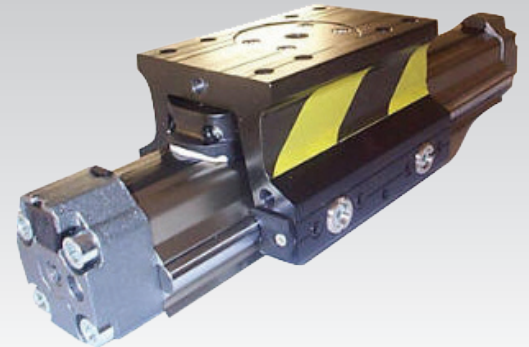


Rodless Cylinders

S1, S5 & VL Series - Ø16 - 50 mm



Features

Unique Strip Seal

Univer strip is manufactured from a high performance elastomer plastic material reinforced with Kevlar to withstand tensile stress

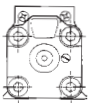
High Performance Cushioning

The Univer design incorporates floating cushioning seals which aid ramp down speed control

Long Life

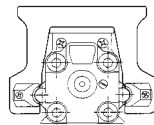
All dynamic seals and sliding strips were developed specifically for rodless cylinders to maximise life efficiency

RODLESS VERSIONS



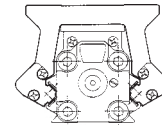
S1 Rodless Cylinders

For **Light Duty** applications with limited loads as the carriage is not supported within the frame of the cylinder



S5 Rodless Cylinders

For **Medium Duty** applications as the carriage is supported by external guides with polymer bearings within the frame of the cylinder



VL Rodless Cylinders

For **Heavy Duty** applications as the carriage is supported by external guides with roller bearings within the frame of the cylinder

TECHNICAL DATA

Types	S1 = Rodless Cylinder without guides S5 = Rodless Cylinder with integrated guides (Polymer bearings) VL = Rodless Cylinder with integrated guides (Roller bearings)
Bore (mm)	16, 25, 32, 40 & 50mm
Stroke	Ø16mm = 5 metre (max) Ø25 - 50mm = 6 metre (max)
Operating Pressure	3 - 10 bar
Fluid	Compressed air, Filtered 50µ. Use with or without lubrication
Operating Temperature	Max + 80° Min -20°
Operating Speed	3m/s (max) - 20mm/s (min)
Carriage Types	Standard, medium & long

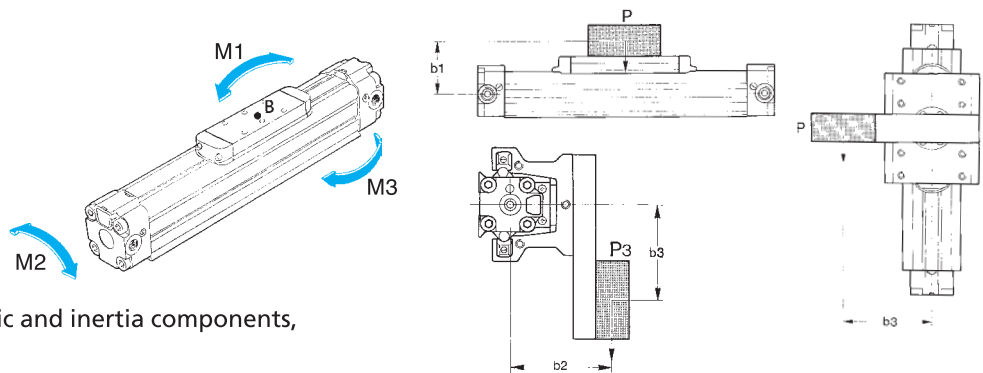
BENDING MOMENT CALCULATIONS

$$F(N) = M \cdot a = M \cdot \frac{V^2}{2 \cdot (L \cdot 10^{-3})}$$

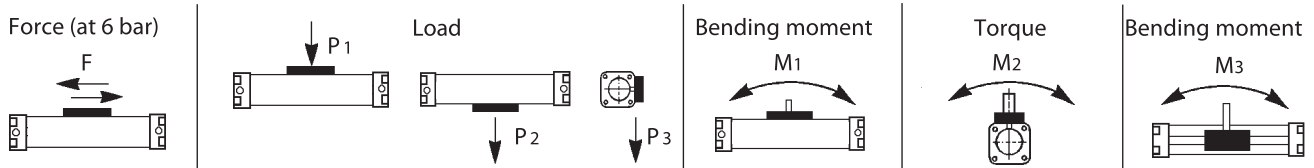
$$M_1 \cdot (Nm) = F \cdot (b_1 \cdot 10^{-3})$$

