

PZA25



Features

- 25mm vertical travel
- 10kg payload capacity
- Sub-micron resolution
- Low profile compact design.
- Precision rolled ballscrew drivetrain
- Integrated brushless servo motor
- Smooth, precise motion; ballscrew location minimizes roll and pitch errors during travel
- Rotary encoder feedback
- PLG160, PDR160 and PCL65 mounting compatible
- Class 10 cleanroom option

Overview

Primatics PZA25 Series elevator tables offer an ideal solution for applications that require small incremental vertical movements. The design and components ensure sub-micron resolution in a compact profile and make the PZA ideal for semiconductor inspection, fiber optics assembly and machine vision applications requiring smooth motion, exceptional stiffness, and high resolution.

Smart Design

The PZA accomplishes its vertical motion with a moving wedge design. The wedge converts horizontal movement from a ballscrew into vertical elevation of the PZA's tabletop. A high quality linear bearing system eliminates motion in the horizontal plane. They feature a preloaded precision rolled ballscrew drivetrain yielding sub-micron sensitivity, high repeatability and long life. A brushless frameless motor is built around the ballscrew eliminating the motor coupler. This design approach minimizes the overall stage footprint as well as system windup.

Superior Vertical Motion

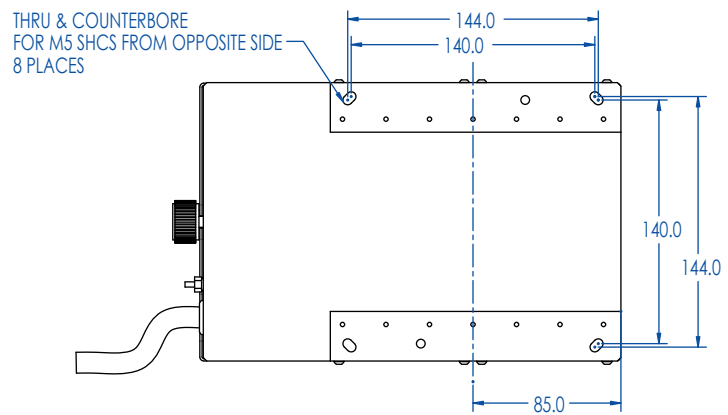
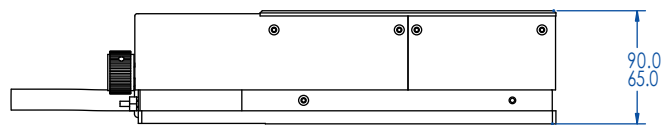
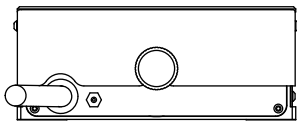
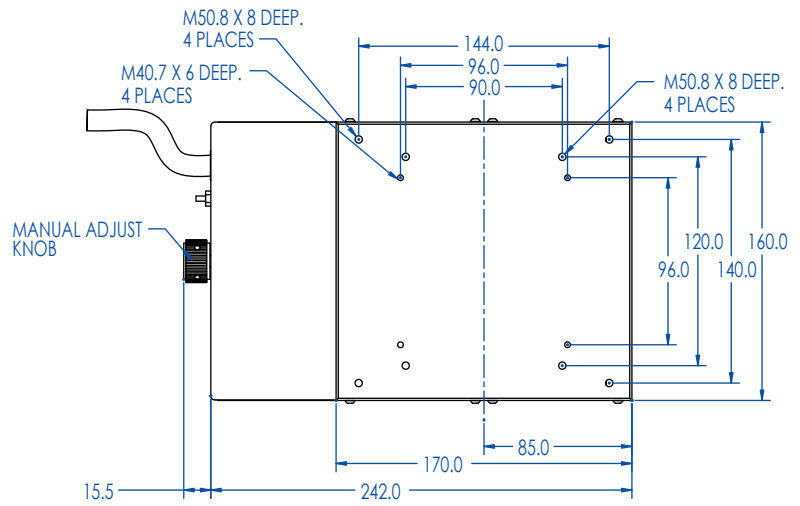
The PZA offers a higher performance, space-saving alternative to traditional Z-axis stages: The inclined plane approach offers superior performance through use of our reliable ballscrew drivetrain while minimizing the overall height. Since the center of the carriage is centered over the bearings, deflections from a cantilevered load are minimized.

