

ASR1200 Series

Mechanical-Bearing Rotary Stage

ER16 collet accepts up to 5.8 mm O.D. tubing

Integral water jacket with scalable o-ring seal for wet cutting applications

Clear aperture for product feed-through

Threaded collet retainer enables rapid tooling changeover

Low inertia shaft for maximum acceleration

Direct-drive brushless motor and encoder

Maintenance-free frictionless rotary union

Aerotech's ASR1200 series is an extension of the successful ASR1000 direct-drive rotary stage. The ASR1200 adds an integral pneumatically-operated collet chuck for automated material handling and a sealed water jacket for wet cutting processes.

Integral Collet Design

The collet chuck on the ASR1200 accepts ER16¹ series collets. These collets are readily available in sizes that support tube diameters from 0.5 mm to 5.8 mm. The collet is retained with a threaded retaining cap that enables quick-changeover. The collet is configured in a “fail-safe” mode where full clamping force is applied when no air pressure is present. Air is delivered to the rotating collet assembly through a custom-designed frictionless, seal-less rotary union. This 100% noncontact rotary union design ensures a lifetime of maintenance-free operation. The combination collet chuck and rotary union also has significantly less friction and inertia than external assemblies created from discrete parts. This reduced inertia improves system performance by allowing higher peak acceleration and reducing position error during laser machining operations.

Note:

1. Requires Rego-Fix electropolished collet. ER16 supports up to 10 mm. Actual tube diameter is limited by fluid delivery system.



Fluid Delivery System

The ASR1200 includes a fluid delivery system and seal assembly to support wet cutting processes. The rear of the unit has a quick release fitting for fluid input and an NPT thread that allows the user to customize the length of the “water jacket” to match the length of the tube material. Inside the ASR1200 is an O-ring assembly that seals the tubing against the I.D. of the ASR1200 shaft. This seal assembly rotates with the tubing, eliminating troublesome torsion-induced errors that are present when working with thin-walled tubing or extremely flexible materials such as Nitinol.

Direct Drive

The ASR1200 series utilizes direct-drive brushless motor technology to maximize positioning performance. Direct-drive technology is optimized for 24/7 production environments because there are no brushes to replace and no gear trains or belts to maintain. Direct drive also provides quicker acceleration and higher top speeds than gear- or belt-driven mechanisms yielding higher total overall throughput.

The low maintenance and high throughput characteristics of the ASR1200 provide a stage that yields the lowest total cost of ownership while the integral water jacket and pneumatic collet provide unmatched levels of integration and ease of use.



Replaceable O-ring seals are available to support wet cutting of 0.5 mm to 5.8 mm tubing.