$$M_2 \cdot (Nm) = M \cdot g \cdot (b_2 \cdot 10^{-3})$$

$$M_3 \cdot (Nm) = F \cdot (b_3 \cdot 10^{-3})$$



While F, M₁ and M₃ can have both static and inertia components, M₂ is a static component only.



S1 Rodless Cylinders ♦ It is not advisable to use the cylinder in applications with high stress.

Cyl. Ø					Standard Carriage			Medium Carriage			Long Carriage		
	F (N)	P1 (N)	P2 (N)	P3 (N)	M1 (Nm)	M2 ♦ (Nm)	M3 (Nm)	M1 (Nm)	M2 ♦ (Nm)	M3 (Nm)	M1 (Nm)	M2 (Nm)	M3 (Nm)
16	125	100	100	25	5	0,2	0,8	-	-	-	-	-	-
25	250	200	200	50	8	2	3	14	3	5	25	6	9
32	420	250	250	65	9	3	4	15	4	7	28	8	12
40	640	350	350	90	11	9	14	16	14	20	31	27	39
50	1050	500	500	125	19	13	19	29	20	30	52	36	53

S5 Rodless Cylinders

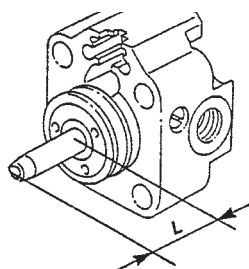
25	250		400		13	8	16	20	10	25	40	15	50
32	420		400		20	9	27	30	12	40	55	18	75
40	640		600		not foreseen			60	30	80	110	45	150
50	1050		800		not foreseen			85	50	110	150	75	210

VL Rodless Cylinders

Cyl. Ø	Medium Carriage						Long Carriage						
	F (N)	P1 (N)	P2 (N)	P3 (N)	M1 (Nm)	M2 (Nm)	M3 (Nm)	P1 (N)	P2 (N)	P3 (N)	M1 (Nm)	M2 (Nm)	M3 (Nm)
25	250		700		34	17	34	1000			63	25	63
32	420		700		51	20	51	1000			93	30	93
40	640		1100		120	46	120	1600			230	69	230
50	1050		1500		170	85	170	2000			310	110	310

Values shown are for static loads.

