Catalog FGYS-11

NEW PRODUCT

WORLD CLASS PERFORMANCE
FABCO-AIR
PNEUMATIC PRODUCTS

Magnetically Coupled Rodless Slides

FGYSR Series

FGYSR Series
Magnetically coupled rodless slides

Features

1. Lube retainers, internal & external.
2. Stainless steel barrel.
3. Anodized aluminum end covers.
4. Bores ø 10, 15, 20, 25, 32, 40
5. The external slider is magnetically coupled to the piston to provide a space-saving rodless slide.
6. Slide position sensors and shock absorbers available. See pages 4 and 7.

See page 3 for dimensions and page 7 for sensor selection.

Specifications – FGYSR

Bore Size	ø10	ø15	ø20	ø25	ø32	ø40
Min. operating pressure	26 psi					
Magnet holding force (N)	53.9	137	231	363	588	922
Max. operating pressure	0.7 MPa (7kgf/cm^2) 101 psi					
Temperature range	–10°C (14°F) to 60°C (140°F)					
Piston speed	50 to 400 mm/s					
Cushion	Rubber bumper or shock absorbers					
Lubrication	None required, or ISO VG32					
Stroke tolerance	0-250 st$^{+1/-0}$ 251-1000 st $^{+1.4/-0}$ mm 1001-1500 st $^{+1.8/-0}$ mm					
Mounting orientation	Horizontal, inclined, vertical					

How to order

FGYSR **20** X **100**

- FGYSR — Series
- 20 — Bore size: ø10, ø15, ø20, ø25, ø32, ø40
- 100 — Standard stroke: Refer to the strokes available in pricing chart on page 7

Order shock absorbers separately.
See page 4 for part numbers and prices.

Order sensors separately.
See page 7 for part numbers and prices.

Max. holding force (N)

Bore Size	ø10	ø15	ø20	ø25	ø32	ø40
Theoretical thrust (holding force) (N)	53.9	137	231	363	588	922

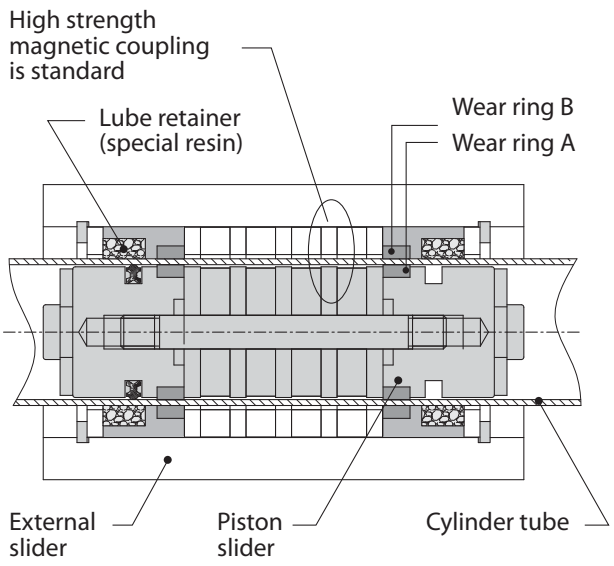
lb force = N x 0.224

Mass (kg)

