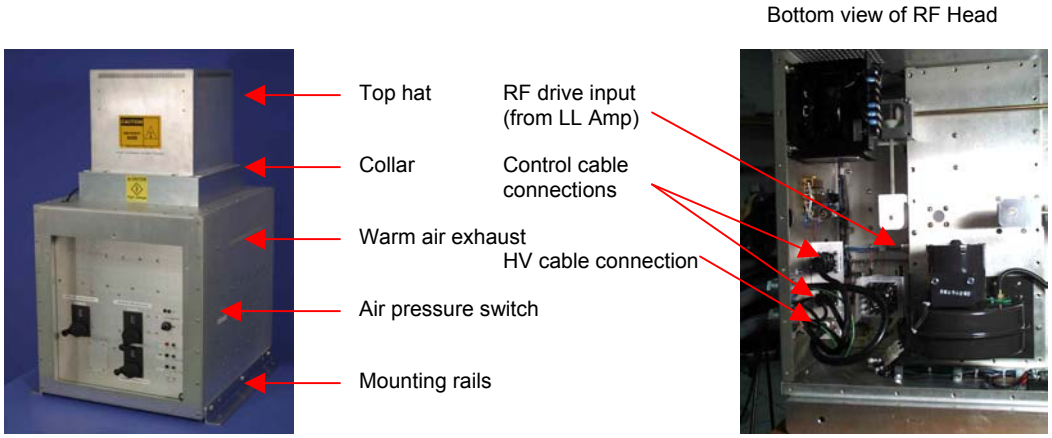
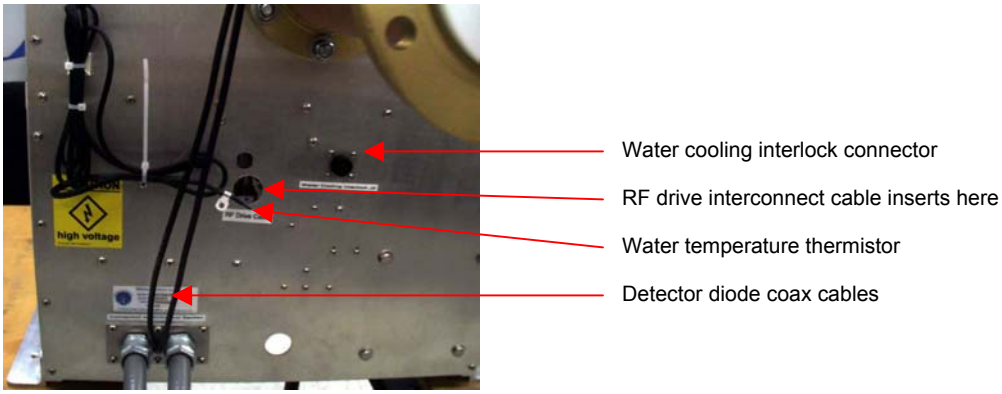
HVT20K150 Installation

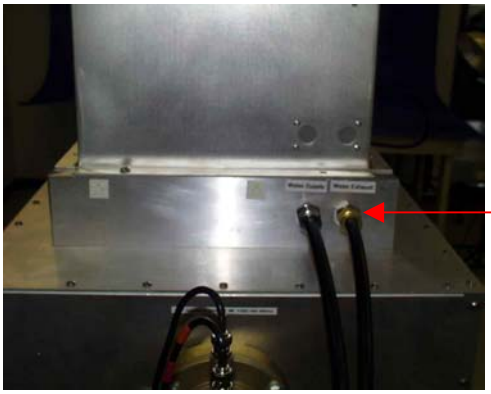
- RF Head



- Gently position the RF head on its side and remove all screws fastening the bottom sheet metal cover. It is best to tilt the head back to vertical and fix it into position before attaching the hard-line interconnect coaxial cable.
- Mount the RF Head to its support structure making sure that it is always operated in a vertical position. Verify that the RF output flange is parallel to the next mating flange. Failure to do so will cause the rear cabinet surface to flex resulting in stress to the internal RF mechanisms.

