STAC Zero Halcyon Upgrade Manual

Revision 1.0, June 2018

Welcome!

Congratulations on purchasing your STAC Zero Halcyon! Please take the time to follow every step of the recommended upgrade procedure in order to get the most out of your Halcyon.

We recommend watching our **Support Video** "Upgrading your STAC Zero to the new Halcyon Smart Trainer" available at https://www.staczero.com/support or from our YouTube channel.

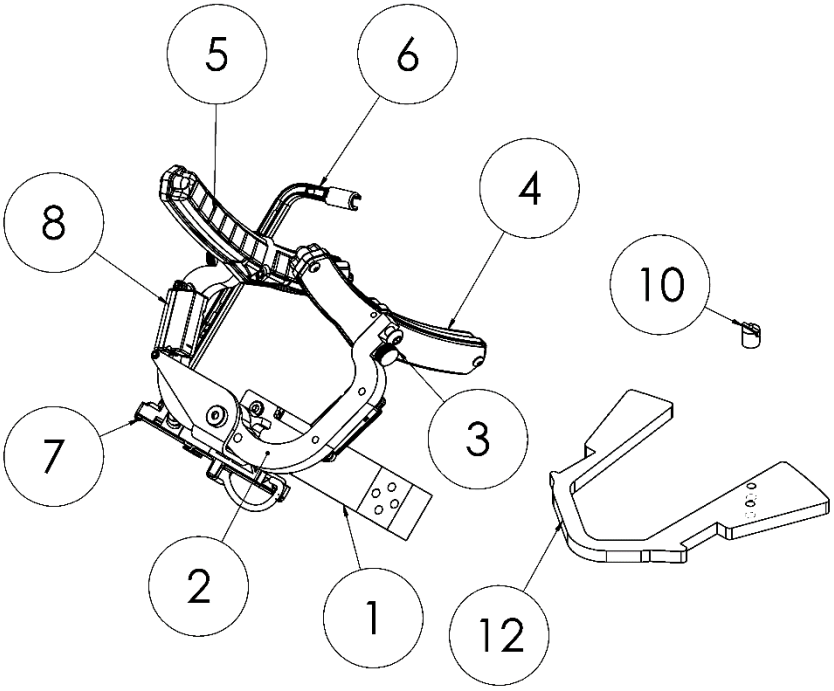
Happy riding,

-The STAC Performance team

Upgrade Notes:

- In order to complete the upgrade alignment you must download the **STAC Control Panel App** for Android or iOS.
- Do not attempt to move the Calipers by hand, as this contributes to wear and tear on the motors. Use the "Manual Positioning" screen in STAC Control Panel to move Calipers. [See page 8]
- In order to avoid damage to the Spring Pins, do not attempt to wrench or twist the Magnet Arrays by hand. Use the Set Screws for all alignment adjustments
- When your trainer is active, a calibration will occur each time the trainer senses the wheel has stopped. *The Magnet Array will fully clamp onto your wheel, then release after a few seconds*. If this occurs during the upgrade procedure, allow the trainer to complete its calibration before proceeding.
- Unlike the Base and Powermeter models, the Halcyon cannot be made compatible with a steel beaded tire. Go to https://www.stacperformance.zendesk.com and select "Wheels" to learn more about compatible wheels and tires.
- The Halcyon has a default mode of 75 Watts in Erg Mode until it receives a command from an app.

UPGRADE COMPONENT DIAGRAM



Resistance Unit:

1. Strain Gauge
2. Caliper
3. Spring Pin
4. Magnet Array
5. Anti-wear Stickers
6. Speed Sensor
7. Electronics Housing
8. Actuator

Accessories included:

9. 4mm Allen Key and 3mm Allen Key *(not shown)*
10. Spoke Magnet
11. Mounting Bolts *(not shown)*
12. Wheel Weight Extension
13. USB Cable *(not shown*)
14. Cadence Sensor *(not shown)*

