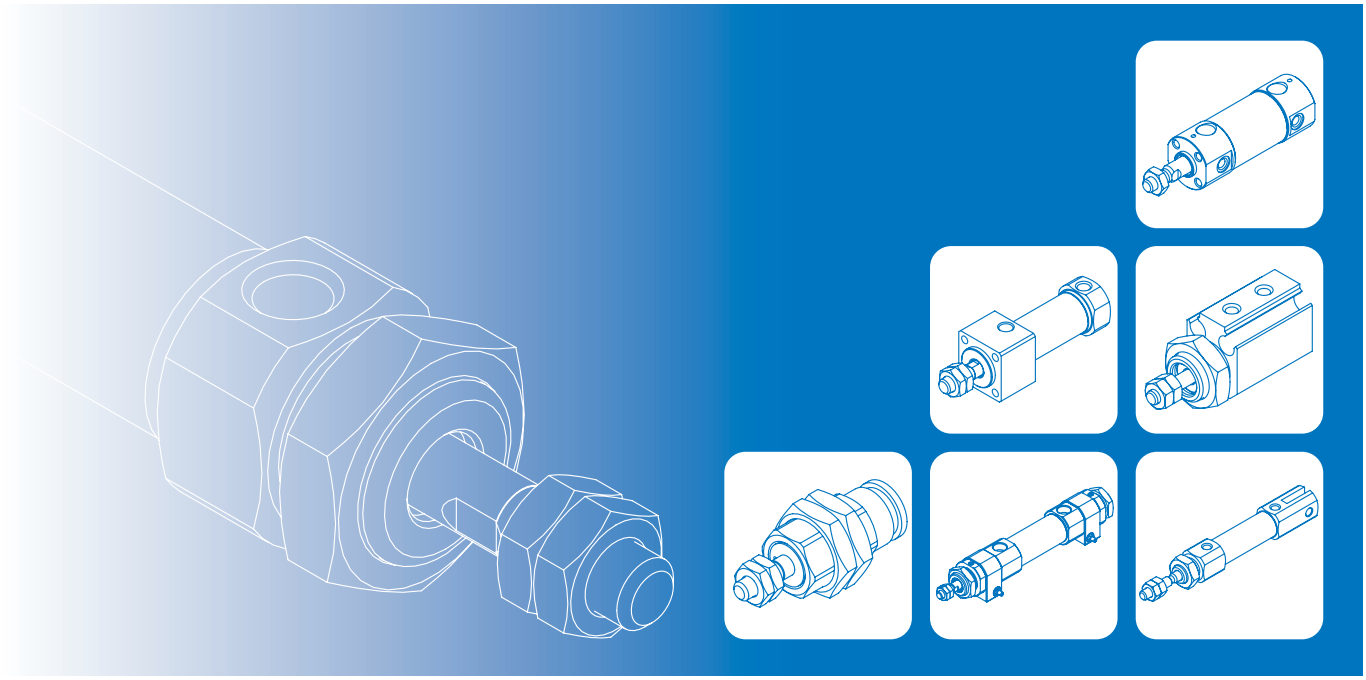
MINIATURE CYLINDER



F Fast delivery (11 style)

Our goal is to achieve 3-day lead time, if there is stock of component set. For more information, please go to our MINDMAN website (www.mindman.com.tw) and click on the "Component Set Inventory" button.

Miniature / Guide cylinder

❶ **Don't twist the cover.**
Don't twist the cover when install the cylinder or fitting. If cover rotate, the junction is probably destroyed.

❷ **Install the speed control valve to adjust speed.**
When operate the cylinders, please install the control valve to adjust the speed of piston within the regular usage range.

❸ **Don't exert the lateral load on the piston rod.**
Please operate the cylinders within the regular usage ranges. Do not exert excessively lateral load on the piston rod.

❹ **The long piston rod need to be braced by supports.**
Operate the long stroke cylinders, please use supports to brace the piston rod for avoiding piston rod droop.

❺ **Don't close the needle valve completely.**
Don't operate the cylinders that the needle valve of which is close completely. That cause packings and related parts are broken.

❻ **Don't open the needle valve excessively.**
Open the needle valve excessively that like no buffer. The piston hit the cover directly, lead to the piston and cover probably broken.

❼ **The parts inside the cylinder tube can't be replaced.**
The cover and cylinder tube are combined by rolling, so that can't be disassembled. The parts inside the cylinder tube can't be replaced except the rod packing.

❽ **Assemble snap ring into the groove certainly.**
Please use the appropriate tool to disassemble the snap ring for replacing the rod packing, Don't support the air to the cylinders until finish replacing certainly to avoid snap ring spouting hurt people or machines.

Miniature cylinder
Applicable model
MCMA
MCMB
MCKMB
MCMBL
MCMBR*
MCMI
MCMIS
MCKMI

Guide cylinder
Applicable model
MGTB
MGTK
MGTU

Pen cylinder

❶ **Don't twist the cover.**
Don't twist the cover when install the cylinder or fitting. If cover rotate, the junction is probably destroyed.

❷ **Install the speed control valve to adjust speed.**
When operate the cylinders, please install the control valve to adjust the speed of piston within the regular usage range.

❸ **Don't exert the lateral load on the piston rod.**
Please operate the cylinders within the regular usage ranges. Do not exert excessively lateral load on the piston rod.

❹ **The parts inside the cylinder tube can't be replaced.**
The cover and cylinder tube are combined by rolling, so that can't be disassembled. The parts inside the cylinder tube can't be replaced.

Applicable model
MCMJ
MCMJ1

Round cylinder

❶ **Install the speed control valve to adjust speed.**
When operate the cylinders, please install the control valve to adjust the speed of piston within the regular usage range.

❷ **Don't exert the lateral load on the piston rod.**
Please operate the cylinders within the regular usage ranges. Do not exert excessively lateral load on the piston rod.

❸ **Don't close the needle valve completely.**
Don't operate the cylinders that the needle valve of which is close completely. That cause packings and related parts are broken.

❹ **Don't open the needle valve excessively.**
Open the needle valve excessively that like no buffer. The piston hit the cover directly, lead to the piston and cover probably broken.

Applicable model
MCCG
MCCN

Sensor switch

❶ Install more than 2 magnetic cylinders side by side, please maintain more than 40mm apart, in order to avoid the mutual interference of the magnetic fields between the cylinders, that might cause sensor malfunction.

❷ If a large number of the magnetic substance (attrated by the magnet) attached to the cylinder, for example, iron filings, iron powder, the substance could weaken the internal cylindrical magnet, and the sensor may not sense normally.

❸ Please cut off the power supply before wiring work; Otherwise, it may cause electric shock, malfunction or damage the sensor.

❹ The sensor is not designed to be explosion proof.
Do not use in an environment filled with explosive gas to avoid causing an explosion.

❺ Do not use in an environment that generates a magnetic field, Because it may cause the sensor and cylinder to malfunction, or the magnet inside the cylinder be demagnetization.

❻ Do not use in water,or be splashed with water, it may cause poor insulation or malfunction of the sensor.

❼ Do not use in an environment containing oil or chemicals, it may cause deterioration of sensors.

MCMA series

MINIATURE CYLINDER

mindman

Special spec

Rod end shape

Technical data

Caution for safety
(Read before installing)

Features

■ Non lubrication

- Special housing and bushing enable 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.
- Operation, with the exception of MCMA-11, single and doubling type available MCMA-13 / 15.

■ Magnetic as standard

Specification

Model		MCMA				
Tube I.D.		16	20	25	32	40
Port size		M5×0.8	Rc1/8			
Medium		Air				
Max. operating perssure		0.7 MPa				
Min. operating perssure		Double: 0.06 MPa ; Single: 0.15 MPa				
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	0.16	0.27	0.4	0.65	1.2
	Cushion air	0.32	0.54	0.78	1.27	2.35
Sensor switch		RDC, RQC, RCM				
Sensor switch band	R*C	BKC-1 (Not for R*CV angle cable)				
	RCM	BM16	BM20	BM25	BM32	BM40

Table for standard stroke

Acting type		Tube I.D.	Stroke (mm)	Max. stroke (mm)
Single acting	13/15/23	ø16,20,25 ø32	15,25,50,75,100	150
Double acting	11	ø16,20,25 ø32,40	↑ 125,150,200, 300,400,500	1000
	21/27		↑ 125,150,200, 300,400	450

* Available with double action type cylinder with stroke more than 500 mm. Sub-piston increases the total length of cylinder by 10 mm and provides further stability.
* Intermediate stroke are available, please contact us.

Order example

MCMA — 11 — 32 — 100 — A — N — □

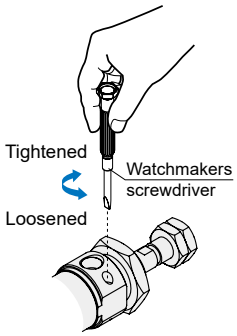
- MODEL
- STYLE
  - **1**: Single rod
  - **2**: Double rod
- TUBE I.D.
- STROKE
- Blank: Cushion pad (Unadjustable)
  A: Cushion air (Adjustable) ⚠
- TYPE
  Blank: Standard
  N: Non-pivot type (end-plain)
- PORT THREAD
  Blank: M5×0.8 (for ø16)
  Blank: Rc thread
  G: G thread
  NPT: NPT thread
  (for ø20~ø40)

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	3		Single acting / Double rod male thread
2	7		Double rod / Adjustable male thread Please mark "adjustable stroke" at order list

⚠ Caution

For (**A**) Cushion air (Adjustable)

1. 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.
2. If the needle valve loosen excessively, the buffer doesn't take effect and the lifetime of cylinder would be shortened.



Accessories & Connector

Code	Accessories			
	LB (LB×2, with cover nut ×1)	LB (LB×1, without cover nut)	NUT	
Cover type	Standard type	Non-pivot type (N)	–	
Mounting / Tube I.D.	with nut		Rod nut	Cover nut
ø16	LB-M1-16x2	LB-M1-16	NUT-M6x1.0x5Hx10B	NUT-M16x1.5x6Hx22B
ø20	LB-M3-20x2	LB-M3-20	NUT-M8x1.25x5Hx13B	NUT-M22x1.5x6Hx30B
ø25			NUT-M10x1.25x6Hx17B	
ø32	LB-M1-32x2	LB-M1-32		NUT-M24x2.0x8Hx32B
ø40	LB-M1-40x2	LB-M1-40	NUT-M12x1.25x7Hx19B	NUT-M30x2.0x8Hx41B

Code	Accessories			Connector		
	FA	FB	SDB (with pin×1 + snap ring×2)	Y	I	YS (Y+Floating pin)
Cover type	All applicable	Standard type	Standard type	All applicable		
Mounting / Tube I.D.						
ø16	FA-M3-12		SDB-M1-16	Y-M3-12	I-M3-12	YS-M3-16
ø20	FA-M3-20		SDB-M1-20	Y-M3-20	I-M3-20	YS-M3-20
ø25				Y-Q2-32	I-Q2-32	YS-Q2-32
ø32	FA-M1-32		SDB-M1-32			
ø40	FA-M1-40		SDB-M1-40	Y-Q2-40	I-Q2-40	YS-Q2-40

Pin

Applicable	YS connector	Y&I connector	SDB connector
Code	PIN-S	PIN-Y-P (with split pin / snap ring)	PIN-SDB-P (with snap ring)
Fig / Tube I.D.		ø16 / ø20~ø40	
ø16	PIN-M3-16-S	PIN-M3-12-2-P	PIN-M1-16-1-P
ø20	PIN-M3-20-S	PIN-M3-20-2-P	PIN-M3-20-1-P
ø25	PIN-Q2-32-S	PIN-Q2-32-2-P	
ø32			PIN-M1-32-1-P
ø40	PIN-Q2-40-S	PIN-Q2-40-2-P	PIN-M1-40-1-P

Order example of self-assembled

The tube I.D. ø16 of LB accessories, Y connector and pin.

No.	Order number	Qty
1	LB-M1-16x2	1
2	Y-M3-12	1
3	PIN-M3-12-2-P	1

* To order accessories/ connectors/ pin separately, please place orders separately according to the order codes in the above table.

Order example of factory assembled

⚠ Cylinders and accessories are distinguished by the symbol " + ".

MCMA – Standard model no. + LB

CYLINDER ACCESSORIES

Cylinder & accessories weight

Cylinder weight

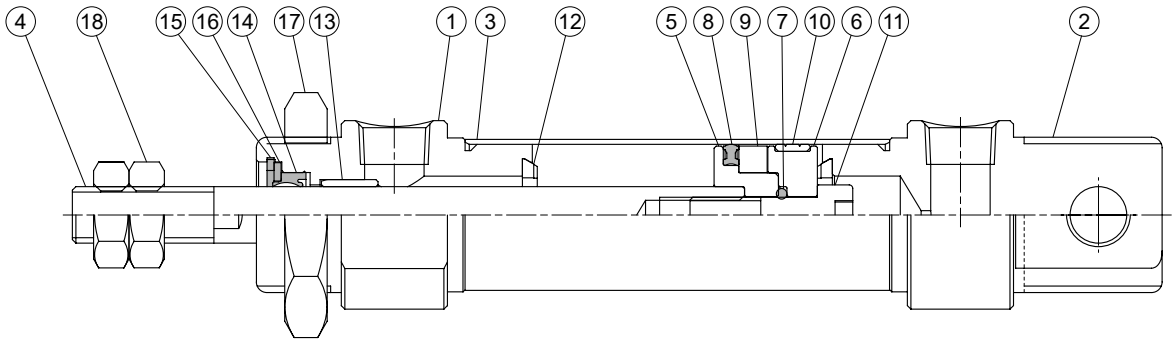
Unit: g

Model	Basic weight MCMA-11	Basic weight MCMA-11-N	Basic weight MCMA-11-A	Stroke 25 mm MCMA-11-*
Tube I.D.				
ø16	76	70	74	13
ø20	178	162	159	24
ø25	230	214	202	30
ø32	295	277	363	39
ø40	496	462	506	60

Accessories weight

Unit: g

Model	LB	FA/FB	SDB	Y	I	YS	Pin	Floating pin	Rod nut	Cover nut
Tube I.D.										
ø16	65	25	24	13	15	18	5	5	2	11
ø20	103	67	103	40	42	50	10	10	4	20
ø25	103	67	103	72	82	90	19	18	8	20
ø32	200	95	153	72	72	90	19	18	8	29
ø40	233	110	184	96	96	128	33	32	11	47



Material

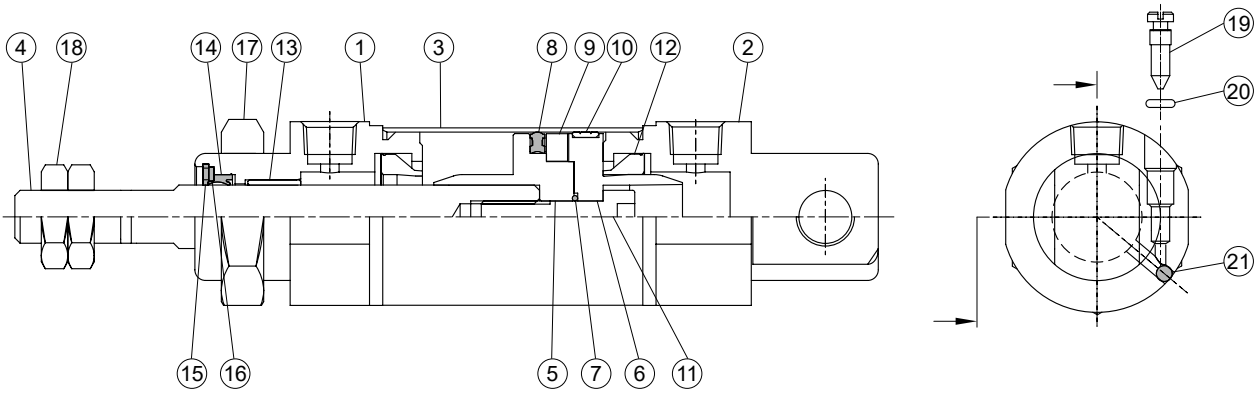
No.	Tube I.D. / Part name	16	20	25	32	40	Q'y 11 type	Q'y 21 type	Component parts (inclusion) 11 type	Component parts (inclusion) 21 type
1	Rod cover	Aluminum alloy					1	2	●	●
2	Head cover	Aluminum alloy					1	–	●	
3	Tube	Stainless steel					1	1		
4	Piston rod	*1	Carbon steel				1	1		
5	Piston-R	Aluminum alloy					1	1	●	●
6	Piston-H	Aluminum alloy					1	1	●	●
7	Piston gasket	NBR					1	1	●	●
8	Piston packing	NBR					1	1	●	●
9	Magnet ring	Magnet material					1	1	●	●
10	Wear ring	Resin					1	1	●	●
11	Piston bolt	SCM					1	–	●	
12	Cushion gasket	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	●	●

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

Order example of component parts

CP – MCMA – 2 – 16 – N – □

- MODEL
- Blank: Single rod
  2: Double rod
- TUBE I.D.
- END COVER TYPE
  Blank: Standard type
  N: Non-pivot type
- PORT THREAD
  Blank: M5×0.8 (for ø16)
  Blank: Rc thread
  G: G thread
  NPT: NPT thread (for ø20~ø40)



Material

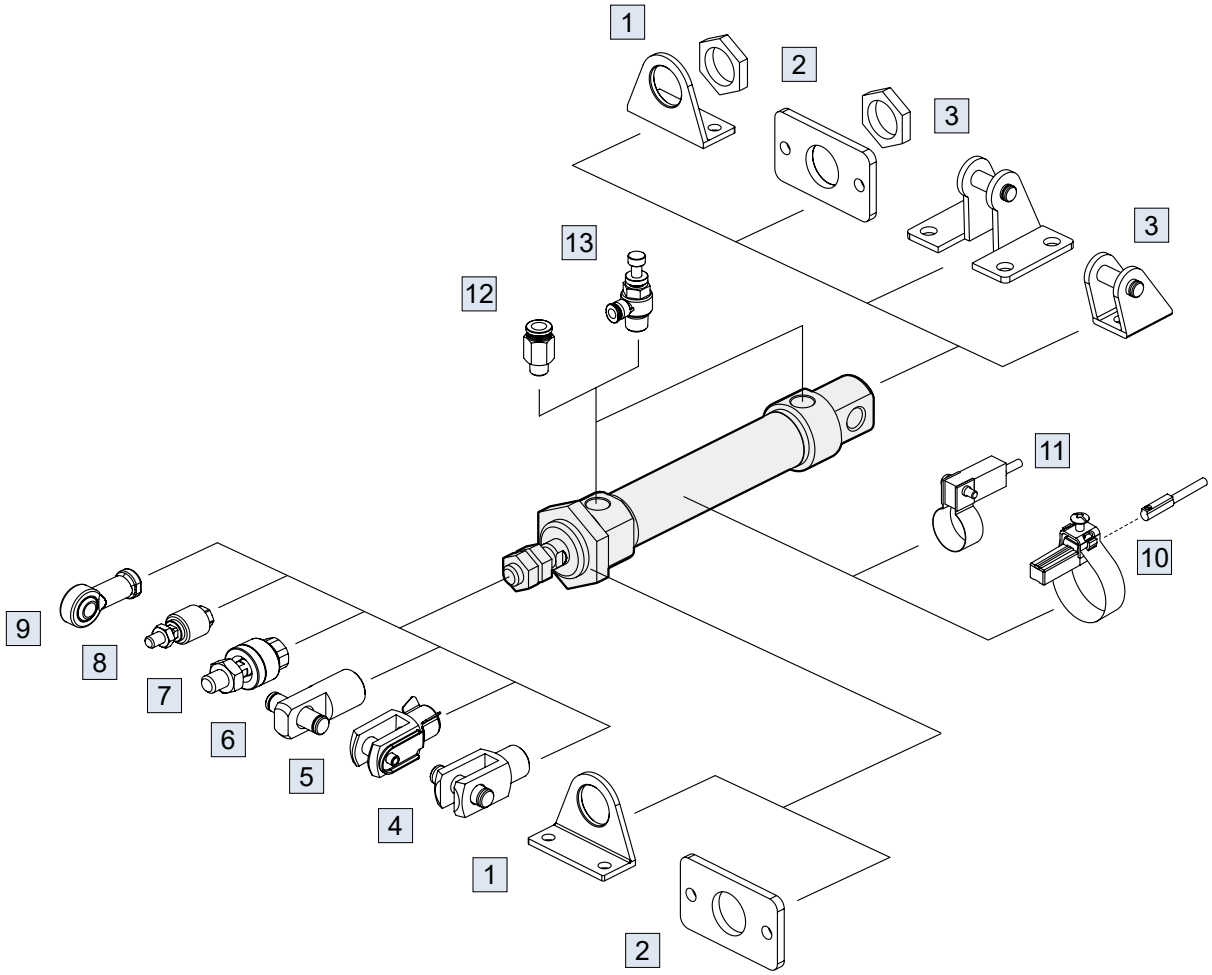
No.	Tube I.D. / Part name	16	20	25	32	40	Q'y 11 type	Q'y 21 type	Component parts (inclusion) 11 type	Component parts (inclusion) 21 type
1	Rod cover	Aluminum alloy					1	2	●	●
2	Head cover	Aluminum alloy					1	–	●	
3	Tube	Stainless steel					1	1		
4	Piston rod	*1	Carbon steel				1	1		
5	Piston-R	Aluminum alloy					1	1	●	●
6	Piston-H	Aluminum alloy					1	1	●	●
7	Piston gasket	NBR					1	1	●	●
8	Piston packing	NBR					1	1	●	●
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				Carbon steel	2	2	●	●
20	Needle valve packing	NBR					2	2	●	●
21	Steel ball	Stainless steel					2	2	●	●

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

Order example of component parts

CP — MCMA — 2 — 16 — A — N — □

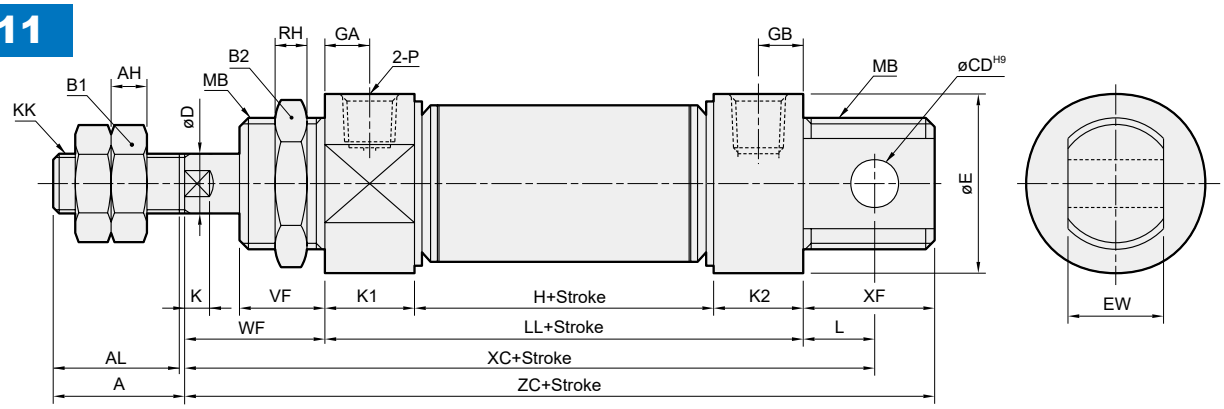
- MODEL
- Blank: Single rod
  2: Double rod
- TUBE I.D.
- **A**: Cushion air (Adjustable)
- END COVER TYPE
  Blank: Standard type
  N: Non-pivot type
- PORT THREAD
  Blank: M5×0.8 (for ø16)
  Blank: Rc thread
  G: G thread
  NPT: NPT thread (for ø20~ø40)



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	

No.	Accessories	Material	Page link
7	Floating joint MFC	Carbon steel	
8	Floating joint MFCS	Carbon steel	
9	Female rod ends PHS	Carbon steel	
10	Sensor switch R*C+BKC-1	–	
11	Sensor switch RCM+BM**	–	
12	Fitting PC (PISCO)	–	
13	Speed controller JSC (PISCO)	–	

11



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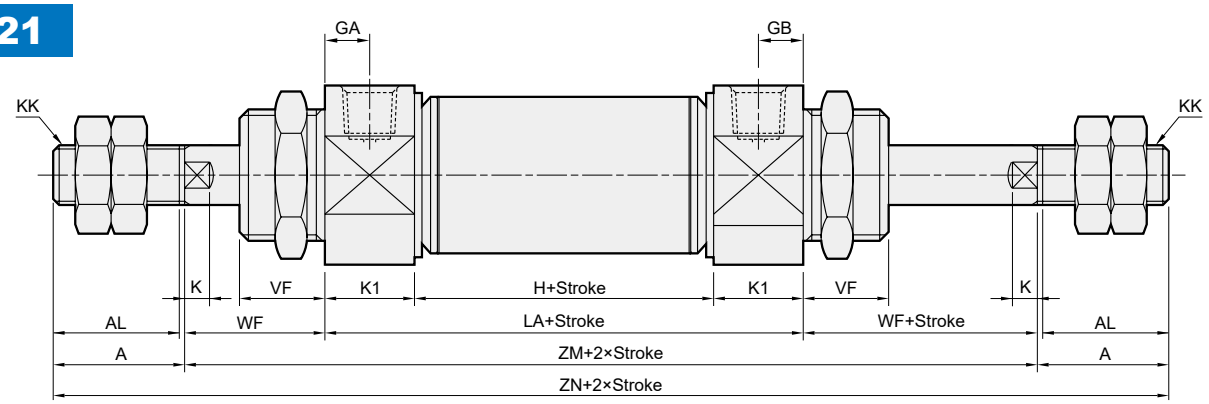

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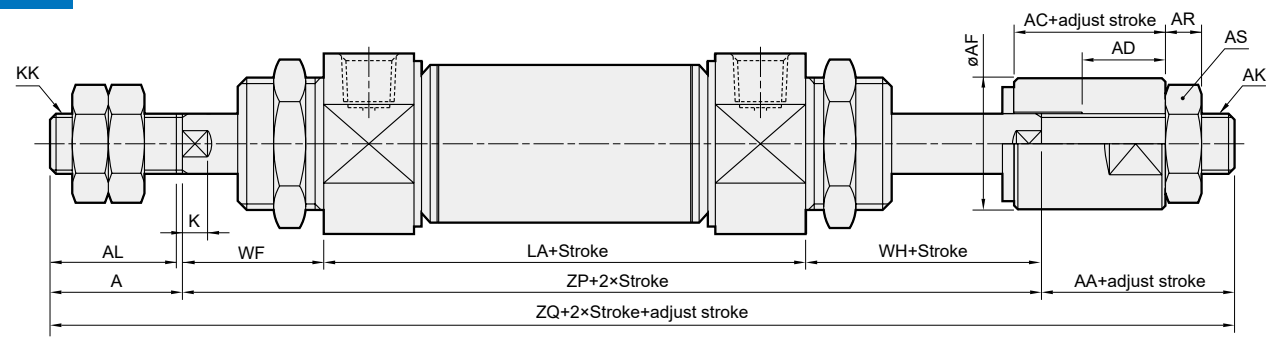

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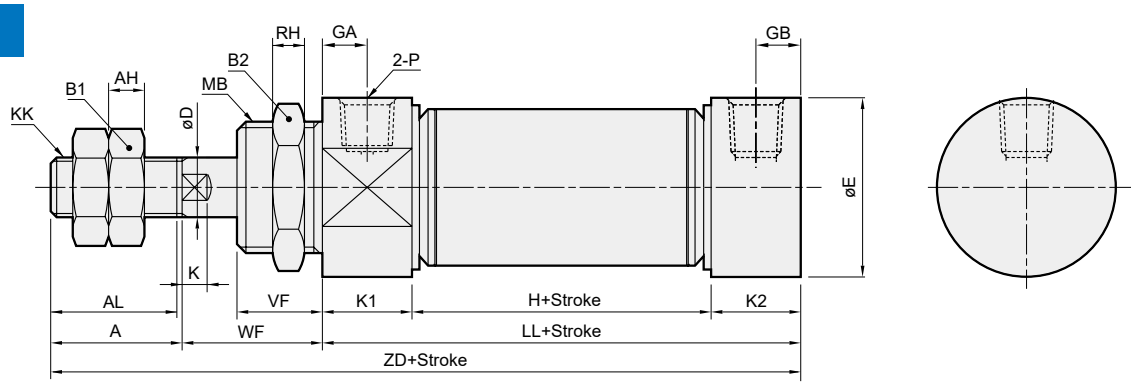
16	16	16	13	7.5	12	5	14	4	8	M5×0.8	10	22	6	6	19.7	12 $^{-0.05}_{-0.4}$	5	5	34	4	M6×1.0
20	20	19	15	9.5	16	5	17.5	5	13	M8×1.25	13	30	8	8	26.7	16 $^{-0.05}_{-0.4}$	7.5	7.5	40	3.5	M8×1.25
25	22	19	15	9.5	16	6	19.5	5	13	M8×1.25	17	30	8	10	29.7	16 $^{-0.05}_{-0.4}$	7.5	7.5	40	5	M10×1.25
32	22	18	12	7	20	6	19.5	6	17	M10×1.25	17	32	10	12	36	16 $^{-0.05}_{-0.4}$	7.5	10.5	37	8	M10×1.25
40	30	18	12	7	30	7	27	7	19	M12×1.25	19	41	12	14	45	20 $^{-0.05}_{-0.4}$	7.5	10.5	42	7	M12×1.25

Code / Tube I.D.	K1	K2	L	LA	LL	MB	P	RH	VF	WF	WH	XC	XF	ZC	ZM	ZN	ZP	ZQ
16	10	10	9	54	54	M16×1.5	M5×0.8	6	12	22	19.5	85	16	92	98	130	95.5	127.5
20	15	15	12	70	70	M22×1.5	Rc1/8	6	12	18	19.5	100	21	109	106	146	107.5	146.5
25	15	15	12	70	70	M22×1.5	Rc1/8	6	15	27	22.5	109	21	118	124	168	119.5	160.5
32	15	18	14	67	70	M24×2.0	Rc1/8	8	18	30	24	114	24	124	127	171	121	161
40	15	18	16	72	75	M30×2.0	Rc1/8	8	17	27	24	118	28	130	126	186	123	171

N

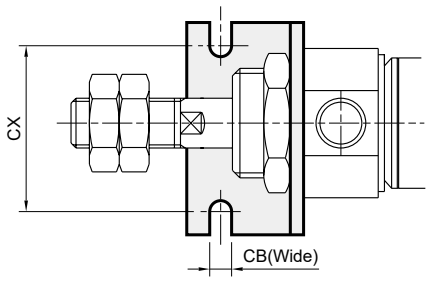


Code / Tube I.D.	A	AH	AL	B1	B2	D	E	GA	GB	H	K	KK	K1	K2	LL	MB	P	RH	VF	WF	ZD
16	16	5	14	10	22	6	19.7	5	5	34	4	M6×1.0	10	10	54	M16×1.5	M5×0.8	6	12	22	92
20	20	5	17.5	13	30	8	26.7	7.5	7.5	40	3.5	M8×1.25	15	15	70	M22×1.5	Rc1/8	6	12	18	108
25	22	6	19.5	17	30	10	29.7	7.5	7.5	40	5	M10×1.25	15	15	70	M22×1.5	Rc1/8	6	15	27	119
32	22	6	19.5	17	32	12	36	7.5	10.5	37	8	M10×1.25	15	18	70	M24×2.0	Rc1/8	8	18	30	122
40	30	7	27	19	41	14	45	7.5	10.5	42	7	M12×1.25	15	18	75	M30×2.0	Rc1/8	8	17	27	132

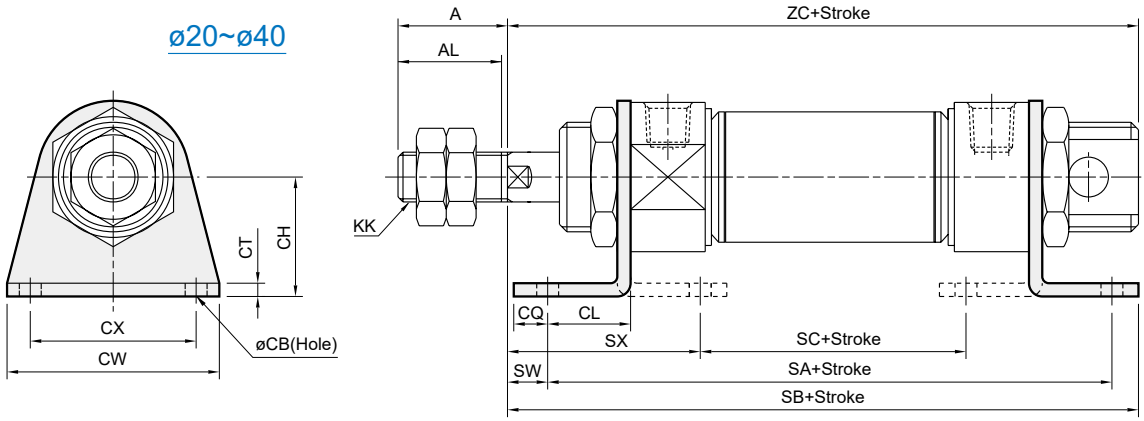
Mounting accessories

LB

ø16

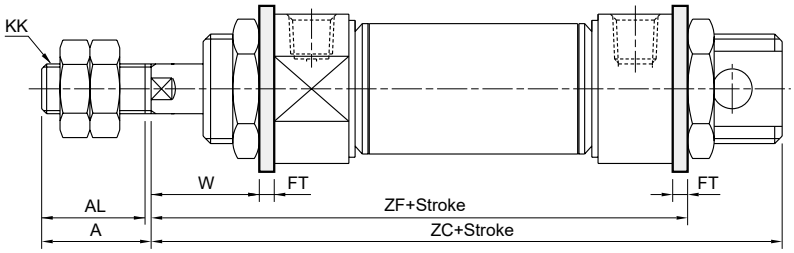


ø20~ø40

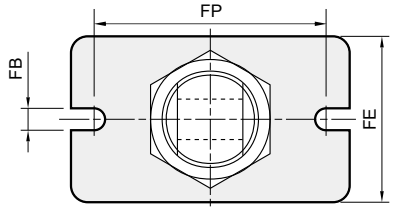


Code / Tube I.D.	A	AL	CB	CH	CL	CQ	CT	CW	CX	KK	SA	SB	SC	SW	SX	ZC
16	16	14	5.5	20	13	6	3.2	44	32	M6×1.0	80	95	34.4	9	31.8	92
20	20	17.5	6.6	25	15	8	3.2	54	40	M8×1.25	100	111	46.4	3	29.8	109
25	22	19.5	6.6	25	15	8	3.2	54	40	M10×1.25	100	120	46.4	12	38.8	118
32	22	19.5	6.6	32	25	8	4	59	45	M10×1.25	120	133	28	5	51	124
40	30	27	6.6	36	25	8	4	64	50	M12×1.25	125	135	33	2	48	130

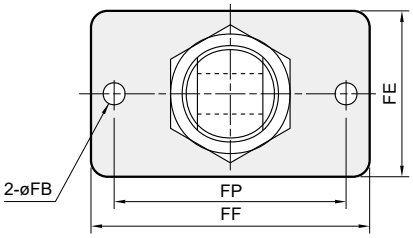
FA / FB



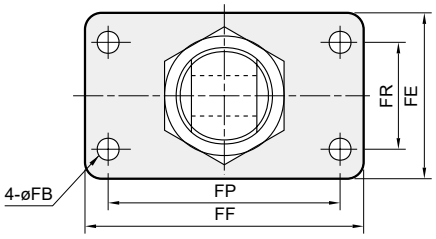
ø16



ø20, ø25

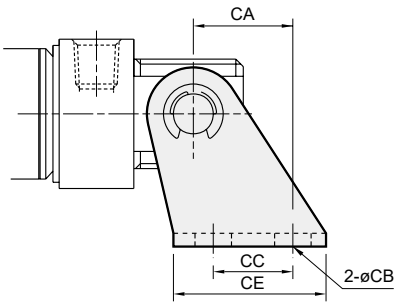


ø32, ø40

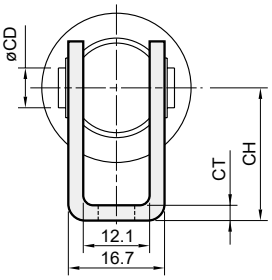


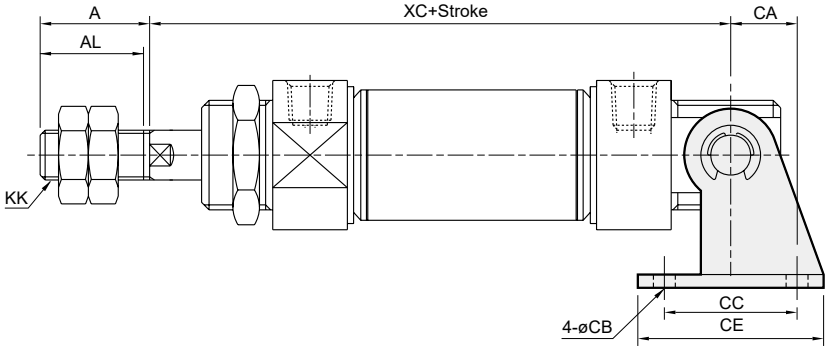
Code / Tube I.D.	A	AL	FB	FE	FF	FP	FR	FT	KK	W	ZC	ZF
16	16	14	5.5	26	52	40	–	3.2	M6×1.0	18.8	92	79.2
20	20	17.5	6.6	38	64	50	–	4.5	M8×1.25	13.5	109	92.5
25	22	19.5	6.6	38	64	50	–	4.5	M10×1.25	22.5	118	101.5
32	22	19.5	6.6	47	72	58	33	4.5	M10×1.25	25.5	124	104.5
40	30	27	6.6	50	84	70	36	4.5	M12×1.25	22.5	130	105.5

SDB

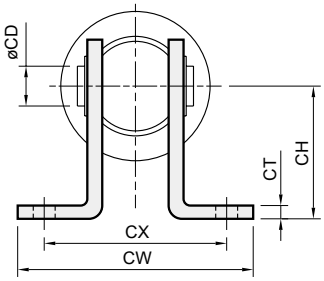


ø16



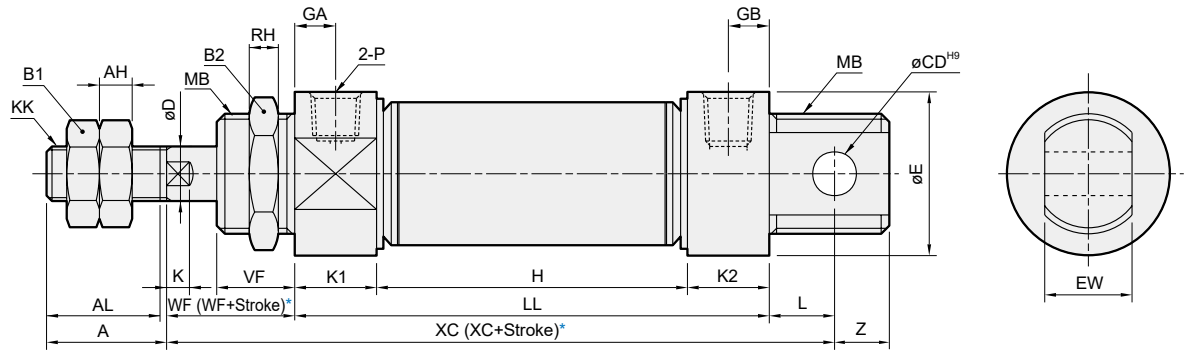


ø20~ø40



Code / Tube I.D.	A	AL	CA	CB	CC	CD	CE	CH	CT	CW	CX	KK	XC
16	16	14	15	5.5	12	6	23	20	2.3	–	–	M6×1.0	85
20	20	17.5	16	6.6	32	8	48	32	3.2	67	51	M8×1.25	100
25	22	19.5	16	6.6	32	8	48	32	3.2	67	51	M10×1.25	109
32	22	19.5	18	6.6	36	10	52	36	4	67	51	M10×1.25	114
40	30	27	20	6.6	40	12	56	40	4	69	53	M12×1.25	118

13 15

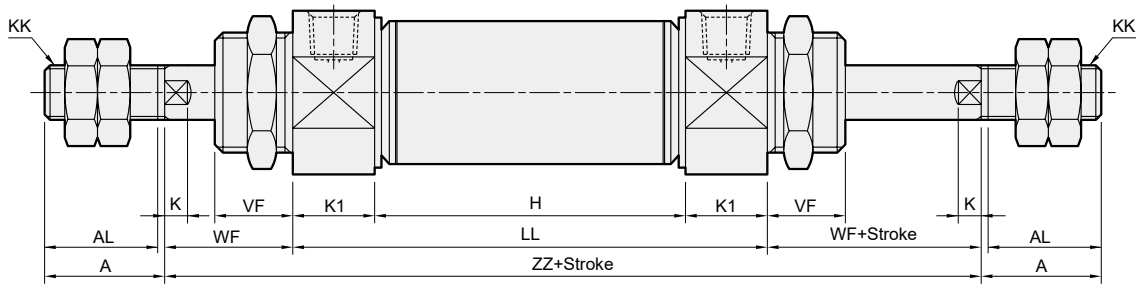


* ( ) Dimension for 13 type.

Code / Tube I.D.	A	AH	AL	B1	B2	CD	D	E	EW	GA	GB	K	KK	K1	K2	L	MB	P	RH	VF	WF	Z
16	16	5	14	10	22	6	6	19.7	12 $^{-0.05}_{-0.4}$	5	5	4	M6×1.0	10	10	9	M16×1.5	M5×0.8	6	12	22	7
20	20	5	17.5	13	30	8	8	26.7	16 $^{-0.05}_{-0.4}$	7.5	7.5	3.5	M8×1.25	15	15	12	M22×1.5	Rc1/8	6	12	18	9
25	22	6	19.5	17	30	8	10	29.7	16 $^{-0.05}_{-0.4}$	7.5	7.5	5	M10×1.25	15	15	12	M22×1.5	Rc1/8	6	15	27	9
32	22	6	19.5	17	32	10	12	36	16 $^{-0.05}_{-0.4}$	7.5	10.5	8	M10×1.25	15	18	14	M24×2.0	Rc1/8	8	18	30	10

Code / Stroke / Tube 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	74	114	154	194	–	–	84	94	134	174	214	–	–	115	125	165	205	245	–	–
20	80	90	140	190	240	290	340	110	120	170	220	270	320	370	140	150	200	250	300	350	400
25	80	90	140	190	240	290	340	110	120	170	220	270	320	370	149	159	209	259	309	359	409
32	77	87	137	187	237	287	337	110	120	170	220	270	320	370	154	164	214	264	314	364	414

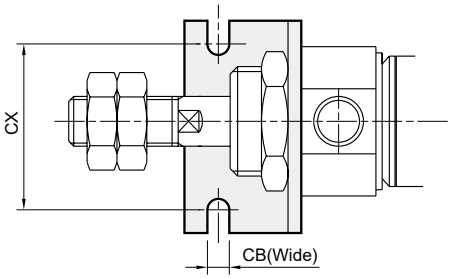
23



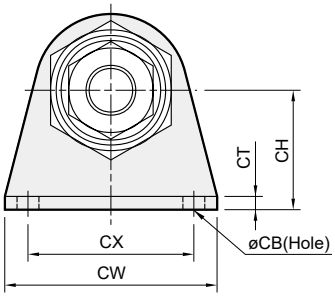
Code / Stroke / Tube I.D.	H							LL							ZZ						
	15	25	50	75	100	125	150	15	25	50	75	100	125	150	15	25	50	75	100	125	150
16	64	74	114	154	194	–	–	84	94	134	174	214	–	–	125	135	175	215	255	–	–
20	80	90	140	190	240	290	340	110	120	170	220	270	320	370	146	156	206	256	306	356	406
25	80	90	140	190	240	290	340	110	120	170	220	270	320	370	164	174	224	274	324	374	424
32	77	87	137	187	237	287	337	107	117	167	217	267	317	367	167	177	227	277	327	377	427

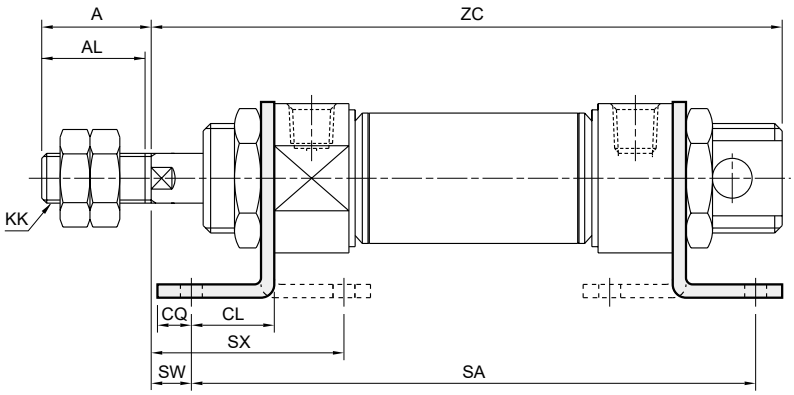
LB

ø16



ø20~ø32





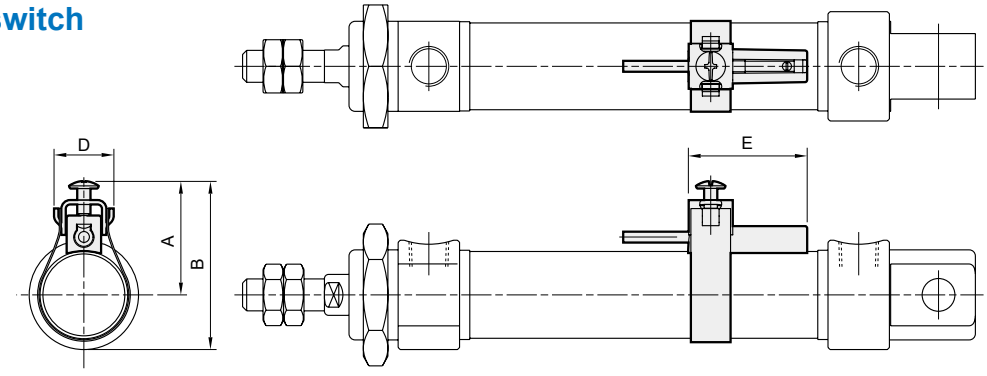
Code / Tube I.D.	A	AL	CB	CH	CL	CQ	CT	CW	CX	KK	SW	SX
16	16	14	5.5	20	13	6	3.2	44	32	M6×1.0	9	31.8
20	20	17.5	6.6	25	15	8	3.2	54	40	M8×1.25	3	29.8
25	22	19.5	6.6	25	15	8	3.2	54	40	M10×1.25	12	38.8
32	22	19.5	6.6	32	25	8	4	59	45	M10×1.25	5	51

Code / Stroke / Tube I.D.	SA							ZC						
	15	25	50	75	100	125	150	15	25	50	75	100	125	150
16	110	120	160	200	240	–	–	121	131	171	211	251	–	–
20	140	150	200	250	300	350	400	146	156	206	256	306	356	406
25	140	150	200	250	300	350	400	155	165	215	265	315	365	415
32	160	170	220	270	320	370	420	162	172	222	272	322	372	422

Installation of sensor switch

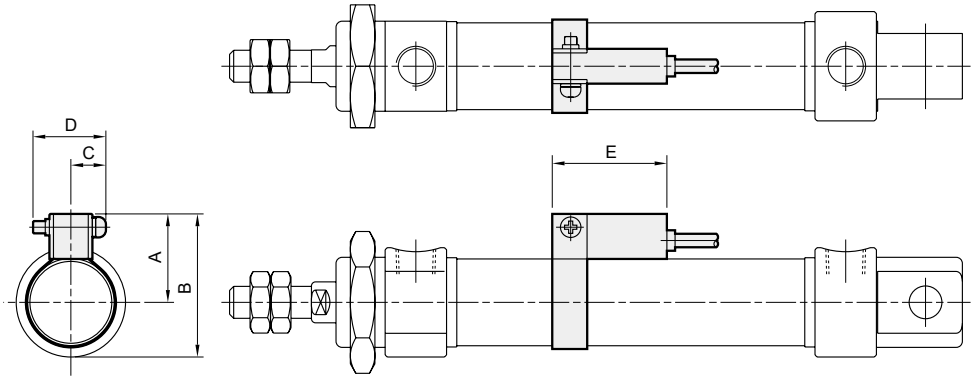
Sensor switch: R*C
Band: BKC-1

Code / Tube I.D.	A	B	D	E
16	24.5	34.5	13.5	27
20	26.5	40	13.5	27
25	29	44	13.5	27
32	33	51	13.5	27
40	37	59.5	13.5	27

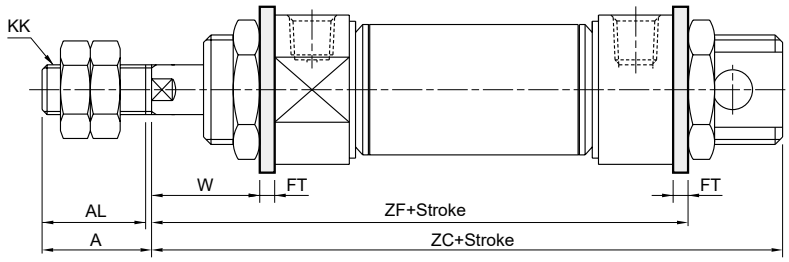


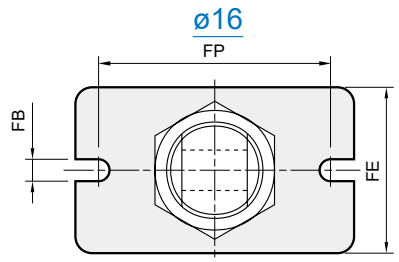
Sensor switch: RCM
Band: BM**

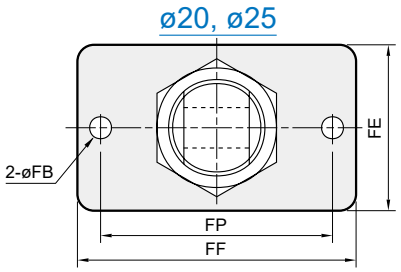
Code / Tube I.D.	A	B	C	D	E
16	20	30	10	16	28
20	22	36	10	16	28
25	25	40	10	16	28
32	28	46	10	16	28
40	32	55	10	16	28

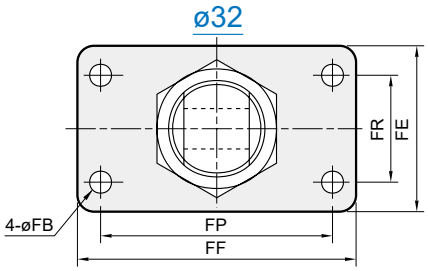


FA / FB





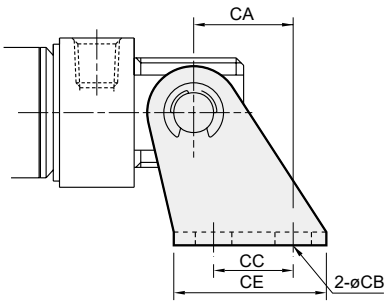


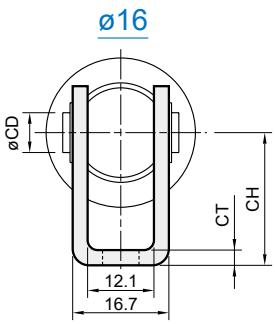


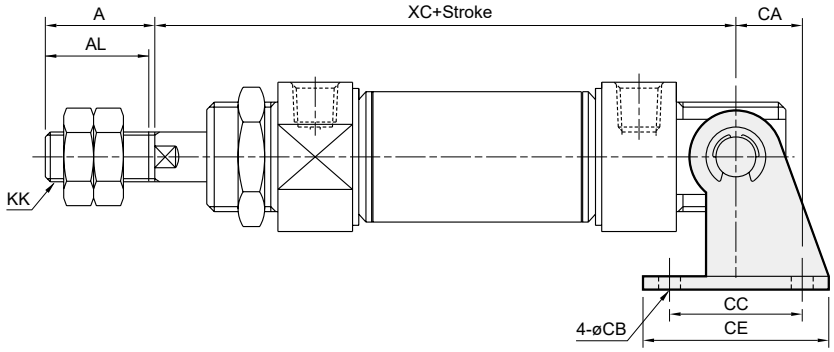
Code / Tube I.D.	A	AL	FB	FE	FF	FP	FR	FT	KK	W
16	16	14	5.5	26	52	40	–	3.2	M6×1.0	18.8
20	20	17.5	6.6	38	64	50	–	4.5	M8×1.25	13.5
25	22	19.5	6.6	38	64	50	–	4.5	M10×1.25	22.5
32	22	19.5	6.6	47	72	58	33	4.5	M10×1.25	25.5

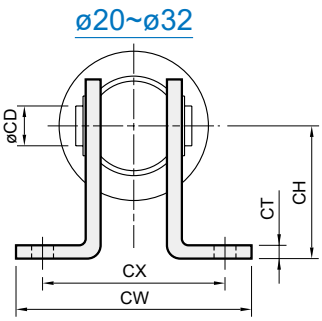
Code / Stroke / Tube I.D.	ZC							ZF						
	15	25	50	75	100	125	150	15	25	50	75	100	125	150
16	121	131	171	211	251	–	–	109.2	119.2	159.2	199.2	239.2	–	–
20	146	156	206	256	306	356	406	132.5	142.5	192.5	242.5	292.5	342.5	392.5
25	155	165	215	265	315	365	415	141.5	151.5	201.5	251.5	301.5	351.5	401.5
32	162	172	222	272	322	372	422	144.5	154.5	204.5	254.5	304.5	354.5	404.5

SDB







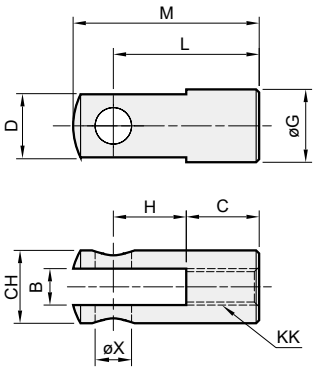


Code / Tube I.D.	A	AL	CA	CB	CC	CD	CE	CH	CT	CW	CX	KK
16	16	14	15	5.5	12	6	23	20	2.3	–	–	M6×1.0
20	20	17.5	16	6.6	32	8	48	32	3.2	67	51	M8×1.25
25	22	19.5	16	6.6	32	8	48	32	3.2	67	51	M10×1.25
32	22	19.5	18	6.6	36	10	52	36	4	67	51	M10×1.25

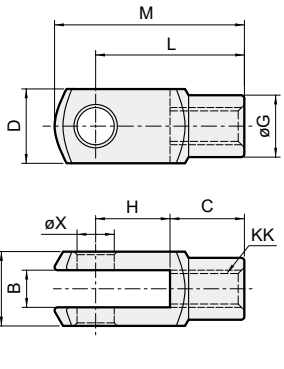
Code / Stroke / Tube I.D.	XC						
	15	25	50	75	100	125	150
16	107	117	157	197	257	–	–
20	139	149	199	249	299	349	399
25	141	151	172	222	272	322	372
32	142	152	173	223	273	323	373

Y connector

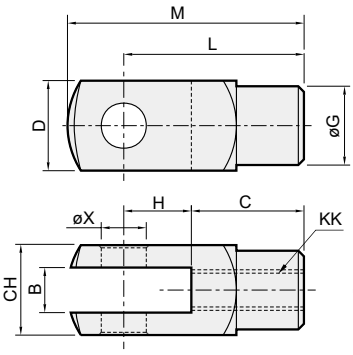
ø8~ø16
Not suitable for (S) floating pin



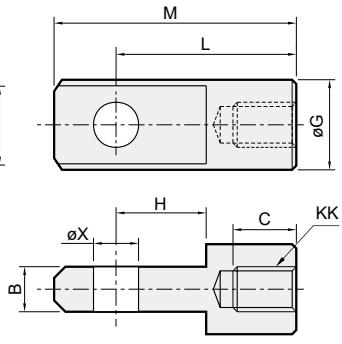
ø16*
For (S) floating pin



ø20~ø40



I connector

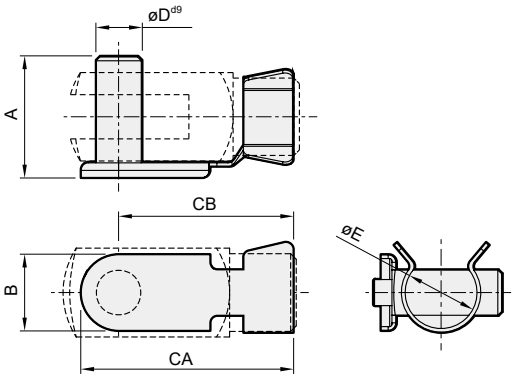


Code / Tube I.D.	B		C		CH		D		G		H		L		M		X
	Y	I	Y	I	Y	I	Y	I	Y	I	Y	I	Y	I	Y	I	
8,10	4 +0.4 +0.1	–	8	–	8	–	8	–	–	–	8	–	16	–	20.75	–	4 +0.1 +0.01
12,16	6 +0.4 +0.1	6 -0.2 -0.3	12	8	12	–	–	–	12	12	12	10	24	21	31	28	6 +0.1 +0.01
16*	6 +0.4 +0.1	–	12	–	12	–	12	–	10	–	12	–	24	–	31	–	6 +0.03 0
20	8 +0.5 +0.15	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 (MCMI)	
	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

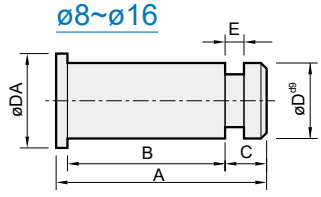
S ø16*~ø40



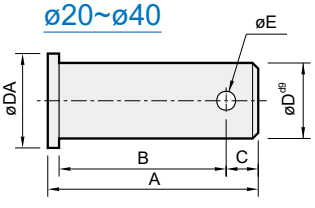
for floating pin

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 ø8~ø16



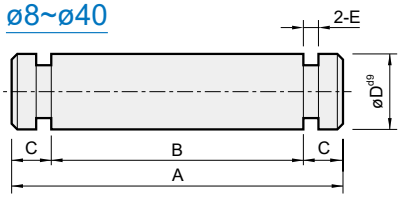
ø20~ø40



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 ø8~ø40



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

MCMB series

MINIATURE CYLINDER

mindman

Special spec

Rod end shape

Technical data

Caution for safety
(Read before installing)

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.

