MCMI series

ISO-6432 **MINIATURE CYLINDERS** / NON-PIVOT TYPE **MINIATURE CYLINDERS**

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:**
Enables world-wide inter-changeability.

■ **Magnetic as standard.**

Table for standard stroke:

	Tube I.D.	Stroke (mm)
Single acting	ϕ16	15, 25, 50, 75, 100
	ϕ20, 25	15, 25, 50, 75, 100, 125, 150
Double acting	ϕ8, 10	10, 25, 40, 50, 80, 100
	ϕ12	10, 25, 40, 50, 80, 100, 125, 160, 200
	ϕ16	15, 25, 50, 75, 100, 125, 150, 200, 250, 300, 350, 400, 450, 500
	ϕ20, 25	15, 25, 50, 75, 100, 125, 150, 200, 250, 300, 350, 400, 450, 500

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

Specification:

Model	MCMI					
Tube I.D. (mm)	8	10	12	16	20	25
Port size	M5×0.8				G 1/8	
Medium	Air					
Max. operating pressure kgf/cm²	7 kgf/cm²					
Min. operating pressure kgf/cm²	1	0.8		0.6		
Proof pressure	10 kgf/cm²					
Ambient temperature	−5~+60℃ (No freezing)					
Available speed range	50~500 mm/sec					
Lubricator	Not required					
Sensor switch (band)	RCA (Matching the BA20,BA25 band) (Matching the BGS20,BGS25 band)					
	RCM (Matching the BM16~BM25 band)					
	RCS (Matching the BJ8~BJ16 band)					

● The code of sensor switch band is BM16. "16" represents the tube I.D.

Order example:

MCMI − 11 − 16 − 100 − A − N

- MCMI: MODEL
- 11: STYLE — **1**: Single Rod, **2**: Double Rod
- 16: TUBE I.D.
- 100: STROKE
- A: **A**: With adjustable cushion, Blank: With cushion pad
- N: **N**: Non-Pivot type (end-plain), Blank: with Pivot type (ISO-6432 Miniature cylinders)

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 distance(mm)" at order list

Single acting type: Please consult us.

※ Order example for special specification, refer to page **H-03**.

Mounting accessories:

FA − MCMI − 16

- FA: MOUNTING TYPE
- MCMI: MODEL
- 16: TUBE I.D.

