

MATRIX

ICR50 INDOOR CYCLE

TROUBLESHOOTING GUIDE

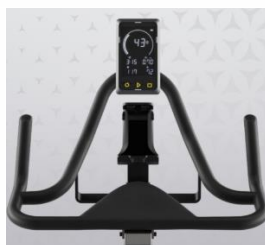
FOR

FC205 FRAME

PHONE/TABLET

OPTIONAL LCD CONSOLE

OPTIONAL IX DISPLAY



ISSUED 3/17/2022

JOHNSON HEALTH TECH - TCMT

V2 – UPDATED 3/8/2023

TABLE OF CONTENTS

INTRODUCTION	3
SERIAL NUMBER	4
<i>Frame</i>	4
<i>LCD Console</i>	4
<i>IX Display</i>	4
KEY COMPONENTS	5
LOWER CONTROL BOARD (LCB)	5
BATTERY.....	6
POTENTIOMETER.....	6
SPEED SENSOR.....	7
<i>Testing Continuity</i>	8
PHONE/TABLET	10
CONNECTING ICR50 TO APP	10
FITNESS APP NOT WORKING CORRECTLY AFTER SERVICE	10
NO RPM ON PHONE/TABLET	11
RPM ONLY DISPLAYS IN MULTIPLES OF 20	11
IS THE PELOTON APP COMPATIBLE?	11
THIRD-PARTY APP IS SLOW TO PAIR WITH THE FRAME.....	11
THIRD-PARTY APP DOES NOT SHOW THE ICR50 CYCLE (FC205) AS AN OPTION	11
SPEED OR CALORIE READOUTS DIFFERENT BETWEEN APP AND CONSOLE	12
LCD CONSOLE	13
CONNECTING RF SENSOR TO LCD CONSOLE.....	13
NO RPM ON LCD CONSOLE	15
SLOW RPM CHANGE ON LCD CONSOLE.....	15
CONNECTING HR STRAP TO LCD CONSOLE	16
IX DISPLAY	17
WHAT DEVICES ARE COMPATIBLE WITH THE IX DISPLAY?.....	17
AUDIO WITH THE IX DISPLAY	17
FRAME TROUBLESHOOTING	18
MAST/SEAT TUBE CANNOT HOLD POSITION	18
NOISE FROM THE CONTROLLER DISK	19
NOISE FROM THE FLYWHEEL	20
CANNOT CLIP INTO PEDALS	21
RESISTANCE FEELS DIFFERENT THAN WHAT'S SHOWN ON DEVICE	21
CRANK SCREW IS DIFFERENT.....	22
CHANGE LOG	23

INTRODUCTION

Use this guide for troubleshooting issues with the ICR50 indoor cycle frame, third-party fitness apps on a phone/tablet, the *optional* LCD console, and the *optional* 22-Inch IX Display.

Additional guides are located on the ICR50 product page in Online Remedy.

- For indoor cycle assembly instructions, follow the Frame Owner's Manual (under Owner's Guides) or the video [Indoor Cycle Assembly](#).
- For maintenance instructions, see Caring for Your Indoor Cycle (under Owner's Guides) or the video [Indoor Cycle Maintenance](#).
- For general information, see the IX Display & Console Guide (under Owner's Guides).
- To test continuity while troubleshooting, refer to Using Your Multi-Meter (under Troubleshooting Guides).

ICR50 | FC205 | 2020 (Bike - Indoor Cycle)

Brand:	Matrix Retail	Product Codes:	FC205
Model Year:	2020-2025	Sales Channel:	(N/A)
SAP Number:	[Multiple - Click to View]		
		MSRP:	(N/A)

Update Center

[\[Found 4 Updates \]](#)

Documents

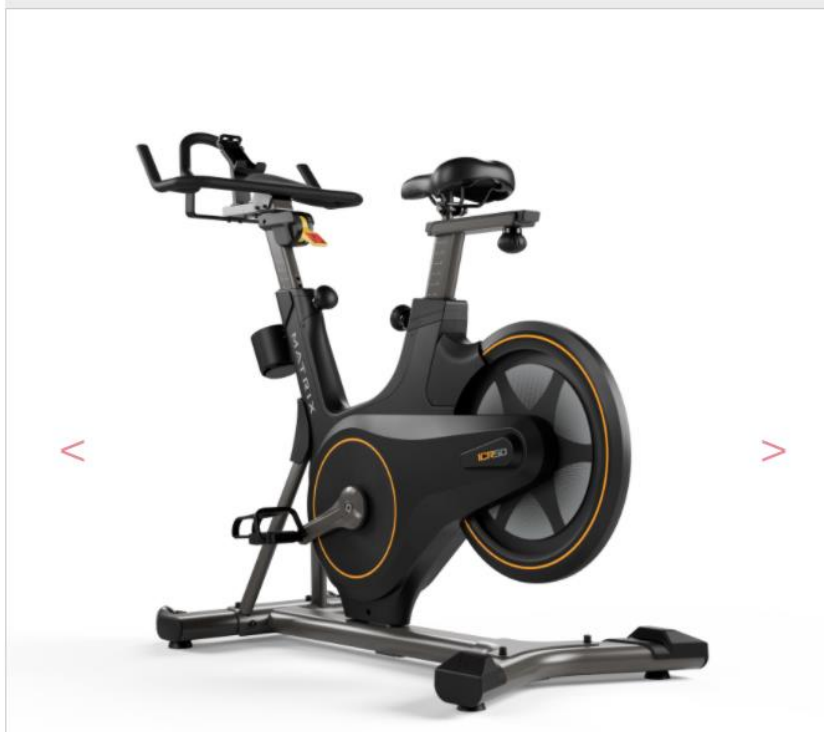
[Order View](#)[Exploded Diagrams](#)[Parts Lists](#)[Parts Replacement](#)[Troubleshooting Guides](#)[Service Guides](#)[Owner's Guides](#)[Service Bulletins](#)[General Information](#)

Figure 1 - ICR50 Product Page

Please direct any questions not addressed in this guide to your Customer Tech Support team.

