

Pre-Paint>Fuselage>Engine>Fit propeller flange extension

Objectives of this task:

To remove the universal propeller flange that is shipped with the engine and fit the model-specific propeller flange extension to the crankshaft. While this is a straightforward mechanical task it is most definitely a **critical** task and care must be taken.

The universal propeller flange is lock wired in place, however the depth of the propeller flange extension makes the use of lock wire almost impossible and so we use a strong Loctite to keep the flange securely fitted. This means that the cleanliness of all threads is critical.

This task will require 2 people: 1 to stop the crankshaft from moving and 1 to loosen and later tighten the cap screws. This task is intended to be performed by the kit builder with the engine mounted to the aircraft. In the factory we do this task while the engine is fitted to a mobile engine stand so some of the photos will be slightly different to what the kit builder could expect to see.

Materials and equipment required:

Loctite 620

Thread cleaner – Loctite or Acetone

5/16” Hex drive socket, or alternately a 5/16” Allen key cut straight and fitted to a 5/16” socket

Torque wrench, set to 30 ft/lbs or 40 Nm

Remove the universal flange



The universal flange is held in place by 6 x 3/8” UNF Allen head cap screws, all of which will be reused.

Cut and remove the lock wire from the 6 cap screws, then heat the cap screws with a heat gun in order to loosen the Loctite.

Lock the engine from turning by holding a large blade screwdriver in the ring gear teeth between the starter motor and the adjacent alloy block (circled in the photo above right).

Crack each cap screw in turn to break the Loctite seal and remove each cap screw and the related washer.

Set the cap screws and washers aside for later use.

Remove the flange and discard.

Clean and prepare the screws and hub



Clean the cap screw threads with a wire brush – make sure that there is no residual Loctite in the threads. Clean all threads with cleaning solvent (Loctite cleaner or Acetone) and dry.

Run a 3/8” UNF flat bottomed tap all the way into each bolt hole in the hub, apply a cleaning solvent (Loctite cleaner or Acetone) into each hole and then blow dry with compressed air. Check that each thread is absolutely clean and dry before proceeding.

Fit the propeller flange extension

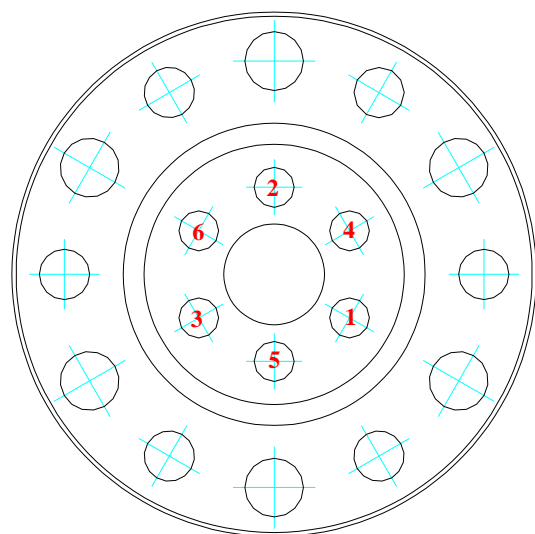
Set your torque wrench to 30 ft/lbs or 40 Nm and place it on top of the engine.



Apply a few drops of Loctite to each screw hole, place the propeller flange extension on the hub and fit the 6 cap screws and washers.

Have your helper lock the engine from turning and tighten all the cap screws firmly then torque each cap screw to 30 ft/lbs or 40 Nm, working in a criss-cross pattern as shown at right. Re-check each cap screw, applying steady pressure on the torque wrench until the torque value is reached.

In the factory we have the workers change places at this point so that the torque values are set by one person and double-checked by the other as an additional safety measure.



This completes the *Pre-Paint>Fuselage>Engine>Fit propeller flange extension* task.