

HD Series Frequently Asked Questions (FAQ)

Q: Is the HD Series Linear Positioner a next generation or replacement for the 400XR family of positioners?

A: No. The HD Series is designed to solve a set of applications which the 400XR family has difficulty solving today. Similarly, the 400XR family will continue to solve a set of applications that the HD Series will simply not be able solve or make sense to use.

The 400XR family is a high precision positioning table designed to deliver its high precision “out of the box”. Other features and characteristics of the 400XR focus on the needs of the typical high precision application. For example, the 400XR’s low profile design makes it ideal for stacking into XY configurations and its maximized bearing spread minimize abbey errors and improve precision.

The HD Series is designed for more industrial applications where high precision is not necessary, but other characteristics are beneficial. For example, the HD Series has a very deep profile which significantly increases the beam strength and stiffness of the body. This is ideal for applications where the table will span across an unsupported distance and reduces or eliminates the need for stiffening brackets. Further, the HD Series carriages are designed as compact as possible which improves the overall length to travel ratio. This allows an industrial machine builder to fit more travel into a smaller space.

The HD Series and 400XR Family are designed to be “Best of Breed” solutions for different types of applications.

Q: What are the drive train options in the HD Series?

A: The standard drive train is a ground ballscrew drive. This is available in 4 leads: 5mm, 10mm, 20mm, and 40mm. There are a few limitations on availability such as 5mm leads only extend to 800mm of travel, the 10mm lead to 1000mm of travel, and the 40mm lead is not available in the HD085. Generally these are 15mm diameter screws with the exception of the longest travels and 40mm lead where the diameter increases to 20mm.

Q: Can I get a rolled screw as an option?

A: Today, not as a standard option. Generally, there is no cost benefit and the rolled screw will increase audible noise, decrease precision, and decrease peak velocities. An exception this rule could apply on very long travels. Contact your Sales Applications Engineer if you think this applies to you.

Q: What are the maintenance requirements of the HD Series?

A: The HD Series is maintenance free! Traditionally, linear rails and ballscrews must be lubricated at designated intervals to ensure long life. The HD Series includes an innovative lubrication system on both the linear rails and ballscrew. This system continually maintains proper lubrication of the components for at least 5 years or 20,000 km of travel. Operating a table at 500 mm/sec at 50% duty cycle, 2 shifts/day, 5 day/week will require a little over 5 years to reach 20,000 km of travel.

Q: I don't see any motor mount or coupling options in the configurable. How do I configure these to match up to a motor?

A: Parker does this for you! New with the HD Series, Parker is offering standard motors (which include the motor mount and coupling) instead of making you figure out the proper motor mount and couplings to use. The motors are performance matched with the table and deliver the majority of the speed and thrust the table is mechanically capable of delivering. By pre-selecting the motor, Parker is able to provide system level performance specifications and present them graphically so that for most applications, the motor sizing is as easy as looking at a set of graphs.

Q: Can I put a larger motor on an HD Series to get more performance from it?

A: Probably not. The standard Parker motors offered were selected because they deliver nearly all of the thrust and speed the table can mechanically achieve. For example, it does not make sense to drive the 5mm lead screw with a motor larger than the SM232 (even on an HD185) because an SM232 delivers all the torque that screw can handle and a larger motor would only over power the screw. When selecting these motors several factors were considered including: screw thrust capacity, screw efficiency, maximum screw speed, thrust bearing capacity, coupling torque capacity, and inertia matching. If an application's requirements are "slightly" above the trust or acceleration capacity ratings of a Parker standard, a through sizing might be useful, particularly on longer travel and/or faster leads tables.

Q: The HD Series includes Parker motors. Can I mount another manufacture's motor to the table and how?

A: Yes. The standard Parker motor offering is designed to provide excellent positioning performance for most applications, however, in some applications there are extenuating circumstances that require use of a third party motor. To do this, you place an order for a standard table, but with the M000 (no motor) option. Then on separate line items, place orders for the motor adapter, coupling, and alternative Parker motor (if applicable). If there is not a standard motor adapter available for the motor, work with your Sales Applications Engineer (SAE) to have the adapter designed. This process helps shorten leadtime and ensure quality as the HD Series Positioner will be ordered and built as a standard product with the only custom part typically being the motor adapter plate. As a final note, the motor adapter and coupling will not be assembled onto the table but will ship as separate parts.

Q: The performance information published in the catalog is only with Parker motors. Where is the information I need to size an HD for use with a third party motor?

A: Table only performance specifications are found in the HD Series Users Manual and include such information as break away torques, input torque capacities, max screw speeds, efficiencies, etc. All of the specifications needed to properly size a motor will be found there.

Q: Can I add a linear encoder to an HD Series? ...As a custom?

A: No and no. There are no provisions within the HD Series to easily add a linear encoder as a standard option or a custom product. If an application requires a linear encoder, the application probably needs precision making a 400XR product a better fit.

Q: Why would one use the HD015 (Idler rail) instead of just buying a linear rail?

A: The short answer is convenience and ease of installation. The HD015 offers several benefits beyond “just a linear rail”. First, the HD015 is a sealed unit and offers the same IP30 rated protection as the other HD Linear Positioners. Additionally, the aluminum body of the HD015 simplifies installation by providing structural strength for the rail allowing it to span unsupported distances, to be mounted with convenient toe clamps or bottom tapped holes, and be fastened to the machine frame much less frequently than a bare linear rail. The linear rail is also aligned to be straight and flat inside the body. Installing a “naked” linear rail will require the assemblers to “indicate” the rail straight during machine build to avoid binding. Finally, the HD015 already has attachment brackets designed to tie it to other HD Series Positioners saving the designer time and risk.