	LB
	FA
	FB
	SDB
	Y
	I

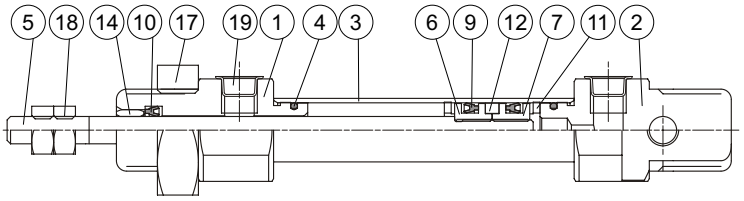
MCMI Inside structure & Parts list

ISO-6432 **MINIATURE CYLINDERS**

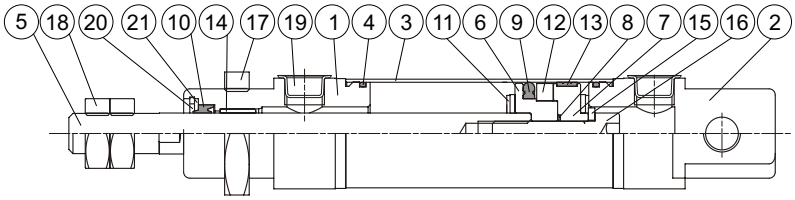
Mindman

Cushion pad type

ϕ8~ϕ12

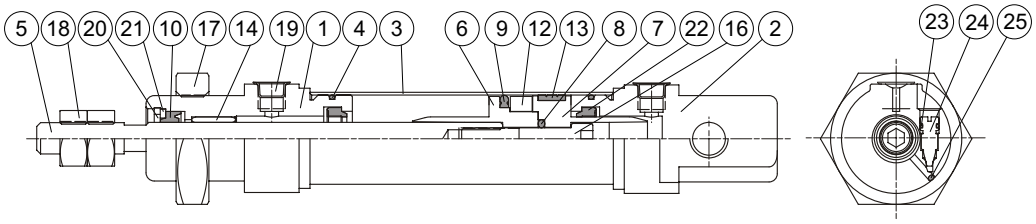


ϕ16~ϕ25



Cushion air type

ϕ16~ϕ25

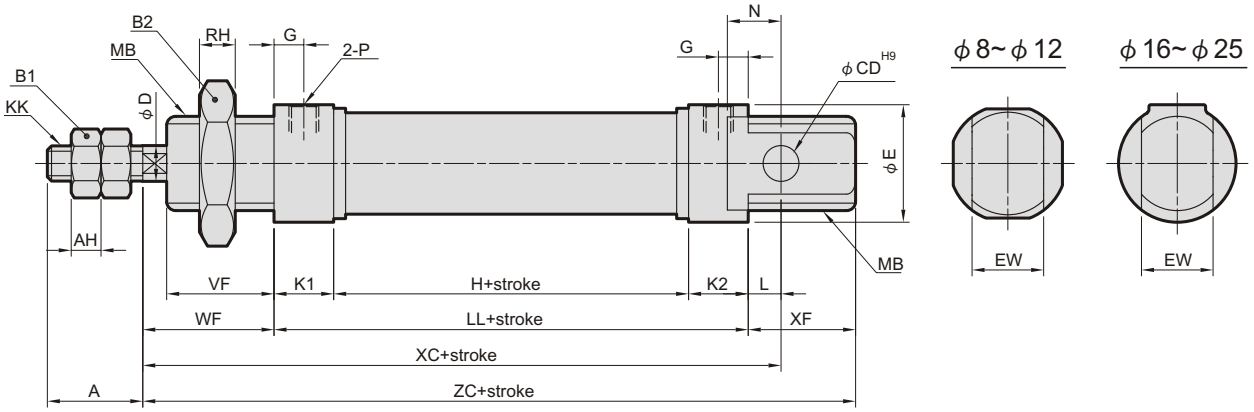


Material :

No.	Cushion		Tube I.D. / Part name	8	10	12	16	20	25	Note
	Air	Pad								
1	●	●	Rod cover	Aluminum alloy						
2	●	●	Head cover	Aluminum alloy						
3	●	●	Tube	Stainless steel						
4	●	●	Cover ring	NBR						
5	●	●	Piston rod	Stainless steel				※1		※1: Medium carbon steel
6	●	●	Piston-R	Aluminum alloy			Polyurethane			ϕ25A with cushion air-Aluminum alloy
7	●	●	Piston-H	Aluminum alloy			Polyurethane			ϕ25A with cushion air-Aluminum alloy
8	●	●	Piston gasket	—			NBR			
9	●	●	Piston packing	NBR						
10	●	●	Rod packing	NBR						
11		●	Cushion gasket	NBR						
12	●	●	Magnet ring	Magnet material						
13	●	●	Wear ring	—			Teflon + Graphite			
14	●	●	Rod bush	Bearing alloy						
15		●	Washer	—					※2	only for ϕ25 with cushion pad
16	●	●	Piston bolt	—			SCM			
17	●	●	Tie nut	Carbon steel						
18	●	●	Rod front nut	Carbon steel						
19	●	●	Port plug	Plastic						
20	●	●	Snap ring	—			Spring steel			
21	●	●	Washer	—			Carbon steel			
22	●		Cushion packing	—			NBR			
23	●		Needle valve packing	—			NBR			
24	●		Needle valve	—			Stainless steel			
25	●		Steel ball	—			Stainless steel			

※2: Carbon steel

11



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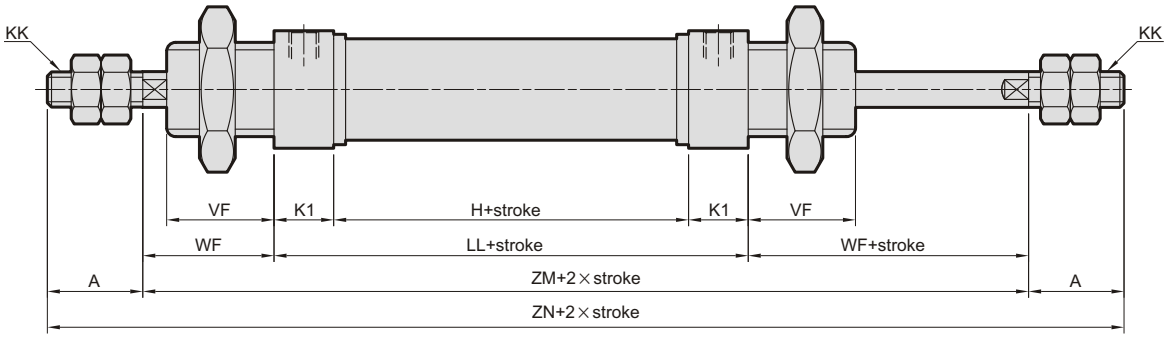

