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How to Update enviolo automatic Firmware

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Firmware Download and Installation

- Please remove all files from the C:\Program Files (x86)\FallbrookTechnologies directory

- Follow the instructions to complete the installation

- enviolo automatic Desktop **2.2.X.** supports Windows 7, Windows 8 and Windows 10

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## Firmware Download and Installation

- As the electronics industry is quickly evolving the Automatic processor type has changed effective August 2015. The new processor requires a separate AHI (Automatic Hub Interface) firmware version.

- enviolo automatic Desktop automatically detects your processor and selects the appropriate firmware.

    o   The old processor uses *.S19 extensions and it´s firmware version starts with 3.X.X

    o   The new processor uses *.bin extensions and it´s firmware version starts with 4.X.X

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- Disconnect Automatic main cable

  - o Pull in shown direction

- Open enviolo automatic desktop software

- Current enviolo automatic desktop software is shown. It should be version 2.2.1

- Connect computer and enviolo AHI via USB/Mini-USB cable

- Select „Click to connect"
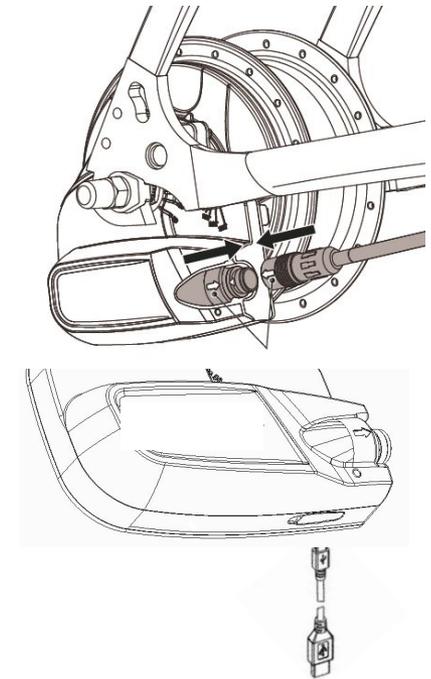
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Establish the Connection between Desktop Tool and AHI

- You will see the screen „Communications established"

- You now have the options to

  o   proceed to „enviolo automatic setup" to configure your system

  o   „Load setup from file" to use or edit an old configuration

  o   „Update firmware" to flash the new software version

Running the Update

- Select "Update Firmware" and select the firmware, which will be opened automatically, according to processor, through the drive

    - New processor -> 4.0.5 as *bin file

    - Old processor -> 3.0.5 as *s19 file

- The firmware update is run and a confirmation appears

- Select „OK" to return to the main screen

- If the update fails, please reconnect the USB cable and restart Desktop software

- Select "Exit", remove the USB cable and reconnect the Automatic main cable

- **Note: After each firmware update a new calibration is necessary and the parameter setting needs to be updated! To ensure you have the proper parameters available please save the parameters <u>prior</u> to the update. You will find more information on this in the system configuration section.**
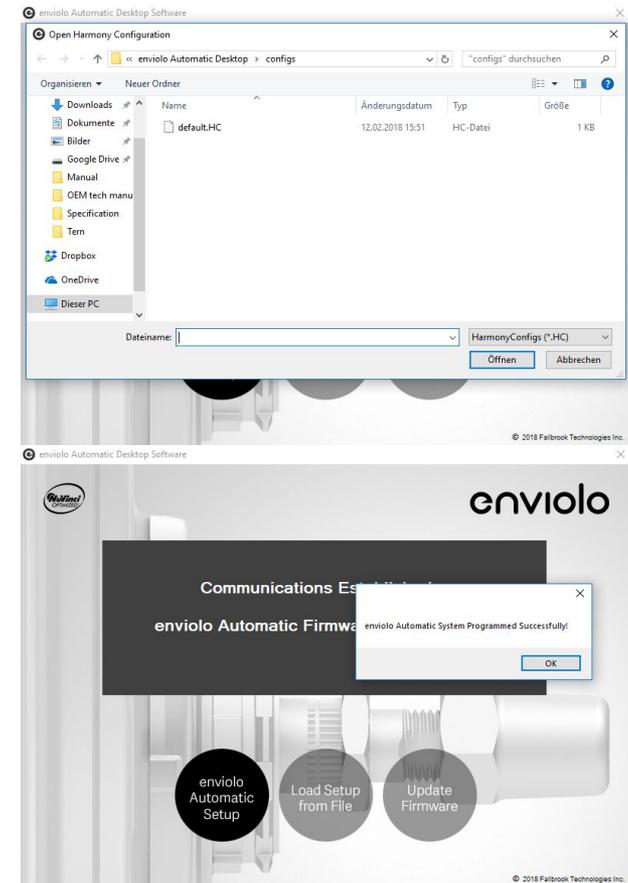
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Running the Update (Optional)