■ Magnetic as standard

Specification

Model		MCMB			
Tube I.D.		20	25	32	40
Port size		Rc1/8			Rc1/4
Medium		Air			
Max. operating perssure		1 MPa			
Min. operating perssure	Double acting	0.05 MPa			
	Single acting	Extended: 0.23, Returned: 0.18 MPa			
Proof pressure		1.5 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	0.27	0.4	0.65	1.2
	Cushion air	0.54	0.78	1.27	2.35
Sensor switch		RDC, RQC, RCM			
Sensor switch band	R*C	BKC-1 (Not for R*CV angle cable)			
	RCM	BM20	BM25	BM32	BM40

Table for standard stroke

Acting type		Tube I.D.	Stroke (mm)	Max. stroke (mm)
Single acting	13/15	ø20,25, 32,40	15,25,50,75,100	150
Double acting	11	ø20,25, 32,40	25,50,75,100,125,150, 200,250,300,400,500	1000
	21/27		25,50,75,100,125,150, 200,250,300,400	450

* Intermediate stroke are available, please contact us.

Order example

MCMB — 11 — 20 — 50 — A — N — G

- MODEL: MCMB
- STYLE: 11
  - **1**: Single rod
  - **2**: Double rod
- TUBE I.D.: 20
- STROKE: 50
- Blank: Cushion pad (Unadjustable)
  A: Cushion air (Adjustable) ⚠
- END COVER TYPE: N
- PORT THREAD: G
  Blank: Rc thread
  G: G thread
  NPT: NPT thread

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 stroke" at order list

END COVER TYPE

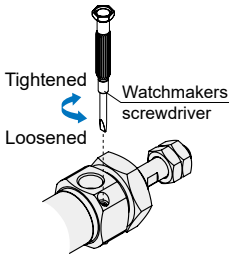
Code	Symbol	Description
Blank		Standard type
N		End-plain
E		With pivot type

* Single acting type, please contact us.

⚠ Caution

For (**A**) Cushion air (Adjustable)

1. 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.
2. If the needle valve loosen excessively, the buffer doesn't take effect and the lifetime of cylinder would be shortened.



Accessories & Connector

Code	Accessories					
	LB (LB×2, with cover nut ×1)	LB (LB×1, without cover nut)	NUT		CA	CB
Cover type	Standrad type	End-plain (N) With pivot type (E)	–		Standrad type	
Mounting / Tube I.D.	with nut		Rod nut	Cover nut		
ø20	LB-M2-20x2	LB-M2-20	NUT-M8x1.25x5Hx13B	NUT-M20x1.5x8Hx26B	CA-M2-20	CB-M2-20
ø25	LB-M2-25x2	LB-M2-25	NUT-M10x1.25x6Hx17B	NUT-M26x1.5x8Hx32B	CA-M2-25	CB-M2-25
ø32						
ø40	LB-M2-40x2	LB-M2-40	NUT-M14x1.5x8Hx22B	NUT-M32x2.0x10Hx41B	CA-M2-40	CB-M2-40

Code	Accessories					Connector	
	FA	FB	SDB (with pin×1 + snap ring×2)	TA	TB	Y	I
Cover type	All applicable	Standard type	With pivot type (E)	All applicable	Standard type	All applicable	
Mounting / Tube I.D.							
ø20	FA-M2-20		SDB-M2-20	TA-M2-20		Y-M2-20	I-M2-20
ø25	FA-M2-25			TA-M2-25		Y-M2-25	I-M2-25
ø32			SDB-M2-32				
ø40	FA-M2-40			TA-M2-40		Y-Q1-40	I-M2-40

Pin

Applicable	Y&I connector	CA&CB accessories	SDB accessories
Code	PIN-Y-P (with split pin / snap ring)	PIN-CB-P (with split pin / snap ring)	PIN-SDB (with split pin)
Fig / Tube I.D.	ø20~ø32 ø40	ø20~ø32 ø40	
ø20	PIN-M2-20-1-P	PIN-M2-20-1-P	PIN-M2-20-2-P
ø25			
ø32			PIN-M2-32-1-P
ø40	PIN-M2-40-2-P	PIN-M2-40-1-P	

Order example of self-assembled

The tube I.D. ø32 of LB accessories, Y connector and pin.

No.	Order number	Qty
1	LB-M2-25x2	1
2	Y-M2-25	1
3	PIN-M2-20-1-P	1

* To order accessories/ connectors/ pin separately, please place orders separately according to the order codes in the above table.

Order example of factory assembled

⚠ Cylinders and accessories are distinguished by the symbol " + ".

MCMB – Standard model no. + LB

CYLINDER ACCESSORIES

Cylinder & accessories weight

Cylinder weight

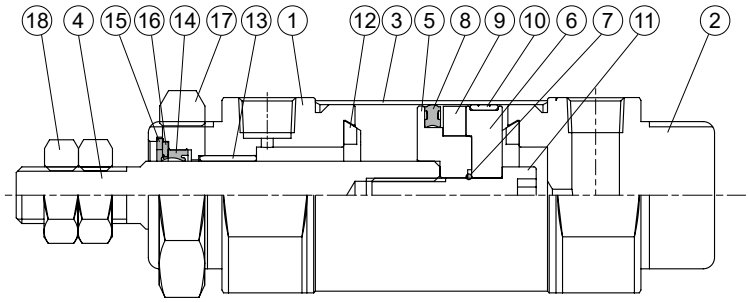
Unit: g

Model	Basic weight MCMB-11	Basic weight MCMB-11-N	Basic weight MCMB-11-E	Basic weight MCMB-11-A	Stroke 25 mm MCMB-11-*
Tube I.D.					
ø20	146	146	148	144	20
ø25	232	232	228	252	28
ø32	275	275	287	340	38
ø40	568	568	576	565	51

Accessories weight

Unit: g

Model	LB	CA	CB	FA/FB	SDB	TA/TB	Y	I	Pin	Rod nut	Cover nut
Tube I.D.											
ø20	122	53	49	66	62	37	53	63	13	4	19
ø25	129	63	69	73	62	47	49	62	13	8	23
ø32	129	63	69	73	140	47	49	62	13	8	23
ø40	207	162	168	124	140	94	230	164	43	16	50



Order example of component parts

CP — MCMB — 2 — 20 — N — G

- MODEL
- Blank: Single rod / **2**: Double rod
- TUBE I.D.
- END COVER TYPE: Blank: Standard type / **N**: Non-pivot type / **E**: With pivot type
- PORT THREAD: Blank: Rc thread / **G**: G thread / **NPT**: NPT thread

Material

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

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

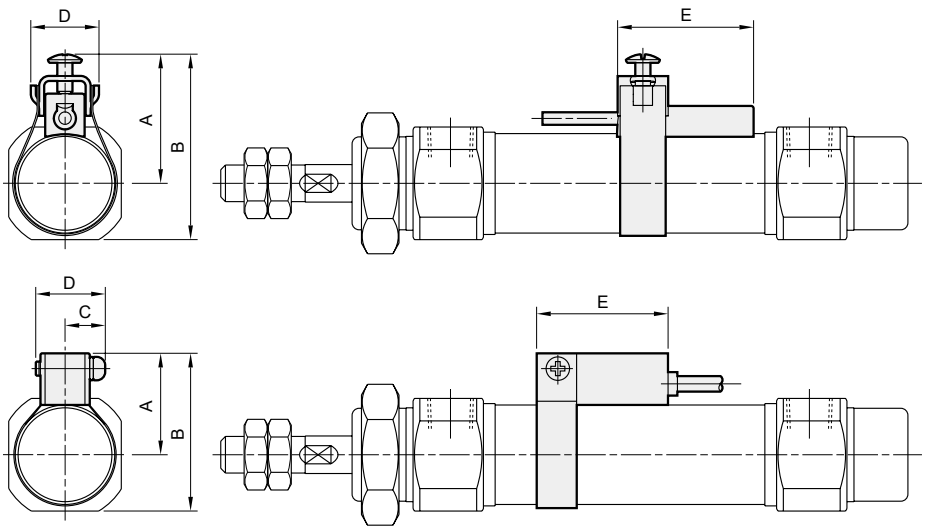
Installation of sensor switch

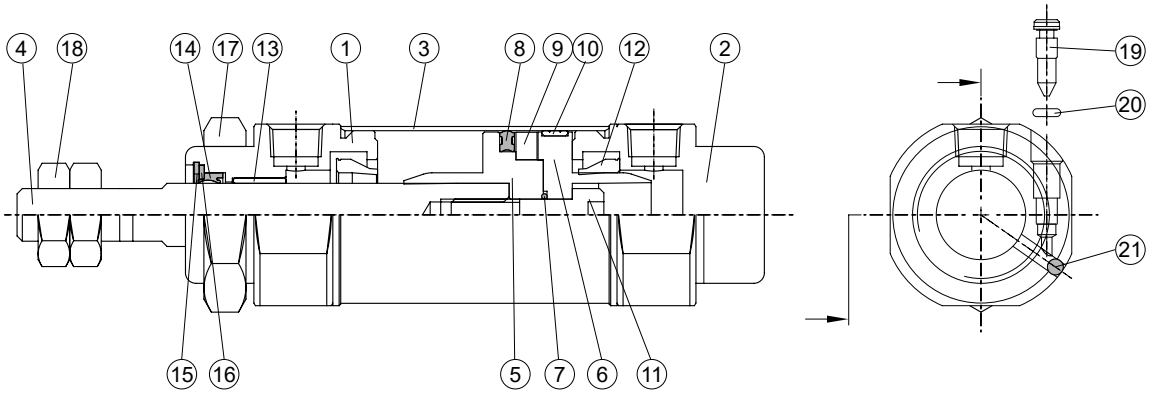
Sensor switch: R*C
Band: BKC-1

Code \ Tube I.D.	A	B	D	E
20	26.5	38.5	13.5	27
25	29	44	13.5	27
32	33	50	13.5	27
40	37	58	13.5	27

Sensor switch: RCM
Band: BM**

Code \ Tube I.D.	A	B	C	D	E
20	22	34	10	16	28
25	25	40	10	16	28
32	28	46	10	16	28
40	32	54	10	16	28





Material

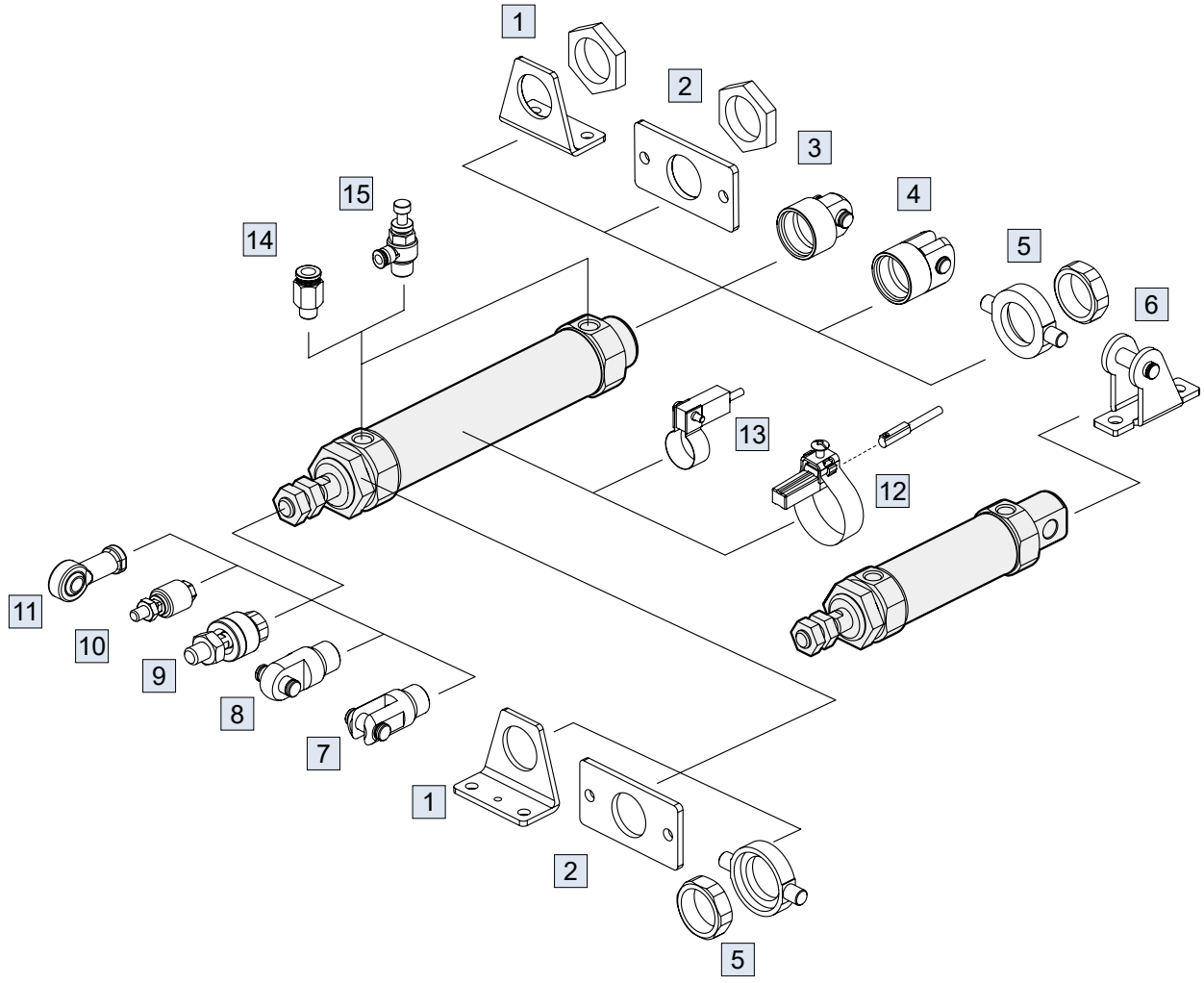
No.	Tube I.D. / Part name	20	25	32	40	Q'y 11 type	Q'y 21 type	Component parts (inclusion) 11 type	Component parts (inclusion) 21 type
1	Rod cover	Aluminum alloy				1	2	●	●
2	Head cover	Aluminum alloy				1	–	●	
3	Tube	Stainless steel				1	1		
4	Piston rod	Carbon steel				1	1		
5	Piston-R	Aluminum alloy				1	1	●	●
6	Piston-H	Aluminum alloy				1	1	●	●
7	Piston gasket	NBR				1	1	●	●
8	Piston packing	NBR				1	1	●	●
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 *1	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		Carbon steel		2	2	●	●
20	Needle valve packing	NBR				2	2	●	●
21	Steel ball	Stainless steel				2	2	●	●

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

Order example of component parts

CP — MCMB — 2 — 20 — A — N — G

- MODEL
- Blank: Single rod
  2: Double rod
- TUBE I.D.
- **A**: Cushion air (Adjustable)
- END COVER TYPE
  Blank: Standard type
  N: Non-pivot type
  E: With pivot type
- PORT THREAD
  Blank: Rc thread
  G: G thread
  NPT: NPT thread

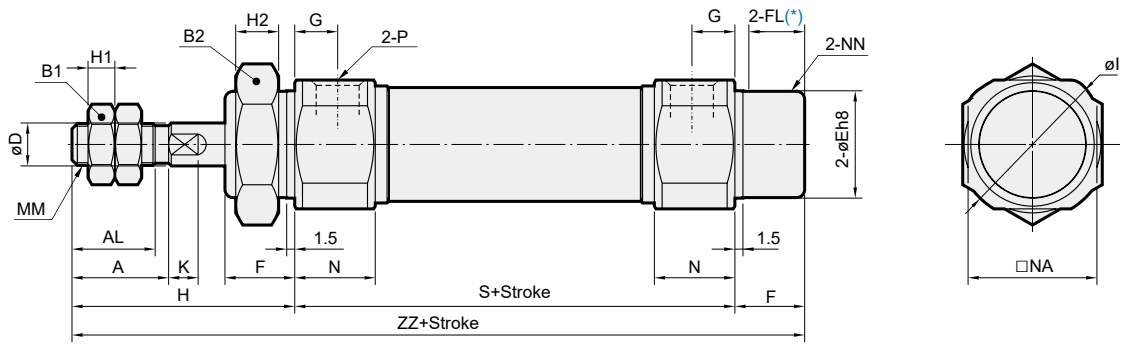


No.	Accessories	Material	Page link
1	Mounting accessories LB	Carbon steel	
2	Mounting accessories FA/FB	Carbon steel	
3	Mounting accessories CA+PIN	Carbon steel	
4	Mounting accessories CB+PIN	Carbon steel	
5	Mounting accessories TA/TB	Cast iron *2	
6	Mounting accessories SDB+PIN (*1)	Carbon steel	
7	Accessories Y+PIN	Carbon steel *3	
8	Accessories I+PIN	Carbon steel	

No.	Accessories	Material	Page link
9	Floating joint MFC	Carbon steel	
10	Floating joint MFCS	Carbon steel	
11	Female rod ends PHS	Carbon steel	
12	Sensor switch R*C+BKC-1	–	
13	Sensor switch RCM+BM**	–	
14	Fitting PC (PISCO)	–	
15	Speed controller JSC (PISCO)	–	

*1. Only for end cover "E" type.
*2. ø20 material is carbon steel.
*3. Y accessories ø40 material is cast iron.

11



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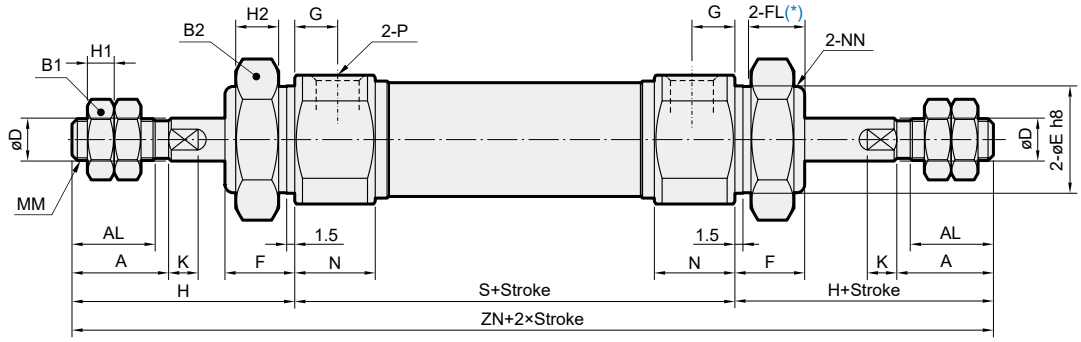

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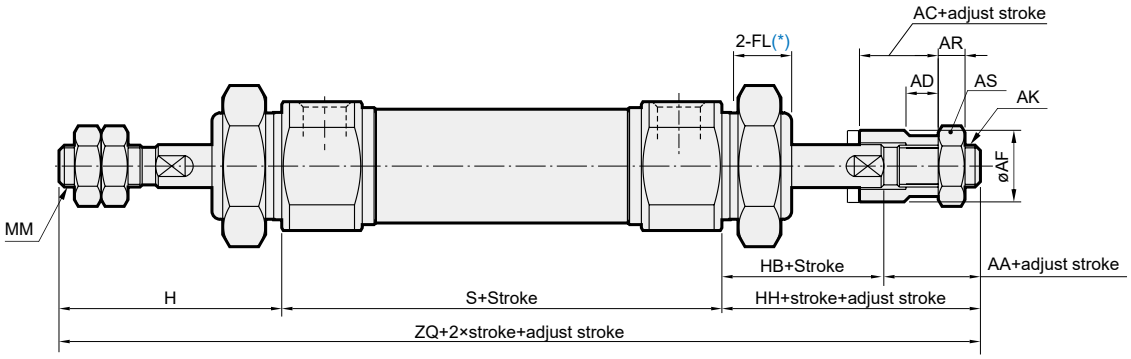


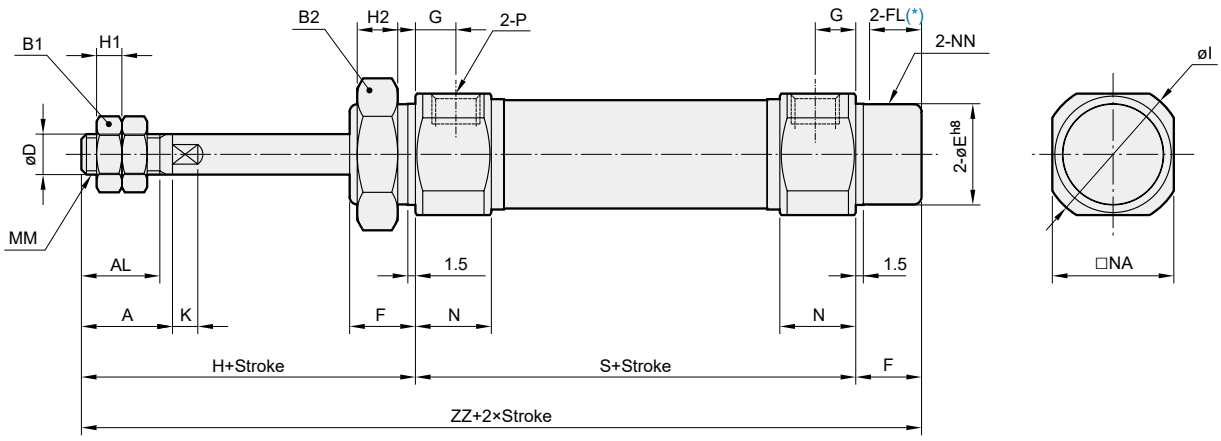
Unit: mm

Code / Tube I.D.	A	AA	AC	AD	AF	AK	AL	AR	AS	B1	B2	D	E	F	FL	G	H	H1	H2	HB	HH	I	K	MM
20	18	17.5	15	9.5	16	M8×1.25	15.5	5	13	13	26	8	20 $^{0}_{-0.03}$	13	10.5	8	41	5	8	20.5	38	28	5	M8×1.25
25	22	18.5	15	9.5	16	M8×1.25	19.5	5	13	17	32	10	26 $^{0}_{-0.03}$	13	10.5	8	45	6	8	20.5	39	33.5	5	M10×1.25
32	22	16	12	7	20	M10×1.25	19.5	6	17	17	32	12	26 $^{0}_{-0.03}$	13	10.5	8	45	6	8	20	36	37.5	5.5	M10×1.25
40	24	17	12	7	30	M12×1.25	21	7	19	22	41	14	32 $^{0}_{-0.04}$	16	13.5	11	50	8	10	23	40	46.5	7	M14×1.5

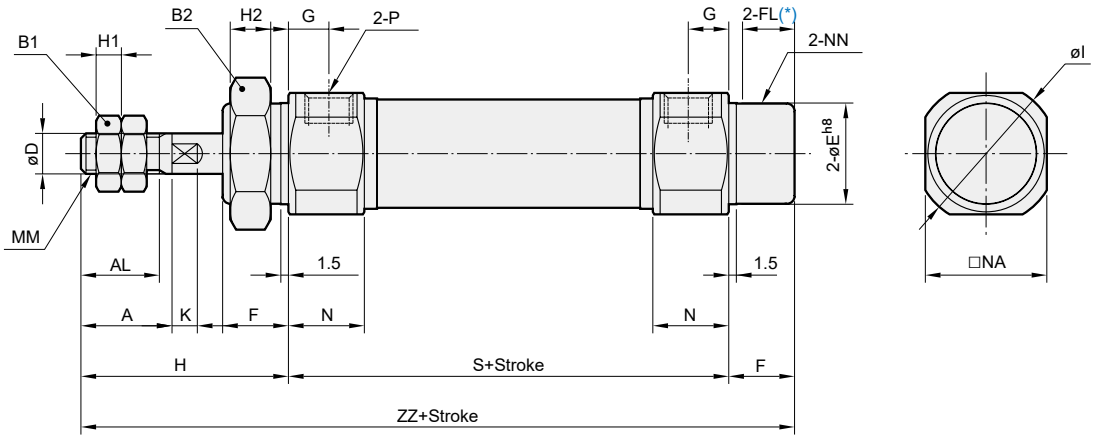
Code / Tube I.D.	N	NA	NN	P	S	ZN	ZQ	ZZ
20	15	24	M20×1.5	Rc1/8	62	144	141	116
25	15	30	M26×1.5	Rc1/8	62	152	146	120
32	15	34.5	M26×1.5	Rc1/8	64	154	145	122
40	21.5	42.5	M32×2.0	Rc1/4	88	188	178	154

* FL: Effective thread length

13



15

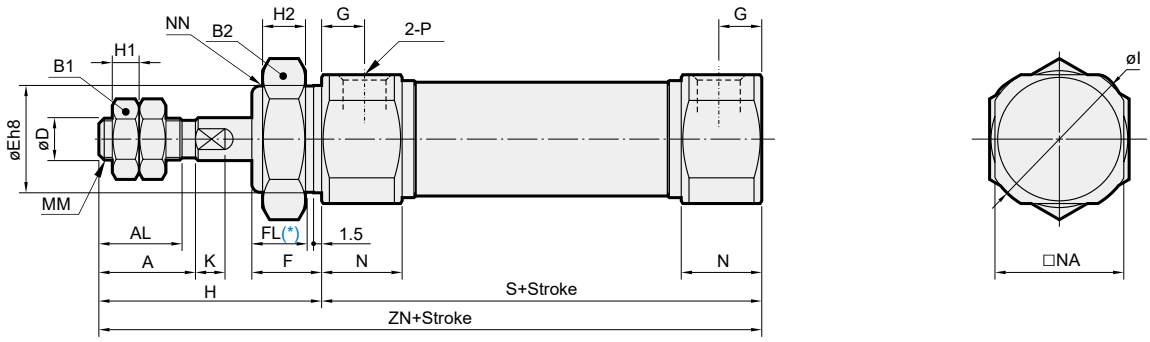


Code / Tube I.D.	A	AL	B1	B2	D	E	F	FL	G	H	H1	H2	I	K	MM	N	NA	NN	P
20	18	15.5	13	26	8	20 $^{0}_{-0.03}$	13	10.5	8	41	5	8	28	5	M8×1.25	15	24	M20×1.5	Rc1/8
25	22	19.5	17	32	10	26 $^{0}_{-0.03}$	13	10.5	8	45	6	8	33.5	5	M10×1.25	15	30	M26×1.5	Rc1/8
32	22	19.5	17	32	12	26 $^{0}_{-0.03}$	13	10.5	8	45	6	8	37.5	5.5	M10×1.25	15	34.5	M26×1.5	Rc1/8
40	24	21	22	41	14	32 $^{0}_{-0.04}$	16	13.5	11	50	8	10	46.5	7	M14×1.5	21.5	42.5	M32×2.0	Rc1/4

Code / Stroke / Tube I.D.	S			ZZ		
	1~50	51~100	101~150	1~50	51~100	101~150
20	87	112	137	141	166	191
25	87	112	137	145	170	195
32	89	114	139	147	172	197
40	113	138	163	179	204	229

* FL: Effective thread length

N

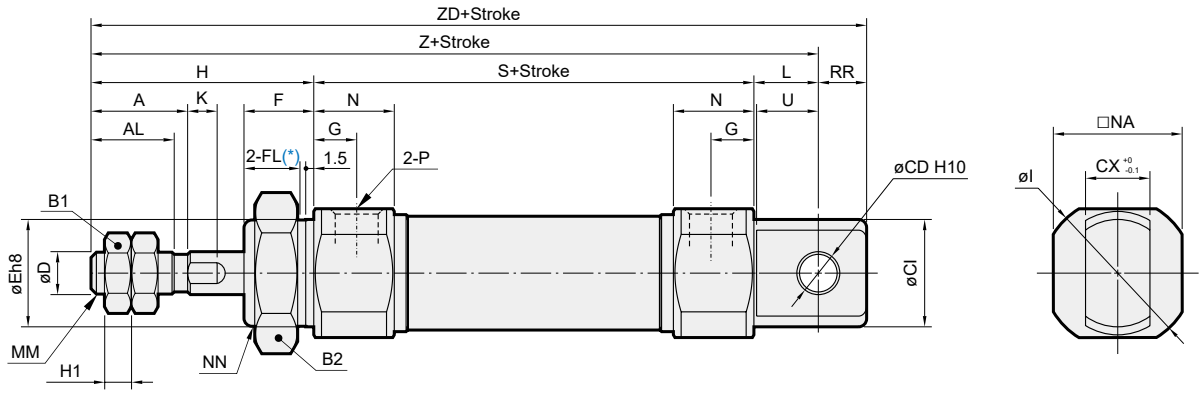


* FL: Effective thread length

Unit: mm

Code / Tube I.D.	A	AL	B1	B2	D	E	F	FL	G	H	H1	H2	I	K	MM	N	NA	NN	P	S	ZN
20	18	15.5	13	26	8	20 $^{0}_{-0.03}$	13	10.5	8	41	5	8	28	5	M8×1.25	15	24	M20×1.5	Rc1/8	62	103
25	22	19.5	17	32	10	26 $^{0}_{-0.03}$	13	10.5	8	45	6	8	33.5	5	M10×1.25	15	30	M26×1.5	Rc1/8	62	107
32	22	19.5	17	32	12	26 $^{0}_{-0.03}$	13	10.5	8	45	6	8	37.5	5.5	M10×1.25	15	34.5	M26×1.5	Rc1/8	64	109
40	24	21	22	41	14	32 $^{0}_{-0.04}$	16	13.5	11	50	8	10	46.5	7	M14×1.5	21.5	42.5	M32×2.0	Rc1/4	88	138

E

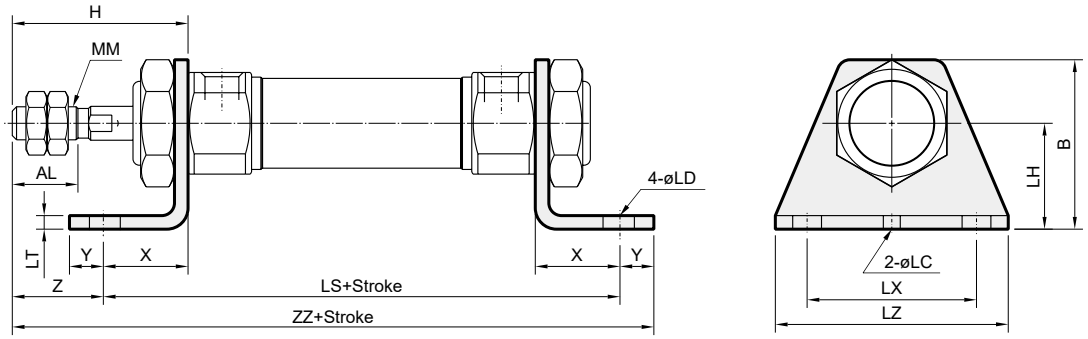


* FL: Effective thread length

Unit: mm

Code / Tube I.D.	A	AL	B1	B2	CD	CX	CI	D	E	F	FL	G	H	H1	I	K	L	MM	N	NA	NN	P	RR	S	U	Z	ZD
20	18	15.5	13	26	8	12	20	8	20 $^{0}_{-0.03}$	13	10.5	8	41	5	28	5	12	M8×1.25	15	24	M20×1.5	Rc1/8	9	62	11.5	115	124
25	22	19.5	17	32	8	12	22	10	26 $^{0}_{-0.03}$	13	10.5	8	45	6	33.5	5	12	M10×1.25	15	30	M26×1.5	Rc1/8	9	62	11.5	119	128
32	22	19.5	17	32	10	20	27	12	26 $^{0}_{-0.03}$	13	10.5	8	45	6	37.5	5.5	15	M10×1.25	15	34.5	M26×1.5	Rc1/8	12	64	14.5	124	136
40	24	21	22	41	10	20	33	14	32 $^{0}_{-0.04}$	16	13.5	11	50	8	46.5	7	15	M14×1.5	21.5	42.5	M32×2.0	Rc1/4	12	88	14.5	153	165

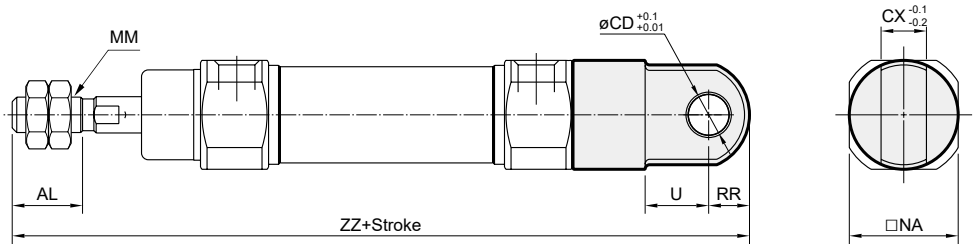
LB



Unit: mm

Code / Tube I.D.	AL	B	H	LC	LD	LH	LS	LT	LX	LZ	MM	X	Y	Z	ZZ
20	15.5	40	41	4	6.8	25	102	3.2	40	55	M8×1.25	20	8	21	131
25	19.5	47	45	4	6.8	28	102	3.2	40	55	M10×1.25	20	8	25	135
32	19.5	47	45	4	6.8	28	104	3.2	40	55	M10×1.25	20	8	25	137
40	21	54	50	4	7	30	134	3.2	55	75	M14×1.5	23	10	27	171

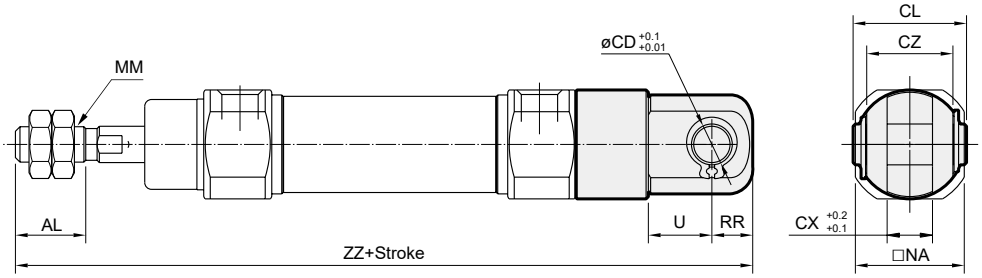
CA



Unit: mm

Code / Tube I.D.	AL	CD	CX	MM	NA	RR	U	ZZ
20	15.5	9	10	M8×1.25	24	9	14	142
25	19.5	9	10	M10×1.25	30	9	14	146
32	19.5	9	10	M10×1.25	34.5	9	14	148
40	21	10	15	M14×1.5	42.5	11	18	188

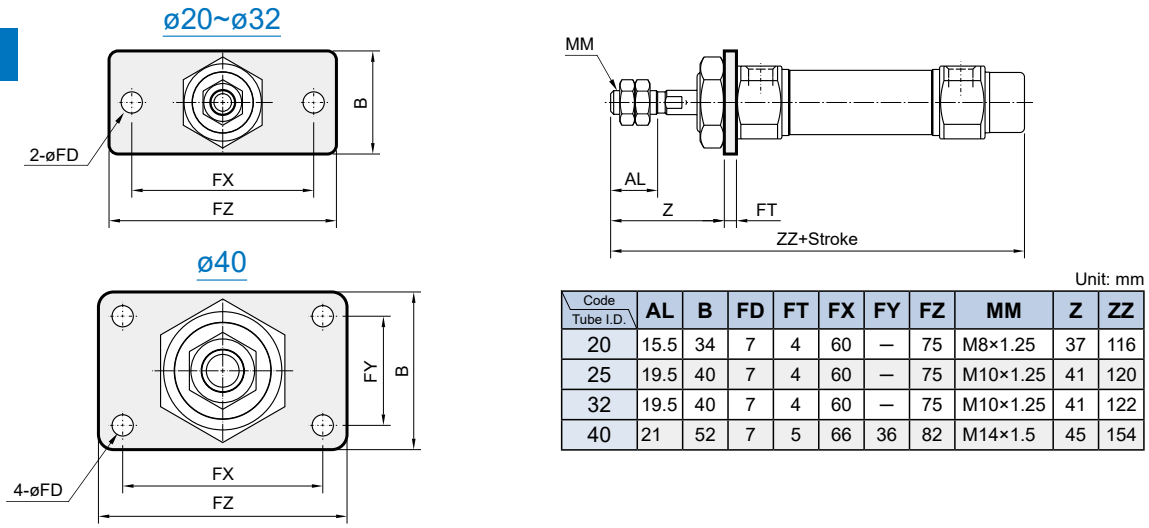
CB



Unit: mm

Code / Tube I.D.	AL	CD	CL	CX	CZ	MM	NA	RR	U	ZZ
20	15.5	9	25	10	19	M8×1.25	24	9	14	142
25	19.5	9	25	10	19	M10×1.25	30	9	14	146
32	19.5	9	25	10	19	M10×1.25	34.5	9	14	148
40	21	10	41.2	15	30	M14×1.5	42.5	11	18	188

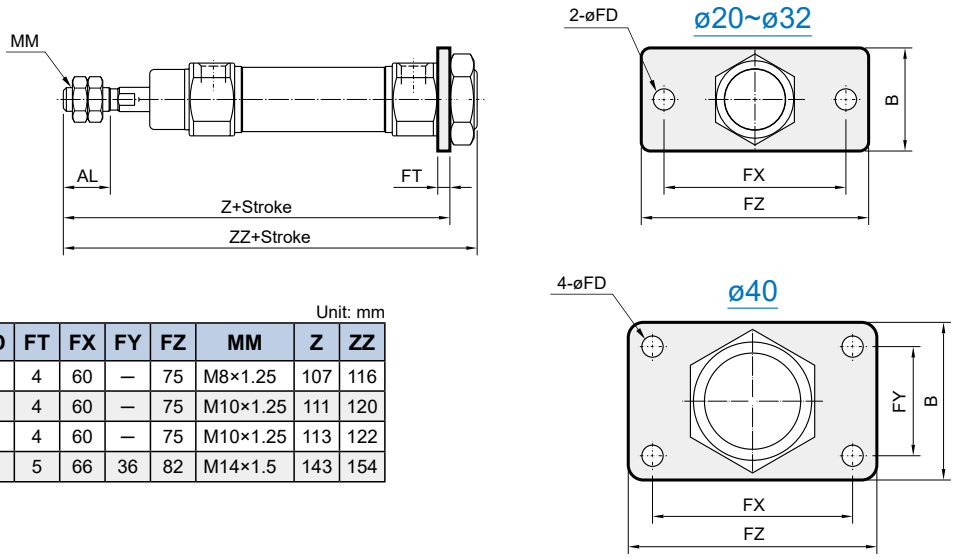
FA



Unit: mm

Code / Tube I.D.	AL	B	FD	FT	FX	FY	FZ	MM	Z	ZZ
20	15.5	34	7	4	60	–	75	M8×1.25	37	116
25	19.5	40	7	4	60	–	75	M10×1.25	41	120
32	19.5	40	7	4	60	–	75	M10×1.25	41	122
40	21	52	7	5	66	36	82	M14×1.5	45	154

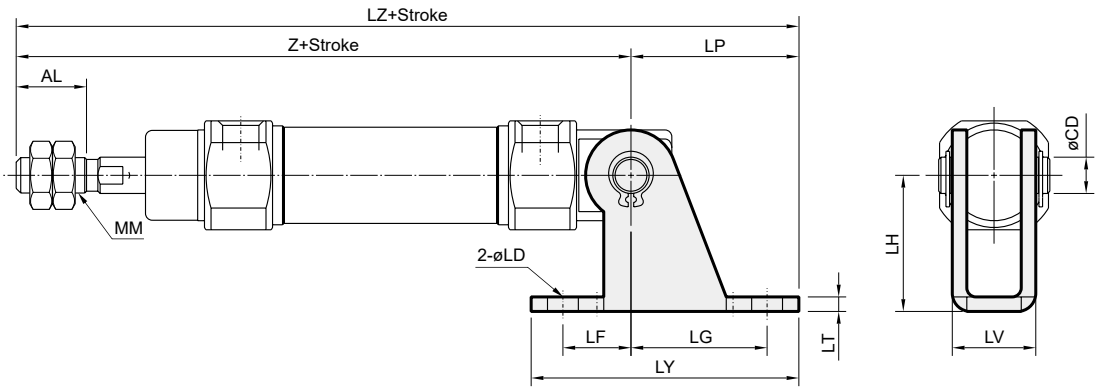
FB



Unit: mm

Code / Tube I.D.	AL	B	FD	FT	FX	FY	FZ	MM	Z	ZZ
20	15.5	34	7	4	60	–	75	M8×1.25	107	116
25	19.5	40	7	4	60	–	75	M10×1.25	111	120
32	19.5	40	7	4	60	–	75	M10×1.25	113	122
40	21	52	7	5	66	36	82	M14×1.5	143	154

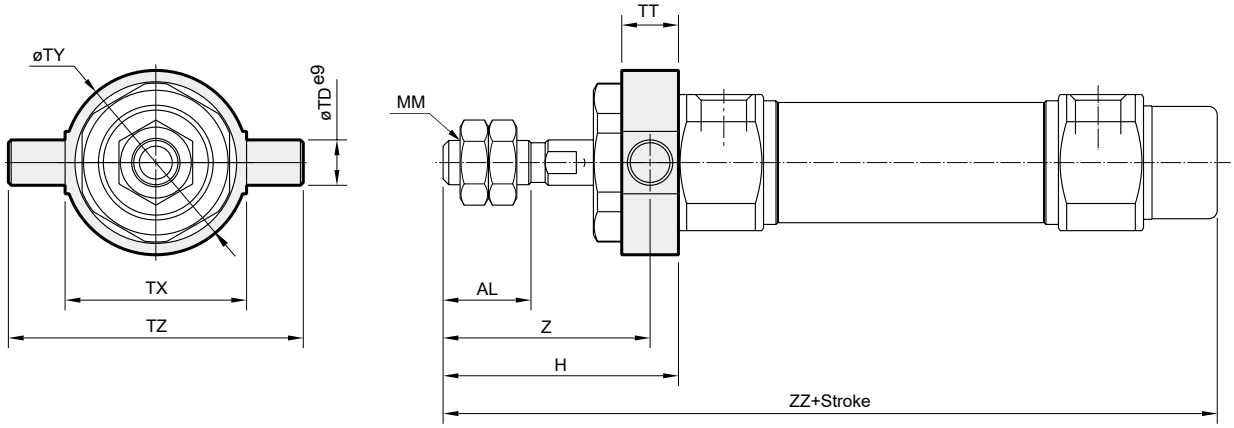
SDB



Unit: mm

Code / Tube I.D.	AL	CD	LD	LF	LG	LH	LP	LT	LV	LY	LZ	MM	N	Z
20	15.5	8	6.8	15	30	30	37	3.2	18.4	59	152	M8×1.25	15	115
25	19.5	8	6.8	15	30	30	37	3.2	18.4	59	156	M10×1.25	15	119
32	19.5	10	9	15	40	40	50	4	28	75	174	M10×1.25	15	124
40	21	10	9	15	40	40	50	4	28	75	203	M14×1.5	21.5	153

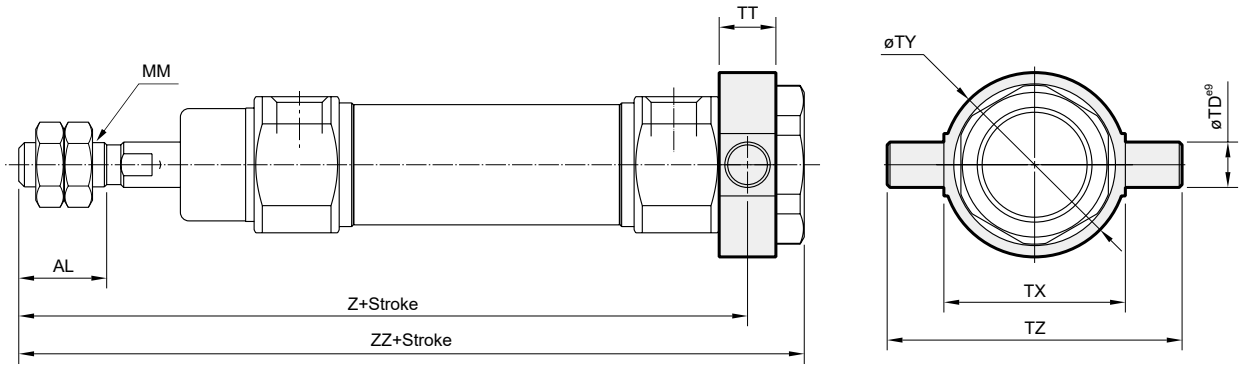
TA



Unit: mm

Code / Tube I.D.	AL	H	MM	TD	TT	TX	TY	TZ	Z	ZZ
20	15.5	41	M8×1.25	8	10	32	32.5	52	36	116
25	19.5	45	M10×1.25	9	10	40	40.5	60	40	120
32	19.5	45	M10×1.25	9	10	40	40.5	60	40	122
40	21	50	M14×1.5	10	11	53	53.5	77	44.5	154

TB

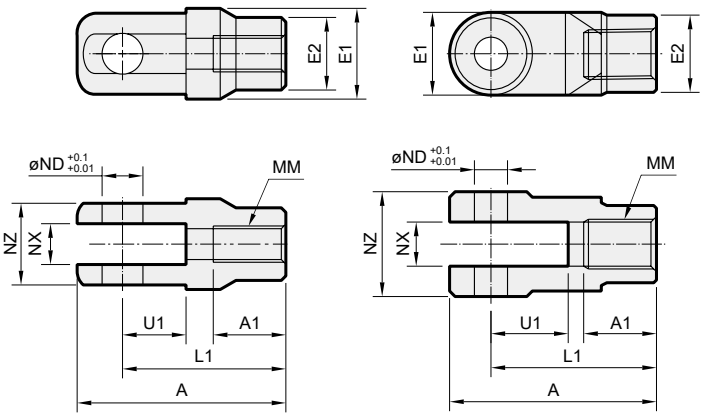


Unit: mm

Code / Tube I.D.	AL	MM	TD	TT	TX	TY	TZ	Z	ZZ
20	15.5	M8×1.25	8	10	32	32.5	52	108	118
25	19.5	M10×1.25	9	10	40	40.5	60	112	122
32	19.5	M10×1.25	9	10	40	40.5	60	114	124
40	21	M14×1.5	10	11	53	53.5	77	143.5	154

Y connector

ø20~ø32

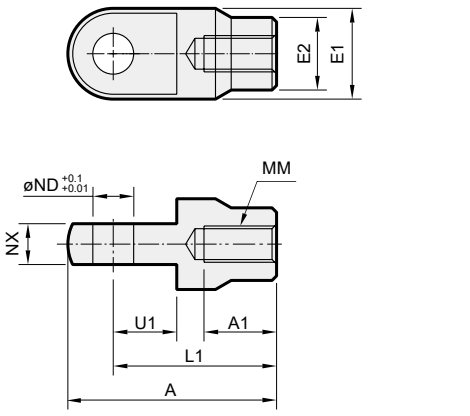


ø40

Unit: mm

Code / Tube I.D.	A	A1	E1	E2	L1	MM	ND	NX	NZ	U1
20	46	16	ø20	ø16	36	M8×1.25	9	9 +0.2 +0.1	18	14
25, 32	46	16	ø20	ø16	36	M10×1.25	9	9 +0.2 +0.1	18	14
40	68	25	ø26	ø24	55	M14×1.5	12	16 +0.3 +0.1	38	25

I connector

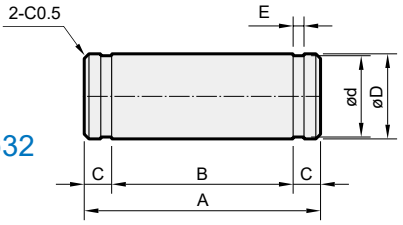


Unit: mm

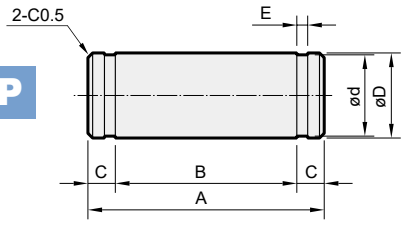
Code / Tube I.D.	A	A1	E1	E2	L1	MM	ND	NX	U1
20	46	16	ø20	ø16	36	M8×1.25	9	9 +0.1 +0.2	14
25, 32	46	16	ø20	ø16	36	M10×1.25	9	9 +0.1 +0.2	14
40	69	22	ø24	–	55	M14×1.5	12	16 +0.1 +0.2	20

PIN

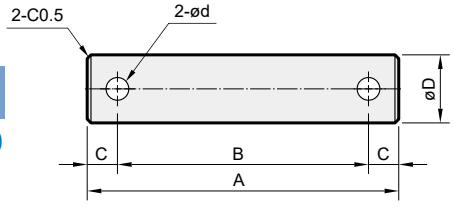
P ø20~ø32



P



P ø40



for SDB

Code / Tube I.D.	A	B	C	øD d9	ød	E	Snap ring
20~25	24.5	19.5	2.5	8 -0.04 -0.08	7.6 0 -0.06	0.9 +0.10 0	STW-8
32~40	34	29	2.5	10 -0.04 -0.08	9.6 -0 -0.09	1.15 +0.14 0	STW-9

for CB & Y connector

Code / Tube I.D.	A	B	C	øD d9	ød	E	Snap ring Split pin
20~32-CB, Y	25	19.2	2.9	9 -0.04 -0.08	8.6 0 -0.06	1.15 +0.14 0	STW-9
40-CB	41.2	33.2	4	10 -0.04 -0.08	3.2	–	ø3.2×20L
40-Y	49.7	41.7	4	12 -0.05 -0.09	3.2	–	ø3.2×20L

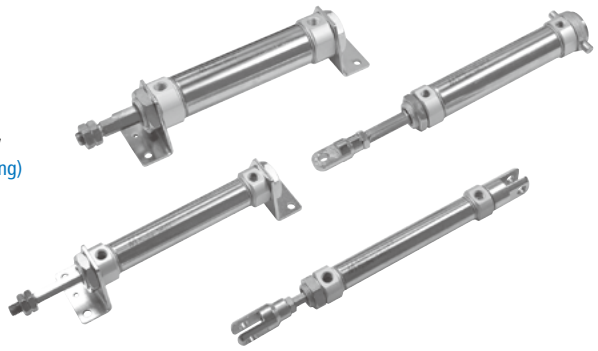
MCKMB series

MINIATURE CYLINDER WITH NON-ROTATING ROD

mindman

Technical data

Caution for safety
(Read before installing)



Features

■ Non lubrication

- Special housing and bushing enables self lubrication of piston rod.

