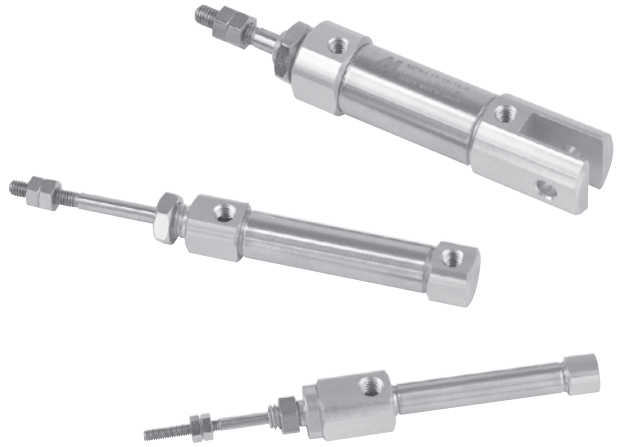
MCMJ series

PEN CYLINDER



Features

■ High quality long service life

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.

Specification

Model			MCMJ		
Tube I.D. (mm)			ø6	ø10	ø16
Port size			M5×0.8		
Medium			Air		
Max. operating perssure			0.7 MPa		
Min. operating perssure (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		
Lubrication			Not required		
Ambient temperature			-5~+60°C (No freezing)		
Available speed range			50~500 mm/sec		
Max. allowable kinetic energy (J)			0.16	0.27	0.4
Sensor switch			RCM (Please refer to page 8-16)		
Sensor switch band			BM6	BM10	BM16

* 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	ø6	15,30,45,60	60
	ø10	15,30,45,60	70
	ø16	15,30,45,60,75,100,125,150	150
Double acting 11	ø6	15,30,45,60,75,100	200
	ø10,16	↑ 150,200	300

* Intermediate stroke are available, please contact us.

Order example

MCMJ — 11 — 16 — 45M — B

MODEL | 1: Single rod 2: Double rod | TUBE I.D. | STROKE | M: Magnet | END COVER TYPE

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

Code	Symbol	Tube I.D.
B		ø10,16
D		ø10,16
R		ø6,10,16

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

Tightening torque

Tube I.D.	Rod thread	Tightening torque (kgf·cm)	End cap thread	Tightening torque (kgf·cm)
ø6	M3×0.5	4.79	M6×1.0	24.6~26.6
ø10	M4×0.7	11.8	M8×1.0	60~65
ø16	M5×0.8	22.8	M10×1.0	110~120

* Make sure the tightening torque within the value above, and avoid breaking the thread.
* The tolerance of tightening torque is ±5%.

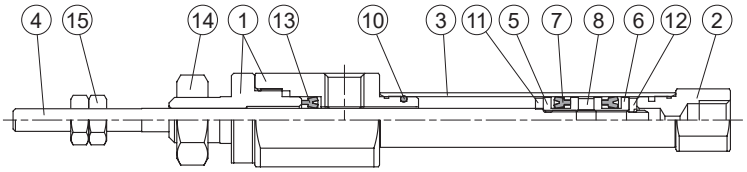
Pin

Applicable	Y & I connector	End cover D type
Code	**PIN-Y-P** (With snap ring)	**PIN-D-P** (With snap ring)
Fig / Tube I.D.		
ø6	–	–
ø10	**PIN-M4-10-1-P**	**PIN-M4-10-2-P**
ø16	**PIN-M4-16-1-P**	**PIN-M4-16-2-P**

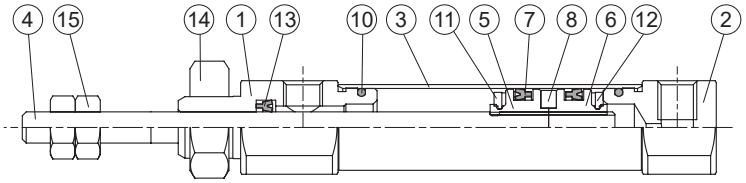
Order example of mounting accessories & connector

	Accessories					Connector	
Code	**LB**	**FA**	**T** (With I+PIN)	**NUT**		**Y**	**I**
Cover type	B, R		D	–		All applicable	
Mounting / Tube I.D.				Rod nut	Cover nut		
ø6	**LB-M4-6**	**FA-M4-6**	–	**NUT-M3x0.5x2.4Hx5.5B**	**NUT-M6x1.0x4Hx8B**	–	–
ø10	**LB-M4-10**	**FA-M4-10**	**T-M4-10**	**NUT-M4x0.7x3.2Hx7B**	**NUT-M8x1.0x4Hx11B**	**Y-M4-10**	**I-M4-10**
ø16	**LB-M4-16**	**FA-M4-16**	**T-M4-16**	**NUT-M5x0.8x4Hx8B**	**NUT-M10x1.0x4Hx14B**	**Y-M4-16**	**I-M4-16**

