



Data Specs

Ø12mm Trapezoidal Precision Lead Screw

Our lead screws offer an excellent way to turn rotational motion into linear motion. This screw fits the bill for most machine designs and will quickly become a standard on Maker store for 3D printer , CNC Machine and robotics DIY community. The 2~4mm pitch offers a good trade-off between torques required to drive the screw and linear speed created. Each rotation of the lead screw will drive the mating nut precisely 2~8mm, depending on the pitch. It's a great power transmission choice for your DIY build!



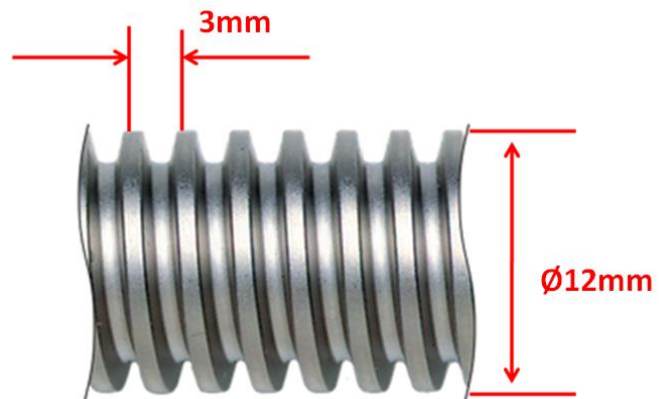
SKU: [MCH1620](#)

Brief Data:

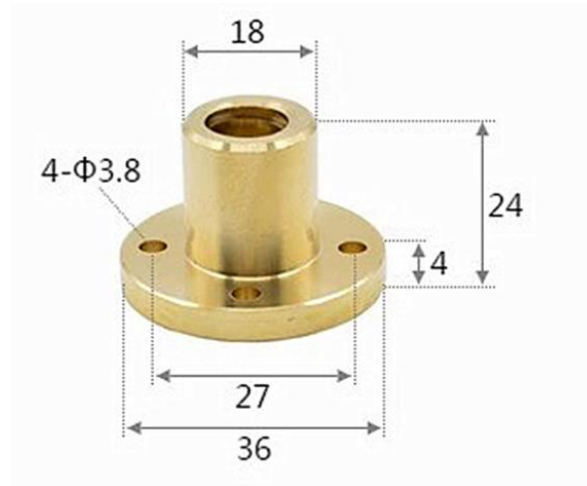
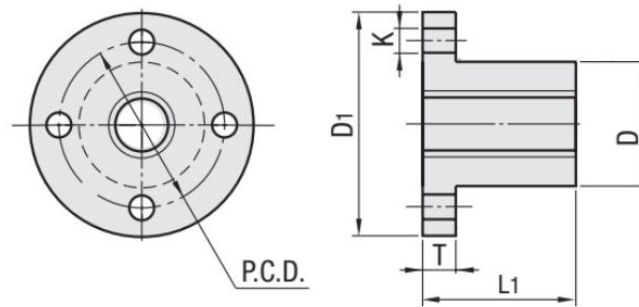
- Model No: T12x3.
- Outer Diameter (OD): Ø12mm.
- Thread: Ø12x3mm (1 start).
- Lead Pitch: 3mm.
- Lead Distance: 3mm (3mm/rotation).
- Number of Start: 1.
- Lead Screw Outer Diameter: Ø12mm.
- Lead Screw Length: 300~750mm.
- Structure: Trapezoidal Spindle Screw.
- Material: Stainless Steel.

Mechanical Dimension:

Unit: mm

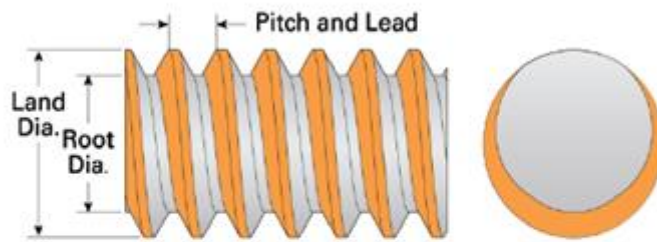


Flange Nut Dimension:

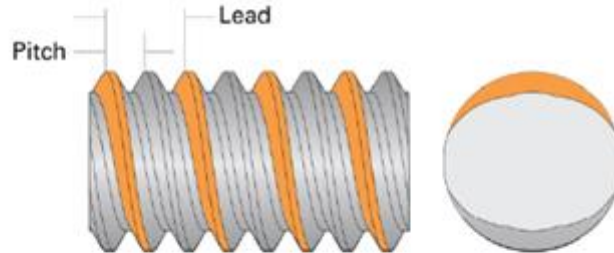


What is Number of Starts, Pitch and Lead of Lead/Ball Screw?

