



Special spec



Rod end shape



Technical data



Caution for safety
(Read before installing)



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 perssure		0.7 MPa							
Min. operating perssure (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		RDC, RQC  , RDT, RQT  , RCM 							
Sensor switch (band)	R°C	BKC-1 (Not for R°C/V angle cable)							
	R*T	BKT-1							
	RCM	BM8	BM10	BM12	BM16	BM20	BM25	BM32	BM40

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

MCMC – 11 – 16 – 100 – A – 10 – N

MODEL

1: Single rod
2: Double rod

TUBE I.D.

STROKE

Blank: Cushion pad (Unadjustable)
A: Cushion air (Adjustable) (*)
* ø8~12 not applicable.

ADJUSTABLE
STROKE
* Only for STYLE 27.

STYLE

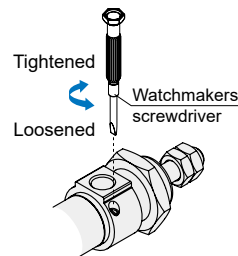
Code	Symbol	Description	Tube I.D.
1 1		Double acting / Male thread	ø8~ø40
1 3		Single acting / Normally extended male thread	ø16~ø25
1 5		Single acting / Normally returned male thread	
2 1		Double rod / Male thread	ø16~ø40
2 7		Double rod / Adjustable male thread	

* Single acting type, please contact us.

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.

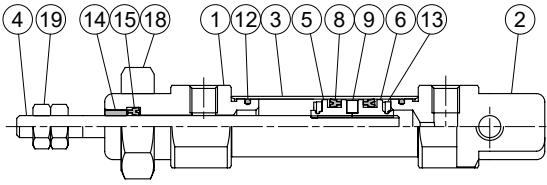


COVER TYPE

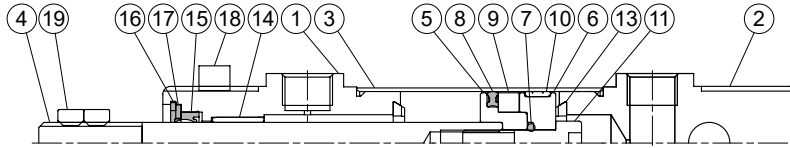
Code	Symbol	Description	Port position	Tube I.D.
N		Standard type	Standard	ø8~ø25
		Non-pivot type		
		Non-pivot type		
R		Rod trunnion / Non-pivot type		ø32~ø40
H		Head trunnion / Non-pivot type		
F		Head foot type		
C		Non-pivot type	Axial port	
RC		Rod trunnion / Non-pivot type		

* (R), (H), (RC) not suitable for ø32 (A) cushion air.

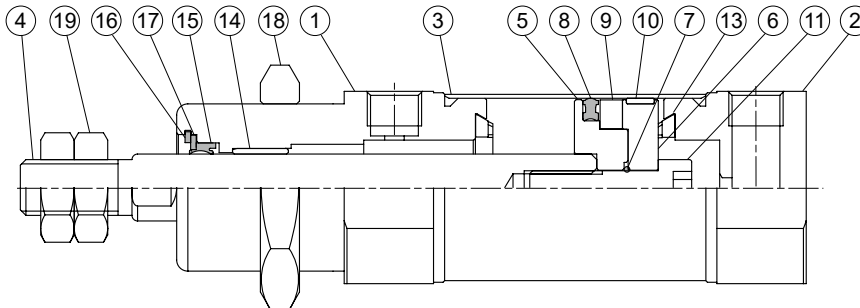
ø8~ø12



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				—				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	●	●

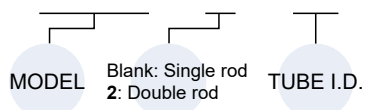
*1. ø8~ø12 (Q'y: 2 pcs)

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

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

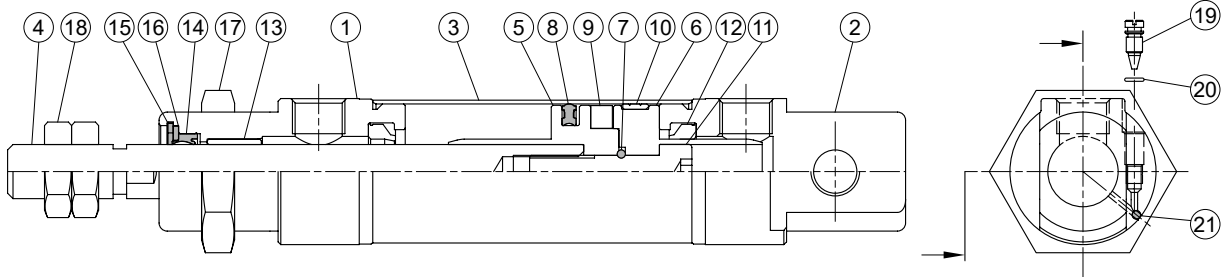
Order example of component parts

CP – MCFI – 2 – 16 – N



END COVER TYPE

Tube I.D.	Blank: Standard type	N: Non- pivot type	R: Rod trunnion	H: Head trunnion	F: Head foot type	C: Non- pivot type	RC: Rod trunnion
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	Cushion packing	NBR				2	2	●	●	
13	Rod bush	Bearing alloy				1	2	●	●	
14	Rod packing *2	NBR				1	2	●	●	
15	Snap ring	Spring steel				1	2	●	●	
16	Washer	Carbon steel				1	2	●	●	
17	Tie nut	Carbon steel				1	2	●	●	
18	Rod front nut	Carbon steel				2	2	●	●	
19	Needle valve	Stainless steel				2	2	●	●	
20	Needle valve packing	NBR				2	2	●	●	
21	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