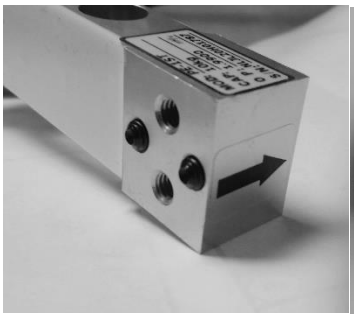
UPGRADE PROCEDURE

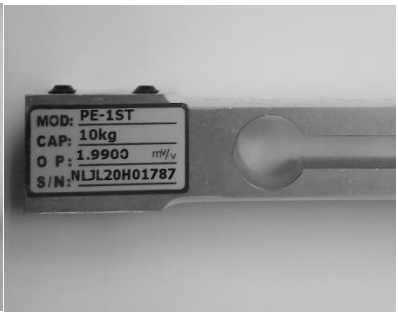
DOWNLOAD THE APP

1. **Android Users** Download the *STAC Control Panel* Android app in Google Play Store.
   Apple Users Download the *STAC Control Panel* iOS app in App Store.

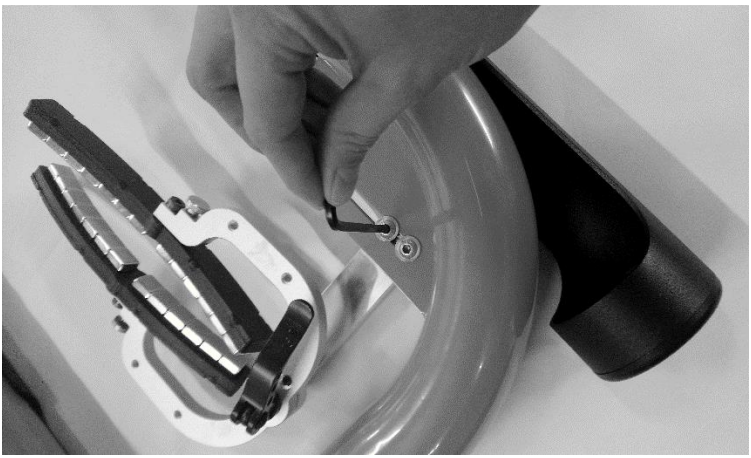
REPLACE THE RESISTANCE UNIT

2. Confirm that the 2 Set Screws protrude slightly from the Strain Gauge, as shown below. If they do not, turn the Screws to the right using the 3mm Allen Key until they extend past the Strain Gauge by at least 2 threads.





3. Unscrew the two Mounting Bolts on your existing trainer using your 4mm Allen Key, and remove the Resistance Unit.



4. Use the position of your old Resistance Unit as an initial guide for mounting the new Resistance Unit. Attach your Halcyon Resistance Unit to the Frame, tightening the 2 Mounting Bolts just enough to prevent any movement of the Resistance Unit until you perform the alignment steps.

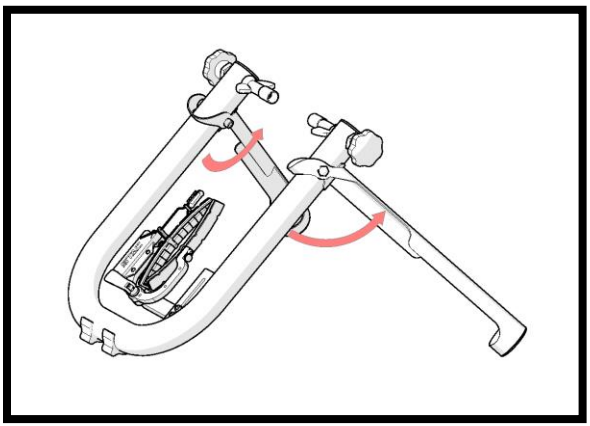
ACTIVATE THE RESISTANCE UNIT

5. Your new Halcyon Resistance Unit will arrive with the Magnet Arrays in a closed position. Pass your Spoke Magnet by the Speed Sensor (about finger's width away) 5 times in quickly to activate it. The Magnet Arrays should open slightly.

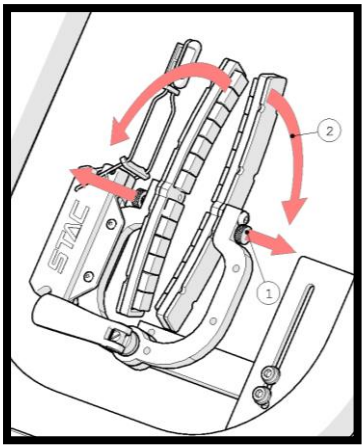
Note: After you have activated the Halcyon Resistance Unit that first time, every time the trainer is inactive the Calipers will return to their default open position. This should leave the Magnet Arrays far enough apart to allow for easy installation of your bike. Attempting to move the Calipers by hand will contribute to wear and tear on the motors.

