



Direct-Drive Rotary Collet Stage **ASR1100**



Extreme throughput. Unrivaled reproducibility.

Aerotech's ASR1100 delivers industry-leading precision and dynamic performance in cylindrical tube-processing applications. Optimized for extremely high speeds and accelerations with outstanding cutting precision, ASR1100 improves part reproducibility and reduces unit costs for cylindrical medical components like stents, hypotubes and guidewires. Configure the stage with a Schaublin W12 dead-length collet chuck for high-precision tube advance-and-regrip processes, or use an ER16 collet for more variable workpiece diameter range. An optional wet-cut rotary union supports active fluid cooling, while the compact design maximizes multi-axis dynamic performance and simplifies system integration.

Key Applications

ASR1100 is ideal for applications that involve manufacturing or processing cylindrical parts, including:

- ◆ Laser micromachining & tube processing
- ◆ Stent & hypotube manufacturing
- ◆ Medical device manufacturing

KEY FEATURES:

- ◆ Performance-optimized design delivers **INCREASED THROUGHPUT & OUTSTANDING PRECISION**
- ◆ Low-inertia rotor & direct-drive motor for **HIGH ACCELERATION & DYNAMIC PERFORMANCE**
- ◆ Capable of speeds up to **3000 RPM**
- ◆ **PNEUMATIC COLLET CHUCK** is configurable for either **ER16 OR W12 COLLETS** for precise, convenient workholding
- ◆ Accommodates cylindrical workpieces with **DIAMETERS FROM 0.5–10 mm**
- ◆ Clear center aperture for workpiece feedthrough can accommodate both **FRONT & REAR TUBE LOADING**
- ◆ Configurable with **WET-CUT OPTION** for use with cutting fluid or coolant

ASR1100 SERIES SPECIFICATIONS

Mechanical Specifications	ASR1100
Travel	± 360° continuous
Accuracy - Uncalibrated ⁽¹⁾	± 73 µrad
Accuracy - Calibrated ⁽¹⁾	± 30 µrad
Bidirectional Repeatability ⁽¹⁾	± 15 µrad
Maximum Speed ⁽²⁾	3000 rpm (-HS) ⁽²⁾ 800 rpm (-SS)
Collet Type ⁽³⁾⁽⁴⁾	W12 (dead-length) or ER16
Tube Capacity	ER16: Ø 0.5–10 mm (-DCUT) Ø 0.5–5.8 mm (-WCUT) W12: Ø 0.3–8 mm (-DCUT) Ø 0.3–5.8 mm (-WCUT)
Maximum Torque (Continuous)	2.3 N·m (-DCUT) 1.6 N·m (-WCUT)
Load Capacity - Axial ⁽⁵⁾	3.0 kg (-ER16) 2.0 kg (-W12)
Load Capacity - Radial ⁽⁵⁾	2.0 kg (-ER16) 0.5 kg (-W12)
Load Capacity - Moment ⁽⁵⁾	3 N·m (-ER16) 0.75 N·m (-W12)
Rotor Inertia (Unloaded)	0.00052 kg·m ² (-ER16) 0.00030 kg·m ² (-W12)
Stage Mass	4.1 kg (-ER16) 3.7 kg (-W12)
Collet Runout ⁽⁶⁾	<25 µm
Minimum System Air Pressure ⁽³⁾	100 psig
Material	Anodized Aluminum & Stainless Steel

Notes:

1. Certified with the -PL2 metrology option.
2. Maximum speed based on stage capability. Requires selection of appropriate amplifier with sufficient voltage and current. When the stage is configured with the wet-cut option (-WCUT), the maximum speed for the -HS option is limited to 2000 rpm.
3. The ER16 collet mechanism is normally closed and requires air pressure to open. The W12 collet mechanism is normally open and requires air pressure to close. Aerotech recommends 99.99% pure nitrogen. Alternatively, compressed air can be used if it is dry and oil-free. Nitrogen or air must be filtered to 1 µm particle size or better. Aerotech's Collet and Gripper Filtration Kit is designed to achieve filtering and drying requirements.
4. ER collet chucks are designed to accept Rego-Fix ER collets manufactured to ISO 15488 / DIN 6499 specifications.
5. Maximum loads are mutually exclusive. Loading limits are due to the collet chuck mechanism. Contact factory if part load requirements exceed specifications.
6. Runout (TIR) specification is based on measurement of precision gage pin 10 mm away from the collet face.



