



NEW PRODUCT BULLETIN

Swing Clamp Cylinders *featuring...*

"SC" Series

- **Magnetic Piston**
 - **Clamp arm with adjusting bolt**
 - **Four rod end flats for clamp arm positioning**
- all included as standard at no extra charge!*



The clamp arm rotates 90° as it extends away from the workpiece providing clearance and access for unload/load operations. Double acting operation and standard magnetic piston offer positive cycles, durability and workpiece detection features. Extruded aluminum body mounts directly and rigidly to equipment surfaces in a minimum of space.

Operation cycle:

- 1) Clamp arm extends (straight line) as it releases clamp load from workpiece.
- 2) Arm rotates 90° to full extend position.
- 3) When retracting, clamp arm swings 90°:
 - Model Code R = clockwise direction,
 - Model Code L = counterclockwise rotation.
- 4) With clamp arm in position over the workpiece, it follows a straight line path to apply clamping force.

Specifications

Action	Double Acting, Magnetic Piston							
Bore Size (mm)	12	16	20	25	32	40	50	63
Max. Moment (ft-lbs*)	0.73	2.8	5.1	9.5	19.9	34.6	78.9	134.2
Swing Stroke (mm)	7.5	7.5	10	10	13	13	18	18
Straight Stroke (mm)	10, 20						20, 50	
Direction of Swing	R-Clockwise; L-Counter Clockwise							
Angle of Swing	90° ± 10°							
Theoretical Clamping Force (lbs)	See chart on page 2							
Operating Media	Compressed Air or Petroleum Based Hydraulic Fluid							
Max. Operating Pressure	145 psi (10 bar) - See "Precautions"							
Piston Speed	50 to 100 mm/sec							
Temperature Range	-10° to + 70°C (+14° to 158°F)							
Lubrication	Air line lubrication recommended							

* Max. bending moment allowed when retracting

Weights (lbs)

Straight Stroke	Model							
	SC12	SC16	SC20	SC25	SC32	SC40	SC50	SC63
10	0.15	0.22	0.55	0.62	1.10	1.31	-	-
20	0.19	0.27	0.64	0.71	1.16	1.41	2.42	3.35
50	-	-	-	-	-	-	2.98	3.98

How to Order

- 1) Specify "SC"
- 2) Specify the bore
- 3) Specify the straight stroke
- 4) Specify direction of swing

Note:

- a) Please order sensors separately from page 4.
- b) Please order Flange Kits separately from page 3.
- c) Swing Clamp Arm, four Wrench Flats and Magnetic Piston are included as standard at no extra charge. Competition charges extra for these essential features!

SC 25 x 20 R

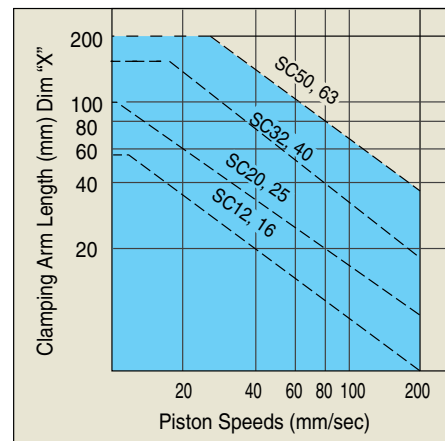
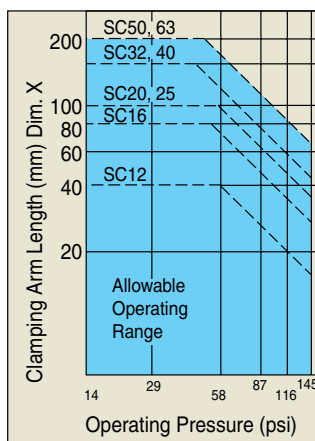
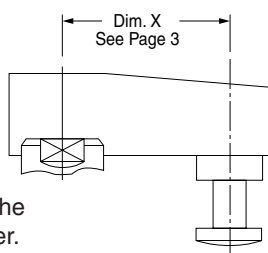
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Series	Bore (mm)	Straight Stroke (mm)	Direction of Swing when retracting	Ports
SC12, SC16, SC20	ø12, ø16, ø20	10: ø12 - ø40 20: ø12 - ø63 50: ø50, ø63	R - Clockwise L - Counter Clockwise	Blank = NPT P = BSP Taper

Total stroke equals swing stroke plus straight stroke. See specifications chart above & dimension drawing on page 3.

