125~ø200

ø200



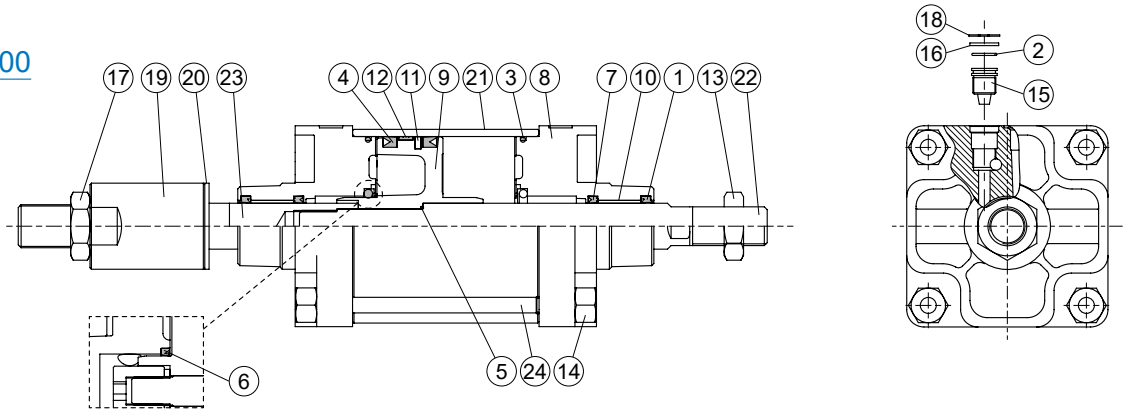
No.	Part name	Material	Q'y	Component parts (inclusion)	Repair kits (inclusion)	Note
1	Rod packing	NBR	1	●	●	
2	O-ring	NBR	2	●	●	
3	O-ring	NBR	2	●	●	
4	Piston packing	NBR	2	●	●	
5	O-ring	NBR	1	●	●	
6	Cushion packing	NBR	2	●	● *1	
7	Rod packing	NBR	1	●	●	
8	Rod cover	Aluminum alloy	1	●		
9	Head cover	Aluminum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

Double rod 21 / 27 type

ø125~ø200

ø200



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

*1. Cushion packing is not included in ø200 repair kits.
*2. When customized material is bearing steel, only two-side across flat (wrench flat) is available.

Order example of component parts

CP — MCQV — 2 — 125 M

- MODEL
- Blank: Single rod / **2**: Double rod
- TUBE I.D. **125, 160, 200**
- **M**: Magnet

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

Order example of repair kits

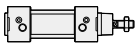
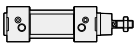
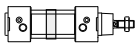
PS — MCQV — 2 — 125 — XB6

- MODEL
- Blank: Single rod / **2**: Double rod
- TUBE I.D. **125, 160, 200**
- Blank: NBR / **XB6**: Heat resistant material

Cylinder & accessories weight

Cylinder weight

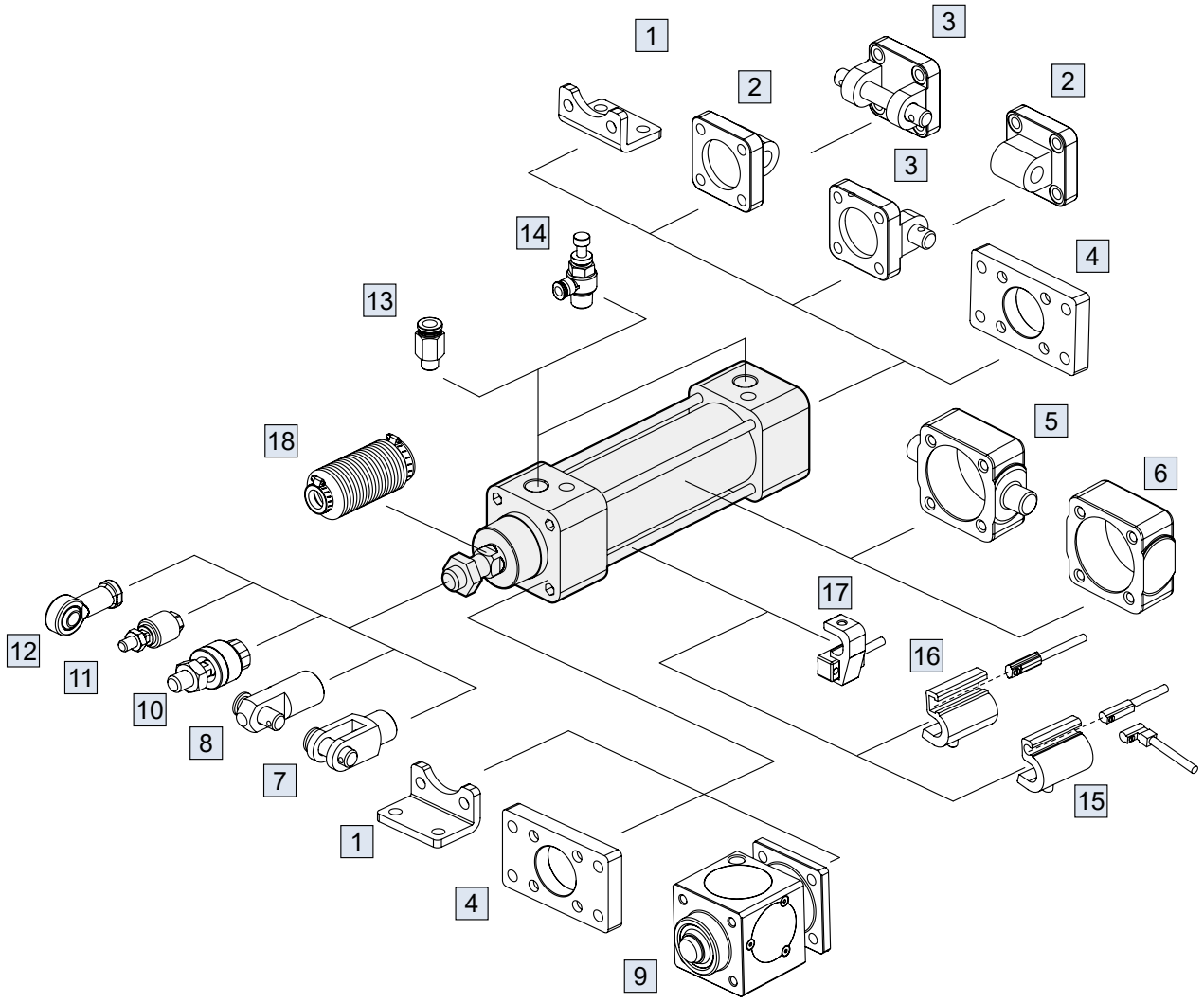
Unit: kg

Model	Basic weight **MCQV-11**	Basic weight (magnet) **MCQV-11**	Stroke 25 mm **MCQV-11**
Tube I.D.			
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	FAC/FBC	TA/TB/TC	SDS	Y	I	Pin	
									Y / I	CA / CB
Tube I.D.										
ø125	2.500	3.780	3.560	4.020	2.750	2.528	1.160	1.400	0.382	0.525
ø160	4.600	7.400	7.140	7.170	5.130	3.907	2.482	1.727	0.567	0.906
ø200	7.342	9.440	9.208	10.852	6.981	6.627	2.482	1.727	0.567	0.906

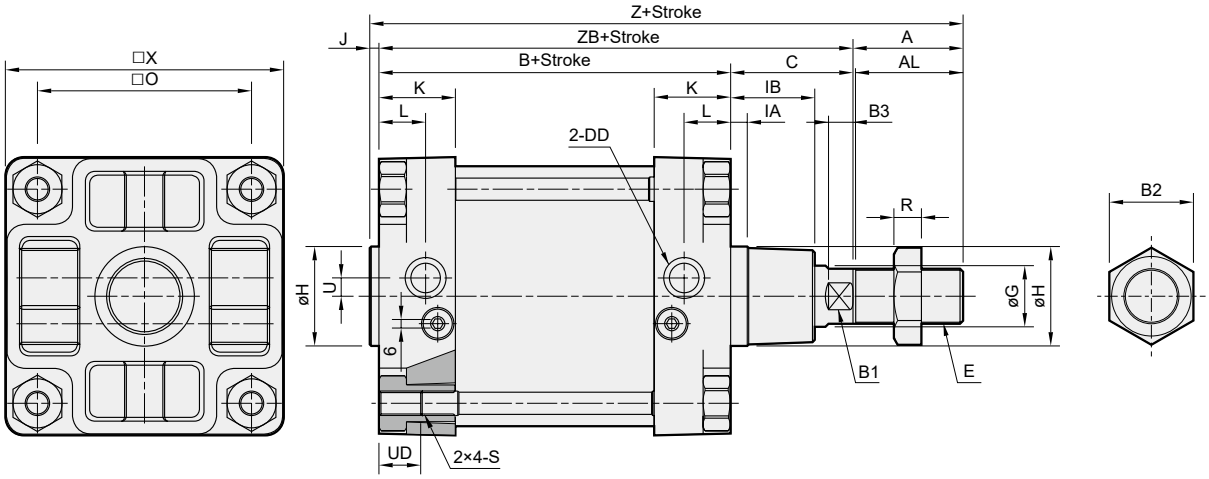


No.	Accessories	Material	Page link
1	Mounting accessories LB	Carbon steel	
2	Mounting accessories CA	Cast iron	
3	Mounting accessories CB+PIN	Cast iron / *1	,
4	Mounting accessories FAC/FBC	Carbon steel	
5	Mounting accessories TA/TB/TC	Cast iron	,
6	Mounting accessories SDS	Cast iron	
7	Accessories Y+PIN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

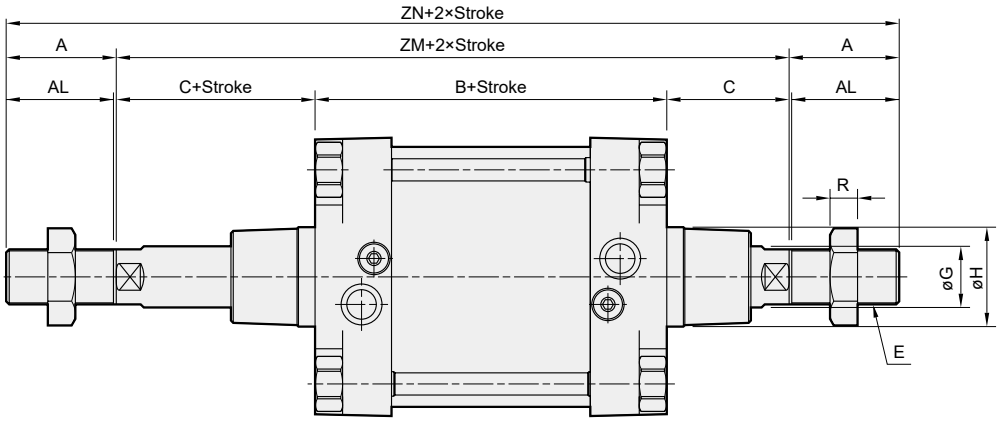
No.	Accessories	Material	Page link
9	Locking unit MCBQV	Aluminum alloy+*2	
10	Floating joint MFC	Carbon steel	
11	Floating joint MFCS	Carbon steel	
12	Female rod ends PHS	Carbon steel	
13	Fitting PC (PISCO)	–	
14	Speed controller JSC (PISCO)	–	
15	Sensor switch R*C(V)+DT7-3	–	
16	Sensor switch R*T+DT-3	–	
17	Sensor switch RCA+HV*	–	
18	Protective bellows kit	NBR	–

*1. PIN material is carbon steel. *2. Bronze alloy.

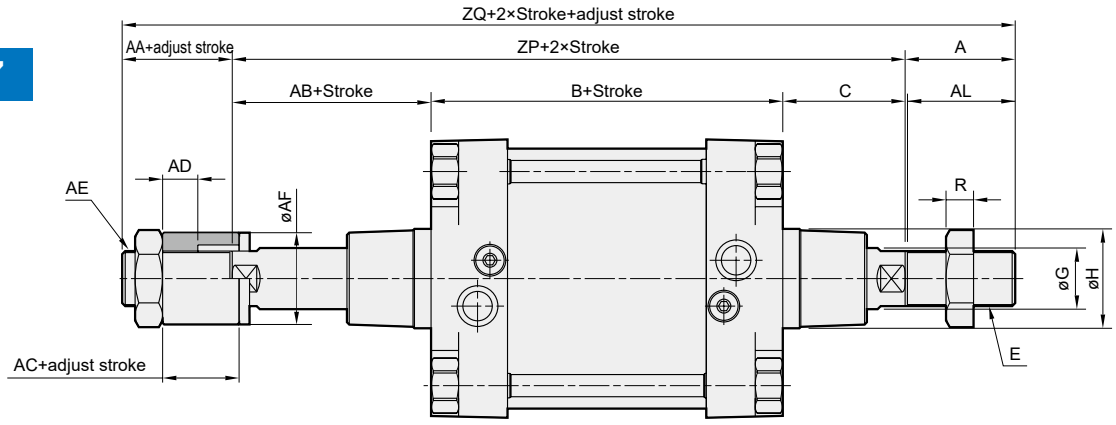
11



21



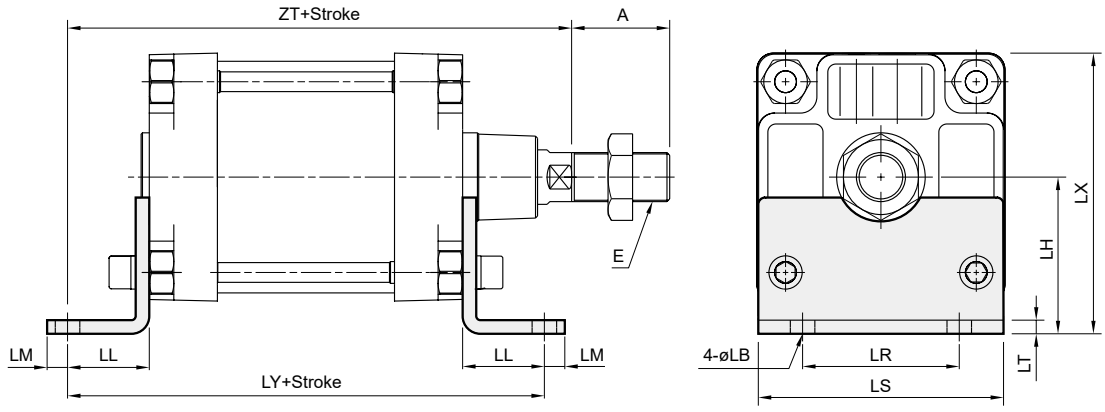
27



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

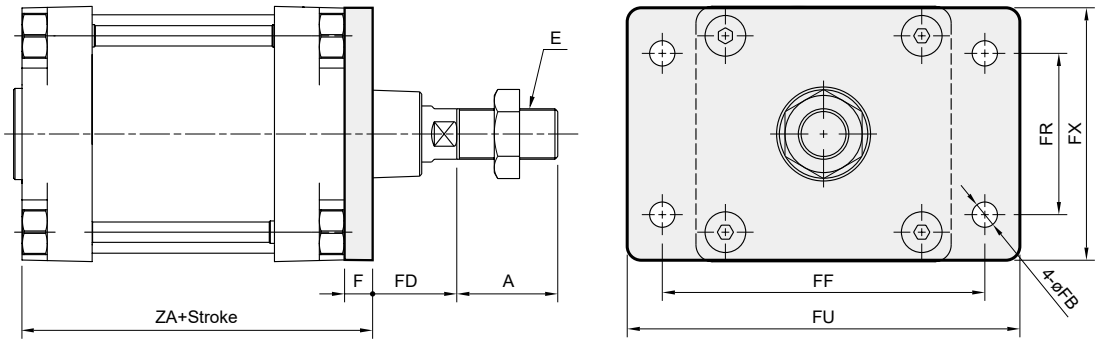
Code / Tube I.D.	S	U	UD	X	Z	ZB	ZM	ZN	ZP	ZQ
125	M12×1.75	11	22	140	285	225	290	398	280	372
160	M16×2.0	12	27	182	338	260	340	484	331	441
200	M16×2.0	12	27	220	353	275	370	514	369.5	457

LB

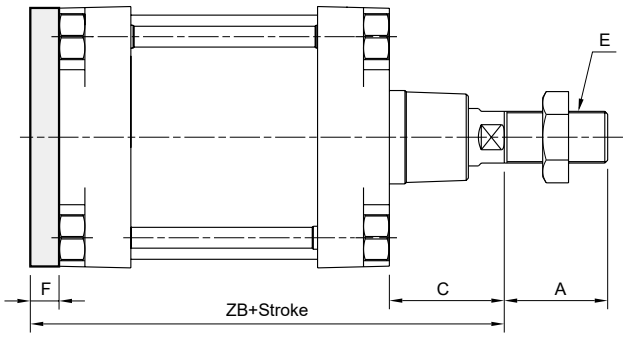


Code / Tube I.D.	A	E	LB	LH	LL	LM	LR	LS	LT	LX	LY	ZT
125	54	M27×2.0	16	90	45	25	90	140	9	160	250	270
160	72	M36×2.0	18	115	60	15	115	180	10	206	300	320
200	72	M36×2.0	24	135	70	35	135	220	12	245	320	345

FAC

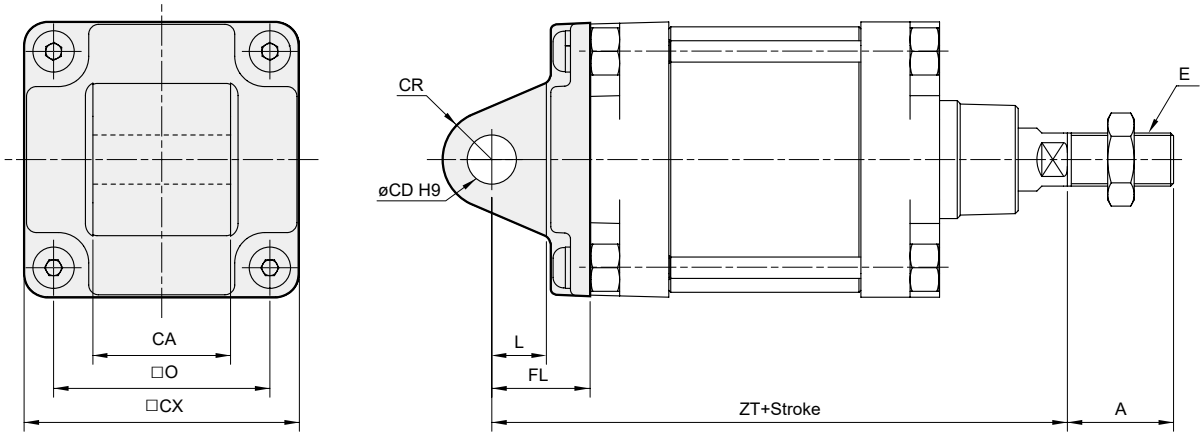


FBC



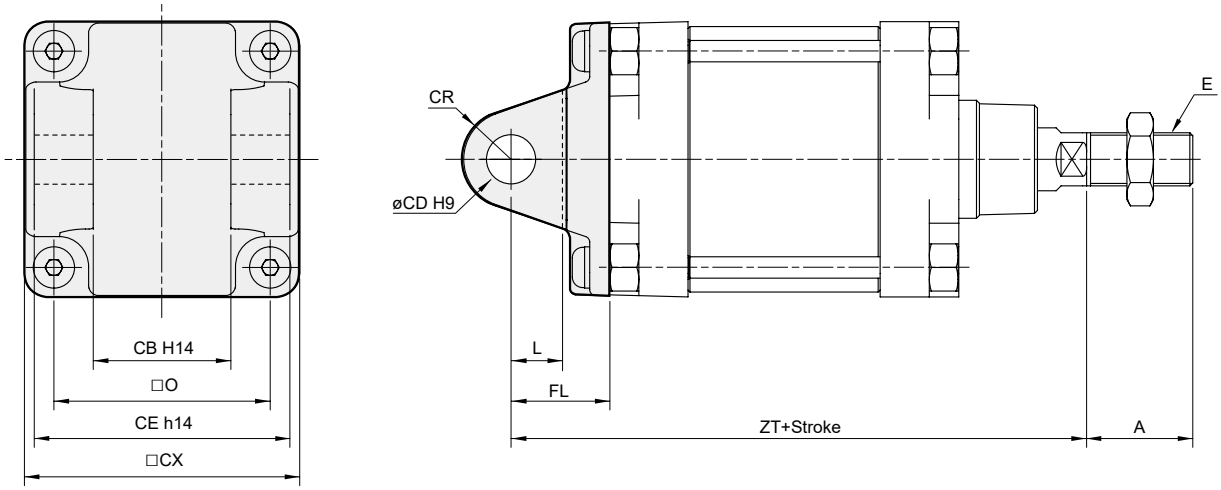
Code / Tube I.D.	A	E	F	FB	FD	FF	FR	FU	FX	ZA	ZB
125	54	M27×2.0	20	16	45	180	90	210	140	180	245
160	72	M36×2.0	20	18	60	230	115	280	180	200	280
200	72	M36×2.0	25	22	70	270	135	320	220	205	300

CA



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

CB

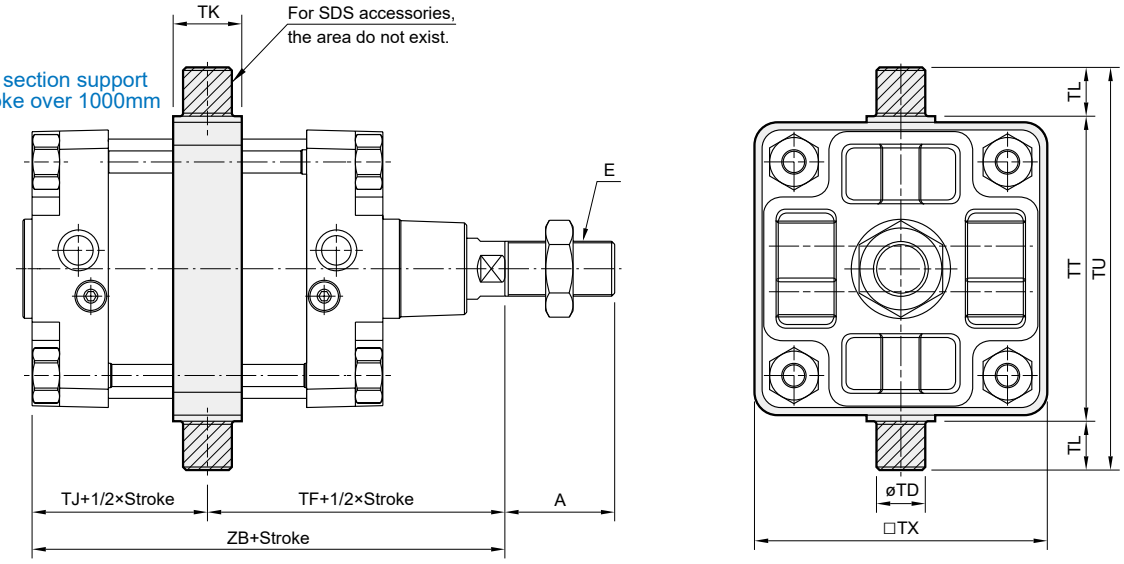


Code / Tube I.D.	A	CB	CD	CE	CR	CX	E	FL	L	O	ZT
125	54	70	25	130	R25	139	M27×2.0	50	30	110	275
160	72	90	30	170	R30	178	M36×2.0	55	35	140	315
200	72	90	30	170	R30	218	M36×2.0	60	35	175	335

TC

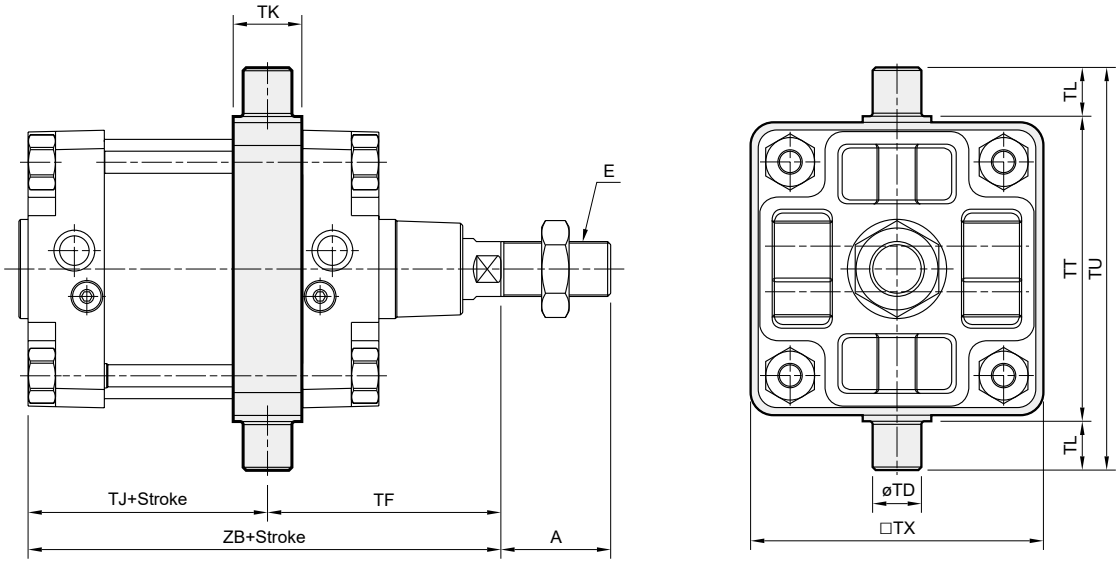
SDS

Mid section support
Stroke over 1000mm



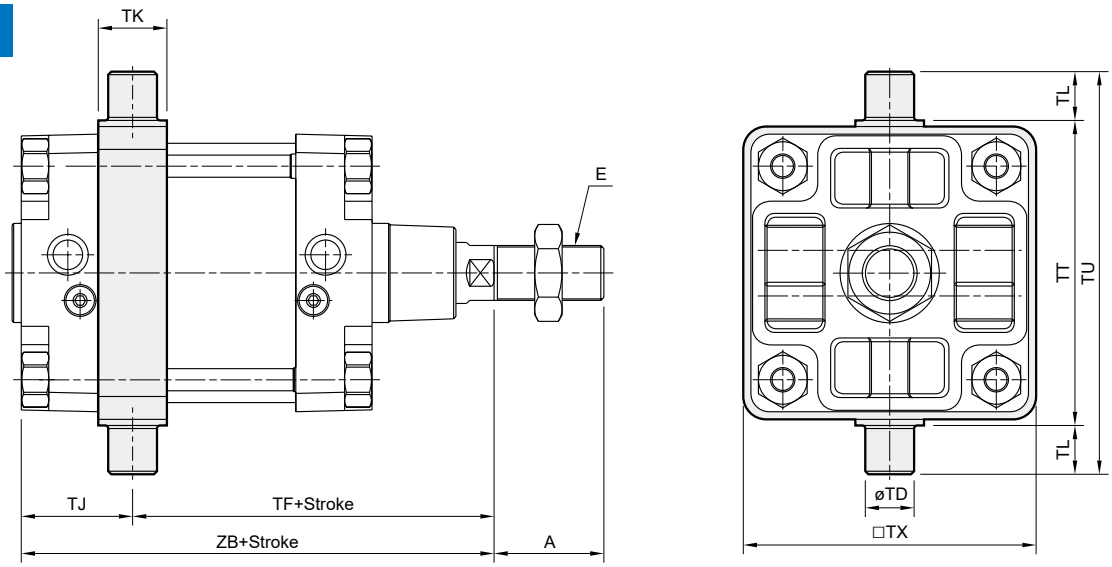
Code / Tube I.D.	A	E	TD	TF	TJ	TK	TL	TT		TU	TX	ZB
								TC	SDS			
125	54	M27×2.0	25e9	145	80	40	25	160	158	210	155	225
160	72	M36×2.0	32e9	170	90	45	32	200	198	264	192	260
200	72	M36×2.0	32e9	185	90	45	32	250	250	314	240	275

TA



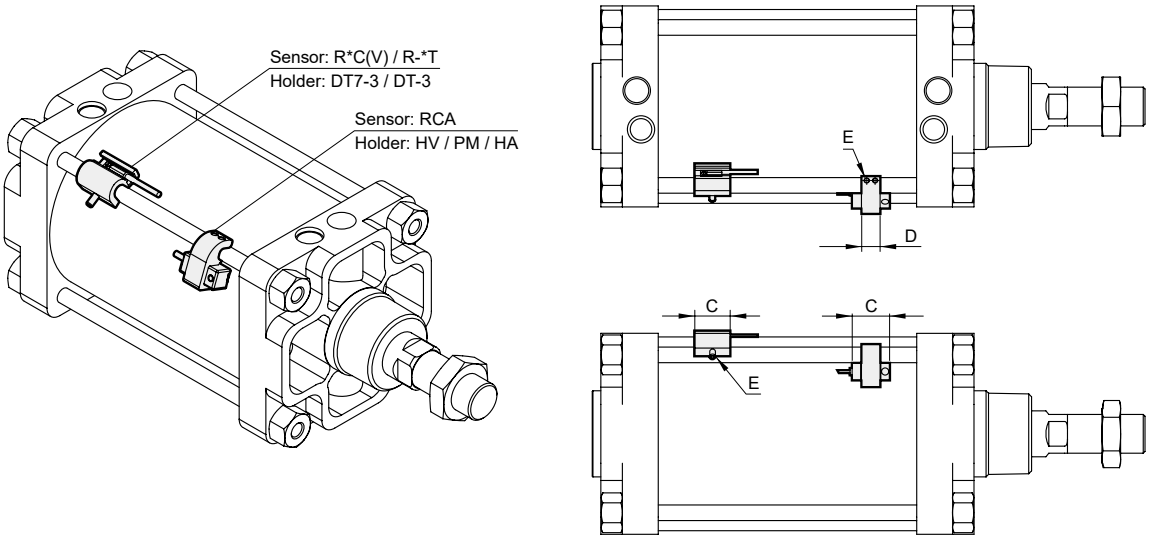
Code / Tube I.D.	A	E	TD	TF	Without magnet		Magnet		TK	TL	TT	TX	TU
					TJ	ZB	TJ	ZB					
125	54	M27×2.0	25e9	125	100	225	146	271	40	25	160	155	210
160	72	M36×2.0	32e9	152.5	107.5	260	157.5	310	45	32	200	192	264
200	72	M36×2.0	32e9	173.5	101.5	275	145.5	319	45	32	250	240	275

TB



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

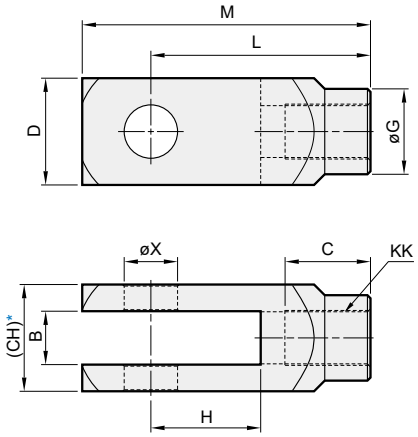
Installation of sensor switch



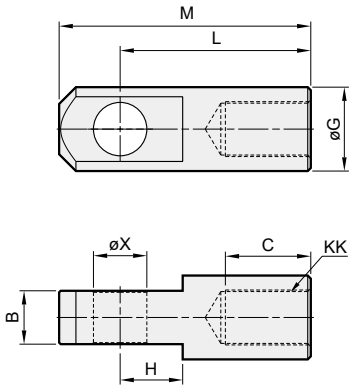
Code / Tube I.D.	Sensor switch	Holder	C	D	E
125	RCA	HV4	26	13	M4×10L
160	RCA	PM16	26	12	M4×10L
200	RCA	HA5	26	15	M4×16L

Code / Tube I.D.	Sensor switch	Holder	C	E
125	R*C(V) / R*T	DT7-3 / DT-3	25	M4×12L
160	R*C(V) / R*T	DT7-3 / DT-3	25	M4×12L
200	R*C(V) / R*T	DT7-3 / DT-3	25	M4×12L

Y connector



I connector

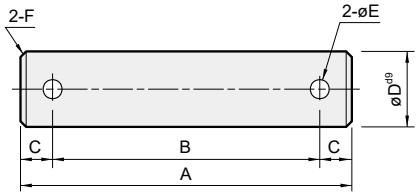


* Please do not take the sand casting plate as the mounting plate, because we do not machine it.
If you have this special demand, please contact our sales representative.

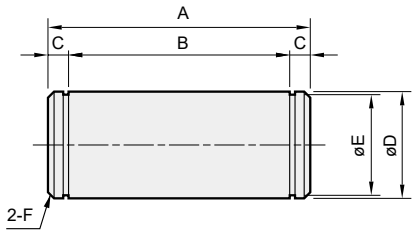
Code / Tube I.D.	B		C		CH		D		G		H		KK		L		M		X^{F7}	
	Y	I	Y	I	Y	I	Y	I	Y	I	Y	I	Y	I	Y	I	Y	I	Y	I
125	$30^{+0.52}_{0}$	$30^{-0.2}_{-0.3}$	56	51	55	–	55	–	48	55	54	40	M27×2.0		110	110	148	145	$30^{+0.04}_{+0.02}$	$30^{+0.04}_{+0.02}$
160	$35^{+0.62}_{0}$	$35^{-0.2}_{-0.3}$	56	56	70	–	70	–	56	55	72	41	M36×2.0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

P



P



for ø125

Code / Type	A	B	C	D^{d9}	E	F	Split pin
CB	157	140	8.5	$ø25^{-0.07}_{-0.12}$	5	1.5	5×36L
Y	81	64	8.5	$ø30^{-0.07}_{-0.12}$	6.3	1.5	6.3×40L

for ø160, ø200

Code / Type	A	B	C	D	E	F	Snap ring
CB	186	172	7	$30^{e8}_{-0.09}$	$28.6^{0}_{-0.21}$	2	STW-30
Y	86	72	7	$35^{h7}_{-0.03}$	$33^{0}_{-0.25}$	2	STW-35

MCQV3 series

ISO 15552 **STANDARD CYLINDER**

mindman

Features
Video
Special spec
Rod end shape
Technical data
Caution for safety
(Read before installing)



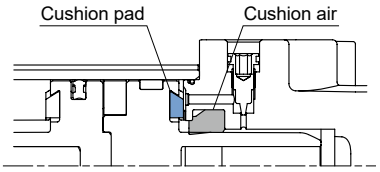
Features

■ Non lubrication
Special housing and bushing enable self lubrication of piston rod.

■ High quality long service life
Hard anodised aluminium cylinder tubes offer high resistance to corrosion and low internal friction.

■ Automatic air cushioning
Pneumatic cushioning at both ends without adjusting.

■ Low noise level
Add cushion pad to reduce impact sound and vibration.



■ 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.