■ High quality long service life

- Cylinder with hexagonal rod design enables non-rotation of rod.
- 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.
- Magnetic as standard

Specification

Model		MCKMB			
Tube I.D. (mm)		20	25	32	40
Port size		Rc1/8			Rc1/4
Medium		Air			
Operating perssure range		0.05~0.7 MPa			
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	0.27	0.4	0.65	1.2
	Cushion air	0.54	0.78	1.27	2.35
Rod non-rotating accuracy		±0.7°		±0.5°	
Allowable rotational torque		2.0 kgf-cm	2.5 kgf-cm	2.5 kgf-cm	4.5 kgf-cm
Sensor switch		RDC, RQC, RCM			
Sensor switch band	R*C	BKC-1 (Not for R*CV angle cable)			
	RCM	BM20	BM25	BM32	BM40

* The cylinder is allowed little leakage. Before the cylinder is sale, it has passed the standard of leakage test.

Table for standard stroke

Tube I.D.	Stroke (mm)	Max. stroke (mm)
ø20	25,50,75,100,125, 150,200,250,300	300
ø25,32,40		500

* Intermediate stroke are available, please contact us.

Tightening torque

Tube I.D.	Rod thread	Tightening torque (kgf·cm)
ø20	M8×1.25	100
ø25,32	M10×1.25	190
ø40	M14×1.5	540

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

Order example

MCKMB — 11 — 40 — 50 — A — N — G

- MODEL
- 1: Single rod
- TUBE I.D.
- STROKE
- Blank: Cushion pad (Unadjustable)
  A: Cushion air (Adjustable) ⚠
- PORT THREAD
  Blank: Rc thread
  G: G thread
  NPT: NPT thread

STYLE

Code		Symbol	Description
1	1		Double acting / Male thread

END COVER TYPE

Code	Symbol	Description
Blank		Standard type
N		End-plain
E		With pivot type

⚠ Caution

- For (**A**) Cushion air (Adjustable) (Fig.1)

1. 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.
2. If the needle valve loosen excessively, the buffer doesn't take effect and the lifetime of cylinder would be shortened.

- Please don't attempt to rotate the piston rod. (Fig.2)

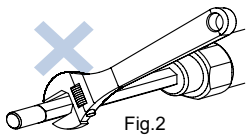


Fig.2

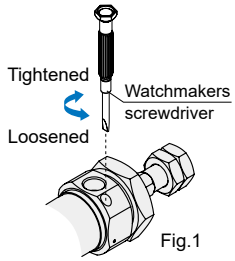


Fig.1

Accessories & Connector

Code	Accessories					
	LB (LB×2, with cover nut ×1)	LB (LB×1, without cover nut)	NUT		CA	CB
Cover type	Standrad type	End-plain (N) With pivot type (E)	–		Standrad type	
Mounting / Tube I.D.	with nut		Rod nut	Cover nut		
ø20	LB-M2-20x2	LB-M2-20	NUT-M8x1.25x5Hx13B	NUT-M20x1.5x8Hx26B	CA-M2-20	CB-M2-20
ø25	LB-M2-25x2	LB-M2-25	NUT-M10x1.25x6Hx17B	NUT-M26x1.5x8Hx32B	CA-M2-25	CB-M2-25
ø32						
ø40	LB-M2-40x2	LB-M2-40	NUT-M14x1.5x8Hx22B	NUT-M32x2.0x10Hx41B	CA-M2-40	CB-M2-40

Code	Accessories					Connector	
	FA	FB	SDB (with pin×1 + snap ring×2)	TA	TB	Y	I
Cover type	All applicable	Standard type	With pivot type (E)	All applicable	Standard type	All applicable	
Mounting / Tube I.D.							
ø20	FA-M2-20		SDB-M2-20	TA-M2-20		Y-M2-20	I-M2-20
ø25	FA-M2-25			TA-M2-25		Y-M2-25	I-M2-25
ø32			SDB-M2-32				
ø40	FA-M2-40			TA-M2-40		Y-Q1-40	I-M2-40

Pin

Applicable	Y&I connector	CA&CB accessories	SDB accessories
Code	PIN-Y-P (with split pin / snap ring)	PIN-CB-P (with split pin / snap ring)	PIN-SDB (with split pin)
Fig / Tube I.D.	ø20~ø32 ø40	ø20~ø32 ø40	
ø20	PIN-M2-20-1-P	PIN-M2-20-1-P	PIN-M2-20-2-P
ø25			
ø32			PIN-M2-32-1-P
ø40	PIN-M2-40-2-P	PIN-M2-40-1-P	

* For accessories dimensions, please refer to the MCMB series.

Order example of self-assembled

The tube I.D. ø32 of LB accessories, Y connector and pin.

No.	Order number	Qty
1	LB-M2-25x2	1
2	Y-M2-25	1
3	PIN-M2-20-1-P	1

* To order accessories/ connectors/ pin separately, please place orders separately according to the order codes in the above table.

Order example of factory assembled

⚠ Cylinders and accessories are distinguished by the symbol " + ".

MCKMB – Standard model no. + LB

CYLINDER ACCESSORIES

Cylinder & accessories weight

Cylinder weight

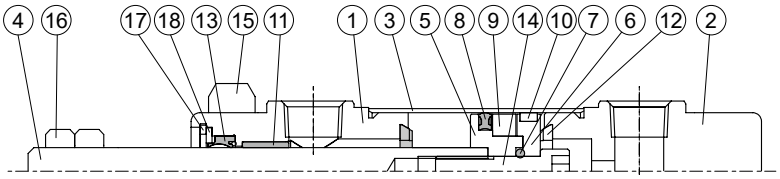
Unit: g

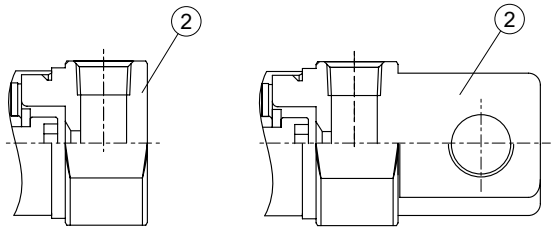
Model	Basic weight MCMB-11	Basic weight MCMB-11-N	Basic weight MCMB-11-E	Basic weight MCMB-11-A	Basic weight MCMB-11-A-N	Basic weight MCMB-11-A-E	Stroke 25 mm MCMB-11-*
Tube I.D.							
ø20	141	130	141	140	129	141	20
ø25	226	207	219	222	203	216	29
ø32	283	264	296	277	259	290	39
ø40	571	537	578	575	541	582	55

Accessories weight

Model	LB	CA	CB	FA/FB	SDB	TA/TB	Y	I	Pin	Rod nut	Cover nut
Tube I.D.											
ø20	122	53	49	66	62	37	53	63	13	4	19
ø25	129	63	69	73	62	47	49	62	13	8	23
ø32	129	63	69	73	140	47	49	62	13	8	23
ø40	207	162	168	124	140	94	230	164	43	16	50

Cushion pad Unadjustable





N type **E** type

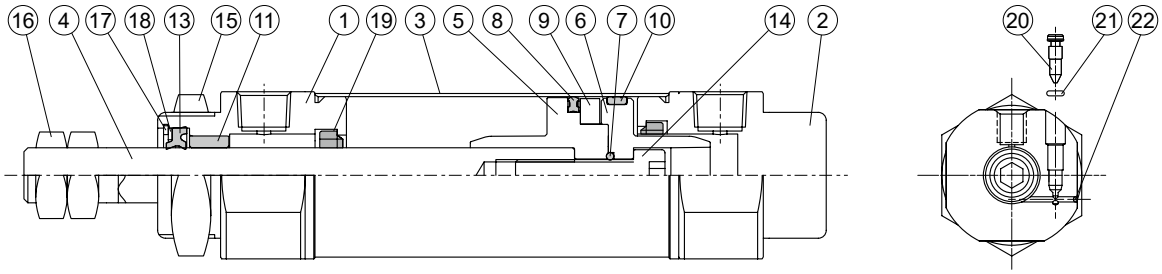
Order example of component parts

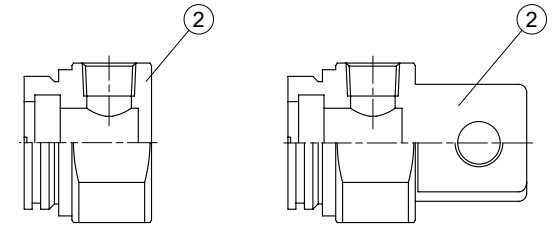
Tube I.D.	Cushion pad
ø20	**CP-MCKMB-20-□**
ø25	**CP-MCKMB-25-□**
ø32	**CP-MCKMB-32-□**
ø40	**CP-MCKMB-40-□**

Tube I.D.	Cushion air
ø20	**CP-MCKMB-20A-□**
ø25	**CP-MCKMB-25A-□**
ø32	**CP-MCKMB-32A-□**
ø40	**CP-MCKMB-40A-□**

* □ Port thread: Blank: Rc thread, **G**: G thread, **NPT**: NPT thread

Cushion air Adjustable





N type **E** type

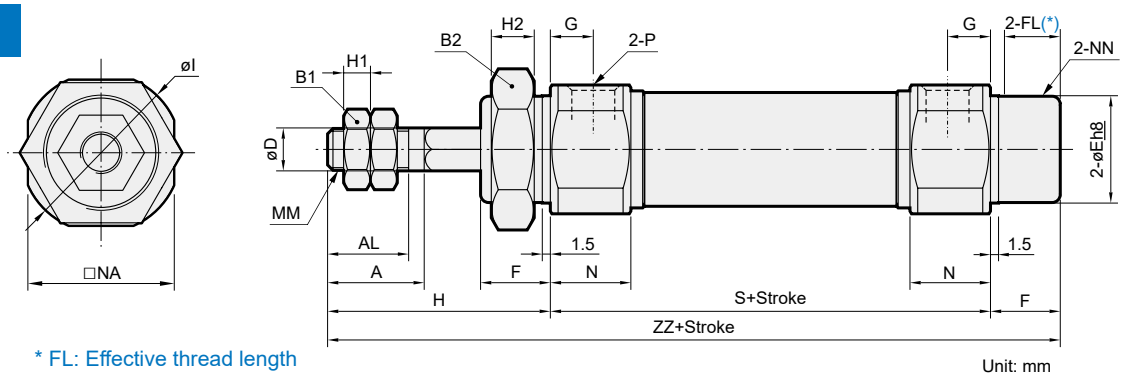
Material

* CP: Component parts (inclusion)

No.	Cushion Pad	Cushion Air	Part name	Material	Q'y	CP * Pad	CP * Air
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	1	●	●
9	●	●	Magnet ring	Magnet material	1	●	●
10	●	●	Wear ring	Resin	1	●	●
11	●	●	Rod bush	Bearing alloy	1	●	●

No.	Cushion Pad	Cushion Air	Part name	Material	Q'y	CP * Pad	CP * Air
12	●		Cushion gasket	NBR	2	●	
13	●	●	Rod packing	NBR	1	●	●
14	●	●	Piston bolt	SCM	1	●	●
15	●	●	Tie nut	Carbon steel	1	●	●
16	●	●	Rod front nut	Carbon steel	2	●	●
17	●	●	Snap ring	Spring steel	1	●	●
18	●	●	Washer	Carbon steel	1	●	●
19		●	Cushion packing	NBR	2		●
20		●	Needle valve packing	NBR	2		●
21		●	Needle valve	Carbon steel	2		●
22		●	Steel ball	Stainless steel	2		●

11

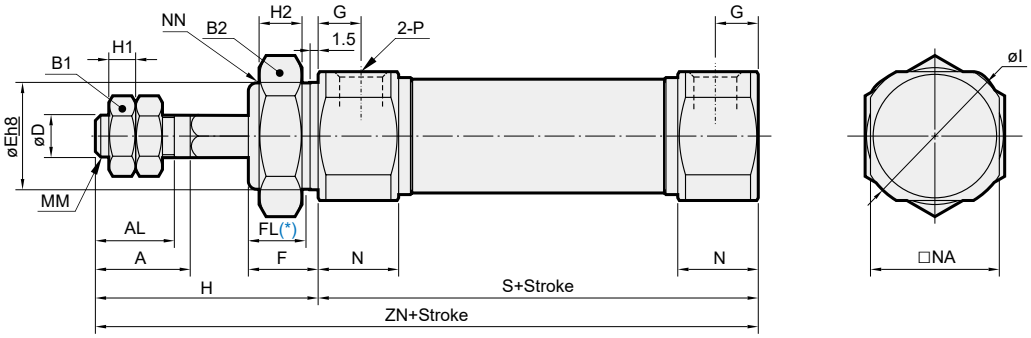


* FL: Effective thread length

Unit: mm

Code / Tube I.D.	A	AL	B1	B2	D	E	F	FL	G	H	H1	H2	I	MM	N	NA	NN	P	S	ZZ
20	18	15.5	13	26	8	20 $^{0}_{-0.03}$	13	10.5	8	41	5	8	28	M8×1.25	15	24	M20×1.5	Rc1/8	62	116
25	22	19.5	17	32	10	26 $^{0}_{-0.03}$	13	10.5	8	45	6	8	33.5	M10×1.25	15	30	M26×1.5	Rc1/8	62	120
32	22	19.5	17	32	12	26 $^{0}_{-0.03}$	13	10.5	8	45	6	8	37.5	M10×1.25	15	34.5	M26×1.5	Rc1/8	64	122
40	24	21	22	41	14	32 $^{0}_{-0.04}$	16	13.5	11	50	8	10	46.5	M14×1.5	21.5	42.5	M32×2.0	Rc1/4	88	154

N

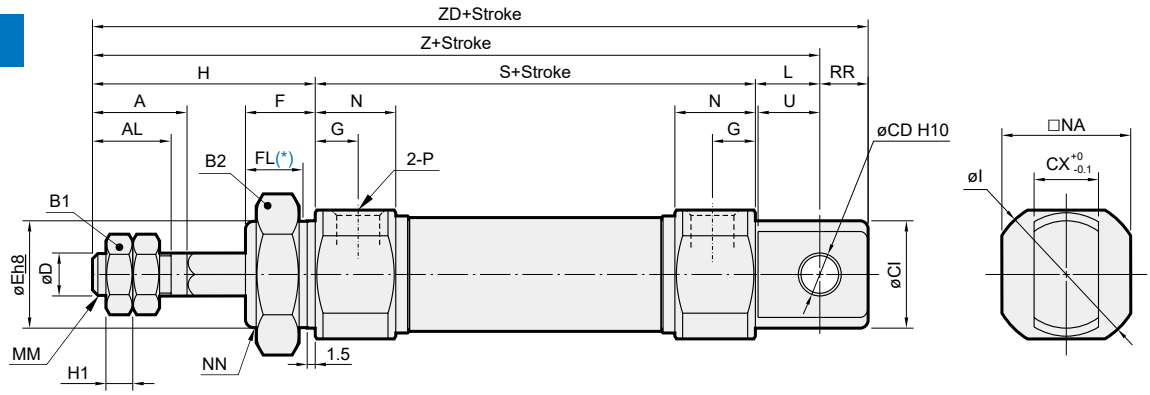


* FL: Effective thread length

Unit: mm

Code / Tube I.D.	A	AL	B1	B2	D	E	F	FL	G	H	H1	H2	I	MM	N	NA	NN	P	S	ZN
20	18	15.5	13	26	8	20 $^{0}_{-0.03}$	13	10.5	8	41	5	8	28	M8×1.25	15	24	M20×1.5	Rc1/8	62	103
25	22	19.5	17	32	10	26 $^{0}_{-0.03}$	13	10.5	8	45	6	8	33.5	M10×1.25	15	30	M26×1.5	Rc1/8	62	107
32	22	19.5	17	32	12	26 $^{0}_{-0.03}$	13	10.5	8	45	6	8	37.5	M10×1.25	15	34.5	M26×1.5	Rc1/8	64	109
40	24	21	22	41	14	32 $^{0}_{-0.04}$	16	13.5	11	50	8	10	46.5	M14×1.5	21.5	42.5	M32×2.0	Rc1/4	88	138

E



* FL: Effective thread length

Unit: mm

Code / Tube I.D.	A	AL	B1	B2	CD	CX	CI	D	E	F	FL	G	H	H1	I	L	MM	N	NA	NN	P	RR	S	U	Z	ZD
20	18	15.5	13	26	8	12	20	8	20 $^{0}_{-0.03}$	13	10.5	8	41	5	28	12	M8×1.25	15	24	M20×1.5	Rc1/8	9	62	11.5	115	124
25	22	19.5	17	32	8	12	22	10	26 $^{0}_{-0.03}$	13	10.5	8	45	6	33.5	12	M10×1.25	15	30	M26×1.5	Rc1/8	9	62	11.5	119	128
32	22	19.5	17	32	10	20	27	12	26 $^{0}_{-0.03}$	13	10.5	8	45	6	37.5	15	M10×1.25	15	34.5	M26×1.5	Rc1/8	12	64	14.5	124	136
40	24	21	22	41	10	20	33	14	32 $^{0}_{-0.04}$	16	13.5	11	50	8	46.5	15	M14×1.5	21.5	42.5	M32×2.0	Rc1/4	12	88	14.5	153	165

MCMBL series

END LOCK CYLINDER

mindman

Technical data

Caution for safety
(Read before installing)

End lock type

Features

- Cylinder remains same position when it reaches either end of stroke even if the input air source is gone.

■ Non lubrication

- Self-lubricating bush provides longer service life.

■ High quality long service life

- Stainless steel cylinder tubes for better corrosion resistance.

■ Magnetic as standard

Specification

Model		MCMBL	
Tube I.D. (mm)		32	40
Port size		Rc1/8	Rc1/4
Medium		Air	
Max. operating perssure		1 MPa	
Min. operating perssure		0.15 MPa	
Proof pressure		1.5 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	0.29	0.53
	Cushion air	0.32	0.59
Lock unit backlash		2 mm or less	
Sensor switch		RDC, RQC, RCM	
Sensor switch band	R*C	BKC-1 (Not for R*CV angle cable)	
	RCM	BM32	BM40

Table for standard stroke

Tube I.D.	Stroke (mm)
ø32, 40	25,50,75,100,125,150,200,250,300

Order example

MCMBL — 11 — 40 — 100 — AR — G

MODEL | 1: Single rod | TUBE I.D. | STROKE | PORT THREAD (Blank: Rc thread, **G**: G thread, **NPT**: NPT thread)

STYLE

Code		Symbol	Description	
1	1		Double acting / Male thread	Rod cover
				Head cover

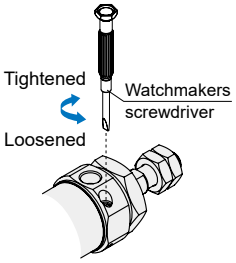
Blank: Cushion pad (Unadjustable)
A: Cushion air (Adjustable) ⚠

END LOCK TYPE
R: Rod cover
H: Head cover

⚠ Caution

For (**A**) Cushion air (Adjustable)

1. 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.
2. If the needle valve loosen excessively, the buffer doesn't take effect and the lifetime of cylinder would be shortened.



Accessories & Connector

	Accessories				
Code	LB (LB×2, with cover nut ×1)	NUT		CA	CB
Mounting / Tube I.D.	with nut	Rod nut	Cover nut		
ø32	LB-M2-25x2	NUT-M10x1.25x6Hx17B	NUT-M26x1.5x8Hx32B	CA-M2-25	CB-M2-25
ø40	LB-M2-40x2	NUT-M14x1.5x8Hx22B	NUT-M32x2.0x10Hx41B	CA-M2-40	CB-M2-40

	Accessories				Connector	
Code	FA	FB	TA	TB	Y	I
Mounting / Tube I.D.						
ø32	FA-M2-25		TA-M2-25		Y-M2-25	I-M2-25
ø40	FA-M2-40		TA-M2-40		Y-Q1-40	I-M2-40

Pin

Applicable	Y&I connector	CA&CB accessories
Code	PIN-Y-P (with split pin / snap ring)	PIN-CB-P (with split pin / snap ring)
Fig / Tube I.D.	ø32 ø40	ø32 ø40
ø32	PIN-M2-20-1-P	PIN-M2-20-1-P
ø40	PIN-M2-40-2-P	PIN-M2-40-1-P

Order example of self-assembled

The tube I.D. ø32 of LB accessories, Y connector and pin.

No.	Order number	Qty
1	LB-M2-25x2	1
2	Y-M2-25	1
3	PIN-M2-20-1-P	1

* To order accessories/ connectors/ pin separately, please place orders separately according to the order codes in the above table.

Order example of factory assembled

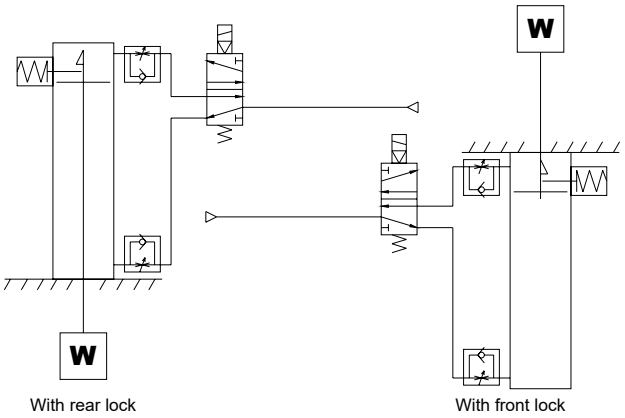
⚠ Cylinders and accessories are distinguished by the symbol " + ".

MCMBL — Standard model no. + LB

CYLINDER ACCESSORIES

Use recommended air pressure circuit

❶ The circuit layout must be settled properly. The recommended circuit design is shown below.



Precautions

❶ Do not use 3-way solenoid valves. The cylinder cannot be locked when compressed air is trapped in the lock side port. And the lock may be released due to the air leakage of solenoid valve, even it was locked successfully.

❷ Do not adjust or mount the cylinder when the lock is on.

❸ The operation load do not exceed 50% of the cylinder maximum output.

❹ Do not operate a workpiece with multiple end-lock cylinders simultaneously.

❺ Use an one-way speed control valve with meter-out circuit layout design. The lock cannot be released when the circuit layout is meter-in design.

❻ Operate the lock only when the cylinder is at the either end-position of stroke.

❼ The air supply must be higher than 0.15 MPa to operate the lock.

❽ The lock will be on when automatically when the pressure of the lock is lower than 0.1 MPa or less.

❾ There are many conditions that will cause the exhaust speed to reduce. The examples are shown below.

ⓐ When the exhausting route length is too long.

ⓑ When the one-way speed control valve is too far from cylinder port.

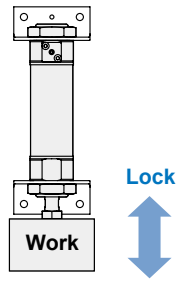
ⓒ When the silencer of the solenoid valve is blocked or clogged.

❿ When the cushion needle is fully closed, the piston rod may not be able to reach the end of its stroke. When the cushion needle is fully closed and the cylinder is locked, the lock may not be able to be released.

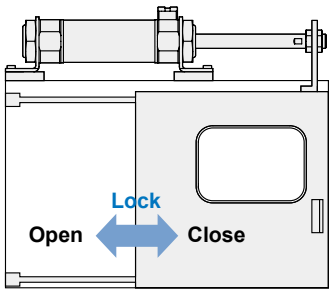
Maintains the cylinder's original position even if the air supply is interrupted.

Prevention of dropping at the rising end

With rear lock



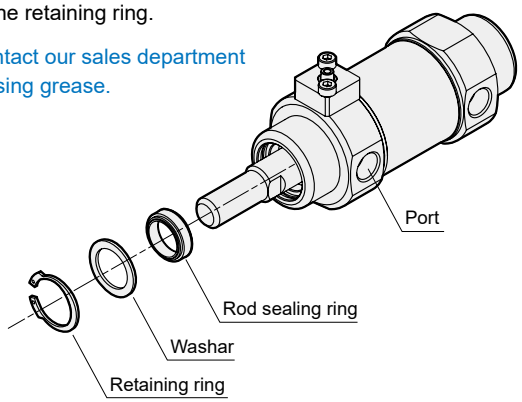
Locking of door With front lock



The replacement of rod sealing ring

ⓐ Remove the retaining ring.
ⓑ Take out the washer and clean it.
ⓒ Take out the rod sealing ring.
ⓓ Lubricate the new rod sealing ring and piston rod with grease.
ⓔ Put in the new rod sealing ring.
ⓕ Put in the washer.
ⓖ Install the retaining ring.

Please contact our sales department for purchasing grease.



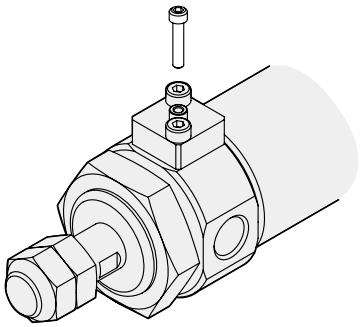
Manual Lock Releasing

❶ Install a bolt into the locking rod and pull it up by hands. When your hands release, the locking rod will move back by spring force and continue locking.

The bolt size, inner spring pulling force and the stroke of locking rod are listed below.

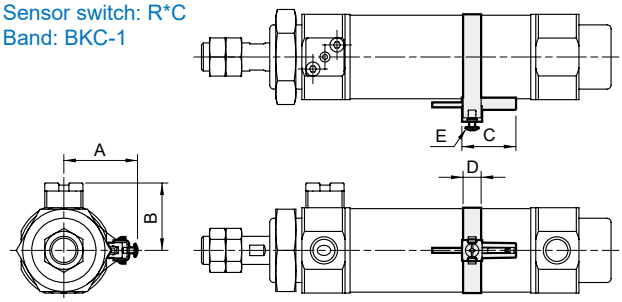
MODEL	Thread size	Pulling force	Stroke (mm)
MCMBL-32	M2.5×0.45×25 ℓ	4.9 N	2
MCMBL-40	M3×0.5×30 ℓ	10.0 N	3

❷ The bolt must be uninstalled after manual lock releasing, or the weight of bolt may cause some performance problems of the lock.

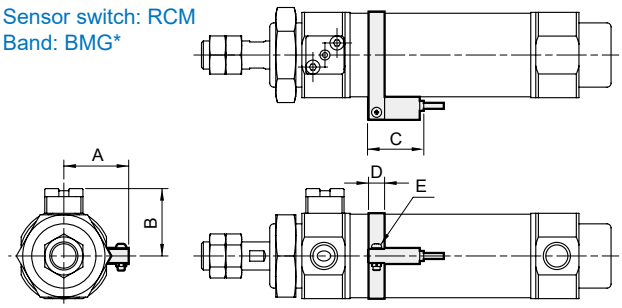


Installation of sensor switch

Sensor switch: R*C
Band: BKC-1



Sensor switch: RCM
Band: BMG*

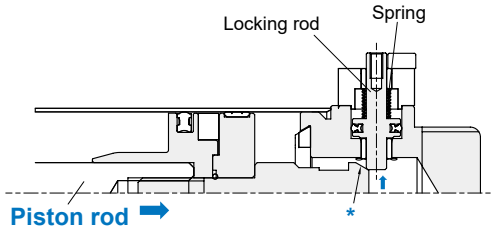


Code / Tube I.D.	Sensor switch	Band	A	B	C	D	E
32	RDC, RQC	BKC-1	33	28	27	9	M3×6L
	RCM	BM32	28.3	27.6	28	9	M3×16L
40	RDC, RQC	BKC-1	37	34.5	27	9	M3×6L
	RCM	BM40	32.3	33.6	28	9	M3×16L

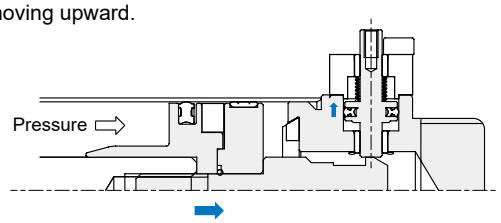
Working Principle

● Both front locking type and rear locking type have the same mechanism. The pictures below shows that how a rear locking type cylinder works.

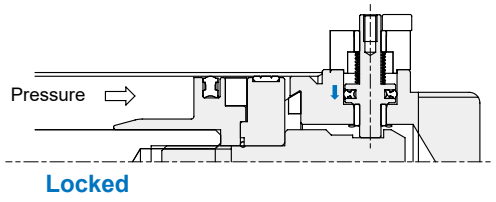
❶ When the air pressure is input from front cap, the piston will move backward. After the piston nears the end of the stroke, the slope of chamfered rod (the position of *mark) will touch the locking rod.



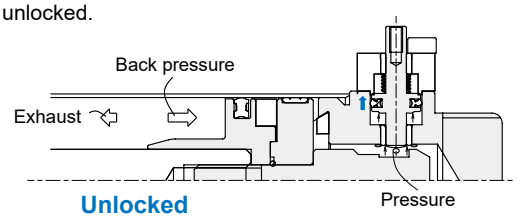
❷ The locking rod will be guided with the slope and keeps moving upward.



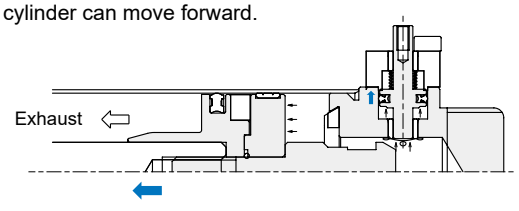
❸ The locking rod will be pushed into the locking slot of the piston rod by the spring force. At this time, the cylinder is locked.



❹ When the air pressure is input from rear cap, the piston will start moving forward. At the same time, the locking rod will be pushed up by the compressed air and make the piston rod unlocked.

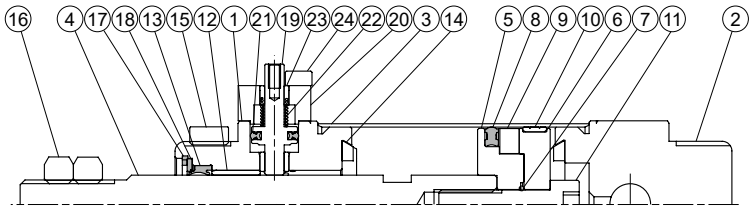


❺ As the locking rod is no longer locking the piston rod, the cylinder can move forward.

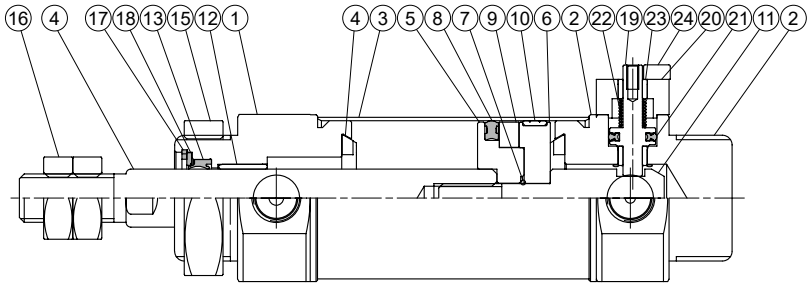


Cushion pad Unadjustable

R

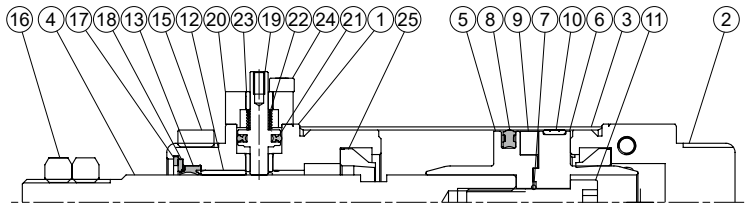


H

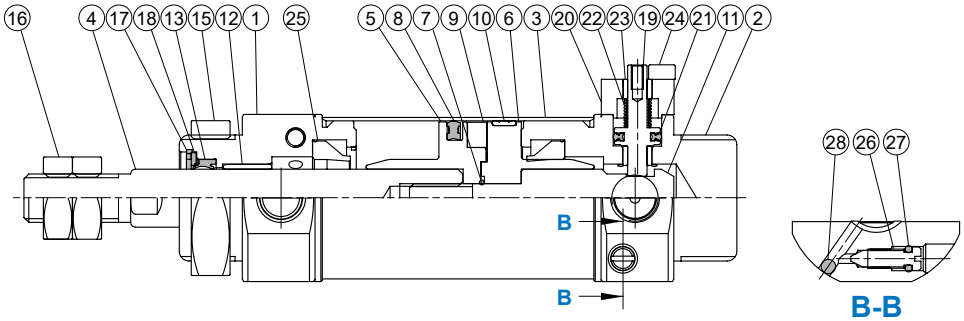


Cushion air Adjustable

AR



AH

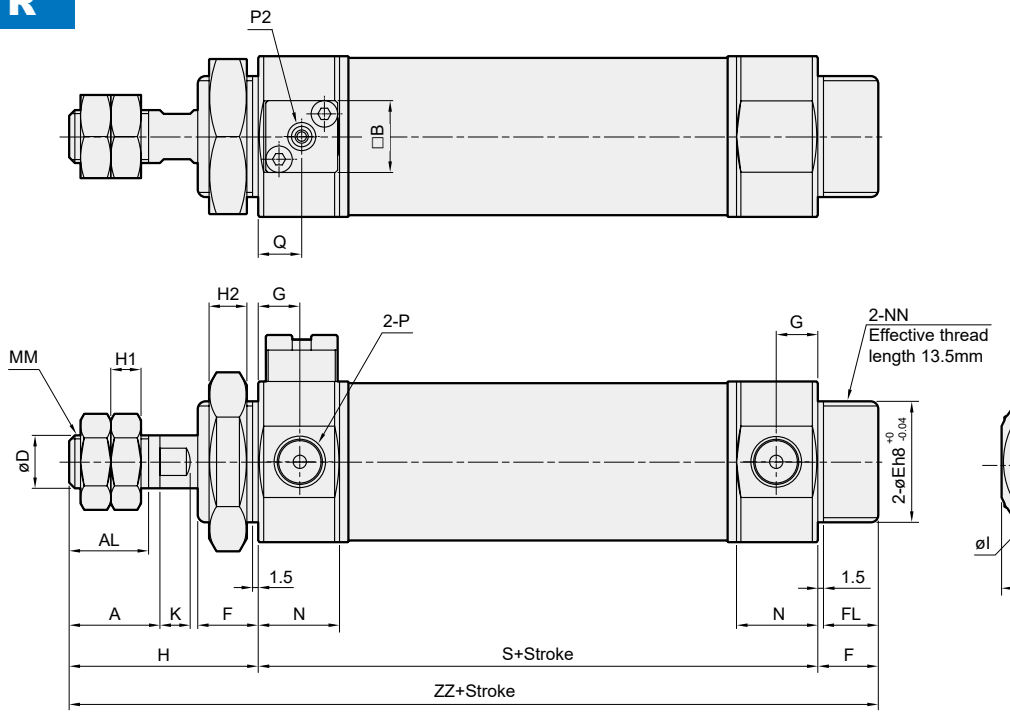


Material

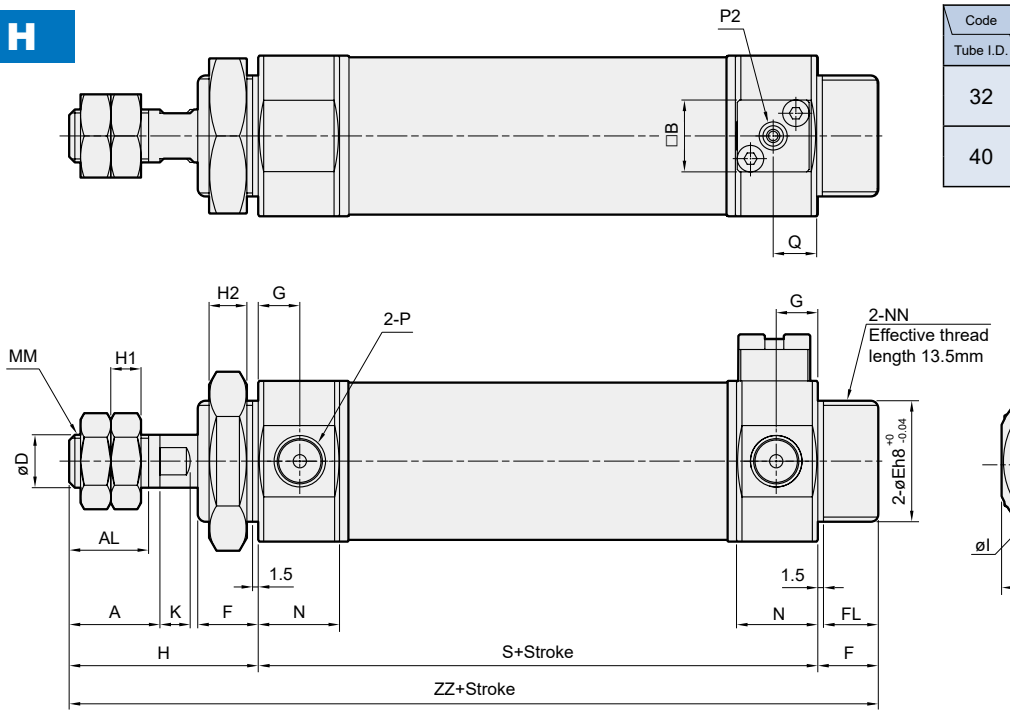
No.	Cushion		Part name	Material	Q'y
	Pad	Air			
1	●	●	Rod cover	Aluminum alloy	1
2	●	●	Head cover	Aluminum alloy	1
3	●	●	Tube	Stainless steel	1
4	●	●	Piston rod	Carbon steel	1
5	●	●	Piston-R	Aluminum alloy	1
6	●	●	Piston-H	Aluminum alloy	1
7	●	●	O-ring	NBR	1
8	●	●	Piston packing	NBR	1
9	●	●	Magnet ring	Magnet	1
10	●	●	Wear ring	Resin	1
11	●	●	Piston bolt	Carbon steel	1
12	●	●	Rod bush	Bearing alloy	1
13	●	●	Rod sealing ring	HNBR	1
14	●		Cushion gasket	NBR	2

No.	Cushion		Part name	Material	Q'y
	Pad	Air			
15	●	●	Cover nut	Carbon steel	1
16	●	●	Nut	Carbon steel	2
17	●	●	Retaining ring	Spring steel	1
18	●	●	Washer	Carbon steel	1
19	●	●	Lock piston	Carbon steel	1
20	●	●	Holder	Aluminum alloy	1
21	●	●	Piston packing	NBR	1
22	●	●	Spring	SWP	1
23	●	●	DU bush	–	2
24	●	●	Bolt	Carbon steel	2
25		●	Cushion ring	NBR	2
26		●	Cushion needle valve	Carbon steel	2
27		●	O-ring	NBR	2
28		●	Steel ball	Stainless steel	2

R



H



Code / Tube I.D.	End lock	S		ZZ	
		Pad	Air	Pad	Air
32	R	64	75	122	133
	H	64	72	122	130
40	R	88	96	154	162
	H	88	93	154	159

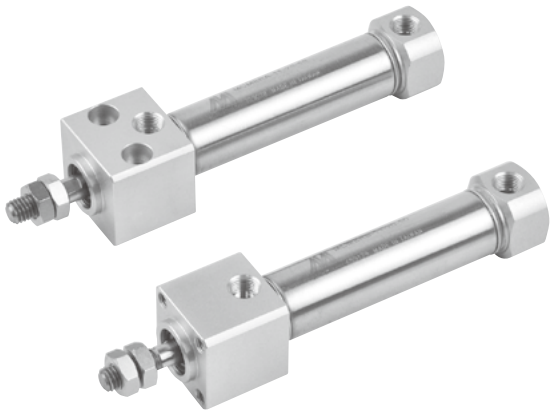
Code / Tube I.D.	A	B	AL	D	E	F	FL	G	H	H1	H2	I	K	MM	N	NA	NB	NN	P	P1	P2	Q
32	22	15	19.5	12	26	13	11.5	8	45	6	8	37.5	6.5	M10×1.25	15	34.5	44.8	M26×1.5	Rc1/8	10.3	M2.5×0.45	8
40	24	19	21	14	32	16	14.5	11	50	8	10	46.5	7	M14×1.5	21.5	42.5	54.8	M32×2.0	Rc1/4	12.3	M3×0.5	11.5

MCMBR* series

MINIATURE CYLINDER

mindman

Technical data
Caution for safety
(Read before installing)



Features

■ Compact type

The cylinder can be directly mounted without bracket (You have bracket) the overall length is shorter and so it will fit into a more confined space. This gives the benefit of saving space when installing the cylinder.

■ Improved strength and accuracy of installation.

■ Two installation methods.

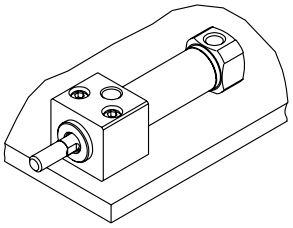
Cylinder can be front mounted or mounted from underneath.

■ Magnetic as standard.

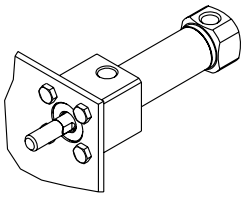
Specification

Model		MCMBRA, MCMBRB			
Tube I.D. (mm)		ø20	ø25	ø32	ø40
Port size		Rc1/8			Rc1/4
Medium		Air			
Max. operating perssure		1 MPa			
Min. operating perssure		0.05 MPa			
Proof pressure		1.5 MPa			
Lubrication		Not required			
Ambient temperature		-5~+60°C (No freezing)			
Available speed range		50~750 mm/sec			
Max. allowable kinetic energy (J)	Cushion pad	0.12	0.18	0.29	0.53
	Cushion air	0.14	0.20	0.32	0.59
Sensor switch		RDC, RQC, RCM			
Sensor switch band	R*C	BKC-1 (Not for R*CV angle cable)			
	RCM	BM20	BM25	BM32	BM40

Mounting



A: Bottom mounting



B: Front mounting

Table for standard stroke

Tube I.D.	Stroke (mm)	Max. stroke (mm)
ø20,25,32,40	25,50,75,100,125, 150,200,250,300	900

* Intermediate stroke are available, please contact us.

Accessories

Code	NUT
Mounting / Tube I.D.	Rod nut
ø20	NUT-M8x1.25x5Hx13B
ø25	NUT-M10x1.25x6Hx17B
ø32	
ø40	NUT-M14x1.5x8Hx22B

Order example

MCMBRA — 11 — 25 — 100 — A — G

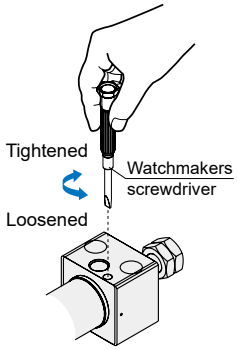
- MODEL
- 1: Single rod
- TUBE I.D.
- STROKE
- PORT THREAD
  - Blank: Rc thread
  - **G**: G thread
  - **NPT**: NPT thread
- MOUNTING
  - **A**: Bottom mounting
  - **B**: Front mounting
- Blank: Cushion pad (Unadjustble)
  A: Cushion air (Adjustable) ⚠
- STYLE

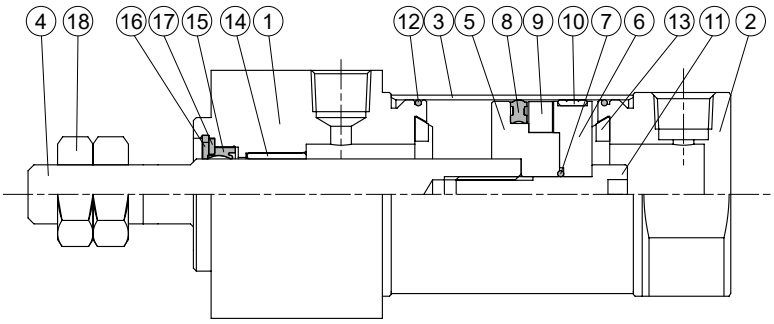
Code		Symbol	Description
1	1		Double acting / Male thread

⚠ Caution

For (**A**) Cushion air (Adjustable)

1. 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.
2. If the needle valve loosen excessively, the buffer doesn't take effect and the lifetime of cylinder would be shortened.





Material

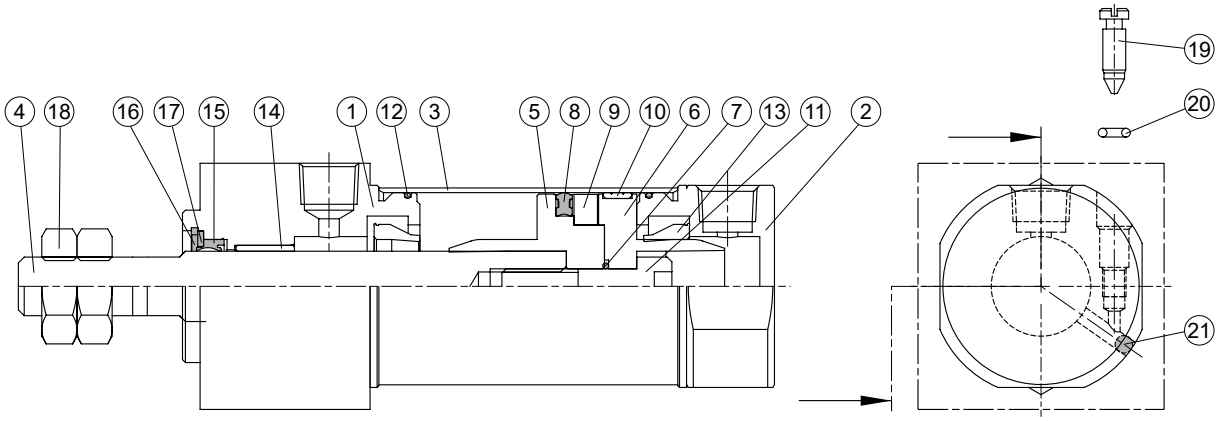
No.	Tube I.D. / Part name	20	25	32	40	Q'y	Component parts (inclusion)
1	Rod cover	Aluminum alloy				1	●
2	Head cover	Aluminum alloy				1	●
3	Tube	Stainless steel				1	
4	Piston rod	Carbon steel				1	
5	Piston-R	Aluminum alloy				1	●
6	Piston-H	Aluminum alloy				1	●
7	Piston gasket	NBR				1	●
8	Piston packing	NBR				1	●
9	Magnet ring	Magnet material				1	●
10	Wear ring	Resin				1	●
11	Piston bolt	SCM				1	●
12	Cover ring *1	–		NBR		2	●
13	Cushion gasket	NBR				2	●
14	Rod bush	Bearing alloy				1	●
15	Rod packing *2	NBR				1	●
16	Snap ring	Spring steel				1	●
17	Washer	Carbon steel				1	●
18	Rod front nut	Carbon steel				2	●

*1. This part is not available for short strokes
[Short stroke range ø32: 400mm or less (inclusive), ø40: 300mm or less (inclusive)].
*2. Only the rod packing is repairable, please contact our sales if needed.

Order example of component parts

Tube I.D.	Component parts
ø20	**CP-MCMBRA-20-☐**
	CP-MCMBRB-20-☐
ø25	**CP-MCMBRA-25-☐**
	CP-MCMBRB-25-☐
ø32	**CP-MCMBRA-32-☐**
	CP-MCMBRB-32-☐
ø40	**CP-MCMBRA-40-☐**
	CP-MCMBRB-40-☐

* ☐ Port thread: Blank: Rc thread, **G**: G thread, **NPT**: NPT thread



Material

No.	Tube I.D. / Part name	20	25	32	40	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	Carbon steel				1	
5	Piston-R	Aluminum alloy				1	●
6	Piston-H	Aluminum alloy				1	●
7	Piston gasket	NBR				1	●
8	Piston packing	NBR				1	●
9	Magnet ring	Magnet material				1	●
10	Wear ring	Resin				1	●
11	Piston bolt	SCM				1	●
12	Cover ring *1	–		NBR		2	●
13	Cushion gasket	NBR				2	●
14	Rod bush	Bearing alloy				1	●
15	Rod packing *2	NBR				1	●
16	Snap ring	Spring steel				1	●
17	Washer	Carbon steel				1	●
18	Rod front nut	Carbon steel				2	●
19	Needle valve	Stainless steel		Carbon steel		2	●
20	Needle valve packing	NBR				2	●
21	Steel ball	Stainless steel				2	●

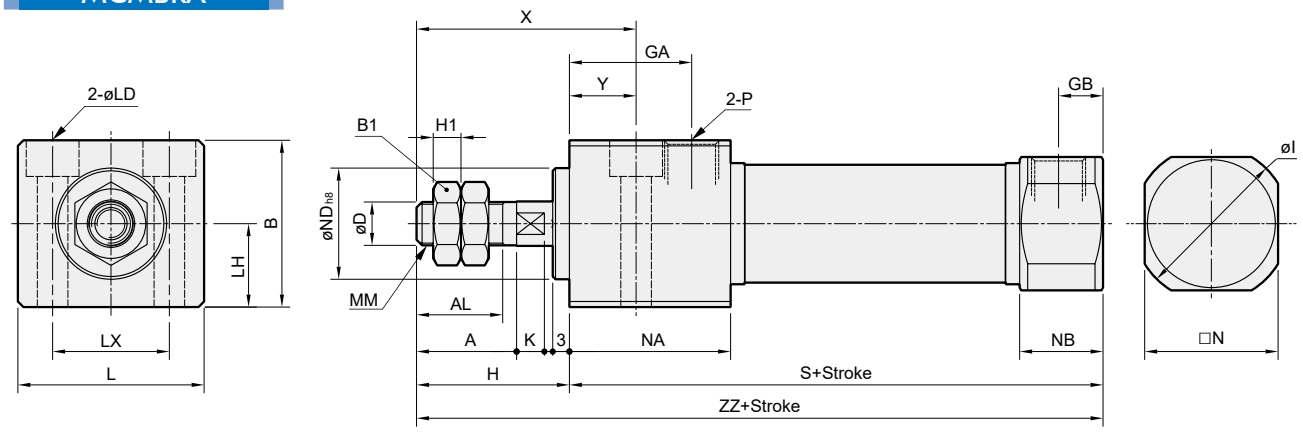
*1. This part is not available for short strokes
[Short stroke range ø32: 400mm or less (inclusive), ø40: 300mm or less (inclusive)].
*2. Only the rod packing is repairable, please contact our sales if needed.

