

## Precision XY Motion Platform

### FEATURES

- Compact Low-Profile Design
- 50mm XY Travel
- Zero backlash, precision ground ball screws
- Optical limit switches with home
- High resolution rotary encoder
- Brushless servo motor drive
- Crossed Roller Bearings



The CXY-BS series stages are designed for a variety of applications. This compact low profile ball screw stage is built for high duty cycles and long life and can attain high velocities for factory automation and semiconductor processing equipment. The CXY series offers extraordinary levels of orthogonality and parallelism resulting in high accuracy for combined axis motion. Recirculating ball linear ways and precision ground ball screws offer extremely smooth operation and velocity control. The XY stage can operate in any orientation and has optional brakes for added safety.

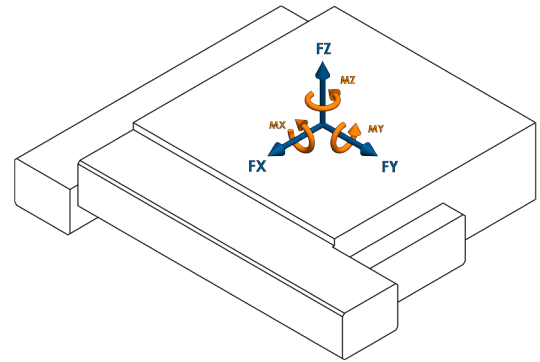


CXY-C-050-BS-A-H-S-0-00

## Motion Specifications

## Product Specifications

Encoder Output	A quad B, index
Force X (N)	200
Force Y (N)	200
Force Z (N)	250
Flatness ( $\mu\text{m}$ )	5
Height (mm)	66
Length (mm)	266
Limit Switches	Yes
Linear Accuracy ( $\mu\text{m}$ )	10
Linear Encoder Resolution ( $\mu\text{m}$ )	0.125
Linear Repeatability ( $\mu\text{m}$ )	2
Linear Velocity (mm/s)	150
Moment X (N-m)	80
Moment Y (N-m)	80
Moment Z (N-m)	50
Moving Mass X (kg)	4.15
Moving Mass Y (kg)	1.22
Orthogonality (arc-sec)	10
Pitch +/- (arc-sec)	8
Screw Lead (mm)	2
Stage Mass (kg)	6.23
Straightness ( $\mu\text{m}$ )	5
Width (mm)	209
Yaw +/- (arc-sec)	8



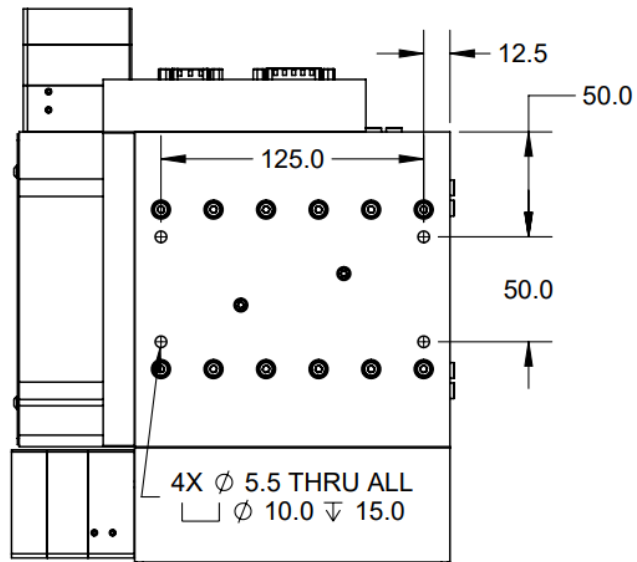
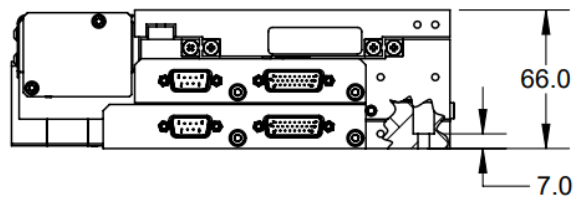
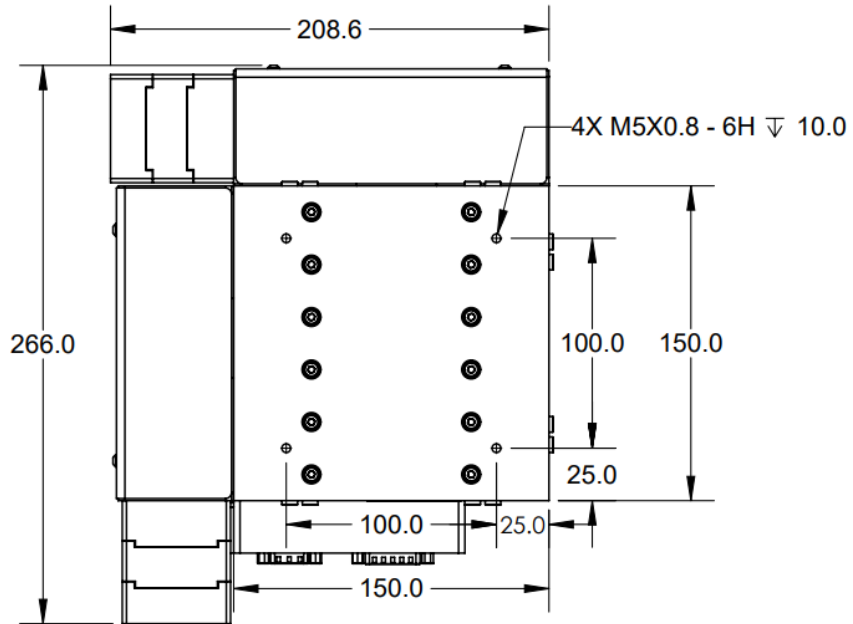
**LOAD DIRECTIONS**

