MCMJ series

PEN CYLINDER

Features

- Special housing and bushing enables self lubrication of piston rod.
- High quality long service life.
- Cylinder mountings, available with a comprehensive range of accessories for rigid or flexible mounting.

Specification

Model			MCMJ		
Tube I.D. (mm)			ϕ6	ϕ10	ϕ16
Port size			M5×0.8		
Medium			Air		
Max operation pressure			0.7 MPa		
Min operation pressure (MPa)	Single acting	normally extended	0.25	0.15	
		normally returned	0.2	0.15	
	Double acting		0.12	0.06	
Proof pressure			1 MPa		
Ambient temperature			−5~+60℃ (No freezing)		
Available speed range			50~500mm/sec		
Max. allowable kinetic energy (J)	Cushion pad		0.16	0.27	0.4
	Adjustable cushion		0.32	0.54	0.78
Lubrication			Not required		
Sensor switch (※)			RCS, RCM		
Sensor switch band		RCS	BJ6	BJ10	BJ16
		RCM	BM6	BM10	BM16

※ RCM, RCS specification, please refer to page **8-13**, **14**.

Table for standand stroke

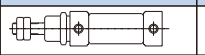
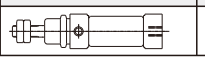
	Tube I.D.	Stroke (mm)
Single acting	ϕ6	15,30,45,60
	ϕ10	15,30,45,60
	ϕ16	15,30,45,60,75,100,125,150
Double acting	ϕ6	15,30,45,60
	ϕ10	15,30,45,60,75,100,125,150
	ϕ16	15,30,45,60,75,100,125,150,175,200

Order example

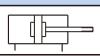
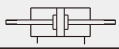
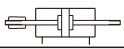
MCMJ − 11 − 16 − 45M − B

- MCMJ: MODEL
- 11: STYLE
  - **1**: Single Rod
  - **2**: Double Rod
- 16: TUBE I.D.
- 45M: STROKE
- **M**: Magnet
- B: END COVER TYPE

END COVER TYPE

Code	Symbol	Tube I.D.
B		ϕ10,16
D		ϕ10,16
R		ϕ6,10,16

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

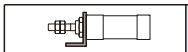
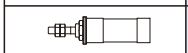
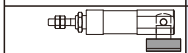
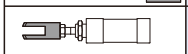
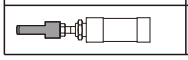
for tube I.D. ϕ10,16

※ Order example for special specification, refer to page **0-7**.
※ Order for **21, 27 type**, please consult us.

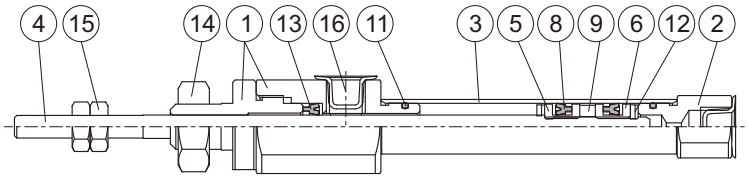
Mounting accessories

FA − MCMJ − 16

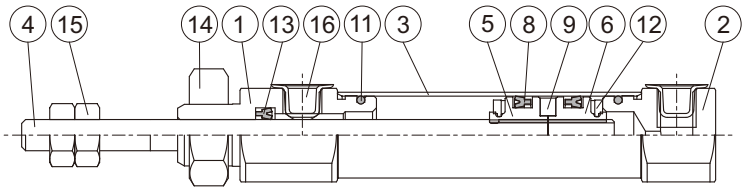
- FA: MOUNTING TYPE
- MCMJ: MODEL
- 16: TUBE I.D.

