

Fiber Communication Troubleshooting

When fibers fail to be recognized or recognized intermittently, these are the steps to follow in order. Most generally the issue can be resolved by merely cleaning the connector in the first step. If the problem is chronic, then delve into the remaining steps in order. Carefully inspect each point.

Step 1: Clean the fiber connector:

- Raise the fiber connector door and clean both the inner, and outer electrical contacts with a cotton swab and IPA (Isopropyl alcohol, either 70/30 or 100% is fine)



- Continue cleaning the connectors until used swabs are no longer soiled from debris

Step 2: Verify RF choke is closed:

- If problems persist, open the enclosure lid exposing the bundle of cables that enter the control enclosure .



- The RF choke seen here in the cable should be closed, and have three turns of the gray wire passing through it.



- If the choke has opened due to vibration, and/or there are not three turns through the choke:



- Ensure the proper number of turns, close the choke, and secure with a cable tie:



Step 3: Check solder joint on fiber connector:

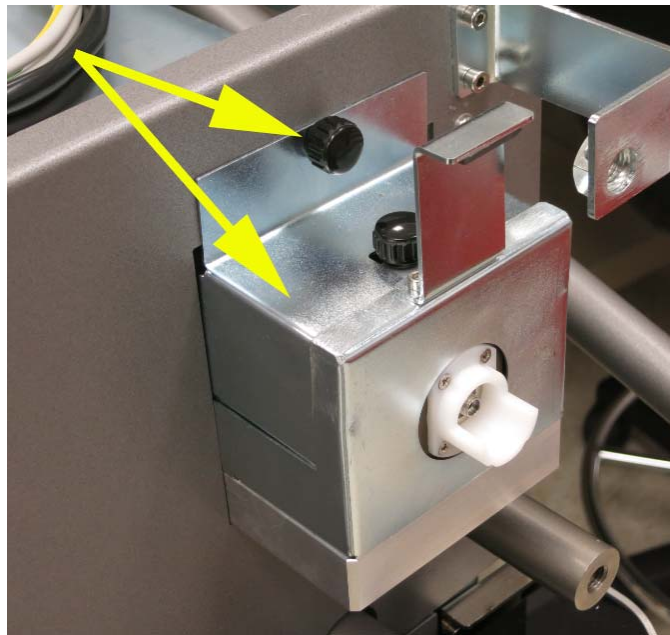
- If the problem still persists, it is most likely the electrical connection at the fiber ring.

CAUTION: SOLDERING SKILLS REQUIRED FOR THIS STEP

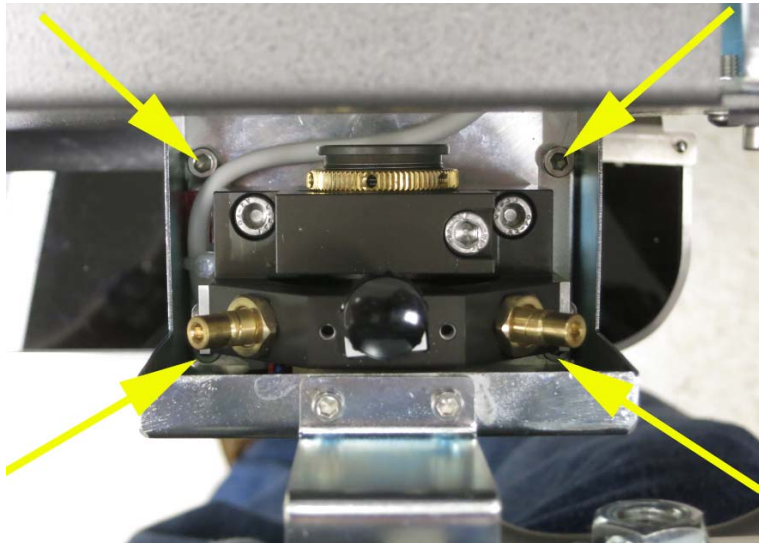
- Remove the four screws holding the front cover:



