Mechanical-Bearing
Direct-Drive Rotary Stage

ADRS

High Throughput, Low Maintenance Rotary Motion

ADRS stages combine direct-drive brushless technology with a low profile to increase throughput and minimize “stack-up” errors at your work point. Because they achieve quicker acceleration and higher top speeds than gear- or belt-driven mechanisms, ADRS stages yield higher overall throughput. Plus, with no brushes to replace and no gear trains or belts to maintain, they’re optimized for 24/7 production environments and result in lower total cost of ownership.

Key Applications

ADRS is ideal for 24/7 production environments that required precise, low-maintenance components, including:

- Rotary indexing and alignment
- Precision testing, measurement and inspection
- Sensor testing
- Semiconductor wafer processing
- Precision manufacturing and automation
- Laser microprocessing

KEY FEATURES:

- **MAXIMIZES POSITIONING PERFORMANCE** with direct-drive brushless motor technology
- Delivers **HIGH-TORQUE OUTPUT**
- Offers **OUTSTANDING VELOCITY STABILITY** due to cog-free slotless motor design
- Uses direct coupled, **HIGH-ACCURACY ROTARY ENCODER**
- Yields **HIGH THROUGHPUT & LOW TOTAL COST** of ownership
- Provides a **CLEAR APERTURE** that can be used for product feed-through or laser beam delivery
- **MINIMIZES** working height

ADRS SERIES SPECIFICATIONS

Specifications		ADRS100	ADRS150	ADRS200
Tabletop Diameter		95 mm	140 mm	190 mm
Aperture		6 mm	15 mm	26 mm
Maximum Bus Voltage		340 VDC		
Maximum Torque (Continuous)		0.48 N·m	2.36 N·m	5.99 N·m
Max Speed [1]		1500 rpm[6]	600 rpm	600 rpm
Accuracy[2]		388 µrad (80 arc sec)		
	Calibrated[3]	29.1 µrad (6 arc sec)		
Repeatability[2]		14.6 µrad (3 arc sec)		
Max Load[4]	**Axial**	7 kg	20 kg	40 kg
	Radial	3 kg	10 kg	20 kg
Axial Error Motion[5]		2 µm	5 µm	5 µm
Radial Error Motion[5]		3 µm	5 µm	5 µm
Tilt Error Motion		48.5 µrad (10 arc sec)		
Inertia	**Unloaded**	0.00038 kg-m^2	0.00264 kg-m^2	0.01069 kg-m^2
Total Mass		2.0 kg	4.5 kg	8.4 kg
Finish	**Tabletop**	Hardcoat		
	Stage	Black Anodize		

Notes:
1. Maximum speed is based on stage capability. Actual speed may depend on encoder resolution, load, amplifier bus voltage and motor.
2. Repeatability and accuracy are dependent on encoder resolution. To achieve the listed specifications, encoder resolution must be 0.36 arc sec or finer.
3. With -PL2 option.
4. Maximum loads are mutually exclusive.
5. For the ADRS100, error motion specifications are below 700 rpm. Above 700 rpm the max radial error is 5 microns. Errors measured 25 mm above the tabletop.
6. Max speed is limited to 1400 rpm with the -E10 feedback option.

ADRS SERIES ORDERING OPTIONS

ADRS Series Direct-Drive Rotary Stage

ADRS100	ADRS100 mechanical-bearing direct-drive rotary stage
ADRS150	ADRS150 mechanical-bearing direct-drive rotary stage
ADRS200	ADRS200 mechanical-bearing direct-drive rotary stage

Feedback (Required)

-E6	Incremental Encoder, 1 Vpp
-E10	Incremental Encoder, digital RS422, electrical resolution 1.02 arc sec (ADRS100) or 0.65 arc sec (ADRS150, ADRS200)

Other feedback options are available upon request. Contact Aerotech for more information.

Motor (Required)

-M1	Low current, -A winding

Other motor options are available upon request. Contact Aerotech for more information.

Tabletop (Required)

-TT1	Metric tabletop

Other tabletop options are available upon request. Contact Aerotech for more information.

Lower Seal (Optional)*

-SL	Lower Seal

*Note: Lower seal not available for ADRS100

Metrology (Required)

-PL1	Metrology, uncalibrated with performance plots
-PL2	Metrology, calibrated (HALAR) with performance plots

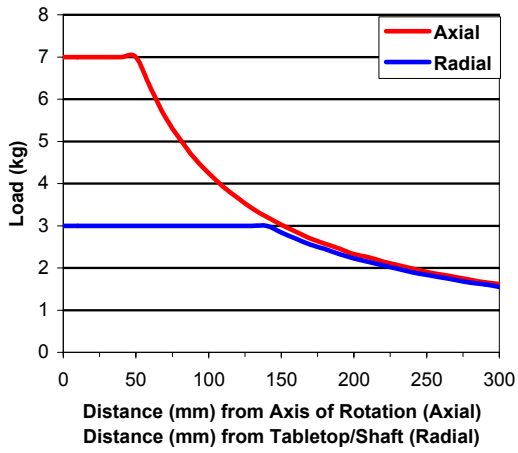
Integration (Required)

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.