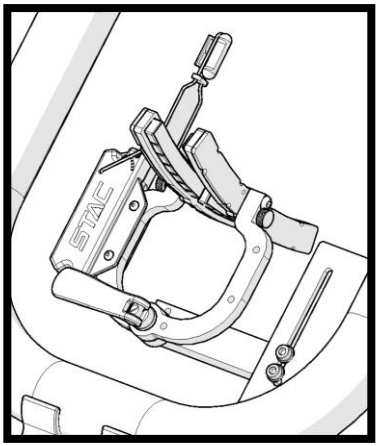
SET UP YOUR BIKE

6. Open the Legs to full extension and place the trainer flat on the floor.



7. Pull back the Spring Pin, and rotate the Magnet Arrays horizontally. The Spring Pin will seat itself once the Magnet Arrays are in place.

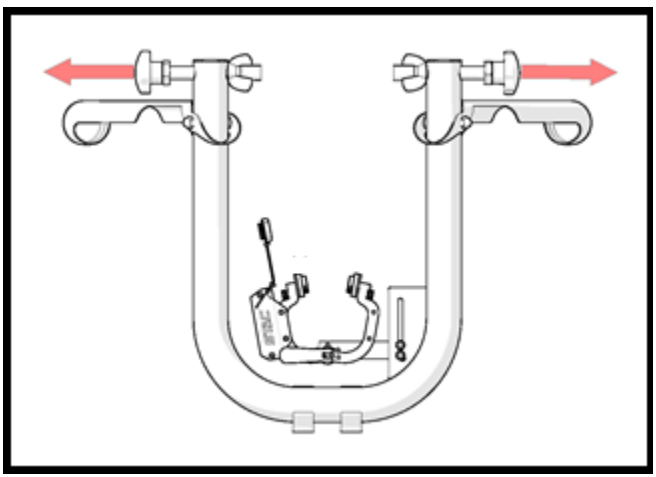




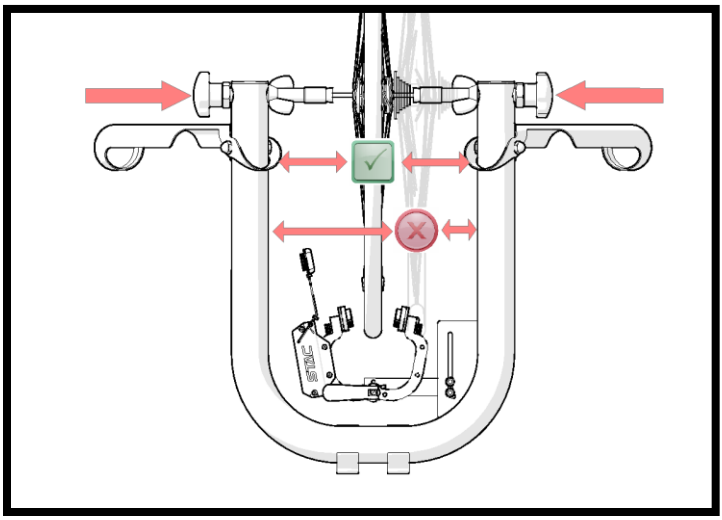
8. Move the Speed Sensor to the side and out of the way.

CAUTION: *Always retract the Spring Pin completely before rotating the Magnet Arrays. Do not use force on magnet arrays or spring pins.*
CAUTION: *Always rotate the Magnet Arrays and pull the Speed Sensor to the side before mounting the bike on the trainer to avoid damage to the trainer.*

9. Unscrew the Knobs to open the Threaded Rods all the way.



10. Install bike on trainer
    a. Back the bike into the trainer, aiming to keep the tire centered over the bolt joining the Calipers.
    b. Line the Skewer up with the Skewer Cups and tighten the Knobs. Make sure the bike is still centered.
    c. Tighten the Wing Nuts against the Frame, locking the bike in place.



MAGNET ARRAY CONTROL

You will be referring back to these next few pages as you perform the Wheel Magnet Alignment.