Precautions

- 1) **Clamp Arm Attachments:** When removing or attaching the clamp arm, brace the arm with a wrench or hold it steady in a vise. Not doing so may damage the internal parts of the clamp cylinder.
- 2) **Operating Pressure:** Max. operating pressure should be determined based on Dim. "X" of either standard or custom length clamp arm.
- 3) **Piston / Clamp Speed:** Use flow control valves to limit piston speed to not greater than limits shown.



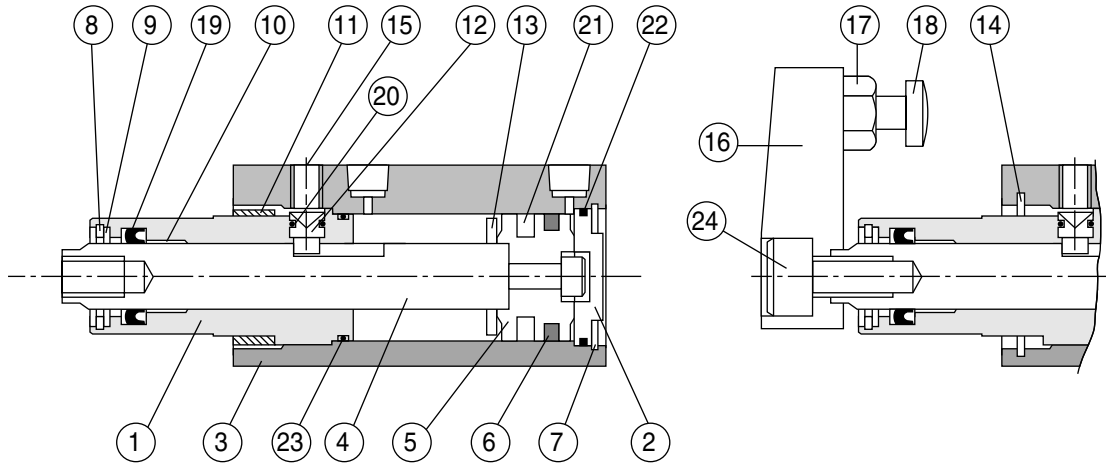
“SC” Swing Clamp Cylinders

FABCO-AIR Inc. • 3716 N.E. 49th Avenue • Gainesville, FL 32609 • Tel (352) 373-3578
 • Fax (352) 375-8024 • E-Mail: fabco@fabco-air.com • Web Site: www.fabco-air.com

Theoretical Output (lbs)

Model	Piston Rod (mm)	Action	Piston Area (in ²)	Operating Pressure (psi)			
				40	60	80	100
SC12	6	Retract	0.13	5.2	7.8	10.4	13
		Extend	0.17	6.8	10.2	13.6	17
SC16	8	Retract	0.23	9.2	13.8	18.4	23
		Extend	0.31	12.4	18.6	24.8	31
SC20	12	Retract	0.32	12.8	19.2	25.6	32
		Extend	0.49	19.6	29.4	39.2	49
SC25	12	Retract	0.59	23.6	35.4	47.2	59
		Extend	0.76	30.4	45.6	60.8	76
SC32	16	Retract	0.94	37.6	56.4	75.2	94
		Extend	1.25	50.0	75.0	100.0	125
SC40	16	Retract	1.64	65.6	98.4	131.2	164
		Extend	1.95	78.0	117.0	156.0	195
SC50	20	Retract	2.56	102.0	153.0	204.0	256
		Extend	3.04	121.0	182.0	243.0	304
SC63	20	Retract	4.35	174.0	261.0	348.0	435
		Extend	4.83	193.0	289.0	386.0	483

