F-Type Nuts

Spare Parts Replacement Instructions

F-Type Nuts are pressurized through a high-pressure F-Nipple located on the end face (axial surface) or on the OD (radial surface) of the nut by either a hand or motorized pump.

1. Amtec repair kits contain all components for a complete F-Type Nut rebuild; each model has a specific kit number.
2. F-Nipples or release screws only need replacement due to wear or damage, or when leakage occurs after being securely tightened by hand using an 11mm or 7/16" socket and wrench for the F-Nipple, or 6mm wrench for the release screw.
3. F-Nipples must be installed with two wraps of Teflon tape around the 1/8" NPT threads, or installed with thread sealant, before tightening with socket and wrench as described above.
4. Release screws consist of a flat point hex socket set screw and a steel ball. The assembly consists of an M12 set screw and 8mm ball for Standard Series Nuts, or an M14 set screw and 10mm ball for Max Force Series Nuts.
5. Either release screw assembly is to be hand tight only using a 6mm hex wrench.
6. The part numbers for Amtec F-Nipples and Release Screw Assemblies are as follows:

   F-Nipples - 710.101.005

   Release Screw Assembly Standard - 719.001.012.001

   Release Screw Assembly Max Force - 719.001.014.001

   (note: 719.001.014.001 is also used for all Aluminum Series F-Nuts)
7. The main seal, located under the steel thrust ring, is Amtec's proprietary dual durometer U-Cup seal, which needs replacement only when grease leakage is observed around the thrust ring.
8. The steel thrust ring needs replacement when it is no longer flat and concentric, or severely deformed on the edges. The O-Ring in the OD of the thrust is not part of the sealing system, but holds the thrust ring in the pressure chamber during handling.
9. To remove the thrust ring:
   Place the nut on the arbor in a press, where uniform pressure may be applied over the entire thrust ring surface, and maintain parallelism with the nut body by contact tooling or a press platten.
10. Gradually increase grease pressure through the F-Nipple using an Amtec Hydraclamp Handpump, with the release screw tight.
11. Slowly back off (loosen) the nut on the threaded arbor, or gradually open the pressure, to allow the thrust ring to be evenly pushed out from the pressure chamber.
12. Partial support of the thrust ring (such as in a bench vice) will result in distortion of the thrust ring.
13. To remove the seal, continue the operation as described above until the seal is well proud of the nut end face.
14. Stop pumping pressure and remove the nut from the arbor or press.
15. The thrust ring is free and can be examined for damage, and the seal can be pulled free from the nut body.
16. The pressure chamber must be thoroughly cleaned of all grease and contamination, and then inspected for any surface damage. Any damage must be repaired before replacing new seal or thrust ring.
17. To install the seal, place the Amtec seal onto the face of the nut, over the pressure chamber wall, with the "lips" toward the nut.
18. Insert a short section of the inner seal lip into the pressure chamber groove, and then manually pinch the seal lips together to allow a short section of the out seal lip to enter the groove. Clean bare hands are the best tools.
19. While keeping pressure on the heel of the seal (blue section) with one hand, progressively push the inner seal lip into the groove while pinching the outer seal lip so that the seal lips enter the groove without folding over or puckering.
20. Progressively push the seal lower into the groove as installation proceeds.
21. Once 75-80 mm of seal perimeter has been partially inserted into the groove, a blunt hardwood "assist bar" can be employed, if the fingers are complaining. (We use a 20 mm diameter hard maple rod with one end shaped to a blunt wedge and sanded smooth).

22. Continue inserting the inner seal lip into the groove while applying radial pressure on the outer seal lip with the "assist bar," sufficient to enter the outer seal lip into the groove.

23. Remember to progressively push the seal further into the groove as you insert the seal lips.

24. Do not allow any wood or foreign particles to get pushed into the groove with the seal. Do not use metal tools.

25. For a larger diameter seal, work alternately at two or three spots around the seal from the first insertion location to ensure the seal does not get stretched and become too long to fit naturally into the groove.

26. Once the seal is fully into the groove, gradually push the seal to the bottom of the groove using the wooden "assist bar."

27. To install the thrust ring, first inspect the thrust ring to ensure it is flat and free of mechanical damage and thoroughly cleaned, with the retainer O-Ring installed in the OD groove.

28. Insert the thrust ring with the sharp edges into the groove and push down uniformly against the seal until it is flush with the face of the nut.

29. Install the Amtec Nut onto the arbor thread and snug against a full arbor of tooling or in a press.

30. Open the release screw in the Amtec Nut (6 mm hex) one full turn.

31. Apply the Amtec handpump onto the F-Nipple in the Amtec Nut and pump grease into the nut until all air bubbles stop and grease flows smoothly out of the release screw orifice.

32. Close the release screw hand tight.

33. The Amtec Nut is now ready for pressurizing in accordance with F-Type and handpump operating instructions.