MCMOC series

OVAL MICRO-CYLINDER

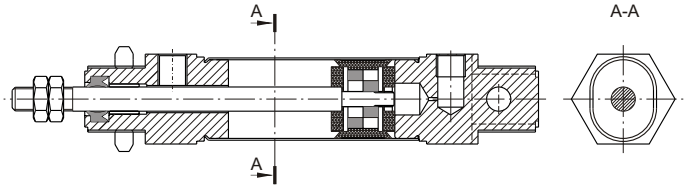
Mindman

Features:

- Large range 8mm bore ~ 25mm bore.
- Flat design enables non rotation of rod.
- ISO standard dimensions.
- Magnetic as standard.

Options

- Hole - rod with cylinders double end rod
- Pneumatic cushioning(A) with cylinders (16,20,25)



Material

Oval tube	Stainless steel
End cover	Anodized aluminium
Piston rod	Stainless steel
Piston	Composit polyurethan
Piston rod bearing	Bronze & PTFE
Seals	Polyurethan
Spring	Bronze & PTFE
Magnet	Ferrite
Spacer spring	Brass & Acetal resin

Model		MCMOC					
Acting type		Double acting / Single acting					
Tube I.D. (mm)		8	10	12	16	20	25
Port size Rc(PT)		M5×0.8				G 1/8	
Medium		Filter air 50 μm lubricated or not					
Operating pressure kgf/cm²	Double acting	1~10		0.8~10		0.8~10	
	Single acting Push	2.0~10		2.3~10		2.1~10	1.5~10
	Single acting Pull	3~10		2.5~10		2~10	
Stocking temperature ℃		-10~70℃ (No freezing)					
Speed m/sec		0.6				0.7	
Tolerance of stoke mm		0~+1.5					
Work temperature ℃		-10~60℃ (No freezing)					
Non-rotating accuracy		±3.5°		±2.5°			
Cushioning of end stroke		Elastic by polyurethan internal stop built into piston					
Pneumatic cushioning		No			Yes (option)		
Sensor switch		RCS					
Sensor switch band		BK-81					

Order example:

MCMOC－11－20－25－A

- MODEL
- 1: Single Rod, 2: Double Rod
- TUBE I.D.
- STROKE
- Blank: with cushion pad, A: Pneumatic cushioning (only φ16,20,25)

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	3		Single action / Double rod male thread
2	5		Double rod / Male thread hole-rod
2	6		Single action / Double rod / Male thread hole-rod

Mounting accessories:

FA－MCMOC－20

- MODEL
- TUBE I.D.

MOUNTING TYPE:

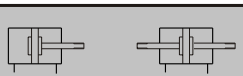
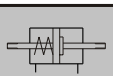
	LB
	FA
	FB
	SDB

Forces for oval cylinder

(unit: kg)

Tube I.D.	Rod ϕ	Function		Area mm²	Pressure kgf/cm²					
					2	3	4	5	6	7
8	4		Push	63	0.63	1.13	1.77	2.52	3.15	3.78
			Pull	51	0.42	0.93	1.44	1.95	2.46	2.97
			Double action Push	63	1.26	1.89	2.52	3.15	3.78	4.41
			Pull	51	10.2	1.53	2.04	2.55	3.06	3.57
10	4		Push	100	1.25	2.37	3.63	4.12	5	6.12
			Pull	88	0.91	1.79	2.67	3.55	4.43	5.31
			Double action Push	100	2.00	3.00	4.00	5.00	6.00	7.00
			Pull	88	1.76	2.64	3.52	4.40	5.28	6.16
12	6		Push	150	2.44	4.08	5.40	6.88	8.37	10.12
			Pull	123	1.61	2.84	4.07	5.30	6.53	7.76
			Double action Push	150	3.00	4.50	6.00	7.50	9.00	10.5
			Pull	123	2.46	3.69	4.92	6.15	7.38	8.61
16	6		Push	200	3.50	5.00	7.40	8.20	9.10	12.00
			Pull	173	1.51	3.25	4.95	6.75	8.45	10.15
			Double action Push	200	4.00	6.00	8.00	10.00	12.00	14.00
			Pull	173	3.46	5.20	6.90	8.70	10.40	12.10
20	8		Push	380	4.63	8.78	12.93	15.98	19.52	24.15
			Pull	330	3.70	5.88	10.30	13.6	16.9	20.20
			Double action Push	380	7.60	11.4	15.2	19.00	22.80	26.60
			Pull	330	6.60	9.90	13.20	16.5	19.80	23.10
25	10		Push	430	6.40	11.70	16.20	21.50	26.30	31.20
			Pull	352	3.52	4.14	7.66	11.18	14.70	18.22
			Double action Push	430	8.60	12.90	17.20	21.50	25.80	30.10
			Pull	352	7.04	10.56	14.08	17.60	21.12	24.64

