

MAL Series Aluminum alloy Mini Cylinder



Ordering Code

MAL



20

×

50

— **25** —

S



Series Code

MA: Double Action Type
 MSA: Single-Extrusion Type
 MTA: Single Drawing-in Type
 MAD: Double-shaft Double Action Type
 MACD: Double-shaft Double Action Damping Type
 MAJ: Double-shaft and adjustable stroke type
 MAC: With Cushion Type

Back Cover Type

Blank: Fishtail type
 CM: Rounded type
 U: Horizontal type

Cylinder Bore
 16mm~40mm

Stroke

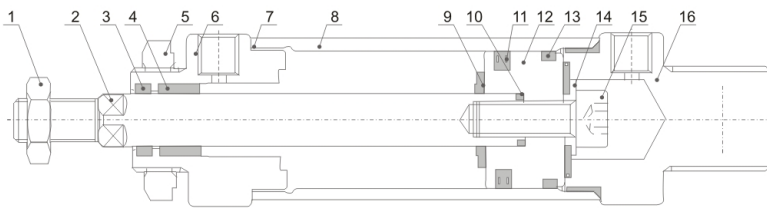
Adjustable Stroke Type
 0~100mm

Magnet Code
 Blank: Without Magnet
 S: With Magnet

Fixed Type

Blank: Normal type
 LB: Front and back fixed type
 FA: Front cover fixed type
 SDB: Back cover swinging type

Internal structure



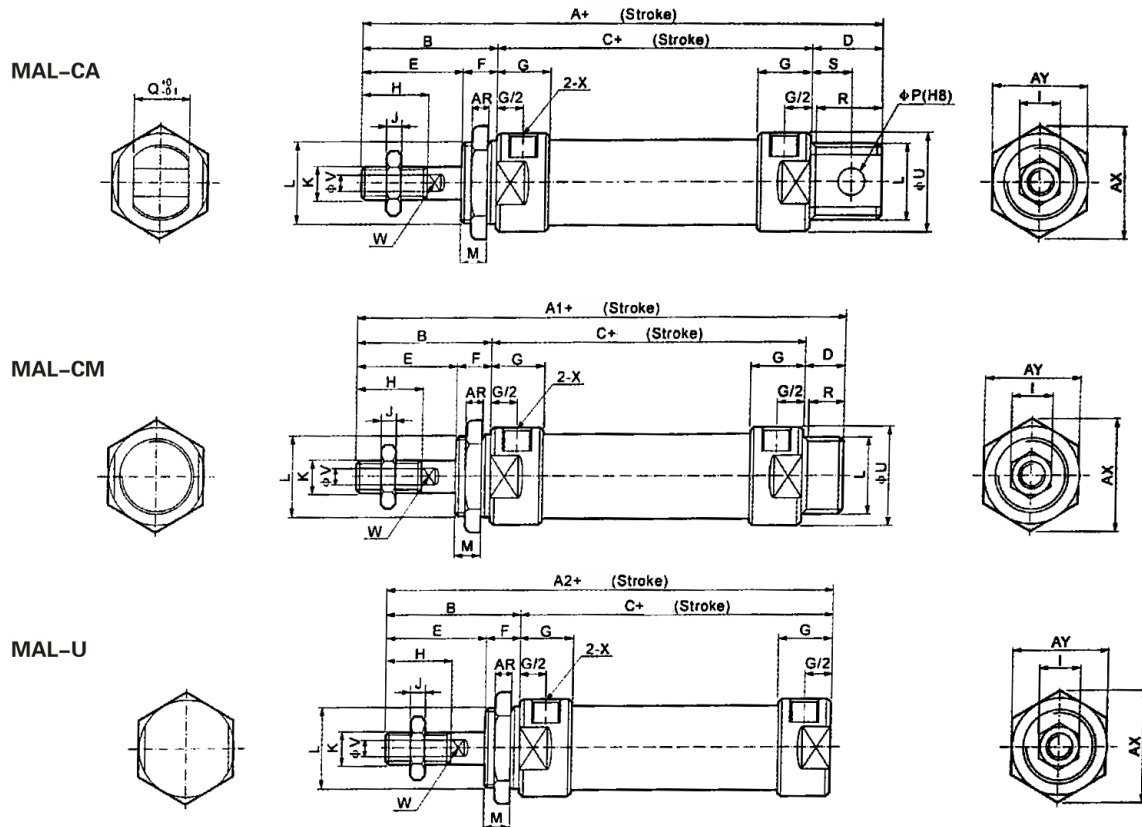
NO	Designation	NO	Designation
1	Piston Rod Nut	2	Piston Rod
3	Front Cover Seal Ring	4	Oiled Bearing
5	Front Cover Nut	6	Front Cover
7	Pipe wall O-ring	8	Aluminum tube
9	Anti-crash cushion	10	Piston rod O-Ring
11	Piston O-Ring	12	Piston
13	Wear ring	14	Back cushion
15	Hex socket screw	16	Back Cover