INSTALL/ADJUST THE SPOKE MAGNET

Align your Spoke Magnet with the tip of the Speed Sensor. Adjust the Speed Sensor within 5mm-10mm (¼”-½”) of the Spoke Magnet.

TIPS

- Use “Go to wheel rim” in **STAC Control Panel** to check your alignment as you go.
- **Activate the Trainer** if STAC Control Panel has lost connection with your trainer when you want to send commands.
- **Adjust the Spoke Magnet** any time you change your Resistance Unit’s position significantly.
- Move the Speed Sensor all the way to the side if you wish to prevent the automatic calibration from occurring during an alignment step. You can re-align it when you are ready to “Go to Wheel Rim”.

ACTIVATE THE TRAINER

1. Pass the Spoke Magnet by the Speed Sensor by hand 5 times quickly, using a back-and-forth motion. The red light on the Electronics Housing should flash each time the Spoke Magnet passes the Sensor.

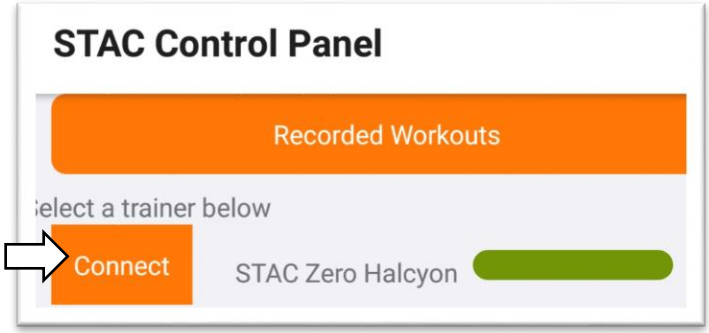
2. Stop the wheel. *THE MAGNET ARRAYS WILL FULLY CLAMP ONTO YOUR WHEEL, THEN RELEASE AFTER A FEW SECONDS*. This automatic calibration allows the trainer to accurately measure where your wheel is. Allow the trainer to complete its calibration before proceeding**.**

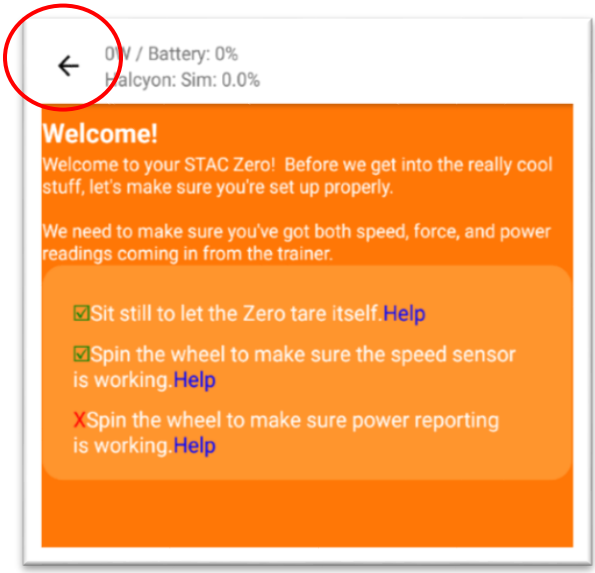
Note*: If the Speed Sensor does not sense the Spoke Magnet go by at least 5 times within 5 seconds, the trainer will not fully activate, and will turn off again 5 seconds after the last pass of the Spoke Magnet.*