Order example of component parts

Tube I.D.	Component parts
ø20	**CP-MCMBRA-20A-☐**
	CP-MCMBRB-20A-☐
ø25	**CP-MCMBRA-25A-☐**
	CP-MCMBRB-25A-☐
ø32	**CP-MCMBRA-32A-☐**
	CP-MCMBRB-32A-☐
ø40	**CP-MCMBRA-40A-☐**
	CP-MCMBRB-40A-☐

* ☐ Port thread: Blank: Rc thread, **G**: G thread, **NPT**: NPT thread

MCMBRA

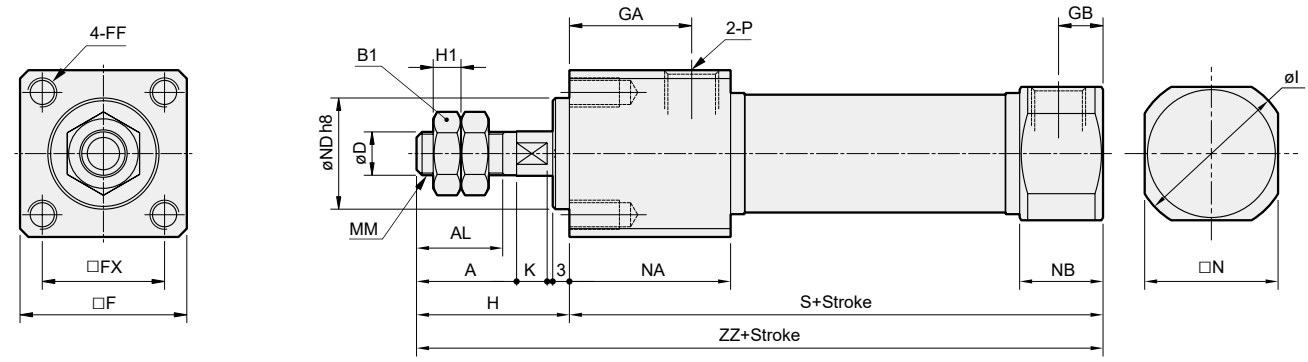


Unit: mm

Code / Tube I.D.	A	AL	B	B1	D	GA	GB	H	H1	I	K	L	LD	LH	LX	MM	N	NA	NB	ND
20	18	15.5	30	13	8	22	8	27	5	28	5	33.5	ø5.5thru,ø9.5×6.5depth	15	21	M8×1.25	24	29	15	20 $^{0}_{-0.033}$
25	22	19.5	36	17	10	22	8	31	6	33.5	5	39	ø6.6thru,ø11×7.5depth	18	25	M10×1.25	30	29	15	26 $^{0}_{-0.033}$
32	22	19.5	42	17	12	22	8	31	6	37.5	5.5	47	ø9thru,ø14×10depth	21	30	M10×1.25	34.5	29	15	26 $^{0}_{-0.033}$
40	24	21	52	22	14	27	11	34	8	46.5	7	58.5	ø11thru,ø17.5×12.5depth	26	38	M14×1.5	42.5	37.5	21.5	32 $^{0}_{-0.039}$

Code / Tube I.D.	P	S	X	Y	ZZ
20	Rc1/8	76	39	12	103
25	Rc1/8	76	43	12	107
32	Rc1/8	78	43	12	109
40	Rc1/4	104	49	15	138

MCMBRB

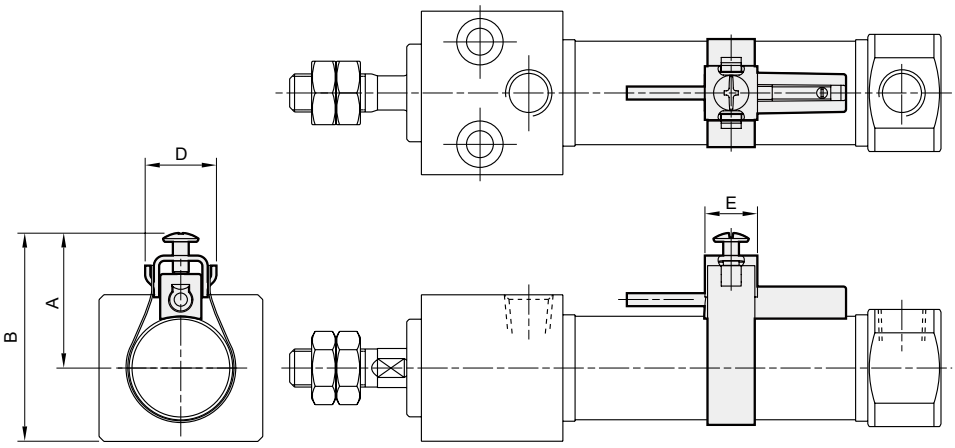


Unit: mm

Code / Tube I.D.	A	AL	B1	D	F	FF	FX	GA	GB	H	H1	I	K	MM	N	NA	NB	ND	P	S	ZZ
20	18	15.5	13	8	30	M5×0.8×9depth	22	22	8	27	5	28	5	M8×1.25	24	29	15	20 $^{0}_{-0.033}$	Rc1/8	76	103
25	22	19.5	17	10	36	M6×1.0×11depth	26	22	8	31	6	33.5	5	M10×1.25	30	29	15	26 $^{0}_{-0.033}$	Rc1/8	76	107
32	22	19.5	17	12	42	M6×1.0×11depth	30	22	8	31	6	37.5	5.5	M10×1.25	34.5	29	15	26 $^{0}_{-0.033}$	Rc1/8	78	109
40	24	21	22	14	52	M8×1.25×14depth	36	27	11	34	8	46.5	7	M14×1.5	42.5	37.5	21.5	32 $^{0}_{-0.039}$	Rc1/4	104	138

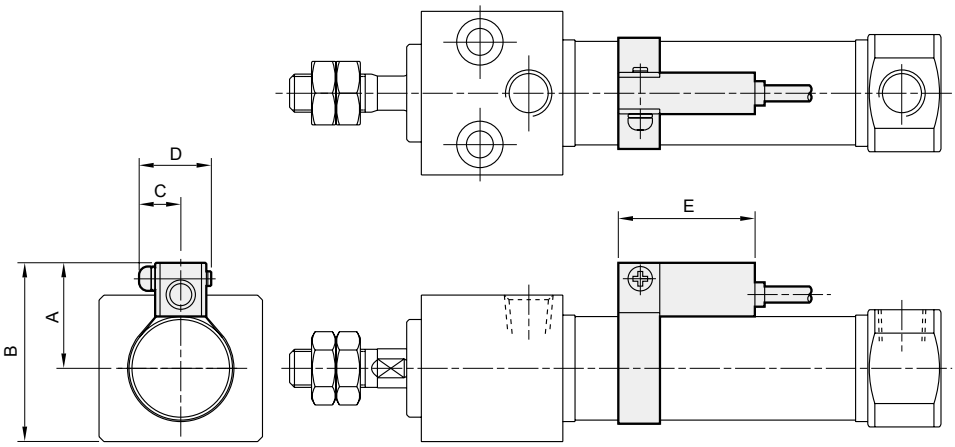
Sensor switch: R*C
Band: BKC-1

Code / Tube I.D.	A	B	D	E
20	26.5	41.5	13.5	27
25	29	47	13.5	27
32	33	54	13.5	27
40	37	63	13.5	27



Sensor switch: RCM
Band: BM**

Code / Tube I.D.	A	B	C	D	E
20	22	37	10	16	28
25	25	43	10	16	28
32	28	50	10	16	28
40	32	59	10	16	28

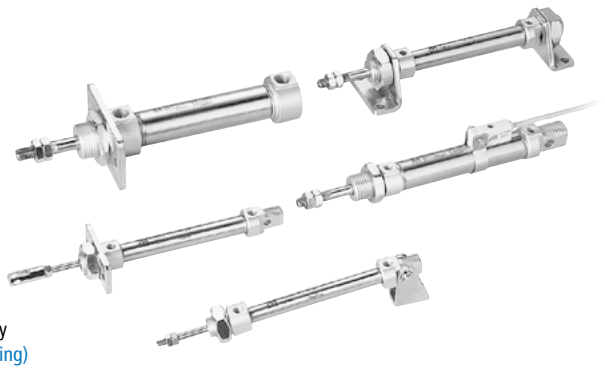


Special spec

Rod end shape

Technical data

Caution for safety
(Read before installing)



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

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.

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			–	
	Single acting 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*CV 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

MCMI — 11 — 16 — 100 — A — N

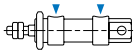
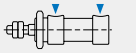
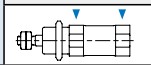
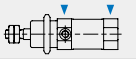
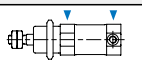
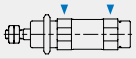
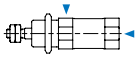
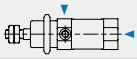
- MODEL
- **1**: Single rod, **2**: Double rod
- TUBE I.D.
- STROKE
- Blank: Cushion pad (Unadjustable), **A**: Cushion air (Adjustable) ⚠ (*)
  * ø8~12 not applicable.

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 Please mark "adjustable stroke" at order list	

* Single acting type, please contact us.

COVER TYPE

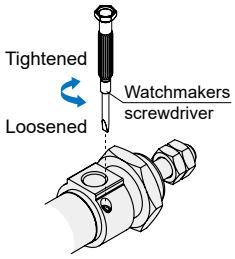
Code	Symbol	Description	Port position	Tube I.D.
□		Standard type	Standard	ø8~ø25
N		Non-pivot type		
		Non-pivot type		ø32~ø40
R		Rod trunnion / Non-pivot type		
H		Head trunnion / Non-pivot type		
F		Head foot type		
C		Non-pivot type	Axial port	
RC		Rod trunnion / Non-pivot type		

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

⚠ Caution

For (**A**) Cushion air (Adjustable)

1. 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.
2. If the needle valve loosen excessively, the buffer doesn't take effect and the lifetime of cylinder would be shortened.



Accessories & Connector

Accessories — □ : Standard type

Code	LB (LB×2, with cover nut ×1)		LB (LB×1, without cover nut)		NUT	
Cover type	□	F	N	R, H, C, RC	–	
Mounting / Tube I.D.	with nut	with nut			Rod nut	Cover nut
ø8	LB-M3-8x2	–	LB-M3-8	–	NUT-M4x0.7x3.2Hx7B	NUT-M12x1.25x6Hx19B
ø10						
ø12	LB-M3-12x2	–	LB-M3-12	–	NUT-M6x1.0x5Hx10B	NUT-M16x1.5x8Hx24B
ø16						NUT-M16x1.5x6Hx22B
ø20	LB-M3-20x2	–	LB-M3-20	–	NUT-M8x1.25x5Hx13B	NUT-M22x1.5x6Hx30B
ø25					NUT-M10x1.25x6Hx17B	
ø32	–	LB-M3-32x2	LB-M3-32		NUT-M10x1.5x5Hx17B	NUT-M30x1.5x7Hx38B
ø40	–	LB-M3-40x2	LB-M3-40		NUT-M12x1.75x7Hx19B	NUT-M38x1.5x8Hx46B

Code	Accessories: FA	FB	SDB (with pin×1 + snap ring×2)	SDB (with bush + trunnion pin)		Connector: Y	I	YS (Y+Floating pin)
Cover type	□, N	□	□	R, RC	H	All applicable		
Mounting / Tube I.D.								
ø8	FA-M3-8		SDB-M3-8	–	–	Y-M3-8	–	–
ø10				–	–		–	–
ø12	FA-M3-12		SDB-M3-12	–	–	Y-M3-12	I-M3-12	YS-M3-16
ø16				–	–			
ø20	FA-M3-20		SDB-M3-20	–	–	Y-M3-20	I-M3-20	YS-M3-20
ø25				–	–	Y-Q2-32	I-Q2-32	YS-Q2-32
ø32	–		–	SDB-M3-32		Y-M3-32	I-M3-32	YS-M3-32
ø40	–		–	SDB-M3-40		Y-M3-40	I-M3-40	YS-M3-40

Pin

Applicable	YS connector	Y&I connector	SDB connector
Code	PIN-S	PIN-Y-P (with split pin / snap ring)	PIN-SDB-P (with snap ring)
Fig / Tube I.D.		ø8~ø16 ø20~ø40	
ø8	–	PIN-M3-8-2-P	PIN-M3-8-1-P
ø10	–		
ø12	PIN-M3-16-S	PIN-M3-12-2-P	PIN-M3-12-1-P
ø16			
ø20	PIN-M3-20-S	PIN-M3-20-2-P	PIN-M3-20-1-P
ø25	PIN-Q2-32-S	PIN-Q2-32-2-P	
ø32			–
ø40	PIN-Q2-40-S	PIN-Q2-40-2-P	–

Order example of self-assembled

The tube I.D. ø32 of LB accessories, Y connector and pin.

No.	Order number	Qty
1	LB-M3-32x2	1
2	Y-M3-32	1
3	PIN-Q2-32-2-P	1

* To order accessories/ connectors/ pin separately, please place orders separately according to the order codes in the above table.

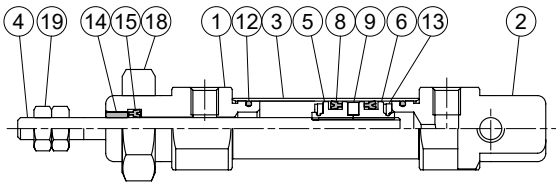
Order example of factory assembled

⚠ Cylinders and accessories are distinguished by the symbol " + ".

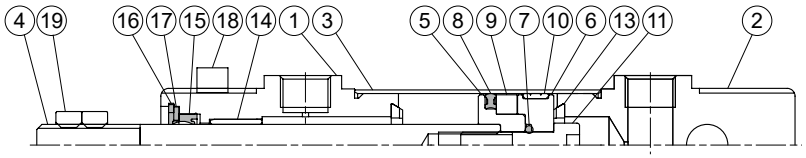
MCMI — Standard model no. + LB

CYLINDER ACCESSORIES

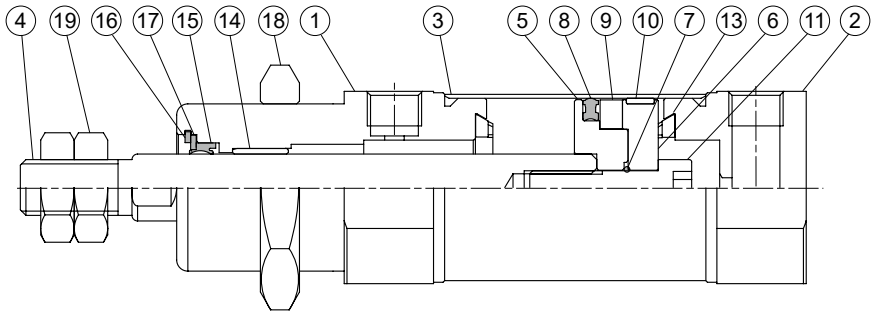
ø8~ø12



ø16~ø25



ø32, ø40



Material

No.	Part name \ Tube I.D.	8	10	12	16	20	25	32	40	Q'y 11 type	Q'y 21 type	Component parts (inclusion) 11 type	Component parts (inclusion) 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	●	●

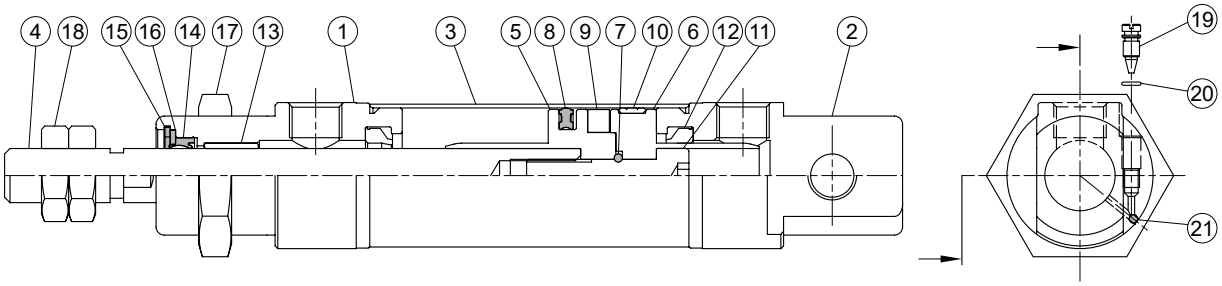
*1. ø8~ø12 (Q'y: 2 pcs) *2. Only the rod packing ø16~ø40 is repairable, please contact our sales if needed.
*3. Style 21 is not suitable for ø8~ø12.

Order example of component parts

CP – MCMI – 2 – 16 – N

- MODEL
- Blank: Single rod, **2**: Double rod
- TUBE I.D.
- 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	●	●

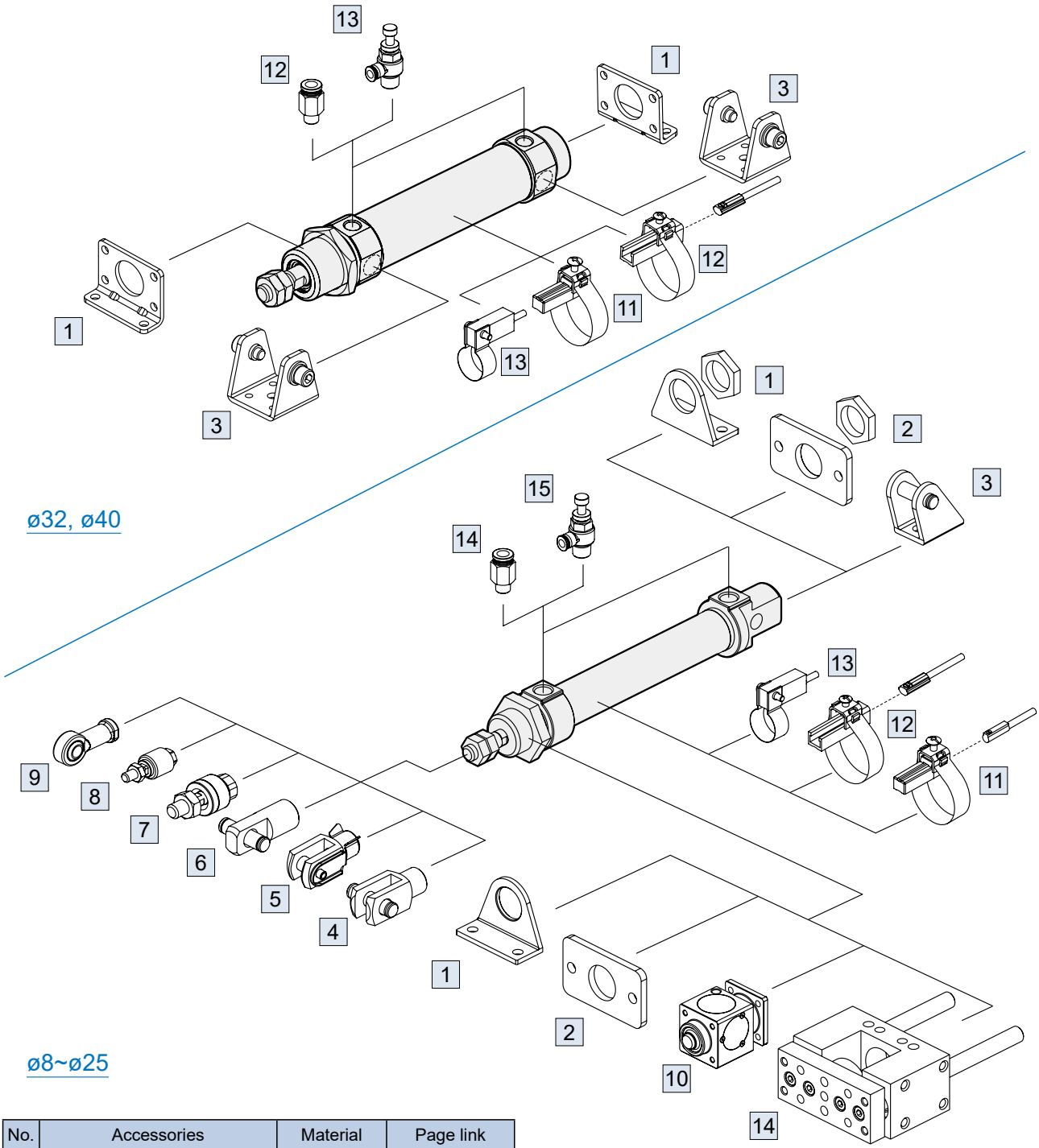
*1. ø8~ø12 (Q'y: 2 pcs) *2. Only the rod packing is repairable, please contact our sales if needed.

Order example of component parts

CP – MCMI – 2 – 16 – A – N

- MODEL
- Blank: Single rod
  2: Double rod
- TUBE I.D.
- **A**: Cushion air (Adjustable)
- END COVER TYPE

Tube I.D.	Blank: Standard type	**N**: Non-pivot type	**F**: Head foot type	**C**: Non-pivot type
ø16~ø25	●	●		
ø32, ø40		●	●	●



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	

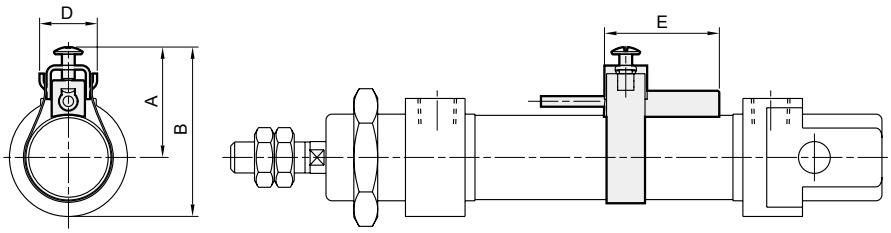
* Aluminum alloy + copper alloy

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

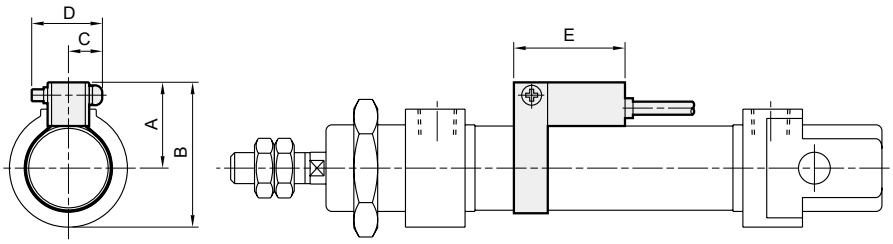
Sensor switch: R*C / R*T (Band: BKC-1 / BKT-1)

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	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 **MCMI-11**	Basic weight **MCMI-11-A**	Stroke 25 mm **MCMI-11**	Basic weight **MCMI-11-N**	Basic weight **MCMI-11-A-N**	Stroke 25 mm **MCMI-11-***
Tube I.D.						
ø8	36	–	6	32	–	6
ø10	38	–	8	35	–	8
ø12	78	–	11	69	–	11
ø16	95	93	13	88	85	13
ø20	162	190	18	151	179	18
ø25	206	229	28	191	214	28

Model	Basic weight **MCMI-11-F**	Basic weight **MCMI-11-A-F**	Stroke 25 mm **MCMI-11-F**	Basic weight **MCMI-11-N/C/R/H**	Basic weight **MCMI-11-A-N/C**	Stroke 25 mm **MCMI-11-***
Tube I.D.						
ø32	334	402	39	307	375	39
ø40	591	601	60	639	649	60

Accessories weight

Unit: g

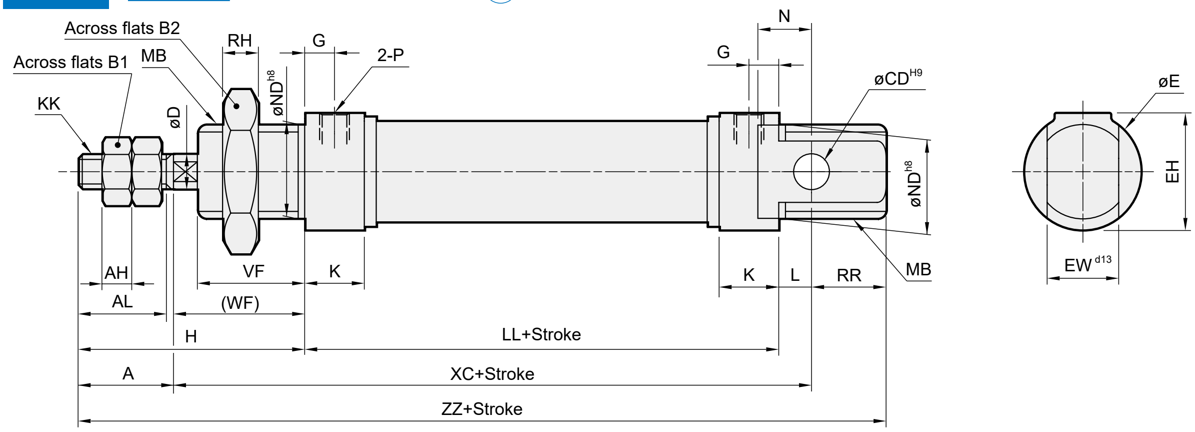
Model	LB	FA/FB	SDB	Y	I	YS	Pin	Floating pin	Rod nut	Cover nut
Tube I.D.										
ø8	42	16	16	4	–	–	2	–	1	8
ø10	42	16	16	4	–	–	2	–	1	8
ø12	65	25	24	13	15	–	4	–	2	16
ø16	65	25	24	13	15	18	5	5	2	11
ø20	103	67	103	40	42	50	10	10	4	20
ø25	103	67	103	72	82	90	19	18	8	20
ø32	160	–	111	–	–	–	–	–	8	28
ø40	246	–	164	–	–	–	–	–	10	41

MCMI Dimensions – Double acting ø8~ø40

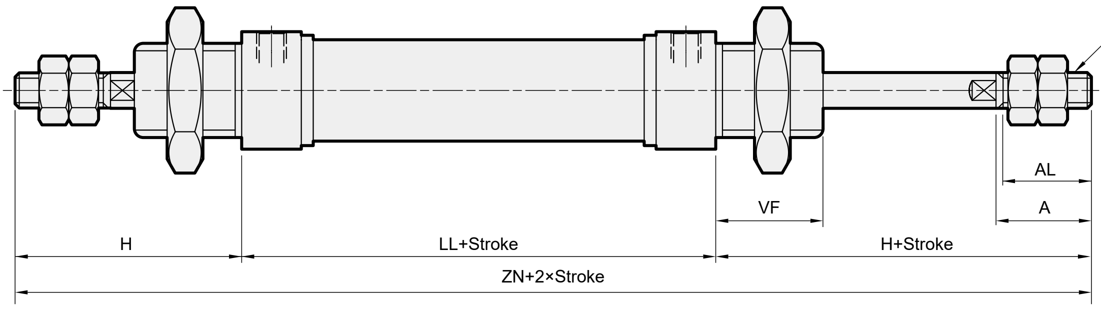
ISO 6432 MINIATURE CYLINDER

11 ø8~ø25

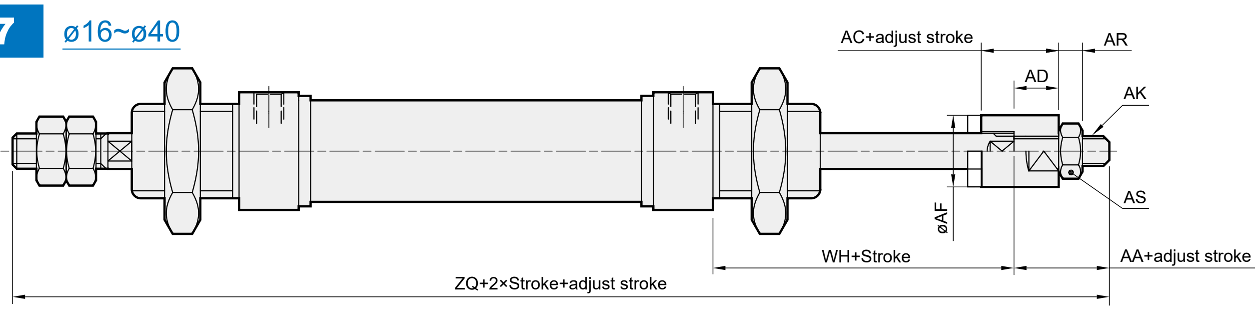
* ø32~ø40 dimensions



21 ø16~ø40



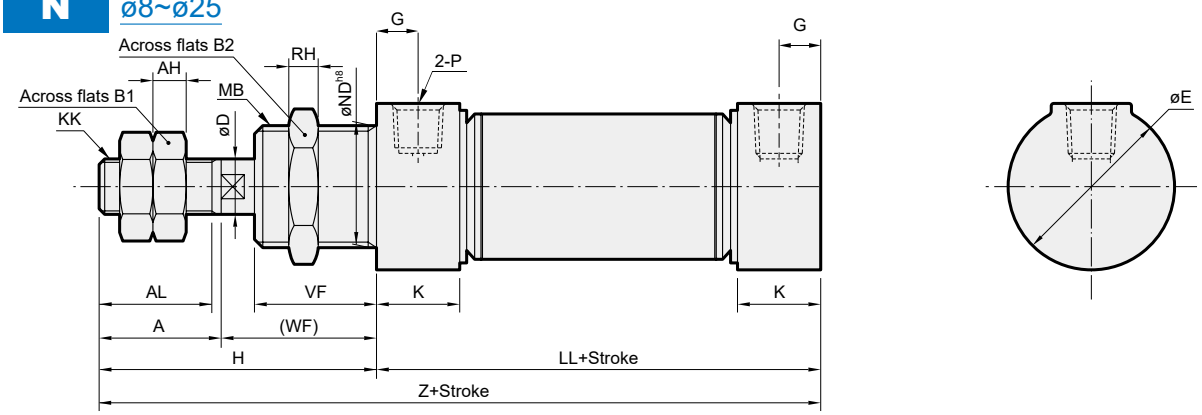
27 ø16~ø40



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	6	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

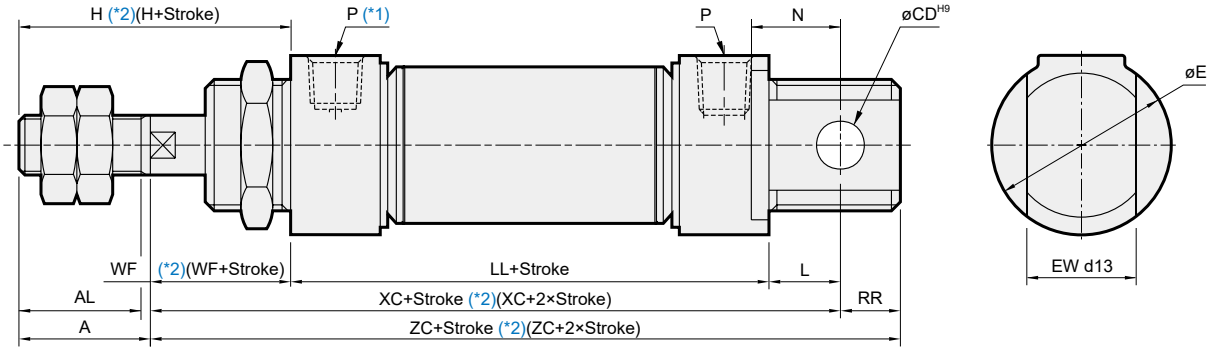
Code / Tube I.D.	MB	N	ND	P	RH	RR	VF	WF	WH	XC	ZN	ZP	ZQ	ZZ
8,10	M12×1.25	6	12	M5×0.8	6	10	12	16	–	64	–	–	–	86
12	M16×1.5	9	16	M5×0.8	8	14	17	22	–	75	–	–	–	105
16	M16×1.5	9	16	M5×0.8	6	12.5	18	22	25.5	82	130.5	102	134	110.5
20	M22×1.5	12	22	G1/8	6	17	20	24	27	95	156	119	158	132
25	M22×1.5	12	22	G1/8	6	13	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	G1/8	8	–	35	45	42	–	227	179	217	–

N ø8~ø25



Code / Tube I.D.	A	AH	AL	B1	B2	D	E	G	H	KK	K	LL	MB	ND	P	RH	VF	WF	Z
8	12	3.2	10.5	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	10.5	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	14	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	14	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	17.5	13	30	8	27	8	44	M8×1.25	15	68	M22×1.5	22	G1/8	6	20	24	112
25	22	6	19.5	17	30	10	27	7.5	50	M10×1.25	15	67	M22×1.5	22	G1/8	6	22	28	117

13 15 ø16~ø25



*1. 15 type ø16 without this air port.
*2. ( ) Dimension for 13 type.

Code / Tube I.D.	A	AL	CD	E	EW	H	L	N	P	RR	WF	ZN
16	16	14	6	20	12	38	5.5	9	M5×0.8	12.5	22	130.5
20	20	17.5	8	27	16	44	3	12	G1/8	17	24	156
25	22	19.5	8	27	16	50	9	12	G1/8	13	28	167

MCMI-13

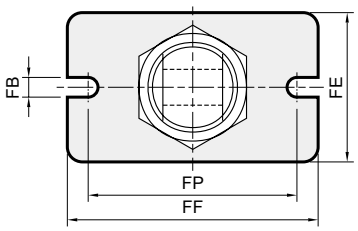
Code / Stroke / Tube I.D.	LL			XC			ZC		
	1~50	51~100	101~150	1~50	51~100	101~150	1~50	51~100	101~150
16	73.5	99.5	125.5	101	127	153	113.5	139.5	165.5
20	93	118	143	120	145	170	137	162	187
25	90.5	115.5	140.5	127.5	152.5	177.5	140.5	165.5	190.5

MCMI-15

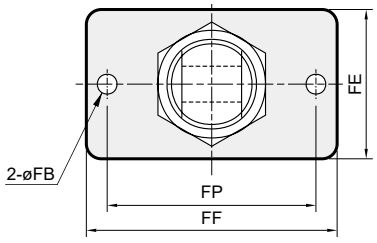
Code / Stroke / Tube I.D.	LL			XC			ZC		
	1~50	51~100	101~150	1~50	51~100	101~150	1~50	51~100	101~150
16	54.5	70	85.5	82	97.5	113	94.5	110	125.5
20	68	118	143	95	145	170	112	162	187
25	67	115.5	140.5	104	152.5	177.5	117	165.5	190.5

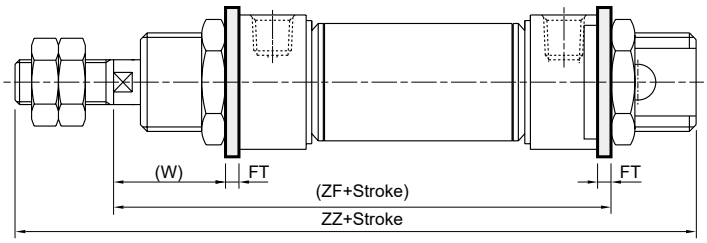
FA / FB

ø12, ø16



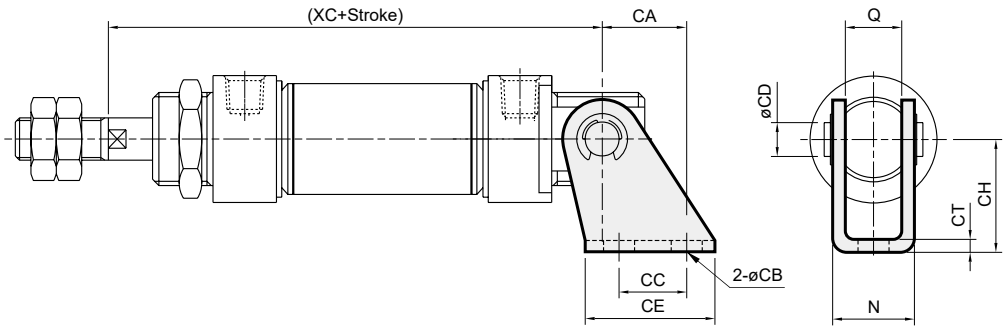
ø8, ø10, ø20, ø25





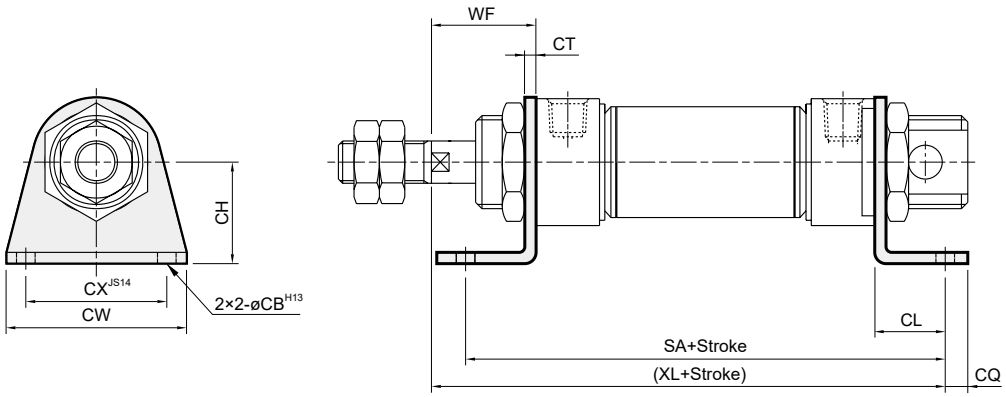
Code / Tube I.D.	FB	FE	FF	FP	FT	W	ZF	ZZ
8	4.5	22	40	30	3.2	12.8	65.2	86
10	4.5	22	40	30	3.2	12.8	65.2	86
12	5.5	26	52	40	3.2	18.8	75.2	105
16	5.5	26	52	40	3.2	18.8	79.7	110.5
20	6.6	38	64	50	4.5	19.5	96.5	132
25	6.6	38	64	50	4.5	23.5	99.5	139

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

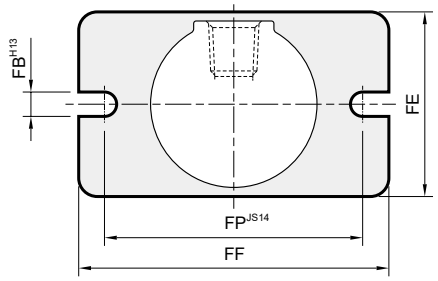


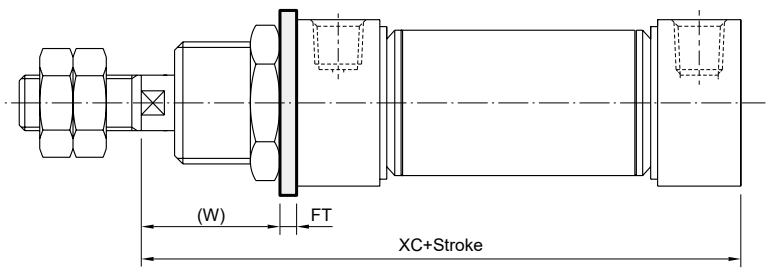
Code / Tube I.D.	CB	CH	CL	CQ	CT	CW	CX	SA	XL	WF
8	4.5	16	11	5	3.2	35	25	68	73	28
10	4.5	16	11	5	3.2	35	25	68	73	28
12	5.5	20	14	6	4	42	32	78	86	38
16	5.5	20	14	6	4	42	32	82.5	90.5	38
20	6.6	25	15	8	3.2	54	40	98	107	44
25	6.6	25	15	8	3.2	54	40	97	110	50

FA N Non-pivot type

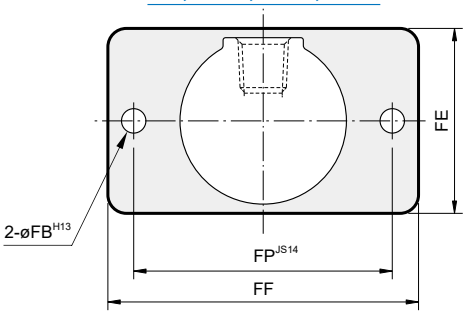
Code / Tube I.D.	FB	FE	FF	FP	FT	W	XC
8	4.5	22	40	30	3.2	12.8	62
10	4.5	22	40	30	3.2	12.8	62
12	5.5	26	52	40	3.2	18.8	72
16	5.5	26	52	40	3.2	18.8	76.5
20	6.6	38	64	50	4.5	19.5	92
25	6.6	38	64	50	4.5	23.5	96

ø12, ø16

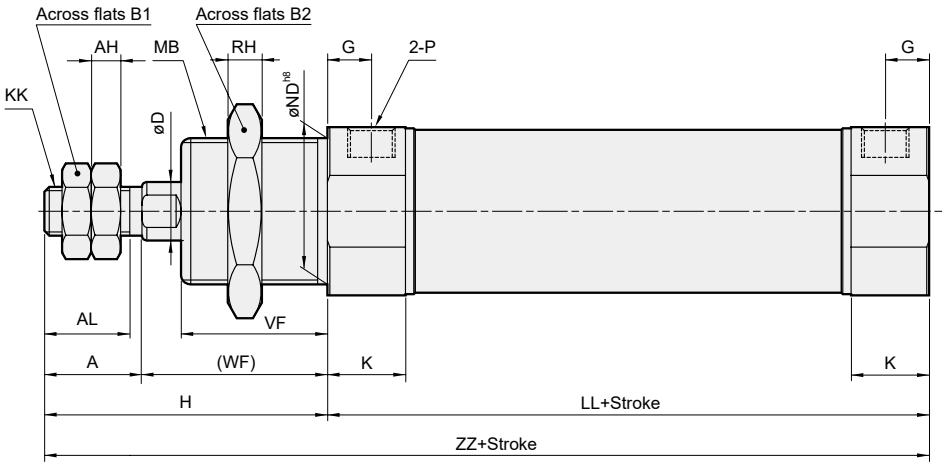




ø8, ø10, ø20, ø25

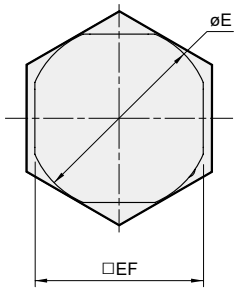


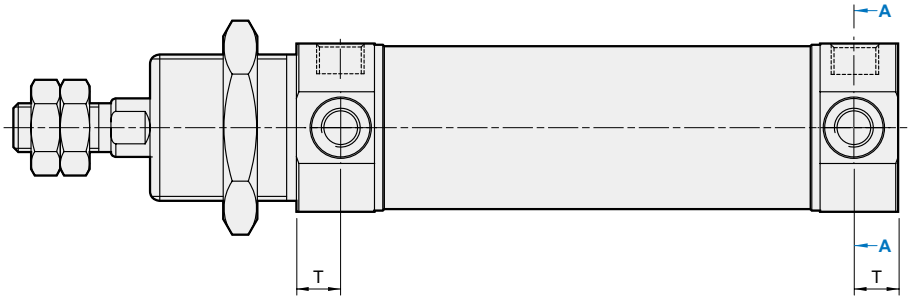
11



N

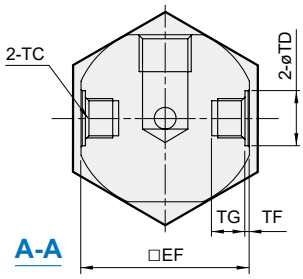
Non-pivot type

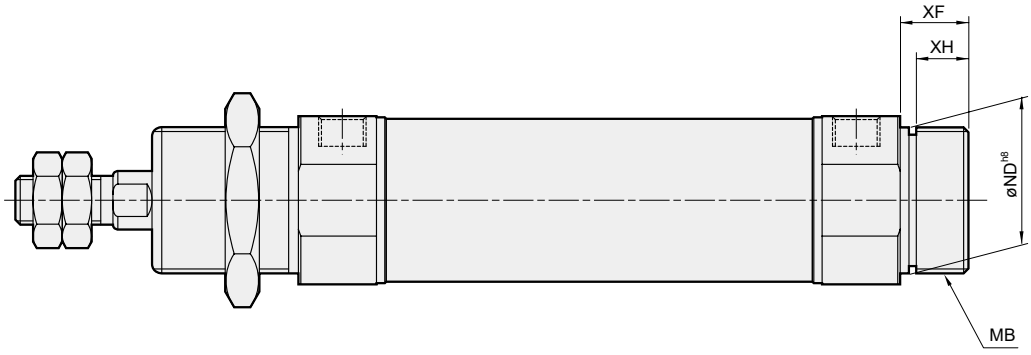




R **H**

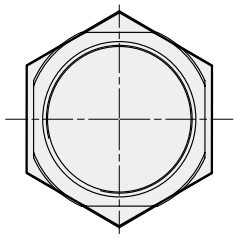
Rod / Head trunnion type

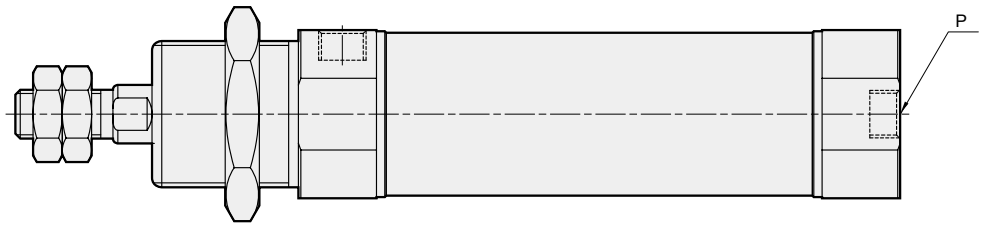




F

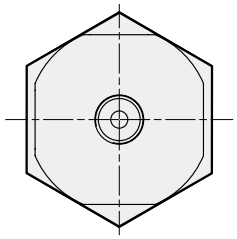
Head foot type





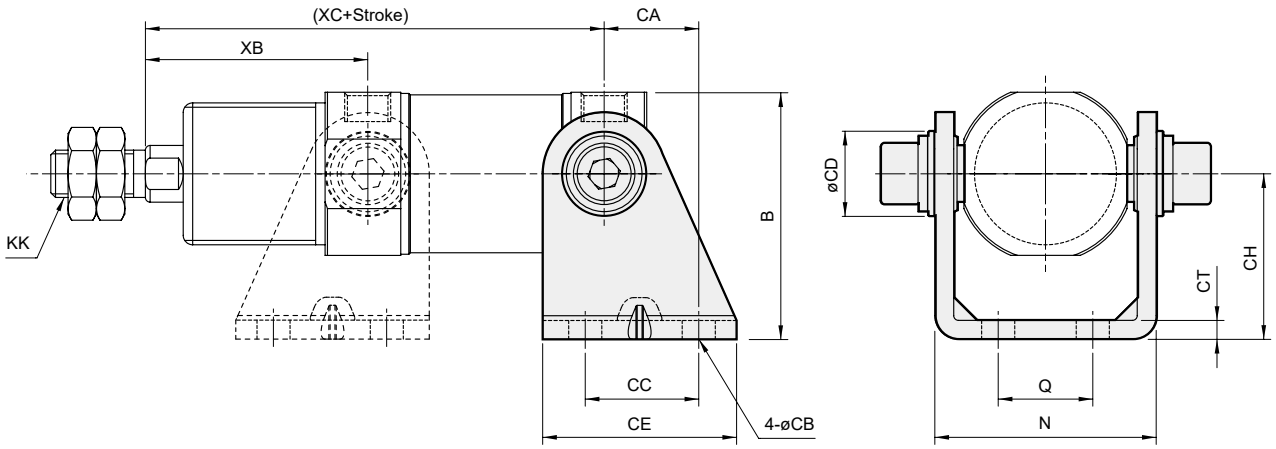
C

Axis port



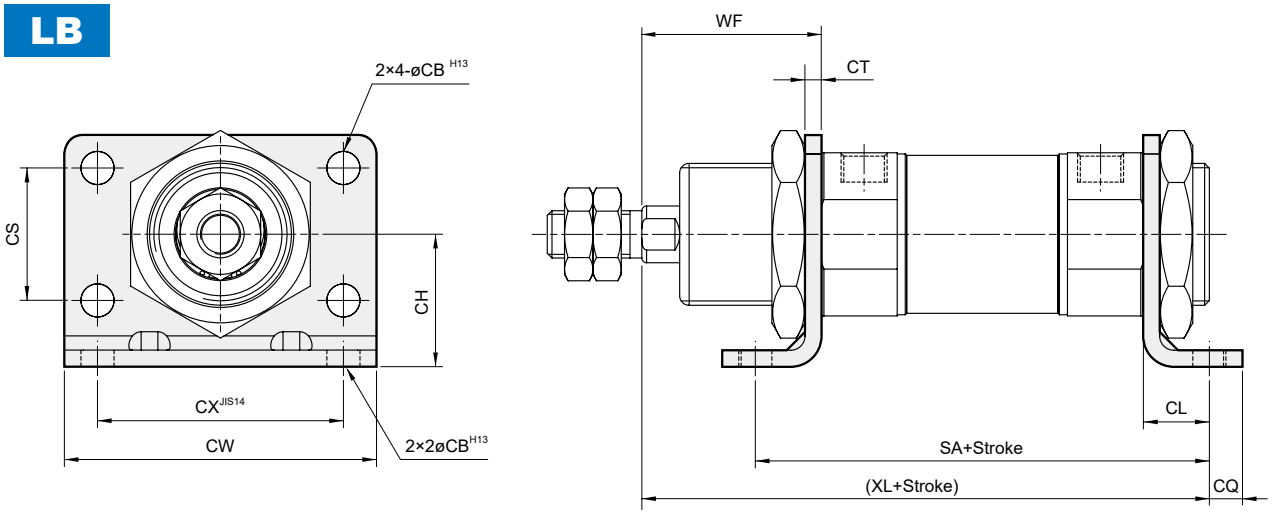
Code / Tube I.D.	A	AH	AL	B1	B2	D	E	EF	G	H	KK	K	LL	MB	ND	P	RH	T	TC	TD	VF	WF	XF	XH	ZZ
32	20	6	17.5	17	38	12	37.5	34.5	9	58	M10×1.5	16	68	M30×1.5	30	G1/8	7	9	M8×1.0×6.5 dp	12	30	38	14	10.7	126
40	24	7	21	19	46	14	46.5	42.5	12	69	M12×1.75	22	89	M38×1.5	38	G1/4	8	12	M10×1.0×8 dp	14	35	45	16	12.2	158

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

MCMIS series

ISO 6432 **MINIATURE CYLINDER** (STAINLESS STEEL)

mindman

Special spec

Technical data

Caution for safety
(Read before installing)

Feature

■ Non lubrication

Special housing and bushing enables self lubrication of piston rod.

■ High strength steel & chemical resistance

Highly resistant with crimped covers and entirely built in stainless steel. Available with or without adjustable cushioning, double acting or through piston rod.
On request complaint with 2014/34/UE ATEX directive.

■ ISO 6432 standard

Enables world-wide inter-changeability.

■ Cylinder mountings

Available with a comprehensive range of accessories for rigid or flexible mounting.

■ Magnetic as standard

Table for standard stroke

Tube I.D.	Stroke (mm)	Max. stroke (mm)
ø10,12	10,25,40,50,80,100,150,200	300
ø16		500
ø20,25	15,25,50,75,100,150,200	500

* Intermediate stroke are available, please contact us.

Tightening torque

Tube I.D.	Bolt	Max. tightening torque (kgf·cm)	Tube I.D.	Bolt	Max. tightening torque (kgf·cm)
ø10	M4×0.7	11.8	ø20	M8×1.25	170
ø12, 16	M6×1.0	41.0	ø25	M10×1.25	340

- Make sure the tightening torque of rod thread does not exceed the value above.
- Tightening torque tolerance ±5%.

Order example

MCMIS — 11 — 16 — 100 — A

MODEL

1: Single rod
2: Double rod*
* Double rod only for ø20, ø25.

TUBE I.D.

STROKE

Blank: Cushion pad (Unadjustable)
A: Cushion air (Adjustable) ⚠
(Only for ø20, ø25)

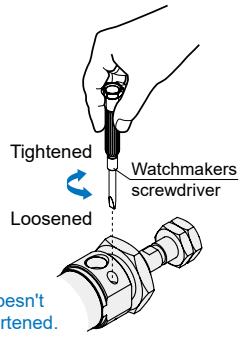
STYLE

Code		Symbol	Description
1	1		Double acting / Male thread
2	1		Double rod / Double acting / Male thread

⚠ Caution

For (**A**) Cushion air (Adjustable)

1. 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.
2. If the needle valve loosen excessively, the buffer doesn't take effect and the lifetime of cylinder would be shortened.



