

PRECISION PRO
POWER METER

User Manual



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1 INTRODUCTION

1.1 What's in the Box?

Your PRECISION PRO powermeter comes complete with the following:



PRECISION PRO

Crankset
included
with Ride
Ready
purchase



(2) CR2032 batteries



1.5mm hex tool
(3) Spare 1.5mm hex screws

2 GETTING STARTED

2.1 Installation

The steps and tools needed for installing a crankset on your bike will vary depending on the model of your crankset. For your safety, follow the crankset manufacturer's instructions when installing the crankset to your bike. Consult your local bike mechanic if you are not comfortable or able to follow the manufacturer's installation instructions.

Quick Tip: *Accuracy is dependent on proper torque.*

2 GETTING STARTED

2.2 Preparing for your ride

Your powermeter is delivered with a pre-installed battery and comes ready to ride.

1. Spin the crank arms four times to wake your powermeter.
2. Pair your powermeter with a compatible display unit using ANT+ and/or Bluetooth Smart. For more details, see [Section 3](#)
3. Perform a zero offset (some display units refer to this as calibration). For more details, see [Section 4](#)

Quick Tip: *For best performance, remember to perform a zero offset before each ride.*



2 GETTING STARTED

2.3 Installing and replacing batteries

Your powermeter uses common CR2032 coin cell lithium ion batteries. If the battery reaches 0% on one side, the other side of the dual system will automatically operate as a single-sided powermeter; reported wattage from this side will be doubled. When the reported battery life is 8%, you will have 8-10 hours of remaining usage.

Non-drive-side crank arm replacement instructions are in [Section 2.3.1](#)

Drive-side Dura-Ace FC-9000 replacement instructions are in [Section 2.3.2](#)

Drive-side FC-Mxxxx (XT/XTR series) replacement instructions are in [Section 2.3.3](#)

Quick Tip: *When storing your batteries, keep them separated; shorting a battery will shorten its life.*

2 GETTING STARTED

2.3.1 Non-drive-side powermeters

To replace the battery on your non-drive-side powermeter, you will need a new CR2032 coin lithium ion battery.



1. Do not pry your battery cap. To remove, twist the battery cap counterclockwise on your powermeter
2. Remove the old battery from the battery cap. To remove the battery from the cap, hold the cap by its edges and tap it against a hard surface
3. Place your battery into the cap with '+' facing the white sticker inside the battery cap

Quick Tip: *Do not remove the white sticker inside the battery cap, it holds the metal contacts.*

2 GETTING STARTED

2.3.2 Drive-side powermeters for Dura-Ace FC-9000

To replace the battery on your drive-side powermeter you will need a new CR2032 lithium ion battery and a 1.5 mm hex tool (included with your powermeter).

1. Using the supplied 1.5 mm hex tool, remove the three screws by turning counterclockwise
2. Gently push the edge of the old battery into the battery compartment and remove the battery
3. Place your new battery into the battery compartment with '+' facing outwards towards you
4. Reinstall the battery cap and tighten the three screws in place using the 1.5 mm hex tool



2 GETTING STARTED

2.3.3 Drive-side powermeters for FC-Mxxxx (XT/XTR series)

To replace the battery on your non-drive-side powermeter, you will need a new CR2032 coin lithium ion battery.



1. Do not pry your battery cap. To remove, twist the battery cap counterclockwise on your powermeter
2. Remove the old battery from the battery cap. To remove the battery from the cap, hold the cap by its edges and tap it against a hard surface
3. Place your battery into the cap with '+' facing the white sticker inside the battery cap

Quick Tip: *Do not remove the white sticker inside the battery cap, it holds the metal contacts.*

2 GETTING STARTED

2.4 Configuring your powermeter using the 4iiii App

When your PRECISION PRO was shipped from the factory, the drive-side and non-drive-side powermeters were linked together such that they operate as a dual-sided powermeter. Your powermeter can also operate as two independent single-sided powermeters. If you want to operate your PRECISION PRO powermeter as a single-sided powermeter using only one crank arm, follow the instructions on [Section 2.4.2](#)

Additional information and settings on your PRECISION PRO can be accessed through the 4iiii app on iOS and Android devices using Bluetooth Smart.