ASR1100 ORDERING OPTIONS

Collet Style (Required)

-ER16 ER16 ultra-precision collet chuck

-W12 W12 dead-length collet chuck

Rotary Speed (Required)

-SS Standard speed (up to 800 rpm)

-HS High speed (up to 3000 rpm)

Cutting Configuration (Required)

-DCUT Dry-cutting configuration

-WCUT Wet-cutting configuration with fluid rotary union

Mounting Plate (Optional)

-MP Mounting plate

Metrology (Required)

-PL0 No metrology performance plots

-PL2 Metrology, calibrated, with performance plots

Integration (Required)

Aerotech offers both standard and custom integration services to help you get your system fully operational as quickly as possible. The following standard integration options are available for this system. Please consult Aerotech if you are unsure what level of integration is required or if you desire custom integration support with your system.

-TAS Integration - Test as system

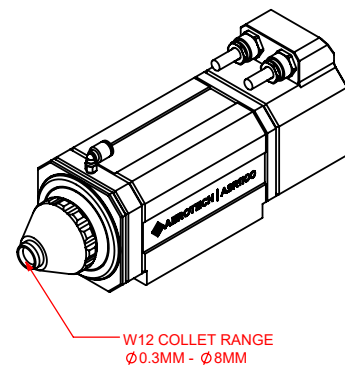
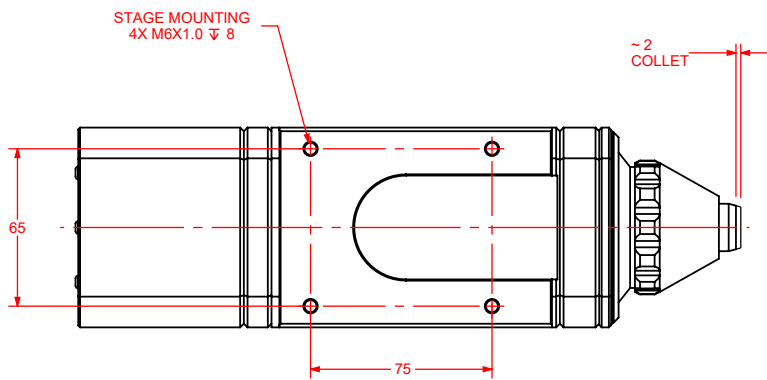
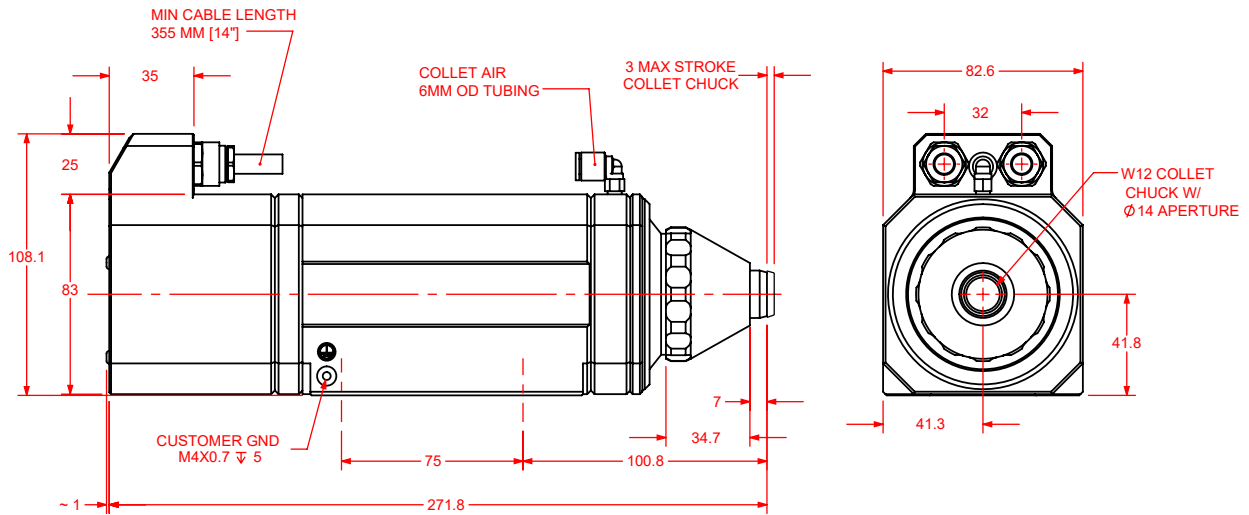
Testing, integration and documentation of a group of components as a complete system that will be used together (ex: drive, controller and stage). This includes parameter file generation, system tuning and documentation of the system configuration.

-TAC Integration - Test as components

Testing and integration of individual items as discrete components. This is typically used for spare parts, replacement parts or items that will not be used or shipped together (ex: stage only). These components may or may not be part of a larger system.



ASR1100 SERIES DIMENSIONS



DIMENSIONS: MILLIMETERS