Serial Number

Make sure to ask for and document serial numbers whenever troubleshooting ICR50 issues with a customer.

Frame

The frame serial number sticker is located on the base of the indoor cycle. The serial number will start with the frame's product code FC205.

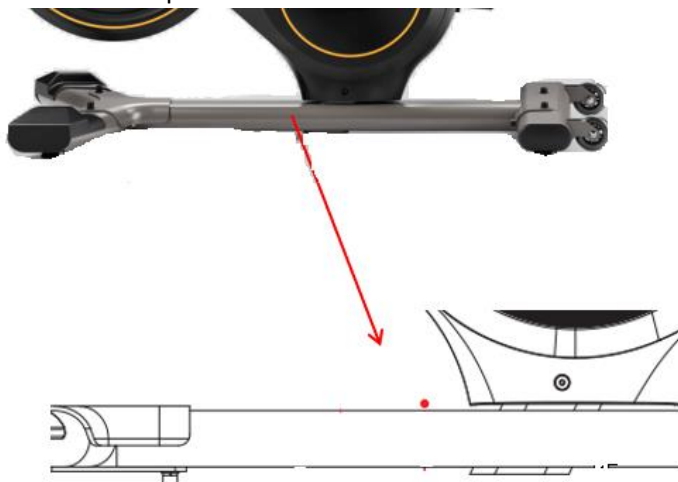


Figure 2 - Serial Number Location

Example Serial Number: FC205190100010

FC205	1901	00010
Drawing #	Year/Month Manufactured (YYMM)	Production #

LCD Console

Currently, the console only comes with a vendor sticker, and the vendor sticker does not follow Matrix's serial number format. The console has a product code of FC203. JHTNA is currently working with the factory to have serial number stickers applied to the console in future manufacturing.

IX Display

The serial number for the IX display is on the outer carton only. It has a product code/serial number prefix of AS2013. The serial number does not appear anywhere on the display itself, so if the customer has thrown away the box, the serial number is lost.

Key Components

Lower Control Board (LCB)

When troubleshooting data transmission, always check the connections to the LCB as detailed in this section.

The Lower Control Board is located on the frame beneath the cover, between the seat and handlebar. This board has the [Battery](#), [Potentiometer](#) (for measuring resistance), and [Speed Sensor](#) (for measuring RPM) with connections as shown below.

Important: If the LCB is replaced, you must recalibrate the ICR50. See [Fitness App Not Working Correctly After Service](#).