	LB
	FA
	T
	Y
	I

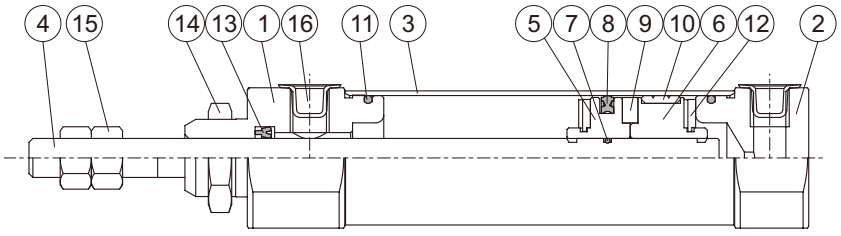
ϕ6

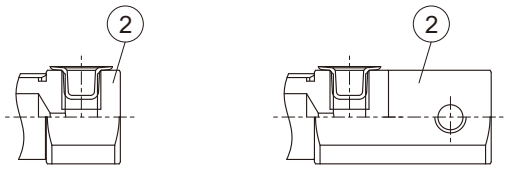


ϕ10



ϕ16





B type: ϕ10, ϕ16 **D** type: ϕ10, ϕ16 **R** type: ϕ6, ϕ10, ϕ16

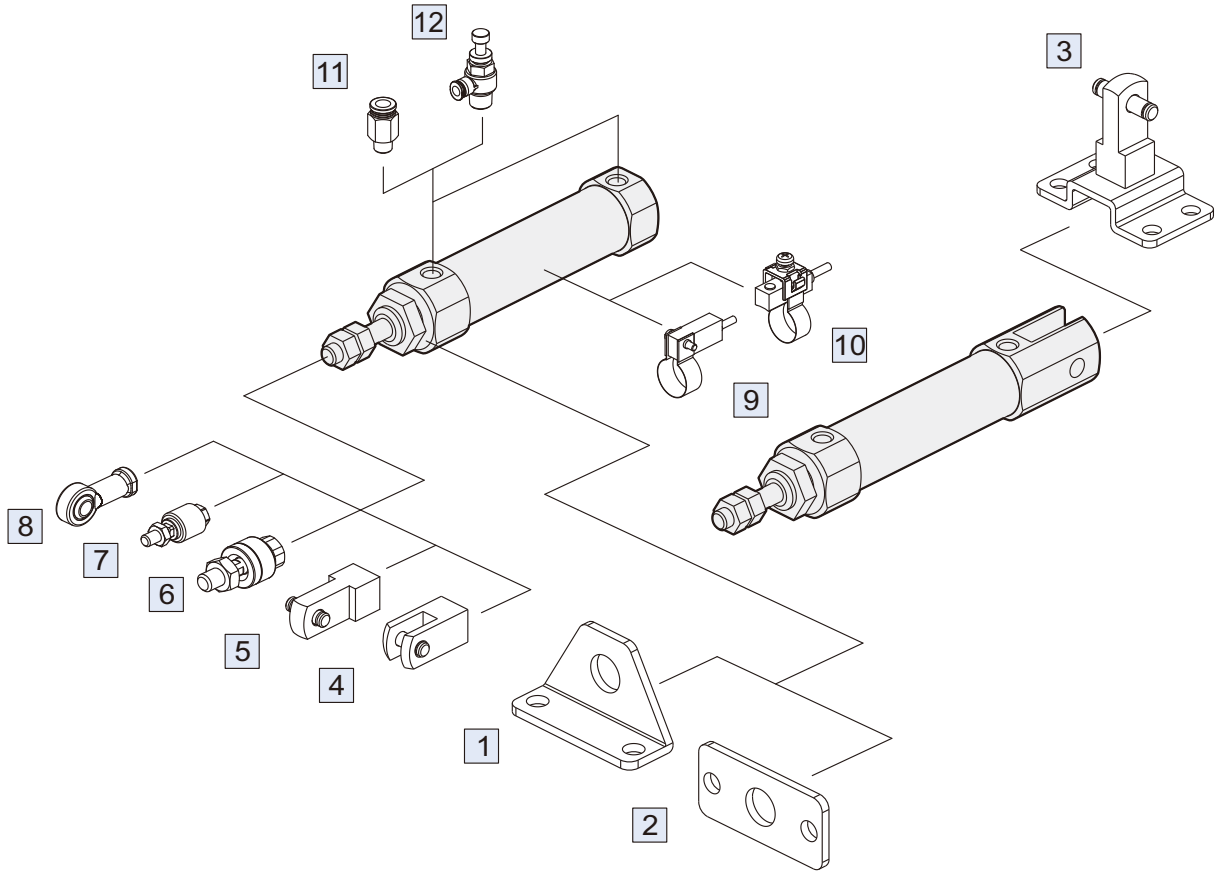
Material

No.	Part name \ Tube I.D.	6	10	16	Q'y	Component parts (inclusion)
1	Rod cover	Aluminum alloy			1	●
2	Head cover	Aluminum alloy			1	●
3	Tube	Stainless steel			1	
4	Piston rod	Stainless steel			1	
5	Piston-R	Aluminum alloy			1	●
6	Piston-H	Aluminum alloy			1	●
7	Piston gasket	—		NBR	1	●
8	Piston packing	NBR			2(※)	●
9	Magnet ring	Magnet material			1	●
10	Wear ring	—		※1	1	●
11	Cover ring	NBR			2	●
12	Cushion packing	NBR			2	●
13	Snap ring	NBR			1	●
14	Tie nut	Carbon steel			1	●
15	Rod front nut	Carbon steel			2	●
16	Port plug	Plastic			2	●

※ Cylinder bore 16 (Required quantity: 1 pc)
※1. Teflon + Graphite

Order example of component parts

Tube I.D.	Component parts
ϕ6	**CP-MCMJ-6-R**
ϕ10	**CP-MCMJ-10-R**
	CP-MCMJ-10-B
	CP-MCMJ-10-D
ϕ16	**CP-MCMJ-16-R**
	CP-MCMJ-16-B
	CP-MCMJ-16-D

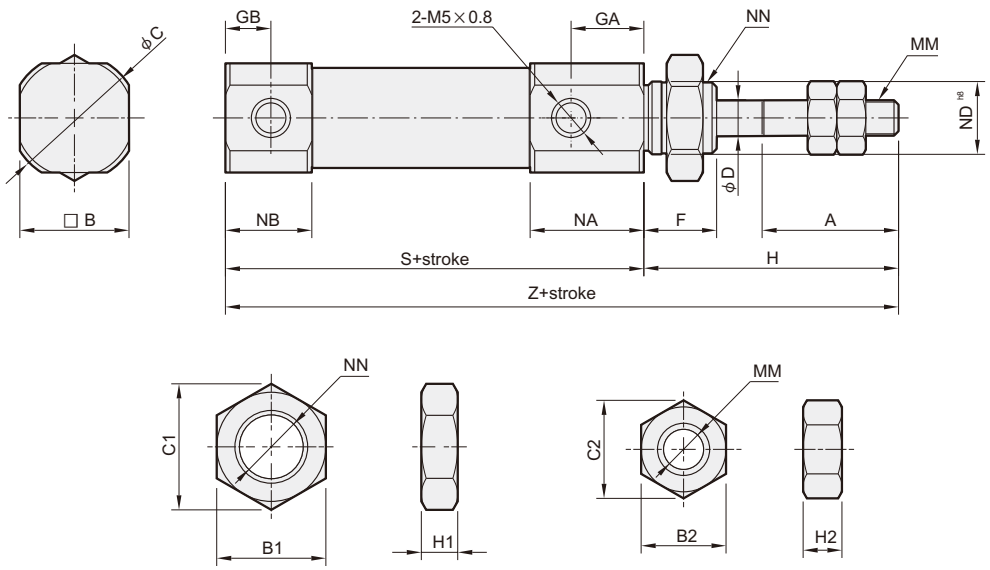


No.	Accessories	Page
1	Mounting accessories LB	3-55, 57, 59
2	Mounting accessories FA	3-56, 58, 60
3	Mounting accessories T+I+PIN (※)	3-56, 58, 60, 61
4	Accessories Y+PIN	3-61
5	Accessories I+PIN	3-61
6	Floating joint MFC	8-2
7	Floating joint MFCS	8-4
8	Female rod ends PHS	8-5

※ Only for end cover "D" type

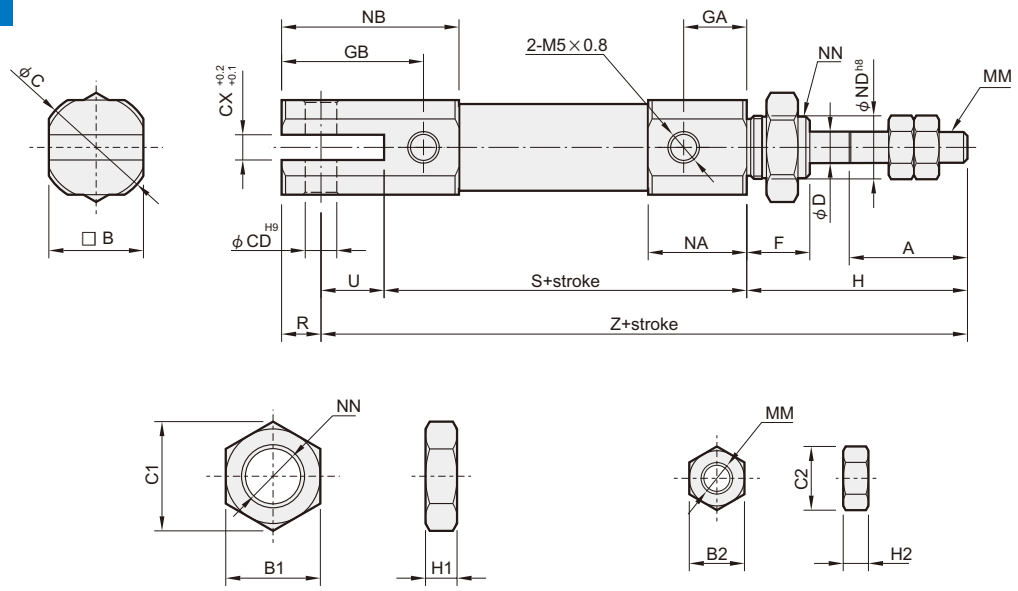
No.	Accessories	Page
9	Sensor switch RCM+BM**	8-13
10	Sensor switch RCS+BJ**	8-14
11	Fitting PC (PISCO)	8-5 (Vol.1)
12	Speed controller JSC (PISCO)	8-18 (Vol.1)

