

The logo for STAC ZERO is displayed in a bold, italicized, sans-serif font. The word "STAC" is on the top line and "ZERO" is on the bottom line. The letters are primarily black with a grey-to-black gradient. A small orange triangle is positioned inside the letter 'A' in "STAC".

**STAC  
ZERO**

**Powermeter  
Upgrade Manual**

Rev 3.0

# Welcome to the world of power training!

Congratulations on purchasing your STAC Zero Powermeter upgrade! You will now be able to track your progress with real numbers, and make use of online training apps. In our experience, training with the Powermeter has led to substantial improvements in performance.

Follow the steps outlined in this manual and the upgrade process should about 10 minutes.

Happy riding,

-The STAC Performance team

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## Table of Contents

<b>UPGRADE AND TRAINER COMPONENTS.....</b>	<b>2</b>
<b>UPGRADE STEPS .....</b>	<b>3</b>
<b>WHEEL MAGNET ALIGNMENT.....</b>	<b>6</b>
HEIGHT .....	6
CONCENTRICITY .....	7
PARALLELISM.....	8
<b>POWERMETER SETUP AND CONFIGURATION .....</b>	<b>11</b>

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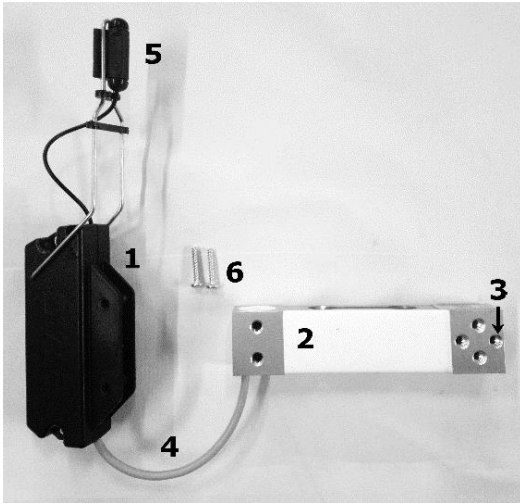
## REQUIRED TOOLS

- 4mm Allen key  
(Included with your original STAC Zero purchase)
- 5/32" Torx screwdriver.
- 3mm Allen key

# UPGRADE AND TRAINER COMPONENTS

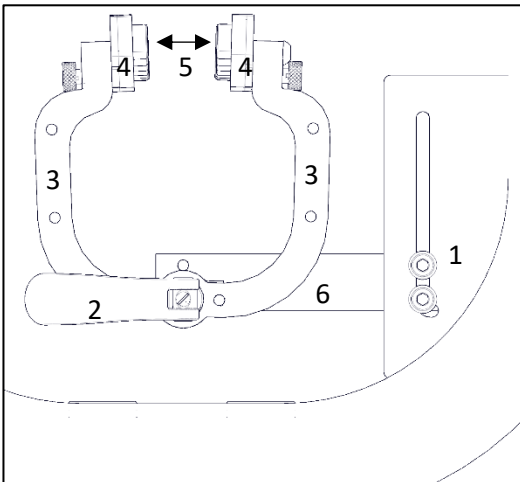
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## UPGRADE KIT



1. POWERMETER
2. STRAIN GAUGE
3. SET SCREW
4. WIRE
5. MAGNET SENSOR
6. 2 SCREWS

## TRAINER COMPONENTS



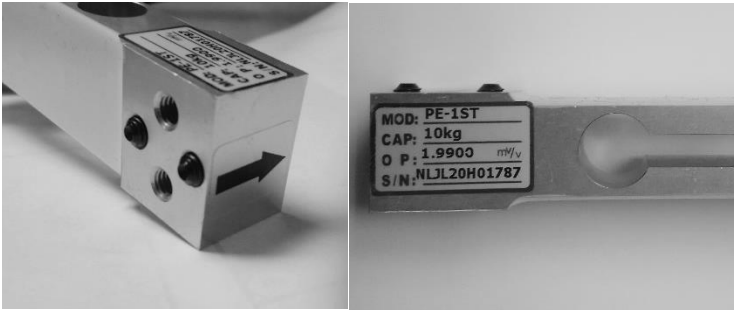
### RESISTANCE UNIT:

