

Mini cylinder(Aluminum barrel)

MBL Series

Inner structure and material of major parts

MBL-CA

NO.	Item	Material
1	Rod nut	Carbon steel
2	Piston rod	Carbon steel with 20 μ m chrome plated
3	Front cover packing	NBR
4	Front cover nut	Carbon steel
5	Bushing	Wear resistant material
6	Front cover	Aluminum alloy
7	Bumper	TPU
8	Barrel	Aluminum alloy
9	Piston	Aluminum alloy
10	Piston seal	NBR
11	Magnet	Plastic
12	Wear ring	Wear resistant material
13	Back cover	Aluminum alloy

Dimensions

MBL/MBLC

Bore size\Item	A		AB	AC	AD	AF	B	C	D	DA	M	MA	MB
	CA	U											
20	131	110	40	70	15.5	102	27	16	8	26	M22 × 1.5	14	21
25	135	114	44	70	15.5	105	30	16	10	30	M22 × 1.5	14	21
32	141	114	44	70	15.5	108	37	16	12	28	M24 × 2.0	16	27
40	165	138	46	92	22	130.5	45	20	16	30	M30 × 2.0	16	27
50	173	146	54	92	22	138	55	20	16	32	M36 × 2.0	22	27
63	173	146	54	92	22	138	68	20	16	32	M36 × 2.0	22	27

Bore size\Item	E	EA	EB	F	FA	G	GA	H	K	KA	P	PA	T
25	M10 × 1.25	21	19.5	17	6	29	7	8	8	9	1/8"	7.5	23.5
32	M10 × 1.25	21	19.5	17	6	32	8	10	10	12	1/8"	7.5	29.5
40	M12 × 1.25	22.5	21	17	7	41	9	14	12	12	1/4"	11	33
50	M14 × 1.5	24	22.5	19	8	46	11	14	12	11	1/4"	11	38
63	M14 × 1.5	24	22.5	19	8	46	11	14	12	11	1/4"	11	44.5

Remark: The dimensions of magnet type cylinder are the same as non-magnet type cylinder.



MBL

MSBL

Item	A		AB	AC		AD	AF			B	C					
	CA			U												
	≤50	51~100		≥101	≤50		51~100	≥101	≤50			51~100	≥101			
20	156	181	206	135	160	185	40	95	120	145	15.5	127	152	177	27	16
25	160	185	210	139	164	189	44	95	120	145	15.5	130	155	180	30	16
32	166	191	216	139	164	189	44	95	120	145	15.5	133	158	183	37	16
40	190	215	240	163	188	213	46	117	142	167	22	155.5	180.5	205.5	45	20

Bore size\Item	D	DA	E	EA	EB	F	FA	G	GA	H	K	KA	M	MA	MB	P	PA
25	10	30	M10 × 1.25	21	19.5	17	6	29	7	8	8	9	M22 × 1.5	14	21	1/8"	7.5
32	12	28	M10 × 1.25	21	19.5	17	6	32	8	10	10	12	M24 × 2.0	16	27	1/8"	7.5
40	16	30	M12 × 1.25	22.5	21	17	7	41	9	14	12	12	M30 × 2.0	16	27	1/4"	11

Remark: The dimensions of magnet type cylinder are the same as non-magnet type cylinder.

Mini cylinder(Aluminum barrel)

Accessories

Ordering code

Accessories of MBL series cylinder are the same with that of MAL\MA series.
Please see accessory list for detail of selection and order information.

Accessory selection

Cylinder model	MBL/MBLC		MSBL, MTBL		MBL(C)D, MBL(C)J	
	Standard	With magnet	Standard	With magnet	Standard	With magnet
Mounting accessory	LB	●	●	●	●	●
	FA	●	●	●	●	●
	SDB	●	●	●	×	×
Knuckle ①	I	●	●	●	●	●
	Y	●	●	●	●	●
	U	●	●	●	●	●
	F	●	●	●	●	●
Sensor switch ②	CS1-M	×	●	×	●	●
	DS1-M	×	●	×	●	●

- ① Floating Joint(F) and Universal Joint(U) are common use part,
Please refer to P453~456 for knuckle detail,
② Please refer to P457~480 for detail of sensor switch.