CUSHIONING DATA

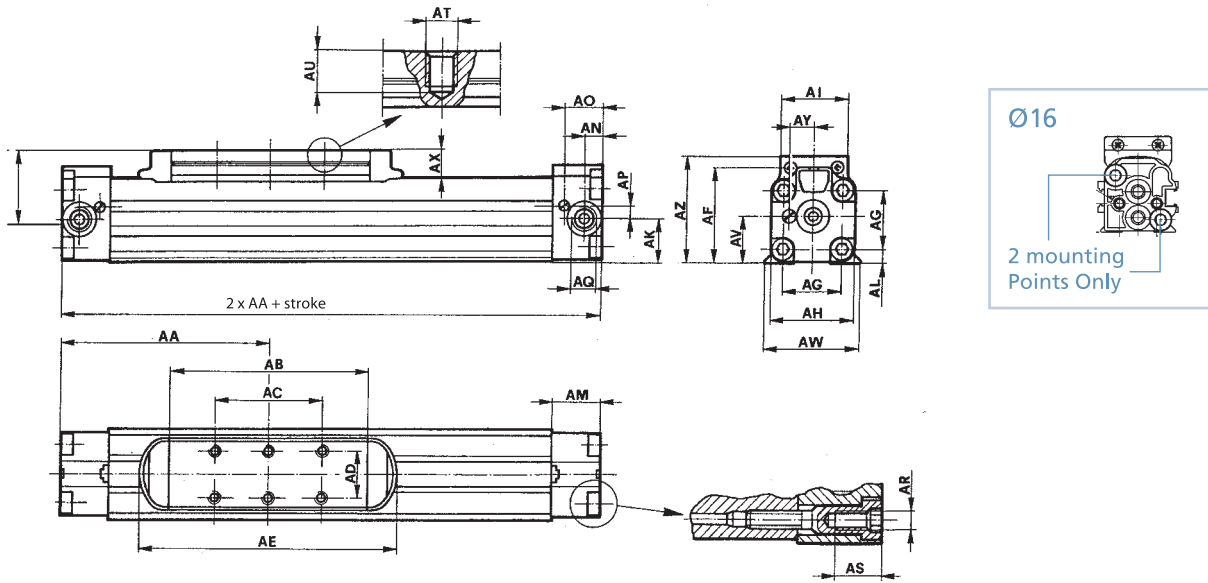


Ø (mm)	L (mm)
16	16.5
25	25.0
32	32.5
40	41.5
50	52.0

It is not possible to absorb kinetic energy using the end cap cushioning within the cylinder. External hydraulic dampers must be fitted according to loads. Alternative pneumatic cushioning blocks can be supplied, but need to be installed within the control system. For further information, contact our technical support team.

S1 SERIES LIGHT DUTY RODLESS Ø16 to 50mm

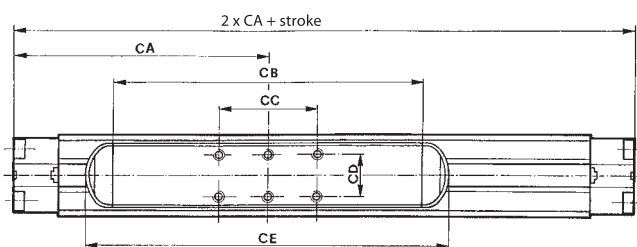
DIMENSIONAL DATA



Cyl Ø	AA	AB	AC	AD	AE	AF	AG	AH	AI	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT
16	68.5	70	45	20	92	30	18	32	27	5.5	6	15	7.5	7.5	-	M5	M4	5	M4
25	100	95	50	24	130	48.3	28	40.5	33	20.2	7	24	7.4	18.2	5.7	G1/8	M5	12	M5
32	125	118	65	31	156	57	35	50	40	25.3	8	29	10.3	22.5	7.3	G1/4	M6	15.5	M6
40	150	134	65	31	177	74	44	64	44	33.8	11.8	33	12.5	26.5	8.7	G3/8	M8	20	M6
50	175	164	105	39	211	90.7	55	80	54	41.4	14.7	33	14.2	25.7	11.8	G3/8	M10	20	M8

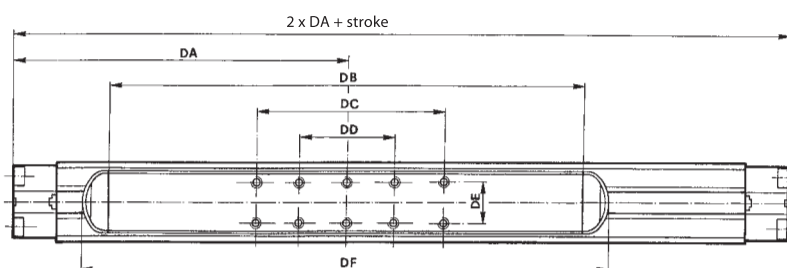
Cyl Ø	AU	AV	AW	AX	AY	AZ	Mass (kg) at "0" stroke	Weight increase (kg) per additional 100mm stroke
16	6	16.5	32	11	9	39	0.310	0.104
25	9	22.8	42.8	16	12.2	57.6	0.750	0.210
32	9	28	54.5	16	14.2	66.2	1.310	0.325
40	11	37	67	19.5	16.5	85.8	2.600	0.555
50	12	47.7	86	20.5	19.5	103	4.785	0.955