Specification

Bore(mm)	16	20	25	32	40
Motion pattern	Double Action or Single Action				
Working Medium	Air				
Fixed Type	Normal Type LB Type FA Type SDB Type				
Operating Pressure Range	0.1~0.9MPa(14.5~130Psi)				
Ensured Pressure Resistance	1.35MPa(195Psi)				
Operating Temperature Range	-5~70°C(32~158 °F)				
Operating Speed Range	30~800mm/s				
Buffer Type	Standard Type	Anti-crash cushion			
	Damping Type	Adjustable cushion			
Port Size	10-32U	NPT1/8"	NPT1/8"	NPT1/8"	NPT1/4"

■ Our Company can also make flat for cylinder covers inlet and outlet position. If you require this, it should be specified.

Overall Dimension



Dimension Sheet

Bore/Symbol	A	A1	A2	B	C	D	D1	E	F	G	H	I	J	K
16	104 (4.094)	104 (4.094)	90 (3.543)	38 (1.496)	52 (2.047)	52 (2.047)	15 (0.590)	24 (0.944)	14 (0.551)	111 (0.433)	16 (0.629)	10 (0.393)	5 (0.196)	M6X1
20	131 (5.157)	122 (4.803)	110 (4.330)	40 (1.574)	70 (2.755)	70 (2.755)	12 (0.472)	28 (1.102)	12 (0.472)	16 (0.629)	20 (0.787)	12 (0.472)	6 (0.236)	M8X1.25
25	135 (5.314)	128 (5.039)	114 (4.488)	44 (1.732)	70 (2.755)	70 (2.755)	14 (0.551)	30 (1.181)	14 (0.551)	16 (0.629)	22 (0.866)	17 (0.669)	6 (0.236)	M10X1.5
32	141 (5.551)	128 (5.039)	114 (4.488)	44 (1.732)	70 (2.755)	70 (2.755)	14 (0.551)	30 (1.181)	14 (0.551)	16 (0.629)	22 (0.866)	17 (0.669)	6 (0.236)	M10X1.5
40	165 (6.496)	152 (5.984)	138 (5.433)	46 (1.811)	92 (3.622)	92 (3.622)	14 (0.551)	32 (1.259)	14 (0.551)	22 (0.866)	24 (0.944)	17 (0.669)	7 (0.275)	M12X1.5

