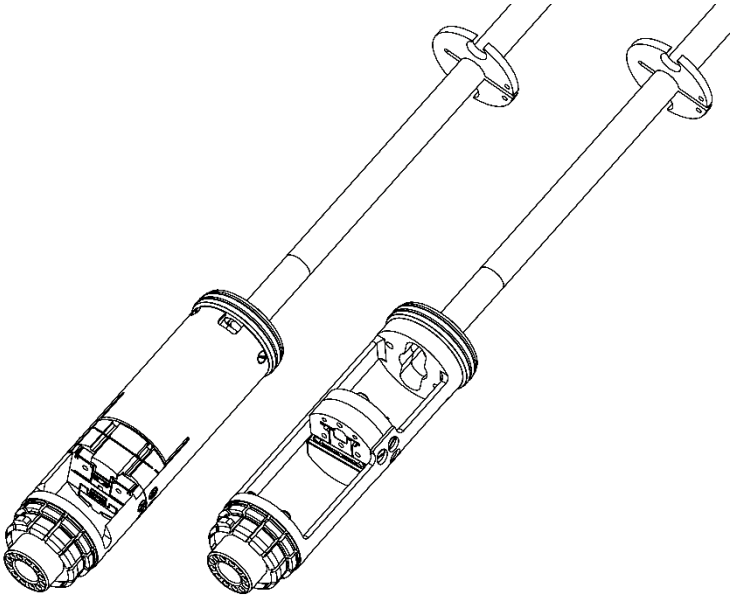


PPMS1: KIT INSTALLATION

This guide covers the installation of the PPMS1 kit on a Quantum Design P450C probe. Once the kit is installed, the probe has the same specification as those ordered through Razorbill Instruments. In addition to this document, please refer to the user manual for the completed probe, and the wiring diagram. The former should be in the same section of the folder, and the latter will be in the section labelled Technical Drawings. Both can also be obtained from Razorbill Instruments through the website below.

Mixed metric and US Customary standards. All Razorbill Instruments products use metric fixings and fittings. The PPMS and the P450 probe built by Quantum Design use US Customary fixings. Attempting to fit a metric screw into a US hole or vice versa may damage one or the other. Take care to select appropriate screws: if in doubt refer to the screw selection table in the user manual or the technical drawing.

Refer to *User guide for PPMS Strain Probe*. This installation manual covers probe conversion, which is normally only done once. The separate user guide covers routine use of the probe, cell mounting, puck connections, etc.

INSTALLATION PROCESS

1. If your probe is a P450A, remove the gold-plated fingers, sample holder and puck. These parts are not present for probe P450C and are not required for the Razorbill conversion

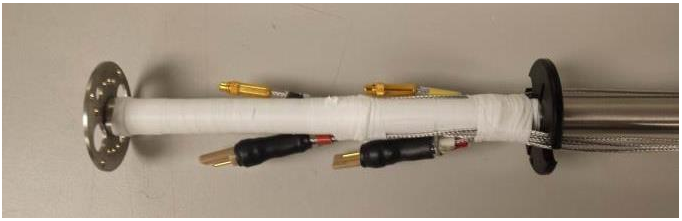
2. Remove the top plate from the PPMS probe, and put to one side (with its screws) in case you ever want to revert the probe to the standard configuration. You will require a 3/32 hex key, which is usually supplied by Quantum Design with each probe. Leave the fibreglass rod and spring in place, and keep the O-ring in its groove.

3. Thread two coax cables through the probe head and down the probe. Keep the right-angle connectors at the top of the probe, and thread the straight ones through and down to the sample end. It doesn't matter particularly which holes you thread the connectors through. It helps keep the wiring neat if you wrap it once or twice around the probe between each baffle.

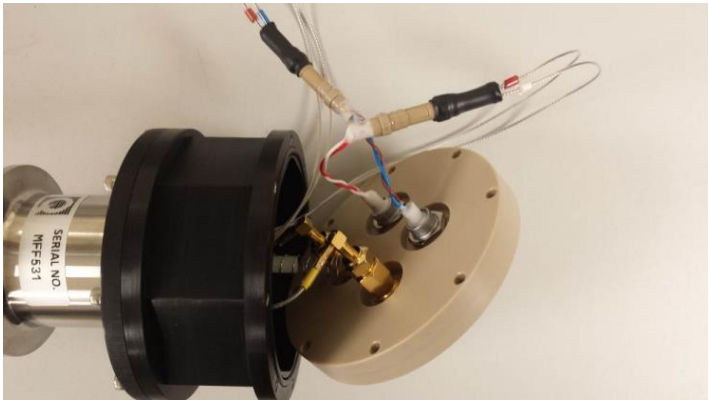
4. At the bottom, first wrap the lowest segment of the probe with PTFE tape, then lay the connectors on top and secure with a second layer of tape as shown. For the best possible capacitance measurement, the connectors bodies should be insulated from each other and from the probe. Remember to leave space for the mating connectors.

5. Leave any extra length of cable at the top – it will make it easier to get the top plate on and off in the future for further modifications or to replace the O-rings.

6. Thread the drive voltage cables through from the top too, run them down the probe and secure them in the same way. These can be inserted either way up. At this point you can add a few wraps of tape between each set of baffles, to keep the wiring tidy, and prevent any excess length from falling down from the probe head.



7. Connect the cables to the new top plate. The coax with the yellow band should be connected to the SMA connector marked “High”, the one with the black band to the one marked “Low”. The drive cables connect so that the coloured bands match the wires they are connecting too. In case the feed throughs have been removed from the plate, compression is blue/brown and tension is red/white.



8. Carefully gather up the wire and connectors, and place them inside the top housing. Check that the O-ring is still seated in the groove, and close up the probe head. Take care not to trap any cables or the O-ring. Secure in place with six of the 4-40 machine screws provided in the kit (they are longer than the original ones). Secure the shorting caps in place with the final two screws. To minimise the risk of damage to the strain cell, these should be connected as shown any time the power supply is not connected, but especially if the temperature is changing.

Your probe is now complete to the same specification as probes purchased through razorbill.

Refer to *PPMS1: User guide for PPMS strain probe* for cell mounting and probe use instructions.

PPMS1: KIT INSTALLATION

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