B



Code / Tube I.D.	A	B	B1	B2	C	C1	C2	D	F	GA	GB	H	H1	H2	MM	NA	NB	ND h8	NN	S	Z
10	15	12	11	7	14	11.5	8.1	4	8	8	5	28	4	3.2	M4×0.7	12.5	9.5	8 $^{0}_{-0.022}$	M8×1.0	46	74
16	15	18	14	8	20	16.2	9.2	5	8	8	5	28	4	4	M5×0.8	12.5	9.5	10 $^{0}_{-0.022}$	M10×1.0	47	75

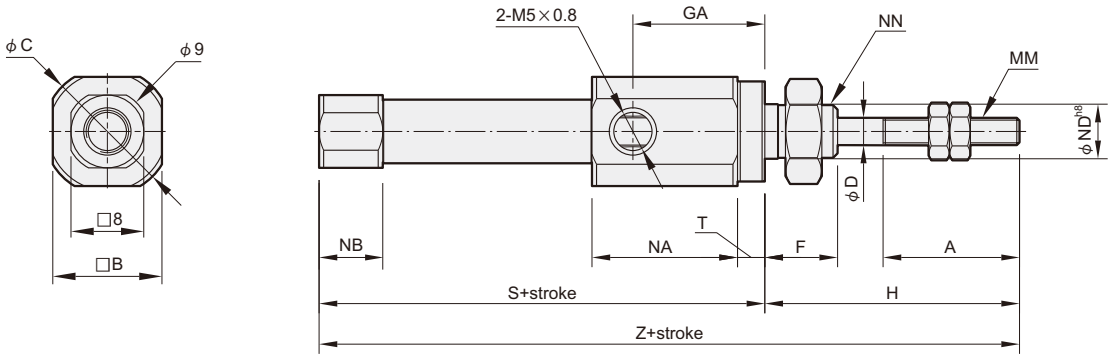
D



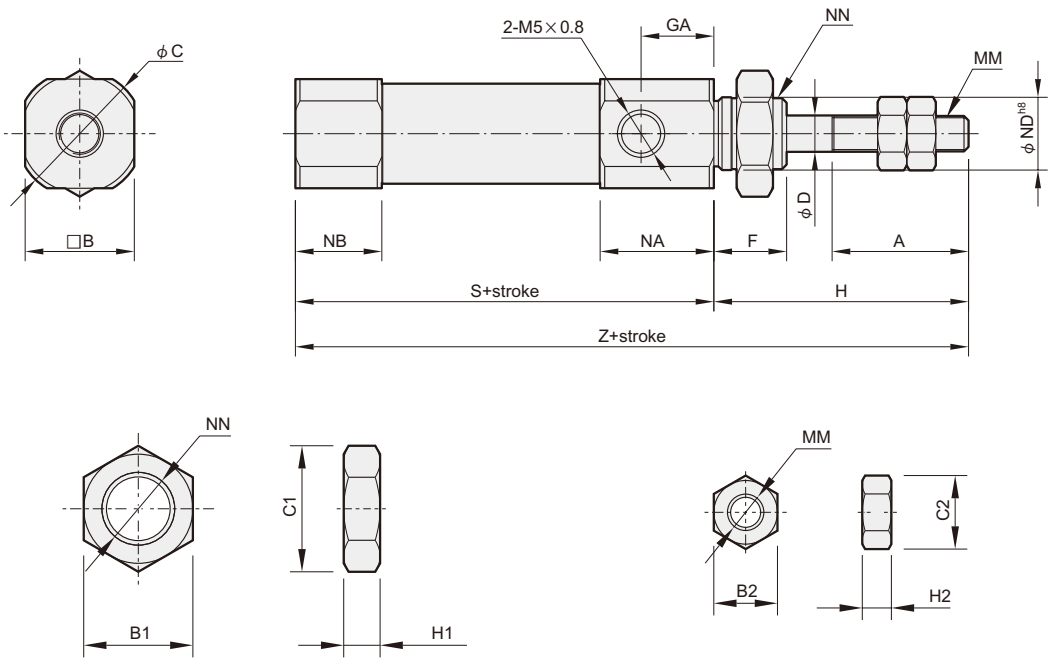
Code / Tube I.D.	A	B	B1	B2	C	CD	CX	C1	C2	D	F	GA	GB	H	H1	H2	MM	NA	NB	ND h8	NN	R	S	U	Z
10	15	12	11	7	14	3.3	3.2	12.7	8.1	4	8	8	18	28	4	3.2	M4×0.7	12.5	22.5	8 $^{0}_{-0.022}$	M8×1.0	5	46	8	82
16	15	18	14	8	20	5	6.5	16.2	9.2	5	8	8	23	28	4	4	M5×0.8	12.5	27.5	10 $^{0}_{-0.022}$	M10×1.0	8	47	10	85

