

RST-E Series Datasheet



- Speed up to 60 °/s and torque up to 70 N-m
- Continuous 360° rotation stage
- Up to 300 kg centered load capacity
- 50.8 mm (2") or 101.6 mm (4") aperture
- Encoder position feedback with slip/stall detection and automatic recovery
- Designed for use with an X-MCC Series stepper motor controller or any 2-phase stepper motor controller
- With AutoDetect, the X-MCC controller configures its settings automatically for the connected peripheral
- Optional Ingress Protection versions available
- Custom versions available

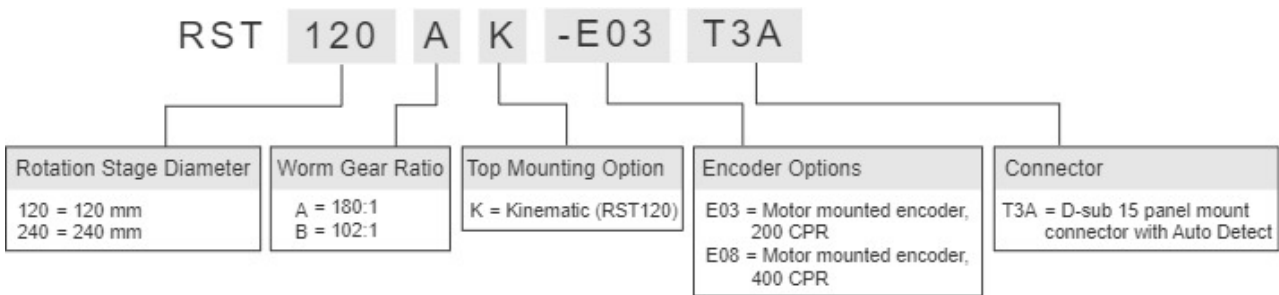
RST-E Series Overview

Zaber's RST-E Series products are motorized rotation stages with built-in motor encoders. Rated for up to 300 kg centered load capacity and up to 70 N-m of torque, they are ideal for high load, angular positioning applications. They have large diameter apertures for a variety of thru-bore applications. RST-E stages are designed for plug-and-play use with any of Zaber's controllers.

The stages are designed to connect directly to our X-MCC Series universal motor controllers, or they can be used with any 2-phase stepper motor controller through the panel mount DB15 connector. Set up is easy with AutoDetect. Once connected, the X-MCC controller will automatically detect and configure the RST-E.

For more information visit: <https://webstaging.izaber.com/products/rotary-stages/RST-E>

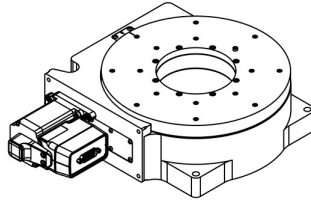
RST-E Series Part Numbering



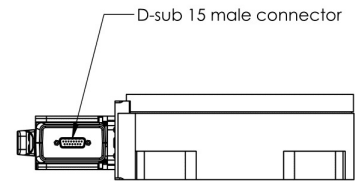
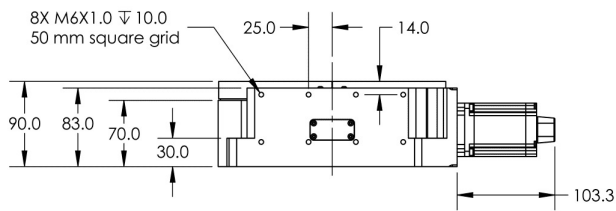
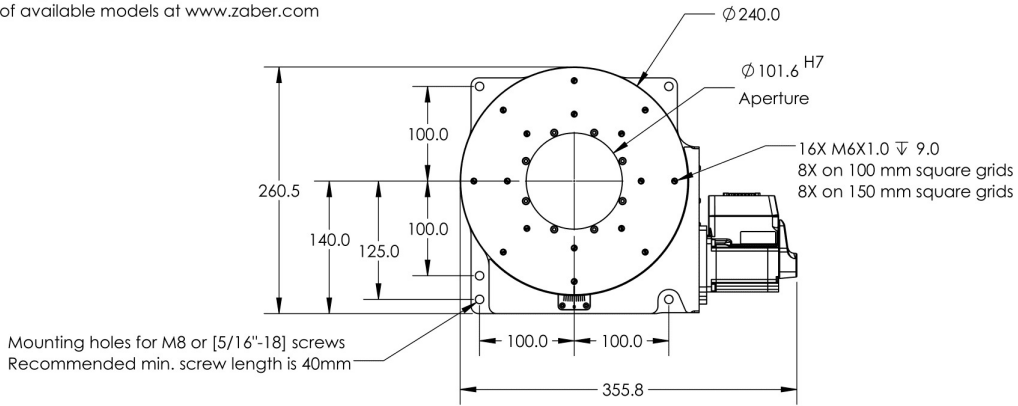
RST-E Series Drawings

