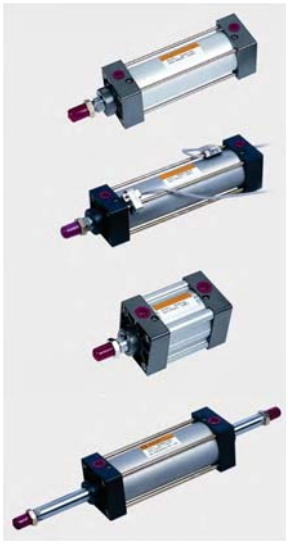
Air Cylinders

Fine Quality

Precision Engineered

Advanced Design

Excellent Prices



Contents | Air Cylinder Numbering System

Contents

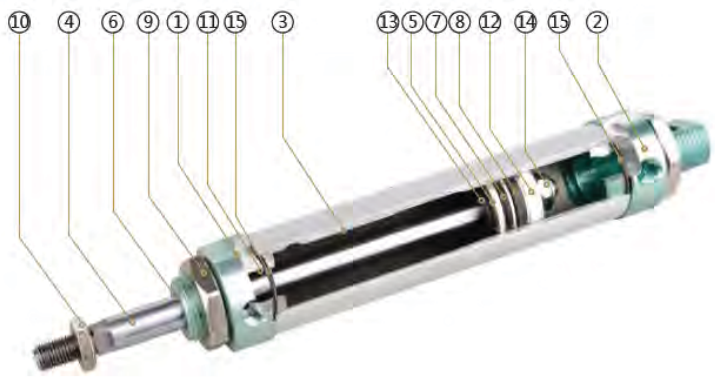
Ordering Part No. =
(e.g., **SSA 32X20**)

Model			Bore (mm)	Stroke (mm)	Magnet (Optional)	Options
MA Series Stainless Steel Round Cylinder	Double Acting	**MA**	**12 16 20 25 32 40**	**25-500**	**(Leave Blank)** = without Magnet **S** = Magnet for Hall Sensor	**Mounting Options:** **(Leave Blank)** = Standard Front Nose Mount and Back Pivot Mount **LB** = Front & Back Mount **FA** = Front Mounting Flange **FB** = Back Mounting Flange **SDB** = Back Clevis Bracket with Pin
	Single Acting (Spring Return)	**MSA**				
MAL Series Aluminum Round Cylinder	Double Acting	**MAL**	**16 20 25 32 40**	**25-500**	**(Leave Blank)** = without Magnet **S** = Magnet for Hall Sensor	**Mounting Options:** **(Leave Blank)** = Standard Front Nose Mount and Back Pivot Mount **LB** = Front & Back Mount **FA** = Front Mounting Flange **FB** = Back Mounting Flange **SDB** = Back Clevis Bracket with Pin
	Single Acting (Spring Return)	**MALS**				
SC Series Tie-Rod Cylinder	Double Acting	**SC**	**32 40 50 63 80 100 125 160 200 250 320**	**25-1000**	**(Leave Blank)** = without Magnet **S** = Magnet for Hall Sensor	**Mounting Options:** **(Leave Blank)** = Standard Mount **LB** = Foot Mount **FA** = Front Mounting Flange **FB** = Back Mounting Flange **CA** = Pivot Bracket with Pin **CB** = Clevis Bracket with Pin **TCM** = Swinging Type Attaching Foot Seat
SU Series Enclosed Tie-Rod Cylinder	Double Acting	**SU**				
SDA Series Compact Round Cylinder	Double Acting	**SDA**	**12 16 20 25 32 40 50 63 80 100**	**5-130**	**(Leave Blank)** = without Magnet **S** = Magnet for Hall Sensor	**Thread Type Options:** **(Leave Blank)** = Shaft with Female Thread **B** = Shaft with Male Thread
	Single Acting	**SSA**				

Part No.	Description	Specifications
AL-03R-MA MAL	Reed Switch for MA or MAL cylinder	Reed Switch 5-240 V (DC/AC) 100 mA 10W (with 39" Lead Wires)
AL-11R-SDA	Reed Switch for SDA cylinder	
AL-21R-SC SU	Reed Switch for SC or SU cylinder	
AL-30R-SI	Reed Switch for SI cylinder	

