



V-738 XY positioner with clear aperture

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PI PRESS RELEASE

XY Linear Positioning Stage w/Linear Motors, Linear Encoders for High Accuracy and Speed

September 2018, Auburn, MA – The V-738 XY translation stage is a computer controllable, high-precision two axis positioning system with a clear aperture. To meet the highest accuracy demands, this XY translation stage is designed in a three piece arrangement for improved geometric performance. In contrast to XY-stage assemblies where two single axis translation stages are bolted together, the integrated, planar design provides better orthogonality (<100 μ rad) and straightness/flatness (2 μ m).

Due to the improved support, planar XY stages are stiffer and flex less compared to XY-combinations of single axis linear stages, especially when the individual axes are moved to their extreme positions. Integrated XY positioning tables are often used in industrial automation applications and precision machinery including semiconductor and flat panel display test and manufacturing.

V-738 Product Details

<https://www.pi-usa.us/en/products/positioning-stages-linear-rotary-motorized-precision/integrated-xy-precision-motorized-stages-planar-xy-stages/v-738-pimag-high-precision-xy-stage-10000034/>

Linear Motor – Direct Drive – High Velocity and Acceleration

3-phase brushless linear motors drive both axes, transmitting the drive force (200N peak) to the motion platform directly without friction. The ironless motors provide smoother running with better velocity control due to the lack of cogging effects caused by permanent magnets. Acceleration of 1G is achieved with maximum velocity of 0.5m/sec. The XY-travel range is 100mm per axis. Other members of the V-7 series include the V-731 XY stage with 200x200 mm travel and the [V-741 XY stage](#) with 300x300mm travel.

XY Linear Translation Stage Overview

<https://www.pi-usa.us/en/products/positioning-stages-linear-rotary-motorized-precision/integrated-xy-precision-motorized-stages-planar-xy-stages/>

Linear Encoders – Nanometer Resolution

Integrated optical linear encoders provide position resolution down to 1 nanometer – the mechanical position repeatability is 0.1µm and minimum incremental motion of 20 nanometers is achieved.

Computer Control

A variety of precision motion controllers are offered, from modular to bench top devices. For the highest performance, PI recommends the [ACS product line](#) of EtherCat compatible precision motion controllers.

Applications

Laser machining, high-accuracy medical manufacturing, optical scanning, bio-nanotech, metrology, automated optical inspection, microscopy.

Standard and Custom

PI has in-house engineered solutions with over 4 decades of experience working with customers to provide products that meet application demands, and can quickly modify existing product designs or provide a fully customized OEM part to fit the exact requirements of the application.

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About PI

PI is a leading manufacturer of air bearing stages, piezoelectric solutions, precision motion control equipment, and hexapod parallel-kinematics for semiconductor applications, photonics, bio-nano-technology and medical engineering. PI has been developing and manufacturing standard & custom precision products with piezoceramic and electromagnetic drives for 4 decades. The company has been ISO 9001 certified since 1994 and provides innovative, high-quality solutions for OEM and research. The PI group employs more than 1,200 people worldwide in 15 subsidiaries and R&D / engineering centers on 3 continents.

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