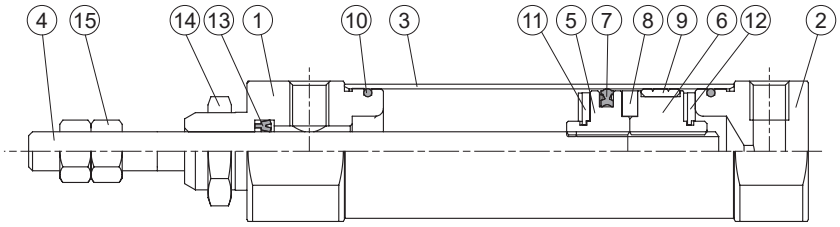
ø6

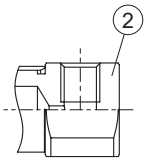


ø10

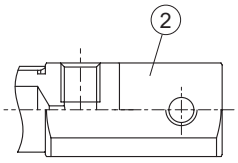


ø16

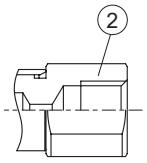




B type: ø10, ø16



D type: ø10, ø16



R type: ø6, ø10, ø16

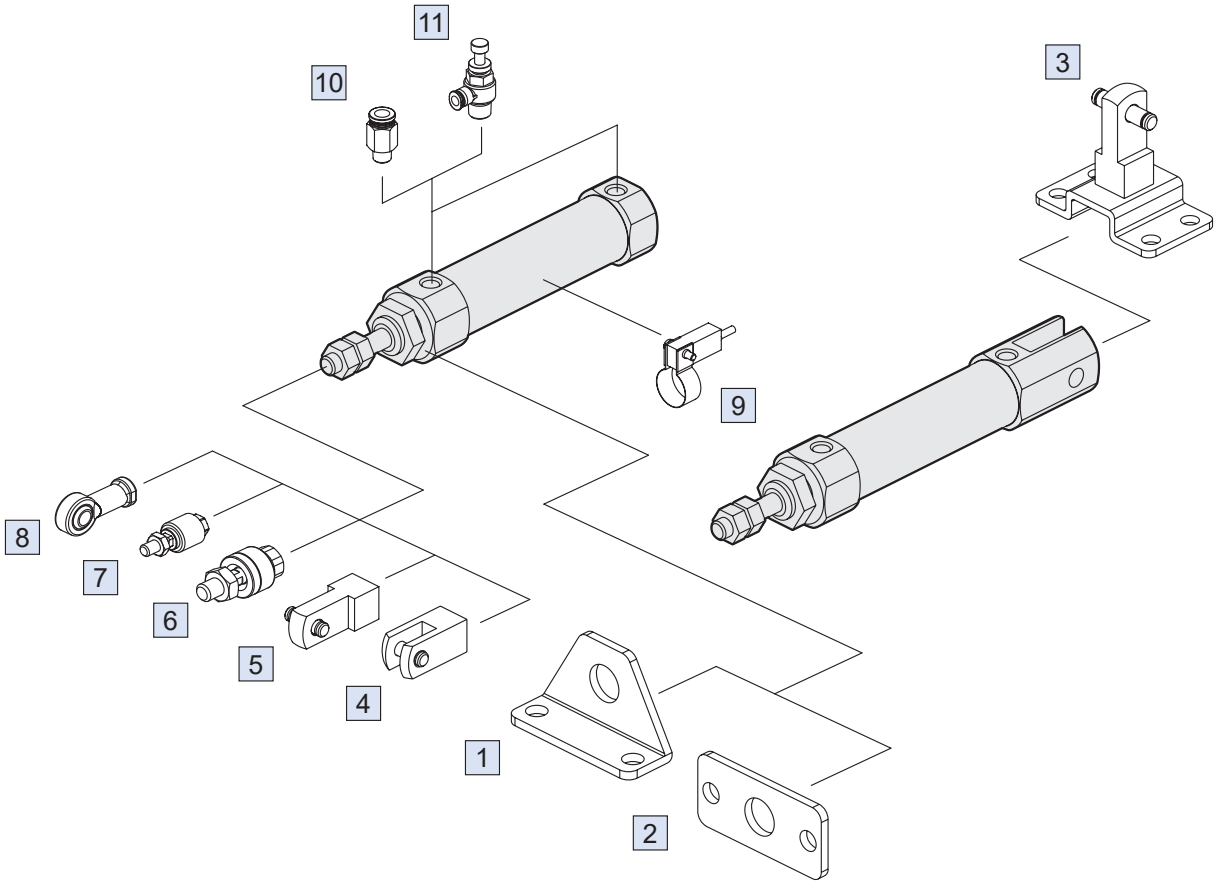
Material

No.	Tube I.D. / Part name	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 packing	NBR			2*1	●
8	Magnet ring	Magnet material			1	●
9	Wear ring	—		Resin	1	●
10	Cover ring	NBR			2	●
11	Cushion packing #1	TPU	NBR		1	●
12	Cushion packing #2	NBR			1	●
13	Snap ring	NBR			1	●
14	Tie nut	Carbon steel			1	●
15	Rod front nut	Carbon steel			2	●

*1. Cylinder bore 6 (Required quantity: 1 pc)

Order example of Component parts

Tube I.D.	Component parts
ø6	**CP-MCMJ-6-R**
ø10	**CP-MCMJ-10-R**
	CP-MCMJ-10-B
	CP-MCMJ-10-D
ø16	**CP-MCMJ-16-R**
	CP-MCMJ-16-B
	CP-MCMJ-16-D

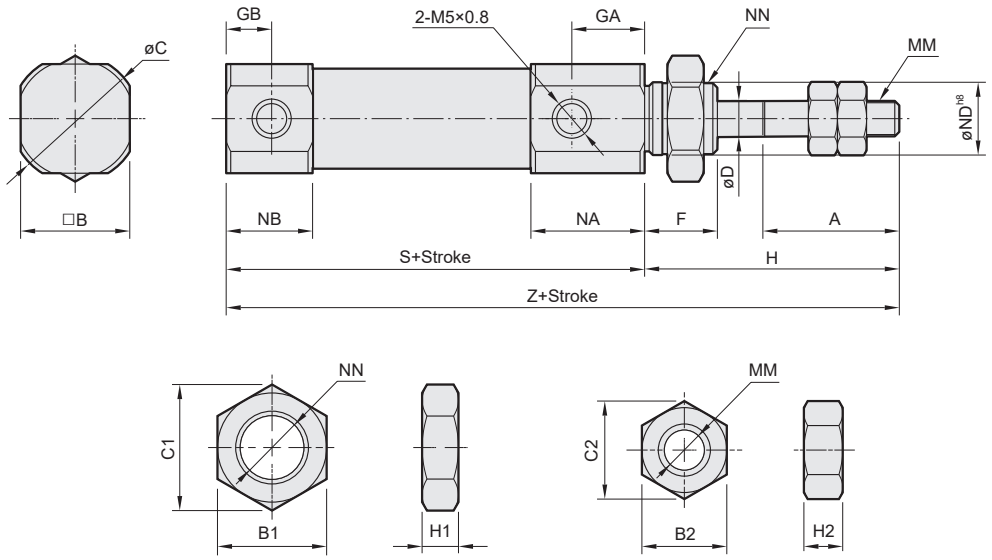


No.	Accessories	Material	Page
1	Mounting accessories LB	Carbon steel	3-68, 70, 72
2	Mounting accessories FA	Carbon steel	3-69, 71, 73
3	Mounting accessories T+I+PIN (*)	Carbon steel	3-69, 71, 73, 74
4	Accessories Y+PIN	Carbon steel	3-74
5	Accessories I+PIN	Carbon steel	3-74
6	Floating joint MFC	Carbon steel	8-2