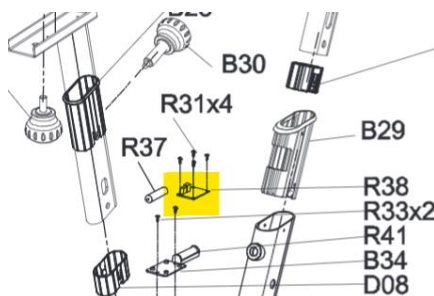


Figure 3 - LCB Location

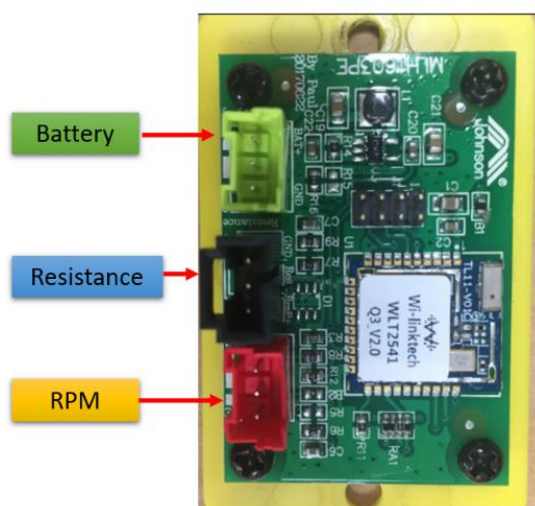


Figure 4 - Plug-in Locations on the LCB



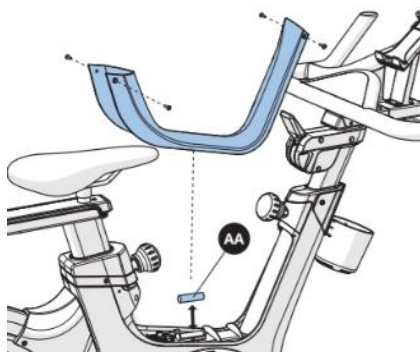
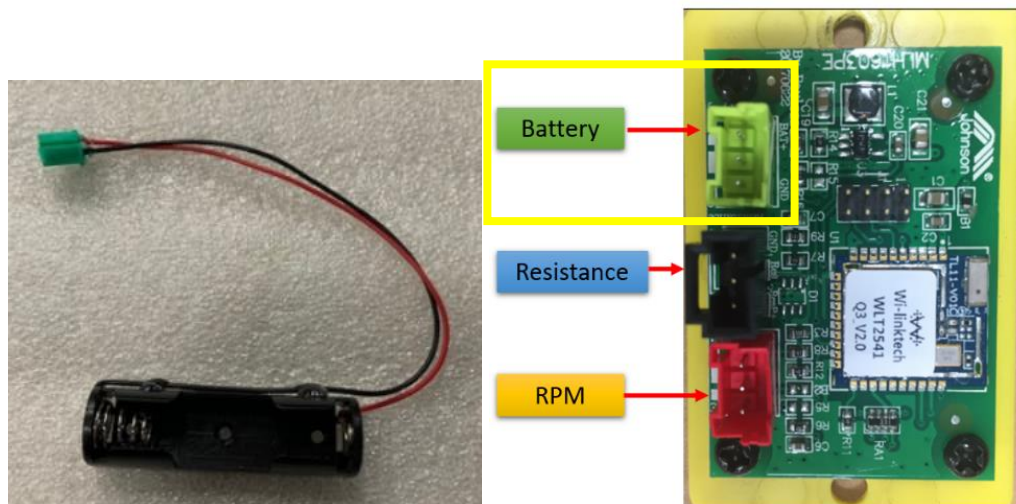
Figure 5 - Wires Connected to LCB

The LCB is equipped with a Bluetooth transmitter that will send data out to compatible devices, such as phones or tablets, and apps. The technology is known as Bluetooth FTMS (Fitness Machine Service). In order to broadcast FTMS to a device, the LCB collects data from sources on the ICR50.

Note: Lower boards produced on or after 6/15/2020 have updated firmware that improves FTMS connection. ICR50 cycles produced after this date already have the updated board.

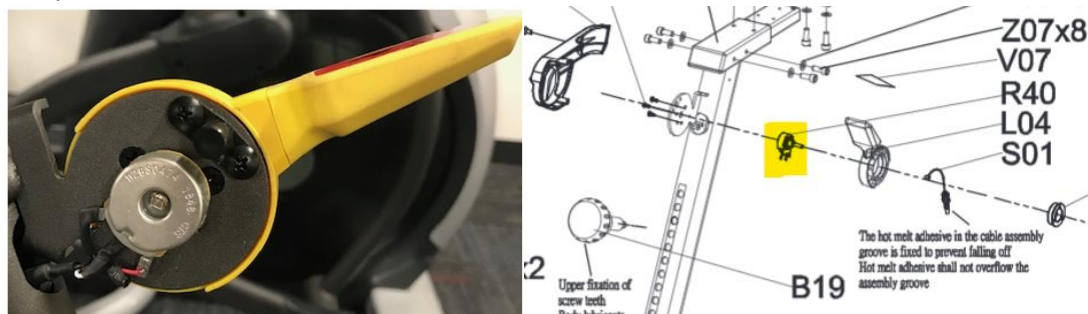
Battery

The LCB is powered by a single AA battery in the battery base that plugs into the LCB. If you are not getting workout readings while using the optional console or a third-party app, you may need to change the AA battery. If you are having issues with data transmission, start by replacing the battery.

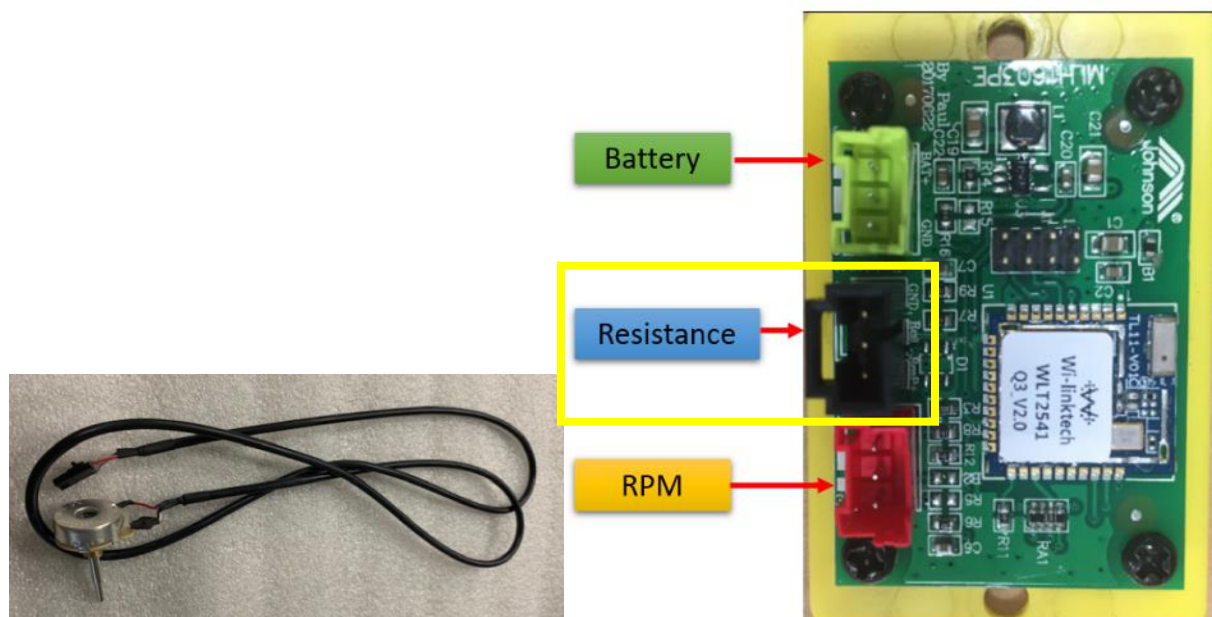


Potentiometer

The potentiometer attaches to the left side of the resistance lever.



