

Dealer's Manual

ROAD	GRAVEL	MTB
E-BIKE	LIFESTYLE	GENERAL

Wheel Set (Disc Brake)

DURA-ACE
WH-R9370

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IMPORTANT NOTICE

- **This dealer's manual is intended primarily for use by professional bicycle mechanics.**

Users who are not professionally trained for bicycle assembly should not attempt to install the components themselves using the dealer's manuals.

If any part of the information on the manual is unclear to you, do not proceed with the installation. Instead, contact your place of purchase or a distributor for assistance.

- Make sure to read all manuals included with each product.
- Do not disassemble or modify the product other than as stated in the information contained in this dealer's manual.
- All manuals and technical documents are accessible online at <https://si.shimano.com>.
- For consumers who do not have easy access to the internet, please contact a SHIMANO distributor or any of the SHIMANO offices to obtain a hardcopy of the user's manual.
- Please observe the appropriate rules and regulations of the country, state or region in which you conduct your business as a dealer.

For safety, be sure to read this dealer's manual thoroughly before use, and follow it for correct use.

The following instructions must be observed at all times in order to prevent personal injury and physical damage to equipment and surroundings.

The instructions are classified according to the degree of danger or damage which may occur if the product is used incorrectly.

	DANGER	Failure to follow the instructions will result in death or serious injury.
	WARNING	Failure to follow the instructions could result in death or serious injury.
	CAUTION	Failure to follow the instructions could cause personal injury or physical damage to equipment and surroundings.

TO ENSURE SAFETY

⚠ WARNING

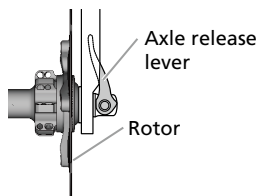
- **Be sure to follow the instructions provided in the manuals when installing the product.**

Only use SHIMANO genuine parts. If a component or replacement part is incorrectly assembled or adjusted, it can lead to component failure and cause the rider to lose control and crash.

-  Wear approved eye protection while performing maintenance tasks such as replacing components.
- When assembling the freewheel body unit, do not apply grease or oil outside of the designated areas. This may cause the freewheel body unit to malfunction.
- Do not wash the freewheel body unit. The internal grease may flow out and cause the freewheel body unit to malfunction.

Be sure to also inform users of the following:

- **Check that the wheels are fastened securely before riding the bicycle. Using the axle release lever incorrectly may cause the wheel to fall off, etc. and lead to serious injury due to a fall or collision.**
- Before riding the bicycle, always check the wheels to make sure that there are no bent or loose spokes, no dents, scratches or cracks on the rim surface, and no carbon peeling or cracking. Do not use the wheel if any of these problems are found. Otherwise, the wheel may break, causing you to fall and be seriously injured.
- Do not use the ROAD wheel set on rough unpaved surfaces. If the wheels are used on rough unpaved surfaces, they may become bent or damaged, and accidents may result.
- Do not leave the carbon wheels in a place exposed to direct sunlight, inside a vehicle on a hot day, or in other hot places. Leaving the wheels in a hot place may damage the carbon parts, which could cause the wheels to be damaged or the tires to come off suddenly while riding, and severe injury may result.
- When transporting the carbon wheels inside a vehicle, protect them from direct sunlight and decrease the air pressure of the tires in advance. Even without high ambient temperatures, the wheels heating by direct sunlight may damage the carbon parts, which could cause the wheels to be damaged or the tires to come off suddenly while riding, and severe injury may result.
- Use the appropriate air pressure indicated on the tire and rim. If the maximum pressure indicated on the tire and rim differ, be sure not to exceed the lower value.
- Do not use with rim brakes. These wheels are designed exclusively for use with disc brakes. Using these wheels with rim brakes could damage the rims and result in an accident that can lead to a serious injury or even death.
- Confirm that the axle release lever does not interfere with the rotor even when it is fully engaged. If the axle release lever is on the same side as the rotor, there is the danger that it may interfere with the rotor. If it interferes with the rotor, stop using it and consult a place of purchase or a distributor.



- Check how to use the axle release lever. Using the axle release lever incorrectly may cause the wheel to fall off, etc. and lead to serious injury.

