

Table for standard stroke

Acting type	Tube I.D.	Stroke (mm)	Max. stroke (mm)
Single acting 13/15	ø16,20,25	10,25,50,75,100	150
Double acting 11	ø8	10,25,40,50,80,100	200
	ø10,12	10,25,40,50,80,100,125,160,200	300
	ø16,20,25 ø32,40	10,25,50,75,100,125,150,200,300,400,500	1000
21/27	ø16,20,25 ø32,40	10,25,50,75,100,125,150,200,300,400	450

* Intermediate stroke are available, please contact us.

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.

■ ISO 6432 standard (ø8~ø25)

Enables world-wide inter-changeability.

■ Port thread Rc. NPT. are also available

■ Magnetic as standard

Specification

Model		MCMI							
Tube I.D. (mm)		8	10	12	16	20	25	32	40
Port size		M5×0.8				G1/8		G1/4	
Medium		Air							
Max. operating pressure		0.7 MPa							
Min. operating pressure (MPa)	Double acting	0.1	0.08		0.06				
	Single acting	Extended	—		0.23		—		
		Returned	—		0.18		—		
Proof pressure		1 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	0.02	0.03	0.04	0.09	0.27	0.4	0.65	1.2
	Cushion air	—	—	—	0.4	0.66	0.97	1.27	2.35
Sensor switch (*)		RCM (Please refer to page 8-16)							
Sensor switch (band)		BM8	BM10	BM12	BM16	BM20	BM25	BM32	BM40

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

Tightening torque

Tube I.D.	Rod thread	Tightening torque (kgf·cm)
ø8	M4×0.7	11.8
ø10	M4×0.7	11.8
ø12	M6×1.0	41
ø16	M6×1.0	41
ø20	M8×1.25	170
ø25	M10×1.25	340
ø32	M10×1.5	340
ø40	M12×1.75	590

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

Order example

MCFI — 11 — 16 — 100 — A — N

MODEL

1: Single rod
2: Double rod

TUBE I.D.

STROKE

Blank: Cushion pad (Unadjustable)
A: Cushion air (Adjustable) Δ (*)
* $\phi 8\sim 12$ not applicable.

STYLE

Code	Symbol	Description	Tube I.D.
1 1		Double acting / Male thread	$\phi 8\sim\phi 40$
1 3		Single acting / Normally extended male thread	$\phi 16\sim\phi 25$
1 5		Single acting / Normally returned male thread	
2 1		Double rod / Male thread	$\phi 16\sim\phi 40$
2 7		Double rod / Adjustable male thread Please mark "adjustable stroke" at order list	

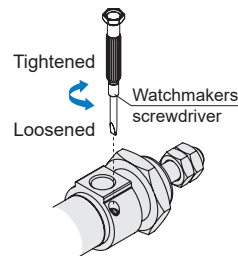
* Single acting type, please contact us.

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

Caution

For (A) Cushion air (Adjustable)

- 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.
- If the needle valve loosen excessively, the buffer doesn't take effect and the lifetime of cylinder would be shortened.



COVER TYPE

Code	Symbol	Description	Port position	Tube I.D.	
-		Standard type	Standard	$\phi 8\sim\phi 25$	
N		Non-pivot type			
		Non-pivot type			
		Rod clevis			
H		Head clevis		Axial port	$\phi 32\sim\phi 40$
F		Head foot type			
C		Non-pivot type			
RC		Rod clevis			

* (R), (H), (RC) not suitable for (A) cushion air.

Mounting accessories

LB — MCFI — 16

MODEL

TUBE I.D.

MOUNTING TYPE	Suitable cover	
	$\phi 8\sim\phi 25$	$\phi 32, \phi 40$
	-, N	N, R, H, F, C, RC
	-, N	N/A
	-	N/A
	-	N/A
	N/A	R, RC
	N/A	H
	-, N	N, R, H, F, C, RC

*1. "-": Standard type

*2. N, R, H, C, RC type, the LB mounting accessories only 1 pc.

*3. Y, I, YS connector, Please refer to page 3-14.

Pin

PIN — MCFI — 16 — Y — P

PIN

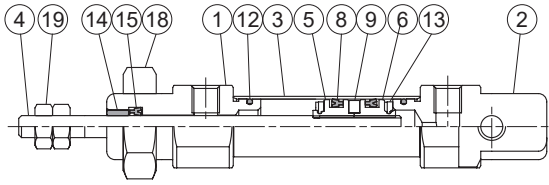
MODEL

TUBE I.D.

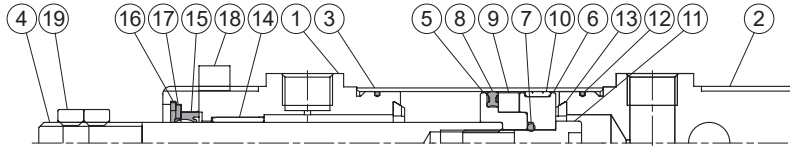
Mounting type	Description
	for SDB accessory
	for Y & I connector
	for Y connector and $\phi 16\sim 40$

* P: With split pin / Snap ring, S: Floating pin

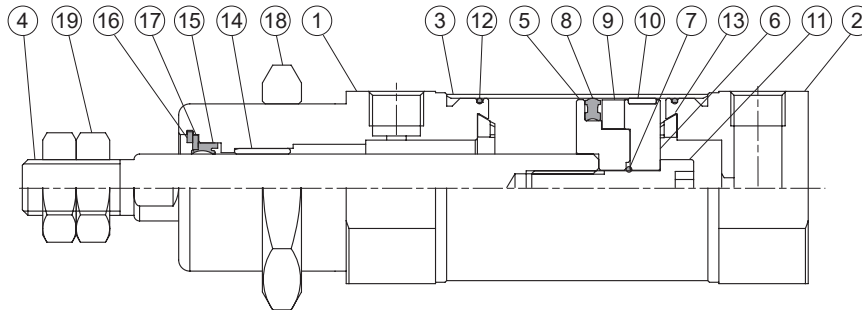
ø8~ø12



ø16~ø25



ø32, ø40



Material

No.	Tube I.D. Part name	8	10	12	16	20	25	32	40	Q'y		Component parts (inclusion)	
										11 type	21 type	11 type	21 type *3
1	Rod cover	Aluminum alloy								1	2	●	●
2	Head cover	Aluminum alloy								1	—	●	
3	Tube	Stainless steel								1	1		
4	Piston rod	Stainless steel				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	1*1	●	●
9	Magnet ring	Magnet material								1	1	●	●
10	Wear ring	—				Resin				1	1	●	●
11	Piston bolt	—				SCM				1	—	●	
12	Cover ring	NBR				—		NBR		2	2	●	●
13	Cushion gasket	NBR								2	2	●	●
14	Rod bush	Bearing alloy								1	2	●	●
15	Rod packing *2	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	●	●