1. MOUNTING BOLTS
2. QUICK RELEASE
3. CALIPER
4. MAGNET ARRAY
5. MAGNETS
6. ALUMINUM BEAM

## UPGRADE STEPS

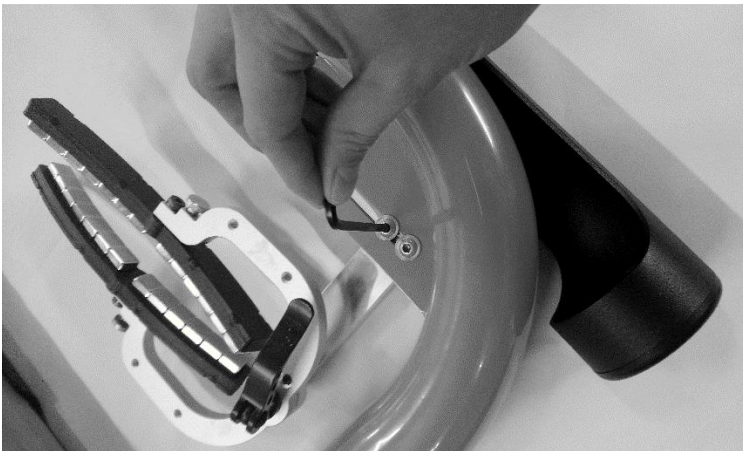
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- 1) Confirm that the 2 Set Screws protrude slightly from the Strain Gauge, as shown (Figure 1). If they do not, turn the Screws to the right using the 3mm Allen Key until they extend past the Strain Gauge by at least 2 threads.



*Figure 1*

- 2) Undo the two Mounting Bolts using a 4mm Allen key (included with your original STAC Zero purchase) and remove the Resistance Unit from the Frame (Figure 2).



*Figure 2*

3) Set up:

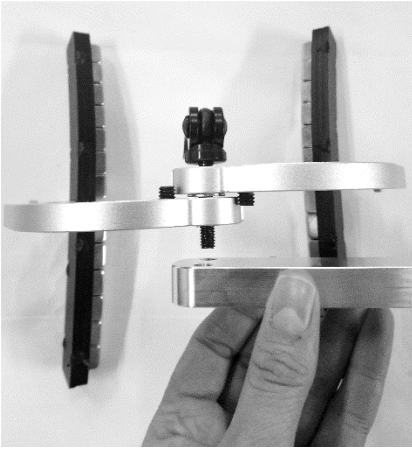


Figure 3

- a. Rotate the Magnet Array to the open position.
- b. Loosen the Quick Release *slightly* so the Calipers can be moved by hand
- c. Open the Calipers and place the Resistance Unit face down on a flat, non-magnetic surface (Figure 3).

*Note: This allows you to remove the Beam from the Quick Release without the Magnets snapping together.*

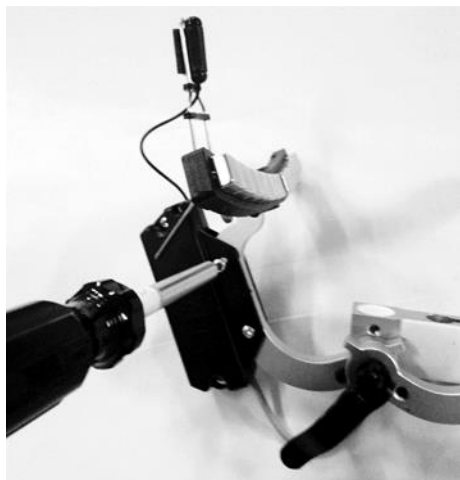
4) Unscrew the Quick Release until you can remove the Aluminum Beam (Figure 3).

*Note: Make sure not to remove the thread of the Quick Release from between the Calipers, as this will cause a spacing washer to slip out.*



Figure 4

- 5) Thread the Quick Release into the threaded hole on the Strain Gauge nearest to the Wire, with the Wire facing away from the Magnets. Tighten the Quick Release (Figure 4).



6) Snap the plastic casing of the Powermeter onto the Caliper that is directly touching the Strain Gauge. Align the screw holes and tighten the screws using a 5/32" Torx screwdriver (Figure 5).

*Figure 5*



7) Remount the Resistance Unit on the Frame with the Mounting Bolts (Figure 6).

8) Mount your bike on the trainer. Loosen the Mounting Bolts slightly, and adjust the Resistance Unit vertically so the Magnet Holders line up with your brake track. Tighten the Bolts.

