

Plglide RT Rotary Air Bearing

FRICTIONLESS, NON-MOTORIZED



A-60X Series

- Table diameters from 50mm to 300mm
- 425kg max payload
- Radial/Axial error motion < 200nm
- Can be mounted vertically or horizontally
- Ideal for positioning, scanning, metrology, inspection, alignment, calibration, and cleanroom applications

Overview

The Plglide RT series of non-motorized passive rotary air bearings are designed for accuracy, precision, high stiffness, and ease of use. They can be used in any orientation and are easy to integrate with motors and encoders for complete positioning solutions. Applications include optical alignment, metrology, inspection, calibration, and scanning. The RT series bearings offer superior runout, flatness, and wobble performance. Since they are completely frictionless, they exhibit no breakaway “stiction” or drag friction during operation. They are ideal for use in cleanrooms, require no maintenance or lubrication, and have unlimited life.

An optional high resolution optical encoder can be added to allow precision table angle recording during manual operation. Applications include parts inspection, optical alignment and drag torque measurement.

Options, Accessories, and Customizations

- Optional Mounting Base
- Optional Position Encoder
- Air Preparation Kits
- Custom Mounting Flanges and Square Housings

Sizes and Capacities

Model	Table Diameter (mm)	Journal Length (mm)	Load Capacity (N [lbf])		Tilt Load Capacity (N-m [lbf-in])	Stiffness (N/μm [lbf/μin])	
			Axial	Radial		Axial	Radial
A-601.025	50	25	134 [30]	57 [13]	0.57 [5]	26 [0.15]	8 [0.05]
A-602.038	75	38	299 [67]	132 [30]	1.13 [10]	57 [0.33]	22 [0.13]
A-603.025	100	25	536 [121]	115 [26]	1.70 [15]	96 [0.55]	18 [0.10]
A-603.050	100	50	536 [121]	229 [51]	4.52 [40]	96 [0.55]	35 [0.20]
A-604.050	150	50	1206 [271]	344 [77]	22.6 [200]	210 [1.2]	64 [0.37]
A-604.090	150	90	1206 [271]	605 [135]	36.7 [325]	210 [1.2]	113 [0.65]
A-605.065	200	65	2144 [482]	577 [129]	39.6 [350]	385 [2.2]	110 [0.63]
A-605.100	200	100	2144 [482]	917 [205]	67.8 [600]	385 [2.2]	175 [1.0]
A-607.075	300	75	4244 [954]	1203 [269]	141.3 [1250]	788 [4.5]	204 [1.17]
A-607.175	300	175	4244 [954]	2789 [627]	282.5 [2500]	788 [4.5]	475 [2.71]

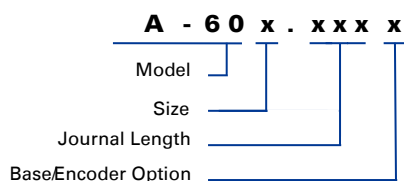
Note: Capacities listed assume supply pressure of 80 psi. Please contact PI if alternate pressures are required.

Performance Specifications

Model	Units	A-601.025	A-602.038	A-603.025	A-603.050	A-604.050	A-604.090	A-605.065	A-605.100	A-607.075	A-607.175
Radial Error Motion (1)	nm	300		200		100			75		
Axial Error Motion (1)	nm	150		100		75			50		
Tilt Error Motion (1)	μrad	5		3		2		1.5		1	
Max Velocity(2)	RPM	3000				2000			1000		
Moment of Inertia	kg-mm ²	35	231	705	750	4,715	5,050	17,900	18,800	181,900	206,700
Rotating Mass	kg	0.15	0.4	0.7	0.8	2.1	2.6	4.6	5.3	19.4	26
Total Weight	kg	0.4	1.2	1.5	2.5	5.4	8.2	11.6	16.3	38.1	59
Operating Pressure	550 +/-35 kPa (80 +/-5 psi)										
Air Consumption	< 57 liters/minute (2.0 SCFM)										
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										
Construction (3)	Hardcoat Aluminum SS Fasteners										

1. Precision specifications are dependent on quality of mounting surfaces, payload weight, payload imbalance, mounting orientation, and external forces on the bearing. Please consult PI for application-specific parameters. Values shown are static (zero rotational velocity during measurement).
2. Velocity may be limited by encoder options or payload imbalance. See below or please contact PI for details.
3. Alternate tabletop materials, such as stainless steel, are available. Please contact PI for a quote.