Specification

Model		MCMIS				
Tube I.D. (mm)		10	12	16	20	25
Port size		M5×0.8			G1/8	
Medium		Air				
Max. operating perssure		1.0 MPa				
Min. operating perssure		0.1 MPa		0.08 MPa		
Proof pressure		1 MPa				
Lubricator		Not required				
Ambient temperature		–35~+80°C (No freezing)				
Available speed range		50~500 mm/sec				
Sensor switch		RDC, RQC, RDT, RQT, RCM				
Sensor switch band	R*C	BKC-1 (Not for R*CV angle cable)				
	R*T	BKT-1				
	RCM	BM10	BM12	BM16	BM20	BM25

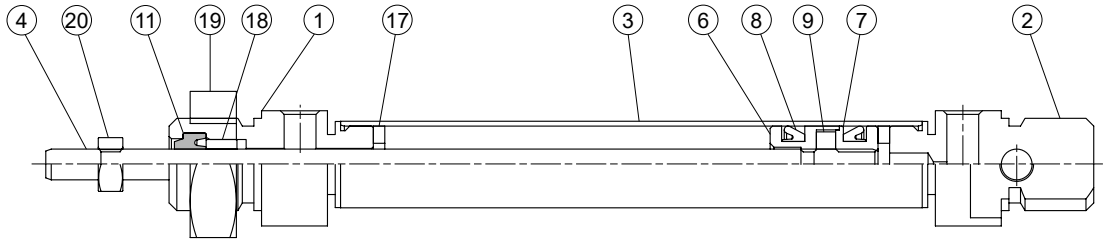
Order example of mounting accessories

	Accessories		
Code	**LB** (LB×2, with cover nut ×1)	**NUT**	
Mounting / Tube I.D.	with nut	Rod nut	Cover nut
ø10	**LB-M6-8x2**	**NUT-S-M4×0.7×3.2H×7B**	**NUT-S-M12x1.25x7Hx19B**
ø12	**LB-M6-12x2**	**NUT-S-M6×1.0×4H×10B**	**NUT-S-M16x1.5x8Hx24B**
ø16			
ø20	**LB-M6-20x2**	**NUT-S-M8×1.25×5H×13B**	**NUT-S-M22x1.5x8Hx27B**
ø25		**NUT-S-M10×1.25×6H×17B**	

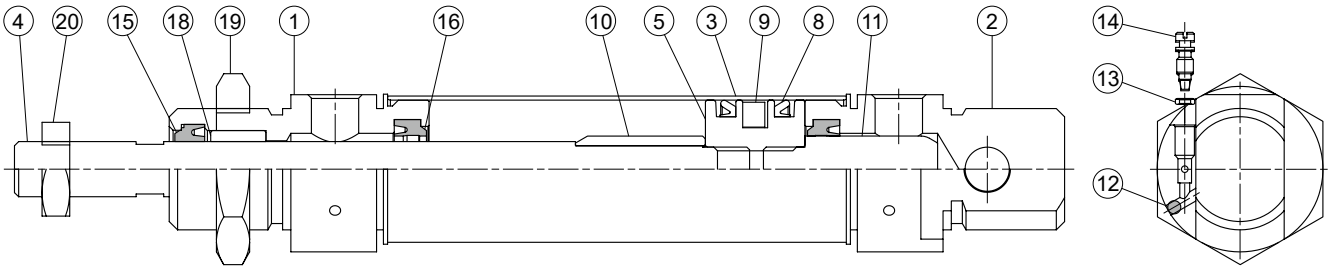
	Accessories			Connector
Code	**FA**	**FB**	**SDB** (with pin×1 + snap ring×2)	**YP** (Y+pin)
Mounting / Tube I.D.				
ø10	**FA-M6-8**		**SDB-M6-8**	–
ø12	**FA-M6-12**		**SDB-M6-12**	**YP-M6-12**
ø16				
ø20	**FA-M6-20**		**SDB-M6-20**	**YP-M6-20**
ø25				**YP-M6-25**

* Material: Stainless steel

Cushion pad Unadjustable



Cushion air Adjustable



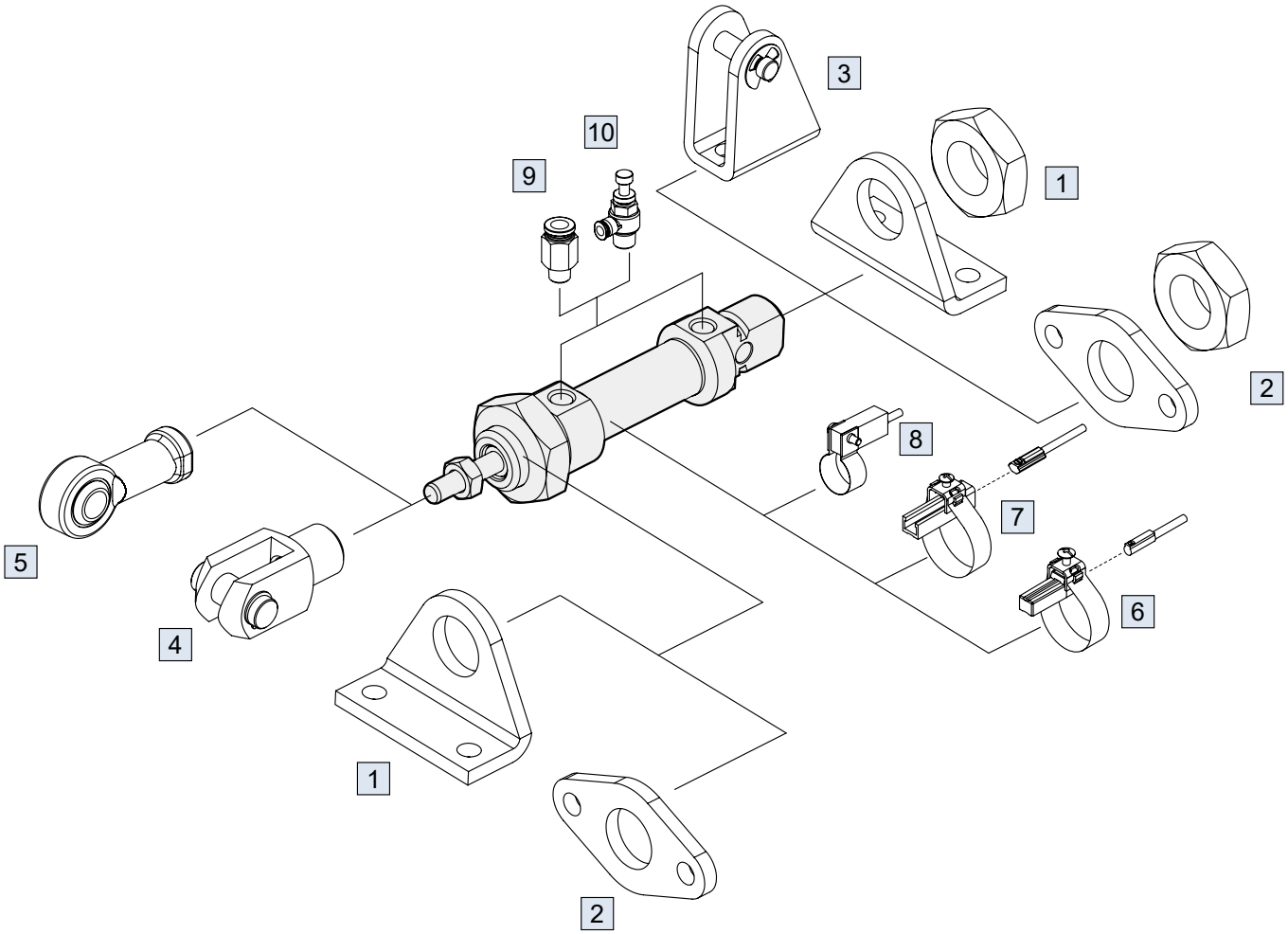
Material

No.	Cushion		Part name	Material	Q'y	Component parts (inclusion)	
	Pad	Air				Pad	Air
1	●	●	Head cover	SUS304	1	●	●
2	●	●	Rear cover	SUS304	1	●	●
3	●	●	Cylinder	SUS304	1		
4	●	●	Piston rod	SUS316	1		
5		●	Piston	Brass	1		●
6	●		Piston-H	Brass	1	●	
7	●		Piston-R	Brass	1	●	
8	●	●	Piston packing	PU	2	●	●
9	●	●	Magnet ring	Magnet	1	●	●
10		●	#1 Shock absorber axis	Aluminum alloy	1		●
11		●	#2 Shock absorber axis	Aluminum alloy	1		●
12		●	Steel ball	Stainless steel	2		●
13		●	Needle valve packing	NBR	2		●
14		●	Needle valve	Stainless steel	2		●
15	●	●	Rod packing	PU	1	●	●
16		●	Cushion ring	NBR	2		●
17	●		Cushion pad	NBR	2	●	
18	●	●	Bushing	Copper alloy	1	●	●
19	●	●	Nut	SUS304	1	●	●
20	●	●	Nut	SUS304	1	●	●

Order example of Component parts

Tube I.D.	Cushion pad
ø10	**CP-MCMIS-10**
ø12	**CP-MCMIS-12**
ø16	**CP-MCMIS-16**
ø20	**CP-MCMIS-20**
ø25	**CP-MCMIS-25**

Tube I.D.	Cushion air
ø20	**CP-MCMIS-20A**
ø25	**CP-MCMIS-25A**

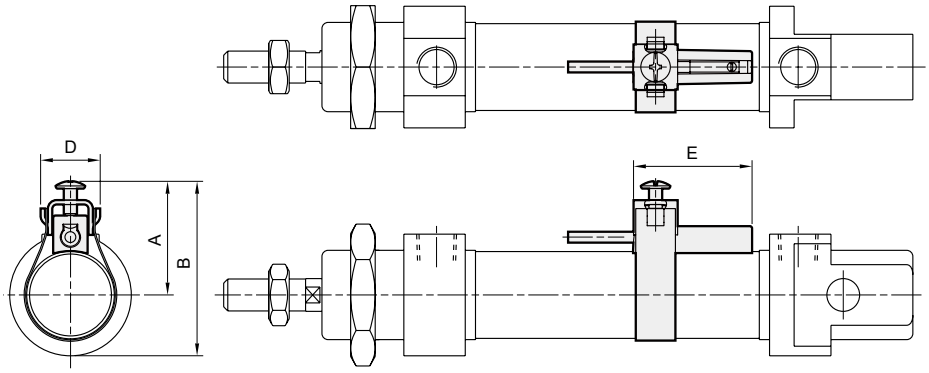


No.	Accessories	Material	Page link
1	Mounting accessories LB	SUS304	
2	Mounting accessories FA/FB	SUS304	
3	Mounting accessories SDB+PIN	SUS304	
4	Accessories Y+PIN	SUS303	
5	Female rod ends PHS-S	Stainless steel	
6	Sensor switch R*C+BKC-1	–	
7	Sensor switch R*T+BKT-1	–	
8	Sensor switch RCM+BM**	–	
9	Fitting PC (PISCO)	–	
10	Fitting JSC (PISCO)	–	

Installation of sensor switch

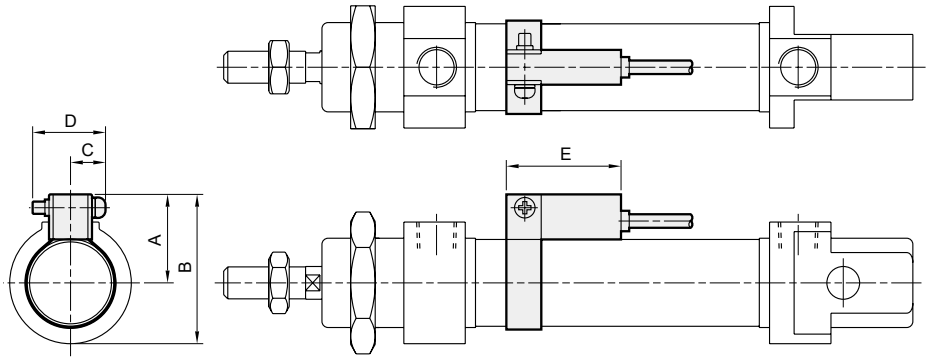
Sensor switch: R*C / R*T
Band: BKC-1 / BKT-1

Code / Band / Tube I.D	A		B		D	E	
	BKC-1	BKT-1	BKC-1	BKT-1		BKC-1	BKT-1
10	21.5	23	29.5	31	13.5	27	30
12	22.5	24.5	32	33.5	13.5	27	30
16	25	26.5	34.5	36	13.5	27	30
20	27	28.5	40.5	42	13.5	27	30
25	29.5	31	44.5	46	13.5	27	30



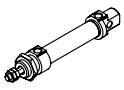
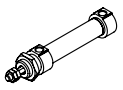
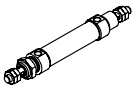
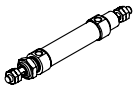
Sensor switch: RCM
Band: BM**

Code / Tube I.D	A	B	C	D	E
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



Cylinder weight

Unit: g

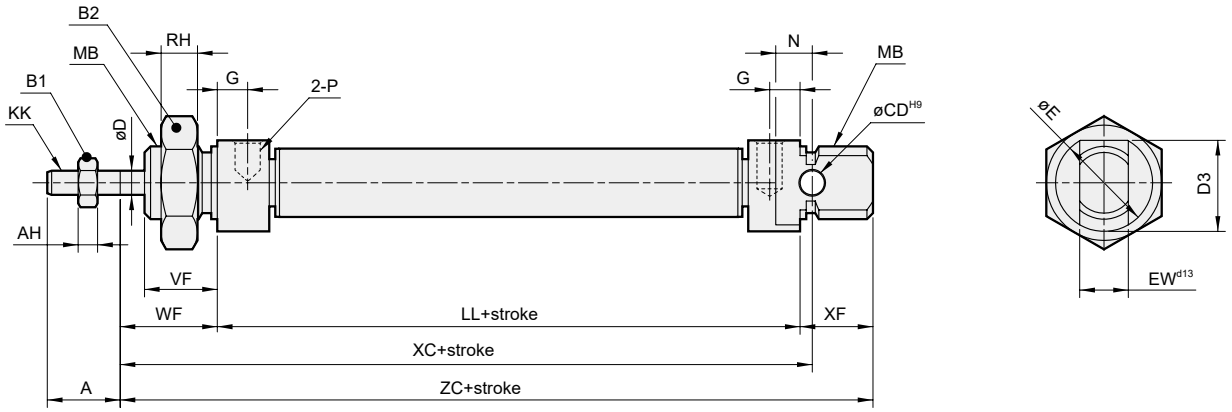
Model	Basic weight **MCMIS-11**	Stroke 25 mm **MCMIS-11**	Basic weight **MCMIS-11-A**	Stroke 25 mm **MCMIS-11-A**	Basic weight **MCMIS-21**	Stroke 25 mm **MCMIS-21**	Basic weight **MCMIS-21-A**	Stroke 25 mm **MCMIS-21-A**
Tube I.D.								
ø10	68	6	–	–	80	12	–	–
ø12	119	10	–	–	135	19	–	–
ø16	147	12	–	–	167	23	–	–
ø20	307	20	298	20	335	38	326	38
ø25	409	27	398	27	447	52	436	52

Accessories weight

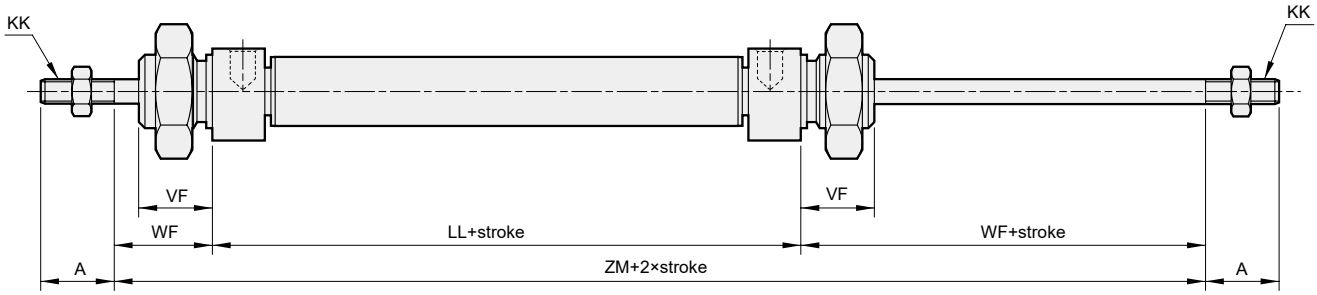
Unit: g

Model	LB	FA/FB	SDB	YP	Rod nut	Cover nut
Tube I.D.						
ø10	23	11	24	7	2	10
ø12	44	26	41	20	3	19
ø16	44	26	41	20	3	19
ø20	96	53	86	58	5	24
ø25	96	53	86	106	10	24

11

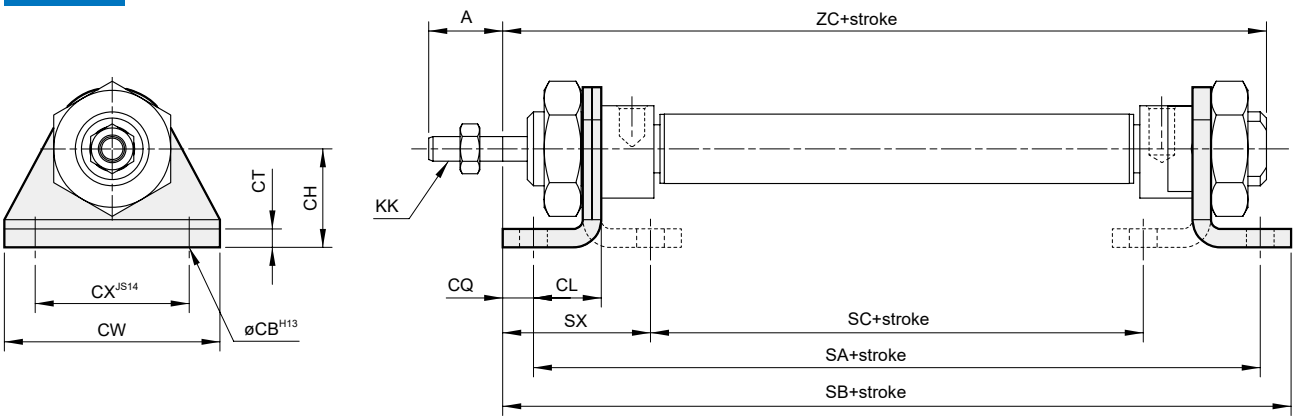


21



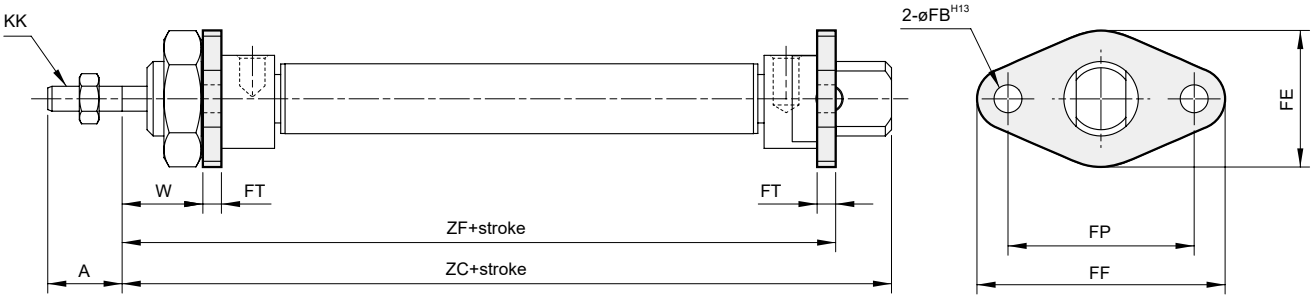
Code / Tube I.D.	A	AH	B1	B2	CD	D	D3	E	EW	G	KK	LL	MB	N	ND	P	RH	VF	WF	XC	XF	ZC	ZM
10	12	3.2	7	16	4	4	15	16	8	5	M4×0.7	46	M12×1.25	6	12	M5×0.8	6	12	16	64	12	74	–
12	16	4	10	22	6	6	18	19	12	5	M6×1.0	48	M16×1.5	9	16	M5×0.8	6	17	22	75	18	88	–
16	16	4	10	22	6	6	18	19	12	4.5	M6×1.0	53	M16×1.5	9	16	M5×0.8	6	18	22	82	18	93	–
20	20	5	13	27	8	8	25.5	27	16	8	M8×1.25	67	M22×1.5	12	22	G1/8	6	20	24	95	20	111	115
25	22	6	17	27	8	10	28.5	30	16	8	M10×1.25	68	M22×1.5	12	22	G1/8	6	22	28	104	22	118	124

LB



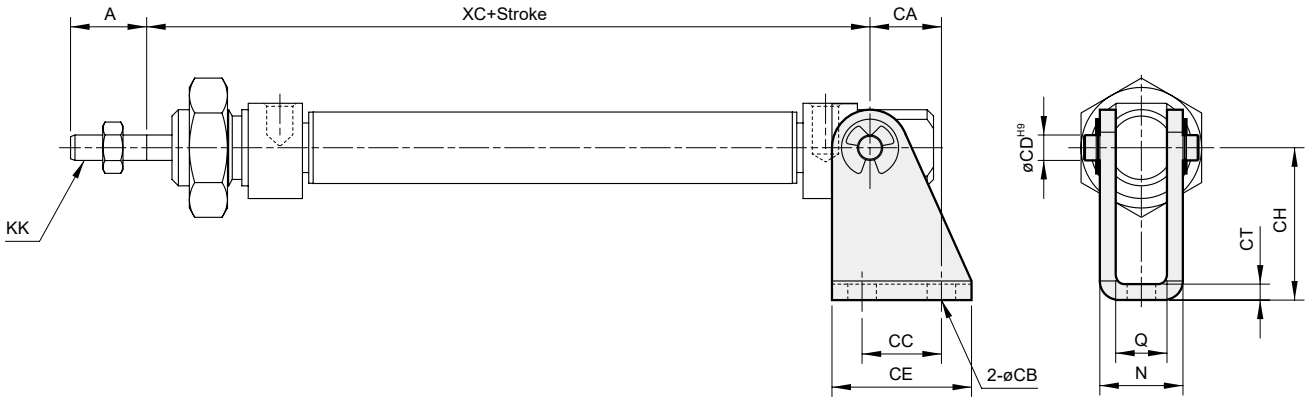
Code / Tube I.D.	A	CB	CH	CL	CQ	CT	CW	CX	KK	SA	SB	SC	SX	ZC
10	12	4.5	16	11	5	3	35	25	M4×0.7	68	78	30	24	74
12	16	5.5	20	14	6	4	42	32	M6×1.0	76	90	28	32	88
16	16	5.5	20	14	6	4	42	32	M6×1.0	81	95	33	32	93
20	20	6.6	25	17	8	5	54	40	M8×1.25	101	116	43	36	111
25	22	6.6	25	17	8	5	54	40	M10×1.25	102	121	44	40	118

FA / FB



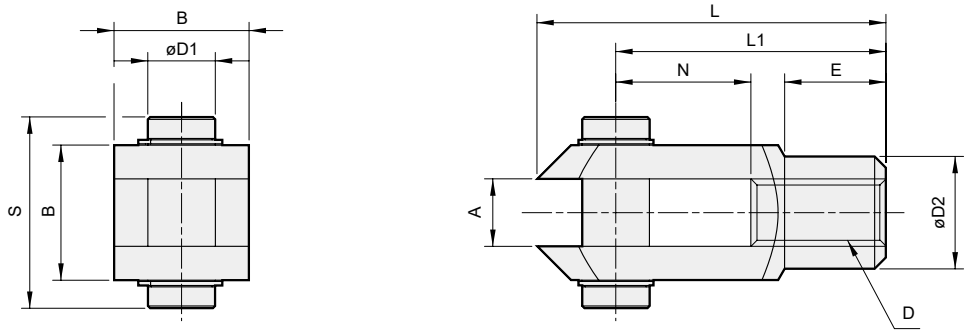
Code / Tube I.D.	A	FB	FE	FF	FP	FT	KK	W	ZC	ZF
10	12	4.5	22	40	30	3	M4×0.7	13	74	65
12	16	5.5	30	52	40	4	M6×1.0	18	88	74
16	16	5.5	30	52	40	4	M6×1.0	18	93	79
20	20	6.6	40	66	50	5	M8×1.25	19	111	96
25	22	6.6	40	66	50	5	M10×1.25	23	118	101

SDB



Code / Tube I.D.	A	CA	CB	CC	CD	CE	CH	CT	KK	N	Q	XC
10	12	11.25	4.5	12.5	4	22	24	2.5	M4×0.7	13.1	8.1	64
12	16	13	5.5	15	6	25	27	3	M6×1.0	18.1	12.1	75
16	16	13	5.5	15	6	25	27	3	M6×1.0	18.1	12.1	82
20	20	16	6.6	20	8	32	30	4	M8×1.25	24.1	16.1	95
25	22	16	6.6	20	8	32	30	4	M10×1.25	24.1	16.1	104

YP Y+Pin



Code / Tube I.D.	A	B	D	D1	D2	E	L	L1	N	S
12,16	6	12	M6×1.0	6	10	9	31	24	12	17
20	8	16	M8×1.25	8	14	12	42	32	16	21
25	10	20	M10×1.25	10	18	15	52	40	20	25

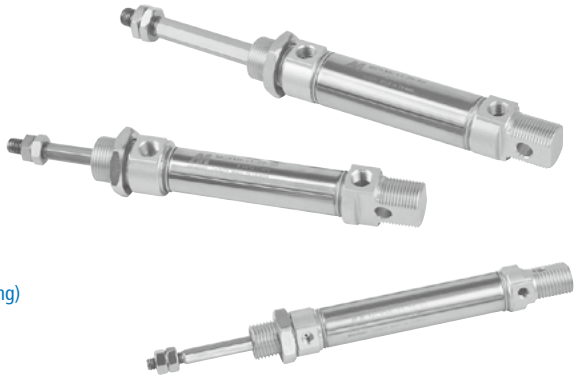
MCKMI series

ISO 6432 **MINIATURE CYLINDER** WITH NON-ROTATING ROD

Special spec

Technical data

Caution for safety
(Read before installing)



Features

- ISO 6432 standard.
- Stainless steel rod and tube for good corrsion resistance.
- Comprehensive types of mounting accessories available.
- Hexagonal rod design provides rod non-rotaion function.
- Magnetic as standard.

Table for standard stroke

Tube I.D.	Stroke (mm)	Max. stroke (mm)
ø16	15,25,50,75,100,125,150,200	500
ø20	↑ 250,300	300
ø25		500

* Intermediate stroke are available, please contact us.

Tightening torque

Tube I.D.	Rod thread	Tightening torque (kgf·cm)
ø16	M6×1.0	41
ø20	M8×1.25	100
ø25	M10×1.25	190

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

Specification

Model		MCKMI		
Tube I.D. (mm)		16	20	25
Port size		M5×0.8	G1/8	
Medium		Air		
Operating perssure range		0.06~0.7 MPa		
Proof pressure		1 MPa		
Lubricator		Not required		
Ambient temperature		-5°C~+60°C (No freezing)		
Available speed range		50~750 mm/sec		
Max. allowable kinetic energy (J)	Cushion pad	0.09	0.27	0.4
	Cushion air	—	0.66	0.97
Rod non-rotating accuracy		±1°	±0.7°	
Allowable rotational torque		0.4 kgf-cm	2.0 kgf-cm	2.5 kgf-cm
Sensor switch		RDC, RQC, RDT, RQT, RCM		
Sensor switch band	R*C	BKC-1 (Not for R*CV angle cable)		
	R*T	BKT-1		
	RCM	BM16	BM20	BM25

* The cylinder is allowed little leakage. Before the cylinder is sale, it has passed the standard of leakage test.

Order example

MCKMI — 11 — 20 — 100 — A — N

MODEL

1: Single rod

TUBE I.D.

STROKE

TYPE
Blank: Standard
N: Non-pivot type (end-plain)

STYLE

Code		Symbol	Description
1	1		Double acting / Male thread

Blank: Cushion pad (Unadjustable)
A: Cushion air (Adjustable) ⚠
(Only for ø20, 25)

⚠ Caution

- For (**A**) Cushion air (Adjustable) (Fig.1)

1. 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.
2. If the needle valve loosen excessively, the buffer doesn't take effect and the lifetime of cylinder would be shortened.

- Please don't attempt to rotate the piston rod. (Fig.2)

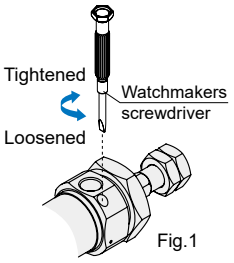


Fig.1

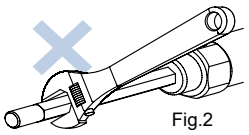
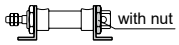
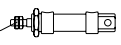
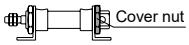
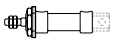
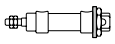
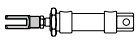
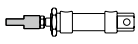
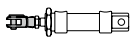


Fig.2

Accessories & Connector

	Accessories		
Code	**LB** (LB×2, with cover nut ×1)	**LB** (LB×1, without cover nut)	**NUT**
Cover type	Standard type	Non-pivot type (N)	–
Mounting / Tube I.D.	 with nut		Rod nut  /  Cover nut
ø16	**LB-M3-12x2**	**LB-M3-12**	**NUT-M6x1.0x5Hx10B** / **NUT-M16x1.5x6Hx22B**
ø20	**LB-M3-20x2**	**LB-M3-20**	**NUT-M8x1.25x5Hx13B** / **NUT-M22x1.5x6Hx30B**
ø25			**NUT-M10x1.25x6Hx17B**

	Accessories			Connector		
Code	**FA**	**FB**	**SDB** (with pin×1 + snap ring×2)	**Y**	**I**	**YS** (Y+Floating pin)
Cover type	All applicable	Standard type	Standard type	All applicable		
Mounting / Tube I.D.						
ø16	**FA-M3-12**		**SDB-M3-12**	**Y-M3-12**	**I-M3-12**	**YS-M3-16**
ø20	**FA-M3-20**		**SDB-M3-20**	**Y-M3-20**	**I-M3-20**	**YS-M3-20**
ø25				**Y-Q2-32**	**I-Q2-32**	**YS-Q2-32**

* **Y**, **I**, **YS**, consulte la página 3-14.

Pin

Applicable	YS connector	Y&I connector	SDB connector
Code	**PIN-S**	**PIN-Y-P** (with split pin / snap ring)	**PIN-SDB-P** (with snap ring)
Fig / Tube I.D.		 ø16 ø20,ø25	
ø16	**PIN-M3-16-S**	**PIN-M3-12-2-P**	**PIN-M3-12-1-P**
ø20	**PIN-M3-20-S**	**PIN-M3-20-2-P**	**PIN-M3-20-1-P**
ø25	**PIN-Q2-32-S**	**PIN-Q2-32-2-P**	

Order example of self-assembled

The tube I.D. ø16 of LB accessories, Y connector and pin.

No.	Order number	Qty
1	**LB-M3-12x2**	1
2	**Y-M3-12**	1
3	**PIN-M3-12-2-P**	1

* To order accessories/ connectors/ pin separately, please place orders separately according to the order codes in the above table.

Order example of factory assembled

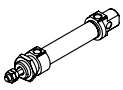
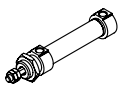
⚠ Cylinders and accessories are distinguished by the symbol " + ".

MCKMI – Standard model no. + LB

CYLINDER ACCESSORIES

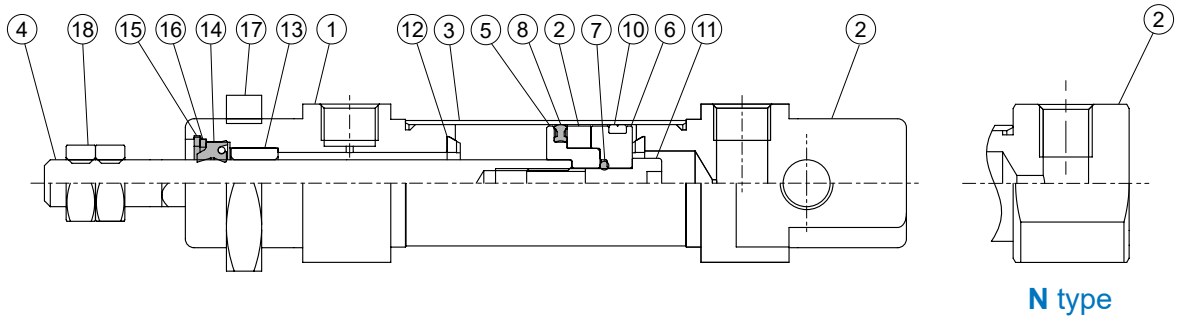
Cylinder weight

Unit: g

Model	Basic weight **MCKMI**	Stroke 25mm **MCKMI**	Basic weight **MCKMI-*-N**	Stroke 25mm **MCKMI-*-N**
Tube I.D.				
ø16	69	13.0	62	13.0
ø20	126	20.3	116	20.3
ø25	168	28.7	153	28.7

Cushion pad Unadjustable

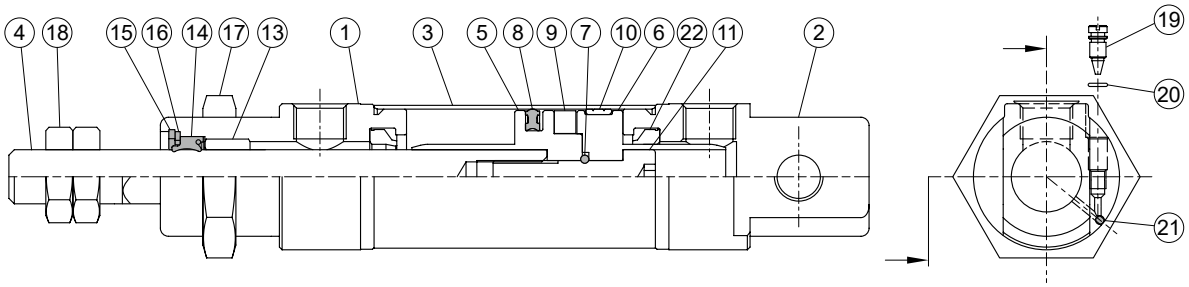
ø16~ø25



N type

Cushion air Adjustable

ø20, ø25



Material

No.	Cushion		Part name	Tube I.D.			Q'y	Component parts (inclusion)	
	Pad	Air		16	20	25		Pad	Air
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			1	●	●
9	●	●	Magnet ring	Magnet material			1	●	●
10	●	●	Wear ring	Resin			1	●	●
11	●	●	Piston bolt	SCM			1	●	●
12	●	●	Cushion gasket	NBR	TPU		2	●	●
13	●	●	Rod bush	Bearing alloy			1	●	●
14	●	●	Rod packing	NBR			1	●	●
15	●	●	Snap ring	Spring steel			1	●	●
16	●	●	Washer	Carbon steel			1	●	●
17	●	●	Tie nut	Carbon steel			1	●	●
18	●	●	Rod front nut	Carbon steel			2	●	●
19		●	Needle valve	Stainless steel			2		●
20		●	Needle valve packing	NBR			2		●
21		●	Steel ball	Stainless steel			2		●
22		●	Cushion packing	NBR			2		●

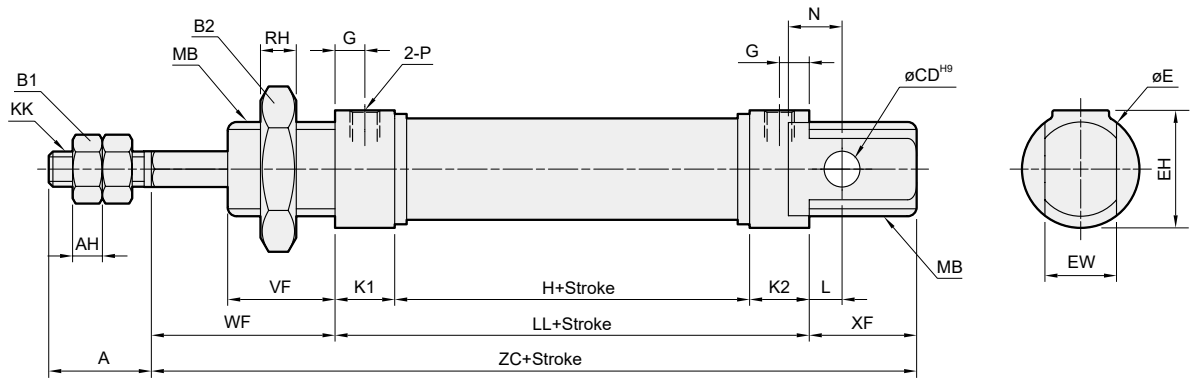
Order example

Component parts

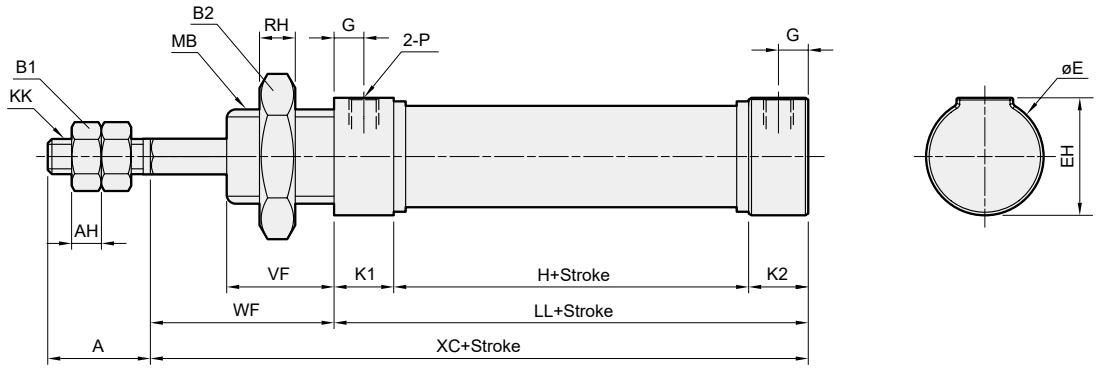
Tube I.D.	Cushion pad
ø16	**CP-MCKMI-16**
ø20	**CP-MCKMI-20**
ø25	**CP-MCKMI-25**

Tube I.D.	Cushion air
ø16	**CP-MCKMI-16A**
ø20	**CP-MCKMI-20A**
ø25	**CP-MCKMI-25A**

11



N



Code / Tube I.D.	A	AH	B1	B2	CD	E	EH	EW	G	H	KK	K1	K2	L	LL	MB	N	P	RH	VF
16	16	5	10	22	6	20	20	12 $^{-0.05}_{-0.4}$	5	34.5	M6×1	10	10	5.5	54.5	M16×1.5	9	M5×0.8	6	18
20	20	5	13	30	8	27	27	16 $^{-0.05}_{-0.4}$	8	38	M8×1.25	15	15	3	68	M22×1.5	12	G1/8	6	20
25	22	6	17	30	8	27	27	16 $^{-0.05}_{-0.4}$	7.5	37	M10×1.25	15	15	9	67	M22×1.5	12	G1/8	6	22

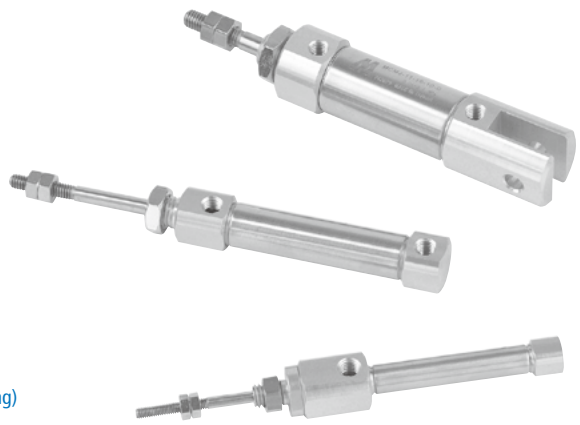
Code / Tube I.D.	WF	XC	XF	ZC
16	22	76.5	18	94.5
20	24	92	20	112
25	28	95	22	117

Special spec

Rod end shape

Technical data

Caution for safety
(Read before installing)



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	
	Single acting 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		RDC, RQC, RCM		
Sensor switch band	R*C	BKC-1 (Not for R*CV angle cable)		
	RCM	BM6	BM10	BM16

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 | STYLE (1: Single rod, 2: Double rod) | TUBE I.D. | STROKE | M: Magnet | END COVER TYPE

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 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%.

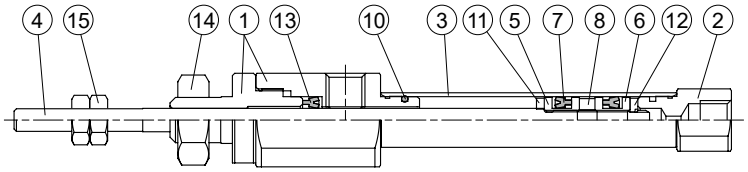
Pin

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**

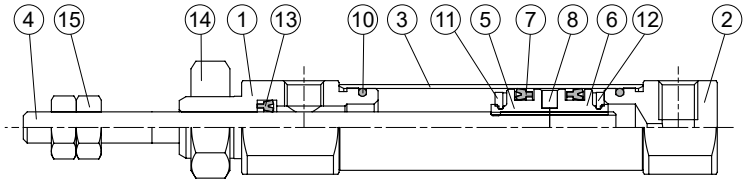
Order example of mounting accessories & connector

	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**

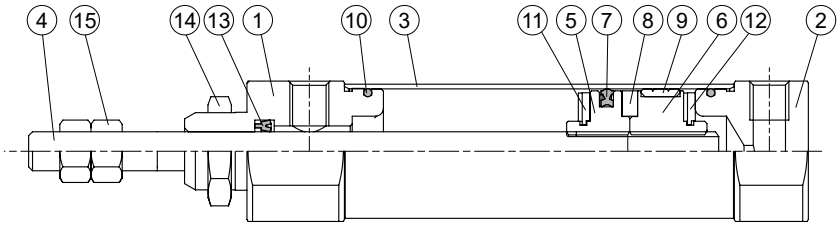
ø6

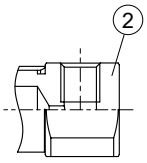


ø10

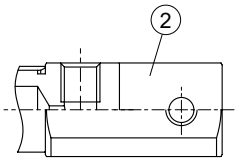


ø16

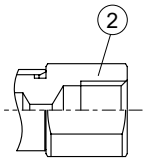




B type: ø10, ø16



D type: ø10, ø16



R type: ø6, ø10, ø16

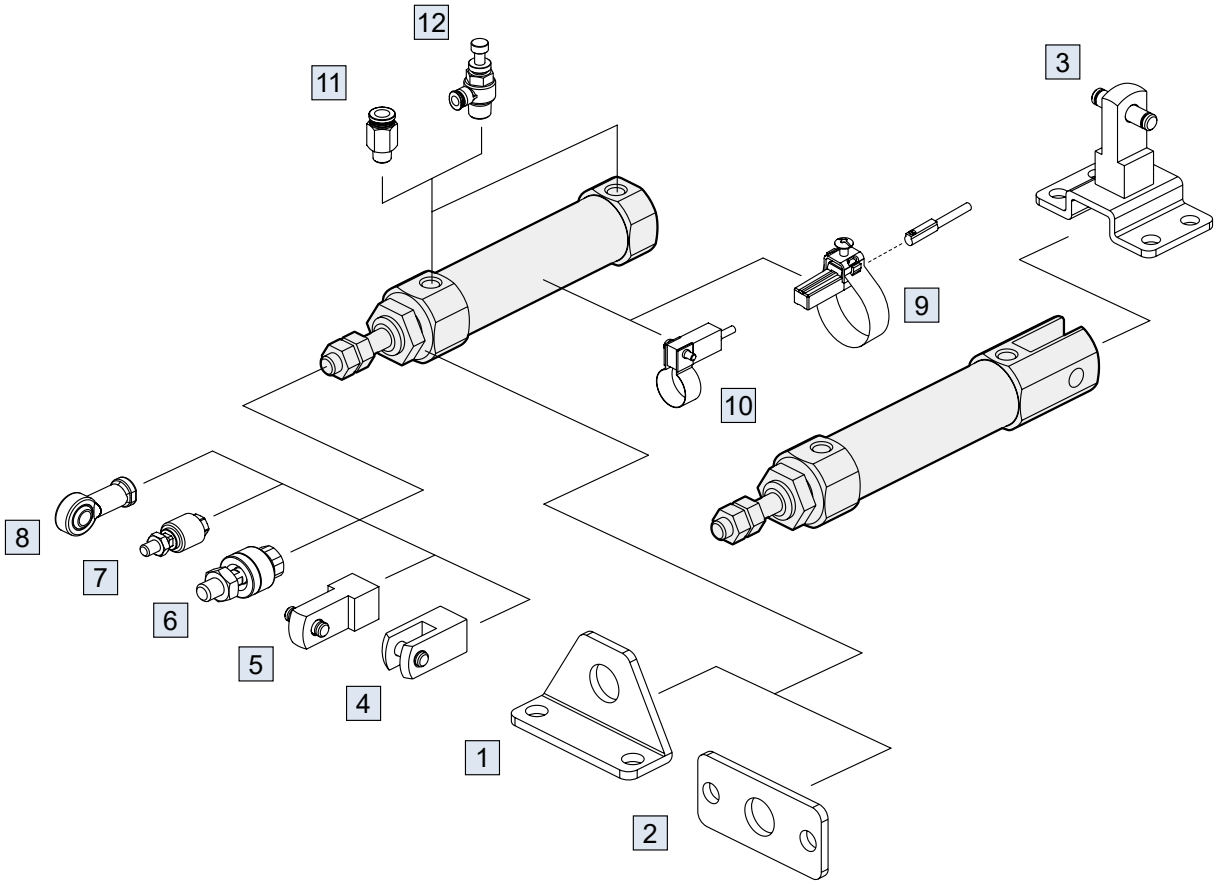
Material

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

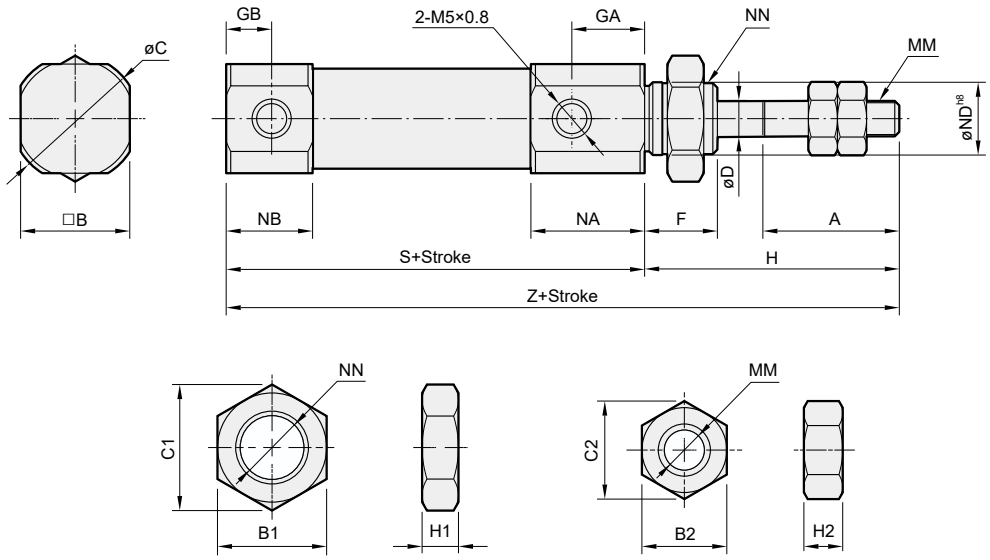


No.	Accessories	Material	Page link
1	Mounting accessories LB	Carbon steel	
2	Mounting accessories FA	Carbon steel	
3	Mounting accessories T+I+PIN (*)	Carbon steel	
4	Accessories Y+PIN	Carbon steel	
5	Accessories I+PIN	Carbon steel	
6	Floating joint MFC	Carbon steel	

No.	Accessories	Material	Page link
7	Floating joint MFCS	Carbon steel	
8	Female rod ends PHS	Carbon steel	
9	Sensor switch R*C+BKC-1	–	
10	Sensor switch RCM+BM**	–	
11	Fitting PC (PISCO)	–	
12	Speed controller JSC (PISCO)	–	

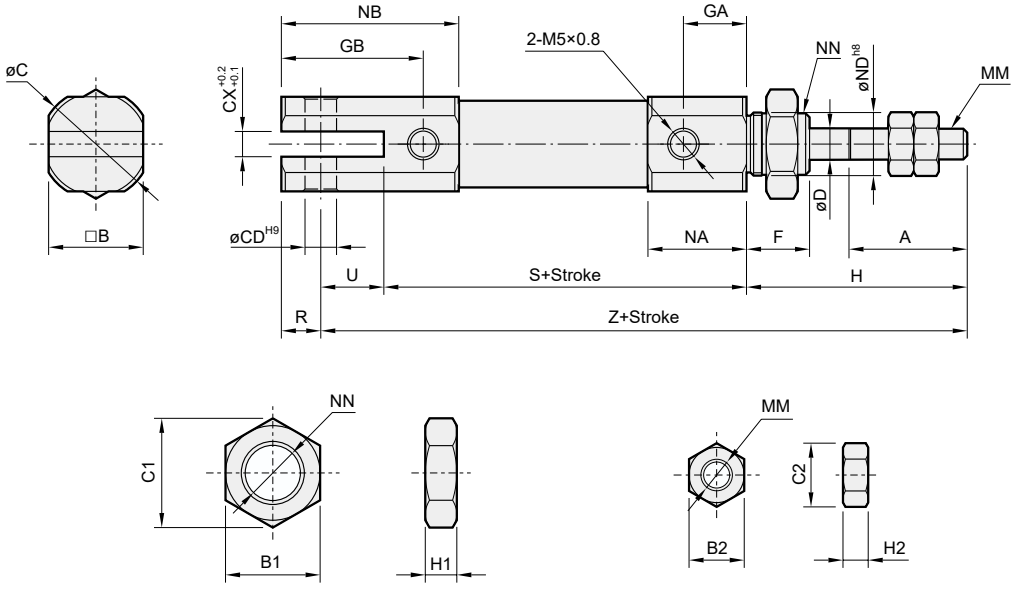
* Contains I+PIN. Only for end cover "D" type.

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

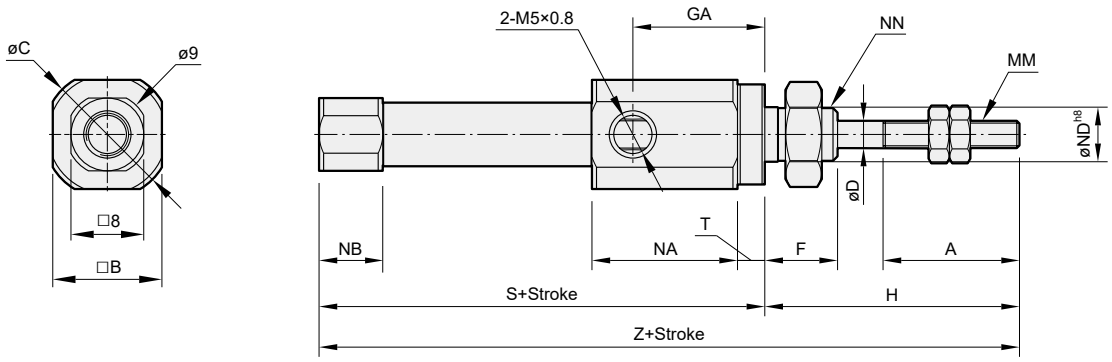
D



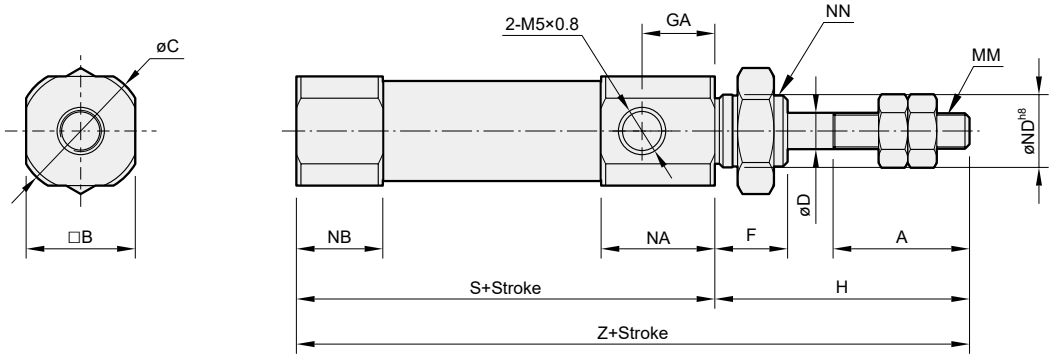
Code / Tube I.D.	A	B	B1	B2	C	CD	CX	C1	C2	D	F	GA	GB	H	H1	H2	MM	NA	NB	ND h8	NN	R	S	U	Z
10	15	12	11	7	14	3.3	3.2	12.7	8.1	4	8	8	18	28	4	3.2	M4×0.7	12.5	22.5	8 $^{0}_{-0.022}$	M8×1.0	5	46	8	82
16	15	18	14	8	20	5	6.5	16.2	9.2	5	8	8	23	28	4	4	M5×0.8	12.5	27.5	10 $^{0}_{-0.022}$	M10×1.0	8	47	10	85

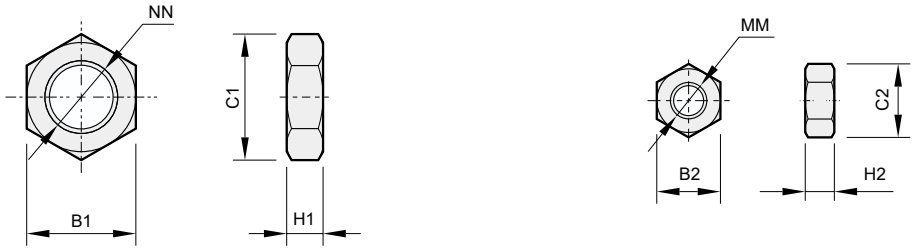
R

ø6



ø10~ø16



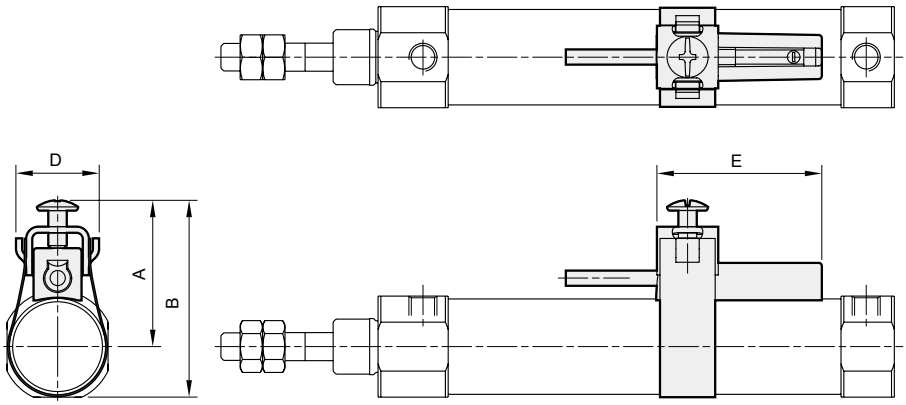


Code / Tube I.D.	A	B	B1	B2	C	C1	C2	D	F	GA	H	H1	H2	MM	NA	NB	ND h8	NN	S	T	Z
6	15	12	8	5.5	14	9.2	6.4	3	8	14.5	28	4	2.4	M3×0.5	16	7	6 $^{0}_{-0.022}$	M6×1.0	49	3	77
10	15	12	11	7	14	12.7	8.1	4	8	8	28	4	3.2	M4×0.7	12.5	9.5	8 $^{0}_{-0.022}$	M8×1.0	46	–	74
16	15	18	14	8	20	16.2	9.2	5	8	8	28	4	4	M5×0.8	12.5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

Installation of sensor switch

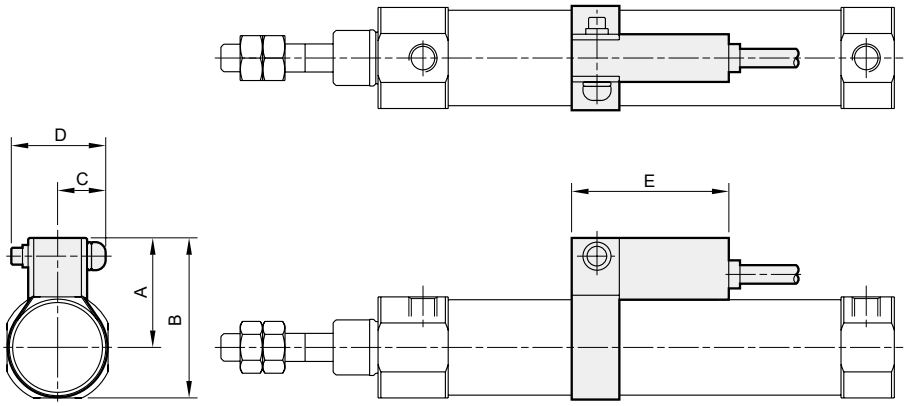
Sensor switch: R*C
Band: BKC-1

Code / Tube I.D.	A	B	D	E
6	19.5	23.5	13.5	27
10	21.5	27.5	13.5	27
16	24.5	33.5	13.5	27



Sensor switch: RCM
Band: BM**

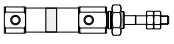
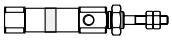
Code / Tube I.D.	A	B	C	D	E
6	15	21	10	16	28
10	17	23	10	16	28
16	20	29	10	16	28



