

AIR SPINDLES

New Way[®] Air Spindles deliver a degree of precision not achievable with conventional rolling element bearings.

With only one moving part and zero contact, sub-micron synchronous error motion is standard and asynchronous error is almost entirely eliminated.

Unlike the complex magnetically suspended or high-pressure oil lubricated systems common to other precision spindle designs, New Way air spindles suspend the rotor on a stiff layer of compressed air, providing frictionless motion without the added complication, and since the components are never in contact, mechanical wear is completely eliminated. This allows for faster rotation speeds and high-precision rotary motion with less interruption or possible down time.

The New Way Air Spindles are very low flow and do not consume nearly the amount of air competing orifice air bearing technologies use. If airflow is somehow disrupted, gradual depressurization of the porous media allows for a soft landing that won't damage the bearing or rotor surfaces, unlike orifice air bearing spindles which often require a complete rebuild after such failures.

All air spindles come in a variety of sizes and stator configurations to accommodate an array of rotary applications. In addition to our standard spindle designs, New Way[®] is happy to work with you on your custom design as well. Contact New Way today to learn what we can do for you!

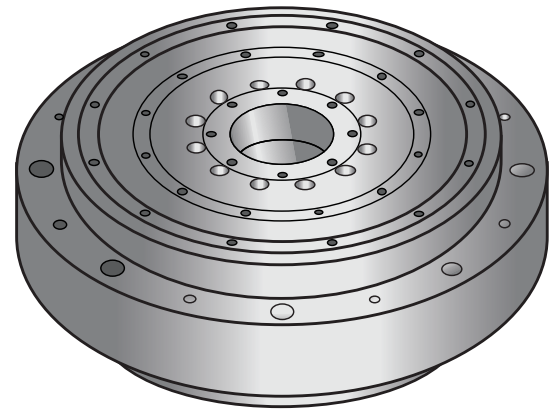


Figure 01 - Air Spindle (Isometric View)

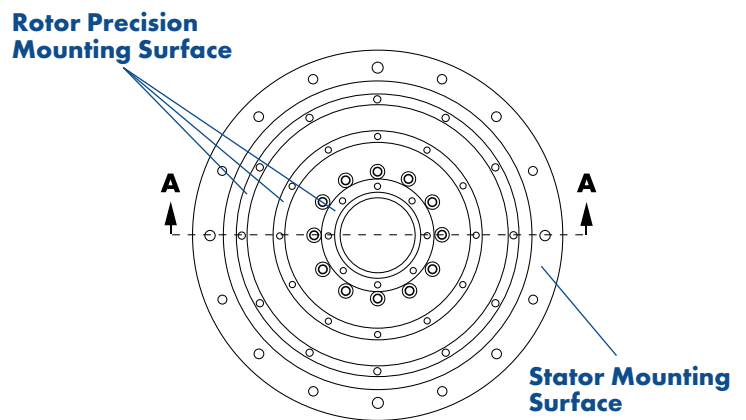


Figure 02 - Air Spindle (Front View)

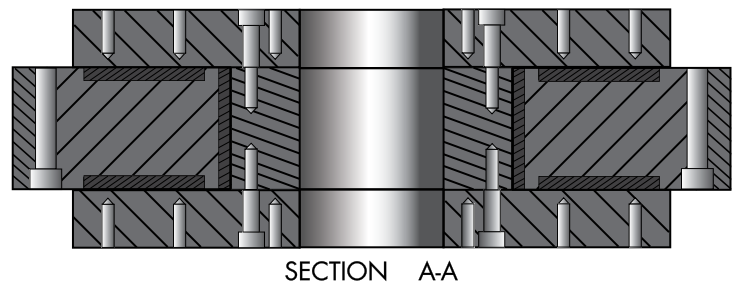


Figure 03 - Air Spindle (Section View)