To configure your PRECISION PRO powermeter in single-sided mode, follow the instructions in [Section 2.4.3](#)

To configure your PRECISION PRO powermeter in dual-sided mode, follow the instructions in [Section 2.4.1](#)

Quick Tip: *Pairing is the connection between your powermeter and display units such as a bike computer, watch, or smartphone. Linking is the connection between the drive and non-drive side powermeters.*

Quick Tip: *Connect your powermeter to the 4iiii App once a month to check for the latest firmware update. If your firmware requires updating, you will be prompted to upgrade.*

2 GETTING STARTED

2.4.1 Configuring as a dual-sided powermeter

If you have unlinked your PRECISION PRO, you will need to re-link in order to use it as a dual-sided powermeter:

1. Spin the crank arms four times to wake your powermeter
2. Open the 4iiii app on your smartphone
3. Tap on the menu and select PRECISION Configuration
4. Select your powermeter from the list
5. Select Dual Sided when prompted
6. Select your other powermeter to link
7. On the next screen, wait up to one minute for the left borders of the information panes to turn green

Quick Tip: If the left borders of the information panes are red, the powermeter is not paired to the app, see Section 7.4

2 GETTING STARTED

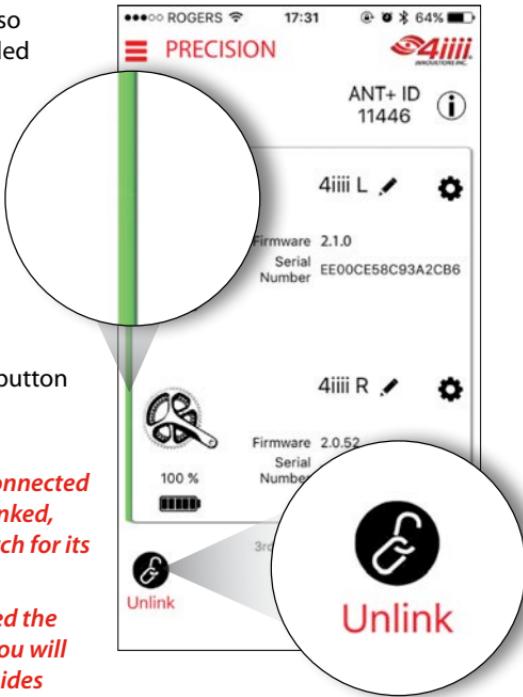
2.4.2 Unlinking your dual-sided powermeter

To unlink your dual-sided powermeter so that it becomes two separate single-sided powermeters:

1. Spin the crank arms four times to wake your powermeters
2. Open the 4iiii app on your smartphone
3. Select your powermeter from the list
4. Once the left borders for both sides are green, tap on the *Unlink* button (located at the bottom left of the screen)

Quick Tip: *Make sure both cranks are connected before unlinking. If only one side is unlinked, the remaining side will continue to search for its previously linked powermeter.*

Quick Tip: *If you have previously enabled the 3rd-Party Apps mode on the 4iiii App, you will need to re-enable this feature on both sides after unlinking.*



2 GETTING STARTED

2.4.3 Configuring in single-sided mode

To unlink your PRECISION PRO, you will need:

- The 4iiii App
- A data connection (cellular or WiFi)
- Bluetooth Smart enabled on your smartphone

Follow these steps to unlink your PRECISION PRO:

1. Spin the crank arms four times to wake your powermeter
2. Open the 4iiii App on your smartphone
3. Tap on the menu and select PRECISION Configuration
4. Select your PRECISION PRO from the list of powermeters
5. Tap on the unlink button to unlink the two sides

Quick Tip: If your powermeter does not appear in the list, check that it is disconnected from all other Bluetooth Smart devices, and that both batteries have sufficient charge.

