

# ZM1 Hubs





# **SRAM® LLC WARRANTY**

THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS AGAINST SRAM, LLC. YOU MAY ALSO HAVE OTHER RIGHTS THAT VARY FROM STATE TO STATE, COUNTRY, OR PROVINCE. THIS WARRANTY DOES NOT AFFECT YOUR STATUTORY RIGHTS. TO THE EXTENT THIS WARRANTY IS INCONSISTENT WITH THE LOCAL LAW, THIS WARRANTY SHALL BE DEEMED MODIFIED TO BE CONSISTENT WITH SUCH LAW. FOR A FULL UNDERSTANDING OF YOUR RIGHTS, CONSULT THE LAWS OF YOUR COUNTRY, PROVINCE, OR STATE. EXTENT OF LIMITED WARRANTY

Except as otherwise set forth herein, SRAM warrants its bicycle components to be free from defects in materials or workmanship for a period of two (2) years after original purchase of the product.

SRAM warrants all Zipp MOTO Wheels and Rims to be free from defects in materials or workmanship for the lifetime of the product.

SRAM warrants all non-electronic Zipp branded bicycle components, Model Year 2021 or newer, to be free from defects in materials or workmanship for the lifetime of the product.

# **GENERAL PROVISIONS**

This warranty only applies to the original owner and is not transferable. Claims under this warranty must be made through the retailer where the bicycle or the SRAM product was purchased or a SRAM authorized service location. Original proof of purchase is required. All SRAM warranty claims will be evaluated by a SRAM authorized service location whereupon acceptance of the claim the product will be repaired, replaced, or refunded at SRAM's discretion. To the extent allowed by local law claims under this warranty must be made during the warranty period and within one (1) year following the date on which any such claim arises.

# **NO OTHER WARRANTIES**

EXCEPT AS DESCRIBED HEREIN, AND TO THE EXTENT ALLOWED BY LOCAL LAW, SRAM MAKES NO OTHER WARRANTIES, GUARANTIES, OR REPRESENTATIONS OF ANY TYPE (EXPRESS OR IMPLIED), AND ALL WARRANTIES (INCLUDING ANY IMPLIED WARRANTIES OF REASONABLE CARE, MERCHANTABILITY, OR FITNESS FOR A PARTICULAR PURPOSE) ARE HEREBY DISCLAIMED.

#### LIMITATIONS OF LIABILITY

EXCEPT AS DESCRIBED HEREIN, AND TO THE EXTENT PERMITTED BY LAW, IN NO EVENT SHALL SRAM OR ITS THIRD PARTY SUPPLIERS BE LIABLE FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES. SOME STATES (COUNTRIES AND PROVINCES) DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL DAMAGES, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU.

#### LIMITATIONS OF WARRANTY

This warranty does not apply to products that have been incorrectly installed, adjusted, and/or maintained according to the respective SRAM user manual. The SRAM user manuals can be found online at sram.com/service.

This warranty does not apply to damage to the product caused by a crash, impact, abuse of the product, non-compliance with manufacturer's specifications of intended usage, or any other circumstances in which the product has been subjected to forces or loads beyond its design.

This warranty does not apply when the product has been modified, including but not limited to, any attempt to open or repair any electronic and electronic related components, including the motor, controller, battery packs, wiring harnesses, switches, and chargers.

This warranty does not apply when the serial number or production code has been deliberately altered, defaced, or removed.

SRAM components are designed for use only on bicycles that are pedal powered or pedal assisted (e-Bike/Pedelec).

Notwithstanding anything else set forth herein, the battery pack and charger warranty does not include damage from power surges, use of improper charger, improper maintenance, or such other misuse.

This warranty shall not cover damages caused by the use of parts of different manufacturers or parts that are not compatible or suitable for use with SRAM components.

This warranty shall not cover damages resulting from commercial (rental) use.