R

MCMJ-6

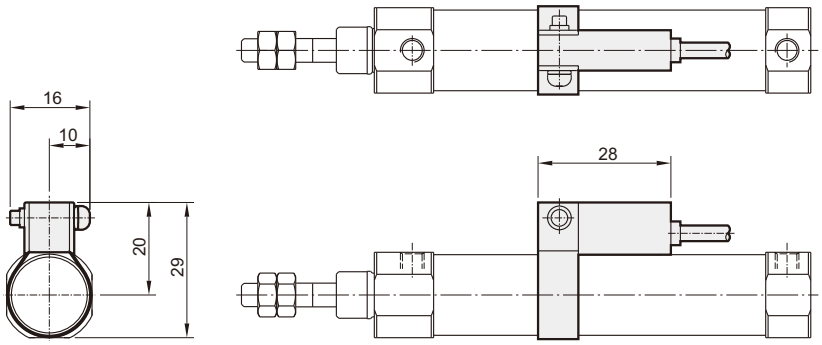


MCMJ-10 / MCMJ-16

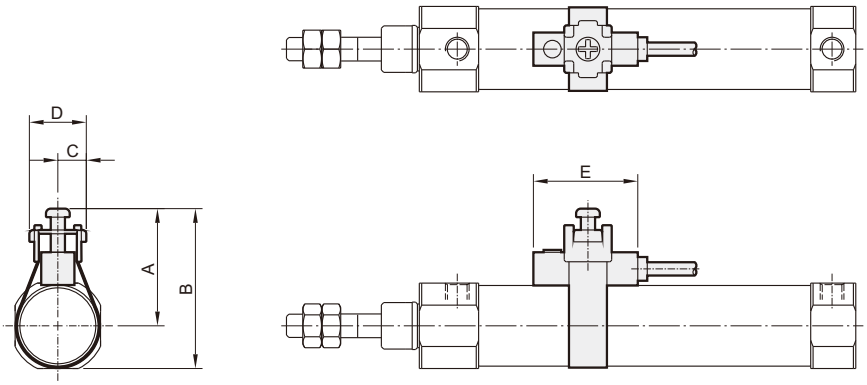


Code / Tube I.D.	A	B	B1	B2	C	C1	C2	D	F	GA	H	H1	H2	MM	NA	NB	ND h8	NN	S	T	Z
6	15	12	8	5.5	14	9.2	6.4	3	8	14.5	28	4	2.4	M3×0.5	16	7	6 $^{0}_{-0.022}$	M6×1.0	49	3	77
10	15	12	11	7	14	12.7	8.1	4	8	8	28	4	3.2	M4×0.7	12.5	9.5	8 $^{0}_{-0.022}$	M8×1.0	46		74
16	15	18	14	8	20	16.2	9.2	5	8	8	28	4	4	M5×0.8	12.5	9.5	10 $^{0}_{-0.022}$	M10×1.0	47		75

Sensor switch: RCM
Sensor switch band: BM**



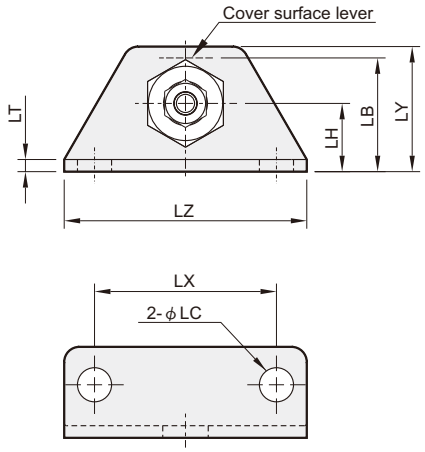
Sensor switch: RCS
Sensor switch band: BJ**

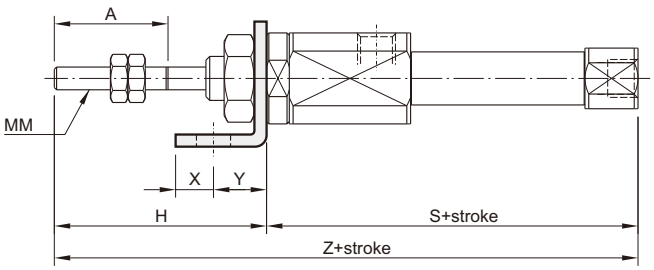


Code / Tube I.D.	A	B	C	D	E
6	18.1	24.1	6	12	22
10	20.1	26.1	6	12	22
16	23.4	32.4	6	12	22

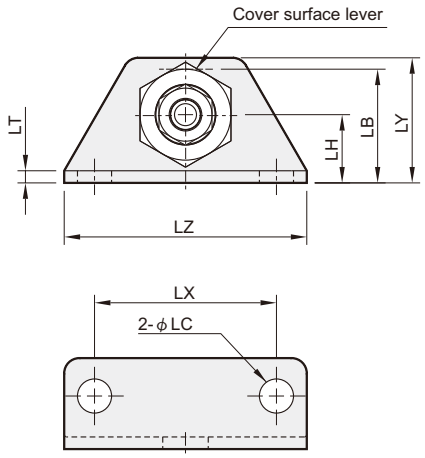
LB

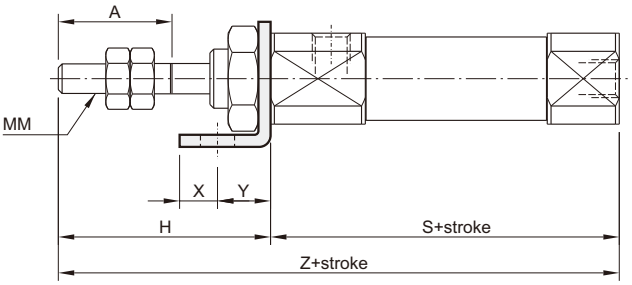
MCMJ-ϕ6-LB





MCMJ-ϕ10, ϕ16-LB

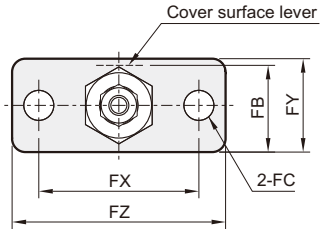


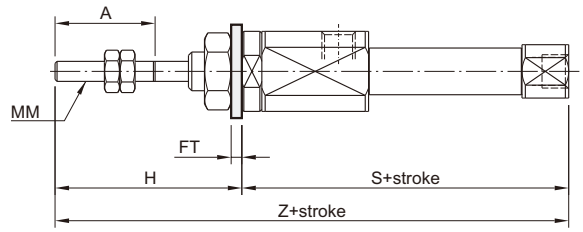


Code / Tube I.D.	A	H	LB	LC	LH	LT	LX	LY	LZ	MM	S	X	Y	Z
6	15	28	15	4.5	9	1.6	24	16.5	32	M3×0.5	49	5	7	77
10	15	28	15	4.5	9	1.6	24	16.5	32	M4×0.7	46	5	7	74
16	15	28	23	5.5	14	2.3	33	25	42	M5×0.8	47	6	9	75

