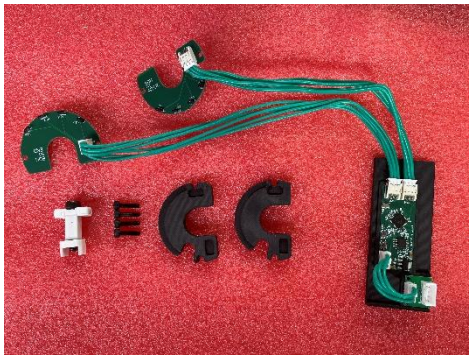
H1 electronics upgrade kit
Instructions

You will need:



- Upgrade kit (provided)
  - PCBs x 4
  - 3D printed board insulators x 3
  - Connecting wires (JST to JST) x 3
  - 3D printed selector hammer (magnet housing) x 1
  - M3x12 screws x 4
  - M5x25 screw x 1

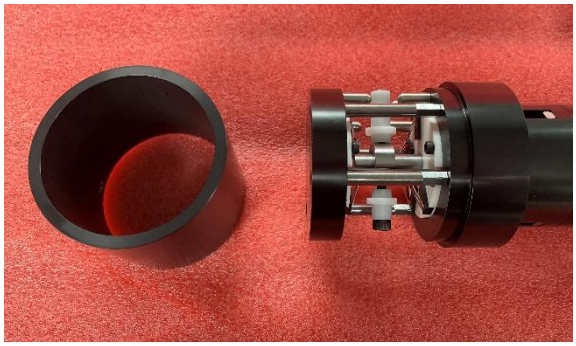
- Tools
  - Allen keys (2mm, 2.5mm, 3mm, 4mm)
  - Needle nose pliers
  - Wire cutters (optional)
  - Small slotted screwdriver (optional)
  - File/deburring tool (optional)

Instructions

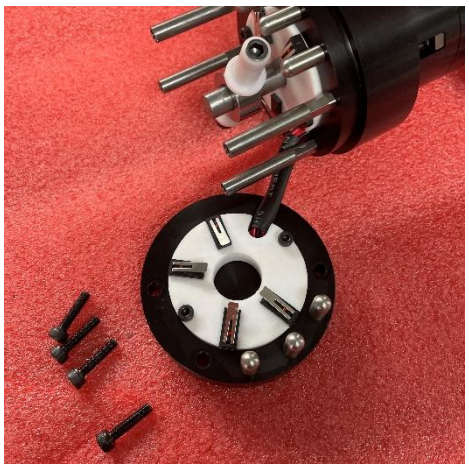
1. Remove the top clamps by undoing the 8 M4x16 screws with a 3mm Allen key.

2. Remove the shifter from its stand.

   Unplug and remove the old board/USB cable and take out any insulating material from the tray, only the USB cable will be reused.

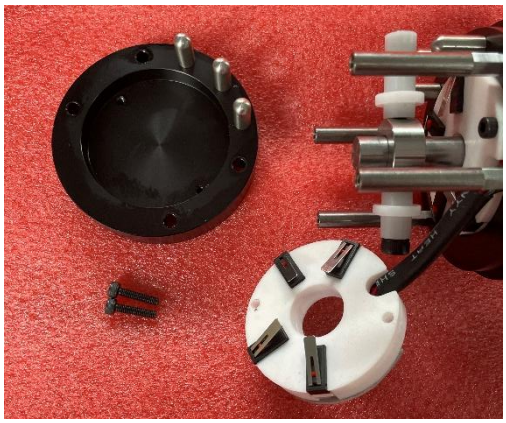


3. Take off the front cowl by undoing the M4x6 grub screw with a 2mm Allen key.

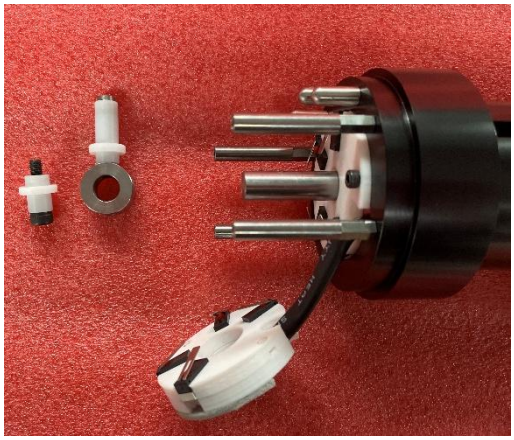


4. Remove the front end by undoing the 4 M4x16 screws with a 3mm Allen key.

5. Take out and discard the 2 existing M3 screws with a 2.5mm Allen key and separate the front end from the switch housing.