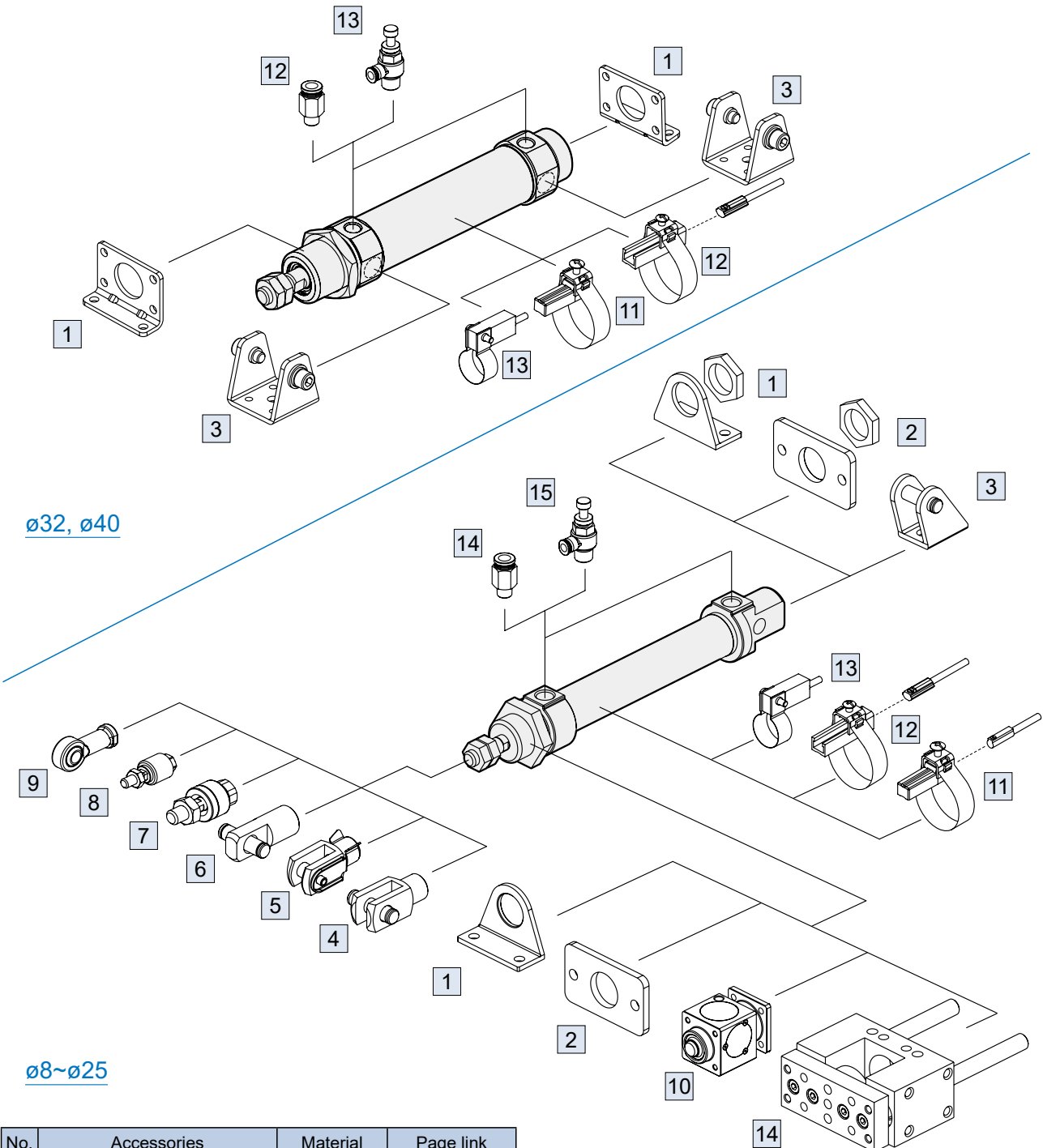
TUBE I.D.

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)



ø32, ø40

ø8~ø25

No.	Accessories	Material	Page link
1	Mounting accessories LB	Carbon steel	↗ , ↘
2	Mounting accessories FA/FB	Carbon steel	↗ , ↘
3	Mounting accessories SDB+PIN	Carbon steel	↗ , ↘ , ↙
4	Accessories Y+PIN	Carbon steel	↗
5	Accessories YS (Y+Floating pin)	Carbon steel	↗
6	Accessories I+PIN	Carbon steel	↗
7	Floating joint MFC	Carbon steel	↗
8	Floating joint MFCS	Carbon steel	↗
9	Female rod ends PHS	Carbon steel	↗

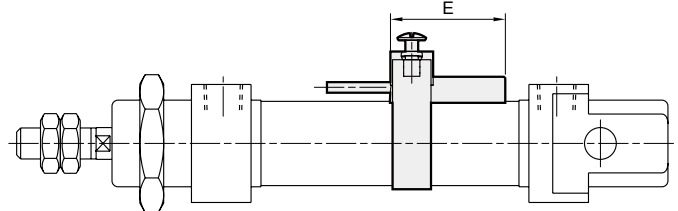
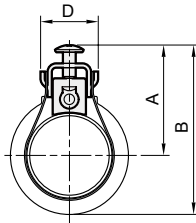
* Aluminum alloy + copper alloy