Table for standard stroke

Tube I.D.	Stroke (mm)	Max. stroke(mm)	
		Style 11	Style 21/27
ø32,40	50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400, 450, 500, 600, 700, 800	1800	850
ø50,63		2000	950
ø80,100		2500	1200

* Please contact us if the stroke is out of specification.

Specification

Model	MCQV3		
Tube I.D. (mm)	32,40	50,63	80,100
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	RDC(V), RQC(V), RDT, RQT, RCA		
Sensor switch holder R*C(V)	DT7-1		DT7-2
Sensor switch holder R*T	DT-1		DT-2
Sensor switch holder RCA	HV1	HV2	HV3
Needle valve tightening torque	2~2.5 kgf·cm		4~4.5 kgf·cm

Order example

MCQV3 — 11 — 63 — 100 M — 10 — S — T

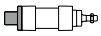
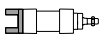
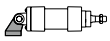
- MODEL
- **1**: Single rod, **2**: Double rod
- STYLE
- TUBE I.D.
- STROKE
- **M**: Magnet
- ADJUSTABLE STROKE
  * Only for STYLE 27.
- CUSHION TYPE
  Blank: Cushion air (Adjustable)
  S: Cushion air (Automatic)
- TYPE
  T: Add "T" when both M and TA / TB are selected.
  * When both magnet (M) and mounting accessories (TA or TB) are selected, please add the suffix "T" at the end of the model number.

STYLE

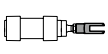
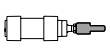
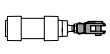
Code		Symbol	Description
1	**1**		Double acting / Male thread
2	**1**		Double rod / Male thread
2	**7**		Double rod / Adjustable male thread

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

Accessories & Connector

	Accessories						
Code	LB (Purchase 2 pcs)	CA	CA2	CB	CB2	CDB (Purchase CB+PIN)	CDB2 (Purchase CB+PIN)
Mounting / Tube I.D.							
ø32	LB-Q2-32	CA-Q2-32	CA2-Q2-32	CB-Q2-32	CB2-Q2-32	CDB-Q2-32	CDB2-Q2-32
ø40	LB-Q2-40	CA-Q2-40	CA2-Q2-40	CB-Q2-40	CB2-Q2-40	CDB-Q2-40	CDB2-Q2-40
ø50	LB-Q2-50	CA-Q2-50	CA2-Q2-50	CB-Q2-50	CB2-Q2-50	CDB-Q2-50	CDB2-Q2-50
ø63	LB-Q2-63	CA-Q2-63	CA2-Q2-63	CB-Q2-63	CB2-Q2-63	CDB-Q2-63	CDB2-Q2-63
ø80	LB-Q2-80	CA-Q2-80	CA2-Q2-80	CB-Q2-80	CB2-Q2-80	CDB-Q2-80	CDB2-Q2-80
ø100	LB-Q2-100	CA-Q2-100	CA2-Q2-100	CB-Q2-100	CB2-Q2-100	CDB-Q2-100	CDB2-Q2-100

	Accessories				Rod nut
Code	FAC	FBC	FAC2	FBC2	NUT
Mounting / Tube I.D.					
ø32	FAC-Q2-32		FAC2-Q2-32		NUT-M10x1.25x5Hx17B
ø40	FAC-Q2-40		FAC2-Q2-40		NUT-M12x1.25x6Hx19B
ø50	FAC-Q2-50		FAC2-Q2-50		NUT-M16x1.5x8Hx24B
ø63	FAC-Q2-63		FAC2-Q2-63		
ø80	FAC-Q2-80		FAC2-Q2-80		NUT-M20x1.5x10Hx30B
ø100	FAC-Q2-100		FAC2-Q2-100		

	Accessories ⚠ Factory-installed, not available for separate purchase or field assembly				Connector		
Code	TA	TB	TC	SDS Mid section support (Stroke over 1000mm)	Y	I	YS (Y+Floating pin)
Mounting / Tube I.D.							
ø32	TC-Q2-32			SDS-Q2-32	Y-Q2-32	I-Q2-32	YS-Q2-32
ø40	TC-Q2-40			SDS-Q2-40	Y-Q2-40	I-Q2-40	YS-Q2-40
ø50	TC-Q2-50			SDS-Q2-50	Y-Q2-50	I-Q2-50	YS-Q2-50
ø63	TC-Q2-63			SDS-Q2-63			
ø80	TC-Q2-80			SDS-Q2-80	Y-Q2-80	I-Q2-80	YS-Q2-80
ø100	TC-Q2-100			SDS-Q2-100			

Pin

Applicable	YS connector	Y&I connector	CA&CB accessories
Code	PIN-S	PIN-Y-P (with split pin)	PIN-CB-P (with split pin)
Fig / Tube I.D.			
ø32	PIN-Q2-32-S	PIN-Q2-32-2-P	PIN-Q2-32-1-P
ø40	PIN-Q2-40-S	PIN-Q2-40-2-P	PIN-Q2-40-1-P
ø50	PIN-Q2-50-S	PIN-Q2-50-2-P	PIN-Q2-50-1-P
ø63			PIN-Q2-63-1-P
ø80	PIN-Q2-80-S	PIN-Q2-80-2-P	PIN-Q2-80-1-P
ø100			PIN-Q2-100-1-P

Order example of self-assembled

The tube I.D. ø40 of LB accessories, Y connector and pin.

No.	Order number	Qty
1	LB-Q2-40	2
2	Y-Q2-40	1
3	PIN-Q2-40-2-P	1

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

Order example of factory assembled

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

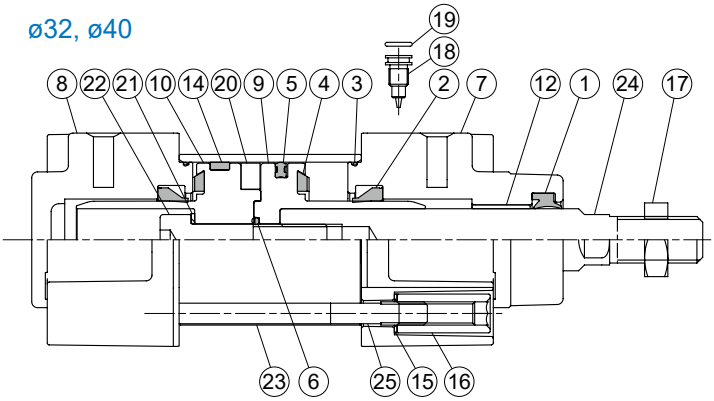
MCQV3 – Standard model no. + TA

CYLINDER ACCESSORIES

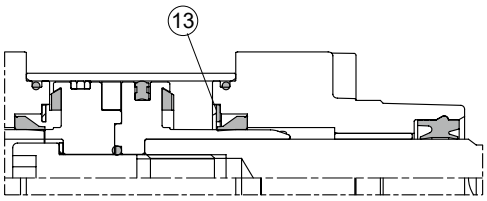
Single rod 11 type

Cushion air (Adjustable)

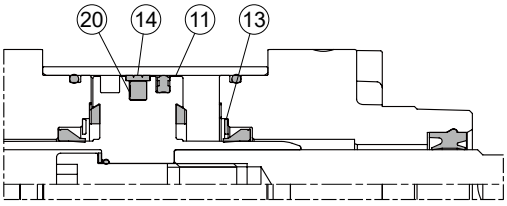
ø32, ø40



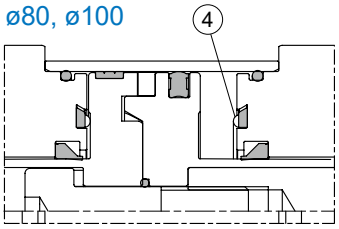
ø50



ø63



ø80, ø100



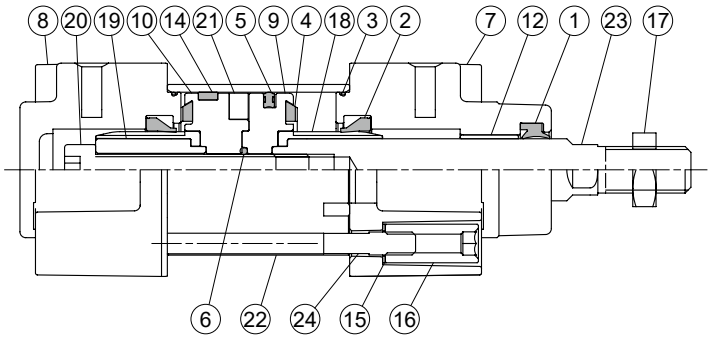
No.	Part name	Material	Q'y	Component parts (inclusion)	Repair kits (inclusion)	Note
1	Rod packing	NBR / TPU	1	●	●	ø50, 63: TPU
2	Cushion packing	NBR	2	●	●	
3	O-ring	NBR	2	●	●	
4	Cushion pad	NBR	2	●	●	
5	Piston packing	NBR	1	●	●	
6	O-ring	NBR	1	●	●	
7	Rod cover	Aluminum alloy	1	●		
8	Head cover	Aluminum alloy	1	●		
9	Piston #1	Aluminum alloy	1	●		
10	Piston #2	Aluminum alloy	1	●		
11	Piston	Aluminum alloy	1	●		Only for ø63
12	Bush	Bearing alloy	1	●		
13	Washer	Carbon steel	2	●		Only for ø50, ø63
14	Wear ring	Resin	1	●		
15	Washer	Aluminum alloy	8	●		
16	Tie rod nut	Carbon steel	8	●		
17	Piston rod nut	Carbon steel	1	●		
18	Needle valve	Resin	2	●		
19	O-ring	NBR	2	●		
20	Magnet ring	Magnet material	1	◎		◎ Option
21	Washer	Aluminum alloy	1	●		
22	Hex bolt	Carbon steel	1	●		
23	Cylinder tube	Aluminum alloy	1			
24	Piston rod *1	Carbon steel	1			
25	Tie rod	Carbon steel	4			

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

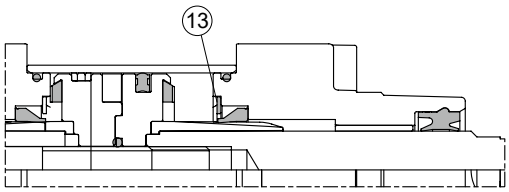
Single rod 11 type

Cushion air (Automatic)

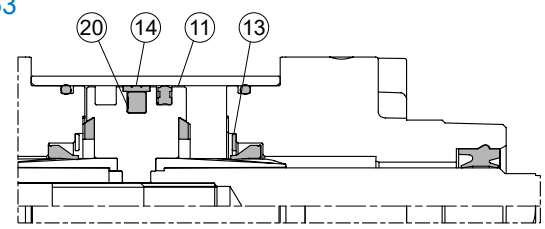
ø32, ø40



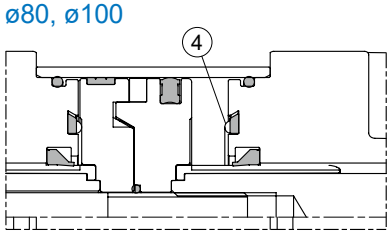
ø50



ø63



ø80, ø100



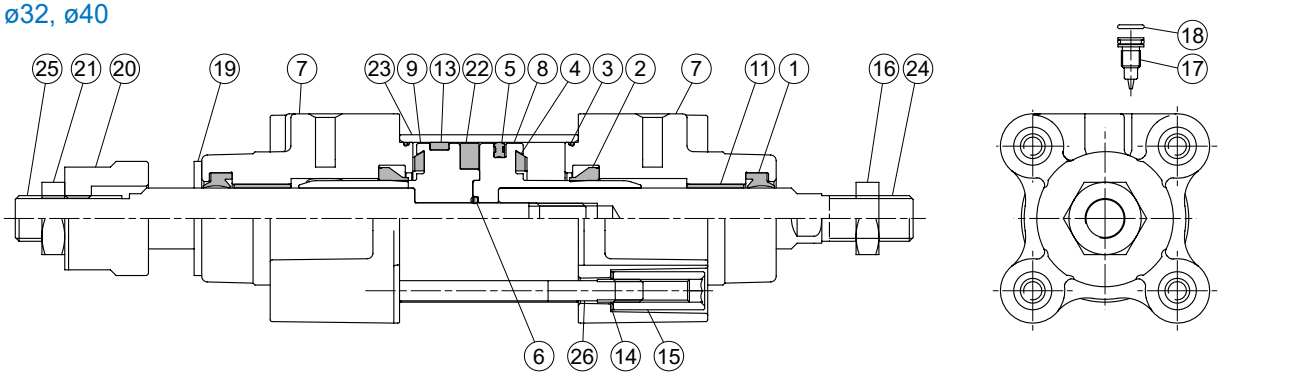
No.	Part name	Material	Q'y	Component parts (inclusion)	Repair kits (inclusion)	Note
1	Rod packing	NBR / TPU	1	●	●	ø50, 63: TPU
2	Cushion packing	NBR	2	●	●	
3	O-ring	NBR	2	●	●	
4	Cushion pad	NBR	2	●	●	
5	Piston packing	NBR	1	●	●	
6	O-ring	NBR	1	●	●	
7	Rod cover	Aluminum alloy	1	●		
8	Head cover	Aluminum alloy	1	●		
9	Piston #1	Aluminum alloy	1	●		
10	Piston #2	Aluminum alloy	1	●		
11	Piston	Aluminum alloy	1	●		Only for ø63
12	Bush	Bearing alloy	1	●		
13	Washer	Carbon steel	2	●		Only for ø50, ø63
14	Wear ring	Resin	1	●		
15	Washer	Aluminum alloy	8	●		
16	Tie rod nut	Carbon steel	8	●		
17	Piston rod nut	Carbon steel	1	●		
18	Shock absorber axis	Resin	2	●		
19	Piston nut	Aluminum alloy	1	●		
20	Hex bolt	Carbon steel	1	●		
21	Magnet ring	Magnet material	1	◎		◎ Option
22	Cylinder tube	Aluminum alloy	1			
23	Piston rod *1	Carbon steel	1			
24	Tie rod	Carbon steel	4			

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

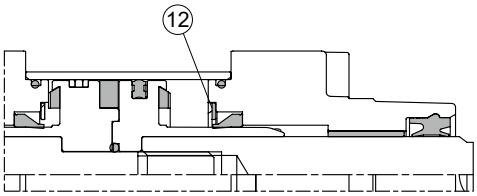
Double rod 21 / 27 type

Cushion air (Adjustable)

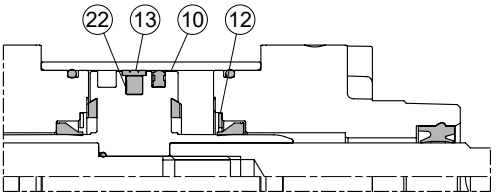
ø32, ø40



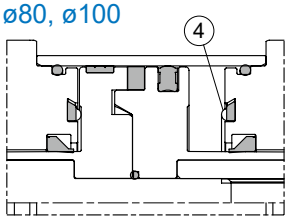
ø50



ø63



ø80, ø100



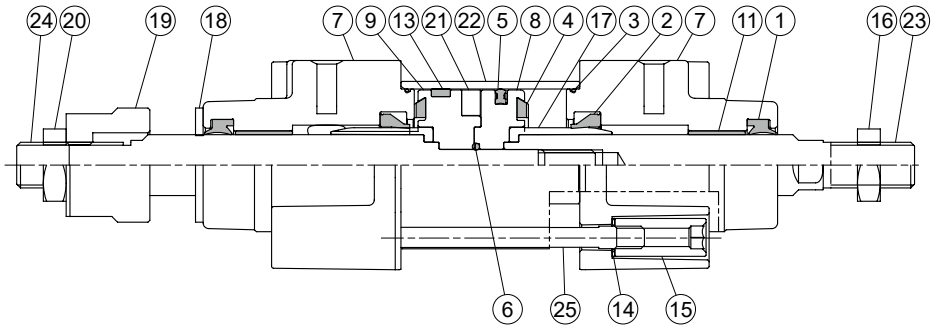
No.	Part name	Material	Q'y	Component parts (inclusion)		Repair kits (inclusion)	Note
				21 type	27 type		
1	Rod packing	NBR / TPU	2	●	●	●	ø50, 63: TPU
2	Cushion packing	NBR	2	●	●	●	
3	O-ring	NBR	2	●	●	●	
4	Cushion pad	NBR	2	●	●	●	
5	Piston packing	NBR	1	●	●	●	
6	O-ring	NBR	1	●	●	●	
7	Rod cover	Aluminum alloy	2	●	●		
8	Piston #1	Aluminum alloy	1	●	●		
9	Piston #2	Aluminum alloy	1	●	●		
10	Piston	Aluminum alloy	1	●	●		Only for ø63
11	Bush	Bearing alloy	2	●	●		
12	Washer	Carbon steel	2	●	●		Only for ø50, ø63
13	Wear ring	Resin	1	●	●		
14	Washer	Carbon steel	8	●	●		
15	Tie rod nut	Carbon steel	8	●	●		
16	Piston rod nut	Carbon steel	1	●	●		
17	Needle valve	Resin	2	●	●		
18	O-ring	NBR	2	●	●		
19	Gasket	PU	1		●		
20	Adjustable nut	Carbon steel	1		●		
21	Hex nut	Carbon steel	1		●		
22	Magnet ring	Magnet material	1	◎	◎		◎ Option
23	Cylinder tube	Aluminum alloy	1				
24	Piston rod #1 *1	Carbon steel	1				
25	Piston rod #2 *1	Carbon steel	1				
26	Tie rod	Carbon steel	4				

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

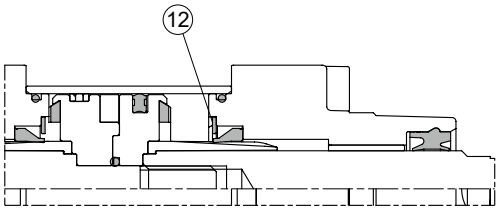
Double rod 21 / 27 type

Cushion air (Automatic)

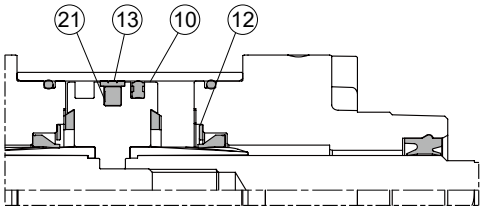
ø32, ø40



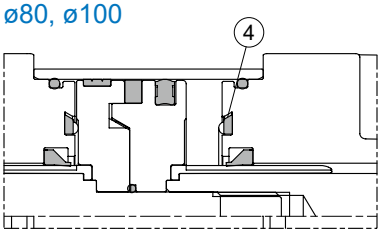
ø50



ø63



ø80, ø100



No.	Part name	Material	Q'y	Component parts (inclusion)		Repair kits (inclusion)	Note
				21 type	27 type		
1	Rod packing	NBR / TPU	2	●	●	●	ø50, 63: TPU
2	Cushion packing	NBR	2	●	●	●	
3	O-ring	NBR	2	●	●	●	
4	Cushion pad	NBR	2	●	●	●	
5	Piston packing	NBR	1	●	●	●	
6	O-ring	NBR	1	●	●	●	
7	Rod cover	Aluminum alloy	2	●	●		
8	Piston #1	Aluminum alloy	1	●	●		
9	Piston #2	Aluminum alloy	1	●	●		
10	Piston	Aluminum alloy	1	●	●		Only for ø63
11	Bush	Bearing alloy	2	●	●		
12	Washer	Carbon steel	2	●	●		Only for ø50, ø63
13	Wear ring	Resin	1	●	●		
14	Washer	Carbon steel	8	●	●		
15	Tie rod nut	Carbon steel	8	●	●		
16	Piston rod nut	Carbon steel	1	●	●		
17	Shock absorber axis	Resin	2	●	●		
18	Gasket	PU	1		●		
19	Adjustable nut	Carbon steel	1		●		
20	Hex nut	Carbon steel	1		●		
21	Magnet ring	Magnet material	1	◎	◎		◎ Option
22	Cylinder tube	Aluminum alloy	1				
23	Piston rod #1 *1	Carbon steel	1				
24	Piston rod #2 *1	Carbon steel	1				
25	Tie rod	Carbon steel	4				

*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 S

- MODEL
- TUBE I.D. **32, 40, 50 63, 80, 100**
- **M**: Magnet
- Blank: Single rod **2**: Double rod
- Blank: Cushion air (Adjustable) **S**: Cushion air (Automatic)

Order example of repair kits

PS — MCQV3 — 2 — 63 S — XB6

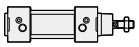
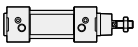
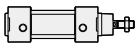
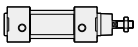
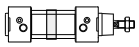
- MODEL
- TUBE I.D. **32, 40, 50 63, 80, 100**
- Blank: Single rod **2**: Double rod
- Blank: Cushion air (Adjustable) **S**: Cushion air (Automatic)
- Blank: NBR **XB6**: Heat resistant material *
- * Not suitable for (S) cushion air.

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

Cylinder & accessories weight

Cylinder weight

Unit: kg

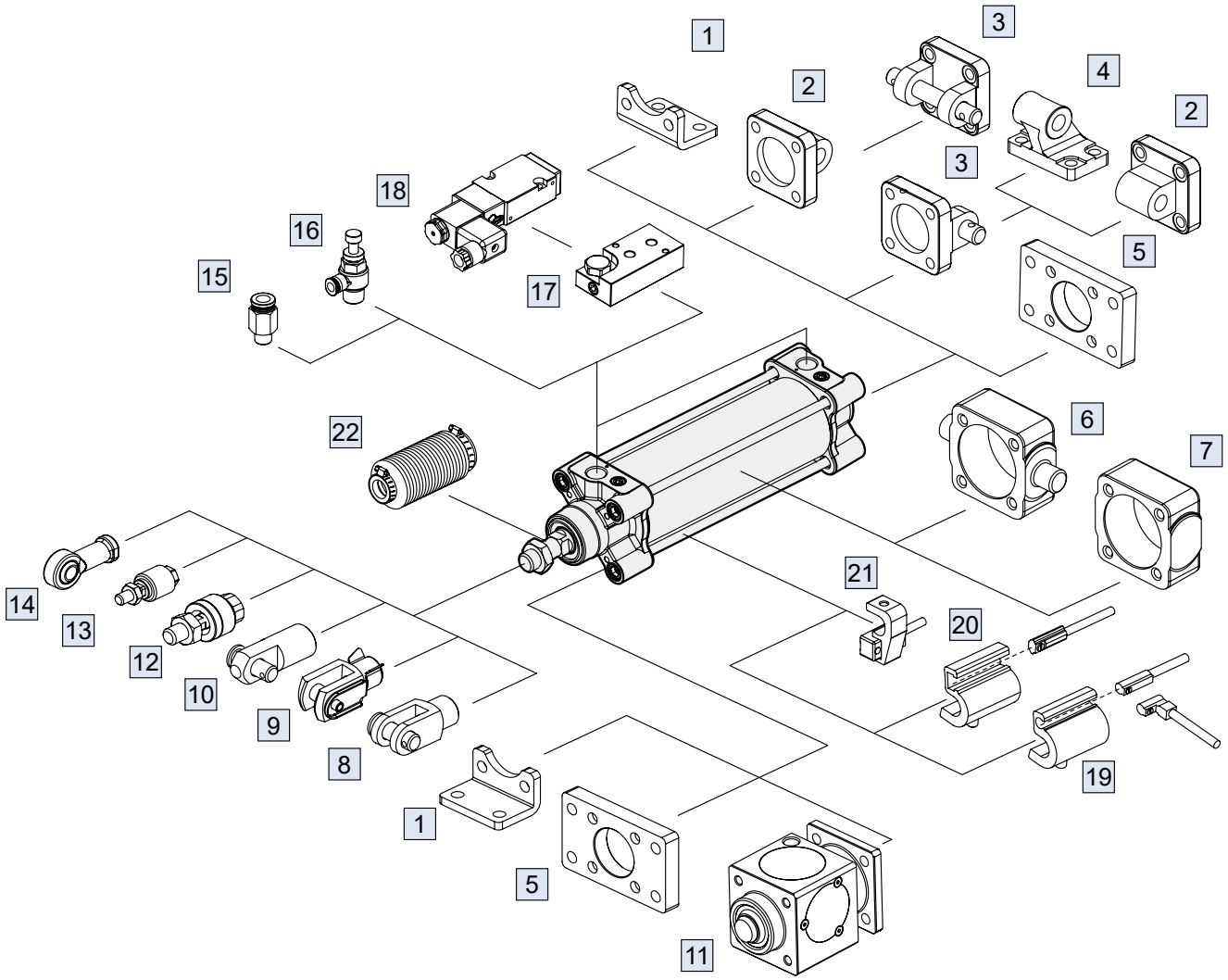
Model	Basic weight **MCQV3-11**	Basic weight (magnet) **MCQV3-11**	Basic weight **MCQV3-11-S**	Basic weight (magnet) **MCQV3-11-S**	Stroke 25 mm **MCQV3-11-(S)**
Tube I.D.					
ø32	0.510	0.516	0.45	0.456	0.05
ø40	0.717	0.729	0.697	0.709	0.068
ø50	1.114	1.131	1.101	1.118	0.108
ø63	1.689	1.709	1.673	1.693	0.125
ø80	2.464	2.491	2.445	2.472	0.187
ø100	3.682	3.717	3.613	3.648	0.210

Accessories weight

Unit: kg

Model	LB	CA	CA2	CB	CB2	CDB	CDB2	FAC/ FBC	FAC2/ FBC2	TA/TB/TC	SDS
Tube I.D.											
ø32	0.163	0.213	0.07	0.185	0.07	0.170	0.06	0.235	0.07	0.208	0.157
ø40	0.211	0.253	0.09	0.211	0.10	0.230	0.08	0.265	0.09	0.282	0.179
ø50	0.315	0.390	0.16	0.352	0.15	0.410	0.12	0.460	0.17	0.377	0.289
ø63	0.395	0.670	0.23	0.544	0.23	0.550	0.18	0.684	0.20	0.675	0.474
ø80	0.816	1.076	0.40	0.982	0.45	0.870	0.28	1.508	0.40	1.025	0.846
ø100	1.014	1.587	0.50	1.493	0.60	1.400	0.45	1.975	0.56	1.680	1.373

Model	Y	I	Pin		YS
			Y / I	CA / CB	
Tube I.D.					
ø32	0.067	0.082	0.016	0.036	0.018
ø40	0.115	0.141	0.029	0.057	0.031
ø50	0.272	0.334	0.067	0.063	0.070
ø63	0.272	0.334	0.067	0.128	0.070
ø80	0.551	0.553	0.142	0.158	0.150
ø100	0.551	0.553	0.142	0.292	0.150

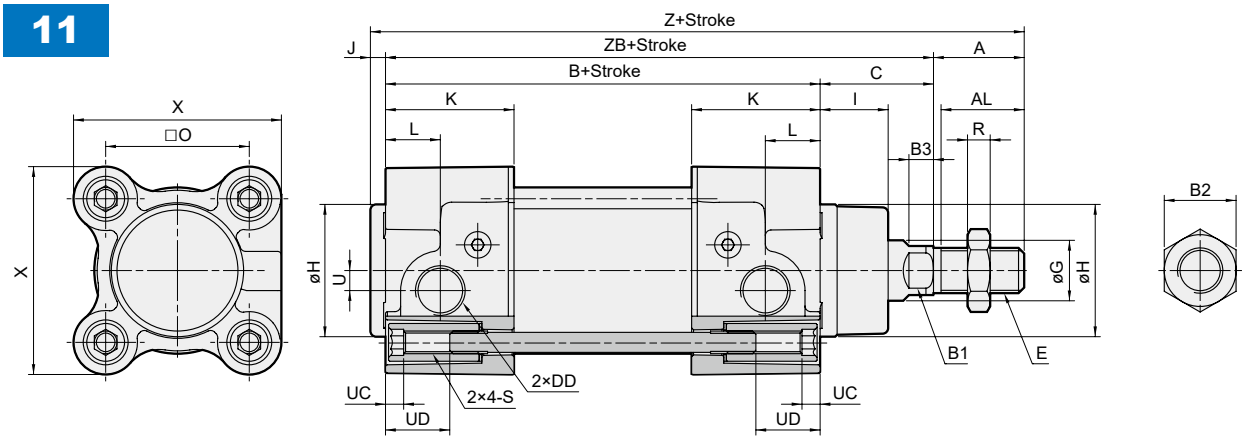


No.	Accessories	Material	Page link
1	Mounting accessories LB	Carbon steel	
2	Mounting accessories CA	Cast iron	
	Mounting accessories CA2	Aluminum alloy	
3	Mounting accessories CB+PIN	Cast iron / *1	,
	Mounting accessories CB2+PIN	Aluminum alloy	,
4	Mounting accessories CDB	Cast iron	
	Mounting accessories CDB2	Aluminum alloy	
5	Mounting accessories FAC/FBC	Carbon steel	
	Mounting accessories FAC2/FBC2	Aluminum alloy	
6	Mounting accessories TA/TB/TC	Cast iron	
7	Mounting accessories SDS	Cast iron	
8	Accessories Y+PIN	Cast iron / *1	
9	Accessories YS (Y+Floating pin)	Carbon steel	
10	Accessories I+PIN	Carbon steel	

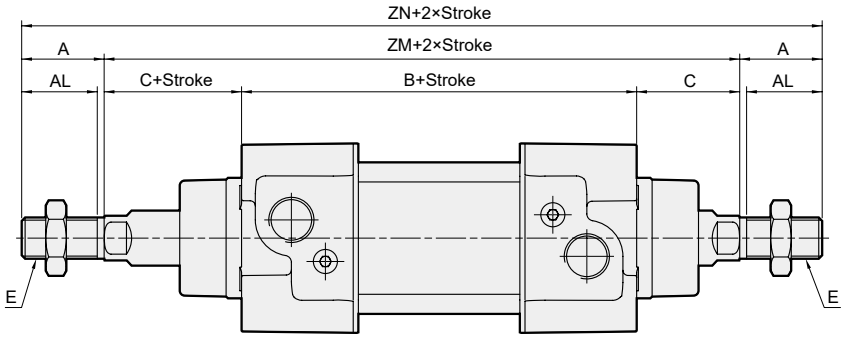
No.	Accessories	Material	Page link
11	Locking unit MCBQV3	Aluminum alloy+*2	
12	Floating joint MFC	Carbon steel	
13	Floating joint MFCS	Carbon steel	
14	Female rod ends PHS	Carbon steel	
15	Fitting PC (PISCO)	–	
16	Speed controller JSC (PISCO)	–	
17	Cylinder link seats MVSN-300-C*3	Aluminum alloy	
18	Solenoid valve MVSN-220 / 300*3	–	,
19	Sensor switch R*C(V)+DT7-*	–	
20	Sensor switch R*T+DT-*	–	
21	Sensor switch RCA+HV*	–	
22	Protective bellows kit	NBR	–

*1. PIN material is carbon steel. *2. Bronze alloy.
*3. Only for tube I.D. ø40, ø50.