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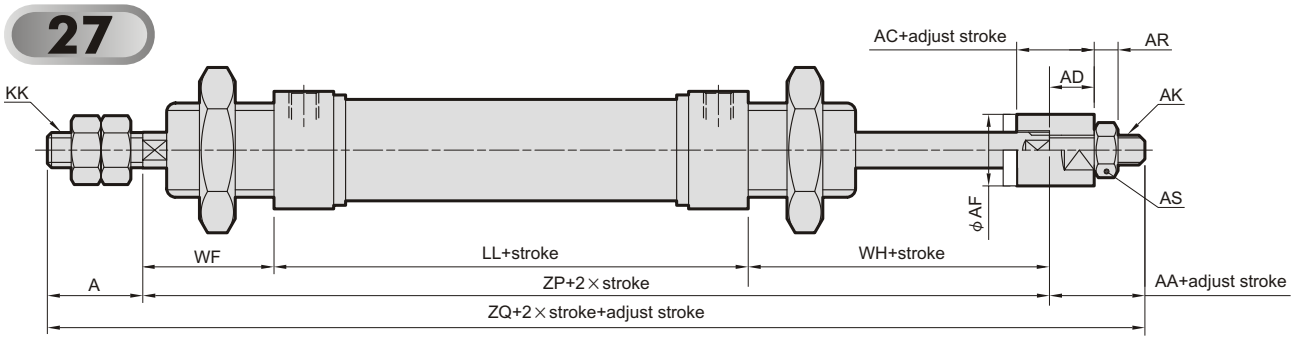
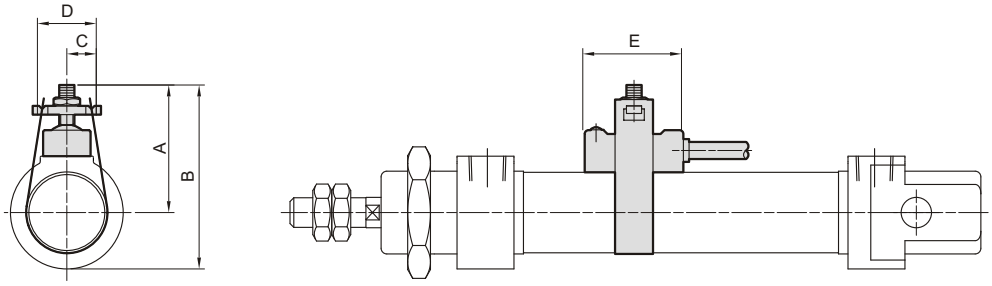


Code / Tube I.D.	A	AA	AC	AD	AF	AH	AK	AR	AS	B1	B2	CD	D	E	EW	G	H	KK	K1	K2	L	LL	MB	N
8	12	_	_	_	_	3.2	_	_	_	7	19	4	4	16.7	$8^{-0.05}_{-0.4}$	6	24	M4×0.7	11	11	2	46	M12×1.25	6
10	12	_	_	_	_	3.2	_	_	_	7	19	4	4	16.7	$8^{-0.05}_{-0.4}$	6	24	M4×0.7	11	11	2	46	M12×1.25	6
12	16	_	_	_	_	5	_	_	_	10	24	6	6	19.7	$12^{-0.05}_{-0.4}$	6	28	M6×1.0	11	11	3	50	M16×1.5	9
16	16	16	13	7.5	12	5	M5×0.8	4	8	10	22	6	6	20	$12^{-0.05}_{-0.4}$	5	34.5	M6×1.0	10	10	5.5	54.5	M16×1.5	9
20	20	19	15	9.5	16	5	M8×1.25	5	13	13	30	8	8	27	$16^{-0.05}_{-0.4}$	8	38	M8×1.25	15	15	3	68	M22×1.5	12
25	22	19	15	9.5	16	5	M8×1.25	5	13	17	30	8	10	27	$16^{-0.05}_{-0.4}$	7.5	37	M10×1.25	15	15	9	67	M22×1.5	12

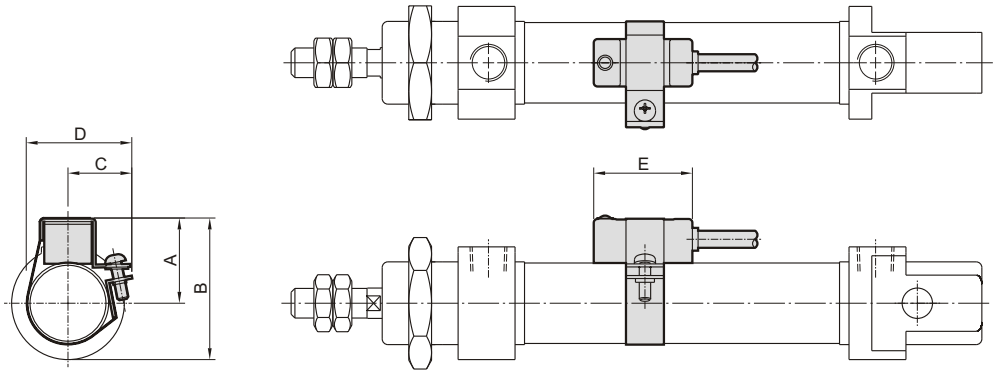
Code / Tube I.D.	P	RH	VF	WF	WH	XC	XF	ZC	ZM	ZN	ZP	ZQ
8	M5×0.8	6	12	16	—	64	12	74	_	_	_	_
10	M5×0.8	6	12	16	—	64	12	74	_	_	_	_
12	M5×0.8	8	17	22	—	75	17	89	—	—	—	—
16	M5×0.8	6	18	22	25.5	82	18	94.5	98.5	130.5	102	134
20	G 1/8	6	20	24	27	95	20	112	116	156	119	158
25	G 1/8	6	22	28	29.5	104	22	117	123	167	124.5	165.5

