



Cylinder

Sizing

SI

SI A.

SC / SU

SCT

SC A.

DSN

DSN A.

MA

**MAL**

MA/MAL A.

SDA

CQ2

CJ2

CDU














TN

CXS

MGP

MSQ

### Ordering Code

MAL	U	20	x	50	-	25	-	S	-	LB	-	MT
Series	Series Code	Bore	Stroke	Adjustable Stroke	Magnet	Mountings	Sensor					
MAL: Double acting 	Blank: Fishtail type 	16 20 25			S: With magnet Blank: Without magnet	Blank: Basic mounting LB: Front and back mounting 	JEL-03 Type 					
MSAL: Single acting, sprung-in 	CM: Round rear cover 	32 40				FA: Front mounting flange FB: Rear mounting flange 	Sensor fastoning 					
MTAL: Single acting, sprung-out 	U: Flat rear cover 					SDB: Rear hinge 						
MALD: Double-shaft, double acting 												
MALJ: Double-shaft with adjustable stroke 												

\*All DSN series aluminum alloy Mini cylinder are with magnet.

### Specification

Bore (mm)	16	20	25	32	40
Operation	Double Acting or Single Acting				
Working Medium	Air				
Mountings	Basic LB FA SDB				
Operating Voltage Range	1 ~ 9.0 Kgf/cm <sup>2</sup>				
Proof Pressure	13.5 Kgf/cm <sup>2</sup>				
Operating Temperature Range	0 ~ 70 °C				
Operating Speed Range	50 ~ 800 mm/s				
Cushion	Gasket Cushioning				
Port Size	M5 × 0.8	G 1/8"			G 1/4"

# MAL Series

## Aluminum Alloy Mini Cylinder



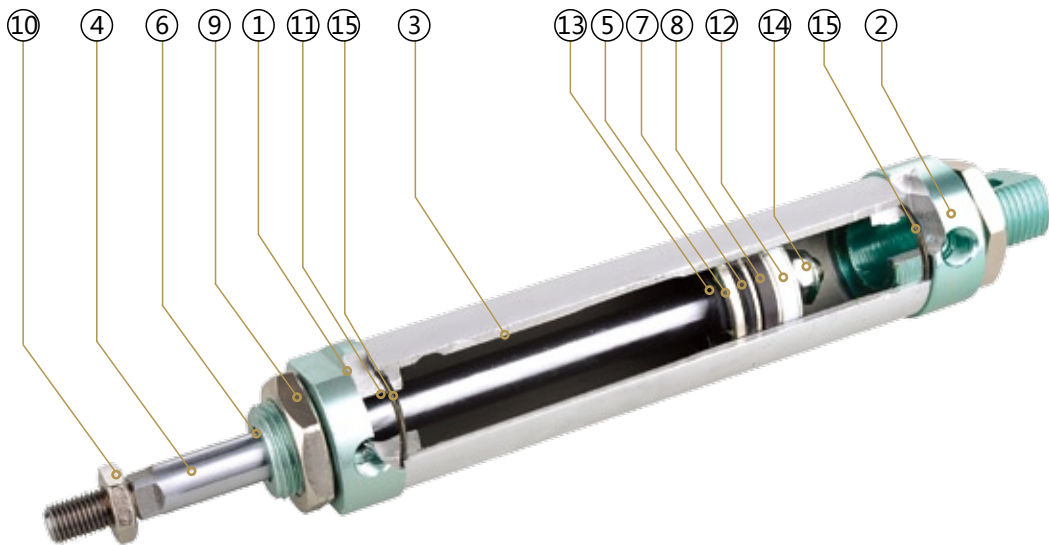
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### Stroke

Bore	Standard Stroke	Max. Stroke	Allowable Stroke
16	25 50 75 80 100 125 150 160 175 200	300	500
20	25 50 75 80 100 125 150 160 175 200 250 300	500	650
25	25 50 75 80 100 125 150 160 175 200 250 300 350 400 450 500	500	650
32	25 50 75 80 100 125 150 160 175 200 250 300 350 400 450 500	500	650
40	25 50 75 80 100 125 150 160 175 200 250 300 350 400 450 500	500	650