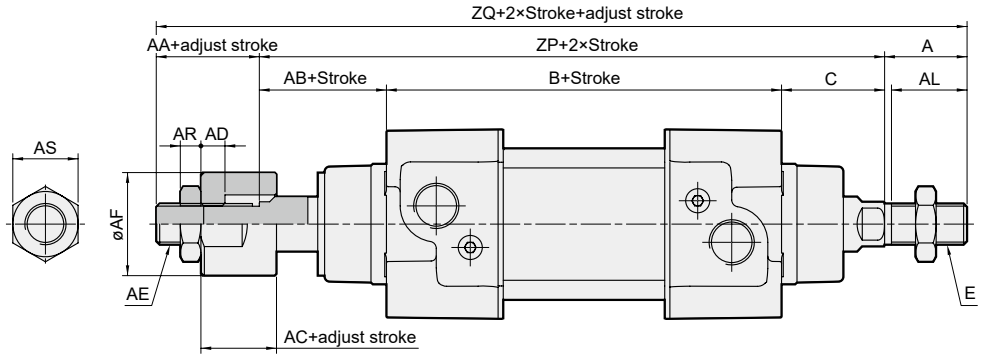
11



21

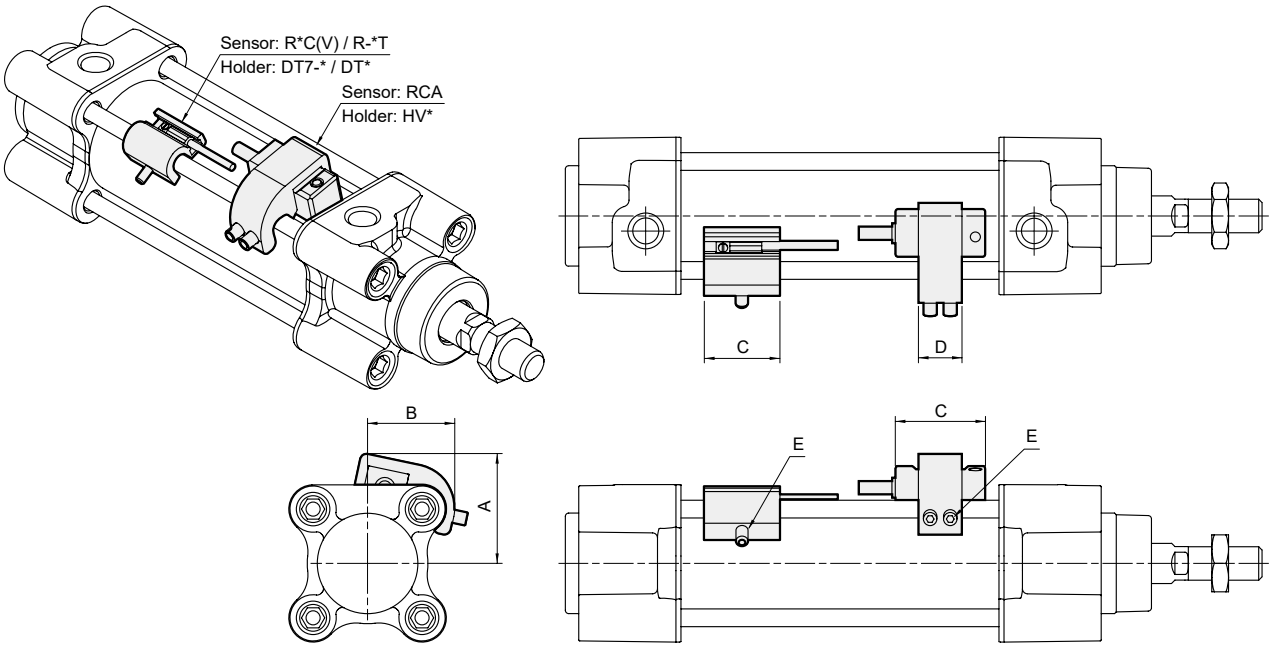


27



Code / Tube I.D.	A	AA	AB	AC	AD	AE	AF	AL	AR	AS	B	B1	B2	B3	C	DD	E	G	H	I	J	K	L	O
32	22	16	26	12	7	M10×1.25	20	20	5	17	94	10	17	4	26	G1/8	M10×1.25	12	30	15	4	30.5	20	32.5
40	24	20	27	12	7	M12×1.25	30	22	6	19	105	13	19	6.5	30	G1/4	M12×1.25	16	35	18	4	34	14.5	38
50	32	18	34	15	10	M16×1.5	40	30	8	24	106	17	24	6	37	G1/4	M16×1.5	20	40	28	4	31	16	46.5
63	32	20	32	15	10	M16×1.5	40	30	8	24	121	17	24	8	37	G3/8	M16×1.5	20	45	26	4	33	17	56.5
80	40	32	41	20	14	M22×1.5	50	38	13	32	128	22	30	10	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	38	13	32	138	22	30	10	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	16	47	146	120	146	190	146	184
40	6	M6×1.0	5.3	4.5	16	55	163	135	165	213	162	206
50	8	M8×1.25	8.5	4.5	16	65	179	143	180	244	177	227
63	8	M8×1.25	8	4.5	16	78	194	158	195	259	190	242
80	10	M10×1.5	9	4.5	18	95	218	174	220	300	215	287
100	10	M10×1.5	13	4.5	18	115	233	189	240	320	235	305

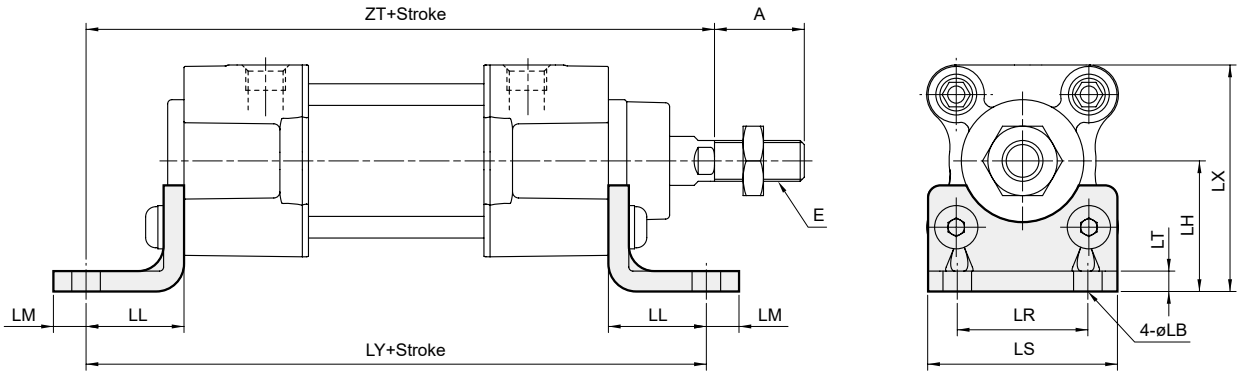


Code / Tube I.D.	Sensor switch	Holder	A	B	C	E
32	R*C(V) / R*T	DT7-1 / DT-1	24	26	25	M4×12L
40	R*C(V) / R*T	DT7-1 / DT-1	28	29.5	25	M4×12L
50	R*C(V) / R*T	DT7-1 / DT-1	31.5	32	25	M4×12L
63	R*C(V) / R*T	DT7-1 / DT-1	36	37	25	M4×12L
80	R*C(V) / R*T	DT7-2 / DT-2	45	46	25	M4×12L
100	R*C(V) / R*T	DT7-2 / DT-2	53.5	55	25	M4×12L

Code / Tube I.D.	Sensor switch	Hold	A	B	C	D	E
32	RCA	HV1	34	25	26	13	M4×10L
40	RCA	HV1	34	26	26	13	M4×10L
50	RCA	HV2	43	38	26	13	M4×10L
63	RCA	HV2	48	43	26	13	M4×10L
80	RCA	HV3	55	48	26	13	M5×16L
100	RCA	HV3	62	58	26	13	M5×16L

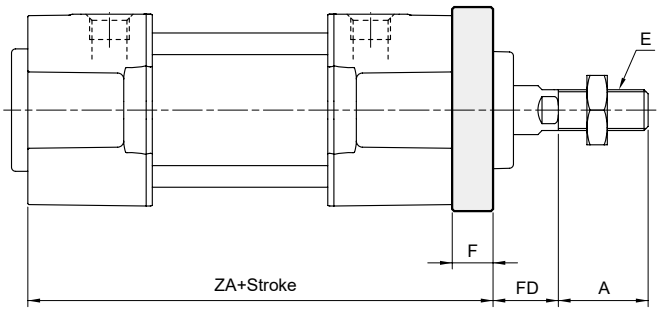
Mounting accessories

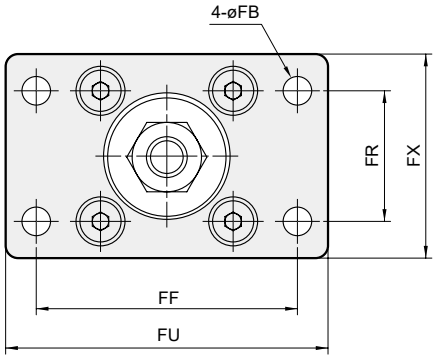
LB



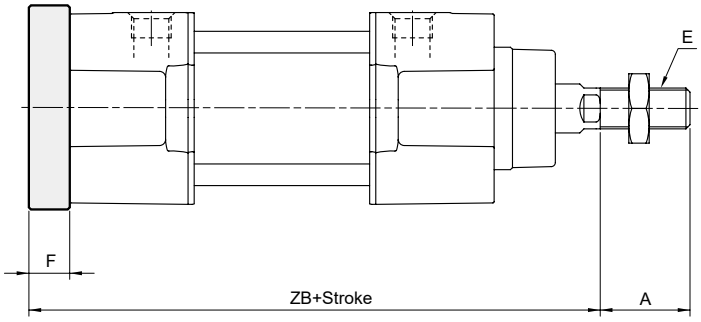
Code / Tube I.D.	A	E	LB	LH	LL	LM	LR	LS	LT	LX	LY	ZT
32	22	M10×1.25	7	32	24	8	32	47	5	55.5	142	144
40	24	M12×1.25	9	36	28	10	36	53	5	63.2	161	163
50	32	M16×1.5	9	45	32	10	45	65	5	77.5	170	175
63	32	M16×1.5	9	50	32	10	50	75	5	89.0	185	190
80	40	M20×1.5	12	63	41	13	63	95	6	110.5	210	215
100	40	M20×1.5	14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

FAC



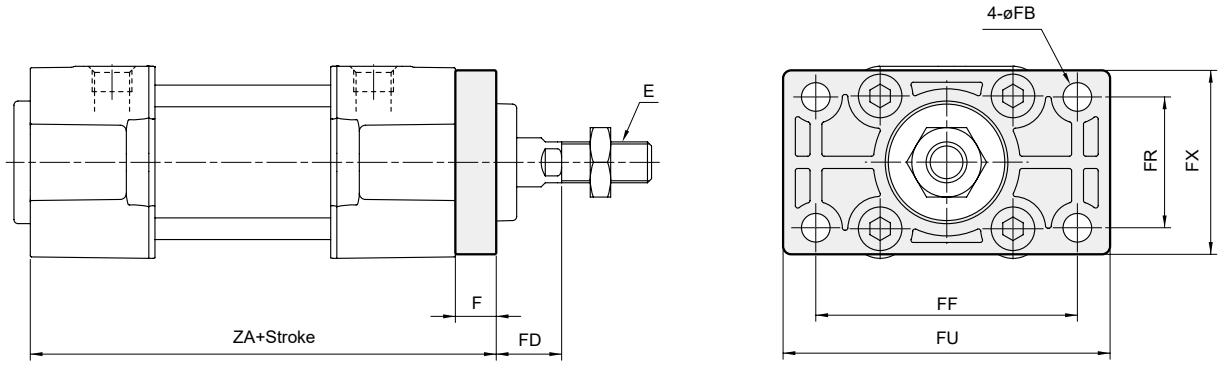


FBC

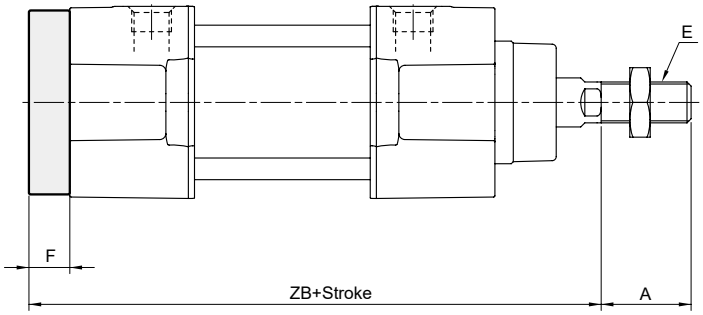


Code / Tube I.D.	A	E	F	FB	FD	FF	FR	FU	FX	ZA	ZB
32	22	M10×1.25	10	7	16	64	32	79	50	104	130
40	24	M12×1.25	10	9	20	72	36	90	52	115	145
50	32	M16×1.5	12	9	25	90	45	110	65	118	155
63	32	M16×1.5	12	9	25	100	50	125	76	133	170
80	40	M20×1.5	16	12	30	126	63	154	94	144	190
100	40	M20×1.5	16	14	35	150	75	180	112	154	205

FAC2

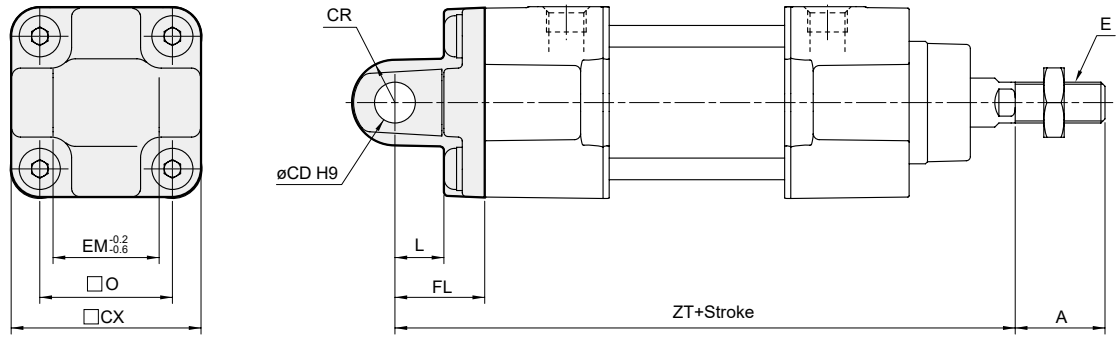


FBC2

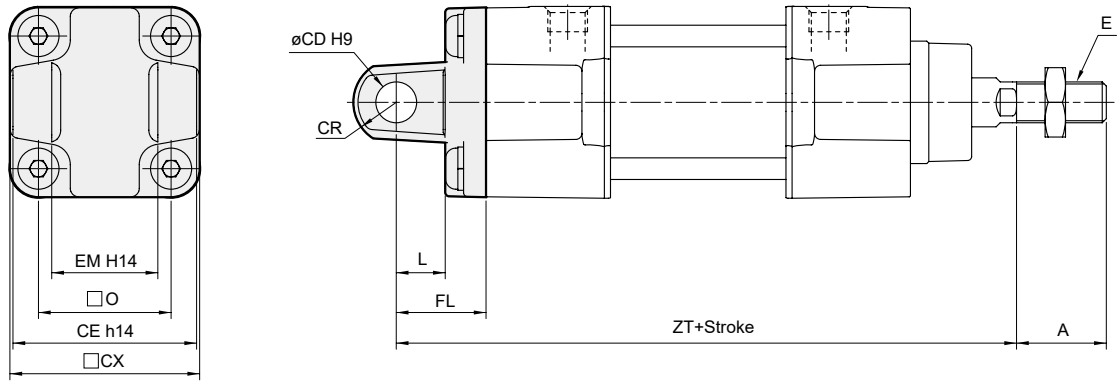


Code / Tube I.D.	A	E	F	FB	FD	FF	FR	FU	FX	ZA	ZB
32	22	M10×1.25	10	7	16	64	32	80	45	104	130
40	24	M12×1.25	10	9	20	72	36	90	52	115	145
50	32	M16×1.5	12	9	25	90	45	110	65	118	155
63	32	M16×1.5	12	9	25	100	50	120	75	133	170
80	40	M20×1.5	16	12	30	126	63	150	95	144	190
100	40	M20×1.5	16	14	35	150	75	175	115	154	205

CA

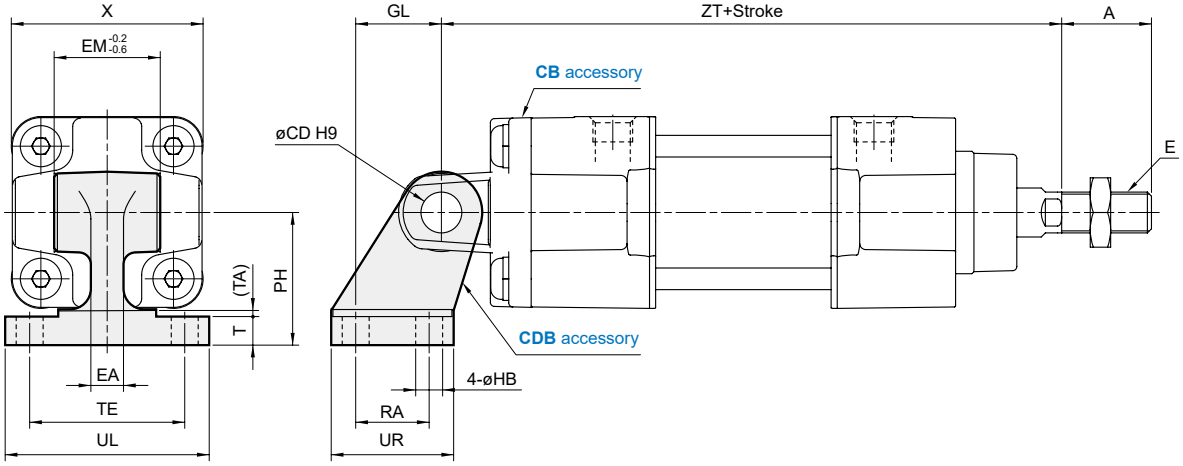


CB



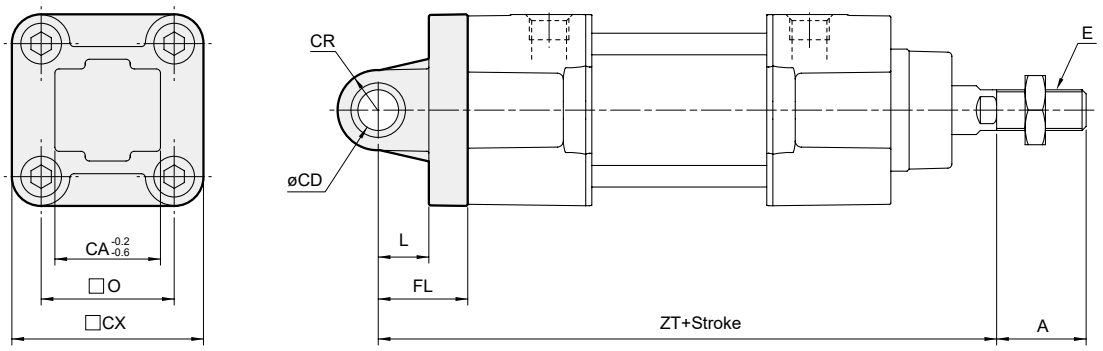
CDB

CB+Pin (Extra purchase)

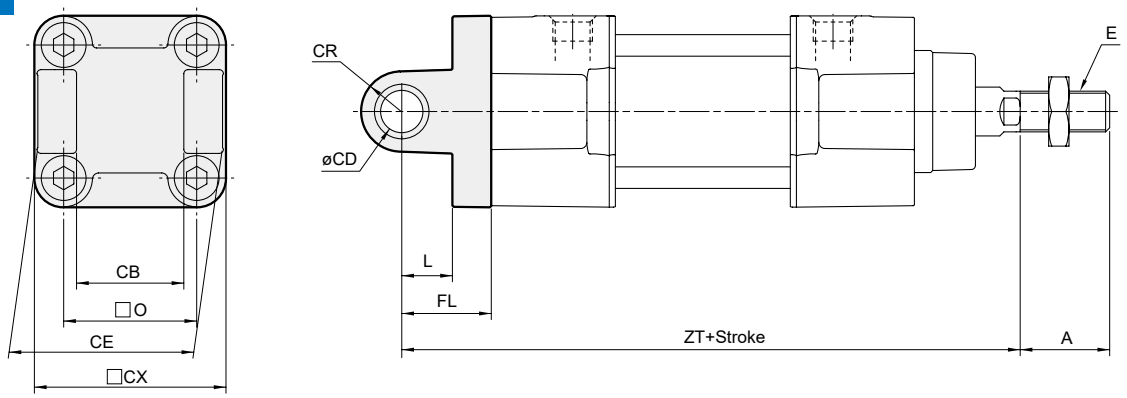


Code / Tube I.D.	A	CD	CE	CR	CX	E	EA	EM	FL	GL	HB	L	O	PH	RA	T	TA	TE	UL	UR	X	ZT
32	22	10	45	R10.5	46.5	M10×1.25	8	26	22	21	6.6	12	32.5	32	18	6.5	1.5	38	50	30	47	142
40	24	12	52	R12	54	M12×1.25	10	28	25	24	6.6	15	38	36	22	8.5	1.5	41	53	34	55	160
50	32	12	60	R13	64	M16×1.5	10	32	27	33	9	15	46.5	45	30	10.5	1.5	50	65	45	65	170
63	32	16	70	R17	75	M16×1.5	12	40	32	37	9	20	56.5	50	35	10.5	1.5	52	67	50	78	190
80	40	16	90	R17	93	M20×1.5	12	50	36	47	11	20	72	63	40	11.5	2.5	66	86	60	95	210
100	40	20	110	R21	114	M20×1.5	16	60	41	55	11	25	89	71	50	12.5	2.5	76	96	70	115	230

CA2

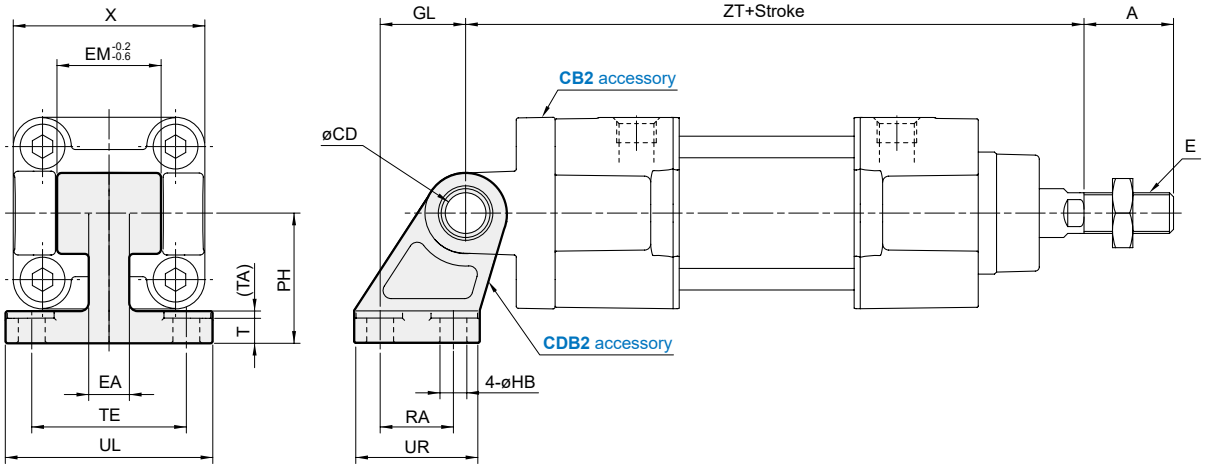


CB2



CDB2

CB2+Pin (Extra purchase)

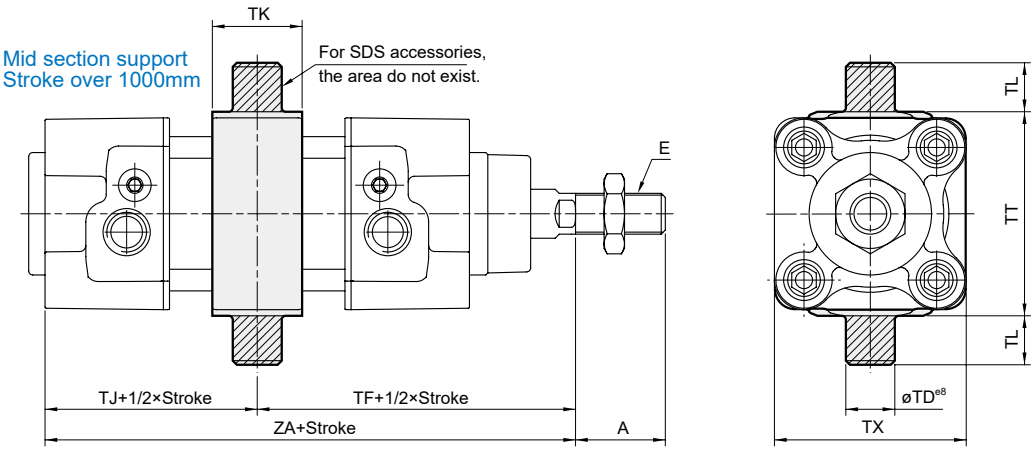


Code / Tube I.D.	A	CA	CB H14	CD H9	CE h14	CR	CX	E	EA	EM	FL	GL	HB	L	O	PH	RA	T	TA	TE	UL	UR	X	ZT
32	22	26	26 +0.052 0	10 +0.036 0	45 0 -0.62	R10	47	M10×1.25	10	26	22	21	6.6	12.5	32.5	32	18	8	1.6	38	51	31	47	142
40	24	28	28 +0.052 0	12 +0.043 0	52 0 -0.74	R12	53	M12×1.25	15	28	25	24	6.6	16	38	36	22	10	1.6	41	54	35	55	160
50	32	32	32 +0.062 0	12 +0.043 0	60 0 -0.74	R12	65	M16×1.5	16	32	27	33	9	16	46.5	45	30	12	1.6	50	65	45	65	170
63	32	40	40 +0.062 0	16 +0.043 0	70 0 -0.74	R16	75	M16×1.5	16	40	32	37	9	21	56.5	50	35	14	1.6	52	67	50	78	190
80	40	50	50 +0.062 0	16 +0.043 0	90 0 -0.87	R16	95	M20×1.5	20	50	36	47	11	22	72	63	40	14	2.5	66	86	60	95	210
100	40	60	60 +0.074 0	20 +0.052 0	110 0 -0.87	R20	115	M20×1.5	20	60	41	55	11	27	89	71	50	17	2.5	76	96	70	115	230

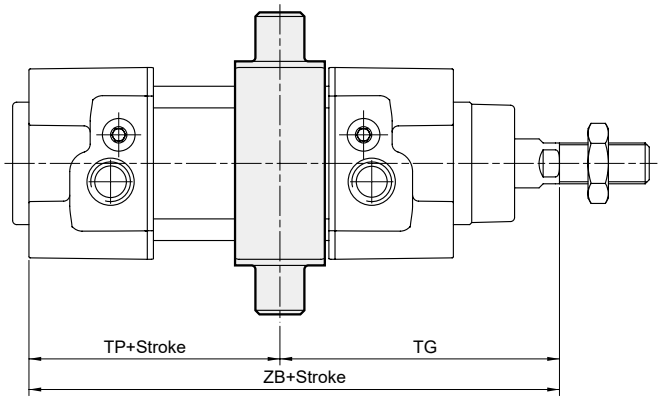
TC

SDS

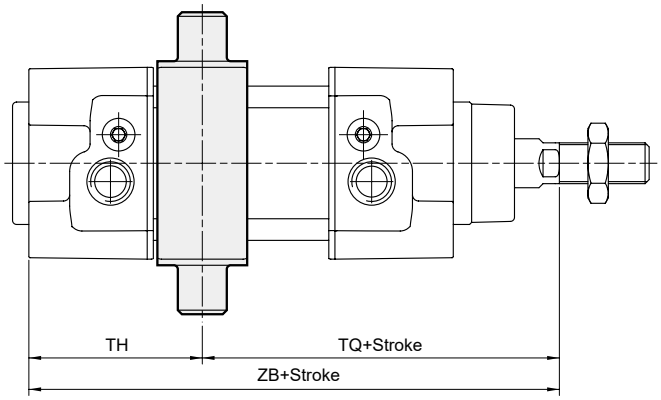
Mid section support
Stroke over 1000mm



TA



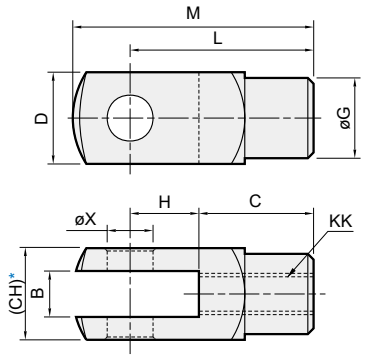
TB



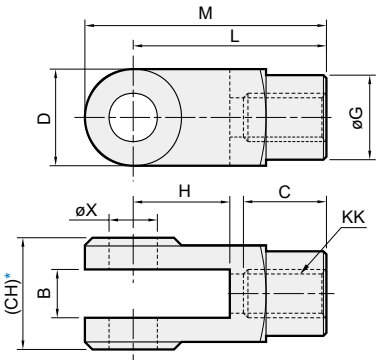
Code / Tube I.D.	A	E	TD	TF	TG	TH	TJ	TK	TL	Without magnet			Magnet			TC	SDS	TX	ZA
										TP	TQ	ZB	TP	TQ	ZB	TT			
32	22	M10×1.25	12	73	68.5	42.5	47	22	12	51.5	77.5	120	81.5	107.5	150	50	49	47	120
40	24	M12×1.25	16	82.5	76	46	52.5	22	16	59	89	135	89	119	165	63	55	53	135
50	32	M16×1.5	16	90	80	43	53	22	16	63	100	143	93	130	173	75	68	66	143
63	32	M16×1.5	20	97.5	85	48	60.5	28	20	73	110	158	103	140	188	90	82	80	158
80	40	M20×1.5	20	110	99.5	53.5	64	34	20	74.5	120.5	174	114.5	160.5	214	110	108	106	174
100	40	M20×1.5	25	120	109	58	69	40	25	80	131	189	120	171	229	132	130	126	189

Y connector

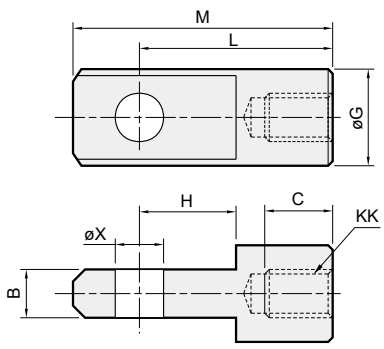
ø32~ø40



ø50~ø100



I connector

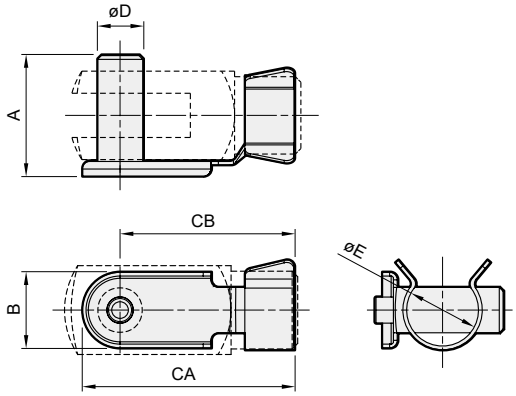


* Please do not take the sand casting plate as the mounting plate, because we do not machine it.
If you have this special demand, please contact our sales representative.

Code / Tube I.D.	B		C		CH		D		G		H		KK		L		M		X H9
	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	—	ø18	ø20	20	15	M10×1.25		40	40	52	52	ø10 +0.04 0
40	12 +0.5 +0.15	12 -0.1 -0.2	24	21	22	—	22	—	ø20	ø24	24	18	M12×1.25		48	48	62	62	ø12 +0.04 0
50	16 +0.3 +0.1	16 -0.1 -0.3	28	23	32	—	32	—	ø28	ø32	32	32	M16×1.5		64	64	89	86	ø16 +0.04 0
63	16 +0.3 +0.1	16 -0.1 -0.3	28	23	32	—	32	—	ø28	ø32	32	32	M16×1.5		64	64	89	86	ø16 +0.04 0
80	20 +0.3 +0.1	20 -0.1 -0.3	33	30	45	—	40	—	ø36	ø36	40	40	M20×1.5		80	80	100	108	ø20 +0.05 0
100	20 +0.3 +0.1	20 -0.1 -0.3	33	30	45	—	40	—	ø36	ø36	40	40	M20×1.5		80	80	100	108	ø20 +0.05 0

PIN

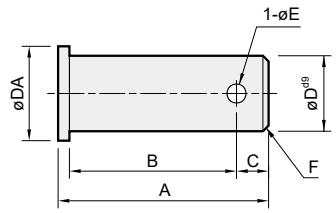
S



for floating pin

Code / Tube I.D.	A	B	CA	CB	D d9	E
32	26	14	45	38	ø10 -0.04 -0.07	17
40	31	16	54	46	ø12 -0.05 -0.09	19
50,63	42	20	70	60	ø16 -0.05 -0.09	27
80,100	56	30	91	76	ø20 -0.06 -0.11	35

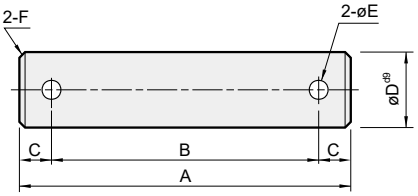
P



for Y & I connector

Code / Tube I.D.	A	B	C	D d9	DA	E	F	Split pin
32	30	25	3.5	ø10 -0.06 -0.09	14	3.2	1	3.2×20L
40	37	30	5	ø12 -0.06 -0.09	16	3.2	1	3.2×20L
50,63	47	37	7	ø16 -0.05 -0.09	22	4	1	4×25L
80,100	62	50	8	ø20 -0.06 -0.11	30	5	1.5	5×35L

P



for CA & CB

Code / Tube I.D.	A	B	C	D d9	E	F	Split pin
32	69	55	7	ø10 -0.05 -0.09	4	1.0	4×20L
40	76	62	7	ø12 -0.05 -0.09	4	1.0	4×20L
50	84	70	7	ø12 -0.05 -0.09	4	1.0	4×20L
63	94	80	7	ø16 -0.05 -0.09	4	1.0	4×30L
80	117	100	8.5	ø16 -0.05 -0.09	5	1.5	5×30L
100	137	120	8.5	ø20 -0.05 -0.09	5	1.5	5×35L

Order example

MCQV3 — As standard order example — VR — 4E2C — 6A — AC110 — L

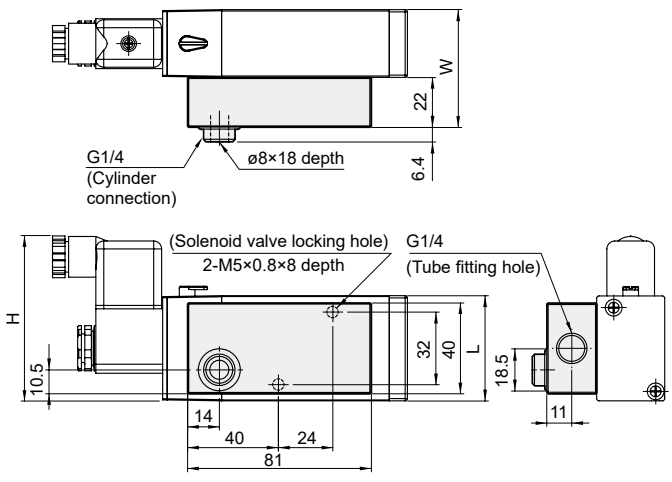
- MCQV3 — MODEL
- VR — SOLENOID VALVE LINK SEATS
  - **VR**: Installed on the front cover
  - **VH**: Installed on the back cover
- 4E2C — **4** way (5 port)
- 4E2C — **E1**: Single solenoid, **E2**: Double solenoid
  - **C**: Closed center
  - **P**: Pressure center
  - **R**: Exhaust center
  - (Only for MVSN-300-4E2)
- 6A — PORT SIZE
  - **6A**: G1/8 (Only for MVSN-220)
  - **8A**: G1/4
- AC110 — VOLTAGE
  - **AC220**V(50/60)Hz
  - **AC110**V(50/60)Hz
  - **DC24**V
- L — ELECTRIC CONNECTION

Standard	
Blank	DIN terminal
L	DIN terminal with LED indicator
E	Explosion protection
Power saving (for DC24V)	
KL	DIN terminal with LED indicator

* MCQV3-ø40 (for MVSN-220 valve)

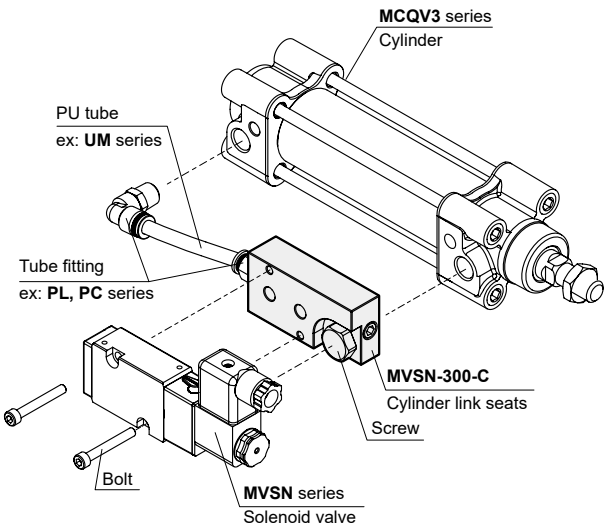
* MCQV3-ø50 (for MVSN-300 valve)

MVSN-300-C Solenoid valve link seats



Code / Model	H	W	L	Cylinder type
MVSN-220	70	44.3	40	MCQV3/MCQI3 ø40
MVSN-300	73	52	46.4	MCQV3/MCQI3 ø50

Mounting of solenoid valve link seats



Technical data

Caution for safety
(Read before installing)



Features

■ High strength steel & chemical resistance

Made of AISI 316 stainless steel.

■ ISO 15552 standard specification

Conform to ISO 15552 specification, enabling worldwide interchangeability.

■ Cylinder mountings

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

■ Magnetic as standard

Specification

Model	MCQVS		
Tube I.D. (mm)	32,40	50,63	80,100
Medium	Air		
Operating perssure 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	RCV		
Sensor switch band	BV125		

Table for standard stroke

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

* Intermediate stroke are available, please contact us.
* Made to order.

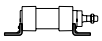
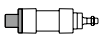
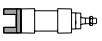
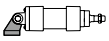
Order example

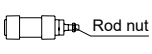
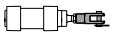
MCQVS – 11 – 40 – 100M – 10

- MODEL
- STYLE — **1**: Single rod, **2**: Double rod
- TUBE I.D.
- STROKE
- **M**: Magnet * Magnetic as standard.
- ADJUSTABLE STROKE * Only for STYLE 27.

