

Standard Operating Procedure for Changing the Process Head Insert on the Q150R ES Coating System

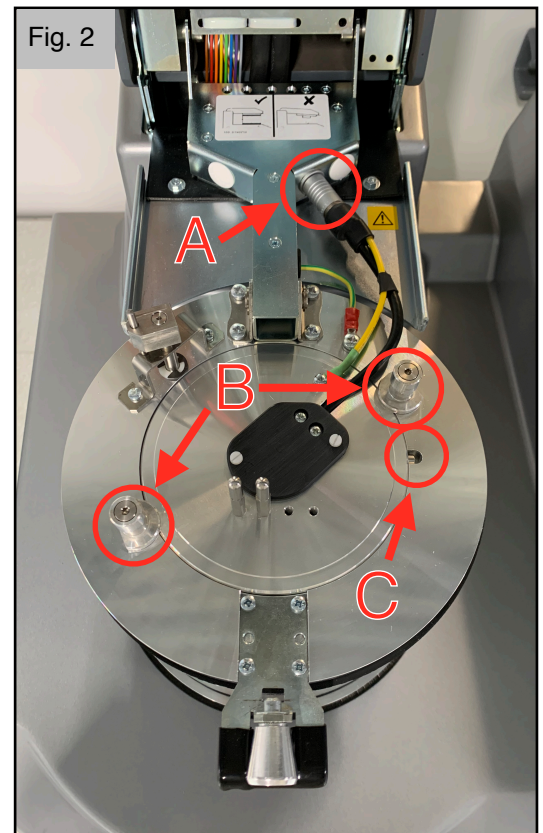
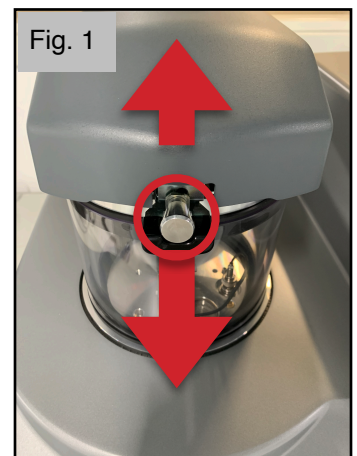
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1. General Information and Precautions

- The Q150R ES is a combination sputter coating and carbon/metal evaporation tool. Interchangeable inserts are provided for each process. See the separate *SOP for the EMS Q150R ES Coating System* for directions on operating the tool.
- Gold/Palladium (60:40) is currently the only target material stocked for the Q150R. Gold, nickel, and chromium are available for use in the Denton Desk II sputter coater, now located in the Class 1000 area. Contact KUNF personnel if you require a different sputter material.
- The evaporation insert is designed for carbon fiber only. Metal and carbon rod inserts are available, but not currently stocked.

2. Changing the Process Head Insert

- Power off the tool using the rocker switch on the back (right side).
- Pull the spring-loaded lock pin on the front of the process head, and lift up the gray plastic cover. See Figure 1.
- If you are removing the sputter head insert, disconnect the high voltage cable from the chamber lid hinge bracket by pulling on the silver lock ring. See **A** in Figure 2. There is no high voltage lead for the evaporation/carbon filament insert.
- Rotate the insert keepers (see **B** in Figure 2) so that flats are aligned with the edges of the insert.
- Pull up on the installed insert to remove it. Place the removed insert into one of the plastic bags found in the storage drawer to the left. If you have removed the sputter head insert, do not touch the target surface.
- Inspect the o-ring and the mating surface on the insert head that you are installing. If they are dirty, wipe them with an IPA-soaked wiper. Do not apply vacuum grease to the o-ring.
- If you are installing the evaporation head, make sure that it has a carbon filament installed. See Section 3 below for details.
- Install the replacement insert head so that the alignment pin is on the right. See **C** in figure 2.
- Rotate the insert keepers (see **B** in Figure 2) so that flats are facing the outer edges of the head.
- If you are installing the sputter head insert, plug in the high voltage cable into the chamber lid hinge bracket. See **A** in Figure 2.
- Pull out the lock pin on the front of the head and close the gray plastic cover. Release the pin and make sure that it aligns with the slot in the cover.
- Power on the tool using the rocker switch on the back (right side).



3. Installing a Carbon Filament in the Evaporation Insert

- a. Retrieve the evaporation insert and some carbon filament from the storage drawer at the left.
- b. Set the insert down on a wiper, and loosen the clamping screws with the provided hex tool.
- c. Fit the filament between the two clamps as shown in Figure 3. Do not pull the cord tight.
- d. Tighten the clamps with the provided hex tool.
- e. Cut any excess filament so that a few millimeters remain on each side of the clamps. See Figure 4 at right.
- f. Install the evaporation insert as described in Section 2 above.