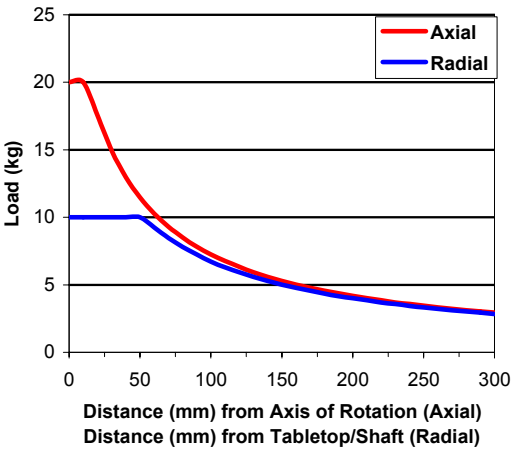
-TAS **Integration - Test as system**
Testing, integration, and documentation of a group of components as a complete system that will be used together (ex: drive, controller and stage). This includes parameter file generation, system tuning and documentation of the system configuration.

-TAC **Integration - Test as components**
Testing and integration of individual items as discrete components. 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.

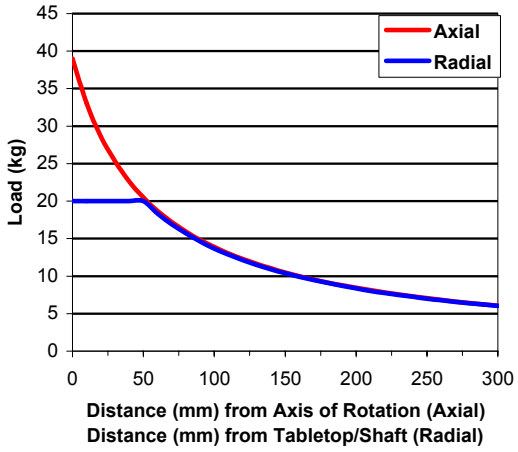
ADRS SERIES LOAD CAPABILITIES



Axial and Radial Cantilevered Load Capability (ADRS100)



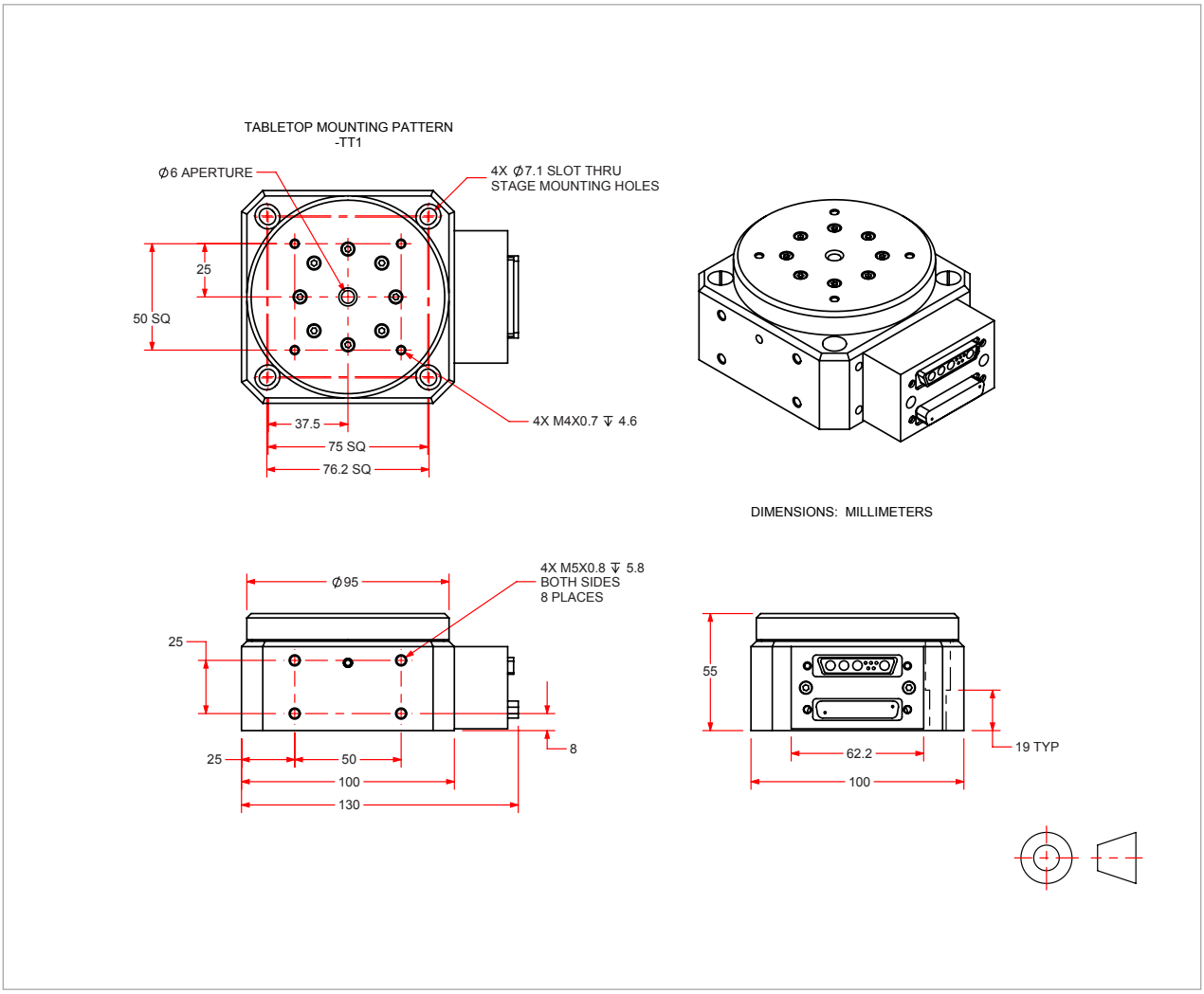
Axial and Radial Cantilevered Load Capability (ADRS150)