#### WEAR AND TEAR

This warranty does not apply to normal wear and tear. Wear and tear parts are subject to damage as a result of normal use, failure to service according to SRAM recommendations, and/or riding or installation in conditions or applications other than recommended.

# WEAR AND TEAR PARTS INCLUDE:

• Aero bar pads	Chains	<ul> <li>Rear shock mounting</li> </ul>	<ul> <li>Stripp</li> </ul>
<ul> <li>Air sealing o-rings</li> </ul>	Corrosion	hardware and main seals	titani
Batteries	<ul> <li>Disc brake rotors</li> </ul>	<ul> <li>Rubber moving parts</li> </ul>	<ul> <li>Tires</li> </ul>
• Bearings	<ul> <li>Dust seals</li> </ul>	<ul> <li>Shifter and Brake cables</li> </ul>	<ul> <li>Tools</li> </ul>
<ul> <li>Bottomout pads</li> </ul>	<ul> <li>Free hubs, Driver bodies, Pawls</li> </ul>	(inner and outer)	<ul> <li>Trans</li> </ul>
<ul> <li>Brake pads</li> </ul>	<ul> <li>Foam rings, Glide rings</li> </ul>	<ul> <li>Shifter grips</li> </ul>	• Uppe
Bushings	<ul> <li>Handlebar grips</li> </ul>	Spokes	• Whe
Cassettes	<ul> <li>Jockey wheels</li> </ul>	Sprockets	

# ZIPP IMPACT REPLACEMENT POLICY

Zipp branded products, Model Year 2021 or newer, are covered under a lifetime impact-damage replacement policy. This policy can be used to obtain a replacement of a product in the event of non-warranty impact damage occurring while riding your bicycle. See www.zipp.com/support for more information.

- Stripped threads/bolts (aluminum,
- titanium, magnesium or steel)
- Transmission gears
- Upper tubes (stanchions)
- Wheel braking surfaces

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# **SAFETY FIRST!**

We care about YOU. Please, always wear your safety glasses and protective gloves when servicing SRAM<sup>®</sup> products. Protect yourself! Wear your safety gear!

3ZERO MOTO ZMI
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Max Recommended System Weight (Bike, Rider, and Equipment): 275 lbs / 125 kg						
Max Tire Pressure	4.5 bar / 65 psi					
Washers <sup>1</sup>	Sapim HM					
Spoke Count	32H					
Replacement Spoke Length with ZM1 Hubs	27.5	DS	NDS	29	DS	NDS
	Front	284	282	Front	302	300
	Rear	280	282	Rear	300	302
Spoke Length for all other Hubs	When calculating spoke lengths, use the longest possible spoke length for your configuration.					
Effective Rim Diameter (ERD)	(27.5") 581 mm with washers (29") 619 mm with washers					
Minimum Spoke Gauge	2.0 mm / 1.65 mm / 2.0 mm					
Recommended Spoke Pattern	3X					
Recommended Spoke Tension	115 $\pm$ 10 Kgf for the Front wheel non-drive side and Rear drive side. The tension for the other side is achieved by truing and centering the wheel.					
Rim Profile	Front: Short Side toward drive side   Rear: Short Side toward non-drive side					

<sup>1</sup>Provided washers are required for use with 3ZERO MOTO when building a wheel

Not recommended for use with non-Boost hubs, i.e. 15X100, 12X142, or narrower hubs

Not recommended for use with split head nipples where the spoke does not assemble the entire length of the split portion of the nipple

# ZM1 Hub Specifications

	Spoke Ho	ole Count			<u>_</u>	5	-
	NDS	DS	A	В	C	U	E
Front Hub							
15x100 Thru Axle	32	28	2.7	49	22	34	46.5
15x110 BOOST Thru Axle	32	32	2.7	49	27	39	46.5
Rear Hub*							
12x142 Thru Axle	32	28	2.7	50	34.25	20.5	57
12x148 BOOST Thru Axle	32	32	2.7	50	37.25	23.5	57
*These specifications are also applicable to hubs with an XD <sup>™</sup> driver body.							