- Select "Load setup from file" and select the previously saved setup

  - Explanation on how to „save setup to file" will follow on following pages

- The programming starts and a confirmation appears

- Select „OK" to return to the main screen

- All subsequent flash procedures will use the same file

- If the update fails, please reconnect the USB cable and restart Desktop software

- Select "Exit", remove the USB cable and reconnect the Automatic main cable

- **Note: After each firmware update a new calibration is necessary and the parameter setting needs to be updated!**
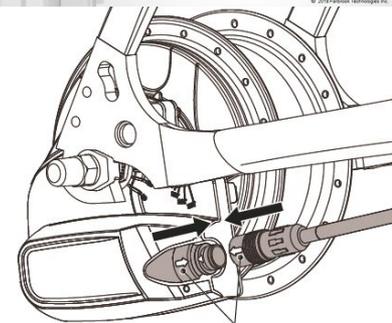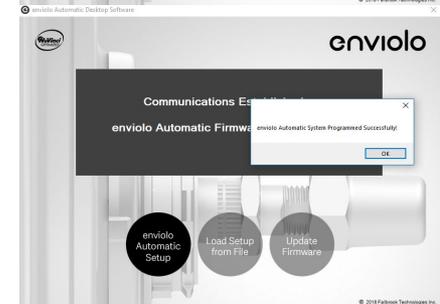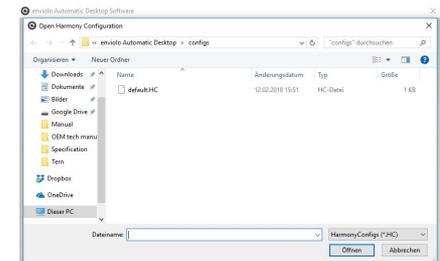
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Difference between 1.0 and 2.0 systems

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- The different systems use different variations of the output speed encoder. Please ensure you use the wide ring for 1.0 systems (pre-2015) and 2 thin rings for 2.0/2.0A systems (post-2015)

- Both output speed encoders are mounted on the cover of the CVP

- The 1.0 variant has a wider ring color matched to the CVP, which is clipped to the CVP

- The newer 2.0/2.0A variant has a thinner ring in black, which is mounted next to the flange and an additional sprocket encoder
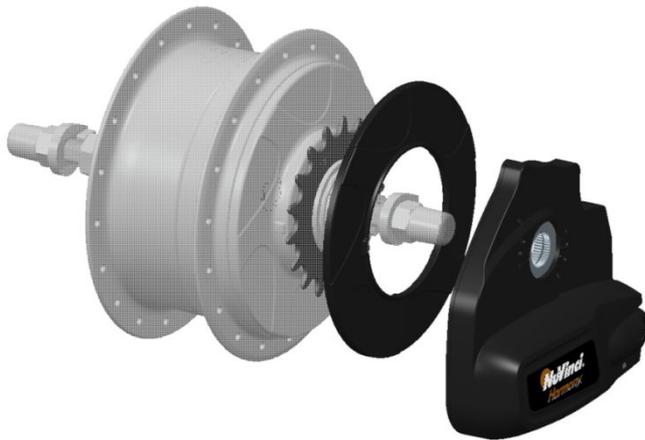
*1.0 systems with wider ring
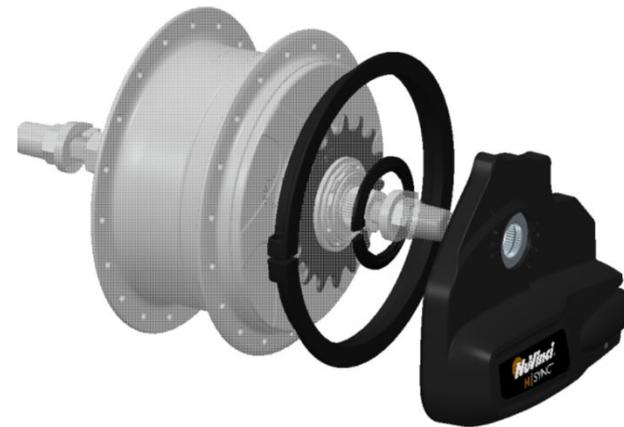
*2.0/2.0A systems with thin ring