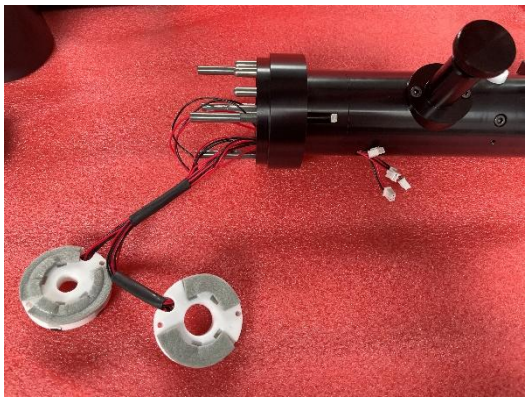


6. Slacken off the 2 M5 screws in the striker collar with a 4mm Allen key.
   Remove the collar from the shaft (this may require some force if the screw ends have marred the shaft).
   Discard the shorter M5 screw along with its nylon sleeve, it will no longer be used.



7. Take out and discard the 2 existing M3 screws from the other switch housing with a 2.5mm Allen key and separate it from the shifter.

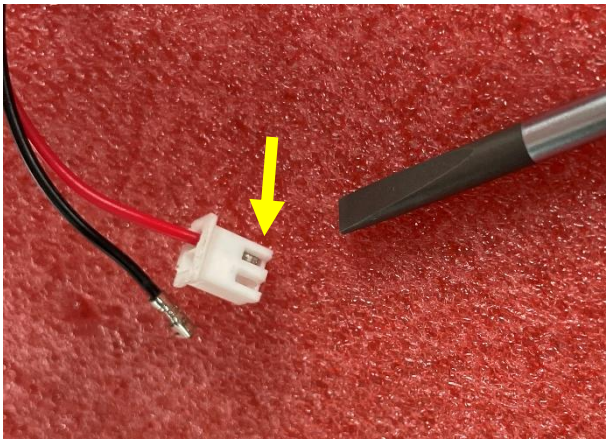
8. The wires are now free to move through the shifter BUT:



To prevent the connectors getting trapped inside the shifter, and to avoid extensive disassembly, it is recommended to remove the connectors from the wires first.

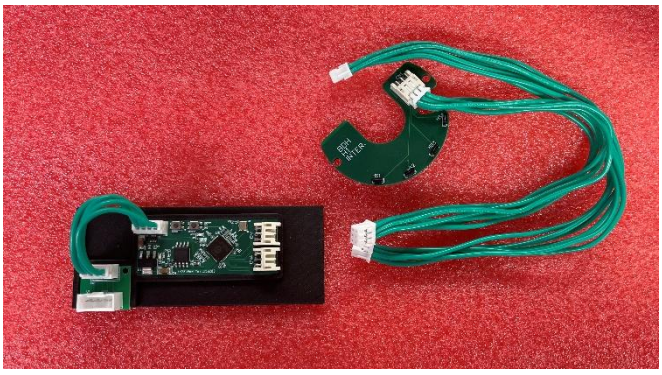
This can be done in two ways:

a) Cut the connectors off with wire cutters.

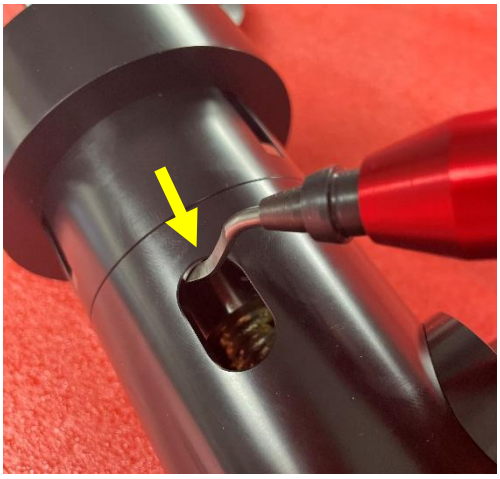


b) If you wish to preserve the switch assembly, remove the crimped wires from the connector by depressing the metal tab on the crimp with a small slotted screwdriver. (They can be pushed back in later).