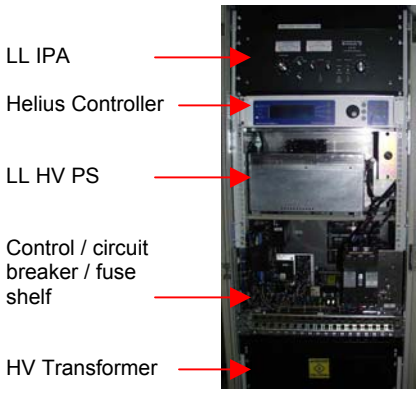


- With the head in the vertical position, route one end of the hard-line cable through the hole on the rear of the head. Remember to remove the strain relief nut before inserting the cable connector into the chassis. Place the nut back onto the cable before fastening the male connector into the female mating connector locate on the rear of the sub compartment inside the lower RF head section. Tighten the connector – be very careful as the hard line cannot be twisted. It may need to be slightly pre-formed to enable a parallel entry into the female connector. Tighten the nut on the strain relief and re-attach the bottom cover.
- The HV & control cables are pre-connected to the RF head. Route these plus the coaxial interconnect cable along a protected surface to the DC/control cabinet.– do not sling these cables by their ends.
- Mount the two Detector diodes to the RF Output line section. One detector is marked with an orange band – this will connect to the orange striped female N connector on the line section and the orange banded BNC cable (this cable & detector are mounted away from the cabinet).
- Connect the cooling water supply to the marked Swagelok tube connector located on the rear top hat riser.

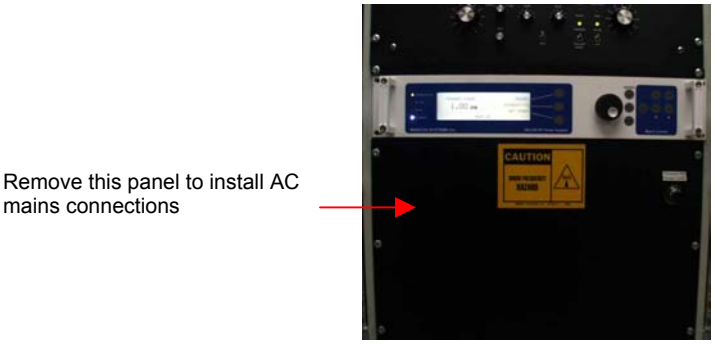


- Connect the cooling water return through a water flow switch to the exhaust (return) connector. Ensure that the flow switch is in the return line and is oriented in the proper direction. Do not allow the water to condense on any surface. It is best to use a shut off valve (in series with the water supply) to slow or stop the water flow when the RF power is OFF. Please note that opening the water cooling interlock will inhibit the RF output in addition to turning off the filament.
- Connect the water flow switch contacts (Open = NO Flow) to the 4 pin CPC marked connector located on the rear of the RF head. Note: The water flow interlock may be routed in series through one or more cooling interlocks. These may include a flow switch, over temperature switch, etc. This interlock needs to be closed to be satisfied.
- The water temperature thermistor comes ty wrapped to the wire bundle on the rear of the RF head. The tip can be mounted to the water supply or return lines as needed. The temperature information is displayed on the Helius controller “Information” screen. Use a small dollop of heat sink grease to ensure good thermal conductivity between the thermistor bulb and the measured surface.