Material of accessories selection

Accessories	Mounting accessories			Knuckle			
	LB	FA	SDB	I	Y	F	U
Bore size	LB	FA	SDB	I	Y	F	U
20-63	○	○	○	□	□	□	□

○—Low carbon steel, □—Carbon steel.

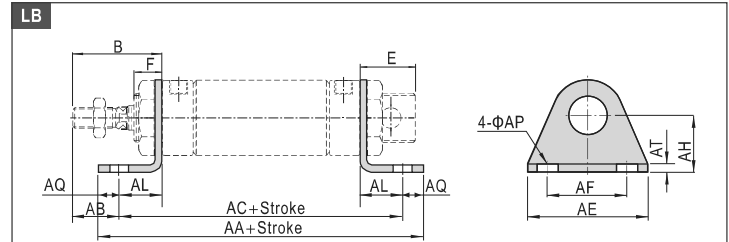
List for ordering code of accessories

Accessories	Mounting accessory		
	LB	FA	SDB
Bore size	LB <td>FA <td>SDB </td></td>	FA <td>SDB </td>	SDB
20	F-MA20LB	F-MA20FA	F-MA20SDB
25	F-MA25LB	F-MA25FA	F-MA25SDB
32	F-MA32LB	F-MA32FA	F-MA32SDB
40	F-MA40LB	F-MA40FA	F-MA40SDB
50	-	-	F-MA40SDB
63	-	-	-

Accessories	Knuckle			
	I: I Knuckle	Y: Y Knuckle	F: F Knuckle	U: U Knuckle
Bore size	I: I Knuckle	Y: Y Knuckle	F: F Knuckle	U: U Knuckle
20	F-MA20I	F-MA20Y	F-M8X125F	F-M8X125U
25	F-MA25I	F-MA25Y	F-M10X125F	F-M10X125U
32	F-MA32I	F-MA32Y	F-M12X125F	F-M12X125U
40	F-MA40I	F-MA40Y	F-M12X125F	F-M12X125U
50	F-MA50I	F-MA50Y	F-M14X150F	F-M14X150U
63	F-MA63I	F-MA63Y	F-M14X150F	F-M14X150U

Accessories	Sensor switch	
	CS1-M□	DS1-M□
Bore size	CS1-M□	DS1-M□
20	CS1-M-A20	DS1-M-A20
25	CS1-M-A25	DS1-M-A25
32	CS1-M-A32	DS1-M-A32
40	CS1-M-A40	DS1-M-A40
50	CS1-M-A50	DS1-M-A50
63	CS1-M-A63	DS1-M-A63

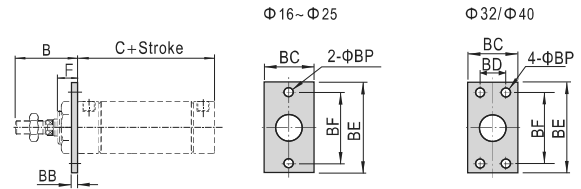
Dimensions



Bore size\Item	AA		AA(MSBL)		AC		AC(MSBL)	
	(MBL)	0-50	51-100	101-150	(MBL)	0-50	51-100	101-150
Stroke	116	141	166	191	100	125	150	175
20	116	141	166	191	100	125	150	175
25	136	161	186	211	120	145	170	195
32	158	183	208	233	142	167	192	217
40								