No.	Accessories	Material	Page link
10	Locking unit MCBMI	(*)	↗
11	Sensor switch R*C+BKC-1	-	↗
12	Sensor switch R*T+BKT-1	-	↗
13	Sensor switch RCM+BM**	-	↗
14	Fitting PC	-	↗
15	Fitting JSC	-	↗
16	Twin-guide cylinders MGTB/TK/TU	-	↗

■ Installation of sensor switch

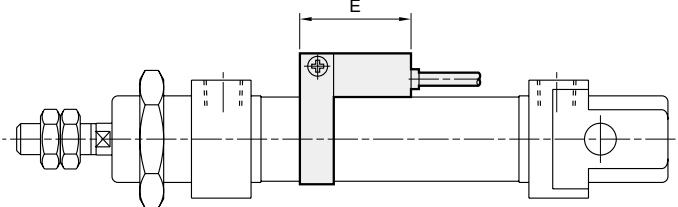
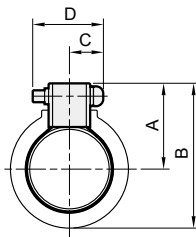
Sensor switch: R*C / R*T (Band: BKC-1 / BKT-1)

Code Band Tube I.D.	A		B		D	E	
	BKC-1	BKT-1	BKC-1	BKT-1		BKC-1	BKT-1
8	20.5	22.5	28	30	13.5	27	30
10	21.5	23	29	30.5	13.5	27	30
12	22.5	24.5	31.5	33.5	13.5	27	30
16	24.5	26	34.5	36	13.5	27	30
20	27	28.5	40.5	42	13.5	27	30
25	29.5	31	43	44.5	13.5	27	30
32	33	34.5	50	51.5	13.5	27	30
40	37	38.5	58.5	60	13.5	27	30



Sensor switch: RCM (Band: BM**)

Code Tube I.D.	A	B	C	D	E
	8	16	23.5	10	16
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

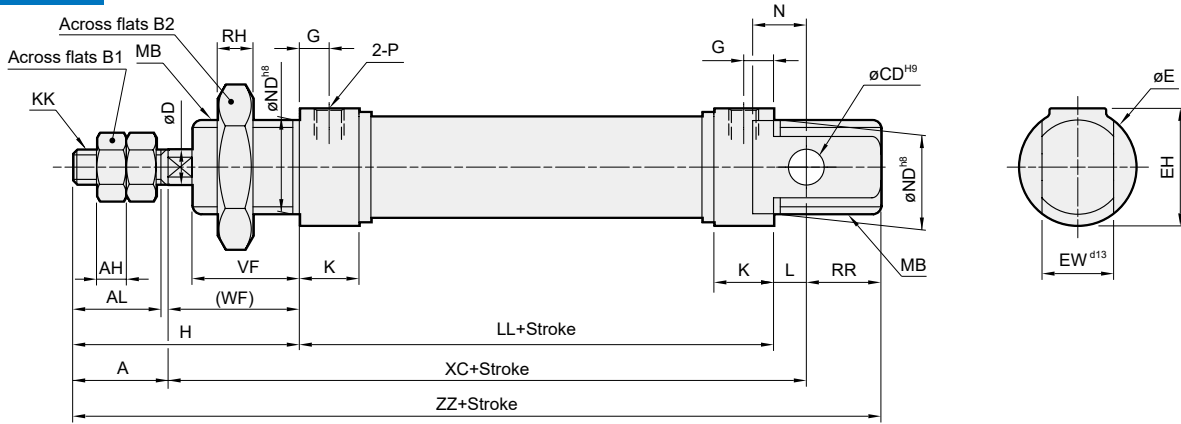
Model	Basic weight MCFI-11-F	Basic weight MCFI-11-A-F	Stroke 25 mm MCFI-11-F	Basic weight MCFI-11-N/C/R/H	Basic weight MCFI-11-A-N/C	Stroke 25 mm MCFI-11-*
Tube I.D.						
$\varnothing 32$	334	402	39	307	375	39
$\varnothing 40$	591	601	60	639	649	60