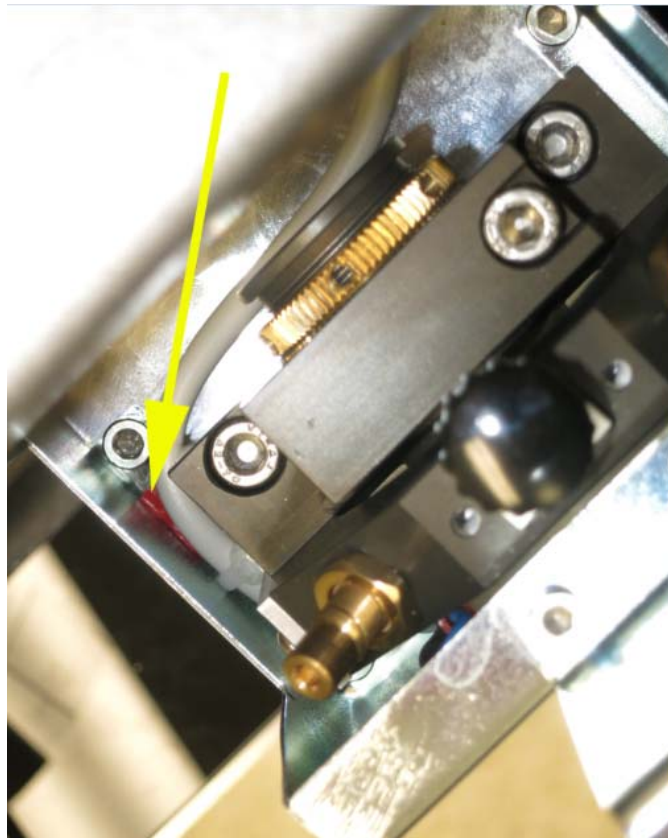
- Next, remove the top cover from the output lens assembly by unscrewing the black knobbed screw shown here:



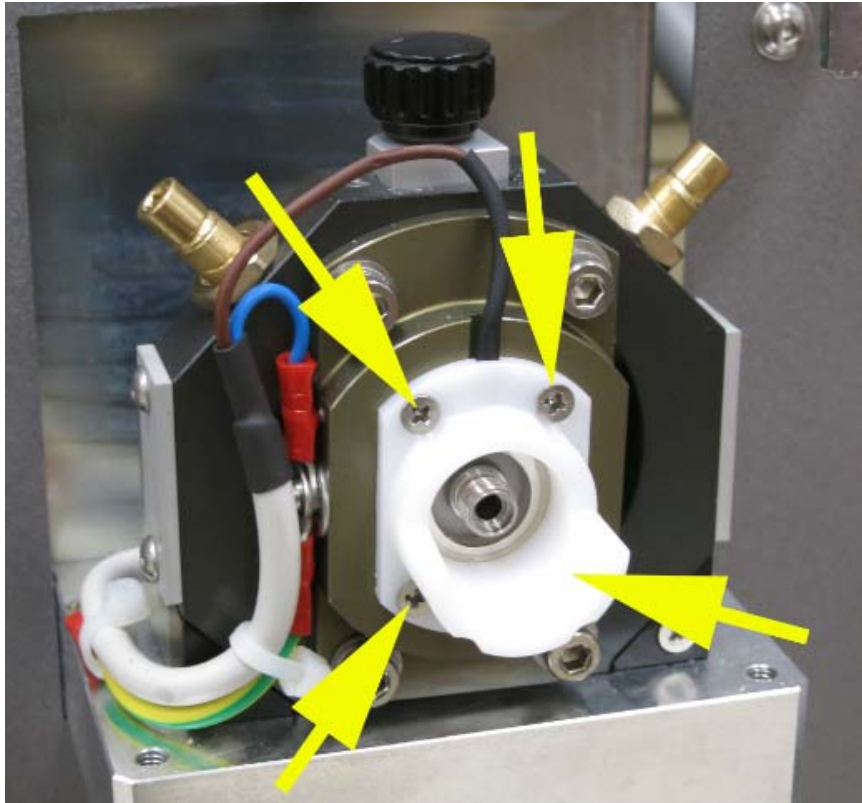
- Now remove the front cover enclosure of the output lens assembly by removing these four screws:



- Pay very close attention to this screw when reassembling. The green jumper wire connected beneath this screw is also **CRITICAL** to fiber communications!



- Once the front enclosure is removed, you will see the output lens assembly and the white plastic saddle where the fiber connects. Carefully remove the white saddle by removing these four screws (one screw is not visible due to the camera angle). Now is also a good time to take a closer look at the jumper described in the previous step. :