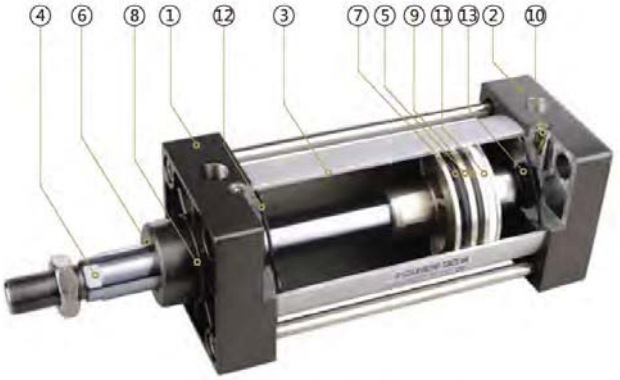
Air Cylinder Technical Data

MA/MAL Internal Components



Item	Name	MA Series Cylinder Material	MAL Series Cylinder Material	Quantity
1	Front Cover	Hard Anodized Aluminum	Hard Anodized Aluminum	1
2	Back Cover	Hard Anodized Aluminum	Hard Anodized Aluminum	1
3	Barrel	Stainless Steel	Hard Anodized Aluminum	1
4	Piston Rod	Chromed Carbon Steel	Chromed Carbon Steel	1
5	Piston	Aluminum	Aluminum	1
6	Piston Rod Seal	NBR	NBR	1
7	Piston Seal	NBR	NBR	1
8	Magnet	Ferric Magnet	Ferric Magnet	1
9	Front & Rear Cover	Carbon Steel	Carbon Steel	1
10	Piston Rod Screw	Carbon Steel	Carbon Steel	1
11	Bearing	Non-Lube Bearing	Non-Lube Bearing	1
12	Anti-Friction Ring	PTFE	PTFE	1
13	Cushing Gasket	NBR	NBR	2
14	Fixing Screw	Carbon Steel	Carbon Steel	1
15	Cover Seal	NBR	NBR	2

SC/SU Internal Components



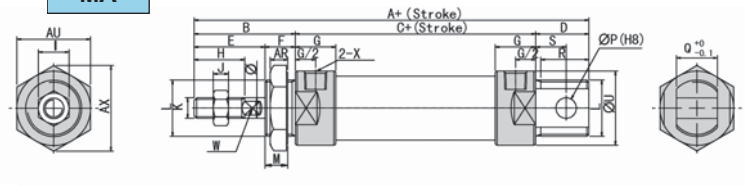
Item	Name	Material	Quantity
1	Front Cover	Polymer Coated Aluminum	1
2	Back Cover	Polymer Coated Aluminum	1
3	Cylinder Barrel	Anodized Aluminum	1
4	Piston Rod	Chromed Carbon Steel	1
5	Piston	Aluminum	1
6	Piston Rod Seal	NBR	1
7	Piston Seal	NBR	2
8	Bearing	Non-Lube Bearing	1
9	Magnet	Ferric Magnet	1
10	Cushion Screw	Brass	2
11	Anti-Friction Ring	PTFE	1
12	End Cap Seal	NBR	2
13	Cushion Seal	NBR	2

MA/MAL Round Cylinder Technical Data						
Bore (mm)	12	16	20	25	32	40
Motion Pattern	Double Action/Single Action					
Working Medium	Air					
Fixed Type	Basic Type/LB Type/FA Type/SDB Type					
Operating Pressure	Double Acting: 14 to 130 PSI (1.0~9.0 bar); Single Acting: 29 to 130 PSI (2.0~9.0 bar)					
Ensured Pressure Resistance	195 PSI (13.5bar)					
Operating Temperature	0 to 70 °C					
Operating Speed	50 ~ 800mm/s					
Buffer Type	Spacer Buffer	Adjustable Buffer (MA and MAL only have spacer buffer)				
Port Size	M5x0.8		G 1/8			G 1/4

SU/SC Cylinder Technical Data									
Bore (mm)	32	40	50	63	80	100	125	160	200
Motion Pattern	Double Action								
Working Medium	Air								
Fixed Type	Basic / LB / FA / CA / CB / TC / TC-M Type								
Operating Pressure	14 to 130 PSI (1.0~9.0bar)								
Ensured Pressure Resistance	195 PSI (13.5bar)								
Operating Temperature	0 to 70 °C								
Operating Speed	50 ~ 800mm/s								
Cushioning Length	20				26				45
Port Size	G 1/8"	G 1/4"		G 3/8"		G 1/2"			G 3/4"

