



## Direct-Drive Rotary Collet Stage **ASR1300**



### Tube Processing with Extreme Speed & Precision

Engineered and optimized for high-throughput tubular processing applications, ASR1300 is the fastest and most capable rotary collet stage available. Now able to accept tubes with up to 4 mm outer diameter, ASR1300 accommodates Levin Type-D dead-length collets—so your workpiece has virtually zero axial motion when the collet opens and closes. This helps to reduce errors in the laser-cutting of stents, hypotubes, catheters and similar devices. ASR1300 is available with high speed balancing allowing a maximum rated speed of 3000 rpm. With its high-torque, low-inertia design, it can accelerate from zero to 1500 rpm over a mere 90 degrees of travel, making ASR1300 considerably faster and more suitable than a spindle for tubular processing. Plus, ASR1300 is our lightest and most compact rotary collet stage, so it's ideal for integrating with high-throughput tube processing machines.

### Key Applications

The ASR1300 is the lightest, fastest and most capable direct-drive rotary collet stage available. It's ideal for the high-throughput manufacturing of medical devices and tubular products, such as:

- ◆ Coronary stents
- ◆ Peripheral vascular stents
- ◆ Neurovascular stents
- ◆ Hypotubes
- ◆ Coronary microcatheters
- ◆ Guidewires

### KEY FEATURES:

- ◆ Accepts tube **DIAMETERS FROM 0.1 mm TO 4 mm - NEW**
- ◆ Compatible with **TYPE-D COLLETS**
- ◆ Minimal collet runout - **LESS THAN 25 µm TIR**
- ◆ Optimized for **MAXIMUM ACCELERATION**
- ◆ Features a **CLEAR, THROUGH-BORE APERTURE & GUIDE SYSTEM** for tube feedthrough
- ◆ **ULTRA-COMPACT**, lightweight design simplifies integration & improves throughput
- ◆ Available with **OPTIONAL WATER COOLING** for maximum throughput

## ASR1300 SERIES SPECIFICATIONS

Mechanical Specifications		
Travel	±360° continuous	
Accuracy - Calibrated <sup>(1)</sup>	±12 µrad (±2.5 arc sec)	
Bidirectional Repeatability	±5 µrad (±1 arc sec)	
Maximum Speed <sup>(2)</sup>	3000 RPM (-HS) 1000 RPM (-SS)	
Maximum Acceleration <sup>(2)(3)</sup>	8000 rad/s <sup>2</sup> peak 3300 rad/s <sup>2</sup> continuous	
Maximum Torque (Continuous) <sup>(2)(3)</sup>	0.5 N·m	
Tube Capacity	Up to 4 mm Collet ID	
Load Capacity <sup>(4)</sup>	Radial	2.0 kg
	Axial	0.50 kg
	Moment	0.75 N·m
Rotor Inertia (Unloaded)	0.00013 kg·m <sup>2</sup>	
Stage Mass	2.8 kg	
Collet Type	Type D (Louis Levin & Sons™) Normally-Open	
Collet Runout <sup>(5)</sup>	<25 µm	
Minimum System Air Pressure <sup>(6)</sup>	100 psig	
Material	Hard Coat Aluminum; Stainless Steel; Polymer	
MTBF	10,000 Hours	

Notes:

1. When configured with -PL2 Metrology option.
2. Requires selection of appropriate amplifier with sufficient voltage, current, and encoder frequency.
3. Based on steady-state temperature rise of motor by 20°C from ambient with Water Cooling option. Higher temperatures are expected without water cooling.
4. Maximum loads are mutually exclusive. Loading limits are due to the collet chuck mechanism. Contact Aerotech directly if part load requirement exceeds specifications.
5. TIR of precision gage pin in an ultra-precision collet. Measured 3 mm away from collet face at 100 psig applied air pressure for ASR1300.
6. The ASR1300 contains a collet chuck mechanism that is normally-open. Collet mechanism requires air to close 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 1 micron particle size or better.

