

# **USER MANUAL**

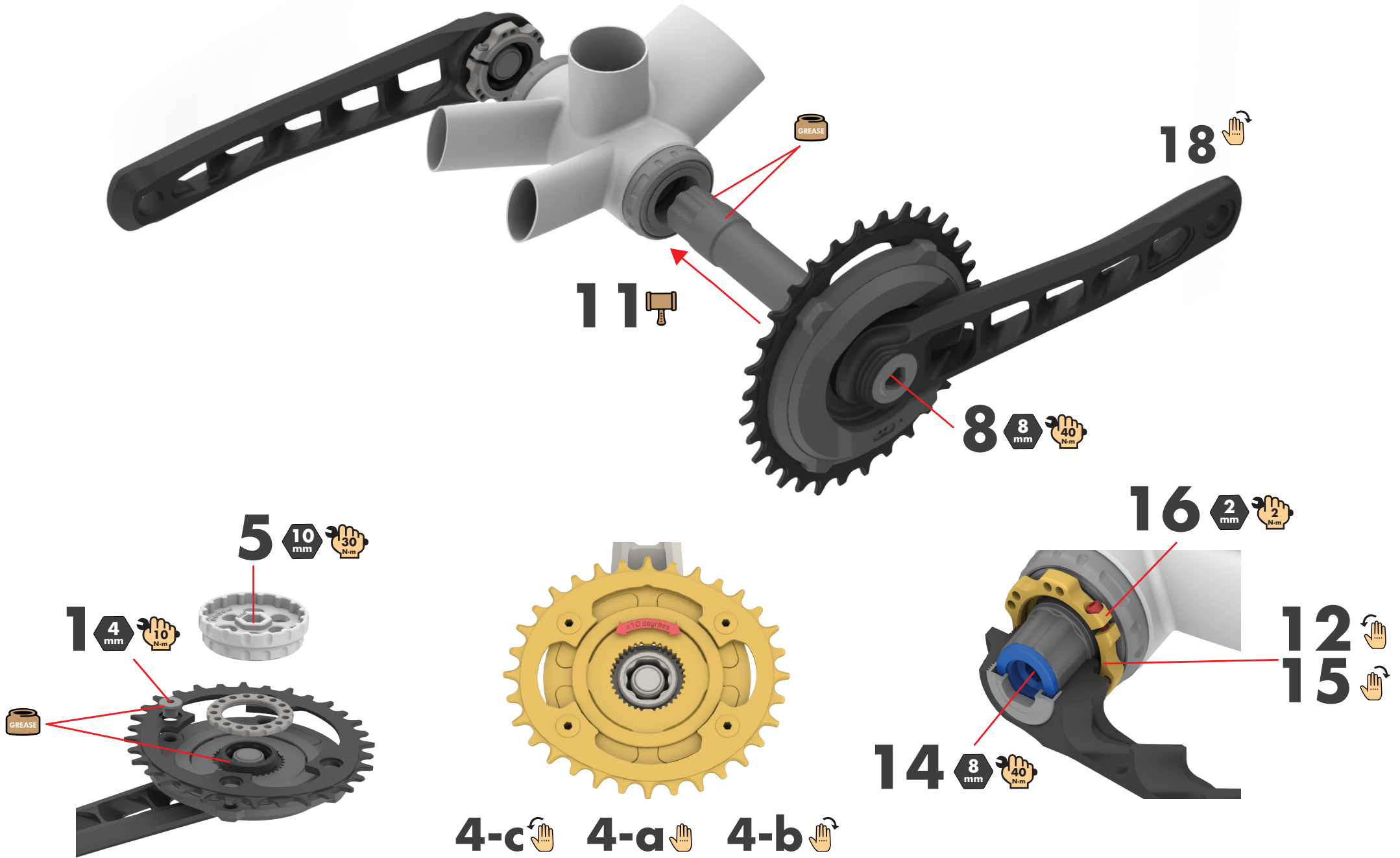
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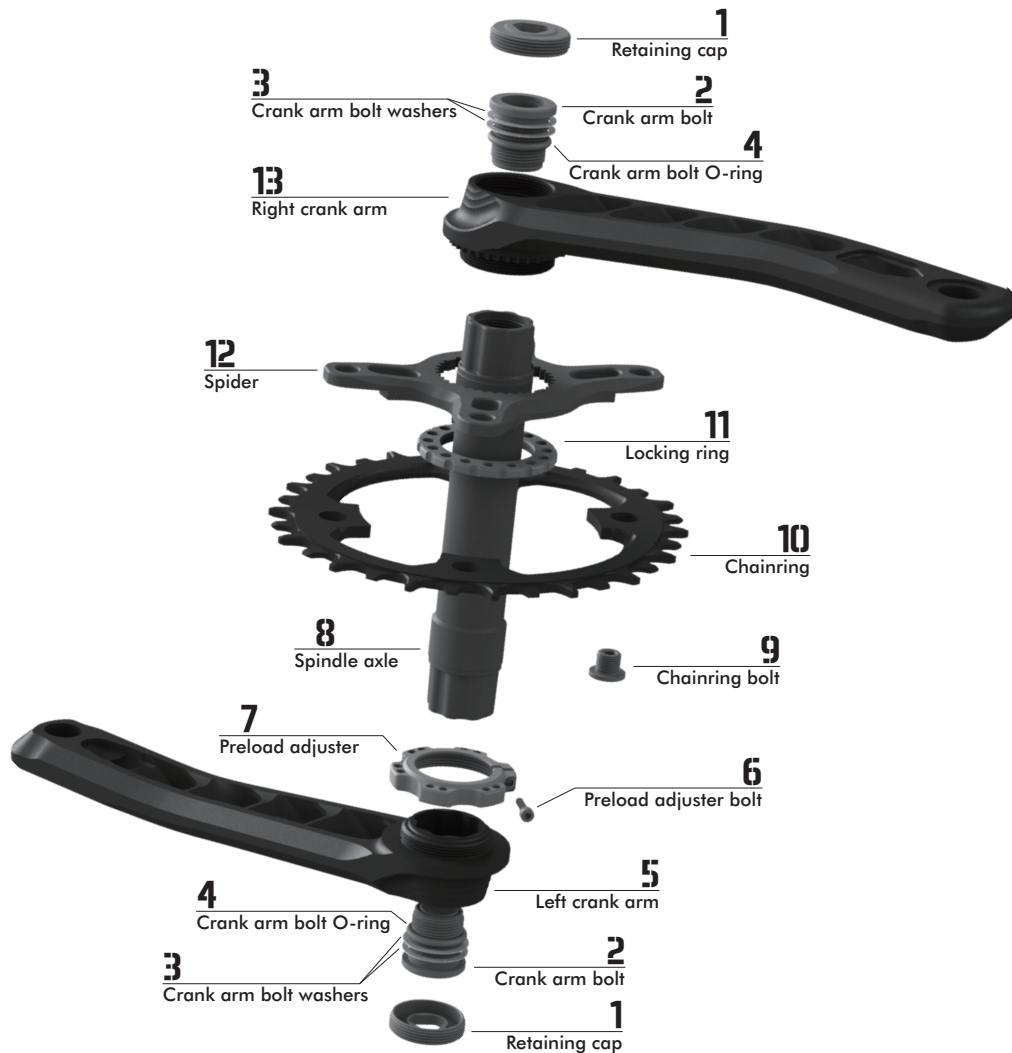
The logo for RIDEA features the word "RIDEA" in a bold, black, sans-serif font. A small red triangle is positioned to the left of the letter "I". The text is centered within a large, stylized grey letter "R" that serves as a background element.