Code		Symbol	Description	Max adjustable stroke
1	1		Double acting / Male thread	–
2	1		Double rod / Male thread	
2	7		Double rod / Adjustable male thread	200 mm

Accessories & Connector

Code	Accessories					
	LB (Purchase 2 pcs)	**CA**	**CB**	**CDB** (Purchase CB+PIN)	**FAC**	**FBC**
Mounting / Tube I.D.						
ø32	**LB-Q4-32**	**CA-Q4-32**	**CB-Q4-32**	**CDB-Q4-32**	**FAC-Q4-32**	
ø40	**LB-Q4-40**	**CA-Q4-40**	**CB-Q4-40**	**CDB-Q4-40**	**FAC-Q4-40**	
ø50	**LB-Q4-50**	**CA-Q4-50**	**CB-Q4-50**	**CDB-Q4-50**	**FAC-Q4-50**	
ø63	**LB-Q4-63**	**CA-Q4-63**	**CB-Q4-63**	**CDB-Q4-63**	**FAC-Q4-63**	
ø80	**LB-Q4-80**	**CA-Q4-80**	**CB-Q4-80**	**CDB-Q4-80**	**FAC-Q4-80**	
ø100	**LB-Q4-100**	**CA-Q4-100**	**CB-Q4-100**	**CDB-Q4-100**	**FAC-Q4-100**	

	Accessories		Connector
Code	**NUT**	**TC** ⚠	**YP** (Y+Pin)
Mounting / Tube I.D.	 Rod nut		
ø32	**NUT-S-M10x1.25x6Hx17B**	**TC-Q4-32**	**YP-Q4-32**
ø40	**NUT-S-M12x1.25x7Hx19B**	**TC-Q4-40**	**YP-Q4-40**
ø50	**NUT-S-M16x1.5x8Hx24B**	**TC-Q4-50**	**YP-Q4-50**
ø63		**TC-Q4-63**	
ø80	**NUT-S-M20x1.5x9Hx30B**	**TC-Q4-80**	**YP-Q4-80**
ø100		**TC-Q4-100**	

⚠ Factory-installed, not available for separate purchase or field assembly.

Pin

Applicable	CA&CB accessories
Code	**PIN-CB-P** (with snap pin)
Fig / Tube I.D.	
ø32	**PIN-Q4-32-1-P**
ø40	**PIN-Q4-40-1-P**
ø50	**PIN-Q4-50-1-P**
ø63	**PIN-Q4-63-1-P**
ø80	**PIN-Q4-80-1-P**
ø100	**PIN-Q4-100-1-P**

Order example of self-assembled

The tube I.D. ø63 of LB accessories, YP connector and pin.

No.	Order number	Qty
1	**LB-Q4-63**	2
2	**YP-Q4-50**	1
3	**PIN-Q4-63-1-P**	1

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

Order example of factory assembled

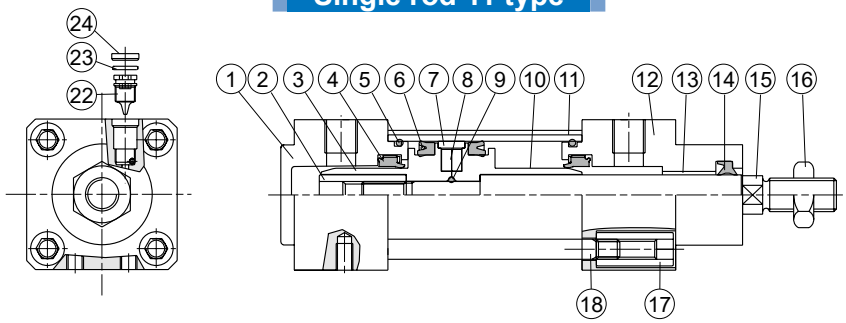
⚠ Cylinders and accessories are distinguished by the symbol " + ".

MCQVS – Standard model no. + TA

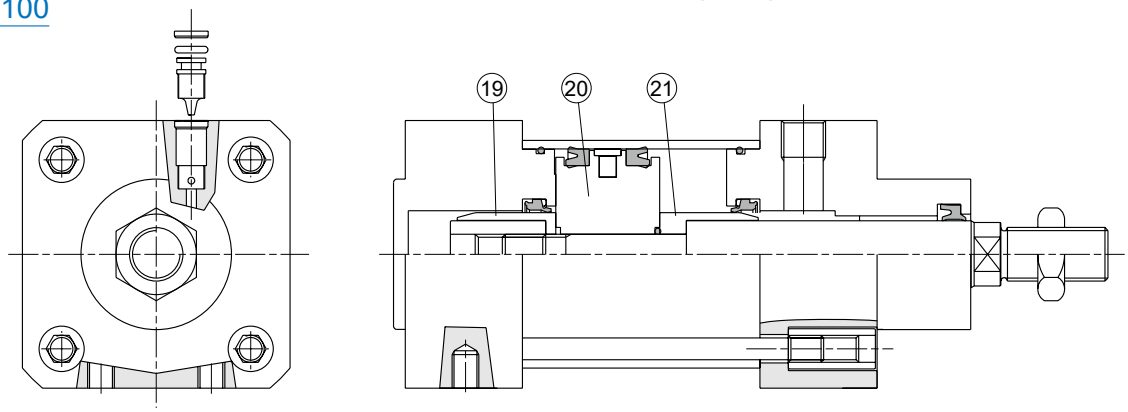
CYLINDER ACCESSORIES

Single rod 11 type

ø32, ø40



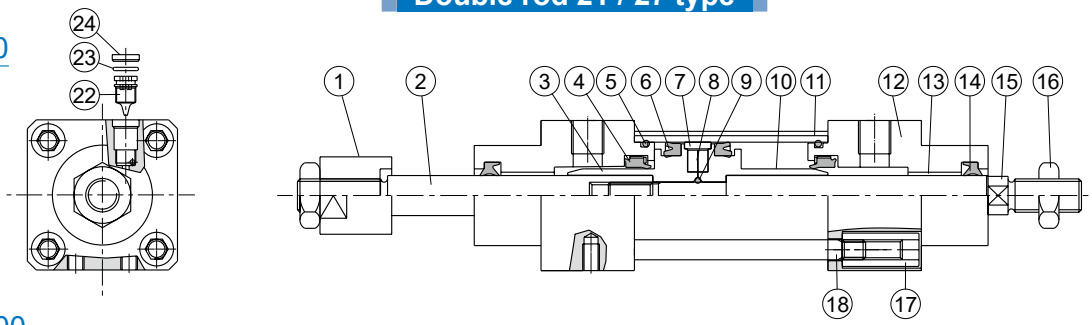
ø50~ø100



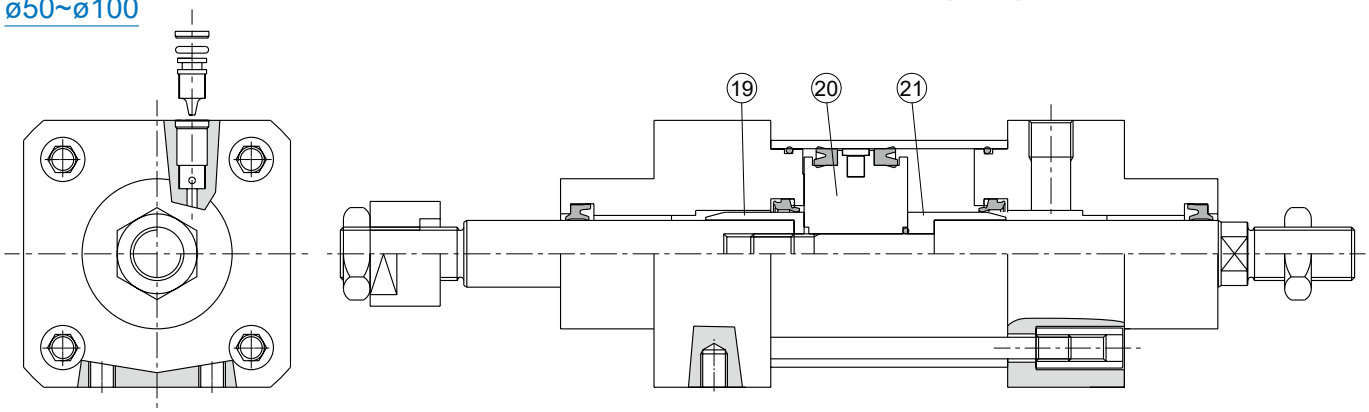
No.	Part name	Material	Q'y	Component parts (inclusion)		Repair kits (inclusion)	Note
				ø30, ø40	ø50~ø100		
1	Head cover	SUS316	1	●	●		
2	Piston nut	Carboon steel	1	●	●		
3	Piston-H	Aluminum alloy	1	●			
4	Cushion packing	NBR	2	●	●	●	
5	O-ring	NBR	2	●	●	●	
6	Piston packing	NBR	2	●	●	●	
7	Wear ring	Resin	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	●	●		

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

CP — MCQVS — 2 — 40 M

- MODEL
- Blank: Single rod / **2**: Double rod
- TUBE I.D. **32, 40, 50, 63, 80, 100**
- **M**: Magnet

Order example of repair kits

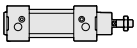
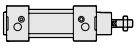
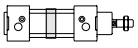
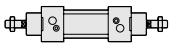
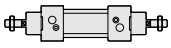
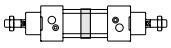
PS — MCQVS — 2 — 40 — XB6

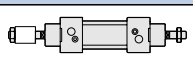
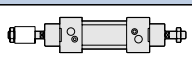
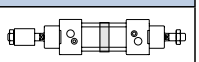
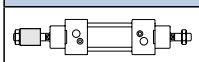
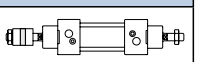
- MODEL
- Blank: Single rod / **2**: Double rod
- TUBE I.D. **32, 40, 50, 63, 80, 100**
- Blank: NBR / **XB6**: Heat resistant material

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

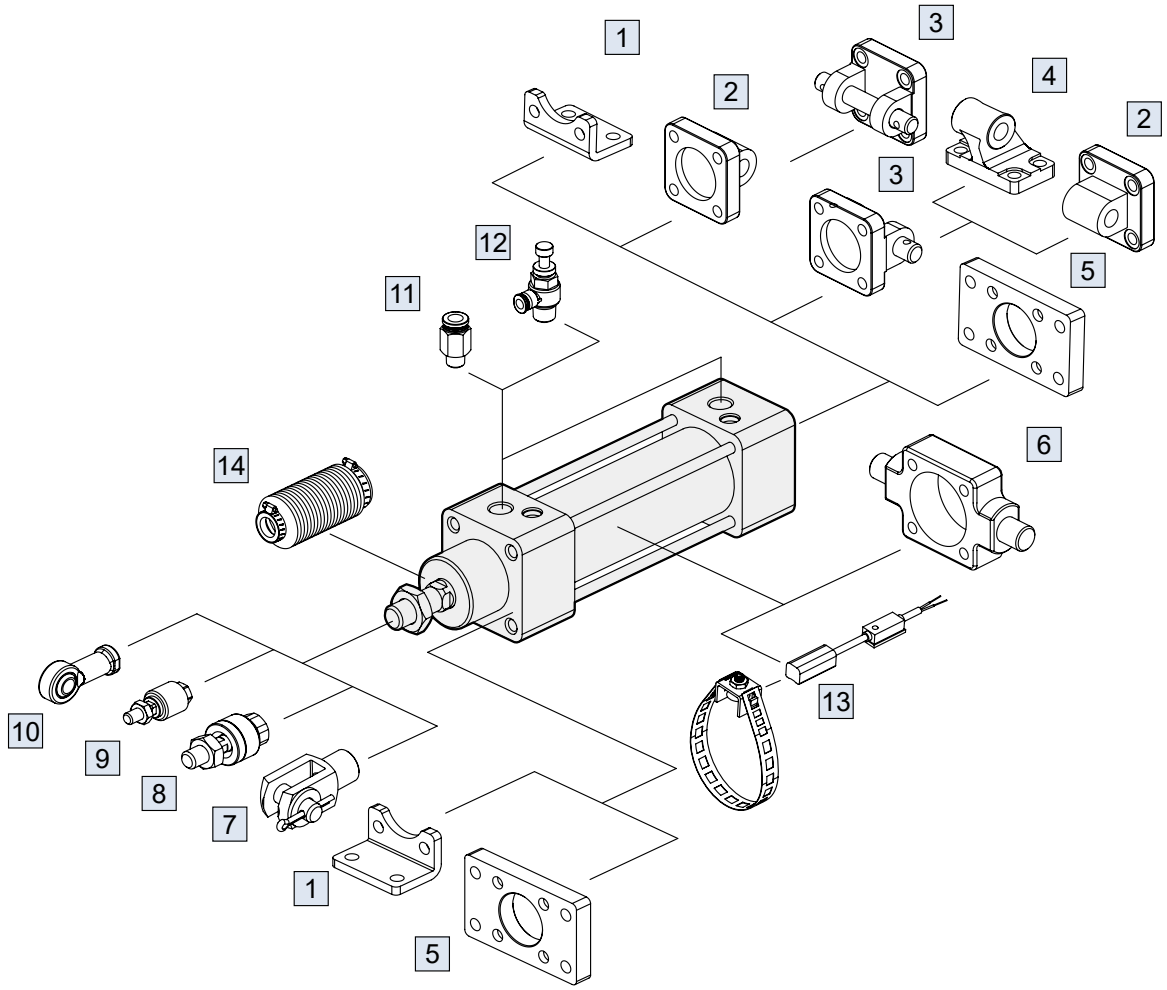
Style 27	Cylinder (A)			Adjustable nut (B)	
Model	Basic weight **MCQVS-27**	Basic weight (magnet) **MCQVS-27**	Stroke 25 mm **MCQVS-27**	Basic weight **MCQVS-27**	Adjustable stroke 25 mm **MCQVS-27**
Tube I.D.					
ø32	1.166	1.170	0.108	0.037	0.039
ø40	1.982	1.989	0.166	0.109	0.097
ø50	2.883	2.893	0.242	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

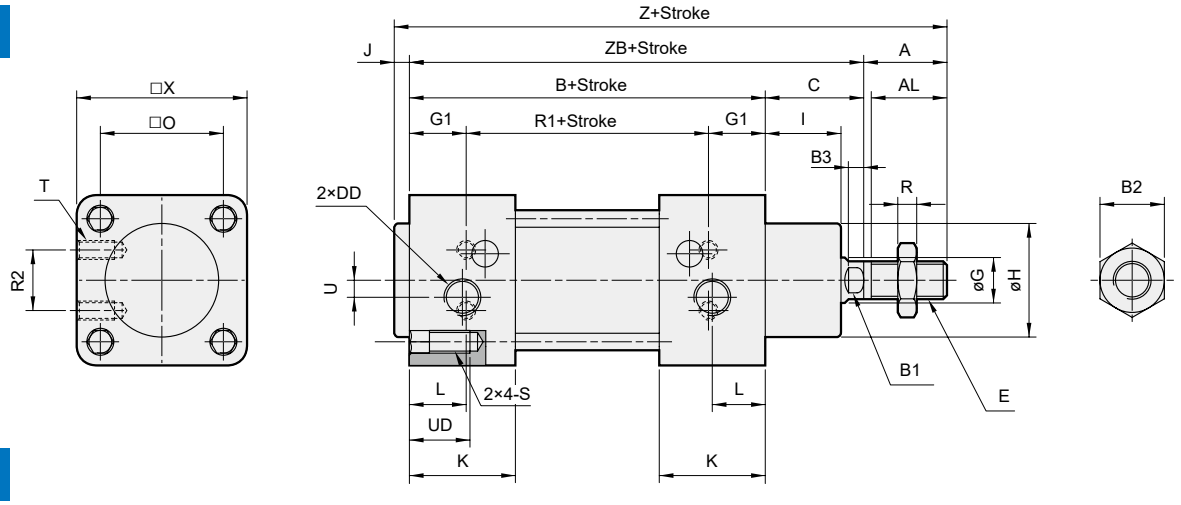
Model	LB	CA	CB	CDB	FAC/FBC	TC	YP	Pin CA / CB
Tube I.D.								
ø32	0.060	0.176	0.138	0.158	0.192	0.128	0.090	0.032
ø40	0.072	0.274	0.230	0.238	0.250	0.308	0.153	0.052
ø50	0.160	0.368	0.338	0.418	0.482	0.370	0.317	0.060
ø63	0.180	0.682	0.540	0.526	0.626	0.690	0.317	0.122
ø80	0.370	1.196	1.000	1.055	1.436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



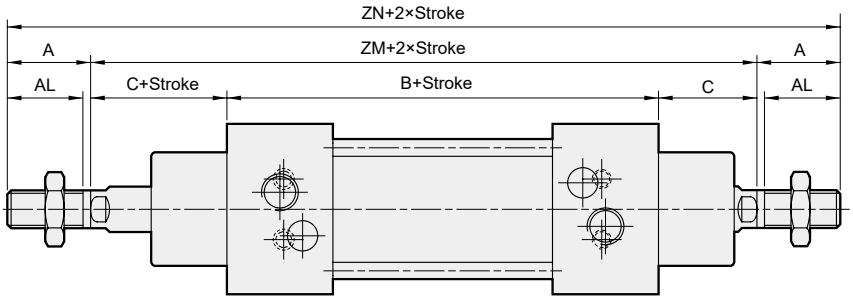
No.	Accessories	Material	Page link
1	Mounting accessories LB	SUS316	
2	Mounting accessories CA	SUS316	
3	Mounting accessories CB+PIN	SUS316	,
4	Mounting accessories CDB	SUS316	
5	Mounting accessories FAC/FBC	SUS316	
6	Mounting accessories TC	SUS316	
7	Accessories YP (Y+PIN)	SUS316	

No.	Accessories	Material	Page link
8	Floating joint MFC	Carbon steel	
9	Floating joint MFCS	Carbon steel	
10	Female rod ends PHS-S	SUS	
11	Fitting PC (PISCO)	—	
12	Speed controller JSC (PISCO)	—	
13	Sensor switch RCV+BV125	—	
14	Protective bellows kit	NBR	—

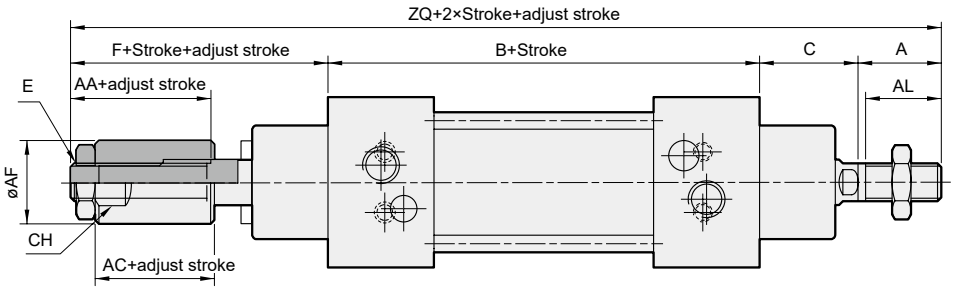
11



21

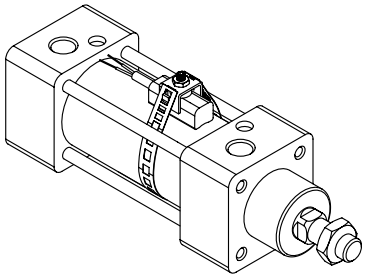


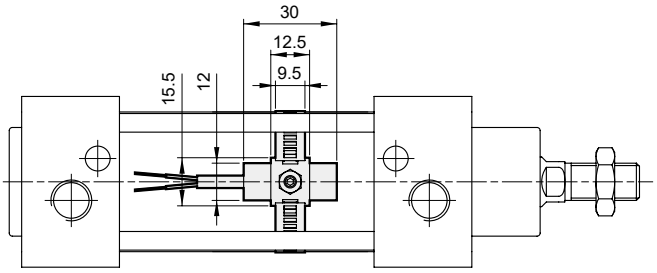
27



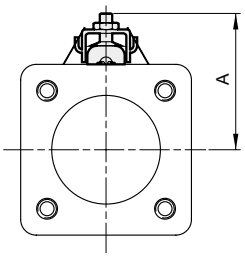
Code / Tube I.D.	A	AA	AC	AF	AL	B	B1	B2	B3	C	CH	DD	E	F	G	G1	H	I	J	K	L	O	R	R1	R2
32	22	28	20	20	20	94	10	17	4	26	17	G1/8	M10×1.25	48	12	15	30	20	4	28	14	32.5	6	64	16
40	24	30.5	24	30	22	105	13	19	6	30	27	G1/4	M12×1.25	54	16	17.5	35	22	4	31.5	16	38	7	70	21
50	32	28	19	40	30	106	17	24	5.5	37	36	G1/4	M16×1.5	59	20	16	40	28	4	31.5	21	46.5	8	74	24
63	32	28	19	40	30	121	17	24	5.5	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	37	128	22	30	9	46	46	G3/8	M20×1.5	81	25	18	45	34	4	36	23	72	9	92	34
100	40	45	35	50	37	138	22	30	9	51	46	G1/2	M20×1.5	86	25	19	55	38	4	41	26	89	9	100	58

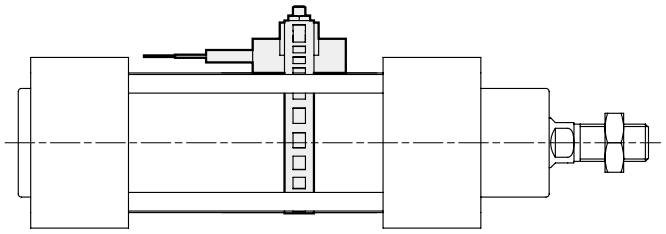
Code / Tube I.D.	S	T	U	UD	X	Z	ZB	ZM	ZN	ZQ
32	M6×1.0	M5×0.8×10L	4.5	16	45	146	120	146	190	190
40	M6×1.0	M6×1.0×10L	5.5	16	55	163	135	165	213	213
50	M8×1.25	M8×1.25×12L	8.5	16	65	179	143	180	244	234
63	M8×1.25	M8×1.25×12L	8.5	16	80	194	158	195	259	249
80	M10×1.5	M10×1.5×15L	8.5	16	95	218	174	220	300	295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



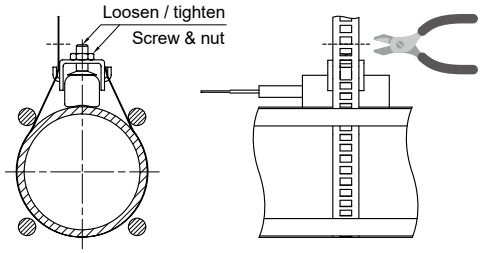


Code / Tube I.D.	Sensor switch	A
32	RCV + BV125 (Band)	41
40		46
50		50
63		52
80		65
100		75



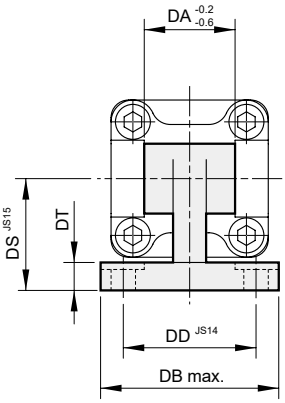


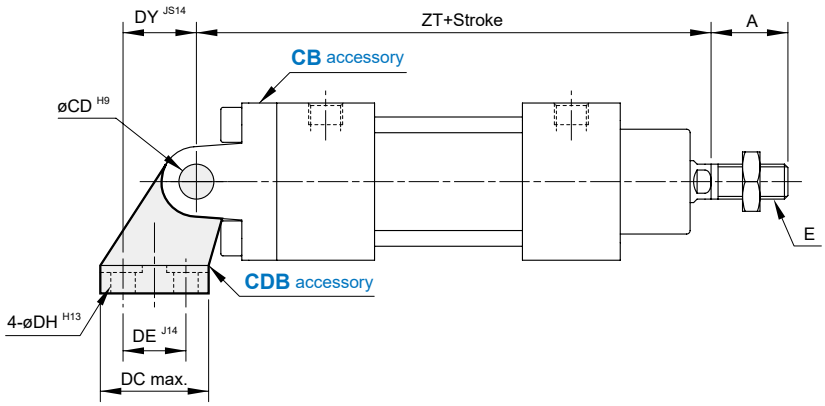
Mounting clamp



Mounting accessories

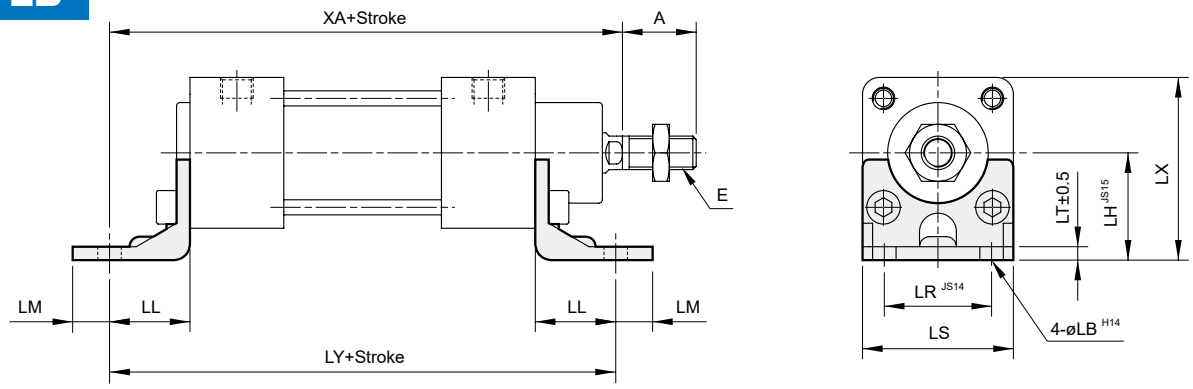
CDB CB+Pin (Extra purchase)



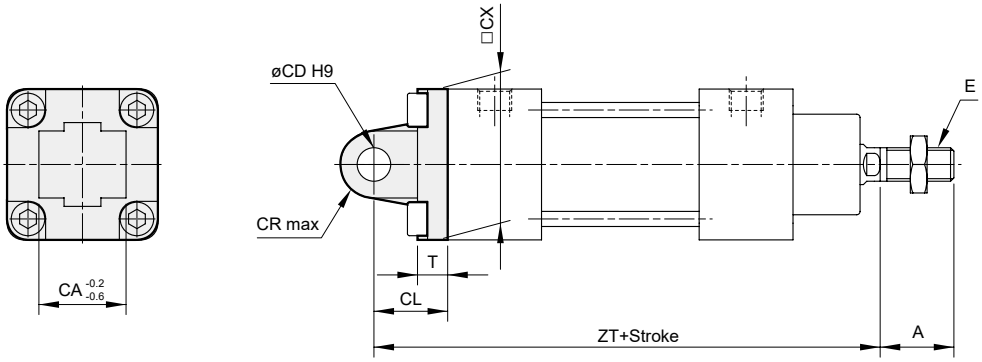


Code / Tube I.D.	A	CD	DA	DB	DC	DD	DE	DH	DS	DT	DY	E	ZT
32	22	10	26	51	31	38	18	6.6	32	8	21	M10×1.25	142
40	24	12	28	54	35	41	22	6.6	36	10	24	M12×1.25	160
50	32	12	32	65	45	50	30	9	45	12	33	M16×1.5	170
63	32	16	40	67	50	52	35	9	50	12	37	M16×1.5	190
80	40	16	50	86	60	66	40	11	63	14	47	M20×1.5	210
100	40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

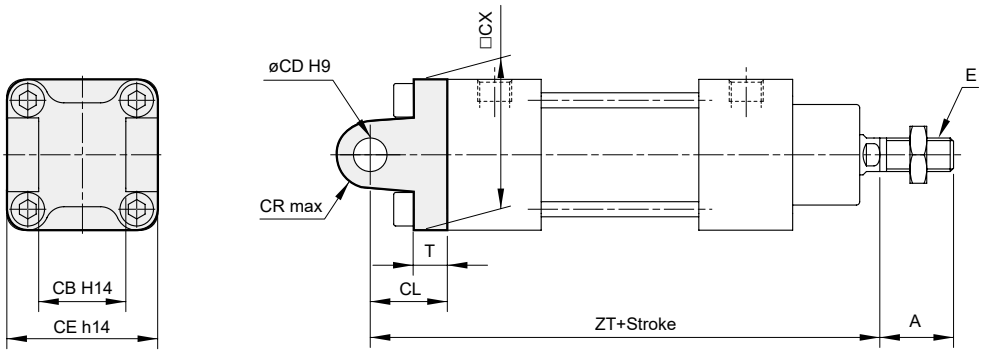
LB



CA

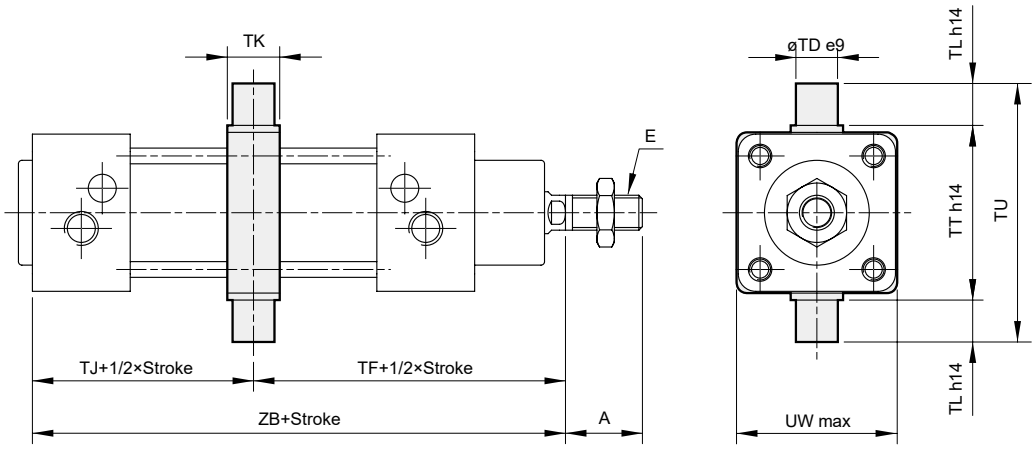


CB



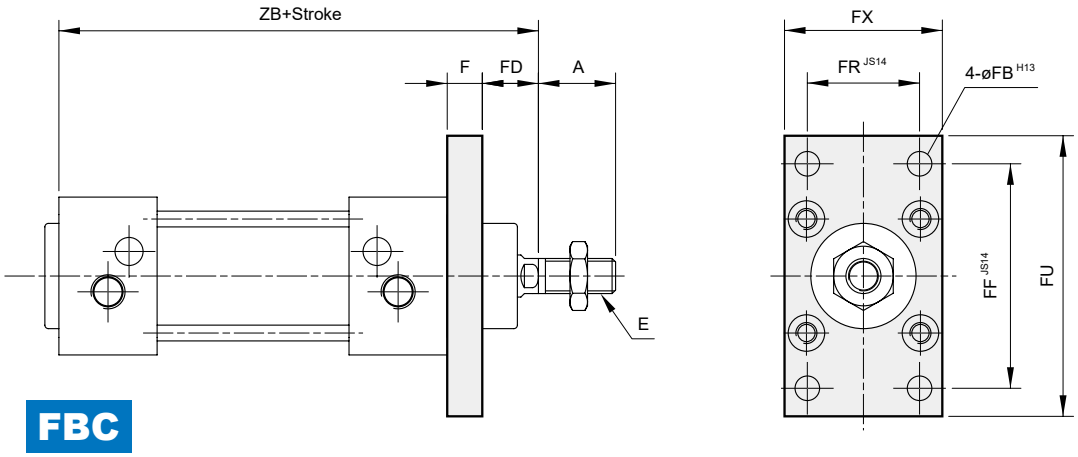
Code / Tube I.D.	A	CA	CB	CD	CE	CL	CR	CX	E	LB	LH	LL	LM	LR	LS	LT	LX	LY	T	XA	ZT
32	22	26	26	10	45	22	10	45	M10×1.25	7	32	24	11	32	45	4	54.5	142	10	144	142
40	24	28	28	12	52	25	12	55	M12×1.25	9	36	28	8	36	52	4	63.5	161	10	163	160
50	32	32	32	12	60	27	12	65	M16×1.5	9	45	32	15	45	65	5	77.5	170	10	175	170
63	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

TC

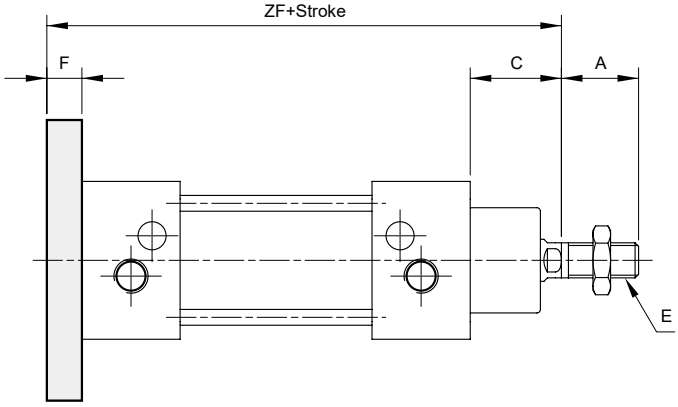


Code / Tube I.D.	A	E	TD	TF	TJ	TK	TL	TT	TU	UW	ZB
32	22	M10×1.25	12	73	47	15	12	50	74	46	120
40	24	M12×1.25	16	82.5	53	20	16	63	95	59	135
50	32	M16×1.5	16	90	53	20	16	75	107	69	143
63	32	M16×1.5	20	98	61	25	20	90	130	84	158
80	40	M20×1.5	20	110	64	25	20	110	150	102	174
100	40	M20×1.5	25	120	69	30	25	132	182	125	189

FAC

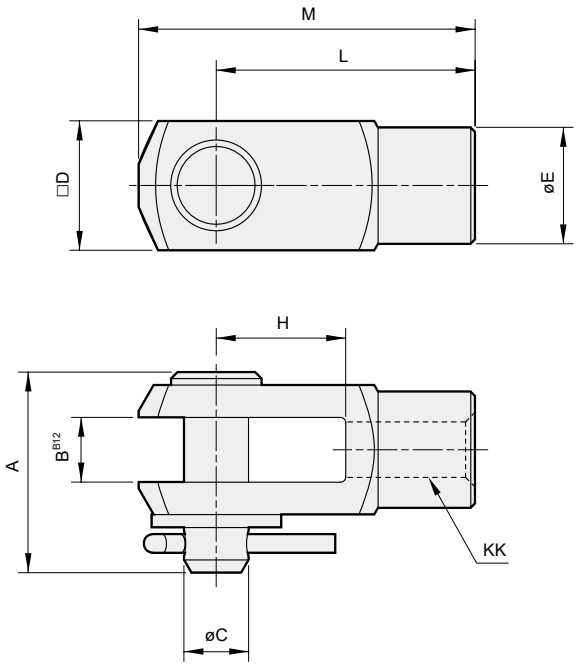


FBC



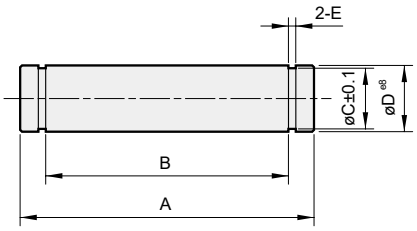
Code / Tube I.D.	A	C	E	F	FB	FD	FF	FR	FU	FX	ZB	ZF
32	22	26	M10×1.25	10	7	16	64	32	80	45	120	130
40	24	30	M12×1.25	10	9	20	72	36	90	52	135	145
50	32	37	M16×1.5	12	9	25	90	45	110	65	143	155
63	32	37	M16×1.5	12	9	25	100	50	120	75	158	170
80	40	46	M20×1.5	16	12	30	126	63	150	95	174	190
100	40	51	M20×1.5	16	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	52	M10×1.25
40	38	12	12	24	20	24	48	62	M12×1.25
50	49	16	16	32	26	32	64	83	M16×1.5
63	49	16	16	32	26	32	64	83	M16×1.5
80	57.5	20	20	40	34	40	80	105	M20×1.5
100	57.5	20	20	40	34	40	80	105	M20×1.5

PIN



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

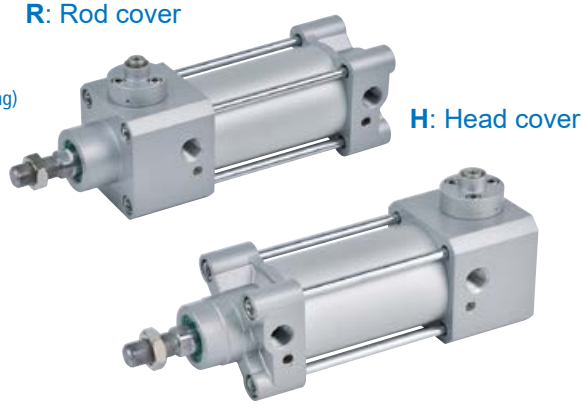
MCQV3L series

END LOCK CYLINDER

Technical data

Caution for safety
(Read before installing)

R: Rod cover



H: Head cover

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		MCQV3L	
Tube I.D. (mm)		63	80
Medium		Air	
Operating perssure range		0.15~1 MPa	
Proof pressure		1.5 MPa	
Ambient temperature		-5~+60°C (No freezing)	
Available speed range		50~500 mm/sec	
Holding force		Max. 2710 N	Max. 3690 N
Backlash		1mm or less	
Sensor switch		RDC(V), RQC(V), RDT, RQT, RCA	
Sensor switch holder	R*C(V)	DT7-1	DT7-2
	R*T	DT-1	DT-2
	RCA	HV2	HV3

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

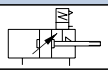
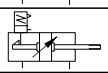
* Please contact us if the stroke is out of specification.