Construction



Quick Reference to Components

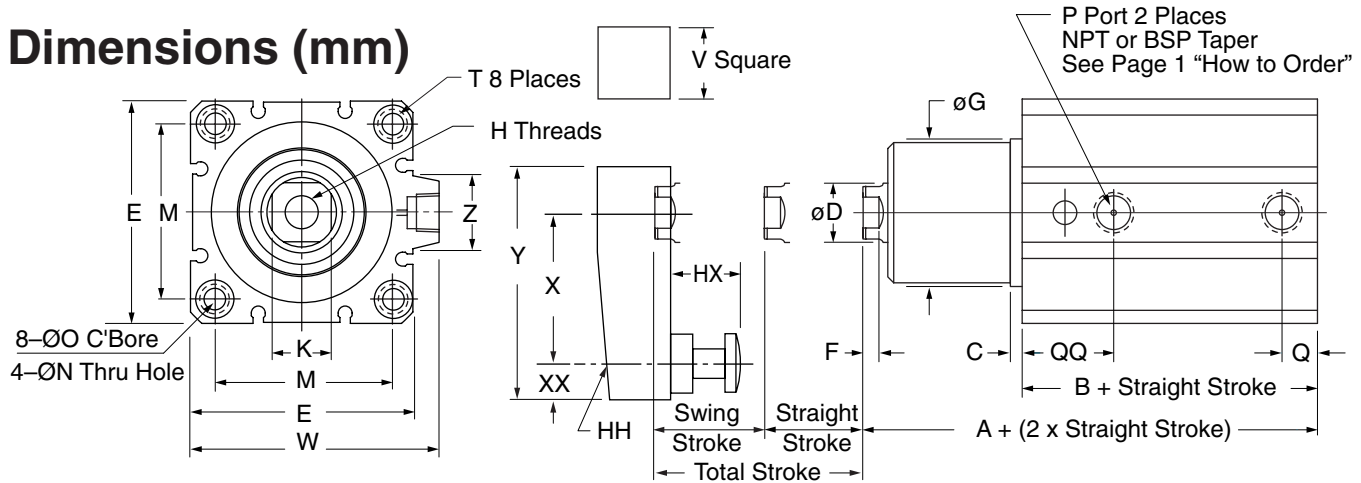
No.	Description	Material	Qty.	No.	Description	Material	Qty.
1	Front end cover	anodized aluminum alloy	1	13	Bumper	Buna-N	1
2	Rear end cover	anodized aluminum alloy	1	14	Snap ring	carbon steel	1
3	Housing	hard anodized aluminum alloy	1	15	Set screw	carbon steel	1
4	Piston rod	hard chrome plated stainless Steel	1	16	Clamp arm	carbon steel, black treated	1
5	Piston	aluminum alloy	1	17	Nut	carbon steel	1
6	Magnet	magnet	1	18	Adjustable screw	carbon steel	1
7	Snap ring	carbon steel	1	19	Rod seal	Buna-N	1
8	Snap ring	carbon steel	1	20	Pin seal	Buna-N	1
9	Washer	bronze	1	21	Piston seal	Buna-N	1
10	Bushing	oil filled, sintered bronze	1	22	Cover seal	Buna-N	1
11	Fastening nut	carbon steel, black treated	1	23	Front cover seal	Buna-N	1
12	Positioning pin	carbon steel	1	24	Fastening bolt	carbon steel	1

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Dimensions

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Dimensions (mm)



Model	A	B	C	D	E	F	G	H Threads - Dp.	HH	HX	K	M	ØN
SC12	48.0	35.5	2	6	25	2.5	-	M3 x 0.5 - 5.5 Dp.	M3 x 0.5	18	5	15.5	3.4
SC16	48.0	35.5	2	8	29	2.5	-	M5 x 0.8 - 6.5 Dp.	M4 x 0.7	18	7	20.0	3.4
SC20	72.5	62.0	3	12	36	3.0	20	M8 x 1.25 - 12 Dp.	M6 x 1.0	22	10	25.5	5.5
SC25	73.5	68.0	3	12	40	3.0	23	M8 x 1.25 - 12 Dp.	M6 x 1.0	22	10	28.0	5.5
SC32	94.0	72.0	4	16	45	5.5	30	M10 x 1.5 - 15 Dp.	M8 x 1.25	25	14	34.0	5.5
SC40	94.0	65.0	4	16	52	5.5	30	M10 x 1.5 - 15 Dp.	M8 x 1.25	25	14	40.0	5.5
SC50	112.0	77.0	4	20	64	5.5	37	M12 x 1.75 - 20 Dp.	M10 x 1.5	40	17	50.0	6.6
SC63	114.0	80.0	4	20	77	5.5	48	M12 x 1.75 - 20 Dp.	M10 x 1.5	40	17	60.0	9.0