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RST240-E Motorized Rotary Stage
 dimensions in mm



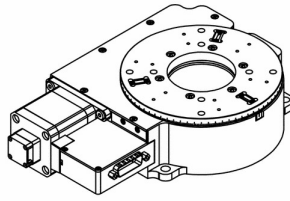
*See product page for complete list of available models at www.zaber.com



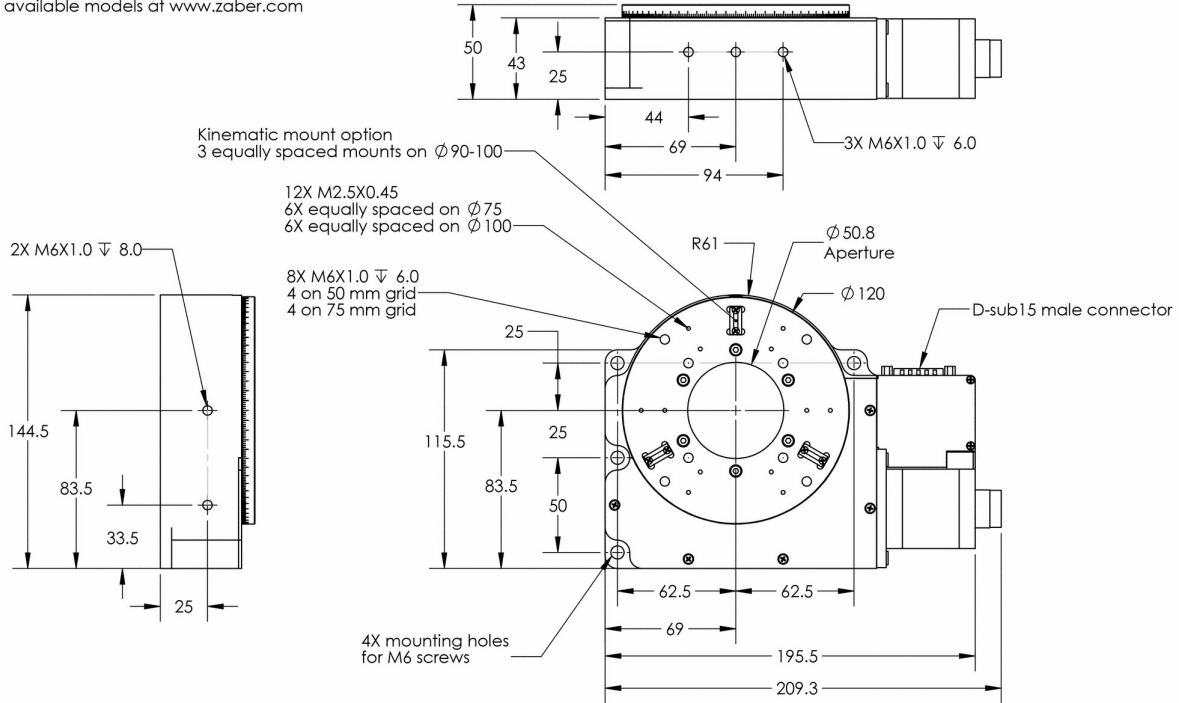
DWG-3727-801

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RST-E Motorized Rotary Stage
 dimensions in mm



*See product page for complete list of available models at www.zaber.com



DWG 1182 801

RST-E Series Specifications

Specification	Value	Alternate Unit
Built-in Controller	No	
Recommended Controller	X-MCC (48 V) Recommended	
AutoDetect	Yes	
Range	360°	
Backlash	< 0.05°	< 0.873 mrad
Encoder Type	Rotary quadrature encoder	
Motor Steps Per Rev	200	
Motor Type	Stepper (2 phase)	
Motor Connection	D-sub 15	
Default Resolution	1/64 of a step	
Mechanical Drive System	Precision Worm Gear	
Limit or Home Sensing	Magnetic home sensor	
Operating Temperature Range	0-50 °C	
Vacuum Compatible	No	
RoHS Compliant	Yes	
CE Compliant	Yes	