Additional Standard Features

The PZA Series elevator table comes standard with integral limit switches, mechanical hard stops, and a home index. The stage tabletop is protected with a clear anodize finish and metric mounting patterns are standard.



Dimensions



All dimensions subject to change w/o notice.

Specifications

Specifications	Notes	PZA25
Travel (mm)		25
Mechanical Drive System		2mm lead ballscrew with brushless servo motor
Resolution (μm)		0.1
Accuracy Over Total Travel (μm)	1, 2	+/- 2.5
Repeatability (μm)	2	+/- 0.75
Max Speed (mm/sec)		20
Maximum Load (kg)		10
Pitch (arc-sec)	2	45
Roll(arc-sec)	2	30
Yaw (arc-sec)	2	30
Stage weight (kg)		6.0

Notes: 1 - Using measured slope correction data; 2 - Specifications based on load COG within 25mm of centerline of stage; All specifications subject to change without notice.

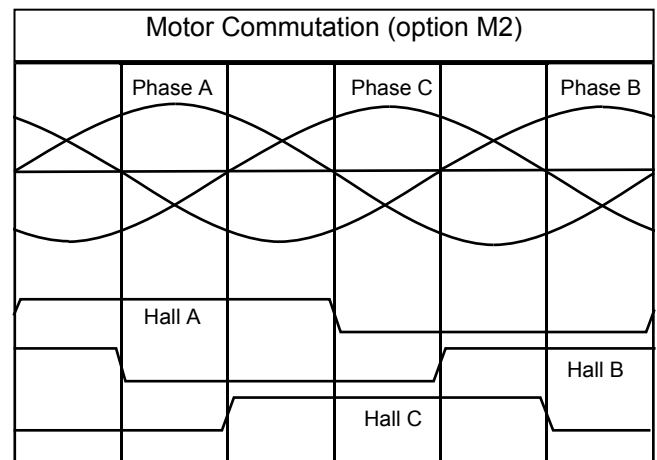
Motor / Encoder, Limit Data

Parameter	Notes	Value
Servo Motor		
Motor Type		Brushless Servo
Continuous Torque (N-m)	1	0.27
Continuous Current (Arms)	1	1.9
Peak Torque (N-m)	2	2.1
Peak Current (Arms)	2	15
Torque Constant (N-m/Arms)		0.14
Back EMF Constant (V/Krpm)		10.3
Winding Resistance (ohms)		1.6
Winding Inductance (mH)		1.5
Thermal Resistance (C/W)		2.8
Poles		6
Hall Sensor Power		5 to 12VDC, 30mA
Hall Outputs		Open collector, current sinking, 20mA max
Encoder		
Encoder power		5VDC +/- 5%, 150mA
Output		Square wave differential line driver
Index		Synchronized pulse, duration equal to one resolution bit
Limit Sensors		
Limit Power		5 to 24VDC, 50mA
Output - L1 and L2 options		Current sinking, 100mA max