Medium carriage - 6 fixing holes for cylinders Ø 25 to 50 mm



Cyl. Ø	CA	CB	CC	CD	CE	Mass (kg) at "0" stroke
25	114,5	125	50	24	160	0,84
32	142,5	153	65	31	191	1,48
40	169	172	65	31	215	2,91
50	205	224	105	39	271	5,55

Long carriage - 10 fixing holes for cylinders Ø 25 to 50 mm

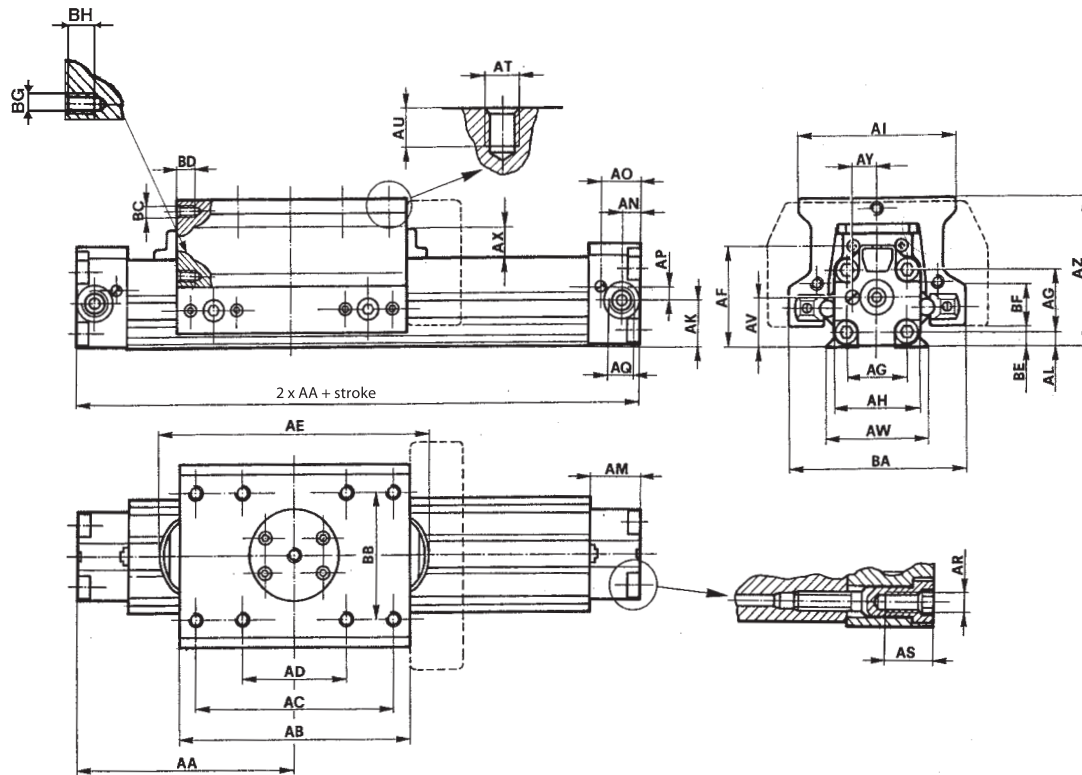


Cyl.Ø	DA	DB	DC	DD	DE	DF	Mass (kg) at "0" stroke
25	147,5	190	100	50	24	225	1,05
32	190	248	130	65	31	286	1,93
40	225	284	130	65	31	327	3,80
50	277	364	315	105	39	411	7,33

In cases where the rodless cylinder is mounted onto external rigid guides, it is necessary to fit a carriage mounted oscillating bracket type SF24.