- Do not touch the calipers or rotor while riding or immediately after dismounting from the bicycle. The calipers and rotor will become hot when the brakes are operated, so you may get burned if you touch them. Check that the brake system has cooled down sufficiently before attempting brake system maintenance.
- Do not allow any oil or grease to get onto the rotor or pads. Riding the bicycle with oil or grease on the rotor or pads may prevent the brakes from operating and result in serious injury due to a fall or collision.
- Read the disc brake manual carefully, and keep it in a safe place for later reference.
- For details on the E-THRU axle, refer to the E-THRU axle user's manual.

F12 (front 12 mm axle) and R12 (rear 12 mm axle) wheels (thru axle)

- These wheels can only be used in combination with the special front fork/frame and the through axle. If it is used in combination with any other front fork/frame or through axle, it may cause the wheel to become detached from the bicycle during riding and result in serious bodily injury.

TL: Tubeless wheel

- The tires should be installed and removed by hand. If this is difficult, a resin tire lever for tubeless wheels may be used. In such cases, be sure to check that the rim surface has not been dented, scratched, or cracked as there is a risk of causing damage to the air seal between the tire and the rim, which would result in air leakage. For carbon rims, check that there is no carbon peeling or cracking, etc. Finally, make sure that there is no air leakage.
- Use the appropriate air pressure indicated on the tire and rim. If the maximum pressures indicated on the tires and rims differ, be sure not to exceed the maximum pressure with the lower value. A higher pressure than indicated can cause a sudden puncture and/or sudden release of the tire, which can result in serious injury.

WH-R9370-TL (28 mm): Maximum pressure = 6.5 bar / 94 psi / 650 kPa

WH-R9370-TL (29 - 32 mm): Maximum pressure = 6 bar / 87 psi / 600 kPa

WH-R9370-TL (33 - 40 mm): Maximum pressure = 5 bar / 72 psi / 500 kPa

WH-R9370-TL (41 - 45 mm): Maximum pressure = 4 bar / 58 psi / 400 kPa

* The tire widths are shown in parentheses.

CAUTION

Be sure to also inform users of the following:

- If you will be using tire sealant, consult the place of purchase or a distributor. Tire sealant may damage the tire and rim.

TL: Tubeless wheel

- When using an inner tube, do not add additional rim tape on top of the tubeless tape. Doing so may make it difficult to install or remove the tire, and it may cause damage to the inner tube resulting in a sudden puncture, which can cause the bicycle to fall over.
- Be sure to use tubeless tape when using these wheels.
- Do not use tape other than genuine SHIMANO tubeless tape. Otherwise, a sudden puncture may occur, and you may fall off the bicycle.
- If you use a tire such as a Tubeless Ready tire that needs to be used with a sealant, use the sealant recommended by the tire manufacturer.
- Do not overtighten the valve lock ring. If you tighten the valve lock ring too much, the valve seal may become deformed, and air leaks may occur.
- Note that a higher rim is more easily affected by the wind and makes riding unstable.

Handling and maintenance of carbon spokes

- Do not apply excessive force or pressure to the spokes. Failure to do so may cause damage.
 - Avoid contact of the spokes with sharp objects or edges. Failure to do so may cause damage.
 - Make sure to check the spokes for any abnormalities before use, and inspect them regularly thereafter.
 - Do not continue using the wheel if any damage is present on the spokes, and consult a place of purchase or a distributor.
 - Before washing and maintaining the bicycle, check that there is no carbon peeling. If you touch delaminated carbon, there is a risk of getting cut.
 - Always wear gloves and approved eye protection when handling damaged carbon parts.
 - Wear gloves for safety while performing maintenance tasks such as replacing components.
 - Avoid stacking heavy objects on top of the wheels.
 - Transport wheels individually in a protective wheel bag.
 - Do not store wheels with a load applied to the spokes.
- **Bed-in period**
- Disc brakes have a bed-in period, and the braking force will gradually increase as the bed-in period progresses. Accidents or falls may occur due to losing control of the bicycle, possibly resulting in serious injury. (The same thing will happen when the pads or rotor are replaced.)

For installation to the bicycle and maintenance

- Refer to the tire size table in the “ [Tire size](#) ” section when selecting tires.
- Read the tire manual carefully, and keep it in a safe place for later reference.
- When installing or removing the rotor lock ring, be careful not to touch the outer edges of the rotor with your hands. Wear gloves to protect your hands from getting cut.