Sensor switch: RCA
Sensor switch band: BA**



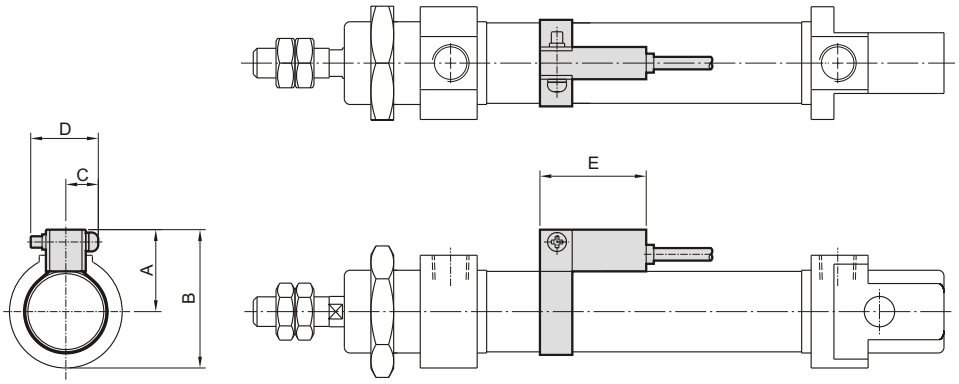
Code / Tube I.D.	A	B	C	D	E
20	33	48	9	18	26
25	35.5	50.5	9	18	26

Sensor switch: RCA
Sensor switch band: BGS**



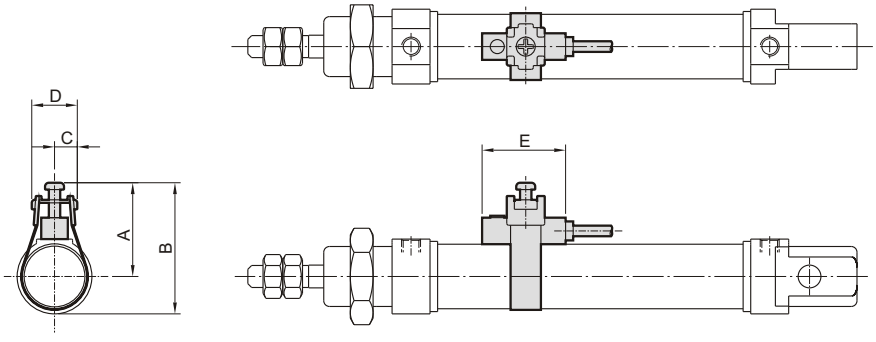
Code / Tube I.D.	A	B	C	D	E
20	25	40	18	33	26
25	25.5	40.5	18.5	33.5	26

Sensor switch: RCM
Sensor switch band: BM**



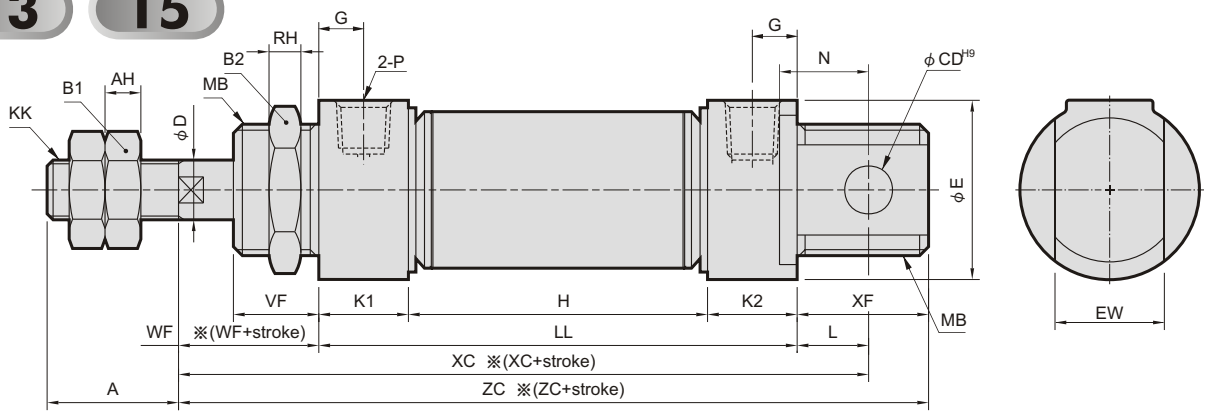
Code / Tube I.D.	A	B	C	D	E
16	20	30	10	16	28
20	22	37	10	16	28
25	25	40	10	16	28

