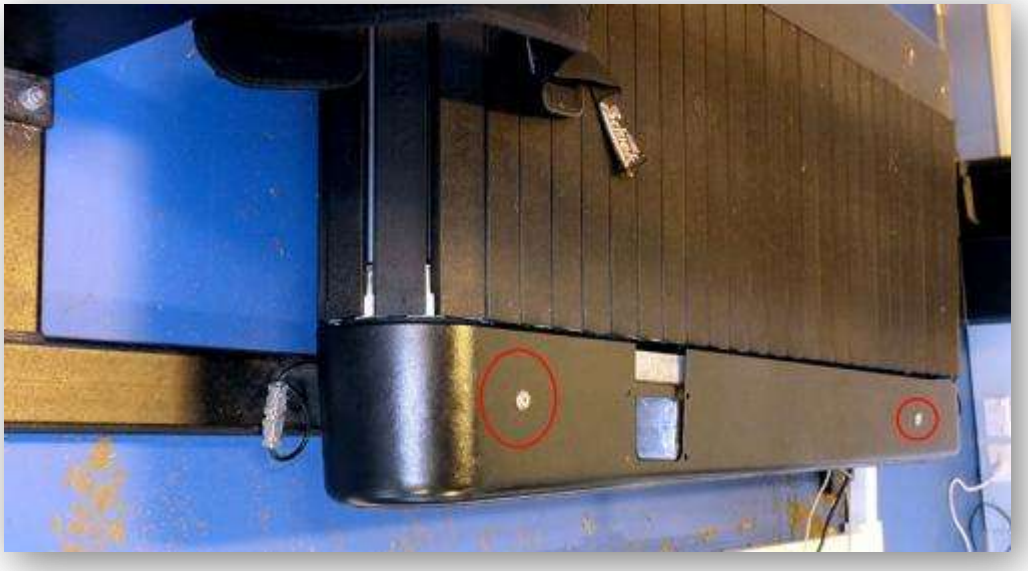
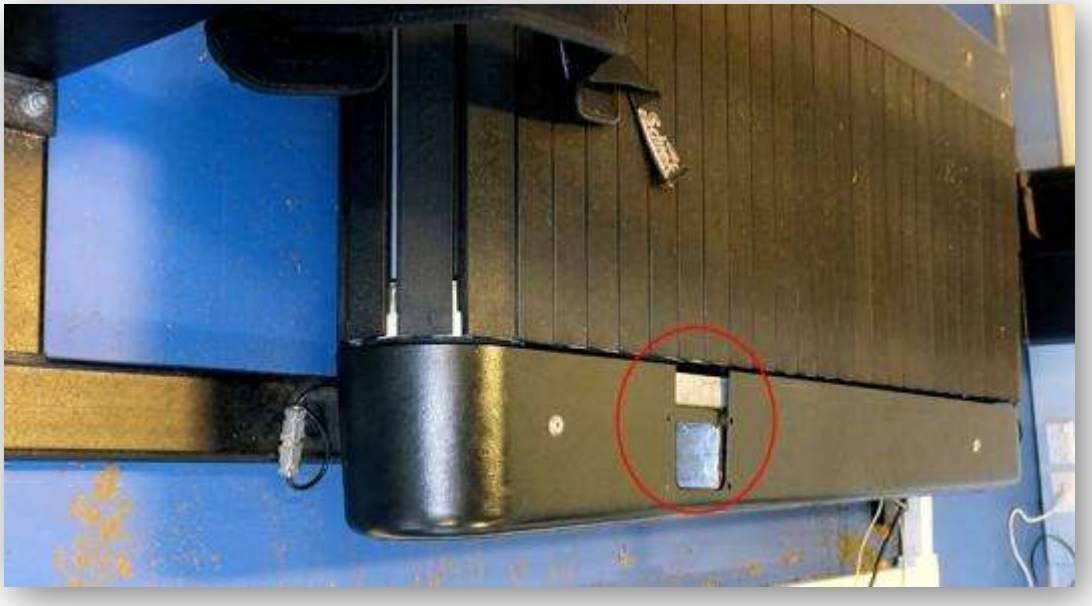
Mounting the new 600 Pulse Tacho sensor in the Force 3 Treadmill

First you will need to remove the side cover to access the Tacho and the XPV7 Interface PCB.

loosen the two screws at the top of the right side cover (standing at rear of treadmill).



If the Upright for the control panel is still connected you will also need to remove the three screws that hold the panel that surrounds the upright.