NOTICE

Be sure to also inform users of the following:

- Use a 3.5 mm spoke wrench.
- Use only the lubricants specified by SHIMANO.
- Do not oil the internal parts of the hub. Doing so may cause the grease to flow out.
- It is recommended that you ask a place of purchase to adjust the spoke tensions if there is any deviation in the spokes and after the first 1,000 km of riding.
- Optional reflector and spoke protector sets are available. Check the model number on the website specifications and please ask your bicycle dealer for details.
- Do not clean the hub areas with a high-pressure wash. Water may get inside the hubs, which can degrade performance.
- Use a neutral detergent when cleaning wheels. Other cleaners may damage the wheels. Do not clean any areas that have been instructed not to be cleaned.
- Do not forcibly scrub wheel stickers, painted parts, or printed parts. This may peel off the stickers or damage the paint or printing.
- Be sure to also read the manual for the disc brakes.
- Products are not guaranteed against natural wear and deterioration from normal use and aging.
- For maximum performance we highly recommend SHIMANO lubricants and maintenance products.

For installation to the bicycle and maintenance

- Use genuine SHIMANO spokes and nipples. Otherwise, the area where the spokes fit into the hub body may become damaged.
- Be careful not to overtighten the nipples when adjusting the spoke tensions. If overtightened, damage to the rim may result.
- If the wheel becomes stiff and difficult to turn, perform an inspection.
- Do not turn the spoke wrench when adjusting the nipples.
- Check “ [Specifications](#) ” for compatible reflectors and spoke protectors.
- For information on how to install and remove the tires, refer to the manual accompanying the tire.
- If the cassette gets caught in the spline of the freewheel body unit and cannot be removed by hand, replace the freewheel body unit.

The actual product may differ from the illustration because this manual is intended mainly to explain the procedures for using the product.

List of tools to be used

The following tools are necessary for installation / removal, adjustment, and maintenance purposes.

Tool	
	17 mm hub spanner x 2
	22 mm hub spanner
	TL-FH12
	TL-FH17A
	TL-LR15
	Snap ring pliers (recommended diameter: 0.9 - 1.1 mm)
	3.5 mm spoke wrench
	Slide hammer
	Nipple adjustment tool (diameter 5.5 mm)
	Bearing press tool
	Bearing puller
	Slotted screwdriver
	Soft face mallet
	24 mm spanner / adjustable wrench

Installation / removal

Tire size

The recommended tire sizes for installation to each wheel are as follows.

Series	Wheel size	Model name	Tire size
DURA-ACE	622 x 23TC (700C)	WH-R9370-C50-TL-F	28-622 - 45-622
		WH-R9370-C50-TL-R	

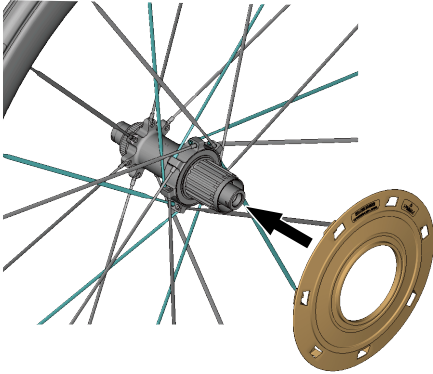
Installing the spoke protector

For information on wheels that can be installed, check " [Compatibility](#)."

CP-WR93A

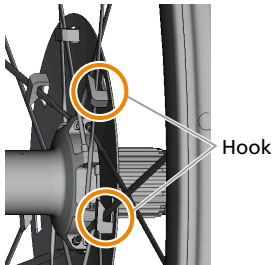
1. Install the spoke protector.

Engage the hooks onto the outer spoke to install.



NOTICE

- Engage the hooks of the spoke protector onto the spoke.

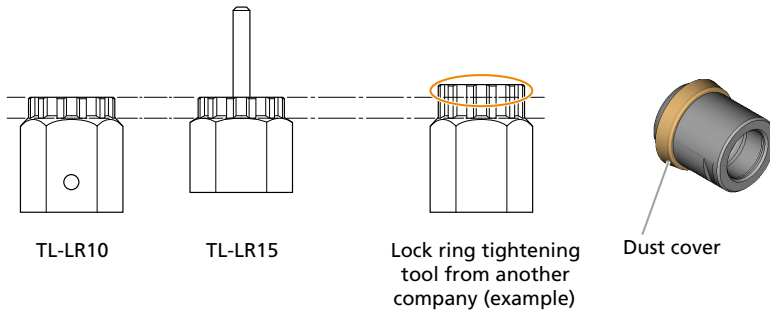


Installing / removing the cassette

Refer to [Installing the cassette](#) to install / remove the cassette.