### Internal Structure

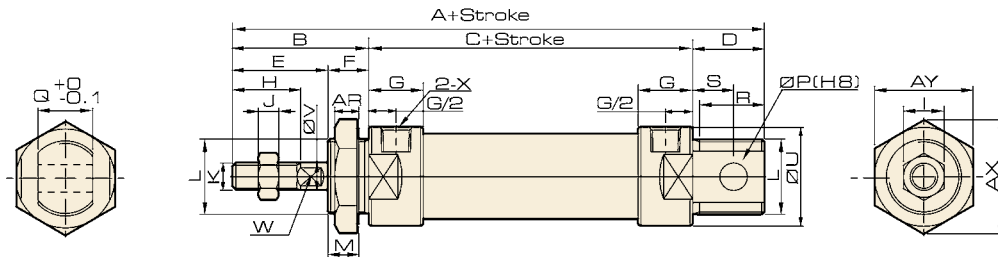


### Parts

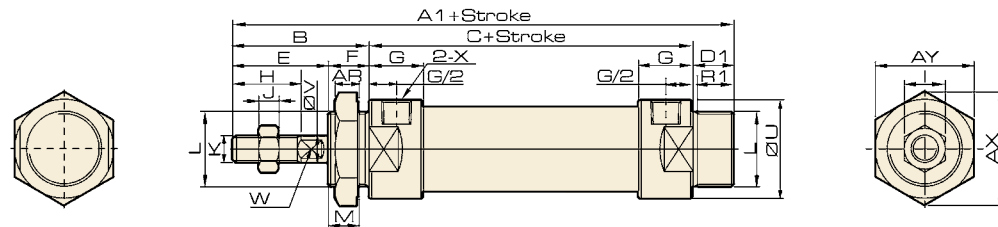
Number	Name	Material	Quantity
1	Front Cover	Hard Anodised Aluminium	1
2	Back Cover	Hard Anodised Aluminium	1
3	Barrel	Stainless Steel	1
4	Piston Rod	Chromed Carbon Steel	1
5	Piston	Aluminium	1
6	Piston Rod Seal	NBR	1
7	Piston Seal	NBR	1
8	Magnet	Plastic	1
9	Front and Rear Cover	Carbon Steel	1
10	Piston Rod Screw	Carbon Steel	1
11	Bearing	Non-lub Bearing	1
12	Anti-frintion Ring	PTFE	1
13	Cushioning Gasket	NBR	2
14	Fixing Screw	Carbon Steel	1
15	Cover Seal	NBR	2

### Overall Dimension

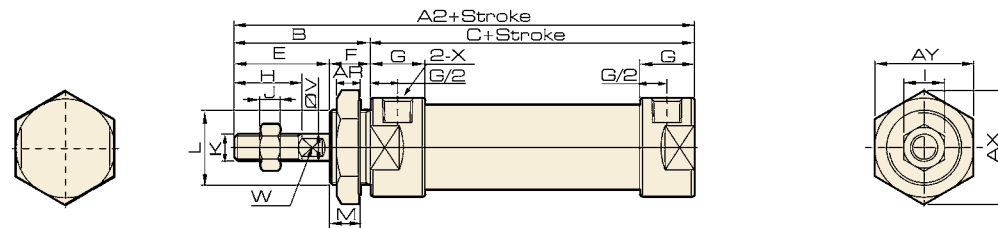
#### MAL-CA



#### MAL-CM



#### MAL-U



### Dimension

Bore Symbol	A	A1	A2	B	C	D	D1	E	F	G	H	I	J	K	L
16	104	104	90	38	52	15	15	24	14	11	16	10	5	M6 × 1	M16 × 1.5
20	131	122	110	40	70	21	12	28	12	16	20	12	6	M8 × 1.25	M22 × 1.5
25	135	128	114	44	70	21	14	30	14	16	22	17	6	M10 × 1.25	M22 × 1.5
32	141	128	114	44	70	27	14	30	14	16	22	17	6	M10 × 1.25	M24 × 2.0
40	165	152	138	46	92	27	14	32	14	22	24	17	7	M12 × 1.25	M30 × 2.0