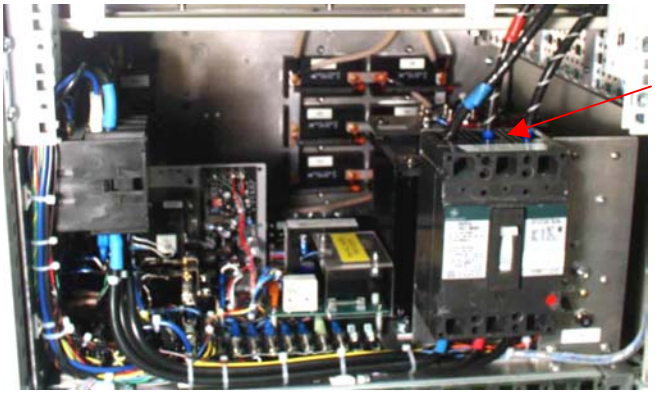
- DC/Control Section



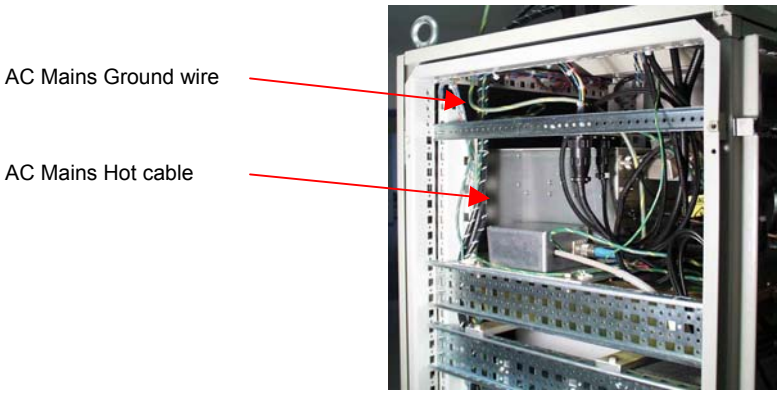
  - Remove side right door (6 screws).
  - Remove the rear door (6 screws).
  - Remove all white ethafoam packing blocks. These are placed in between various modules and shelves inside the cabinet.
  - Position the cabinet in its desired location. Remember to leave enough room around all of the sides to perform installation and service. The system draws its cooling air supply from both lower side doors through replaceable filters. Make sure that the supply air is free from dust and dirt. Exhaust the warm air (from the roof) away from the two inlets.
  - Route the AC mains conduit through the hole located on the cabinet roof in the right front corner. You may need to enlarge the hole using a knockout punch to accommodate the conduit connector. Either flexible (Sealtite) or rigid metal conduit may be used between the control cabinet and the wall mounted circuit breaker cabinet.
  - Remove the black front panel covering the circuit breaker and RF power limit pot.

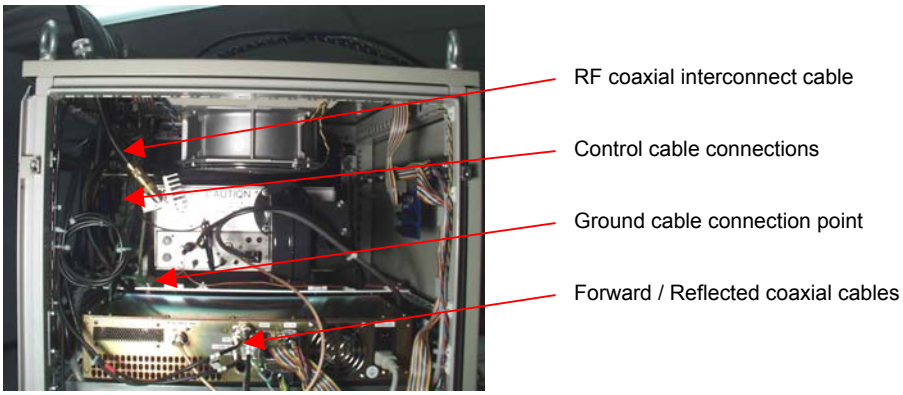


  - Route the AC mains “hot” wires from the roof down the front right support rail to the terminals on the circuit breaker. Ensure they are properly tightened to the circuit breaker terminals.

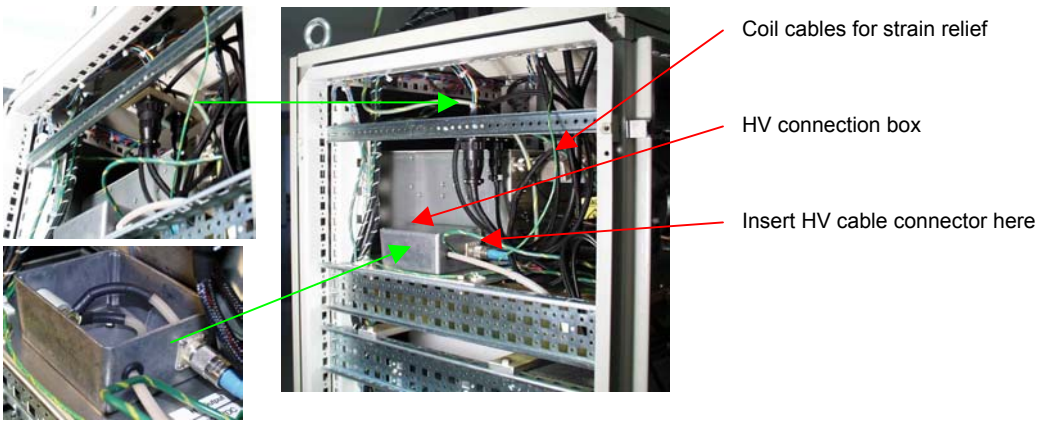


- Route the AC mains ground wire along the right inside of the roof towards the rear and connect the ground to the brass ¼-20 screw located on the 1st shelf behind the Lunar Link driver amplifier. Use a crimp terminal or electrical grounding lug.