Electrical Specifications	
Drive System	Brushless, Direct-Drive Servomotor
Feedback System	1 Vpp, Incremental Noncontact Optical Encoder, 7200 lines/rev
Maximum Bus Voltage	320 VDC



## ASR1300 ORDERING OPTIONS

### Speed (Required)

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- SS Standard speed
- HS High speed

### Water Cooling (Optional)

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- WC Motor water cooling

### Connector (Required)

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- CN1 4-pin HPD motor and 25-pin D feedback connectors
- CN2 25-pin D motor and 25-pin D feedback connectors

### Mounting Plate (Optional)

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- MP1 Mounting plate - no water cooling
- MP2 Mounting plate - with water cooling

### Mounting Orientation (Required)

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- MT1 Normal mounting
- MT2 Left-side mounting
- MT3 Inverted mounting
- MT4 Right-side mounting

### Metrology (Required)

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- PL0 No metrology performance plots
- PL2 Metrology, calibrated with performance plots

### Integration (Required)

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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

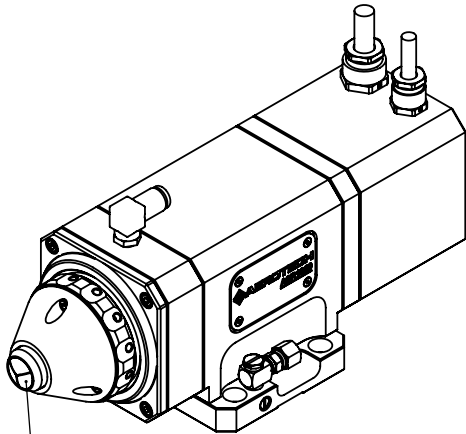
Testing and integration of individual items as discrete components. This is typically used for spare parts, replacement parts or items that will not be used or shipped together (ex: stage only). These components may or may not be part of a larger system.

### Accessories (to be ordered as separate line item)

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- Collet-D-CLTxx** Collet, Type-D, Part Sizes from 0.1 mm to 4 mm
- CGF** Collet and gripper filtration kit

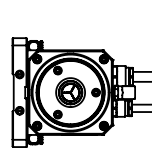
# ASR1300 SERIES DIMENSIONS



COLLET RANGE:  
 $\varnothing 0.1\text{MM} - \varnothing 4.0\text{MM}$

ASR1300  
 WATER COOLING (-WC)

MOUNTING ORIENTATION  
 INVERTED (-MT3)

