



Direct-Drive Rotary Collet Stage **ACS-LP**



Integrated Workholding in a Compact Design

ACS-LP rotary stages are equipped with an integral pneumatic ER collet chuck and clear aperture for automated material handling of a wide range of workpiece material types, diameters and applications. Available with ER8, ER25 or ER40 series collets, ACS-LP stages offer a combination of high speed, excellent velocity stability, low runout and a compact form factor. This makes the ACS-LP an excellent choice for simple, convenient integration into tube-processing motion platforms and systems.

Key Applications

ACS-LP stages are ideal for applications that require precisely holding and rotating a cylindrical workpiece, including:

- ◆ Medical device manufacturing
- ◆ Tubular material processing
- ◆ Stent, hypotube & guidewire cutting
- ◆ Sensor testing & inspection
- ◆ Laser cutting & laser micromachining
- ◆ Laser welding & joining
- ◆ Tube inspection & measurement

KEY FEATURES:

- ◆ Provides **AUTOMATED MATERIAL HANDLING** capability through integral pneumatic ER collet chuck
- ◆ Features a clear aperture for **CONVENIENT WORKPIECE FEED-THROUGH**
- ◆ Supports **EXTENSIVE TUBE DIAMETER RANGE** from 0.2 mm to 25 mm
- ◆ Minimizes working height & **SIMPLIFIES INTEGRATION** with low-profile design
- ◆ Offers **EXCELLENT VELOCITY STABILITY** with brushless, cogless direct drive motor & high resolution encoder
- ◆ Results in **HIGH PROCESS THROUGHPUT & LOW TOTAL COST** of ownership

ACS LP SERIES SPECIFICATIONS

Specifications	ACS100LP	ACS150LP	ACS200LP
Travel	±360° Continuous		
Collet Option ⁽¹⁾	ER8/MicroBore	ER25	ER40
Aperture-ER8/MicroBore	5 mm ER, 0.9 mm MicroBore		
Aperture-ER25	N/A	16 mm	N/A
Aperture-ER40	N/A		25 mm
Maximum Torque (Continuous)	0.64 N·m	2.36 N·m	5.99 N·m
Bus Voltage	Up to 340 VDC		
Max Speed ⁽²⁾	1500 rpm	600 rpm	
Accuracy-Uncalibrated ⁽³⁾	388 µrad (80 arc sec)		
Accuracy-Calibrated ⁽³⁾	29.1 µrad (6 arc sec)	48.5 µrad (10 arc sec)	
Repeatability ⁽³⁾	14.6 µrad (3 arc sec)	19.4 µrad (4 arc sec)	
Max Load-ER8/MicroBore ⁽⁴⁾	1.5 kg (Axial); 0.5 kg (Radial); 0.75 N-m (Moment)		
Max Load-ER25 ⁽⁴⁾	10 kg (Axial); 5 kg (Radial); 6 N-m (Moment)		
Max Load-ER40 ⁽⁴⁾	15 kg (Axial); 10 kg (Radial); 12 N-m (Moment)		
Pin/Collet Runout ⁽⁵⁾	<25 µm		
Tilt Error Motion	48.5 µrad (10 arc sec)	97 µrad (20 arc sec)	
Inertia Unloaded	0.00038 kg·m ²	0.00242 kg·m ²	0.00843 kg·m ²
Total Mass	2.0 kg	4.3 kg	7.6 kg
Finish-Table	Hardcoat		
Finish-Stage	Black Anodize		

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. Repeatability and accuracy are dependent on encoder resolution. To achieve the listed specifications, encoder resolution must be 0.36 arc sec or less.
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. Measured TIR of precision gage pin chucked with an ultraprecision ER collet (DIN6499) 6 mm away from collet face with no load.
6. 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 1 micron particle size or better.