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

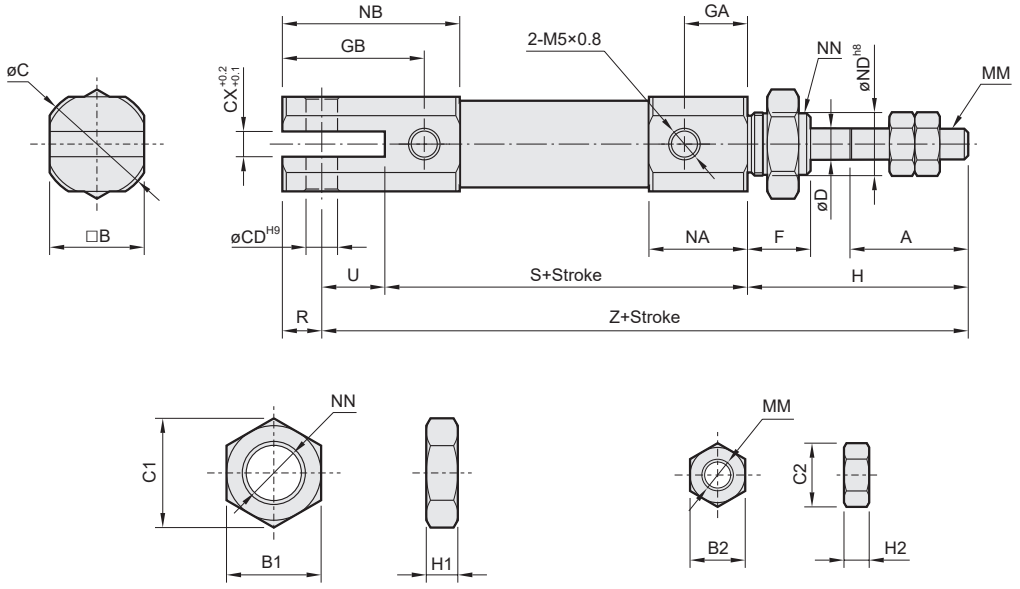
* Contains I+PIN. Only for end cover "D" type.

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

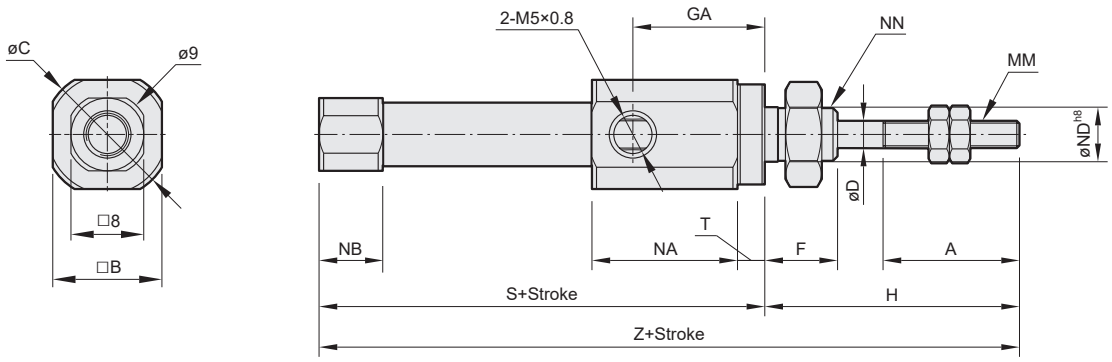
D



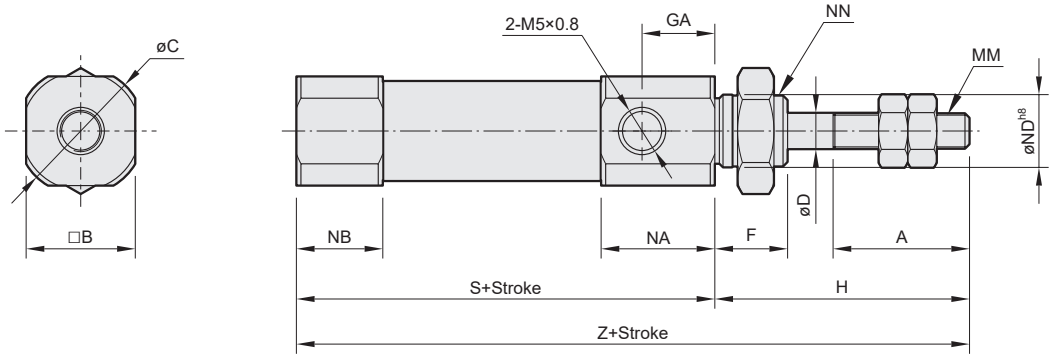
Code / Tube I.D.	A	B	B1	B2	C	CD	CX	C1	C2	D	F	GA	GB	H	H1	H2	MM	NA	NB	ND h8	NN	R	S	U	Z
10	15	12	11	7	14	3.3	3.2	12.7	8.1	4	8	8	18	28	4	3.2	M4×0.7	12.5	22.5	8 $^{0}_{-0.022}$	M8×1.0	5	46	8	82
16	15	18	14	8	20	5	6.5	16.2	9.2	5	8	8	23	28	4	4	M5×0.8	12.5	27.5	10 $^{0}_{-0.022}$	M10×1.0	8	47	10	85