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- Select „enviolo automatic Setup"

- Enter the bicycle configuration

  o **Front cog size (# of teeth on the front sprocket)**

    - Make sure to select "Bosch geared" only for Bosch Gen 2 variants

      – This has an impact on ride performance

  o **Rear cog size (# of teeth on the rear sprocket)**

    - Make sure to select chain only or belt compatible variant on firmware variants 3.X.X

   - Systems with 4.X.X firmware will only show one variant
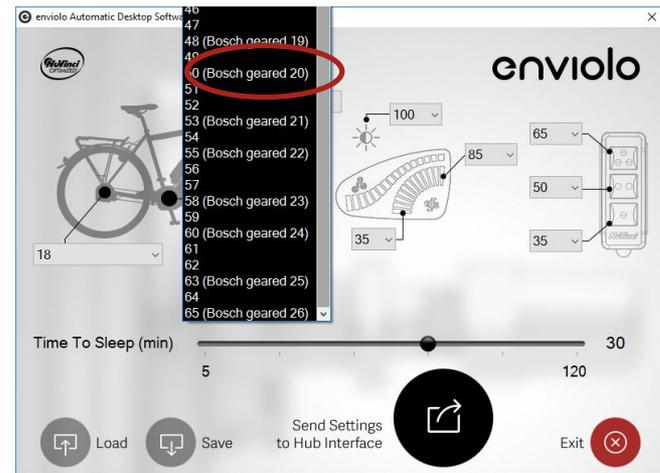
Note: In case of using a Bosch Gen 2 system, please ensure to save the latest parameter settings <u>prior</u> to update, since the old parameter file will be incompatible with the new desktop software and leads to incorrect ride behaviour.

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- As the next step set up the controller

  o This is either the 3-button controller on the right side or the grip shift controller on the left side

  o **For the 3-button select**

    - Low cadence set point

    - Medium cadence set point

    - High cadence set point

  o **For the grip shift select**

    - Low cadence limit

    - High cadence limit

    - Display brightness
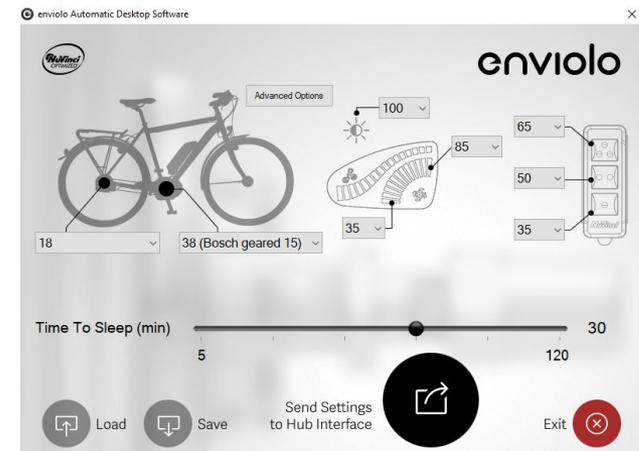
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- **Low cadence**

  o   Very low cadence may have the following disadvantages

    - This setup means high torque from the rider, which may compromise the eBike's battery range