Part Number	Microstep Size (Default Resolution)	Accuracy (unidirectional)	Repeatability	Maximum Speed
RST120AK-E03T3A	0.00015625° (2.727 µrad)	0.16° (2.792000 mrad)	< 0.005° (< 0.087 mrad)	24°/s (4 rpm)
RST240B-E08T3A	0.00027574° (4.812 µrad)	0.075° (1.308750 mrad)	< 0.0015° (< 0.026 mrad)	60°/s (10 rpm)

Part Number	Minimum Speed	Speed Resolution	Encoder Resolution	Maximum Torque
RST120AK-E03T3A	0.000095°/s (1.658 µrad/s)	0.000095°/s (1.658 µrad/s)	200 CPR (800 states/rev)	
RST240B-E08T3A	0.000168°/s (2.932 µrad/s)	0.000168°/s (2.932 µrad/s)	400 CPR (1600 states/rev)	7000 N-cm (9912.8 oz-in)

Part Number	Maximum Continuous Torque	Maximum Centered Load	Maximum Cantilever Load	Guide Type
RST120AK-E03T3A	1000 N-cm (1416.1 oz-in)	500 N (112.1 lb)	2000 N-cm (2832.2 oz-in)	Preloaded Ball Bearing

RST240B-E08T3A	4500 N-cm (6372.5 oz-in)	3000 N (672.8 lb)	20000 N-cm (28322.4 oz-in)	Crossed-Roller Bearing
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Part Number	Stage Top Dimension	Radial Error Motion	Axial Error Motion	Tilt Error Motion
RST120AK-E03T3A	120 mm (4.724")			

RST240B-E08T3A	240 mm (9.449")	+/- 2.5 μ m (+/- 0.000098")	< 4 μ m (< 0.000157")	+/- 0.003° (+/- 52.3 μ rad)
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Part Number	Bearing Plane Offset	Angular Motion Per Motor Rev	Motor Rated Current	Motor Winding Resistance
RST120AK-E03T3A	27.1 mm (1.067")	2°	1500 mA/phase	2.4 ohms/phase

RST240B-E08T3A	30.75 mm (1.211")	3.5294°	4200 mA/phase	0.53 ohms/phase
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Part Number	Inductance	Maximum Angular Momentum	Motor Frame Size	Gear Ratio
RST120AK-E03T3A	6.6 mH/phase	0.4 kg-m ² /s	17	180:1

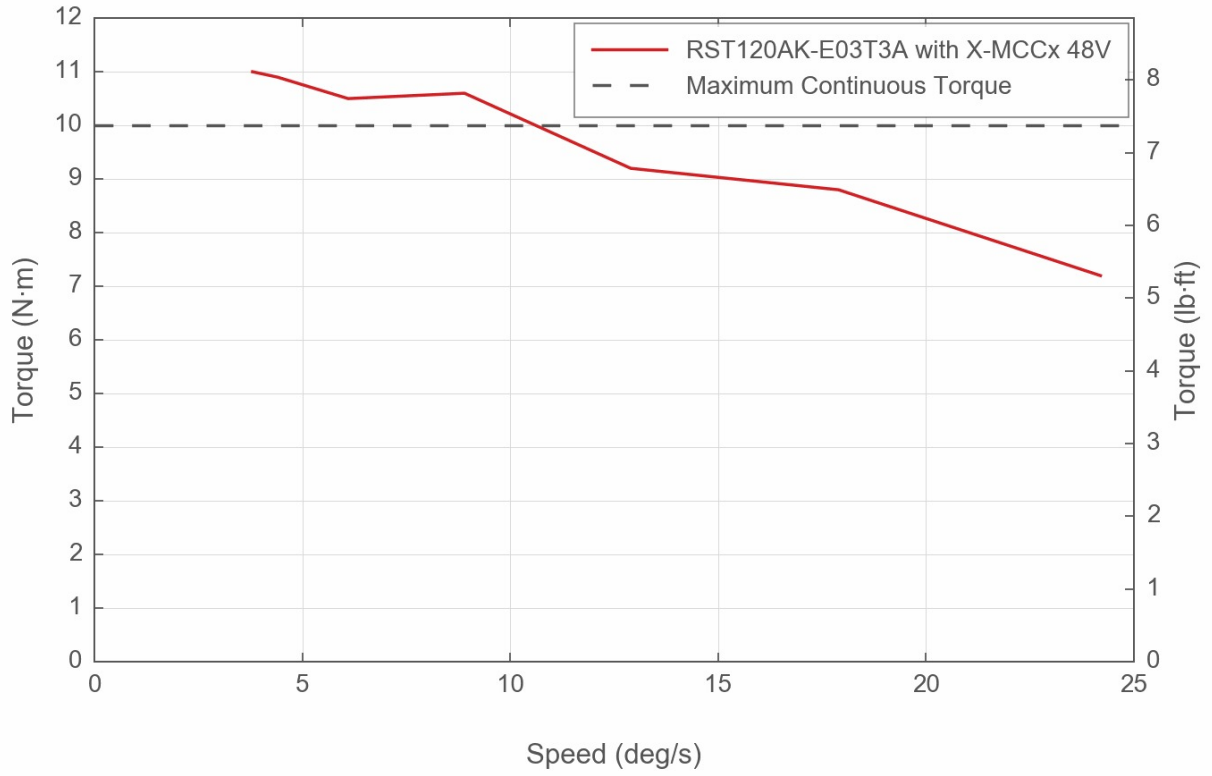
RST240B-E08T3A	2 mH/phase	1.6 kg-m ² /s	23	102:1
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Part Number	Mounting Interface	Weight
RST120AK-E03T3A	Kinematic with M2.5 and M6 threaded holes	2.41 kg (5.313 lb)