R

ø6



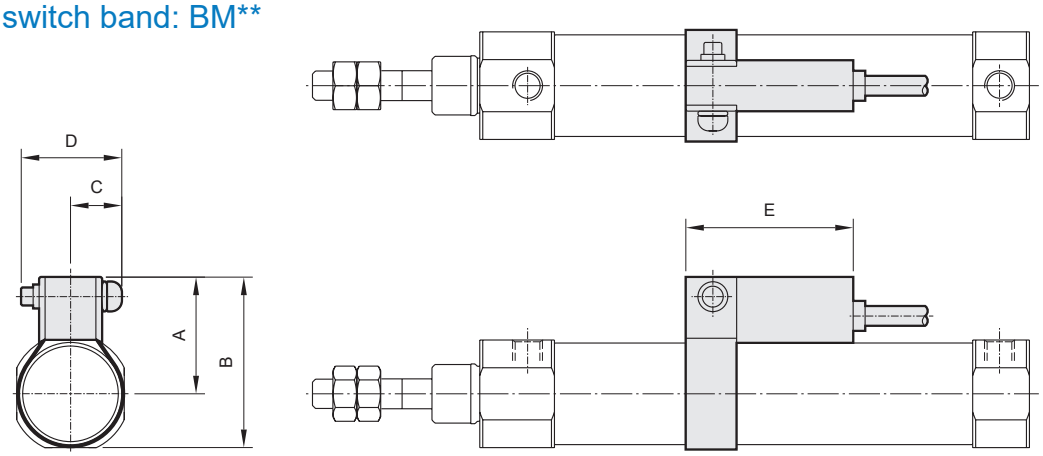
ø10~ø16



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

Installation of sensor switch

Sensor switch: RCM
Sensor switch band: BM**

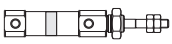


Code / Tube I.D.	A	B	C	D	E
6	15	21	10	16	28
10	17	23	10	16	28
16	20	29	10	16	28

Cylinder & accessories weight

Cylinder weight

Unit: g

Model	Basic weight **MCMJ-11-B**	Stroke 15 mm **MCMJ-11-B**	Basic weight **MCMJ-11-D**	Stroke 15 mm **MCMJ-11-D**	Basic weight **MCMJ-11-R**	Stroke 15 mm **MCMJ-11-R**
Tube I.D.						
ø6	–	–	–	–	18	2
ø10	21	4	24	4	23	3
ø16	46	7	52	8	46	7

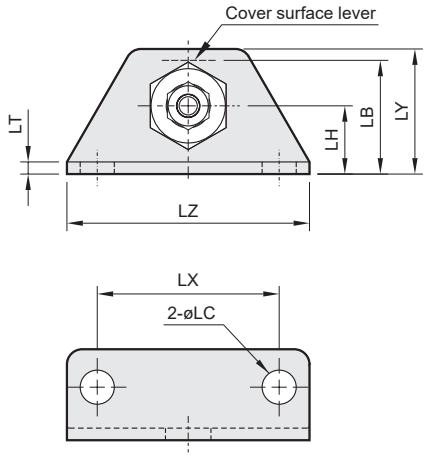
Accessories weight

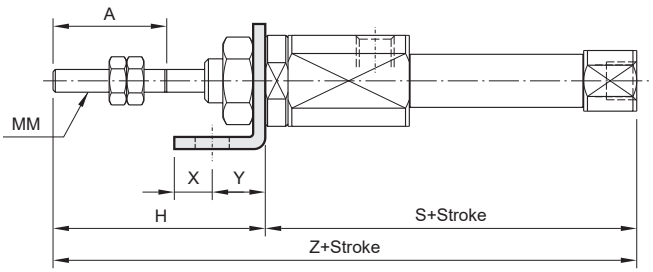
Unit: g

Model	LB	FA	T	Y	I	Pin
Tube I.D.						
ø6	9	5	–	–	–	–
ø10	9	5	14	22	16	1
ø16	21	13	54	17	21	3

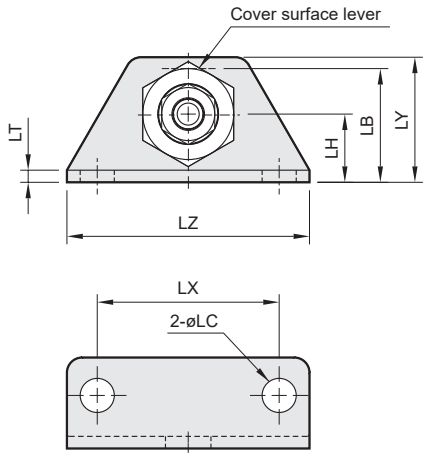
LB

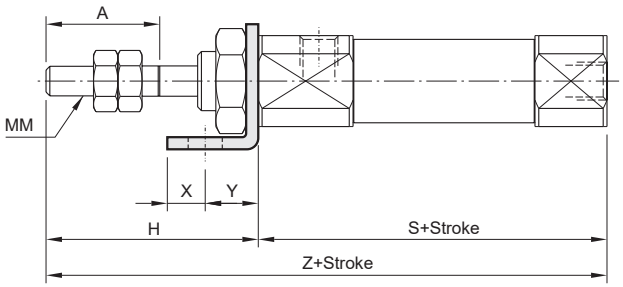
ø6





ø10~ø16

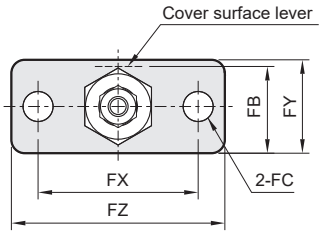


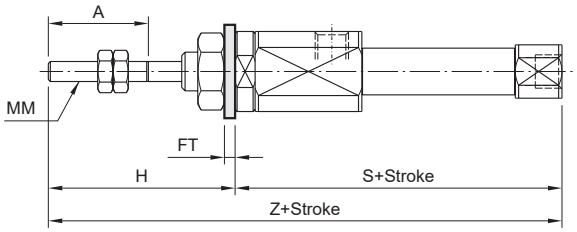


Code / Tube I.D.	A	H	LB	LC	LH	LT	LX	LY	LZ	MM	S	X	Y	Z
6	15	28	15	4.5	9	1.6	24	16.5	32	M3×0.5	49	5	7	77
10	15	28	15	4.5	9	1.6	24	16.5	32	M4×0.7	46	5	7	74
16	15	28	23	5.5	14	2.3	33	25	42	M5×0.8	47	6	9	75