CONTROL YOUR MAGNET ARRAY FROM STAC CONTROL PANEL

1. Open **STAC Control Panel**. Once you open the app, it will automatically scan for STAC Zero trainers in the area.

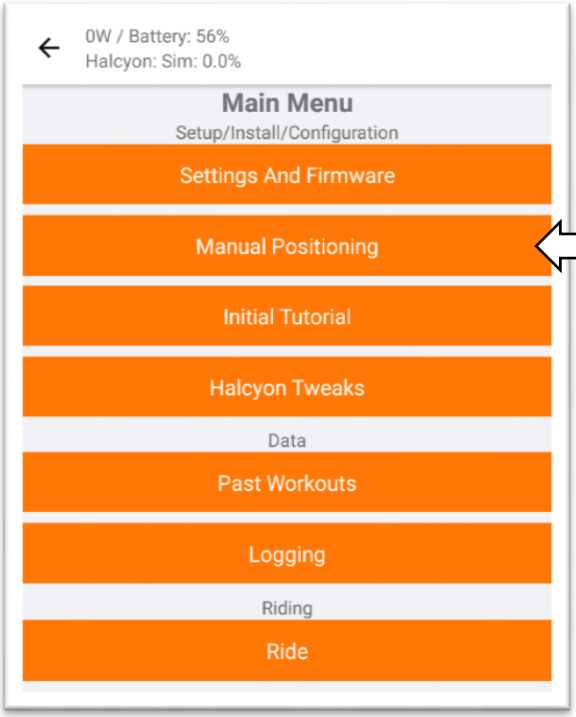
2. Select your trainer by clicking Connect from the Start Page. If the *STAC Zero Halcyon* does not appear on this page, repeat the steps “Install a Spoke Magnet” and “Activate the trainer”.



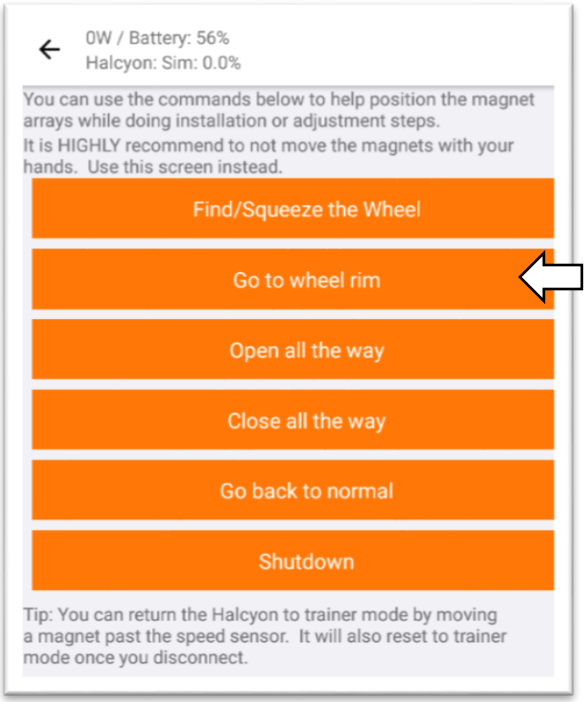


3. If this is the first time you have opened **STAC Control Panel**, a tutorial will run. We strongly recommend going through the tutorial, but if you wish to skip it for now, press the back button in the top left corner to access the Main Menu.

Note: From now on, connecting to a trainer will take you directly to the Main Menu. You can access the tutorial from the Main Menu at any time.



4. From the Main Menu select "Manual Positioning".



5. Select "Go to wheel rim".

Note: If, at any point in the alignment process, the Magnet Arrays seem distant from wheel rim, or of unequal distance from the wheel rim, select "Find/Squeeze wheel" to reset them, and then "Go to wheel rim".

WHEEL MAGNET ALIGNMENT

Support Video: “Wheel Magnet Alignment”

HEIGHT

Your Magnet Array should be level with your bike’s brake track. Connect to the trainer in STAC Control Panel and Select “Go to wheel rim” to check your height.

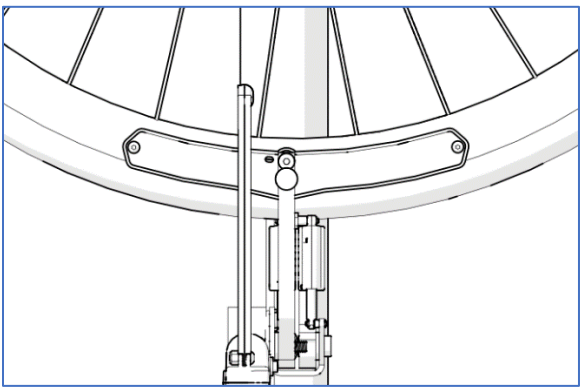
If the Magnet Arrays are the correct height, proceed to the next section.