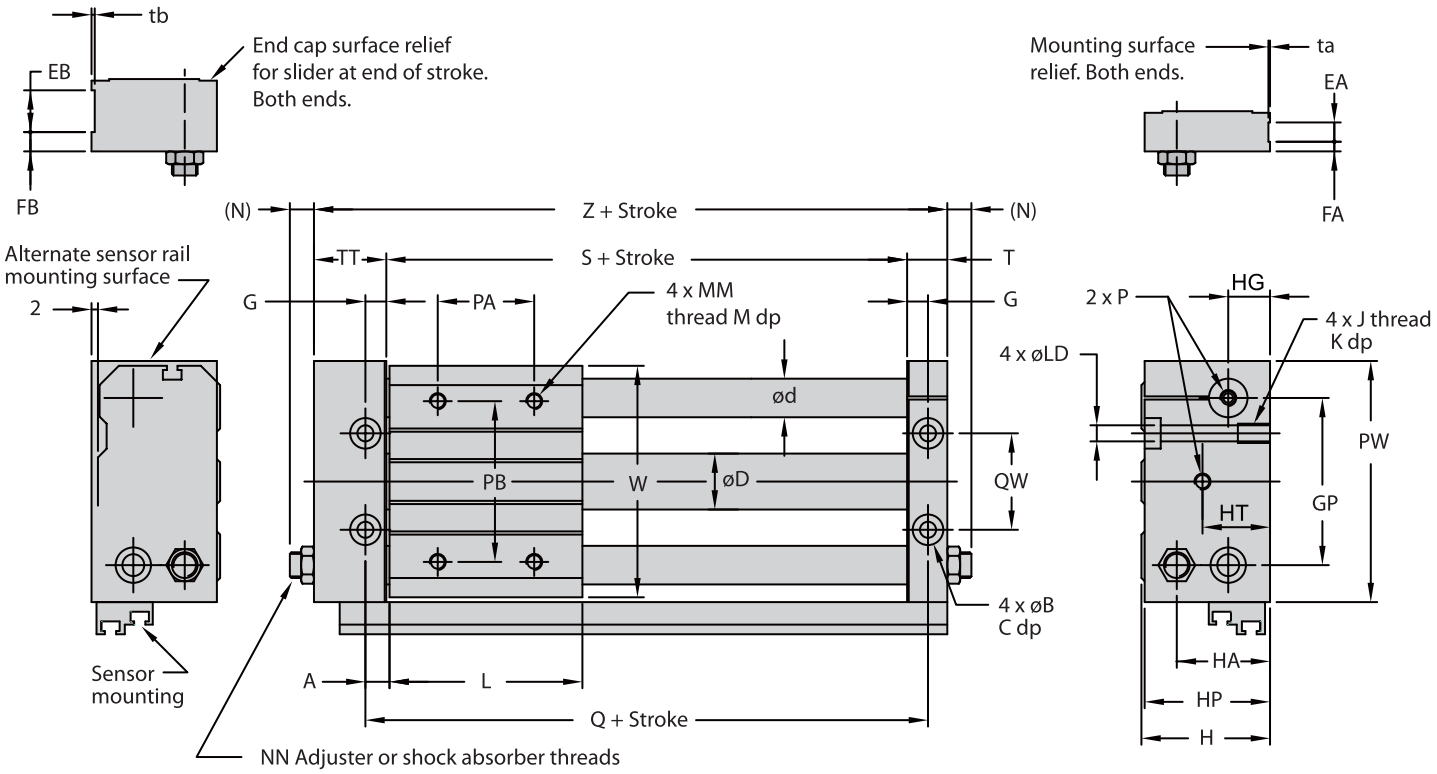
Bore Size	ø10	ø15	ø20	ø25	ø32	ø40
Basic mass (0 stroke)	0.48	0.91	1.48	1.84	3.63	4.02
Additional mass per 50 mm stroke	0.074	0.104	0.138	0.172	0.267	0.406

Calculation example: **FGYSR32 X 500**
Basic mass . . . . . .3.63 kg
Additional mass . . . . . .0.267 per 50 stroke
Cylinder stroke . . . . . .500 stroke
3.63 + (0.267 x 500 ÷ 50) = 6.3 kg

Magnetic coupling



FGYSR Series



FGYSR Series Dimensions (mm)

Bore	A	B	C	D	d	EA	EB	FA	FB	G	GP	H	HA	HG	HP	HT	J	K	L	LD
Ø10	7.5	8	4	12	10	6	12	3	5	6.5	40	34	25.5	12	33	18	M5x0.8	10.5	45	4.3
Ø15	7.5	9.5	5	17.4	12	6	13	3	6	6.5	52	40	29	13	39	21	M6x1.0	10	60	5.5
Ø20	10	9.5	5.2	21.4	16	–	–	–	–	8.5	62	46	36	17	45	20	M6x1.0	9.5	70	5
Ø25	10	11	6.5	26.4	16	8	14	4	7	8.5	70	54	40	20	53	20	M8x1.25	11	70	6.8
Ø32	12.5	14	8	33.6	20	8	16	5	7	9.5	86	66	46	24	64	24	M10x1.5	15.5	85	8.7
Ø40	12.5	15	9	41.6	25	10	20	5	10	10.5	104	76	57	25	74	25	M10x1.5	16	95	8.7

Bore	MM	M	(N)	NN	P	PA	PB	PW	Q	QW	S	T	TT	ta	tb	W	Z
Ø10	M4x0.7	8	9.5	M8x1.0	M5x0.8	25	38	60	60	24	47	12.5	20.5	0.5	1	58	80
Ø15	M5x0.8	8	7.5	M8x1.0	M5x0.8	30	50	75	75	30	62	12.5	22.5	1	1	72	97
Ø20	M6x1.0	10	9.5	M10x1.0	Rc)PT1/8"	40	70	90	90	38	73	16.5	25.5	–	–	87	115
Ø25	M6x1.0	10	11	M14x1.5	Rc)PT1/8"	40	70	100	90	42	73	16.5	25.5	0.5	1	97	115
Ø32	M8x1.25	12	11.5	M20x1.5	Rc)PT1/8"	40	75	122	110	50	91	18.5	28.5	0.5	1	119	138
Ø40	M8x1.25	12	10.5	M20x1.5	Rc)PT1/4"	65	105	145	120	64	99	20.5	35.5	1	1	142	155

Vertical Operation

When operating a load vertically, it should be operated within the allowable load mass and maximum operating pressures shown in the table below. Use caution, as operating above the prescribed values may lead to dropping the load. Also see mounting orientation Example 3 on page 5.