Accessories weight

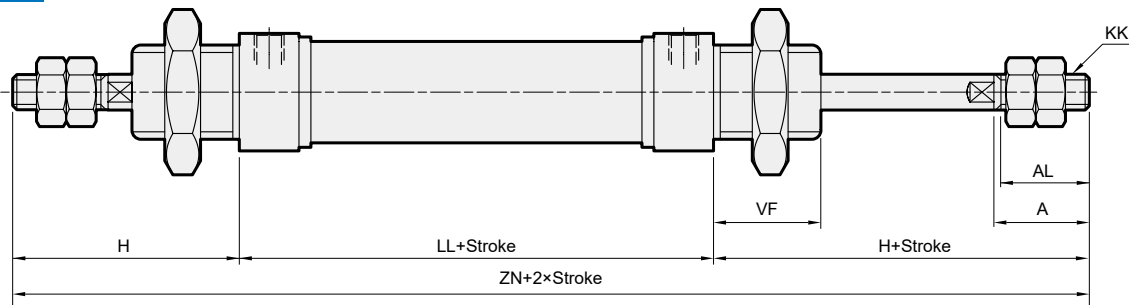
Unit: g

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

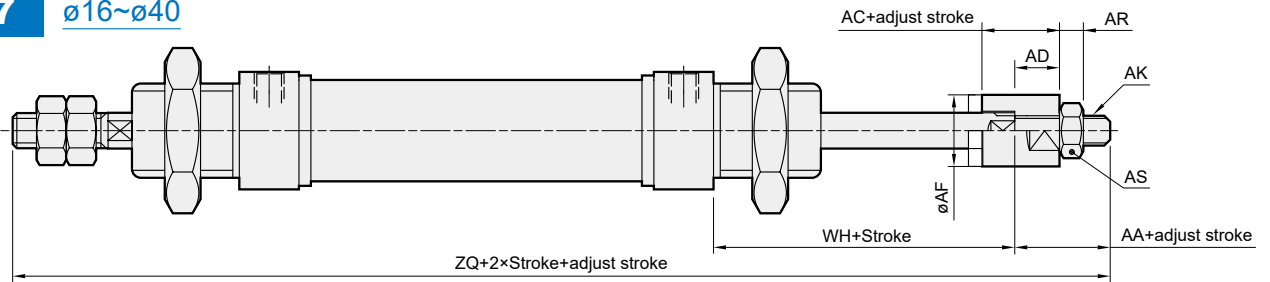
11 $\phi 8\sim\phi 25$ * $\phi 32\sim\phi 40$ dimensions, please refer to the link.



21 $\phi 16\sim\phi 40$



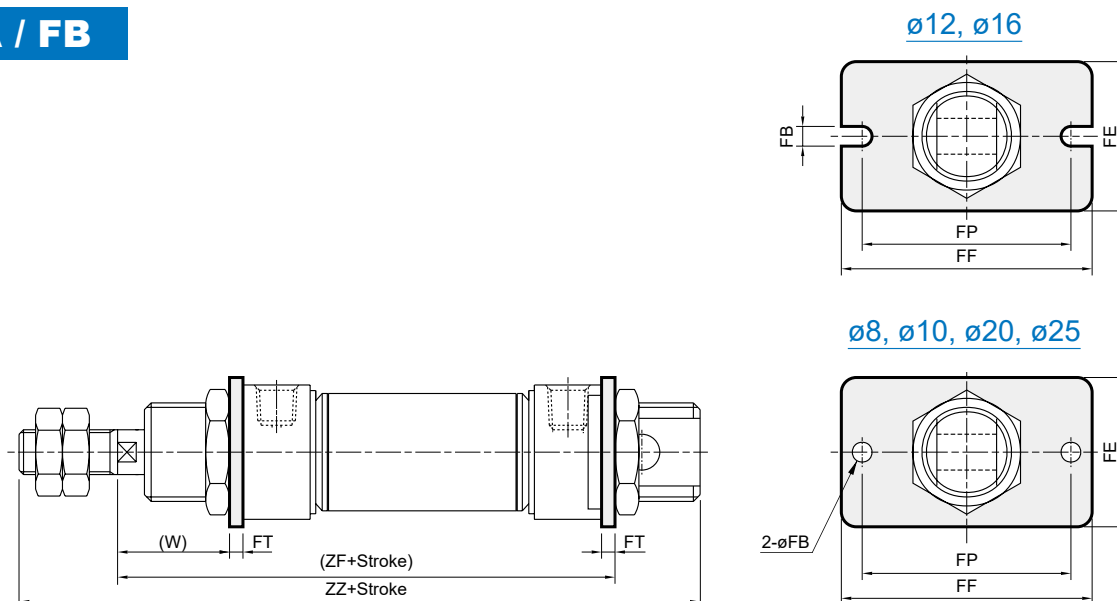
27 $\phi 16\sim\phi 40$



Code Tube I.D.	A	AA	AC	AD	AF	AH	AK	AL	AR	AS	B1	B2	CD	D	E	EH	EW	G	H	K	KK	L	LL
8,10	12	—	—	—	—	3.2	—	10.5	—	—	7	19	4	4	15	15	8	6	28	11	M4×0.7	2	46
12	16	—	—	—	—	5	—	14	—	—	10	24	6	6	20	20	12	6	38	11	M6×1.0	3	50
16	16	16	13	7.5	12	5	M5×0.8	14	4	8	10	22	6	6	20	20	12	5	38	10	M6×1.0	5.5	54.5
20	20	19	15	9.5	16	5	M8×1.25	17.5	5	13	13	30	8	8	27	27	16	8	44	15	M8×1.25	3	68
25	22	19	15	9.5	16	6	M8×1.25	19.5	5	13	17	30	8	10	27	27	16	7.5	50	15	M10×1.25	9	67
32	20	16	12	7	20	5	M10×1.25	17.5	6	17	17	38	—	12	37.5	—	—	9	58	16	M10×1.5	—	68
40	24	17	12	7	30	7	M12×1.25	21	7	19	19	46	—	14	46.5	—	—	12	69	22	M12×1.75	—	89