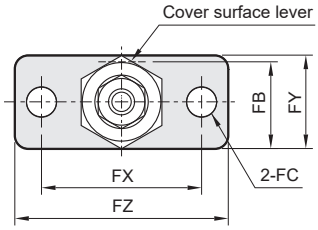
FA

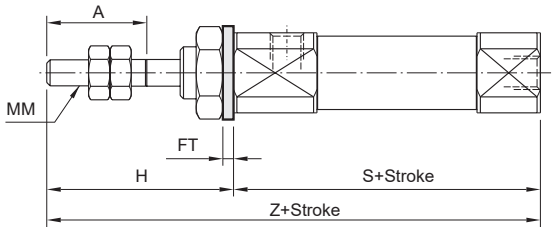
ø6





ø10~ø16

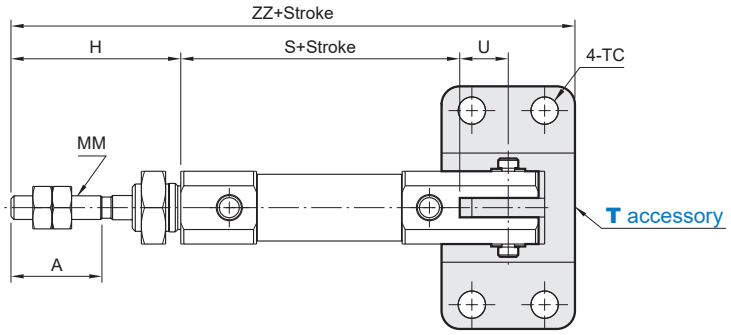


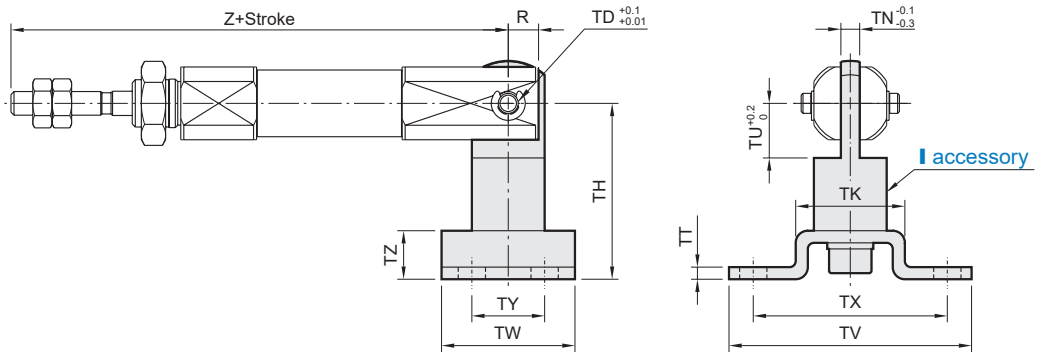


Code / Tube I.D.	A	FB	FC	FT	FX	FY	FZ	H	MM	S	Z
6	15	13	4.5	1.6	24	14	32	28	M3×0.5	49	77
10	15	13	4.5	1.6	24	14	32	28	M4×0.7	46	74
16	15	19	5.5	2.3	33	20	42	28	M5×0.8	47	75

T

Contains **I+PIN**

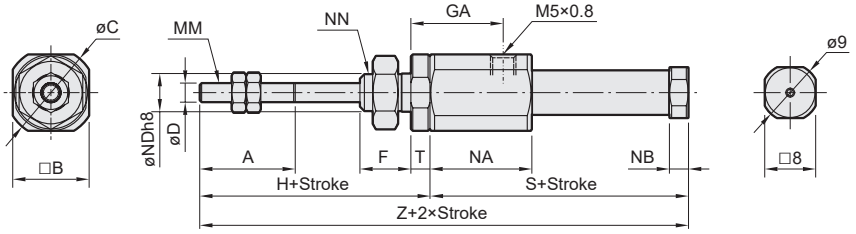




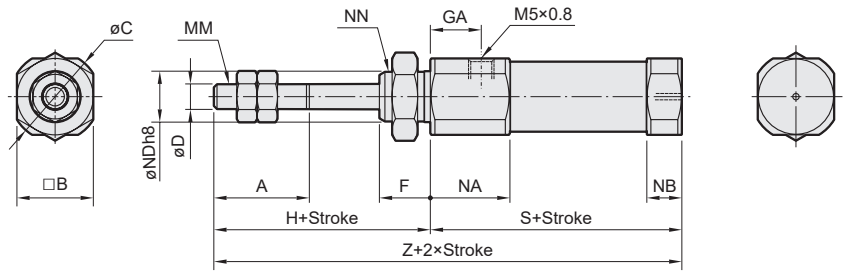
Code / Tube I.D.	A	H	MM	R	S	TC	TD	TH	TK	TN	TT	TU	TV	TW	TX	TY	TZ	U	Z	ZZ
10	15	28	M4×0.7	5	46	4.5	3.3	29	18	3.1	2	9	40	22	32	12	8	8	8	93
16	15	28	M5×0.8	8	47	5.5	5	35	20	6.4	2.3	14	48	28	38	16	10	10	10	99