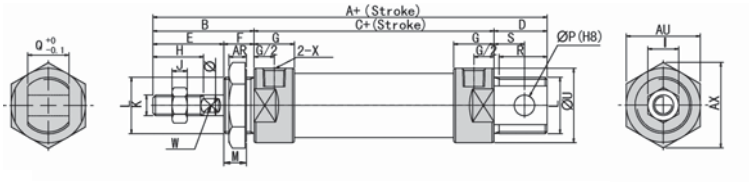
MA & MAL Series Stainless Steel Round Cylinder Dimensions

MA



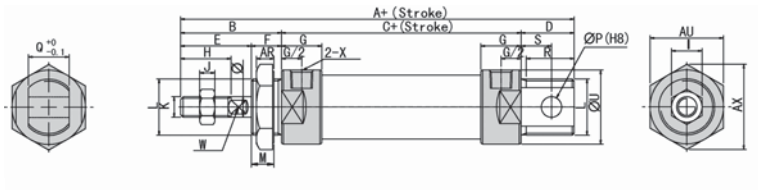
Model: MA																	
Bore	A	A1	A2	B	C	D	D1	E	F	G	H	I	J	K			
16	114	114	98	38	60	15	15	22	16	10	16	10	5	M6 X 1			
20	137	128	116	40	76	21	12	28	12	16	20	12	6	M8 X 1.25			
25	141	134	120	44	76	21	14	30	14	16	22	17	6	M10 X 1.25			
32	147	134	120	44	76	27	14	30	14	16	22	17	6	M10 X 1.25			
40	149	136	122	46	76	27	14	32	14	16.7	24	17	7	M12 X 1.25			
Bore	L			M	P	Q	R	R1	S	U	V	W	X	AR	AX	AY	
16	M16 X 1.5			14	6	12	14	14	9	21	6	5	M5	6	24	28	
20	M22 X 1.5			10	8	16	19	12	12	27	8	6	G1/8	7	33	29	
25	M22 X 1.5			12	8	16	19	14	12	30	10	8	G1/8	7	33	29	
32	M24 X 2.0			12	10	16	25	14	15	35	12	10	G1/8	8	37	32	
40	M30 X 2.0			12	12	20	25	14	15	42	16	14	G1/8	9	47	41	

MSA



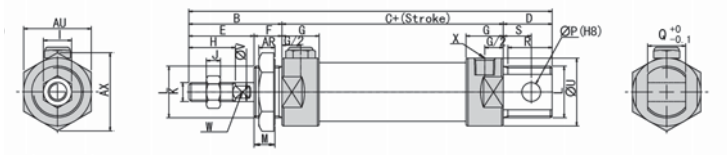
Symbol	A		A1		A2		B	C		D	D1	E	F	G	H	I	J	K	L	M	P	Q	R	R1	S	U	V	W	X	AR	AX	AY
Bore	0~50	51~100	0~50	51~100	0~50	51~100		0~50	51~100																						
20	137	162	128	153	116	141	40	76	101.0	21	12	28	12	16	20	12	6	M8 X 1.25	M22 X 1.5	10	8	16	19	12	12	27	8	6	G1/8	7	33	29
25	141	166	134	159	120	145	44	76	101.0	21	14	30	14	16	22	17	6	M10 X 1.25	M22 X 1.5	12	8	16	19	14	12	30	10	8	G1/8	7	33	29
32	147	172	134	159	120	145	44	76	101.0	27	14	30	14	16	22	17	6	M10 X 1.25	M24 X 2.0	12	10	16	25	14	15	35	12	10	G1/8	8	37	32
40	149	174	136	161	122	147	46	76	101.0	27	14	32	14	22	24	17	7	M12 X 1.25	M30 X 2.0	12	12	20	25	14	15	41.6	16	14	G1/8	9	47	41

MAL



Bore	A	A1	A2	B	C	D	D1	E	F	G	H	I	J	K	L	M	P	Q	R	R1	S	U	V	W	X	AR	AX	AY
16	104	104	90	38	52	15	15	24	14	11	16	10	5	M6 X 1	M16 X 1.5	8	6	12	13	13	6	20	6	/	M5	7	24	28
20	131	122	110	40	70	21	12	28	12	16	20	12	6	M8 X 1.25	M22 X 1.5	10	8	16	19	12	12	29	8	6	G1/8	7	33	29
25	135	128	114	44	70	21	14	30	14	16	22	17	6	M10 X 1.25	M22 X 1.5	12	8	16	19	14	12	34	10	8	G1/8	7	33	29
32	141	128	114	44	70	27	14	30	14	16	22	17	6	M10 X 1.25	M24 X 2.0	12	10	16	25	14	15	40	12	10	G1/8	8	37	32
40	165	152	138	46	92	27	14	32	14	22	24	17	7	M12 X 1.25	M30 X 2.0	12	12	20	25	14	15	50	16	14	G1/4	9	47	41