Bore Symbol	M	P	Q	R	R1	S	U	V	W	X	AR	AX	AY
16	8	6	12	13	13	6	20	6	/	M5	7	24	27.5
20	10	8	16	19	10	12	29	8	6	G 1/8	7	33	29
25	12	8	16	19	12	12	34	10	8	G 1/8	7	33	29
32	12	10	16	25	12	15	39.5	12	10	G 1/8	8	37	32
40	12	12	20	25	12	15	49.5	16	14	G 1/4	9	47	41

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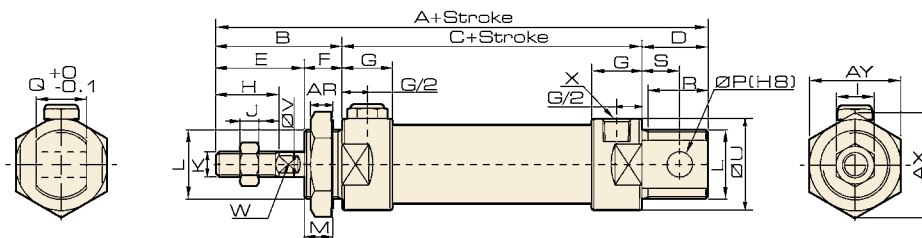
CXS

MGP

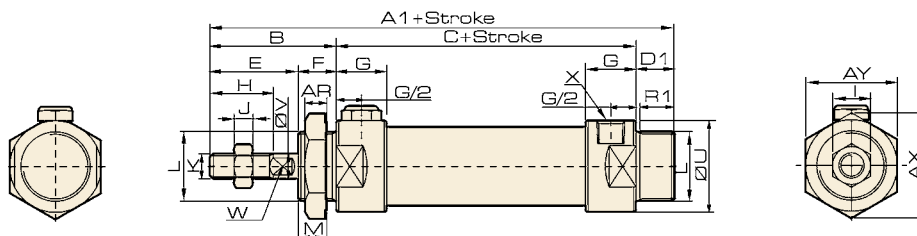
MSQ

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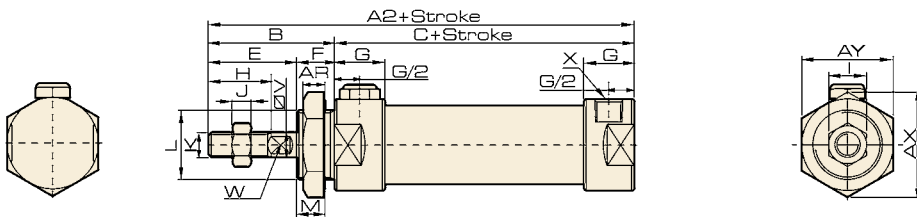
#### MSAL-CA



#### MSAL-CM



#### MSAL-U



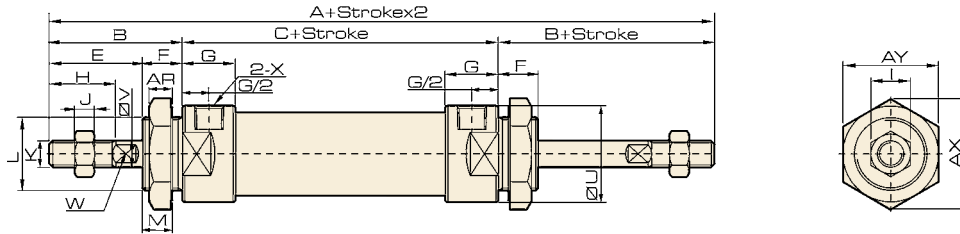
### Dimension

Symbol	A		A1		A2		B	C		D	D1	E	F	G	H	I	J
	0~50	51~100	0~50	51~100	0~50	51~100		0~50	51~100								
20	131	156	122	147	110	135	40	70	95	21	12	28	12	16	20	12	6
25	135	160	128	153	114	139	44	70	95	21	14	30	14	16	22	17	6
32	141	166	128	153	114	139	44	70	95	27	14	30	14	16	22	17	6
40	165	190	152	177	138	163	46	92	117	27	14	32	14	22	24	17	7

