USER GUIDE
WARNING: Read this manual in its entirety before using this product. Improper use could result in damage to the product or lead to injury.
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SECTION 1 – PACKAGE CONTENTS
1. Chainring w/sensor
2. Contoured Nuts (x5)
3. M137 Torx Bolts (x5)
4. Identification Card (not pictured)

TOOLS REQUIRED
2.5mm hex key
T-30 Torx attachment
Adjustable torque wrench
OPTIONAL
5mm hex
6mm hex
Park Tool Chainring Wrench (CNW-2)
(not pictured)

SPECIFICATIONS
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<td>Crank Interface</td>
<td>5 bolt, 110 BCD compact</td>
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<td>About 150 grams</td>
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<td>Battery</td>
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SECTION 2 – INSTALLATION AND REMOVAL

A. COMPATIBILITY

The PowerTap C1 power meter is compatible with a number of popular crank sets. The C1 fits most 5 bolt, 110 BCD cranksets. The C1 is not compatible with 130 BCD cranksets, SRAM Exogram cranksets (hidden bolt), Campy cranksets, or any Shimano 4 bolt asymmetric cranksets. For a list of the most up-to-date compatibility information go to www.powertap.com/uploads/PDF/powertap-manuals/powertap-c1-crank-compatibility.pdf

IMPORTANT: If the C1 is used with an incompatible crank damage to the sensor could occur. Any damage caused to the C1 due to improper installation or installation to incompatible cranks will not be covered under warranty.

B. INSTALL AND REMOVAL

See installation video at powertap.com

Tools required – T-30 Torx Wrench (see image on pg 3)
5mm Hex Wrench, 6 mm Hex Wrench

Step 1- Remove your crank from your bike. Please reference the manual for the crank you have for removal instructions.

Step 2- Remove the existing chainrings from your crank. There will be 5 chainring bolts and nuts holding the chainrings to the crank. Fixing hardware varies from one crank to another. Common tools are 5mm and 6mm hex (Allen) wrench, T-30 Torx or chainring nut tool.

Step 3- Check compatibility of the C1 to your crank. The surface of the C1 chainring sensor must fully contact the inboard surface of the crank spider. Additionally, the 5 arms of the crank spider should not be in contact with any area of the sensor cover. If the crank spider arms are in contact with the sensor cover your crank is not compatible with the C1.
Step 4- Install the C1 chainring to your crank. Use the contoured nuts and M137 chainring bolts that came with your C1 to affix the chainrings to your crank. Place the chainring on the inboard side of the crank lining up the holes on the chainring and crank spider. Line the C1 chainring up so the chain pin is inline with the drive side crank arm.

**IMPORTANT:** If the C1 is used with an incompatible crank damage to the sensor could occur. Any damage caused to the C1 due to improper installation or installation to incompatible cranks will not be covered under warranty.
IMPORTANT: The bolts connecting the sensor to the chainring are plugged and should not be tightened or loosened (see image to right).

Place one of the contoured nuts through the crank arm spider hole and chainring sensor. Thread one of the M137 bolts through the chainring sensor and into the contoured nut from the inboard side of the crank but do not fully tighten. Repeat this step for each of the remaining arms of the crank – 5 total. Once all 5 contoured nuts and bolts are in place tighten each of them to the torque specification 7nm (62in lbs) in a star pattern (follow the numbers as indicated in the illustration to the right).

Step 5- Reinstall the crank to the bike. For best results follow the installation instructions in the crank manufacturers product manual.
SECTION 3 - PAIRING
For pairing instructions specific to your receiving device see your display unit’s instructions for pairing.

To Pair:
Awake the chainring by spinning the crank a few times.

Go to the SENSORS screen on your display and select POWER SENSOR from the menu and initiate the pair. Note: this can take up to 60 seconds.
When the ID from the appropriate sensor shows on the display screen select this sensor by pressing the ENTER button. Then activate the sensor.

The C1 Chainring broadcasts data using Bluetooth Smart and ANT+ simultaneously. You can pair your chainring to any device using either of these wireless protocols.

SECTION 4 - CALIBRATION AND MANUAL ZERO

Each PowerTap C1 chainring is dynamically calibrated from the factory to the highest standard. Calibration values cannot be changed by the user. However, it is important to periodically zero the offset manually. Before performing a manual zero unclip from the pedals and make sure there is no load on the drivetrain. Navigate to the sensor screen on the Joule GPS+ and select Calibration. Initially, numbers will display related to the previous zeroing of the calibration offset. With Manual Zero selected Press the ENTER button to zero the offset. If using different brand head unit refer to the manual for specific zero offset (calibration) instructions.