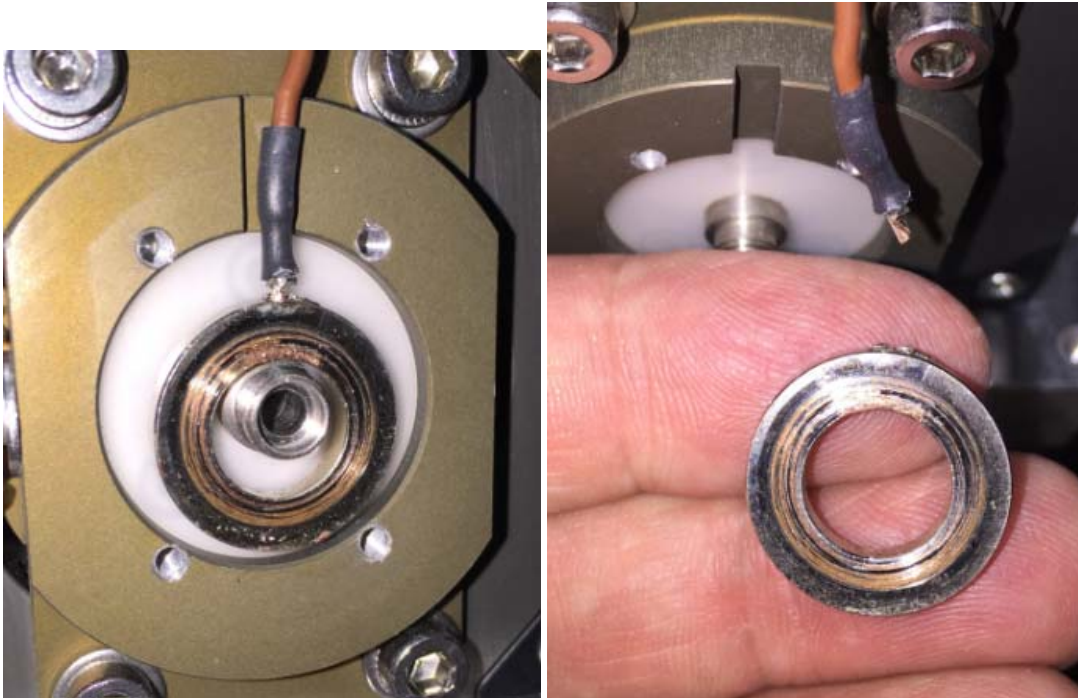
- Carefully pull the white plastic saddle forward to remove:



- The BROWN wire is soldered to the chrome ring. This solder joint can crack. Carefully inspect this connection front and back to ensure a good joint. If you must re-solder, **REMOVE THE O-RING FIRST!!** The wire actually enters a very small hole in the ring. It will be necessary to remove the solder from the hole and reflow fresh solder if the connection is bad. Do not flow an excessive amount of solder onto the joint, space is limited on re-assembly:



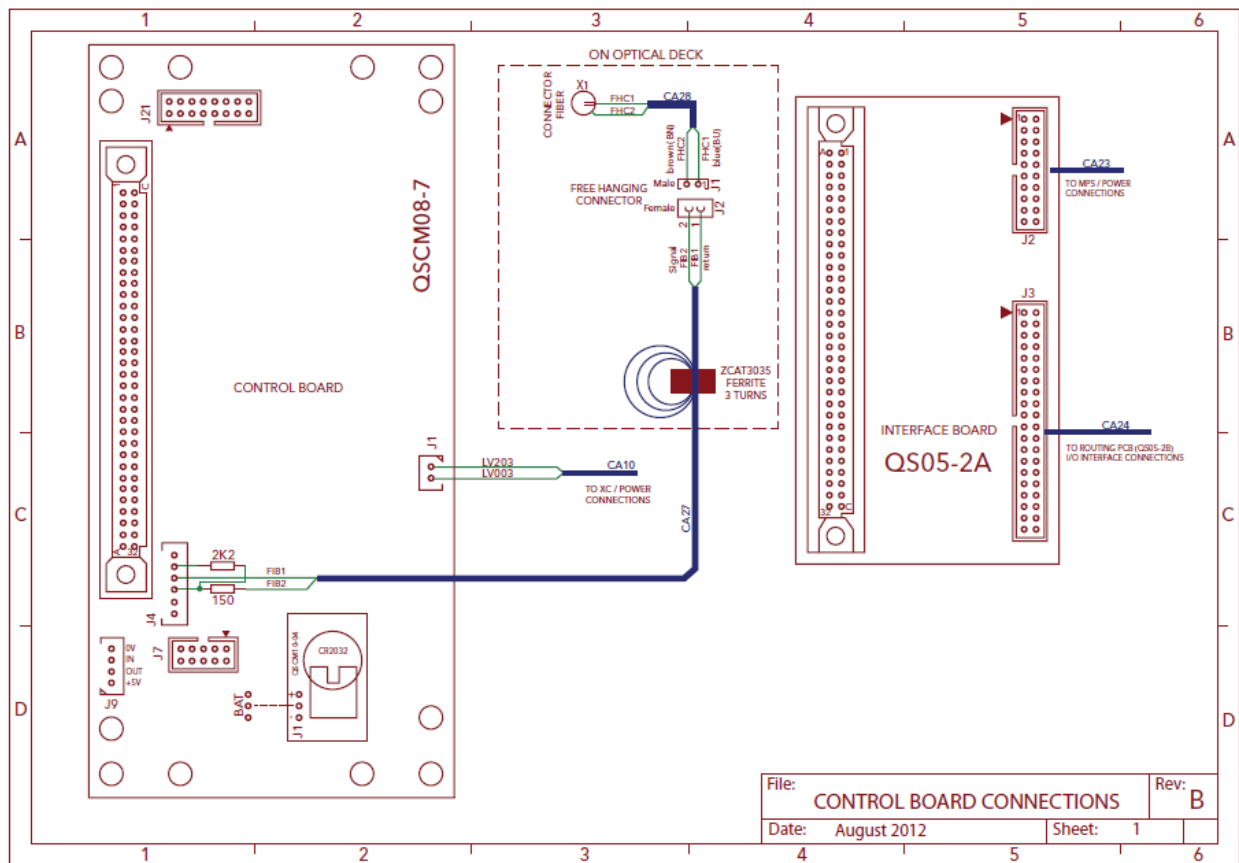
- Here is an example of a bad solder joint and ring:



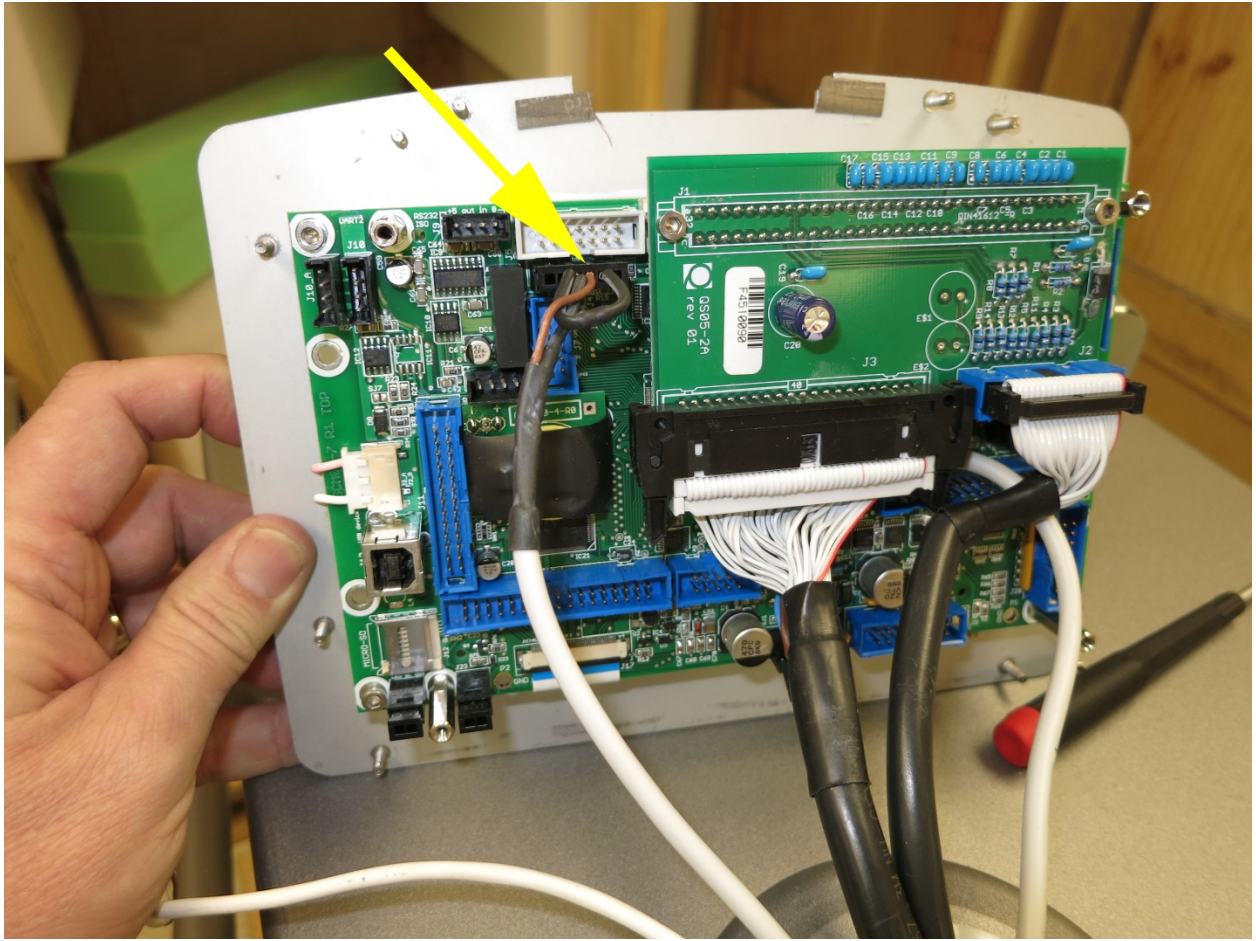
- Re-assembly is in reverse order. Do not re-assemble without the O-Ring! As noted before, pay close attention to the green jumper wire that connects to the back left screw of the output lens housing!

