FA SERIES

Pneumatic Magnetic Grippers

Overview

FA28

The FA28 is the smallest pneumatic magnetic gripper offered by Fluxus. Primary design considerations for this product include the small gripping area footprint, shallow magnetic field and excellent durability. This product is for gripping small parts, generally less than 2kg, in a variety of applications.

Key Features:

- 28mm Outside Diameter
- 16kgf Max Flux Force
- M5 Air Ports
- C-Slot ON/OFF Sensors

FA46

The FA46 is the flagship Fluxus magnetic gripper for factory automation. Featuring a novel magnetic housing architecture with a rotary pneumatic drive, the FA46 is the most powerful switchable permanent magnet of its size in the world. Target parts for this gripper generally weigh between 2 and 10kg.

Key Features:

- 46mm Outside Diameter
- 85kgf Max Flux Force
- M5 Air Ports
- Fluxus ON/OFF Sensor
- 4mm Hex Drive Manual Override

FA76

Building on the same innovative architecture of the FA46, the FA76 maintains all of the same features in a larger, more powerful package. This tool is generally recommended for parts in the 10 to 30kg size range, depending on the application.

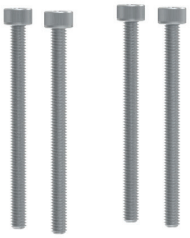
Key Features:

- 76mm Outside Diameter
- 256kgf Max Flux Force
- G1/8 Air Ports
- Fluxus ON/OFF Sensor
- 6mm Hex Drive Manual Override

Poles

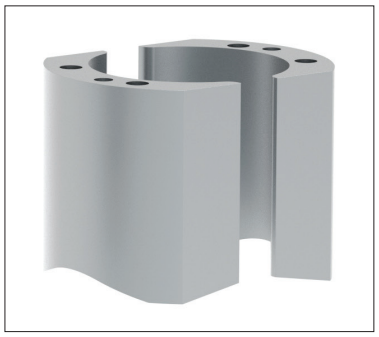
The poles on FA Series products need to be specified for each application. Standard pole options include Flat, V, Pin and Blank. Custom poles are also available if one of the standard poles isn't suitable.

Visit www.fluxus-us.com for more information and support. 2D drawings and 3D models of all standard pole designs can be found on each product page. For pole specification and custom pole design, use the website contact form.



FA28 Flat Poles

FA46 Pin Poles



FA76 V Poles

Performance

FA28

Flux Force and Recommended Safe Working Loads

Target Thickness (mm)	0.4	0.5	0.6	0.8	1.0	1.2	1.5	2.0	2.5	3	>3.5
Flux Force (kgf)	2.3	3.6	4.0	7.7	8.8	11	13.6	15.5	16.5	16.5	16.5
Normal Work Load (kg)	0.46	0.72	0.8	1.54	1.76	2.2	2.72	3.1	3.3	3.3	3.3
Shear Work Load (kg)	0.23	0.36	0.4	0.77	0.88	1.1	1.36	1.55	1.65	1.65	1.65

FA46

Flux Force and Recommended Safe Working Loads

Target Thickness (mm)	0.4	0.5	0.6	0.8	1.0	1.2	1.5	2.0	2.5	3	3.5	4	4.5	5	>5.0
Flux Force (kgf)	4.3	7.2	9.1	14.9	19.3	25.2	32.3	47.5	55.9	71.1	78.3	84.9	85.0	85.0	85.0
Normal Work Load (kg)	0.9	1.4	1.8	3.0	3.9	5.0	6.5	9.5	11.2	14.2	15.7	17.0	17.0	17.0	17.0
Shear Work Load (kg)	0.4	0.7	0.9	1.5	1.9	2.5	3.2	4.7	5.6	7.1	7.8	8.5	8.5	8.5	8.5

FA76

Flux Force and Recommended Safe Working Loads

Target Thickness (mm)	0.4	0.5	0.6	0.8	1.0	1.5	2.0	2.5	3	4	5	7	8	>8
Flux Force (kgf)	8.3	11.3	14.4	22.0	27.4	41.8	67.1	94.5	116.6	155.0	217.3	242.1	256.0	256.0
Normal Work Load (kg)	1.7	2.3	2.9	4.4	5.5	8.4	13.4	18.9	23.3	31.0	43.5	48.4	51.2	51.2
Shear Work Load (kg)	0.8	1.1	1.4	2.2	2.7	4.2	6.7	9.5	11.7	15.5	21.7	24.2	25.6	25.6

- Flux Force is the amount of gripping force generated by the product on a target part.
- Normal Work Load is the max target part weight recomended for handling in a normal orientation.
- Shear Work Load is the max target part weight recomended for handling in a shear orientation.