- **SPM<sup>2</sup> POWER METERS**
- **PNEUMA TAROKO CRANKSETS (ROAD)**
- **PNEUMA SEKOAN CRANKSETS (MTB)**

# INSTALLATION DIAGRAM

For detailed installation information, please read pages 3-4.





- |   |                                |
|---|--------------------------------|
| 1. Retaining cap. 10 mm hex. <b>5 Nm</b>        | 7. Preload adjuster            |
| 2. Crank arm bolt. 8 mm hex. <b>40 Nm</b>       | 8. Spindle axle                |
| 3. Crank arm bolt washers                       | 9. Chainring bolt              |
| 4. Crank arm bolt O-ring                        | 10. Chainring                  |
| 5. Left crank arm                               | 11. Locking ring. <b>30 Nm</b> |
| 6. Preload adjuster bolt. 2 mm hex. <b>2 Nm</b> | 12. Spider                     |
|   | 13. Right crank arm            |

# USER MANUAL

**Congratulations!** You have purchased a piece of engineering that we, at Ridea, have made with passion. Enjoy your rides with your Ridea component as much as we enjoyed making it.

## IMPORTANT NOTICE

Thank you for your purchase of a Ridea product. Please read thoroughly this user manual before proceeding with the installation of your new Ridea crankset. Although the installation process is easy to follow, we recommend taking your crankset to a professional bicycle mechanic with specialized tools to perform the installation.

## CONTENTS

- Pneuma right crank arm and spider
- Pneuma left crank arm
- Pneuma spindle
- Ridea BB tool
- Magnetic charging cable (power meter version only)
- 3 mm spacer (M412 spindle only)
- 4.5 mm spacer (M413 spindle only)
- This user manual

## LIST OF TOOLS

- Torque wrench
- 2 mm hex wrench
- 4 mm hex wrench
- 8 mm hex wrench
- 10 mm hex wrench
- Ridea BB tool (included)
- Rubber mallet
- Grease and anti-seize

## INSTALLATION OF PNEUMA CRANKS

**Important note:** Tightening to the recommended torque is important for your safety and for the performance and durability of your bicycle. Always use a torque wrench.

## Chaining installation (chainrings not included)

1. Use a 4 mm hex wrench to tighten the chaining screws to **10 Nm**. Do not tighten to the final torque one screw before tightening the others. Instead, alternatively tighten each screw, switching between them, until all of them reach the recommended torque. **Note:** Apply anti-seize to the threads before installation. **Tip:** To facilitate the tightening of the spider's locking ring, chaining installation can be done after step 5.

## Crankset installation

2. Refer to bottom bracket manufacturer's user manual to perform its installation. The spindle diameter of your PNEUMA crankset is indicated in the spindle: a D24 mark refers to 24 mm spindle diameter, while a D29 refers to 29 mm. **Note:** Crank arm code, located in the inner side of each crank, near the pedal interface, also references the spindle diameter. The code is like LF**29** R-175L or LF**24** M-170R. The number in bold, bolded here for your reference, indicate the diameter of your spindle in millimeters.
3. Identify the left and right crank arms. The code in the inner side of each crank will guide you. The last letter of the code (LF29 R-175**L** or LF24 M-170**R**, bolded here for your reference) denotes the side of the crank: L for left and R for right crank.
4. The spider comes preinstalled in the right-side crank arm in the standard position. The spider has three possible positions, described below.
  - a. Standard position: The central position (marked as "0") is the standard and recommended for most riders and conditions. This is the position already preinstalled. If you do not want to change the position of your spider now, jump to step 5 after checking that the torque of the locking ring is **30 Nm**.
  - b. Climbing position: Starting from the standard position, rotate the spider one step in counter-clockwise direction, this position is recommended for climbers and it is marked in the spider as "+10".
  - c. Rouleur position: Starting from the standard position, rotate the spider one step in clockwise direction. This position is recommended for rouleur riders and it is marked in the spider as "-10".

**Note:** the position marks of the spider (+10; 0; -10) should be visible after installing the crank arm. In other words, when the crank arm is in the 9 o'clock position, these marks should be towards the rear wheel of the bicycle.

5. Once you have chosen your desired position, apply grease (or anti-seize) to the contact areas between the spider, the right crank arm and the locking ring, as well as the threads of the locking ring and crank. Use the included Ridea BB tool and a 10 mm hex wrench to tighten the locking ring to **30 Nm**. Clean the grease excess. **Attention:** if installing the SPM2 power meter spider, the crank must always fit in the crank slot of the SPM2. Never try to install the crank in the opposite direction.
6. To facilitate the installation of the crank arms into the spindle, you can loosen both retaining caps. You can either remove them entirely in order to apply a bit of thread-locker in step 17, or you can loosen them just a half-turn until they spin freely. Use a 10 mm hex wrench. **Attention:** this is a left-handed thread. Therefore, to loosen the cap, turn the wrench in clockwise direction.