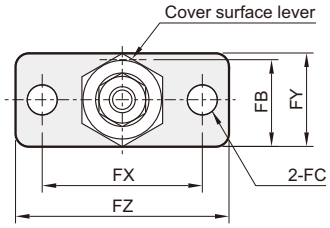
FA

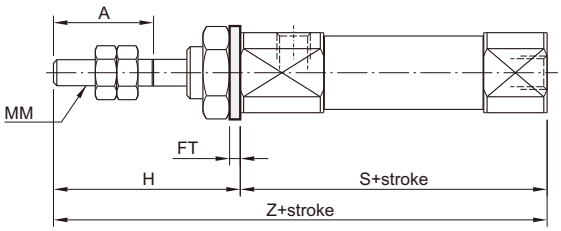
ϕ6





ϕ10~ϕ16

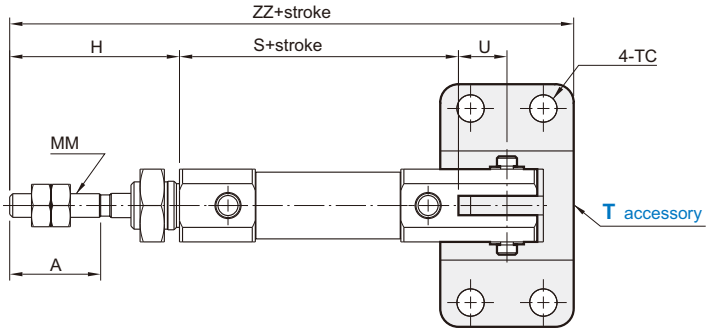


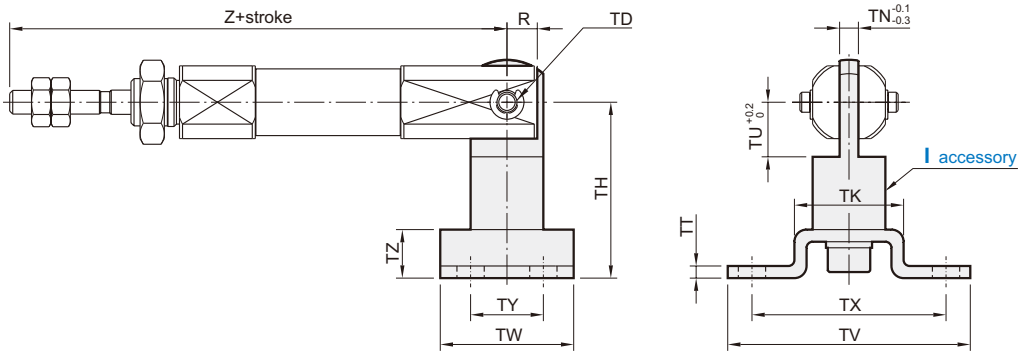


Code / Tube I.D.	A	FB	FC	FT	FX	FY	FZ	H	MM	S	Z
6	15	13	4.5	1.6	24	14	32	28	M3×0.5	49	77
10	15	13	4.5	1.6	24	14	32	28	M4×0.7	46	74
16	15	19	5.5	2.3	33	20	42	28	M5×0.8	47	75

T

I + Pin
(Extra purchase)

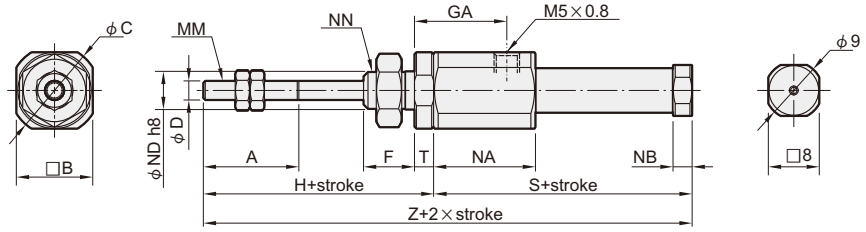




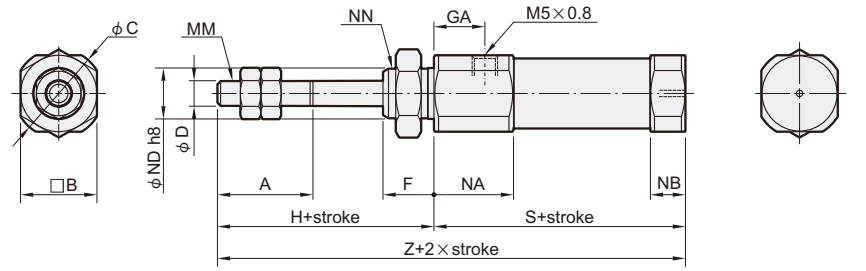
Code / Tube I.D.	A	H	MM	R	S	TC	TD H10	TH	TK	TN	TT	TU	TV	TW	TX	TY	TZ	U	Z	ZZ
10	15	28	M4×0.7	5	46	4.5	3.3 +0.048 0	29	18	3.1	2	9	40	22	32	12	8	8	8	93
16	15	28	M5×0.8	8	47	5.5	5 +0.048 0	35	20	6.4	2.3	14	48	28	38	16	10	10	10	99

13

φ6



φ10, φ16



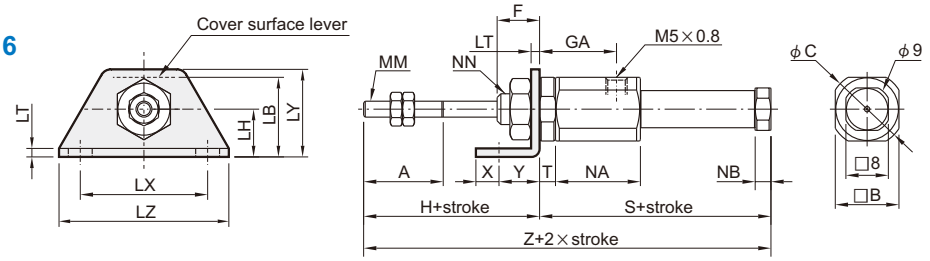
Code / Tube I.D.	A	B	C	D	F	GA	H	MM	NA	NB	ND	NN	T
6	15	12	14	3	8	14.5	28	M3×0.5	16	3	$6^{\ 0}_{-0.018}$	M6×1.0	3
10	15	12	14	4	8	8	28	M4×0.7	12.5	5.5	$8^{\ 0}_{-0.022}$	M8×1.0	-
16	15	18	20	5	8	8	28	M5×0.8	12.5	5.5	$10^{\ 0}_{-0.022}$	M10×1.0	-

Code / Stroke / I.D.	※S								※Z							
	5~15	16~30	31~45	46~60	61~75	76~100	101~125	126~150	5~15	16~30	31~45	46~60	61~75	76~100	101~125	126~150
6	46.5 (51.5)	55.5 (60.5)	59.5 (64.5)	73.5 (78.5)	-	-	-	-	74.5 (79.5)	83.5 (88.5)	87.5 (92.5)	101.5 (106.5)	-	-	-	-
10	48.5	56	68	80	-	-	-	-	76.5	84	96	108	-	-	-	-
16	48.5	57	69	81	87	111	129	141	76.5	85	97	109	115	139	157	169

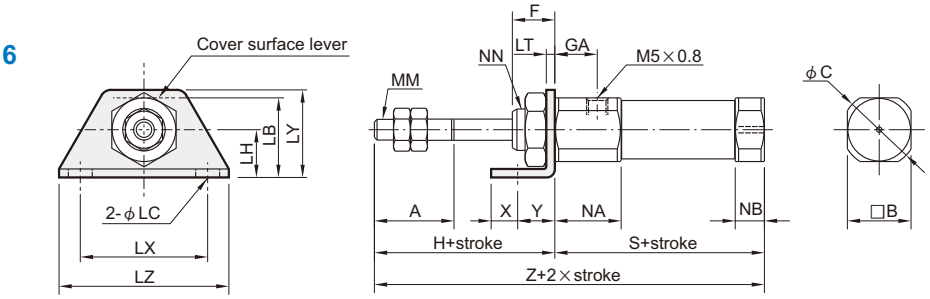
※(S), (Z) ( ) indicate the size of that with magnet ring