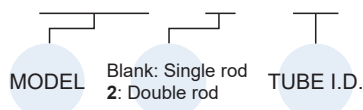
*1. ø8~ø12 (Q'y: 2 pcs)

*2. Only the rod packing ø16~ø40 is repairable, please contact our sales if needed.

*3. Style 21 is not suitable for ø8~ø12.

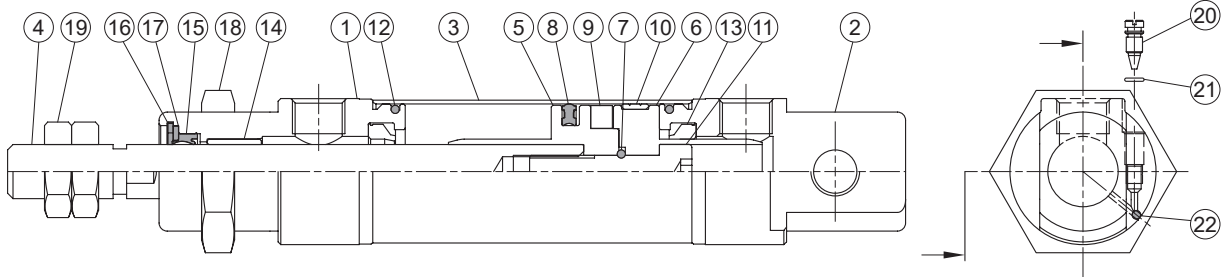
Order example of component parts

CP – MCFI – 2 – 16 – N



END COVER TYPE

Tube I.D.	Blank: Standard type	N: Non- pivot type	R: Rod clevis	H: Head clevis	F: Head foot type	C: Non- pivot type	RC: Rod clevis
ø8~ø25	●	●					
ø32, ø40		●	●	●	●	●	●



Material

No.	Tube I.D. Part name	16	20	25	32	40	Q'y		Component parts (inclusion)	
							11 type	21 type	11 type	21 type
1	Rod cover	Aluminum alloy					1	2	●	●
2	Head cover	Aluminum alloy					1	—	●	
3	Tube	Stainless steel					1	1		
4	Piston rod	Stainless steel	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	1*1	●	●
9	Magnet ring	Magnet material					1	1	●	●
10	Wear ring	Resin					1	1	●	●
11	Piston bolt	SCM					1	—	●	
12	Cover ring	NBR	—	NBR			2	2	●	●
13	Cushion packing	NBR					2	2	●	●
14	Rod bush	Bearing alloy					1	2	●	●
15	Rod packing *2	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					2	2	●	●
21	Needle valve packing	NBR					2	2	●	●
22	Steel ball	Stainless steel					2	2	●	●

*1. $\phi 8\sim\phi 12$ (Q'y: 2 pcs)

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

Order example of component parts

CP — MCFI — 2 — 16 — A — N

MODEL

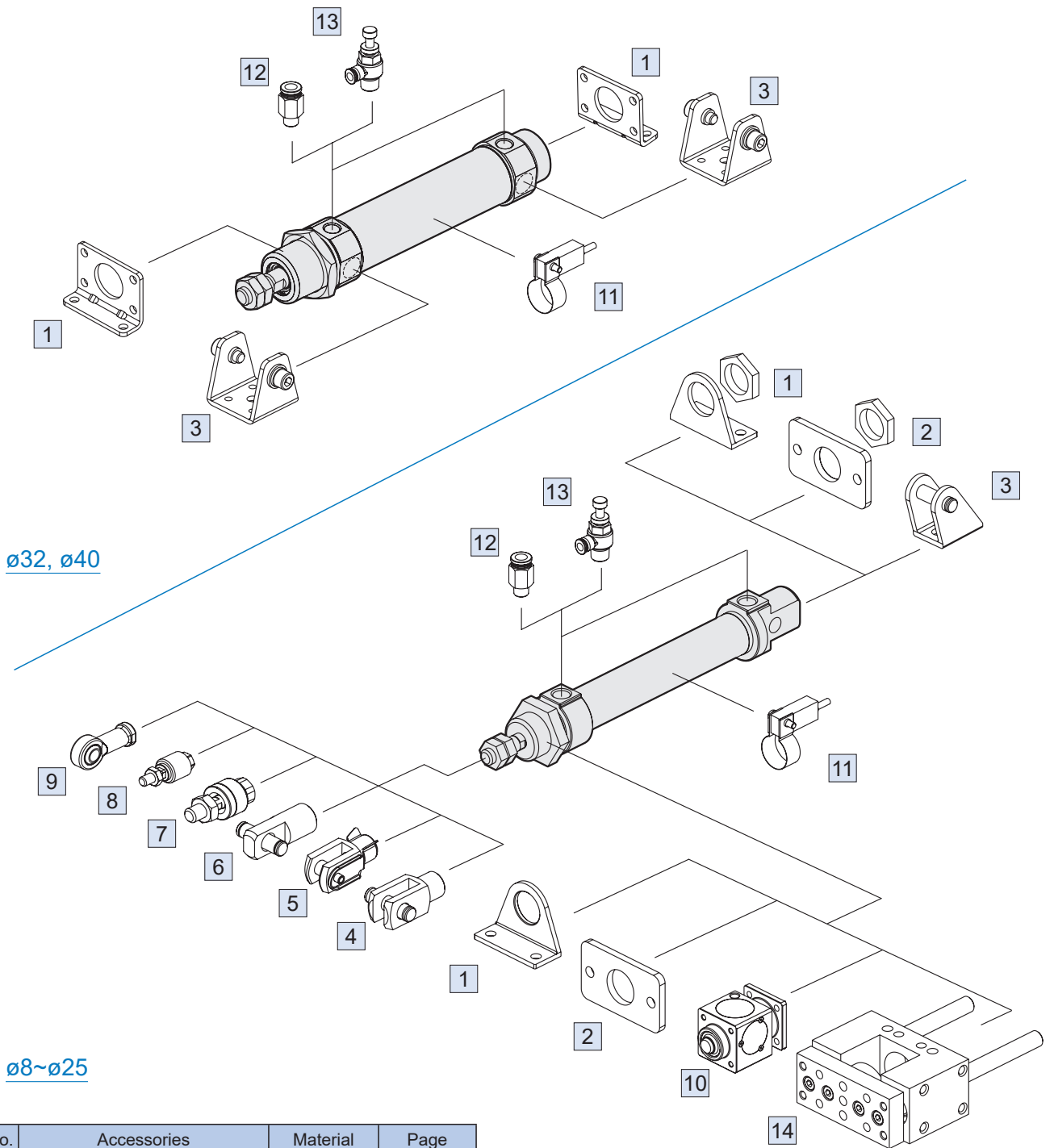
TUBE I.D.