Storkes

Function / Tube I.D.		Hole-rod			Hole-rod	
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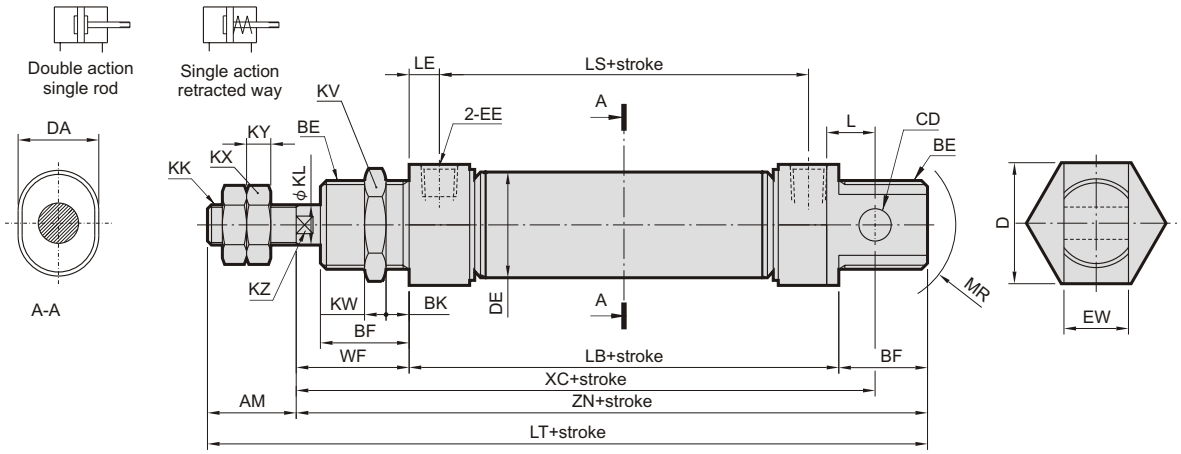
10	5, 10, 15, 20, 25, 30, 40, 50, 80,100	25, 50, 80, 100	10, 25, 50	10, 25, 50	25, 50	10, 25, 50
12	5, 10, 15, 20, 25, 30, 40, 50, 80, 100, 160	25, 50, 80, 100	10, 25	10, 25	25	10, 25, 50
16	5, 10, 15, 20, 25, 30, 40, 50, 80, 100, 160, 200	25, 50, 80, 100, 160	10, 25, 50	10, 25, 50	25, 50	10, 25, 50
20	5, 10, 15, 20, 25, 30, 40, 50, 80, 100, 160, 200, 300	25, 50, 80, 100, 160, 200	10, 25, 50	10, 25, 50	25, 50	10, 25, 50
25	5, 10, 15, 20, 25, 30, 40, 50, 80, 100, 160, 200, 300, 400, 500, 650	25, 50, 80, 100, 160, 200	10, 25, 50	10, 25, 50	25, 50	10, 25, 50