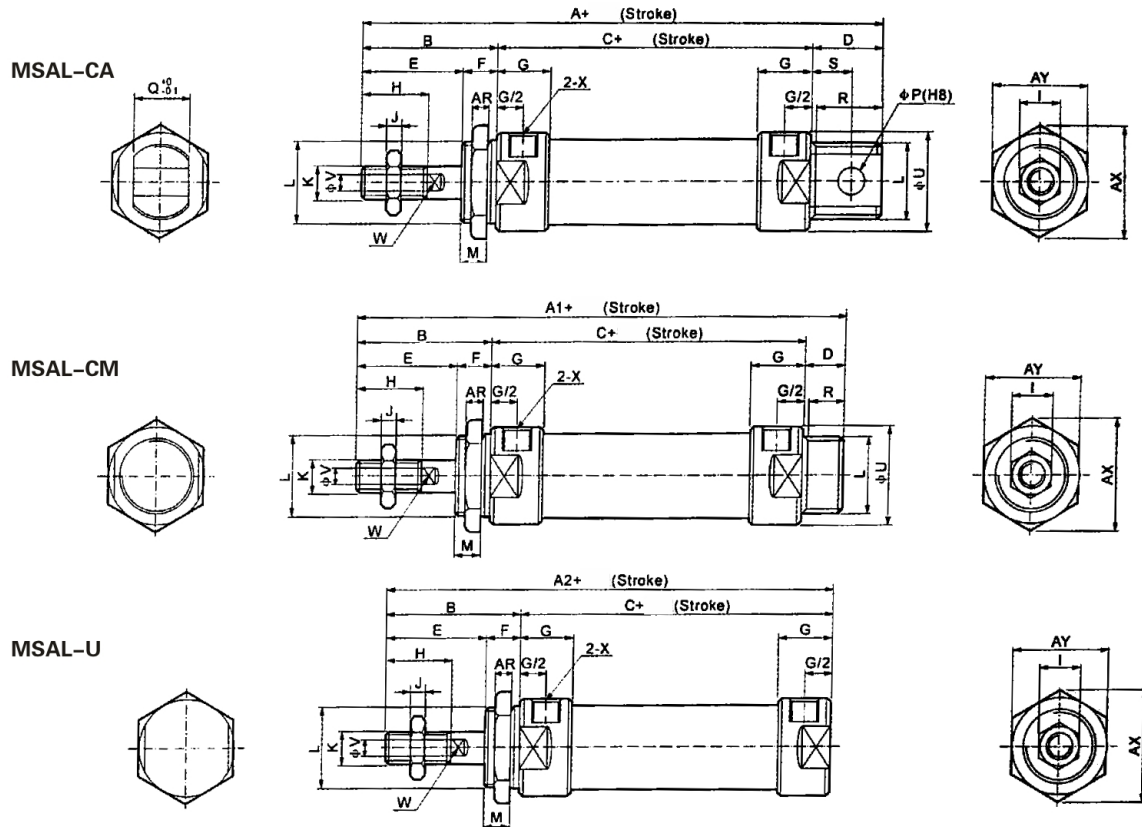
Bore/Symbol	L	M	P	Q	R	R1	S	U	V	W	X	AR	AX	AY
16	M16X1.5	8 (0.314)	6 (0.336)	12 (0.472)	13 (0.511)	13 (0.511)	6 (0.236)	20 (0.787)	6 (0.236)	/	M5	7 (0.275)	24 (0.944)	27.5 (1.082)
20	M22X1.5	10 (0.393)	8 (0.336)	16 (0.629)	19 (0.748)	12 (0.472)	12 (0.472)	29 (1.141)	8 (0.314)	6 (0.236)	NPT1/8	7 (0.275)	33 (1.299)	29 (1.141)
25	M22X1.5	12 (0.472)	8 (0.336)	16 (0.629)	19 (0.748)	14 (0.551)	12 (0.472)	34 (1.338)	10 (0.393)	8 (0.314)	NPT1/8	7 (0.275)	33 (1.299)	29 (1.141)
32	M24X2.0	12 (0.472)	10 (0.336)	16 (0.629)	25 (0.984)	14 (0.551)	15 (0.590)	39.5 (1.555)	12 (0.472)	10 (0.399)	NPT1/8	8 (0.314)	37 (1.456)	32 (1.259)
40	M30X2.0	12 (0.472)	12 (0.336)	20 (0.787)	25 (0.984)	14 (0.551)	15 (0.590)	49.5 (1.948)	16 (0.629)	14 (0.551)	NPT1/4	9 (0.354)	47 (1.850)	41 (1.614)