S5 SERIES MEDIUM DUTY RODLESS Ø25 to 50mm

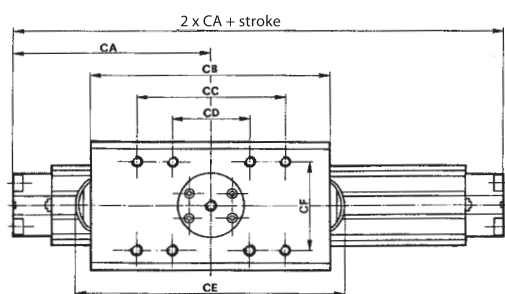
DIMENSIONAL DATA



Cyl. Ø	AA	AB	AC	AD	AE	AF	AG	AH	AI	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT
25	100	106	90	50	130	48,3	28	40,5	70	20,2	7	24	7,4	18,2	5,7	G 1/8	M5	12	M6
32	125	140	115	55	156	57,0	35	50	88	25,3	8	29	10,3	22,5	7,3	G 1/4	M6	15,5	M8
40							44	64	90	33,8	11,8	33	12,5	26,5	8,7	G 3/8	M8	20	M8
50							55	80	100	41,4	14,7	33	14,2	25,7	11,8	G 3/8	M10	20	M8

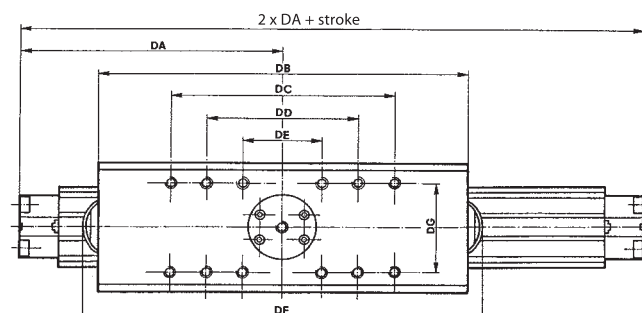
Cyl. Ø	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF	BG	BH	Mass (kg) at "0" stroke	Weight increase(kg) per additional 100 mm stroke
25	10	22,8	42,8	16	12,2	71,8	85	50	M6	15	5,7	24	M6	15	1,625	0,365
32	12	28	57	16	14,2	82,5	100	67,5	M6	15	7	24,5	M6	15	2,775	0,495
40	14	37	67	19,5	16,5	106,6	135	65	M6	15	7	39	M6	15		0,92
50	16	47,7	86	20,5	19,1	123,7	149	76,5	M8	16	7,2	41	M6	15		1,28

Medium carriage - 8 fixing holes



Cyl. Ø	CA	CB	CC	CD	CE	CF	Mass (kg) at "0" stroke
25	114,5	136	90	50	160	50	1,93
32	142,5	175	115	55	191	67,5	3,265
40	169	205	180	75	215	65	6,095
50	205	258	190	80	271	76,5	10,03

