

Flight Stand 15 & 50 Dual Motor Testing Fixture Assembly Manual

The Dual Motor Testing Fixture (SKU: TCTU) is intended to simplify the process of testing two powertrains at various axial and radial distances.

We recommend assembling the dual motor testing fixture prior to preparing the Flight Stand.

Introduction and item checklist

Check that you have the following items in the box:

- 1 x NEGP - FS15/50 Stand to Rail Fastener Bag
- 1 x SJFS - FS15/50 Slide-in T-nut Bag
- 1 x BGHG - FS15/50 Drop-in T-nut Bag
- 1 x QAHJ - FS15/50 Rail L Bracket Fasteners Bag
- 1 x EVVW - FS15/50 Two Stand Attachment Bag
- 28 x JCNM - 30 Series 2 Hole - Inside Corner Bracket
- 2 x VMGJ - 30-3030 rail - 4 Feet Long (30mm x 30mm T-slotted Profile)
- 2 x PHGU - 30-3030 rail - 2 Feet Long (30mm x 30mm T-slotted Profile)
- 4 x LKGN - 30-3030 rail - 7 cm long (30mm x 30mm T-slotted Profile)

Assembly of the rails

Assemble the rails according to Fig. 1 (next page). The position of the short rails relative to the long rails is up to you and depends on the type of dual motor tests you intend to do. A mix of slide-in T-nuts and drop-in T-nuts is provided for convenience: they can be installed anywhere. The short 7 cm rail should be placed approximately in the middle of the two long rails for rigidity.

Use up to 12 Inside Corner Brackets to interconnect the rails together.

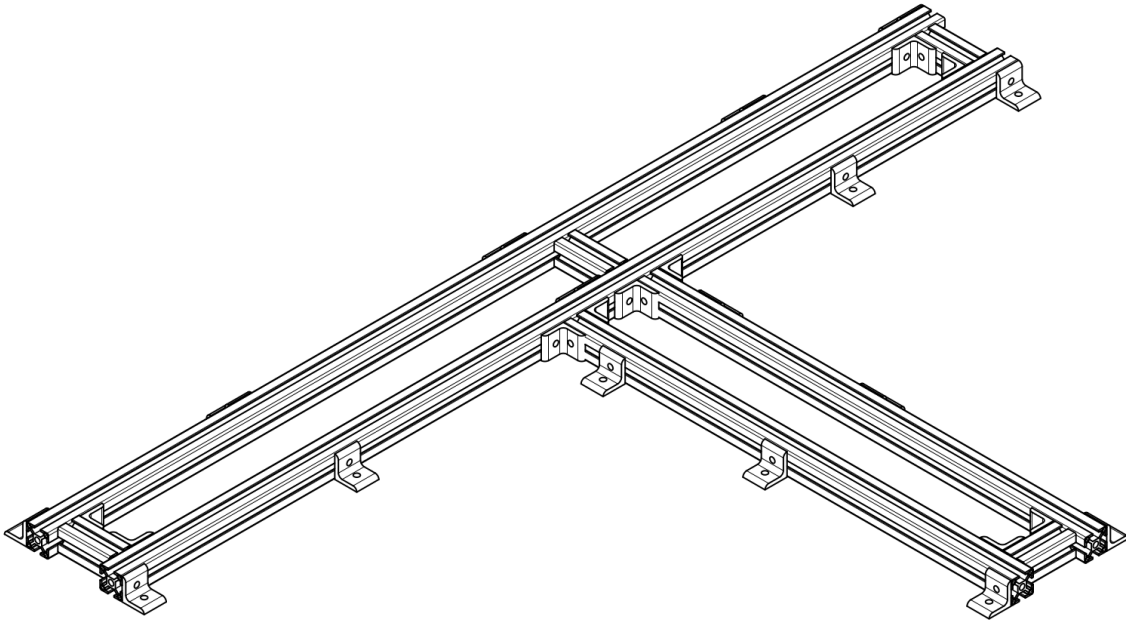


Fig. 1. Assembly of the fixture

Installation of the rails on the ground

At least 15 L brackets should be used to fix the rails to the concrete flooring. Space the L brackets evenly on each rail with a minimum of 3 on the 2-foot rails, and a minimum of 4 on the 4-foot rails, as shown in Fig 1. Add reinforcements according to your test application, if necessary.

You may use concrete anchors, or concrete screws to fix the whole assembly on the concrete flooring. The L brackets allow passing through M6 (metric) or 1/4 inch (imperial) screws. The minimum pull strength of the fasteners should be 200 kg or 440 lbs, but we recommend more to increase the rigidity of the fixture. A flat ground is preferable as it helps to reduce vibrations. The anchors or concrete screws must be attached to the corner brackets facing the ground.

!!! IMPORTANT !!!

The stand has to be attached to a solid ground such as concrete. A soft ground has the risk of causing important vibrations at some rotation speed. This could damage the load cell which would require a replacement and a recalibration.

Install all the L-brackets provided in the package. Make sure the rails are flat on the ground, or add spacers until there is good contact along the entire rail section.

Stop the test and check the installation if you notice unusual vibration. Contact support in case of doubt. More information about vibrations is available [here](#).

Assembly of the coaxial attachment plate

The force of the propeller causes the stand to bend and vibrate. This is normal. The coaxial attachment plate is intended to prevent the force measurement units (FMUs) from touching each other during a back-to-back test. To install it, first of all, make sure the two stands are positioned so the hex cut-out on the upper L brackets is on the same side. Then, simply remove the nylon lock nuts from the upper L-bracket of your two stands. Install the coaxial attachment plate on the exposed bolts and reattach the nuts.

The attachment plate offers adjustable distance between the stands for up to 74 mm.

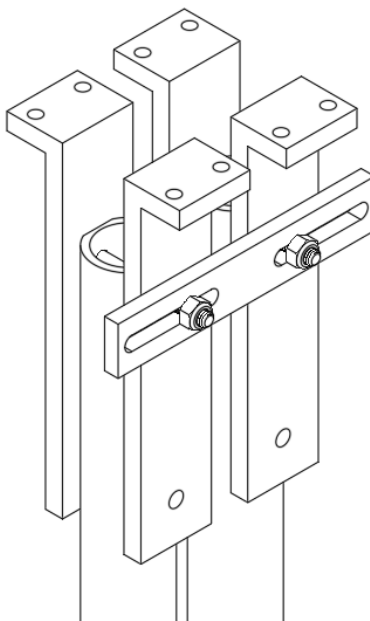


Fig 2. Coaxial Attachment Plate to connect two stands