*Figure 6*

# WHEEL MAGNET ALIGNMENT

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## Support Video: “Wheel Magnet Alignment”



Due to some slight variation, the Magnets may not be parallel to your wheel after the upgrade is executed, however this is easily adjusted. Perform this step with the bike mounted on the trainer so you can see the results of the adjustment.

Pictured (Figure 7): Location of Set Screws.

*Figure 7*

Adjust the **Set Screws** using a 3mm Allen Key.

Adjust the **Mounting Bolts** using a 4mm Allen Key.

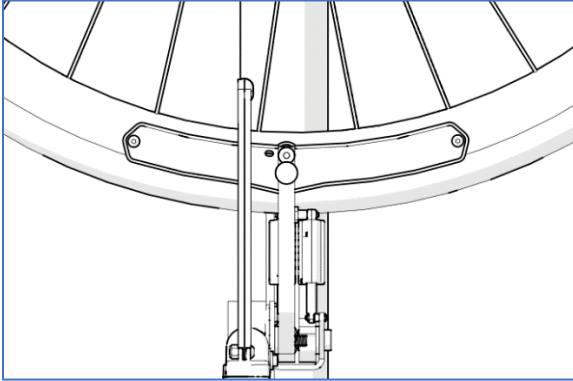
## HEIGHT

Your Magnet Array should be level with your bike’s brake track. 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):

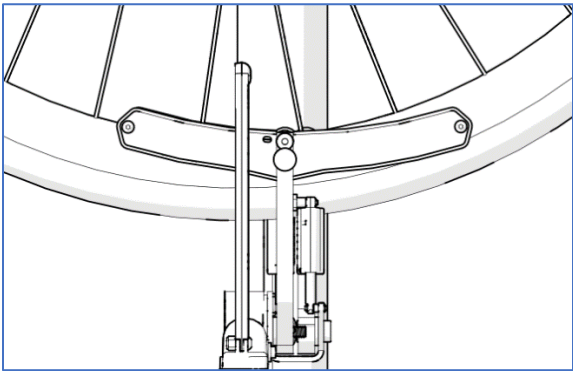
1. Loosen the 2 Mounting Bolts and move the Resistance Unit lower or higher as needed. Re-tighten the Mounting Bolts.
2. Adjust your Spoke Magnet.

## 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.



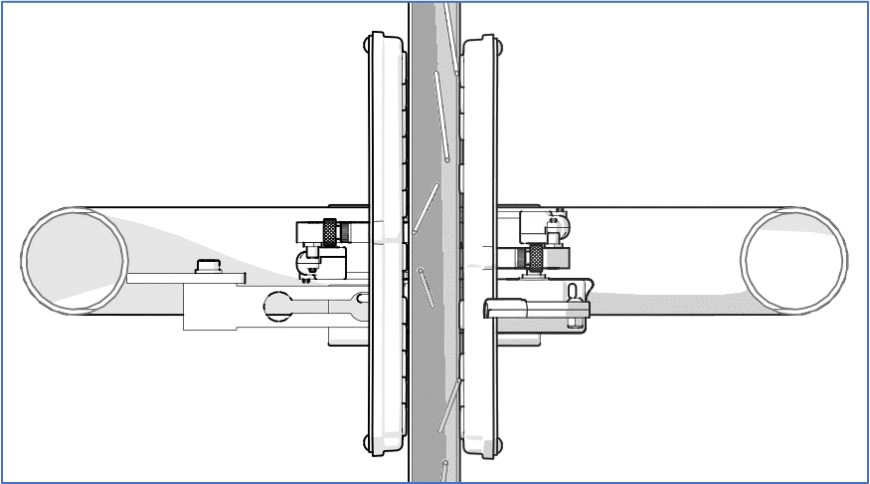
- If a greater change in the mounting angle is necessary:
- Further loosen the opposing Mounting Bolt.
  - Tighten both Set Screws to lift the Strain Gauge slightly further away from the Frame.
  - Re-tighten the appropriate Mounting Bolt.
- Ensure both Mounting Bolts are tight to secure the Resistance Unit.
  - Re-check Concentricity *and* Height.

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## 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.

