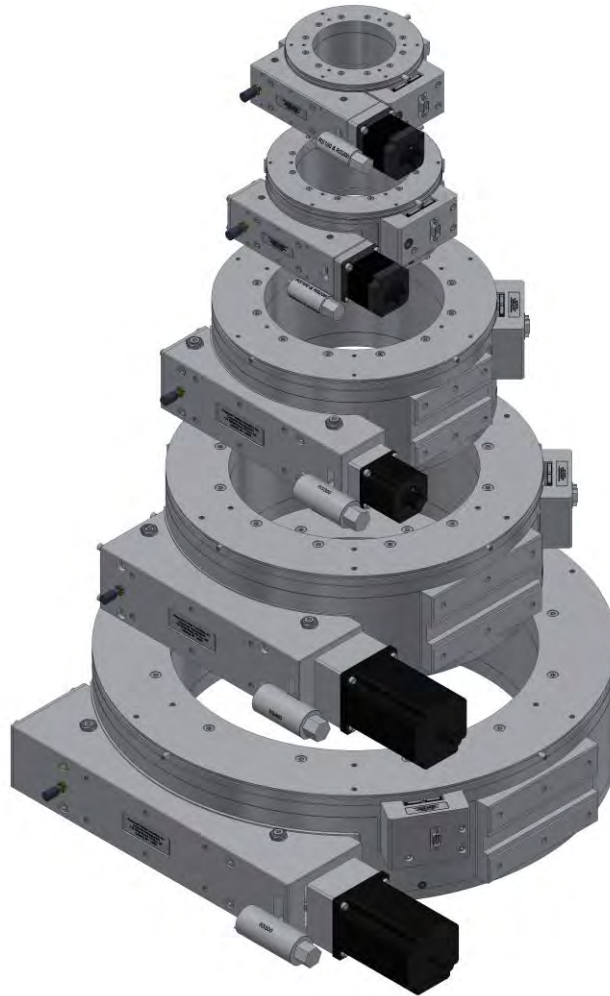


# Rotation Stages

Precision Mechanical Rotation Stages



**LARGE AXIAL AND RADIAL LOAD CAPACITIES**

**EXCEPTIONAL ACCURACY AND REPEATABILITY**

**CONTINUOUS 360 DEGREE ROTARY POSITIONING**

**DRIVEN BY A PRELOADED PRECISION WORM GEAR**

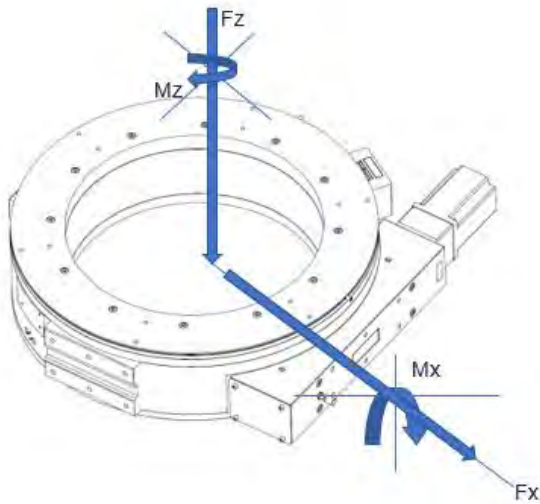
126 Ridge Rd, Lansing NY, 14882  
[www.adc9001.com](http://www.adc9001.com)

ADVANCED DESIGN  
CONSULTING USA, INC.

1-607-533-3531  
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## ROTATION STAGE SPECIFICATIONS

The Precision Mechanical Rotation Stages are precision rotation stages are built upon an industry leading, preloaded, duplexed angular contact bearing set. These stages not only give an exceptionally high running accuracy but allow for large radial and thrust loads as well. Each stage is driven by a precision ground worm gear set and a high resolution, high torque stepper motor. Backlash is reduced by employing a flexure style shimming technique to preload the worm and worm wheel.



## KEY FEATURES

- Precision Repeatability
- Large Axial Load Capacity
- Precision Ground Worm Gear
- Minimized Backlash