7. Apply anti-seize compound to the threads of the spindle/crank arm bolt, and apply grease to the spindle-crank interface (the union between the spindle and crank arm) in the right side of your crankset. **Note:** Do not use thread-locker compound with titanium spindles.
8. Carefully align the spindle and the crank arm bolt to avoid cross-threading. Fix the spindle to the right-side crank arm. Use an 8 mm hex wrench to tighten it to **40 Nm**. **Note:** spindle is symmetrical. Therefore, there is neither right nor left side. **Tip:** To prevent cross-threading, a good tip is to turn the wrench counter-clockwise until you hear/feel a click, then start fastening the screw in clockwise direction. If you feel unusual resistance at the beginning, loosen the bolt and start over. **Attention:** To tighten the bolt that fixes the crank arm to the spindle, the required tool is an 8 mm hex wrench and it is a right-handed thread (righty-tighty). The 10 mm hex wrench is required only to tighten the retaining caps during step 17.
9. Provisionally insert the right crank arm unit in the bottom bracket and measure the chainline. If needed, you can adjust it with the appropriate chainline adjusters. These should be installed in the crankset spindle, between the bottom bracket and the crankset.
10. Take the crankset out of the BB to apply grease in the bearing contact areas. **Note:** only use grease on these areas. Never use anti-seize or any other compound.
11. Insert the right crank arm unit into the BB shell with the appropriate chainline adjusters (if needed). If required, use a rubber mallet to tap the crank to make sure that the spindle is fully inserted into the BB shell.
12. Counter-clockwise turn the preload adjuster of the left crank arm until it contacts the crank arm. This is an important step, because if the preload adjuster position is towards the bottom bracket, it can prevent the correct tightening of the crankset and the preload of the bottom bracket bearings. **Note:** If the preload adjuster is not turning, try loosening the preload adjuster bolt (hex wrench 2 mm).
13. Apply anti-seize compound to the threads of the spindle/crank arm bolt, and apply grease to the spindle-crank interface (the union between the spindle and crank arm) in the left side of your crankset.
14. Carefully align the spindle and the crank arm bolt to avoid cross-threading. Fix the spindle to the left-side crank arm. Use an 8 mm hex wrench to tighten it to **40 Nm**. **Note:** check tips and reminders noted in step 8 above.
15. Clockwise turn the preload adjuster until it contacts the bottom bracket. Hand-tighten it. Do not over tighten it, or the cranks may not spin smoothly.
16. Tighten the preload adjuster bolt to fix preload adjuster's position. Hex wrench 2 mm. Maximum torque: **2 Nm**. **Tip:** A small amount of thread-locker can be applied to this bolt.
17. Tighten both retaining caps. Use a 10 mm hex wrench to tighten them to **5 Nm**. **Attention:** this is a left-handed thread. Therefore, to tighten the cap, turn the wrench in counter-clockwise direction.
18. Check the crankset for play by moving the cranks laterally. If you feel any play, check the tightening torques and the preload adjuster position in case they need a higher tightening. Check that the cranks rotate freely. If the cranks do not spin freely, check the preload adjuster position (it may be too tight).

## PNEUMA CRANKSET REMOVAL

1. Loosen the preload adjuster bolt, with a 2 mm hex wrench, and hand-turn the preload adjuster towards the crank.
2. Use an 8 mm hex wrench to remove the left crank arm. If required, use a rubber mallet to tap the crank to help you remove it.
3. Slide the right crank arm and the spindle out of the bb shell. If required, use a rubber mallet to tap the spindle from the non-drive side to help you remove the crankset.

## RIDEA SPM<sup>2</sup> POWER METER SPIDER

### Getting ready

#### First charge

Ridea SPM2 includes a partially charged internal battery. Before using your power meter on a ride, it is recommended to perform a full charge of the battery. Check the "Battery" section to know more about charging your unit.

#### Connection to a bicycle computer or smartphone

Ridea SPM2 is compatible with ANT+™ and Bluetooth® LE protocols. Most cycling computers preferably use the former, while most smartphones are only compatible with the latter.

Your power meter must be activated in order to connect to a compatible display unit. To activate it, rotate the cranks. If the power meter is activated, the LED will flash a blue light every eight seconds while the cranks are moving.

Follow the manufacturer's instruction manual of your cycling computer or smartphone app for connecting new devices.

#### Connection to Ridea smartphone app

Ridea SPM2 app can use the Bluetooth® of your smartphone to connect both devices.