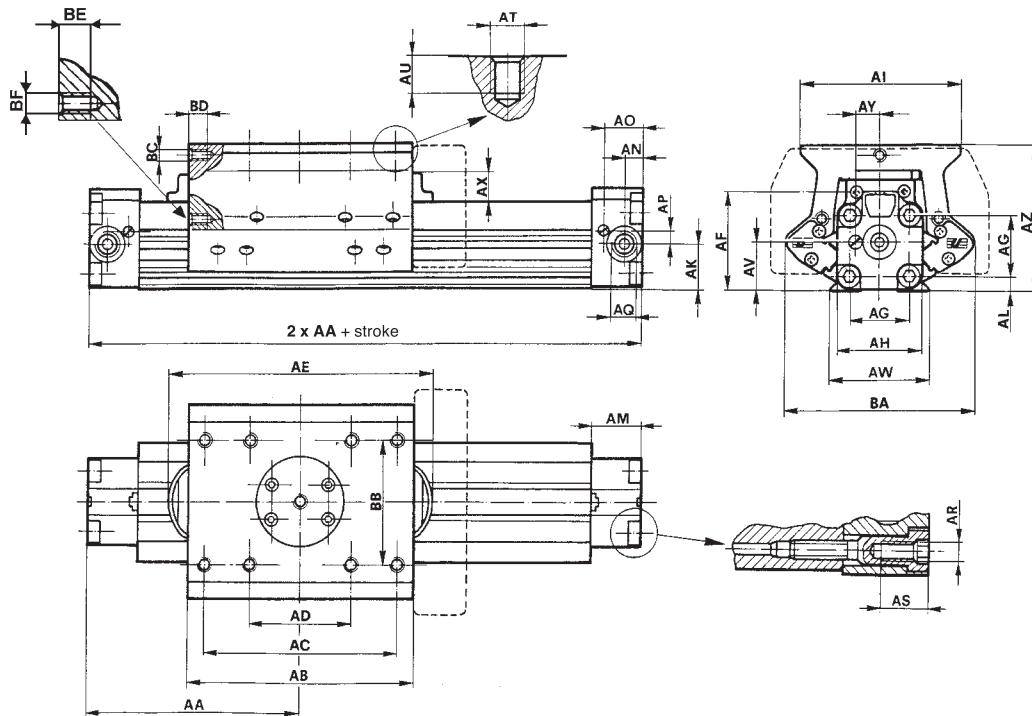
Long carriage - 12 fixing holes



Cyl. Ø	DA	DB	DC	DD	DE	DF	DG	Mass (kg) at "0" stroke
25	147,5	201	130	90	50	225	50	2,64
32	190	270	175	115	55	286	67,5	4,65
40	225	317	280	185	75	327	65	8,60
50	277	398	320	200	80	411	76,5	14,04

VL SERIES HEAVY DUTY RODLESS Ø25 to 50mm

DIMENSIONAL DATA

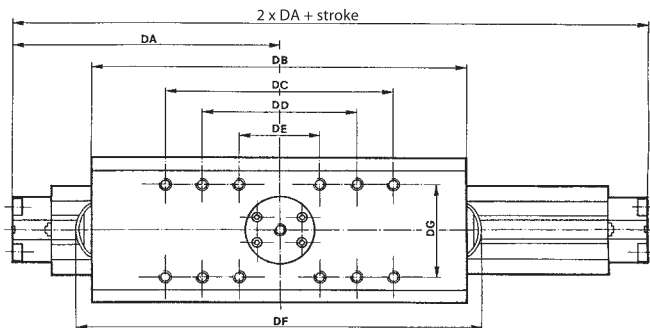


Cyl. Ø	AA	AB	AC	AD	AE	AF	AG	AH	AI	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT
25	114,5	136	90	50	160	48,3	28	40,5	83,5	20,2	7	24	7,4	18,2	5,7	G 1/8	M5	12	M6
32	142,5	175	115	55	191	57	35	50	92	25,3	8	29	10,3	22,5	7,3	G 1/4	M6	15,5	M8
40	169	205	180	75	215	74	44	64	125	33,8	11,8	33	12,5	26,5	8,7	G 3/8	M8	20	M8
50	207	258	190	80	271	90,7	55	80	140	41,4	14,7	33	14,2	25,7	11,8	G 3/8	M10	20	M8

Cyl. Ø	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF	Mass (kg) at "0" stroke	Weight increase (kg) per additional 100 mm stroke
25	12	22,8	42,8	16	12,2	74,3	111	50	M6	10	M6	10	2,095	0,3
32	12	28	57	16	14,2	82,5	118	67,5	M6	10	M6	10	3,125	0,415
40	14	37	67	19,5	16,5	106	158	65	M6	15	M6	15	6,34	0,67
50	15	47,7	86	20,5	19,1	126,2	173	100	-	-	M6	12	10,85	1,02

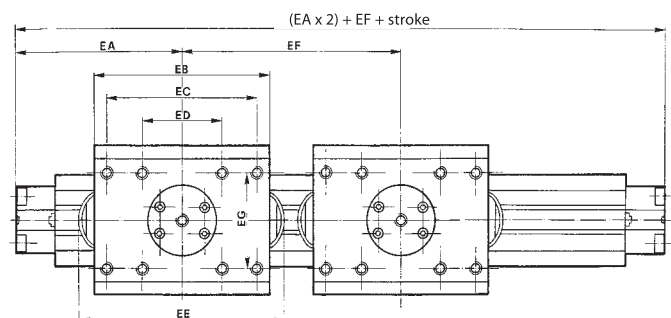
The dotted line indicates the overall dimensions of the locking unit; fixing holes of the locking unit see page 8-