Ordering Information

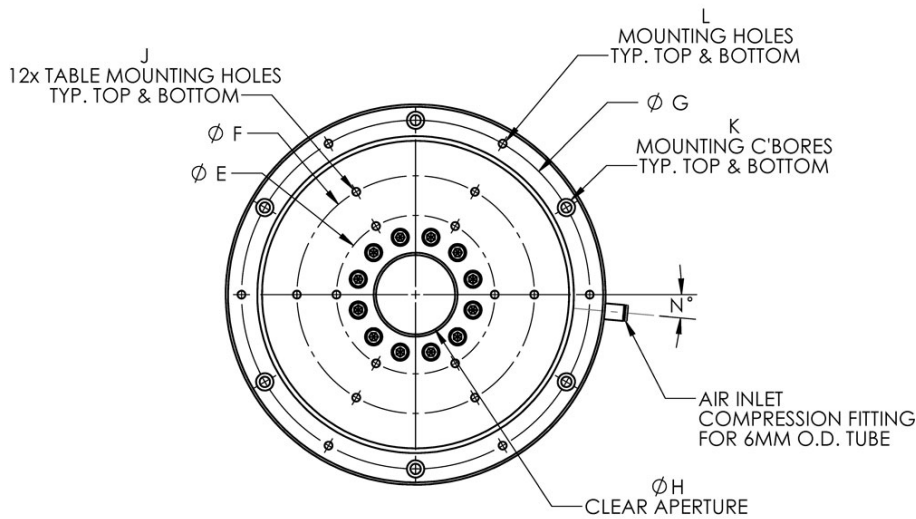
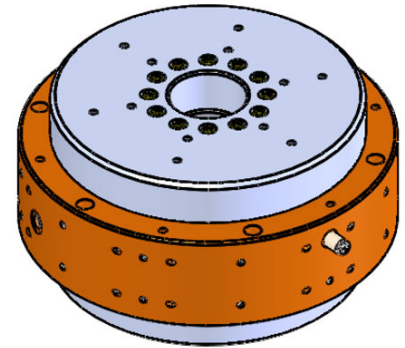
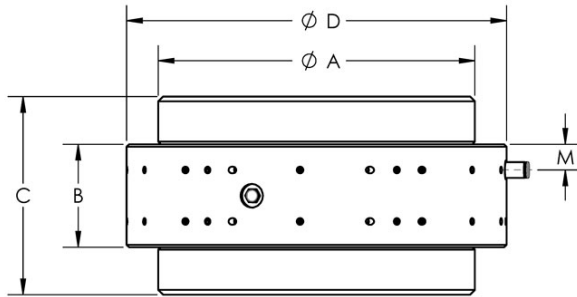


Ordering Example

Part# **A-602.038M** is a
Model: A-60 (PIglide RT rotary air bearing)
Size: 2 (75 mm diameter table)
Journal Length: 38 mm
Encoder: M (Supplied with mounting base)

Model	Table Diameter	Journal Length	Mounting Base / Encoder Option
A-60	1 = 50mm	025 = 25mm	(Blank) = No encoder or base
	2 = 75mm	038 = 38mm	
	3 = 100mm	025 = 25mm	M = Mounting Base (no Encoder)
		050 = 50mm	
	4 = 150mm	050 = 50mm	H = Digital incremental, RS-422 Output 4x Interpolation, 4 MHz Clock Includes Mounting Base
		090 = 90mm	
	5 = 200mm	065 = 65mm	
100 = 100mm			
7 = 300mm	075 = 75mm		
	175 = 175mm		

Dimensions (mm)