Bluetooth Smart is the low energy version of Bluetooth wireless technology. Learn more about this technology visit www.bluetooth.com

ANT+ is a low energy form of wireless technology used in many sport electronics. To learn more about ANT+ visit www.thisisant.com
A. AUTO-ZERO

Each C1 Chainring power meter has auto-zero functionality. Auto-zero allows the power meter to reset the zero offset during a ride. Most power based cycling computers have the ability to turn auto-zero on and off. To activate the auto-zero functionality make sure auto-zero is ‘on’ in the computer you are using.

B. FIRST RIDE

After installation there is a short break-in period where the hardware and fasteners will settle in. During this period offset values will change while riding and eventually become static. You may notice that power values are slightly off while the offset is changing. To accellerate the brake-in it is best to perform several short bursts of high power output. After performing the short, high power output bursts perform a MANUAL ZERO to reset the offset. The normal break-in period takes between 15 - 60 minutes.
SECTION 5 – BATTERY REPLACEMENT

Tools required: 2.5mm hex wrench

Your C1 Chainring comes with a battery installed out of the box.
STEP 1 - To replace the battery use a 2.5mm hex wrench to remove the bolts holding the electronics cover on.
STEP 2 - Pull the electronics cover off the C1 Chainring.
STEP 3 - Remove the battery and replace it with a new CR2032 battery.
STEP 4 - Note the orientation (+ side out) of the battery prior to reinstallation of the electronics cover. Next, make sure the ring seal is correctly seated on the shelf of the electronics housing. Reinstall the electronics cover, pushing it down fully before threading in the hex bolts.
STEP 5 - Once the electronics cover is fully seated over the electronics housing, thread in the 2.5mm hex bolts and tighten to the torque specification 3 in lbs.
SECTION 6 - FIRMWARE UPDATES

Firmware on the C1 can be updated wirelessly when new firmware releases are available. Over-the-Air firmware updates allow users to enjoy the full capabilities of the C1 Chainrings including ongoing enhancements. For more information on firmware updates, current firmware versions, and update instructions please visit www.powertap.com/firmware

REPLACING CHAINRINGS: Chainrings are a wearing part and need to be replaced when worn. PowerTap sells replacement chainrings that can be purchased at powertap.com or from your local dealer. It is recommended that a calibration be performed anytime the chainrings are replaced. This can be done at PowerTap headquarters.

When replacing chainrings a torque wrench and T-30 Torx bit is required. To replace the chainrings remove the crank from your bicycle, then remove the worn chainrings. Note the orientation of the chainrings to the sensor. There is a keyed interface between the chainring and sensor where the electronics are situated. When reinstalling the new chainrings, tighten the bolts using a star pattern. Progressively torque each of the chainring bolts to 7nm (62in lbs).
SECTION 7 - PRECAUTIONS
Avoid submerging C1 chainrings in water and direct, high pressure water spray. Also avoid chemicals like diesel, kerosene and other strong, damaging solvents.

LONG TERM STORAGE If the chainrings will not be used for an extended period of time (2 months or more) remove the batteries to prevent excessive battery drain and potential battery corrosion.

SECTION 8 - WARRANTY
The PowerTap C1 Chainring is warranted to the original retail purchaser to be free from defects in materials and workmanship. Warranty coverage is valid to the original purchaser only and proof of purchase will be required.

Electronics - 2 years

THIS WARRANTY DOES NOT COVER:
• Normal wear and tear.
• Any damage, failure or loss caused by accident, misuse, neglect, abuse, improper assembly, improper maintenance, or failure to follow instructions or warnings in Owner's Manual.
• Use of products in a manner or environment for which they were not designed.

LIMITATIONS
The foregoing warranties are in lieu of and exclude all other warranties not expressly set forth herein, whether expressed or implied by operation of law or otherwise, including, but not limited to, warranties of merchantability or fitness for a particular purpose. Saris Cycling Group shall in no event be liable for incidental or consequential losses, damages or expenses in connection with its exercise products. Saris Cycling Group’s liability hereunder is expressly limited to the replacement of goods not complying with this warranty or, at Saris Cycling Group election, to the repayment of an amount of the purchase price of the exercise product in question. Some states do not permit the exclusion or limitation of implied warranties or incidental or consequential damages, so the preceding limitations and exclusions may not apply to you.

PROCEDURES
Warranty service will be performed by Saris Cycling Group or an authorized Saris Cycling Group Dealer. The original purchaser must provide proof of purchase. Service calls and/or transportation to and from the Authorized Saris Cycling Group Dealer are the responsibility of the purchaser.
• Saris Cycling Group will have the option to repair or replace any product(s) which requires warranty service.
• Saris Cycling Group will replace any unit that is structurally defective with a new unit or replace the unit with a unit of equal value.
• In the event a product cannot be repaired, Saris Cycling Group will apply a limited credit reimbursement toward another PowerTap product of equal or greater value.
FCC STATEMENT
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.

The grantee is not responsible for any changes or modifications not expressly approved by the party responsible for compliance. Such modifications could void the user’s authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. 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 and, 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