13

ø6



ø10, ø16



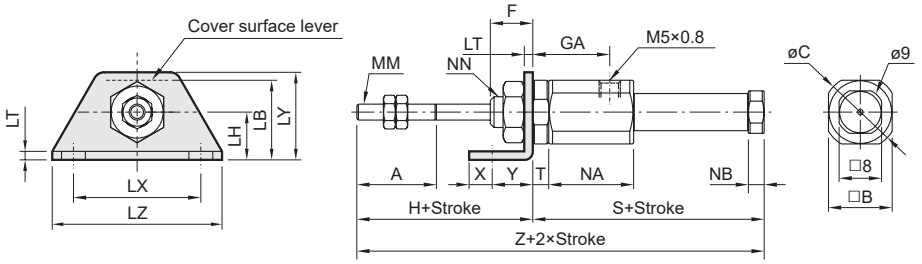
Code / Tube I.D.	A	B	C	D	F	GA	H	MM	NA	NB	ND	NN	T
6	15	12	14	3	8	14.5	28	M3×0.5	16	3	$6\,^{0}_{-0.018}$	M6×1.0	3
10	15	12	14	4	8	8	28	M4×0.7	12.5	5.5	$8\,^{0}_{-0.022}$	M8×1.0	–
16	15	18	20	5	8	8	28	M5×0.8	12.5	5.5	$10\,^{0}_{-0.022}$	M10×1.0	–

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

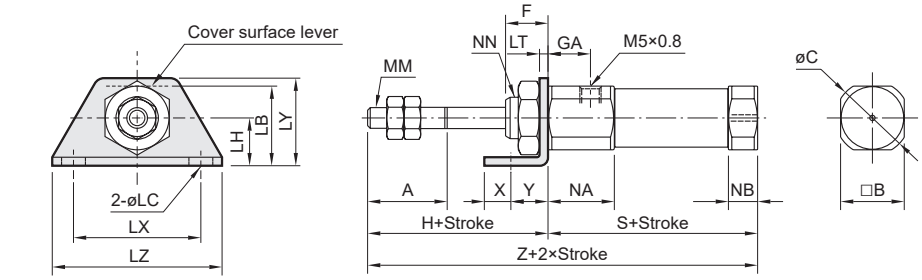
Code / Stroke / Tube I.D.	S *								Z *							
	5~15	16~30	31~45	46~60	61~75	76~100	101~125	126~150	5~15	16~30	31~45	46~60	61~75	76~100	101~125	126~150
6	46.5 (51.5)	55.5 (60.5)	59.5 (64.5)	73.5 (78.5)	–	–	–	–	74.5 (79.5)	83.5 (88.5)	87.5 (92.5)	101.5 (106.5)	–	–	–	–
10	48.5	56	68	80	–	–	–	–	76.5	84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

LB

ø6



ø10, ø16



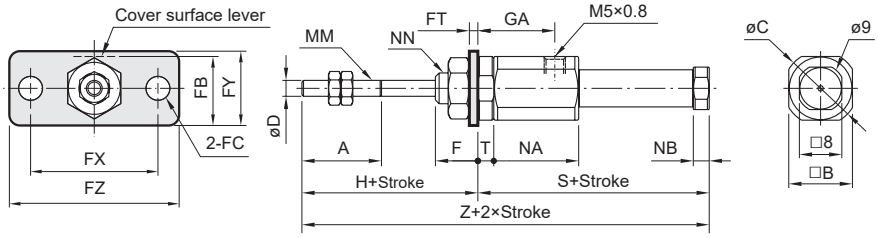
Code / Tube I.D.	A	B	C	D	F	GA	H	LB	LC	LH	LT	LX	LY	LZ	MM	NA	NB	NN	T	X	Y
6	15	12	14	3	8	14.5	28	15	4.5	9	1.6	24	16.5	32	M3×0.5	16	3	M6×1.0	3	5	7
10	15	12	14	4	8	8	28	15	4.5	9	1.6	24	16.5	32	M4×0.7	12.5	5.5	M8×1.0	–	5	7
16	15	18	20	5	8	8	28	23	5.5	14	2.3	33	25	42	M5×0.8	12.5	5.5	M10×1.0	–	6	9

Code / Stroke / Tube 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

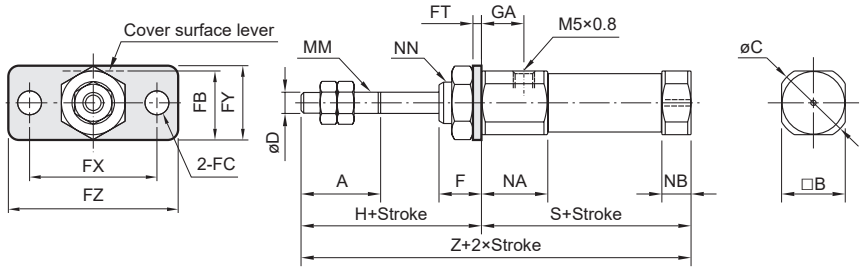
* (S), (Z) ( ) indicate the size of that with magnet ring.

FA

ø6



ø10~ø16



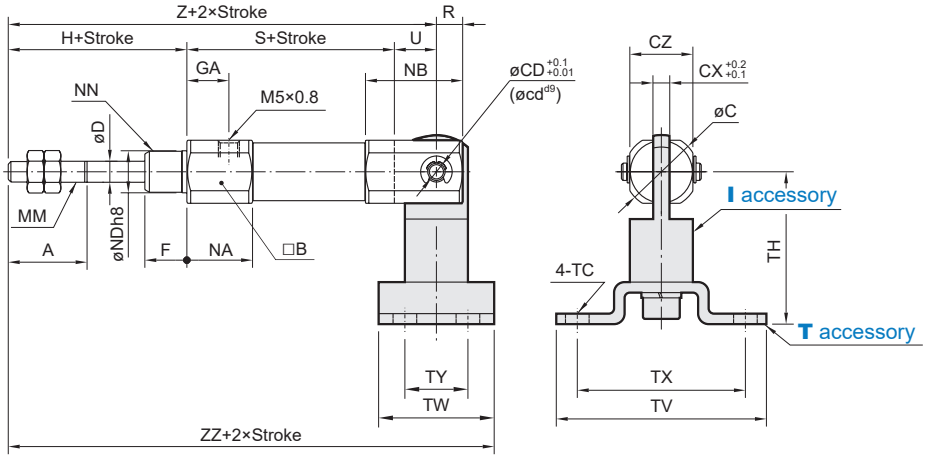
Code / Tube I.D.	A	B	C	D	F	GA	H	FB	FC	FT	FX	FY	FZ	MM	NA	NB	NN	T	X	Y
6	15	12	14	3	8	14.5	28	11	4.5	1.6	24	14	32	M3×0.5	16	3	M6×1.0	3	5	7
10	15	12	14	4	8	8	28	13	4.5	1.6	24	14	32	M4×0.7	12.5	5.5	M8×1.0	–	5	7
16	15	18	20	5	8	8	28	19	5.5	2.3	33	20	42	M5×0.8	12.5	5.5	M10×1.0	–	6	9