Activate the Bluetooth® function of your smartphone and open the app.

Your power meter must be activated in order to connect to your smartphone. To activate it, rotate the cranks. If the power meter is activated, the LED will flash a blue light every eight seconds while the cranks are moving.

Click the "+" bottom in the app to detect your SPM2 unit. Select the right power meter unit and both devices will link together.

## Zero offset

A zero offset, also called calibration or zero reset, is a procedure to make sure that the data given by your power meter unit is accurate to the current conditions.

Ridea SPM2 has several technologies that allow an automatic zero offsetting without the need of user intervention. This means that you do not normally need to perform a zero offset to obtain precise data of your rides. Although not necessarily required, you may perform a manual zero offset before your first ride and also after maintenance work has been done in the crankset; like re-installation, change of chainrings and/or pedals, or retightening of bolts. You can also perform a zero offset if you have not ridden your bicycle for a long period of time.

Ridea SPM2 also adjusts itself to compensate temperature changes. In case there is a drastic change of temperature, like when you take the bicycle out in the winter, but you still want precise data at the very beginning of your ride, it is recommended to wait a few minutes until the internal components of the power meter have reached the ambient temperature. Then you can perform a manual zero offset or let the unit adjust itself automatically.

### Performing a manual zero offset (optional)

1. Rotate the cranks to ensure the power meter is awake. A blue light will flash every eight seconds to confirm that the unit is awake.
2. Select the zero offset, calibration or zero reset function of your bicycle computer or smartphone app.
3. With compatible display units, you should see a confirmation message when the zero offset is finished.

## BATTERY

To charge the integrated battery of the SPM2, connect the included magnetic charging cable to a 5V USB charging source and to the unit's charging port (**Caution:** Make sure the port is clean and dry before plugging in the cable). A green light will flash briefly to confirm connection and then the LED will turn red during charging. Once the battery is fully charged, the LED will turn off to let you know that you can unplug the charging cable. A full charging run can take around 3 to 4 hours. **DO NOT** use your power meter while charging the battery.

The integrated battery of the SPM2 allows up to 120 hours of riding after a full charge. In compatible devices, the screen can show five levels of battery life (sometimes regarded as: new – good – ok – low – critical). Once it reaches the "low" level, the power meter will have several hours of normal and accurate measures. It is recommended to charge the battery before it reaches the "critical" level to avoid measure inaccuracies. The power meter unit will enter standby mode after five minutes of inactivity to save battery life. To activate the unit again, rotate the cranks.

## MAINTENANCE AND CARE OF THE SPM<sup>2</sup> POWER METER SPIDER

Here there are some simple guidelines to prolong the life and to keep the performance of your power meter:

- Use water or mild soap and a soft rag or sponge to clean your power meter.
- DO NOT use high-pressure water over your power meter to avoid water from soaking into the unit's electrical components.
- Avoid direct contact of degreasers or corrosive cleaning products with your power meter.
- Store your power meter at a temperature range of -20 – 50 °C.
- When not riding your bicycle, try to avoid power meter exposure to direct and strong sunrays.
- Before connecting the charging cable, please ensure that the magnetic charging port is clean and dry.

## DISPOSAL OF ELECTRONIC DEVICES

We desire you can use your Ridea SPM2 for many years. Although eventually, you will have to replace it. This is an electronic device, do not dispose it in general household garbage. Dispose it accordingly to local regulations in a recycling center or other suitable facility.

## MAINTENANCE AND CARE OF THE CRANKSET

Clean your crankset with water and mild soap.

Check your Ridea product for wear, damage of any type and looseness before every ride and immediately after any crash or fall. DO NOT ride your bicycle if you find any damage on your Ridea product or in any other component of your bicycle.

Maintenance intervals greatly vary with riding conditions, distance ridden and intensity of your rides. In case of doubt about the status and condition of your crankset, please stop riding and check with a professional mechanic to perform a maintenance service.

It is important to periodically check the tightening torques of the bolts and to check if there is any play in the cranks (try to move the cranks laterally to feel if there is any play). If you feel any play or if the bolts are loose, tighten them to the correct torque again.

Less often, it is recommended to perform a full removal, cleaning, inspection, re-greasing and re-installing of your crankset and bottom bracket unit.