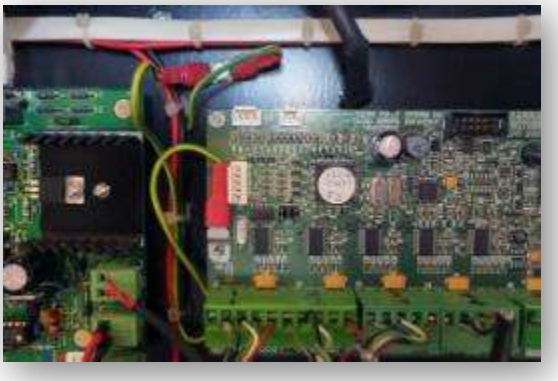
Once all screws are removed you can slide the side panel off. This will give you access to the Tacho and circuit board (PCB).

We will start by removing the PCB. **Turn off and unplug the power at the wall before touching anything inside the treadmill.** No we can start to unplug the cables connected to the PCB. Start with the USB lead (see below)

Then unplug the Brake controller lead (below left) and the PCB Power lead (below right)

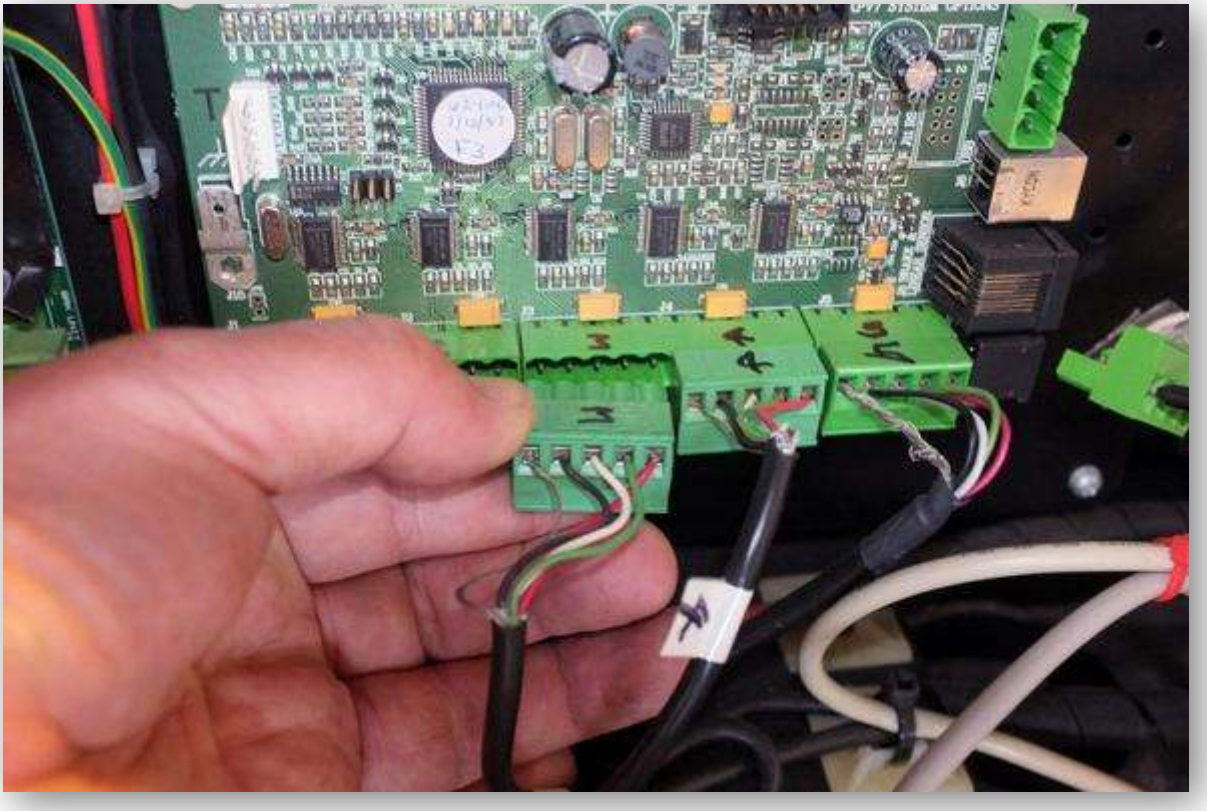
Once they are removed we can unplug the heart rate lead (see below)

and the tacho lead (below below left). Now you want to unplug the earth lead (below right)