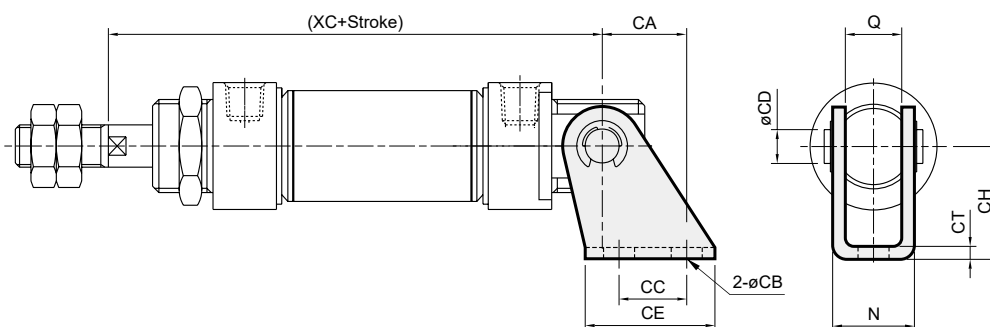
Code Tube I.D.	MB	N	ND	P	RH	RR	VF	WF	WH	XC	ZN	ZP	ZQ	ZZ
8,10	M12×1.25	6	12	M5×0.8	6	10	12	16	—	64	—	—	—	86
12	M16×1.5	9	16	M5×0.8	8	14	17	22	—	75	—	—	—	105
16	M16×1.5	9	16	M5×0.8	6	12.5	18	22	25.5	82	130.5	102	134	110.5
20	M22×1.5	12	22	G1/8	6	17	20	24	27	95	156	119	158	132
25	M22×1.5	12	22	G1/8	6	13	22	28	29.5	104	167	124.5	165.5	139
32	M30×1.5	—	30	G1/8	7	—	30	38	37	—	184	145.5	179	—
40	M38×1.5	—	38	G1/4	8	—	35	45	42	—	227	179	217	—

FA / FB



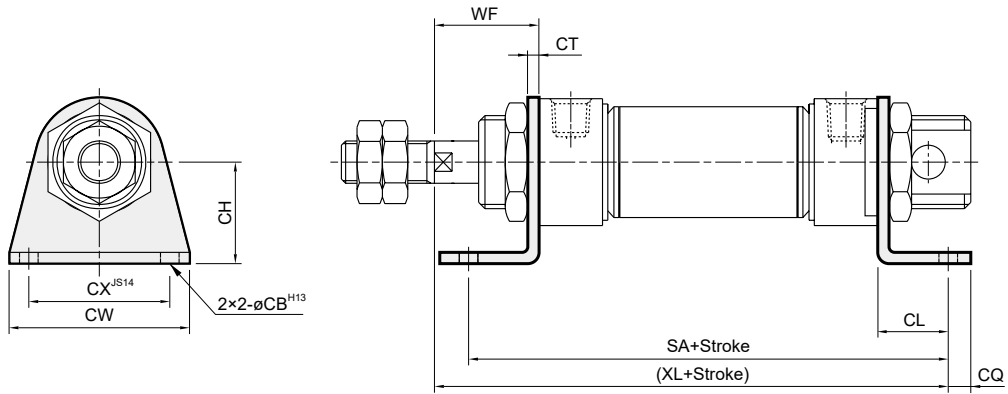
Code Tube I.D.	FB	FE	FF	FP	FT	W	ZF	ZZ
8	4.5	22	40	30	3.2	12.8	65.2	86
10	4.5	22	40	30	3.2	12.8	65.2	86
12	5.5	26	52	40	3.2	18.8	75.2	105
16	5.5	26	52	40	3.2	18.8	79.7	110.5
20	6.6	38	64	50	4.5	19.5	96.5	132
25	6.6	38	64	50	4.5	23.5	99.5	139

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



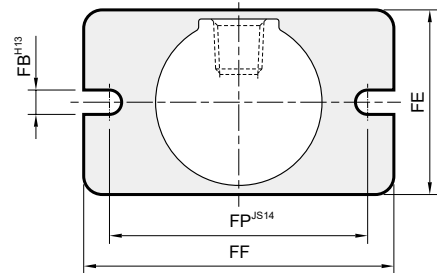
Code Tube I.D.	CB	CH	CL	CQ	CT	CW	CX	SA	XL	WF
8	4.5	16	11	5	3.2	35	25	68	73	28
10	4.5	16	11	5	3.2	35	25	68	73	28
12	5.5	20	14	6	4	42	32	78	86	38
16	5.5	20	14	6	4	42	32	82.5	90.5	38
20	6.6	25	15	8	3.2	54	40	98	107	44
25	6.6	25	15	8	3.2	54	40	97	110	50

FA

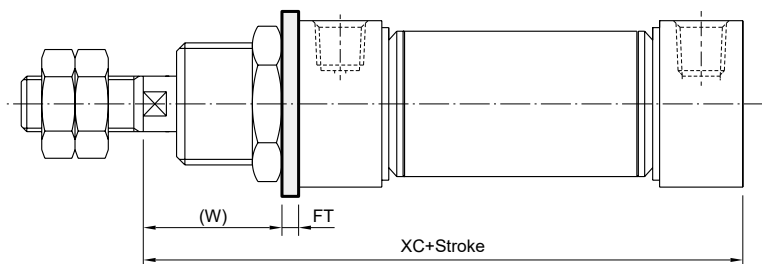
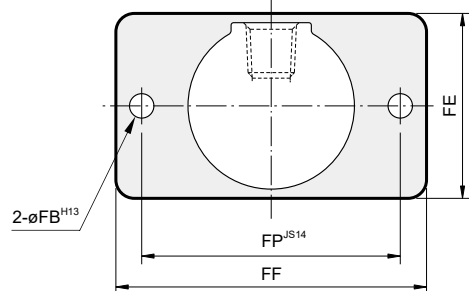
N Non-pivot type

