

Retaining Plate Part No. 3006241

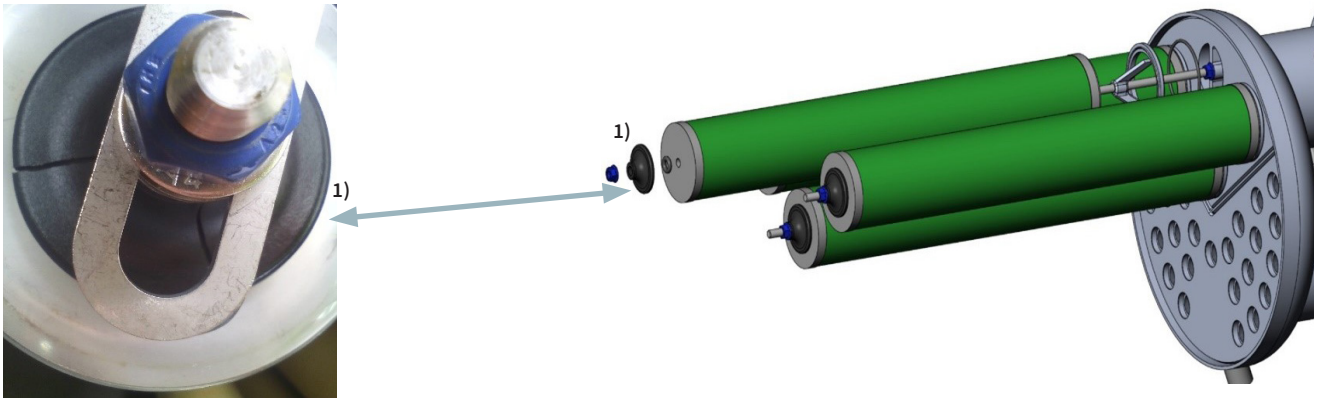
No. 01 / 2022

Background

Cases of damaged retaining plates have been reported, used to seal against the separator end cap and mounting rod in filter water separators model FW24-H-T.

The recommended tightening torque for the separator hex nuts, in order to achieve a good seal and prevent damage to the separator element, is 7 Nm.

Retaining plates are polyphthalamide (PPA) and tested to a tightening torque of 30 Nm.

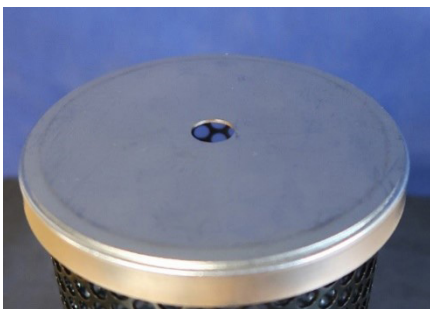


1) Retaining plate for FW24-H-T series

Investigation

Where damaged retaining plates were found, indentations in the stainless steel end cap of the separator elements were observed, indicating over-tightening of the hex nut which secures the element.

New Separator End Cap



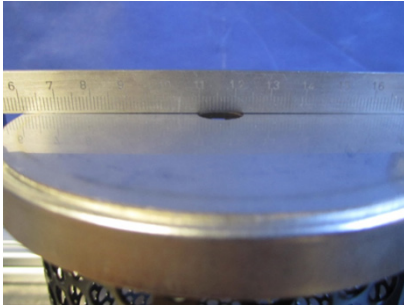
Over-Torqued Example From The Field



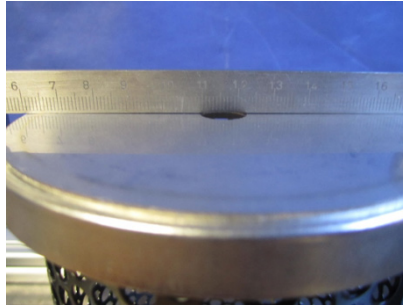
Following in-house testing to reproduce the indentations, it was determined that the hex nut had been over-tightened.

The following series of images shows the degree of indentation at a given torque.