## LED NOTIFICATIONS

Condition	LED behavior	LED meaning	Required action
Cranks start movement	1 blue flash	Unit is waking up	Warm up time!
Cranks moving and unit is wake up	Blue flashes every 8 seconds	Unit active and measuring	Keep cycling!
Plugging charging cable	1 green flash	Charging cable connected	Sit down. The battery starts charging
Charging cable connected	Red light	Battery is charging	Keep charging. Coffee?
Charging cable connected	No light	Battery fully charged	Unplug charging cable
Unit detected an error	5 blue flashes in 1 second, followed by 1 green flash	Error message	Plug charging cable and charge the battery for 1 minute. Unplug cable and rotate cranks to check if problem is solved

## SPM<sup>2</sup> POWER METER UNIT SPECIFICATIONS

Leg measurement	Both legs
Accuracy	±1.5 %
Power range	0 – 2000 W
Cadence range	30 – 200 rpm
Calibration	Auto Zero Offset
Weather sealing	IPX6
Battery	Lithium. Internal. Running time: 120 hours
Temperature range	-20 – 50 °C
Connectivity	ANT+™ and Bluetooth® LE

# PNEUMA TAROKO CRANKSETS (ROAD)



With 24 mm:

- 140
- 145
- 150
- 155
- 160
- 165
- 167.5
- 170
- 172.5
- 175
- 180

With 29 mm:

- 155
- 160
- 165
- 167.5
- 170
- 172.5
- 175

# PNEUMA TAROKO CRANKS SPECIFICATIONS

CRANK ARM	
Crank material	CNC AL7150
Crank Length	With 24 mm spindle: 140; 145; 150; 155; 160; 165; 167.5; 170; 172.5; 175; 180 mm With 29 mm spindle: 155; 160; 165; 167.5; 170; 172.5; 175 mm

SPINDLE	
Spindle diameter	24 mm OR 29 mm
Spindle length	126 mm
Spindle material	SCM440 or T164 (24 mm) / AL7075 (29 mm)
Bearing contact area	92 mm
Chain line	44.5 mm
Q factor	148 mm

POWER METER SPIDER & CHAINRING		
Spider model	SPM <sup>2</sup> R491	SPM <sup>2</sup> GR4C
Discipline	Road	Gravel
BCD	110 mm	110/80 mm
No. of arms	4	4
Compatible chainrings	Ridea Lami-Flow R491 series	Ridea Lami-Flow GR4C series
Chainring sizes	Double: WOT: 50/34; 52/36; 53/39; 56/44 W2T: 48/32; 50/34; 52/36; 53/39 W3T: 50/34; 52/36; 53/39  Single: WOT: 38t; 40t; 42t; 44t; 46t; 48t; 50t; 52t; 54t; 56t W2T: 34t; 36t; 38t; 40t; 42t; 44t W3T: 46t; 48t; 50t; 52t; 54t; 56t W2T (inset 3 mm): 42t; 44t W3T (inset 3 mm): 46t; 48t; 50t	Double: WOT: 46/30 W2T: 46/30  Single: WOT: 38t; 40t; 42t W2T: 38t; 40t; 42t
Weight	519 g (170 mm; 24 mm, Tl64 spindle; w/o chainring)	523 g (170 mm; 24 mm, Tl64 spindle; w/o chainring)
Spider mount positions	When using Ridea Duo-Oval Powering chainrings: +10° (climbing); -10° (rouleur); 0° (standard position)	

NON-POWER METER SPIDER & CHAINRING			
Spider model	R491	GR4C	ITST
BCD	110 mm	110/80 mm	130 mm
No. of arms	4		5
Compatible chainrings	Ridea Lami-Flow R491 series (single or double)	Ridea Lami-Flow GR4C series	Ridea Lami-Flow R5ST series (single or double)
Chainring sizes	Double: WOT: 50/34; 52/36; 53/39; 56/44 W2T: 48/32; 50/34; 52/36; 53/39 W3T: 50/34; 52/36; 53/39  Single: WOT: 38t; 40t; 42t; 44t; 46t; 48t; 50t; 52t; 54t; 56t W2T: 34t; 36t; 38t; 40t; 42t; 44t W3T: 46t; 48t; 50t; 52t; 54t; 56t W2T (inset 3 mm): 42t; 44t W3T (inset 3 mm): 46t; 48t; 50t	Double: WOT: 46/30 W2T: 46/30  Single: WOT: 38t; 40t; 42t W2T: 38t; 40t; 42t	Double: WOT: 53/39; 56/44; 58/46 W2T: 53/40 W3T: 56/44  Single: WOT: 46t; 48t; 50t; 52t; 54t; 56t; 58t W3T: 42t; 42t; 46t; 48t; 50t; 52t; 54t; 56t; 58t
Weight	454 g (170 mm; 24 mm, Tl64 spindle; w/o chainring)	460 g (170 mm; 24 mm, Tl64 spindle; w/o chainring)	483 g (170 mm; 24 mm, Tl64 spindle; w/o chainring)
Spider positions	When using Ridea Duo-Oval Powering chainrings: +10° (climbing); -10° (rouleur); 0° (standard position)		