The other ends plugs into the LCB at the location marked “Resistance” as shown in the picture below.



Speed Sensor

The speed sensor wire connects to the Bluetooth FTMS LCB (red end) and the RF sensor (white end) if using the LCD console. If not using the LCD console, the white end does not plug into anything and may be referred to as the "unused wire".



The speed sensor (black end) should be approximately 2-3.5mm away from the drive belt pulley magnet.

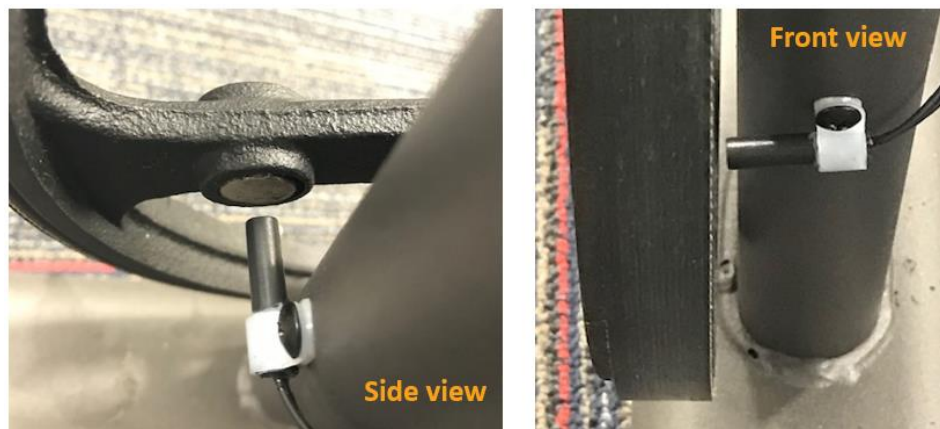
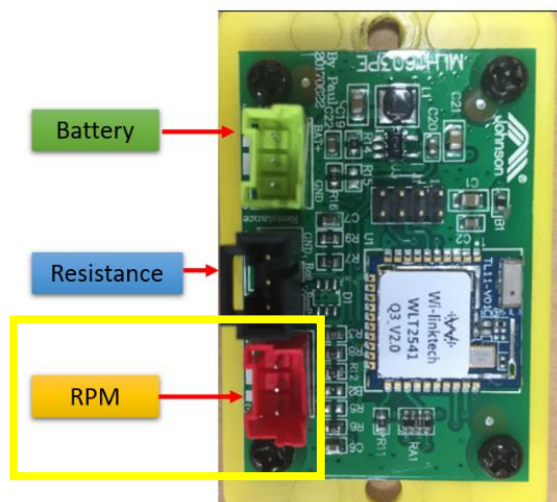


Figure 6 – Appropriate Speed Sensor Placement

The speed sensor sends an RPM signal whenever the pedal axle magnet passes it on a revolution. The RPM displayed in third-party FTMS apps comes from the signal the Bluetooth FTMS LCB relays from the speed sensor. The RPM displayed on the LCD console comes from the additional connection of the speed sensor wire to the RF sensor.



Testing Continuity

You can use your multi-meter to check the speed sensor. See “Using Your Multi-Meter” under Troubleshooting Guides in Online Remedy for expanded instructions.

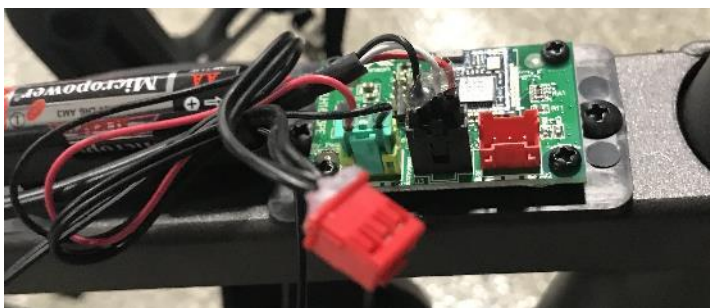
1. Turn the dial on your meter to “Resistance, Continuity & Diode”.