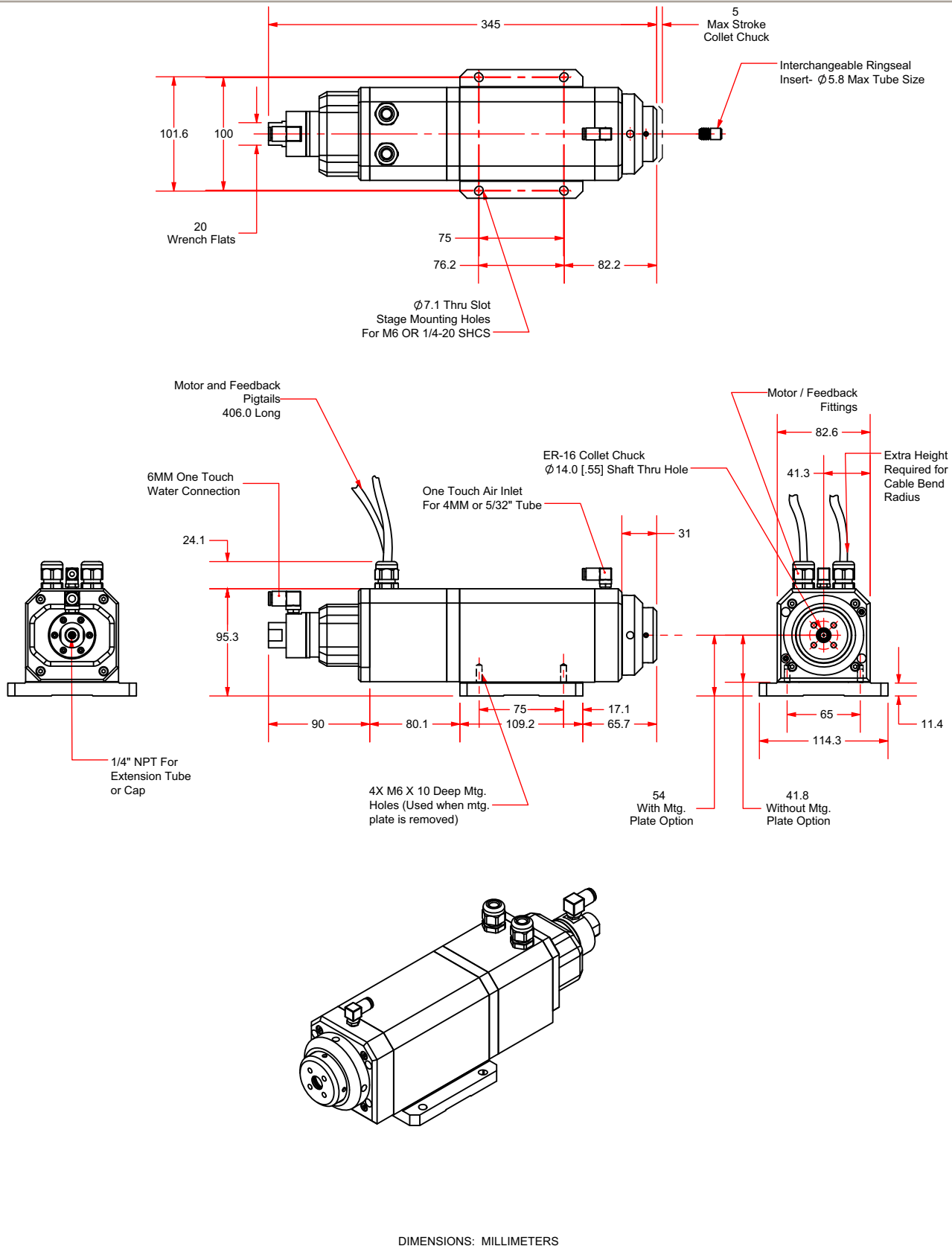
ASR1200 Series SPECIFICATIONS

ASR1200 Series		
Total Travel	±360° Continuous	
Collet Type ⁽¹⁾	ER16	
Maximum Aperture	5.8 mm (Water Jacket Limited)	
Drive System	Direct-Drive Brushless Servomotor	
Feedback	2048 Cycles/Rev; Analog Output Encoder (STD)	
Maximum Rotary Speed ⁽²⁾	600 rpm	
Accuracy	±72.8 μrad (±15 arc sec)	
Repeatability	±14.6 μrad (±3 arc sec)	
Inertia	15 x 10 ⁻⁵ kg-m ² (0.014 oz-in-s ²)	
Nominal Stage Weight	<5 N-m	
Maximum Load ⁽³⁾	3.0 kg (Axial); 2 kg (Radial); 3 N-m (Moment)	
Continuous Current	A _{pk}	10
	A _{rms}	7.1
Motor Type	BM250	
Bus Voltage	Up to 320 VDC	
Pin/Collet Runout ⁽⁴⁾	<25 μm	
Material	Stage Body	Aluminum
	Collet Chuck	Stainless Steel
Finish	Stage Body	Stainless Steel
	Collet Chuck	Stainless Steel

Note:

1. Collet chuck accepts Rego-Fix ER collets manufactured to DIN6499 specifications only.
2. Maximum speed based on stage capability; maximum application velocity may be limited by system data rate, system resolution, and load.
3. Maximum loads are mutually exclusive. Loading limits are due to the collet chuck mechanism. Contact Aerotech directly if part load requirement exceeds specifications.
4. Measured TIR of precision gage pin chucked with an ultraprecision ER collet (DIN6499) 10 mm away from collet face with no load.
5. Collet chuck mechanism is normally-closed. Collet mechanism requires air to open collet chuck. Air supply must be dry (0° F dew point) oil-less air OR 99.99% pure nitrogen. Air or nitrogen must be filtered to 0.25 micron particle size or better.

ASR1200 Series DIMENSIONS



ASR1200 Series ORDERING INFORMATION

Ordering Example

ASR1200	-10	-HPD	-RE2048AS	-NC	-MP
Series	Drive Motor	Connector	Position Transducer	Collet Chuck	Options
	-10	-HPD -25D	-RE2048AS -RE5000AS	-NC	-MP -WRENCH

ASR1200 Series Direct-Drive Rotary Stage

ASR1200 Direct-drive rotary stage with integral pneumatic ER16 collet chuck, frictionless rotary union and water jacket

Drive Motor

-10 5 N-m peak, 1.95 N-m continuous direct-drive brushless motor

Connector

-HPD High power D connector for motor power and 25-pin D for feedback
-25D Dual 25-pin D connectors with bridged pins for motor power

Collet Chuck

-NC Normally-closed collet chuck

Position Transducer

-RE2048AS Incremental encoder with 2048 cycles per rev sinusoidal output signal
-RE5000AS Incremental encoder with 5000 cycles per rev sinusoidal output signal

Options

-MP Mounting plate with square bolthole pattern
-WRENCH Spanner wrenches for changing ER16 collets
RINGSEAL-xxxx O-ring seal assembly for wet cutting. Consult factory for supported sizes.

Accessories (ordered as separate line item)

ER16-1AA	ER16 collet, 0.5-1 mm I.D. DIN6499 AA
ER16-1-5AA	ER16 collet, 1-1.5 mm I.D. DIN6499 AA
ER16-2AA	ER16 collet, 1-2 mm I.D. DIN6499 AA
ER16-2-5AA	ER16 collet, 1.5-2.5 mm I.D. DIN6499 AA
ER16-3AA	ER16 collet, 2-3 mm I.D. DIN6499 AA
ER16-3-5AA	ER16 collet, 2.5-3.5 mm I.D. DIN6499 AA
ER16-4AA	ER16 collet, 3-4 mm I.D. DIN6499 AA
ER16-4-5AA	ER16 collet, 3.5-4.5 mm I.D. DIN6499 AA
ER16-5AA	ER16 collet, 4-5 mm I.D. DIN6499 AA
ER16-5-5AA	ER16 collet, 4.5-5.5 mm I.D. DIN6499 AA
ER16-6AA	ER16 collet, 5-6 mm I.D. DIN6499 AA
ER16-6-5AA	ER16 collet, 5.5-6.5 mm I.D. DIN6499 AA