Blank: Single rod
2: Double rod

END COVER TYPE

Tube I.D.	Blank: Standard type	N: Non- pivot type	F: Head foot type	C: Non- pivot type
$\phi 16\sim\phi 25$	●	●		
$\phi 32, \phi 40$		●	●	●

A: Cushion air (Adjustable)



$\varnothing 32, \varnothing 40$

$\varnothing 8 \sim \varnothing 25$

No.	Accessories	Material	Page
1	Mounting accessories LB	Carbon steel	3-49, 51
2	Mounting accessories FA/FB	Carbon steel	3-48, 49
3	Mounting accessories SDB+PIN	Carbon steel	3-48, 51, 14
4	Accessories Y+PIN	Carbon steel	3-14
5	Accessories YS (Y+Floating pin)	Carbon steel	3-14
6	Accessories I+PIN	Carbon steel	3-14
7	Floating joint MFC	Carbon steel	8-2
8	Floating joint MFCS	Carbon steel	8-5

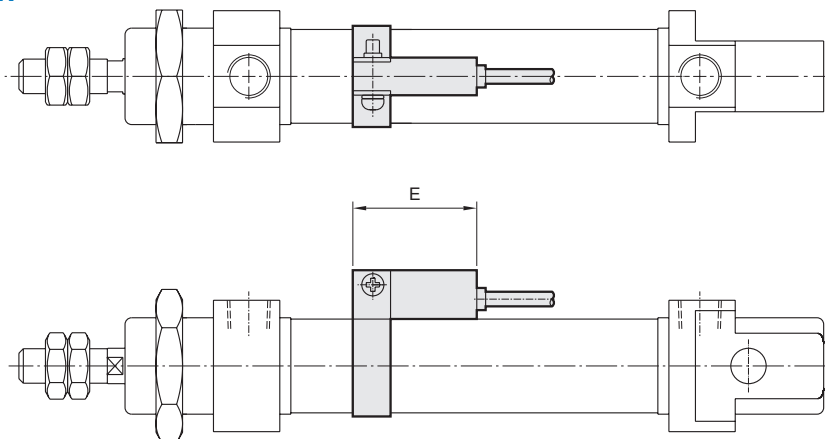
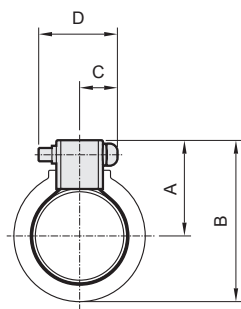
* Aluminum alloy + copper alloy

No.	Accessories	Material	Page
9	Female rod ends PHS	Carbon steel	8-6
10	Locking unit MCBMI	(*)	1-88
11	Sensor switch RCM+BM**	-	8-16
12	Fitting PC	-	8-3 (Vol.1)
13	Fitting JSC	-	8-15 (Vol.1)
14	Twin-guide cylinders MGTB/TK/TU	-	4-39

■ Installation of sensor switch

Sensor switch: RCM

Sensor switch band: BM**



Code Tube I.D.	A	B	C	D	E
8	16	23.5	10	16	28
10	17	24.5	10	16	28
12	18	28	10	16	28
16	20	30	10	16	28
20	22	35.5	10	16	28
25	25	38.5	10	16	28
32	28	45.5	10	16	28
40	32	54	10	16	28

■ Cylinder & accessories weight

Cylinder weight

Unit: g

Model	Basic weight MCFI-11	Basic weight MCFI-11-A	Stroke 25 mm MCFI-11	Basic weight MCFI-11-N	Basic weight MCFI-11-A-N	Stroke 25 mm MCFI-11-*
Tube I.D.						
$\varnothing 8$	36	—	6	32	—	6
$\varnothing 10$	38	—	8	35	—	8
$\varnothing 12$	78	—	11	69	—	11
$\varnothing 16$	95	93	13	88	85	13
$\varnothing 20$	162	190	18	151	179	18
$\varnothing 25$	206	229	28	191	214	28