## Part Number Description

CXY	CXY Series
C	No Aperture
050	50mm Travel
BS	Ball Screw Drive
A	Brushless Servo Motor
H	0.125 $\mu\text{m}$ Rotary Encoder
S	Standard Precision
0	No Additional Options
00	Standard Product (Call for custom)

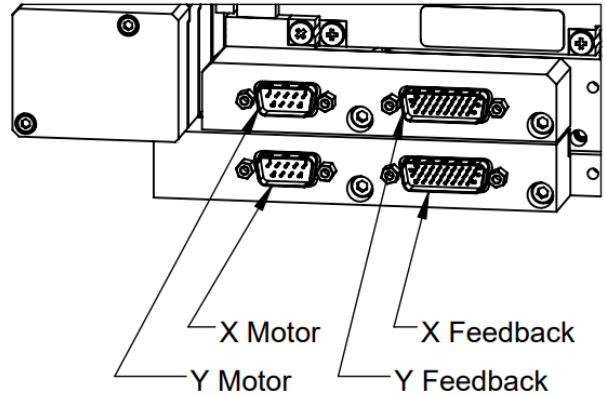
CXY-C-050-BS-A-H-S-0-00

### Mechanical Specifications



**Feedback Connector  
(DSUB26HD MALE)**

PIN	NAME
1	+5V
2	A+
3	B+
4	RI+
5	LIM+
6	*
7	*
8	*
9	*
10	*
11	A-
12	B-
13	RI-
14	LIM-
15	*
16	*
17	*
18	*
19	GND
20	HALL A
21	HALL B
22	HALL C
23	HOME
24	*
25	*
26	*
* Reserved	



**Motor Connector (DSUB9 MALE)**

PIN	NAME
1	*
2	*
3	*
4	*
5	*
6	PHASE A
7	PHASE B
8	PHASE C
9	*
* Reserved	



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## Electrical Specifications

Motor Specifications	
Motor Type	3 $\Phi$ Brushless DC
BEMF Constant (V/KRPM)	1.88
Electrical Time Constant (ms)	0.38
Max Bus Voltage (VDC)	40
Max Continuous Current (A)	3.0
Motor Force Constant (N/A)	50.8
Peak Current (A)	10.0
Pin to Pin Inductance (mH)	0.55
Pin to Pin Resistance (ohm)	1.51
Poles per Revolution	6

Feedback Specifications	
Supply Voltage (V)	5.0 $\pm$ 10%
Supply Current (mA)	200
Encoder Feedback	Yes
Encoder Type	Incremental
Encoder Output	Square Wave Quadrature, RS-422 compatible, A,B,Z, Differential Pairs
Encoder Resolution	8000 cts/mm
Hall Switch Output	Open-collector, no internal pullup resistor
Hall Switch max current (mA)	-20
Limit Switches	Yes
Limit Switch Output Type	Open-collector, no internal pullup resistor
Limit Switch Output current (mA)	-20.0
Limit Switch Output Low (V)	0.8
Home Switch	Yes
Home Switch Output Type	CMOS
Home Switch Output current (mA)	$\pm$ 20.0

A home switch is provided near center mechanical travel and a limit switch at each end of travel. The encoder will output one index pulse per revolution of the motor. This pulse is highly repeatable and can be used in coordination with the home switch to find an absolute position after power-up.

The limit switches will be pulled low throughout the travel range of the stage. The output will swing high at the end of travel and remain high until the mechanical limit is reached.