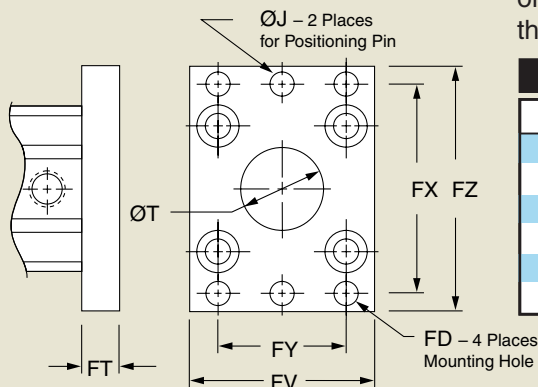
Model	ØO	P	Q	QQ	T Threads - Dp.	V	W	X	XX	Y	Z
SC12	6.5 x 4 dp	M5 x 0.8	5.0	16	M4 x 0.7 - 7 Dp.	8	-	20	4.0	29	-
SC16	6.5 x 4 dp	M5 x 0.8	5.0	16	M4 x 0.7 - 7 Dp.	11	-	25	5.0	36	-
SC20	9 x 7 dp	M5 x 0.8	7.5	27	M6 x 1.0 - 10 Dp.	16	-	35	7.5	51	-
SC25	9 x 7 dp	M5 x 0.8	8.0	28	M6 x 1.0 - 10 Dp.	16	-	35	7.5	51	-
SC32	9 x 7 dp	1/8	9.0	33	M6 x 1.0 - 10 Dp.	19	49.5	45	10.0	67	14
SC40	9 x 7 dp	1/8	10.0	26	M6 x 1.0 - 10 Dp.	19	57.0	45	10.0	67	15
SC50	11 x 8 dp	1/4	10.0	30	M8 x 1.25 - 14 Dp.	22	71.0	65	10.0	88	19
SC63	14 x 10.5 dp	1/4	12.0	31	M10 x 1.5 - 18 Dp.	22	84.0	65	10.0	88	22

STANDARD FEATURES (for which the competition charges extra)!!!

- Magnetic Piston • Clamp arm with adjusting clamp bolt • 4 rod end flats for clamp arm positioning

Mounting Flange

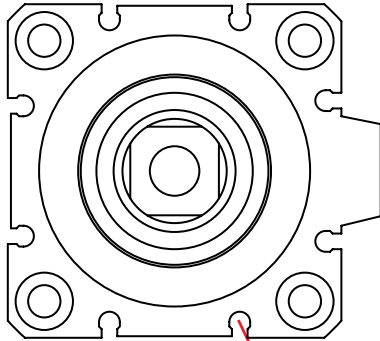
Mounting flange & fastener kit to provide alternative mounting and port orientation to a rectangular pattern. Please order kits separately from the table below.