2. Select the sound option on the meter.

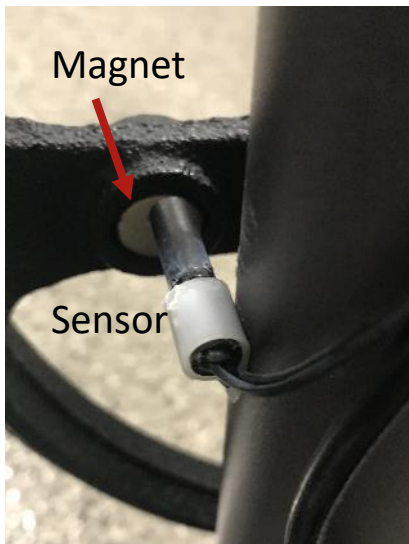


3. Disconnect the red connection from the lower board.



4. Touch your meter probes to the cable wires.

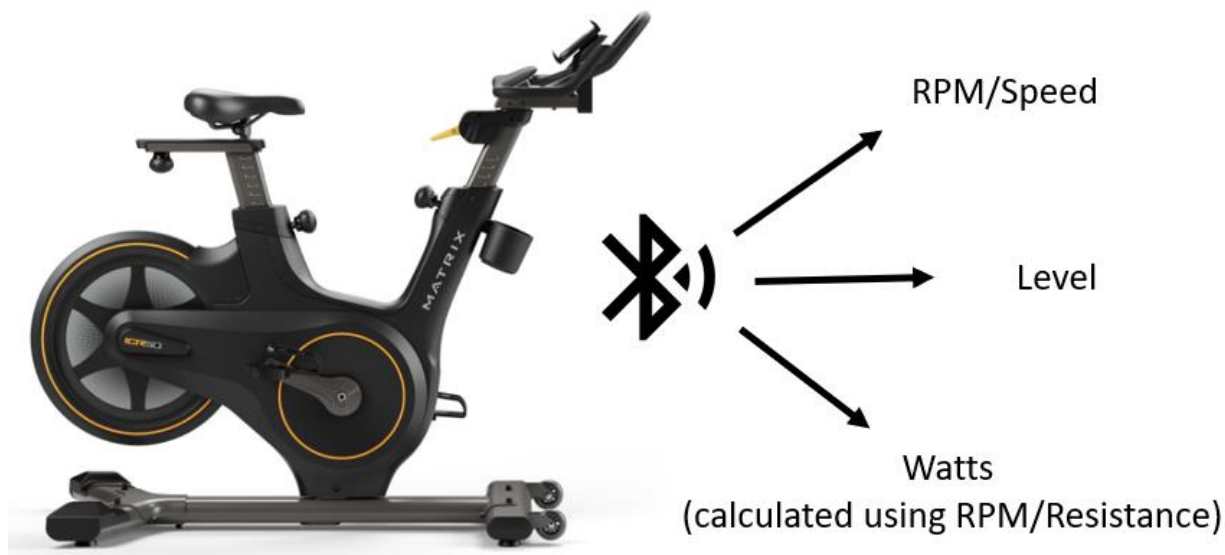
5. Turn the pedals so that the magnet passes the sensor.



6. If the cable is good, the meter will beep as the magnet passes the sensor.
 - If RPM is still not showing on the console, check battery voltage.
 - If battery voltage is good, replace the lower board.

Phone/Tablet

A FTMS fitness app on a phone or tablet can receive workout data from the Bluetooth transmitter in the LCB on the ICR50 frame.



Connecting ICR50 to App

To pair a third-party FTMS app to the LCB on the cycle frame, open the app on your phone/tablet, and then start pedaling the cycle. Locate the ICR50 within the app and select it to connect. **This process uses Bluetooth.** A how-to video is also available: [How to Connect Zwift](#)

Fitness App Not Working Correctly After Service

If you do not see a change in watts when increasing resistance, evidenced by little to no movement within the app when pedaling, you may need to recalibrate the ICR50.

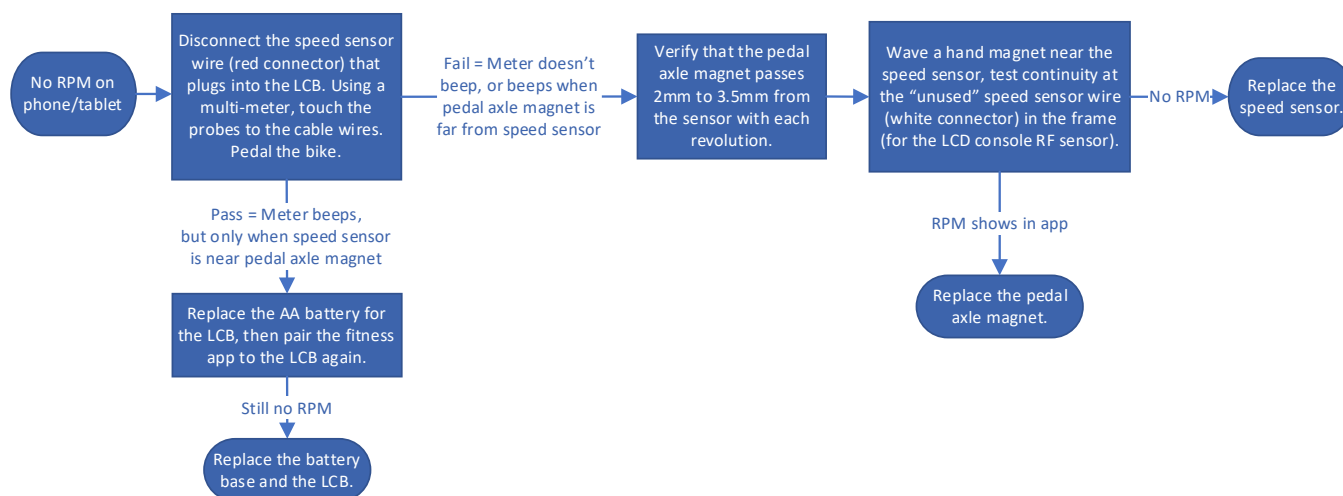
If the LCB is replaced, the resistance must be recalibrated for the ICR50 to interact with apps properly. Use the IDC software to update and calibrate resistance for the LCB. The IDC software is an android-based app that allows you to access the Bluetooth LCB to apply updates and set resistance.

The IDC software and instructions are currently only available [here](#) on the global customer service site.