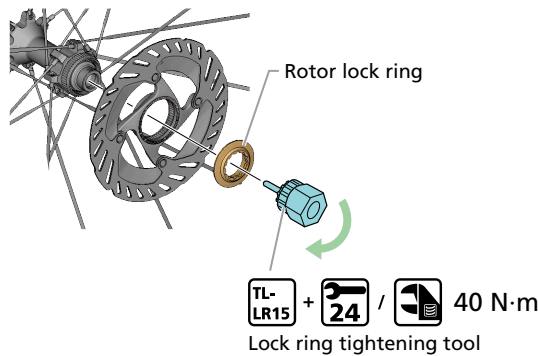
NOTICE

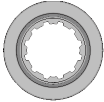
- When using a lock ring tightening tool from another company, ensure that the tool does not interfere with the dust cover of the right cap. Damage to the dust cover or deviation from the specified position may affect the rotation performance and waterproofing performance.



Installing the rotor

1. Set the rotor on to the hub, then secure it with the rotor lock ring.
Secure with TL-LR15 and 24 mm spanner / adjustable wrench.



	Internal spline type
Rotor lock ring	
Lock ring tightening tool	TL-LR15 and 24 mm spanner / adjustable wrench

Removing the rotor

Perform the removal of the rotor in the reverse order from the installation procedure.

Maintenance

Spoke lacing

NOTICE

- Use the SHIMANO original tool (TL-FH12) when assembling the wheel.

WH-R9370

Lace the spokes as shown in the figure.

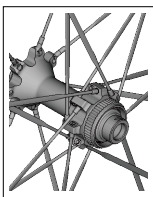
* Refer to the table for the spoke tension values and the converted spoke tension values for the TM-1 from Park Tool.

* "Reading by Park Tool TM-1" are values independently evaluated by SHIMANO. Please use them as reference values.

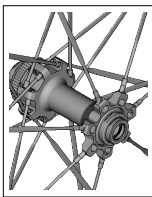
Number of spokes: 21

For front

Left side (rotor side)

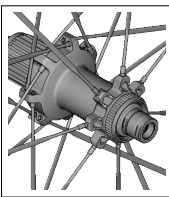


Right side

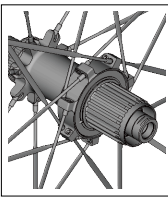


For rear

Left side (rotor side)



Right side (sprocket side)



622 x 23TC (700C)

Spoke tension value (converted spoke tension value for the TM-1 from Park Tool)		
	For front	For rear

Maintenance
Spoke lacing

Spoke tension value (converted spoke tension value for the TM-1 from Park Tool)		
Left side (rotor side)	950 - 1,250 N (15 - 17)	946 - 1,276 N (17.5 - 19)
Right side	1,002 - 1,318 N (18 - 20)	1,150 - 1,550 N (19 - 21)

Replacing the spokes

Remove the tubeless tape before replacing the spokes.

(For instructions on affixing / removing tubeless tape, refer to “ [Replacing tubeless tape.](#)”)

For front: Left side (rotor side) / For rear: Right side

1. Remove the spoke to replace.

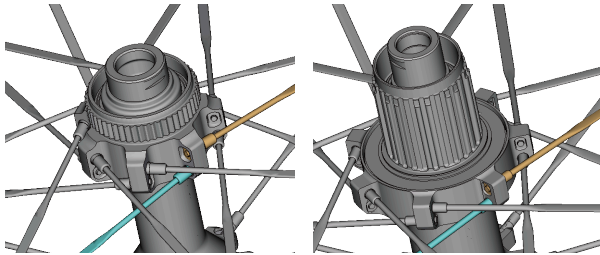
When replacing the inner spoke, remove the outer spoke first. Perform the installation in the reverse order from the removal procedure.