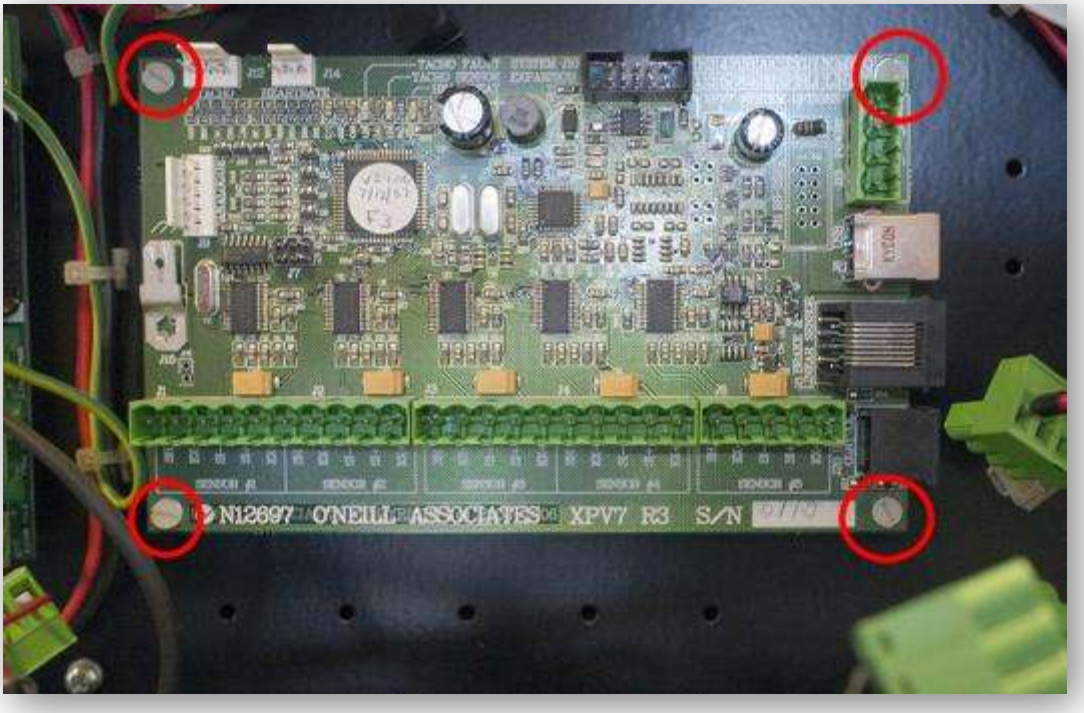


Before removing the load cell connectors you will want to ensure they are labelled 1 to 5, left to right as below (use a permenant marker). this will help ensure the correct load cell reconnects to the right position when the new board is installed.

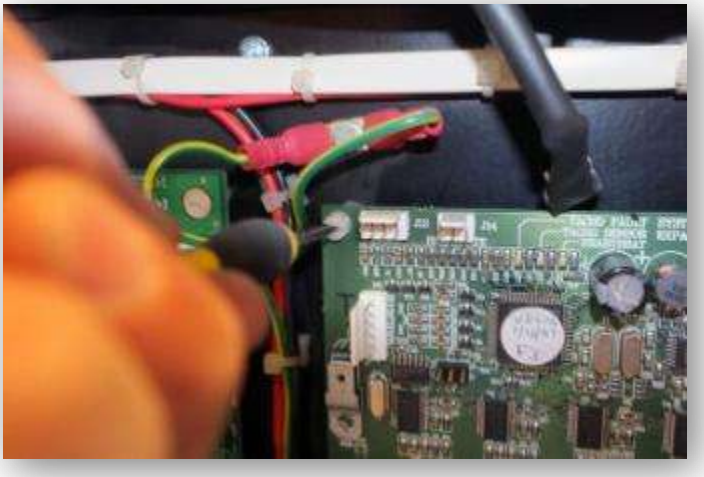
Now you can unplug the load cells from the PCB. **Do this by pulling on the connector not the cable.**

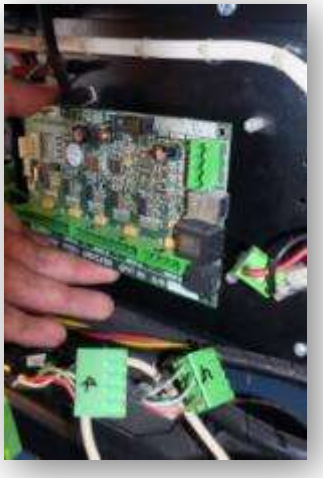


Once all are unplugged you will be able to see the four srews that hold the PCB in place.



