



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 **3**) into your pedals before fitting to LIMITS and right none sensing unit.

① 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

② REQUIRED TOOLS

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

③ QUICK START

Note the left side has a left-hand (reverse) thread

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

④ LIMITS INSTALLATION

4-1 Install the left side first

Note the left side has a left-hand (reverse) thread

1. Remove the left pedal from crankarm using a spanner or hex key.
2. Clean the pedal threads and apply a thin layer of grease on the pedal spindle and the surface where it contacts LIMITS.
3. 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 **3**) into your pedal before fitting to LIMITS and right none sensing spacer.

4. Manually tighten LIMITS **1** 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 **2. Do not use more than two washers.**

5. Using a 8mm hex driver and torque wrench tighten LIMITS **1** to 30Nm.



4-2 Fit Hex 8mm Pedals

ATTENTION

Fit 8mm to 6mm hex reducer **3 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 **3**
- Repeat the above steps to fit the right none sensing spacer.

⑤ 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.



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

6 FITTING BATTERIES

! Note direction arrow for removing end cap



! Note battery end caps are revers 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

FITTING BATTERIES CONTINUED

Remove battery end caps 4 by rotating clockwise. Take care when removing to avoid damage or loss of battery end cap. Fit SR44 batteries 5 note battery polarity (+ side top). Replace the battery end caps by aligning as shown below and turning anticlockwise to tighten.



7 LED STATUS

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

8 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.

! 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

9 CONFIGURING 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.

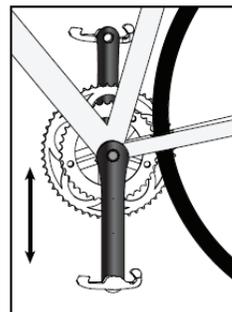
! Disable or remove third party cadence sensors

! If crankarm length cannot be set LIMITS will default to 172.5mm

10 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 recalibrate. For accuracy you should calibrate LIMITS before each ride.



CALIBRATION CONTINUED

Calibration error codes

Error	0
Cause	Time out
Fix	Move headset closer and retry
Error	200
Cause	Bike leaning > +/- 5 degrees
Fix	Ensure bike is upright
Error	201
Cause	Pedal movement detected
Fix	Ensure pedals are stationary
Error	202
Cause	Low battery
Fix	Replace batteries

11 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

12 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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