Derating factors can be used to make simple calculations to choose the appropriate product for a given application.

Flux Force Deratings for Material and Contact

Condition	Derating Factor
Target Material - Low Carbon Steel	1.0
Target Material - High Carbon Steel	0.9
Target Material - Ferritic Stainless Steel	0.5
Target Material - Cast Iron	0.45
Contact - Perfect Flat	1.0
Contact - Imperfect Flat / Rough Surface	0.9
Contact - V Pole on Round	0.5
Contact - Multi-Point	0.5
Orientation - Normal	1.0
Orientation - Shear	0.5

Calculation Examples

Example A - FA46 with V poles handling a 2mm thick mild steel tube that weighs 3kg in normal orientation only.

(FA46 Flux Force on 2mm) x (V Pole on Round) x (Low Carbon Steel) = Estimated Flux Force

47.5 x 0.5 x 1.0 = 23.75kgf Flux Force

Example B - FA76 with flat poles handling a 10mm thick rough surface cast iron part that weighs 10kg in shear orientation.

(FA76 Flux Force on 10mm) x (Rough Surface) x (Cast Iron) x (Shear) = Estimated Flux Force

256.0 x 0.9 x 0.45 x 0.5 = 51.8kgf Flux Force

Use the contact form at **www.fluxus-us.com** for individualized support.

Product Manuals and 3D Models

Scan the QR codes below or visit the links to access the product pages where you can select a product configuration and download a product manual as well as a 3D model.

FA28

www.fluxus-us.com/fa28

FA46

www.fluxus-us.com/fa46

FA76

www.fluxus-us.com/fa76

Part Numbers and SKUs

The Part Number / Product Name can be generated using the first table below. Each PN has a corresponding ordering SKU in the following three tables.

Description	Series	Size	-	Pole	-	Sensors	-	Custom
Pneumatic Magnetic Gripper	FA							
28mm Outside Diameter		28						
46mm Outside Diameter		46						
76mm Outside Diameter		76						
Flat Pole			-	S				
V Pole			-	V				
Pin Pole			-	P				
Blank Pole			-	B				
Custom Pole			-	C				
No Position Sensors					-	0		
Position Sensors (PNP)					-	1		
Position Sensors (NPN)					-	2		
Custom ID Code							-	XXX

FA28

Part Number / Product Name	SKU
FA28-S-0	9970112
FA28-S-1	9970113
FA28-S-2	9970114
FA28-V-0	9970115
FA28-V-1	9970116
FA28-V-2	9970117
FA28-P-0	9970118
FA28-P-1	9970119
FA28-P-2	9970120
FA28-B-0	9970121
FA28-B-1	9970122
FA28-B-2	9970123
FA28-C-0-XXXX	XXXXXXX
FA28-C-1-XXXX	XXXXXXX
FA28-C-2-XXXX	XXXXXXX

Part Numbers and SKUs

FA46

Part Number / Product Name	SKU
FA46-S-0	9970124
FA46-S-1	9970125
FA46-S-2	9970126
FA46-V-0	9970127
FA46-V-1	9970128
FA46-V-2	9970129
FA46-P-0	9970130
FA46-P-1	9970131
FA46-P-2	9970132
FA46-B-0	9970133
FA46-B-1	9970134
FA46-B-2	9970135
FA46-C-0-XXXX	XXXXXXX
FA46-C-1-XXXX	XXXXXXX
FA46-C-2-XXXX	XXXXXXX

FA76

Part Number / Product Name	SKU
FA76-S-0	9970100
FA76-S-1	9970101
FA76-S-2	9970102
FA76-V-0	9970103
FA76-V-1	9970104
FA76-V-2	9970105
FA76-P-0	9970106
FA76-P-1	9970107
FA76-P-2	9970108
FA76-B-0	9970109
FA76-B-1	9970110
FA76-B-2	9970111
FA76-C-0-XXXX	XXXXXXX
FA76-C-1-XXXX	XXXXXXX
FA76-C-2-XXXX	XXXXXXX

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