Remove the four screws and then you can remove the PCB.



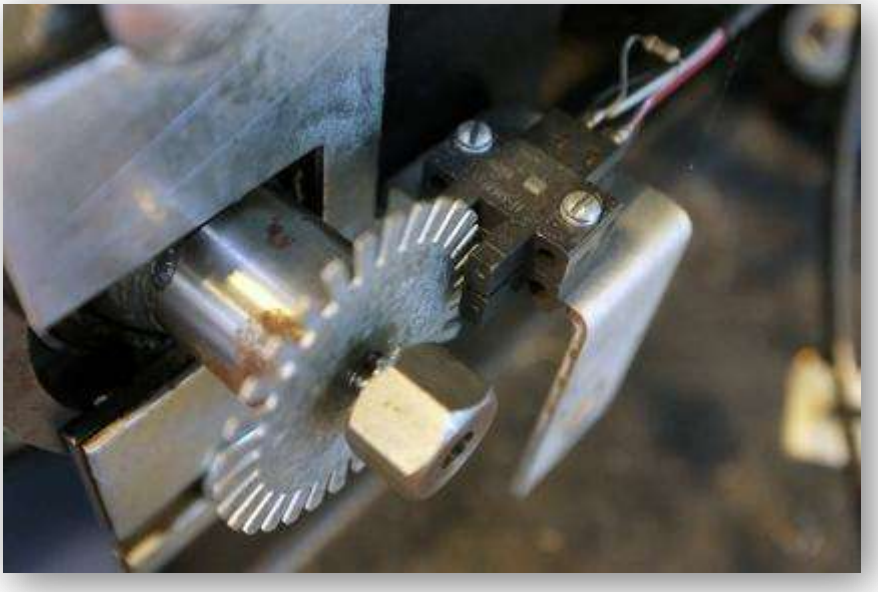


Once the PCB is removed when can go ahead with attaching the new tachometer. first remove the screw holding the old tacho disk using 4mm Allen Key. Discard the screw but keep the disk and the star washer.

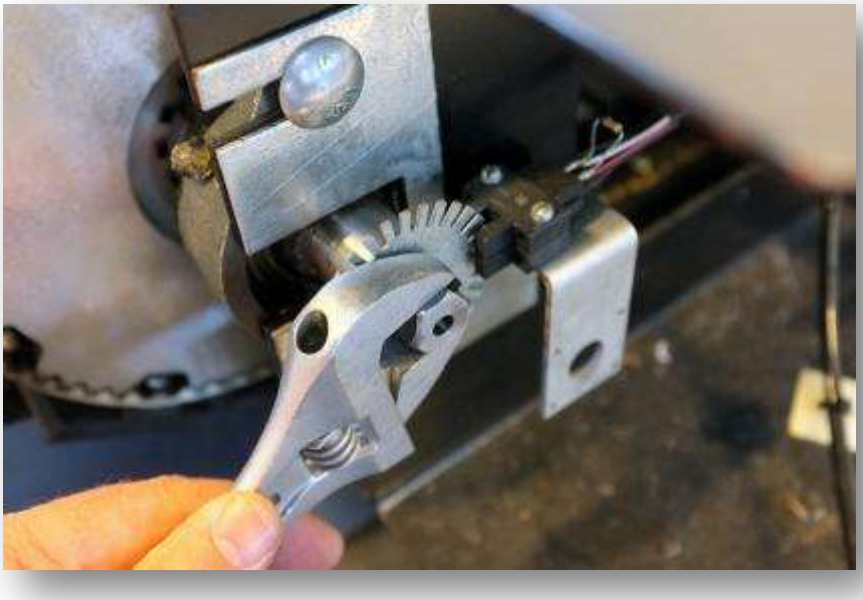
Place the tacho adapter through the hole in the disk with the star washer in place (see below)

Apply a drop of loctite 243 or similar (supplied with kit) to the thread of the tacho adapter.

Screw the tacho adapter back ensuring that the tacho disk is positioned between the optical sensor as shown in the image below.