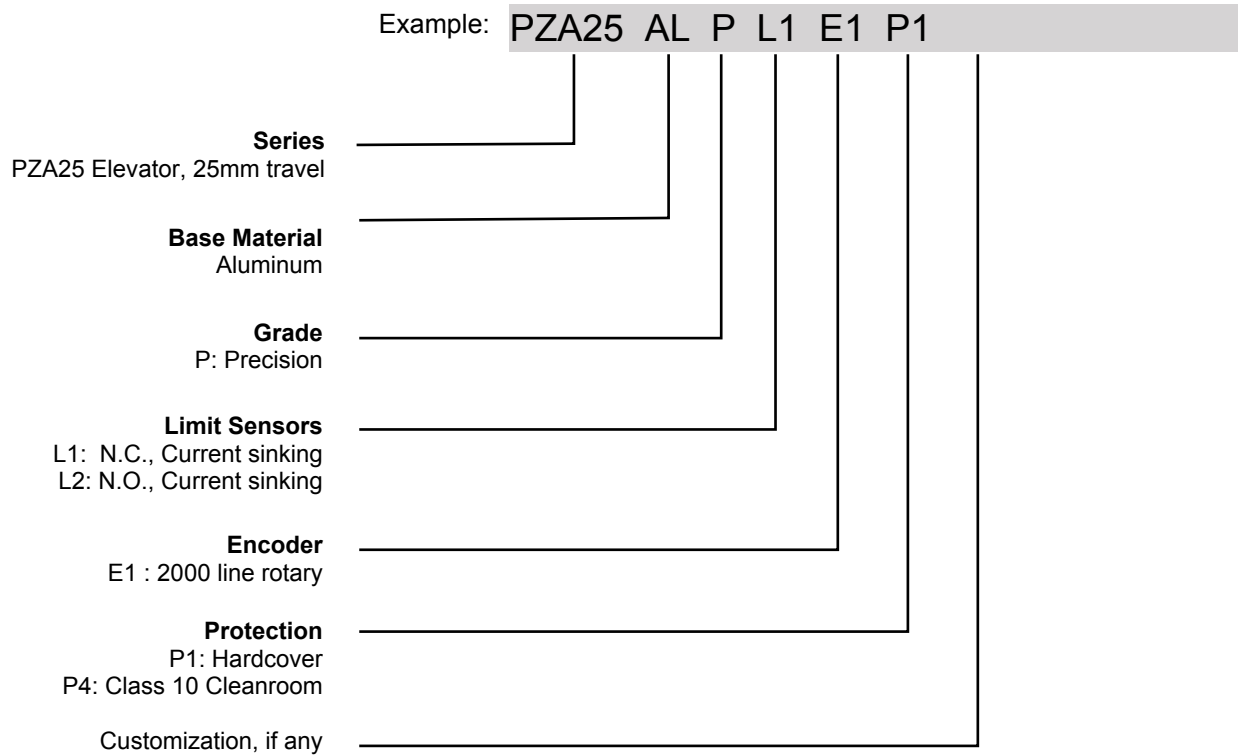
Notes: 1 - At 25°C maximum temperature rise; 2 - At 10% duty cycle and 1 second maximum. All specifications subject to change without notice.

Connectors

Servo Motor (option M2)	
Connector: Cannon 192926-0480 Size 20, 28 pins	
Pin	Function
A	Motor Phase A
B	Motor Phase B
C	Motor Phase C
D	Motor Shield
E	Encoder 5V
F	Encoder Ch A+
G	Encoder Ch A-
H	Encoder Ch B+
J	Encoder Ch B-
K	Encoder Shield
L	Limit Power
M	Limit Return and Signal Common
N	Not Used
P	Not Used
R	Not Used
S	Signal Shield
T	Hall V+
U	Hall V-
V	Encoder Power Return
W	Encoder Ch I+
X	Encoder Ch I-
Y	Forward Limit - Activates at Full Forward Travel
Z	Reverse Limit - Activates at Full Reverse Travel
a	KEY
b	Hall A
c	Hall B
d	Temperature switch - N.C to Signal Common (M)
e	Hall C



Model Configuration



Not all configurations are valid - consult factory for assistance

Accessories

Model	Description
CABLE-SERVO-STAGE-PIGTAIL	Use with user supplied drives and controls. Un-terminated at user end. 12 ft standard
CABLE-SERVO-STAGE-DMC40X0-I200	Use with Galil DMC-40x0-I200 with trap servo drives. 12 ft standard.
CABLE-SERVO-STAGE-DMC40X0-I200-SINE	Use with Galil DMC-40x0-I200 with sine servo drives. 12 ft standard.
CABLE SERVO STAGE MC4U W/ HALLS	Use with ACS MC4U. 12 ft standard.
CABLE-SERVO-ACS-CMNT-DIG	Use with ACS CMnt. 12 ft standard.