MALS



Symbol	A		A1		A2		B	C		D	D1	E	F	G	H	I	J	K	L	M	P	Q	R	R1	S	U	V	W	X	AR	AX	AY
Bore	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	M8 X 1.25	M22 X 1.5	10	8	16	19	12	12	29	8	6	G1/8	7	33	29
25	135	160	128	153	114	139	44	70	95	21	14	30	14	16	22	17	6	M10 X 1.25	M22 X 1.5	12	8	16	19	14	12	34	10	8	G1/8	7	33	29
32	141	166	128	153	114	139	44	70	95	27	14	30	14	16	22	17	6	M10 X 1.25	M24 X 2.0	12	10	16	25	14	15	39.5	12	10	G1/8	8	37	32
40	165	190	152	177	138	163	46	92	117	27	14	32	14	22	24	17	7	M12 X 1.25	M30 X 2.0	12	12	20	25	14	15	49.5	16	14	G1/4	9	47	41

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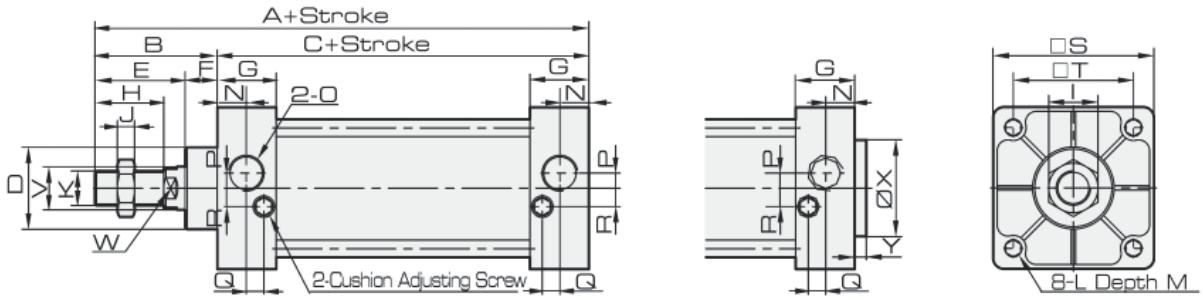
SC & SU Series
Cylinder Dimensions

SC / SU

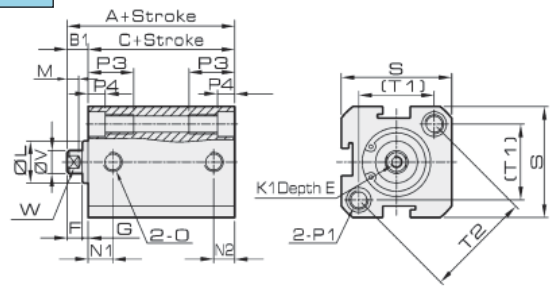


Bore	A	A1	A2	B	C	D	E	F	G	H	I	J	K	L
32	140	187	182	47	93	28	32	15	27.5	22	17	6	M10 x 1.25	M6
40	142	191	185	48	93	32	34	15	27.5	24	17	7	M12 x 1.25	M6
50	150	207	196	57	93	38	42	15	27.5	32	23	8	M16 x 1.25	M6
63	153	210	199	57	96	38	42	15	27.5	32	23	8	M16 x 1.25	M8
80	183	258	243	75	108	47	54	21	33	40	26	10	M20 x 1.25	M10
100	189	264	249	75	114	47	54	21	33	40	26	10	M20 x 1.25	M10
125	226	/	/	104	122	55	70	34	33	54	40	10	M27 x 1.25	M12
160	291	/	/	123	168	62	93	30	50	72	55	18	M36 x 2	M16
200	347	/	/	167	180	80	112	55	50	72	55	18	M36 x 2	M16
250	389	/	/	189	200	90	122	67	54	84	65	21	M42 x 2	M20
320	436	/	/	216	220	110	126	90	65	96	75	24	M48 x 2	M24