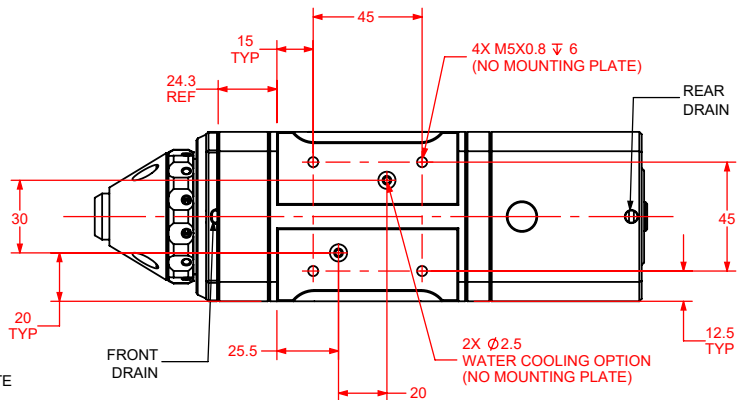
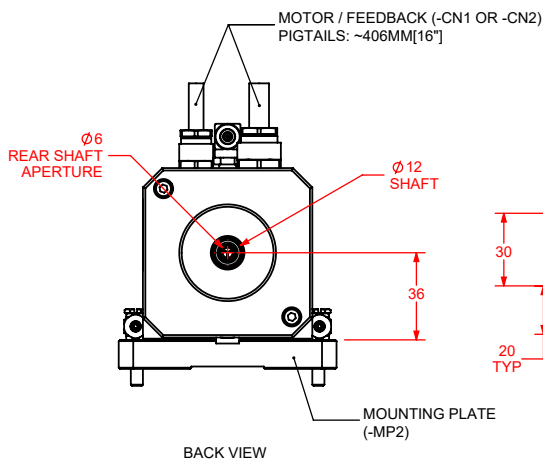
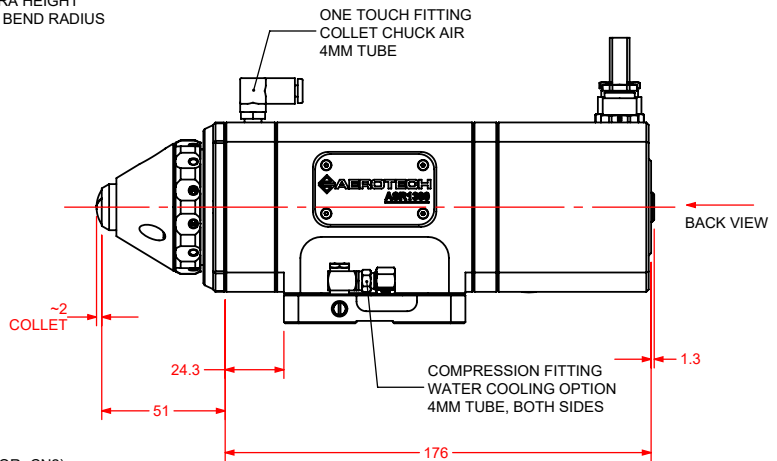
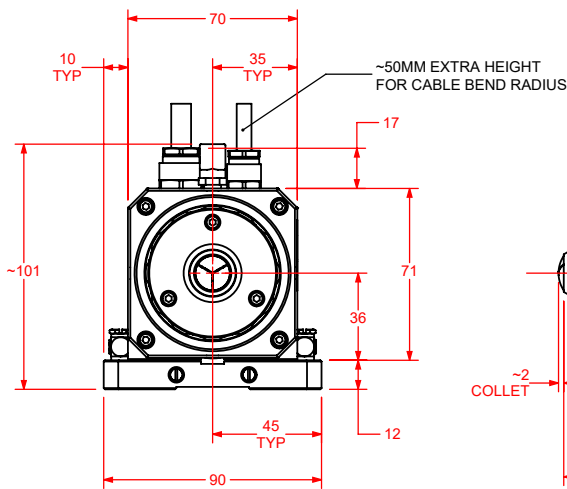
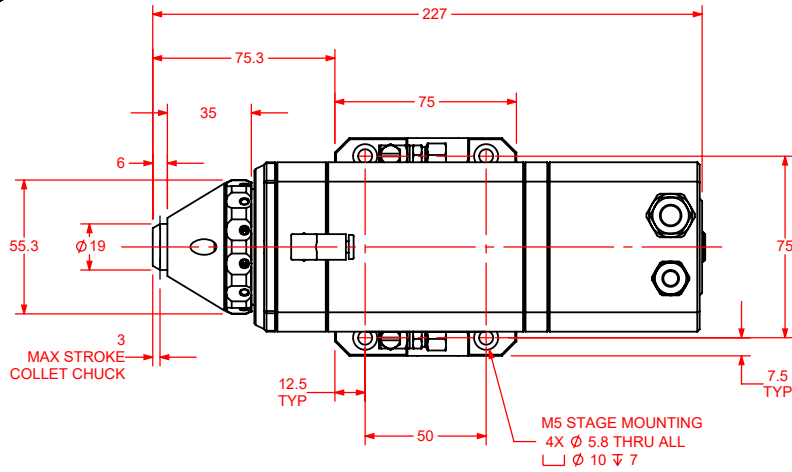


LEFT-SIDE (-MT2)



NORMAL (-MT1)

RIGHT-SIDE (-MT4)



DIMENSIONS: MILLIMETERS