Code / Stroke / Tube 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

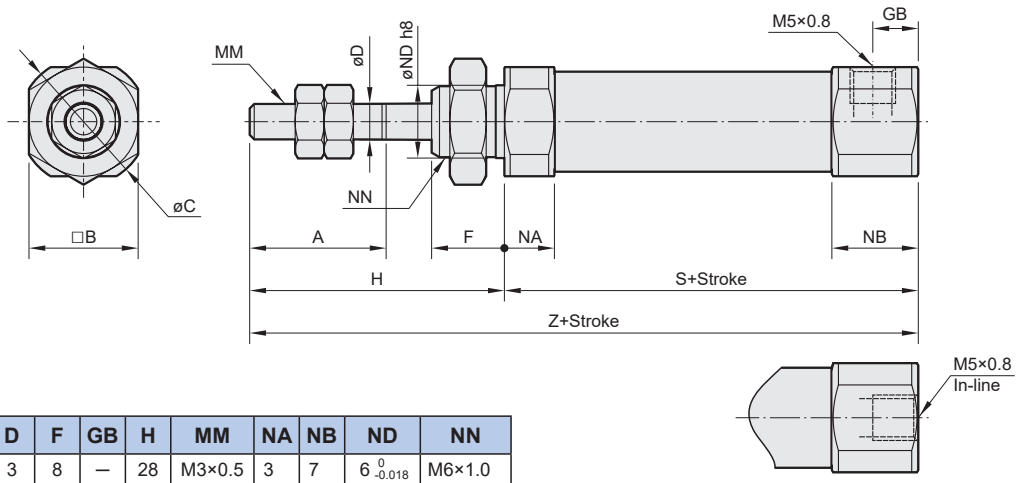
Contains **I+PIN**



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 / Tube I.D.	S								Z								ZZ							
	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	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	–	–	–	–	95.5	103	115	127	–	–	–	–
16	48.5	57	69	81	87	111	129	141	86.5	95	107	119	125	149	167	179	100.5	109	121	133	139	163	181	193

15

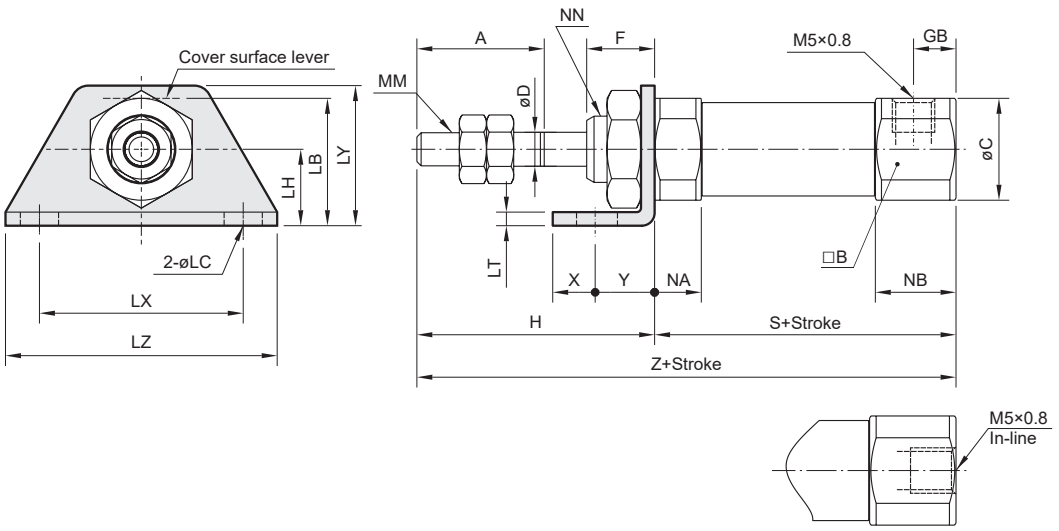


Code / Tube I.D.	A	B	C	D	F	GB	H	MM	NA	NB	ND	NN
6	15	8	9	3	8	–	28	M3×0.5	3	7	$6^{\ 0}_{-0.018}$	M6×1.0
10	15	12	14	4	8	5	28	M4×0.7	5.5	9.5	$8^{\ 0}_{-0.022}$	M8×1.0
16	15	18	20	5	8	5	28	M5×0.8	5.5	9.5	$10^{\ 0}_{-0.022}$	M10×1.0