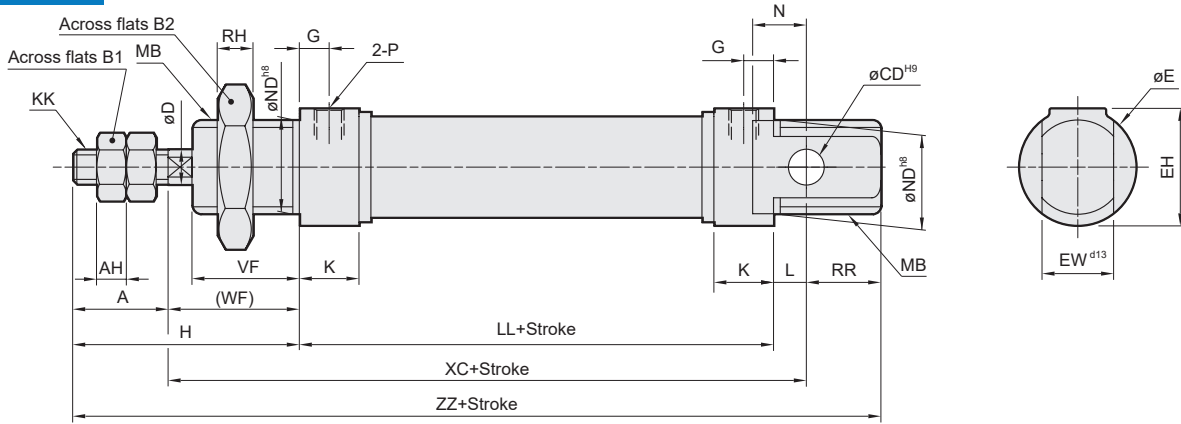
Model	Basic weight MCFI-11-F	Basic weight MCFI-11-A-F	Stroke 25 mm MCFI-11-F	Basic weight MCFI-11-N/C/R/H	Basic weight MCFI-11-A-N/C	Stroke 25 mm MCFI-11-*
Tube I.D.						
$\varnothing 32$	334	402	39	307	375	39
$\varnothing 40$	591	601	60	639	649	60

Accessories weight

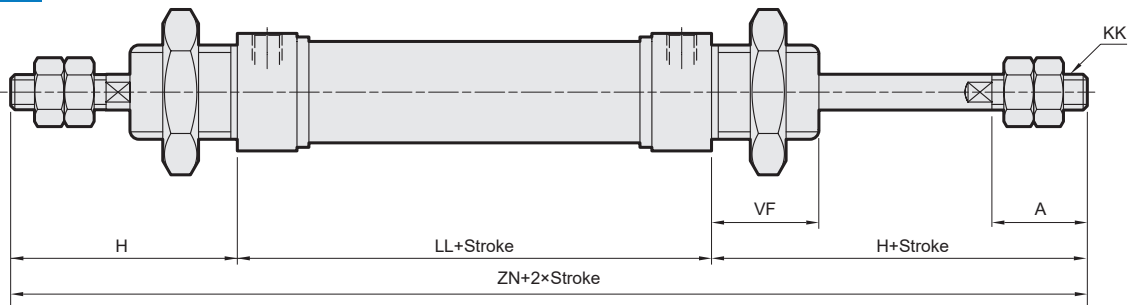
Unit: g

Model	LB	FA/FB	SDB	Y	I	YS	Pin	Floating pin	Rod nut	Cover nut
Tube I.D.										
$\varnothing 8$	42	16	16	4	—	—	2	—	1	8
$\varnothing 10$	42	16	16	4	—	—	2	—	1	8
$\varnothing 12$	65	25	24	13	15	—	4	—	2	16
$\varnothing 16$	65	25	24	13	15	18	5	5	2	11
$\varnothing 20$	103	67	103	40	42	50	10	10	4	20
$\varnothing 25$	103	67	103	72	82	90	19	18	8	20
$\varnothing 32$	160	—	111	—	—	—	—	—	8	28
$\varnothing 40$	246	—	164	—	—	—	—	—	10	41

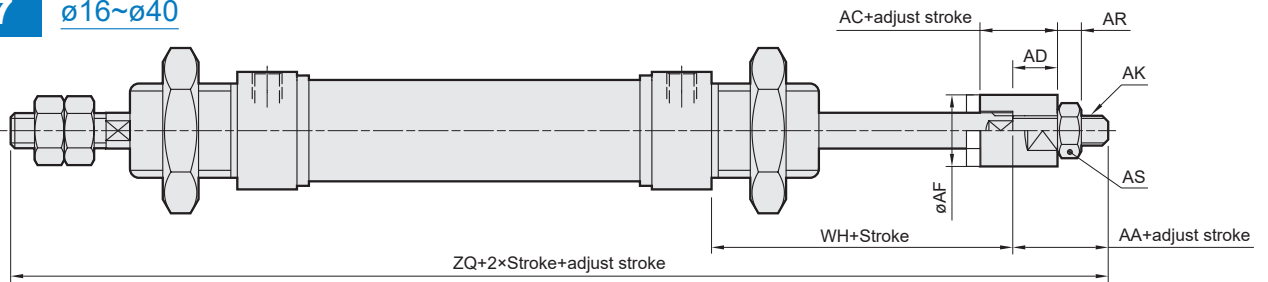
11 $\phi 8 \sim \phi 25$ * Please refer to page 3-50 for dimensions of $\phi 32 \sim \phi 40$.