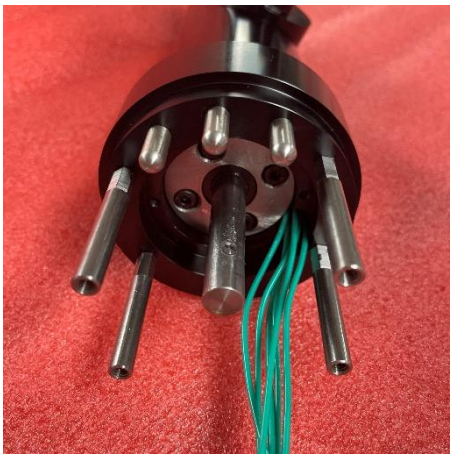
9. Unplug the connecting wires from the main board.

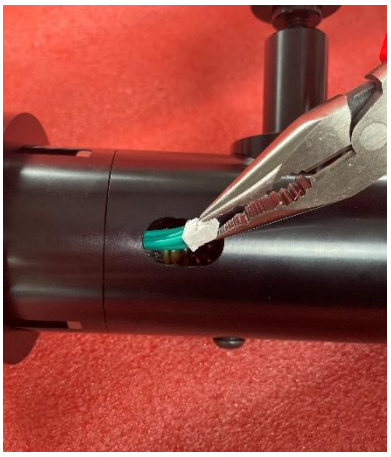


10. Before inserting the connecting wires, you may wish to deburr the sharp inner edge of the opening with a deburring tool or file. This will reduce the chance of damaging the wires' insulation when pulling them through.

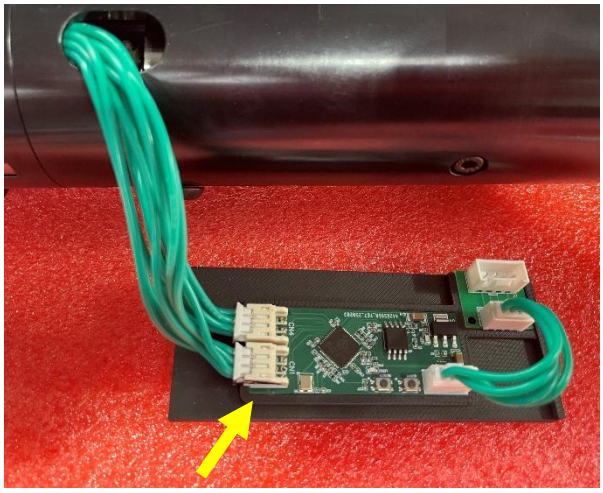


11. Feed the connecting wires through one by one, gently pulling them through the opening with needle nose pliers when they come into view.