When the cylinder is mounted vertically or at an angle from horizontal, sliders may move downward due to their own weight or workpiece mass. If an accurate stopping position is required at the stroke end or mid-stroke, use an external stopper for precise positioning.

Bore size (mm)	Model	Max. Allowable load mass (Wv) (kg) Note 2	Max. operating pressure (Pv) (MPa) psi
ø10	FGYSR10	2.7	(0.55) 80
ø15	FGYSR15	7.0	(0.65) 94
ø20	FGYSR20	11.0	(0.65) 94
ø25	FGYSR25	18.5	(0.65) 94
ø32	FGYSR32	30.0	(0.65) 94
ø40	FGYSR40	47.0	(0.65) 94

Note 1) Use caution, since the magnetic coupling may disengage if it is used over the maximum operating pressure.
Note 2) Allowable load mass above indicates the maximum load mass when loaded. The actual loadable mass must be determined referring to the calculations on pages 5 and 6.

Intermediate Stopping

1) Intermediate stopping of load using an external stopper.
When stopping a load in mid-stroke using an external stopper (adjusting bolt, etc.), operate within the operating pressure limits shown in the table below. Use caution, as operation exceeding these limits can break the magnetic connection.

Bore size (mm)	Model	Operating pressure limit for intermediate stop (MPa) psi
ø10	FGYSR10	(0.55) 80
ø15	FGYSR15	(0.65) 94
ø20	FGYSR20	(0.65) 94
ø25	FGYSR25	(0.65) 94
ø32	FGYSR32	(0.65) 94
ø40	FGYSR40	(0.65) 94

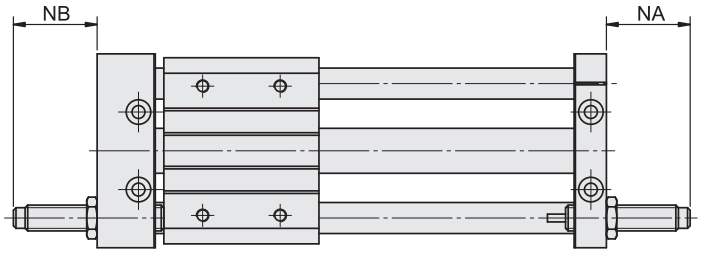
2) Intermediate stopping of load using an air pressure circuit.
When stopping a load using an air pressure circuit, operate at or below the kinetic energy shown in the table below. Use caution, as operation when exceeding the allowable value can result in breaking the magnetic coupling connection.

Bore size (mm)	Model	Allowable kinetic energy for intermediate stop (Es) (J)
ø10	FGYSR10	0.03
ø15	FGYSR15	0.13
ø20	FGYSR20	0.24
ø25	FGYSR25	0.45
ø32	FGYSR32	0.88
ø40	FGYSR40	1.53

Shock absorber specifications & Prices

Rodless slide size	FGYSR10/15	FGYSR20	FGYSR25	FGYSR32/40
Shock absorber model	FSA0806-AN	FSA1007-AN	FSA1412-AN	FSA2015-AN
Energy per cycle (Nm)	3	6	20	59
Stroke (mm)	6	7	12	15
Impact speed (m/s)	0.3~2.5	0.3~3.5	0.3~5.0	0.3~5.0
Ambient temperature range	-10° to 80° C (14° to 176° F) - See pg. 2 for slide temperature			

Model	Applicable Shock Absorber	NA	NB	Price
FGYSR10	FSA0806-AN	27	19	$34.90
FGYSR15	FSA0806-AN	27	17	34.90
FGYSR20	FSA1007-AN	29	20	34.90
FGYSR25	FSA1412-AN	49	40	48.00
FGYSR32	FSA2015-AN	52	42	55.15
FGYSR40	FSA2015-AN	51	36	55.15



Allowable load mass calculation based on cylinder mounting orientation

Load Sizing

Maximum load mass centered on the slide block when used on strokes less than or equal to the stroke values shown in Table 1.