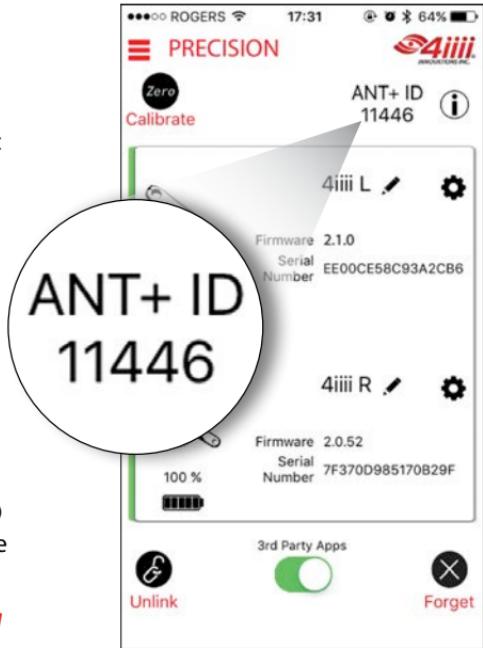
3 PAIRING

3.1 Pairing with ANT+ enabled displays

To receive power and cadence information from PRECISION PRO, it must first be paired to your display unit. Pairing procedures vary between display units, but the following generic instructions are provided:

1. Turn on your display unit
2. Spin the crank arms four times to wake your powermeter
3. Go to the *Sensors* menu on your display unit
4. Select *Add a new sensor*
5. A list of available power sensors will be shown. Select the ANT+ ID that matches your PRECISION PRO which is etched on the edge of the non-drive side PRECISION pod

Quick Tip: The ANT+ ID used for pairing is also displayed on the 4iiii App.



3 PAIRING

With your powermeter paired, you can add power metrics to the workout screens of your display unit. Consult your display unit's instruction manual for more specific directions.

Fields that are available on many display units include:

- Power (1 sec. 3 sec. 10 sec.)
- Normalized Power
- Intensity Factor
- TSS
- Power Balance
- Cadence

3 PAIRING

3.2 Pairing with Bluetooth Smart

Pairing procedures vary widely between Bluetooth Smart display units. Please consult the manufacturer's instructions to pair your PRECISION PRO. Following are instructions for pairing using the 4iiii App.

1. Spin the crank arms four times to wake your powermeter
2. Open the 4iiii App on your smartphone
3. Tap on the menu and select PRECISION Configuration
4. Select your PRECISION PRO from the list of powermeters
5. If your PRECISION PRO is configured as a dual-sided powermeter, continue to Step 6; otherwise, select *Single Sided*
6. Once the left edge of the PRECISION info pane turns green, tap on the menu and select *Workout*

Quick Tip: *If your powermeter does not appear in the list, check that it is disconnected from all other Bluetooth Smart devices, and that Bluetooth is enabled on your phone. Also, ensure both batteries on your powermeter have sufficient charge.*

4 PERFORMING A ZERO OFFSET

4.1 Performing a zero offset via ANT+

For best performance, you should allow the powermeter to adjust to the ambient riding temperature before performing a zero offset and starting your ride. Allowing your powermeter to reach ambient temperatures normally takes a few minutes.

To perform a zero offset on your powermeter using your ANT+ display unit, follow these steps:

1. Unclip and dismount from your bike
2. Spin the crank arms four times to wake your powermeter
3. Place your crank arms in the 12 and 6 o'clock positions
4. Use your display unit to calibrate your powermeter
 - i. Go to the *Sensors* menu
 - ii. Select the ANT+ ID of your powermeter from the list of available sensors
 - iii. Choose *Calibrate*

Quick Tip: Some display units uses the term "calibration" rather than "zero offset".

