

RM-3 SERIES ROTARY STAGE

FEATURES

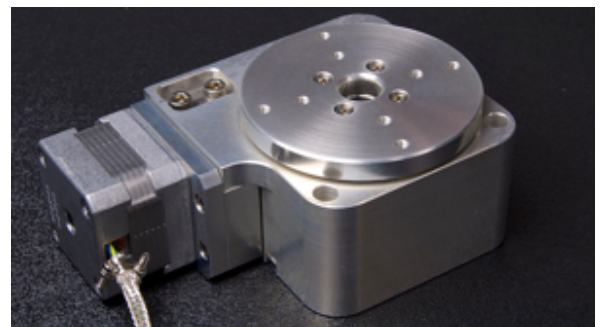
- Resolution: Up to 0.29 arc-sec
- Speed: Up to 360°/sec
- Compact Size
- Size 17 motor



RM-3 Design

The design takes advantage of a single preloaded crossed roller bearing for the table movement. This design approach eliminates the use of a dual bearing configuration thus improving on axial runout and wobble. The RM-3 rotary table utilizes a worm gear drive with available gear ratios of 90:1 and 45:1. The worm gear is preload to minimize the backlash in the gear train.

The RM-3 is available as a **vacuum compatible** rotary stage. The vacuum compatible version uses a special stepper motor that has all paint and oils removed. The worm gear and bearings use a high vacuum grease. The leads from the motor utilizes a Teflon insulation. All aluminum stage parts have a clear iridite finish.

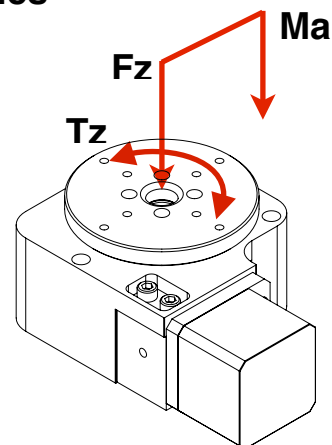


Specifications

Resolution	Stepper Motor: 0.29 arc-sec (90:1 gear ratio), 0.57 arc-sec (45:1 gear ratio) Servo Motor: 3.6 arc-sec (90:1 gear ratio), 7.2 arc-sec (45:1 gear ratio)
Accuracy	70 arc-sec
Max Speed	Stepper Motor: 30°/sec (90:1 gear ratio), 50°/sec (45:1 gear ratio) Servo Motor: 180°/sec (90:1 gear ratio), 360°/sec (45:1 gear ratio)
Unidirectional Repeatability	5 arc-sec
Max Payload Weight	20.4 kg (45 lbs)
Travel Range	360° Continuous
Encoder	Optical rotary encoder mounted to rear of motor, 1000 lines (4000 CPR) with Index (Optional, Standard with servo motor)
Limit Switches	None
Origin	Optical Home Switch (optional) Optical index mark on encoder (with encoder option)
Gear Ratio	90:1 or 45:1
Stage Weight	1.4 kg (3 lbs)
Material	Aluminum Alloy Construction
Finish	Black Anodize

Load Characteristics

Normal Load (Fz)	20.4 kg (45 lbs)
Moment Load (Ma)	13.5 Nm (10 lb-ft)
Max. Torque (Tz)	4.5 Nm (3.3 lb-ft)



Pin Assignment

Standard Stepper Motor Version

Motor

DB-9 Male	Description
1.	Phase A
2.	Phase A'
3.	Phase B
4.	Phase B'
5.	Phase A Center
6.	Phase B Center

Signals (Encoder Option)

HD-15 Female	Description
1.	N.C.
2.	N.C.
3.	N.C.
4.	Encoder Ground
5.	+5V Encoder Power
6.	Ch. A
7.	Ch. A-
8.	Ch. B
9.	Ch. B-
10.	Index +
11.	Index -

Motor Specifications

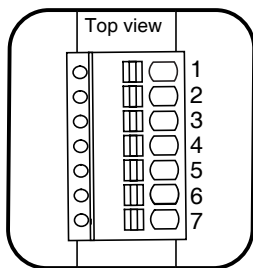
Step Size: 1.8°/step

Amps/Phase: 0.95

Resistance: 5.0 Ohm/Phase

Inductance: 3.1 mH/Phase

MDrive Stepper Motor Version



7-Pin Pluggable Terminal

Power and I/O

7-Pin Terminal	Description
1	I/O 1
2	I/O 2
3	I/O 3
4	I/O 4
5	Analog Input
6	Power GND
7	+24V Motor Power

The home switch is connected to I/O 1.
The home switch is wired normally closed.