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

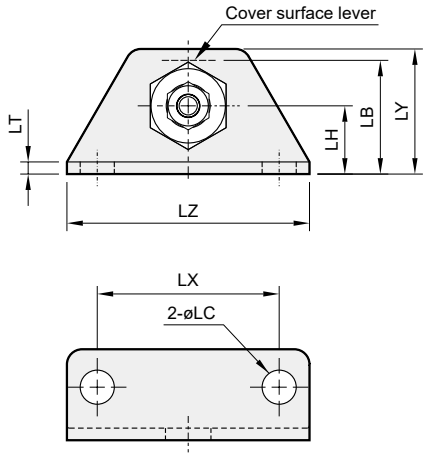
Accessories weight

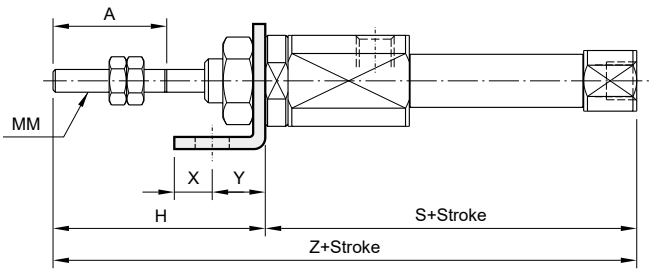
Unit: g

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

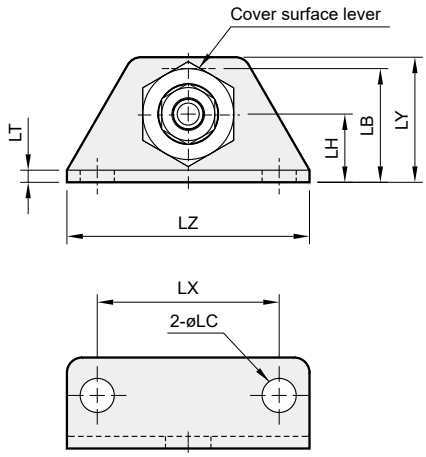
LB

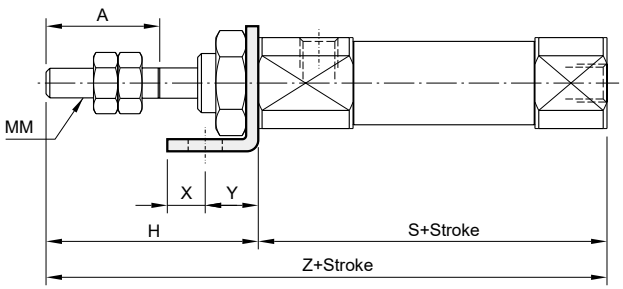
ø6





ø10~ø16

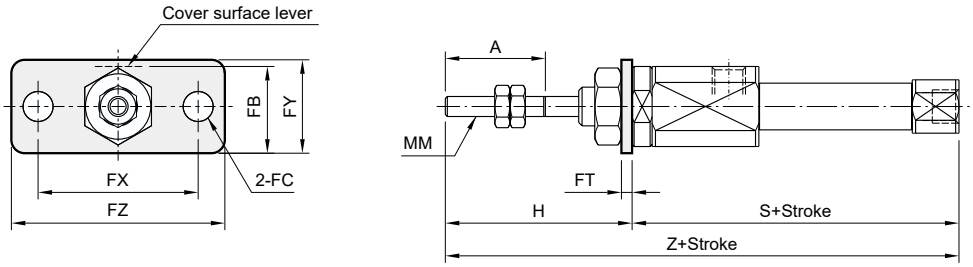




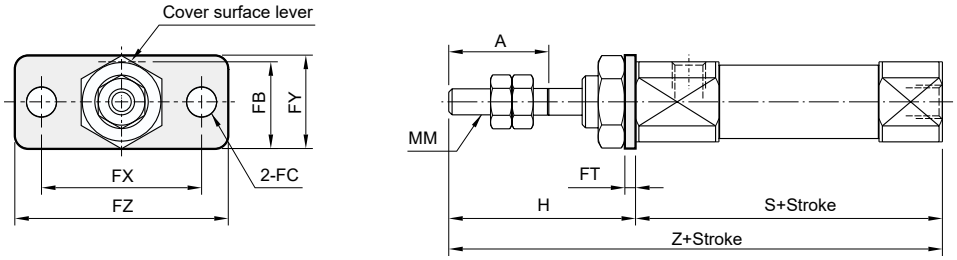
Code / Tube I.D.	A	H	LB	LC	LH	LT	LX	LY	LZ	MM	S	X	Y	Z
6	15	28	15	4.5	9	1.6	24	16.5	32	M3×0.5	49	5	7	77
10	15	28	15	4.5	9	1.6	24	16.5	32	M4×0.7	46	5	7	74
16	15	28	23	5.5	14	2.3	33	25	42	M5×0.8	47	6	9	75

FA

ø6



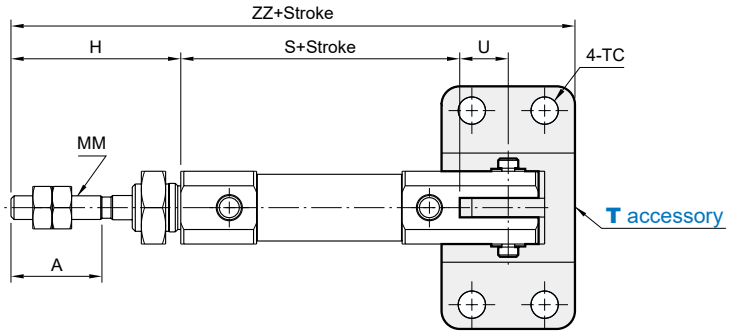
ø10~ø16

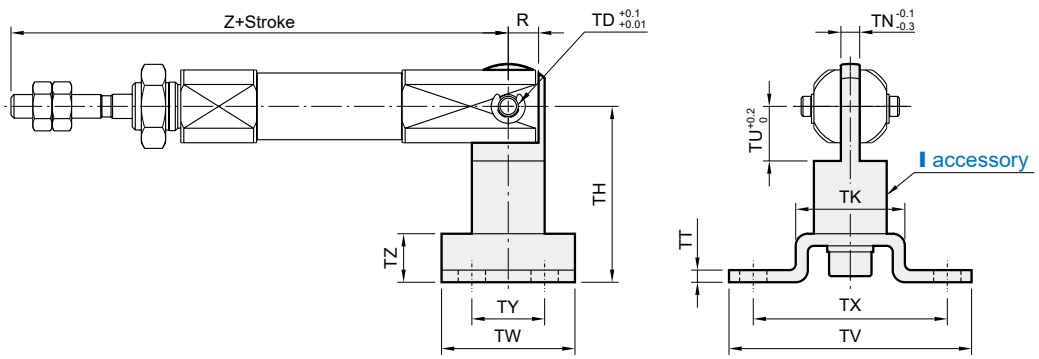


Code / Tube I.D.	A	FB	FC	FT	FX	FY	FZ	H	MM	S	Z
6	15	13	4.5	1.6	24	14	32	28	M3×0.5	49	77
10	15	13	4.5	1.6	24	14	32	28	M4×0.7	46	74
16	15	19	5.5	2.3	33	20	42	28	M5×0.8	47	75

T

Contains **I+PIN**

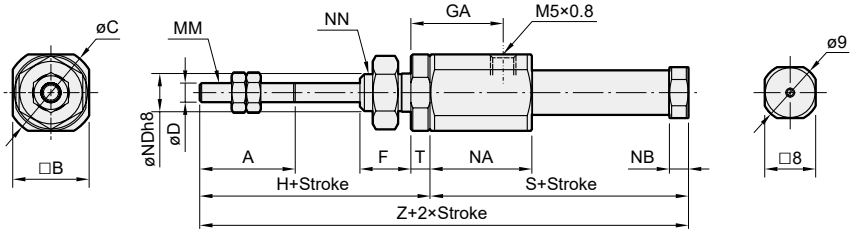




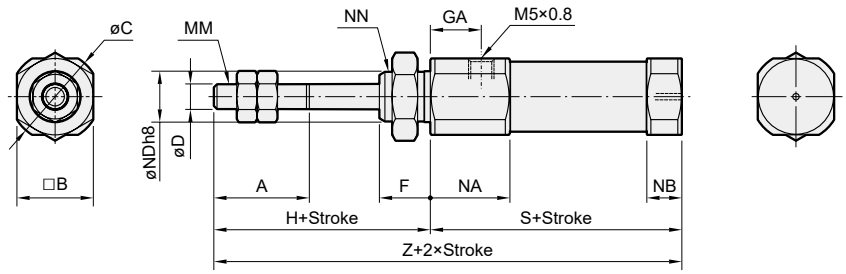
Code / Tube I.D.	A	H	MM	R	S	TC	TD	TH	TK	TN	TT	TU	TV	TW	TX	TY	TZ	U	Z	ZZ
10	15	28	M4×0.7	5	46	4.5	3.3	29	18	3.1	2	9	40	22	32	12	8	8	8	93
16	15	28	M5×0.8	8	47	5.5	5	35	20	6.4	2.3	14	48	28	38	16	10	10	10	99

13

ø6



ø10, ø16



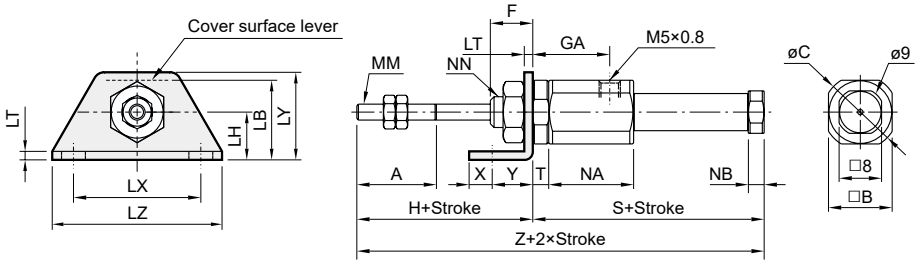
Code / Tube I.D.	A	B	C	D	F	GA	H	MM	NA	NB	ND	NN	T
6	15	12	14	3	8	14.5	28	M3×0.5	16	3	$6\,^{0}_{-0.018}$	M6×1.0	3
10	15	12	14	4	8	8	28	M4×0.7	12.5	5.5	$8\,^{0}_{-0.022}$	M8×1.0	–
16	15	18	20	5	8	8	28	M5×0.8	12.5	5.5	$10\,^{0}_{-0.022}$	M10×1.0	–

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

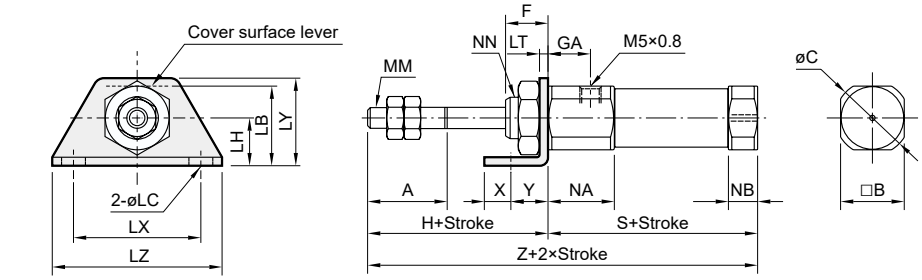
Code / Stroke / Tube I.D.	S *								Z *							
	5~15	16~30	31~45	46~60	61~75	76~100	101~125	126~150	5~15	16~30	31~45	46~60	61~75	76~100	101~125	126~150
6	46.5 (51.5)	55.5 (60.5)	59.5 (64.5)	73.5 (78.5)	–	–	–	–	74.5 (79.5)	83.5 (88.5)	87.5 (92.5)	101.5 (106.5)	–	–	–	–
10	48.5	56	68	80	–	–	–	–	76.5	84	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



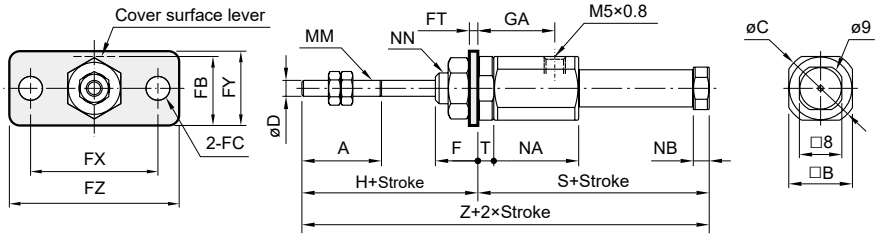
Code / Tube I.D.	A	B	C	D	F	GA	H	LB	LC	LH	LT	LX	LY	LZ	MM	NA	NB	NN	T	X	Y
6	15	12	14	3	8	14.5	28	15	4.5	9	1.6	24	16.5	32	M3×0.5	16	3	M6×1.0	3	5	7
10	15	12	14	4	8	8	28	15	4.5	9	1.6	24	16.5	32	M4×0.7	12.5	5.5	M8×1.0	–	5	7
16	15	18	20	5	8	8	28	23	5.5	14	2.3	33	25	42	M5×0.8	12.5	5.5	M10×1.0	–	6	9

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

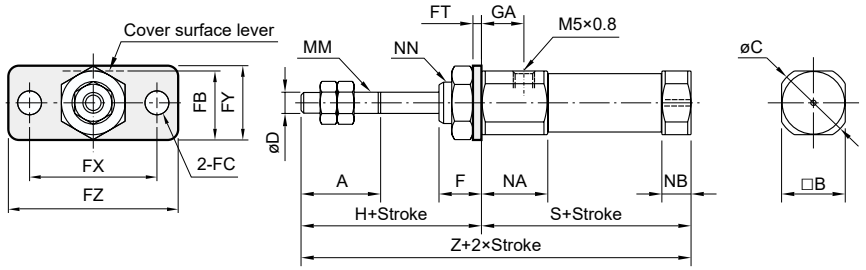
* (S), (Z) ( ) indicate the size of that with magnet ring.

FA

ø6



ø10~ø16



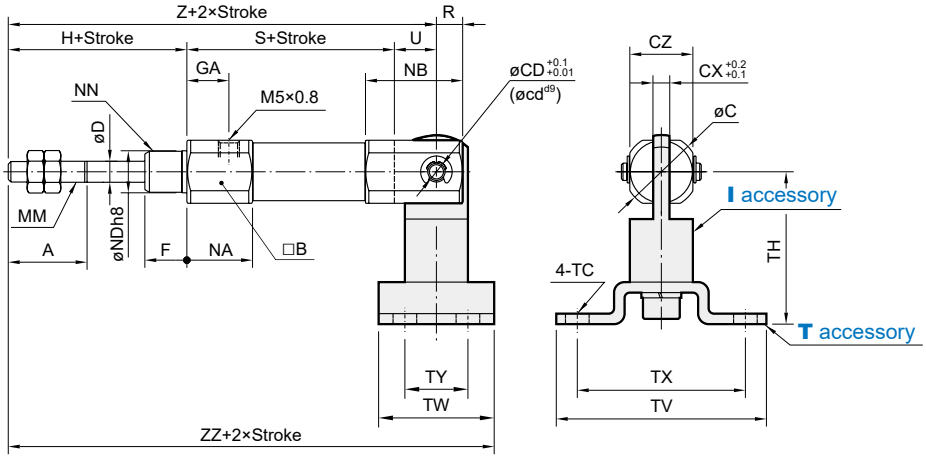
Code / Tube I.D.	A	B	C	D	F	GA	H	FB	FC	FT	FX	FY	FZ	MM	NA	NB	NN	T	X	Y
6	15	12	14	3	8	14.5	28	11	4.5	1.6	24	14	32	M3×0.5	16	3	M6×1.0	3	5	7
10	15	12	14	4	8	8	28	13	4.5	1.6	24	14	32	M4×0.7	12.5	5.5	M8×1.0	–	5	7
16	15	18	20	5	8	8	28	19	5.5	2.3	33	20	42	M5×0.8	12.5	5.5	M10×1.0	–	6	9

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

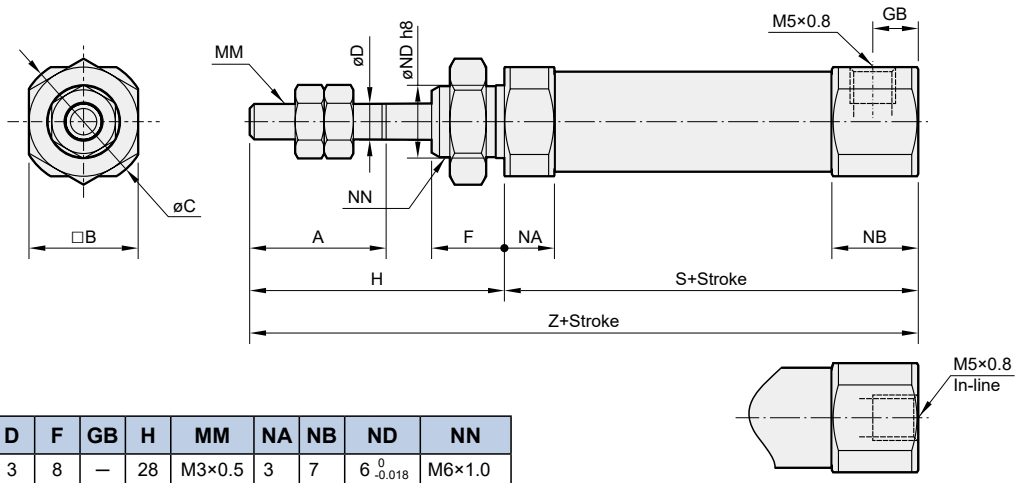
Contains **I+PIN**



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

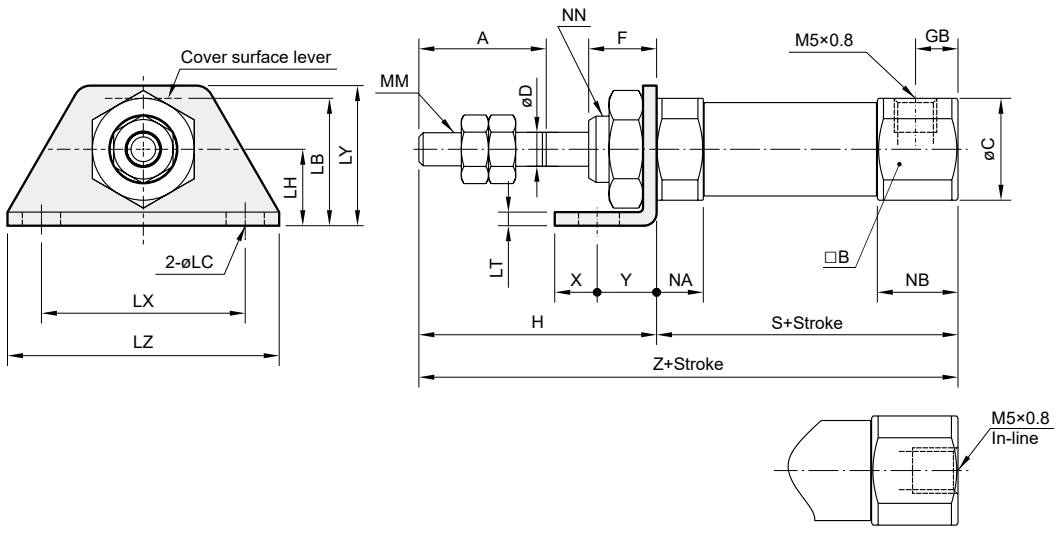


Code / Tube I.D.	A	B	C	D	F	GB	H	MM	NA	NB	ND	NN
6	15	8	9	3	8	–	28	M3×0.5	3	7	$6^{\ 0}_{-0.018}$	M6×1.0
10	15	12	14	4	8	5	28	M4×0.7	5.5	9.5	$8^{\ 0}_{-0.022}$	M8×1.0
16	15	18	20	5	8	5	28	M5×0.8	5.5	9.5	$10^{\ 0}_{-0.022}$	M10×1.0

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

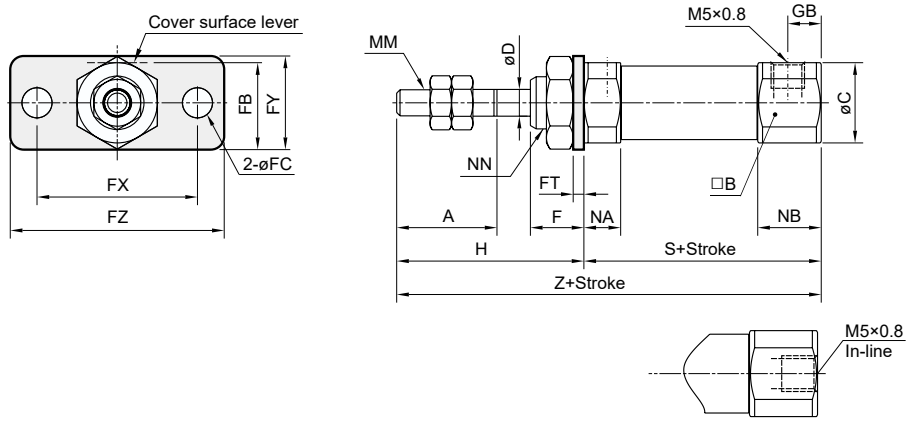


Code / Tube I.D.	A	B	C	D	F	GB	H	LB	LC	LH	LT	LX	LY	LZ	MM	NA	NB	NN	X	Y
6	15	8	9	3	8	–	28	13	4.5	9	1.6	24	16.5	32	M3×0.5	3	7	M6×1.0	5	7
10	15	12	14	4	8	5	28	15	4.5	9	1.6	24	16.5	32	M4×0.7	5.5	9.5	M8×1.0	5	7
16	15	18	20	5	8	5	28	23	5.5	14	2.3	33	25	42	M5×0.8	5.5	9.5	M10×1.0	6	9

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



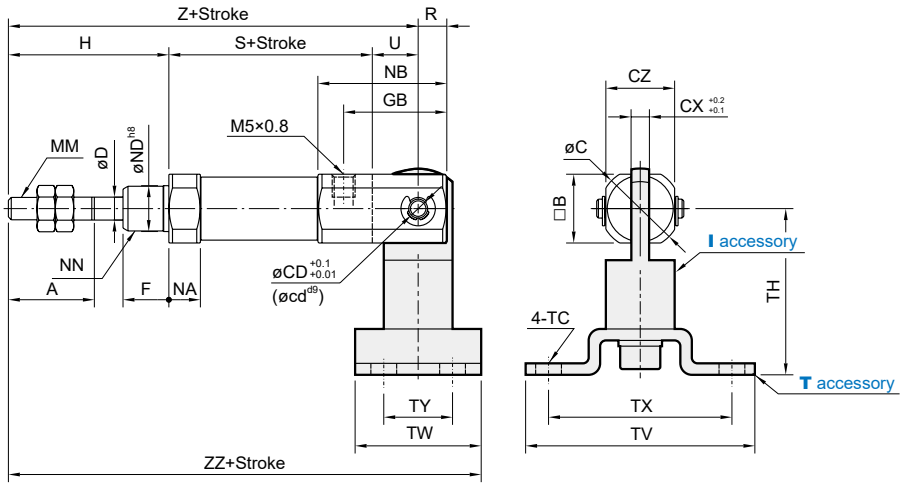
Code / Tube I.D.	A	B	C	D	F	GB	H	FB	FC	FT	FX	FY	FZ	MM	NA	NB	NN	X	Y
6	15	8	9	3	8	–	28	11	4.5	1.6	24	14	32	M3×0.5	3	7	M6×1.0	5	7
10	15	12	14	4	8	5	28	13	4.5	1.6	24	14	32	M4×0.7	5.5	9.5	M8×1.0	5	7
16	15	18	20	5	8	5	28	19	5.5	2.3	33	20	42	M5×0.8	5.5	9.5	M10×1.0	6	9

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

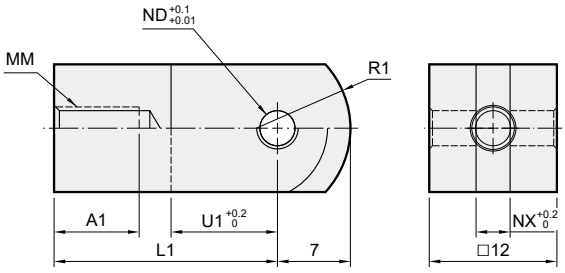
Contains **I+PIN**



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

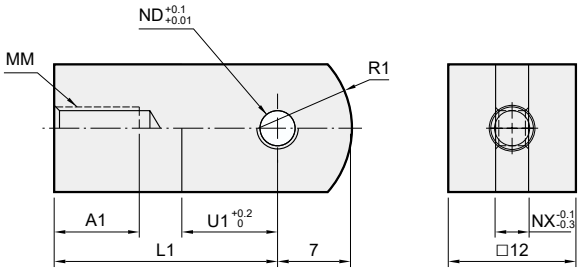
Code / Stroke / Tube I.D.	S								Z								ZZ							
	5~15	16~30	31~45	46~60	61~75	76~100	101~125	126~150	5~15	16~30	31~45	46~60	61~75	76~100	101~125	126~150	5~15	16~30	31~45	46~60	61~75	76~100	101~125	126~150
10	45.5	53	65	77	–	–	–	–	81.5	89	101	113	–	–	–	–	92.5	100	112	124	–	–	–	–
16	45.5	54	66	78	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

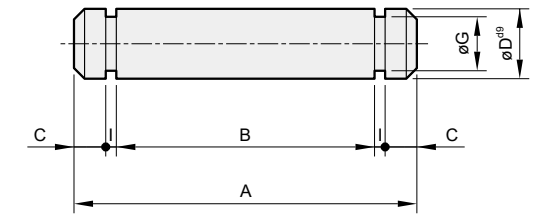
I connector



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

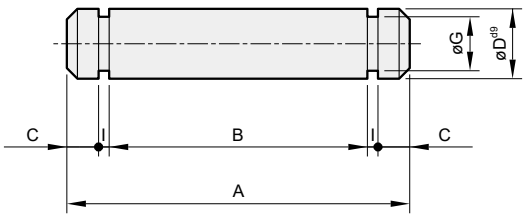
P



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

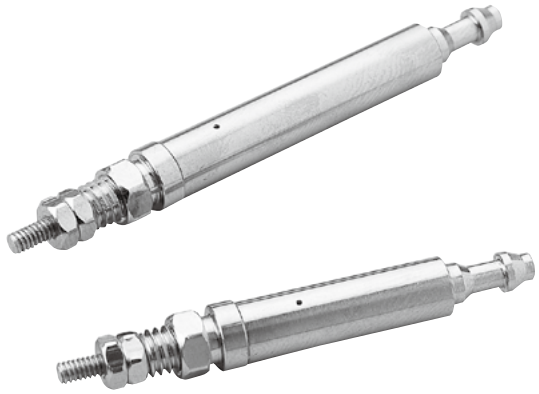
MCMJ1 series

PEN CYLINDER

mindman

Technical data

Caution for safety
(Read before installing)



Specification

Model	MCMJ1
Acting type	Single acting
Tube I.D. (mm)	4
Medium	Air
Max. operating perssure	0.7 MPa
Min. operating perssure	0.3 MPa
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	0.004J

* All this product line is without magnet.

Table for standard stroke

Tube I.D.	Stroke (mm)
ø4	5,10,15,20

Tightening torque

Tube I.D.	Rod thread	Tightening torque (kgf·cm)
ø4	M2×0.4	1.39

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

Spring retracting force

Unit: N

Tube I.D.	Extended position	Retracted position
ø4	3.04	1.07

Theoretical force

Unit: N

Tube I.D.	Operation direction	Piston area (mm)	Operating pressure (MPa)				
			0.3	0.4	0.5	0.6	0.7
ø4	OUT	12.6	0.74	2.0	3.26	4.52	5.78
	IN	–	1.47				

Order example

MCMJ1 – 15 – 4 – 10

- MODEL
- 1: Single rod
- TUBE I.D.
- STROKE (mm) **5,10,15,20**
- STYLE

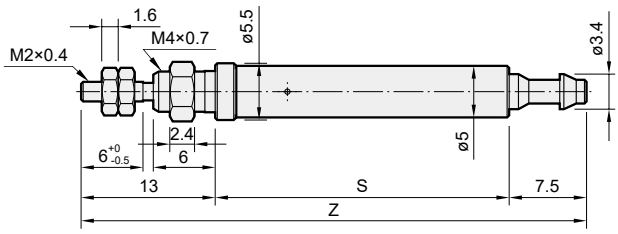
Code		Symbol	Description
1	**5**		Single acting / Normally returned male thread

Cylinder weight

Unit: g

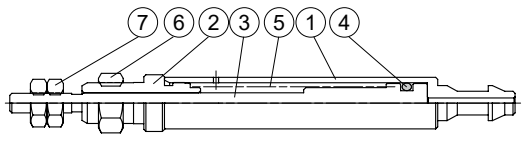
Tube I.D.	Stroke (mm)			
	5	10	15	20
ø4	38	48	58	68

Dimensions



Code / Stroke / Tube I.D.	S				Z			
	5	10	15	20	5	10	15	20
4	19.5	28.5	37.5	46.5	40	49	58	67

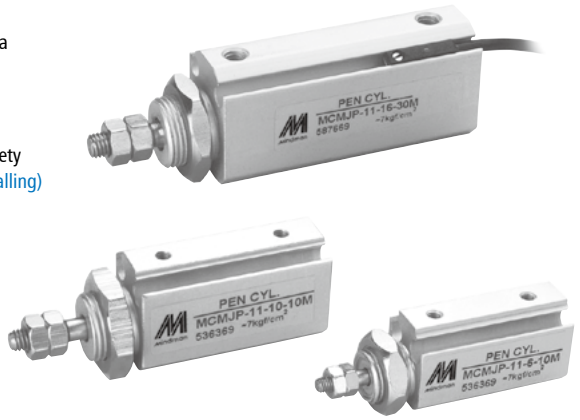
Inside structure & Parts list



No.	Part name	Material
1	Tube	Copper
2	Rod cover	Copper
3	Piston rod	Stainless steel
4	Piston packing	NBR
5	Spring	Stainless steel
6	Tie nut	Copper
7	Rod front nut	Copper

Technical data

Caution for safety
(Read before installing)



Features

- Space saving, compact design enables simple mounting.
- Flush fitting sensor switch.

Specification

Model	MCMJP		
Acting type	Double acting		
Tube I.D. (mm)	6	10	16
Port size	M3×0.5		M5×0.8
Medium	Air		
Max. operating perssure	0.7 MPa		
Min. operating perssure	0.12 MPa		0.06 MPa
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	0.012J	0.025J	0.05J
Sensor switch	RDC(V), RQC(V), RDFE(V), RDGV		

Table for standard stroke

Tube I.D.		Stroke (mm)	Max. stroke (mm)	
			Without	With magnet
Standard type	ø6	5,10,15,20,25	30	25
	ø10	5,10,15,20,25,30	35	30
	ø16	5,10,15,20,25,30,40	45	40
End-plain	ø6	5,10,15,20	25	20
	ø10	5,10,15,20	25	20
	ø16	5,10,15,20,25	30	25

* It can't be supplied if the stroke is out of the maximum of above table.

Cylinder weight

Unit: g

Stroke (mm)	**11**: Male thread			**18**: Threadless		
	ø6	ø10	ø16	ø6	ø10	ø16
5	19	29	46	18	28	45
10	21	31	50	20	30	49
15	24	34	54	23	33	53
20	26	36	58	25	35	57
25	29	39	62	28	38	61
30	–	41	66	–	40	65
40	–	–	74	–	–	73

Order example

MCMJP — 11 — 6 — 10M — E

MODEL | **1**: Single rod | TUBE I.D. | STROKE | **M**: Magnet

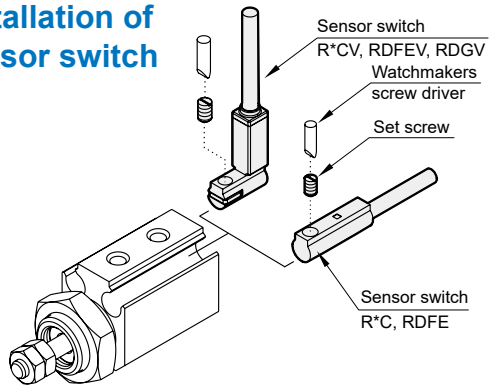
STYLE

Code		Symbol	Description
1	1		Double acting / Male thread
1	8		Double acting / Threadless

TYPE

Code	Symbol	Description
Blank		Standard type
E		End-plain

Installation of sensor switch



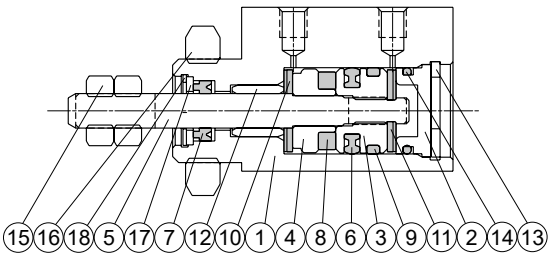
Order example of mounting accessories

Code	Accessories			
	LB	**FA**	**SDB** (With pin×1 + snap ring×2)	**NUT**
Type	Standard type		End-plain (E)	–
Mounting / Tube I.D.				Rod nut
ø6	**LB-M5-6**	**FA-M5-6**	**SDB-M5-6**	**NUT-M3x0.5x2.4Hx5.5B**
ø10	**LB-M5-10**	**FA-M5-10**	**SDB-M5-10**	**NUT-M4x0.7x3.2Hx7B**
ø16	**LB-M5-16**	**FA-M5-16**	**SDB-M5-16**	**NUT-M5x0.8x4Hx8B**

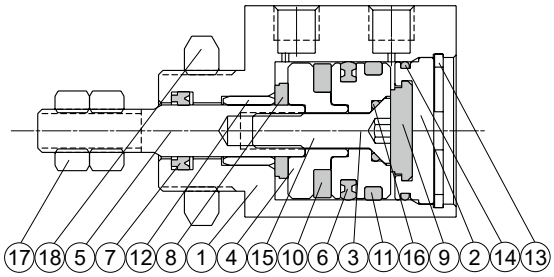
Pin

Applicable	SDB accessories
Code	**PIN-SDB-P** (With snap pin)
Fig / Tube I.D.	
ø6	**PIN-M5-6-1-P**
ø10	**PIN-M5-10-1-P**
ø16	**PIN-M5-16-1-P**

ø6, ø10



ø16



Material

No.	Tube I.D. / Part name	6	10	Note	Q'y	Repair kits (inclusion)
1	Body	Aluminum alloy			1	
2	End cover	Aluminum alloy			1	
3	Piston	Aluminum alloy			1	
4	Piston	Aluminum alloy		for with magnet	1	
5	Piston rod	Stainless steel			1	
6	Pistion packing	NBR			1	●
7	Rod packing	NBR			1	●
8	Magnet ring	Magnet material		for with magnet	1	
9	Wear ring	Resin			1	
10	Cushion	NBR			1	●
11	Cushion	NBR			1	●
12	Rod bush	Copper			1	
13	Stop ring	Carbon steel			1	
14	Cover ring	NBR			1	●
15	Rod front nut	Carbon steel			2	
16	Tie nut	Carbon steel			1	
17	Fixed ring	Aluminum alloy			1	
18	Stop ring	Carbon steel			1	

No.	Tube I.D. / Part name	16	Note	Q'y	Repair kits (inclusion)
1	Body	Aluminum alloy		1	
2	End cover	Aluminum alloy		1	
3	Piston	Aluminum alloy		1	
4	Piston	Aluminum alloy	for with magnet	1	
5	Piston rod	Stainless steel		1	
6	Pistion packing	NBR		1	●
7	Rod packing	NBR		1	●
8	Cushion	NBR		1	●
9	Cushion	NBR		1	●
10	Magnet ring	Magnet material	for with magnet	1	
11	Wear ring	Resin		1	
12	Rod bush	Copper		1	
13	Stop ring	Carbon steel		1	
14	Cover ring	NBR		1	●
15	Piston bolt	SCM		1	
16	Piston gasket	NBR		1	●
17	Rod front nut	Carbon steel		2	
18	Tie nut	Carbon steel		1	

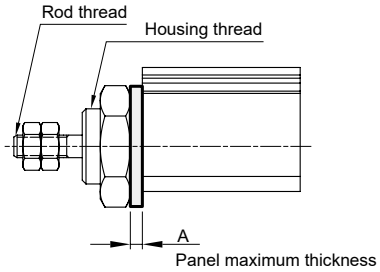
Order example of repair kits

Tube I.D.	Repair kits
ø6	**PS-MCMJP-6**
ø10	**PS-MCMJP-10**
ø16	**PS-MCMJP-16**

Tightening torque

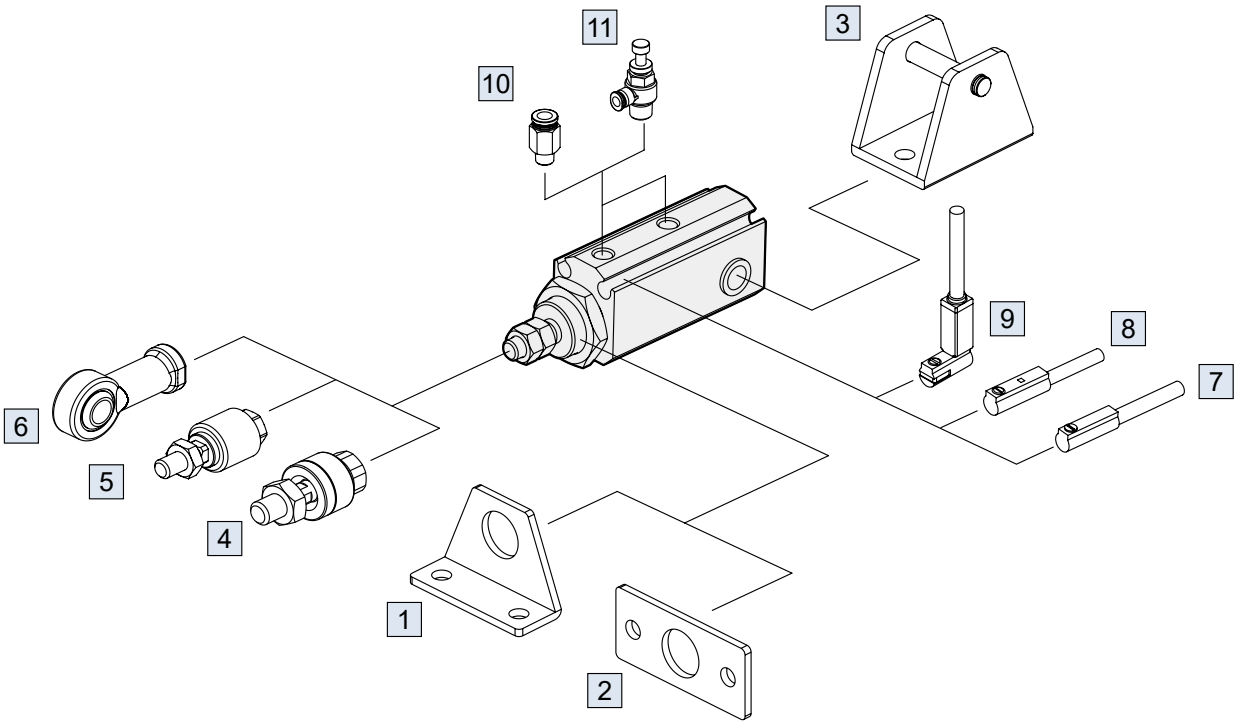
Tube I.D.	Rod thread	Maximum Tightening torque (kgf·cm)
ø6	M3×0.5	3.1
ø10	M4×0.7	8.2
ø16	M5×0.8	16.3

Tube I.D.	Housing thread	Maximum Tightening torque (kgf·cm)	A (mm)
ø6	M10×1	125	4
ø10	M12×1	214	4
ø16	M14×1	347	5



- Make sure the tightening torque of thread does not exceed the value above.

Accessories

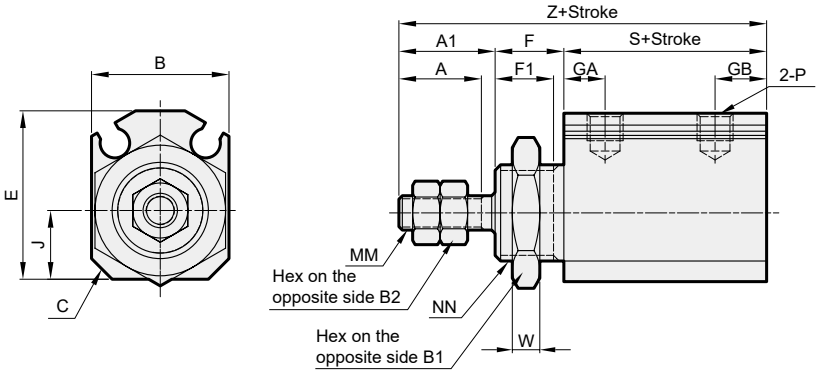


No.	Accessories	Material	Page link
1	Mounting accessories LB	Carbon steel	
2	Mounting accessories FA	Carbon steel	
3	Mounting accessories SDB+PIN	Carbon steel / *1	,
4	Floating joint MFC	Carbon steel	
5	Floating joint MFCS	Carbon steel	
6	Female rod ends PHS	Carbon steel	
7	Sensor switch R*C(V)	–	
8	Sensor switch RDFE	–	
9	Sensor switch RDGV	–	
10	Fitting PC (PISCO)	–	
11	Speed controller JSC (PISCO)	–	

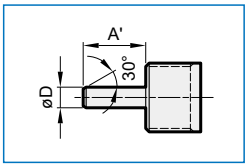
*1. PIN material is stainless steel.

MCMJP Dimensions ø6~ø16

PEN CYLINDER

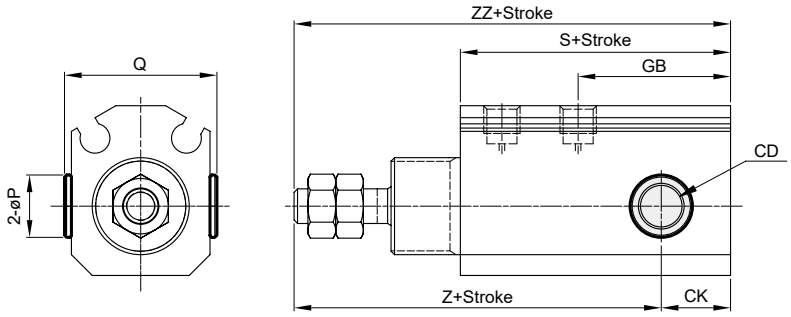


MCMJP-18



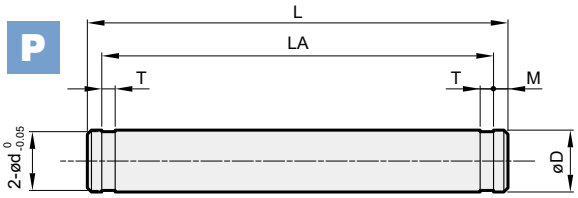
Code / Tube I.D.	A	A1	B	B1	B2	C	D	E	F	F1	GA	GB	J	MM	NN	P	W	Without magnet		Magnet	
																		S	Z	S	Z
6	7	9	14	14	5.5	2	3	16.5	8	6.5	5.5	6	6	M3×0.5	M10×1.0	M3×0.5	4	16	33	21	38
10	10	12	15	17	7	2.5	4	19	8	6.5	6	7	7	M4×0.7	M12×1.0	M3×0.5	4	19.5	39.5	24.5	44.5
16	12	14	20	19	8	3	6	24.5	10	8.5	6	7.5	10	M5×0.8	M14×1.0	M5×0.8	4	19.5	43.5	24.5	48.5

E



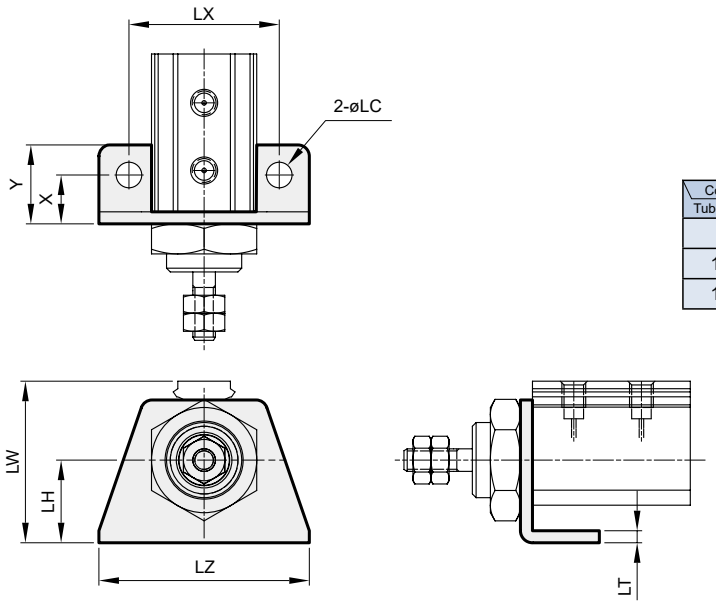
Code / Tube I.D.	CD	CK	GB	P	Q	Without magnet			Magnet		
						S	Z	ZZ	S	Z	ZZ
6	3 $^{+0.04}_{+0}$	4	11	—	—	21	34	38	26	39	43
10	5 $^{+0.06}_{+0}$	6.5	18	8	17	30.5	44	50.5	35.5	49	55.5
16	6 $^{+0.06}_{+0}$	10	22	9	22	34	48	58	39	53	63

PIN



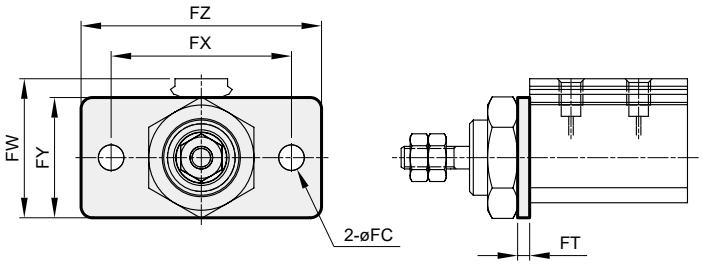
Code / Tube I.D.	D^{d9}	d	L	LA	M	T	Split pin
6	3 $^{-0.02}_{-0.05}$	2.85	20.4	19	0.7	0.5	STW-3
10	5 $^{-0.03}_{-0.06}$	4.8	23.9	21.9	1	0.7	STW-5
16	6 $^{-0.03}_{-0.06}$	5.7	31.9	29.9	1	0.8	STW-6

LB



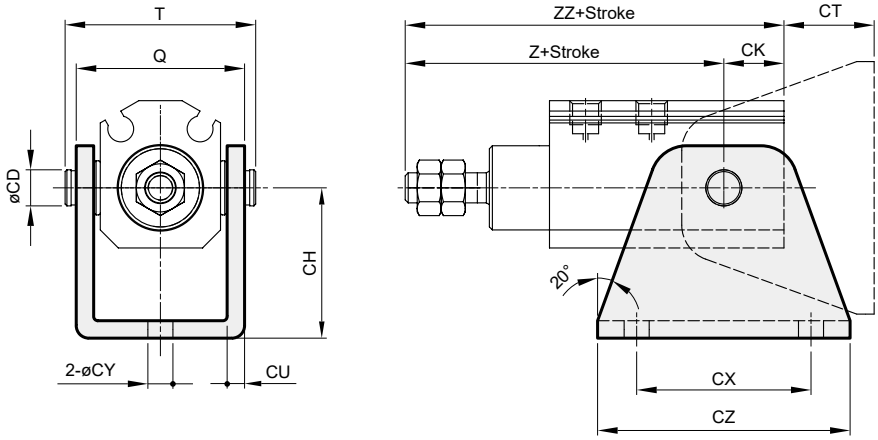
Code / Tube I.D.	LC	LH	LT	LW	LX	LZ	X	Y
6	3.4	11	1.6	21.5	20	28	6.5	10.5
10	4.5	13	1.6	25	24	33	7	12
16	5.5	18	2.3	32.5	30	43	10	16.5

FA



Code / Tube I.D.	FC	FT	FW	FX	FY	FZ
6	3.4	1.6	18.5	24	16	32
10	4.5	1.6	21	28	18	37
16	5.5	2.3	25.5	36	22	49

SDB



Code / Tube I.D.	CD	CH	CK	CT	CU	CX	CY	CZ	Q	T	Without magnet		Magnet	
											Z	ZZ	Z	ZZ
6	3	16	4	12	1.6	18	3.4	26	18.5	20.4	34	38	39	43
10	5	20	6.5	13.5	1.6	24	4.5	33	20.5	23.9	44	50.5	49	55.5
16	6	25	10	15	3	29	5.5	42	28.2	31.9	48	58	53	63

MCMJP* series

PEN CYLINDER

mindman

Technical data

Caution for safety
(Read before installing)

Features

■ A short stroke miniature cylinder with a shorter overall length.

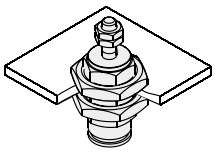
The installation space can be significantly reduced because this cylinder can be recessed directly into a machine body or installed on a panel. Thus, the machines can be made more compact.

Specification

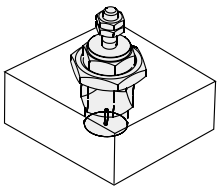
Model	MCMJPB		MCMJPS
Acting type	Single acting		
Tube I.D. (mm)	6	10	15
Medium	Air		
Max. operating perssure	0.7 MPa		
Min. operating perssure ø6	0.2 MPa		
Min. operating perssure ø10,15	0.15 MPa		
Proof pressure	1 MPa		
Lubrication	Not required		
Ambient temperature	-5~+60°C (No freezing)		
Available speed range	50~500 mm/sec		
Max. allowable kinetic energy	0.003J	0.008J	0.019J

* All this product line is without magnet

Mounting type



B: Panel mounting style



S: Plug mounting style

Order example

MCMJPB — 15 — 6 — 15

- MODEL
- **1**: Single rod
- TUBE I.D.
- STROKE (mm) **5**,**10**,**15**
- **B**: Panel mounting
  S: Plug mounting
- STYLE

Code		Symbol	Description
1	**0**		Single acting / Normally returned without thread
1	**5**		Single acting / Normally returned male thread

Table for standard stroke

Tube I.D.	Stroke (mm)
ø6,10,15	5,10,15

Spring retracting force

Unit: N

Tube I.D.	Extended position	Retracted position
ø6	3.92	1.42
ø10	5.98	2.45
ø15	10.80	4.41

Theoretical force

Unit: N

Tube I.D.	Operation direction	Operating pressure (MPa)		
		0.3	0.5	0.7
ø6	OUT	4.56	10.2	15.9
	IN	1.42		
ø10	OUT	17.6	33.3	49.0
	IN	2.45		
ø15	OUT	42.2	77.5	113
	IN	4.41		

Tightening torque

	Rod thread	Max. Tightening torque (kgf·cm)
MCMJPB/S Piston rod	M3×0.5	3.1
	M4×0.7	8.2
	M5×0.8	16.3

	Housing thread	Max. Tightening torque (kgf·cm)
MCMJPB/S Housing	M10×1	100
	M15×1.5	100
	M22×1.5	360

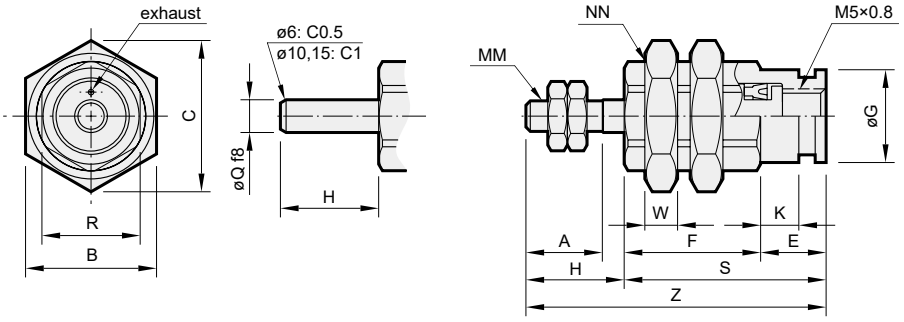
* Make sure the tightening torque of thread does not exceed the value above.

Weight

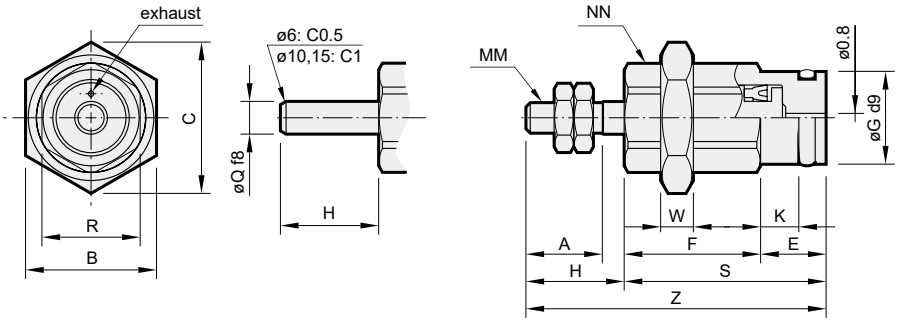
Unit: g

Tube I.D.	Basic weight **MCMJPB**	Stroke 5 mm **MCMJPB**	Basic weight **MCMJPS**	Stroke 5 mm **MCMJPS**
ø6	8	2	7	2
ø10	23	5	22	5
ø15	63	10	62	10

MCMJPB

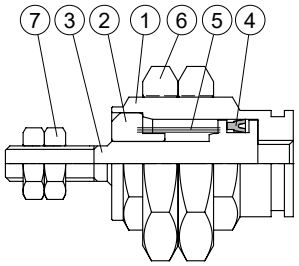


MCMJPS



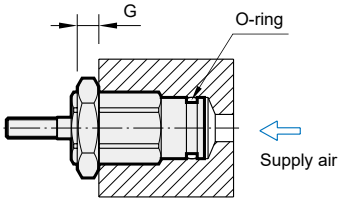
Code / Tube I.D.	A	B	C	E	F			G	H	K	MM	NN	Q	R	S			W	Z		
					5st	10st	15st								5st	10st	15st		5st	10st	15st
6	7	12	13.9	6	12.5	19.5	26.5	8.5	9	3.5	M3×0.5	M10×1.0	3	9	18.5	25.5	32.5	3	27.5	34.5	41.5
10	10	19	22	6	14.5	21	28	12	12	3.5	M4×0.7	M15×1.5	5	13	20.5	27	34	4	32.5	39	46
15	12	27	31	7	16.5	22.5	29	19	14	4.2	M5×0.8	M22×1.5	6	20	23.5	29.5	36	5	37.5	43.5	50

Inside structure & Parts list

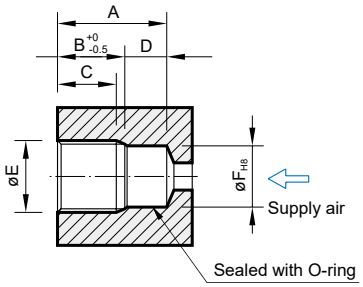


No.	Part name	Material		
		6	10	15
1	Body	Copper		
2	Cover	Copper		
3	Piston rod	Stainless steel		
4	Piston packing	NBR		
5	Spring	SWP		
6	Nut	Copper		*
7	Rod front nut	Carbon steel		

* Carbon steel



When plug mounting



Maching dimension for mounting

Tube I.D.	Code / Stroke	A	B	C	D	E	F	G
6	5	16	12.5	10	3.5	M10×1.0	8.5	3
	10	23	19.5	17				
	15	30	26.5	24				
10	5	17	13.5	10.5	3.5	M15×1.5	12	4
	10	23.5	20	17				
	15	30.5	27	24				
15	5	19	14.5	11.5	4.5	M22×1.5	19	5
	10	25	20.5	17.5				
	15	31.5	27	24				

MCCG series

ROUND CYLINDER

mindman

Special spec

Rod end shape

Technical data

Caution for safety
(Read before installing)

Table for standard stroke

Tube I.D.	Stroke (mm)	Long stroke (mm)	Max. stroke (mm)
ø20	25,50,75,100,125,150,200	201~350	1200
ø25	25,50,75,100,125, 150,200,250,300	301~400	
ø32		301~450	
ø40		301~800	
ø50		301~1200	
ø63		301~500	500
ø80		301~500	
ø100		301~500	

* Intermediate stroke are available, please contact us.

