MCMB series

MINIATURE CYLINDER

Features

■ Non lubrication

- Special housing and bushing enables self lubrication of piston rod.

■ High quality long service life

- Hard anodised stainless steel cylinder tubes offer a high resistance to corrosion and low internal friction.
- Cylinder mountings, available with a comprehensive range of accessories for rigid or flexible mounting.

■ Magnetic as standard

Specification

Model		MCMB			
Tube I.D.		20	25	32	40
Port size		Rc1/8			Rc1/4
Medium		Air			
Max. operating perssure		1 MPa			
Min. operating perssure	Double acting	0.05 MPa			
	Single acting	Extended: 0.23, Returned: 0.18 MPa			
Proof pressure		1.5 MPa			
Lubricator		Not required			
Ambient temperature		-5~+60°C (No freezing)			
Available speed range		50~750 mm/sec			
Max. allowable kinetic energy (J)	Cushion pad	0.27	0.4	0.65	1.2
	Cushion air	0.54	0.78	1.27	2.35
Sensor switch		RCM (Please refer to page 8-16)			
Sensor switch (band)		BM20	BM25	BM32	BM40

* For precautions, please refer to page 3-2.

Table for standard stroke

Acting type		Tube I.D.	Stroke (mm)	Max. stroke (mm)
Single acting	13/15	ø20,25, 32,40	15,25,50,75,100	150
Double acting	11	ø20,25, 32,40	25,50,75,100,125,150, 200,250,300,400,500	1000
	21/27		25,50,75,100,125,150, 200,250,300,400	450

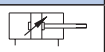
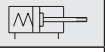
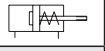
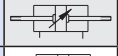
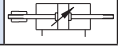
* Intermediate stroke are available, please contact us.

Order example

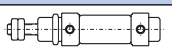
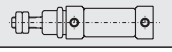
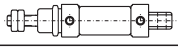
MCMB — 11 — 20 — 50 — A — N — G

- MODEL
- STYLE — **1**: Single rod; **2**: Double rod
- TUBE I.D.
- STROKE
- Blank: Cushion pad (Unadjustable); **A**: Cushion air (Adjustable) ⚠
- PORT THREAD — Blank: Rc thread; **G**: G thread; **NPT**: NPT thread

STYLE

Code		Symbol	Description
1	1		Double acting / Male thread
1	3		Single acting / Normally extended male thread
1	5		Single acting / Normally returned male thread
2	1		Double rod / Male thread
2	7		Double rod / Adjustable male thread Please mark "adjustable stroke" at order list

END COVER TYPE

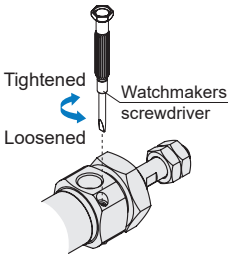
Code	Symbol	Description
Blank		Standard type
N		End-plain
E		With pivot type

* Single acting type, please contact us.
* Order example for special specification, refer to page 0-7.

⚠ Caution

For (**A**) Cushion air (Adjustable)

1. To adjust a cushion needle, please slowly turn the needle valve from the fully closed status to the required status which needs to be within 2.5 turns.
2. If the needle valve loosen excessively, the buffer doesn't take effect and the lifetime of cylinder would be shortened.



Accessories & Connector

	Accessories					
Code	LB (LB×2, with cover nut ×1)	LB (LB×1, without cover nut)	NUT		CA	CB
Cover type	Standrad type	End-plain (N) With pivot type (E)	–		Standrad type	
Mounting / Tube I.D.	with nut		Rod nut	Cover nut		
ø20	LB-M2-20x2	LB-M2-20	NUT-M8x1.25x5Hx13B	NUT-M20x1.5x8Hx26B	CA-M2-20	CB-M2-20
ø25	LB-M2-25x2	LB-M2-25	NUT-M10x1.25x6Hx17B	NUT-M26x1.5x8Hx32B	CA-M2-25	CB-M2-25
ø32						
ø40	LB-M2-40x2	LB-M2-40	NUT-M14x1.5x8Hx22B	NUT-M32x2.0x10Hx41B	CA-M2-40	CB-M2-40

	Accessories					Connector	
Code	FA	FB	SDB (with pin×1 + snap ring×2)	TA	TB	Y	I
Cover type	All applicable	Standard type	With pivot type (E)	All applicable	Standard type	All applicable	
Mounting / Tube I.D.							
ø20	FA-M2-20		SDB-M2-20	TA-M2-20		Y-M2-20	I-M2-20
ø25	FA-M2-25			TA-M2-25		Y-M2-25	I-M2-25
ø32			SDB-M2-32				
ø40	FA-M2-40			TA-M2-40		Y-Q1-40	I-M2-40

Pin

Applicable	Y&I connector	CA&CB accessories	SDB accessories
Code	PIN-Y-P (with split pin / snap ring)	PIN-CB-P (with split pin / snap ring)	PIN-SDB (with split pin)
Fig / Tube I.D.	ø20~ø32 ø40	ø20~ø32 ø40	
ø20	PIN-M2-20-1-P	PIN-M2-20-1-P	PIN-M2-20-2-P
ø25			
ø32			PIN-M2-32-1-P
ø40	PIN-M2-40-2-P	PIN-M2-40-1-P	

Cylinder & accessories weight

Cylinder weight

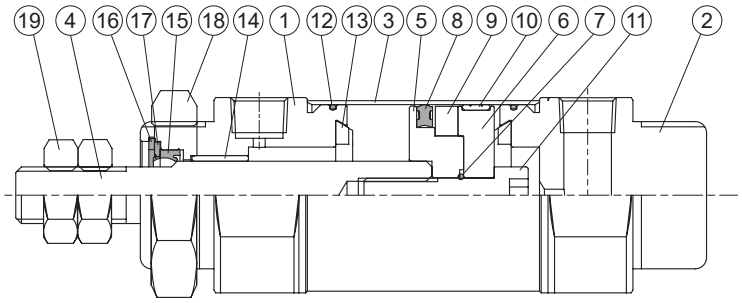
Unit: g

Model	Basic weight MCMB-11	Basic weight MCMB-11-N	Basic weight MCMB-11-E	Stroke 25 mm MCMB-11	Basic weight MCMB-11-A	Stroke 25 mm MCMB-11-A
Tube I.D.						
ø20	146	146	148	18	144	20
ø25	232	232	228	28	252	26
ø32	275	275	287	38	340	38
ø40	568	568	576	50	565	51

Accessories weight

Unit: g

Model	LB	CA	CB	FA/FB	SDB	TA/TB	Y	I	Pin	Rod nut	Cover nut
Tube I.D.											
ø20	122	53	49	66	62	37	53	63	13	4	19
ø25	129	63	69	73	62	47	49	62	13	8	23
ø32	129	63	69	73	140	47	49	62	13	8	23
ø40	207	162	168	124	140	94	230	164	43	16	50