MAL Alinminum alloy Mini Cylinder

Dimension Sheet

Unit:Newton(N)																
Cylinder Inside Diameter	16			20			25			32			40			
External Diameter of Piston Rod	6			8			10			12			16			
Motion Pattern	Single-action	Double Acting		Single-action	Double Acting		Single-action	Double Acting		Single-action	Double Acting		Single-action	Double Acting		
		Extrusi on Side	Pull Side		Extrusi on Side	Pull Side		Extrusi on Side	Pull Side		Extrusi on Side	Pull Side		Extrusi on Side	Pull Side	
Compression Area(cm ²)	28.58	28.58	25.74	44.66	44.66	37.54	69.69	69.69	58.60	114.35	114.35	98.14	178.64	178.64	150.05	
Air Pressure (PSI)	14.5	/	28.58	25.74	/	44.66	37.54	/	69.69	58.60	/	114.35	98.14	/	178.64	150.05
	29.0	/	57.16	51.48	22.33	89.32	75.08	34.84	139.38	117.20	57.16	228.70	196.28	89.32	357.28	300.10
	43.5	28.58	85.74	77.22	66.99	133.98	112.62	104.54	209.07	175.80	171.53	343.05	294.42	267.96	535.92	450.15
	58.0	57.17	114.32	102.96	111.65	178.64	150.16	174.23	278.76	234.40	285.88	457.40	392.56	446.61	714.56	600.20
	72.5	85.76	142.90	128.70	156.31	223.30	187.70	243.93	348.45	293.00	400.14	571.75	590.70	625.25	893.20	750.25
	87.0	114.35	171.48	154.44	200.97	267.96	225.24	313.62	418.14	351.60	514.60	686.10	588.84	803.90	1071.84	900.30
	101.5	142.80	200.06	180.18	245.63	312.62	262.78	383.31	487.83	410.20	628.95	800.45	686.98	982.54	1250.48	1050.35
	116.0	/	/	/	290.29	357.28	300.32	453.01	557.52	468.80	743.31	914.80	785.12	1161.19	1429.12	1200.40
130.5	/	/	/	334.95	803.88	675.75	522.70	1254.42	1054.80	857.66	2058.30	1766.52	1339.83	3215.52	2700.90	

Overall Dimension



Dimension Sheet

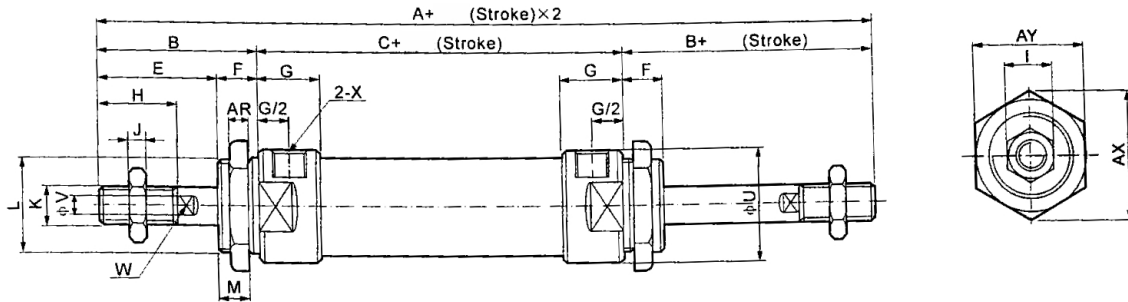
Symbol	A		A1		A2		B	C		D	D1	E	F	G	H	I	J
	0~50 (0~1.968)	51~100 (1~4")	0~50 (0~2")	51~100 (2.1~4")	0~50 (0~2")	51~100 (2.1~4")		0~50	51~100								
20	131 (5.157)	156 (6.141)	122 (4.803)	147 (5.787)	110 (4.330)	135 (5.314)	40 (1.574)	70 (2.755)	95 (3.450)	21 (0.826)	12 (0.472)	28 (1.102)	12 (0.472)	16 (0.629)	20 (0.787)	12 (0.472)	6 (0.236)
25	135 (5.314)	160 (6.299)	128 (5.039)	153 (6.023)	114 (4.488)	139 (5.472)	44 (1.732)	70 (2.755)	95 (3.450)	21 (0.826)	14 (0.551)	30 (1.181)	14 (0.551)	16 (0.629)	22 (0.866)	17 (0.669)	6 (0.236)
32	141 (5.551)	166 (6.535)	128 (5.039)	153 (6.023)	114 (4.488)	139 (5.472)	44 (1.732)	70 (2.755)	95 (3.450)	27 (1.062)	14 (0.551)	30 (1.181)	14 (0.551)	16 (0.629)	22 (0.866)	17 (0.669)	6 (0.236)
40	165 (6.496)	190 (7.480)	152 (5.984)	177 (6.968)	138 (5.433)	163 (6.417)	46 (1.811)	92 (3.622)	117 (4.606)	27 (1.062)	14 (0.551)	32 (1.259)	14 (0.551)	22 (0.866)	24 (0.944)	17 (0.669)	7 (0.236)