Sensor switch: RCS
Sensor switch band: BJ**



Code / Tube I.D.	A	B	C	D	E
8	19.1	26.6	6	12	22
10	20.1	27.6	6	12	22
12	21.3	30.5	6	12	22
16	23.4	33.3	6	12	22

13 **15**



※( ) Dimension for **13** type

Code / Tube I.D.	A	AH	B1	B2	CD	D	E	EW	G	KK	K1	K2	L	LA	MB	N	P	RH	VF	WF	XF	ZM	ZN	ZP	ZQ
16	16	5	10	22	6	6	20	$12^{-0.05}_{-0.4}$	5	M6×1.0	10	10	5.5	54.5	M16×1.5	9	M5×0.8	6	18	22	18	98.5	130.5	96	134
20	20	5	13	30	8	8	27	$16^{-0.05}_{-0.4}$	8	M8×1.25	15	15	3	68	M22×1.5	12	G 1/8	6	20	24	20	116	156	119	158
25	22	6	17	30	8	10	27	$16^{-0.05}_{-0.4}$	7.5	M10×1.25	15	15	9	67	M22×1.5	12	G 1/8	6	22	28	22	123	167	124.5	165.5

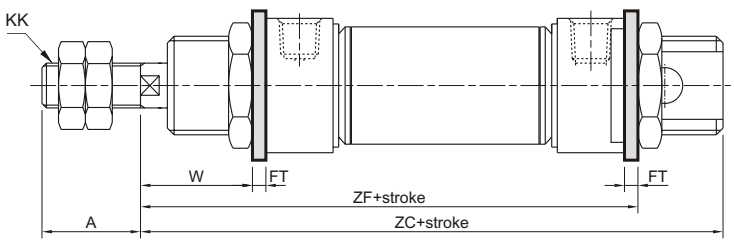
Code / Stroke / I.D.	H							LL							XC						
	15	25	50	75	100	125	150	15	25	50	75	100	125	150	15	25	50	75	100	125	150
16	64.5	74.5	114.5	154.5	194.5			84.5	94.5	134.5	174.5	214.5			112	122	162	202	242		
20	78	88	138	188	238	288	338	108	118	168	218	268	318	368	135	145	195	245	295	345	395
25	77	87	137	187	237	287	337	107	117	167	217	267	317	367	144	154	204	254	304	354	404

Code / Stroke / I.D.	ZC						
	15	25	50	75	100	125	150
16	124.5	134.5	174.5	214.5	254.5		
20	152	162	212	262	312	362	412
25	153	163	213	263	313	363	413

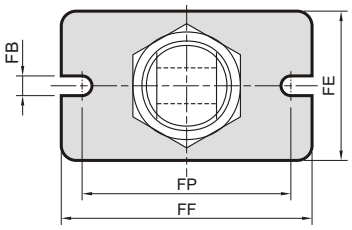
■ Mounting accessories / Double acting

FA(FB)

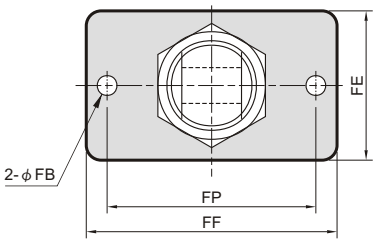
Code / Tube I.D.	A	FB	FE	FF	FP	FT	KK	W	ZC	ZF
8	12	4.5	22	40	30	3.2	M4×0.7	12.8	74	65.2
10	12	4.5	22	40	30	3.2	M4×0.7	12.8	74	65.2
12	16	5.5	26	52	40	3.2	M6×1.0	18.8	89	75.2
16	16	5.5	26	52	40	3.2	M6×1.0	18.8	94.5	79.7
20	20	6.6	38	64	50	4.5	M8×1.25	19.5	112	96.5
25	22	6.6	38	64	50	4.5	M10×1.25	23.5	117	99.5