Order example of component parts

CP – MCMB – 2 – 20 – N – G

- MODEL
- Blank: Single rod / **2**: Double rod
- TUBE I.D.
- END COVER TYPE: Blank: Standard type / **N**: Non-pivot type / **E**: With pivot type
- PORT THREAD: Blank: Rc thread / **G**: G thread / **NPT**: NPT thread

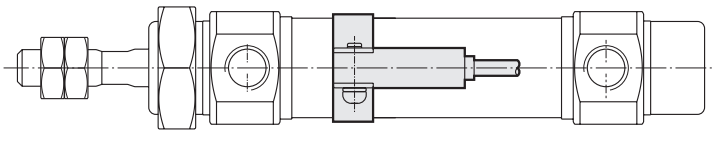
Material

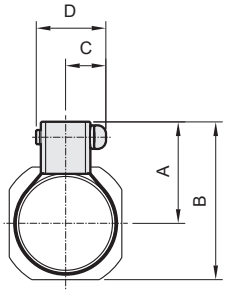
No.	Tube I.D. / Part name	20	25	32	40	Q'y 11 type	Q'y 21 type	Component parts (inclusion) 11 type	Component parts (inclusion) 21 type
1	Rod cover	Aluminum alloy				1	2	●	●
2	Head cover	Aluminum alloy				1	–	●	
3	Tube	Stainless steel				1	1		
4	Piston rod	Carbon steel				1	1		
5	Piston-R	Aluminum alloy				1	1	●	●
6	Piston-H	Aluminum alloy				1	1	●	●
7	Piston gasket	NBR				1	1	●	●
8	Piston packing	NBR				1	1	●	●
9	Magnet ring	Magnet material				1	1	●	●
10	Wear ring	Resin				1	1	●	●
11	Piston bolt	SCM				1	–	●	
12	Cover ring	–		NBR		2	2	●	●
13	Cushion gasket	NBR				2	2	●	●
14	Rod bush	Bearing alloy				1	2	●	●
15	Rod packing *1	NBR				1	2	●	●
16	Snap ring	Spring steel				1	2	●	●
17	Washer	Carbon steel				1	2	●	●
18	Tie nut	Carbon steel				1	2	●	●
19	Rod front nut	Carbon steel				2	2	●	●

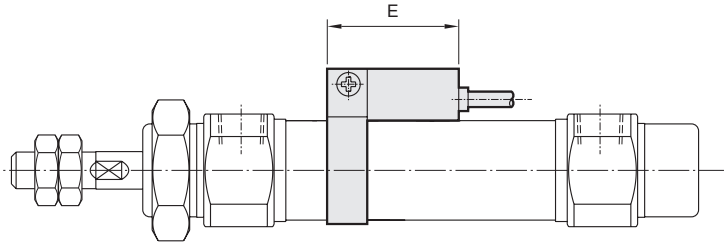
*1. Only the rod packing is repairable, please contact our sales if needed.

Installation of sensor switch

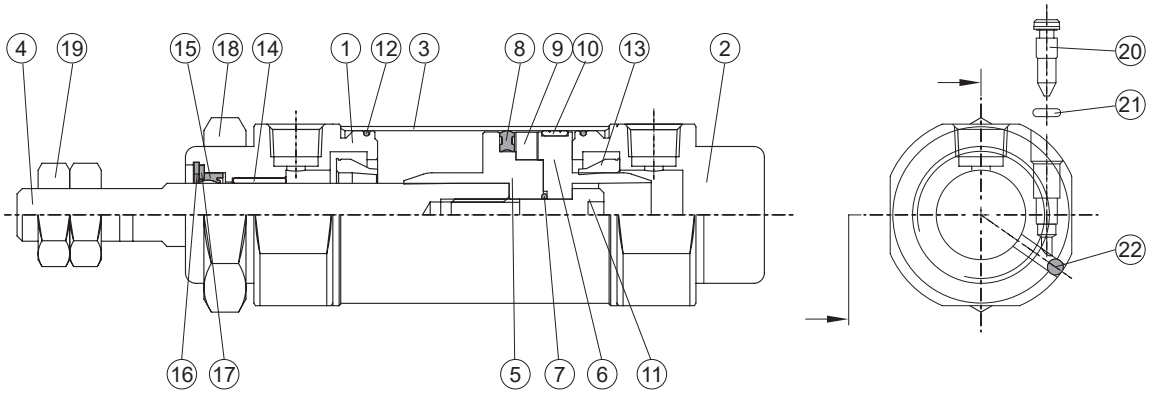
Sensor switch: RCM
Sensor switch band: BM**







Code / Tube I.D.	A	B	C	D	E
20	22	34	10	16	28
25	25	40	10	16	28
32	28	46	10	16	28
40	32	54	10	16	28