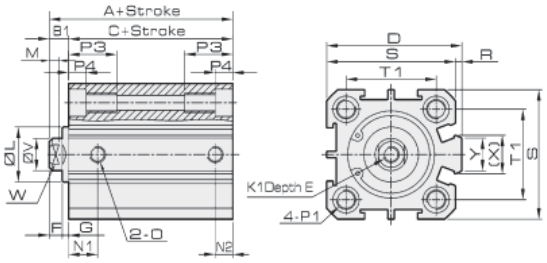
Bore	M	N	O	P	Q	R	S	T	V	W	X	Y	Z
32	9.5	13.5	G1/8	3.5	7.5	7	45	33	12	10	/	/	21
40	9.5	13.5	G1/4	6	8.2	9	50	37	16	14	/	/	21
50	9.5	13.5	G1/4	8.5	8.2	9	62	47	20	17	/	/	23
63	9.5	13.5	G3/8	7	8.2	8.5	75	56	20	17	/	/	23
80	11.5	16.5	G3/8	10	9.5	14	94	70	25	22	/	/	29
100	11.5	16.5	G1/2	11	9.5	14	112	84	25	22	/	/	29
125	15.5	16.5	G1/2	10	10	11	140	110	32	27	/	/	/
160	17.5	25	G1/2	/	/	/	180	140	40	36	/	/	/
200	17.5	25	G3/4	/	/	/	220	175	40	36	/	/	/
250	25	31	G1	18.5	5	40	270	220	50	46	90	10	/
320	28	31	G1	35	15	35	350	270	63	55	110	10	/

SDA Series
Compact Cylinder Dimensions

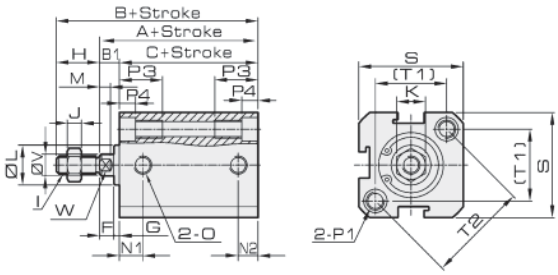
SDA



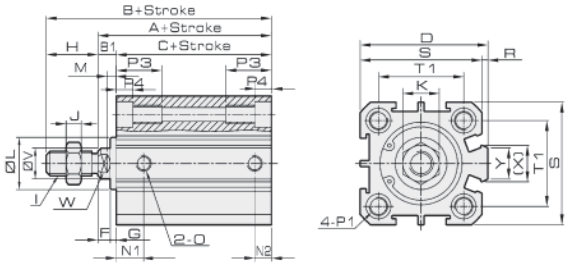
SDA 12-16, Female Thread



SDA 20-100, Female Thread



SDA 12-16, Male Thread



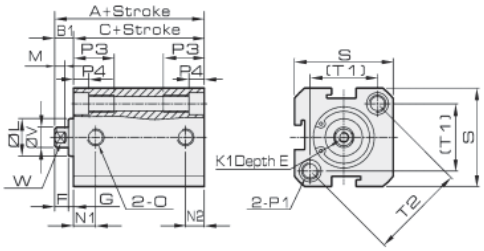
SDA 20-100, Male Thread

Symbol	Standard Type			With Magnet			B1	D	E	F	G	H	I	J	K	K1	L
Bore	A	B	C	A	B	C											
12	22	34	17	32	44	27	5	-	6	4	2	12	M5 x 0.8	4	8	M3 x 0.5	10
16	24	36	18.5	34	46	28.5	5.5	-	6	4	2	12	M5 x 0.8	4	8	M3 x 0.5	11
20	25	40	19.5	35	50	29.5	5.5	36	8	4	1.5	15	M6 x 1.0	5	10	M4 x 0.7	13
25	27	44	21	37	54	31	6	42	10	4	2	17	M8 x 1.25	6	14	M5 x 0.8	17
32	31.5	49.5	24.5	41.5	59.5	34.5	7	50	12	4	3	18	M10 x 1.25	6	17	M6 x 1.0	22
40	33	61	26	43	71	36	7	58.5	12	4	3	28	M14 x 1.5	8	22	M8 x 1.25	28
50	37	65	28	47	75	38	9	71.5	15	5	4	28	M18 x 1.5	9	27	M10 x 1.5	38
63	41	69	32	51	79	42	9	84.5	15	5	4	28	M18 x 1.5	9	27	M10 x 1.5	40
80	52	85	41	62	95	51	11	104	20	6	5	33	M22 x 1.5	13	32	M14 x 1.5	45
100	63	101	51	73	111	61	12	124	20	7	5	38	M26 x 1.5	12	36	M18 x 1.5	55