21 $\phi 16 \sim \phi 40$



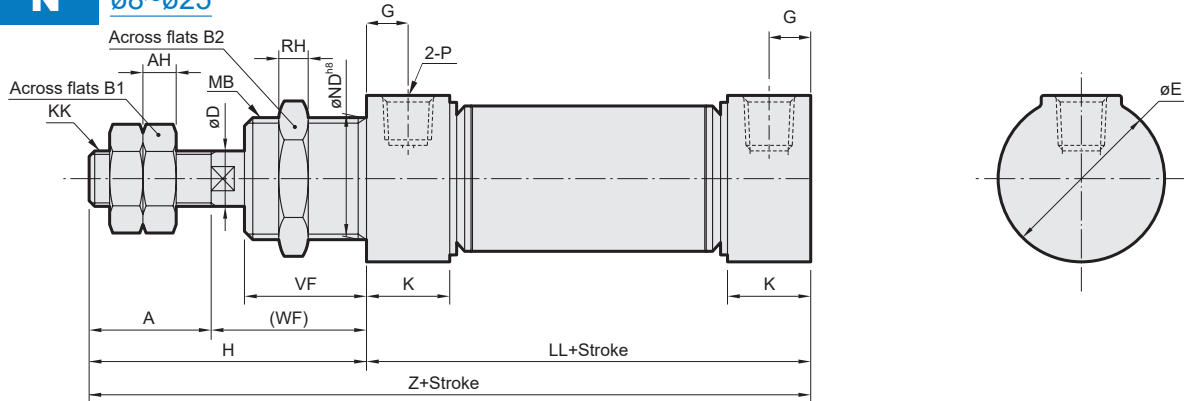
27 $\phi 16 \sim \phi 40$



Code Tube I.D.	A	AA	AC	AD	AF	AH	AK	AR	AS	B1	B2	CD	D	E	EH	EW	G	H	K	KK	L	LL	MB
8,10	12	—	—	—	—	3.2	—	—	—	7	19	4	4	15	15	8	6	28	11	M4×0.7	2	46	M12×1.25
12	16	—	—	—	—	5	—	—	—	10	24	6	6	20	20	12	6	38	11	M6×1.0	3	50	M16×1.5
16	16	16	13	7.5	12	5	M5×0.8	4	8	10	22	6	6	20	20	12	5	38	10	M6×1.0	5.5	54.5	M16×1.5
20	20	19	15	9.5	16	5	M8×1.25	5	13	13	30	8	8	27	27	16	8	44	15	M8×1.25	3	68	M22×1.5
25	22	19	15	9.5	16	6	M8×1.25	5	13	17	30	8	10	27	27	16	7.5	50	15	M10×1.25	9	67	M22×1.5
32	20	16	12	7	20	6	M10×1.25	6	17	17	38	—	12	37.5	—	—	9	58	16	M10×1.5	—	68	M30×1.5
40	24	17	12	7	30	7	M12×1.25	7	19	19	46	—	14	46.5	—	—	12	69	22	M12×1.75	—	89	M38×1.5

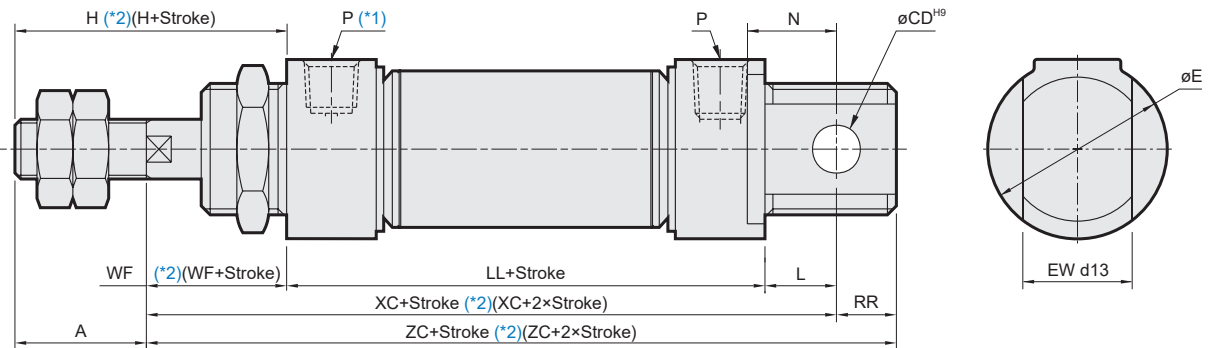
Code Tube I.D.	N	ND	P	RH	RR	VF	WF	WH	XC	ZN	ZP	ZQ	ZZ
8,10	6	12	M5×0.8	6	10	12	16	—	64	—	—	—	86
12	9	16	M5×0.8	8	14	17	22	—	75	—	—	—	105
16	9	16	M5×0.8	6	12.5	18	22	25.5	82	130.5	102	134	110.5
20	12	22	G1/8	6	17	20	24	27	95	156	119	158	132
25	12	22	G1/8	6	13	22	28	29.5	104	167	124.5	165.5	139
32	—	30	G1/8	7	—	30	38	37	—	184	145.5	179	—
40	—	38	G1/8	8	—	35	45	42	—	227	179	217	—

N $\phi 8\sim\phi 25$



Code Tube I.D.	A	AH	B1	B2	D	E	G	H	KK	K	LL	MB	ND	P	RH	VF	WF	Z
8	12	3.2	7	19	4	16.7	6	28	M4×0.7	11	46	M12×1.25	12	M5×0.8	6	12	16	74
10	12	3.2	7	19	4	16.7	6	28	M4×0.7	11	46	M12×1.25	12	M5×0.8	6	12	16	74
12	16	5	10	24	6	19.7	6	38	M6×1.0	11	50	M16×1.5	16	M5×0.8	8	17	22	88
16	16	5	10	22	6	20	5	38	M6×1.0	10	54.5	M16×1.5	16	M5×0.8	6	18	22	92.5
20	20	5	13	30	8	27	8	44	M8×1.25	15	68	M22×1.5	22	G1/8	6	20	24	112
25	22	6	17	30	10	27	7.5	50	M10×1.25	15	67	M22×1.5	22	G1/8	6	22	28	117

13 **15** $\phi 16\sim\phi 25$



*1. 15 type $\phi 16$ without this air port.

*2. () Dimension for 13 type.

Code Tube I.D.	A	CD	E	EW	H	L	N	P	RR	WF	ZN
16	16	6	20	12	38	5.5	9	M5×0.8	12.5	22	130.5
20	20	8	27	16	44	3	12	G1/8	17	24	156
25	22	8	27	16	50	9	12	G1/8	13	28	167