No RPM on Phone/Tablet

The RPM displayed in third-party FTMS apps (which is the only way to get RPM to display on the IX Display) comes from the signal that the Bluetooth FTMS LCB relays from the speed sensor.

Follow the steps in [Connecting ICR50 to App](#). If the app is still not displaying RPM, follow the troubleshooting steps below.



RPM Only Displays in Multiples of 20

If the ICR50 frame is connected to an app (such as Peloton or Wahoo) that uses a protocol **other than** FTMS, the RPM may display in the app in multiples of 20.

If you are experiencing this issue with an app that **does** use the FTMS protocol, replace the Bluetooth LCB with one that has newer firmware.

Is the Peloton App compatible?

The Peloton app is not compatible with the ICR50 Indoor Cycle. The Peloton app does not support FTMS, and therefore it is not compatible with the ICR50 indoor cycle. If the app is connected to the indoor cycle, the RPM will be incorrect.

Third-Party App is Slow to Pair with the Frame

1. Follow the steps in the how-to video [How to Connect Zwift](#). Make sure to pedal the ICR50 while you are completing the steps to connect the app.
2. Replace the AA battery in the lower board.
3. If the issue remains, replace the lower board.

Note: Lower boards produced on or after 6/15/2020 have updated firmware that improves FTMS connection. ICR50 cycles produced after this date already have the updated board.

Third-Party App Does Not Show the ICR50 Cycle (FC205) as an Option

1. Open the app, and then start pedaling the ICR50 before attempting to connect.
2. Replace the AA battery in the lower board.

Speed or Calorie Readouts Different Between App and Console

Different applications use their own formulas for calculating things like speed or calories, so the readout on a connected app may differ from each other, or from what appears on the LCD console because information is gathered from the ICR50 in different ways. If a customer notices that general information in an app is regularly more than 10% off from what displays on the console, contact Customer Tech Support.

The LCD console calculates speed/distance/calories based on RPM only, but the Bluetooth board communicates resistance/watts information to FTMS apps, giving the apps a more accurate estimate of speed. The differences between the values on the app and on the LCD console will be more pronounced at higher resistance levels. Displayed speed in some apps can be twice as high as the displayed speed on the LCD console at maximum resistance.

LCD Console

Connecting RF Sensor to LCD Console

Follow these instructions to pair the optional LCD console with the RF sensor (transmitter), which is located inside the cycle frame. **The LCD console and RF sensor do not have Bluetooth capabilities.**

A video showing this procedure can also be found in Online Remedy > Videos > Matrix Retail > Indoor Cycle > [Pairing LCD Console to Sensor](#)

1. Follow the instructions in the LCD Console Owner's Manual for installing the console RF sensor into the frame of the ICR50.
2. Press and hold the left two console buttons at the same time until the console screen beeps.



The default RF sensor ID will display in the middle of the screen, and the P number below will be 0.



3. Begin pedaling the cycle. The magnet in the flywheel will begin to move and communicate with the RF sensor, and a value for P will display.