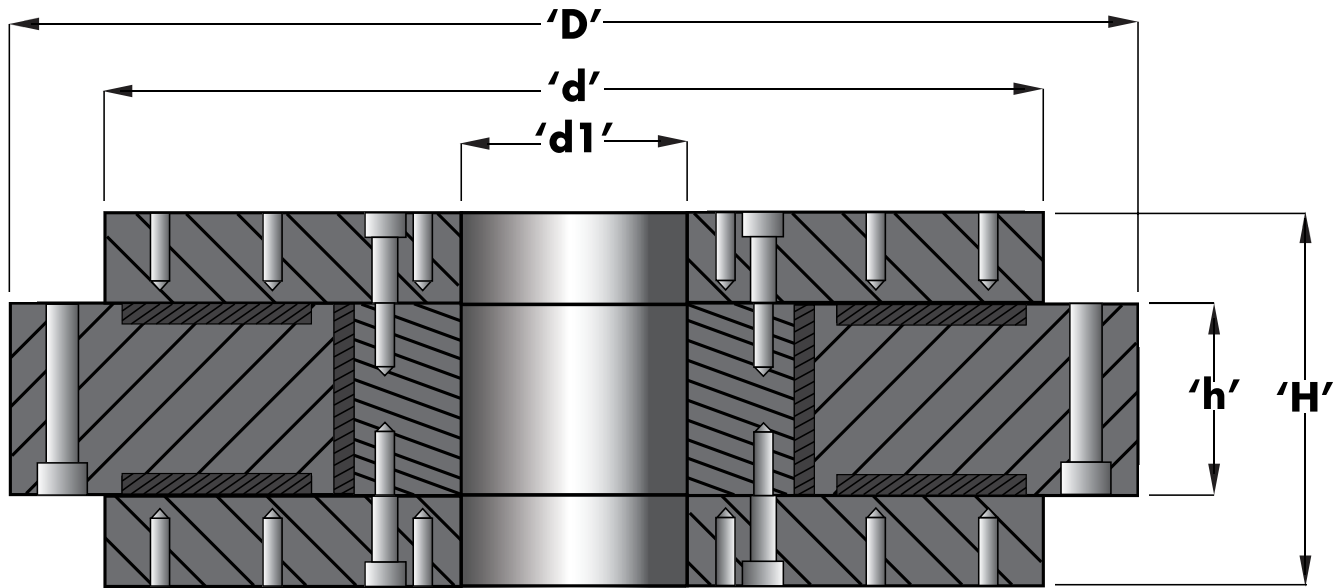


Figure 04 - Air Bearing Spindle Specification

Part #	'D'	'd'	'd1'	'H'	'h'	Total Mass	Rotor Mass
SS - 375	17.716" / 450mm	14.764" / 375mm	3.543" / 90mm	5.905" / 150mm	2.953" / 75mm	312.13 lbs / 141.62 kg	143.88 lbs / 65.28 kg
SS - 250	10.905" / 277mm	9.842" / 250mm	2.362" / 60mm	3.937" / 100mm	1.968" / 50mm	81.77 lbs / 37.10 kg	44.98 lbs / 20.41 kg
SS - 150	7.087" / 180mm	5.905" / 150mm	1.417" / 36mm	2.362" / 60mm	1.181" / 30mm	18.32 lbs / 8.31 kg	9.61 lbs / 4.36 kg
SS - 100	5.905" / 150mm	3.937" / 100mm	0.945" / 24mm	1.968" / 50mm	0.955" / 24.25mm	9.15 lbs / 4.15 kg	1.58 lbs / 3.48 kg
SS - 75	4.921" / 125mm	2.953" / 75mm	0.630" / 16mm	1.803" / 45.8mm	0.787" / 20mm	5.22 lbs / 2.37 kg	2.03 lbs / 0.92 kg
SS - 55	3.937" / 100mm	2.106" / 53.5mm	0.472" / 12mm	1.587" / 40.3mm	0.787" / 20mm	2.58 lbs / 1.17 kg	0.99 lbs / 0.45 kg

Part #	Input Pressure	Axial Load	Radial Load	Axial and Radial Error Motion	Max. Speed	Average No Load Flow	Moment of Inertia Metric (kg*m ²) / English (lbm*in ²)
SS - 375	60psi / 0.41 MPa	2373 lbs / 10554 (N)	563 lbs / 2502 (N)	15.7 μin / 0.4 (μM)	2616 (RPM)	100.0 SCFH / 47.2 NLPM	1.12 / 3837.23
SS - 250	60psi / 0.41 MPa	952 lbs / 4233 (N)	249 lbs / 1108 (N)	7.9 μin / 0.2 (μM)	3979 (RPM)	60.0 SCFH / 28.3 NLPM	0.151 / 515.99
SS - 150	60psi / 0.41 MPa	312 lbs / 1387 (N)	89 lbs / 396 (N)	3.9 μin / 0.1 (μM)	6586 (RPM)	51.0 SCFH / 24.1 NLPM	0.0115 / 39.30
SS - 100	60psi / 0.41 MPa	132 lbs / 585 (N)	49 lbs / 216 (N)	3.9 μin / 0.1 (μM)	9554 (RPM)	34.0 SCFH / 16.0 NLPM	0.00189 / 6.46
SS - 75	60psi / 0.41 MPa	64 lbs / 286 (N)	26 lbs / 117 (N)	3.9 μin / 0.1 (μM)	13274 (RPM)	28.0 SCFH / 13.2 NLPM	0.000611 / 2.09
SS - 55	60psi / 0.41 MPa	21 lbs / 91 (N)	9.2 lbs / 41 (N)	3.9 μin / 0.1 (μM)	21739 (RPM)	23.5 SCFH / 11.1 NLPM	0.000144 / 0.49