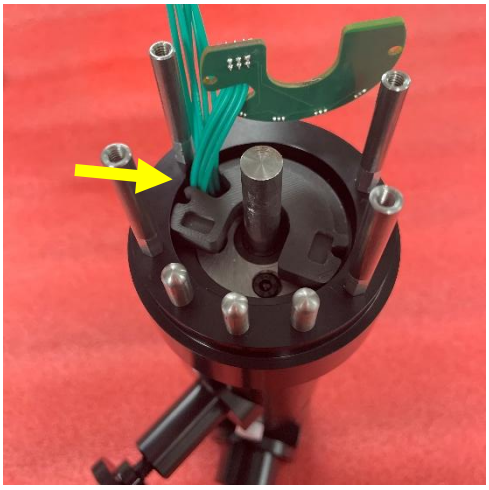


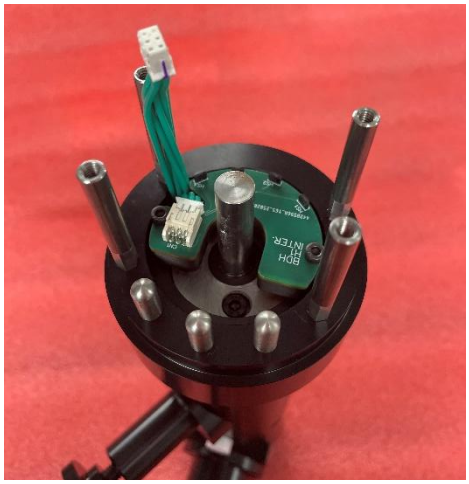


12. Plug in the main board.
Make sure that the male and female connectors with marker pen on connect to each other.

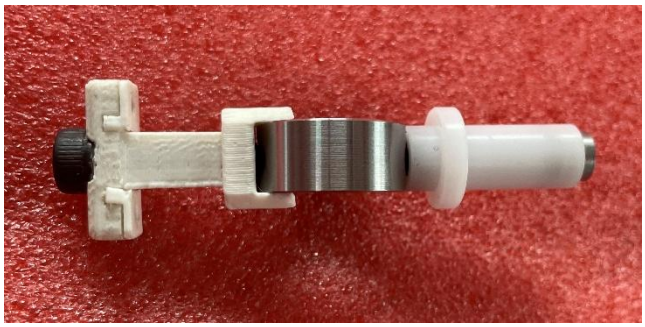


13. Use a 2.5mm Allen key to fasten down the ‘inter’ board and board insulator with 2 of the M3x12 screws provided.
Make sure the wires go through the cutout and aren’t crushed when tightening.

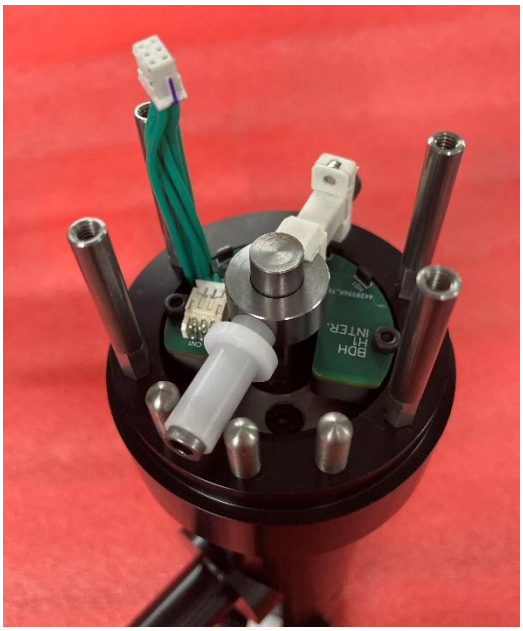




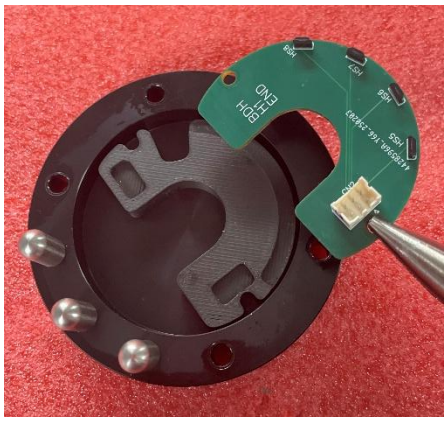
14. Reassemble the collar like this (the new magnetic selector hammer with the M5x25 screw provided has replaced the shorter M5 screw and nylon sleeve).

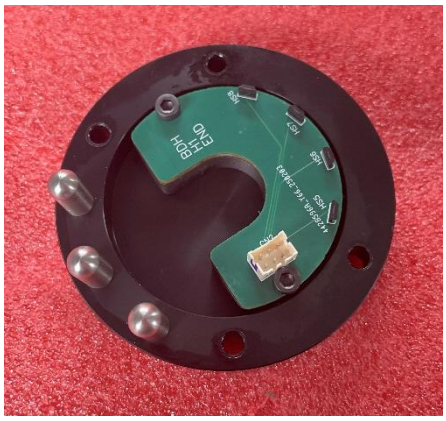


15. Slide the collar back over the shaft as shown but don’t tighten the screws yet. (The shaft can be filed lightly if it is too marred for the collar to fit back on).



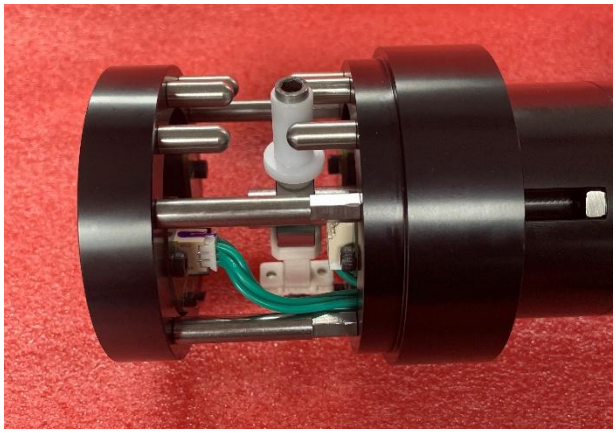
16. Use a 2.5mm Allen key to fasten down the ‘end’ board and board insulator to the front end as shown with 2 of the M3x12 screws provided.