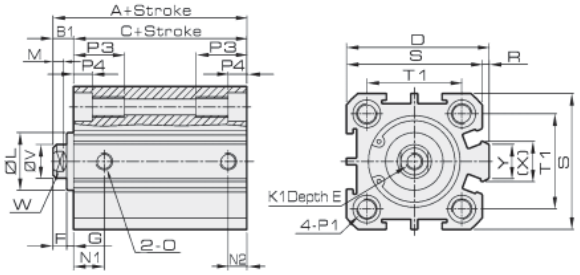
Symbol / Stroke	M	N1		N2		O	P1/DIA	P3	P4	R	S	T1	T2	V	W	X	Y
Bore		S = 5	S > 5	S = 5	S > 5												
12	3	7.5		5.5		M5X0.8	M5 x 0.8 x 4.2	12	4.5	-	25	16.3	23	6	5	-	-
16	3	8		5	5.5	M5X0.8	M5 x 0.8 x 4.2	12	4.5	-	29	19.8	28	6	5	-	-
20	3	8.5		5.5		M5X0.8	M5 x 0.8 x 4.2	14	4.5	2	34	24	-	8	6	11.2	10
25	3	9		5.5		M5X0.8	M6 x 1.0 x 4.6	15	5.5	2	40	28	-	10	8	12	10
32	3	9		6.5	8	G1/8	M6 x 1.0 x 4.6	16	5.5	6	44	34	-	12	10	18	14
40	3	9		7.5		G1/8	M8 x 1.25 x 6.7	20	7.5	6.5	52	40	-	16	14	21	14
50	3	8	10.5	8	10.5	G1/4	M8 x 1.25 x 6.7	25	8.5	9.5	62	48	-	20	17	29.5	19
63	3	9.5	11	9.5	11	G1/4	M8 x 1.25 x 6.7	25	8.5	9.5	75	60	-	20	17	26	19
80	4	11.5	14	11.5	14	G3/8	M12 x 1.75 x 9.2	25	10.5	10	94	74	-	25	22	36	26
100	4	15	20	15	18	G3/8	M14 x 2 x 11.3	30	13	10	114	90	-	32	27	35.5	26