Order example

MCQV3L — 11 — 63 — 100M — R — T

- MODEL
- 1: Single rod
- TUBE I.D.
- STROKE
- M: Magnet
- END LOCK TYPE
  - R: Rod cover
  - H: Head cover
- TYPE
  - T: Add "T" when both M and TA / TB are selected.
  - * When both magnet (M) and mounting accessories (TA or TB) are selected, please add the suffix "T" at the end of the model number.

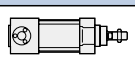
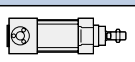
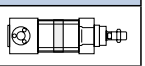
STYLE

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

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

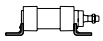
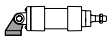
Cylinder weight

Unit: kg

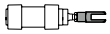
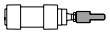
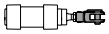
Model		Basic weight MCQV3L-11	Basic weight (magnet) MCQV3L-11	Stroke 25 mm MCQV3L-11
Tube I.D.	End lock type			
ø63	R	2.42	2.45	0.13
	H	2.48	2.51	0.13
ø80	R	4.08	4.13	0.2
	H	4.14	4.19	0.2

* Accessories weight please refer to MCQV3 series.

Accessories & Connector

	Accessories						
Code	**LB** (Purchase 2 pcs)	**CA**	**CA2**	**CB**	**CB2**	**CDB** (Purchase CB+PIN)	**CDB2** (Purchase CB2+PIN)
Mounting / Tube I.D.							
ø63	**LB-Q2-63**	**CA-Q2-63**	**CA2-Q2-63**	**CB-Q2-63**	**CB2-Q2-63**	**CDB-Q2-63**	**CDB2-Q2-63**
ø80	**LB-Q2-80**	**CA-Q2-80**	**CA2-Q2-80**	**CB-Q2-80**	**CB2-Q2-80**	**CDB-Q2-80**	**CDB2-Q2-80**

	Accessories				Rod nut
Code	**FAC**	**FBC**	**FAC2**	**FBC2**	**NUT**
Mounting / Tube I.D.					
ø63	**FAC-Q2-63**		**FAC2-Q2-63**		**NUT-M16x1.5x8Hx24B**
ø80	**FAC-Q2-80**		**FAC2-Q2-80**		

	Accessories ⚠ Factory-installed, not available for separate purchase or field assembly			Connector		
Code	**TA**	**TB**	**TC**	**Y**	**I**	**YS** (Y+Floating pin)
Mounting / Tube I.D.						
ø63	**TC-Q2-63**			**Y-Q2-50**	**I-Q2-50**	**YS-Q2-50**
ø80	**TC-Q2-80**			**Y-Q2-80**	**I-Q2-80**	**YS-Q2-80**

Pin

Applicable	YS connector	Y&I connector	CA&CB accessories
Code	**PIN-S**	**PIN-Y-P** (with split pin)	**PIN-CB-P** (with split pin)
Fig / Tube I.D.			
ø63	**PIN-Q2-50-S**	**PIN-Q2-50-2-P**	**PIN-Q2-63-1-P**
ø80	**PIN-Q2-80-S**	**PIN-Q2-80-2-P**	**PIN-Q2-80-1-P**

* Dimension please refer to MCQV3 series .

Order example of self-assembled

The tube I.D. ø63 of LB accessories, Y connector and pin.

No.	Order number	Qty
1	**LB-Q2-63**	2
2	**Y-Q2-50**	1
3	**PIN-Q2-50-2-P**	1

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

Order example of factory assembled

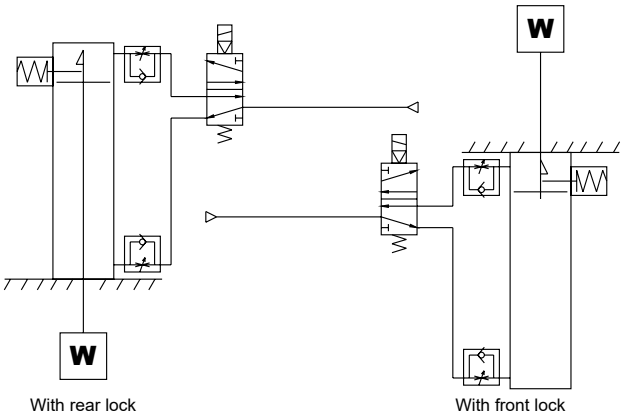
⚠ Cylinders and accessories are distinguished by the symbol " + ".

MCQV3L – Standard model no. + TA

CYLINDER ACCESSORIES

Use recommended air pressure circuit

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



Precautions

❶ 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.

❷ Do not adjust or mount the cylinder when the lock is on.

❸ The operation load do not exceed 50% of the cylinder maximum output.

❹ Do not operate a workpiece with multiple end-lock cylinders simultaneously.

❺ 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.

❻ Operate the lock only when the cylinder is at the either end-position of stroke.

❼ The air supply must be higher than 0.15 MPa to operate the lock.

❽ The lock will be on when automatically when the pressure of the lock is lower than 0.1 MPa or less.

❾ 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.

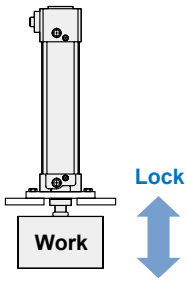
ⓒ When the silencer of the solenoid valve is blocked or clogged.

❿ 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.

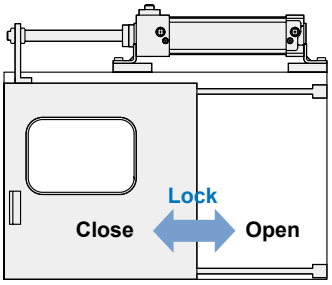
Maintains the cylinder's original position even if the air supply is interrupted.

Prevention of dropping at the rising end

With rear lock



Locking of door With front lock



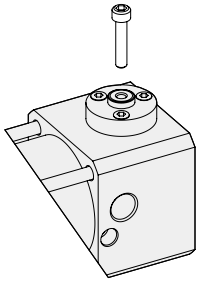
Manual Lock Releasing

❶ 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.

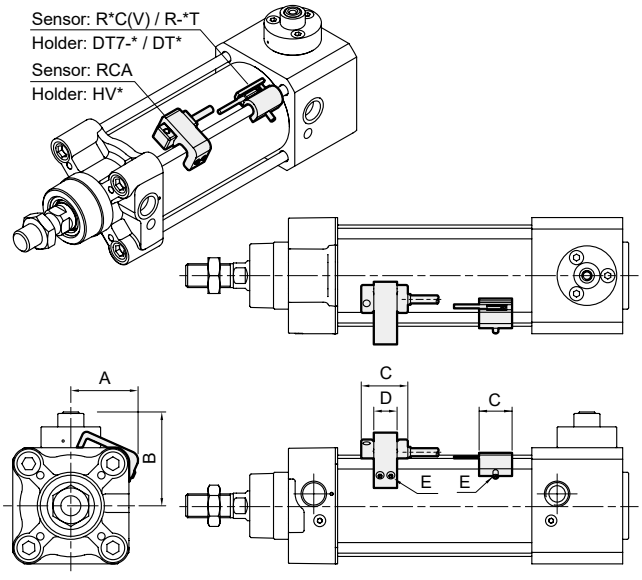
The bolt size, inner spring pulling force and the stroke of locking rod are listed below.

MODEL	Thread size	Pulling force	Stroke (mm)
MCQV3L-63	M6×1.0×20 L	24.5 N	4
MCQV3L-80	M6×1.0×20 L	24.5 N	5

❷ 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

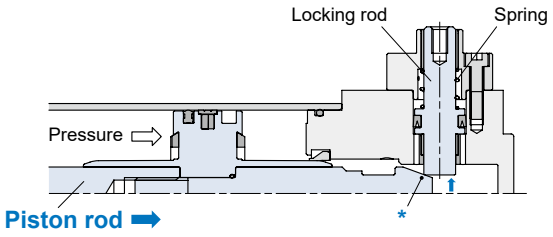


Code / Tube I.D.	Sensor switch	Holder	A	B	C	D	E
63	R*C(V)	DT7-1	37	50	25	–	M4×12L
	R*T	DT-1					
	RCA	HV2	42.5	50	26	13	M4×10L
80	R*C(V)	DT7-2	46.5	60	25	–	M4×12L
	R*T	DT-2					
	RCA	HV3	49.5	60	26	13	M4×10L

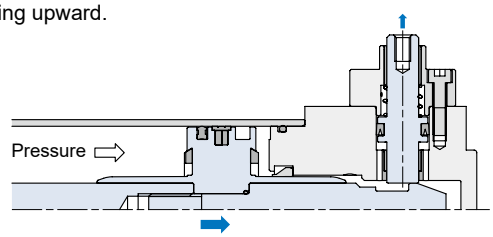
Working Principle

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

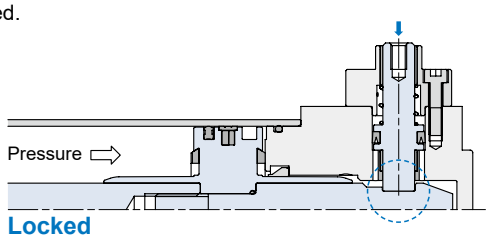
❶ When the air pressure is input from front cap, the piston will move backward. After the piston nears the end of the stroke, the slope of chamfered rod (the position of *mark) will touch the locking rod.



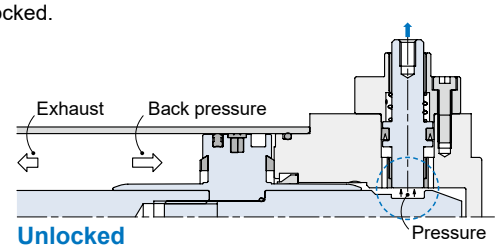
❷ The locking rod will be guided with the slope and keeps moving upward.



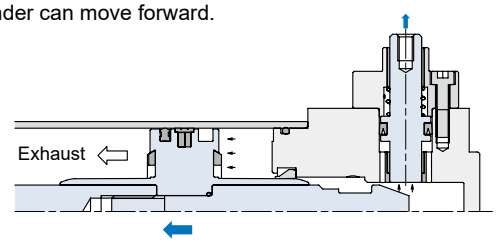
❸ The locking rod will be pushed into the locking slot of the piston rod by the spring force. At this time, the cylinder is locked.



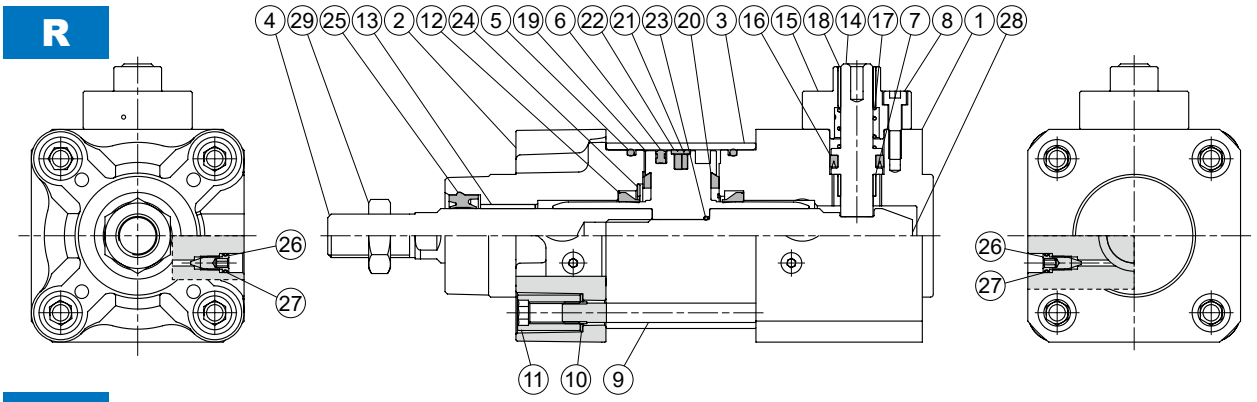
❹ When the air pressure is input from rear cap, the piston will start moving forward. At the same time, the locking rod will be pushed up by the compressed air and make the piston rod unlocked.



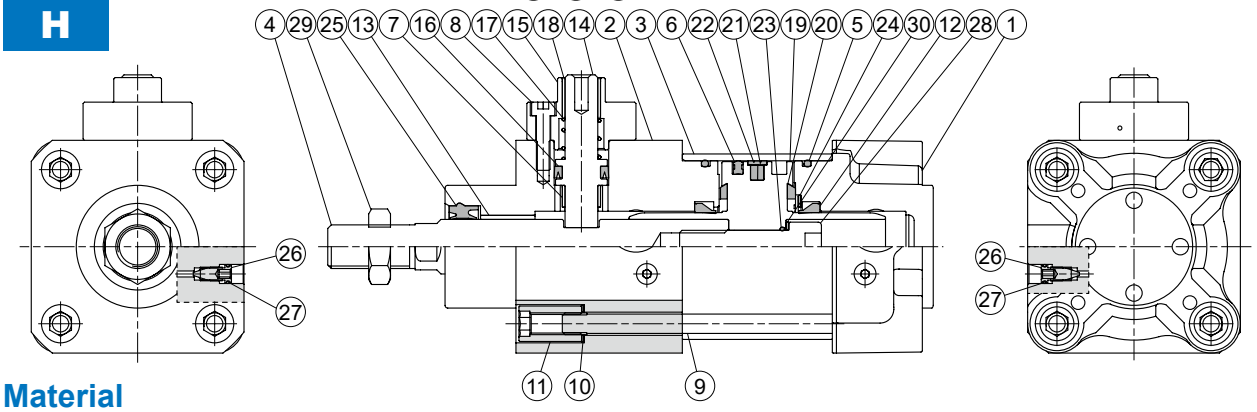
❺ As the locking rod is no longer locking the piston rod, the cylinder can move forward.



R



H



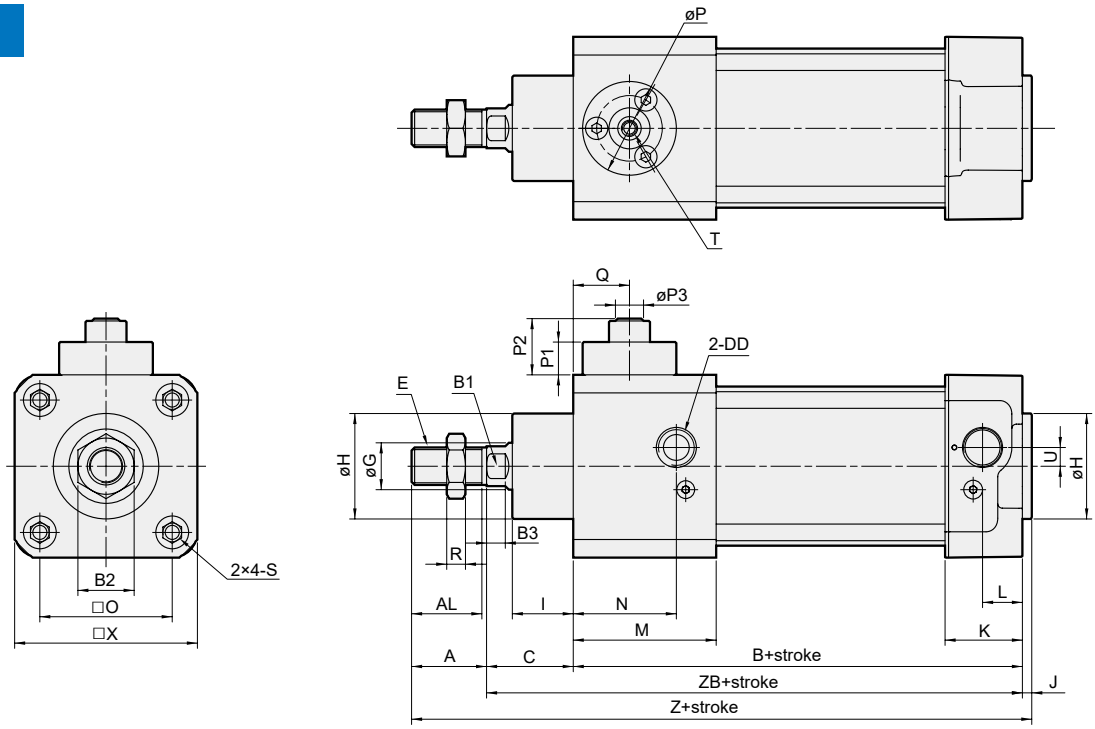
Material

No.	Part name	Material	Q'y	Repair kits (inclusion)
1	Head cover	Aluminum alloy	1	
2	Rod cover	Aluminum alloy	1	
3	Cylinder tube	Aluminum alloy	1	
4	Piston rod	Carbon steel	1	
5	O-ring	NBR	2	●
6	Piston packing	NBR	1	●
7	Bush	Bearing alloy	1	
8	Hex bolt	Carbon steel	3	
9	Tie rod	Carbon steel	4	
10	Washer	Carbon steel	8	
11	Tie rod nut	Carbon steel	8	
12	Cushion packing	NBR	2	●
13	Bush	Bearing alloy	1	
14	Locking rod	Carbon steel	1	
15	Fixing holder	Aluminum alloy	1	
16	Piston ring	NBR	1	●
17	Single action spring	Stainless steel	1	
18	Guide rod bushing	Copper alloy	1	
19	Piston	Aluminum alloy	1	
20	Cushion pad	NBR	2	
21	Magnet ring	Magnet material	1	
22	Wear ring	Resin	1	
23	O-ring	NBR	1	●
24	Washer	Carbon steel	1	
25	Rod packing	NBR	1	
26	Needle valve	Copper alloy	1	
27	O-ring	NBR	2	●
28	Piston nut	Carbon steel	2	
29	Piston rod nut	Carbon steel	1	
30	Cushion pad	NBR	1	

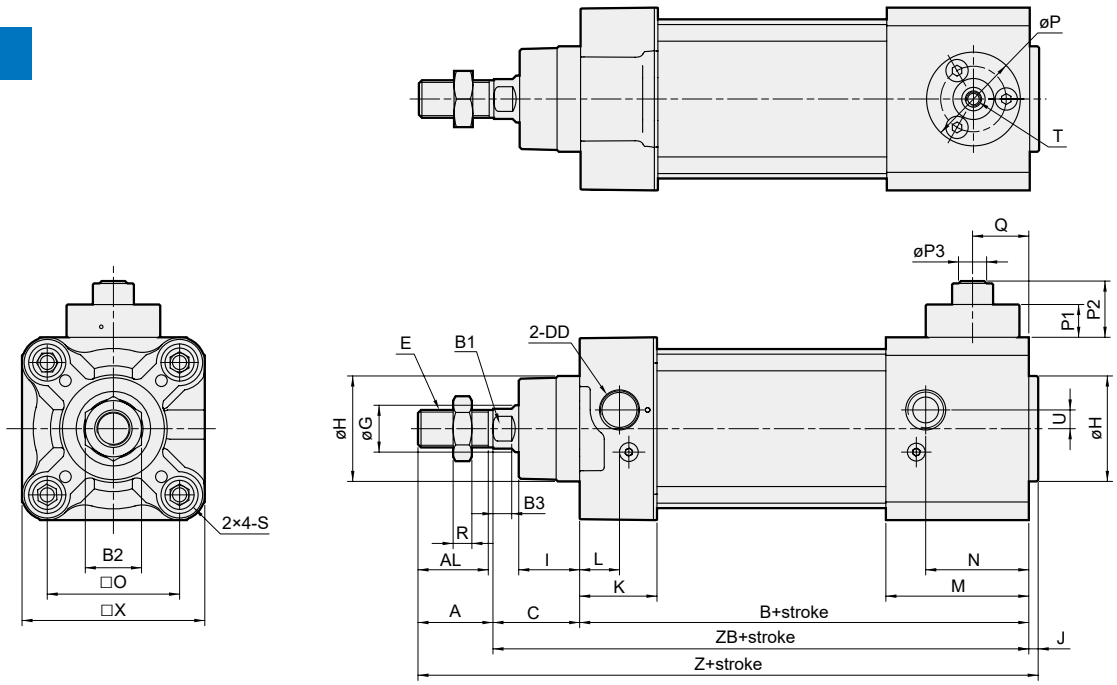
Repair kits

Tube I.D.	Repair kits
ø63	**PS-MCQV3L-63**
ø80	**PS-MCQV3L-80**

R



H



Code / Tube I.D.	A	AL	B	B1	B2	B3	C	DD	E	G	H	I	J	K	L	M	N	O	P	P1	P2	P3	Q	R
63	32	30	149	17	24	8	37	G3/8	M16×1.5	20	45	26	4	33	17	61	44	56.5	40	14	24	12	24	8
80	40	38	168	22	30	10	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

MCQI3 series

ISO 15552 **STANDARD** PROFILE **CYLINDER**

mindman

Features
Video
Special spec
Rod end shape
Technical data
Caution for safety
(Read before installing)



Features

■ Non lubrication

Special housing and bushing enables self lubrication of piston rod.

■ High quality long service life

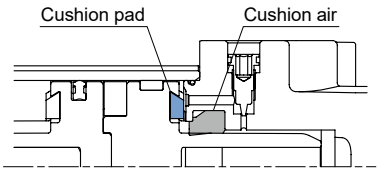
Hard anodised aluminium cylinder tubes offer a high resistance to corrosion and low internal friction.

■ Automatic air cushioning

Pneumatic cushioning at both ends without adjusting.

■ Low noise level

Add cushion pad to reduce impact sound and vibration.



■ 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.

Table for standard stroke

Tube I.D.	Stroke (mm)	Max. stroke(mm)	
		Style 11	Style 21/27
ø32,40	50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400, 450, 500, 600, 700, 800	1800	850
ø50,63		2000	950
ø80,100		2500	1200

* Please contact us if the stroke is out of specification.

Specification

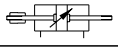
Model	MCQI3	
Tube I.D. (mm)	32, 40, 50, 63	80, 100
Medium	Air	
Operating perssure range	0.05~1 MPa	
Proof pressure	1.5 MPa	
Ambient temperature	-5~+60°C (No freezing)	
Available speed range	50~500 mm/sec	
Sensor switch	RDT, RQT, RCI	
Needle valve tightening torque	2~2.5 kgf·cm	4~4.5 kgf·cm

Order example

MCQI3 — 11 — 63 — 100 M — 10 — S — T

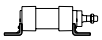
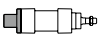
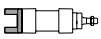
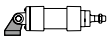
- MCQI3 — MODEL
- 11 — **1**: Single rod, **2**: Double rod
- 63 — TUBE I.D.
- 100 — STROKE
- M — **M**: Magnet
- 10 — ADJUSTABLE STROKE
  * Only for STYLE 27.
- S — CUSHION TYPE
  Blank: Cushion air (Adjustable)
  S: Cushion air (Automatic)
- T — TYPE
  T: Add "T" when both M and TA / TB are selected.
  * When both magnet (M) and mounting accessories (TA or TB) are selected, please add the suffix "T" at the end of the model number.

STYLE

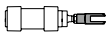
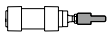
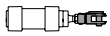
Code		Symbol	Description
1	1		Double acting / Male thread
2	1		Double rod / Double acting / Male thread
2	7		Double rod / Adjustable male thread

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

Accessories & Connector

	Accessories						
Code	LB (Purchase 2 pcs)	CA	CA2	CB	CB2	CDB (Purchase CB+PIN)	CDB2 (Purchase CB2+PIN)
Mounting / Tube I.D.							
ø32	LB-Q2-32	CA-Q2-32	CA2-Q2-32	CB-Q2-32	CB2-Q2-32	CDB-Q2-32	CDB2-Q2-32
ø40	LB-Q2-40	CA-Q2-40	CA2-Q2-40	CB-Q2-40	CB2-Q2-40	CDB-Q2-40	CDB2-Q2-40
ø50	LB-Q2-50	CA-Q2-50	CA2-Q2-50	CB-Q2-50	CB2-Q2-50	CDB-Q2-50	CDB2-Q2-50
ø63	LB-Q2-63	CA-Q2-63	CA2-Q2-63	CB-Q2-63	CB2-Q2-63	CDB-Q2-63	CDB2-Q2-63
ø80	LB-Q2-80	CA-Q2-80	CA2-Q2-80	CB-Q2-80	CB2-Q2-80	CDB-Q2-80	CDB2-Q2-80
ø100	LB-Q2-100	CA-Q2-100	CA2-Q2-100	CB-Q2-100	CB2-Q2-100	CDB-Q2-100	CDB2-Q2-100

	Accessories				Rod nut
Code	FAC	FBC	FAC2	FBC2	NUT
Mounting / Tube I.D.					
ø32	FAC-Q2-32		FAC2-Q2-32		NUT-M10x1.25x5Hx17B
ø40	FAC-Q2-40		FAC2-Q2-40		NUT-M12x1.25x6Hx19B
ø50	FAC-Q2-50		FAC2-Q2-50		NUT-M16x1.5x8Hx24B
ø63	FAC-Q2-63		FAC2-Q2-63		
ø80	FAC-Q2-80		FAC2-Q2-80		NUT-M20x1.5x10Hx30B
ø100	FAC-Q2-100		FAC2-Q2-100		

	Accessories ⚠ Factory-installed, not available for separate purchase or field assembly			Connector		
Code	TA	TB	TC	Y	I	YS (Y+Floating pin)
Mounting / Tube I.D.						
ø32	TC-Q3-32			Y-Q2-32	I-Q2-32	YS-Q2-32
ø40	TC-Q3-40			Y-Q2-40	I-Q2-40	YS-Q2-40
ø50	TC-Q3-50			Y-Q2-50	I-Q2-50	YS-Q2-50
ø63	TC-Q3-63					
ø80	TC-Q3-80			Y-Q2-80	I-Q2-80	YS-Q2-80
ø100	TC-Q3-100					

Pin

Applicable	YS connector	Y&I connector	CA&CB accessories
Code	PIN-S	PIN-Y-P (with split pin)	PIN-CB-P (with split pin)
Fig / Tube I.D.			
ø32	PIN-Q2-32-S	PIN-Q2-32-2-P	PIN-Q2-32-1-P
ø40	PIN-Q2-40-S	PIN-Q2-40-2-P	PIN-Q2-40-1-P
ø50	PIN-Q2-50-S	PIN-Q2-50-2-P	PIN-Q2-50-1-P
ø63			PIN-Q2-63-1-P
ø80	PIN-Q2-80-S	PIN-Q2-80-2-P	PIN-Q2-80-1-P
ø100			PIN-Q2-100-1-P

Order example of self-assembled

The tube I.D. ø40 of LB accessories, Y connector and pin.

No.	Order number	Qty
1	LB-Q2-40	2
2	Y-Q2-40	1
3	PIN-Q2-40-2-P	1

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

Order example of factory assembled

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

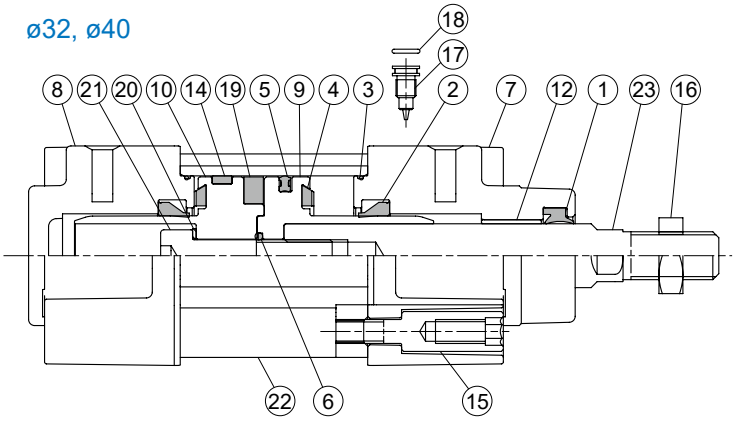
MCQI3 — Standard model no. + TA

CYLINDER ACCESSORIES

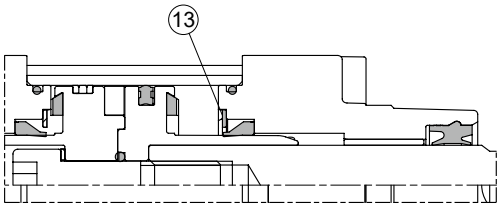
Single rod 11 type

Cushion air (Adjustable)

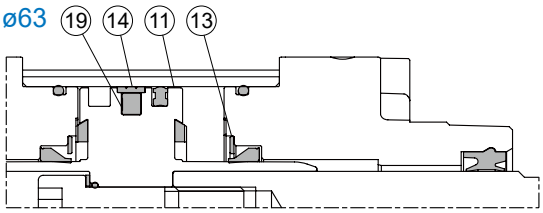
ø32, ø40



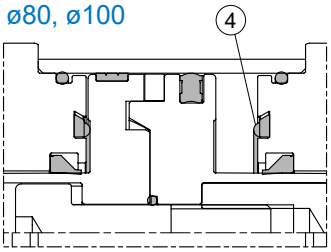
ø50



ø63



ø80, ø100



Material

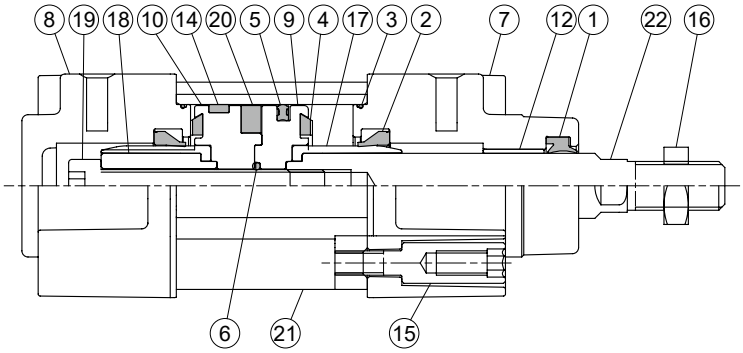
No.	Part name	Material	Q'y	Component parts (inclusion)	Repair kits (inclusion)	Note
1	Rod packing	NBR / TPU	1	●	●	ø50, 63: TPU
2	Cushion packing	NBR	2	●	●	
3	O-ring	NBR	2	●	●	
4	Cushion pad	NBR	2	●	●	
5	Piston packing	NBR	1	●	●	
6	O-ring	NBR	1	●	●	
7	Rod cover	Aluminum alloy	1	●		
8	Head cover	Aluminum alloy	1	●		
9	Piston #1	Aluminum alloy	1	●		
10	Piston #2	Aluminum alloy	1	●		
11	Piston	Aluminum alloy	1	●		Only for ø63
12	Bush	Bearing alloy	1	●		
13	Washer	Carbon steel	2	●		Only for ø50, ø63
14	Wear ring	Resin	1	●		
15	Screw	Carbon steel	8	●		
16	Piston rod nut	Carbon steel	1	●		
17	Needle valve	Resin	2	●		
18	O-ring	NBR	2	●		
19	Magnet ring	Magnet material	1	◎		◎ Option
20	Washer	Carbon steel	1	●		
21	Hex bolt	Carbon steel	1	●		
22	Cylinder tube	Aluminum alloy	1			
23	Piston rod *1	Carbon steel	1			

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

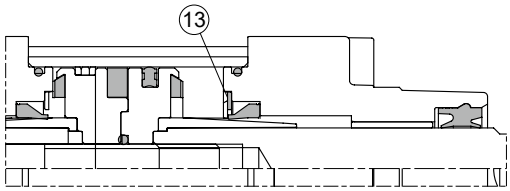
Single rod 11 type

Cushion air (Automatic)

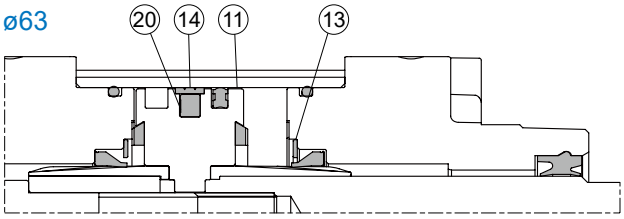
ø32, ø40



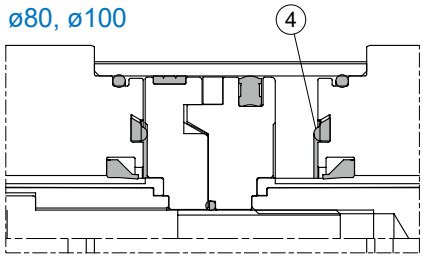
ø50



ø63



ø80, ø100



Material

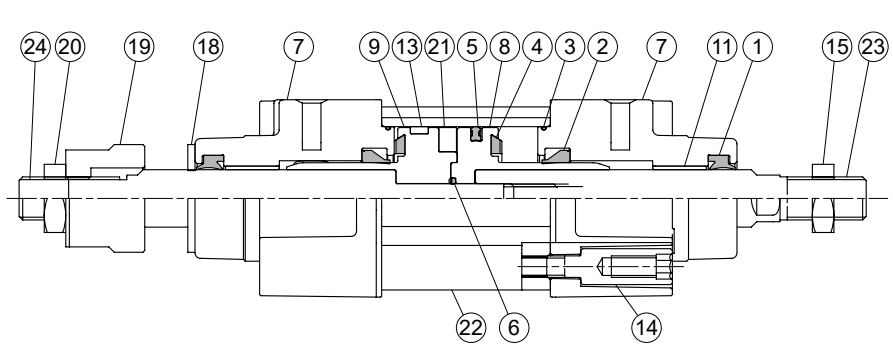
No.	Part name	Material	Q'y	Component parts (inclusion)	Repair kits (inclusion)	Note
1	Rod packing	NBR / TPU	1	●	●	ø50, 63: TPU
2	Cushion packing	NBR	2	●	●	
3	O-ring	NBR	2	●	●	
4	Cushion pad	NBR	2	●	●	
5	Piston packing	NBR	1	●	●	
6	O-ring	NBR	1	●	●	
7	Rod cover	Aluminum alloy	1	●		
8	Head cover	Aluminum alloy	1	●		
9	Piston #1	Aluminum alloy	1	●		
10	Piston #2	Aluminum alloy	1	●		
11	Piston	Aluminum alloy	1	●		Only for ø63
12	Bush	Bearing alloy	1	●		
13	Washer	Carbon steel	2	●		Only for ø50, ø63
14	Wear ring	Resin	1	●		
15	Screw	Carbon steel	8	●		
16	Piston rod nut	Carbon steel	1	●		
17	Shock absorber axis	Resin	2	●		
18	Piston nut	Aluminum alloy	1	●		
19	Hex bolt	Carbon steel	1	●		
20	Magnet ring	Magnet material	1	◎		◎ Option
21	Cylinder tube	Aluminum alloy	1			
22	Piston rod *1	Carbon steel	1			

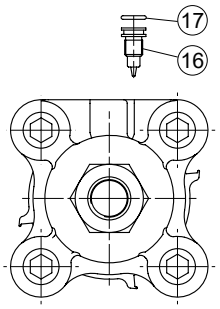
*1. When customized material is bearing steel, only two-side across flat (wrench flat) is available.