Single-sided mode:

A two digit response will appear on your display unit. Refer to *Zero Offset Table on Page 16*

Dual-sided mode:

A four digit number will appear on your display unit. The first two digits refer to the zero offset response of the non-drive side of PRECISION PRO and the last two digits refer the zero offset response of the drive side. Refer to *Zero Offset Table on Page 16*

4 PERFORMING A ZERO OFFSET

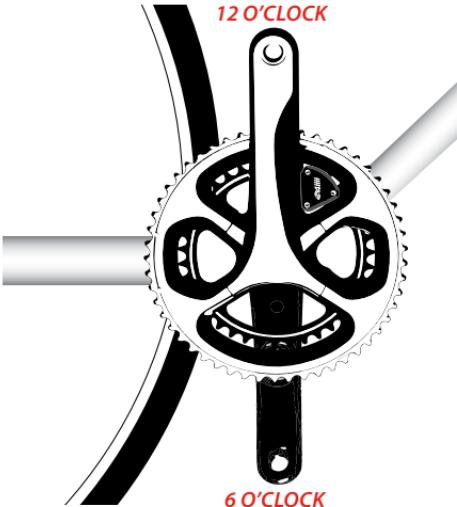
<i>Two digit Response</i>	<i>Result</i>	<i>Description</i>	<i>What to do</i>
10	Success		Go Ride!
20	Error	Crank movement detected	Keep your bike steady
40	Error	Firmware mismatch	Connect to 4iiii App to update firmware
50	Error	Firmware error	Connect to 4iiii App to update firmware
99	Error	Powermeter side not found	<ul style="list-style-type: none">• Spin crank arms four times to wake up• Replace battery• Confirm linking status on 4iiii App
0	Error	Powermeter not found	<ul style="list-style-type: none">• Spin crank arms four times to wake up• Replace battery
If an error cannot be solved with the recommendations above, contact your 4iiii authorized dealer for support.			

4 PERFORMING A ZERO OFFSET

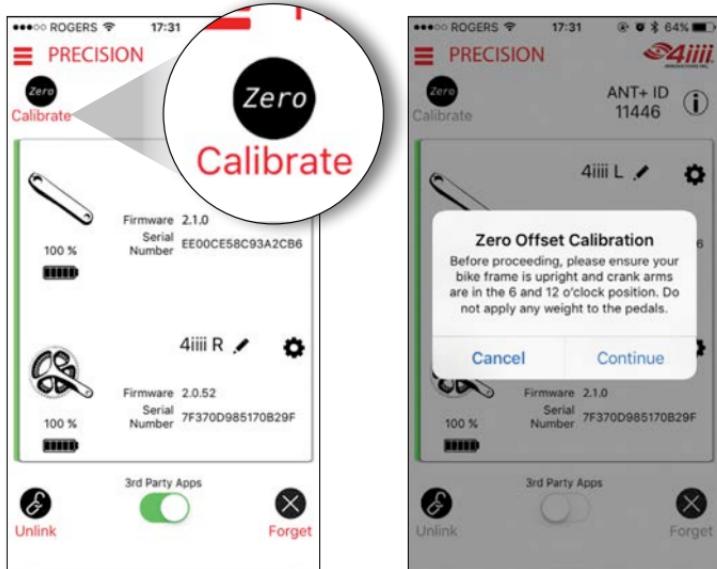
4.2 Performing a zero offset using your 4iiii App (Bluetooth Smart)

Zero offset is performed by pairing your powermeter with the 4iiii App, not through the phone's Bluetooth settings. Follow these steps:

1. Unclip and dismount from your bike
2. Spin the crank arms four times to wake your powermeter
3. Place your crank arms in the 12 and 6 o'clock positions
4. Ensure that you have an internet connection (cellular or WiFi) and that Bluetooth is enabled in your smartphone settings
5. Open the 4iiii App
6. Tap on the menu and select PRECISION Configuration
7. If your powermeter is not already paired with the 4iiii App, you will be presented with a list of nearby powermeters, select your powermeter from the list
8. Once the left edge of the PRECISION info pane turns green for both sides, tap the Zero button