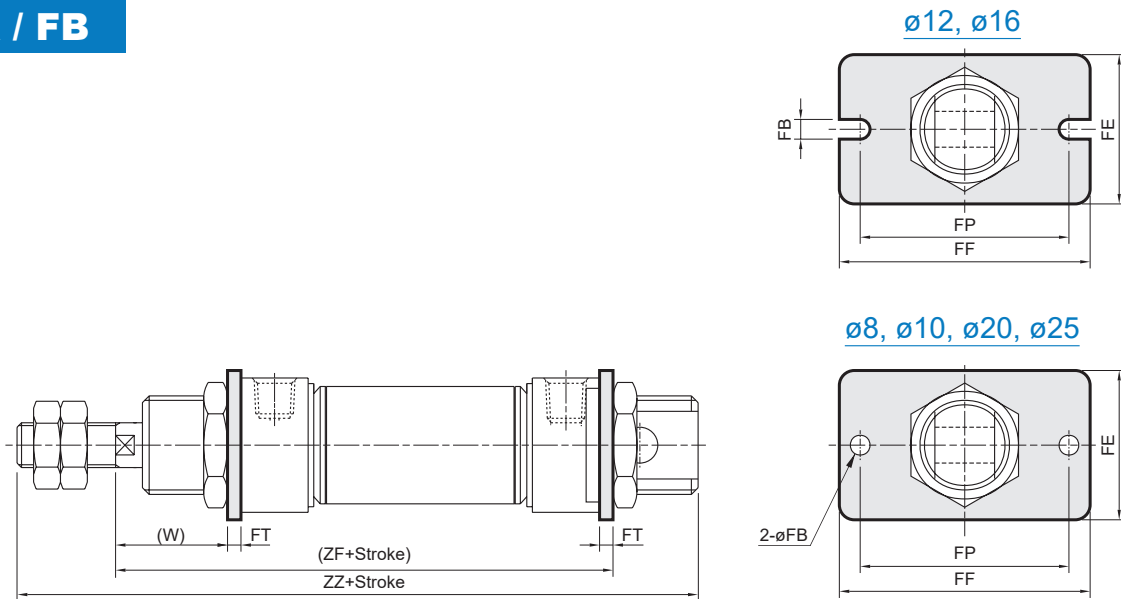
MCFM-13

Code Stroke Tube I.D.	LL			XC			ZC		
	1~50	51~100	101~150	1~50	51~100	101~150	1~50	51~100	101~150
16	73.5	99.5	125.5	101	127	153	113.5	139.5	165.5
20	93	118	143	120	145	170	137	162	187
25	90.5	115.5	140.5	127.5	152.5	177.5	140.5	165.5	190.5

MCFM-15

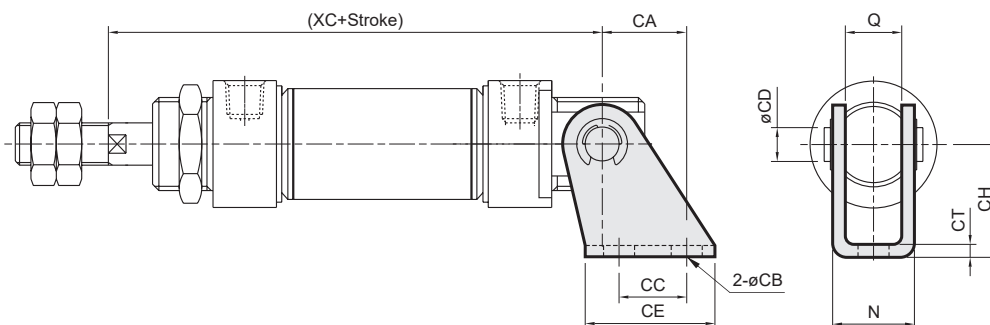
Code Stroke Tube I.D.	LL			XC			ZC		
	1~50	51~100	101~150	1~50	51~100	101~150	1~50	51~100	101~150
16	54.5	70	85.5	82	97.5	113	94.5	110	125.5
20	68	118	143	95	145	170	112	162	187
25	67	115.5	140.5	104	152.5	177.5	117	165.5	190.5

FA / FB



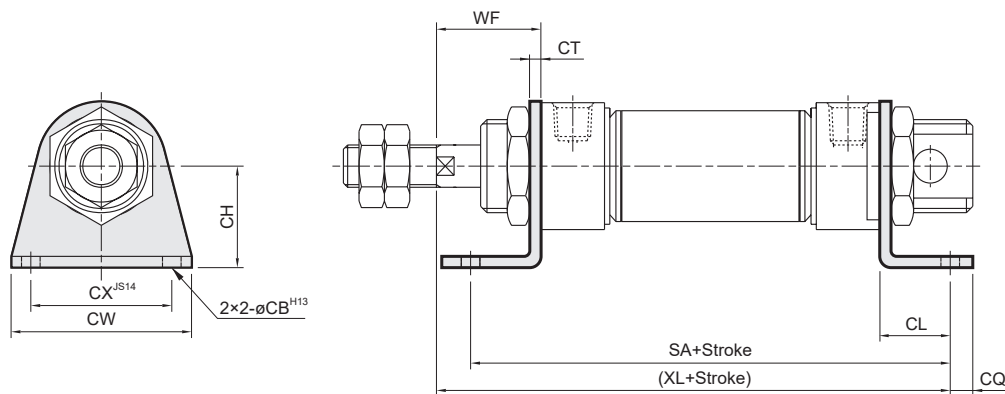
Code Tube I.D.	FB	FE	FF	FP	FT	W	ZF	ZZ
8	4.5	22	40	30	3.2	12.8	65.2	86
10	4.5	22	40	30	3.2	12.8	65.2	86
12	5.5	26	52	40	3.2	18.8	75.2	105
16	5.5	26	52	40	3.2	18.8	79.7	110.5
20	6.6	38	64	50	4.5	19.5	96.5	132
25	6.6	38	64	50	4.5	23.5	99.5	139

SDB



Code Tube I.D.	CA	CB	CC	CD	CE	CH	CT	N	Q	XC
8	11	4.5	12.5	4	20	24	2.5	13.1	8.1	64
10	11	4.5	12.5	4	20	24	2.5	13.1	8.1	64
12	13	5.5	15	6	25	27	3.2	18.5	12.1	75
16	13	5.5	15	6	25	27	3.2	18.5	12.1	82
20	16	6.6	20	8	32	30	3.2	22.5	16.1	95
25	16	6.6	20	8	32	30	3.2	22.5	16.1	104

LB



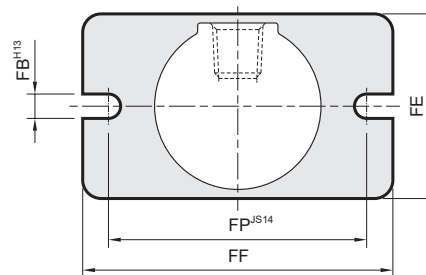
Code Tube I.D.	CB	CH	CL	CQ	CT	CW	CX	SA	XL	WF
8	4.5	16	11	5	3.2	35	25	68	73	28
10	4.5	16	11	5	3.2	35	25	68	73	28
12	5.5	20	14	6	4	42	32	78	86	38
16	5.5	20	14	6	4	42	32	82.5	90.5	38
20	6.6	25	15	8	3.2	54	40	98	107	44
25	6.6	25	15	8	3.2	54	40	97	110	50

