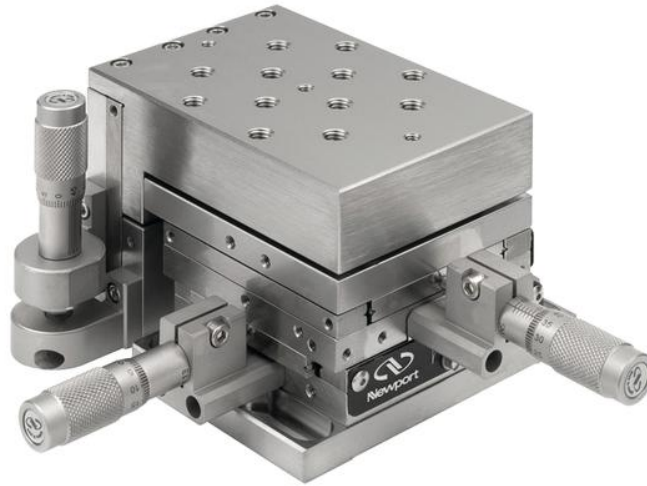


LINEAR TRANSLATION STAGE SELECTION GUIDE



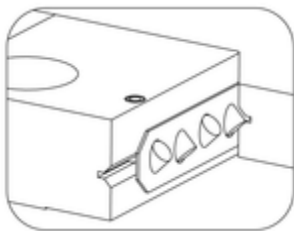
Newport offers the widest selection of [Linear Translation Stages](#) anywhere. Additionally, these stages comprise only a part of a modular system of products that can be combined to provide virtually any required motion or adjustment. The primary construction and performance criteria for each stage type is shown below.

Material

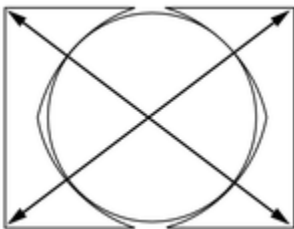
Stainless Steel: Stainless-steel stages are heavier with a lower thermal expansion delivering better long-term stability and higher precision.

Aluminum: aluminum stages are lighter and designed for reconfigurability.

Bearing Type



Crossed-Roller Bearings: Crossed-roller bearings have a large contact area between the mounting plates and base plates which ensures precise linear travel and high accuracy. Compared to standard ball-bearing stages, crossed-roller bearings provide improved repeatability and the ability to handle heavier loads. In addition, the bearing reference surfaces are precision ground to ensure minimal angular deviation about any axis.












Gothic-Arch Ball Bearings: Gothic-arch grooves enable the balls to contact the guideway at four points so that the load and momentum are evenly distributed resulting in higher stiffness than other types of bearings as well as high repeatability and smooth motion.




Ball Bearings and Rods: Standard ball bearings and rods provide a high degree of accuracy at a reasonable price.

Selecting a Linear Translation Stage

Click [Linear Translation Stages](#) to shop or browse all of our standard models, or select a product family below for more information. We also offer [Motorized Linear Translation Stages](#).

Series		Type	Axes of Travel	Typical Travel Ranges	Base Material	Bearing Type	Special Features
	ULTRAlign™ Precision XYZ Positioning Stages	Precision	xyz	13 mm	Stainless Steel	Crossed Roller	Exceptional stiffness and straightness < 100 µrad
	ULTRAlign™ Precision Integrated Crossed-Roller Bearing Linear Stages	Precision	x, xy, xz, xyz	13 mm	Stainless Steel	Crossed-Roller	Exceptional straightness < 100 µrad
	ULTRAlign™ Precision Integrated Crossed-Roller Bearing Linear Stages	Precision	x, xy, xz, xyz	25 mm	Stainless Steel	Crossed-Roller	Exceptional straightness < 100 µrad
	Vacuum Compatible Stainless-Steel Crossed Roller Bearing Linear Translation Stages	Precision	x, xy, xz, xyz	13, 25 mm	Stainless Steel	Crossed-Roller	Vacuum compatible to 10E-6 Torr
	Precision Low-Profile Ball Bearing Linear Stages	High Performance	x	10, 16, or 25 mm	Stainless Steel	Ball	Very low profile
	Machined-In Monolithic Bearing Way Translation Stages	High Performance	x, xy, xz, xyz	6.5, 13, or 25 mm	Stainless Steel	Gothic-Arch	Machined-in bearing ways
	Double-Row Steel Linear Ball Bearing Stages	High Performance	x	5, 16, 25, 50 or 80 mm	Alloy Steel	Ball Bearing	High load capacity and stiffness
	Extended Platform Crossed-Roller Bearing Stages	High Performance	x	25 or 50 mm	Aluminum	Crossed Roller	Angular deviation < 150 µrad
	Extended Range Ball Bearing Linear Stages	High Performance	x	25, 46, 50, or 102 mm	Aluminum	Ball Bearing	Large platforms, long travel

	Peg-Joining Linear Stages	High Performance	x, xy, xyz	13 or 25 mm	Aluminum	Ball Bearing	Quick versatile peg-mounting system
	All-In-One Alignment Stages	High Performance	xyθx θy, xyzθx θy	3 mm, 8°	Aluminum	Kinematic Stage	Vacuum compatible, all-in-one 4- and 5-axis stages
	High-Performance Large Platform Two-Axis Linear Stages	High Performance	xy	13 mm	Aluminum	Guide Rod	Heavy duty xy stage
	Quick-Mount Linear Stages	Standard Performance	x, xy, xz, xyz	13 mm	Aluminum	Ball Bearing	Lowest profile xy stage
	Pint-Sized Rail Mount Translation Stages	Standard Performance	x, z, xy, xz, xyz	13, 25 mm	Aluminum	Ball Bearings	Rail mounting
	Compact Ball Bearing Linear Stage	Standard Performance	x	6 mm	Alloy Steel	Ball Bearing	Compact, low profile
	Miniature Ball Bearing Linear Stages	Standard Performance	x	13 or 25 mm	Aluminum	Ball Bearing	Compact, high-resolution
	Fast-Drive Dovetail Stages	Standard Performance	x	25 mm	Aluminum	Dovetail	Low cost translation
	Miniature Dovetail Stages	Standard Performance	x, xy, xyz	9 mm	Aluminum	Dovetail	Compact, high load
	Miniature Linear Stages	Standard Performance	x, xy, xyz	23 or 12 mm	Aluminum	Guide Rod	Sub miniature

	Miniature Linear Stages	Standard Performance	x	4 mm	Alloy Steel	Guide Rod	Compact, low profile
	Peg-Joining Dovetail Stages	Industrial	x, xy, xyz	13 mm	Aluminum	Dovetail	Peg-mounting, long-term stability
	Compact Dovetail Linear Stages	Industrial	x, xy, xyz	6 or 14 mm	Aluminum	Dovetail	Compact, long-term stability