

PIglide FPC: Flat, Circular Air Bearing Modules

Friction-free, modular air bearings



A-41x

- Diameters from 25 mm to 300 mm
- Load capacity to 15500 N
- Stiffness to 860 kN/mm
- Mounting hardware, customizations, and accessories available

The PIglide Flat Pad Circular air bearing series is suitable for applications that require friction-free, accurate linear or planar motion. The modular concept of these air bearings allows the user to build their own motion system. Several bearings can be combined to increase the load capacity or to create multi-axis motion platforms.

Application fields

For setting up positioning, scanning, metrology, inspection, and calibration systems.

Thanks to the friction-free motion, no particles are formed, which makes PIglide stages ideal for cleanroom applications.

Specifications

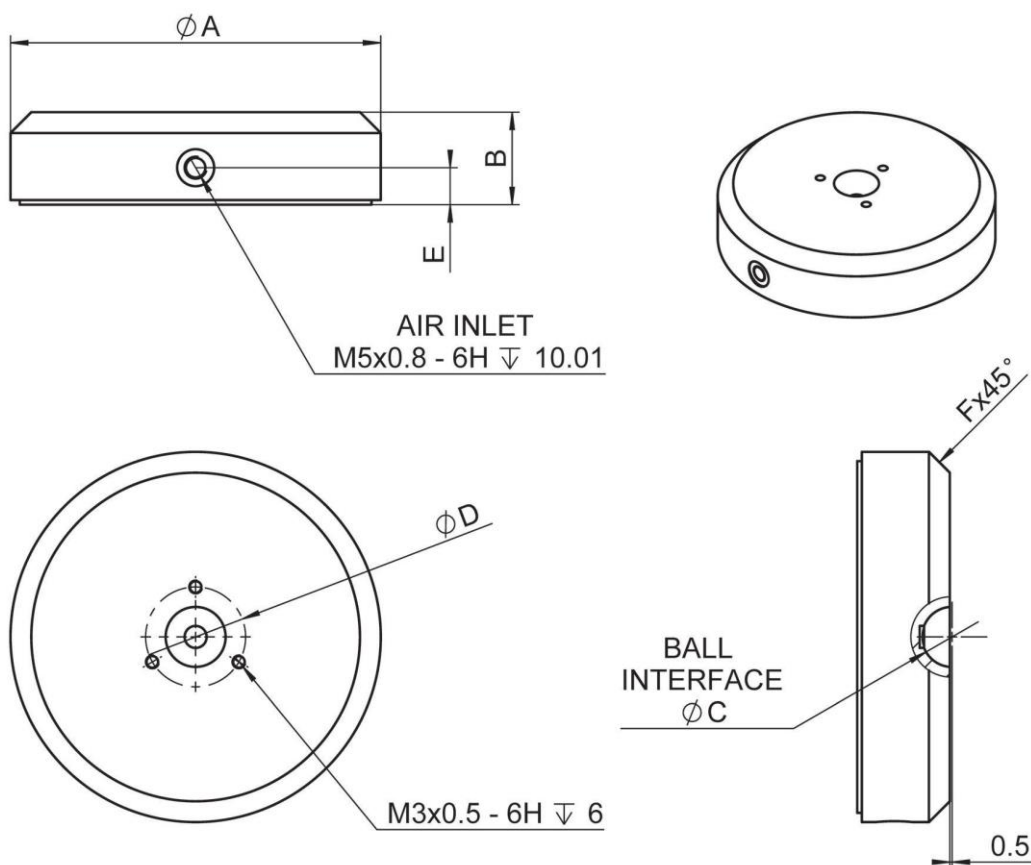
Part #	Diameter / mm	Ball interface diameter / mm	Load capacity / N	Stiffness / N/μm	Air consumption / l/h (SCFH)	Mass / g
A-411.025	25	13	88	17.5	60 (2)	16
A-411.040	40	13	220	28.0	60 (2)	42
A-411.050	50	13	330	52.5	85 (3)	66
A-411.065	65	13	660	78.8	115 (4)	171
A-411.080	80	13	1010	111	170 (6)	259
A-411.100	100	20	1710	175	170 (6)	505
A-411.125	125	20	2780	254	230 (8)	1105
A-411.150	150	20	4000	350	285 (10)	1590
A-411.200	200	20	7700	520	570 (20)	4040
A-411.300	300	20	15500	860	850 (30)	12000