Double rod 21 / 27 type

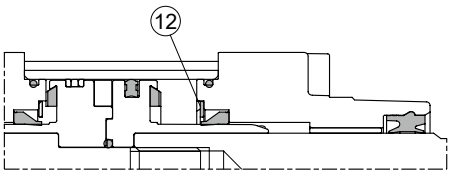
Cushion air (Adjustable)

ø32, ø40

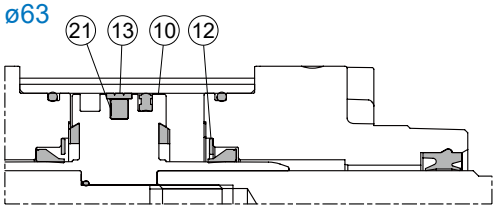




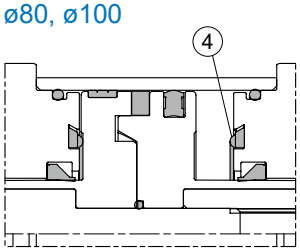
ø50



ø63



ø80, ø100



Material

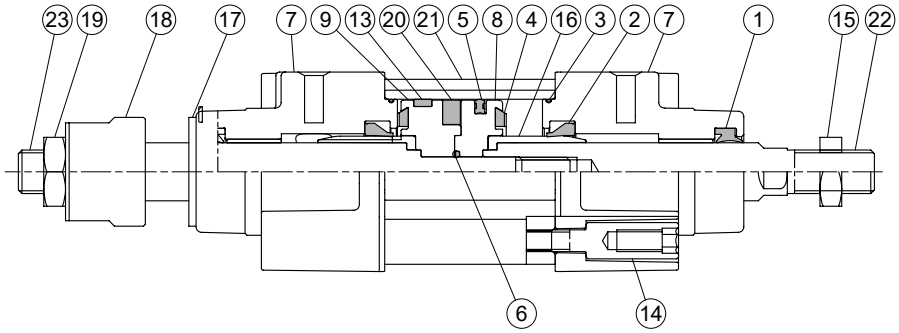
No.	Part name	Material	Q'y	Component parts (inclusion)		Repair kits (inclusion)	Note
				21 type	27 type		
1	Rod packing	NBR / TPU	2	●	●	●	ø50, 63: TPU
2	Cushion packing	NBR	2	●	●	●	
3	O-ring	NBR	2	●	●	●	
4	Cushion pad	NBR	2	●	●	●	
5	Piston packing	NBR	1	●	●	●	
6	O-ring	NBR	1	●	●	●	
7	Rod cover	Aluminum alloy	2	●	●		
8	Piston #1	Aluminum alloy	1	●	●		
9	Piston #2	Aluminum alloy	1	●	●		
10	Piston	Aluminum alloy	1	●	●		Only for ø63
11	Bush	Bearing alloy	2	●	●		
12	Washer	Carbon steel	2	●	●		Only for ø50, ø63
13	Wear ring	Resin	1	●	●		
14	Screw	Carbon steel	8	●	●		
15	Piston rod nut	Carbon steel	1	●	●		
16	Needle valve	Resin	2	●	●		
17	O-ring	NBR	2	●	●		
18	Gasket	PU	1		●		
19	Adjustable nut	Carbon steel	1		●		
20	Hex nut	Carbon steel	1		●		
21	Magnet ring	Magnet material	1	◎	◎		◎ Option
22	Cylinder tube	Aluminum alloy	1				
23	Piston rod #1 *1	Carbon steel	1				
24	Piston rod #2 *1	Carbon steel	1				

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

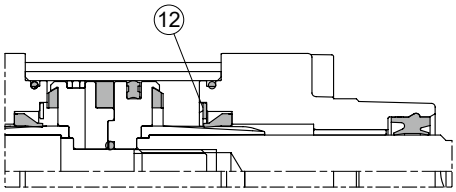
Double rod 21 / 27 type

Cushion air (Automatic)

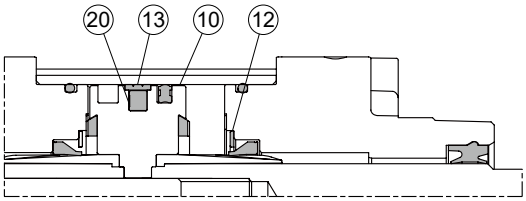
ø32, ø40



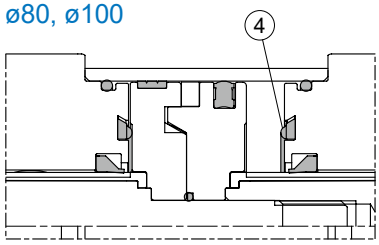
ø50



ø63



ø80, ø100



Material

No.	Part name	Material	Q'y	Component parts (inclusion)		Repair kits (inclusion)	Note
				21 type	27 type		
1	Rod packing	NBR / TPU	2	●	●	●	ø50, 63: TPU
2	Cushion packing	NBR	2	●	●	●	
3	O-ring	NBR	2	●	●	●	
4	Cushion pad	NBR	2	●	●	●	
5	Piston packing	NBR	1	●	●	●	
6	O-ring	NBR	1	●	●	●	
7	Rod cover	Aluminum alloy	2	●	●		
8	Piston #1	Aluminum alloy	1	●	●		
9	Piston #2	Aluminum alloy	1	●	●		
10	Piston	Aluminum alloy	1	●	●		Only for ø63
11	Bush	Bearing alloy	2	●	●		
12	Washer	Carbon steel	2	●	●		Only for ø50, ø63
13	Wear ring	Resin	1	●	●		
14	Screw	Carbon steel	8	●	●		
15	Piston rod nut	Carbon steel	1	●	●		
16	Shock absorber axis	Resin	2	●	●		
17	Gasket	PU	1		●		
18	Adjustable nut	Carbon steel	1		●		
19	Hex nut	Carbon steel	1		●		
20	Magnet ring	Magnet material	1	◎	◎		◎ Option
21	Cylinder tube	Aluminum alloy	1				
22	Piston rod #1 *1	Carbon steel	1				
23	Piston rod #2 *1	Carbon steel	1				

*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 S

- MCQI3 — MODEL
- 2 — Blank: Single rod / **2**: Double rod
- 63 — TUBE I.D. **32, 40, 50 63, 80, 100**
- M — **M**: Magnet
- S — Blank: Cushion air (Adjustable) / **S**: Cushion air (Automatic)

Order example of repair kits

PS — MCQI3 — 2 — 63 S — XB6

- MCQI3 — MODEL
- 2 — Blank: Single rod / **2**: Double rod
- 63 — TUBE I.D. **32, 40, 50 63, 80, 100**
- S — Blank: Cushion air (Adjustable) / **S**: Cushion air (Automatic)
- XB6 — Blank: NBR **XB6**: Heat resistant material *

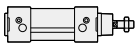
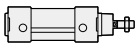
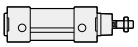
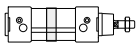
* Not suitable for (S) cushion air.

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

Cylinder & accessories weight

Cylinder weight

Unit: kg

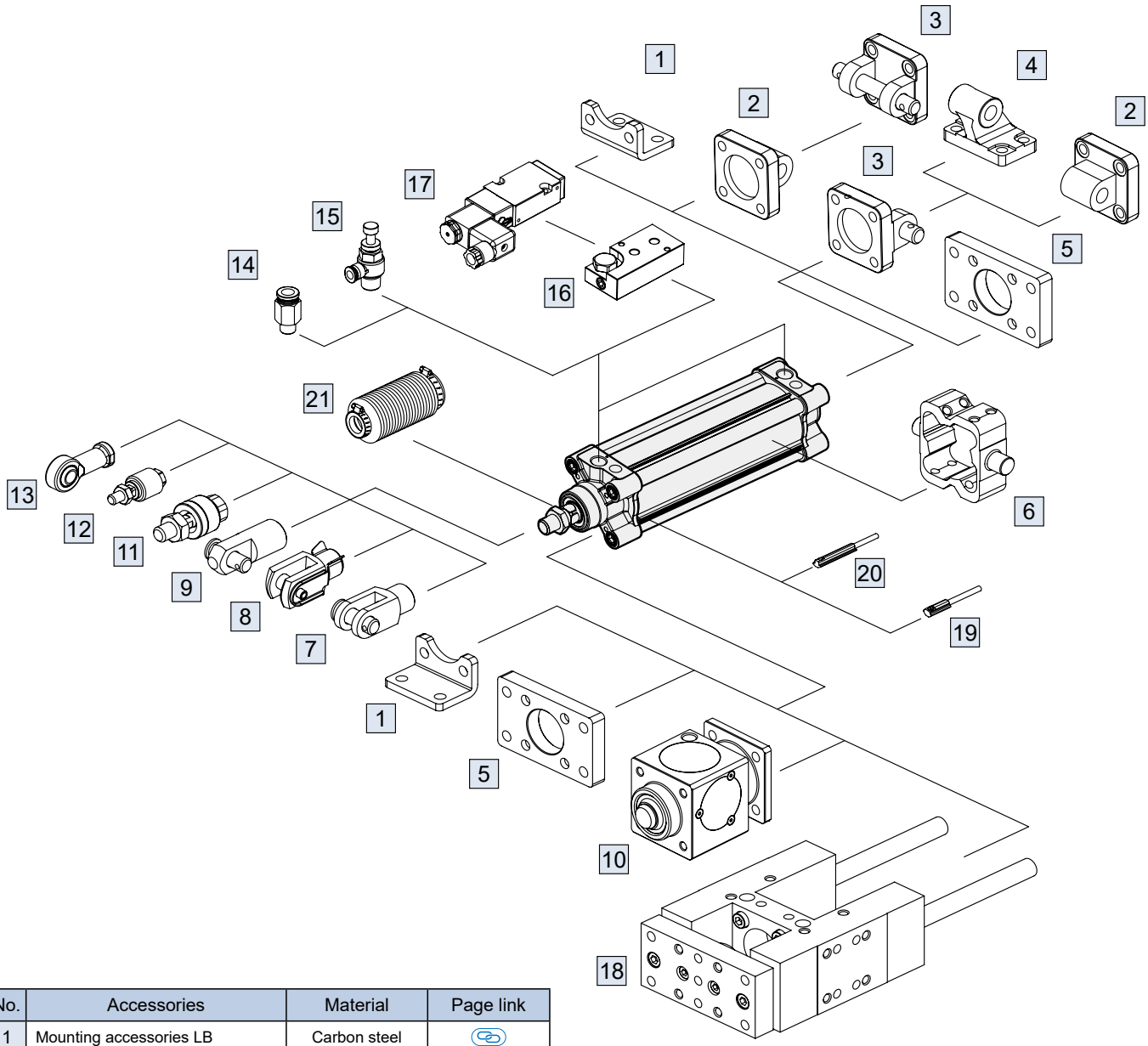
Model	Basic weight **MCQI3-11**	Basic weight (magnet) **MCQI3-11**	Basic weight **MCQI3-11-S**	Basic weight (magnet) **MCQI3-11-S**	Stroke 25 mm **MCQI3-11-(S)**
Tube I.D.					
ø32	0.534	0.540	0.531	0.537	0.062
ø40	0.789	0.801	0.783	0.795	0.088
ø50	1.300	1.317	1.293	1.310	0.120
ø63	1.785	1.805	1.774	1.794	0.129
ø80	2.653	2.680	2.638	2.665	0.185
ø100	3.949	3.984	3.885	3.920	0.236

Accessories weight

Unit: kg

Model	LB	CA	CA2	CB	CB2	CDB	CDB2	FAC/ FBC	FAC2/ FBC2	TA/TB/TC
Tube I.D.										
ø32	0.163	0.213	0.07	0.185	0.07	0.170	0.06	0.235	0.07	0.208
ø40	0.211	0.253	0.09	0.211	0.10	0.230	0.08	0.265	0.09	0.282
ø50	0.315	0.390	0.16	0.352	0.15	0.410	0.12	0.460	0.17	0.377
ø63	0.395	0.670	0.23	0.544	0.23	0.550	0.18	0.684	0.20	0.675
ø80	0.816	1.076	0.40	0.982	0.45	0.870	0.28	1.508	0.40	1.025
ø100	1.014	1.587	0.50	1.493	0.60	1.400	0.45	1.975	0.56	1.680

Model	Y	I	Pin		YS
			Y / I	CA / CB	
Tube I.D.					
ø32	0.070	0.080	0.02	0.040	0.018
ø40	0.115	0.141	0.03	0.065	0.031
ø50	0.272	0.334	0.08	0.072	0.070
ø63	0.272	0.334	0.08	0.145	0.070
ø80	0.551	0.553	0.16	0.179	0.150
ø100	0.551	0.553	0.16	0.330	0.150

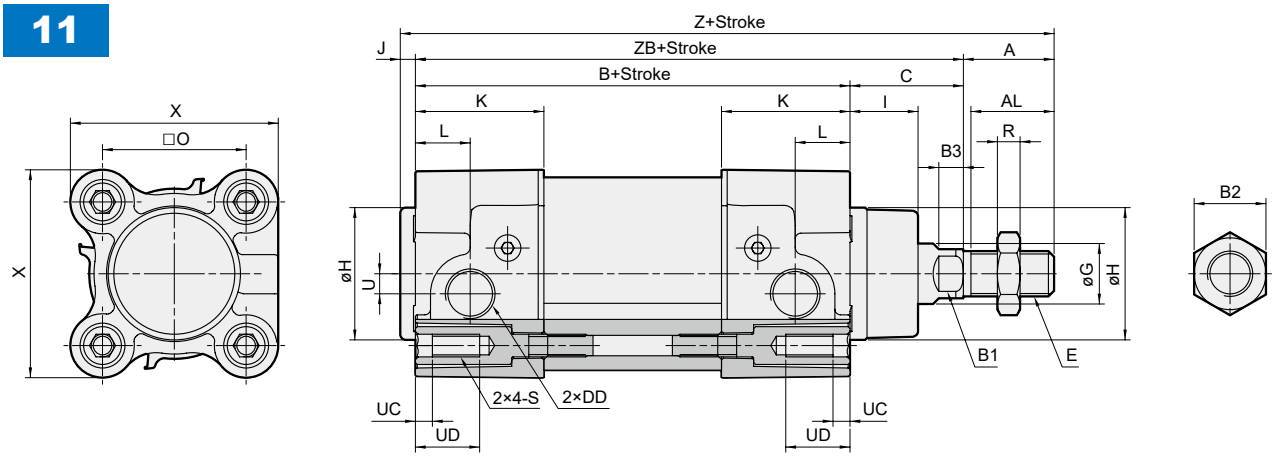


No.	Accessories	Material	Page link
1	Mounting accessories LB	Carbon steel	
2	Mounting accessories CA	Cast iron	
	Mounting accessories CA2	Aluminum alloy	
3	Mounting accessories CB+PIN	Cast iron / *1	,
	Mounting accessories CB2+PIN	Aluminum alloy	,
4	Mounting accessories CDB	Cast iron	
	Mounting accessories CDB2	Aluminum alloy	
5	Mounting accessories FAC/FBC	Carbon steel	
	Mounting accessories FAC2/FBC2	Aluminum alloy	
6	Mounting accessories TA/TB/TC	Cast iron	
7	Accessories Y+PIN	Cast iron / *1	
8	Accessories YS (Y+Floating pin)	Carbon steel	
9	Accessories I+PIN	Carbon steel	
10	Locking unit MCBQI3	Aluminum alloy+*2	

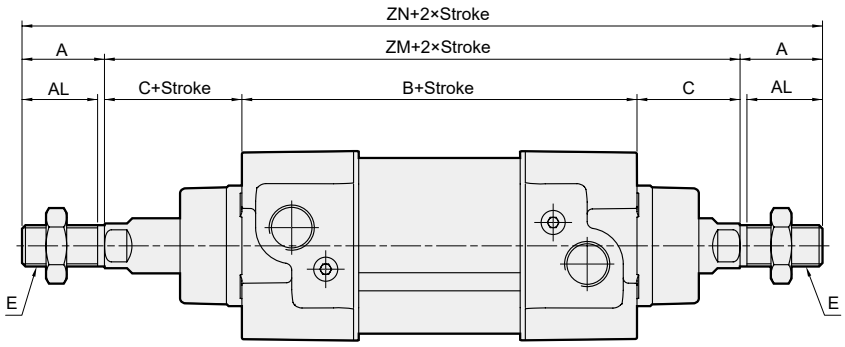
No.	Accessories	Material	Page link
11	Floating joint MFC	Carbon steel	
12	Floating joint MFCS	Carbon steel	
13	Female rod ends PHS	Carbon steel	
14	Fitting PC (PISCO)	–	
15	Speed controller JSC (PISCO)	–	
16	Cylinder link seats MVSN-300-C *3	Aluminum alloy	
17	Solenoid valve MVSN-220 / 300 *3	–	,
18	Twin-guide cylinders MGTB/TU/TX	–	
19	Sensor switch R*T	–	
20	Sensor switch RCI	–	
21	Protective bellows kit	NBR	–

*1. PIN material is carbon steel. *2. Bronze alloy.
*3. Only for tube I.D. ø40, ø50.

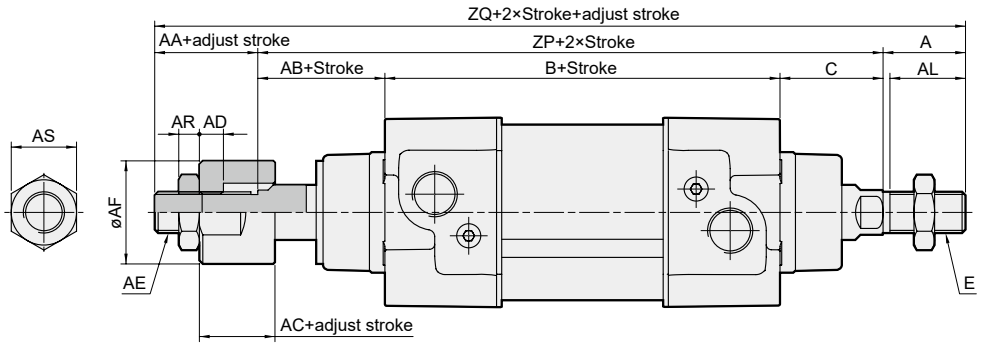
11



21



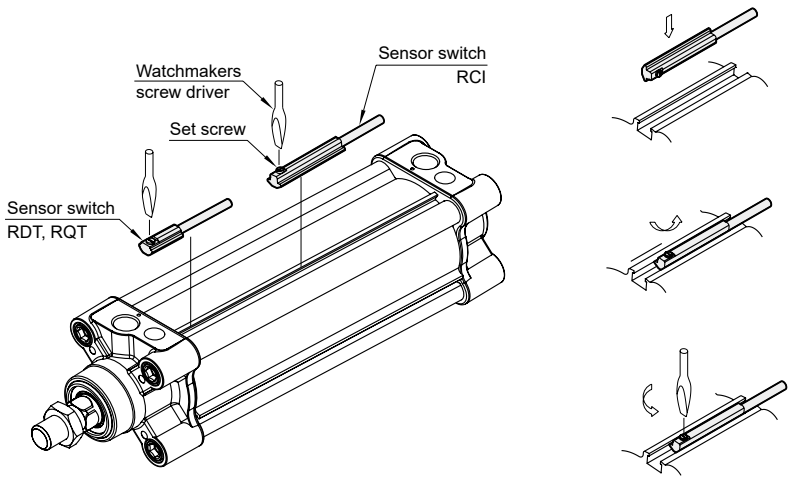
27



Code / Tube I.D.	A	AA	AB	AC	AD	AE	AF	AL	AR	AS	B	B1	B2	B3	C	DD	E	G	H	I	J	K	L	O
32	22	16	26	12	7	M10×1.25	20	20	5	17	94	10	17	4	26	G1/8	M10×1.25	12	30	15	4	30.5	20	32.5
40	24	20	27	12	7	M12×1.25	30	22	6	19	105	13	19	6.5	30	G1/4	M12×1.25	16	35	18	4	34	14.5	38
50	32	18	34	15	10	M16×1.5	40	30	8	24	106	17	24	6	37	G1/4	M16×1.5	20	40	28	4	31	16	46.5
63	32	20	32	15	10	M16×1.5	40	30	8	24	121	17	24	8	37	G3/8	M16×1.5	20	45	26	4	33	17	56.5
80	40	32	41	20	14	M22×1.5	50	38	13	32	128	22	30	10	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	38	13	32	138	22	30	10	51	G1/2	M20×1.5	25	55	37.5	4	37	19	89

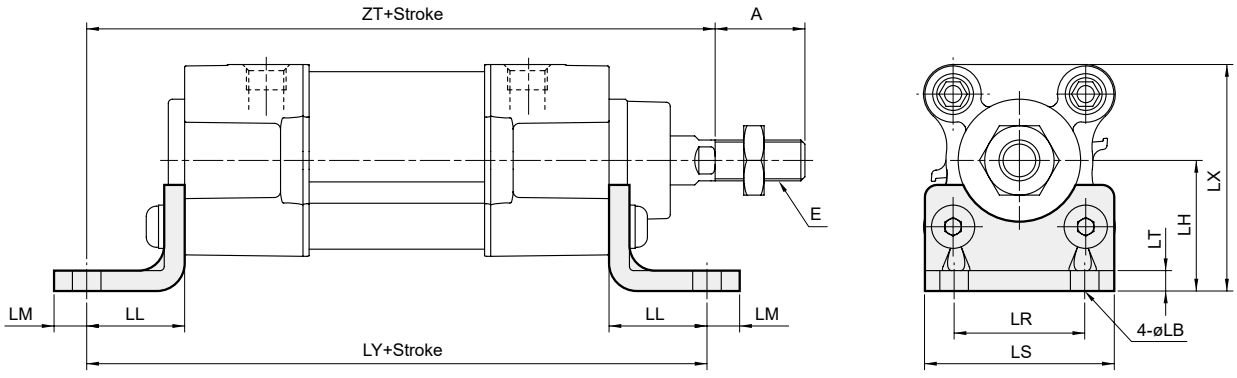
Code / Tube I.D.	R	S	U	UC	UD	X	Z	ZB	ZM	ZN	ZP	ZQ
32	5	M6×1.0	4.5	4.5	16	47	146	120	146	190	146	184
40	6	M6×1.0	5.3	4.5	16	55	163	135	165	213	162	206
50	8	M8×1.25	8.5	4.5	16	65	179	143	180	244	177	227
63	8	M8×1.25	8	4.5	16	78	194	158	195	259	190	242
80	10	M10×1.5	9	4.5	18	95	218	174	220	300	215	287
100	10	M10×1.5	13	4.5	18	115	233	189	240	320	235	305

Installation of sensor switch



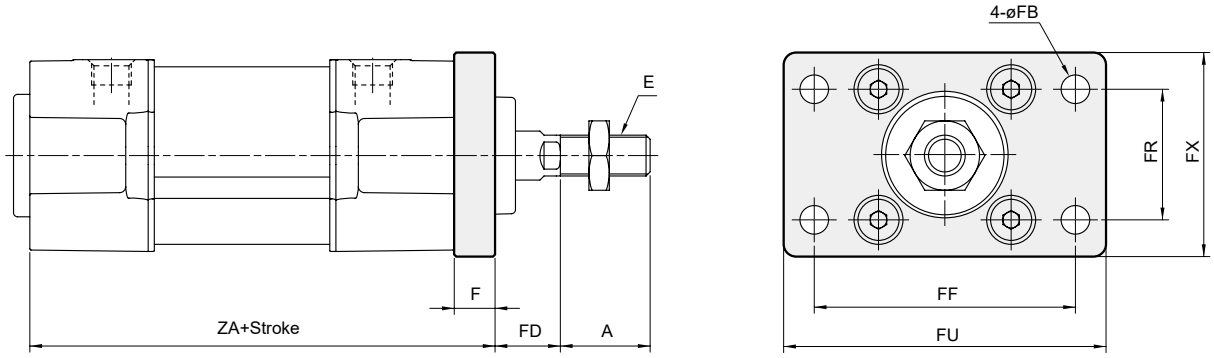
Mounting accessories

LB

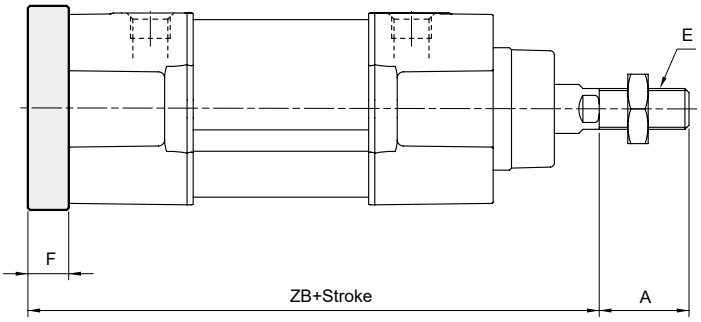


Code / Tube I.D.	A	E	LB	LH	LL	LM	LR	LS	LT	LX	LY	ZT
32	22	M10×1.25	7	32	24	8	32	47	5	55.5	142	144
40	24	M12×1.25	9	36	28	10	36	53	5	63.2	161	163
50	32	M16×1.5	9	45	32	10	45	65	5	77.5	170	175
63	32	M16×1.5	9	50	32	10	50	75	5	89.0	185	190
80	40	M20×1.5	12	63	41	13	63	95	6	110.5	210	215
100	40	M20×1.5	14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

FAC

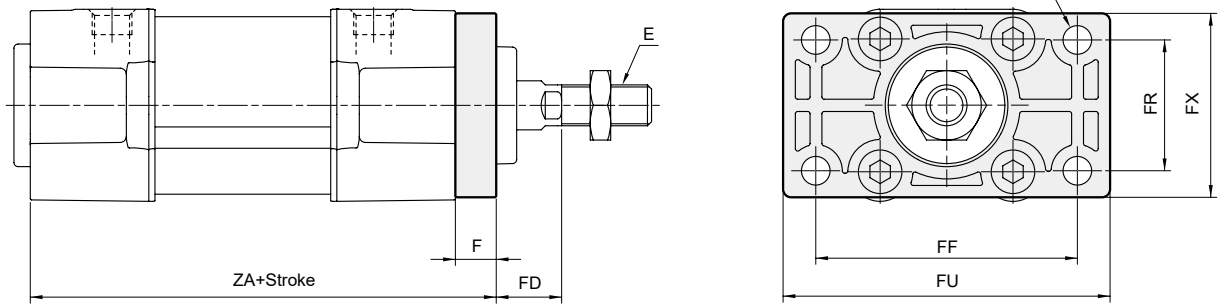


FBC

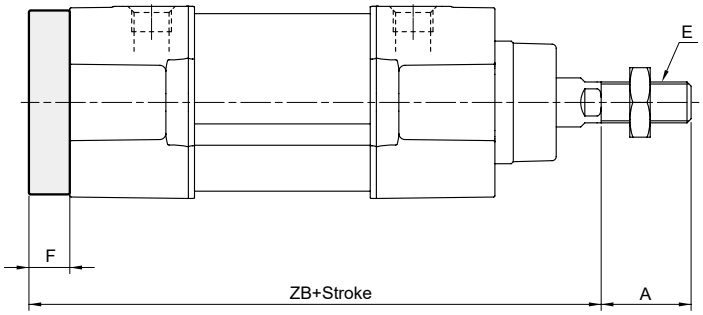


Code / Tube I.D.	A	E	F	FB	FD	FF	FR	FU	FX	ZA	ZB
32	22	M10×1.25	10	7	16	64	32	79	50	104	130
40	24	M12×1.25	10	9	20	72	36	90	52	115	145
50	32	M16×1.5	12	9	25	90	45	110	65	118	155
63	32	M16×1.5	12	9	25	100	50	125	76	133	170
80	40	M20×1.5	16	12	30	126	63	154	94	144	190
100	40	M20×1.5	16	14	35	150	75	180	112	154	205

FAC2

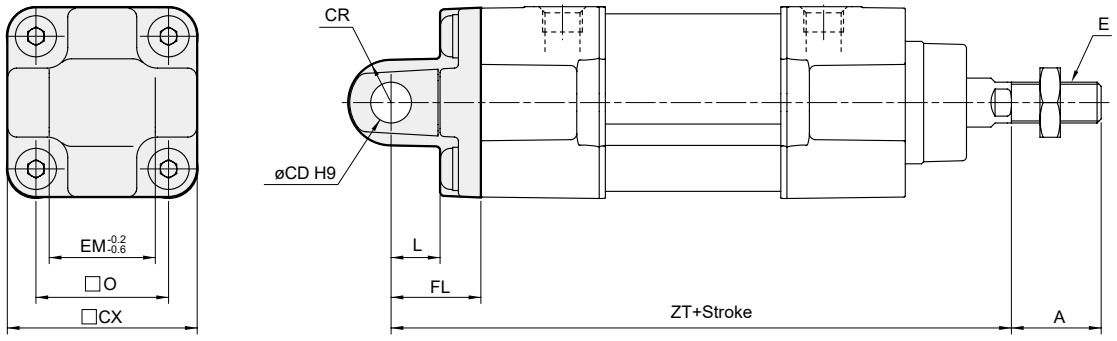


FBC2

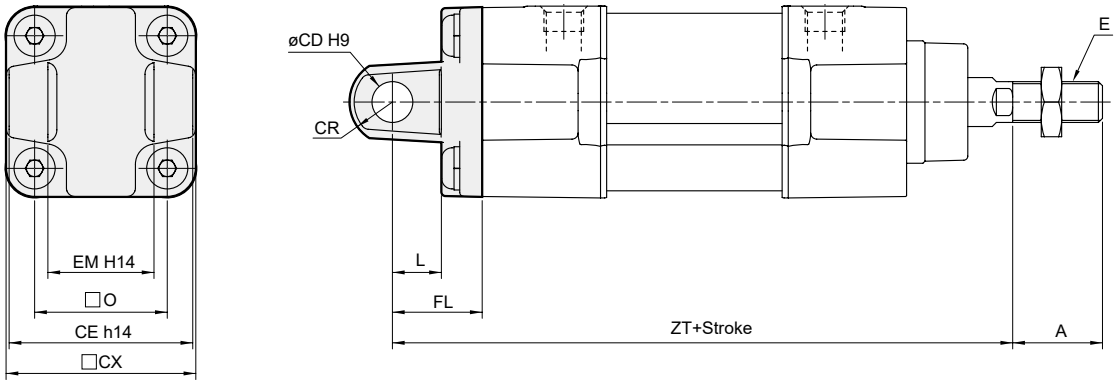


Code / Tube I.D.	A	E	F	FB	FD	FF	FR	FU	FX	ZA	ZB
32	22	M10×1.25	10	7	16	64	32	80	45	104	130
40	24	M12×1.25	10	9	20	72	36	90	52	115	145
50	32	M16×1.5	12	9	25	90	45	110	65	118	155
63	32	M16×1.5	12	9	25	100	50	120	75	133	170
80	40	M20×1.5	16	12	30	126	63	150	95	144	190
100	40	M20×1.5	16	14	35	150	75	175	115	154	205