Connected to 7-Pin Terminal

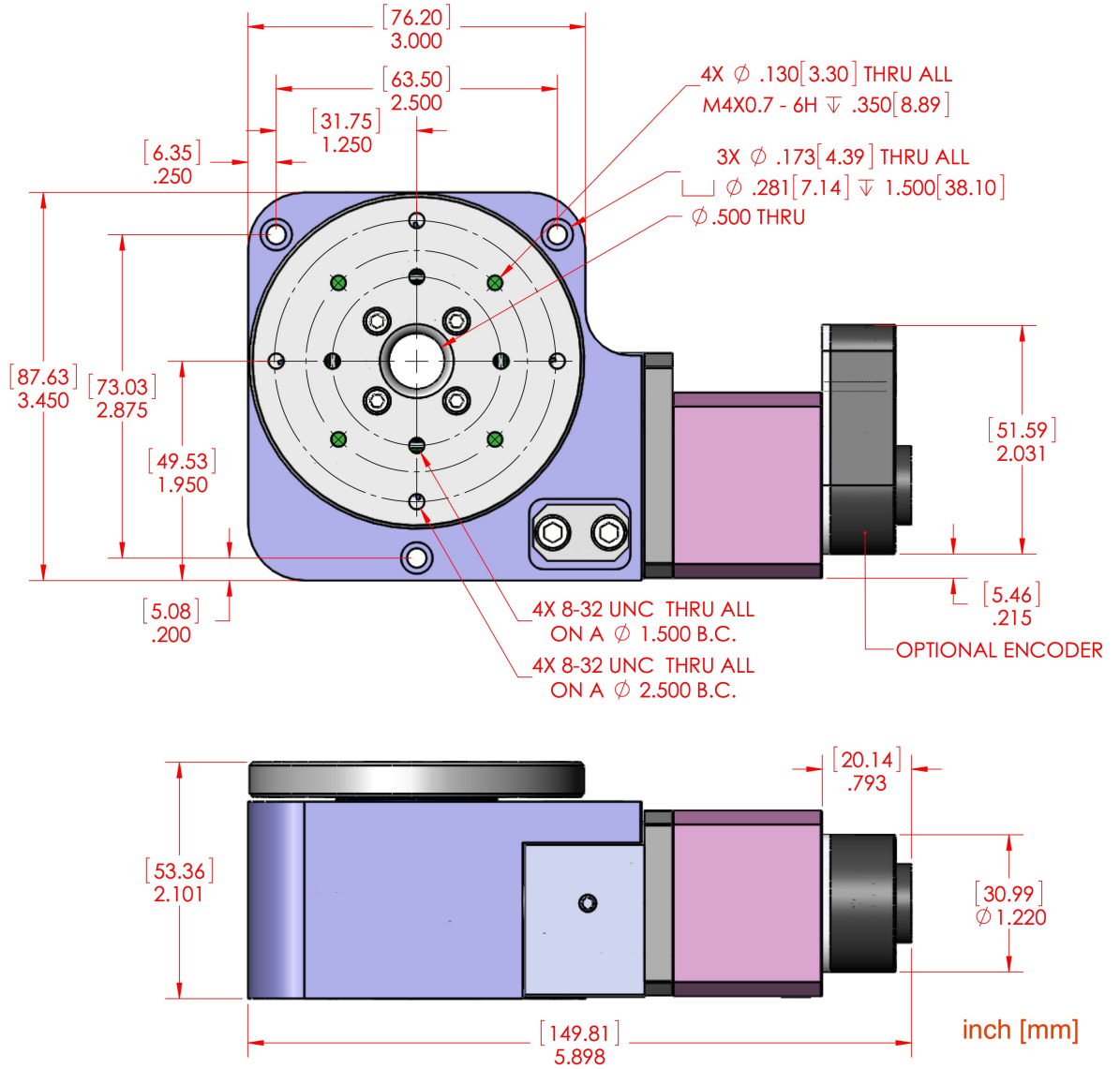
DC Jack, 2.1mm	Description
Center	+24 VDC
Outside	Power Ground

RS-422 Communications

10-Pin IDC	Description
1	TX+
2	TX-
3	RX+
4	RX-
5	Aux-Logic
6	RX+
7	RX-
8	TX-
9	TX+
10	COMM GND