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

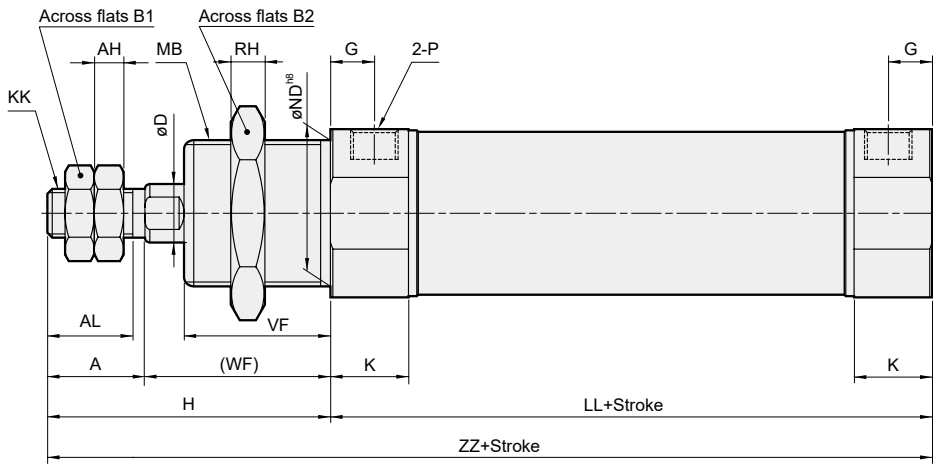
$\varnothing 12, \varnothing 16$



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

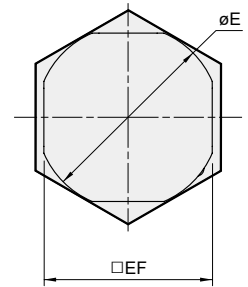


11



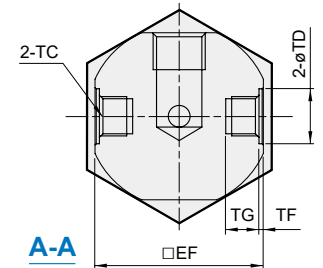
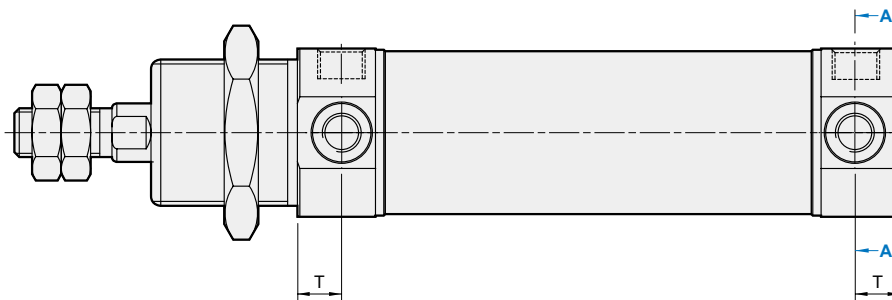
N

Non-pivot type



R H

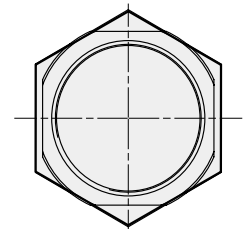
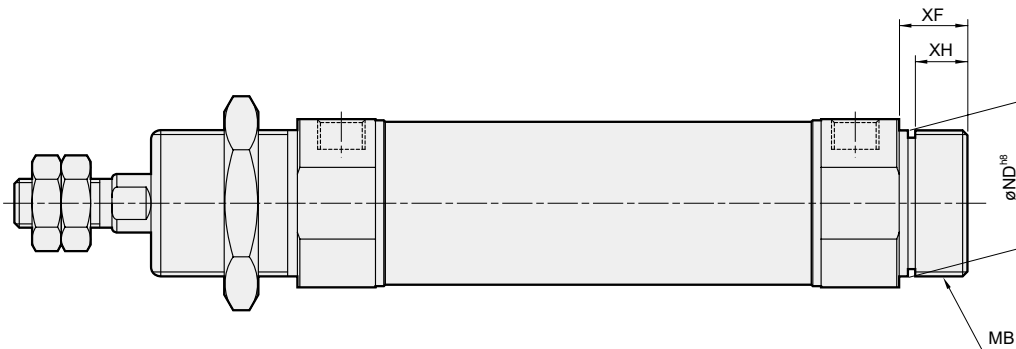
Rod / Head trunnion type



A-A

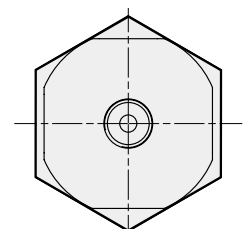
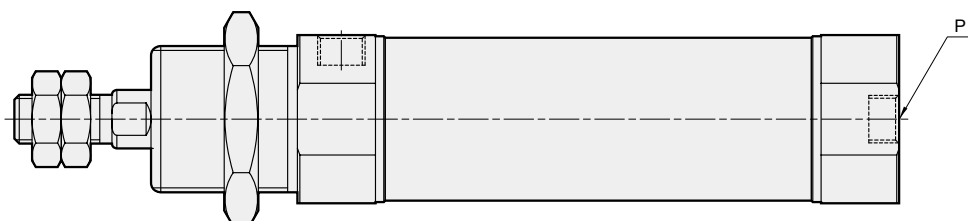
F