    - This setup will shift through the ratio range more quickly, which means cadence will increase once system is in full overdrive
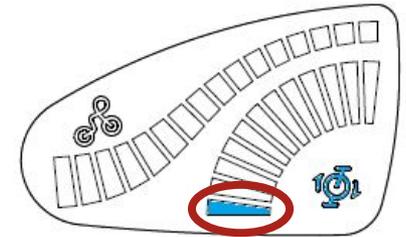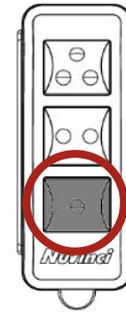
- **High cadence**

  o   Very high cadence may have the following disadvantages

    - Some riders may not be able to ride at very high cadences and the drivetrain will seem to never shift, because it doesn´t reach the cadence set points

    - Some drive systems don´t support high cadence settings, so riders might be frustrated with limited assist they receive from the system
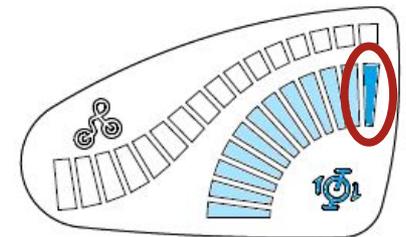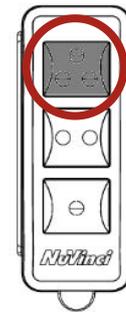
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- **Cadence range**

  o   Recommended to have at least 20 RPM between the high and low set points

      o   Riders want to feel a cadence change and less sensitive riders may

           not feel enough variation if the difference is less than 20 RPM

- **3-button recommended settings**

  o   High cadence   70 RPM (some ebike systems only support to 65

       RPM)

  o   Medium cadence   55 RPM

  o   Low cadence   40 RPM

- **Grip shifter recommended settings**

  o   High cadence   85 RPM (some ebike systems only support to 65

       RPM)

  o   Low cadence   40 RPM
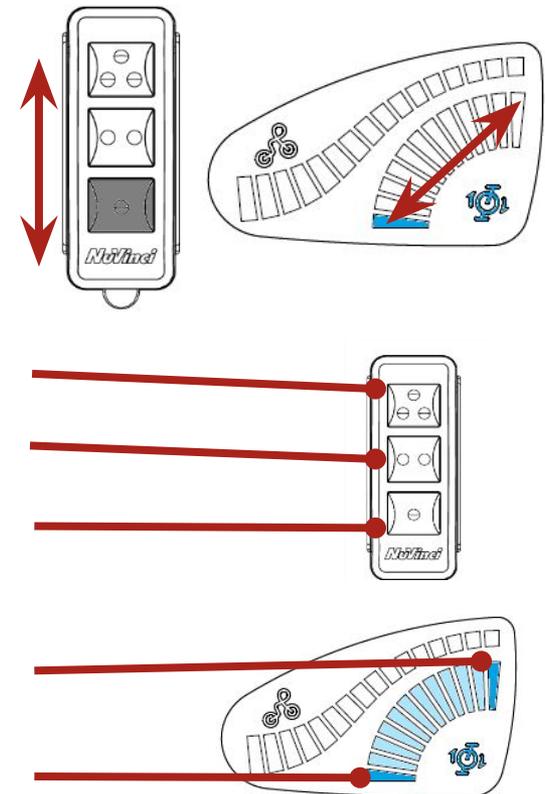
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System Configuration – automatic +

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- For Automatic + equipped bikes a special setup for the CAN Bus has to be completed

- Select „Advanced options"