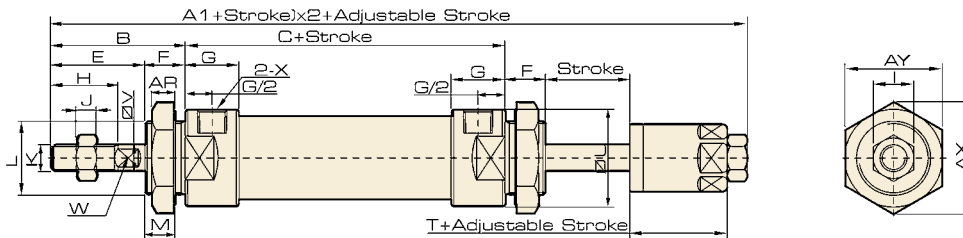
Bore Symbol	K	L	M	P	Q	R	R1	S	U	V	W	X	AR	AX	AY
20	M8 × 1.25	M22 × 1.5	10	8	16	19	10	12	29	8	6	G1/8	7	33	29
25	M10 × 1.25	M22 × 1.5	12	8	16	19	12	12	34	10	8	G1/8	7	33	29
32	M10 × 1.25	M24 × 2.0	12	10	16	25	12	15	39.5	12	10	G1/8	8	37	32
40	M12 × 1.25	M30 × 2.0	12	12	20	25	12	15	49.5	16	14	G1/4	9	47	41

### Overall Dimension

#### MALD



#### MALJ



### Dimension

Bore Symbol	A	A1	B	C	E	F	G	H	I	J	K	L
20	150	147	40	70	28	12	16	20	12	6	M8 × 1.25	M22 × 1.5
25	158	155	44	70	30	14	16	22	17	6	M10 × 1.25	M22 × 1.5
32	158	155	44	70	30	14	16	22	17	6	M10 × 1.25	M24 × 2.0
40	184	180	46	92	32	14	22	24	17	7	M12 × 1.25	M30 × 2.0

Bore Symbol	M	U	V	W	X	AR	AX	AY	T
20	10	29	8	6	G1/8	7	33	29	19
25	12	34	10	8	G1/8	7	33	29	21
32	12	39.5	12	10	G1/8	8	37	32	21
40	12	49.5	16	14	G1/4	9	47	41	21

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# MA / MAL

## Mini Cylinder Accessory



The way to automation

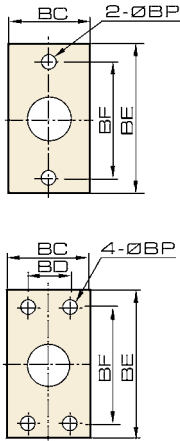
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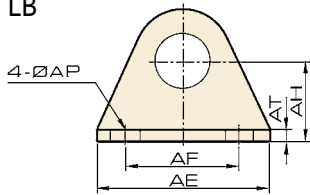
### Dimension

#### FA



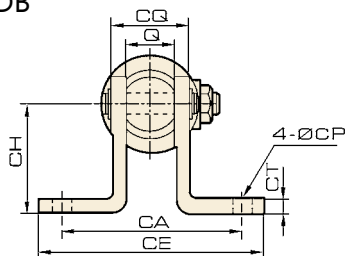
Symbol Bore / Stroke	BC	BD	BE	BF	BP
16	26	-	52	40	5.5
20	33	-	64	50	6.5
25	33	-	64	50	6.5
32	47	33	72	58	6.5
40	50	36	84	70	6.5

#### LB



Bore / Symbol	AE	AF	AP	AT	AH
16	44	32	5.5	3	19.5
20	54	40	6.5	3	24.5
25	54	40	6.5	3	24.5
32	59	45	6.5	3	32
40	64	50	6.5	3	34

#### SDB



Symbol Bore / Stroke	CD	CE	CF	CH	CT	CP	CQ	PA	PB
16	23	-	12	20	2.3	5.5	16.5	21	17
20	48	67	32	32	3	6.5	22	27	22.5
25	48	67	32	32	3	6.5	22	27	22.5
32	52	67	36	36	4	6.5	24	30	24.5
40	56	71	40	40	4	6.5	28	34	28.5