SSA Series
Compact Cylinder Dimensions

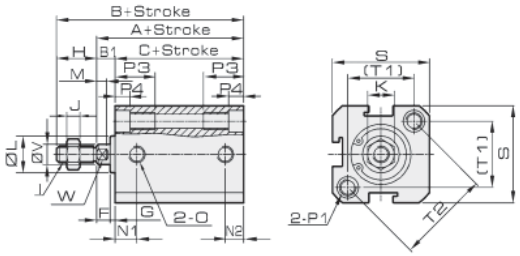
SSA



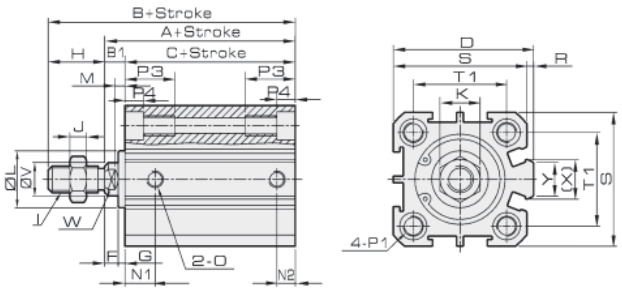
SSA 12-16, Female Thread



SDA 20-63, Female Thread



SSA 12-16, Male Thread



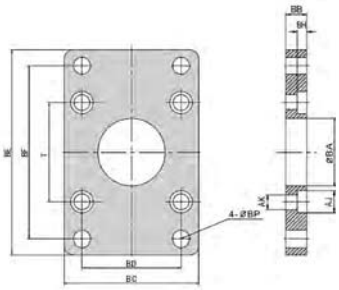
SSA 20-63, Male Thread

Symbol / Stroke	Standard Type						With Magnetic Piston						B1	D	E	F	G	H	I	J	K	K1	L
	A		B		C		A		B		C												
Bore	≤10	>10	≤10	>10	≤10	>10	≤10	>10	≤10	>10	≤10	>10											
12	32	42	44	54	27	37	42	52	54	64	37	47	5	-	6	4	2	12	M5 x 0.8	4	8	M3 x 0.5	10
16	34	44	46	56	28.5	38.5	44	54	56	66	38.5	48.5	5.5	-	6	4	2	12	M5 x 0.8	4	8	M3 x 0.5	11
20	35	45	50	60	29.5	39.5	45	55	60	70	39.5	49.5	5.5	36	8	4	1.5	15	M6 x 1.0	5	10	M4 x 0.7	13
25	37	47	54	64	31	41	47	57	64	74	41	51	6	42	10	4	2	17	M8 x 1.25	6	14	M5 x 0.8	17
32	41.5	51.5	59.5	69.5	34.5	44.5	51.5	61.5	69.5	79.5	44.5	54.5	7	50	12	4	3	18	M10 x 1.25	6	17	M6 x 1.0	22
40	43	53	71	81	36	46	53	63	81	91	46	56	7	58.5	12	4	3	28	M14 x 1.5	8	22	M8 x 1.25	28
50	47	57	75	85	38	48	57	67	85	95	48	58	9	71.5	15	5	4	28	M18 x 1.5	9	27	M10 x 1.5	38
63	51	61	79	89	42	52	61	71	89	99	52	62	9	84.5	15	5	4	28	M18 x 1.5	9	27	M10 x 1.5	40
80	62	72	95	105	51	61	72	82	105	115	61	71	11	104	20	6	5	33	M22 x 1.5	13	32	M14 x 1.5	45
100	73	83	111	121	61	71	83	93	121	131	71	81	12	124	20	7	5	38	M26 x 1.5	12	36	M18 x 1.5	55

Symbol / Stroke	L	M	N1		N2		O	P1/DIA	P3	P4	R	S	T1	T2	V	W	X	Y
Bore			S = 5	S > 5	S = 5	S > 5												
12	10	3	7.5		5.5		M5X0.8	M5 x 0.8 x 4.2	12	4.5	-	25	16.3	23	6	5	-	-
16	11	3	8		5	5.5	M5X0.8	M5 x 0.8 x 4.2	12	4.5	-	29	19.8	28	6	5	-	-
20	13	3	8.5		5.5		M5X0.8	M5 x 0.8 x 4.2	14	4.5	2	34	24	-	8	6	11.2	10
25	17	3	9		5.5		M5X0.8	M6 x 1.0 x 4.6	15	5.5	2	40	28	-	10	8	12	10
32	22	3	9		6.5	8	G1/8	M6 x 1.0 x 4.6	16	5.5	6	44	34	-	12	10	18	14
40	28	3	9		7.5		G1/8	M8 x 1.25 x 6.7	20	7.5	6.5	52	40	-	16	14	21	14
50	38	3	8	10.5	8	10.5	G1/4	M8 x 1.25 x 6.7	25	8.5	9.5	62	48	-	20	17	29.5	19
63	40	3	9.5	11	9.5	11	G1/4	M8 x 1.25 x 6.7	25	8.5	9.5	75	60	-	20	17	26	19
80	45	4	11.5	14	11.5	14	G3/8	M12 x 1.75 x 9.2	25	10.5	10	94	74	-	25	22	36	26
100	55	4	15	20	15	18	G3/8	M14 x 2 x 11.3	30	13	10	114	90	-	32	27	35.5	26

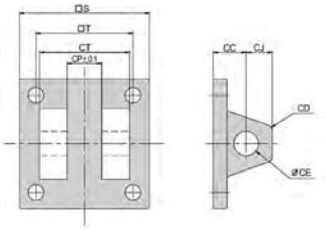
Cylinder Mounting Bracket Dimensions

Front or Rear Flange
(FA/FB)



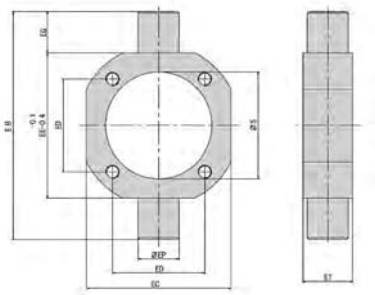
FA/FB (Front or Rear Flange)									
Bore	32	40	50	63	80	100	125	160	200
BA	28.3	32.3	38.3	38.3	47.3	47.5	56	63	81
BB	10	10	10	12	16	16	20	25	25
BC	47	52	65	76	95	115	140	180	220
BD	33	36	47	56	70	84	90	115	135
BE	72	84	104	116	143	162	224	280	320
BF	58	70	86	98	119	138	180	230	270
BG	6.5	6.5	6.5	8.5	11	11	15	20	20
BH	11	11	14	14	17	17	19	25	25
AJ	6.5	6.5	8.5	8.5	11	11	13	17	17
BP	7	7	9	9	12	12	16	18	22
T	33	37	47	56	70	84	110	140	175