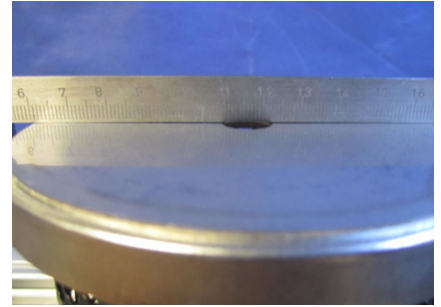
New Separator End Cap



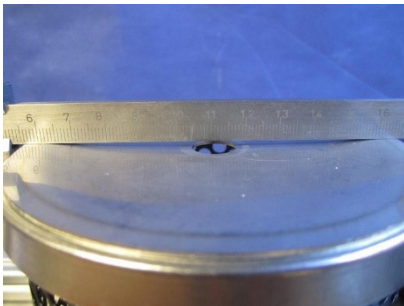
7 Nm (5 ft. lbs.)



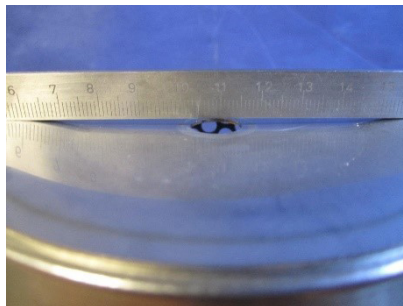
10 Nm (7 ft. lbs.)



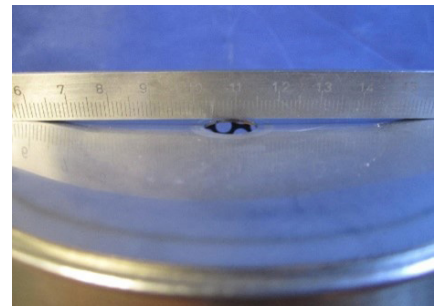
15 Nm (11 ft. lbs.)



20 Nm (15 ft. lbs.)



30 Nm (22 ft. lbs.)



It has been determined that once the end cap has deformed, that loading on the retaining plate is distributed around the outer edge of the plate, rather than the flat surface on a flat end cap, as designed. The result is that after replacing a broken polyphthalamide retaining plate, with another in polyphthalamide (PPA), the torque that it is capable of withstanding is reduced.

Action

Inspect the condition of the retaining plates and separator end caps on all model FW24 filter water separators.

- Drain the vessel and open the cover
- Remove the separator spider
- Remove the hex nut securing the separator to the rod, the washer, retaining plate and O-ring seal
- Check the PPA retaining plate for cracks
- Check the separator end caps for indentations

1. No over-torquing

If no cracks are found on the retaining plates and no indentation in the end caps, reassemble, tightening the hex nut to 7 Nm. Refit the spider, washer, hex nut to 7 Nm. Replace the cover seal, close the vessel, tighten the cover bolts to the torque detailed on the vessel EI 1596 data plate. Refill the vessel at a maximum of 10% of the design flow rate.

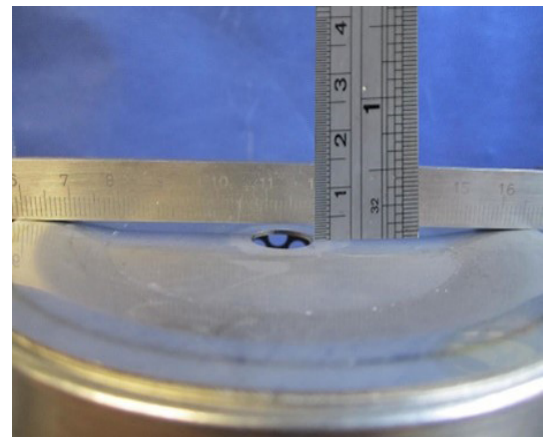
2. Over-torquing

Should an indentation in the separator end cap be observed:

a. End cap deformation of less than 1.5mm and the existing PPA retaining plate intact, both the separator and retaining plate may be re-used.

b. End cap deformation up to 3mm, either reuse the existing separators and replace the PPA retaining plates with aluminium versions, available from FAUDI Aviation or the local distributor, or purchase replacement separators and new retainer plates in PPA or aluminium.

c. End cap deformation over 3mm, purchase replacement separators and retainer plates in PPA or aluminium. 7 Nm remains the recommended torque in either material.



This issue highlights the need to ensure that service technicians receive the training and tools required to carry out such activities.

Datasheet of element torque settings available to download [Element Torque Settings](#).