Note: Special strokes are available on request

MCMOC Dimensions ϕ8~ϕ25

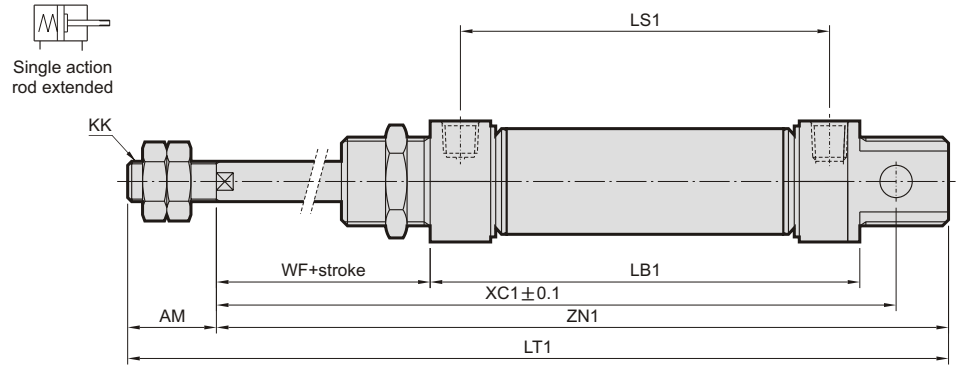
OVAL MICRO-CYLINDER



Code / Tube I.D.	AM ※	BE ※	BF	BK	CD (H9) ※	D	DA	DE	EE ※	EW (d13) ※	KL	KK ※	KV ※	KW ※	KX	KY	KZ
8	12	M12×1.25	13	7	4	14	8.3	11.8	M5	8	4	M4	19	6	7	2	-
10	12	M12×1.25	13	7	4	14	10.3	14.3	M5	8	4	M4	19	6	7	2	-
12	16	M16×1.5	17	8	6	20	12.3	17.3	M5	12	6	M6	23	8	10	3	5
16	16	M16×1.5	17	8	6	20	14.3	19.8	M5	12	6	M6	23	8	10	3	5
20	20	M22×1.5	20	9	8	27	20.5	25.5	G 1/8	16	8	M8	32	11	13	4	7
25	22	M22×1.5	22	11	8	27	22.5	26.5	G 1/8	16	10	M10×1.25	32	11	17	5	9

Code / Tube I.D.	L ※	LB	LE	LS	LT	MR ※	WF ±1.2 ※	XC ±1 ※	ZC	ZN
8	6	45	6	33	86	18	16	64	20	73
10	6	45	6	33	86	18	16	64	20	73
12	9	46	6	34	102	22	22	75	20	85
16	9	53	6	41	107	22	22	82	20	92
20	12	67	8	51	132	25	24	95	20	112
25	12	72	8	56	143	25	28	104	20	121

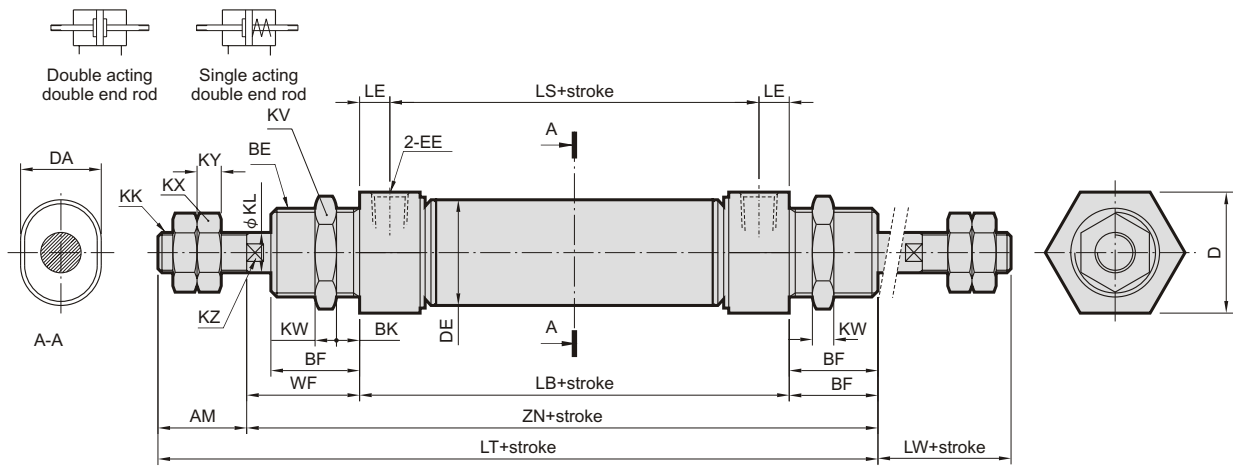
※ Dimension ISO 6432



Code / Tube I.D.	LB1			LS1			LT1			XC1			ZN1		
	10	25	50	10	25	50	10	25	50	10	25	50	10	25	50
8	65	95	145	53	83	133	116	161	236	94	139	214	103	148	223
10	65	95	145	53	83	133	116	161	236	94	139	214	103	148	223
12	66	96	146	54	84	134	132	177	252	105	150	225	115	160	235
16	73	103	153	61	91	141	137	182	257	112	157	232	122	167	242
20	87	117	167	71	101	151	162	207	282	125	170	245	142	187	262
25	92	122	172	76	106	156	173	218	293	134	179	254	151	196	281