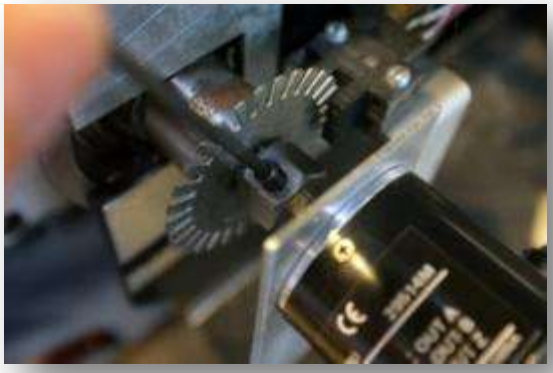


Tighten the tacho adater firmly with a spanner

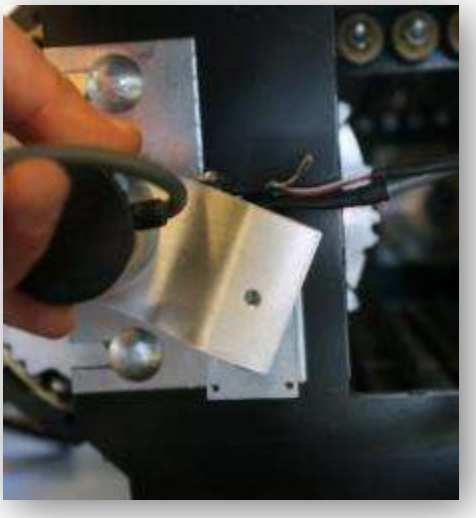


Remove the grub screw using a 2.5mm Allen key and apply a drop of supplied loctite.

insert the shft of the tacho unit and re-insert the grub and tighten firmly.



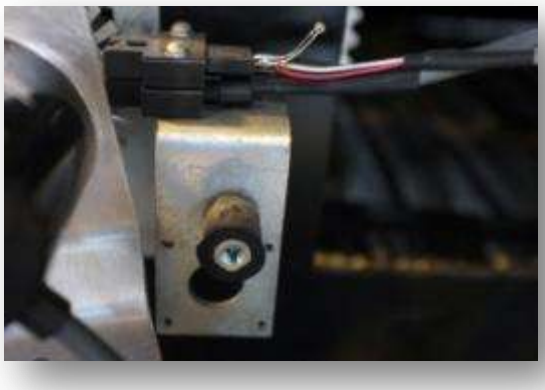
You will now need to drill a 4mm hole so get your drill and rotate the tachos bent mounting plate so that you can drill a mark onto the metal tab behind the tachos bent mounting plate.



You will only need to mark the metal at this point. then you can spi the tacho mounting plate back outof the way and finish drilling the 4mm hole.

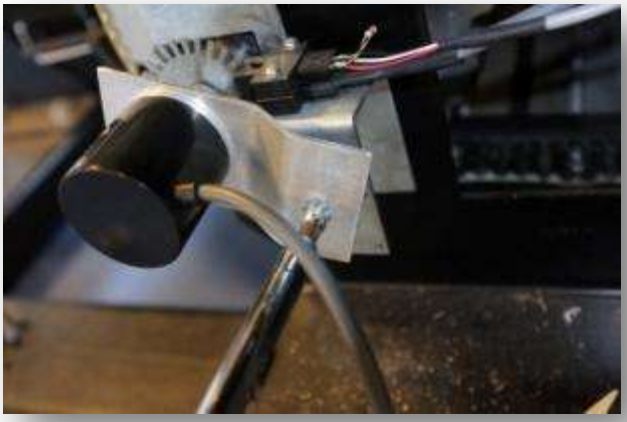
wethen get the rubber vibration reduction mount and a 4mm screw with two star washers on it. remove one of the star washers and position the screw through the previously drilled hole from the rear of the metal tab (as below). Then put the second star waher on the screw

with your finger on the screw head to hold it in place screw the rubber vibration reducer into place as tight as you can. This can be done with your fingers or you will need to get a right angle phillips head screwdriver.



Rotate the tacho so that the mounting plate once again lines up with the hole in the rubber vibration reducer.

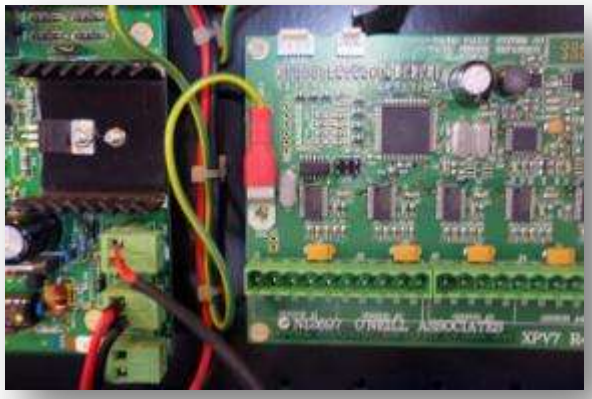
Screw the screw with the nut and star washer into place to lock the tacho in position



You will then need to run the cable from the tacho along the existing cble run to get the plug end back into the areawhere the PCB will be re-mounted.