Code / Stroke / Tube 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

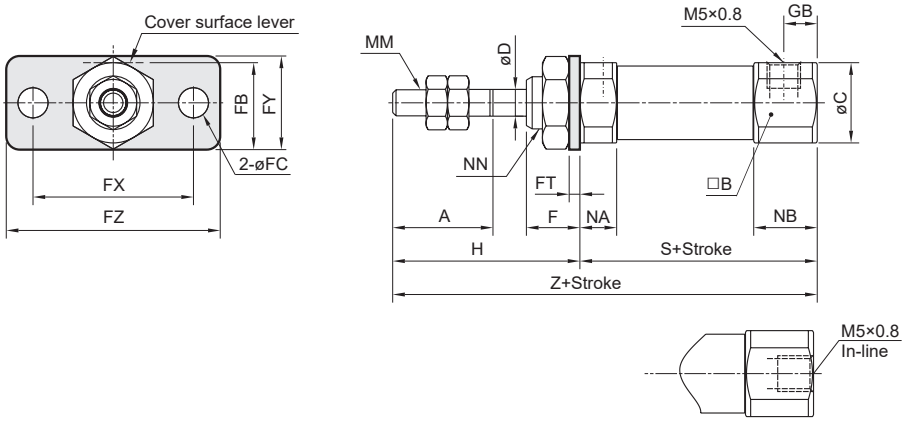


Code / Tube I.D.	A	B	C	D	F	GB	H	LB	LC	LH	LT	LX	LY	LZ	MM	NA	NB	NN	X	Y
6	15	8	9	3	8	–	28	13	4.5	9	1.6	24	16.5	32	M3×0.5	3	7	M6×1.0	5	7
10	15	12	14	4	8	5	28	15	4.5	9	1.6	24	16.5	32	M4×0.7	5.5	9.5	M8×1.0	5	7
16	15	18	20	5	8	5	28	23	5.5	14	2.3	33	25	42	M5×0.8	5.5	9.5	M10×1.0	6	9

Code / Stroke / Tube 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



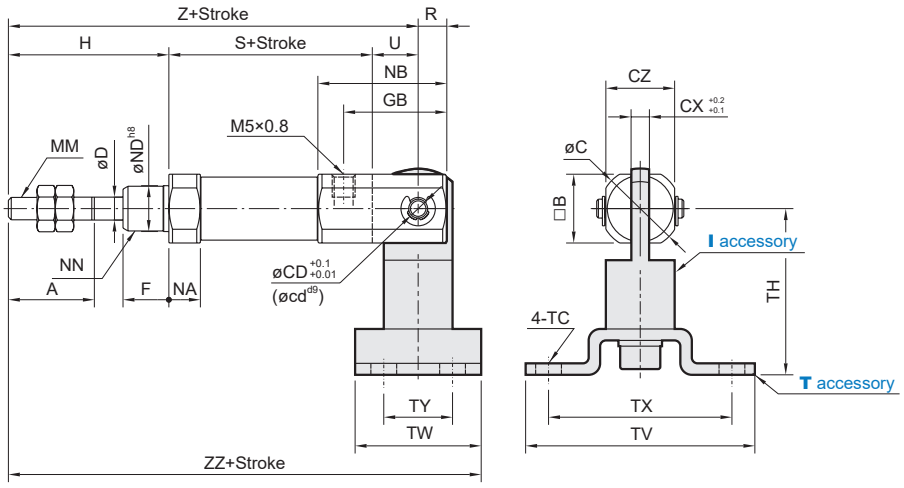
Code / Tube I.D.	A	B	C	D	F	GB	H	FB	FC	FT	FX	FY	FZ	MM	NA	NB	NN	X	Y
6	15	8	9	3	8	–	28	11	4.5	1.6	24	14	32	M3×0.5	3	7	M6×1.0	5	7
10	15	12	14	4	8	5	28	13	4.5	1.6	24	14	32	M4×0.7	5.5	9.5	M8×1.0	5	7
16	15	18	20	5	8	5	28	19	5.5	2.3	33	20	42	M5×0.8	5.5	9.5	M10×1.0	6	9

Code / Stroke / Tube 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

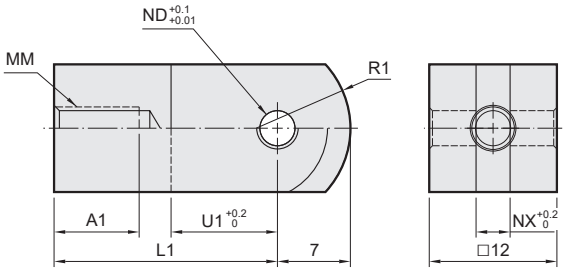
Contains **I+PIN**



Code / Tube I.D.	A	B	C	CD (cd)	CX	CZ	D	F	GB	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	18	28	M4×0.7	5.5	22.5	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	23	28	M5×0.8	5.5	27.5	10 $^{0}_{-0.022}$	M10×1.0	8	5.5	35	48	28	38	16	10

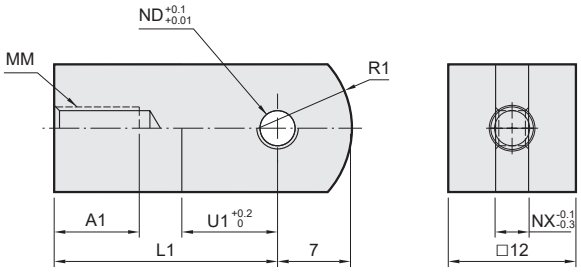
Code / Stroke / Tube I.D.	S								Z								ZZ							
	5~15	16~30	31~45	46~60	61~75	76~100	101~125	126~150	5~15	16~30	31~45	46~60	61~75	76~100	101~125	126~150	5~15	16~30	31~45	46~60	61~75	76~100	101~125	126~150
10	45.5	53	65	77	–	–	–	–	81.5	89	101	113	–	–	–	–	92.5	100	112	124	–	–	–	–
16	45.5	54	66	78	84	108	126	138	83.5	92	104	116	122	146	164	176	97.5	106	118	130	136	160	178	190

Y connector



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

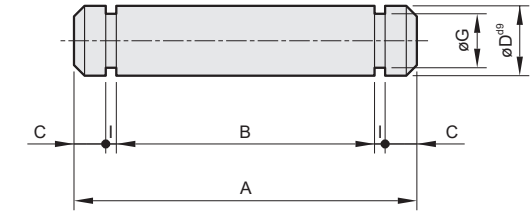
I connector



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

PIN

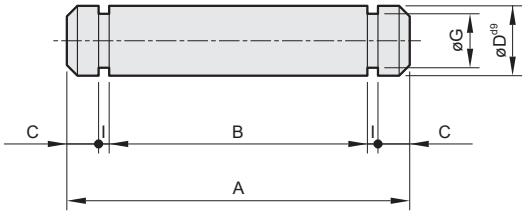
P



for Y & I 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

P



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