  - Select the appropriate CAN Bus dialect

    - Bosch is default

    - Fallbrook is for all other enviolo automatic partner systems

    - Energy Bus is currently not supported

    - Send settings to hub interface
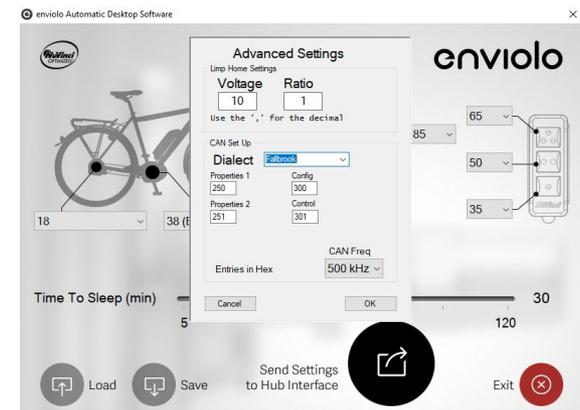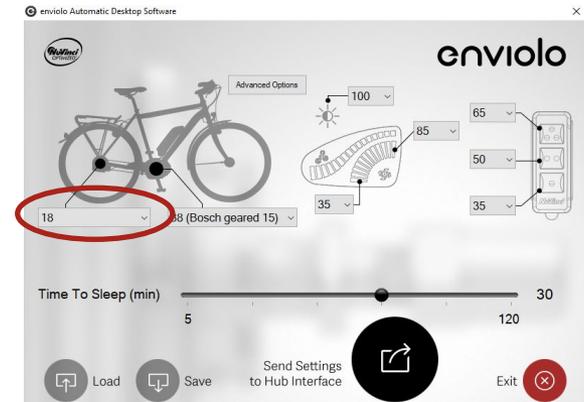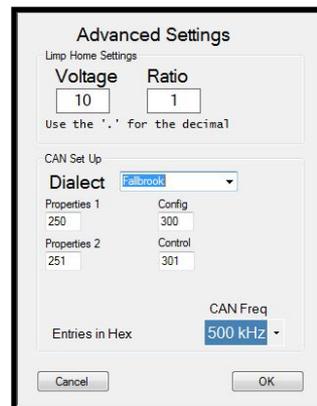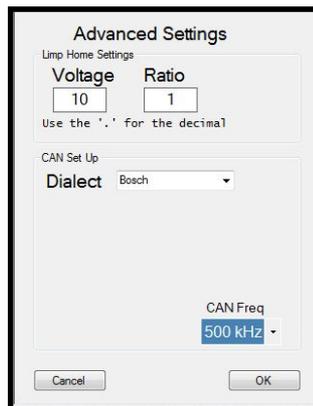
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- **Time To Sleep:**
    - o Enter the time in minutes before the system should go to the energy saving sleep mode

- **Select „Save":**
    - o Saves the configuration to a setup file, which can be edited or reused for future bikes
    - o You can use any name and directory

- **Select "Send settings to hub interface"**
    - o Flash process is started
    - o Confirmation appears
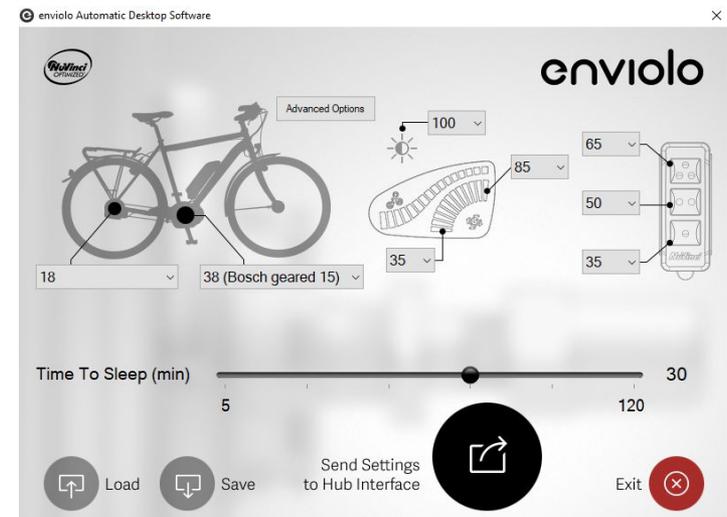
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System Configuration

- You can also review and edit settings from a saved file

- Select „edit setup from file" on the „enviolo automatic setup" screen

- Select the desired file

- The settings will be imported and shown on the setup screen

- Modify the settings according to your requirements

- Then select „send settings to hub interface"