4 PERFORMING A ZERO OFFSET



Quick Tip: If you receive a calibration error message, refer to the DESCRIPTION column in the Calibration Results Table on Page 16

5 ADVANCED FEATURES

5.1 Renaming your powermeter using the 4iiii App

Each side of your powermeter has its own Bluetooth Smart name. These names can be changed using the 4iiii App. Follow these steps

1. Spin the crank arms four times to wake your powermeter
2. Connect to your powermeter using the 4iiii App
3. Tap the *Pencil* button
4. Enter a new name (9 character limit)
5. Tap Save
6. Disconnect from your powermeter

Quick Tip: *After renaming your powermeter, you may have to reconnect again before the new name is displayed.*

5 ADVANCED FEATURES

5.2 Setting scale factor compensation values

The scale factor feature allows the user to adjust the output of the powermeter. In single-sided mode, this feature can be used to compensate for left and right leg strength imbalance. This scale factor can also be used to modify the output of your PRECISION powermeter to match third-party power meters or a smart trainer.

Power output can be reduced by inputting a scale factor lower than 1.000, or increased by inputting a scale factor greater than 1.000.

For example, to increase the reported power from your single-sided powermeter by 2%, follow these steps:

1. Spin the crank arms four times to wake your powermeter
2. Connect using the 4iiii App
3. Tap the *Gear* button
4. Enter 1.02 as the new scale factor and tap *Done*

Quick Tip: *The default value for the scale factor is 1.000.*

Quick Tip: *The scale factor modifies the power output for each leg independently. For example, to decrease the total power output of a dual-sided powermeter by 2%, change both scale factors 0.980. This value is obtained by dividing the default value of 1.000 by the percentage that you want to reduce (1.020).*

5 ADVANCED FEATURES

5.3 Using third-party compatibility mode on Bluetooth Smart

By default your powermeter adheres to the Bluetooth Smart standard and transmits power data from each leg to a Bluetooth Smart display unit independently. Some Bluetooth Smart display units and apps do not support this. You can enable third-party compatibility mode through the 4iiii App. With this option enabled your powermeter will combine the power data from both legs for the display unit or app.

To enable third-party compatibility mode, follow these steps:

1. Spin the crank arms four times to wake your powermeter
2. Open the 4iiii App
3. Tap on the menu and select PRECISION Configuration
4. Select your powermeter from the list
5. Once the left edge of the PRECISION info pane turns green for both sides, swipe across the toggle to enable 3rd Party Apps.



6 MAINTENANCE AND CARE

Your powermeter should be cared for properly. Follow these guidelines:

- Store your powermeter between temperatures of -20°C (68°F) and 50°C (122°F)
- Do not allow water or other liquids to enter the battery compartment
- Avoid using abrasive materials when cleaning your powermeter
- Only use water or mild soap to clean your crank
- Do not expose your powermeter to degreasers or corrosive cleaning agents
- To ensure a watertight seal, keep the o-rings on the battery cap lubricated with silicone grease and replace any o-rings that appear worn or damaged

Quick Tip: *Replacement battery covers and o-rings are available at our online store.*

7 TROUBLESHOOTING

7.1 Power output is half of expected value on Bluetooth Smart display unit	Enable third-party compatibility mode using the 4iiii App (see Section 5.3)
7.2 Power output is double the expected value on Bluetooth Smart display unit	Enable third-party compatibility mode using the 4iiii App (see Section 5.3)
7.3 Powermeter cannot connect to Bluetooth Smart display unit	<ul style="list-style-type: none">• Spin the crank arms four times to wake your powermeter• Ensure the powermeter is paired with your Bluetooth Smart display unit• Ensure the Bluetooth option is enabled on your Bluetooth Smart display unit• Ensure the powermeter is not connected to another Bluetooth Smart display unit• Remove the battery from your powermeter, wait one minute, and put the battery back into your powermeter• Replace battery in your powermeter (see Section 5.3)