# Front Hub Service

We recommend that you have your ZIPP<sup>®</sup> wheels and hubs serviced by a qualified bicycle mechanic. Servicing ZIPP products requires knowledge of wheel components, as well as the use of specialized tools and lubricants.

Visit <u>www.zipp.com</u> for the latest ZIPP<sup>®</sup> Spare Parts catalog and technical information. For order information, please contact your local ZIPP distributor or dealer.



Information contained in this publication is subject to change at any time without prior notice. Your product's appearance may differ from the pictures contained in this publication.

# Component Removal

Prior to service, remove the wheels from the bicycle according to the bicycle manufacturer's instructions and thoroughly clean the exterior of the product to avoid contamination of internal sealing part surfaces.

For additional information about ZIPP wheels and hubs, user manuals are available at www.ZIPP.com.

# Parts, Tools, and Supplies

#### Parts

 WHEEL BEARING KIT - FRONT - ZM1 Includes: (2) 23327 (23mm x 32mm x 7mm)

# **Safety and Protection Supplies**

- Apron
- Clean, lint-free shop towels
- Nitrile Gloves

#### Lubricants and Fluids

- Isopropyl alcohol
- SRAM Butter grease

## **ZIPP** Tools

· ZIPP BEARING PRESS TOOL 23X32X7, FRONT HUB - ZM1



#### **Bicycle Tools**

- Park Tool<sup>®</sup> AV-5 Axle and Spindle Vise Insert
- Wheels Manufacturing® Press-1 Sealed Bearing Press Tool
- · Sealer Bearing Puller with

#### **Common Tools**

- Bench vise
- Flat blade screwdriver

# **SAFETY INSTRUCTIONS**

Always wear nitrile gloves when working with bicycle grease.

# Exploded View - Front Hub



# Front Hub End Caps



# NOTICE

Before beginning service, thoroughly clean the exterior of the product to avoid contamination of internal sealing part surfaces.

When cleaning parts use isopropyl alcohol and a clean lint-free shop towel unless instructed otherwise.

# End Cap Replacement

Clamp the Park Tool® AV-5 Axle and Spindle Vise tool into a vise. Clamp the flat edge of the end cap into the 36/14 slot of the AV-5 tool and pull up on the wheel. Repeat to remove the other end cap.





Press the end caps onto the axle.



# Front Hub Bearing Removal



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Use a soft face mallet to remove the axle and bearing from the hub. Remove the bearing from the axle and discard the bearing.

Insert the axle through the open end of the hub. Use a soft face mallet to tap the axle and remove the second bearing. Remove the bearing from the axle and discard the bearing.





Clean the bearing bores with a shop towel.

# Front Hub Bearing Installation



Apply a thin layer of SRAM® Butter grease to the bearing bores on each side of the hub.





Install a new bearing (23327) into the non-drive side of the hub. Bearings are symmetrical. Bearing orientation is not critical.



3 Slide a SRAM Bearing Press 23327 tool onto the Press Tool threaded rod. Insert the threaded rod through the drive side of the hub shell. Slide the second SRAM Bearing Press 23327 tool onto the threaded rod.

Thread the Press Tool handle onto the threaded rod.

Turn the handle clockwise to press the bearing into the hub until it is hand-tight.

Do not overtighten the bearing.

Remove the tools.



RAM Bearing Press 23327 Tool SRAM Bearing Press 23327 Tool

4

Insert the axle through the drive side of the hub.











6 Slide a SRAM<sup>®</sup> Bearing Press 23327 tool onto the Press Tool threaded rod. Insert the threaded rod of the through the non-drive side of the hub shell. Slide the second SRAM Bearing Press 23327 tool onto the threaded rod.

Thread the Press Tool handle onto the threaded rod.

Turn the handle clockwise to press the bearing into the hub until it is hand-tight.

Do not overtighten the bearing.

Remove the tools.

NOTICE

To prevent damage when pressing the bearings into the front hub, make sure that the bearing press tools contact both the inner and outer bearing races, and not the hub shell.