For front

For rear

Left side (rotor side)
Outward

Right side
Outward



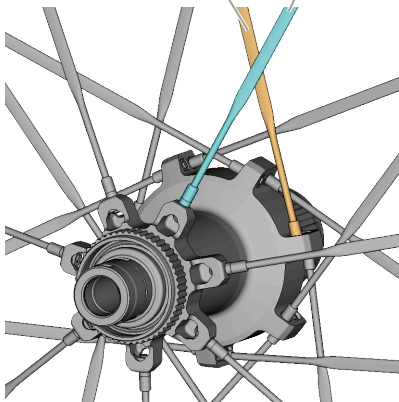
For rear: Left side (rotor side)

1. Remove the spoke to replace.

When replacing the left side spoke, remove the right inner side spoke first. Perform the installation in the reverse order from the removal procedure.

Inner right side spoke

Left side spoke

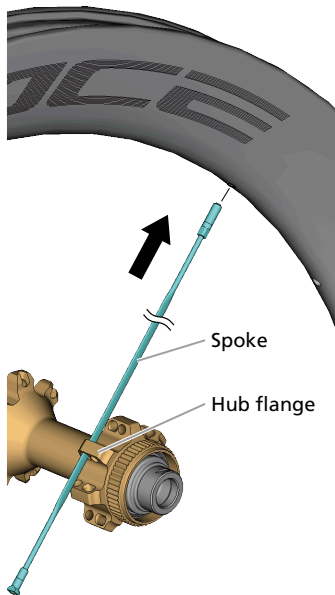


NOTICE

- The right side spokes for front, left side (rotor side) outer spokes for front, and right side outer spokes for rear can be removed one by one.

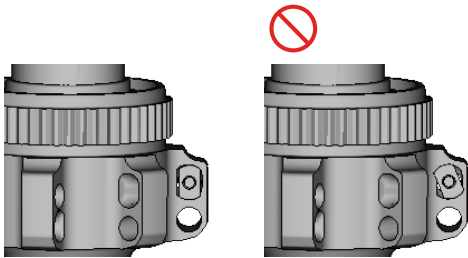
2. Insert the spoke through the hole in the hub flange.

Set the spoke onto the hub flange.



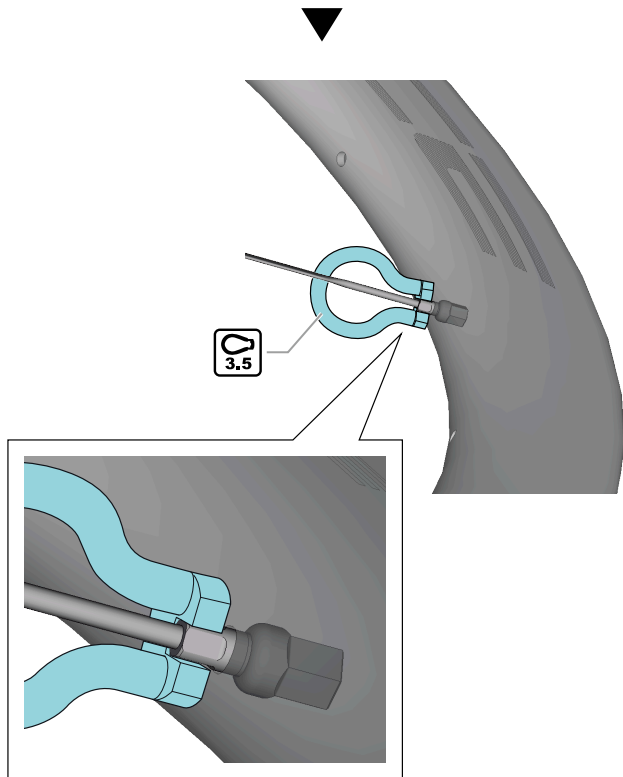
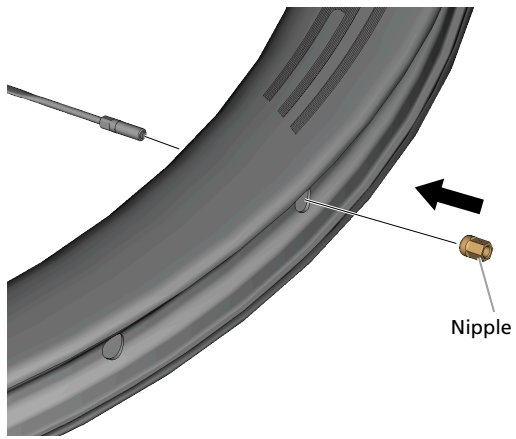
NOTICE

- Pay attention to the direction of the flat surface of the spoke to set it correctly.