MCMI-ϕ12, ϕ16

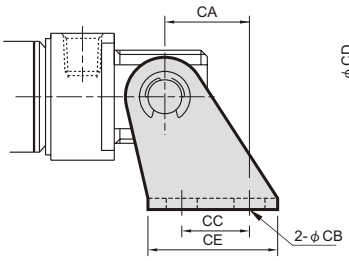


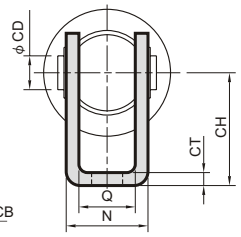
MCMI-ϕ8, ϕ10, ϕ20, ϕ25

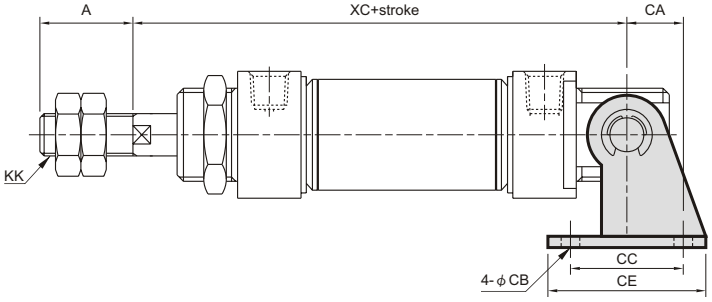


SDB

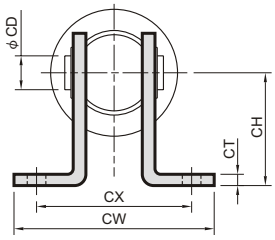
MCMI-ϕ8, ϕ10, ϕ12, ϕ16







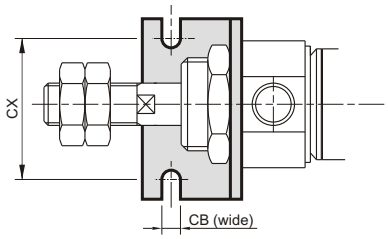
MCMI-ϕ20, ϕ25



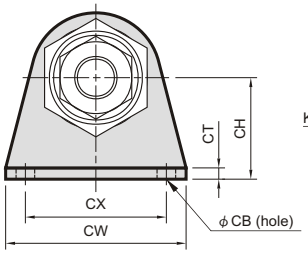
Code / Tube I.D.	A	CA	CB	CC	CD	CE	CH	CT	CW	CX	KK	N	Q	XC
8	12	11	4.5	12.5	4	20	24	2.5			M4×0.7	13.1	8.1	64
10	12	11	4.5	12.5	4	20	24	2.5			M4×0.7	13.1	8.1	64
12	16	13	5.5	15	6	25	27	3.2			M6×1.0	18.5	12.1	75
16	16	15	5.5	12	6	23	20	2.3			M6×1.0	16.7	12.1	82
20	20	16	6.6	32	8	48	32	3.2	67	51	M8×1.25			95
25	22	16	6.6	32	8	48	32	3.2	67	51	M10×1.25			104