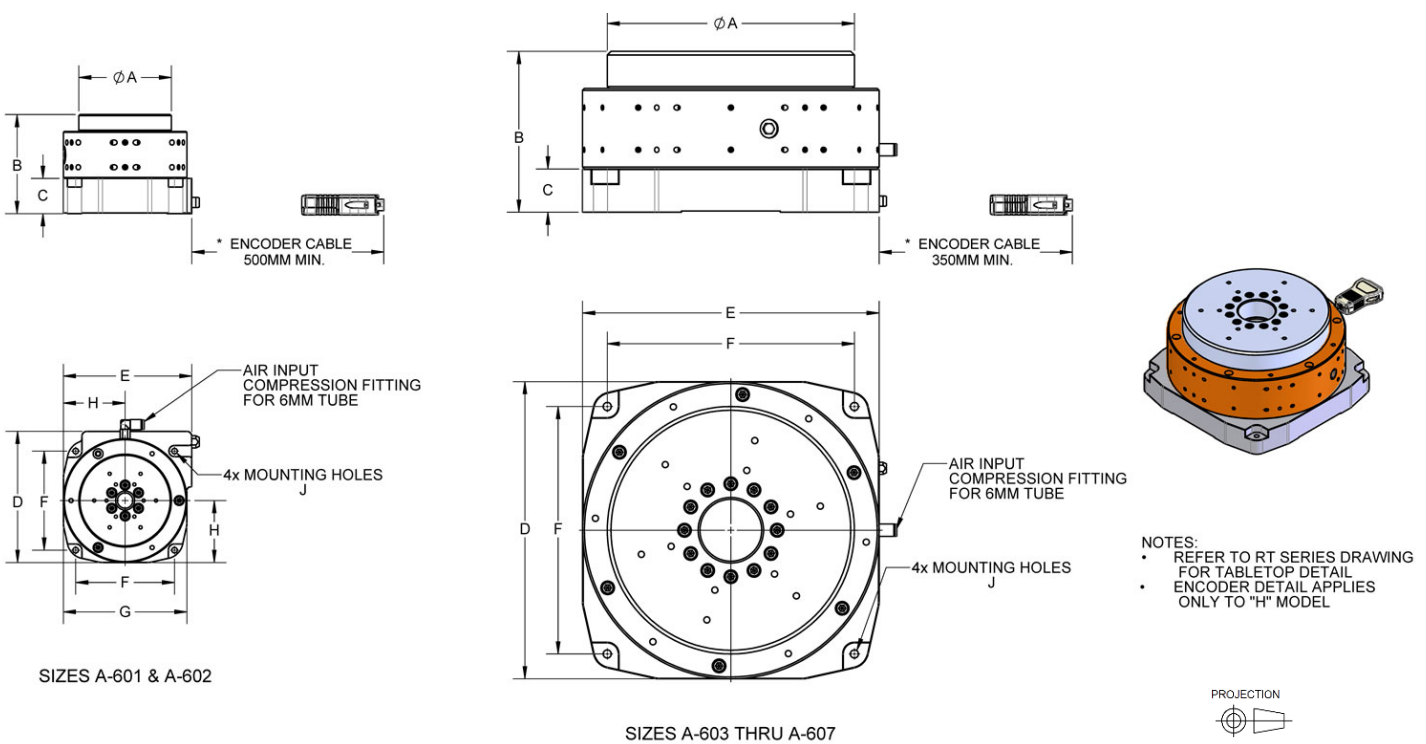


Model	A	B	C	D	E	F	G	H	J	K	L	M	N
A-601.025	50	25	50	70	25	40	60	8	M3x0.5, 6 DEEP	3x M3 SHCS, 30 LG. MIN	3x M3x0.5, 6 DEEP	6	30
A-602.038	75	38	65	100	30	50	87.5	12.5	M3x0.5, 6 DEEP	3x M4 SHCS, 40 LG. MIN	3x M4x0.7, 8 DEEP	9.5	30
A-603.025	100	25	55	125	50	75	112.5	25	M4x0.7, 8 DEEP	3x M5 SHCS, 30 LG. MIN	3x M5x0.8, 10 DEEP	6	30
A-603.050	100	50	80	125	50	75	112.5	25	M4x0.7, 8 DEEP	3x M5 SHCS, 50 LG. MIN	3x M5x0.8, 10 DEEP	12.5	30
A-604.050	150	50	95	185	75	125	170	40	M5x0.8, 10 DEEP	4x M6 SHCS, 50 LG. MIN	4x M6x1.0, 12 DEEP	12.5	68
A-604.090	150	90	135	185	75	125	170	40	M5x0.8, 10 DEEP	4x M6 SHCS, 90 LG. MIN	4x M6x1.0, 12 DEEP	22.5	68
A-605.065	200	65	125	240	100	150	220	60	M6x1.0, 12 DEEP	6x M6 SHCS, 70 LG. MIN	6x M6x1.0, 12 DEEP	16	5
A-605.100	200	100	160	240	100	150	220	60	M6x1.0, 12 DEEP	6x M6 SHCS, 100 LG. MIN	6x M6x1.0, 12 DEEP	23.5	5
A-607.075	300	75	150	355	150	250	330	75	M6x1.0, 12 DEEP	6x M8 SHCS, 80 LG. MIN	6x M8x1.25, 16 DEEP	17.3	5
A-607.175	300	175	250	355	150	250	330	75	M6x1.0, 12 DEEP	6x M8 SHCS, 150 LG. MIN	6x M8x1.25, 16 DEEP	58.5	5

Specifications - Optional Optical Encoder

Model	Units	A-601.xxxH	A-602.xxxH	A-603.xxxH	A-604xxxH	A-605.xxxH	A-607.xxxH
Resolution	μrad	192	133	100	66.4	50	33.5
Max Velocity	RPM	2500	2000	1500	1000	800	500
Output Signal	-	Incremental Digital RS-422 A-quadr-B, Differential, 4 MHz Clock					
Index Mark	-	1 / rev, 1 count wide, Synchronized to Output Signal					

Dimensions (mm), Models with "M" or "H" Base/Encoder Option



Model	A	B	C	D	E	F	G	H	J
A-601.025 M or H	50	65	26.5	82	74	55	70	35	M3 SHCS, 25 LG. MIN
A-602.038 M or H	75	80	28.5	106	104	80	100	50	M4 SHCS, 30 LG. MIN
A-603.025 M or H	100	65	25	135	125	100	-	-	M5 SHCS, 25 LG. MIN
A-603.050 M or H	100	90	25	135	125	100	-	-	M5 SHCS, 25 LG. MIN
A-604.050 M or H	150	100	27.5	185	185	150	-	-	M5 SHCS, 30 LG. MIN
A-604.090 M or H	150	140	27.5	185	185	150	-	-	M5 SHCS, 30 LG. MIN
A-605.065 M or H	200	130	35	240	240	200	-	-	M6 SHCS, 35 LG. MIN
A-605.100 M or H	200	165	35	240	240	200	-	-	M6 SHCS, 35 LG. MIN
A-607.075 M or H	300	155	42.5	355	355	300	-	-	M8 SHCS, 40 LG. MIN
A-607.175 M or H	300	255	42.5	355	355	300	-	-	M8 SHCS, 40 LG. MIN