4. Press and **hold** the middle button to save the P value as the new RF sensor ID number.

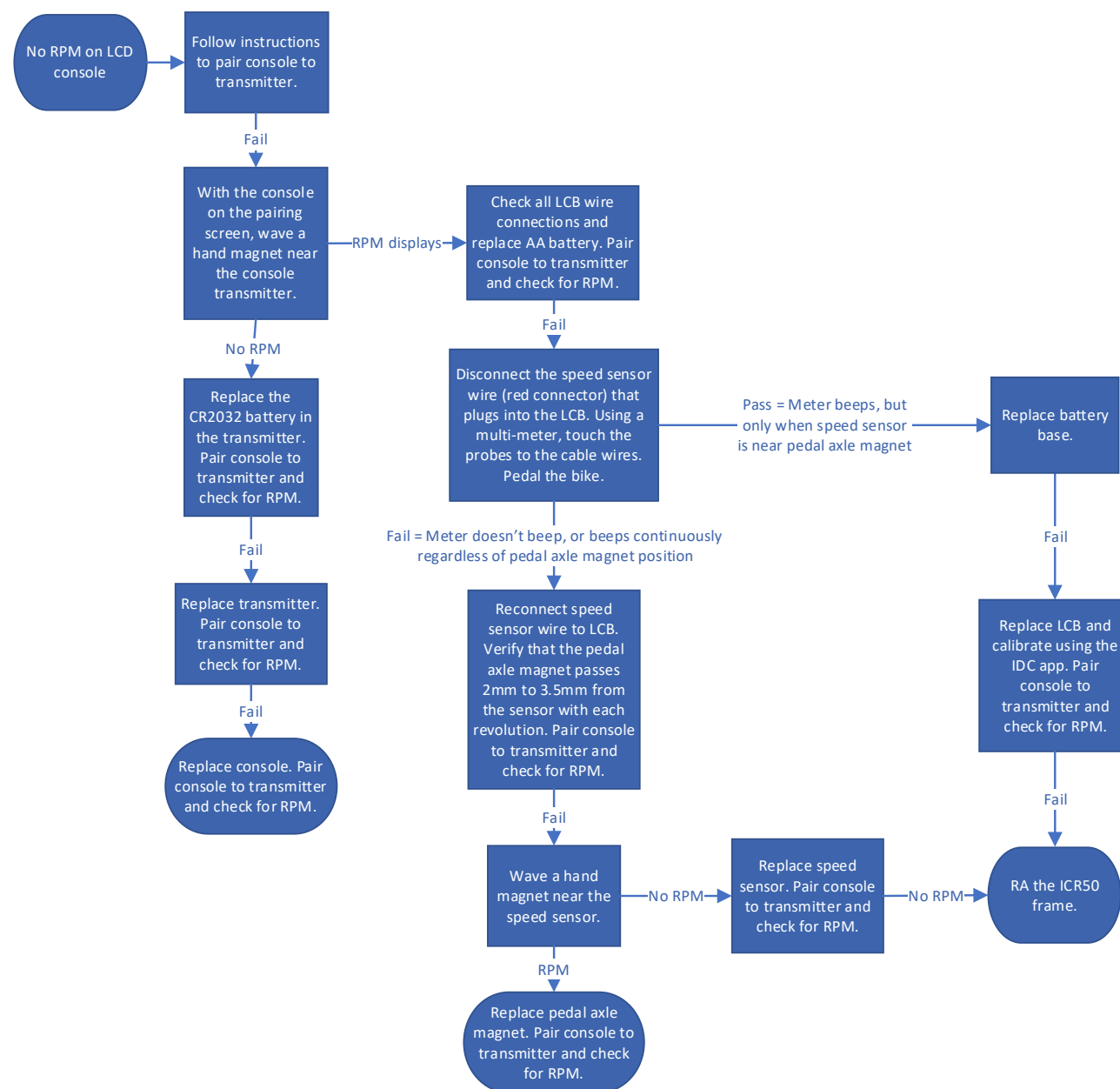


The console will return to the workout screen. The RF sensor and console are now paired.



No RPM on LCD Console

Follow the steps in [Connecting RF Sensor to LCD Console](#). If console is still not displaying RPM, follow the troubleshooting steps below.



Slow RPM Change on LCD Console

The console averages RPM over several seconds, so there can be a delay between the RPM on the console matching the pedal RPM.

Connecting HR Strap to LCD Console

The only way to monitor heart rate on the cycle is with a chest strap, which must be purchased separately. The LCD console can connect to wireless heart rate monitors over 5 kHz.

There is no set up required, and there is no pairing required between strap and console. The console has a receiver in it, so the user only needs to put on the strap and the console will automatically detect it and give the HR reading.

1. Refer to the instructions provided with the HR strap. Check the contact points on the strap and ensure the strap is being worn correctly.
2. Make sure strap and receiver are within 2 feet of each other.
3. If still no reading, there could be outside interference. Take the strap and console to a different location and try again.
4. If still no reading, replace the console.

IX Display

The IX Display is not a console or a smart device, and it has no connectivity to the ICR50 other than being able to mirror a phone or tablet over HDMI. The phone or tablet can connect to the ICR50 using a third-party Bluetooth FTMS app like Zwift or Kinomap. The IX Display does not enable any FTMS apps to work by itself—it will only display those apps if it is connected to a device that is already able to run and display them.

See these videos for help with using the IX Display:

- [How to Stream Content From Media Player](#)
- [How To Mirror Content](#)
- [How to Connect Zwift](#)

What Devices are Compatible with the IX Display?

Any device capable of HDMI output is compatible. Devices such as Firestick and Roku will work, but the **remotes** will not work on the display.

Audio with the IX Display

The volume buttons are on the back of the display, user-right side. Volume can only be adjusted using the physical buttons.

- Audio comes from the display speakers, unless connected to Bluetooth audio.
- There is no headphone jack on the display. Only Bluetooth headphones can be used if user does not want volume from the speakers.
- The IX display does not have a receiver for RF, Wi-Fi, or Bluetooth, so remote controls for other devices and universal remote controls cannot pair to it.
- The IX will automatically enter low power mode if it does not a signal from another device through its HDMI or VGA ports.

Frame Troubleshooting

Mast/Seat Tube Cannot Hold Position

1. Make sure that the knob is well-locked.
2. Loosen the knob, fine tuning the tube to make sure the knob is engaged in the groove.
3. Replace the knob if it is damaged.



4. Replace the mast tube if the groove is damaged.



5. Replace the slide sleeve if it is damaged.

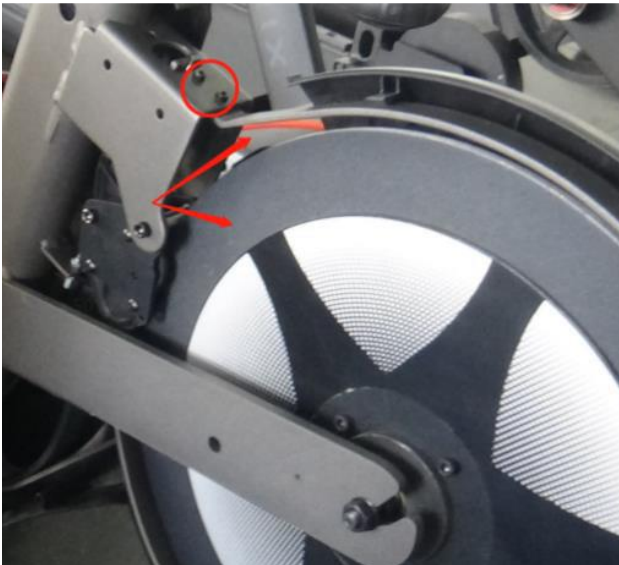


Noise from the Controller Disk

1. Remove crank and left/right cover sets.



2. Observe if controller disk hits the fixing plate during workout. If so, loosen the plate screws to adjust the gap of the plates to ensure there is no interference.