Head foot type



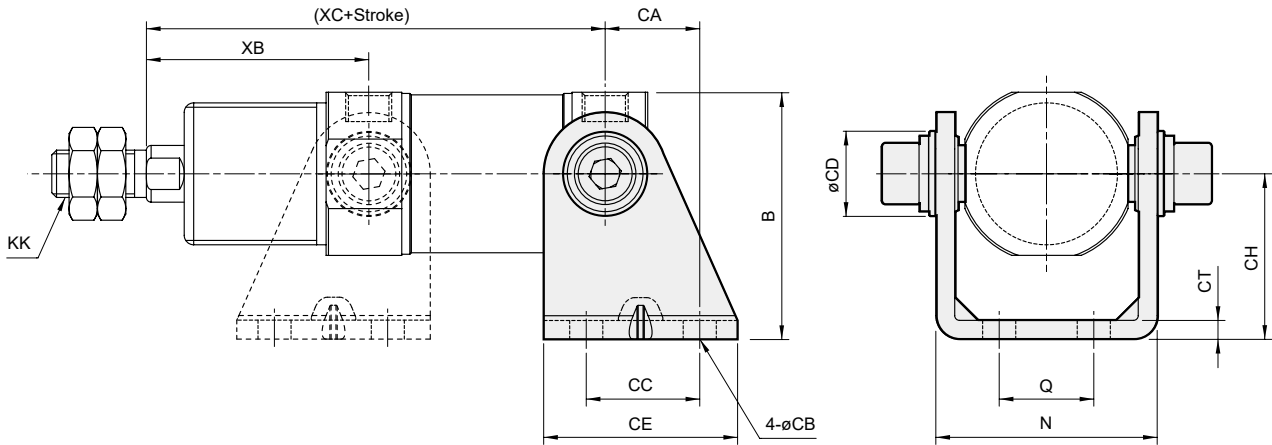
C

Axis port



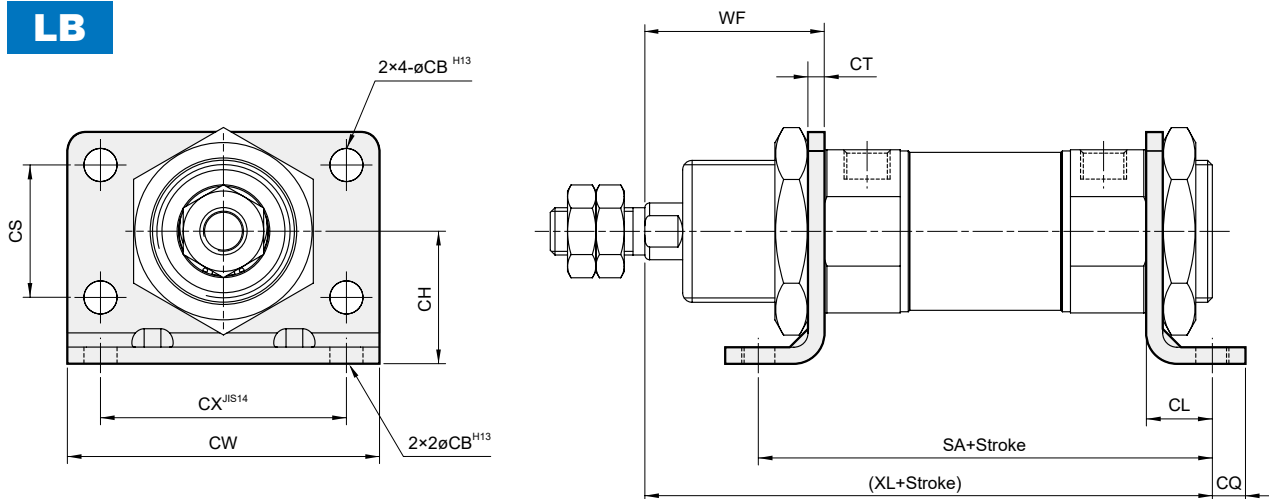
Code Tube I.D.	A	AH	AL	B1	B2	D	E	EF	G	H	KK	K	LL	MB	ND	P	RH	T	TC	TD	VF	WF	XF	XH	ZZ
32	20	5	17.5	17	38	12	37.5	34.5	9	58	M10×1.5	16	68	M30×1.5	30	G1/8	7	9	M8×1.0×6.5 dp	12	30	38	14	10.7	126
40	24	7	21	19	46	14	46.5	42.5	12	69	M12×1.75	22	89	M38×1.5	38	G1/4	8	12	M10×1.0×8 dp	14	35	45	16	12.2	158