Material

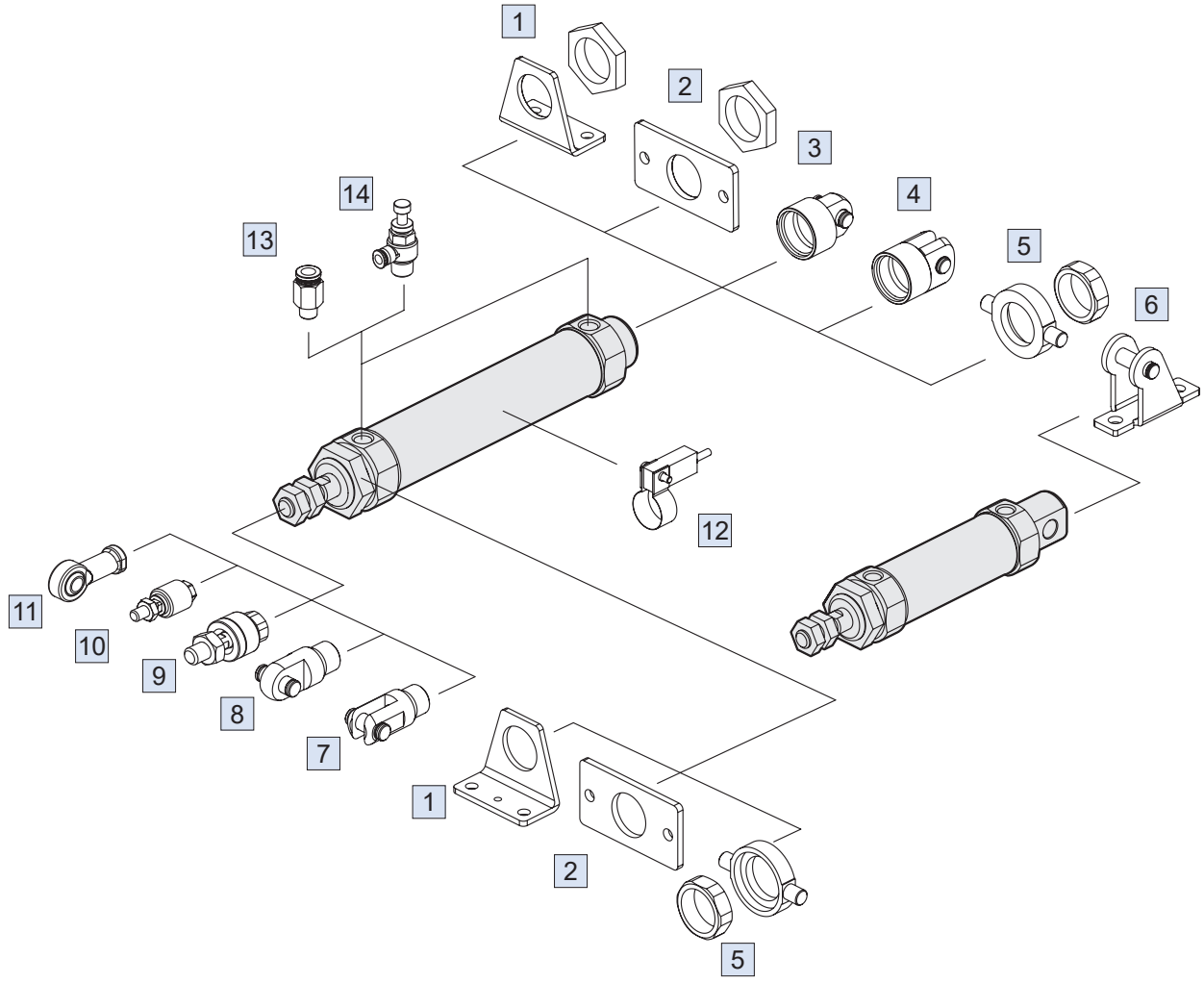
No.	Tube I.D. / Part name	20	25	32	40	Q'y 11 type	Q'y 21 type	Component parts (inclusion) 11 type	Component parts (inclusion) 21 type
1	Rod cover	Aluminum alloy				1	2	●	●
2	Head cover	Aluminum alloy				1	–	●	
3	Tube	Stainless steel				1	1		
4	Piston rod	Carbon steel				1	1		
5	Piston-R	Aluminum alloy				1	1	●	●
6	Piston-H	Aluminum alloy				1	1	●	●
7	Piston gasket	NBR				1	1	●	●
8	Piston packing	NBR				1	1	●	●
9	Magnet ring	Magnet material				1	1	●	●
10	Wear ring	Resin				1	1	●	●
11	Piston bolt	SCM				1	–	●	
12	Cover ring	–		NBR		2	2	●	●
13	Cushion packing	NBR				2	2	●	●
14	Rod bush	Bearing alloy				1	2	●	●
15	Rod packing *1	NBR				1	2	●	●
16	Snap ring	Spring steel				1	2	●	●
17	Washer	Carbon steel				1	2	●	●
18	Tie nut	Carbon steel				1	2	●	●
19	Rod front nut	Carbon steel				2	2	●	●
20	Needle valve	Stainless steel		Carbon steel		2	2	●	●
21	Needle valve packing	NBR				2	2	●	●
22	Steel ball	Stainless steel				2	2	●	●

*1. Only the rod packing is repairable, please contact our sales if needed.

Order example of component parts

CP — MCMB — 2 — 20 — A — N — G

- CP — MODEL
- 2 — Blank: Single rod, **2**: Double rod
- 20 — TUBE I.D.
- A — **A**: Cushion air (Adjustable)
- N — END COVER TYPE: Blank: Standard type, **N**: Non-pivot type, **E**: With pivot type
- G — PORT THREAD: Blank: Rc thread, **G**: G thread, **NPT**: NPT thread



No.	Accessories	Material	Page
1	Mounting accessories LB	Carbon steel	3-23
2	Mounting accessories FA/FB	Carbon steel	3-24
3	Mounting accessories CA+PIN	Carbon steel	3-23, 26
4	Mounting accessories CB+PIN	Carbon steel	3-23, 26
5	Mounting accessories TA/TB	Cast iron *2	3-25
6	Mounting accessories SDB+PIN (*1)	Carbon steel	3-24, 26
7	Accessories Y+PIN	Carbon steel *3	3-26
8	Accessories I+PIN	Carbon steel	3-26

No.	Accessories	Material	Page
9	Floating joint MFC	Carbon steel	8-2
10	Floating joint MFCS	Carbon steel	8-5
11	Female rod ends PHS	Carbon steel	8-6
12	Sensor switch RCM+BM**	–	8-16
13	Fitting PC (PISCO)	–	8-3 (Vol.1)
14	Speed controller JSC (PISCO)	–	8-15 (Vol.1)

*1. Only for end cover "E" type.
*2. ø20 material is carbon steel.
*3. Y accessories ø40 material is cast iron.

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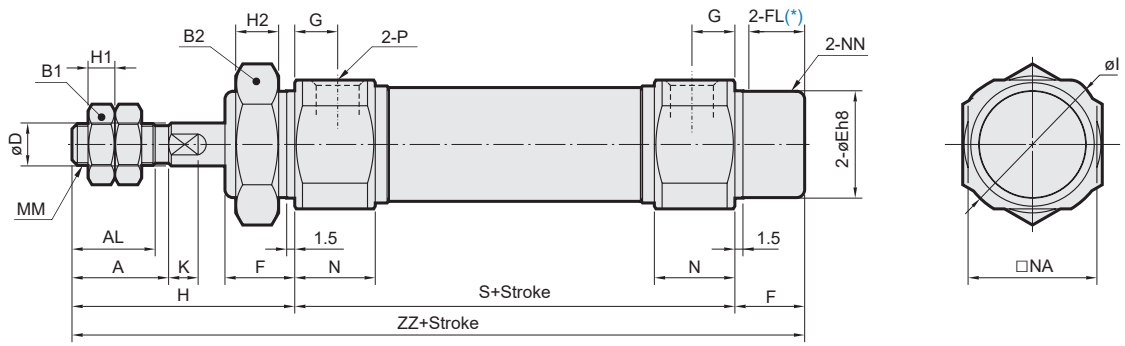
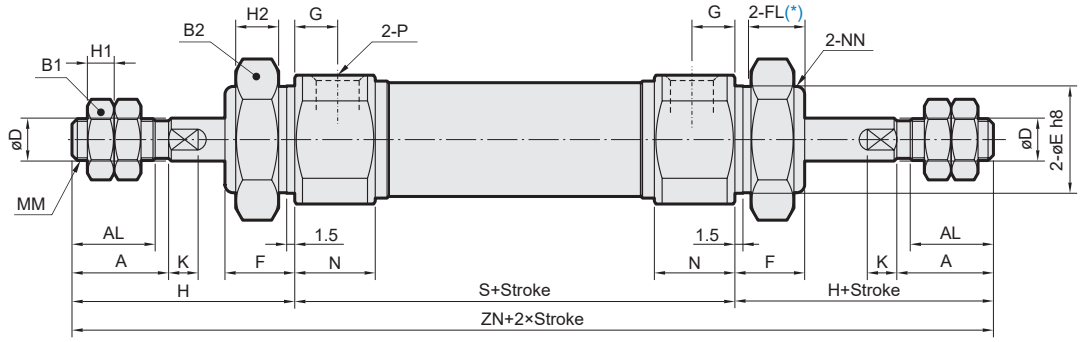