Axial and Radial Cantilevered Load Capability (ADRS200)

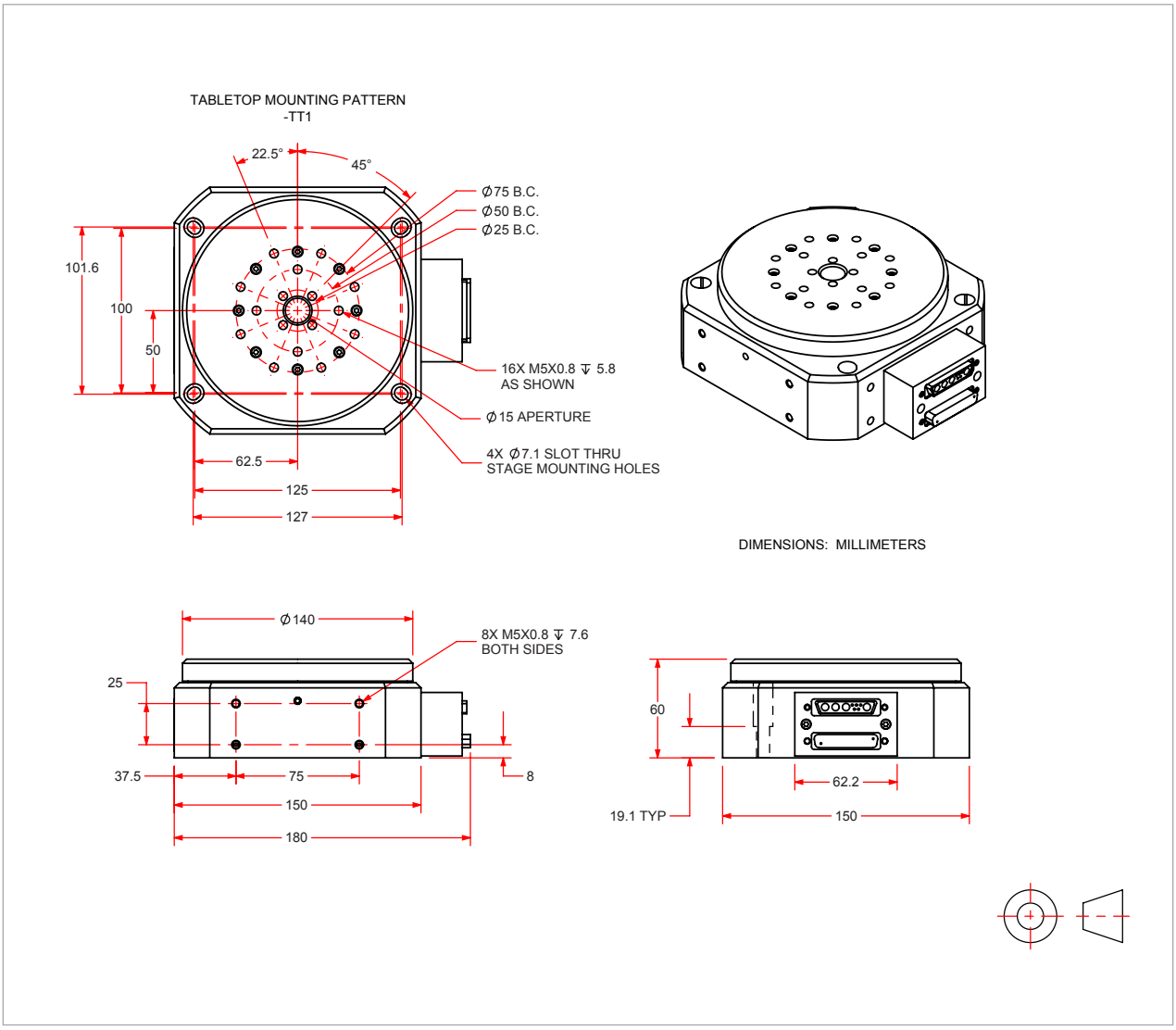
ADRS SERIES DIMENSIONS

ADRS100



ADRS SERIES DIMENSIONS

ADRS150



ADRS SERIES DIMENSIONS

ADRS200