Applying excessive force while installing the second bearing may result in damage to one or both bearings.

Press the end caps onto the axle.



# Rear Hub and Driver Body Service

We recommend that you have your ZIPP<sup>®</sup> wheels and hubs serviced by a qualified bicycle mechanic. Servicing ZIPP products requires knowledge of wheel components, as well as the use of specialized tools and lubricants.

Visit <u>www.zipp.com</u> for the latest ZIPP<sup>®</sup> Spare Parts catalog and technical information. For order information, please contact your local ZIPP distributor or dealer.



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## Component Removal

Prior to service, remove the wheels from the bicycle according to the bicycle manufacturer's instructions and thoroughly clean the exterior of the product to avoid contamination of internal sealing part surfaces.

For additional information about ZIPP wheels and hubs, user manuals are available at www.ZIPP.com.

# Parts, Tools, and Supplies

#### Parts

- ZIPP WHEEL BEARING KIT REAR ZM1 (1) 6903 (17 mm x 30 mm x 7 mm) (1) 63803 (17 mm x 28 mm x 7 mm)
- ZIPP WHEEL DRIVER BODY KIT ZM1 XD or ZIPP WHEEL DRIVER BODY KIT - 9/10 SPEED - ZM1

# Safety and Protection Supplies

- Apron
- Clean, lint-free shop towels
- Nitrile Gloves
- Cotton Swabs

#### Lubricants and Fluids

- Isopropyl alcohol
- SRAM Butter grease
- Common Tools
- Bench vise
- Flat blade screwdriver
- Plastic mallet
- · Pick or tweezers

## **ZIPP** Tools

#### ZIPP BEARING PRESS TOOLS 6903/63803D28, REAR HUB - ZM1



# **Bicycle Tools**

- Park Tool<sup>®</sup> AV-5 Axle and Spindle Vise Insert
- Wheels Manufacturing<sup>®</sup> Press-1 Sealed Bearing Press Tool
  - 6804 Bearing Press Adapter from Press-1 Kit
- Sealed Bearing Puller with 17 mm slotted attachment

# SAFETY INSTRUCTIONS

Always wear nitrile gloves when working with bicycle grease.



# Rear Hub End Caps

	Thru Axle 12 mm x 142 mm/148 mm	Thru Axle 12 mm x 142 mm/148 mm XD
Drive Side		
Non-Drive Side		

# Rear Hub Bearing Removal

1 Pull outward on the driver body to remove the drive side end cap and driver body.

Removal is the same for both XD and 10 speed driver bodies.



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Remove the spacer tube from the axle.





Clamp the non-drive side end cap into the #5 slot of the Park Tool® AV-5 Axle and Spindle Vise, and pull up on the wheel to remove the non-drive side end cap.

Use a soft face mallet to tap the axle through the drive side of the hub and remove the non-drive side bearing and axle.





6

Insert the non-drive side of the axle through the non-drive side of the hub.

Use a soft face mallet to tap the axle through the non-drive side of the hub and remove the drive side bearing.



Clean the ratchet ring and hub internals with isopropyl alcohol, a shop towel, and cotton swabs. Do not remove the ratchet ring.

Set the rear hub aside until the driver body service is complete.



# Driver Body Bearing Removal

1

**10-Speed Driver Body Only:** Use a small flat blade screwdriver to lift up the notched edge of the circlip, and remove the circlip from the driver body.

# **ACAUTION**

The circlip has sharp edges and can cause eye injury if it rapidly ejects from the driver body. Wear safety glasses.



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Use a pick or tweezers to remove the pawls and leaf springs from the driver body.





Remove the driver body seal from the driver body.



5

Insert the 17 mm Bearing Puller slotted attachment through the outboard bearing. Align the slotted attachment with the bottom of the bearing, and expand it inside the bearing.

Do not over tighten the slotted attachment. For more detailed assembly and usage, see the bearing puller manufacturer's instructions.