ACS MAXIMUM SPEEDS FOR ENCODER OPTION

Encoder Option	ACS100LP	ACS150LP	ACS200LP
-E1 / -E2 / -E3 / -E4	1500 rpm	600 rpm	600 rpm
-E5	800 rpm	300 rpm	300 rpm



ACS LP SERIES ORDERING INFORMATION

ACS100LP Mechanical-Bearing Direct-Drive Rotary Collet Stage

Chuck Style (Required)

- ER8 ER8 Ultra-Precision Collet
- ER8MB ER8 Micro-Bore Collet

Feedback (Required)

- E1 Incremental Encoder, 1 Vpp
- E2 Incremental Encoder, TTL, x5 Interpolation
- E3 Incremental Encoder, TTL, x10 Interpolation
- E4 Incremental Encoder, TTL, x25 Interpolation
- E5 Incremental Encoder, TTL, x50 Interpolation

Note: Digital output encoder signals are synthesized with a 16 MHz clock. Care must be taken to ensure that the encoder sample rate on the controller is at least 16 MHz or higher. Slower clock rates are available on request.

Wrench (Optional)

- WR Wrench for Changing Collet

Metrology (Required)

- PL1 Metrology, Uncalibrated with Performance Plots
- PL2 Metrology, Calibrated (HALAR) 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 that ship together. This is typically used for spare parts, replacement parts, or items that will not be used together. These components may or may not be part of a larger system.

Accessories (To Be Ordered As Separate Line Item)

- Collet-ER8-CLTxx** ER8 DIN6499AA Electropolished Collet, 0.5 mm to 5 mm part diameter sizes available
- Collet-ER8MB-CLTxx** ER8 DIN6499AA Electropolished Microbore Collet, 0.2 mm to 0.9 mm part diameter available
- CGF** Collet and Gripper Filtration Kit

ACS LP SERIES ORDERING INFORMATION

ACS150LP Mechanical-Bearing Direct-Drive Rotary Collet Stage

Motor (Required)

-M1 Low Current, -A Winding

Feedback (Required)

- E1** Incremental Encoder, 1 Vpp
- E2** Incremental Encoder, TTL, x5 Interpolation
- E3** Incremental Encoder, TTL, x10 Interpolation
- E4** Incremental Encoder, TTL, x25 Interpolation
- E5** Incremental Encoder, TTL, x50 Interpolation

Note: Digital output encoder signals are synthesized with a 16 MHz clock. Care must be taken to ensure that the encoder sample rate on the controller is at least 16 MHz or higher. Slower clock rates are available on request.

Rear Seal (Optional)

-SL Rear Seal

Wrench (Optional)

-WR Wrench for Changing Collet

Metrology (Required)

- PL1** Metrology, Uncalibrated with Performance Plots
- PL2** Metrology, Calibrated (HALAR) with Performance Plots

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Accessories (To Be Ordered As Separate Line Item)

Collet-ER25-CLTxx ER25 DIN6499AA Electropolished Collet, 0.5 mm to 15 mm part holding sizes available

CGF Collet and Gripper Filtration Kit

ACS LP SERIES ORDERING INFORMATION

ACS200LP Mechanical-Bearing Direct-Drive Rotary Collet Stage

Motor (Required)

-M1 Low Current, -A Winding

Feedback (Required)

- E1** Incremental Encoder, 1 Vpp
- E2** Incremental Encoder, TTL, x5 Interpolation
- E3** Incremental Encoder, TTL, x10 Interpolation
- E4** Incremental Encoder, TTL, x25 Interpolation
- E5** Incremental Encoder, TTL, x50 Interpolation

Note: Digital output encoder signals are synthesized with a 16 MHz clock. Care must be taken to ensure that the encoder sample rate on the controller is at least 16 MHz or higher. Slower clock rates are available on request.