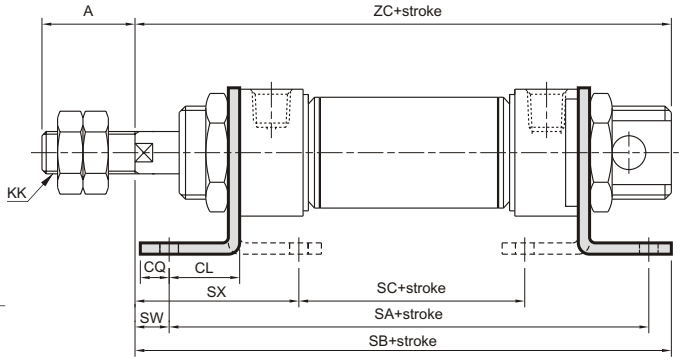
LB

MCMI-ϕ16



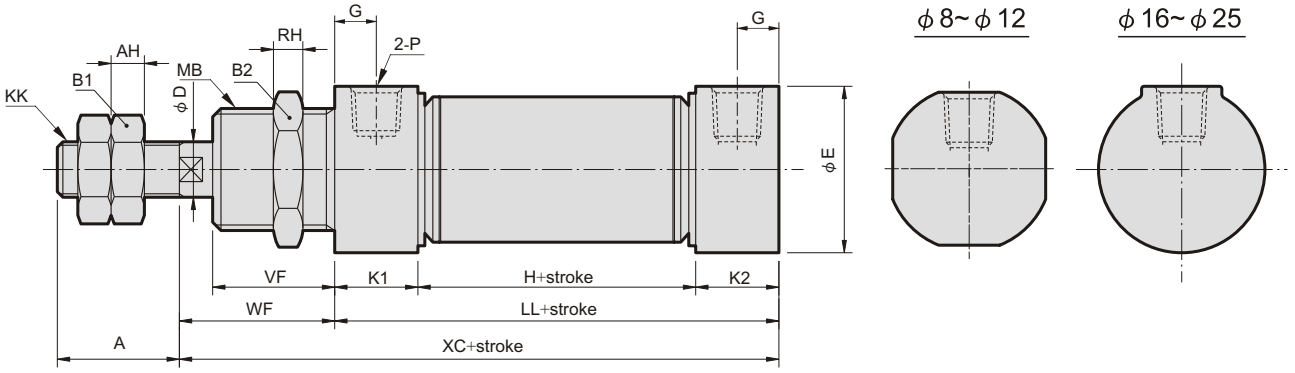
MCMI-ϕ8, ϕ10, ϕ12, ϕ20, ϕ25





Code / Tube I.D.	A	CB	CH	CL	CQ	CT	CW	CX	KK	SA	SB	SC	SW	SX	ZC
8	12	4.5	16	11	5	3.2	35	25	M4×0.7	68	78	30.4	5	23.8	74
10	12	4.5	16	11	5	3.2	35	25	M4×0.7	68	78	30.4	5	23.8	74
12	16	5.5	20	14	6	4	42	32	M6×1.0	78	92	30	8	32	89
16	16	5.5	20	13	6	3.2	44	32	M6×1.0	80.5	95.5	34.9	9	31.8	94.5
20	20	6.6	25	15	8	3.2	54	40	M8×1.25	98	115	44.4	9	35.8	112
25	22	6.6	25	15	8	3.2	54	40	M10×1.25	97	118	43.4	13	39.8	117

N

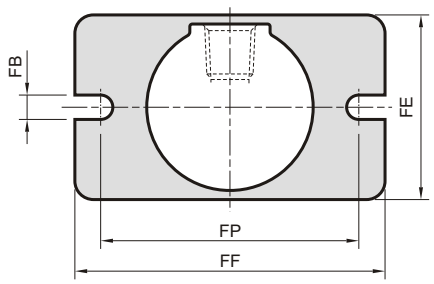


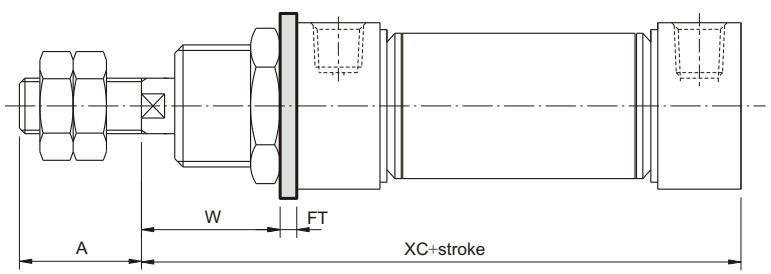
Code / Tube I.D.	A	AH	B1	B2	D	E	G	H	KK	K1	K2	LL	MB	P	RH	VF	WF	XC
8	12	3.2	7	19	4	16.7	6	24	M4×0.7	11	11	46	M12×1.25	M5×0.8	6	12	16	62
10	12	3.2	7	19	4	16.7	6	24	M4×0.7	11	11	46	M12×1.25	M5×0.8	6	12	16	62
12	16	5	10	24	6	19.7	6	28	M6×1.0	11	11	50	M16×1.5	M5×0.8	8	17	22	72
16	16	5	10	22	6	20	5	34.5	M6×1.0	10	10	54.5	M16×1.5	M5×0.8	6	18	22	76.5
20	20	5	13	30	8	27	8	38	M8×1.25	15	15	68	M22×1.5	G 1/8	6	20	24	92
25	22	6	17	30	10	27	7.5	37	M10×1.25	15	15	67	M22×1.5	G 1/8	6	22	28	95

FA

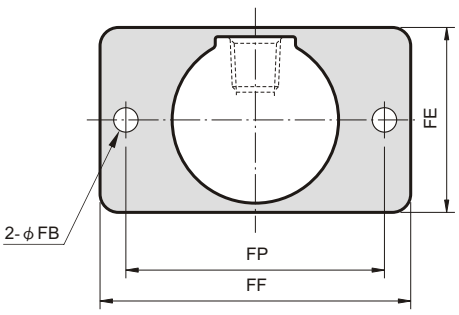
Code / Tube I.D.	A	FB	FE	FF	FP	FT	W	XC
8	12	4.5	22	40	30	3.2	12.8	62
10	12	4.5	22	40	30	3.2	12.8	62
12	16	5.5	26	52	40	3.2	18.8	72
16	16	5.5	26	52	40	3.2	18.8	76.5
20	20	6.6	38	64	50	4.5	19.5	92
25	22	6.6	38	64	50	4.5	23.5	96