FA

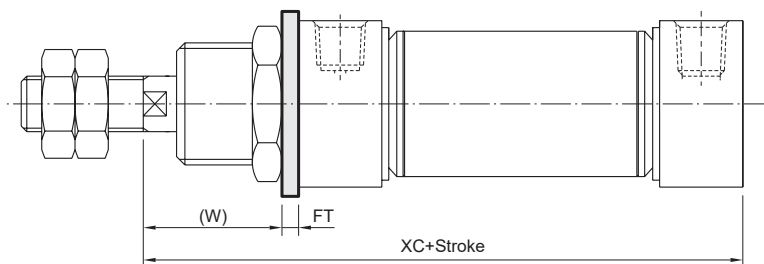
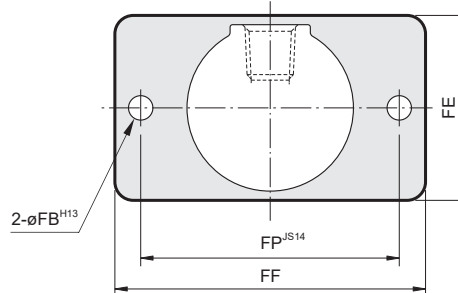
N Non-pivot type

Code Tube I.D.	FB	FE	FF	FP	FT	W	XC
8	4.5	22	40	30	3.2	12.8	62
10	4.5	22	40	30	3.2	12.8	62
12	5.5	26	52	40	3.2	18.8	72
16	5.5	26	52	40	3.2	18.8	76.5
20	6.6	38	64	50	4.5	19.5	92
25	6.6	38	64	50	4.5	23.5	96

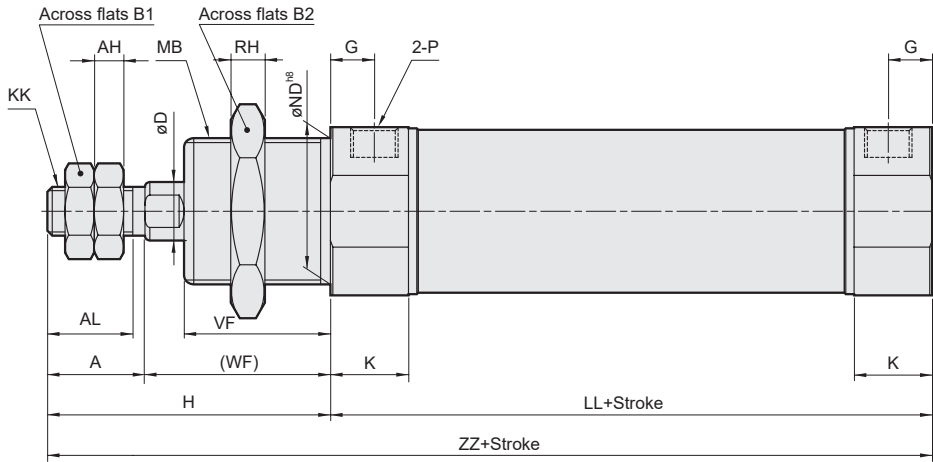
$\varnothing 12, \varnothing 16$



$\varnothing 8, \varnothing 10, \varnothing 20, \varnothing 25$

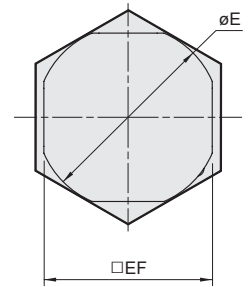


11



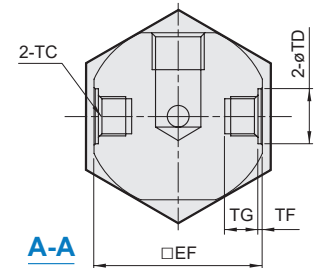
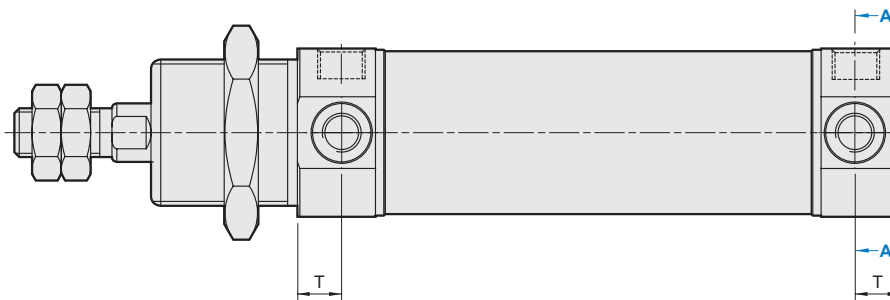
N

Non-pivot type



R H

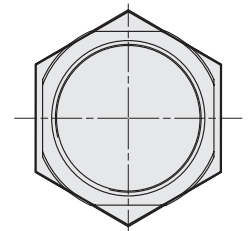
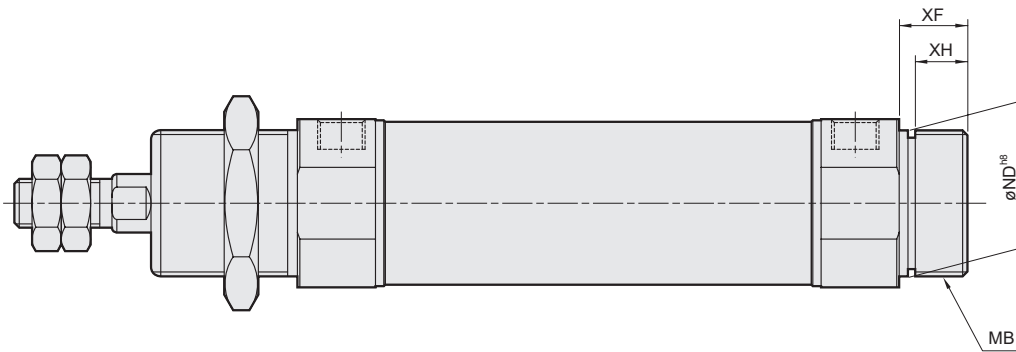
Rod / Head clevis type