LB

φ6



φ10, φ16



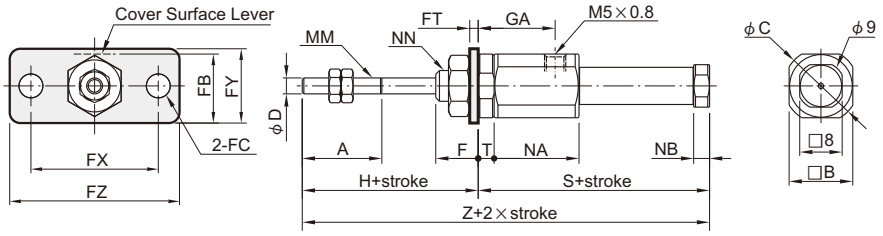
Code / Tube I.D.	A	B	C	D	F	GA	H	LB	LC	LH	LT	LX	LY	LZ	MM	NA	NB	NN	T	X	Y
6	15	12	14	3	8	14.5	28	15	4.5	9	1.6	24	16.5	32	M3×0.5	16	3	M6×1.0	3	5	7
10	15	12	14	4	8	8	28	15	4.5	9	1.6	24	16.5	32	M4×0.7	12.5	5.5	M8×1.0	-	5	7
16	15	18	20	5	8	8	28	23	5.5	14	2.3	33	25	42	M5×0.8	12.5	5.5	M10×1.0	-	6	9

Code / Stroke / I.D.	※S								※Z							
	5~15	16~30	31~45	46~60	61~75	76~100	101~125	126~150	5~15	16~30	31~45	46~60	61~75	76~100	101~125	126~150
6	46.5 (51.5)	55.5 (60.5)	59.5 (64.5)	73.5 (78.5)	-	-	-	-	74.5 (79.5)	83.5 (88.5)	87.5 (92.5)	101.5 (106.5)	-	-	-	-
10	48.5	56	68	80	-	-	-	-	76.5	84	96	108	-	-	-	-
16	48.5	57	69	81	87	111	129	141	76.5	85	97	109	115	139	157	169

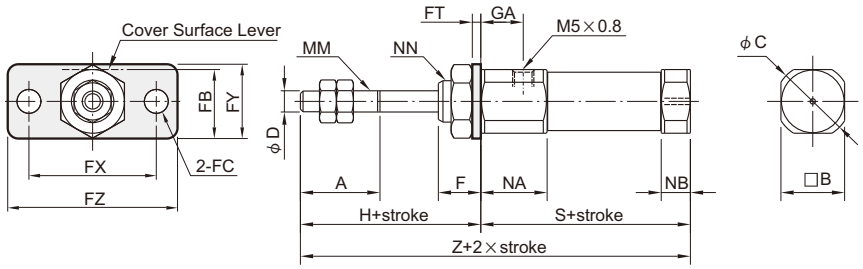
※(S), (Z) ( ) indicate the size of that with magnet ring

FA

ϕ6



ϕ10, ϕ16



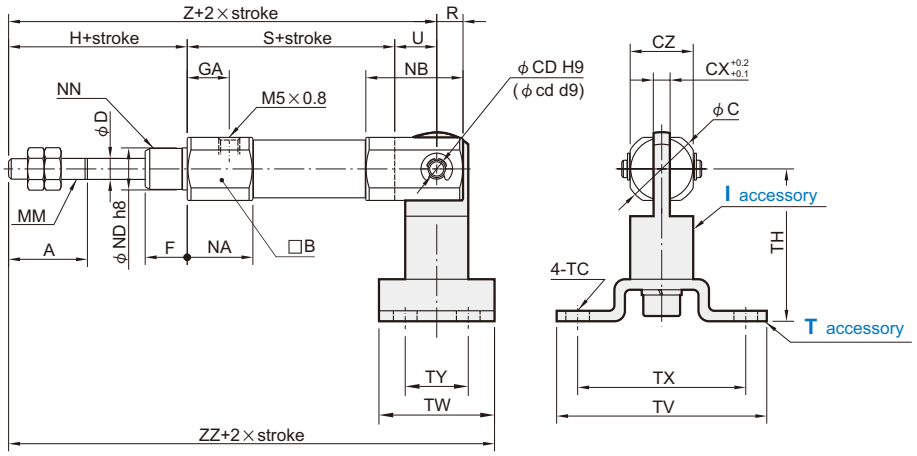
Code / Tube I.D.	A	B	C	D	F	GA	H	FB	FC	FT	FX	FY	FZ	MM	NA	NB	NN	T	X	Y
6	15	12	14	3	8	14.5	28	11	4.5	1.6	24	14	32	M3×0.5	16	3	M6×1.0	3	5	7
10	15	12	14	4	8	8	28	13	4.5	1.6	24	14	32	M4×0.7	12.5	5.5	M8×1.0	-	5	7
16	15	18	20	5	8	8	28	19	5.5	2.3	33	20	42	M5×0.8	12.5	5.5	M10×1.0	-	6	9

Code / Stroke / I.D.	※S								※Z							
	5~15	16~30	31~45	46~60	61~75	76~100	101~125	126~150	5~15	16~30	31~45	46~60	61~75	76~100	101~125	126~150
6	46.5 (51.5)	55.5 (60.5)	59.5 (64.5)	73.5 (78.5)	-	-	-	-	74.5 (79.5)	83.5 (88.5)	87.5 (92.5)	101.5 (106.5)	-	-	-	-
10	48.5	56	68	80	-	-	-	-	76.5	84	96	108	-	-	-	-
16	48.5	57	69	81	87	111	129	141	76.5	85	97	109	115	139	157	169

※(S), (Z) ( ) indicate the size of that with magnet ring

T

I + Pin
(Extra purchase)