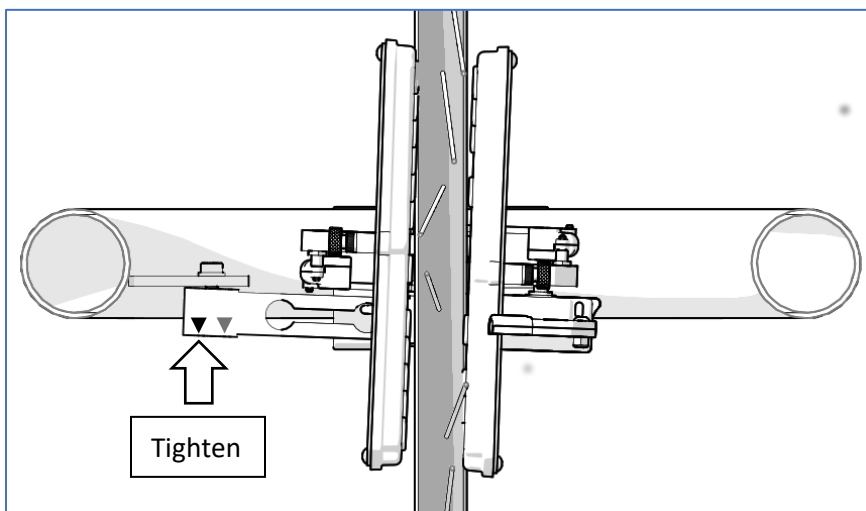


### *Parallel Magnet Array*

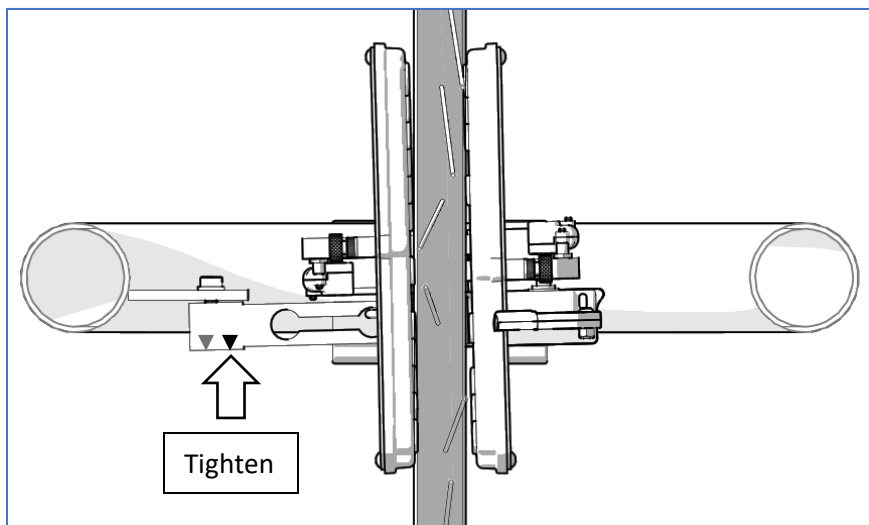
If the Magnet Arrays are not perfectly parallel with the wheel (as seen in the following diagrams), follow these steps.

- Loosen Mounting Bolts slightly.
- 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. Re-check Parallelism and Concentricity.
- 

**FINAL STEPS:**

1. Re-align your Spoke Magnet with the tip of the Speed Sensor.  
You are ready to ride!
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# POWERMETER SETUP AND CONFIGURATION

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## **Support Video:**

"Getting to know your Powermeter/Understanding the Powermeter Lights"



## **Installation of Spoke Magnet and startup of Powermeter**

1. Install the included spoke magnet on a drive side spoke.
2. Align the spoke magnet with the end of the Magnet Sensor nearest the center of your wheel.
3. Adjust the Magnet Sensor within 5mm-10mm ( $\frac{1}{4}$ "- $\frac{1}{2}$ " ) of the spoke magnet. The red light on the Powermeter should toggle on/off as the spoke magnet goes by.
4. Rotate the wheel a couple of revolutions slowly by hand to make sure the spoke magnet will not hit your bike or the Magnet Sensor.
5. Allow the unit to sit for 15 seconds after the Powermeter lights have activated to allow for self-calibration.

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## Regulatory Compliance

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

## European Compliance Statement

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

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 support go to:

**[www.staczero.com/support](http://www.staczero.com/support)**

For additional assistance, contact us at:

**[support@staczero.com](mailto:support@staczero.com)**

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