Table 1

Bore Size	ø10	ø15	ø20	ø25	ø32	ø40
Max. load mass (kg)	3	7	12	20	30	50
Max. stroke (mm)	to 300	to 500	to 500	to 500	to 600	to 600

Two factors: Stroke Length & Mounting Orientation

The maximum load mass values shown above will change with the two factors: stroke length and mounting orientation for each cylinder size due to limitation from bending of the guide shafts. (Take note of the δ coefficient.) Additionally, depending on the mounting orientation, the allowable load mass may be different from the maximum load mass.

Since the maximum load mass with respect to the cylinder stroke changes as shown in the graph below, the stroke coefficient δ should be considered for each stroke. The value of δ is used in formula for all mounting orientations.

Calculating the stroke coefficient δ

Use $\delta = 1$ for all applications with strokes up to:
ø10 – 300mm stroke, ø15 – 500mm stroke,
ø20 – 500mm stroke, ø25 – 500mm stroke,
ø32 – 600mm stroke, and ø40 – 600mm stroke

For longer strokes, rough values for allowable loads can be obtained from the logarithmic graph, however, a calculation using the formula for each bore size in Table 2 will provide the accurate results needed for each mounting orientation.

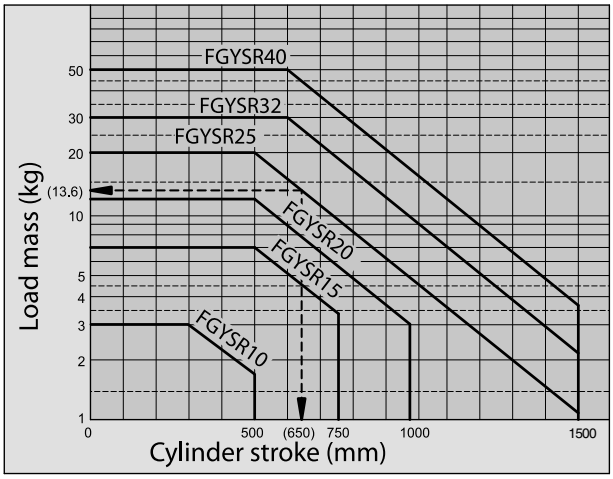


Table 2

Model	FGYSR10	FGYSR15	FGYSR20
$\delta =$	$\frac{10^{(0.86-1.3\times10^{-3}\times ST)}}{3}$	$\frac{10^{(1.5-1.3\times10^{-3}\times ST)}}{7}$	$\frac{10^{(1.71-1.3\times10^{-3}\times ST)}}{12}$

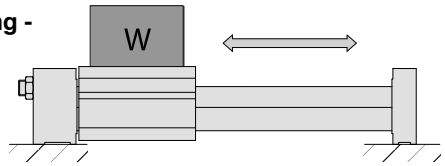
Model	FGYSR25	FGYSR32	FGYSR40
$\delta =$	$\frac{10^{(1.98-1.3\times10^{-3}\times ST)}}{20}$	$\frac{10^{(2.26-1.3\times10^{-3}\times ST)}}{30}$	$\frac{10^{(2.48-1.3\times10^{-3}\times ST)}}{50}$

Example δ Calculation (seeTable 2 below left)**:**

FGYSR25 X 650 (ø25 bore, 650mm stroke)

$$\delta = \frac{10^{(1.98-1.3\times10^{-3}\times \text{Stroke})}}{20} = \frac{10^{1.135}}{20} = \frac{13.6}{20} = 0.68$$

1) Horizontal mounting - (floor mounting)

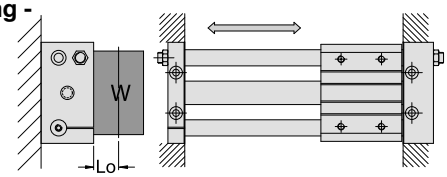


Allowable load mass W = δ x Max. load mass

Example 1- allowable load calculation for FGYSR25 X 650

Given: Load centered; δ=0.68 (from stroke coefficient calculation)
Allowable load = 0.68 x 20 = 13.6 Kg max

2) Horizontal mounting - (wall mounting)



Bore (mm)	ø10	ø15	ø20
Allowable load mass (W_A) (kg)	$\frac{\delta\bullet12.0}{8.4 + 2Lo}$	$\frac{\delta\bullet36.4}{10.6 + 2Lo}$	$\frac{\delta\bullet74.4}{12 + 2Lo}$

Bore (mm)	ø25	ø32	ø40
Allowable load mass (W_A) (kg)	$\frac{\delta\bullet140}{13.8 + 2Lo}$	$\frac{\delta\bullet258}{17 + 2Lo}$	$\frac{\delta\bullet520}{20.6 + 2Lo}$