MCMI-ϕ12, ϕ16





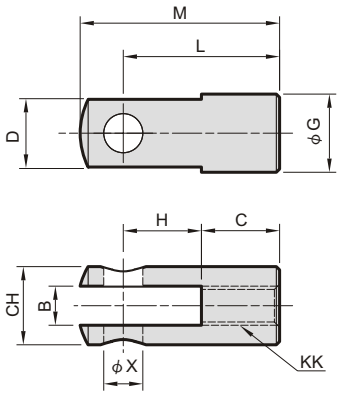
MCMI-ϕ8, ϕ10, ϕ20, ϕ25



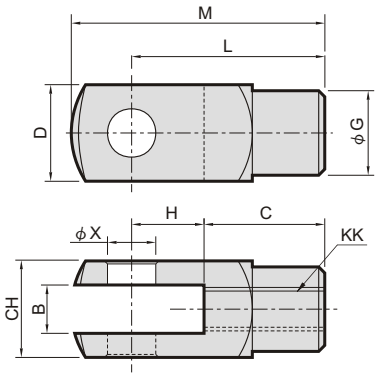
Y connector

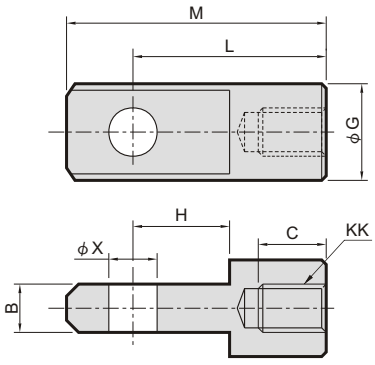
I connector

ϕ8 ~ϕ16



ϕ20 ~ϕ40

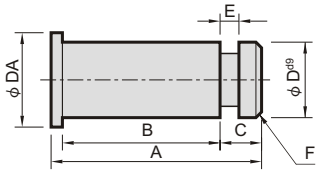




Code / Tube I.D.	B		C		CH		D		G		H		KK		L		M		X H9
	Y	I	Y	I	Y	I	Y	I	Y	I	Y	I	Y	I	Y	I	Y	I	
8,10	4 $^{+0.4}_{+0.1}$		8		8		8				8		M4×0.7		16		20.75		4 $^{+0.03}_{+0}$
12,16	6 $^{+0.4}_{+0.1}$	6 $^{-0.2}_{-0.3}$	12	8	12				12	12	12	10	M6×1		24	21	31	28	6 $^{+0.03}_{+0}$
20	8 $^{+0.5}_{+0.15}$	8 $^{-0.1}_{-0.2}$	16	14	16		16		14	16	16	12	M8×1.25		32	32	42	42	8 $^{+0.036}_{+0}$
25,32	10 $^{+0.5}_{+0.15}$	10 $^{-0.1}_{-0.2}$	20	17	19		19		18	20	20	15	M10×1.25		40	40	52	52	10 $^{+0.036}_{+0}$
40	12 $^{+0.5}_{+0.15}$	12 $^{-0.1}_{-0.2}$	24	21	22		22		20	24	24	18	M12×1.25		48	48	62	62	12 $^{+0.043}_{+0}$

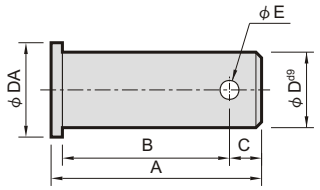
Pin

ϕ8~ϕ16



【Ⅰ】

ϕ20~ϕ40

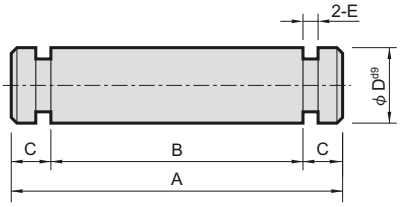


【Ⅱ】

Order example:

PIN – MCMA – 16 – Y – P

- PIN
- MODEL — **MCMI** : for ϕ8~12 tube I.D. **SDB** : for SDB accessory; **MCMA** : for ϕ16~40 tube I.D.
- TUBE I.D.
- TYPE — **Y** : for Y&I connector
- **P** : with split pin



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	ϕ2.5	2.5×16L
25,32	30	25	3.5	10 $^{-0.04}_{-0.08}$	14	ϕ3.2	3.2×20L
40	37	30	5	12 $^{-0.05}_{-0.09}$	16	ϕ3.2	3.2×20L

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	30	25	2.5	8 $^{-0.04}_{-0.08}$	0.9	E7
25,32	33	27	3	10 $^{-0.04}_{-0.08}$	0.9	E9
40	37	31	3	12 $^{-0.05}_{-0.09}$	0.9	E9