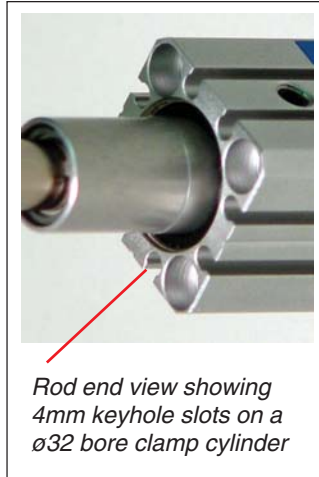
Model	Dimensions								Mounting Kit
	FD	FT	FY	FX	FV	FZ	ØJ	ØT	Kit Part No.
SC20	6.3	8	25.5	48	38	60	6.6	13	SC20-190MK
SC25	6.3	8	28	52	42	64	6.6	15	SC25-190MK
SC32	5.5	10	34	56	48	65	6.3	21	SC32-190MK
SC40	5.5	10	40	62	56	72	6.3	28	SC40-190MK
SC50	6.6	10	50	76	67	89	6.3	35	SC50-190MK
SC63	9.0	10	60	92	80	108	6.3	35	SC63-190MK

Magnetically Actuated Sensors –

Magnetic Piston is a standard feature of Fabco-Air swing clamp cylinders. When position sensing is desired for input to signal controllers, Fabco-Air sensors mount easily and securely in slots on the cylinder body.



4mm keyhole slots for mounting (sensors shown on $\phi 63$ bore – 8 places)



Rod end view showing 4mm keyhole slots on a $\phi 32$ bore clamp cylinder

Round Profile Sensors feature surge suppression, polarity protection, LED indicator, and extremely fast switching speeds. They slide into mating 4mm keyhole slots on either side of the cylinder block and are easily positioned and locked in place with a set screw. They are offered in two styles: a quick connect style with a 6 inch pigtail and male connector, or a prewired style with a 9 foot lead.

Female Cordsets are available in both 3 and 4 pin configurations in 2 and 5 meter lengths.

Order sensors and cordsets separately from the tables below.

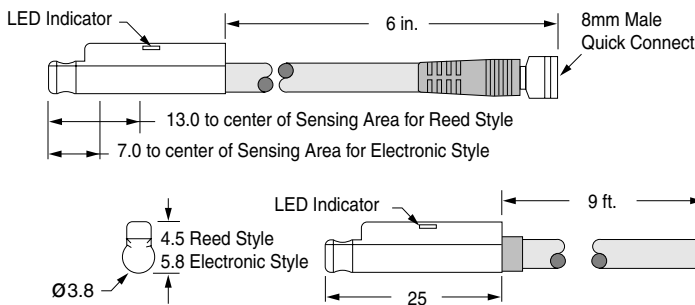


Prewired sensor shown with 9 ft. lead



3 pin cordset shown with sensor pigtail

Sensor Dimensions (mm unless noted)



All sensors feature surge suppression, polarity protection, LED indicator, and extremely fast switching speeds.

8mm Female Cordsets for Quick Connect Sensors	
Cordset Description	Part No.
2 meters, 3-Pin	CFC-2M
5 meters, 3-Pin	CFC-5M
2 meters, 4-Pin	CFC4-2M
5 meters, 4-Pin	CFC4-5M

Magnetic Sensors – Electrical Characteristics							Part Numbers	
Sensor Type	Function	Switching Voltage	Switching Current	Switching Power	Switching Speed	Voltage Drop	Prewired 9 ft. Part No.	Quick Connect Part No.
Reed Switch for PLC's w/LED (current limiting)	SPST Normally Open	5-120V AC/DC 50/60 Hz	0.04 Amp max 0.005 Amp min.	4 Watts max.	0.5 ms operate 0.1 ms release	2.5 Volts	9C49-000-002	9C49-000-302 Requires 3 pin cordset
Electronic LED and Sourcing	PNP Normally Open	6-30 VDC	0.2 Amp max.	6 Watts max.	1.5 μ s operate 0.5 μ s release	1.5 Volts	9C49-000-031	9C49-000-331 Requires 3 pin cordset
Electronic LED and Sinking	NPN Normally Open	6-30 VDC	0.2 Amp max.	6 Watts max.	1.5 μ s operate 0.5 μ s release	1.5 Volts	9C49-000-032	9C49-000-332 Requires 3 pin cordset
Electronic LED & Dual Output Sinking or Sourcing	Normally Open NPN or PNP Output	6-30 VDC	0.2 Amp max.	6 Watts max.	1.5 μ s operate 0.5 μ s release	1.5 Volts	9C49-000-050	9C49-000-350 Requires 4 pin cordset