21



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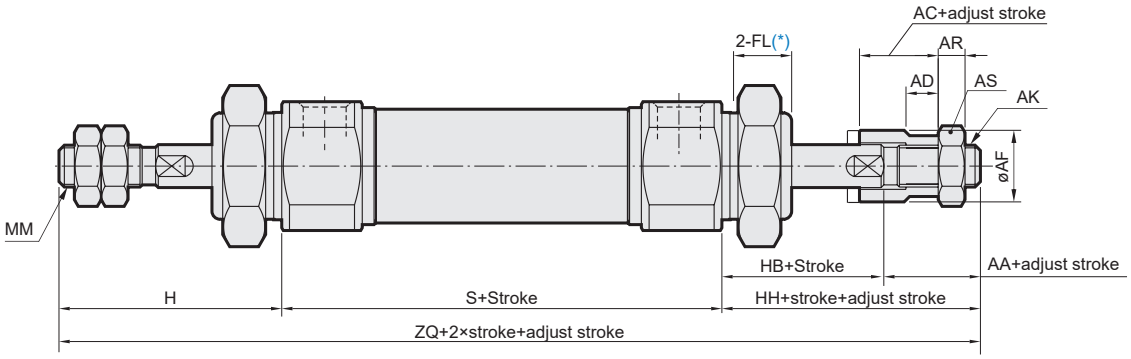

Unit: mm

Code / Tube I.D.	A	AA	AC	AD	AF	AK	AL	AR	AS	B1	B2	D	E	F	FL	G	H	H1	H2	HB	HH	I	K	MM
20	18	17.5	15	9.5	16	M8×1.25	15.5	5	13	13	26	8	20 $^{0}_{-0.03}$	13	10.5	8	41	5	8	20.5	38	28	5	M8×1.25
25	22	18.5	15	9.5	16	M8×1.25	19.5	5	13	17	32	10	26 $^{0}_{-0.03}$	13	10.5	8	45	6	8	20.5	39	33.5	5	M10×1.25
32	22	16	12	7	20	M10×1.25	19.5	6	17	17	32	12	26 $^{0}_{-0.03}$	13	10.5	8	45	6	8	20	36	37.5	5.5	M10×1.25
40	24	17	12	7	30	M12×1.25	21	7	19	22	41	14	32 $^{0}_{-0.04}$	16	13.5	11	50	8	10	23	40	46.5	7	M14×1.5

Code / Tube I.D.	N	NA	NN	P	S	ZN	ZQ	ZZ
20	15	24	M20×1.5	Rc1/8	62	144	141	116
25	15	30	M26×1.5	Rc1/8	62	152	146	120
32	15	34.5	M26×1.5	Rc1/8	64	154	145	122
40	21.5	42.5	M32×2.0	Rc1/4	88	188	178	154

* FL: Effective thread length

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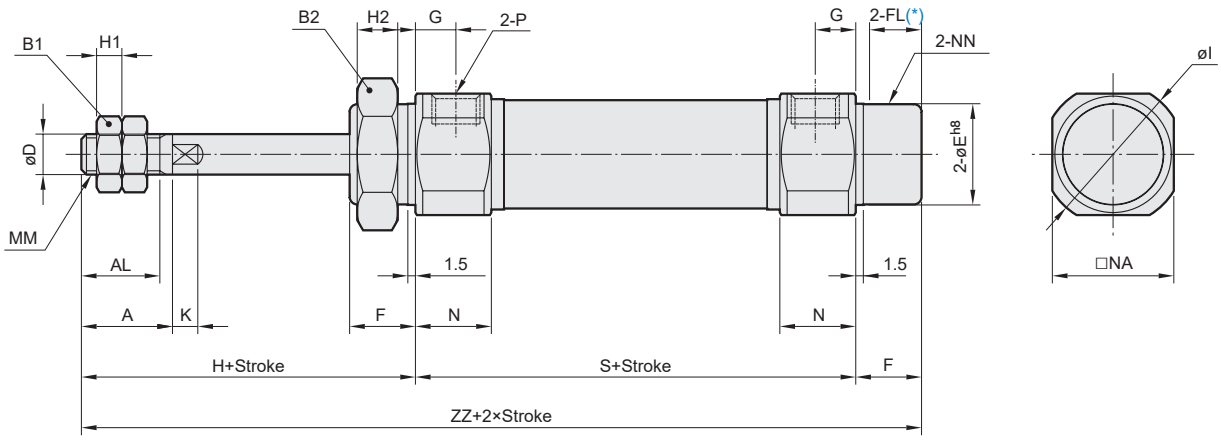
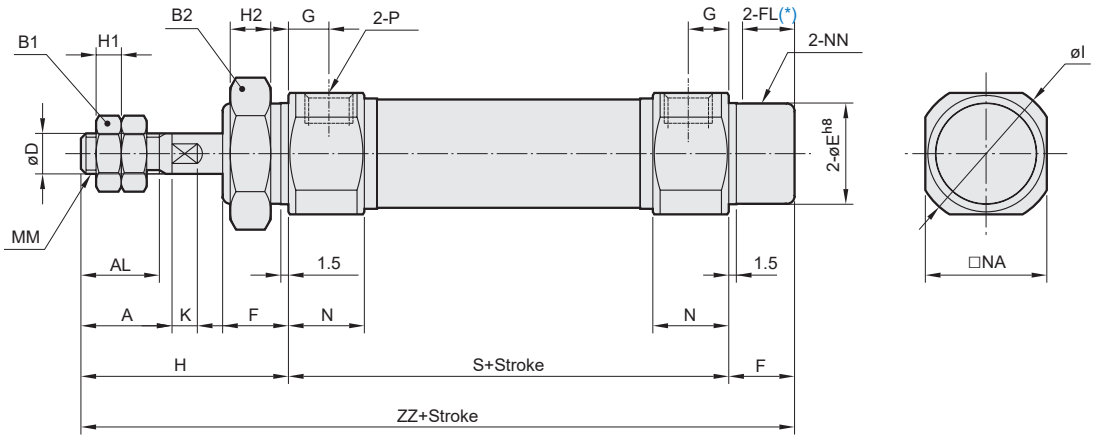