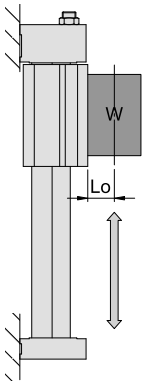
Lo = Distance from mounting surface to load center of gravity (cm)

Example 2– allowable load calculation for FGYSR25 X 650

Given: Lo = 20 mm = 2.0 cm; δ = 0.68

$$\text{Allowable load} = \frac{\delta\bullet140}{13.8 + 2Lo} = \frac{(0.68)(140)}{13.8 + 2(2.0)} = \frac{95.2}{17.8} = 5.3 \text{ Kg max}$$

3) Vertical operation (wall mounting)



Bore (mm)	ø10	ø15	ø20
Allowable load mass (W_A) (kg)	$\frac{\delta\bullet4.16}{2.2 + Lo}$	$\frac{\delta\bullet13.23}{2.7 + Lo}$	$\frac{\delta\bullet26.8}{2.9 + Lo}$

Bore (mm)	ø25	ø32	ø40
Allowable load mass (W_A) (kg)	$\frac{\delta\bullet44.0}{3.4 + Lo}$	$\frac{\delta\bullet88.2}{4.2 + Lo}$	$\frac{\delta\bullet167.8}{5.1 + Lo}$

Lo = Distance from mounting surface to load center of gravity (cm)

Note: Operating pressure should be equal to or less than the maximum operating pressure shown in "Vertical Operation" information on page 4.

Example 3– allowable load calculation for FGYSR25 X 650

Given: Lo = 20 mm = 2.0 cm; δ = 0.68

$$\text{Allowable load} = \frac{\delta\bullet44}{3.4 + Lo} = \frac{(0.68)(44)}{3.4 + 2.0} = \frac{29.92}{5.4} = 5.5 \text{ Kg max}$$

Allowable load mass calculation based on cylinder mounting orientation

4) Inclined operation (In operating direction)

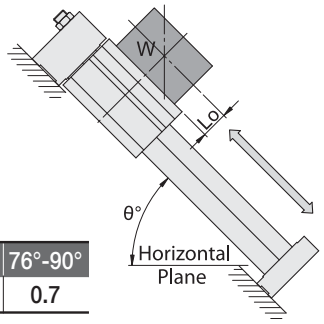


Table K (K=Angle coefficient)

Angle Θ	0°-45°	46°-60°	61°-75°	76°-90°
K	1	0.9	0.8	0.7

Bore (mm)	ø10	ø15	ø20
Allowable load mass (W_A) (kg)	$\frac{\delta \bullet 10.5K}{3.5\cos\theta+2(2.2+Lo)\sin\theta}$	$\frac{\delta \bullet 35K}{5\cos\theta+2(2.7+Lo)\sin\theta}$	$\frac{\delta \bullet 72K}{6\cos\theta+2(2.9+Lo)\sin\theta}$

Bore (mm)	ø25	ø32	ø40
Allowable load mass (W_A) (kg)	$\frac{\delta \bullet 120K}{6\cos\theta+2(3.4+Lo)\sin\theta}$	$\frac{\delta \bullet 210K}{7\cos\theta+2(4.2+Lo)\sin\theta}$	$\frac{\delta \bullet 400K}{8\cos\theta+2(5.1+Lo)\sin\theta}$

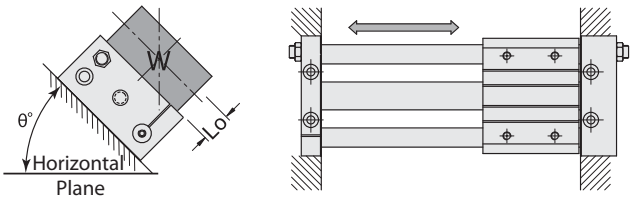
Lo = Distance from mounting surface to load center of gravity (cm)

Example 4– allowable load calculation for FGYSR25 X 650

Given: Lo = 2 cm; δ = 0.68; angle = 60°; K = 0.9 (from Table "K" above)

$$\text{Allowable Load} = \frac{\delta \bullet 120K}{6\cos\theta+2(3.4+Lo)\sin\theta} = \frac{0.68 \times 120 \times 0.9}{6(0.500)+2(3.4+2)(0.866)} = 5.9 \text{ Kg max}$$

5) Inclined operation (At right angle to operating direction)



Bore (mm)	ø10	ø15	ø20
Allowable load mass (W_A) (kg)	$\frac{\delta \bullet 12.0}{4+2(2.2+Lo)\sin\theta}$	$\frac{\delta \bullet 36.4}{5.2+2(2.7+Lo)\sin\theta}$	$\frac{\delta \bullet 74.4}{6.2+2(2.9+Lo)\sin\theta}$