A-A

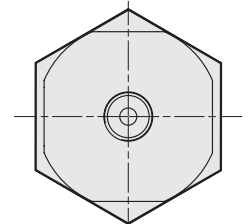
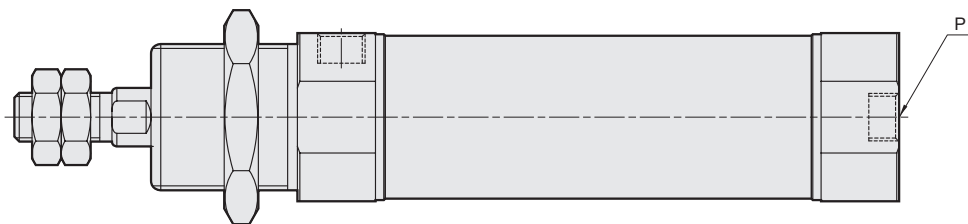
F

Head foot type



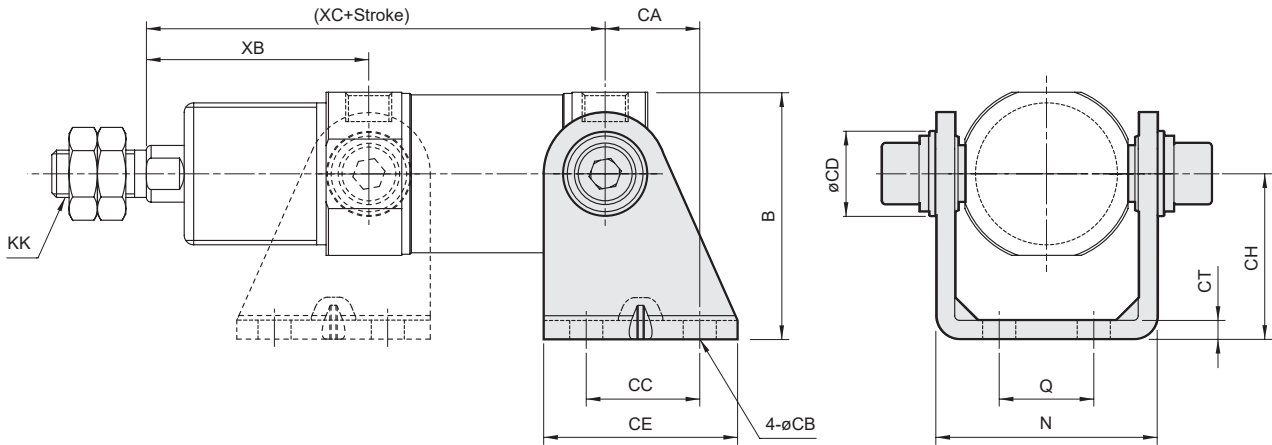
C

Axis port



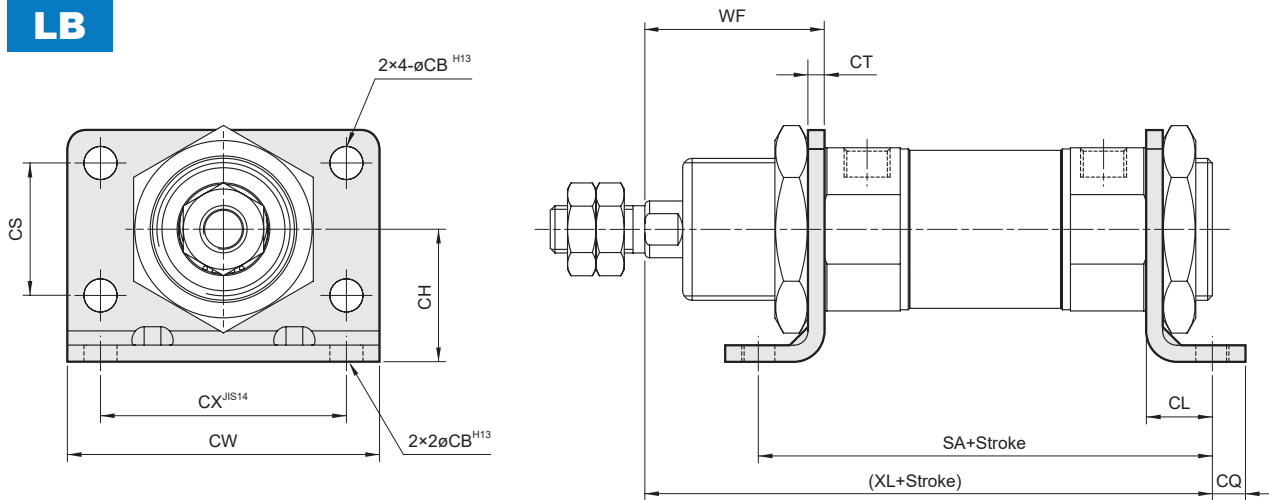
Code Tube I.D.	A	AH	AL	B1	B2	D	E	EF	G	H	KK	K	LL	MB	ND	P	RH	T	TC	TD	VF	WF	XF	XH	ZZ
32	20	6	17	17	38	12	37.5	34.5	9	58	M10×1.5	16	68	M30×1.5	30	G1/8	7	9	M8×1.0×6.5 dp	12	30	38	14	10.7	126
40	24	7	21	19	46	14	46.5	42.5	12	69	M12×1.75	22	89	M38×1.5	38	G1/4	8	12	M10×1.0×8 dp	14	35	45	16	12.2	158

SDB



Code Tube I.D.	B	CA	CB	CC	CD	CE	CH	CT	KK	N	Q	XC	XB
32	52.3	20	7	24	18	41	35	4	M10×1.5	46.8	20	97	49.5
40	61.3	27	9	30	22	52	40	4	M12×1.75	58.2	28	122	60

LB



Code Tube I.D.	CB	CH	CL	CQ	CT	CW	CX	CS	KK	SA	SC	SX	WF	XL
32	7	28	14	7	3.5	66	52	28	M10×1.5	96	47	48.5	38	120
40	9	33	20	10	3.5	80	60	30	M12×1.75	129	56	62.5	45	154