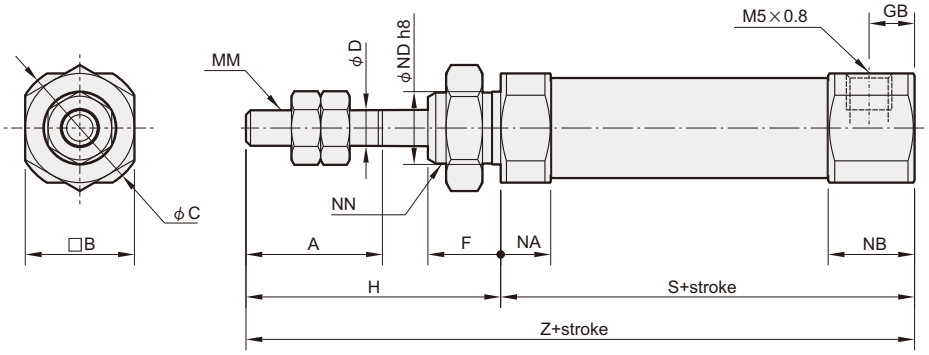


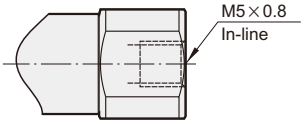
Code / Tube I.D.	A	B	C	CD (cd)	CX	CZ	D	F	GA	H	MM	NA	NB	ND	NN	R	TC	TH	TV	TW	TX	TY	U
10	15	12	14	3.3	3.2	12	4	8	8	28	M4×0.7	12.5	18.5	8 $^{0}_{-0.022}$	M8×1.0	5	4.5	29	40	22	32	12	8
16	15	18	20	5	6.5	18	5	8	8	28	M5×0.8	12.5	23.5	10 $^{0}_{-0.022}$	M10×1.0	8	5.5	35	48	28	38	16	10

Code / Stroke / I.D.	S								Z							
	5~15	16~30	31~45	46~60	61~75	76~100	101~125	126~150	5~15	16~30	31~45	46~60	61~75	76~100	101~125	126~150
10	48.5	56	68	80	-	-	-	-	84.5	92	104	116	-	-	-	-
16	48.5	57	69	81	87	111	129	141	86.5	95	107	119	125	149	167	179

Code / Stroke / I.D.	ZZ							
	5~15	16~30	31~45	46~60	61~75	76~100	101~125	126~150
10	95.5	103	115	127	-	-	-	-
16	100.5	109	121	133	139	163	181	193

15



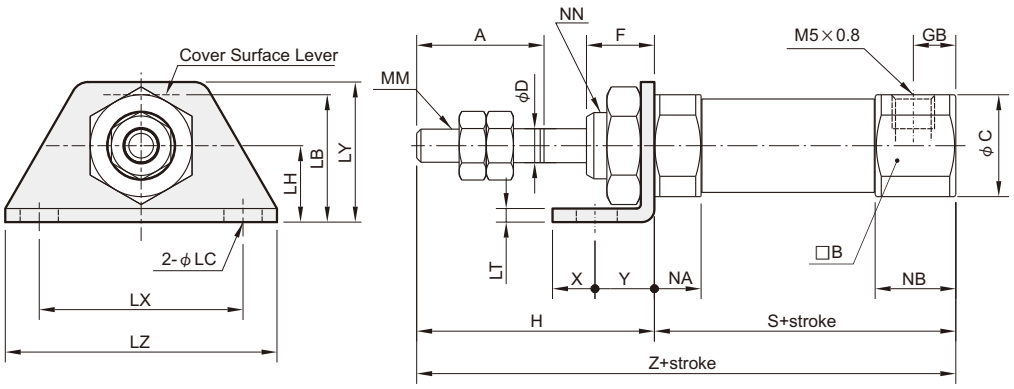


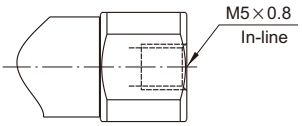
Code / Tube I.D.	A	B	C	D	F	GB	H	MM	NA	NB	ND	NN
6	15	8	9	3	8	-	28	M3×0.5	3	7	$6^{0}_{-0.018}$	M6×1.0
10	15	12	14	4	8	5	28	M4×0.7	5.5	9.5	$8^{0}_{-0.022}$	M8×1.0
16	15	18	20	5	8	5	28	M5×0.8	5.5	9.5	$10^{0}_{-0.022}$	M10×1.0

Code / Stroke / I.D.	※S								※Z							
	5~15	16~30	31~45	46~60	61~75	76~100	101~125	126~150	5~15	16~30	31~45	46~60	61~75	76~100	101~125	126~150
6	34.5 (39.5)	43.5 (48.5)	47.5 (52.5)	61.5 (66.5)	-	-	-	-	62.5 (67.5)	71.5 (76.5)	75.5 (80.5)	89.5 (94.5)	-	-	-	-
10	45.5	53	65	77	-	-	-	-	73.5	81	93	105	-	-	-	-
16	45.5	54	66	78	84	108	126	138	73.5	82	94	106	112	136	154	166

※(S), (Z) ( ) indicate the size of that with magnet ring

LB



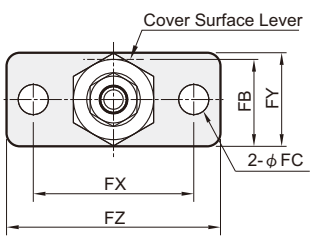


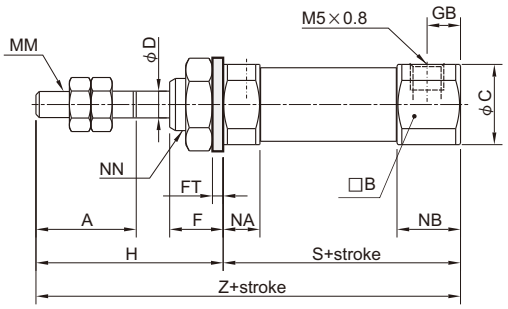
Code / Tube I.D.	A	B	C	D	F	GB	H	LB	LC	LH	LT	LX	LY	LZ	MM	NA	NB	NN	X	Y
6	15	8	9	3	8	-	28	13	4.5	9	1.6	24	16.5	32	M3×0.5	3	7	M6×1.0	5	7
10	15	12	14	4	8	5	28	15	4.5	9	1.6	24	16.5	32	M4×0.7	5.5	9.5	M8×1.0	5	7
16	15	18	20	5	8	5	28	23	5.5	14	2.3	33	25	42	M5×0.8	5.5	9.5	M10×1.0	6	9

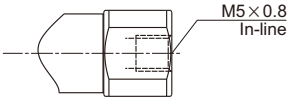
Code / Stroke / I.D.	※S								※Z							
	5~15	16~30	31~45	46~60	61~75	76~100	101~125	126~150	5~15	16~30	31~45	46~60	61~75	76~100	101~125	126~150
6	34.5 (39.5)	43.5 (48.5)	47.5 (52.5)	61.5 (66.5)	-	-	-	-	62.5 (67.5)	71.5 (76.5)	75.5 (80.5)	89.5 (94.5)	-	-	-	-
10	45.5	53	65	77	-	-	-	-	73.5	81	93	105	-	-	-	-
16	45.5	54	66	78	84	108	126	138	73.5	82	94	106	112	136	154	166