Bore (mm)	ø25	ø32	ø40
Allowable load mass (W_A) (kg)	$\frac{\delta \bullet 140}{7+2(3.4+Lo)\sin\theta}$	$\frac{\delta \bullet 258}{8.6+2(4.2+Lo)\sin\theta}$	$\frac{\delta \bullet 520}{10.4+2(5.1+Lo)\sin\theta}$

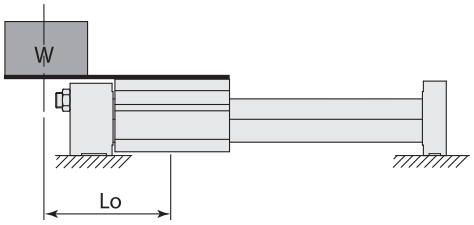
Lo = Distance from mounting surface to load center of gravity (cm)

Example 5– allowable load calculation for FGYSR25 X 650

Given: Lo = 2 cm; δ = 0.68; angle = 60°

$$\text{Allowable Load} = \frac{\delta \bullet 140}{7+2(3.4+Lo)\sin\theta} = \frac{0.68 \times 140}{7+2(3.4+2)(0.866)} = 5.8 \text{ Kg max}$$

6) Load center offset in operating direction (Lo)



Bore (mm)	ø10	ø15	ø20	ø25	ø32	ø40
Allowable load mass (W_A) (kg)	$\frac{\delta \bullet 5.25}{3.5 + Lo}$	$\frac{\delta \bullet 17.5}{5.0 + Lo}$	$\frac{\delta \bullet 36}{6.0 + Lo}$	$\frac{\delta \bullet 60}{6.0 + Lo}$	$\frac{\delta \bullet 105}{7.0 + Lo}$	$\frac{\delta \bullet 200}{8.0 + Lo}$

Lo = Distance from center of slide block to load center of gravity (cm)

Example 6– allowable load calculation for FGYSR25 X 650

Given: Lo = 2 cm; δ = 0.68

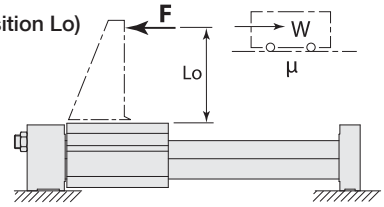
$$\text{Allowable Load} = \frac{\delta \bullet 60}{6.0 + Lo} = \frac{0.68 \times 60}{2.0 + 6.0} = 5.1 \text{ Kg max}$$

7) Horizontal operation (Pushing load, Pusher)

F: Drive (from slide block to position Lo) resistance force **W** x μ (kg)

Lo: Distance (cm) from mounting surface to load center of gravity

μ: Friction coefficient



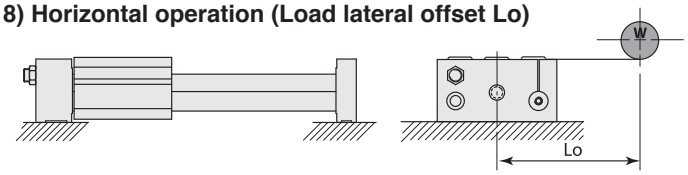
Bore (mm)	ø10	ø15	ø20	ø25	ø32	ø40
Allowable drive force (F_A) (kg)	$\frac{\delta \bullet 5.25}{2.2 + Lo}$	$\frac{\delta \bullet 17.5}{2.7 + Lo}$	$\frac{\delta \bullet 36}{2.9 + Lo}$	$\frac{\delta \bullet 60}{3.4 + Lo}$	$\frac{\delta \bullet 105}{4.2 + Lo}$	$\frac{\delta \bullet 200}{5.1 + Lo}$

Example 7– allowable load calculation for FGYSR25 X 650

Given: Lo = 2 cm; δ = 0.68

$$\text{Allowable Force} = \frac{\delta \bullet 60}{3.4 + Lo} = \frac{0.68 \times 60}{3.4 + 2} = 7.5 \text{ Kg max}$$

8) Horizontal operation (Load lateral offset Lo)



Bore (mm)	ø10	ø15	ø20	ø25	ø32	ø40
Allowable load mass (W_A) (kg)	$\frac{\delta \bullet 8.4}{4 + Lo}$	$\frac{\delta \bullet 25.48}{5.2 + Lo}$	$\frac{\delta \bullet 52.1}{6.2 + Lo}$	$\frac{\delta \bullet 98}{7.0 + Lo}$	$\frac{\delta \bullet 180}{8.6 + Lo}$	$\frac{\delta \bullet 364}{10.4 + Lo}$

Lo = Distance from center of slide block to load center of gravity (cm)

Example 8– allowable load calculation for FGYSR25 X 650

Given: Lo = 2 cm; δ = 0.68

$$\text{Allowable Load} = \frac{\delta \bullet 98}{7 + Lo} = \frac{0.68 \times 98}{7 + 2} = 7.4 \text{ Kg max}$$

Cylinder Prices (FGYSR ☐ X ☐)

Consult factory for models where price is not shown.