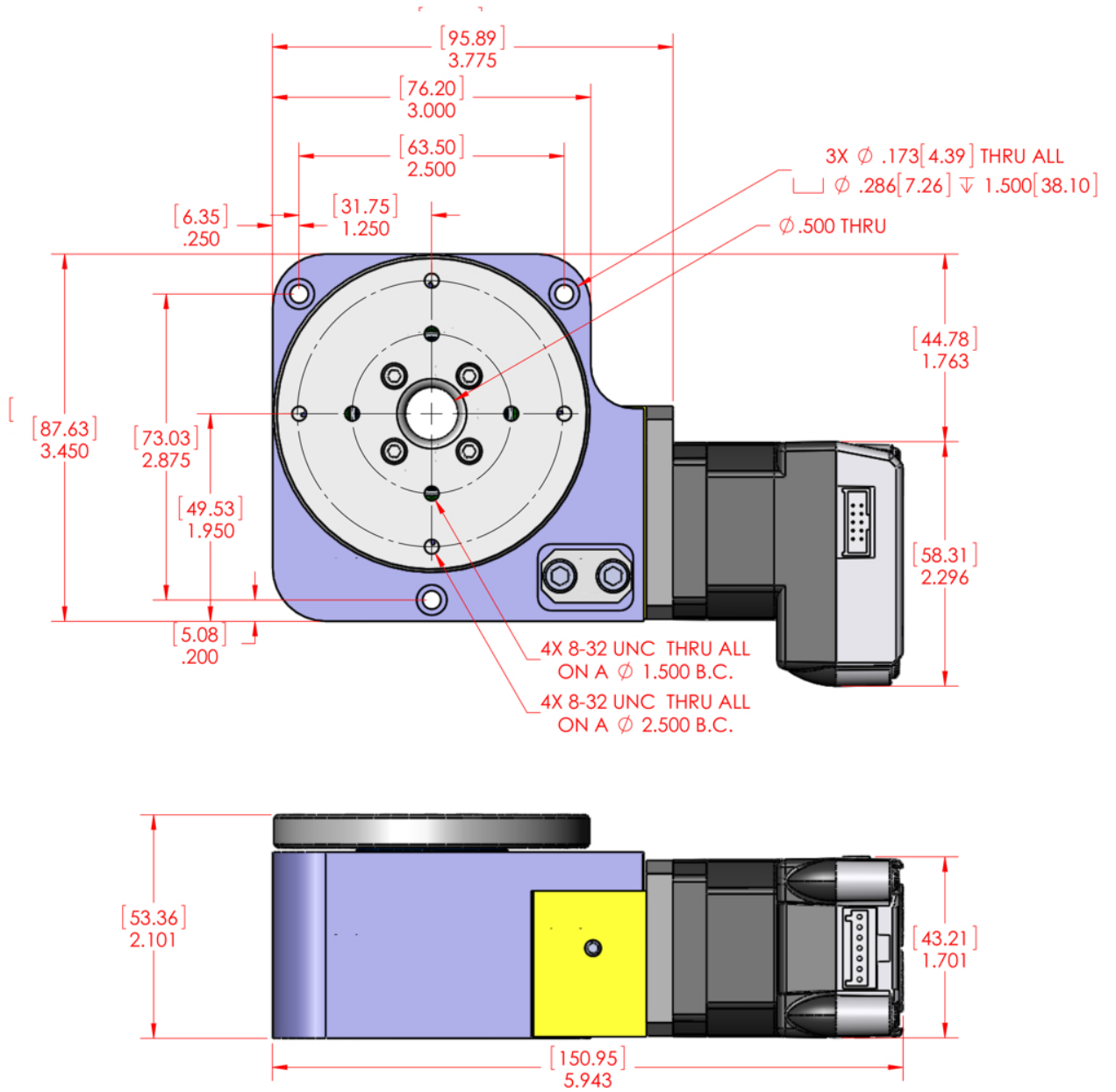
Dimensions

Stepper Motor



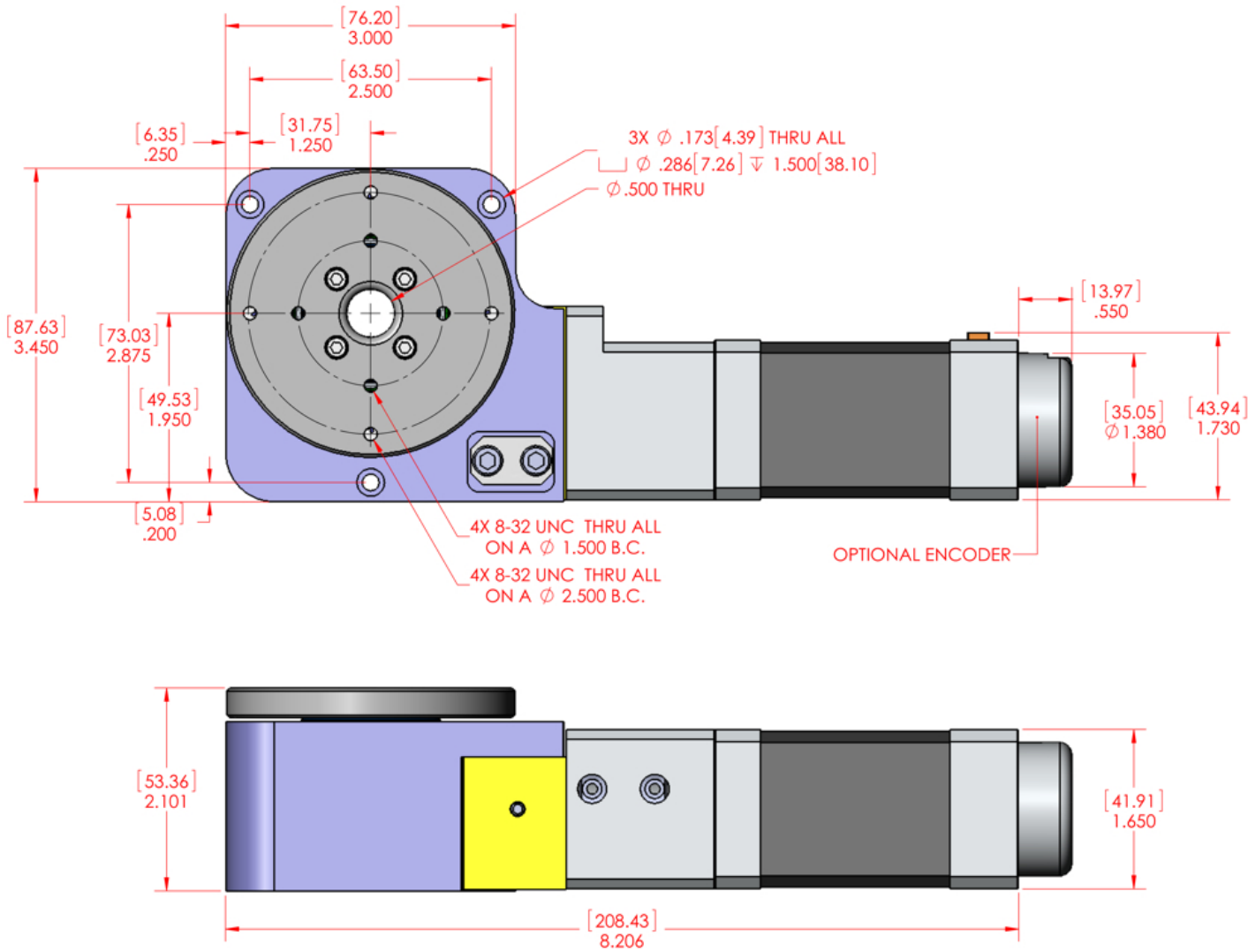
Dimensions

MDrive Motor



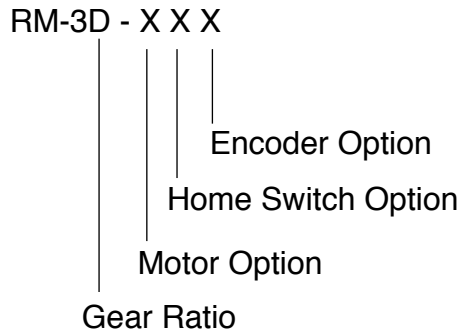
Dimensions

Servo Motor



Ordering Information

Part Number Configuration



Gear Ratio Options

- D 45:1 Gear Ratio
- Blank 90:1 Gear Ratio

Motor Options

- 1 Stepper Motor
- 3 MDrive
- 4 Servo Motor

Home Switch Options

- 0 No Home Switch
- 1 Home Switch

Encoder Options

- 0 No Encoder
- 1 1000 Line Encoder
- 2 512 Line Encoder, Mdrive

Motion Controllers

The following Newmark Systems, Inc. controllers are compatible with the RM-3 Stage.

[NCS-A1 Series](#) | [NSC-A2L Series](#) | [NSC-G Series](#)