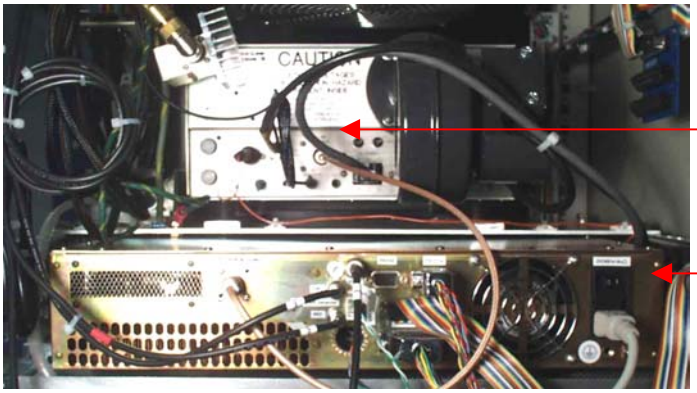




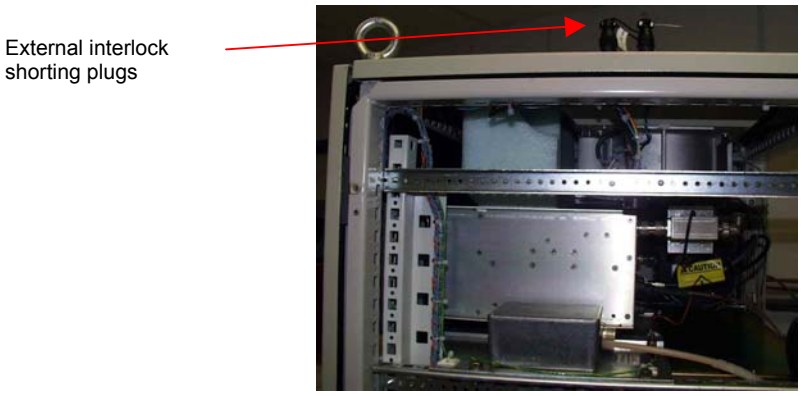
- The HV & control cables are then routed through the double hole located on the right rear corner of the roof. Let the connector ends hang free while the flange is fastened to the roof using 6 self tapping screws. All cables will be rolled in a circle and then connected to their mating connectors (to provide proper strain relief). First attach the 4 pin CPC connector to its mate located on the bracket. The 14 pin connector will be the 2nd to attach – its mating connector is located on the same bracket.



- Locate the small aluminum HV junction box on the 1st shelf. Remove the 6 screws holding its lid. The HV cable will be routed through the female connector body – do not tighten the shell at this time. The center conductor lug is connected to the brass stud mounted on the ceramic standoff – remove the nut and washers then insert the lug and replace & tighten the hardware. Ensure that this connection and wiring does not short to the ground surfaces. Properly position the wires before fastening the lid. You may provide extra insulation by wrapping the open connection with 3M HV rubber tape.



- Now connect the two coaxial signal cables to the rear of the Helius exciter module. One is marked Forward Power and the other Reflected Power.
- All cables can now be ty wrapped to a side rail.



- Install the AC ON shorting plug to the marked connector located on the roof. This shorting plug will enable the AC mains ON/OFF to be controlled by switching the main circuit breaker. A remote AC Mains ON/OFF switch may be used by connecting it in series with the two leads on the shorting plug.
- Install the Safety interlock shorting plug to the marked connector located on the roof. This shorting plug will enable the safety interlock circuit. A remote safety interlock switch may be used by connecting it in series with the two leads on the shorting plug. This switch may be a cabinet/cover interlock on the system or part of the process system's interlock string.
- The Helius controller is set to operate in a local mode – all user controls are located on the exposed front panel. The user may connect external metering and /or control circuits using the DB25 connector located on the cabinet roof.