If the Magnet Array is sitting too low (touching the tire) or too high (not contacting brake track):

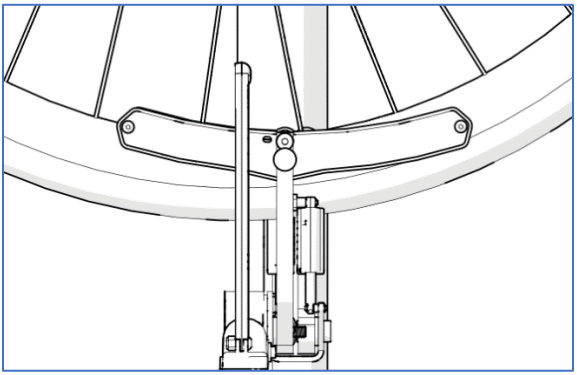
1. Loosen the 2 Mounting Bolts and move the Resistance Unit lower or higher as needed. Re-tighten the Mounting Bolts.
2. Adjust your Spoke Magnet. Select “Go to wheel rim” re-check height.

CONCENTRICITY

The Magnet Arrays should track the curve of the wheel when viewed from the side. If the Magnet Arrays appear concentric, proceed to the next section. If one end of the Magnet Array is higher/lower on the brake track, follow these steps.



Concentric Magnet Array



Non-concentric Magnet Array

1. Slightly loosen both Mounting Bolts.
2. Adjust the mounting angle:
    a. If the front end of the Magnet Array is low relative to the brake rim, tighten the upper Mounting Bolt until the Magnet Array comes into alignment.
    b. If the front end of the Magnet Array is high relative to the brake rim, tighten the lower Mounting Bolt until the Magnet Array comes into alignment.

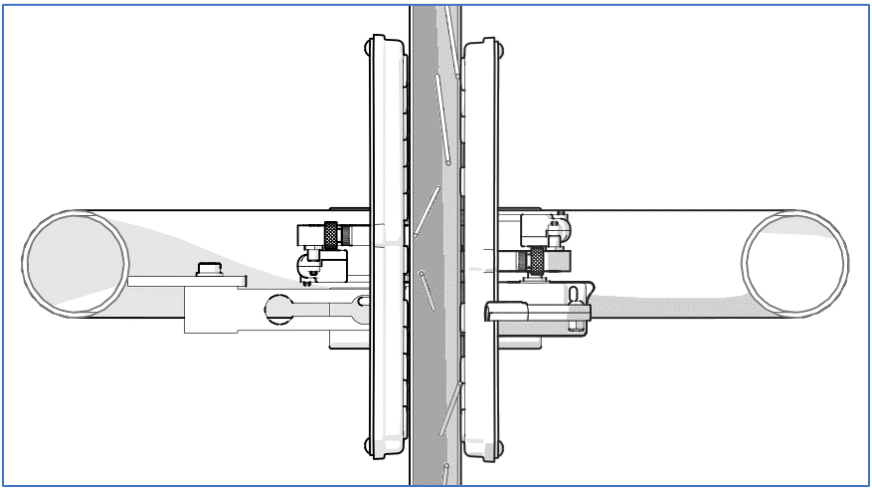
    If a greater change in the mounting angle is necessary:

    a. Further loosen the opposing Mounting Bolt.
    b. Tighten both Set Screws to lift the Strain Gauge slightly further away from the Frame.
    c. Re-tighten the appropriate Mounting Bolt.
3. Ensure both Mounting Bolts are tight to secure the Resistance Unit.
4. Select “Go to wheel rim” in STAC Control Panel to re-check Concentricity *and* Height.

PARALLELISM

The space between the Magnet Array and your brake rim should be even from the front end of the Magnet Array to the back.

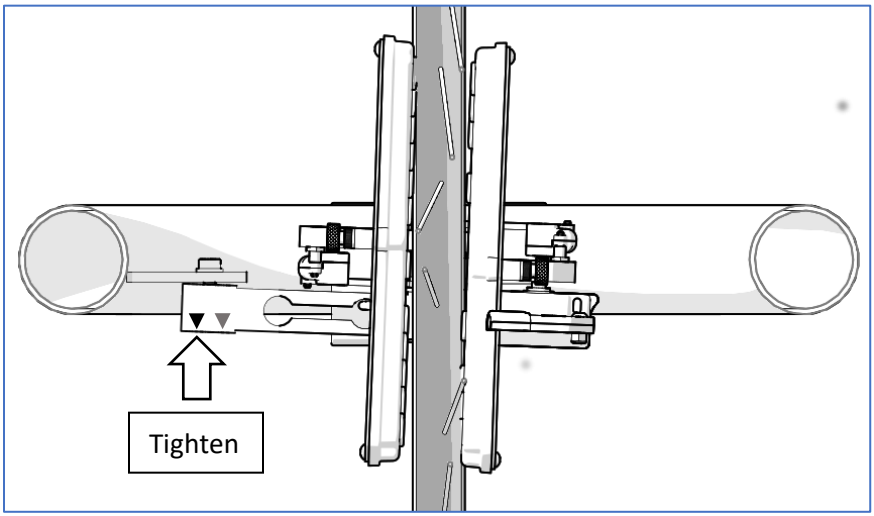
If the Magnet Arrays appear parallel, proceed to the next section.