CA

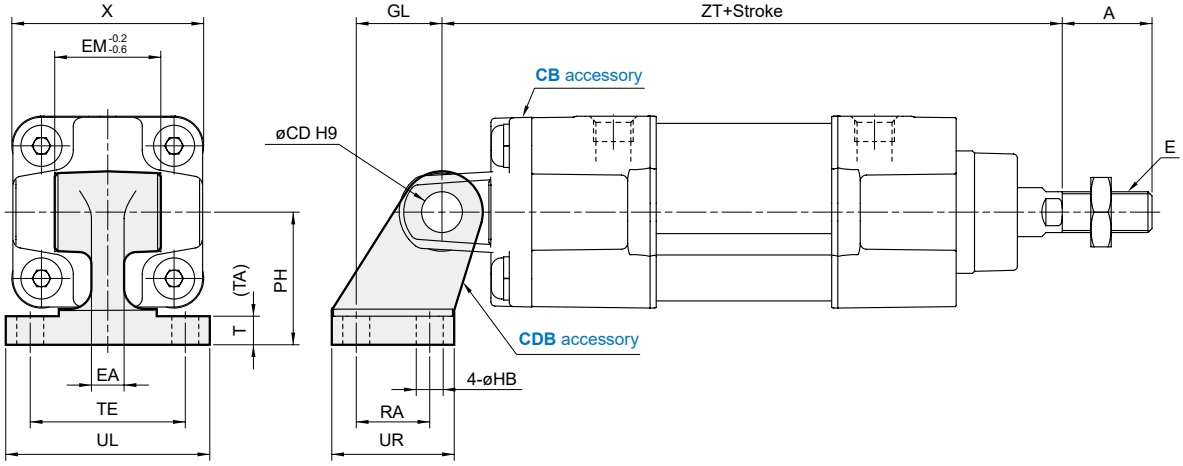


CB



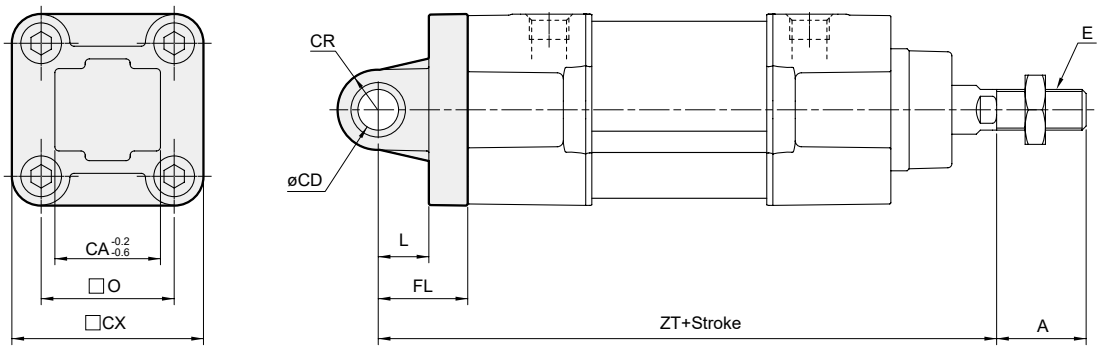
CDB

CB+Pin (Extra purchase)

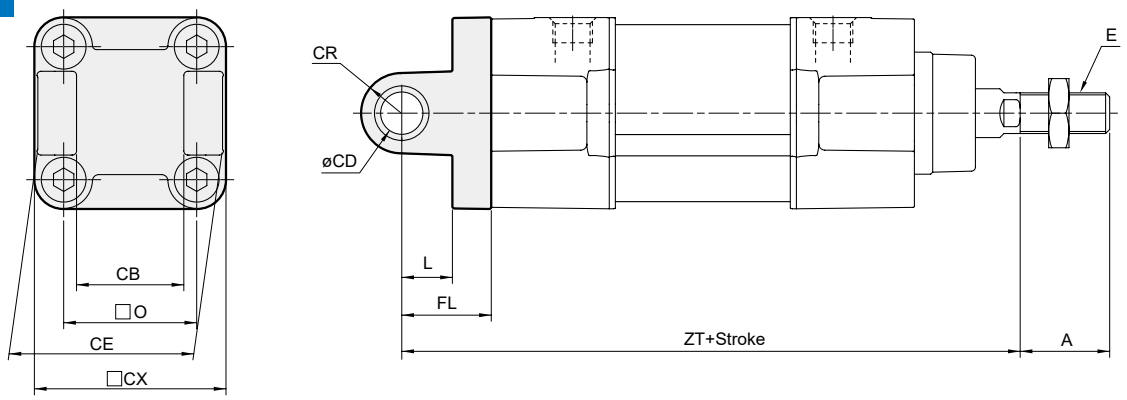


Code / Tube I.D.	A	CD	CE	CR	CX	E	EA	EM	FL	GL	HB	L	O	PH	RA	T	TA	TE	UL	UR	X	ZT
32	22	10	45	R10.5	46.5	M10×1.25	8	26	22	21	6.6	12	32.5	32	18	6.5	1.5	38	50	30	47	142
40	24	12	52	R12	54	M12×1.25	10	28	25	24	6.6	15	38	36	22	8.5	1.5	41	53	34	55	160
50	32	12	60	R13	64	M16×1.5	10	32	27	33	9	15	46.5	45	30	10.5	1.5	50	65	45	65	170
63	32	16	70	R17	75	M16×1.5	12	40	32	37	9	20	56.5	50	35	10.5	1.5	52	67	50	78	190
80	40	16	90	R17	93	M20×1.5	12	50	36	47	11	20	72	63	40	11.5	2.5	66	86	60	95	210
100	40	20	110	R21	114	M20×1.5	16	60	41	55	11	25	89	71	50	12.5	2.5	76	96	70	115	230

CA2

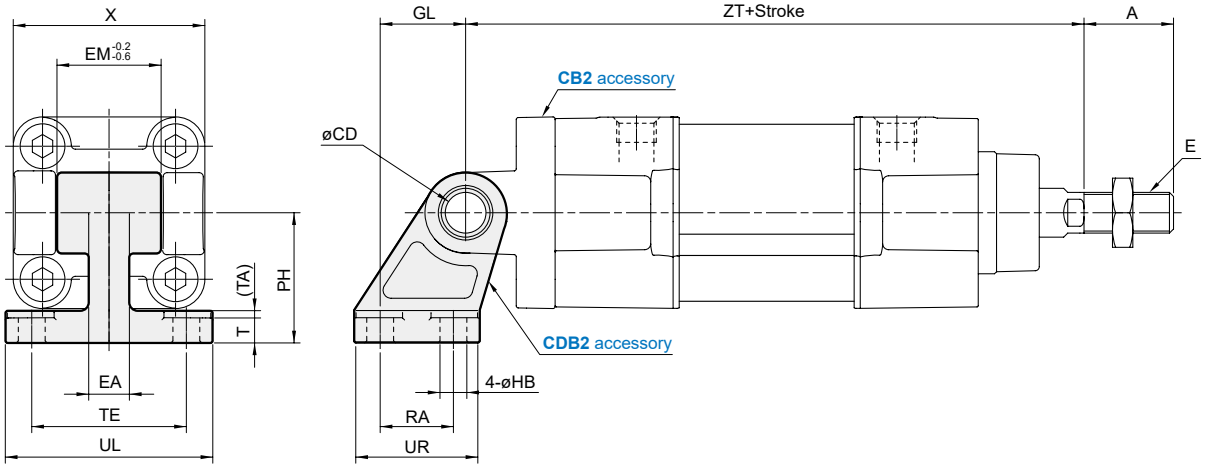


CB2



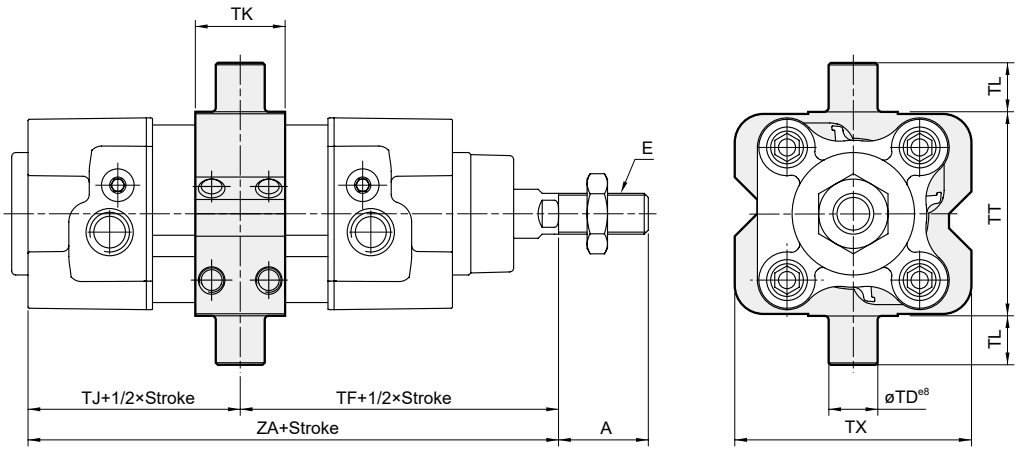
CDB2

CB2+Pin (Extra purchase)

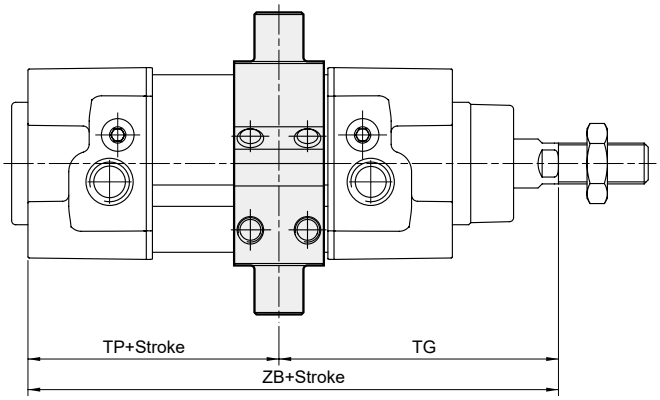


Code / Tube I.D.	A	CA	CB H14	CD H9	CE h14	CR	CX	E	EA	EM	FL	GL	HB	L	O	PH	RA	T	TA	TE	UL	UR	X	ZT
32	22	26	26 +0.052 0	10 +0.036 0	45 0 -0.62	R10	47	M10×1.25	10	26	22	21	6.6	12.5	32.5	32	18	8	1.6	38	51	31	47	142
40	24	28	28 +0.052 0	12 +0.043 0	52 0 -0.74	R12	53	M12×1.25	15	28	25	24	6.6	16	38	36	22	10	1.6	41	54	35	55	160
50	32	32	32 +0.062 0	12 +0.043 0	60 0 -0.74	R12	65	M16×1.5	16	32	27	33	9	16	46.5	45	30	12	1.6	50	65	45	65	170
63	32	40	40 +0.062 0	16 +0.043 0	70 0 -0.74	R16	75	M16×1.5	16	40	32	37	9	21	56.5	50	35	14	1.6	52	67	50	78	190
80	40	50	50 +0.062 0	16 +0.043 0	90 0 -0.87	R16	95	M20×1.5	20	50	36	47	11	22	72	63	40	14	2.5	66	86	60	95	210
100	40	60	60 +0.074 0	20 +0.052 0	110 0 -0.87	R20	115	M20×1.5	20	60	41	55	11	27	89	71	50	17	2.5	76	96	70	115	230

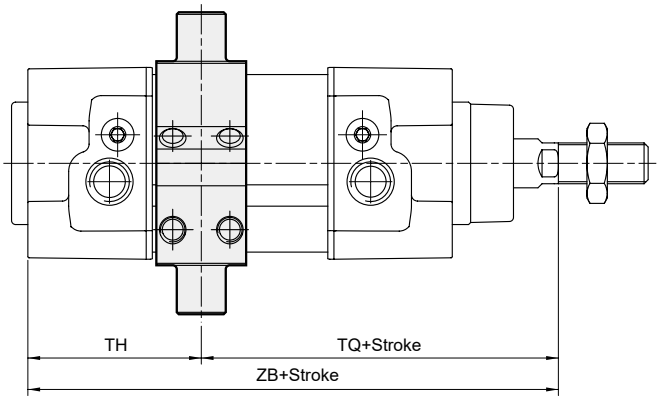
TC



TA



TB



Code / Tube I.D.	A	E	TD	TF	TG	TH	TJ	TK	TL	Without magnet			Magnet			TT	TX	ZA
										TP	TQ	ZB	TP	TQ	ZB			
32	22	M10×1.25	12	73	70.5	44.5	47	22	12	49.5	75.5	120	79.5	105.5	150	50	58	120
40	24	M12×1.25	16	82.5	81	51	52.5	28	16	54	84	135	84	114	165	63	70	135
50	32	M16×1.5	16	90	87	50	53	32	16	56	93	143	86	123	173	75	85	143
63	32	M16×1.5	20	97.5	90.5	53.5	60.5	35	20	67.5	104.5	158	97.5	134.5	188	90	100	158
80	40	M20×1.5	20	110	104.5	58.5	64	40	20	69.5	115.5	174	109.5	155.5	214	110	120	174
100	40	M20×1.5	25	120	113.5	62.5	69	45	25	75.5	126.5	189	115.5	166.5	229	132	145	189

Order example

MCQI3 — As standard order example — VR — 4E2C — 6A — AC110 — L

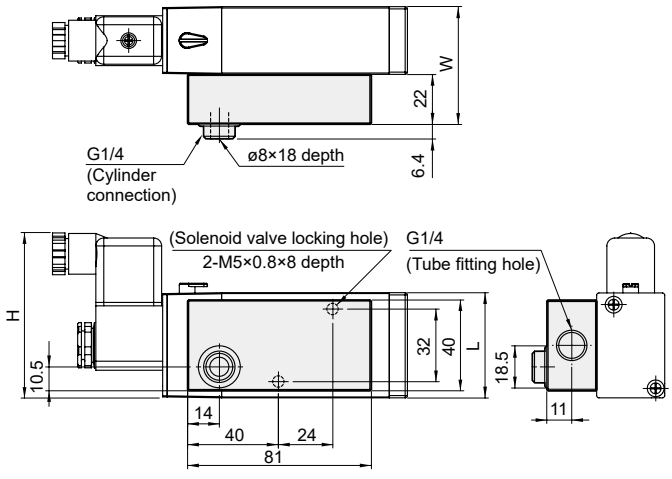
- **MODEL**: **MCQI3**, **MCKQI3**
- **SOLENOID VALVE LINK SEATS**: **VR**: Installed on the front cover; **VH**: Installed on the back cover
- **4** way (5 port)
- **E1**: Single solenoid; **E2**: Double solenoid
- **C**: Closed center; **P**: Pressure center; **R**: Exhaust center (Only for MVSN-300-4E2)
- **PORT SIZE**: **6A**: G1/8 (Only for MVSN-220); **8A**: G1/4
- **VOLTAGE**: **AC220**V(50/60)Hz; **AC110**V(50/60)Hz; **DC24**V
- **ELECTRIC CONNECTION**

Standard	
Blank	DIN terminal
L	DIN terminal with LED indicator
E	Explosion protection
Power saving (for DC24V)	
KL	DIN terminal with LED indicator

* MC(K)QI3-ø40 (for MVSN-220 valve)

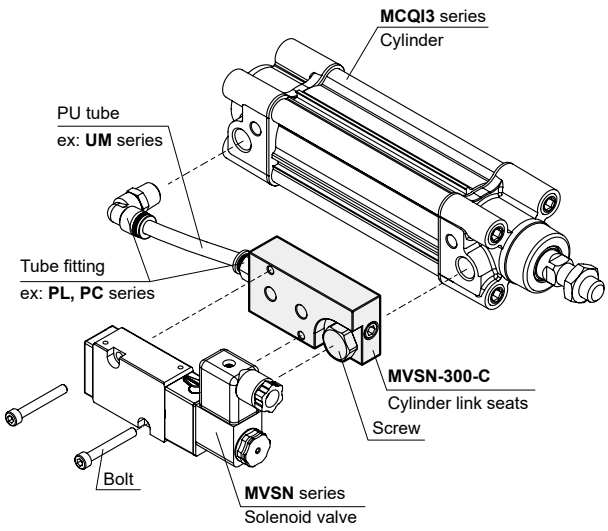
* MCQI3-ø50 (for MVSN-300 valve)

MVSN-300-C Solenoid valve link seats



Code / Model	H	W	L	Cylinder type
MVSN-220	70	44.3	40	MCQV3 / MCQI3 / MCKQI3 ø40
MVSN-300	73	52	46.4	MCQV3 / MCQI3 ø50

Mounting of solenoid valve link seats



MCKQI3 series

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

Special spec

Technical data

Caution for safety
(Read before installing)



Features

■ Hexagonal rod design & Non lubrication

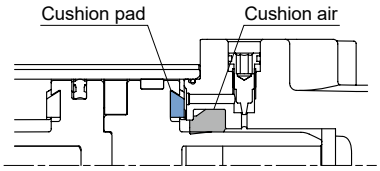
Cylinder with hexagonal rod design for non-rotating feature.
Special housing and bushing enables self lubrication of piston rod.

■ High quality long service life

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

■ Low noise level

Add cushion pad to reduce impact sound and vibration.



■ 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.

Table for standard stroke

Tube I.D.	Stroke (mm)	Max. stroke (mm)
ø32,40	50,75,100,125,150, 175,200,300,400,500	700

* Intermediate stroke are available, please contact us.

Tightening torque

Tube I.D.	Rod thread	Tightening torque (kgf·cm)
ø32	M10×1.25	190
ø40	M12×1.25	330

* Make sure the tightening torque of rod thread does not exceed the value above.
* The tolerance of tightening torque is ±5%.

Specification

Model	MCKQI3	
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	RDT, RQT, RCI	

Order example

MCKQI3 — 11 — 32 — 100M — T

MODEL | STYLE | TUBE I.D. | STROKE | **M**: Magnet | TYPE

T: Add "T" when both M and TA / TB are selected.

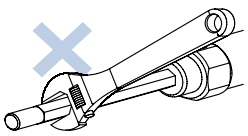
* When both magnet (M) and mounting accessories (TA or TB) are selected, please add the suffix "T" at the end of the model number.

Code		Symbol	Description
1	**1**		Double acting / Male thread

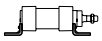
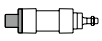
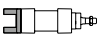
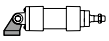
* **Rc** or **NPT** thread are also available, please contact us.

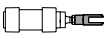
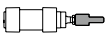
Caution

Please don't attempt to rotate the piston rod.



Accessories & Connector

	Accessories						Rod nut
Code	**LB** (Purchase 2 pcs)	**CA**	**CB**	**CDB** (Purchase CB+PIN)	**FAC**	**FBC**	**NUT**
Mounting / Tube I.D.							
ø32	**LB-Q2-32**	**CA-Q2-32**	**CB-Q2-32**	**CDB-Q2-32**	**FAC-Q2-32**		**NUT-M10x1.25x5Hx17B**
ø40	**LB-Q2-40**	**CA-Q2-40**	**CB-Q2-40**	**CDB-Q2-40**	**FAC-Q2-40**		**NUT-M12x1.25x6Hx19B**

	Accessories ⚠ Factory-installed, not available for separate purchase or field assembly			Connector		
Code	**TA**	**TB**	**TC**	**Y**	**I**	**YS** (Y+Floating pin)
Mounting / Tube I.D.						
ø32	**TC-Q3-32**			**Y-Q2-32**	**I-Q2-32**	**YS-Q2-32**
ø40	**TC-Q3-40**			**Y-Q2-40**	**I-Q2-40**	**YS-Q2-40**

Pin

Applicable	YS connector	Y&I connector	CA&CB accessories
Code	**PIN-S**	**PIN-Y-P** (with split pin)	**PIN-CB-P** (with split pin)
Fig / Tube I.D.			
ø32	**PIN-Q2-32-S**	**PIN-Q2-32-2-P**	**PIN-Q2-32-1-P**
ø40	**PIN-Q2-40-S**	**PIN-Q2-40-2-P**	**PIN-Q2-40-1-P**

Order example of self-assembled

The tube I.D. ø40 of LB accessories, Y connector and pin.

No.	Order number	Qty
1	**LB-Q2-40**	2
2	**Y-Q2-40**	1
3	**PIN-Q2-40-2-P**	1

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

Order example of factory assembled

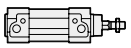
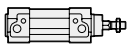
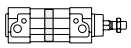
⚠ Cylinders and accessories are distinguished by the symbol " + ".

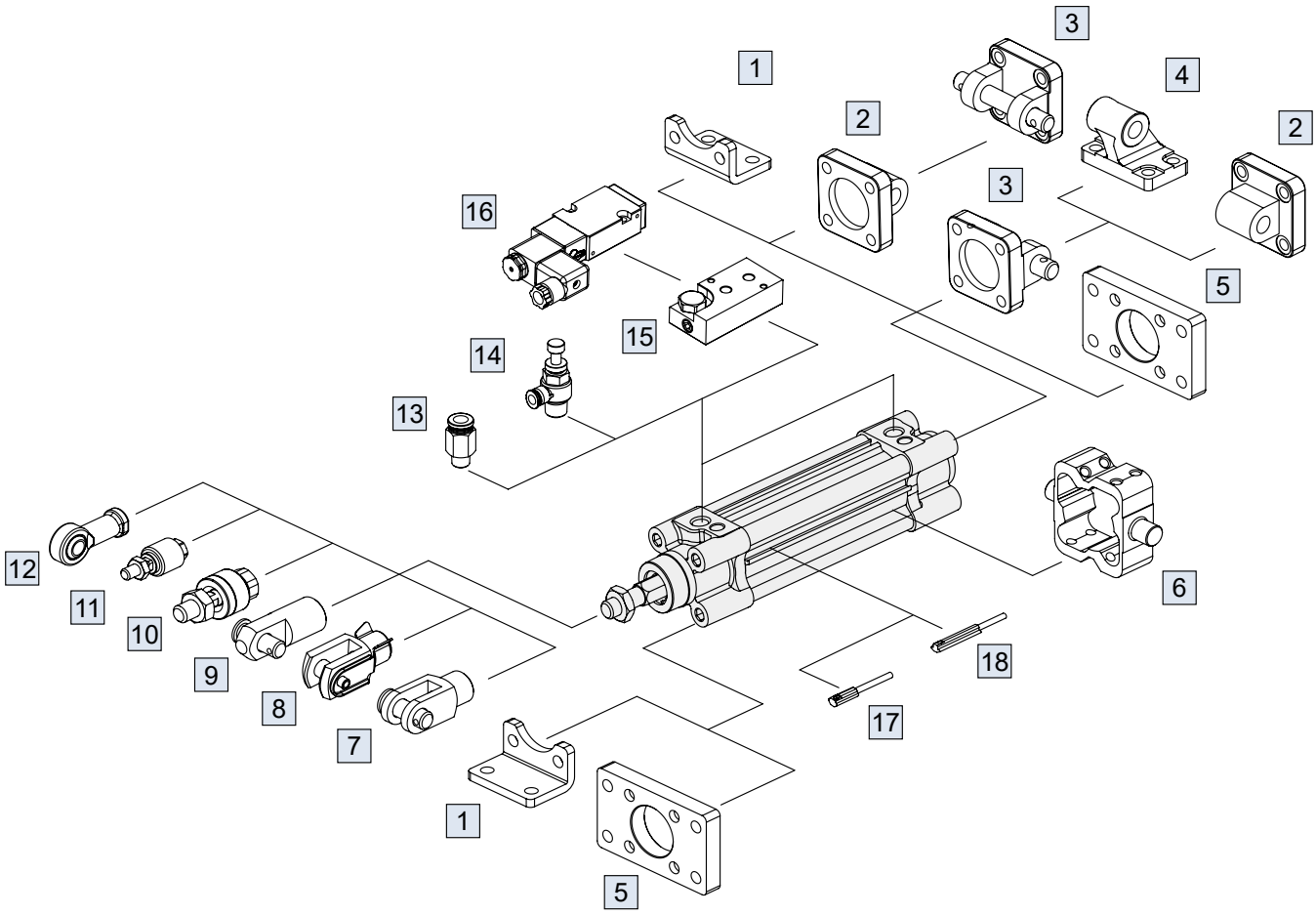
MCKQI3 — Standard model no. + TA

CYLINDER ACCESSORIES

Cylinder weight

Unit: kg

Model	Basic weight	Basic weight (magnet)	Stroke 25 mm
Tube I.D.			
ø32	0.507	0.513	0.065
ø40	0.758	0.770	0.088



No.	Accessories	Material	Page link
1	Mounting accessories LB	Carbon steel	
2	Mounting accessories CA	Cast iron	
	Mounting accessories CA2	Aluminum alloy	
3	Mounting accessories CB+PIN	Cast iron / *1	
	Mounting accessories CB2+PIN	Aluminum alloy	
4	Mounting accessories CDB	Cast iron	
	Mounting accessories CDB2	Aluminum alloy	
5	Mounting accessories FAC/FBC	Carbon steel	
	Mounting accessories FAC2/FBC2	Aluminum alloy	
6	Mounting accessories TA/TB/TC	Cast iron	
7	Accessories Y+PIN	Cast iron / *1	
8	Accessories YS (Y+Floating pin)	Carbon steel	

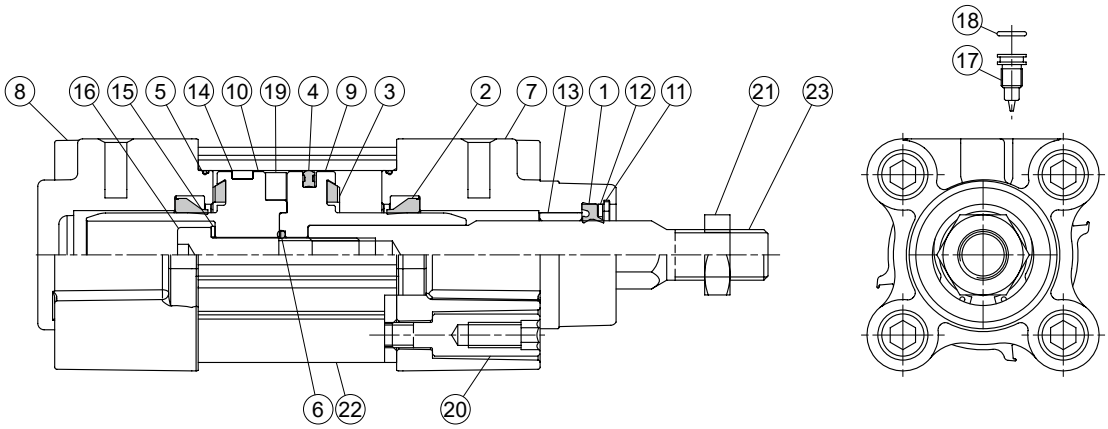
No.	Accessories	Material	Page link
9	Accessories I+PIN	Carbon steel	
10	Floating joint MFC	Carbon steel	
11	Floating joint MFCS	Carbon steel	
12	Female rod ends PHS	Carbon steel	
13	Fitting PC (PISCO)	–	
14	Speed controller JSC (PISCO)	–	
15	Cylinder link seats MVSN-300-C *3	Aluminum alloy	
16	Solenoid valve MVSN-220 *3	–	
17	Sensor switch R*T	–	
18	Sensor switch RCI	–	

*1. PIN material is carbon steel. *2. Bronze alloy.
*3. Only for tube I.D. ø40.
*4. Accessories dimensions (No.1~9) please refer to MCQI3 series .

MCKQI3 Inside structure & Parts list / Dimensions

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

mindman



Material

No.	Part name	Material	Q'y	Component parts (inclusion)	Repair kits (inclusion)
1	Rod packing	NBR	1	●	●
2	Cushion packing	NBR	2	●	●
3	Cushion pad	NBR	2	●	●
4	Piston packing	NBR	1	●	●
5	O-ring	NBR	2	●	●
6	O-ring	NBR	1	●	●
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	Snap ring	Spring steel	1	●	
12	Washer	Carbon steel	1	●	
13	Bush	Bearing alloy	1	●	
14	Wear ring	Resin	1	●	
15	Washer	Carbon steel	1	●*	
16	Bolt	Carbon steel	1	●	
17	Needle valve	Copper alloy	2	●	
18	O-ring	NBR	2	●	
19	Magnet ring	Magnet material	1	●	
20	Screw	Carbon steel	8	●	
21	Rod nut	Carbon steel	1	●	
22	Cylinder tube	Aluminum alloy	1		
23	Piston rod	Stainless steel	1		

* Only for ø40.

■ Order example of component parts

CP — MCKQI3 — □ — 40 M

- MODEL
- Blank: Single rod
- TUBE I.D. **32, 40**
- **M**: Magnet

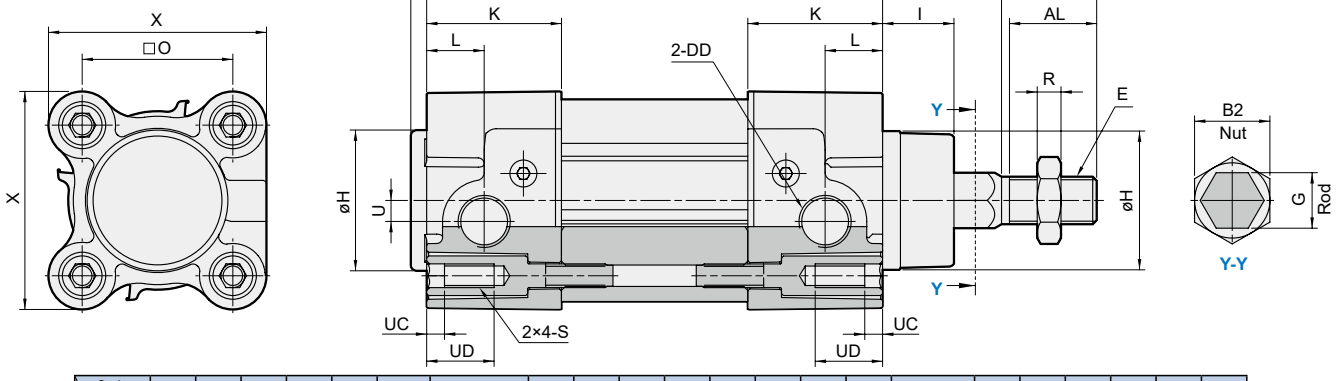
* **Rc** or **NPT** thread are also available, please contact us.

■ Order example of repair kits

PS — MCKQI3 — □ — 40

- MODEL
- Blank: Single rod
- TUBE I.D. **32, 40**

Dimensions



Code / Tube I.D.	A	AL	B	B2	C	DD	E	G	H	I	J	K	L	O	R	S	U	UC	UD	X	Z	ZB
32	22	19.5	94	17	26	G1/8	M10×1.25	12	30	15	4	30.5	20	32.5	5	M6×1.0	4.5	4.5	16	47	146	120
40	24	22	105	19	30	G1/4	M12×1.25	14	35	18	4	34	14.5	38	6	M6×1.0	5.3	4.5	16	55	163	135

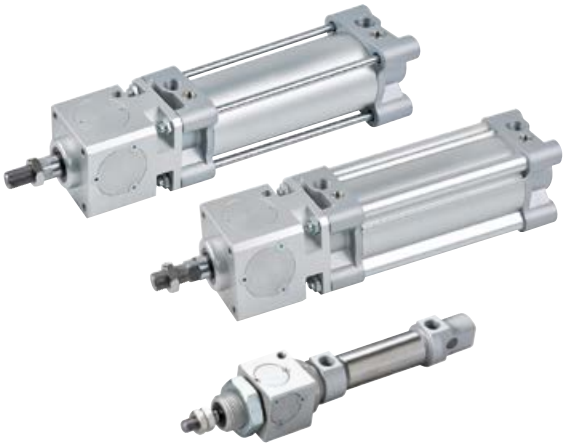
MCB* series

ROD LOCKING CYLINDER

Locking unit

Technical data

Caution for safety
(Read before installing)



Attention

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

Table for standard stroke

Tube I.D.	Stroke (mm)	Max. stroke (mm)
ø20,25	10,25,50,75,100,125, 150,200,300,400,500	800
ø32,40	50,75,100,125,150, 175,200,250,300, 350,400,450,500	1600
ø50,63		1800
ø80,100		2300
ø125		1800

* Intermediate stroke are available, please contact us.

Order example

MCBQV3 — 11 — 40 — 100M — S

1: Single rod | TUBE I.D. | STROKE | **M**: Magnet (*1)

STYLE

Code		Symbol	Description
1	1		Double acting / Male thread

MODEL

MODEL	Tube I.D.
MCBMI	ø20, ø25

MODEL	Tube I.D.
MCBQV3	ø32~ø100
MCBQI3	ø32~ø100
MCBQV	ø125

CUSHION TYPE

Blank: Cushion pad	**A**: Cushion air (Adjustable)
●	●

Blank: Cushion air (Adjustable)	**S**: Cushion air (Automatic)
●	●
●	●
●	

*1. The MCBMI series is magnetic as standard; (M) code is not required.
*2. **Rc** or **NPT** thread are also available, please contact us.

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.

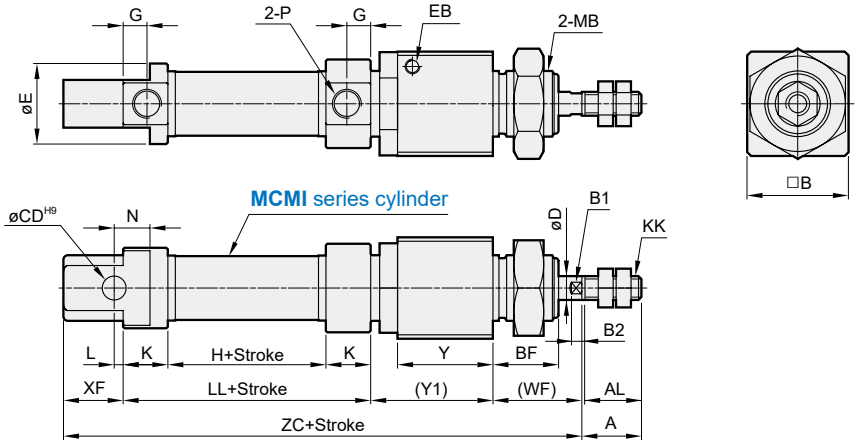
Specification

Model		MCBMI		MCBQI3					
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°C (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		RDC,RQC, RDT,RQT, RCM		RDT, RQT, RCI					
Sensor switch band	R*C/R*T	BKC-1/BKT-1		—					
	RCM	BM20	BM25	—					

* BKC-1 is not for R*CV vertical cable.