Specification

Model		MCCG							
Acting type		Double acting							
Tube I.D. (mm)		20	25	32	40	50	63	80	100
Port size		Rc1/8				Rc1/4		Rc3/8	Rc1/2
Medium		Air							
Max. operating perssure		1 MPa							
Min. operating perssure		0.05 MPa							
Proof pressure		1.5 MPa							
Lubrication		Not required							
Ambient temperature		-5~+60°C (No freezing)							
Available speed range		50~500 mm/sec							
Max. allowable kinetic energy (J)	Cushion pad	0.07	0.10	0.17	0.3	0.5	0.85	1.48	2.48
	Cushion air	0.09	0.14	0.23	0.45	0.85	1.23	2.95	4.18
Sensor switch		RDC, RQC, RCM						RCM	
Sensor switch band	R*C	BKC-1 (Not for R*CV angle cable)						–	
	RCM	BMG20	BMG25	BMG32	BMG40	BMG50	BMG63	BMG80	BMG100

Order example

MCCG — 11 — 40 — 100M — A — □

MODEL

STYLE

1: Single rod

Code		Symbol	Description
1	**1**		Double acting / Male thread

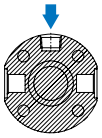
TUBE I.D.

STROKE

M: Magnet

Blank: Cushion pad (Unadjustable)
A: Cushion air (Adjustable) ⚠

PORT THREAD
Blank: Rc thread
NPT: NPT thread

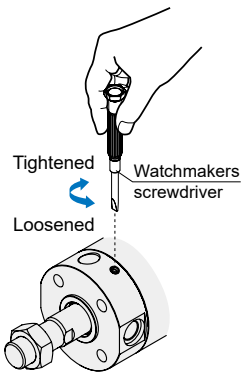


* Order example for **G** thread, please contact us.

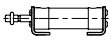
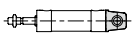
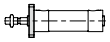
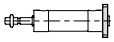
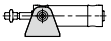
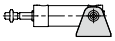
⚠ Caution

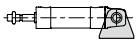
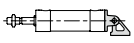
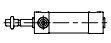
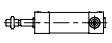
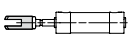
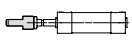
For (**A**) Cushion air (Adjustable)

1. 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.
2. If the needle valve loosen excessively, the buffer doesn't take effect and the lifetime of cylinder would be shortened.



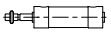
Mounting accessories

	Accessories					
Code	LB (Purchase 2 pcs)	CB	FAC	FBC	SDB-R*1 (with TA)	SDB-H*1 (with TB)
Mounting / Tube I.D.						
ø20	LB-C1-20	CB-C1-20	FAC-C1-20		SDB-C1-20	
ø25	LB-C1-25	CB-C1-25	FAC-C1-25		SDB-C1-25	
ø32	LB-C1-32	CB-C1-32	FAC-C1-32		SDB-C1-32	
ø40	LB-C1-40	CB-C1-40	FAC-C1-40		SDB-C1-40	
ø50	LB-C1-50	CB-C1-50	FAC-C1-50		SDB-C1-50	
ø63	LB-C1-63	CB-C1-63	FAC-C1-63		SDB-C1-63	
ø80	LB-C1-80	CB-C1-80	FAC-C1-80		–	
ø100	LB-C1-100	CB-C1-100	FAC-C1-100		–	

	Accessories				Connector	
Code	CB+SDB+PIN*1 (with Pin)	CB+SDB+PIN*1,*2 (with Pin)	TA (Front trunnion)	TB (Rear trunnion)	Y	I
Mounting / Tube I.D.						
ø20	CB+SDB+PIN-C1-20	–	TA-C1-20		Y-C1-20	I-C1-20
ø25	CB+SDB+PIN-C1-25	–	TA-C1-25		Y-C1-25	I-C1-25
ø32	CB+SDB+PIN-C1-32	–	TA-C1-32			
ø40	CB+SDB+PIN-C1-40	–	TA-C1-40		Y-C1-40	I-C1-40
ø50	CB+SDB+PIN-C1-50	–	TA-C1-50		Y-C1-50	I-C1-50
ø63	CB+SDB+PIN-C1-63	–	TA-C1-63			
ø80	–	CB+SDB+PIN-C1-80	–		Y-C1-80	I-C1-80
ø100	–	CB+SDB+PIN-C1-100	–		Y-C1-100	I-C1-100

1. Mounting procedures please refer to page 3-90.
2. **SDB** accessories (Order example **SDB-C1-80** / **100**).

Pin

	Rod nut
Code	NUT
Mounting / Tube I.D.	
ø20	NUT-M8x1.25x5Hx13B
ø25	NUT-M10x1.25x6Hx17B
ø32	
ø40	NUT-M14x1.5x8Hx22B
ø50	NUT-M18x1.5x11Hx26B
ø63	
ø80	NUT-M22x1.5x13Hx32B
ø100	NUT-M26x1.5x14Hx35B

Applicable	Y&I connector	CB accessories
Code	PIN-Y-P (With snap ring)	PIN-CB-P (With snap ring)
Fig / Tube I.D.		
ø20	PIN-C1-20-2-P	PIN-C1-20-1-P
ø25	PIN-C1-25-2-P	PIN-C1-25-1-P
ø32		PIN-C1-32-1-P
ø40	PIN-C1-40-2-P	PIN-C1-40-1-P
ø50	PIN-C1-50-2-P	PIN-C1-50-1-P
ø63		PIN-C1-63-1-P
ø80	PIN-C1-80-1-P	
ø100	PIN-C1-100-1-P	

Order example of self-assembled

The tube I.D. ø32 of LB accessories, Y connector and pin.

No.	Order number	Qty
1	LB-C1-32	2
2	Y-C1-25	1
3	PIN-C1-25-2-P	1

* To order accessories/ connectors/ pin separately, please place orders separately according to the order codes in the above table.

Order example of factory assembled

⚠ Cylinders and accessories are distinguished by the symbol " + ".

MCCG – Standard model no. + LB

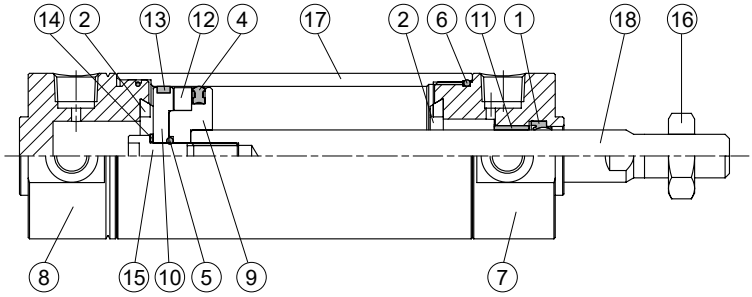
CYLINDER ACCESSORIES

MCCG / MCCN Inside structure & Parts list

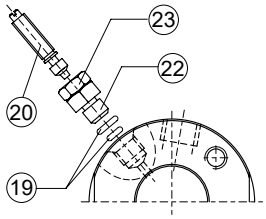
ROUND CYLINDER

mindman

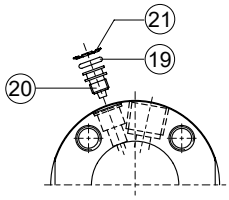
Cushion pad Unadjustable



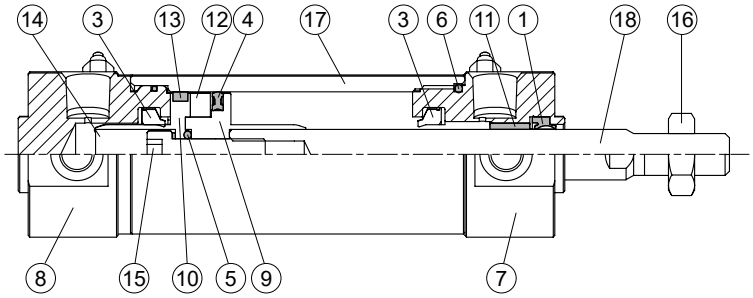
ø20~ø32



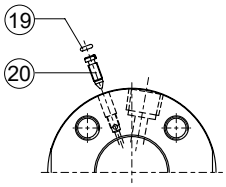
ø50



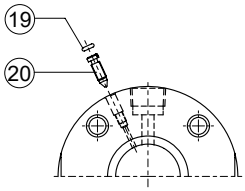
Cushion air Adjustable



ø40, ø63



ø80, ø100



Material

A: Component parts, **B**: Repair kits

No.	Cushion		Part name	Material	Q'y	A	B	Note
	Pad	Air				(inclusion)		
1	●	●	Rod packing	NBR	1	●	●	
2	●		Cushion pad	NBR	2	●	●	
3		●	Cushion pad	NBR	2	●	●	
4	●	●	Piston packing	NBR	1	●	●	
5	●	●	O-ring	NBR	1	●	●	
6	●	●	O-ring	NBR	1 or 2	●	●	ø50~100 (Q'y=2)
7	●	●	Rod cover	Aluminum alloy	1	●		
8	●	●	Head cover	Aluminum alloy	1	●		
9	●	●	Piston-R	Aluminum alloy	1	●		
10	●	●	Piston-H	Aluminum alloy	1	●		
11	●	●	Bush	Bearing alloy	1	●		
12	●	●	Magnet ring	Magnet material	1	◎		◎ Option
			Spacer ring	Aluminum alloy	1	●		for ø20~ø32
13	●	●	Wear ring	Resin	1	●		
14	●	●	Washer	Carbon steel	1	●		ø20 without
15	●	●	Piston bolt	Carbon steel	1	●		
16	●	●	Nut	Carbon steel	1	●		
17	●	●	Cylinder tube	Aluminum alloy	1			
18	●	●	Piston rod	Carbon steel	1			ø20~25 stainless steel
19		●	O-ring	NBR	4 or 2			ø40~80 (Q'y=2)
20		●	Needle valve	Stainless steel	2			*1
21		●	Needle valve packing	Carbon steel	2			only for ø50
22		●	Needle valve fixed nut	Stainless steel	2			only for ø20~32
23		●	Hex nut	Carbon steel	2			only for ø20~32

*1. ø50: Copper, ø63~100: Carbon steel

■ Order example of component parts

CP — MCCG — 20 SM — □

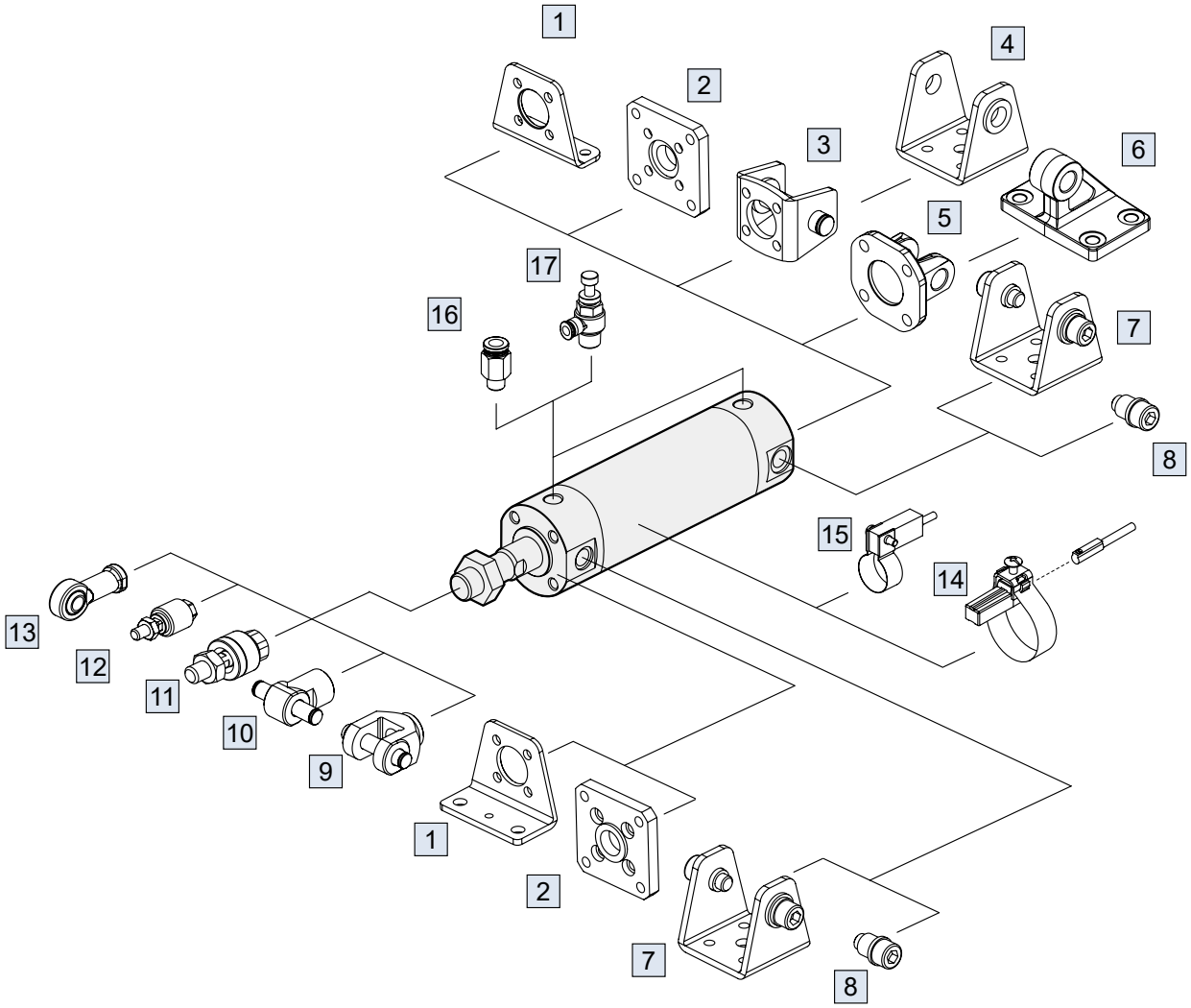
- MODEL: **MCCG**, **MCCN**
- TUBE I.D.: **20**, **25**, **32**, **40**, **50**, **63**, **80**, **100**
- **S**: Standard stroke, **H**: Long stroke
- **M**: Magnet
- PORT THREAD: Blank: Rc thread, **NPT**: NPT thread

* **MCCN** only be used for NPT.
* Order example for **G** thread, please consult us.

■ Order example of repair kits

PS — MCCG — 20 — XB6

- MODEL: **MCCG**, **MCCN**
- TUBE I.D.: **20**, **25**, **32**, **40**, **50**, **63**, **80**, **100**
- Blank: NBR, **XB6**: Heat resistant material

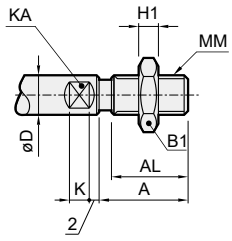


No.	Accessories	Material	Page link
1	Mounting accessories LB	Carbon steel	
2	Mounting accessories FAC/FBC	Carbon steel	
3	Mounting accessories CB+PIN *1	Carbon steel	,
4	Mounting accessories SDB *1	Carbon steel	
5	Mounting accessories CB+PIN *2	Cast iron / *3	,
6	Mounting accessories SDB *2	Cast iron	
7	Mounting accessories SDB-R/H	Carbon steel	
8	Mounting accessories TA/TB	Carbon steel	

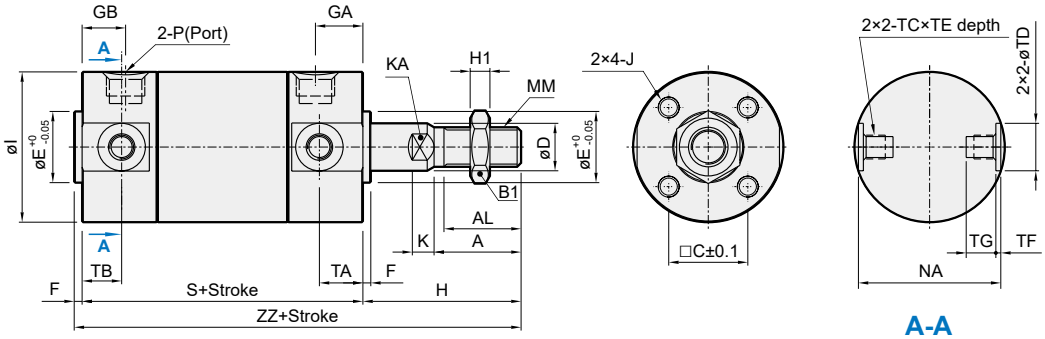
No.	Accessories	Material	Page link
9	Accessories Y+PIN	Carbon steel	
10	Accessories I+PIN	Carbon steel	
11	Floating joint MFC	Carbon steel	
12	Floating joint MFCS	Carbon steel	
13	Female rod ends PHS	Carbon steel	
14	Sensor switch R*C+BKC-1	–	
15	Sensor switch RCM+BMG**	–	
16	Fitting PC (PISCO)	–	
17	Speed controller JSC (PISCO)	–	

*1. For tube I.D. ø20~63.
*2. For tube I.D. ø80,100.
*3. PIN material is carbon steel.

ø20, ø25



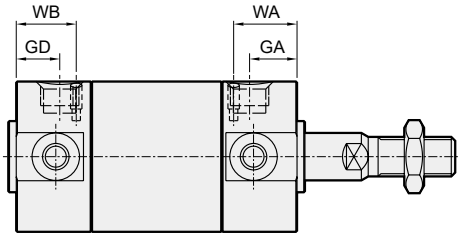
ø32~ø100



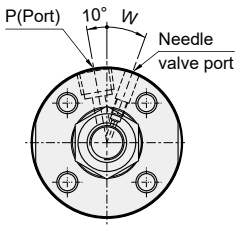
A-A

With cushion air (Adjustagle)

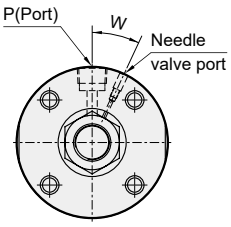
A



ø20~ø63



ø80, ø100

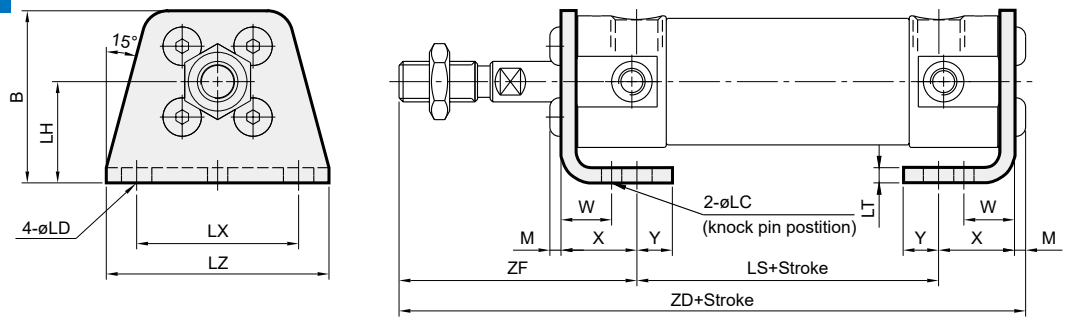


Code / Tube I.D.	Standard stroke range	Long stroke range	A	AL	B1	C	D	E	F	GA	GB	GD	H	H1	I	J	K	KA
20	~200	201~350	18	15.5	13	14	8	12	2	12	12 (12)	12 (12)	35	5	26	M4×0.7×7 dp	4	6
25	~300	301~400	22	19.5	17	16.5	10	14	2	12	12 (12)	12 (12)	40	6	31	M5×0.8×7.5 dp	5	8
32	~300	301~450	22	19.5	17	20	12	18	2	12	11 (12)	11 (12)	40	6	38	M5×0.8×8 dp	5.5	10
40	~300	301~800	30	27	22	26	16	25	2	13	12 (13)	10 (13)	50	8	47	M6×1.0×12 dp	6	14
50	~300	301~1200	35	32	26	32	20	30	2	14	13 (13)	12 (14)	58	11	58	M8×1.25×16 dp	7	18
63	~300	301~700	35	32	26	38	20	32	2	14	13 (13)	12 (14)	58	11	72	M10×1.5×16 dp	7	18
80	~300	301~700	40	37	32	50	25	40	3	20	16 (16)	16 (16)	71	13	89	M10×1.5×22 dp	10	22
100	~300	301~700	40	37	35	60	30	50	3	20	16 (16)	16 (16)	71	14	110	M12×1.75×22 dp	10	26

Code / Tube I.D.	MM	NA	P	S	TA	TB	TC	TD_{H9}	TE	TF	TG	W	WA	WB	ZZ
20	M8×1.25	24	Rc1/8	69(77)	11	11 (11)	M5×0.8	$8^{+0.036}_{0}$	4	0.5	5.5	40°	14	14 (14)	106 (114)
25	M10×1.25	29	Rc1/8	69(77)	11	11 (11)	M6×0.75	$10^{+0.036}_{0}$	5	1	6.5	40°	14	13 (13)	111 (119)
32	M10×1.25	36	Rc1/8	71(79)	11	10 (11)	M8×1.0	$12^{+0.043}_{0}$	5.5	1.25	7.5	30°	14	13 (13)	113 (121)
40	M14×1.5	44	Rc1/8	78(87)	12	10 (12)	M10×1.25	$14^{+0.043}_{0}$	6	1.25	8	20°	16	15 (16)	130 (139)
50	M18×1.5	55	Rc1/4	90(102)	13	12 (13)	M12×1.25	$16^{+0.043}_{0}$	7.5	2	10	20°	16	16 (16)	150 (162)
63	M18×1.5	69	Rc1/4	90(102)	13	12 (13)	M14×1.5	$18^{+0.043}_{0}$	11.5	3	14.5	20°	18	18 (18)	150 (162)
80	M22×1.5	86	RC3/8	108(122)	–	–	–	–	–	–	–	25°	24	20 (20)	182 (196)
100	M26×1.5	106	RC1/2	108(122)	–	–	–	–	–	–	–	25°	24	20 (20)	182 (196)

( ): Dimension for long stroke.

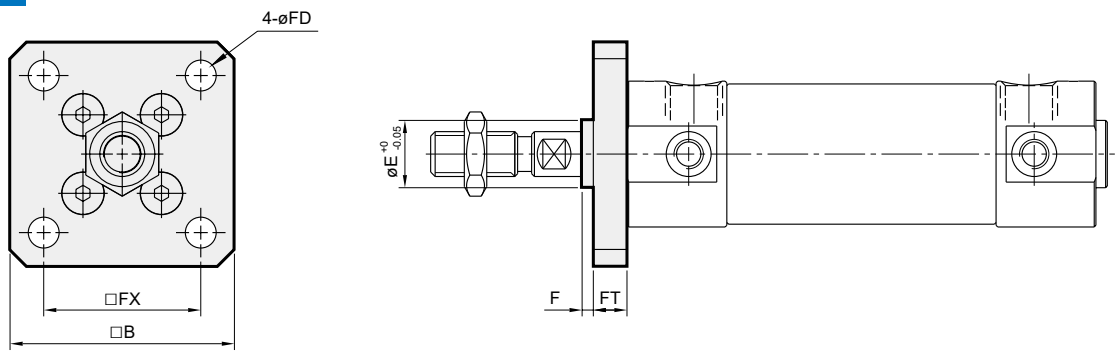
LB



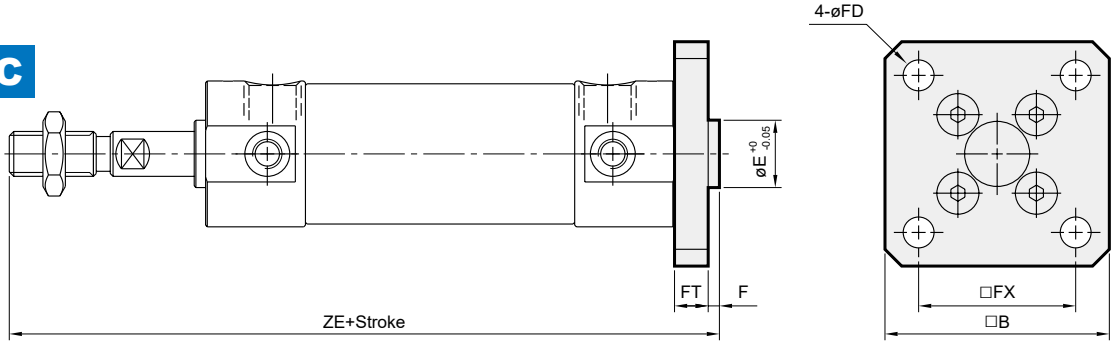
Code / Tube I.D.	B	LC	LD	LH	LS	LT	LX	LZ	M	W	X	Y	ZD	ZF
20	34	4	6	20	45 (53)	3	32	44	2.2	10	15	7	109.2 (117.2)	47
25	38.5	4	6	22	45 (53)	3	36	49	2.8	10	15	7	114.8 (122.8)	52
32	45	4	6.6	25	45 (53)	3	44	58	2.8	10	16	8	116.8 (124.8)	53
40	54.5	4	6.6	30	51 (60)	3	54	71	3.3	10	16.5	8.5	134.3 (143.3)	63.5
50	70.5	5	9	40	55 (67)	4.5	66	86	4.4	17.5	22	11	156.9 (168.9)	75.5
63	82.5	5	11	45	55 (67)	4.5	82	106	5.5	17.5	22	13	158.0 (170.0)	75.5
80	101	6	11	55	60 (74)	4.5	100	125	5.5	20	28.5	14	189.0 (203.0)	95.0
100	121	6	14	65	60 (74)	6	120	150	6.2	20	30	16	192.2 (206.2)	95.0

( ): Dimension for long stroke.

FAC



FBC

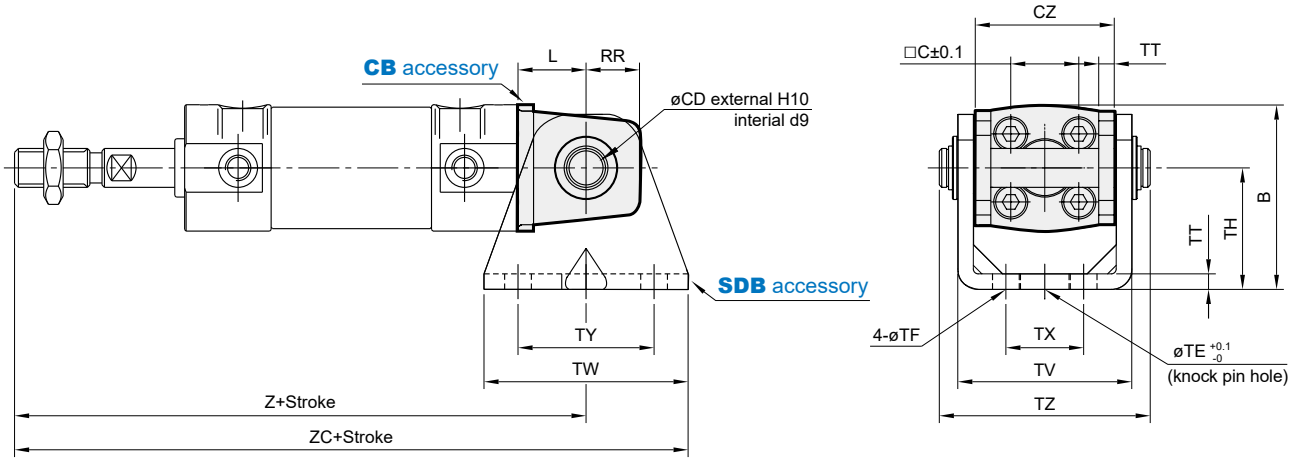


Code / Tube I.D.	B	E	F	FX	FD	FT	ZE
20	40	12	2	28	5.5	6	112 (120)
25	44	14	2	32	5.5	7	118 (126)
32	53	18	2	38	6.6	7	120 (128)
40	61	25	2	46	6.6	8	138 (147)
50	76	30	2	58	9	9	159 (171)
63	92	32	2	70	11	9	159 (171)
80	104	40	3	82	11	11	193 (207)
100	128	50	3	100	14	14	196 (210)

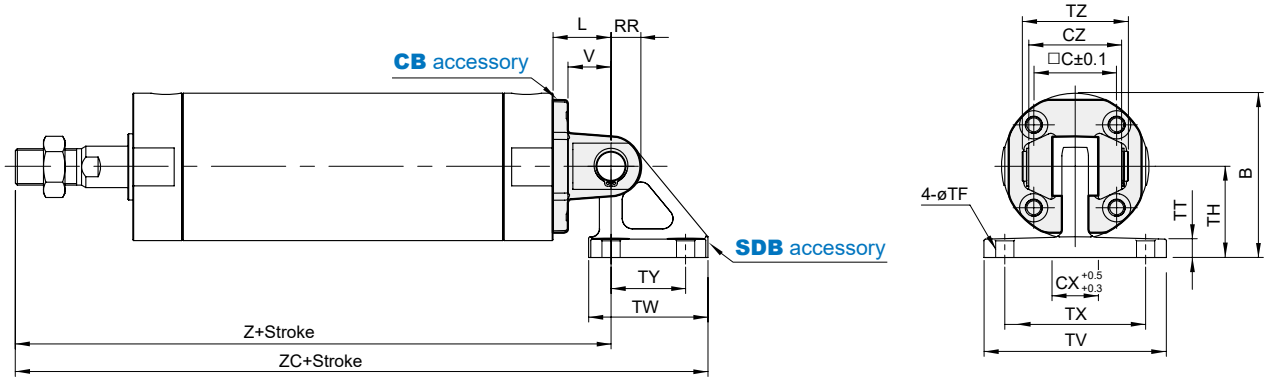
( ): Dimension for long stroke.

CB SDB+Pin (Extra purchase)

ø20~63



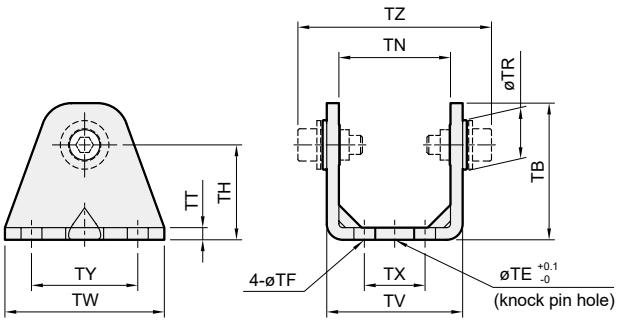
ø80, 100

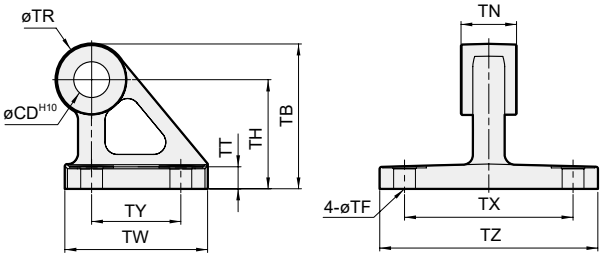


Code / Tube I.D.	B	C	CD	CX	CZ	L	RR	V	TE	TF	TH	TT	TV	TW	TX	TY	TZ	Z	ZC
20	38	14	8	–	29	14	11	–	10	5.5	25	3.2	35.8	42	16	28	43.4	118 (126)	139 (147)
25	45.5	16.5	10	–	33	16	13	–	10	5.5	30	3.2	39.8	42	20	28	48	125 (133)	146 (154)
32	54	20	12	–	40	20	15	–	10	6.6	35	4.5	49.4	48	22	28	59.4	131 (139)	155 (163)
40	63.5	26	14	–	49	22	18	–	10	6.6	40	4.5	58.4	56	30	30	71.4	150 (159)	178 (187)
50	79	32	16	–	60	25	20	–	20	9	50	6	72.4	64	36	36	86	173 (185)	205 (217)
63	96	38	18	–	74	30	22	–	20	11	60	8	90.4	74	46	46	105.4	178 (190)	215 (227)
80	99.5	50	18	28	56	35	18	26	–	11	55	11	110	72	85	45	64	214 (228)	272.5 (286.5)
100	120	60	22	32	64	43	22	32	–	13.5	65	12	130	93	100	60	72	222 (236)	298.5 (312.5)

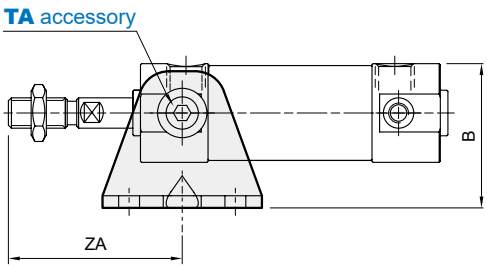
( ): Dimension for long stroke.

SDB ø20~63 TA / TB (Extra purchase) ø80, 100

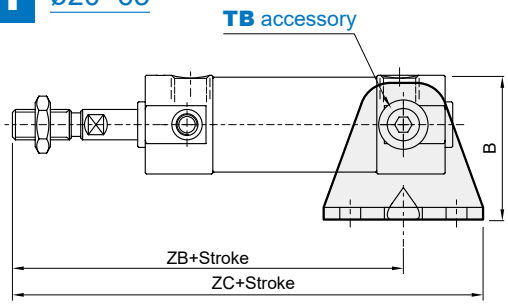




SDB-R ø20~63



SDB-H ø20~63



Code / Tube I.D.	B	CD	TB	TE	TF	TH	TN	TR	TT	TV	TW	TX	TY	TZ	ZA	ZB	ZC	Applicable pin O.D.
20	38	–	36	10	5.5	25	29.3	14	3.2	35.8	42	16	28	51	46	93(101)	114(122)	8d9 -0.040 -0.076
25	45.5	–	43	10	5.5	30	33.1	16	3.2	39.8	42	20	28	58.2	51	98(106)	119(127)	10d9 -0.040 -0.076
32	54	–	50	10	6.6	35	40.4	18	4.5	49.4	48	22	28	71.5	51	101(108)	125(132)	12d9 -0.050 -0.093
40	63.5	–	58	10	6.6	40	49.2	22	4.5	58.4	56	30	30	88.5	62	118(125)	146(153)	14d9 -0.050 -0.093
50	79	–	70	20	9	50	60.4	25	6	72.4	64	36	36	109	71	136(147)	168(179)	16d9 -0.050 -0.093
63	96	–	82	20	11	60	74.6	27	8	90.4	74	46	46	131	71	136(147)	173(184)	18d9 -0.050 -0.093
80	–	18	73	–	11	55	28	36	11	–	72	85	45	110	–	–	–	18d9 -0.050 -0.093
100	–	22	90	–	13.5	65	32	50	12	–	93	100	60	130	–	–	–	22d9 -0.065 -0.117

( ): Dimension for long stroke.

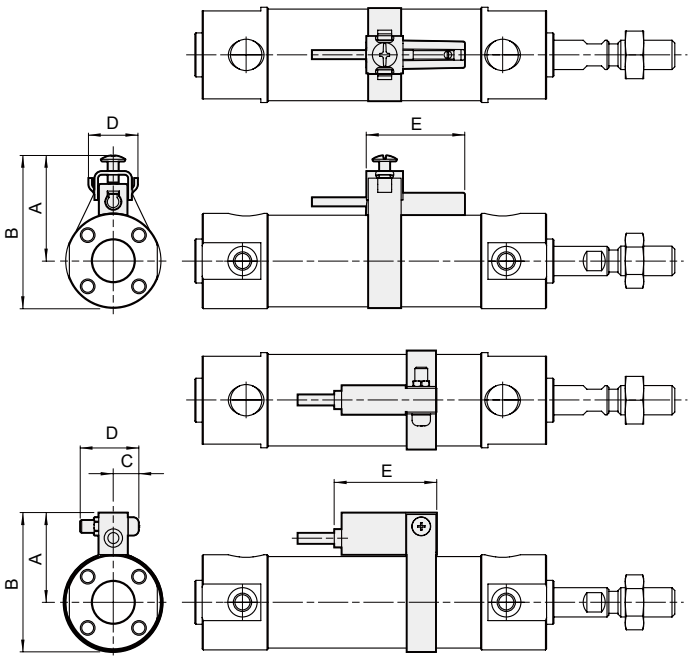
Installation of sensor switch

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

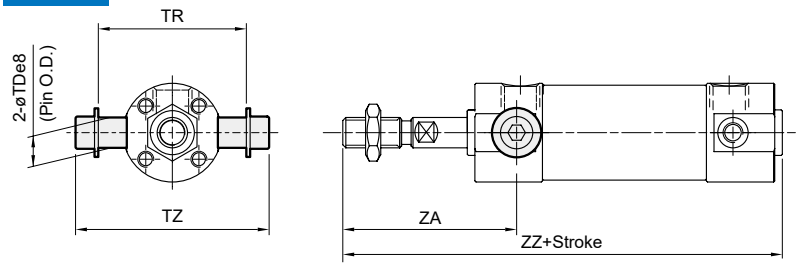
Code / Tube I.D.	A	B	D	E
20	28.5	41.5	13.5	27
25	31	46.5	13.5	27
32	35	54	13.5	27
40	39.5	63	13.5	27
50	45	74	13.5	27
63	52	88	13.5	27

Sensor switch: RCM (Band: BMG**)

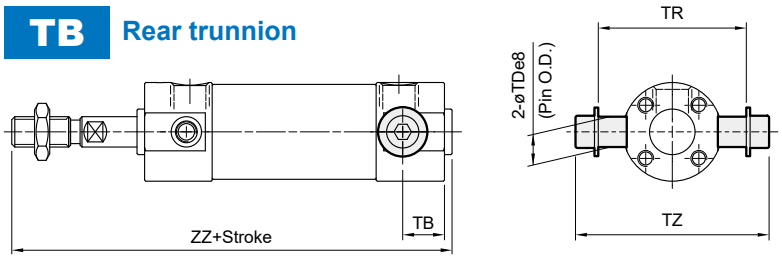
Code / Tube I.D.	A	B	C	D	E
20	24	37.5	7	16	28
25	26.5	42.5	7	16	28
32	30.5	50.5	7	16	28
40	35	59.5	7	16	28
50	40.5	70.5	7	16	28
63	47.5	84.5	7	16	28
80	56	101.5	7	16	28
100	66.5	122.5	7	16	28



TA Front trunnion



TB Rear trunnion

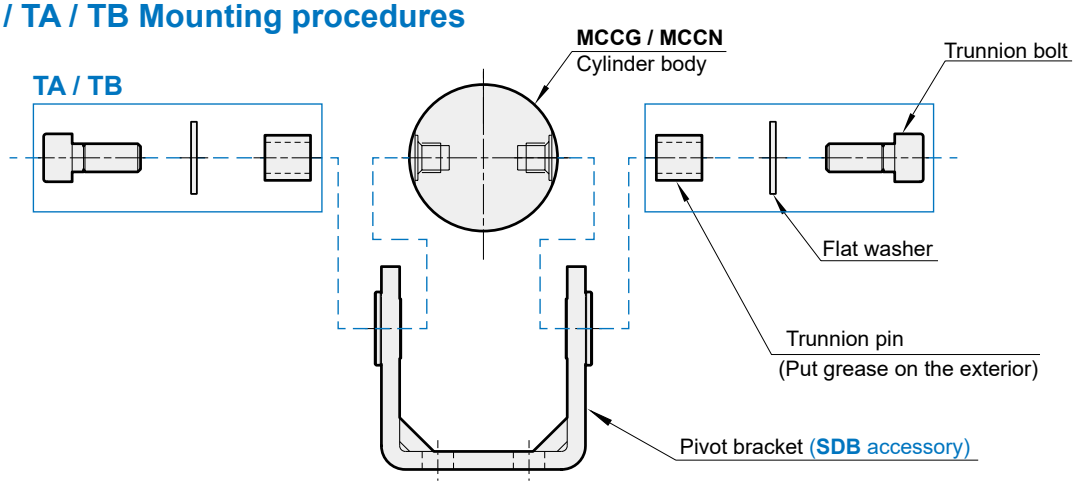


Code / Tube I.D.	TB	TDe8	TR	TZ	ZA	ZZ
20	11(11)	8 $^{-0.025}_{-0.047}$	39	51	46	106 (114)
25	11(11)	10 $^{-0.025}_{-0.047}$	43	58.2	51	111 (119)
32	10(11)	12 $^{-0.032}_{-0.059}$	53.5	71.5	51	113 (121)
40	10(12)	14 $^{-0.032}_{-0.059}$	64.5	88.5	62	130 (139)
50	12(13)	16 $^{-0.032}_{-0.059}$	80	109	71	150 (162)
63	12(13)	18 $^{-0.032}_{-0.059}$	98	131	71	150 (162)

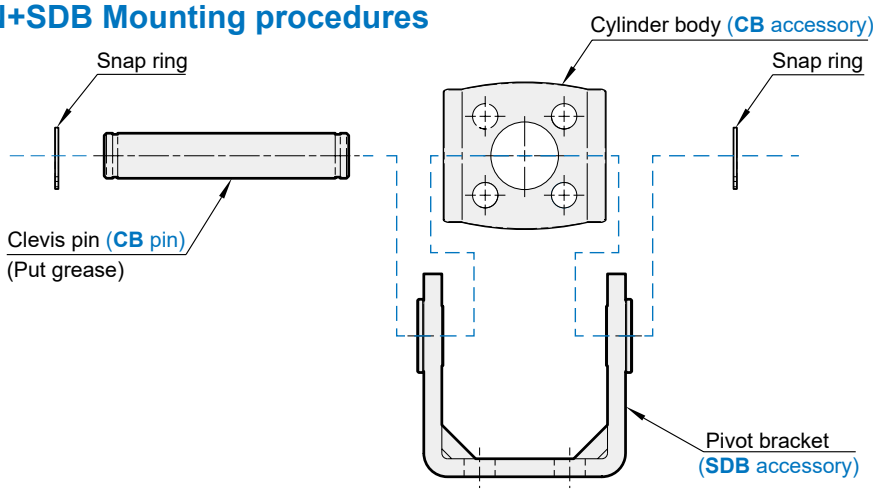
( ): Dimension for long stroke.

MCCG / MCCN

SDB-R(H) / TA / TB Mounting procedures

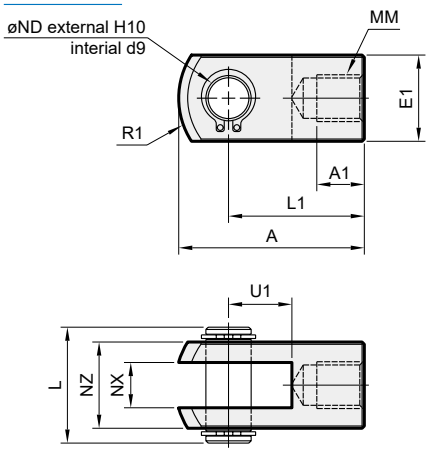


CB+PIN+SDB Mounting procedures

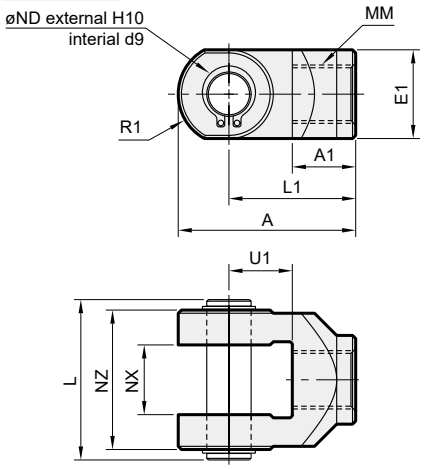


Y connector

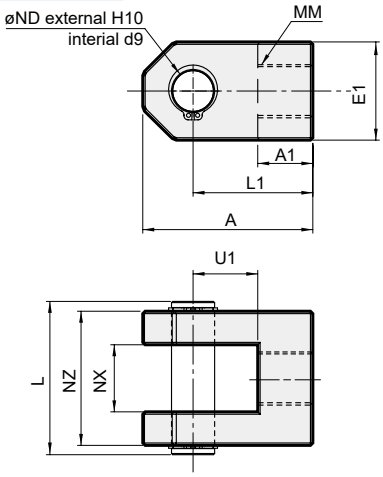
ø20~ø32



ø40~ø63



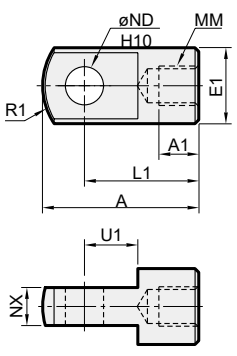
ø80, ø100



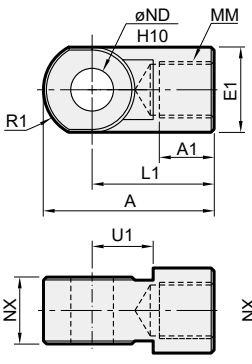
Code / Tube I.D.	A	A1	E1	L	L1	MM	R1	U1	ND	NX	NZ
20	34	8.5	□16	21	25	M8×1.25	14	11.5	8	8 $^{+0.4}_{+0.2}$	15.88
25,32	41	10.5	□20	25.6	30	M10×1.25	18	14	10	10 $^{+0.4}_{+0.2}$	19.05
40	42	16	ø20	41.6	30	M14×1.5	12	14	10	18 $^{+0.5}_{+0.3}$	36
50,63	56	20	ø25	50.6	40	M18×1.5	16	20	14	22 $^{+0.5}_{+0.3}$	44
80	71	23	41	64	50	M22×1.5	–	26	18	28 $^{+0.5}_{+0.3}$	56
100	79	24	47	72	55	M26×1.5	–	30	22	32 $^{+0.5}_{+0.3}$	64

I connector

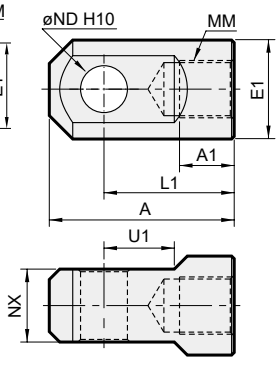
ø20~ø32



ø40~ø63



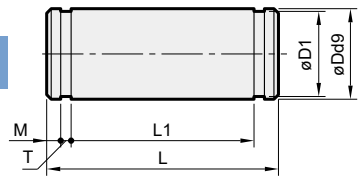
ø80, ø100



Code / Tube I.D.	A	A1	E1	L1	MM	R1	U1	ND_{H10}	NX
20	34	8.5	ø16	25	M8×1.25	14	11.5	8 $^{+0.058}_{0}$	8 $^{-0.2}_{-0.4}$
25,32	41	10.5	ø20	30	M10×1.25	18	14	10 $^{+0.058}_{0}$	10 $^{-0.2}_{-0.4}$
40	42	14	ø22	30	M14×1.5	12	14	10 $^{+0.058}_{0}$	18 $^{-0.3}_{-0.5}$
50,63	56	18	ø28	40	M18×1.5	16	20	14 $^{+0.070}_{0}$	22 $^{-0.3}_{-0.5}$
80	71	21	ø38	50	M22×1.5	–	27	18 $^{-0.070}_{0}$	28 $^{-0.3}_{-0.5}$
100	79	21	ø45	55	M26×1.5	–	31	22 $^{-0.084}_{0}$	32 $^{-0.3}_{-0.5}$

PIN

P



for CB

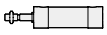
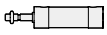
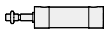
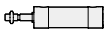
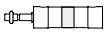
Code / Tube I.D.	Dd9	D1	L	L1	M	T	Snap ring
20	8 $^{-0.04}_{-0.08}$	7.6	43.4	38.6	1.5	0.9	STW-8
25	10 $^{-0.04}_{-0.08}$	9.6	48	42.6	1.55	1.15	STW-10
32	12 $^{-0.05}_{-0.09}$	11.5	59.4	54	1.55	1.15	STW-12
40	14 $^{-0.05}_{-0.09}$	13.4	71.4	65	2.05	1.15	STW-14
50	16 $^{-0.05}_{-0.09}$	15.2	86	79.6	2.05	1.15	STW-16
63	18 $^{-0.05}_{-0.09}$	17.0	105.4	97.8	2.45	1.35	STW-18
80	18 $^{-0.05}_{-0.09}$	17	64	56.2	2.55	1.35	STW-18
100	22 $^{-0.06}_{-0.11}$	21	72	64.2	2.55	1.35	STW-22

for Y & I connector

Code / Tube I.D.	Dd9	D1	L	L1	M	T	Snap ring
20	8 $^{-0.04}_{-0.08}$	7.6	21	16.2	1.5	0.9	STW-8
25,32	10 $^{-0.04}_{-0.08}$	9.6	25.6	20.2	1.55	1.15	STW-10
40	10 $^{-0.04}_{-0.08}$	9.6	41.6	36.2	1.55	1.15	STW-10
50,63	14 $^{-0.05}_{-0.09}$	13.4	50.6	44.2	2.05	1.15	STW-14
80	18 $^{-0.05}_{-0.09}$	17	64	56.2	2.55	1.35	STW-18
100	22 $^{-0.06}_{-0.11}$	21	72	64.2	2.55	1.35	STW-22

Cylinder weight

Unit: kg

Model / Tube I.D.	Stroke	Basic weight		Basic weight (magnet)		Stroke 25 mm
		MCCG-11	MCCG-11-A	MCCG-11-M	MCCG-11-M-A	
						
20	~200	0.107	0.112	0.108	0.113	0.022
	201~350	0.117	0.122	0.118	0.123	
25	~300	0.165	0.165	0.166	0.166	0.03
	301~400	0.178	0.178	0.179	0.179	
32	~300	0.233	0.237	0.234	0.238	0.043
	301~450	0.261	0.265	0.262	0.266	
40	~300	0.402	0.413	0.414	0.425	0.067
	301~800	0.44	0.451	0.452	0.463	
50	~300	0.753	0.782	0.77	0.799	0.1
	301~1200	0.838	0.867	0.855	0.884	
63	~300	1.058	1.076	1.078	1.096	0.119
	301~700	1.192	1.21	1.212	1.23	
80	~300	2.007	2.054	2.034	2.081	0.166
	301~700	2.227	2.274	2.254	2.301	
100	~300	3.015	3.094	3.05	3.129	0.234
	301~700	3.348	3.427	3.383	3.462	

Accessories weight

Model / Tube I.D.	LB	CB	FAC / FBC	SDB	TA / TB	Y	I	PIN-Y-P (With snap ring)	PIN-CB-P (With snap ring)	Rod nut
										
20	0.0434	0.037	0.066	0.089	0.012	0.0352	0.0318	0.0088	0.0174	0.004
25	0.0543	0.051	0.092	0.111	0.018	0.0622	0.0598	0.0164	0.03	0.008
32	0.072	0.096	0.136	0.202	0.038				0.053	
40	0.089	0.147	0.208	0.311	0.068	0.093	0.07	0.0262	0.086	0.016
50	0.24	0.272	0.364	0.545	0.114	0.182	0.151	0.0618	0.135	0.032
63	0.352	0.488	0.521	0.725	0.176				0.2116	
80	0.45	0.57	0.786	0.933	–	0.68	0.4	0.125		0.049
100	0.814	1.075	1.542	1.719	–	0.976	0.614	0.19		0.056

Special spec
Rod end shape
Technical data
Caution for safety
(Read before installing)

Table for standard stroke

Tube I.D.	Stroke (inch)	Long stroke (inch)	Max. stroke (inch)
20: 3/4"	1,2,3,4,5,6,8	8.01~14	48
25: 1"	1,2,3,4,5, 6,8,10,12	12.01~16	
32: 1 1/4"		12.01~18	
40: 1 1/2"		12.01~32	
50: 2"		12.01~48	
63: 2 1/2"		12.01~19	19

* Intermediate stroke are available, please contact us.

Specification

Model		MCCN					
Acting type		Double acting					
Tube I.D. (inch)		3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"
Port size		NPT1/8				NPT1/4	
Medium		Air					
Max. operating perssure		1 MPa					
Min. operating perssure		0.05 MPa					
Proof pressure		1.5 MPa					
Lubrication		Not required					
Ambient temperature		-5~+60°C (No freezing)					
Available speed range		50~500 mm/sec					
Max. allowable kinetic energy (J)	Cushion pad	0.07	0.10	0.17	0.3	0.5	0.85
	Cushion air	0.09	0.14	0.23	0.45	0.85	1.23
Sensor switch		RDC, RQC, RCM					
Sensor switch band	R*C	BKC-1 (Not for R*CV angle cable)					
	RCM	BMG20	BMG25	BMG32	BMG40	BMG50	BMG63

Order example

MCCN — 11 — 40 — 0425M — A

- MODEL
- **1**: Single rod
- TUBE I.D.
  - **20**: 3/4"
  - **25**: 1"
  - **32**: 1 1/4"
  - **40**: 1 1/2"
  - **50**: 2"
  - **63**: 2 1/2"
- STANDARD STROKE (Inches)
  - **04**=4" stroke
- STROKE (Hundred of an inch)
  - **12**=0.125 (1/8")
  - **25**=0.25 (1/4")
  - **37**=0.375 (3/8")
  - **50**=0.5 (1/2")
- **M**: Magnet
- Blank: Cushion pad (Unadjustable)
- **A**: Cushion air (Adjustable) ⚠

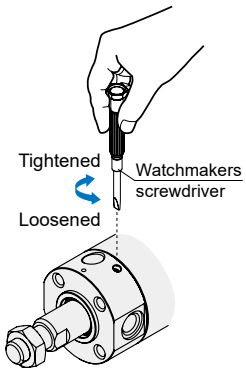
STYLE

Code		Symbol	Description
1	**1**		Double acting / Male thread

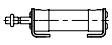
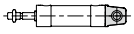
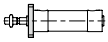
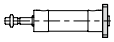
⚠ Caution

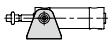
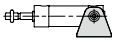
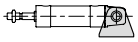
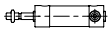
For (**A**) Cushion air (Adjustable)

1. 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.
2. If the needle valve loosen excessively, the buffer doesn't take effect and the lifetime of cylinder would be shortened.