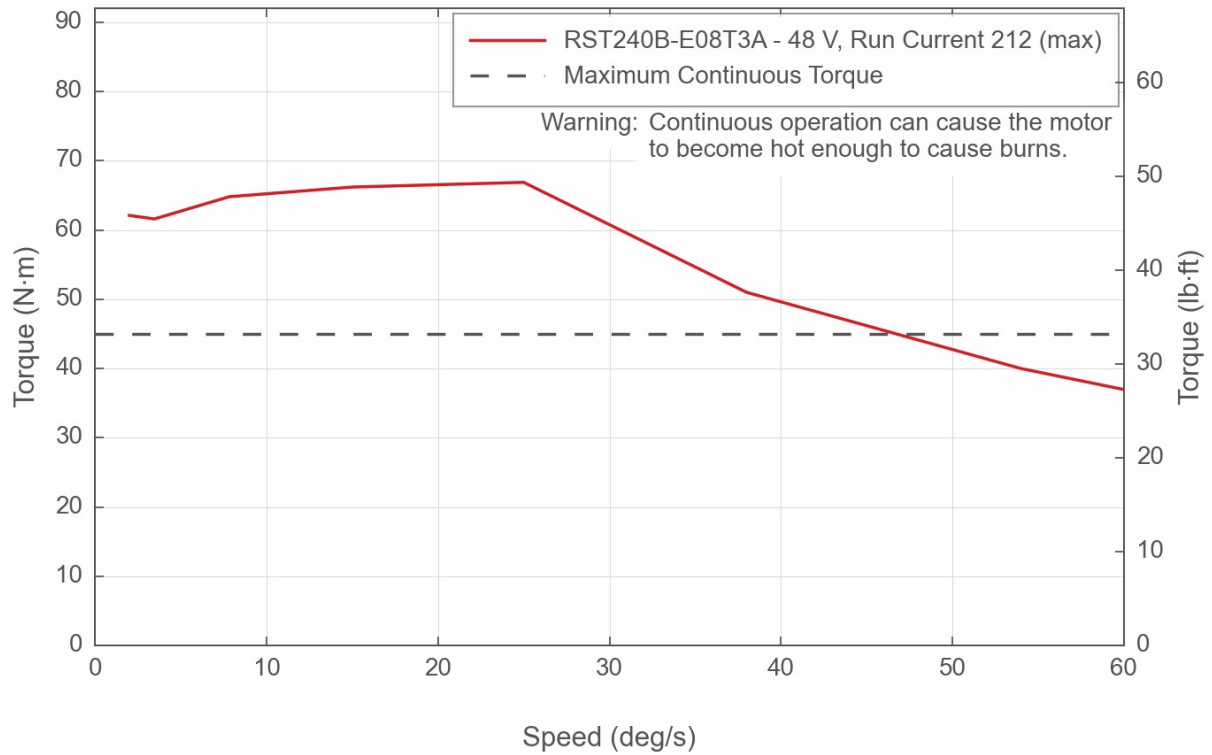
RST240B-E08T3A	M6 threaded holes and M8 mounting holes	14.5 kg (31.967 lb)
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RST-E Series Charts

Torque Speed Performance



Torque Speed Performance



Contact

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