Thread the rod of the bearing puller into the attachment. Grip the slide hammer and forcefully pull away from the slotted attachment to remove the bearing from the driver body.





Remove the ID (inside diameter) spacer tube and the OD (outside diameter) spacer tube.





Insert the non-drive side end of the axle through the non-drive side of the driver body. Use a soft head mallet to tap the axle and the inboard bearing through the inboard and outboard bearing bores to remove the bearing.



7

Clean the driver body and pawl pockets with a shop towel and cotton swabs.



# NOTICE

To prevent damage when pressing the bearings into the driver body, make sure that the bearing press tool contacts both the inner and outer bearing races.



2

3

Apply a thin layer of  $\mathsf{SRAM}^{\otimes}$  butter grease to the bearing bores.





Install a new bearing into the drive side of the driver body. Bearings are symmetrical. Seal color orientation is not critical.

Slide a 6804 bearing press adapter onto the threaded rod of the Bearing Press Tool. Insert the threaded rod through the non-drive side of the driver body. Slide the SRAM 63803 Bearing Press Tool onto the threaded rod.

Thread the bearing press handle onto the threaded rod.

Turn the handle clockwise to press the bearing past the outboard bearing bore and into the inboard bearing bore until it is hand-tight.

Do not overtighten the bearing.

Remove the bearing press tool.

# NOTICE

The bearing must be pushed through the outboard bearing bore and seated into the inboard bearing bore.



6804 Bearing Press Adapter

SRAM 63803 Bearing Press Tool







Align the ID spacer tube with the inside race of the previously installed bearing. Install a new bearing into the drive side of the driver body.

Bearings are symmetrical. Seal orientation is not critical.



Slide a 6804 bearing press adapter onto the threaded rod of the Bearing Press Tool. While holding the driver body vertically, insert the threaded rod through the non-drive side of the driver body. Slide the SRAM 63803 Bearing Press Tool onto the threaded rod.

Thread the bearing press handle onto the threaded rod.

Turn the handle clockwise to press the bearing into the outboard bearing bore until it is hand-tight.

Do not overtighten the bearing.

Remove the bearing press tool.

#### NOTICE

The ID spacer tube can be crushed during bearing installation if it is not aligned with the inside race of each bearing. Hold the driver body vertically and press the bearing into the driver body to prevent the ID spacer tube from shifting side-to-side.

Applying excessive force while installing the second bearing may result in damage to one or both bearings.

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**9/10-Speed Driver Body Only:** Use a small flat blade screwdriver to seat the circlip into the groove just above the drive side bearing.

#### 

The circlip has sharp edges and can cause eye injury if it springs from the driver body. Wear safety glasses.







Use your fingers to press the driver body seal, with the groove facing up, over the leaf spring and pawl carrier.



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Using a grease syringe, apply a small amount of  $\mathsf{SRAM}^{\otimes}$  Butter grease to the pawl pockets.



Insert the leaf springs into the spring slots. Orient the long edge of each spring along the inside of the carrier so that it points clockwise.

Insert the pawls into the pawl slots. You may need to use a pick or flat blade screwdriver to compress each leaf spring to assist with inserting the pawls. Orient the cambered edge (the edge that is slightly more curved) of each pawl along the outside of the carrier so that it points counter-clockwise.





# Rear Hub Bearing Installation

Install a new bearing into the drive side of the hub.

Bearings are symmetrical. Seal orientation is not critical.

# NOTICE

To prevent damage when pressing the bearings into the rear hub, make sure that the bearing press tool contacts both the inner and outer races of the bearing.



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Apply a thin layer of  $\mathsf{SRAM}^{\scriptscriptstyle\mathsf{M}}$  Butter grease to the bearing bores on either side of the hub.





Slide a SRAM 63803 bearing press tool onto the threaded rod Bearing Press Tool. Insert the threaded rod through the non-drive side of the hub shell. Slide the SRAM 6903 Bearing Press Tool onto the threaded rod.