7 TROUBLESHOOTING

<p>7.4 Powermeter is not shown while attempting to pair with the 4iiii App</p>	<ul style="list-style-type: none">• Spin the crank arms four times to wake your powermeter• Ensure the powermeter is paired with your Bluetooth Smart display unit• Ensure the Bluetooth option is enabled on your Bluetooth Smart display unit• Ensure the powermeter is not connected to another Bluetooth Smart display unit• Remove the battery from your powermeter, wait one minute, and put the battery back into your powermeter• Replace battery in your powermeter (see Section 2.3)
<p>7.5 Powermeter cannot connect to ANT+ display unit</p>	<ul style="list-style-type: none">• Spin the crank arms four times to wake your powermeter• Ensure the powermeter is paired with your ANT+ display unit• Remove the battery from your powermeter, wait one minute, and put the battery back in your powermeter• Replace battery in your powermeter (see Section 2.3)

7 TROUBLESHOOTING

<p>7.6 Power balance data from your dual-sided powermeter is not shown on ANT+ display unit</p>	<ul style="list-style-type: none">• Ensure your powermeter is configured to dual-sided mode (see Section 2.4.1)• Ensure your ANT+ display unit is connected to the ANT+ ID shown on your 4iiii App, this ANT+ ID is also shown on the non-drive side powermeter housing
<p>7.7 Cannot connect PRECISION PRO to ANT+ display unit</p>	<ul style="list-style-type: none">• Spin the crank arms four times to wake your powermeter• Ensure the powermeter is paired with your ANT+ display unit• Remove the battery from your powermeter, wait one minute, and put the battery back in your powermeter• Replace battery in your powermeter (see Section 2.3)• Connect to your ANT+ display unit using the ANT+ ID on the left crank arm

8 SPECIFICATIONS

Accuracy	±1% error
Power range	0 - 4000 watts
Cadence Range	30 - 170 RPM
Battery type	CR2032 Lithium Ion
Battery life (riding)	100+ hours
Communication	ANT+ / Bluetooth Smart
Weather sealing	IP67
Operating temperature range	0°C to 40°C / 32°F to 104°F
Storage temperature range	- 20°C to 40°C / 4°F to 104°F
Non-drive side weight	6 gram (without battery) 9 gram (including battery)
Drive-side weight	13 gram (without battery) 16 gram (including battery)

9 WARRANTY

Covered Products

This warranty covers the PRECISION PRO product manufactured by 4iiii Innovations Inc. ("4iiii") and purchased by the end purchaser (the "Product"), unless otherwise specifically agreed in writing by 4iiii.

Limited Warranty

4iiii warrants solely to the end purchaser of the Product, subject to the exclusions and procedures set forth below, that the Product and its internal components shall be free from defects in materials and workmanship and will substantially conform to 4iiii's applicable specifications for the Product, for a period of 12 months from the date of original purchase (the invoice date) of the Product (the "Warranty Period"). Repairs and replacement components for the Product are warranted, subject to the exclusions and procedures set forth below, to be free from defects in material and workmanship, and will substantially conform to 4iiii's applicable specifications for the Product, for 30 days from

replacement or delivery, or for the balance of the original Warranty Period, whichever is greater. This LIMITED WARRANTY is only valid while the Product is affixed to the end purchaser's crank.

Exclusion of all other warranties

The LIMITED WARRANTY shall apply only if the Product is installed, used, maintained, stored and operated in accordance with 4iiii's relevant User's Manual and Specifications, and the Product is not modified or misused in anyway. The Product is provided "AS IS" and the implied warranties of merchantability and fitness for a particular purpose and all other warranties, express, implied or arising by statute, by course of dealing or by trade usage, in connection with the design, sale, installation, service or use of any products or any component thereof, are excluded from this transaction and shall not apply to the Product. The LIMITED WARRANTY is in lieu of any other warranty, express or implied, including but not limited to, any warranty of merchantability or fitness for a particular purpose, title, and non-infringement.