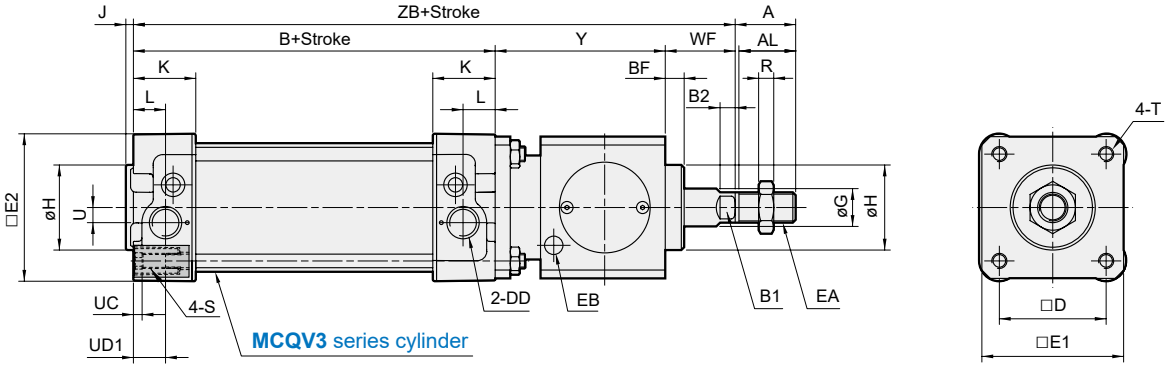
Model		MCBQV3						MCBQV
Tube I.D. (mm)		32	40	50	63	80	100	125
Medium		Air						
Operating perssure range		0.3~0.6 MPa						
Proof pressure		1.5 MPa						
Ambient temperature		-5~+60°C (No freezing)						
Min. working pressure		0.3 MPa						
Available speed range		50~500 mm/sec						
Locking mode		Secure locking of piston rod in any position						
Lock retention forces (N)		790	1240	1930	3060	5400	7700	12040
Sensor switch		RDC(V), RQC(V), RDT, RQT, RCA						
Sensor switch holder	R*C(V)	DT7-1				DT7-2		DT7-3
	R*T	DT-1				DT-2		DT-3
	RCA	HV1		HV2		HV3		HV4

MCBMI

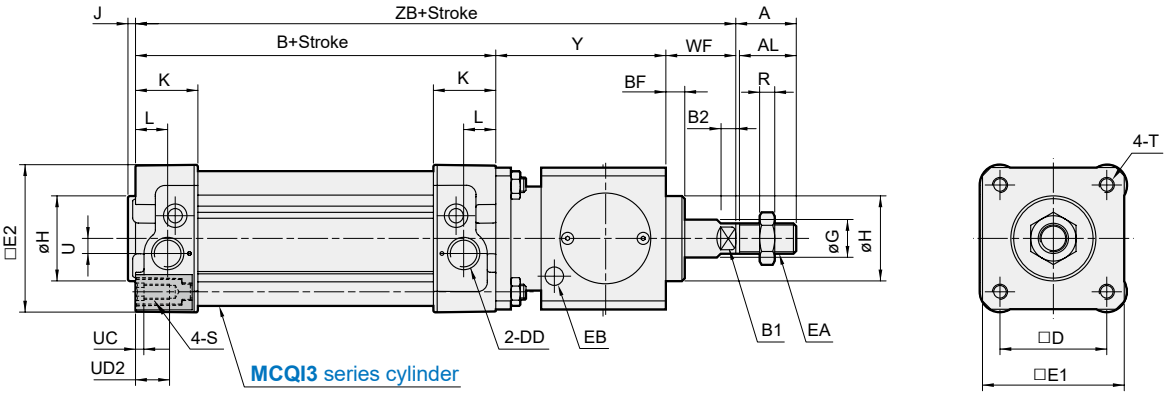


Code / Tube I.D.	A	AL	B	B1	B2	BF	CD	D	E	EB	G	H	K	KK	L	LL	MB	N	P	WF	XF	Y	Y1	ZC
20	20	20	34	7	3.5	22	8	8	27	M5	8	38	15	M8×1.25	3	68	M22×1.5	12	G1/8	26	20	32	43	157
25	22	19.5	34	9	5	22	8	10	27	M5	7.5	37	15	M10×1.25	9	67	M22×1.5	12	G1/8	28	22	32	45	162

MCBQV3



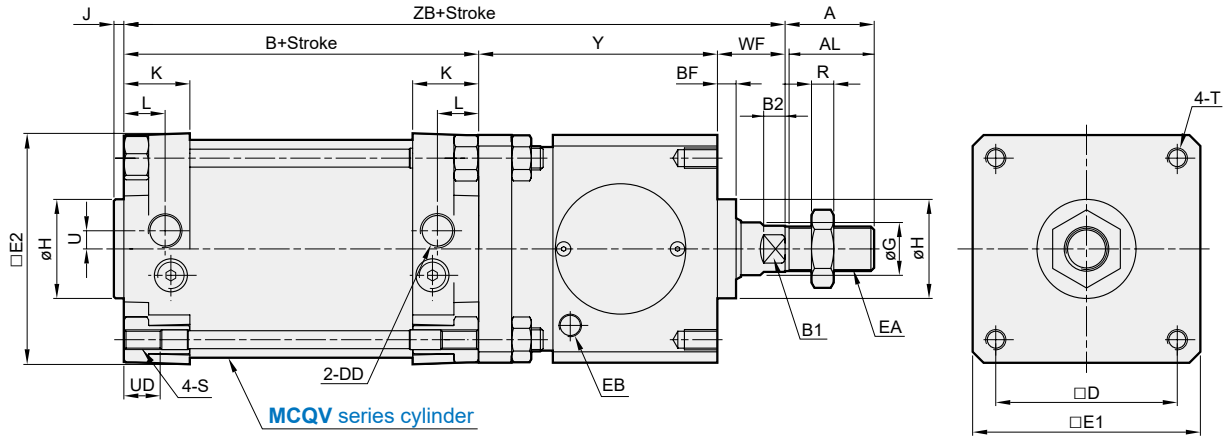
MCBQI3



Code / Tube I.D.	A	AL	B	BF	B1	B2	D	DD	E1	E2	EA	EB	G	H	J	K	L	R	S	T	U	UC	UD1	UD2	WF	Y	ZB
32	22	20	94	7.5	10	4	32.5	G1/8	47	47	M10×1.25	G1/8	12	30	4	30.5	20	5	M6×1.0	M6×12L	4.5	4.5	12	M6×1.0×15L	26	60	180
40	24	22	105	10	13	6.5	38	G1/4	54	53	M12×1.25	G1/8	16	34.9	4	34	14.5	6	M6×1.0	M6×12L	5.3	4.5	12	M6×1.0×15L	30	70	205
50	32	30	106	10	17	6	46.5	G1/4	65	65	M16×1.5	G1/8	20	40	4	31	16	8	M8×1.25	M8×14L	8.5	4.5	16	M8×1.25×18L	37	90	233
63	32	30	121	10	17	8	56.5	G3/8	75	78	M16×1.5	G1/8	20	45	4	33	16	8	M8×1.25	M8×14L	8	4.5	16	M8×1.25×18L	37	90	248
80	40	38	128	10	22	10	72	G3/8	95	95	M20×1.5	G1/4	25	45	4	35.5	20.5	10	M10×1.5	M10×16L	9	4.5*1	18	M10×1.5×19L	46	110	284
100	40	38	138	10	22	10	89	G1/2	114	115	M20×1.5	G1/4	25	55	4	37	19	10	M10×1.5	M10×16L	13	4.5*1	18	M10×1.5×19L	51	110	299

* **MCQI3** series UC=5.5

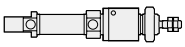
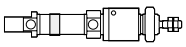
MCBQV

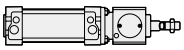
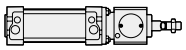
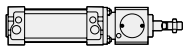
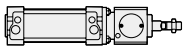
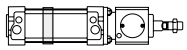


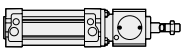
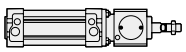
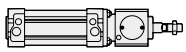
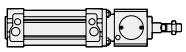
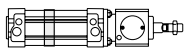
Code / Tube I.D.	A	AL	B	B1	B2	BF	D	DD	E1	E2	EA	EB	G	H	J	K	L	R	S	T	U	UD	WF	Y	ZB
125	54	52	160	27	13	16	110	G1/2	138	140	M27×2.0	G1/4	32	60	6	40	25	13.5	M12×1.75	M12×20L	11	22	65	140	365

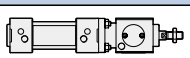
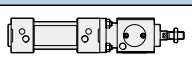
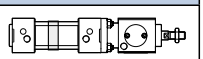
Cylinder weight

Unit: kg

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

Model	Basic weight **MCBQV3-11**	Basic weight (magnet) **MCBQV3-11**	Basic weight **MCBQV3-11-S**	Basic weight (magnet) **MCBQV3-11-S**	Stroke 25 mm **MCBQV3-11(-S)**
Tube I.D.					
ø32	0.960	0.966	0.9	0.906	0.050
ø40	1.417	1.429	1.397	1.409	0.068
ø50	2.414	2.431	2.401	2.418	0.108
ø63	3.389	3.409	3.373	3.393	0.125
ø80	5.434	5.461	5.415	5.442	0.187
ø100	7.552	7.587	7.483	7.518	0.210

Model	Basic weight **MCBQI3-11**	Basic weight (magnet) **MCBQI3-11**	Basic weight **MCBQI3-11-S**	Basic weight (magnet) **MCBQI3-11-S**	Stroke 25 mm **MCBQI3-11(-S)**
Tube I.D.					
ø32	0.984	0.99	0.981	0.987	0.062
ø40	1.489	1.501	1.483	1.495	0.088
ø50	2.6	2.617	2.593	2.61	0.120
ø63	3.485	3.505	3.474	3.494	0.129
ø80	5.623	5.65	5.608	5.635	0.185
ø100	7.819	7.854	7.755	7.79	0.236

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

MCB series

LOCKING UNIT

With cylinder

Technical data

Caution for safety
(Read before installing)



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 perssure 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

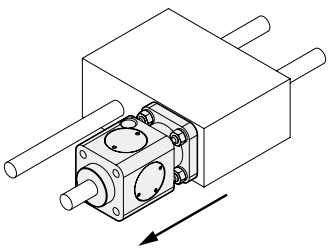
Order example

MCB – 40

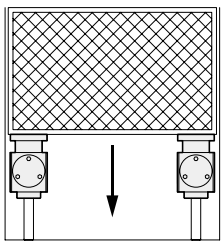
MODEL — TUBE I.D.

Applications of the Locking unit

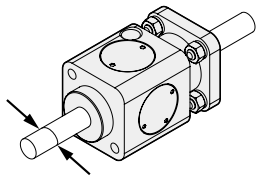
For slides



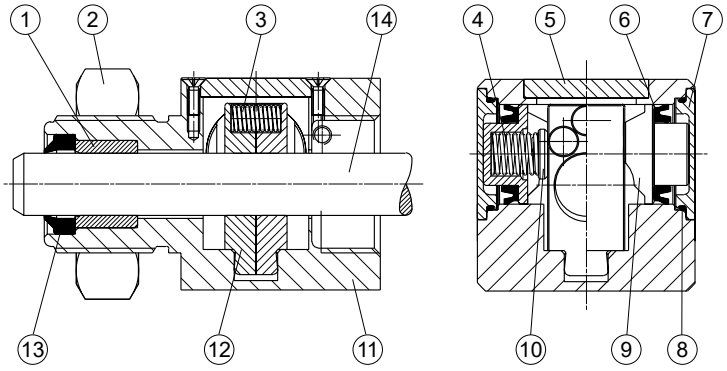
For piling



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.

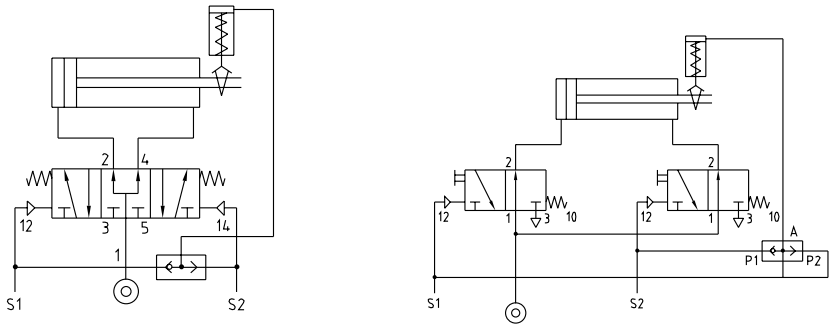
* When the ⑪ body of locking unit is removed the air supply, if there is no ⑭ support pin or piston rod to support inside structure, it will cause the ⑫ jaws deviation. The piston rod can't be mounted anymore.

Material

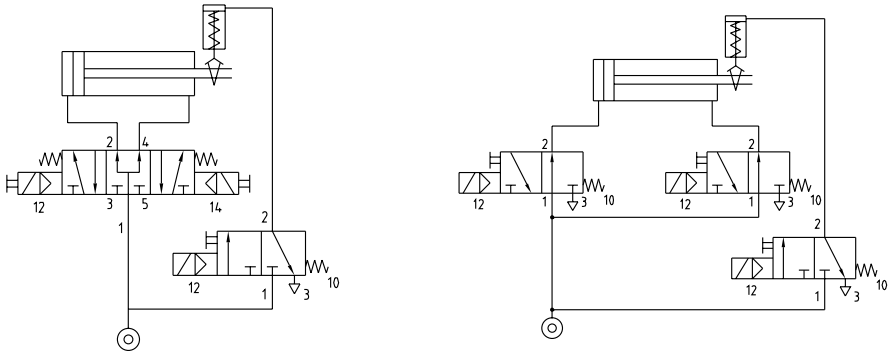
No.	Part name	Material
1	Guida bush	Iglidur
2	Nut	Steel
3	Spring	Steel
4	Spring	Steel
5	Superior cover	Aluminum alloy
6	Seal piston	NBR
7	Lateral cover	Aluminum alloy
8	O-ring	NBR
9	Piston	Delrin
10	Spring cover	Delrin
11	Body	Aluminum alloy
12	Jaws	Bronze
13	Rod seal	NBR
14	Support pin	Carbon steel

Connection scheme

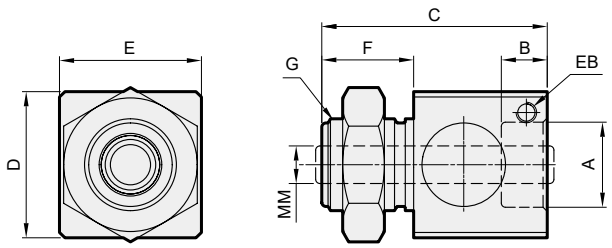
Pneumatic control



Electropneumatic control

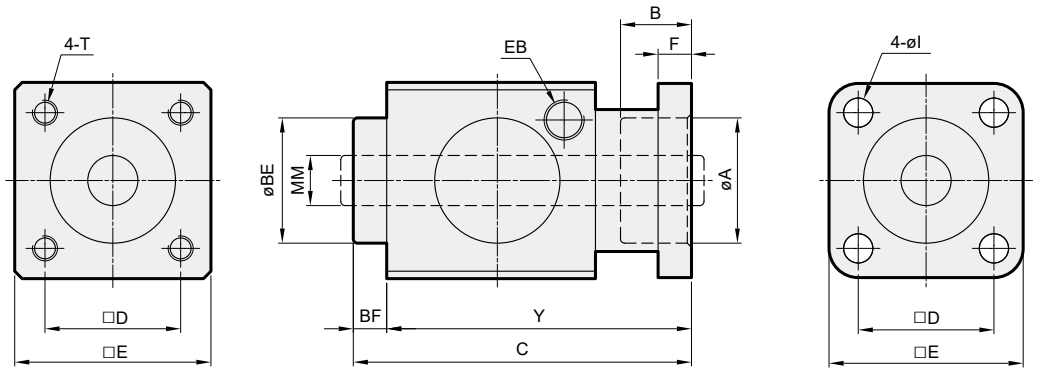


ø20, ø25



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	$ø8^{f7}$
25	M22×1.5	11	54	35	34	M5	22	M22×1.5	$ø10^{f7}$

ø32~ø125



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	$ø12^{f7}$	M6×8L	60
40	35.5	22.5	34.9	10	80	38	54	6	G1/8	6.5	$ø16^{f7}$	M6×8L	70
50	40.5	29	40	10	100	46.5	65	8	G1/8	9	$ø20^{f7}$	M8×12L	90
63	45.5	29	45	10	100	56.5	75	8	G1/8	9	$ø20^{f7}$	M8×12L	90
80	45.5	37	45	10	120	72	95	12	G1/4	11	$ø25^{f7}$	M10×16L	110
100	55.5	39	55	10	120	89	114	12	G1/4	11	$ø25^{f7}$	M10×16L	110
125	60.5	51.5	60	16	156	110	138	20	G1/4	13	$ø32^{f7}$	M12×20L	140

MHPD series

POWER CYLINDER

Technical data

Caution for safety
(Read before installing)



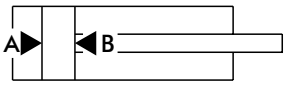
Features

- Hydro-pneumatic solution provides high power in confined space.
- Simple construction make these units ideal in many applications where previously hydraulics were the only option.
- Quiet in operation.
- Only requires a pneumatic valve to make the system operate.
- Wide range of working strokes and output forces available.

Specification

Model	MHPD
Pressure boost model	1T, 3T, 5T, 8T, 10T
Total stroke (mm)	50, 75, 100, 150, 200
Working stroke (mm)	5, 10, 15, 20
Medium	Filtered air with or without lubrication
Operating pressure range	0.3 ~ 0.8 MPa
Ambient temperature	-10~+60 °C (No freezing)

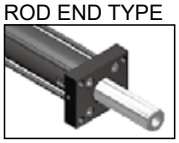
MHPD	Hole in rod end type	
MHPD-Z	Male thread in rod end type	



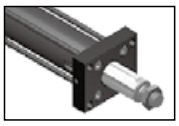
Order example

MHPD — 3T × 100 — 10 — Z

- MODEL
- THRUST MODEL: **1T** **3T** **5T** **8T** **10T**
- TOTAL STROKE: **50**: 50mm, **75**: 75mm, **100**: 100mm, **150**: 150mm, **200**: 200mm
- WORKING STROKE: **5**: 5mm, **10**: 10mm, **15**: 15mm, **20**: 20mm
- ROD END TYPE



Blank: Hole



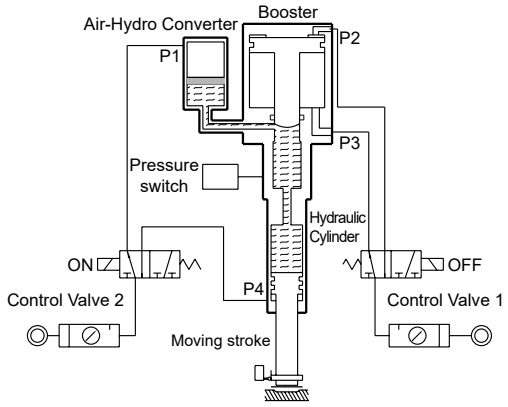
Z: Male thread

Power cylinders theoretic force

Unit: N

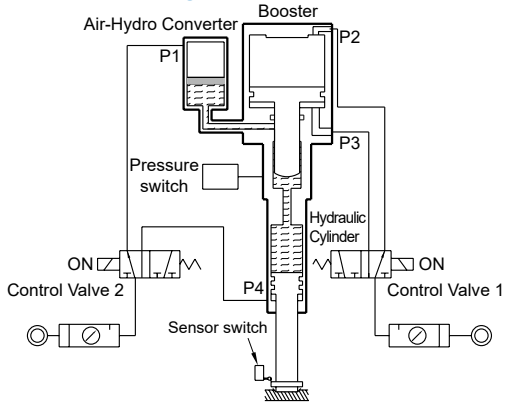
Thrust model			1T	3T	5T	8T	10T
Tube I.D. (mm)			ø50	ø70	ø80	ø100	ø125
Rod (mm)			ø30	ø40	ø50	ø60	ø70
Operating pressure (MPa)	0.3	A	7,216	18,473	30,054	46,959	67,630
		B	377	778	919	1,508	2,527
	0.4	A	9,621	24,630	40,072	62,612	90,174
		B	503	1,037	1,225	2,011	3,369
	0.5	A	12,026	30,788	50,090	78,265	112,717
		B	628	1,296	1,532	2,513	4,212
	0.6	A	14,432	36,945	60,108	93,918	135,261
		B	754	1,555	1,838	3,016	5,054
	0.7	A	16,837	43,103	70,126	109,571	157,804
		B	880	1,814	2,144	3,519	5,896
	0.8	A	19,242	49,260	80,143	125,224	180,347
		B	1,005	2,073	2,450	4,021	6,739

1. Quick traverse



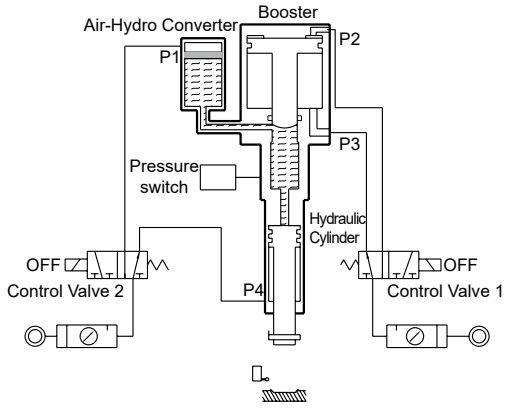
When the air is charged from the port P1, the oil in the tank will forward the hydraulic cylinder quickly. The pressure is the same as the air pressure, but the inflow of oil is large in volume.

2. Intensified feeding



When the air is charged from the port P2, a ram will advance. the highly pressured fluid will come in to the hydraulic cylinder which will be forwarded by large thrust.

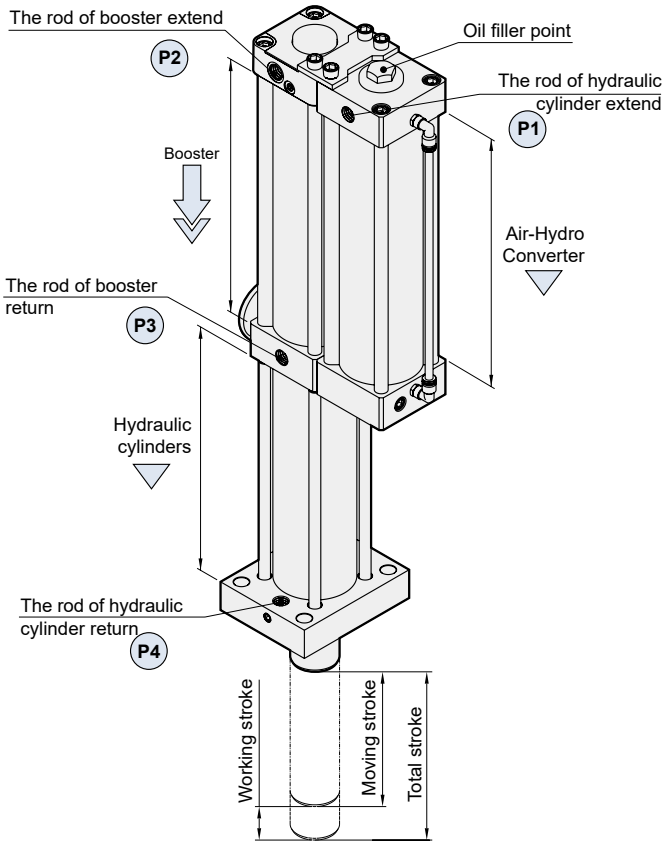
3. Swift reverse



When the air is send into port P4 and P3. the hydraulic cylinder is swiftly reversed. and at the same time the ram goes back.

Points in usage

- The booster must be levelled. The booster must be higher than the work cylinder.
- Standard booster are designed for use with petroleum base hydraulic oil.
- Before working, the rod of booster and hydraulic must return.
- Frequency of use should be 20 times/min or lower.



Power Cylinders bore and stroke

Type		Working stroke (mm)				
Thrust model / Total stroke		1T	3T	5T	8T	10T
MHPD	50mm	⑤⑩⑮	⑤⑩	⑤⑩	⑤⑩	⑤⑩⑮
	75mm	⑤⑩⑮⑳	❺⑩⑮	⑤⑩⑮	⑤⑩⑮	❺⑩⑮
	100mm	❺⑩⑮⑳	❺⑩⑮	❺⑩⑮	❺⑩⑮	❺⑩⑮
	125mm	❺⑩⑮⑳	❿⑮	❺⑩⑮	⑩⑮	⑩⑮⑳
	150mm	❿⑮⑳	❿⑮⑳	⑩⑮⑳	⑩⑮⑳	❿⑮⑳
	200mm	❿⑮⑳	❿⑮⑳	❿⑮⑳	❿⑮⑳	❿⑮⑳
MHPD-Z	50mm	⑤⑩⑮	⑤⑩	⑤⑩⑮	⑤⑩⑮	⑤⑩⑮
	75mm	⑤⑩⑮⑳	❺⑩⑮	⑤⑩⑮	⑤⑩⑮	❺⑩⑮⑳
	100mm	❺⑩⑮⑳	❺⑩⑮⑳	❺⑩⑮	❺⑩⑮⑳	❺⑩⑮⑳
	125mm	❺⑩⑮⑳	❿⑮⑳	❺⑩⑮⑳	⑩⑮⑳	⑩⑮⑳
	150mm	❿⑮⑳	❿⑮⑳	⑩⑮⑳	⑩⑮⑳	❿⑮⑳
	200mm	❿⑮⑳	❿⑮⑳	❿⑮⑳	❿⑮⑳	❿⑮⑳

Note. ⑤ = Working stroke 5mm, ⑩ = Working stroke 10mm;
⑮ = Working stroke 15mm, ⑳ = Working stroke 20mm;
Short stroke: ⑤⑩⑮⑳, Long stroke: ❺❿⑮⑳

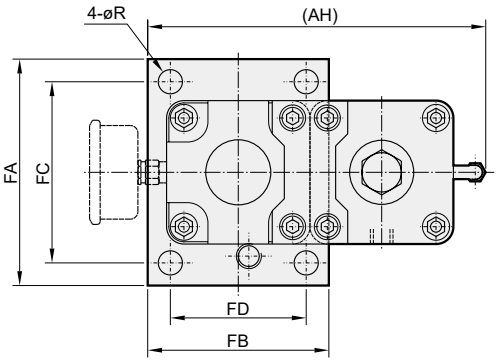
MHPD / MHPD-Z

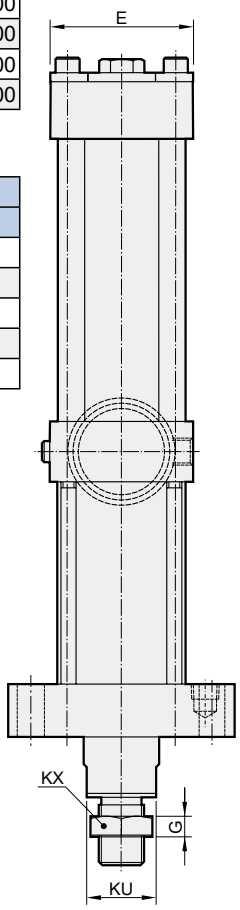
Standard stroke (Short stroke)

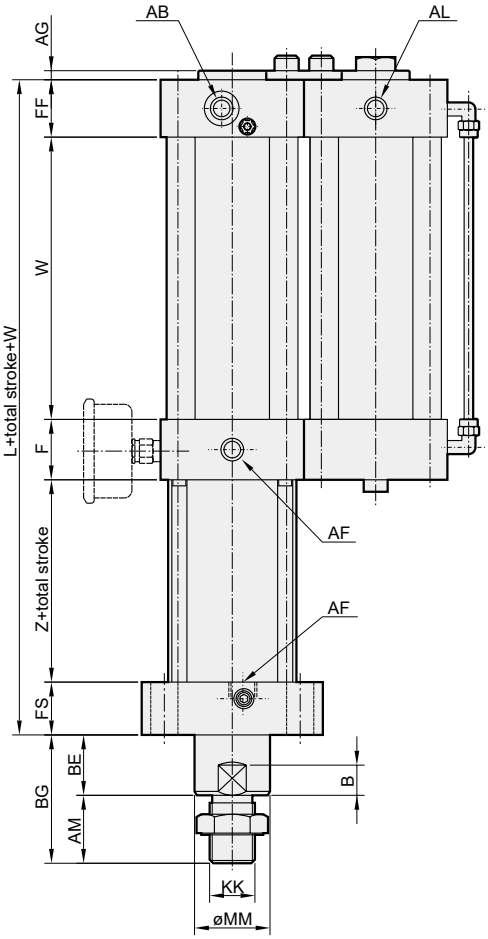
Type	Working stroke			
	5	10	15	20
1T	50~75	50~125	50~150	75~200
3T	50	50~100	75~150	150~200
5T	50~75	50~150	75~200	150~200
8T	50~75	50~150	75~200	150~200
10T	50	50~125	50~200	125~200
1T-Z	50~75	50~125	50~150	50~200
3T-Z	50	50~100	75~150	100~200
5T-Z	50~75	50~150	50~200	125~200
8T-Z	50~75	50~150	50~200	100~200
10T-Z	50	50~125	50~200	75~200

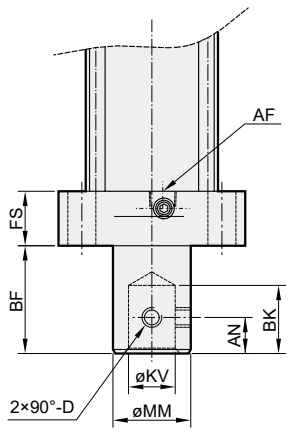
Working stroke

Type	W			
	5	10	15	20
1T	108	146	184	222
3T	126	187	248	309
5T	135	199	263	327
8T	150	214	278	342
10T	148	212	276	340









Female thread

Code / Type	AB	AF	AG	AH	AL	AM	AN	B	BE	BF	BG	BK	D	E	F
1T	G3/8	G3/8	5	187	G3/8	35	12	12	25	40	60	28	M6×1.0	75	40
3T	G3/8	G3/8	6	227	G3/8	45	15	20	40	50	85	35	M6×1.0	95	40
5T	G1/2	G1/2	6	262	G1/2	60	20	20	40	60	100	40	M10×1.5	115	40
8T	G1/2	G1/2	6	315	G1/2	70	25	20	50	70	120	60	M10×1.5	140	45
10T	G3/4	G3/4	6	381	G3/4	80	30	27	60	85	140	50	M10×1.5	174	55

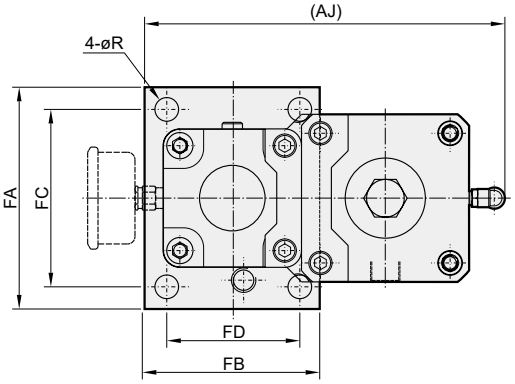
Code / Type	FA	FB	FC	FD	FF	FS	G	KK	KU	KV	KX	L	MM	R	Z
1T	130	100	100	70	32	35	11	M22×1.5	27	16	32	167	30	11	60
3T	150	120	120	90	38	35	13	M30×1.5	36	20	41	187	40	16	74
5T	185	130	155	100	40	45	15	M40×2.0	46	25	57	199	50	17	74
8T	230	160	190	120	45	45	15	M48×2.0	55	30	65	218	60	22	83
10T	270	190	220	140	55	50	20	M56×2.0	65	40	80	243	70	26	83

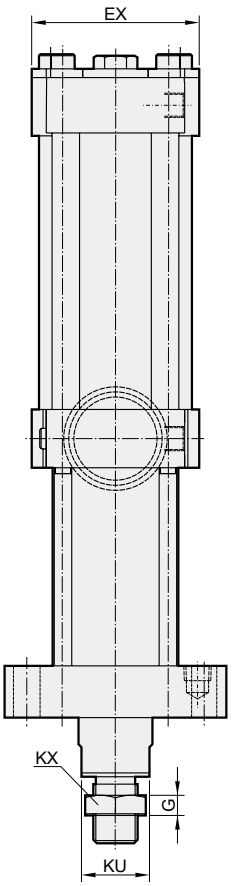
MHPD / MHPD-Z

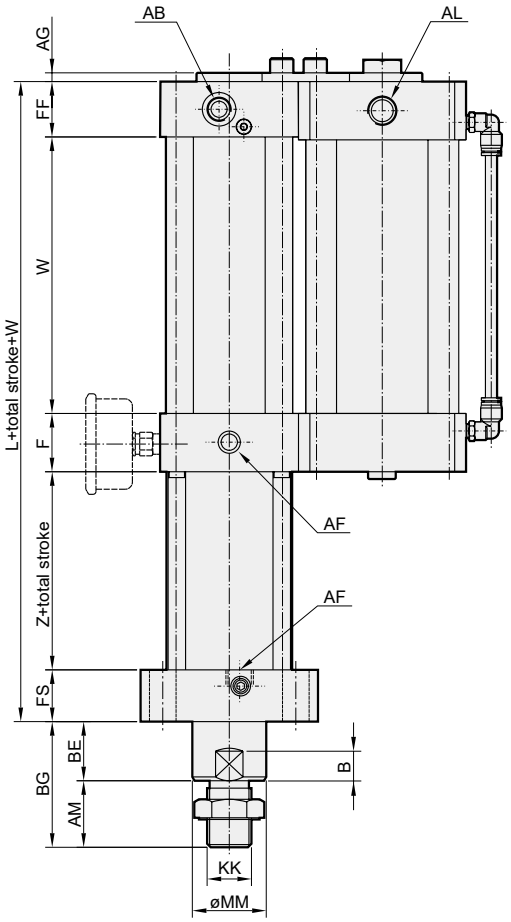
Standard stroke (Long stroke)

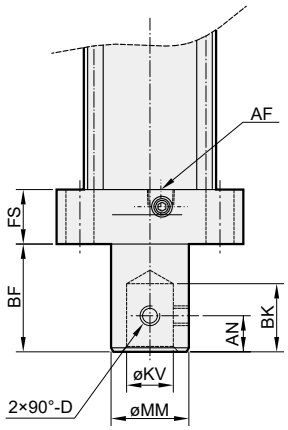
Type	Working stroke		
	5	10	15
1T	80~125	130~200	155~200
3T	55~100	105~200	155~200
5T	80~125	155~200	–
8T	80~100	155~200	–
10T	75~100	130~200	–
1T-Z	80~125	130~200	155~200
3T-Z	55~100	105~200	155~200
5T-Z	80~125	155~200	–
8T-Z	80~100	155~200	–
10T-Z	55~100	130~200	–

Type	W		
	5	10	15
1T	108	146	184
3T	126	187	248
5T	135	199	263
8T	150	214	278
10T	148	212	276









Female thread

Code / Type	AB	AF	AG	AJ	AL	AM	AN	B	BE	BF	BG	BK	D	EX	F
1T	G3/8	G3/8	5	207	G3/8	35	12	12	25	40	60	28	M6×1.0	95	40
3T	G3/8	G3/8	6	247	G1/2	45	15	20	40	50	85	35	M6×1.0	115	40
5T	G1/2	G1/2	6	287	G1/2	60	20	20	40	60	100	40	M10×1.5	140	40
8T	G1/2	G1/2	6	341	G3/4	70	25	20	50	70	120	60	M10×1.5	174	45
10T	G3/4	G3/4	6	411	G3/4	80	30	27	60	85	140	50	M10×1.5	204	55

Code / Type	FA	FB	FC	FD	FF	FS	G	KK	KU	KV	KX	L	MM	R	Z
1T	130	100	100	70	32	35	11	M22×1.5	27	16	32	167	30	11	60
3T	150	120	120	90	38	35	13	M30×1.5	36	20	41	187	40	16	74
5T	185	130	155	100	40	45	15	M40×2.0	46	25	57	199	50	17	74
8T	230	160	190	120	45	45	15	M48×2.0	55	30	65	218	60	22	83
10T	270	190	220	140	55	50	20	M56×2.0	65	40	80	243	70	26	83