Air supply	
Operating pressure	80 psi (550 kPa) nominal
Air quality	Clean (filtered to 1.0 μm or better) - ISO 8573-1 Class 1 Oil free - ISO 8573-1 Class 1 Dry (-15 °C dew point) - ISO 8573-1 Class 3
Miscellaneous	
Guideway surface flatness	< 1μm / 300 mm
Nominal fly-height	10 - 15 μm
Materials	Hardcoat aluminum, stainless steel fasteners
Recommended guideway materials	Guideways are supplied by the customer. Granite, hardcoat aluminum, stainless steel, ceramics, nickel-plated steel, nickel-plated cast iron
Air bearing Type	Discrete orifice

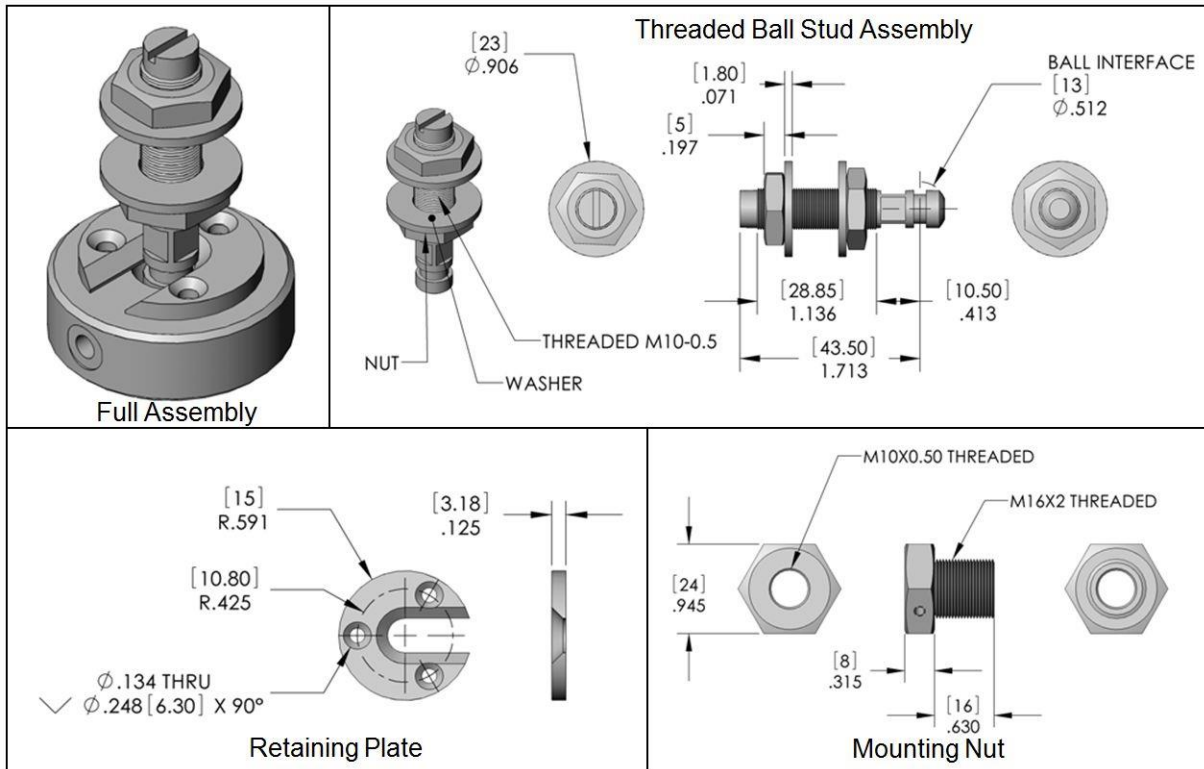
Mounting Hardware (sold separately)		
Part #	Description	Ball interface diameter
A-412.013S	Threaded ball stud assembly	13
A-412.013N	Mounting nut	13
A-412.013P	Retaining plate	13
A-412.020S	Threaded ball stud assembly	20
A-412.020N	Mounting nut	20
A-412.020P	Retaining plate	20

The loads listed assume a supply pressure of 550 kPa (80 psi). Please contact PI if other pressures are required.