3. Replace the fixing plate/controller disk/hardware if damaged.

Noise from the Flywheel

1. Make sure the crank screws are well-tightened.



2. Remove crank and left/right cover sets.



3. Check if the drive belt can hold its position.



4. Check if there is interference between crank/flywheel/cover sets.
5. Replace the crank/flywheel/cover sets/belt/hardware if damaged.

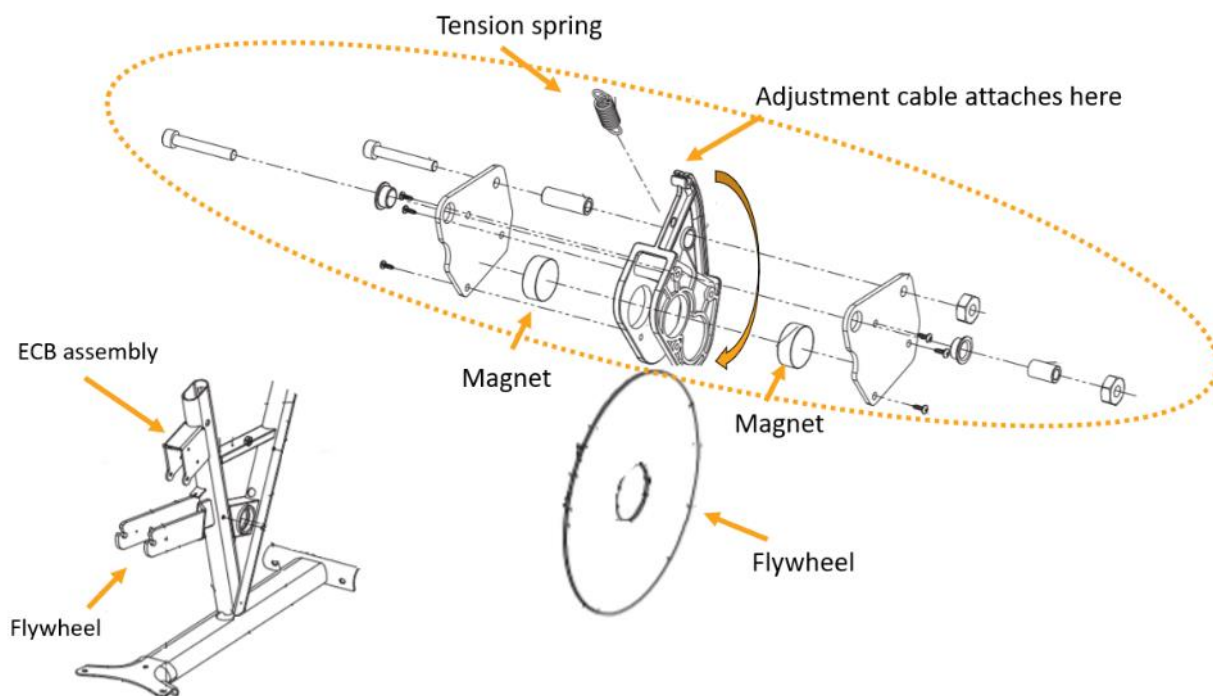
Cannot Clip Into Pedals

If a customer states that their SPD cleats are not fitting into the pedal clips, advise them that their foot needs to slide in from front to back to engage with the clip. If their cleats still do not fit, direct them to Online Remedy > Videos > Matrix Retail > Indoor Cycle > [Indoor Cycle Pedal Clips](#).

Resistance Feels Different Than What's Shown on Device

The LCB reads the position of the resistance lever. A poorly adjusted ECB/cable could cause incorrect data to be displayed.

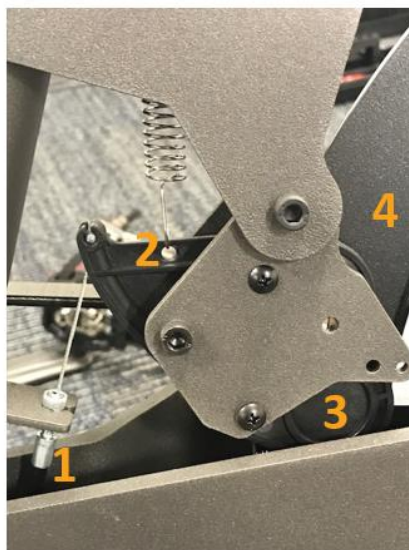
ECB Assembly



Resistance lever at 0



Resistance lever at max



When adjusting the resistance lever to high resistance levels, the ECB adjusts downward, moving the magnets more over the flywheel.

Adjustments of the resistance can be done at both ends of the adjustment cable (1 in the picture above shows the end nearest the ECB.)

Crank Screw is Different

Due to the “fast disassembly” screw (Figure 7) being out of stock, ICR50 frames manufactured between December 2020 and December 2021 were assembled with different crank screws. Technicians servicing an ICR50 should have a crank puller with them in case the unit requires it. See the “Crank Screw Temporary Change” service bulletin in Online Remedy for more information.



Figure 7 - Original, Fast Disassembly Screw



Figure 8 - Replacement Screw Requiring Crank Puller

CHANGE LOG

Version	Date	Details	By
1	3/17/2022	Original Version	Regina Templeton
2	3/8/2023	Added paragraph about speed readout differences to “Speed or Calorie Readouts Different Between App and Console”	Regina Templeton