Double Rear Clevis
Bracket with Pin (CB)



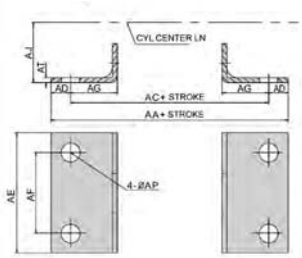
CB (Double Rear Clevis Bracket with Pin)									
Bore	32	40	50	63	80	100	125	160	200
CC	19	19	19	19	32	32	50	55	60
CD	5	5	3	3	8	8	25	30	30
CE	12	14	14	14	20	20	25	30	30
CJ	13	13	15	15	21	21	25	30	30
CP	16	21	20	20	32	32	70	90	90
CT	32	44	52	52	64	64	120	160	160
PAI	41	52	60	60	74	74	130	170	170
PBI	34	46	54	54	66	66	122	162	162
S	48	50	62	75	94	112	140	180	220
T	33	37	47	56	70	84	110	140	175

Swing Type (TC)



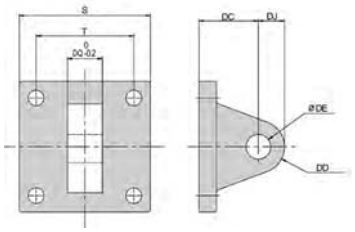
TC (Center Trunnion)								
Bore	40	50	63	80	100	125	160	200
EB	113	126	138	164	182	210	264	336
EC	63	76	88	114	132	160	200	240
ED	37	47	56	70	84	110	140	175
EE	63	76	88	114	132	160	200	240
EG	25	25	25	25	25	25	32	48
EP	25	25	25	25	25	25	32	38
ET	30	30	30	30	30	30	38	44
S	46	56	69	88	108	135	173	213

Foot Mount
(LB)



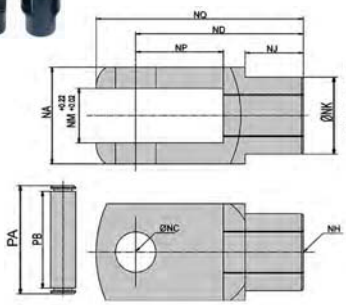
LB (Foot Mount)									
Bore	32	40	50	63	80	100	125	160	200
AA	153	169	173	184	200	210	249	328	380
AC	134	140	149	158	168	174	213	288	320
AD	9.5	15	12	12	16	18	18	20	30
AE	50	57	68	80	97	112	140	180	220
AF	33	36	47	56	70	84	90	115	135
AG	21	24	28	31	30	30	45	60	70
AJ	28	30	37	41	49	57	90	115	135
AP	9	12	12	12	14	14	16	18	22
AT	3.2	3.2	3.2	3.2	4	4	8	8	10

Single Rear Clevis
with Pin (CA)

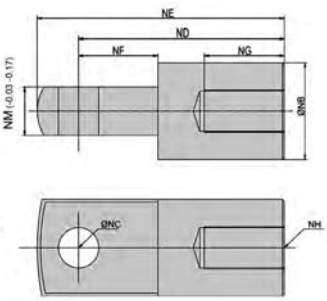


CA (Single Rear Clevis with Pin)									
Bore	32	40	50	63	80	100	125	160	200
S	48	50	62	75	94	112	140	180	220
T	33	37	47	56	70	84	110	140	175
DC	34	34	34	34	48	48	50	55	60
DD	14	14	15	15	20	20	25	30	30
DE	12	14	14	14	20	20	25	30	30
DL	14	14	15	15	20	20	25	30	30
DQ	16	20	20	20	32	32	70	90	90

Rod Clevis with Pin (Y)



Rod Pivot with Pin (I)



Y (Rod Clevis with Pin), I (Rod Pivot with Pin)															
Bore	NA	NB	NC	ND	NE	NF	NG	NH	NJ	NK	NM	NP	NQ	PA	PB
32	19	20	10	40	52	15	20	M10X1.25	12	18	10	20	52	26	20
40	25	24	12	48	67	24	20	M12X1.25	20	23	12	24	62	33	27
50	32	32	16	64	89	32	23	M16X1.5	22	30	16	32	83	39	33
63	32	32	16	64	89	32	23	M16X1.5	22	30	16	32	83	39	33
80	44	40	20	80	112	40	30	M20X1.5	30	39	20	40	105	53	45
100	44	40	20	80	112	40	30	M20X1.5	30	39	20	40	105	53	45

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