Thread the bearing press handle onto the threaded rod.

Turn the handle clockwise to press the bearing into the hub until it is hand-tight.

Do not overtighten the bearing.

Remove the bearing press tool.





Insert the drive side of the axle through the non-drive side of the hub.







6 Slide a SRAM<sup>®</sup> 6903 bearing press tool onto the threaded rod of the Bearing Press Tool. Insert the threaded rod of the bearing press through the drive side of the hub shell. Slide the SRAM 63803 Bearing Press Tool onto the threaded rod.

Thread the bearing press handle onto the threaded rod.

Turn the handle clockwise to press the bearing into the hub until it is hand-tight.

Do not overtighten the bearing.

Remove the bearing press tool.

# NOTICE

Applying excessive force while installing the second bearing may result in damage to one or both bearings.

Use the SRAM Butter grease syringe to dispense 1 gram of grease onto the ratchet ring.



SRAM 63803 Bearing Press Tool

SRAM 6903 Bearing Press Too





Install the spacer tube onto the axle. 8



Install the driver body onto the axle and twist it counter-clockwise to seat the driver body and driver body seal.

Make sure the driver body seal is fully seated into the seal groove.

The installation process is the same for 9/10 speed and XD  $^{\scriptscriptstyle \rm M}$  driver bodies.





Make sure both axle ends are dry and free of grease.

**XD Driver Body:** Press the end cap labeled  $XD^{\mathsf{M}}$  onto the drive side axle end.

Press the remaining end cap onto the non-drive side axle end.

Installation is the same for both thru axle and quick release end caps.

# NOTICE

The XD end cap must be installed onto the XD driver body.



# Rim Strip and Tubeless Tape Installation

We recommend that you have your ZIPP® wheels and hubs serviced by a qualified bicycle mechanic. Servicing ZIPP products requires knowledge of wheel components, as well as the use of specialized tools and lubricants.

Visit <u>www.zipp.com</u> for the latest ZIPP<sup>®</sup> Spare Parts catalog and technical information. For order information, please contact your local ZIPP distributor or dealer.

For recycling and environmental compliance information, please visit <u>www.sram.com</u>.

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# Parts, Tools, and Supplies

# Parts

- Zipp MOTO rim strip
- Tubeless tape

# **Safety and Protection Supplies**

- Apron
- Clean, lint-free shop towels
- Nitrile Gloves

# Lubricants and Fluids

- Isopropyl alcohol
- SRAM Butter grease

## **Bicycle Tools**

- Plastic tire lever
- Wheel truing stand

# Common Tools

- Scissors
- Small flashlight
- Small knife
- Screwdriver

# SAFETY INSTRUCTIONS

Always wear nitrile gloves when working with bicycle grease.

# Rim Strip Installation



2

Remove any existing valve stem, rim strip, and tubeless tape from the rim. Install the wheel into a truing stand. Thoroughly clean the rim with isopropyl alcohol and a clean rag. Make sure that the rim is dry and free of alcohol.



Align the valve hole in the rim strip with the valve hole of the rim. The printed side of the rim strip should face the rim with the smooth non-printed side facing away.

# NOTICE

It may be helpful to insert a round screwdriver into the valve hole to help hold the rim strip in place. Be careful to not damage the rim when inserting the screwdriver.

A plastic tire lever can be used to help pull the rim strip onto the rim.

Install the rim strip onto the rim, making sure it is centered in the channel and all spokes are covered.



# Tubeless Tape Installation



Install the wheel into a truing stand.

Apply the beginning section of tape between the two spoke holes that are 180 degrees opposite from the valve stem hole. Press 4-5 inches (10-13 cm) of tape into the channel of the tire bed.



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Apply tension to the tape and rotate the wheel away from you until there are 2 complete layers of tape on the rim.





Cut the tape approximately 2 inches beyond the starting edge.

Working around the circumference of the rim, press the tape into the edges of the rim with a plastic tire lever and the center of the rim with your finger, finishing at the cut edge of the tape.