Rear Seal (Optional)

-SL Rear Seal

Wrench (Optional)

-WR Wrench for Changing Collet

Metrology (Required)

- PL1** Metrology, Uncalibrated with Performance Plots
- PL2** Metrology, Calibrated (HALAR) with Performance Plots

Integration (Required)

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Accessories (To Be Ordered As Separate Line Item)

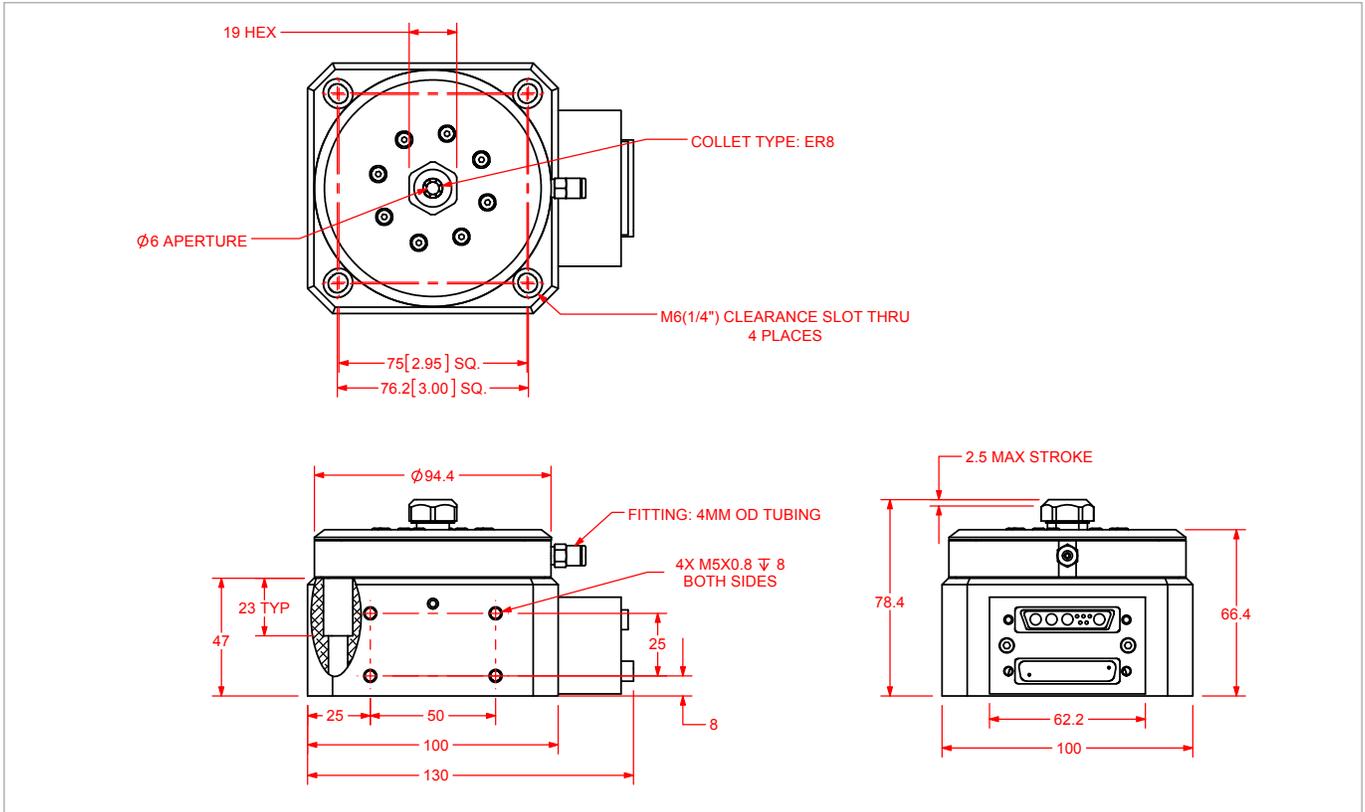
Collet-ER25-CLTxx ER40 DIN6499AA Electropolished Collet, 15.5 mm to 25 mm part holding sizes available

Note: ER40 collet sizes below 15.5 mm diameter are not supported. Use the ACS150LP if these sizes are required.

