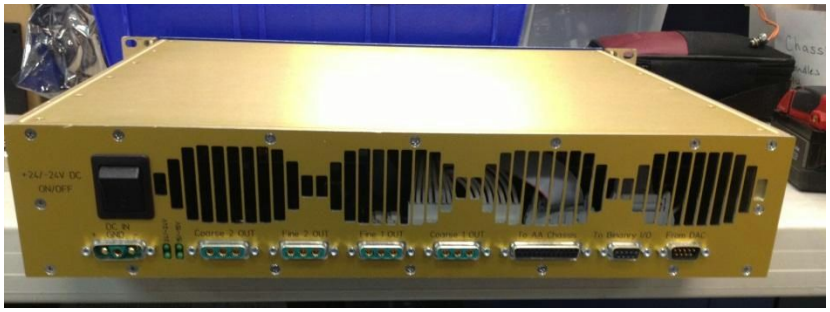
How to install the Driver Cutoff boards in a Coil Driver

Here's the coil Driver Chassis (D0902744) that will be modified:

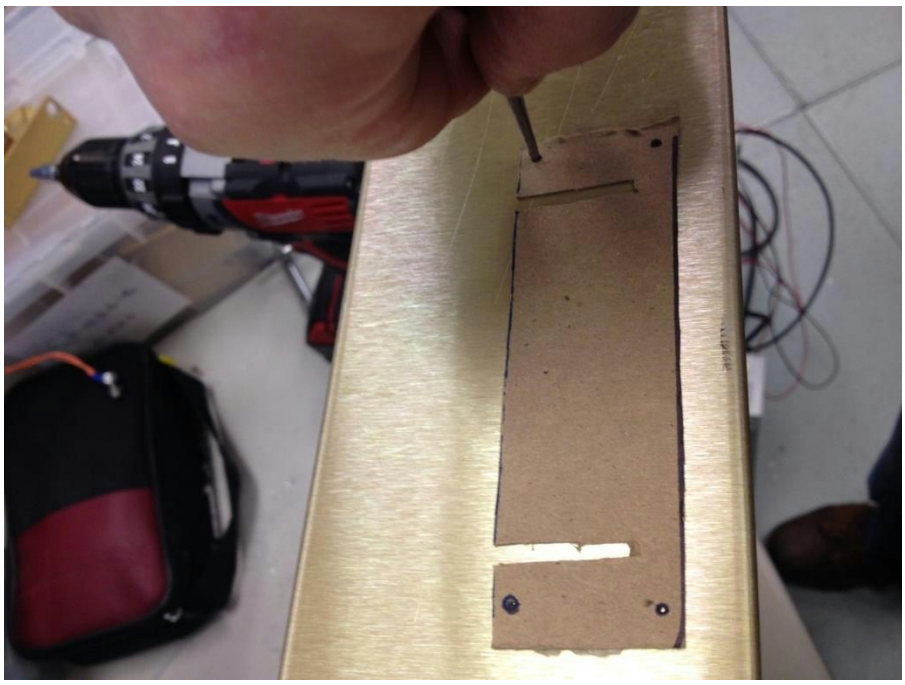
The back should have no BNC connector in it:



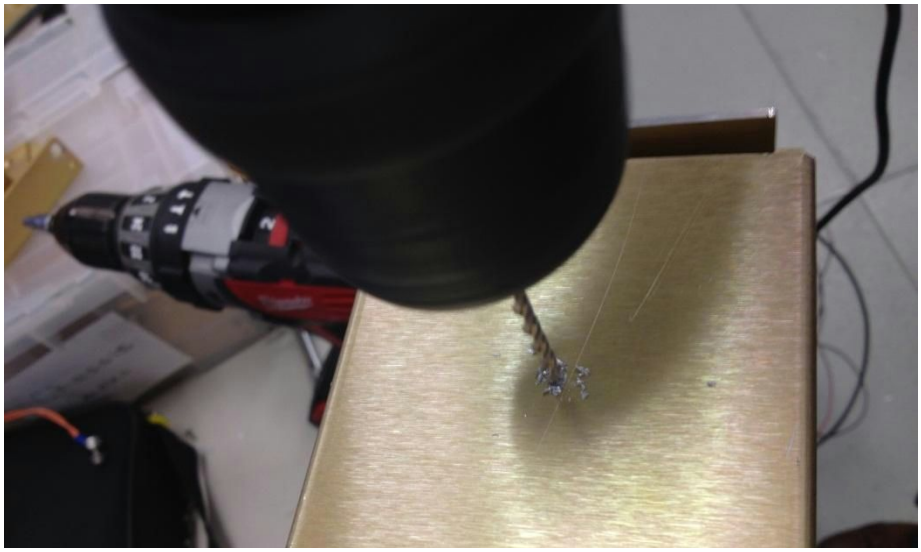
In addition to installing the Driver Cutoff circuit, we should also take care of some manufacturing issues while we have the box open, and check to see if the back boards are up to date. The first of these is the absence of the locking washers under the Dsub jackscrews:

Step 1:

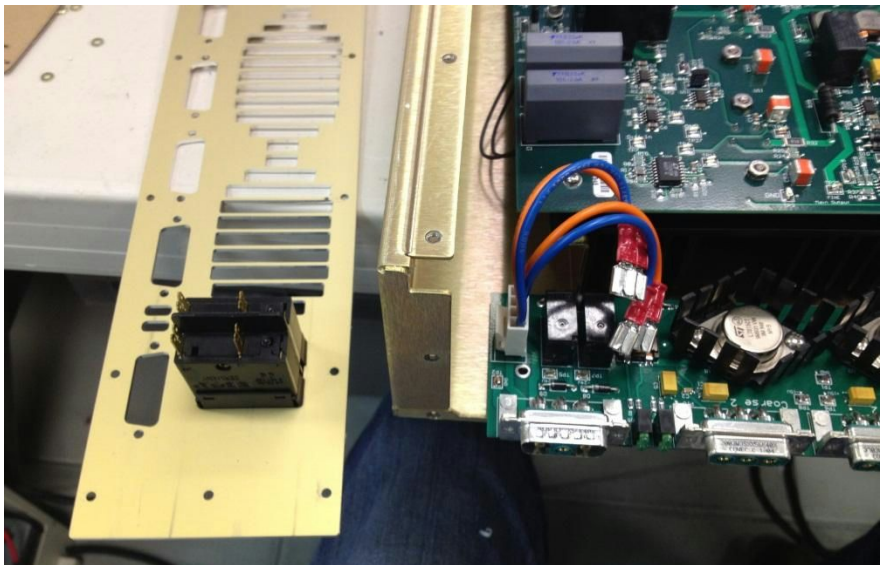
If your chassis does not have a set of power supply standoffs, you will have to drill some holes to mount the boards to on the right side (close to the switch). Find/get/make a hole pattern template for the Cutoff boards, and centerpunch the holes starting approximately 2” from the back edge, and ½” from the bottom:



Drill these holes out with a 7/64” or #36 drill bit:



Unscrew and remove the top cover, and the back panel:



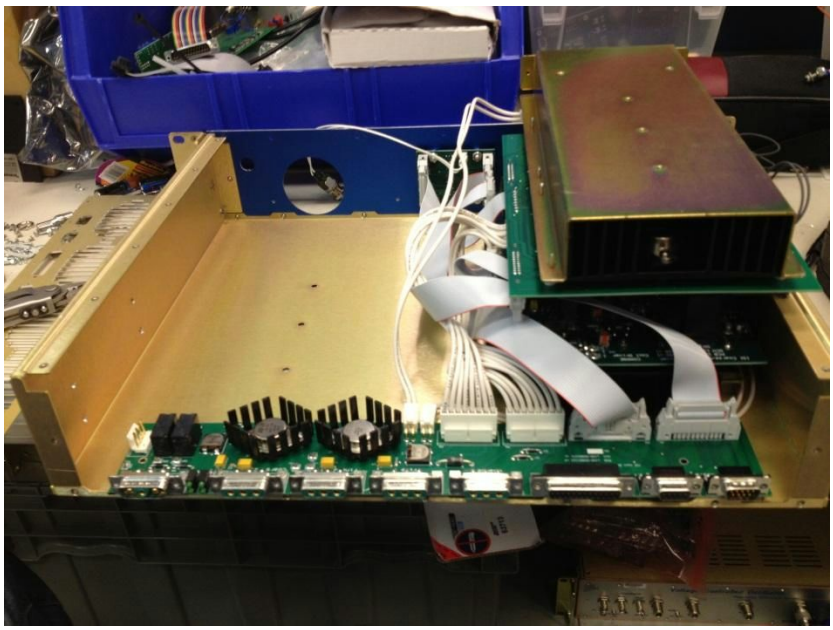
Unscrew the Fine/Coarse 2 fan and electronics module by removing the three screws underneath:

At this point, it is a good idea to check whether the two older modifications have been done to the back board. If not, a description of the necessary changes can be found in the appropriate ECRs.

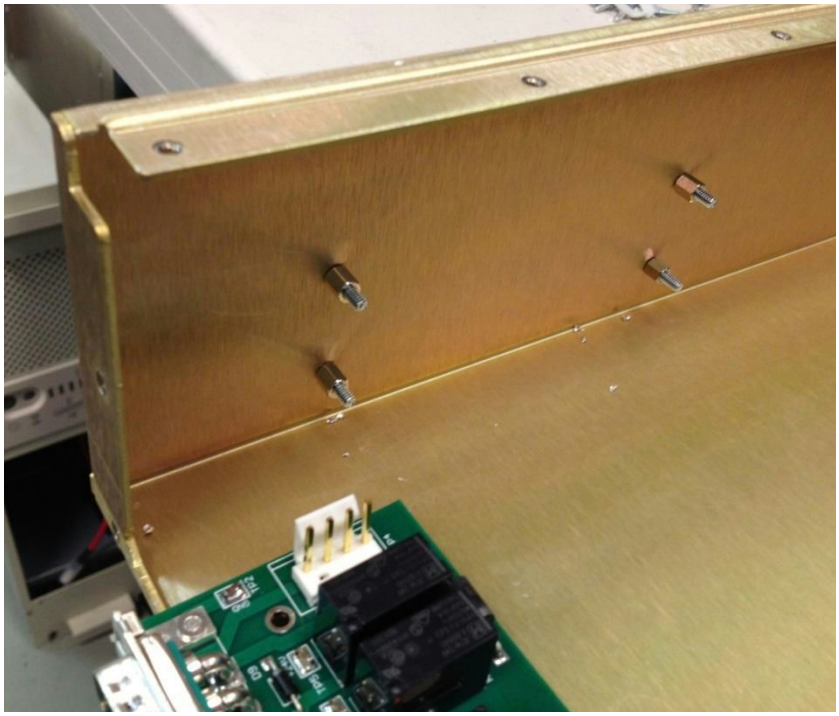
Under J2, there should be a piece of wire connecting pins 4 & 5 (ECR E1100821-v1)

There should be a diode soldered under the negative Voltage Regulator (U2) (ECR E1300535-v1)