※(S), (Z) ( ) indicate the size of that with magnet ring

FA







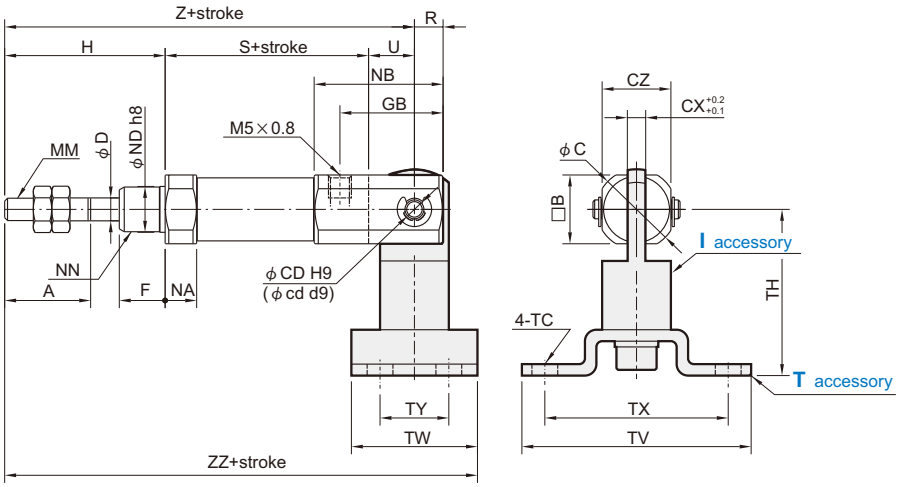
Code / Tube I.D.	A	B	C	D	F	GB	H	FB	FC	FT	FX	FY	FZ	MM	NA	NB	NN	X	Y
6	15	8	9	3	8	-	28	11	4.5	1.6	24	14	32	M3×0.5	3	7	M6×1.0	5	7
10	15	12	14	4	8	5	28	13	4.5	1.6	24	14	32	M4×0.7	5.5	9.5	M8×1.0	5	7
16	15	18	20	5	8	5	28	19	5.5	2.3	33	20	42	M5×0.8	5.5	9.5	M10×1.0	6	9

Code / Stroke / I.D.	※S								※Z							
	5~15	16~30	31~45	46~60	61~75	76~100	101~125	126~150	5~15	16~30	31~45	46~60	61~75	76~100	101~125	126~150
6	34.5 (39.5)	43.5 (48.5)	47.5 (52.5)	61.5 (66.5)	-	-	-	-	62.5 (67.5)	71.5 (76.5)	75.5 (80.5)	89.5 (94.5)	-	-	-	-
10	45.5	53	65	77	-	-	-	-	73.5	81	93	105	-	-	-	-
16	45.5	54	66	78	84	108	126	138	73.5	82	94	106	112	136	154	166

※(S), (Z) ( ) indicate the size of that with magnet ring

T

I + Pin
(Extra purchase)

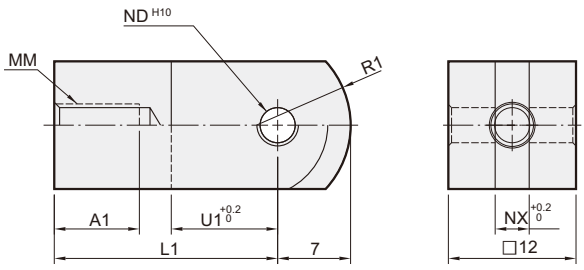


Code / Tube I.D.	A	B	C	CD (cd)	CX	CZ	D	F	GB	H	MM	NA	NB	ND	NN	R	U	TC	TH	TV	TW	TX	TY
10	15	12	14	3.3	3.2	12	4	8	18	28	M4×0.7	5.5	22.5	8 0 -0.022	M8×1.0	5	8	4.5	29	40	22	32	12
16	15	18	20	5	6.5	18	5	8	23	28	M5×0.8	5.5	27.5	10 0 -0.022	M10×1.0	8	10	5.5	35	48	28	38	16

Code / Stroke / I.D.	S								Z							
	5~15	16~30	31~45	46~60	61~75	76~100	101~125	126~150	5~15	16~30	31~45	46~60	61~75	76~100	101~125	126~150
10	45.5	53	65	77	-	-	-	-	81.5	89	101	113	-	-	-	-
16	45.5	54	66	78	84	108	126	138	83.5	92	104	116	122	146	164	176

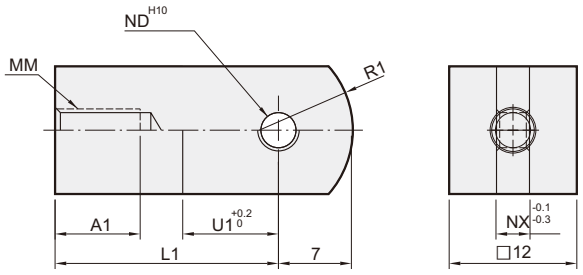
Code / Stroke / I.D.	ZZ							
	5~15	16~30	31~45	46~60	61~75	76~100	101~125	126~150
10	92.5	100	112	124	-	-	-	-
16	97.5	106	118	130	136	160	178	190

Y connector



Code / Tube I.D.	A1	L1	MM	ND H10	NX	R1	U1
10	8	21	M4×0.7	3.3 +0.048 0	3.2	8	10
16	11	21	M5×0.8	5 +0.048 0	6.5	12	10

I connector



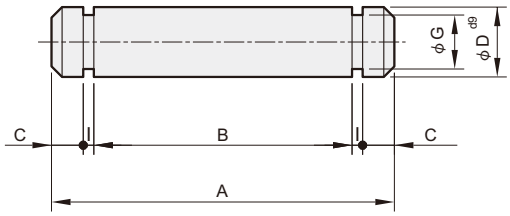
Code / Tube I.D.	A1	L1	MM	ND H10	NX	R1	U1
10	8	21	M4×0.7	3.3 +0.048 0	3.1	8	9
16	8	25	M5×0.8	5 +0.048 0	6.4	12	14

Pin

Order example

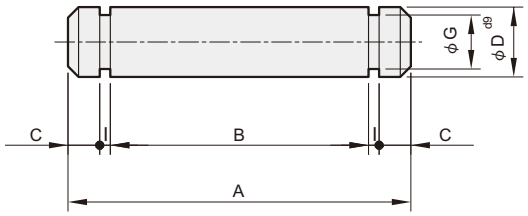
PIN – MCMJ – 10 – Y – P

- PIN
- TUBE I.D.
- TYPE
  - **Y**: for Y&I connector
  - **D**: for end cover D type
- **P**: With split pin



for I & Y connector

Code / Tube I.D.	A	B	C	D d9	G	I	Split pin
10	16.2	12.2	1.5	3.3 -0.03 -0.06	2.5	0.5	E-2.5
16	16.2	12.2	1.5	5 -0.03 -0.06	4	0.7	E-4



for end cover D type

Code / Tube I.D.	A	B	C	D d9	G	I	Split pin
10	15.2	12.2	1	3.3 -0.03 -0.06	2.5	0.5	E-2.5
16	22.7	18.3	1.5	5 -0.03 -0.06	4	0.7	E-4