15

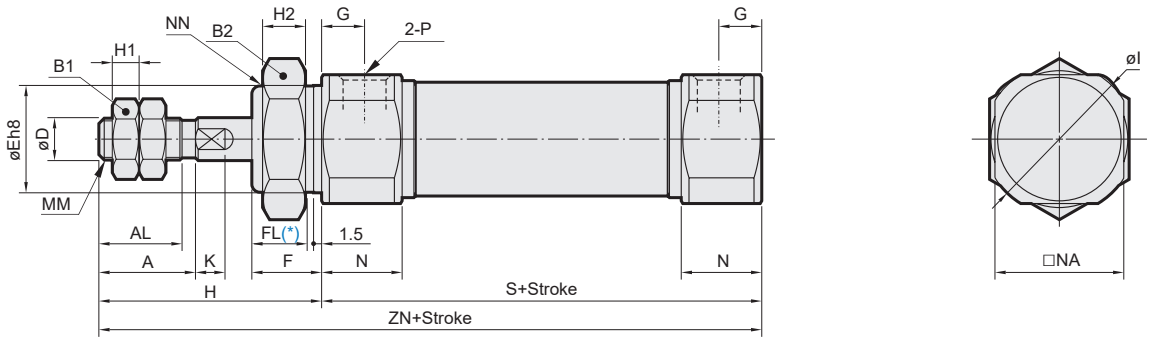


Code / Tube I.D.	A	AL	B1	B2	D	E	F	FL	G	H	H1	H2	I	K	MM	N	NA	NN	P
20	18	15.5	13	26	8	20 $^{0}_{-0.03}$	13	10.5	8	41	5	8	28	5	M8×1.25	15	24	M20×1.5	Rc1/8
25	22	19.5	17	32	10	26 $^{0}_{-0.03}$	13	10.5	8	45	6	8	33.5	5	M10×1.25	15	30	M26×1.5	Rc1/8
32	22	19.5	17	32	12	26 $^{0}_{-0.03}$	13	10.5	8	45	6	8	37.5	5.5	M10×1.25	15	34.5	M26×1.5	Rc1/8
40	24	21	22	41	14	32 $^{0}_{-0.04}$	16	13.5	11	50	8	10	46.5	7	M14×1.5	21.5	42.5	M32×2.0	Rc1/4

Code / Stroke / Tube I.D.	S			ZZ		
	1~50	51~100	101~150	1~50	51~100	101~150
20	87	112	137	141	166	191
25	87	112	137	145	170	195
32	89	114	139	147	172	197
40	113	138	163	179	204	229

* FL: Effective thread length

N

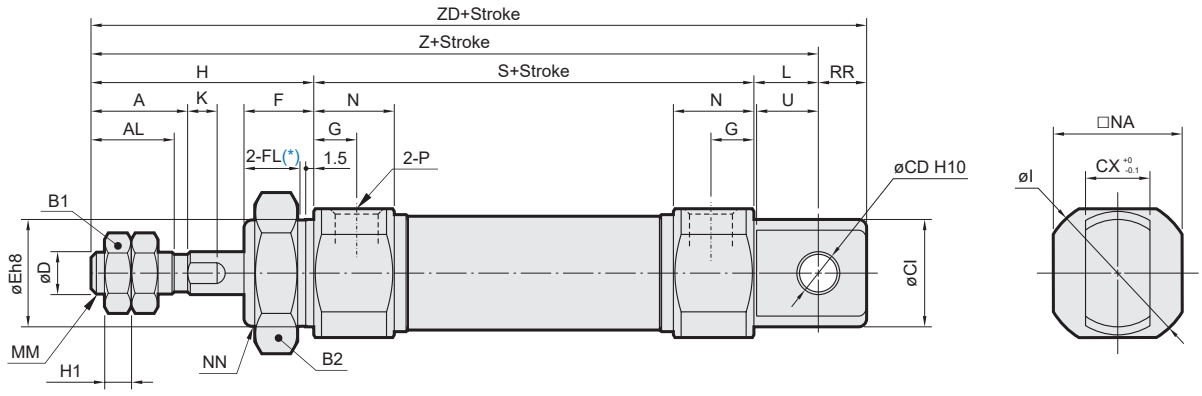


* FL: Effective thread length

Unit: mm

Code / Tube I.D.	A	AL	B1	B2	D	E	F	FL	G	H	H1	H2	I	K	MM	N	NA	NN	P	S	ZN
20	18	15.5	13	26	8	20 $^{0}_{-0.03}$	13	10.5	8	41	5	8	28	5	M8×1.25	15	24	M20×1.5	Rc1/8	62	103
25	22	19.5	17	32	10	26 $^{0}_{-0.03}$	13	10.5	8	45	6	8	33.5	5	M10×1.25	15	30	M26×1.5	Rc1/8	62	107
32	22	19.5	17	32	12	26 $^{0}_{-0.03}$	13	10.5	8	45	6	8	37.5	5.5	M10×1.25	15	34.5	M26×1.5	Rc1/8	64	109
40	24	21	22	41	14	32 $^{0}_{-0.04}$	16	13.5	11	50	8	10	46.5	7	M14×1.5	21.5	42.5	M32×2.0	Rc1/4	88	138

