

# XYR Positioning Stage



## Dover Motion

(800) 227-1066

sales@dovermotion.com

www.dovermotion.com

## Features

- :: Low Profile
- :: High Stiffness
- :: Superior Repeatability

## Description

The XYR Series Positioning Stage is dimensionally identical to the XY Series with the exception of way construction. The XYR Series incorporates precision crossed roller ways for high load capacities and stiffness. Both series boast a monolithic design, which machines orthogonality into a

low-profile, 3.5" high unit. This design attaches both motors to the center section, so they both move with the lower axis. Standard tables include motors, end of travel limit switches, and locking connectors.

## Specifications

Specifications		XYR-4040	XYR-6060	XYR-8080	XYR-1010	XYR-1212	XYR-1414
Travel (inches)		2 x 2	4 x 4	6 x 6	8 x 8	10 x 10	12 x 12
Travel (mm)		50 x 50	100 x 100	150 x 150	200 x 200	250 x 250	300 x 300
Positional Accuracy (μm)	Commercial	45	65	75	80	100	120
	Precision	15	20	25	30	35	40
Bidirectional Repeatability (μm)	Commercial	6	6	6	6	6	6
	Precision	3	3	3	3	3	3
Flatness & Straightness, (μm TIR)		5	6	8	10	12	14
Orthogonality (arc-seconds)	Commercial	50	50	50	50	50	50
	Precision	20	20	20	20	20	20
Load Capacity (for all, kg) <sup>2</sup>		75	95	125	145	175	175
Maximum Leadscrew Velocity (rps) <sup>3</sup>		15	15	15	15	15	15
Moving Mass (kg)	Upper Axis	0.5	1	1.7	2.5	3.6	
	Lower Axis	3.4	6.3	9.2	14.1	20	
Total Mass (kg)		3.9	7.3	10.9	16.6	23.6	

## Configurations (Apply to all of the above models)

Leadscrew Lead	0.1 inch Standard, also available with 0.5 in, 0.4 in, 0.2 in, or 2 mm
Motor	200 step / rev Standard, also available with 400 step / rev or Servo
Encoder	Standard option has no encoder, options include: Rotary encoder with 2,000 or 4,000 counts/rev Linear encoder with analog feedback Linear encoder with 5μm, 1μm, or 0.1μm digital feedback

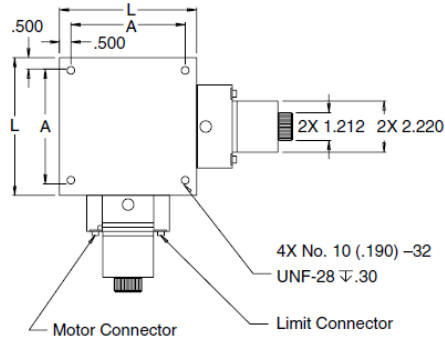
<sup>1</sup> Stepper motor; open loop, with 2pt slope correction. Accuracy improves with encoder feedback or compensation.

<sup>2</sup> Please contact our Applications Engineers for loads exceeding the specification.

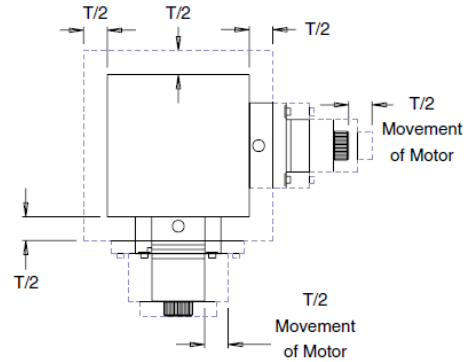
<sup>3</sup> Multiply leadscrew velocity by chosen lead to determine maximum linear velocity

## Dimensions

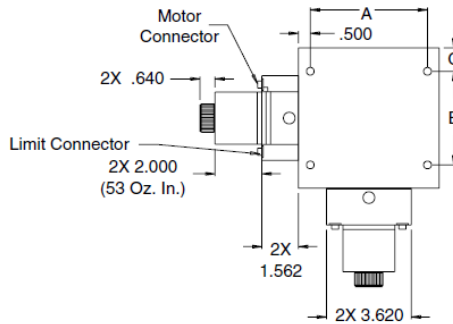
**Top View**



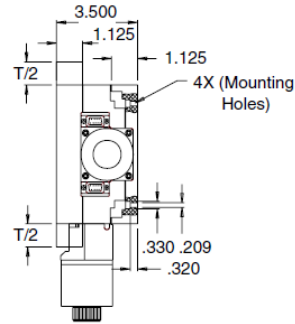
**Side View**



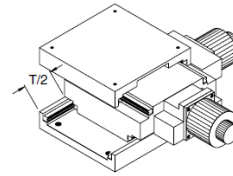
**Bottom View**



**End View**



**Moving Envelope**



Third Angle Projection  
Note: All Dimensions in Inches

Model	Travel (T)	Length (L)	A	B	C
XYR-4040	2.00	4.00	3	2.375	0.8
XYR-6060	4.00	6.00	5	4	1
XYR-8080	6.00	8.00	7	6	1
XYR-1010	8.00	10.00	9	8	1
XYR-1212	10.00	12.00	11	10	1
XYR-1414	12.00	14.00	13	12	1

Measurements in inches

## Wiring

### 23 Frame Rotary Motor Units

Pin	Motor Connector (DE-9P)			Limit/Encoder Connector (DE-9S)
	Stepper	Servo		
		Brushless	Brush	
1	Coil A	Motor Phase 1	Motor +V	+5 Volts
2	Coil $\bar{A}$	Motor phase 2	Not connected	+ Limit Output <sup>1</sup>
3	Not connected	Ground	Not connected	- Limit Output
4	Coil B	Hall input 1	Not connected	Index Output <sup>2</sup>
5	Coil $\bar{B}$	Hall input 2	Not connected	Ground
6	Coil A, center tap	Motor phase 3	Motor -V	Encoder Channel A
7	Not connected	+5 volts	Not connected	Encoder Channel B
8	Not connected	Motor Fault Input	Not connected	Encoder Channel $\bar{A}$
9	Coil B, center tap	Hall input 3	Not connected	Encoder Channel $\bar{B}$