- Flash process is started

- Confirmation appears
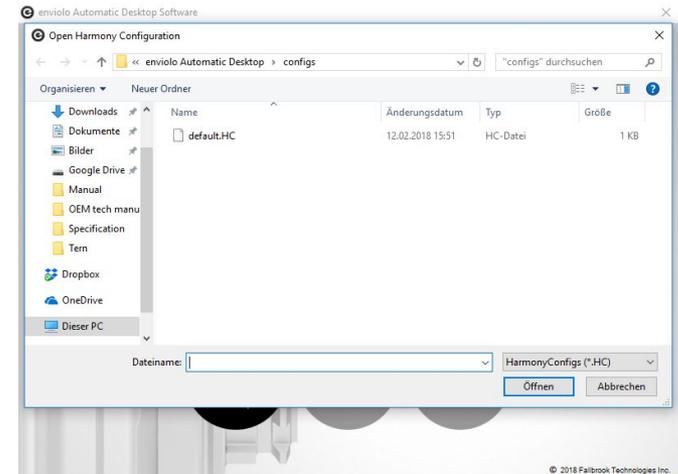
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- **When**
  - o After enviolo automatic assembly
  - o After firmware update
  - o When system functions are not appropriate
- **How**
  - o Turn on the eBike system
  - o Lift up the rear wheel and pedal fast and easy
  - o Grip shift Controller: Press and hold the [MODE] button and pedal fast and easy during the whole procedure
  - o 3-button Controller: Press and hold the top and bottom button at the same time and pedal fast and easy during the whole procedure
  - o Hold the button until you can hear the hub unit shifting
  - o Continue to pedal while the system shifts from full overdrive to full underdrive several times to complete the calibration process

Mode Button
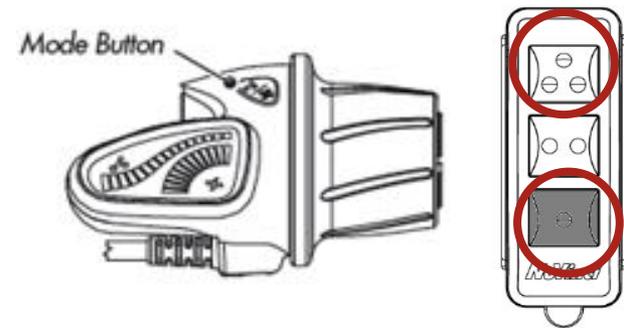
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- **When**

  o After enviolo automatic + assembly

  o After firmware update

  o When system functions are not appropriate

- **How**

  o Turn on the Bosch Intuvia or Nyon system

  o Activate the „configuration mode" through simultaneous push and hold of [RESET] and [i] buttons (A)

  o Push the [i] button, until you can see „gear calibration" on the screen

  o Lift up the rear wheel and pedal fast and easy

  o While pedaling, press the „Light" button (B) to start calibration

  o Continue to pedal while the system shifts from full overdrive to full underdrive several times to complete the calibration process

  o After completion of the calibration process exit the „configuration mode" through pressing and holding the [RESET] button for 5 seconds

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- **When**
  - o After enviolo automatic + assembly
  - o After firmware update
  - o When system functions are not appropriate
- **How**
  - o Turn on the Flyer system
  - o Enter the set up menu
  - o Navigate to "Kalibrierung"
  - o Confirm "NuVinci kalibrieren"
  - o Confirm by pressing "OK" on the joystick again
  - o Lift up the rear wheel and pedal fast and easy
  - o Continue to pedal while the system shifts from full overdrive to full underdrive several times to complete the calibration process and the screen indicates „success"
  - o After completion of the calibration the display shows a confirmation message. If it does not appear restart the process

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- **Check system calibration**
    - Pedal the bicycle lightly and quickly while shifting through the ratio range (manual mode) and cadence range (automatic mode)
    - Ensure the system is able to shift through the full range of the display without issue
    - If operation is inconsistent while pedaling on a stand or riding, recalibrate the system
- **Calibration notes**
    - Without pedaling, enviolo automatic will not calibrate and function will be compromised
    - Pedaling will get harder and easier during calibration as the enviolo automatic system determines the shift range for the CVP
- **Usage notes**
    - The enviolo automatic system will not shift if there is no pedal or wheel movement on the bicycle
    - The ability to shift the CVP is affected by input torque, and shifting can be delayed under high pedal torque and e-Bike assist levels

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Thank you