MCMOC Dimensions ϕ8~ϕ25

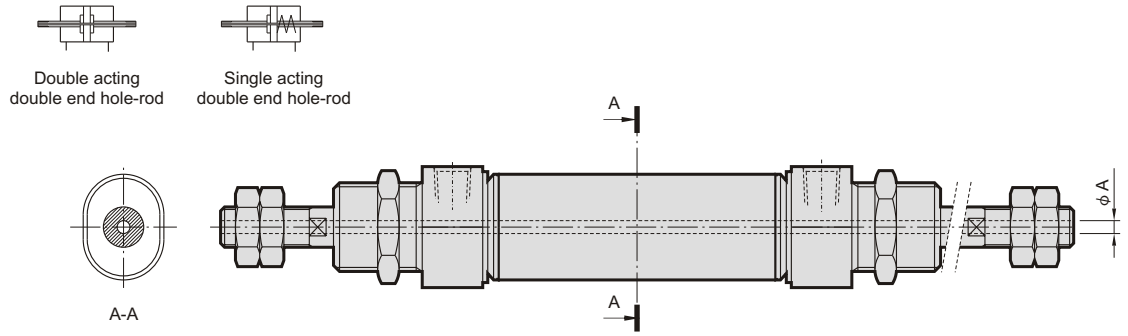
OVAL MICRO-CYLINDER



Code / Tube I.D.	AM ※	BE ※	BF	BK	D	DA	DE	EE ※	KL	KK ※	KV ※	KW ※	KX	KY	KZ
8	12	M12×1.25	13	7	14	8.3	11.8	M5	4	M4	19	6	7	2	-
10	12	M12×1.25	13	7	14	10.3	14.3	M5	4	M4	19	6	7	2	-
12	16	M16×1.5	17	8	20	12.3	17.3	M5	6	M6	23	8	10	3	5
16	16	M16×1.5	17	8	20	14.3	19.8	M5	6	M6	23	8	10	3	5
20	20	M22×1.5	20	9	27	20.5	25.5	G 1/8	8	M8	32	11	13	4	7
25	22	M22×1.5	22	11	27	22.5	26.5	G 1/8	10	M10×1.25	32	11	17	5	9

Code / Tube I.D.	LB	LE	LS	LT	LW ※	WF ※ ±1.2	ZC	ZN
8	45	6	33	86	15	16	20	73
10	45	6	33	86	15	16	20	73
12	46	6	34	102	22	22	20	85
16	53	6	41	107	20	22	20	92
20	67	8	51	132	23	24	20	112
25	72	8	56	143	29	28	20	121

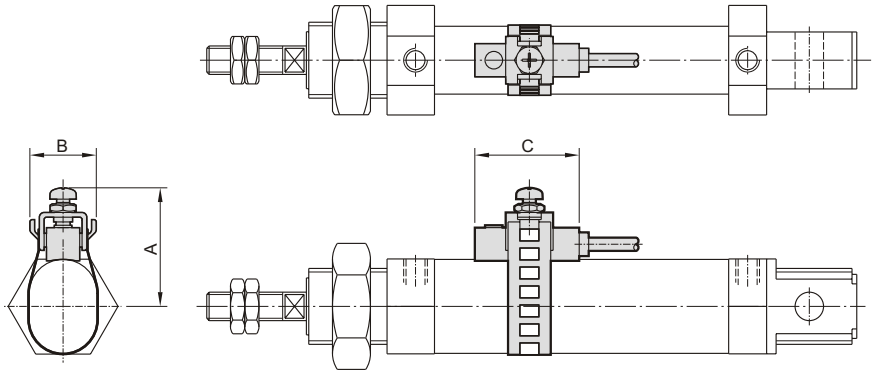
※ Dimension ISO 6432



Code / Tube I.D.	A +0.15 +0
8	1
10	1
12	1.2
16	1.2
20	3.2
25	3.2

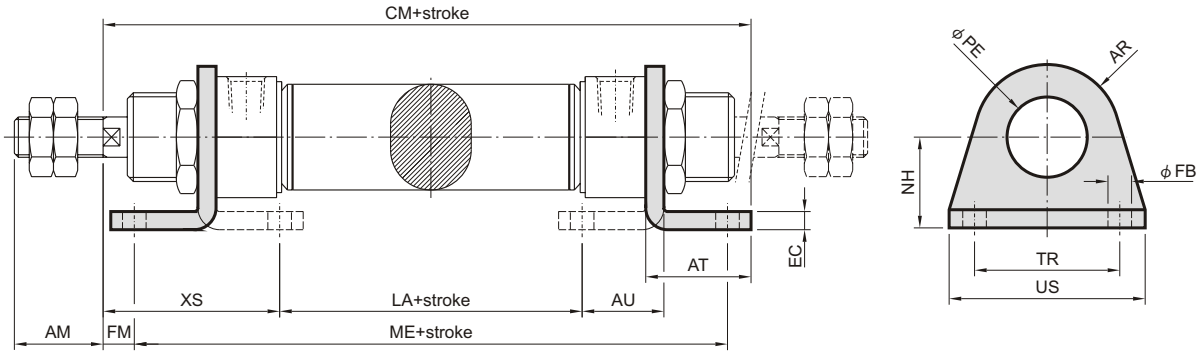
Sensor switch: RCS
Sensor switch band: BK-81