E

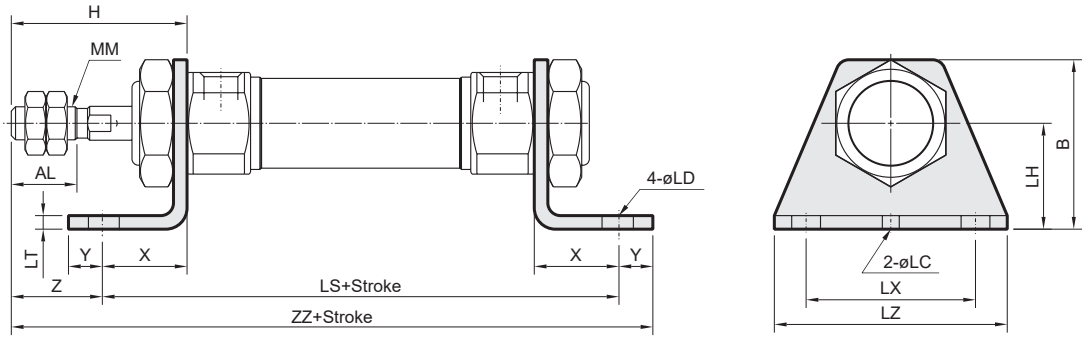


* FL: Effective thread length

Unit: mm

Code / Tube I.D.	A	AL	B1	B2	CD	CX	CI	D	E	F	FL	G	H	H1	I	K	L	MM	N	NA	NN	P	RR	S	U	Z	ZD
20	18	15.5	13	26	8	12	20	8	20 $^{0}_{-0.03}$	13	10.5	8	41	5	28	5	12	M8×1.25	15	24	M20×1.5	Rc1/8	9	62	11.5	115	124
25	22	19.5	17	32	8	12	22	10	26 $^{0}_{-0.03}$	13	10.5	8	45	6	33.5	5	12	M10×1.25	15	30	M26×1.5	Rc1/8	9	62	11.5	119	128
32	22	19.5	17	32	10	20	27	12	26 $^{0}_{-0.03}$	13	10.5	8	45	6	37.5	5.5	15	M10×1.25	15	34.5	M26×1.5	Rc1/8	12	64	14.5	124	136
40	24	21	22	41	10	20	33	14	32 $^{0}_{-0.04}$	16	13.5	11	50	8	46.5	7	15	M14×1.5	21.5	42.5	M32×2.0	Rc1/4	12	88	14.5	153	165

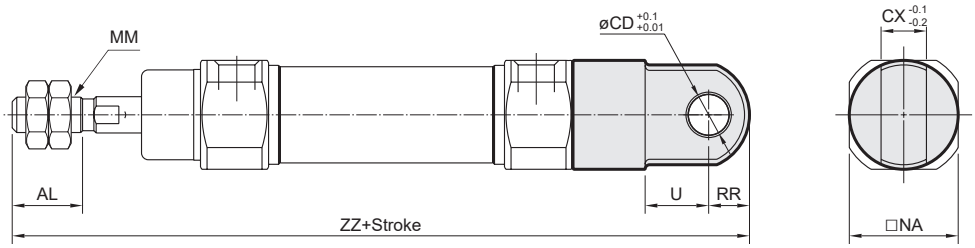
LB



Unit: mm

Code / Tube I.D.	AL	B	H	LC	LD	LH	LS	LT	LX	LZ	MM	X	Y	Z	ZZ
20	15.5	40	41	4	6.8	25	102	3.2	40	55	M8×1.25	20	8	21	131
25	19.5	47	45	4	6.8	28	102	3.2	40	55	M10×1.25	20	8	25	135
32	19.5	47	45	4	6.8	28	104	3.2	40	55	M10×1.25	20	8	25	137
40	21	54	50	4	7	30	134	3.2	55	75	M14×1.5	23	10	27	171

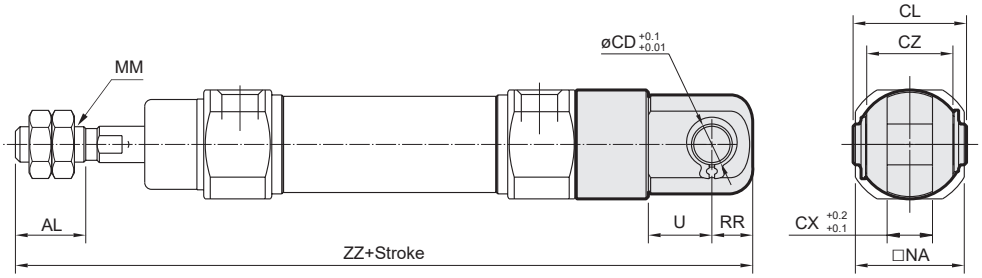
CA



Unit: mm

Code / Tube I.D.	AL	CD	CX	MM	NA	RR	U	ZZ
20	15.5	9	10	M8×1.25	24	9	14	142
25	19.5	9	10	M10×1.25	30	9	14	146
32	19.5	9	10	M10×1.25	34.5	9	14	148
40	21	10	15	M14×1.5	42.5	11	18	188

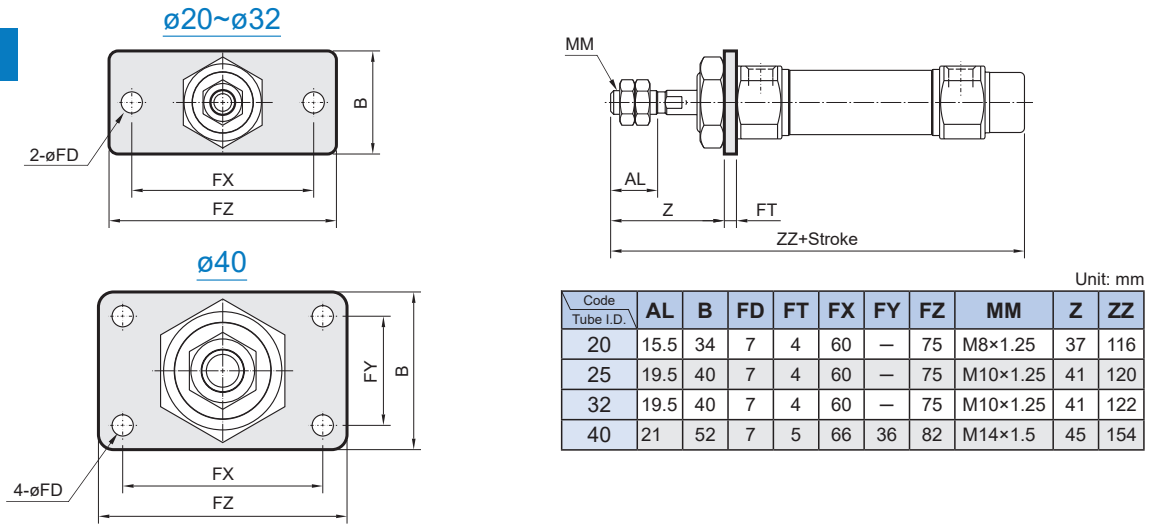
CB



Unit: mm

Code / Tube I.D.	AL	CD	CL	CX	CZ	MM	NA	RR	U	ZZ
20	15.5	9	25	10	19	M8×1.25	24	9	14	142
25	19.5	9	25	10	19	M10×1.25	30	9	14	146
32	19.5	9	25	10	19	M10×1.25	34.5	9	14	148
40	21	10	41.2	15	30	M14×1.5	42.5	11	18	188