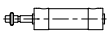
Mounting accessories

Code	Accessories				
	LB (Purchase 2 pcs)	CA	CB	FAC	FBC
Mounting / Tube I.D.					
20: 3/4"	LB-C2-20	CA-C2-20	CB-C2-20	FAC-C2-20	
25: 1"	LB-C2-25	CA-C2-25	CB-C2-25	FAC-C2-25	
32: 1 1/4"	LB-C2-32	CA-C2-32	CB-C2-32	FAC-C2-32	
40: 1 1/2"	LB-C2-40	CA-C2-40	CB-C2-40	FAC-C2-40	
50: 2"	LB-C2-50	CA-C2-50	CB-C2-50	FAC-C2-50	
63: 2 1/2"	LB-C2-63	CA-C2-63	CB-C2-63	FAC-C2-63	

Code	Accessories				
	SDB-R*1 (with TA)	SDB-H*1 (with TB)	CB+SDB+PIN*1 (with Pin)	TA (Front trunnion)	TB (Rear trunnion)
Mounting / Tube I.D.					
20: 3/4"	SDB-C1-20		CB+SDB+PIN-C2-20	TA-C1-20	
25: 1"	SDB-C1-25		CB+SDB+PIN-C2-25	TA-C1-25	
32: 1 1/4"	SDB-C1-32		CB+SDB+PIN-C2-32	TA-C1-32	
40: 1 1/2"	SDB-C1-40		CB+SDB+PIN-C2-40	TA-C1-40	
50: 2"	SDB-C1-50		CB+SDB+PIN-C2-50	TA-C1-50	
63: 2 1/2"	SDB-C1-63		CB+SDB+PIN-C2-63	TA-C1-63	

1. Mounting procedures please refer to page 3-90.

Pin

Code	Rod nut
	NUT
Mounting / Tube I.D.	
20: 3/4"	NUT-1/4-28UNFx0.16Hx0.44B
25: 1"	NUT-5/16-24UNFx0.19Hx0.5B
32: 1 1/4"	NUT-7/16-20UNFx0.26Hx0.69B
40: 1 1/2"	
50: 2"	NUT-1/2-20UNFx0.32Hx0.75B
63: 2 1/2"	

Applicable	CB accessories
Code	PIN-CB-P (With snap ring)
Fig / Tube I.D.	
20: 3/4"	PIN-C1-20-1-P
25: 1"	PIN-C1-25-1-P
32: 1 1/4"	PIN-C1-32-1-P
40: 1 1/2"	PIN-C1-40-1-P
50: 2"	PIN-C1-50-1-P
63: 2 1/2"	PIN-C1-63-1-P

Order example of self-assembled

The tube I.D. ø32 of CB accessories and pin.

No.	Order number	Qty
1	CB-C2-32	1
2	PIN-C1-32-1-P	1

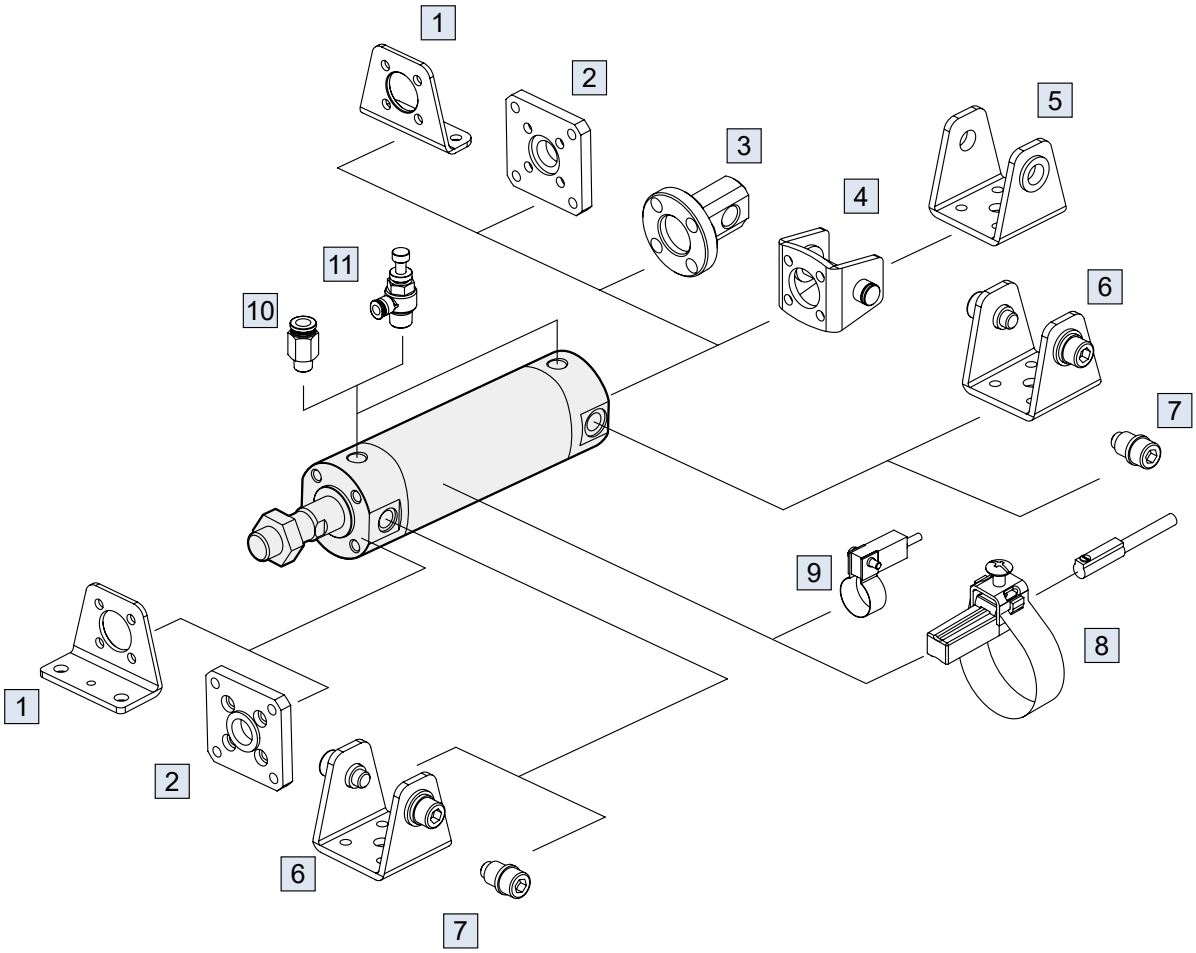
* To order accessories/ connectors/ pin separately, please place orders separately according to the order codes in the above table.

Order example of factory assembled

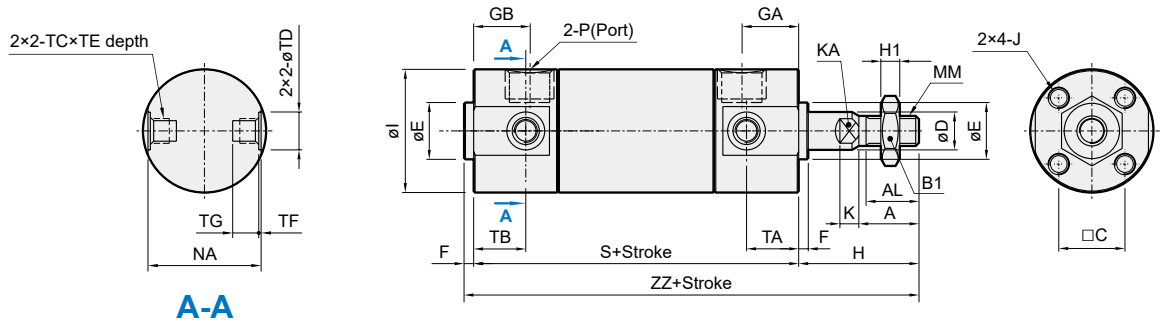
⚠ Cylinders and accessories are distinguished by the symbol " + ".

MCCN — Standard model no. + CB

CYLINDER ACCESSORIES

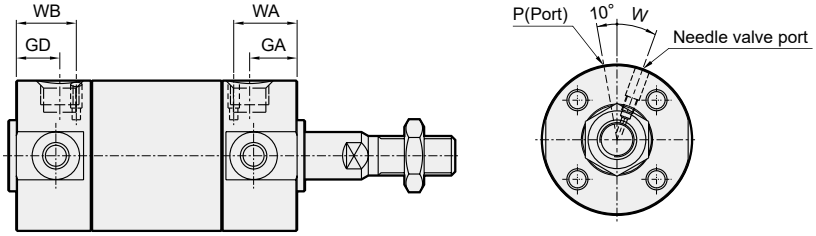


No.	Accessories	Material	Page link
1	Mounting accessories LB	Carbon steel	
2	Mounting accessories FAC/FBC	Carbon steel	
3	Mounting accessories CA	Carbon steel	
4	Mounting accessories CB+PIN	Carbon steel	, ,
5	Mounting accessories SDB	Carbon steel	,
6	Mounting accessories SDB-R/H	Carbon steel	,
7	Mounting accessories TA/TB	Carbon steel	,
8	Sensor switch R*C+BKC-1	–	
9	Sensor switch RCM+BMG**	–	
10	Fitting PC (PISCO)	–	
11	Speed controller JSC (PISCO)	–	



■ Cushion air (Adjustable)

A



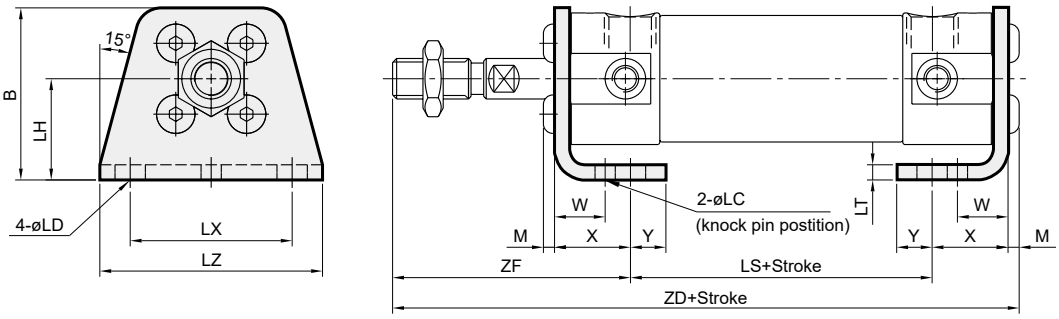
Unit: inch

Code / Tube I.D.	Standard stroke range	Long stroke range	A	AL	B1	C	D	E	F	GA	GB	GD	H	H1	I	J	K
20	~ 8	8.01 ~ 14	0.50	0.44	0.44	0.55	0.315	0.472 $^{+0}_{-0.002}$	0.08	0.47	0.47 (0.47)	0.47 (0.47)	1	0.16	1.02	#8-32×0.28 dp	0.157
25	~12	12.01 ~ 16	0.50	0.44	0.50	0.65	0.394	0.551 $^{+0}_{-0.002}$	0.08	0.47	0.47 (0.47)	0.47 (0.47)	1.12	0.19	1.22	#10-32×0.30 dp	0.197
32	~12	12.01 ~ 18	0.75	0.69	0.69	0.79	0.472	0.709 $^{+0}_{-0.002}$	0.08	0.47	0.43 (0.47)	0.43 (0.47)	1.63	0.26	1.50	#10-32×0.30 dp	0.217
40	~12	12.01 ~ 32	0.75	0.69	0.69	1.02	0.630	0.984 $^{+0}_{-0.002}$	0.08	0.51	0.47 (0.51)	0.39 (0.51)	1.63	0.26	1.85	1/4-28×0.47 dp	0.3
50	~12	12.01 ~ 48	0.88	0.84	0.75	1.26	0.787	1.181 $^{+0}_{-0.002}$	0.08	0.55	0.51 (0.51)	0.47 (0.55)	2.07	0.32	2.28	5/16-24×0.63 dp	0.276
63	~12	12.01 ~ 27.5	0.88	0.84	0.75	1.50	0.787	1.260 $^{+0}_{-0.002}$	0.08	0.55	0.51 (0.51)	0.47 (0.55)	2.07	0.32	2.83	3/8-24×0.63 dp	0.276

Code / Tube I.D.	KA	MM	NA	P	S	TA	TB	TC	TD_{H9}	TE	TF	TG	W	WA	WB	ZZ
20	0.24	1/4-28 UNF	0.94	NPT1/8	2.72 (3.03)	0.43	0.43 (0.43)	M5×0.8	0.315	0.157	0.020	0.217	40°	0.551	0.551 (0.551)	3.80 (4.11)
25	0.31	5/16-24 UNF	1.14	NPT1/8	2.72 (3.03)	0.43	0.43 (0.43)	M6×0.75	0.394	0.197	0.039	0.256	40°	0.551	0.511 (0.511)	3.92 (4.23)
32	0.39	7/16-20 UNF	1.42	NPT1/8	2.80 (3.11)	0.43	0.39 (0.43)	M8×1.0	0.472	0.217	0.049	0.295	30°	0.551	0.511 (0.511)	4.51 (4.82)
40	0.55	7/16-20 UNF	1.73	NPT1/8	3.07 (3.43)	0.47	0.39 (0.47)	M10×1.25	0.551	0.236	0.049	0.315	20°	0.629	0.590 (0.629)	4.78 (5.14)
50	0.71	1/2-20 UNF	2.17	NPT1/4	3.54 (4.02)	0.51	0.47 (0.51)	M12×1.25	0.630	0.295	0.079	0.394	20°	0.629	0.629 (0.629)	5.69 (6.17)
63	0.71	1/2-20 UNF	2.72	NPT1/4	3.54 (4.02)	0.51	0.47 (0.51)	M14×1.5	0.709	0.453	0.118	0.571	20°	0.708	0.708 (0.708)	5.69 (6.17)

( ): Dimension for long stroke.

LB

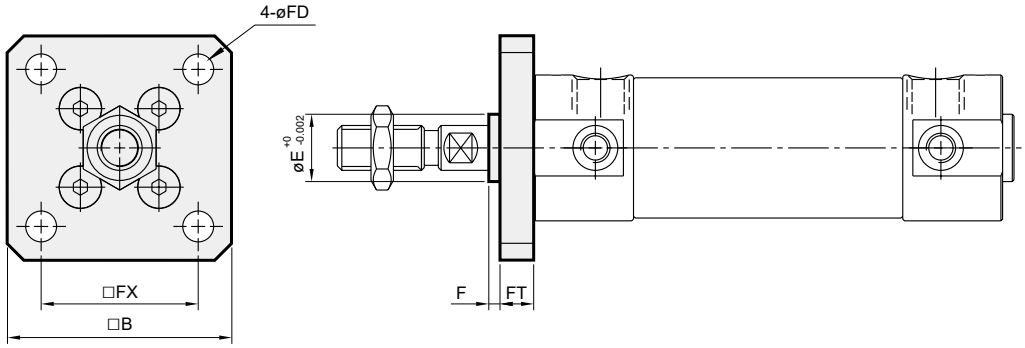


Unit: inch

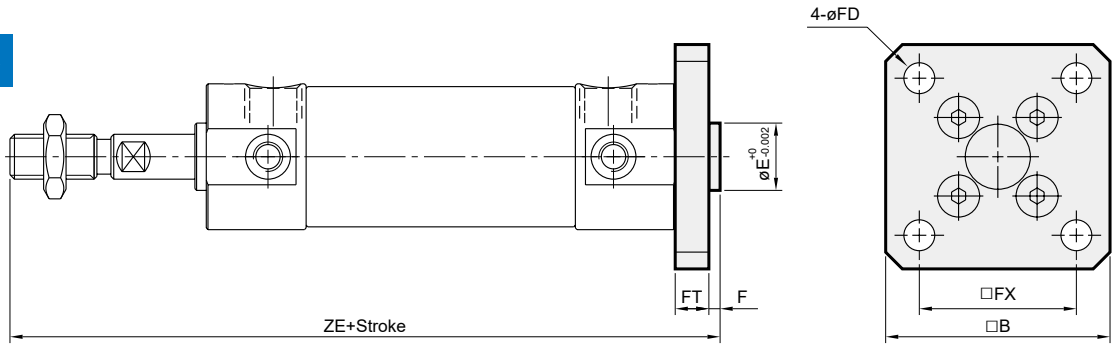
Code / Tube I.D.	B	LC	LD	LH	LS	LT	LX	LZ	M	W	X	Y	ZD	ZF
20	1.34	0.16	0.24	0.79	1.78 (2.09)	0.12	1.26	1.73	0.09	0.39	0.59	0.28	3.93 (4.24)	1.47
25	1.52	0.16	0.24	0.87	1.78 (2.09)	0.12	1.42	1.93	0.11	0.39	0.59	0.28	4.07 (4.38)	1.59
32	1.77	0.16	0.26	0.98	1.78 (2.09)	0.12	1.73	2.28	0.11	0.39	0.63	0.31	4.66 (4.97)	2.14
40	2.15	0.16	0.26	1.18	2.01 (2.37)	0.12	2.13	2.80	0.13	0.39	0.65	0.33	4.95 (5.31)	2.16
50	2.78	0.20	0.35	1.57	2.16 (2.64)	0.18	2.60	3.39	0.17	0.69	0.87	0.43	5.96 (6.44)	2.76
63	3.25	0.20	0.43	1.77	2.16 (2.64)	0.18	3.23	4.17	0.22	0.69	0.87	0.51	6.01 (6.49)	2.76

( ): Dimension for long stroke.

FAC



FBC

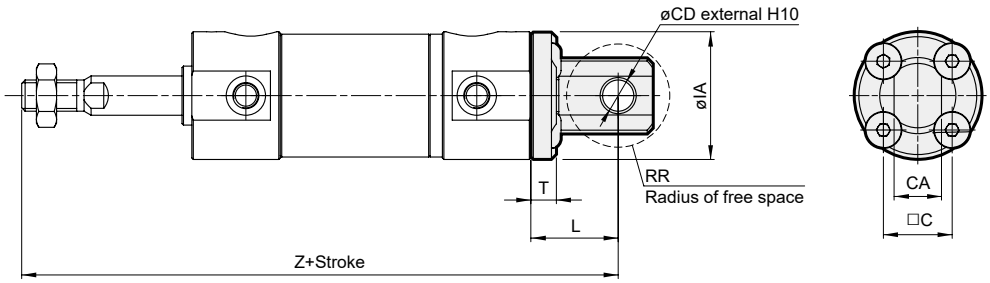


Unit: inch

Code / Tube I.D.	B	E	F	FX	FD	FT	ZE
20	1.57	0.472	0.08	1.10	0.22	0.24	4.04 (4.35)
25	1.73	0.551	0.08	1.26	0.22	0.28	4.20 (4.51)
32	2.09	0.709	0.08	1.50	0.26	0.28	4.79 (5.10)
40	2.40	0.984	0.08	1.81	0.26	0.31	5.09 (5.45)
50	2.99	1.181	0.08	2.28	0.35	0.35	6.04 (6.52)
63	3.62	1.260	0.08	2.76	0.43	0.35	6.04 (6.52)

( ): Dimension for long stroke.

CA

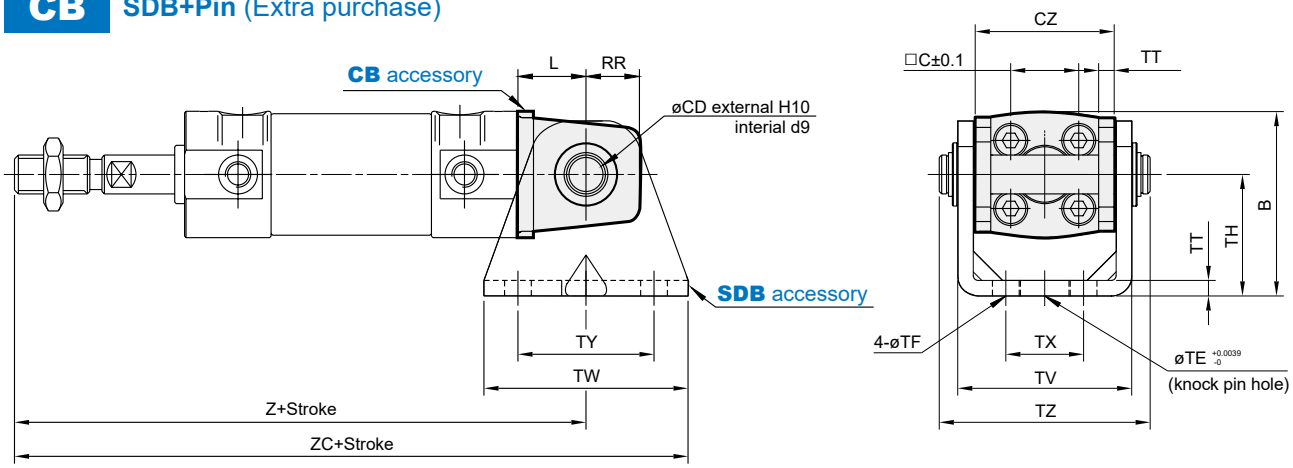


Unit: inch

Code / Tube I.D.	C	CA	CD	IA	L	RR	T	Z
20	0.55	0.38	0.25	1.02	0.70	0.42	0.20	4.42(4.73)
25	0.65	0.38	0.25	1.22	0.68	0.75	0.21	4.52(4.83)
32	0.79	0.5	0.25	1.49	1.07	0.60	0.47	5.50(5.81)
40	1.02	0.62	0.375	1.85	0.88	0.65	0.25	5.58(5.94)
50	1.26	0.75	0.375	2.28	0.91	0.38	0.29	6.52(7)
63	1.5	0.75	0.375	2.83	0.91	0.38	0.29	6.52(7)

( ): Dimension for long stroke.

CB SDB+Pin (Extra purchase)

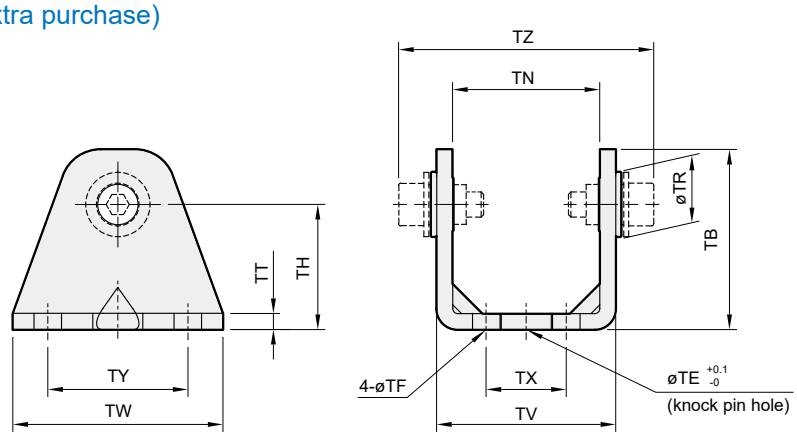


Unit: inch

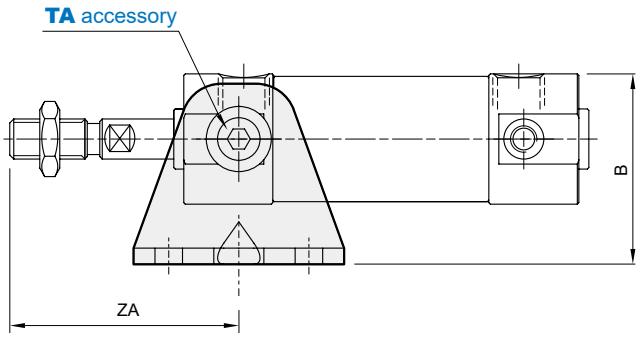
Code / Tube I.D.	B	CD	CZ	L	RR	TE	TF	TH	TT	TV	TW	TX	TY	TZ	Z	ZC
20	1.50	0.315	1.14	0.55	0.43	0.394	0.22	0.98	0.13	1.41	1.65	0.63	1.10	1.71	4.27 (4.58)	5.10 (5.41)
25	1.79	0.394	1.30	0.63	0.51	0.394	0.22	1.18	0.13	1.57	1.65	0.79	1.10	1.89	4.47 (4.78)	5.30 (5.61)
32	2.13	0.472	1.57	0.79	0.59	0.394	0.26	1.38	0.18	1.94	1.89	0.87	1.10	2.34	5.22 (5.53)	6.16 (6.47)
40	2.50	0.551	1.93	0.87	0.71	0.394	0.26	1.57	0.18	2.30	2.20	1.18	1.18	2.81	5.57 (5.93)	6.67 (7.03)
50	3.11	0.630	2.36	0.98	0.79	0.787	0.35	1.97	0.24	2.85	2.52	1.42	1.42	3.39	6.59 (7.07)	7.85 (8.33)
63	3.78	0.709	2.91	1.18	0.87	0.787	0.43	2.36	0.31	3.56	2.91	1.81	1.81	4.15	6.79 (7.27)	8.25 (8.73)

( ): Dimension for long stroke.

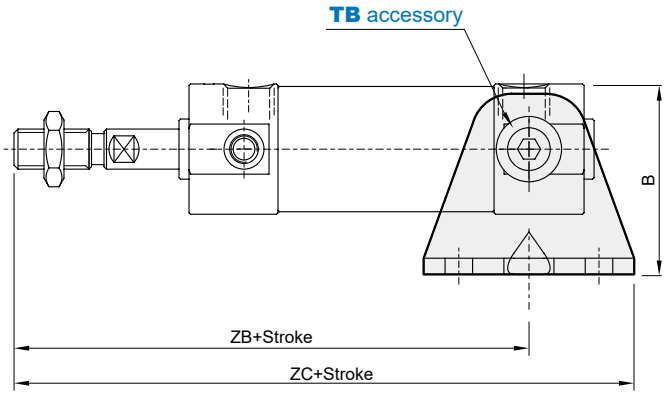
SDB TA/TB (Extra purchase)



SDB-R



SDB-H

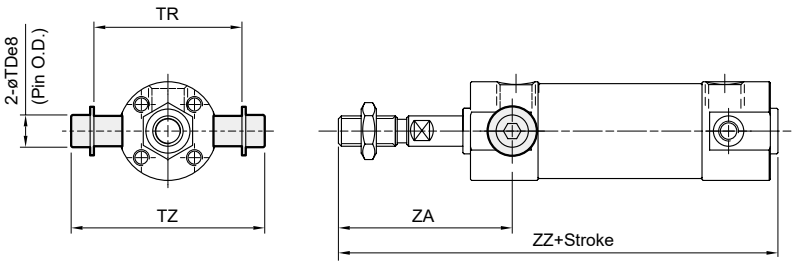


Unit: inch

Code / Tube I.D.	B	TB	TE	TF	TH	TN	TR	TT	TV	TW	TX	TY	TZ	ZA	ZB	ZC	Applicable pin O.D.
20	1.50	1.42	0.394	0.22	0.98	1.15	0.55	0.13	1.41	1.65	0.63	1.10	2.00	1.43	3.29(3.6)	3.80(4.11)	0.315 -0.0016 -0.0030
25	1.79	1.69	0.394	0.22	1.18	1.30	0.63	0.13	1.57	1.65	0.79	1.10	2.29	1.55	3.41(3.72)	3.92(4.23)	0.394 -0.0016 -0.0030
32	2.13	1.97	0.394	0.26	1.38	1.59	0.71	0.18	1.94	1.89	0.87	1.10	2.81	2.06	4.04(4.31)	4.51(4.82)	0.472 -0.0020 -0.0037
40	2.50	2.28	0.394	0.26	1.57	1.94	0.87	0.18	2.30	2.20	1.18	1.18	3.48	2.10	4.31(4.59)	4.78(5.14)	0.551 -0.0020 -0.0037
50	3.11	2.76	0.787	0.35	1.97	2.38	0.98	0.24	2.85	2.52	1.42	1.42	4.29	2.58	5.14(5.58)	5.69(6.17)	0.630 -0.0020 -0.0037
63	3.78	3.23	0.787	0.43	2.36	2.94	1.06	0.31	3.56	2.91	1.81	1.81	5.15	2.58	5.14(5.58)	5.69(6.17)	0.709 -0.0020 -0.0037

( ): Dimension for long stroke.

TA Front trunnion

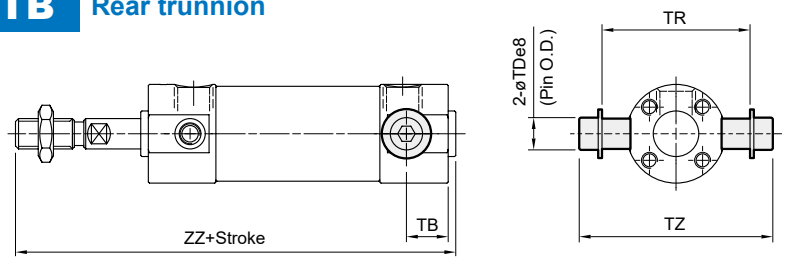


Unit: inch

Code / Tube I.D.	TB	TDe8	TR	TZ
20	0.43(0.43)	0.315	1.54	2.00
25	0.43(0.43)	0.394	1.69	2.29
32	0.39(0.43)	0.472	2.11	2.81
40	0.39(0.47)	0.551	2.54	3.48
50	0.47(0.51)	0.630	3.15	4.29
63	0.47(0.51)	0.709	3.86	5.15

( ): Dimension for long stroke.

TB Rear trunnion



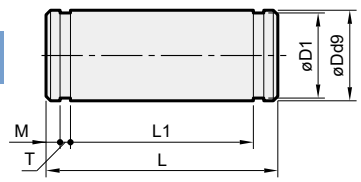
Unit: inch

Code / Tube I.D.	ZA	ZB	ZZ
20	1.43	3.29 (3.60)	3.80 (4.11)
25	1.55	3.41 (3.72)	3.92 (4.23)
32	2.06	4.04 (4.31)	4.51 (4.82)
40	2.10	4.31 (4.59)	4.78 (5.14)
50	2.58	5.14 (5.58)	5.69 (6.17)
63	2.58	5.14 (5.58)	5.69 (6.17)

( ): Dimension for long stroke.

PIN

P



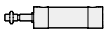
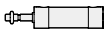
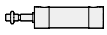
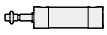
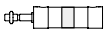
for CB

Unit: inch

Code / Tube I.D.	Dd9	D1	L	L1	M	T	Snap ring
20	0.315 -0.0016 -0.0030	0.30	1.71	1.52	0.06	0.04	STW-8
25	0.394 -0.0016 -0.0030	0.38	1.89	1.68	0.06	0.05	STW-10
32	0.472 -0.0020 -0.0037	0.45	2.34	2.13	0.06	0.05	STW-12
40	0.551 -0.0020 -0.0037	0.53	2.81	2.56	0.08	0.05	STW-14
50	0.630 -0.0020 -0.0037	0.60	3.39	3.13	0.08	0.05	STW-16
63	0.709 -0.0020 -0.0037	0.67	4.15	3.85	0.10	0.05	STW-18

Weight – Cylinder

Unit: kg

Model	Stroke	Basic weight		Basic weight (magnet)		Stroke 25 mm
		MCCN-11	MCCN-11-A	MCCN-11-M	MCCN-11-M-A	
Tube I.D.						
20	~200	0.107	0.112	0.108	0.113	0.022
	201~350	0.117	0.122	0.118	0.123	
25	~300	0.165	0.165	0.166	0.166	0.03
	301~400	0.178	0.178	0.179	0.179	
32	~300	0.233	0.237	0.234	0.238	0.043
	301~450	0.261	0.265	0.262	0.266	
40	~300	0.402	0.413	0.414	0.425	0.067
	301~800	0.44	0.451	0.452	0.463	
50	~300	0.753	0.782	0.77	0.799	0.1
	301~1200	0.838	0.867	0.855	0.884	
63	~300	1.058	1.076	1.078	1.096	0.119
	301~700	1.192	1.21	1.212	1.23	

Accessories

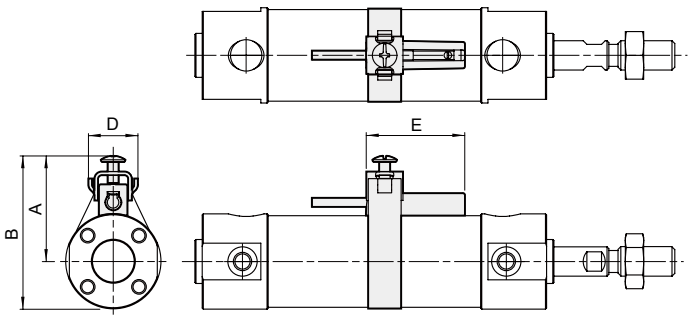
Model	LB	CB	FAC / FBC	SDB	TA / TB	Y	I	PIN-Y-P (With snap ring)	PIN-CB-P (With snap ring)	Rod nut
Tube I.D.										
20	0.0434	0.037	0.066	0.089	0.012	0.0352	0.0318	0.0088	0.0174	0.002
25	0.0543	0.051	0.092	0.111	0.018	0.0622	0.0598	0.0164	0.03	0.004
32	0.072	0.096	0.136	0.202	0.038				0.053	0.01
40	0.089	0.147	0.208	0.311	0.068	0.093	0.07	0.0262	0.086	
50	0.24	0.272	0.364	0.545	0.114	0.182	0.151	0.0618	0.135	0.013
63	0.352	0.488	0.521	0.725	0.176				0.2116	

Installation of sensor switch

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

Unit: inch

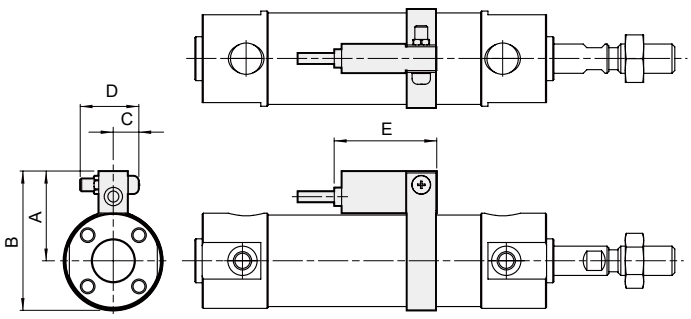
Code / Tube I.D.	A	B	D	E
20	1.11	1.62	0.53	1.06
25	1.21	1.82	0.53	1.06
32	1.37	2.12	0.53	1.06
40	1.55	2.47	0.53	1.06
50	1.76	2.90	0.53	1.06
63	2.04	3.45	0.53	1.06



Sensor switch: RCM (Band: BMG**)

Unit: inch

Code / Tube I.D.	A	B	C	D	E
20	0.94	1.48	0.28	0.63	1.1
25	1.04	1.67	0.28	0.63	1.1
32	1.20	1.99	0.28	0.63	1.1
40	1.38	2.34	0.28	0.63	1.1
50	1.59	2.78	0.28	0.63	1.1
63	1.87	3.33	0.28	0.63	1.1



MCCH series

HIGH SPEED CYLINDER

Technical data

Caution for safety
(Read before installing)

Feature

- The diameter of the port orifice has been enlarged to support high speed operation. max speed: 3000mm/sec
- Longer cushion rod to absorb more exercise energy and reduce external cushioning settings.
- The cylinder with relief valve provides better cushioning performance than the general purpose cylinder with needle valve.
- The relief valve body can rotate 360 degrees freely, which is convenient for adjustment and use.
- Magnetic as standard.

Specification

Model	MCCH	
Acting type	Double acting	
Tube I.D. (mm)	25	32
Port size	Rc1/4	Rc3/8
Medium	Air	
Max. operating perssure	1 MPa	
Min. operating perssure	0.05 MPa	
Proof pressure	1.5 MPa	
Lubrication	Not required	
Ambient temperature	-5~+60°C (No freezing)	
Available speed range	50~3000 mm/sec	
Cushion	Air cushion	
Max energy absorption (J)	12	21
Standard stroke (*1,2,3)	250~700 mm	250~1000 mm
Max. stroke	1500 mm	
Effective cushioning stroke	80 mm	
Sensor switch	RDC, RQC, RCM	
Sensor switch band R*C	BKC-1 (Not for R*CV angle cable)	
Sensor switch band RCM	BMG25	BMG32

*1. Minimum stroke unit 1mm.
*2. Outside the guaranteed range when the stroke exceeds standard stroke, please reconfirm the dimension with our sales department when the stroke over our standard.
*3. This product has a large absorption energy and a longer effective buffer range. Therefore, when the stroke below 250mm is used at high speed, the cushioning performance may not meet the catalog standard.

Order example

MCCH — 11 — 32 — 250 — □

MODEL **1**: Single rod

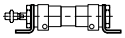
TUBE I.D. STROKE
25 25 : **250~700** mm
32 32 : **250~1000** mm

STYLE

Code		Symbol	Description
1	**1**		Double acting / Male thread

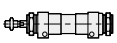
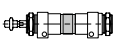
PORT THREAD
Blank: Rc thread
G: G thread
NPT: NPT thread

Order example of mounting accessories

Code	**LB** (Purchase 2 pcs)
Mounting / Tube I.D.	
25	**LB-C3-25**
32	**LB-C3-32**

Weight

Unit: g

Tube I.D.	Basic weight (magnet)	Stroke 100 mm	**LB**
			
25	777	137	228
32	1090	180	368

Operation

⚠ Caution

❶ Install the speed control valve to adjust speed
When operate the cylinders, please install the control valve to adjust the speed of piston within the regular usage range.

❷ Don't exert the lateral load on the piston rod
Please operate the cylinders within the regular usage ranges. Do not exert excessively lateral load on the piston rod.

❸ The long piston rod need to be braced by supports
Operate the long stroke cylinders, please use supports to brace the piston rod for avoiding piston rod droop.

❹ Assemble snap ring into the groove certainly
Please use the appropriate tool to disassemble the snap ring for replacing the rod packing, Don't support the air to the cylinders until finish replacing certainly to avoid snap ring spouting hurt people or machines.

❺ Adjustment method of relief valve screw

ⓐ When using, please adjust the relief valve screw to the fully closed state (do not lock too tightly, or this will damage internal parts), then turn overflow valve screw counterclockwise according to the buffer requirements, and finally fix it with the lock nut.

ⓑ Loosing relief valve screw excessively will invalidate the buffer and shorten the life of the cylinder. Therefore, the relief valve screw must be adjusted from tight to loose first.

❻ Across flats cover designed for disassembly
When removing the cylinder, use a vise to fix the flat surface on both sides of the rod cover or the head cover, and then remove the other end cap with a wrench.

Operation

⚠ Caution

❼ The method of adjustment relief valve body
The relief valve body can be adjusted 360 degrees arbitrarily, please follow the procedure as bellow:

ⓐ Turn off the source of pressure and confirm that there is no residual pressure in the cylinder, then loosen the accessories.

ⓑ Loosen the fixing screw of the relief valve fixing seat,and then the relief valve body can be rotated and adjusted.

ⓒ After adjustment, fix it with fixing screws until the relief valve body does not rotate.

Before use the air cylinder which has been installed, please confirm whether the relief valve body is loose. The looseness may cause buffer failure.

❽ Illustration of speed 3000 mm/s

ⓐ The velocity of using speed is 3000mm / s that means the maximum speed, not the average speed.

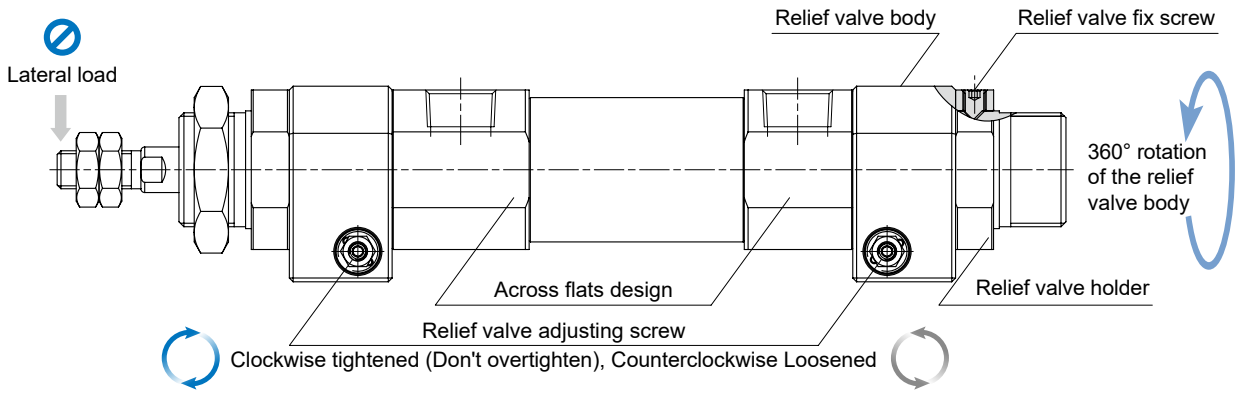
ⓑ The short stroke may not achieve the desired speed.

ⓒ The speed is related to the speed control valve, piping, and fittings, etc. When the flow rate is restricted, the desired speed may not be achieved. Therefore, ensure that the pneumatic system has a sufficient effective area.

❾ Do not exceed absorbed energy
If the maximum absorbed energy (J) value is exceeded, an external buffer is required.

❿ Back pressure on exhaust side is necessary
Before starting the cylinder, make a back pressure on the exhaust side of the cylinder to prevent the piston rod from flying out.

⓫ The source of pressure is stable
Please make sure that the source of pressure is stable when use the cylinder. The Sudden rise in pressure will cause buffering performance invalid.



Seloection example1. **Horizontal operation**

* Use an external guide, etc. for horizontal actuation of a load.

Operating conditions

Horizontal operation ..... Graph 1
Load mass ..... M = 8kg
Stroke ..... St = 600mm
Time for stroke required . To = 0.6s

Estimate of the max speed

Average speed ..... Vm = St/To = 1000mm/s
Maximum speed ..... Vmax = 1.5Vm = 1500mm/s

Model selection by graph

Load mass ..... M = 8kg
Maximum speed ..... Vmax = 1500mm/s

Graph 1, Mark ●

MCCH-25

Seloection example2. **Vertical operation**

Operating conditions

Vertical operation ..... Graph 2
Load mass ..... M = 6kg
Stroke ..... St = 700mm
Time for stroke required . To = 0.5s

Estimate of the max speed

Average speed ..... Vm = St/To = 1400mm/s
Maximum speed ..... Vmax = 1.5Vm = 2100mm/s

Model selection by graph

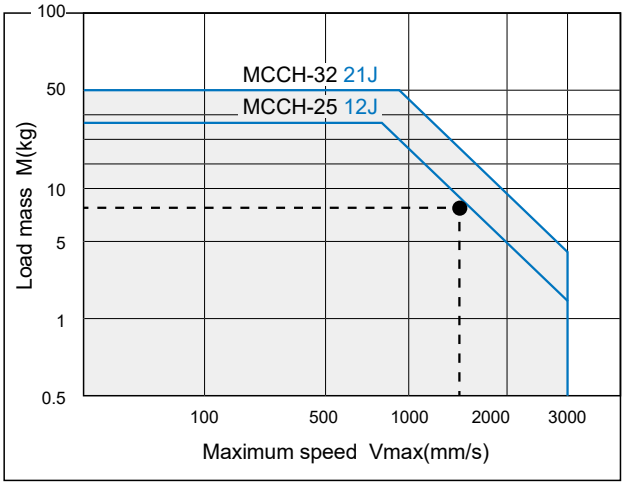
Load mass ..... M = 6kg
Maximum speed ..... Vmax = 2100mm/s

Graph 2, Mark ●

MCCH-32

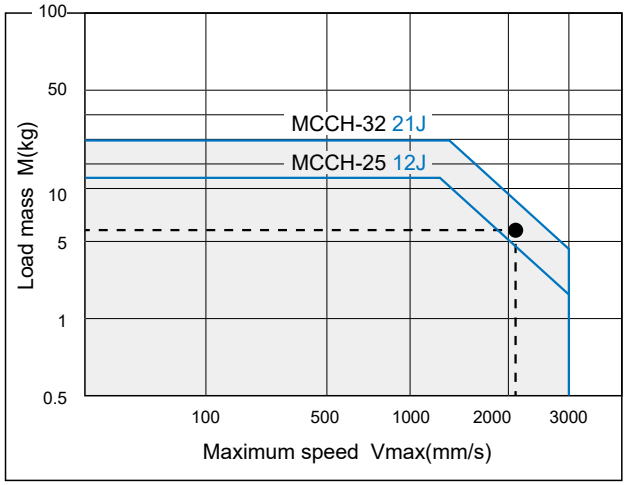
Graph 1 - Horizontal operation

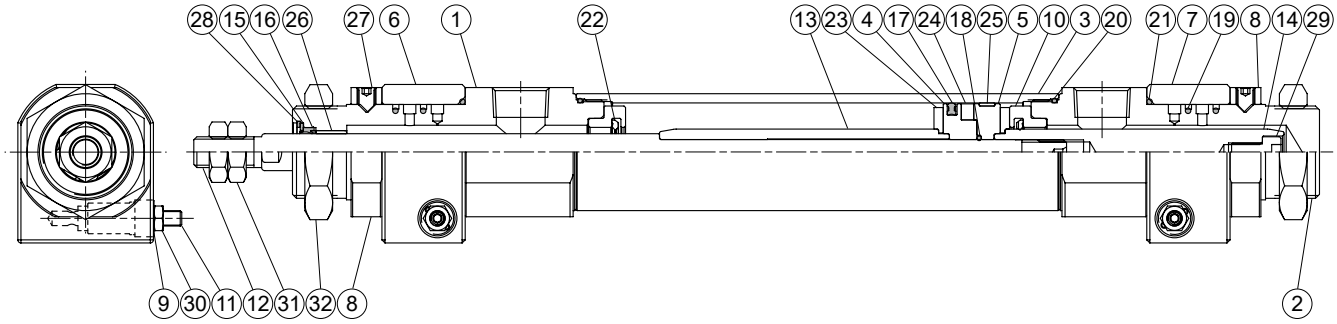
Supply pressure 0.5 MPa



Graph 2 - Vertical operation

Supply pressure 0.5 MPa





Material

A: Component parts, **B**: Repair kits

No.	Part name	Material	Q'y	A inclusion	B inclusion
1	Cover-R	Aluminum alloy	1	●	
2	Cover-H	Aluminum alloy	1	●	
3	Tube	Aluminum alloy	1		
4	Piston-R	Aluminum alloy	1	●	
5	Piston-H	Aluminum alloy	1	●	
6	Relief valve body-R	Aluminum alloy	1	●	
7	Relief valve body-H	Aluminum alloy	1	●	
8	Relief valve holder	Aluminum alloy	2	●	
9	Relief valve cover	Stainless steel	2	●	
10	Cushion spacer	Stainless steel	2	●	
11	Relief valve adjustment screw	Stainless steel	2	●	
12	Piston rod	Carbon steel	1		
13	Cushion axis-R	Carbon steel	1	●	
14	Cushion axis-H	Carbon steel	1	●	
15	Washer	Carbon steel	1	●	
16	Rod packing	NBR	1	●	●

No.	Part name	Material	Q'y	A inclusion	B inclusion
17	Piston packing	NBR	1	●	●
18	O-ring	NBR	1	●	
19		NBR	4	●	●
20		NBR	2	●	●
21		NBR	2	●	●
22	Cushion packing	NBR	2	●	●
23	Gasket	PU	2	●	
24	Magnet ring	Magnet material	1	●	
25	Wear ring	Resin	1	●	●
26	Rod bush	Bearing alloy	1	●	
27	Screw	SCM	4	●	
28	Snap ring	Spring steel	1	●	
29	Bolt	Carbon steel	1	●	
30	Nut	Carbon steel	2	●	
31	Rod front nut	Carbon steel	2	●	
32	Tie nut	Carbon steel	1	●	

Order example of component parts & repair kits

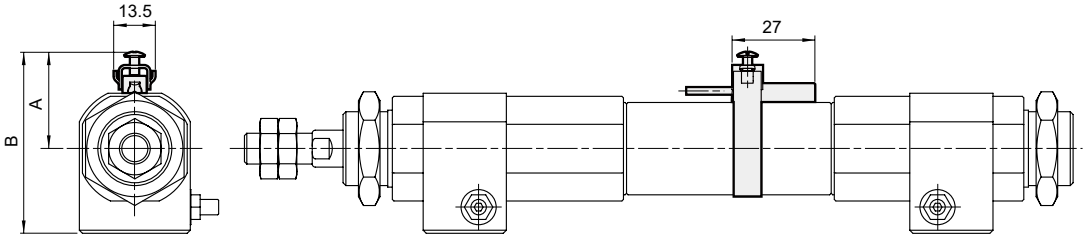
Tube I.D.	Component parts	Repair kits
25	**CP-MCCH-25-□**	**PS-MCCH-25**
32	**CP-MCCH-32-□**	**PS-MCCH-32**

* □ Port thread: Blank: Rc thread, **G**: G thread, **NPT**: NPT thread

Installation of sensor switch

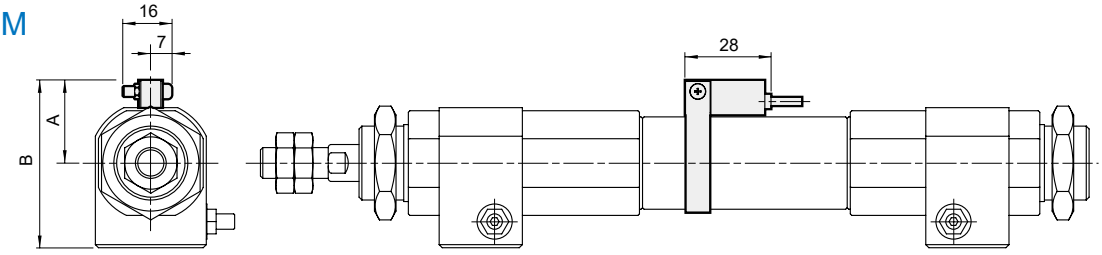
Sensor switch: R*C
Band: BKC-1

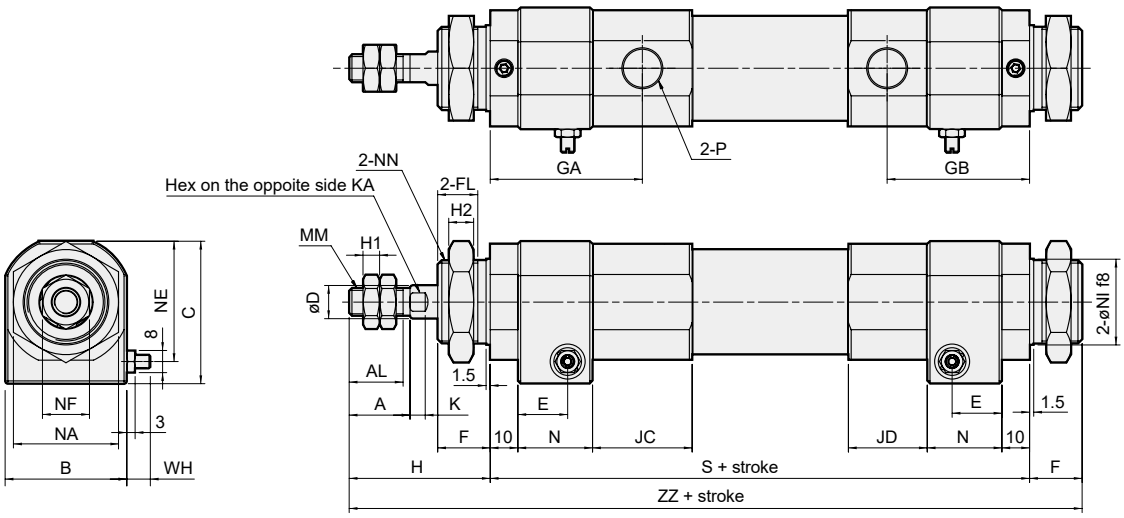
Code / Tube I.D.	A	B
25	31	58.5
32	35	64.5



Sensor switch: RCM
Band: BMG*

Code / Tube I.D.	A	B
25	26.5	54.5
32	30.5	60.5



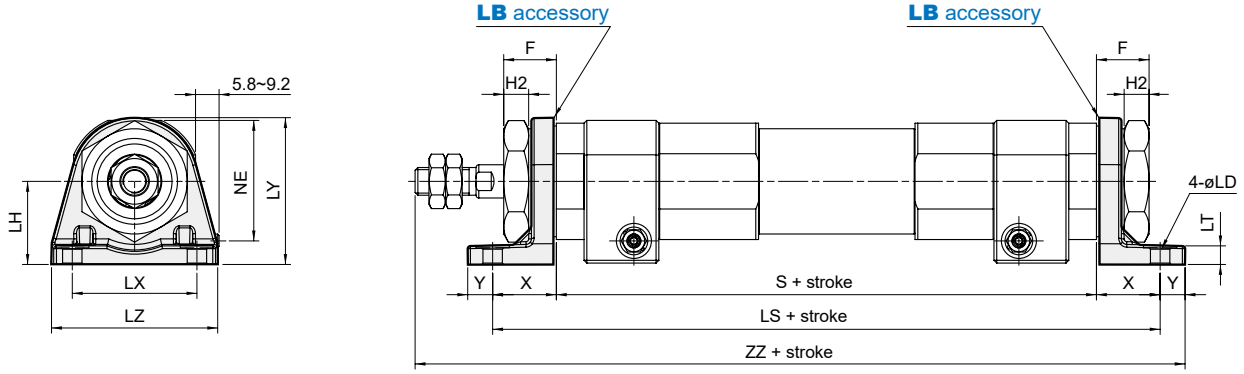


Code / Tube I.D.	A	AL	B	C	D	E	F	FL	GA	GB	H	H1	H2	JC	JD	K	KA	MM	N	NE	NA
25	22	19.5	36	45.5	12	18	16	11.5	56.5	49.5	48	6	7	39	25.5	5.5	10	M10×1.25	27	37	32
32	22	19.5	44	51.5	12	18	19	14.5	55	51.5	51	6	9	36	28.5	5.5	10	M10×1.25	27	43.5	38

Code / Tube I.D.	NF	NI	NN	P	S	WH	ZZ
25	17	25 $^{-0.020}_{-0.053}$	M24×1.5	Rc1/4	193	5.8~9.2	257
32	17	31 $^{-0.025}_{-0.064}$	M30×1.5	Rc3/8	195	5.8~9.2	265

■ Mounting accessories

LB Material: Carbon steel



Code / Tube I.D.	F	H2	LD	LH	LS	LT	LX	LY	LZ	NE	S	X	Y	ZZ
25	16	8	7	28	233	6.5	40	46.5	55	37	193	20	9	270
32	19	9	7	30	241	7	45	53	60	43.5	195	23	9	278