Bore size (mm)	Price by standard stroke																			
	50	100	150	200	250	300	350	400	450	500	600	700	800	900	1000	1100	1200	1300	1400	1500
Ø10	$162.70	$168.50	$174.25	$180.00	$185.80	$191.55	$197.35	$203.10	$208.85	$214.65	–	–	–	–	–	–	–	–	–	–
Ø15	208.75	217.50	225.00	232.50	241.25	248.75	257.55	265.05	272.55	281.30	$288.50	$304.65	–	–	–	–	–	–	–	–
Ø20	258.80	270.05	280.05	291.30	301.30	312.55	322.55	333.80	343.80	355.05	365.80	386.55	$406.20	$426.95	$447.70	–	–	–	–	–
Ø25	312.55	323.80	335.05	346.30	356.30	367.55	378.80	390.05	401.30	412.55	457.55	443.10	465.05	485.80	507.75	$518.60	$540.05	$561.45	$581.80	$603.25
Ø32	485.50	500.50	515.50	529.10	544.10	559.10	574.10	587.75	602.75	617.75	623.80	652.55	680.05	708.80	737.55	745.40	773.10	800.80	828.50	855.05
Ø40	628.80	647.55	666.30	685.05	702.55	721.30	740.05	758.80	776.30	795.05	831.30	868.80	905.05	942.55	978.80	1016.30	1052.55	1090.05	1126.30	1163.80

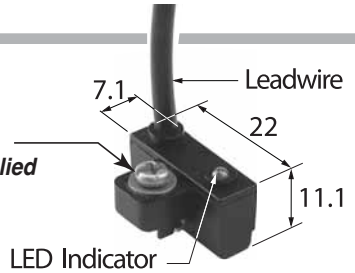
Shock absorber prices – See table on page 4

Position sensor specifications & prices

Please order sensors and female cordsets separately from charts here.

Female Cord Sets	Part No.	Price
1 Meter	CFC-1M	$15.05
2 Meters	CFC-2M	16.85
5 Meters	CFC-5M	21.30

Remove this clamp screw and use the fastener supplied with the slide unit.



Sensor Selection Guide		Prewired 9 ft. Leadwire		Quick Disconnect*	
Sensor Type	Electrical Characteristics	Part No.	Price	Part No.	Price
Reed (LED)	5-120 VDC/VAC, 0.03 Amp Max current, 4 Watt Max., 2.0 voltage drop	9P49-000-002. . .	$13.95	9P49-000-302 ..	$16.60
Electronic (LED)	Sourcing PNP 5-28 VDC, 0.20 Amp Max current, 0.5 voltage drop	9P49-000-031. . . .	27.10	9P49-000-331.....	29.70
Electronic (LED)	Sinking NPN 5-28 VDC, 0.20 Amp Max current, 0.5 voltage drop	9P49-000-032. . . .	27.10	9P49-000-332.....	29.70

*Note: Quick disconnect styles are supplied with 6 inch pigtail with male connector.

Operation

⚠ Warning

1) Be aware of the space between the plates and the side block. Take sufficient care to avoid getting your hands or fingers caught when the cylinder is operated.
2) Do not apply a load to the cylinder which is greater than the allowable value calculated from formulae in mounting orientation vs. load mass tables. This may cause malfunctions.
3) When a cylinder is used in a place where water or cutting oil may splash, or lubricity of the cylinder sliding parts may deteriorate, please consult the factory.

Disassembly & Maintenance

⚠ Warning

1) Use caution as the attractive power of the magnet is very strong. When removing the external slider and piston slider from the cylinder tube for maintenance, etc., handle with caution because the magnets installed in each slider have a very strong attractive force.

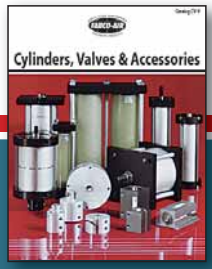
Mounting

⚠ Caution

1) Avoid operation with the external slider fixed to the mounting surface. The cylinder should be operated with the plates fixed to the mounting surface.
2) Make sure that the cylinder mounting surface has a flatness of 0.2 mm or less. If the flatness of the cylinder mounting surface is not appropriate, the two guide shafts may be twisted. This may adversely affect the operating conditions and shorten the service life due to increased sliding resistance and the early abrasion of the bearings. The cylinder mounting surface must have a flatness of 0.2 mm or less, and the cylinder must be mounted so it operates smoothly through the full stroke at the minimum operating pressure.

