Installation Guide

WARNINGS

- Please read this installation guide carefully before installing LIMITS. Incorrect installation or maintenance, especially failure to torque LIMITS or the pedal properly may lead to accidents and possible harm to persons and/or possessions. Always use calibrated torque wrench. If LIMITS shows signs of damage, cracks, loosening and/or wear it must be professionally checked. Always check carefully after fall or accident.

- If you are in doubt about your ability to install the product, seek advice from a qualified bike mechanic.

- Tighten all parts to the torques recommended in this install guide and where applicable, those recommended by your pedal / bike manufacturer.

- Do not use LIMITS with standard shoes as this may cause damage to the sensor.

- Never use a grip wrench to fit or remove LIMITS or the pedal as this may cause irreparable damage to the sensor.

- Do not pressure wash LIMITS.

ATTENTION

If you are using 8mm hex pedals please ensure you fit the 8mm to 6mm hex reducers (part number ) into your pedal before fitting to LIMITS and right none sensing unit.

PACKAGE CONTENTS

1. 1x Left LIMITS
2. 2x Pedal washers
3. 2x 8mm to 6mm hex reducer
4. 2x Battery end caps (spares)
5. 2x SR44 Batteries
6. 1x Right none sensing spacer

REQUIRED TOOLS

- 30 Nm Torque wrench
- 6mm Hex driver
- 8mm Hex driver
- Pedal grease

QUICK START

1. Note the left side has a left-hand (reverse) thread
2. Remove left pedal using pedal spanner or hex driver
3. Fit LIMITS to left crank and torque via 8mm hex to 30Nm
4. Fit pedal to LIMITS (if 8mm hex pedal, ensure you have inserted the 8mm to 6mm hex reducer )
5. Tighten pedal to manufacturers recommended torque
6. Repeat for right none sensing spacer on right crank

LIMITS INSTALLATION

4-1 Install the left side first

1. Note the left side has a left-hand (reverse) thread
2. Remove the left pedal from crankarm using a spanner or hex key.
3. Clean the pedal threads and apply a thin layer of grease on the pedal spindle and the surface where it contacts LIMITS.
4. Apply a thin layer of grease on the LIMITS spindle and the surface where it contacts the crankarm.

ATTENTION

If you are using 8mm hex pedals please ensure you fit the 8mm to 6mm hex reducers (part number ) into your pedal before fitting to LIMITS and right none sensing spacer.

4. Manually tighten LIMITS to crankarm

Do not use torque wrench for this operation until you determine if a washer is required.

LIMITS should only contact the crankarm at the metal mounting face. If the plastic housing contacts the crankarm it may fracture when torqued.

If the plastic housing contacts the crankarm use one or two of the washers provided Do not use more than two washers.

5. Using a 8mm hex driver and torque wrench tighten LIMITS to 30Nm.

LIMITS REMOVAL

Never grip LIMITS with a grip wrench
Remove spanner pedal. Using 8mm hex driver and torque wrench hold LIMITS in place and remove pedal with spanner. Using 8mm hex driver and torque wrench remove LIMITS.

4-2 Fit Hex 8mm Pedals

ATTENTION

Fit 8mm to 6mm hex reducer to pedal before fitting pedal to LIMITS

1. Manually tighten pedal to LIMITS.
2. Using 6mm hex driver tighten pedal to manufacturers recommended torque

Fit Hex 6mm pedals as above but without 8mm to 6mm reducer
Repeat the above steps to fit the right none sensing spacer.
LIMITS REMOVAL CONTINUED

Remove hex pedal. Using 6mm hex driver and torque wrench remove pedal. Using 8mm hex driver and torque wrench remove LIMITS.

If LIMITS comes off with pedal contact LIMITS support@limits.technology

6mm

FITTING BATTERIES

6 Note direction arrow for removing end cap
2 Note battery end caps are reversion thread
Clockwise → to open
Counterclockwise → to close

It is recommended to use a coin to open and close battery end caps

Overtightening the battery end caps past the end stop will cause damage

Use SR44 Silver Oxide batteries or equivalent
Note: LIMITS is not compatible with LR44 batteries

POWERING UP

- Solid Blue
Calibrating -- Blink Green
Error -- Solid Red
Device Firmware Update -- Solid Green

The ANT+™ ID number is supplied with documentation. Turn the pedal 2 or 3 times to wake up LIMITS. To automatically or manually pair with LIMITS read the manual provided with your bicycle computer.

Make sure there are no other ANT+™ power meters within 10m
Make sure LIMITS is within 2m of the bicycle computer
It is recommended that you manually pair LIMITS to your bicycle computer

LED STATUS

Align

PAIRING TO BICYCLE COMPUTER

The ANT+™ ID number is supplied with documentation. Turn the pedal 2 or 3 times to wake up LIMITS. To automatically or manually pair with LIMITS read the manual provided with your bicycle computer.

It is recommended that you manually pair LIMITS to your bicycle computer

To configure your bicycle computer, please read your bicycle computer manual.

It is recommended the bicycle computer is configured as follows:
1. Set data collection to include zeros
2. Set data collection to once-per-second
3. Ensure crank length is set correctly

Always check the above settings after a firmware update of your bicycle computer as they may revert to the default settings.

Disable or remove third party cadence sensors

If crank arm length cannot be set LIMITS will default to 172.5mm

CALIBRATION

Perform a calibration before starting to cycle

The left crank arm with LIMITS MUST be positioned straight down (6 o'clock position), with no load applied to the pedal, and the bike in the vertical position. If the left crank arm is not straight down or the bike not vertical the calibration will fail. It is recommended that after first fitting LIMITS you carry out a 30min ride to bed-in LIMITS then re-calibrate. For accuracy you should calibrate LIMITS before each ride.

Make sure there are no other ANT+™ power meters within 10m
Make sure LIMITS is within 2m of the bicycle computer
It is recommended that you manually pair LIMITS to your bicycle computer

CALIBRATION CONTINUED

Calibration error codes

<table>
<thead>
<tr>
<th>Error</th>
<th>Cause</th>
<th>Fix</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Time out</td>
<td>Move head closer and retry</td>
</tr>
<tr>
<td>200</td>
<td>Bike leaning &gt; +/- 5 degrees</td>
<td>Ensure bike is upright</td>
</tr>
<tr>
<td>201</td>
<td>Pedal movement detected</td>
<td>Ensure pedals are stationary</td>
</tr>
<tr>
<td>202</td>
<td>Low battery</td>
<td>Replace batteries</td>
</tr>
</tbody>
</table>

LIMITS SOFTWARE UPDATE

LIMITS firmware can be updated over-the-air (OTA). Firmware updates may be sent to the power meter by way of nRF Toolbox App for iOS or Android devices using Bluetooth Smart. Check our website at: www.limits.technology/support for links to the latest available firmware and nRF Toolbox Apps, as well as instructions on how to use the App for OTA firmware updates

MAINTENANCE

Clean LIMITS with a damp cloth and remove debris with care. Do not clean with solvents or cleaning agents. Do not use high pressure cleaners. LIMITS is IPX7 rated but it is not recommended to immerse the product. Periodically check the product is torqued correctly. Do not attempt to open or disassemble the product as you may damage it. If the product is not used for a long time it is advisable to remove LIMITS and batteries and store in its original packaging.

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