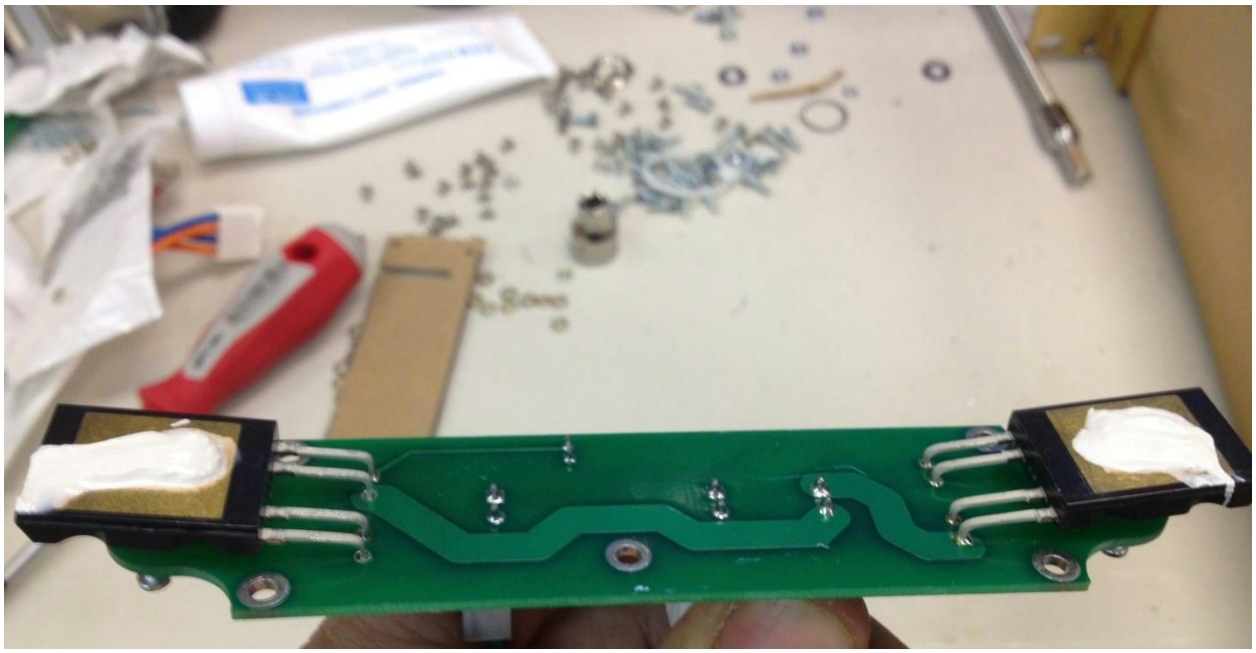
Remove the reset switch from the front panel, and gently turn over the Fine/Coarse2 module and place it on top of the Fine/Coarse1 module:



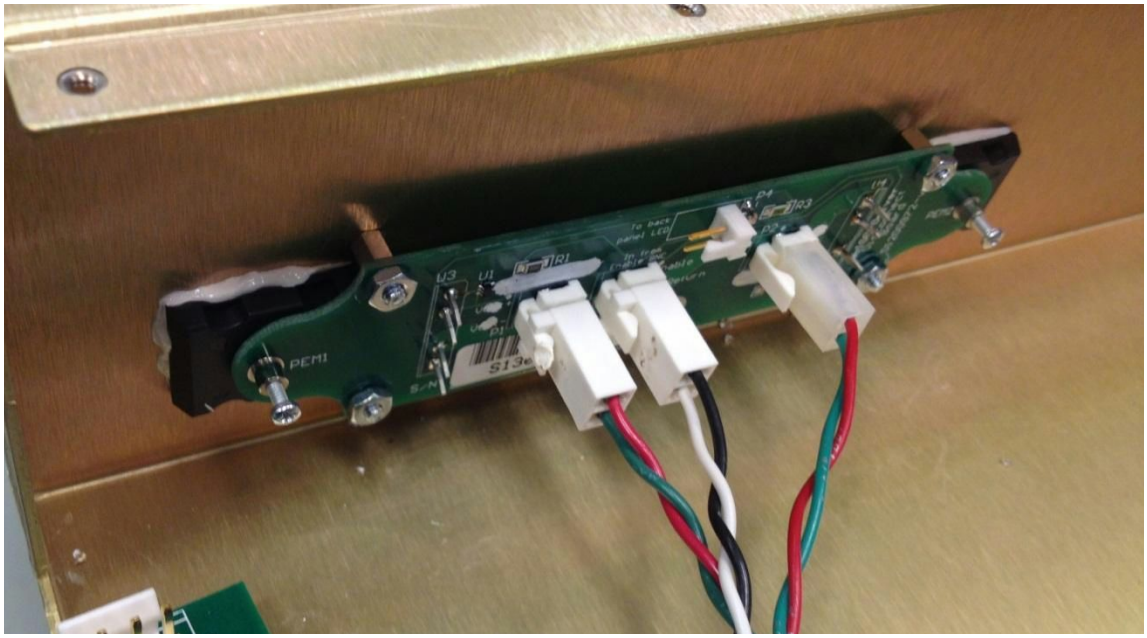
Get four 4-40 x ½” screws, and four 4-40 x 3/16 hex standoffs, and mount them through the four holes:



Place a generous dab of thermal grease onto the two FETs:

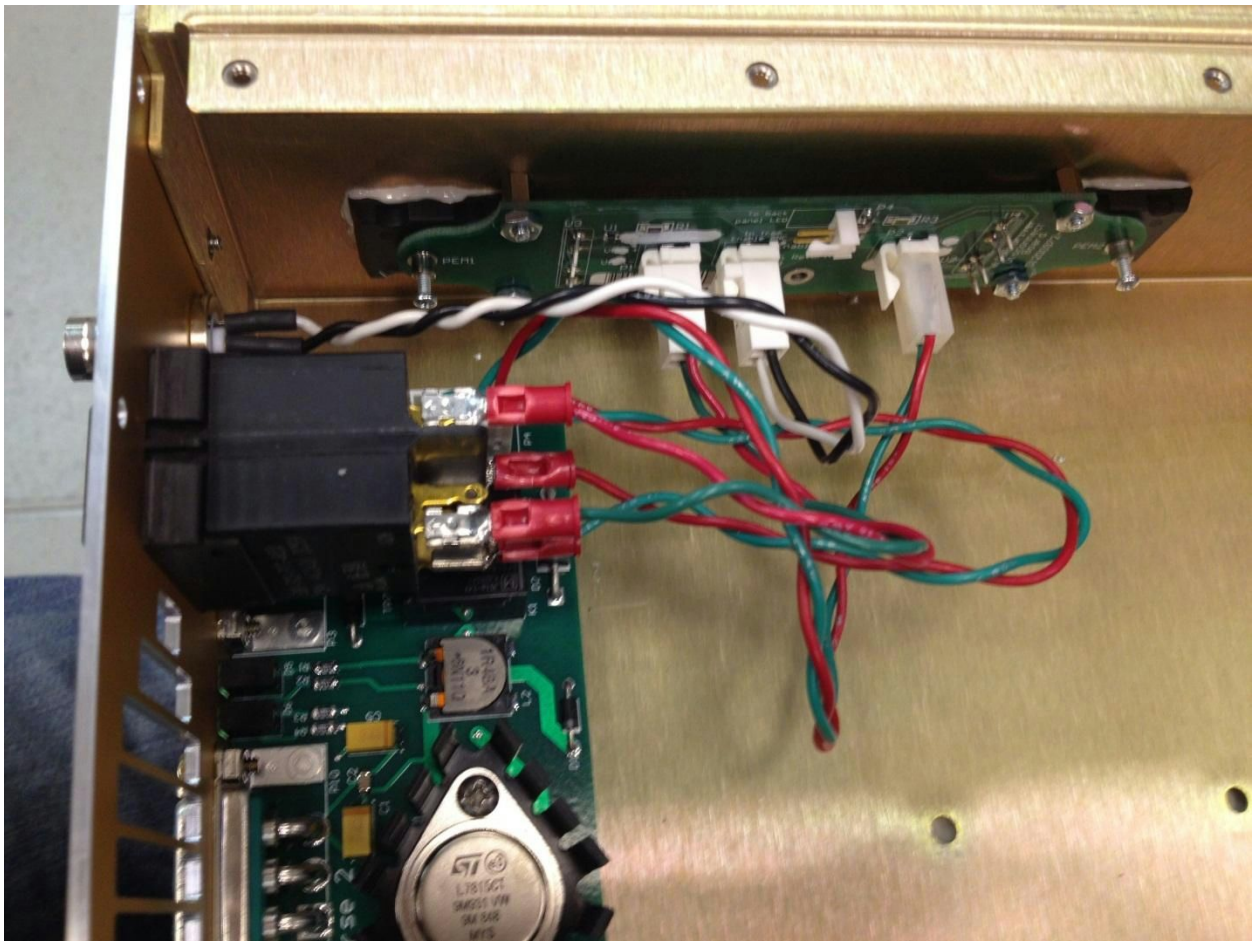


Using four 4-40 nuts, attach the boards to the chassis. Be sure that the pressure screws that push the FETs against the wall of the enclosure are fully backed out. Once the nuts are tight, you can push the FETs against the side wall, and finger-tighten their associated pressure screw:



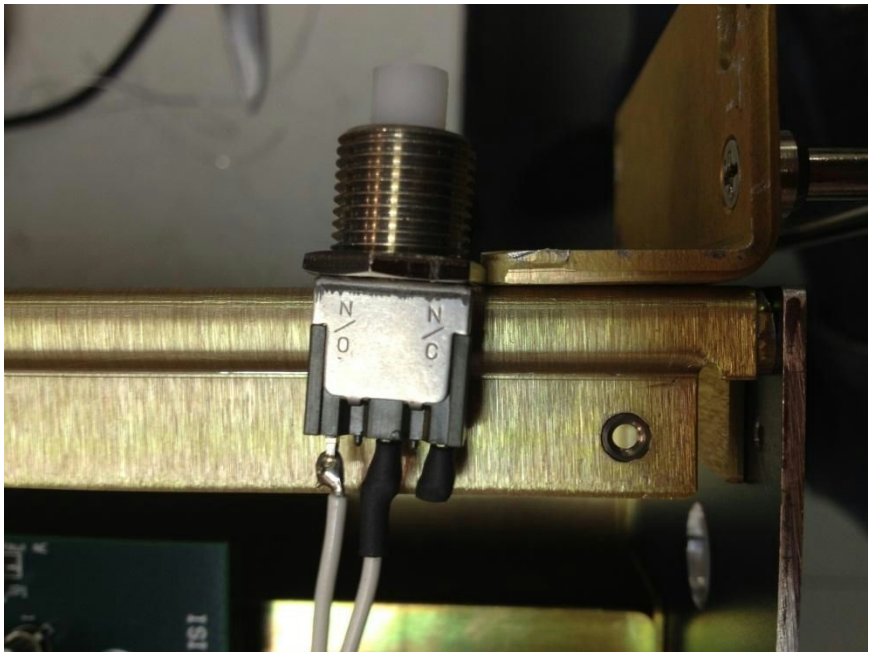
Remove the switch from the old panel, and place it into the new rear panel. Also attach the Watchdog BNC, and put the back panel back together, remembering to install the necessary split washers:

Plug the four crimp terminals onto the back panel switch. For uniformity, I plug the input power onto the bottom pins (positive (red) on the left, as viewed from the top, and negative (green) on the right. I then plug the outward bound power onto the top two pins, with the colors on the same sides as the bottom two:



Now, to fix the two other manufacturing issues, if they're present. At this stage, power up the board, and see if all the surface mount leds light up. If the +15V LEDs do not light, they are in backwards, and need to be turned around:

The second issue is that the reset switch may be wired in backwards. It will still work, but sometimes it will need resetting after a power cycle. To make it work correctly, the outer wire should be connected to the N/O pin, not the N/C pin. If it's connected to the N/C pin, cut it close to the pin, strip the end, and solder it to the N/O pin:



Do one final functionality check by powering the whole chassis up (I used clip leads, but only because I didn't have the appropriate 24V power cord handy), turn it on (which should not do anything), then apply 15V to the watchdog BNC (which should power the chassis up). Check the LEDs on the boards, pull and replace one of the thermal cutoff jumpers, and make sure the corresponding front panel error LED comes on. Reset the chassis with the front panel button then shut it down. Replace the lid, and screw the chassis together.