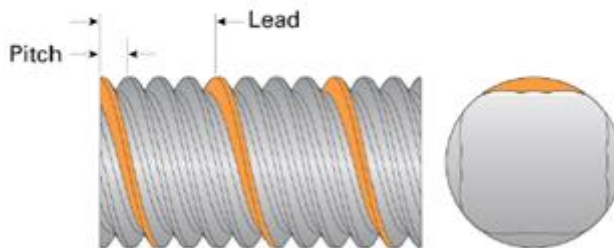
Single Start (Lead = Pitch)



Double Start (Lead = 2 × Pitch)



Four Start (Lead = 4 × Pitch)



Screw Starts

Is the number of independent threads/grooves on the screw shaft; example one, two or four in the figure above.

Pitch

Pitch is the distance between screw grooves and is commonly used with inch sized products and specified as threads per inch.

Lead

Lead is the linear travel the nut makes per one screw revolution and is how lead & ball screws are typically specified. The pitch and lead are equal with single start screws. For multiple start screws the lead is the pitch multiplied by the number of starts.

Stepper Motor Drive Step Calculation:

The motor is a standard 1.8°/step Stepper Motor, with an integral four start 8mm pitch lead-screw with a metric trapezoidal thread. 4-Start means that there are four individual threads along the length of the lead-screw. 8mm Lead Distance means that the center to center distance of the thread is 8mm (or that a nut mounted on the lead-screw will be driven 8mm for one full rotation of the lead-screw).

Using A4988 Stepper Motor Driver with 16-microstepping setting:

For 1.8°/step stepper motor, one full revolution require $(360^\circ/1.8^\circ) = 200$ Steps.

With stepper motor driver set to 16-microstepping required:

$$200 \times 16 = 3,200 \text{ microsteps} = 8\text{mm.}$$

So in order to move the nut mounted on the lead-screw 1mm distance, the Stepper Motor Driver required $3200/8 = 400$ Steps. In other word, the controller board need to output 400 pulses in order to move 1mm linear distance.

Ordering Number:

Shaft Diameter: Ø12mm

Thread	Pitch mm	Lead Distance mm	Length mm	SKU
T12x3	3	3	500	MCH1620

[Linear Motion Products Selection Guide:](#)



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[Miniature Metal Bearings](#)



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[Flange Trapezoidal T-8 Lead Screw Nut](#)



[GT2 Pulley](#)



[GT2 Idler Pulley](#)



[Harden Chrome Smooth Linear Shaft](#)



[Self Aligning Flange Shaft Holder - Horizontal](#)



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[LM10UU Linear Bushing](#)



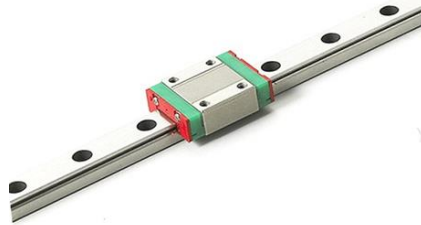
[LMK10LUU Flange Linear Bearings-Long](#)



[LMK10UU Flange Bearings Bushing](#)



[LMKM10UU Middle Pilot Flange Linear Bushing](#)



[MGN12 Series Linear Guideway](#)



[SBR12UU Open Type Linear Ball Bearing Bushing](#)



[SBS12UU Shaft Support Rails with Steel Shafts](#)



[SC10LUU Linear Ball Bearing Bushing – Long Type](#)



[SFU1204 Ball Screw Kit. Length 300mm.](#)



[SFU1204-3 Ball Screw Nut – Flanged](#)



[Shaft Collar Ø8mm](#)



[SHF10 Horizontal Linear Shaft Holder](#)



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