Long carriage - 12 fixing holes



Cyl. Ø	DA	DB	DC	DD	DE	DF	DG	Mass (kg) at "0" stroke
25	147,5	201	130	90	50	225	50	2,855
32	67,5	270	175	115	55	286	67,5	4,41
40	67,5	317	280	185	75	327	65	8,955
50	277	398	320	200	80	411	100	15,365

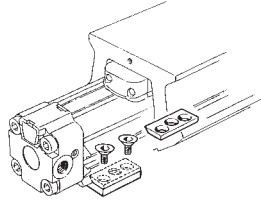
Twin medium carriage - 8 fixing holes for each carriage



Cyl. Ø	EA	EB	EC	ED	EE	EF	EG	Mass (kg) at "0" stroke
25	114,5	136	90	50	160	164	50	3,88
32	142,5	175	115	55	191	206	67,5	5,75
40	169	205	180	75	215	243	65	11,65
50	207	258	190	80	271	316	100	20,15

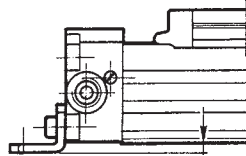
MOUNTING BRACKETS

BASE MOUNTING BRACKET



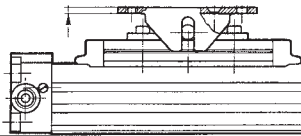
Part Number	Ø mm
SF-12016	16
SF-12025	25
SF-12032	32
SF-12040	40
SF-12050	50

END CAP MOUNTING BRACKET



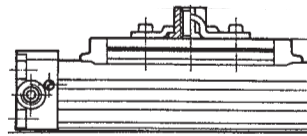
Part Number	Ø mm
SF-13016	16
SF-13025	25
SF-13032	32
SF-13040	40
SF-13050	50

OSCILLATING MOUNTING BRACKET (S1 Series only)



Part Number	Ø mm
SF-24016	16
SF-24025	25
SF-24032	32
SF-24032	40
N/A	50

FEMALE THREADED MOUNTING BRACKET (S1 Series only)



Part Number	Ø mm
SF-26016	16
SF-26025	25
SF-26032	32
SF-26032	40
N/A	50

POSITION SENSORS

REED SWITCH (S1 Series only)



Part Number	Ø mm
DF-220	16

Supplied as standard with flying leads. Optional M08 or M12 connector as shown.

24V AC/DC with LED Other versions available

REED SWITCH (S1 Series only)

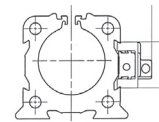


Part Number	Ø mm
DH-200	25 - 50

Supplied as standard with flying leads. Optional M08 or M12 connector as shown.

24V AC/DC with LED Other versions available

REED SWITCH BRACKET (S1 Series only)



Part Number	Ø mm
DH-S25	25
DH-S32	32
DH-S40	40
DH-S50	50

Position sensing for S5 & VL Series Rodless Cylinders requires external proximity sensors. For further information contact our Technical Support Team.

CODIFICATION KEY

S	1	0	1	1	-	2	5	-	1	5	0	0	M
1	2	3	4			5			6			7	

1 Series

S1 = Light Duty
S5 = Medium Duty
VL = Heavy Duty

3 Left End Cap

0 = No Supply Port
1 = Side Supply Port
2 = Bottom Supply Port
3 = Rear Supply Port

5 Bore (mm)

33 = 32mm
44 = 40mm
55 = 50mm
56 = 63mm

7 Options

M = Magnetic

2 Carriage Type

0 = Standard
2 = Medium
3 = Long

4 Right End Cap

1 = Side Supply Port
2 = Bottom Supply Port
3 = Rear Supply Port
4 = Right Supplies Both Ends

6 Stroke

0100 = 100mm
0200 = 200mm
0500 = 500mm
0750 = 750mm
1000 = 1000mm

For additional strokes change number accordingly