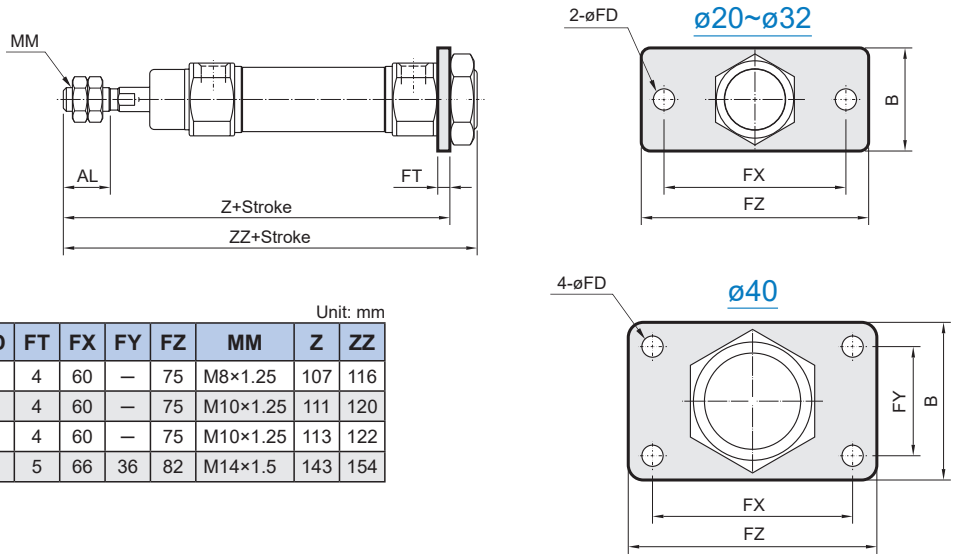
FA



Unit: mm

Code / Tube I.D.	AL	B	FD	FT	FX	FY	FZ	MM	Z	ZZ
20	15.5	34	7	4	60	–	75	M8×1.25	37	116
25	19.5	40	7	4	60	–	75	M10×1.25	41	120
32	19.5	40	7	4	60	–	75	M10×1.25	41	122
40	21	52	7	5	66	36	82	M14×1.5	45	154

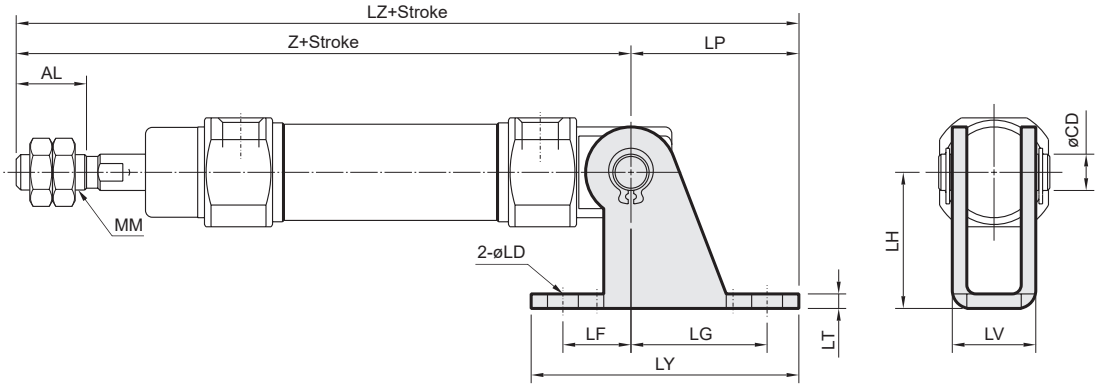
FB



Unit: mm

Code / Tube I.D.	AL	B	FD	FT	FX	FY	FZ	MM	Z	ZZ
20	15.5	34	7	4	60	–	75	M8×1.25	107	116
25	19.5	40	7	4	60	–	75	M10×1.25	111	120
32	19.5	40	7	4	60	–	75	M10×1.25	113	122
40	21	52	7	5	66	36	82	M14×1.5	143	154

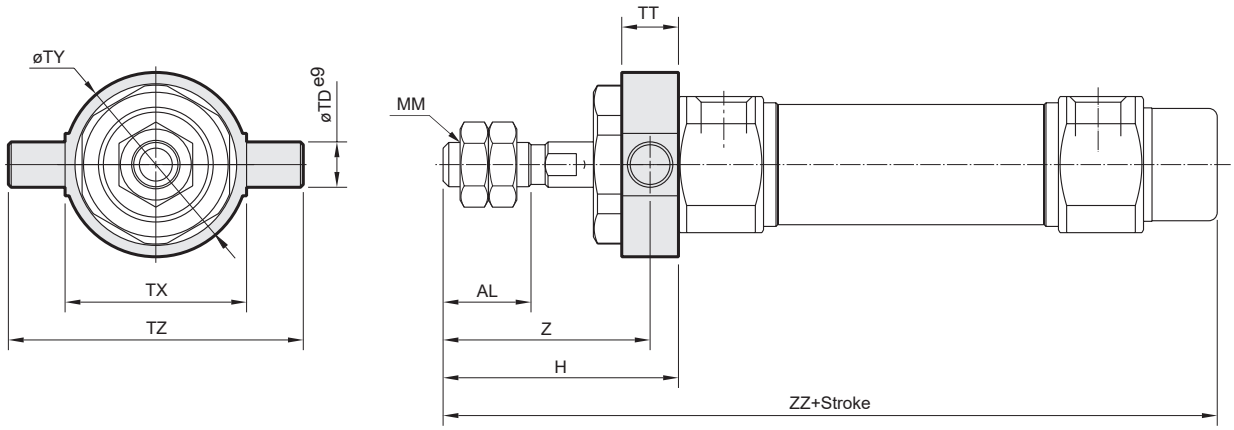
SDB



Unit: mm

Code / Tube I.D.	AL	CD	LD	LF	LG	LH	LP	LT	LV	LY	LZ	MM	N	Z
20	15.5	8	6.8	15	30	30	37	3.2	18.4	59	152	M8×1.25	15	115
25	19.5	8	6.8	15	30	30	37	3.2	18.4	59	156	M10×1.25	15	119
32	19.5	10	9	15	40	40	50	4	28	75	174	M10×1.25	15	124
40	21	10	9	15	40	40	50	4	28	75	203	M14×1.5	21.5	153

