**Replacing the Stirling cooler**

Steps to remove the cooler

1. Open the vacuum chamber-see protocol on this.

A person fixing a machine

Description automatically generated

1. Loosen the vacuum fastener/clump, remove the screws that connect the stirling cooler to the base holder. This way you can be able to gently move the copper base plate

Close-up of a machine with many wires

Description automatically generatedClose up of a machine

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Vacuum fastener/clump

Oasis cooler pipes

Stirling cooler

1. Gently put aside the temperature sensor by unscrewing the screw on the side.

Close-up of a machine with wires and a copper tube

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Temperature sensor screw

1. Remove the pipes coming from the chillers (see image in 2). Be careful at this point because there might be cooling liquid. Have spare tissues or stoppers for this step.
2. Remove the screws from the steel holder from the bottom of the TREX rack.

A metal box with holes and screws

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Screws at the bottom of the TREX

1. You will then see cables from the Stirling cooler going into the sunpower blue box. For the two cables-orange is +OUT and white is -OUT. Cut the cables to have more space to move the stirling cooler. If you do have a better tool to access this, then you do not need to cut the cables.

A blue box with holes and wires

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Unscrew on these holes

Orange and white cables

1. You then unscrew this from the holes on top of the box and remove the cooler completely.

Replacing the cooler:

1. Have someone hold the Stirling cooler while you screw back the two cables to the SunPower blue box.
2. Put the Stirling cooler back in holding place. Screw back the steel holder.
3. Connect back the pipes from the chiller and fasten.
4. Place back the temperature sensor back, then the copper base plate, while fastening the vacuum clamp and screw at the back to ensure alignment.
5. See if it aligns with the linear actuator by adjusting the screw on the L corner (with the green, blue and red cables). Be careful with temperature sensor and any other cables.
6. Close the vacuum chamber while ensuring that the screws align properly. You may need to adjust the L corner several times if you feel that the screws are a bit too tight or it is really hard to screw them in.