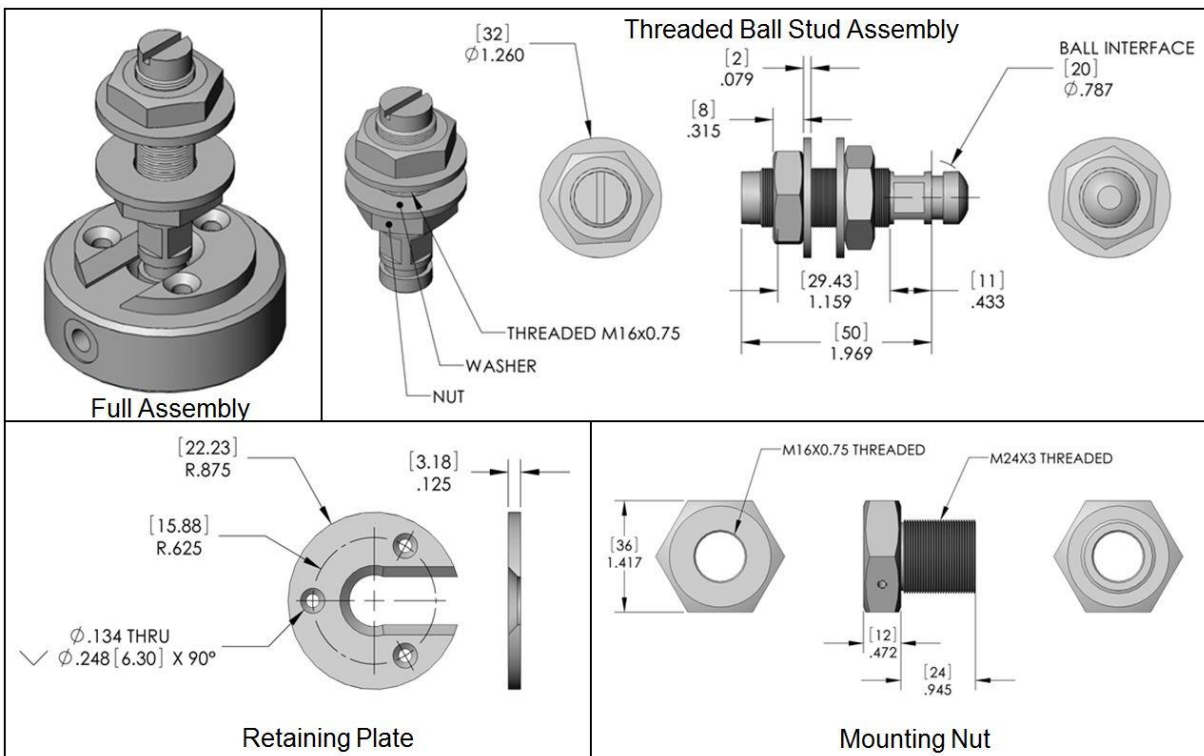
Drawings / Images



Model	A	B	C	D	E	F
A-411.025	25	13	13	N/A	6.4	1.5
A-411.040	40	13	13	21.6	7	1
A-411.050	50	13	13	21.6	7	1
A-411.065	65	20	13	21.6	8	1
A-411.080	80	20	13	21.6	8	4.5
A-411.100	100	25	20	31.6	9	6.4
A-411.125	125	35	20	31.6	9	6.4
A-411.150	150	35	20	31.6	9	6.4
A-411.200	200	66	20	31.6	9	25
A-411.300	300	66	20	31.6	9	25



Mounting hardware dimensions: 13 mm ball interface diameter



Mounting hardware dimensions: 20 mm ball interface diameter

Ordering Information

A-411.025

PIglide FPC flat, circular air bearing modules, 25 mm diameter, 13 mm diameter ball interface

A-411.040

PIglide FPC flat, circular air bearing modules, 40 mm diameter, 13 mm diameter ball interface

A-411.050

PIglide FPC flat, circular air bearing modules, 50 mm diameter, 13 mm diameter ball interface

A-411.065

PIglide FPC flat, circular air bearing modules, 65 mm diameter, 13 mm diameter ball interface

A-411.080

PIglide FPC flat, circular air bearing modules, 80 mm diameter, 13 mm diameter ball interface

A-411.100

PIglide FPC flat, circular air bearing modules, 100 mm diameter, 20 mm diameter ball interface

A-411.125

PIglide FPC flat, circular air bearing modules, 125 mm diameter, 20 mm diameter ball interface

A-411.150

PIglide FPC flat, circular air bearing modules, 150 mm diameter, 20 mm diameter ball interface

A-411.200

PIglide FPC flat, circular air bearing modules, 200 mm diameter, 20 mm diameter ball interface

A-411.300

PIglide FPC flat, circular air bearing modules, 300 mm diameter, 20 mm diameter ball interface

Mounting Hardware

A-412.013S

Ball head screw setup, 13 mm ball interface diameter

A-412.013N

Mounting nut, 13 mm ball interface diameter

A-412.013P

Retaining plate, 13 mm ball interface diameter

A-412.020S

Ball head screw setup, 20 mm ball interface diameter

A-412.020N

Mounting nut, 20 mm ball interface diameter

A-412.020P

Retaining plate, 20 mm ball interface diameter