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

MINIATURE CYLINDER

mindman

Y connector

$\varnothing 8 \sim \varnothing 16$

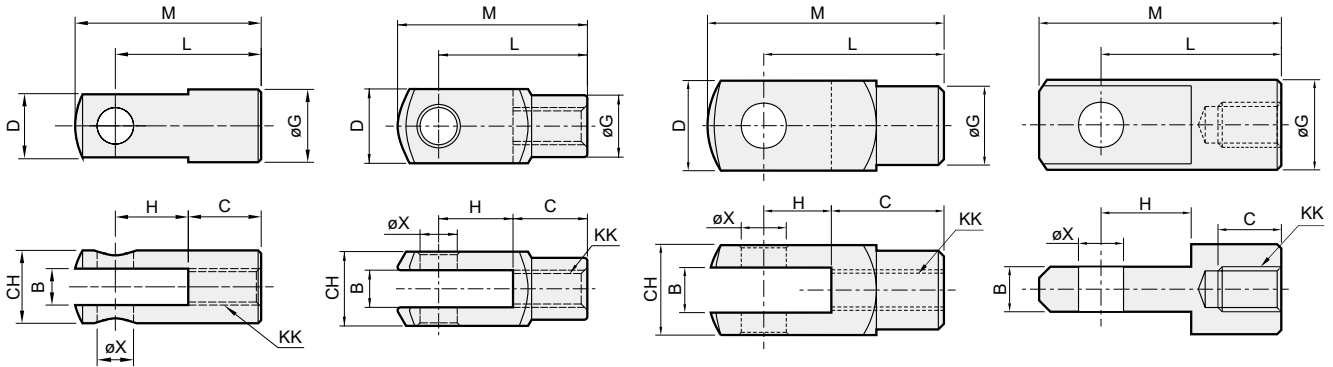
Not suitable for (S) floating pin

$\varnothing 16^*$

For (S) floating pin

$\varnothing 20 \sim \varnothing 40$

I connector

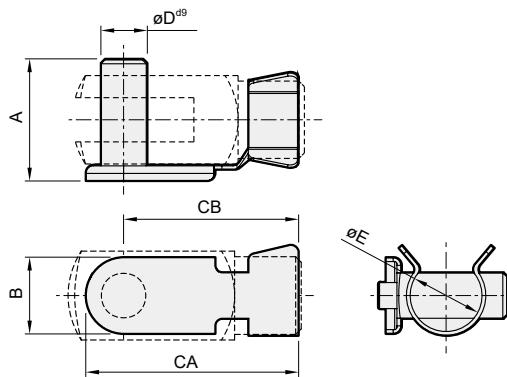


Code Tube I.D.	B		C		CH		D		G		H		L		M		X
	Y	I	Y	I	Y	I	Y	I	Y	I	Y	I	Y	I	Y	I	
8,10	4 ^{+0.4} _{+0.1}	—	8	—	8	—	8	—	—	—	8	—	16	—	20.75	—	4 ^{+0.1} _{+0.01}
12,16	6 ^{+0.4} _{+0.1}	6 ^{-0.2} _{-0.3}	12	8	12	—	—	—	12	12	12	10	24	21	31	28	6 ^{+0.1} _{+0.01}
16*	6 ^{+0.4} _{+0.1}	—	12	—	12	—	12	—	10	—	12	—	24	—	31	—	6 ^{+0.03} ₀
20	8 ^{+0.5} _{+0.15}	8 ^{-0.1} _{-0.2}	16	14	16	—	16	—	14	16	16	12	32	32	42	42	8 ^{+0.1} _{+0.01}
25,32	10 ^{+0.5} _{+0.15}	10 ^{-0.1} _{-0.2}	20	17	19	—	19	—	18	20	20	15	40	40	52	52	10 ^{+0.1} _{+0.01}
40	12 ^{+0.5} _{+0.15}	12 ^{-0.1} _{-0.2}	24	21	22	—	22	—	20	24	24	18	48	48	62	62	12 ^{+0.1} _{+0.01}

Code Tube I.D.	KK (MCMA)		KK (MCMC)	
	Y	I	Y	I
8,10	M4×0.7	—	M4×0.7	—
12,16,16*	M6×1.0			
20	M8×1.25			
25	M10×1.25			
32	M10×1.25	—	M10×1.5	—
40	M12×1.25	—	M12×1.75	—

PIN

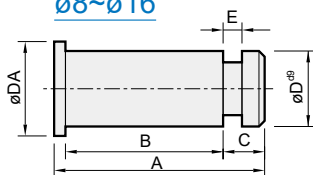
S $\varnothing 16^* \sim \varnothing 40$



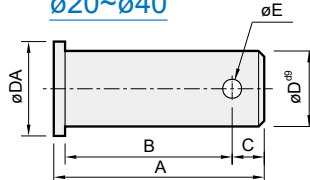
for floating pin

Code Tube I.D.	A	B	CA	CB	D ^{d9}	E
16*	16	10	28	23	ø6 ^{-0.03} _{-0.06}	9.5
20	22	12	37	31	ø8 ^{-0.04} _{-0.08}	13.5
25,32	26	14	45	38	ø10 ^{-0.04} _{-0.08}	17
40	31	16	54	46	ø12 ^{-0.05} _{-0.09}	19

P $\varnothing 8 \sim \varnothing 16$



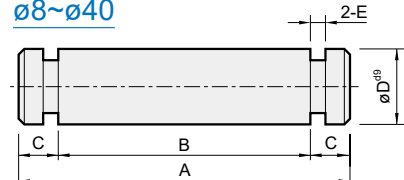
$\varnothing 20 \sim \varnothing 40$



for Y & I connector

Code Tube I.D.	A	B	C	D ^{d9}	DA	E	Split pin
8,10	12	8.5	2	4 ^{-0.03} _{-0.06}	8	0.7	E3
12,16	18.5	15	2	6 ^{-0.03} _{-0.06}	10	0.7	E4
20	24.5	20.5	2.5	8 ^{-0.04} _{-0.08}	12	ø2.5	2.5×16L
25,32	30	25	3.5	10 ^{-0.04} _{-0.08}	14	ø3.2	3.2×20L
40	37	30	5	12 ^{-0.05} _{-0.09}	16	ø3.2	3.2×20L

P $\varnothing 8 \sim \varnothing 40$



for SDB

Code Tube I.D.	A	B	C	D ^{d9}	E	Split pin
8,10	18	14	2	4 ^{-0.03} _{-0.06}	0.7	E3.2
12	23.5	19.5	2	6 ^{-0.03} _{-0.06}	0.7	E5
16	21	17	2	6 ^{-0.03} _{-0.06}	0.7	E5
20,25	30	25	2.5	8 ^{-0.04} _{-0.08}	0.9	E7
32	33	27	3	10 ^{-0.04} _{-0.08}	0.9	E9
40	37	31	3	12 ^{-0.05} _{-0.09}	0.9	E9