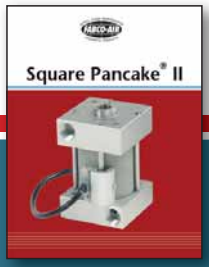
WORLD CLASS PERFORMANCE
FABCO-AIR
PNEUMATIC PRODUCTS

Fabco-Air Product Catalog Library



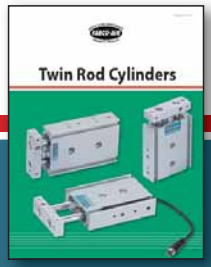
Cylinders, Valves and Accessories
Catalog #CV9

Pancake® II Air Cylinders
Catalog #Pan2-2



Square Pancake® II
Air Cylinders
Catalog #SqPan2

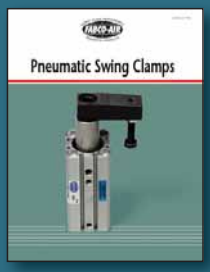
ISO 6431 Cylinders
Catalog #FAQR-09



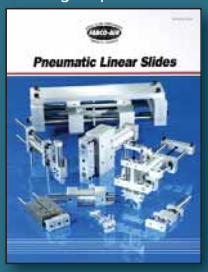
Twin Rod, Non-Rotating
Air Cylinders - Catalogs
#FDF-09 & #FDXS-09

High Closing Force
Angular Grippers
Catalog #FKHC-10

Multi-Power® Air Presses
Catalog #FP16



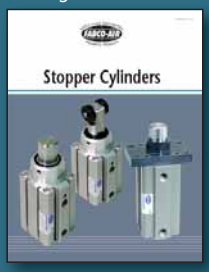
Swing Clamps
Catalog #SC-DB04



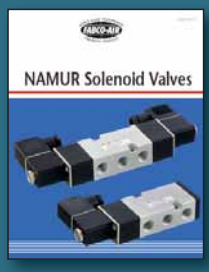
Linear Slides - 6 Families
Catalog #LS-03

Compact Finger Slides
Catalog #FDH-10

ISO 6432 Cylinders
Catalog #FAE-09



Stopper Cylinders
Catalog #ST-SC



NAMUR Solenoid Valves
Catalog #FVEN-10

Global Series™ Metric
Air Cylinders
Catalog #GC-15

NFPA Air Cylinders
Catalog #NF-6

Air Table Slides
Catalog #FGXS-10

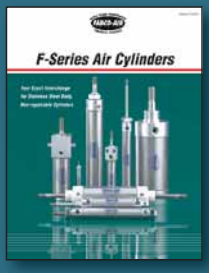
Wide & Narrow Parallel
Grippers - Catalogs
#FKHZ-10 & #FKHQ-10

Toggle Type
Angular Grippers
Catalog #FKHT-10

Modular Air Preparation
System - FRLs
Catalog #FRL-06

Guided Motion
Air Cylinders
Catalog #FGM-10

Pneumatic Rotary
Actuators
Catalog #FRA.C-09

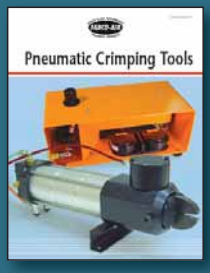


Stainless Steel Body
Air Cylinders
Catalog #SSB-03

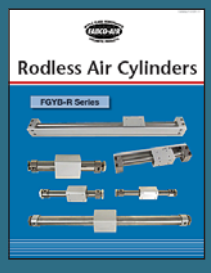
Pneumatic & Hydraulic
Swing Clamps
Catalog #FML.H

Wide Opening
Parallel Grippers
Catalog #FKHL-10

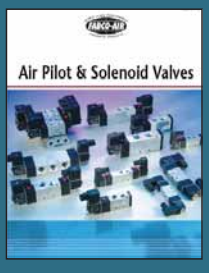
Original Pancake®
Air Cylinders
Catalog #CV9



Pneumatic
Crimping Tools
Catalog #FCT-JY07



Magnetically Coupled
Rodless Air Cylinders
Catalog #FGYBR-11



Pneumatic Valves
FVA & FVEC Series
Catalog #FVA.E-09

Angular Grippers
Catalog #FKA-09

3 Series of Angular &
Parallel Motion Grippers
Catalog #GR8

3-19-13

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