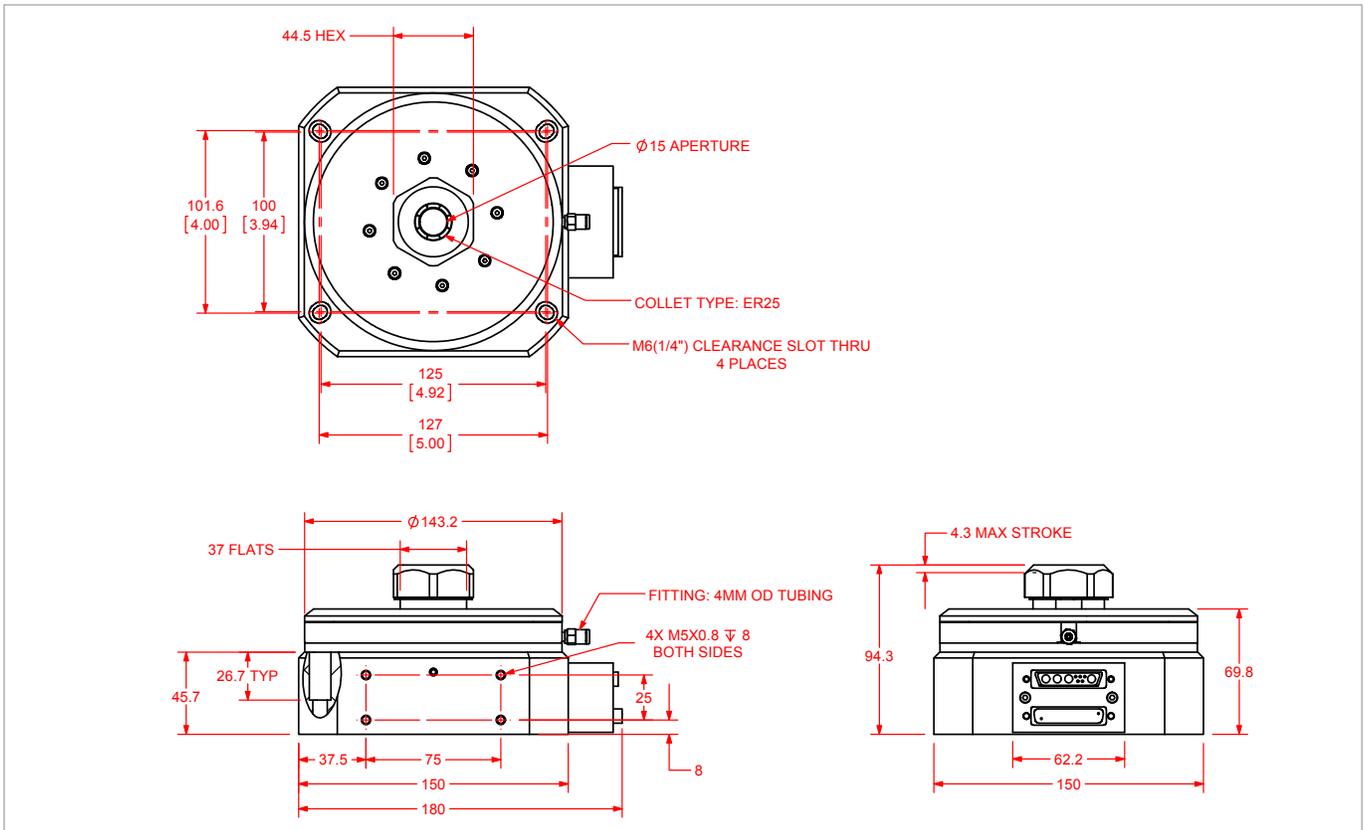
CGF Collet and Gripper Filtration Kit

ACS LP SERIES DIMENSIONS

ACS100LP



ACS150LP



ACS LP SERIES DIMENSIONS

ACS200LP