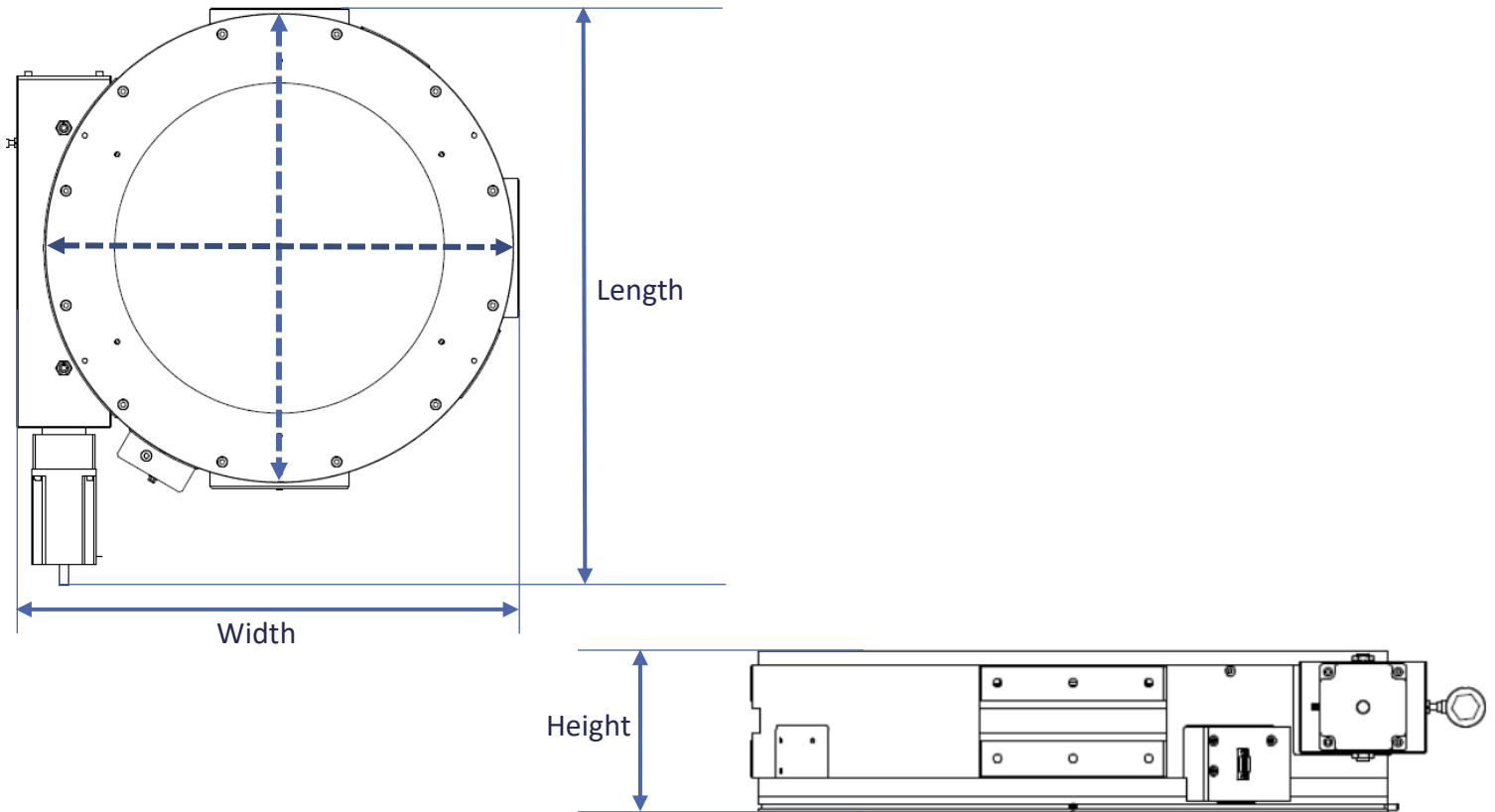
## LOAD CHARACTERISTICS

Description	Fx (N)	Fz (N)	Mx (Nm)	Mz (Nm)
RS100	221	351	26	16
RS200	412	650	62	39
RS300	1015	1627	237	148
RS400	1213	2008	395.5	239
RS500	2390	4050	1130	645

## MECHANICAL

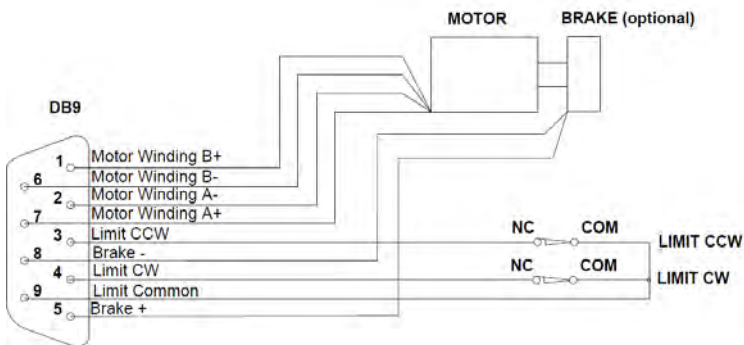
Model	100	200	300	400	500
Travel Range (°)	+/-360	+/-360	+/-360	+/-360	+/-360
Accuracy (μrad)	150	125	125	100	125
Gear Reduction	360:1	356:1	364:1	380:1	260:1
Repeatability (μrad RMS)	1.5	1.0	1.0	1.0	30
Runnout (μm)	7.5	7.5	10	15	15
Load Capacity Radial (kg)	23	39	103	123.5	243.5
Stiffness (μrad/Nm)	1.26	.556	.112	.051	.021
Mass (kg)	4.6	6.8	25.3	48	76
Optional Linear Encoder	Yes	Yes	Yes	Yes	Yes