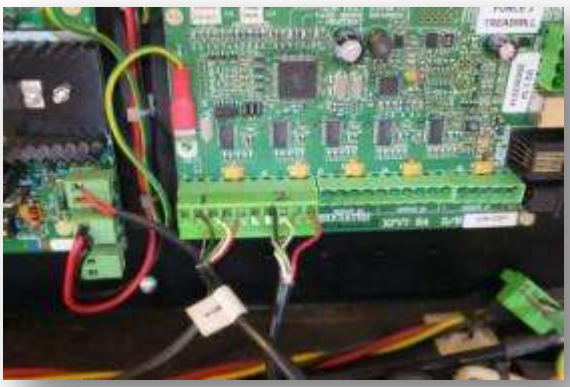
Re-mount the PCB using the four plastic screws from the old PCB and tighten.

Connect the earth lead.

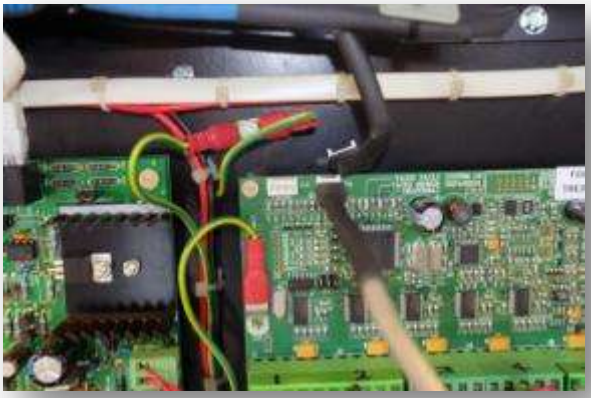


Reconnect the 5 loadcells ensuring they go 1-5 left to right. then reconnect the PCB power lead, USB lead

And the brake controller lead (as below Right).



Recconnect the heart rate and then the new tacho connector.



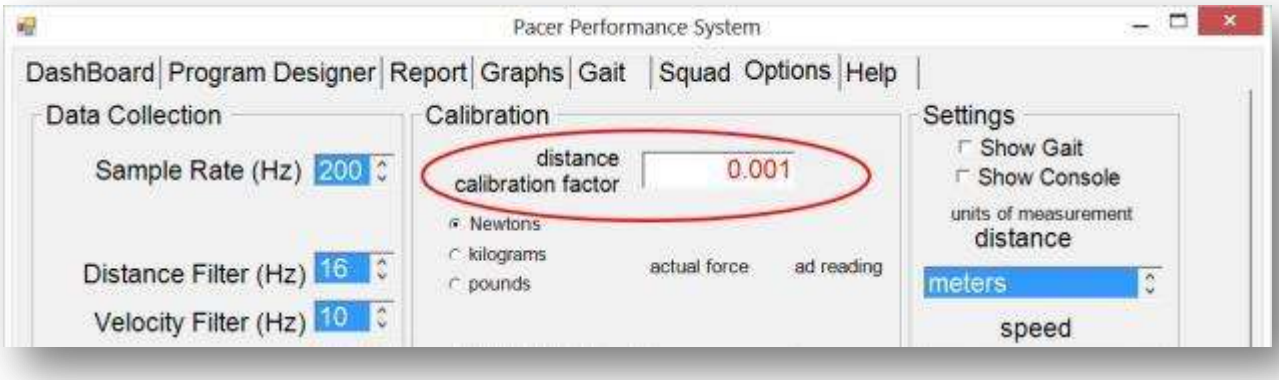
When everything is plugged in we can secure the tacho cable using the supplied cable ties.

The unit is now setup for testing. Power up the treadmill at the wall and plug USB lead into your PC. Run the XPV7 diagnostic software (Available here) as per the video below to check that everything s connected properly and working before replacing the cover

Video: Using the Test XPV7 Diagnostic Software with the Force 3 Treadmill

If all is working ok you can replace the side cover.

Once the treadmill is back together you can reconnect the USB lead to a PC and start the Pacer Performance System Software. You will need to change the distance calibration factor from 0.02 to 0.001. Go to the Options tab to do this (see below) This tells the software that every pulse signals 1mm of deck travel instead of the old 20mm.



The tacho upgrade is now complete.