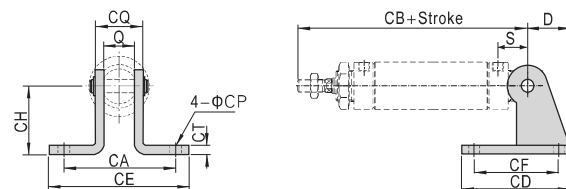
Bore size\Item	B	E	F	AB	AE	AF	AL	AQ	AP	AT	AH
	20	40	21	14	25	54	40	15	8	6.5	3
25	44	21	14	29	54	40	15	8	6.5	3	25
32	44	27	16	19	59	45	25	8	6.5	4	32
40	46	27	16	21	64	50	25	8	6.5	4	36

FA



Bore size\Item	B	C			BB	BC	BD	BE	BF	BP	F	
		(MAL)	0-50	51-100								101-150
Stroke	40	70	95	120	145	4	38	-	64	50	6.5	14
20	44	70	95	120	145	4	38	-	64	50	6.5	14
25	44	70	95	120	145	4	47	33	72	58	6.5	16
32	46	92	117	142	167	4	50	36	84	70	6.5	16
40												

SDB



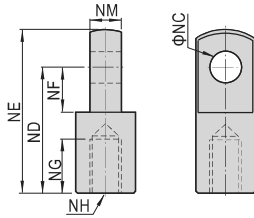
Bore size\Item	D	S	Q	CA	CB	CB(MSBL)			CD	CE	CF	CH	CT	CP	CQ
						(MBL)	0-50	51-100							
Stroke	21	12	16	51	122	147	172	197	48	67	32	32	3	6.5	22
20	21	12	16	51	126	151	176	201	48	67	32	32	3	6.5	22
25	27	15	16	51	129	154	179	204	52	67	36	36	4	6.5	24
32	27	15	20	55	153	178	203	228	56	71	40	40	4	6.5	28
40															



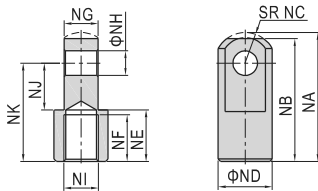
MBL

Accessories

I Knuckle

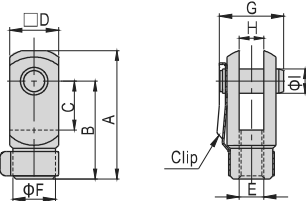


Type\Item	NC	ND	NE	NF	NG	NH	NM
F-MA20I	8	30	40	11	15	M8×1.25	8
F-MA25I	10	40	50	15	20	M10×1.25	10
F-MA40I	10	45	57	16	23	M12×1.25	14

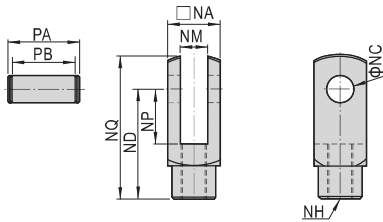


Type\Item	NA	NB	NC	ND	NE	NF	NG	NH	NJ	NK	NI
F-MAC50I	52.5	50	12.5	22	21	19	13.8	10	19	40	M14×1.5

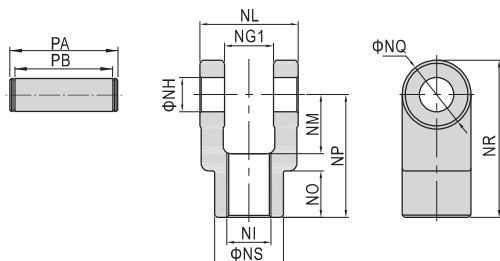
Y Knuckle



Type\Item	A	B	C	D	E	F	G	H	I
F-MA20Y	42	32	16	16	M8×1.25	14	21	8	8
F-MA25Y	52	40	20	19	M10×1.25	18	25	10	10



Type\Item	NA	NC	ND	NP	NQ	NM	NH	PA	PB
F-MA40Y	25.4	10	45	20	57	14	M12×1.25	32	26.2



Type\Item	NG1	NH	NI	NL	NM	NO	NP	NQ	NR	NS	PA	PB
F-MAC50Y	14.2	10	M14×1.5	27.8	19	17	40	22	51	22	34.6	28.8



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