# NOTICE

Do not use a tire lever to press the tape into the center channel of the rim. The spoke nipples can damage the tape causing air to leak.

# NOTICE

The tubeless tape must be seated into the channel to create an air tight seal. If the tape is not seated into the channel, the tire may leak air.



# Valve Stem Installation

Shine a flashlight through the rim to illuminate the valve stem hole. Use a small knife to cut the tape from the valve stem hole.





2

Insert the valve stem through the rim.

# NOTICE

For TyreWiz valve stems, please check that the o-rings are still in position after installation of the valve into the rim.

There are 2 MOTO valve stem designs:

**Symmetrical Valve Block:** Install the Presta valve with the angled edges of the valve block parallel to the rim.

**Asymmetrical Valve Block:** Install the valve so the profile of the rubber block matches the profile of the center channel of the rim.

Rear wheel: The steeper angle (A) is on the non-drive side.

Front wheel: the shallow angle (B) is on the non-drive side.











TyreWiz only: apply grease to the valve stem o-rings.

#### NOTICE

TyreWiz must not be installed onto the valve during sealant installation. Refer to the TyreWiz User Manual for detailed sealant installation instructions.

Install TyreWiz onto the valve stem and onto the rim. The profile of the rubber bumper should match the profile of the rim.



4

Install an o-ring onto the valve stem.

Thread the nut, with the recessed side facing the rim, onto the valve stem until it is finger tight.

# NOTICE

Do not use any tool to tighten the nut.





Install the valve cap.



NOTICE

TyreWiz is only compatible with the supplied air valve. Do not modify the air valve in any way. TyreWiz may not be compatible with tire inserts.

This concludes the Rim Strip and Tubeless Tape Installation. Install a tubeless compatible tire according to the manufacturer's instructions.

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1:1°, Accuwatt<sup>®</sup>, Avid<sup>®</sup>, AXS<sup>®</sup>, Bar<sup>®</sup>, Blackbox<sup>®</sup>, BoXXer<sup>®</sup>, DoubleTap<sup>®</sup>, Elita<sup>®</sup>, eTap<sup>®</sup>, Firecrest<sup>®</sup>, Firex<sup>®</sup>, Grip Shift<sup>®</sup>, GXP<sup>®</sup>, Hammerschmidt<sup>®</sup>, Holzfeller<sup>®</sup>, Hussefelt<sup>®</sup>, i-Motion<sup>®</sup>, Judy<sup>®</sup>, Know Your Powers<sup>®</sup>, NSW<sup>®</sup>, Omnium<sup>®</sup>, Pike<sup>®</sup>, PowerCal<sup>®</sup>, PowerLock<sup>®</sup>, PowerTap<sup>®</sup>, Qollector<sup>®</sup>, Quarq<sup>®</sup>, RacerMate<sup>®</sup>, Reba<sup>®</sup>, Rock Shox<sup>®</sup>, Ruktion<sup>®</sup>, Service Course<sup>®</sup>, ShockWiz<sup>®</sup>, SID<sup>®</sup>, Single Digit<sup>®</sup>, Speed Dial<sup>®</sup>, Speed Weaponry<sup>®</sup>, Spinscan<sup>®</sup>, SRAM<sup>®</sup>, SRAM APEX<sup>®</sup>, SRAM EAGLE<sup>®</sup>, SRAM FORCE<sup>®</sup>, SRAM RED<sup>®</sup>, SRAM RIVAL<sup>®</sup>, SRAM VIA<sup>®</sup>, Stylo<sup>®</sup>, Torpedo<sup>®</sup>, Truvativ<sup>®</sup>, TyreWiz<sup>®</sup>, Varicrank<sup>®</sup>, Velotron<sup>®</sup>, X0<sup>®</sup>, X01<sup>®</sup>, X-SYNC<sup>®</sup>, XX1<sup>®</sup>, Zed tech<sup>®</sup>, Zipp<sup>®</sup>

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