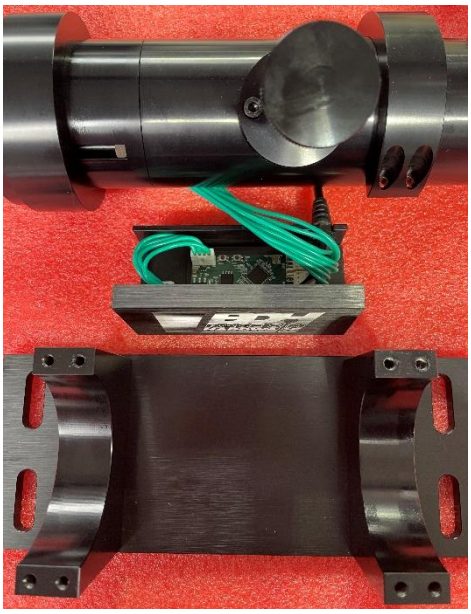
17. Use a 3mm Allen key to reattach the front end with the 4 M4x16 screws previously removed.

    Plug in the end board.

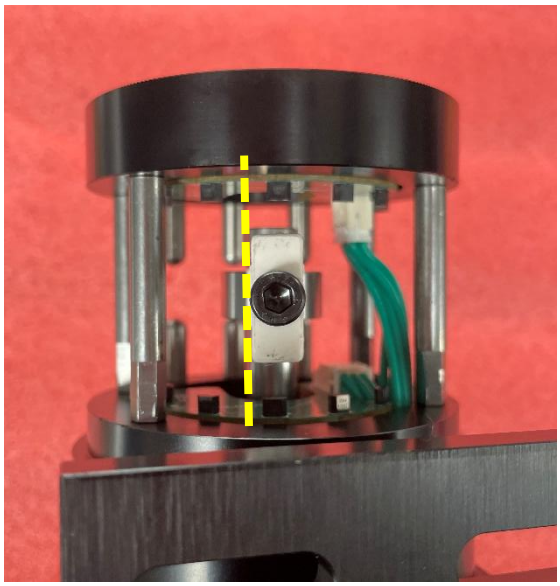


18. Plug the USB to JST cable into the small power adapter board and sit the board inside the tray as shown, fitting the grommet of the USB wire into the cutout of the tray.

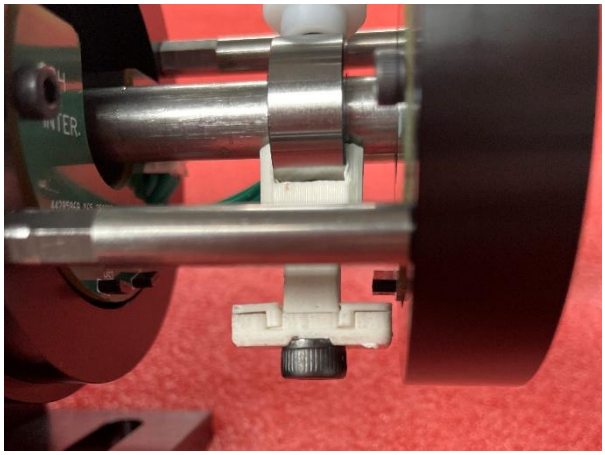
19. Pack the wires into the tray and sit the shifter back on its stand. Make sure that no wires get trapped.
Refit the clamps, using a 3mm Allen key to fasten the 8 M4x16 screws removed previously.



20. Put the shifter in neutral and apply some tension with the tensioner to keep the shaft in place.
Align the collar so that the gate arm is exactly in the middle of the gates shown (mid-way between gears '3' and '4').
Tighten the 2 M5 screws in the collar with a 4mm Allen key, pinning it to the shaft, avoid overtightening.
Make sure the selector hammer is straight.



21. Go through the gears, making sure that the selector hammer ends are clearing the sensors/metalwork.



22. Refit the front cowl and fix it in place by tightening the grub screw with a 2mm Allen key.

    The upgrade is now complete.