Inside Diameter/ Symbol	K	L	M	P	Q	R	R1	S	U	V	W	X	AR	AX	AY
20	M8x1.25	M22x1.5	10 (0.393)	8 (0.314)	16 (0.629)	19 (0.748)	12 (0.472)	12 (0.472)	29 (1.141)	8 (0.314)	6 (0.236)	NPT1/8	7 (0.275)	33 (1.299)	29 (1.141)
25	M10x1.25	M22x1.5	12 (0.472)	8 (0.314)	16 (0.629)	19 (0.748)	14 (0.551)	12 (0.472)	34 (1.338)	10 (0.393)	8 (0.314)	NPT1/8	7 (0.275)	33 (1.299)	29 (1.142)
32	M10x1.25	M24x2.0	12 (0.472)	10 (0.393)	16 (0.629)	25 (0.984)	14 (0.551)	15 (0.590)	39.5 (1.5551)	12 (0.472)	10 (0.393)	NPT1/8	8 (0.314)	37 (1.456)	32 (1.259)
40	M12x1.25	M30x2.0	12 (0.472)	12 (0.472)	20 (0.787)	25 (0.984)	14 (0.551)	15 (0.590)	49.5 (1.9488)	16 (0.629)	14 (0.551)	NPT1/8	9 (0.354)	47 (1.850)	41 (1.614)

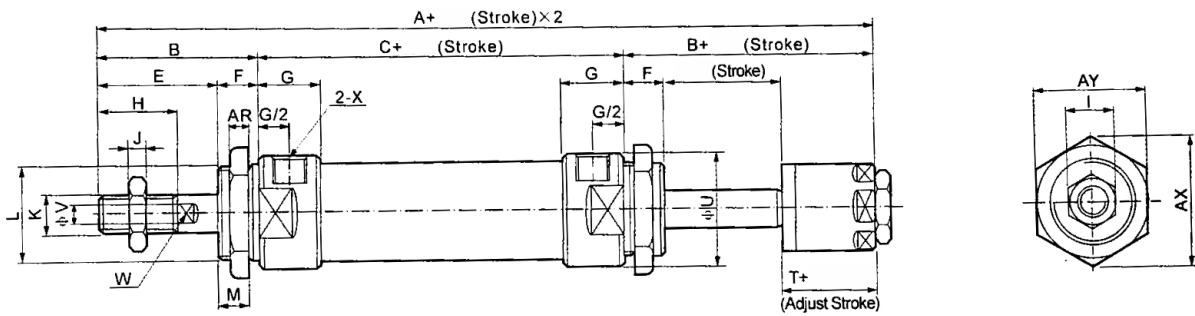
MAL Aluminum alloy Mini Cylinder

Dimension Sheet

MALD



MALJ



Dimension Sheet

Inside Diameter/ Symbol	A	A1	B	C	E	F	G	H	I	J	K
20	131 (5.157)	122 (4.803)	40 (1.574)	70 (2.755)	28 (1.102)	12 (0.472)	16 (0.629)	20 (0.787)	12 (0.472)	6 (0.236)	M8x1.25
25	135 (5.314)	128 (5.039)	44 (1.732)	70 (2.755)	30 (1.181)	14 (0.551)	16 (0.629)	22 (0.866)	17 (0.669)	6 (0.236)	M10x1.25
32	141 (5.551)	128 (5.039)	44 (1.732)	70 (2.755)	30 (1.181)	14 (0.551)	16 (0.629)	22 (0.866)	17 (0.669)	6 (0.236)	M10x1.25
40	165 (6.496)	152 (5.984)	46 (1.811)	92 (3.622)	32 (3.622)	14 (0.551)	22 (0.866)	24 (0.944)	17 (0.669)	7 (0.275)	M12x1.25

Inside Diameter/ Symbol	L	M	U	V	W	X	AR	AX	AY	T
20	M22x1.25	10 (0.393)	29 (1.141)	8 (0.314)	6 (0.236)	NPT1/8	7 (0.275)	33 (1.299)	29 (1.141)	19 (0.748)
25	M22x1.25	12 (0.472)	34 (1.338)	10 (0.393)	8 (0.314)	NPT1/8	7 (0.275)	33 (1.299)	29 (1.141)	21 (0.826)
32	M24x2.0	12 (0.472)	39.5 (1.5551)	12 (0.472)	10 (0.393)	NPT1/8	8 (0.314)	37 (1.456)	32 (1.259)	21 (0.826)
40	M30x2.0	12 (0.472)	49.5 (1.9488)	16 (0.629)	14 (0.551)	NPT1/4	9 (0.354)	47 (1.614)	41 (1.614)	21 (0.826)