SPM<sup>2</sup> R491



SPM<sup>2</sup> GR4C



R491



GR4C



ITST



# PNEUMA SEKOAN CRANKSETS (MTB)



# PNEUMA SEKOAN CRANKS SPECIFICATIONS

CRANK ARM	
Crank material	CNC AL7150
Crank Length	With 24 mm spindle: 160; 165; 170; 175 mm With 29 mm spindle: 165; 170; 175 mm

SPINDLE			
OLD	135/142 mm (Standard)	148 mm (Boost)	157 mm (Super Boost)
Spindle diameter	24 or 29 mm	24 or 29 mm	24 or 29 mm
Spindle length	130 mm	136 mm	139 mm
Spindle material	24 mm (SCM440 or Ti64) 29 mm (AL7075)	24 mm (SCM440 or Ti64) 29 mm (AL7075)	24 mm (SCM440) 29 mm (AL7075)
Bearing contact area	96 mm	102 mm	105 mm
Chain line	52 mm	55 mm	56,5 mm
Q factor	172 mm	178 mm	181 mm

POWER METER SPIDER & CHAINRING	
Spider model	<b>SPM<sup>2</sup> MSH1</b>
BCD	96 mm
No. of arms	4
Compatible chainrings	Ridea MSH1 series
Chainring sizes	W2T: 30t; 32t; 34t; 36t; 38t; 40t
Weight	520 g (170 mm; 24 mm, T164 spindle; w/o chainring)
Spider mount positions	When using Ridea Duo-Oval Powering chainrings: +10° (climbing); -10° (rouleur); 0° (standard position)

NON-POWER METER SPIDER & CHAINRING			
Spider model	<b>MSH1</b>	<b>M4S2</b>	<b>M4S3</b>
BCD	96 mm	104/64 mm	104/64 mm
No. of arms	4		
Compatible chainrings	Ridea MSH1 series	Ridea M4S2 series	Ridea M4S3 series
Chainring sizes	WOT: 32t; 34t; 36t; 38t W2T: 30t; 32t; 34t; 36t; 38t; 40t; 44t; 48t	WOT: 40/26; 42/27 W2T: 36/24; 38/24; 40/26; 42/27	W2T: 42/32/22; 44/33/23; 44/34/24; 46/34/24; 46/36/26
Weight	452 g (170 mm; 24 mm, T164 spindle; w/o chainring)	460 g (170 mm; 24 mm, T164 spindle; w/o chainring)	470 g (170 mm; 24 mm, T164 spindle; w/o chainring)
Spider positions	When using Ridea Duo-Oval Powering chainrings: +10° (climbing); -10° (rouleur); 0° (standard position)		



SPM<sup>2</sup> MSH1



MSH1



M4S2



M4S3

## WARRANTY

Ridea Group Ltd. warrants this product against defects in materials or workmanship for a period of four (4) years from the original date of purchase, with the exception of SPM2 spider power meter unit, which is warranted for a period of two (2) years from the original date of purchase. This warranty does not cover damage or failure resulting from misuse, abuse, alteration, neglect, crash or impact, improper installation and maintenance and normal and reasonable wear. If you think you have a warranty claim, please contact the bicycle shop where you bought your product for more details.

ANT+™ is a trademark of Dynastream Innovations Inc. Bluetooth® is a registered trademark of Bluetooth SIG, Inc.

## Pneuma crankset warranty card

Date of purchase	Year / Month / Day
Signature/Dealer stamp	



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