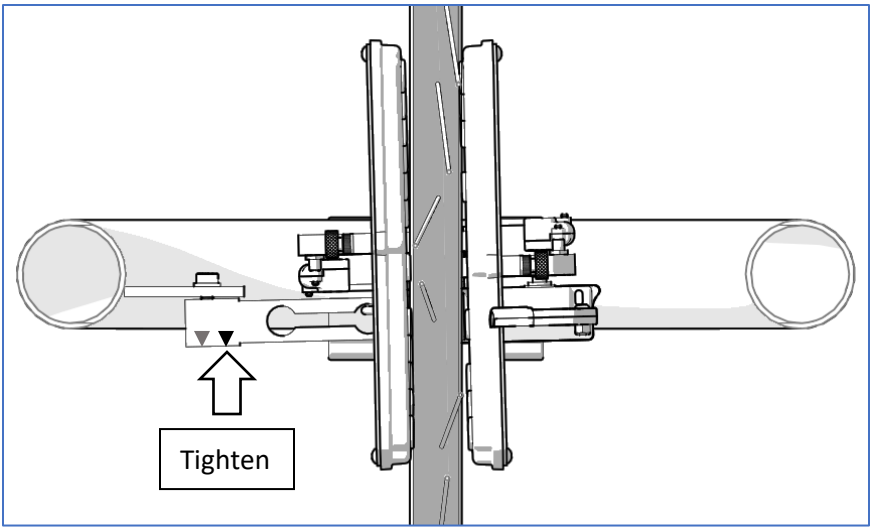
Parallel Magnet Array

If the Magnet Arrays are not perfectly parallel with the wheel (as seen in the following diagrams), follow these steps.

1. Loosen Mounting Bolts slightly.
2. Use a 3mm Allen Key to adjust one of two Set Screws to change the mounting angle.
    a. If the Magnet Arrays skew right towards the front of the bike when viewed from above, tighten the Set Screw closer to the arm of the Frame.



b. If the Magnet Arrays skew left towards the front of the bike when viewed from above, tighten the Set Screw closer to the center of the trainer.



c. If you adjust the Set Screw too far in one direction on your first attempt, resulting in the opposite parallelism error, untighten the over tightened Set Screw slightly before attempting to tighten the other one.

3. Re-tighten the Mounting Bolts.
4. Select “Go to wheel rim” in STAC Control Panel to re-check Parallelism and Concentricity.

FINAL STEPS:

1. Re-align your Spoke Magnet with the tip of the Speed Sensor.
2. Select “Go back to normal” or exit out of the Manual Positioning menu to resume Smart control of the Halcyon.
3. Activate the trainer and allow the calibration prior to each ride.

You are ready to ride!
You just need to tell the Halcyon what to do by connecting it to the STAC Control Panel app or your favorite cycling training app.

Regulatory Compliance

Product: STAC Zero Halcyon
Model: Rigado BMD-300
FCC ID: 2AA9B04
IC: 12208A-04

European Compliance Statement CE

STAC Performance hereby declares that this device is in compliance with the essential requirements and other relevant provisions of the R&TTE Directive.

FCC Compliance FC

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
1) this device may not cause harmful interference, and
2) this device must accept any interference received, including interference that may cause undesired operation.
Changes or modifications not expressly approved by STAC Performance, could void the user's right to operate the product.
This equipment has been tested and found to be compliant to FCC radiation exposure limits. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy. If not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference, the user is encouraged to try to correct the interference with one or more of the following measures
1) Reorient or relocate the receiving antenna
2) Increase the separation between the equipment and receiver
3) Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
4) Consult the dealer or an experienced radio/TV technician

For any questions, clarifications or issues, contact us at:

support@staczero.com

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