## ROTATION STAGE SERIES DIMENSIONS AND INFORMATION



Model	100	200	300	400	500
Inner Diameter	100	140	215	300	400
Outer Diameter	165.1	209.5	340	450	625
Length	272	294.25	435	610	770
Width	191	239	367.5	500	670
Height	71.75	94.05	147	158.75	158

### ELECTRICAL CONNECTOR



### ELECTRICAL

Model	Description
Motor	2-Phase, 5-Phase Stepper; DC
Limit Switches	Mechanical, Normally Closed
Optical Encoder Type	Renishaw Tonic ( <a href="http://www.renishaw.com">http://www.renishaw.com</a> )

ADC uses a standard male DB-9 Connector for both the motor and limit switches.

## ROTATION STAGE ORDERING INFORMATION

Stage	Model	-A	-N	-B	-2PH	-G
Stage	Model	Air Type	Encoder	Brake	Motor	Gearbox
RS	-100	-A	-E	-B	-2PH	3:1
	-200	-HV	-N	-N	-5PH	to
	-300				-DC	100:1
	-400					ratio
	-500					

### Model Number

-100	100 Model
-200	200 Model
-300	300 Model
-400	400 Model
-500	500 Model

### Air Preparation Options

-A	Standard Air Stage
-HV	High Vacuum Air Stage, $10^{-7}$ torr

### Optical Encoder Options

-E	With Optical Encoder
-N	Without Optical Encoder

### Brake Options

-B	With Brake, 24VDC
-N	Without Brake

### Motor Options

-2PH	Standard 2 Phase Bi-Polar Stepper Motor
-5PH	5 Phase Stepper Motor
-DC	DC Motor

### Gearbox Option

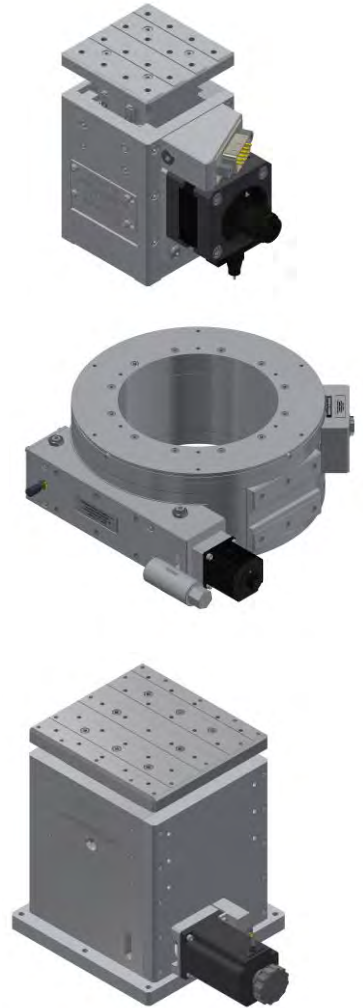
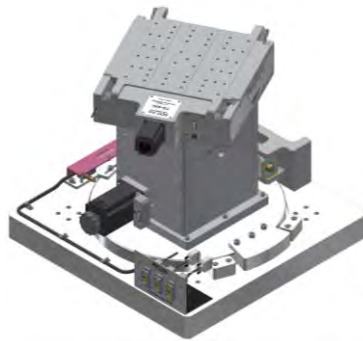
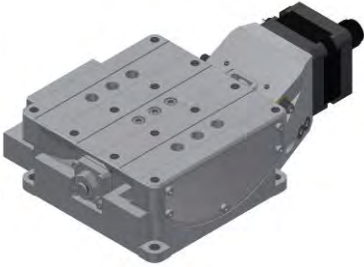
Available from 3:1 to 100:1 ratios

### Example Order

#### RS200-A-N-B-2PH

This is an order for a RS200 Precision Rotation Stage in air, with no encoder, with a brake, and a 2-phase motor.

## Similar ADC Products



Linear Stages	Lift Stages
DS210	DJ210
DS310	DJ310
DS410	DJ410
DS510	
Tilt Stages/ Goniometers	Rotation Stages (SHOWN)
TS-50	RS-100
TS-90	RS-200
TS-160	RS-300
TS-300	RS-400
TS-400	RS-500
Mounting Brackets	Big Jacks
MB200	BJ25-50
MB300	BJ25-100
MB400	BJ25-150
	BJ25-200

## Custom Complex Motion Systems

For custom complex motion systems, contact ADC at [adc@adc9001.com](mailto:adc@adc9001.com) or visit our website [www.adc9001.com](http://www.adc9001.com)



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