Code / Tube I.D.	A	B	C
8	19.5	15	22
10	21	15	22
12	22.5	15	22
16	23.5	15	22
20	26.5	15	22
25	27	15	22



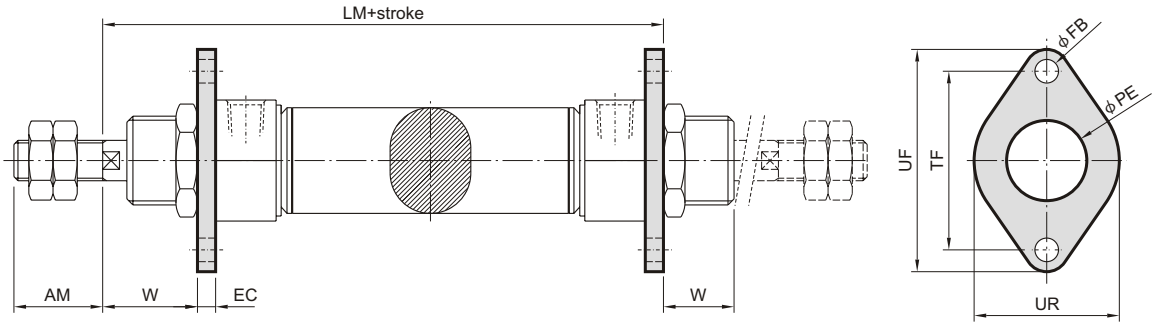
■ Mounting accessories

LB



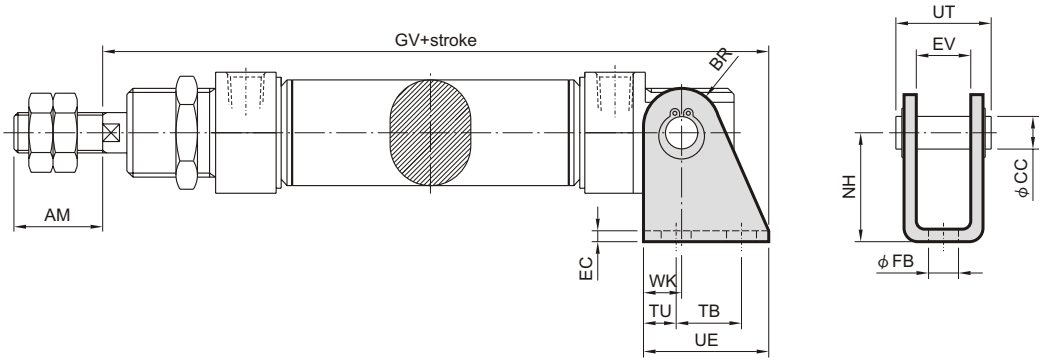
Code / Tube I.D.	AM	AR	AT	AU	CM	EC	FB	FM	LA	ME	NH	PE	TR	US	XS
8	12	10	16	10.5	76	4.5	4.5	5	30	67	16	12.1	25	35	23.5
10	12	10	16	10.5	76	4.5	4.5	5	30	67	16	12.1	25	35	23.5
12	16	12	21	13	89	5.5	5.5	9	27	74	20	16.1	32	42	32
16	16	12	21	13	101	5.5	5.5	9.5	34	80.5	20	16.1	32	42	32.5
20	20	20	29	17	117	6.5	6.5	8.5	43.5	101.5	25	22.1	40	54	36.5
25	22	20	29	17	131.5	6.5	6.5	12.5	48.5	108	25	22.1	40	54	40

FA



Code / Tube I.D.	AM	EC	FB	LM	PE	TF	UF	UR	W
8	12	3	4.5	64	12.1	30	40	25	13
10	12	3	4.5	64	12.1	30	40	25	13
12	16	4	5.5	72	16.1	40	53	30	18
16	16	4	5.5	79	16.1	40	53	30	18
20	20	5	6.5	96	22.1	50	66	40	20
25	22	5	6.5	105	22.1	50	66	40	24

SDB



Code / Tube I.D.	AM	BR	CC	EC	EV	FB	GV	NH	TB	TU	UE	UT	WK
8	12	5	4	2.5	8.1	4.5	82	24	12.5	6.5	23	17	5
10	12	5	4	2.5	8.1	4.5	82	24	12.5	6.5	23	17	5
12	16	7	6	3	12.1	5.5	93	27	15	5	25	23	8
16	16	7	6	3	12.1	5.5	100	27	15	5	25	23	8
20	20	10	8	4	16.1	6.5	117	30	20	6	32.5	30	10
25	22	10	8	4	16.1	6.5	126.5	30	20	6	32.5	30	10