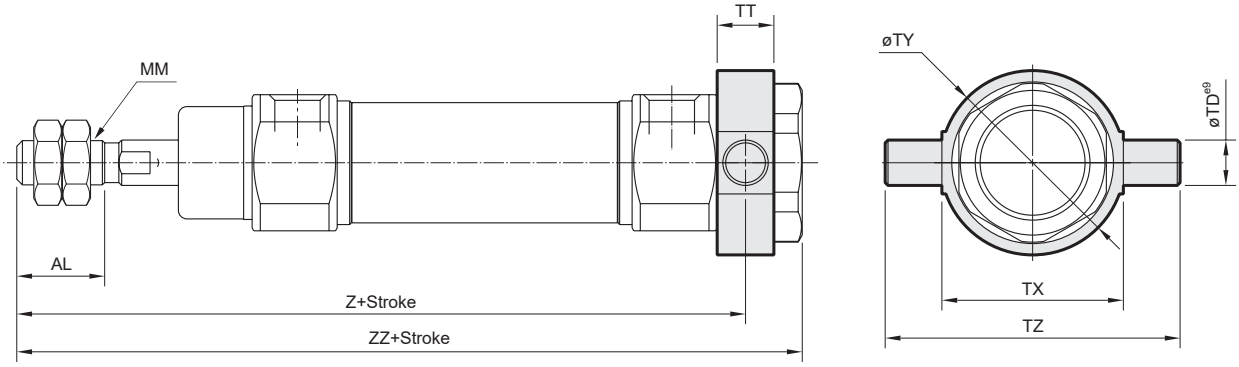
TA



Unit: mm

Code / Tube I.D.	AL	H	MM	TD	TT	TX	TY	TZ	Z	ZZ
20	15.5	41	M8×1.25	8	10	32	32.5	52	36	116
25	19.5	45	M10×1.25	9	10	40	40.5	60	40	120
32	19.5	45	M10×1.25	9	10	40	40.5	60	40	122
40	21	50	M14×1.5	10	11	53	53.5	77	44.5	154

TB

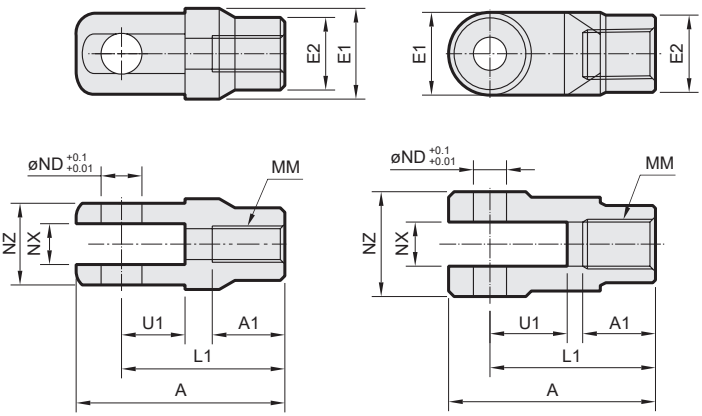


Unit: mm

Code / Tube I.D.	AL	MM	TD	TT	TX	TY	TZ	Z	ZZ
20	15.5	M8×1.25	8	10	32	32.5	52	108	118
25	19.5	M10×1.25	9	10	40	40.5	60	112	122
32	19.5	M10×1.25	9	10	40	40.5	60	114	124
40	21	M14×1.5	10	11	53	53.5	77	143.5	154

Y connector

ø20~ø32

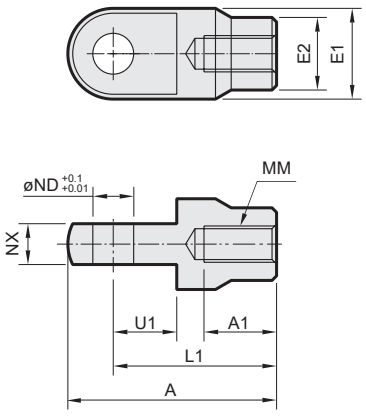


ø40

Unit: mm

Code / Tube I.D.	A	A1	E1	E2	L1	MM	ND	NX	NZ	U1
20	46	16	ø20	ø16	36	M8×1.25	9	9 $^{+0.2}_{+0.1}$	18	14
25, 32	46	16	ø20	ø16	36	M10×1.25	9	9 $^{+0.2}_{+0.1}$	18	14
40	68	25	ø26	ø24	55	M14×1.5	12	16 $^{+0.3}_{+0.1}$	38	25

I connector

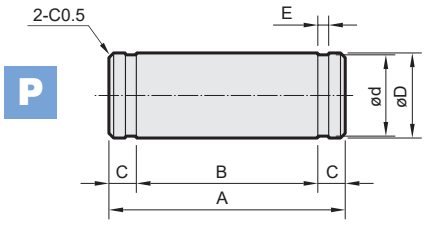


Unit: mm

Code / Tube I.D.	A	A1	E1	E2	L1	MM	ND	NX	U1
20	46	16	ø20	ø16	36	M8×1.25	9	9 $^{+0.1}_{+0.2}$	14
25, 32	46	16	ø20	ø16	36	M10×1.25	9	9 $^{+0.1}_{+0.2}$	14
40	69	22	ø24	–	55	M14×1.5	12	16 $^{+0.1}_{+0.2}$	20

PIN

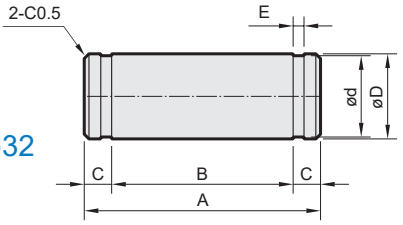
P



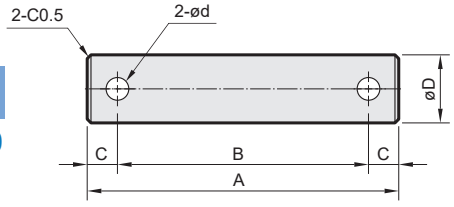
for SDB

Code / Tube I.D.	A	B	C	øD^{d9}	ød	E	Snap ring
20~25	24.5	19.5	2.5	8 $^{-0.04}_{-0.08}$	7.6 $^{0}_{-0.06}$	0.9 $^{+0.10}_{0}$	STW-8
32~40	34	29	2.5	10 $^{-0.04}_{-0.08}$	9.6 $^{-0}_{-0.09}$	1.15 $^{+0.14}_{0}$	STW-9

P
ø20~ø32



P
ø40



for CB & Y connector

Code / Tube I.D.	A	B	C	øD^{d9}	ød	E	Snap ring Split pin
20~32-CB, Y	25	19.2	2.9	9 $^{-0.04}_{-0.08}$	8.6 $^{0}_{-0.06}$	1.15 $^{+0.14}_{0}$	STW-9
40-CB	41.2	33.2	4	10 $^{-0.04}_{-0.08}$	3.2	–	ø3.2×20L
40-Y	49.7	41.7	4	12 $^{-0.05}_{-0.09}$	3.2	–	ø3.2×20L