9 WARRANTY

Limitation of remedies

The purchaser's EXCLUSIVE REMEDY against 4iiii shall be, at 4iiii's option, the repair or replacement of any defective Product or components thereof with new, refurbished or reconditioned Product or components thereof at no charge to the end purchaser for parts and labour. The end purchaser shall be responsible for all shipping and handling costs for return of the Product with return shipping and handling costs for return after repair or replacement of the Product paid by 4iiii. The end purchaser shall notify 4iiii immediately of any defect. Repair shall be made through 4iiii or 4iiii authorized representatives only. Repair, modification or service of 4iiii products by any party other than 4iiii or 4iiii authorized representatives shall render this warranty null and void. The remedy in this paragraph shall only apply if the Product is installed, used, maintained, stored and operated in accordance with 4iiii's relevant User's Manual and Specifications, and the Product is not modified or misused in anyway. NO OTHER REMEDY (INCLUDING, BUT NOT LIMITED TO, SPECIAL, INDIRECT,

INCIDENTAL, CONSEQUENTIAL OR CONTINGENT DAMAGES FOR LOST PROFITS, LOST SALES, INJURY TO PERSON OR PROPERTY, OR ANY OTHER INCIDENTAL OR CONSEQUENTIAL LOSS) SHALL BE AVAILABLE TO THE END PURCHASER, even if 4iiii has been advised of the possibility of such damages. Without limiting the foregoing, 4iiii shall not be liable for any damages of any kind resulting from use, quality, performance or accuracy of any Product.

4iiii IS NOT RESPONSIBLE FOR PURCHASER'S NEGLIGENCE OR UNAUTHORIZED USE OF THE PRODUCT. IN NO EVENT SHALL 4iiii BE IN ANY WAY RESPONSIBLE FOR ANY DAMAGES RESULTING FROM END PURCHASER'S OWN NEGLIGENCE, OR FROM OPERATION OF THE PRODUCT IN ANY WAY OTHER THAN AS SPECIFIED IN 4iiii's RELEVANT USER'S MANUAL AND SPECIFICATIONS. 4iiii is NOT RESPONSIBLE for defects or performance problems resulting from: (1) misuse, abuse or neglect of Product; (2) the utilization of the Product with interfaces not supported by 4iiii; (3) the operation of

9 WARRANTY

the Product under any specification other than, or in addition to, the specifications set forth in 4iiii's relevant User's Manual and Specifications; (4) damage caused by accident or natural events such as lightning (or other electrical discharge) or fresh/salt water immersion of Product; (5) damage occurring in transit; or (6) normal wear and tear. **4iiii IS NOT RESPONSIBLE** for (1) aesthetic or structural damage to the end purchaser's crank resulting from installation or removal of the Product, or (2) damages incurred to the end purchaser's crank when the Product is sent in for warranty, service and/or replacement of the Product.

Warranty service

To obtain warranty service, the end purchaser must send his/her crank along with the Product and must contact 4iiii for shipping instructions and an RMA tracking number. Return the Product, freight prepaid, along with the original sales receipt as a required proof of purchase for warranty repairs, with the RMA tracking number written on the outside of the package and ship to 4iiii. In the event of a Product

failure for which warranty is claimed where the point of sale was through a 4iiii authorized dealer and/or distributor, such authorized dealer and/or distributor will perform an assessment of the Product, follow the 4iiii authorized removal procedure and be the contact with 4iiii while providing the end purchaser with a replacement product. **VOIDING WARRANTY.** This Limited Warranty shall be null and void if: (1) the Product is repaired or serviced by anyone other than an authorized 4iiii representative; (2) the Product is installed on any non-compatible crank including, but not limited to, a carbon crank; or (3) the Product is exposed to external heat sources that expose Product to temperatures in excess of storage and operating specifications.

10 CONTACT

**FOR TECHNICAL SUPPORT PLEASE CONTACT
YOUR 4iiii AUTHORIZED DEALER.**

*4iiii Innovations Inc.
228 River Ave
Cochrane, AB T4C 2C1
Canada*

*support@4iiii.com
1.800.218.3095*



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