Step 4: Check fiber communication cable:

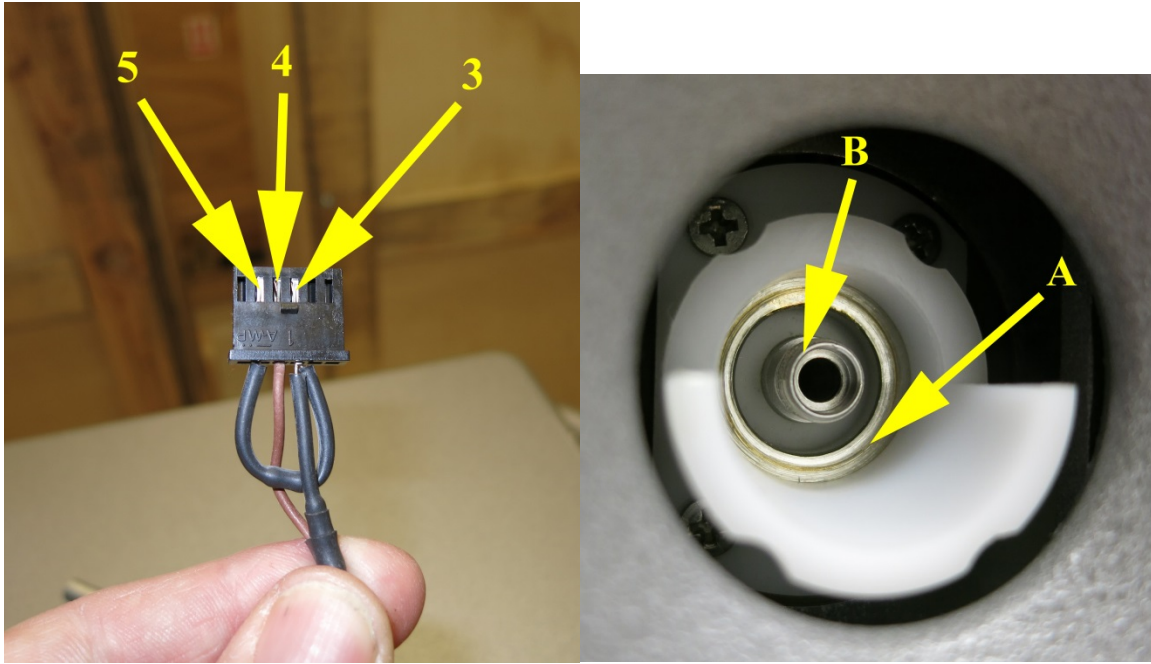
- This step will refer to the following page in the service manual. It shows details of how the fiber communication is routed to the controller:



- Open the control enclosure to gain access to main controller board. The fiber communication cable plugs into the main controller here.



- Unplug the fiber communication cable.
- Use a resistance meter to measure the following values:



- Between indicated positions 5 and 3, you should read approximately 2.2K Ω
- Between indicated positions 4 and B, you should read close to 0 Ω .
- Between indicated positions 3 and A, you should read approximately 150 Ω .
- Between indicated positions A and B, you should see an infinite, or open, resistance.

Step 5: Image capture:

- Capture the fiber error message if/when it appears on the screen with a camera, or smartphone.
- Send the captured image, along with the unit's serial number to Capital Service Customer Service at capitalservice@cookmedical.com

Conclusion:

One of these four steps will most likely lead you to a fiber connection error solution. Not every scenario can be enumerated here. These are the most common issues found to date.