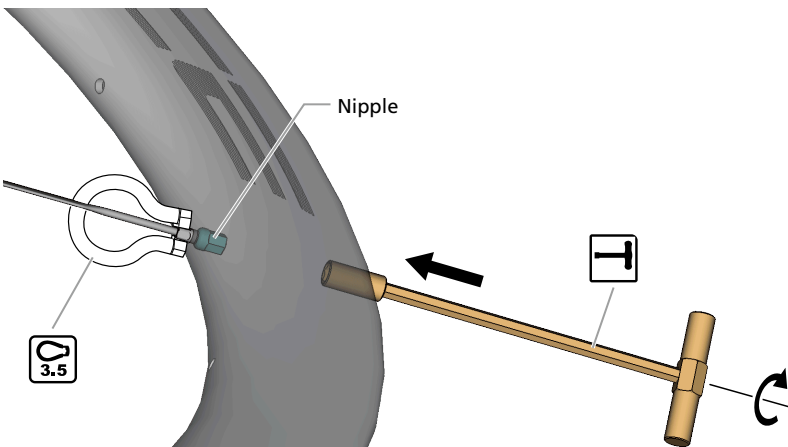


3. Attach the nipple and tighten it to the specified spoke tension.

- (1) Secure the spoke with the spoke wrench to prevent the spoke from turning.

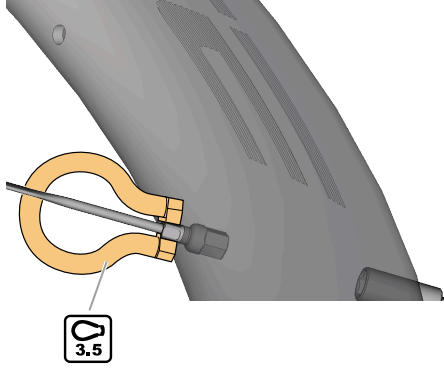


- (2) Use the nipple adjustment tool to tighten the nipple.



NOTICE

- Hold the spoke wrench firmly so that it does not rotate.



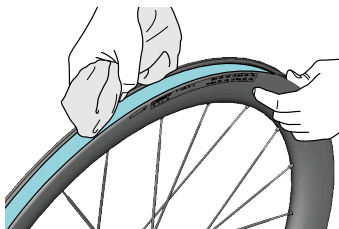
Replacing tubeless tape

Important safety information

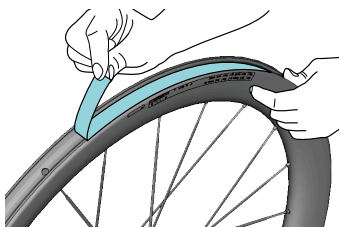
⚠ CAUTION

- Be sure to use tubeless tape when using these wheels.
- Do not use tape other than genuine SHIMANO tubeless tape. Otherwise, a sudden puncture may occur, and you may fall off the bicycle.

1. If sealant was used in the tire, use a clean rag to wipe away any residual sealant from the rim and tape.

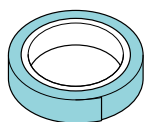


2. Remove the tubeless tape.



NOTICE

- Tubeless tape cannot be reused. After removing tubeless tape, always replace it with new tape.
- Use a tubeless tape matching the rim inner width.
- Use genuine SHIMANO tubeless tape to prevent punctures and other possible damage.



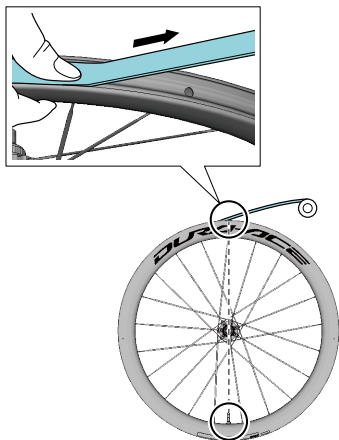
Tubeless tape

3. Use a clean rag to wipe off any residue, sealant or dirt from the surface where the tubeless tape will be affixed.



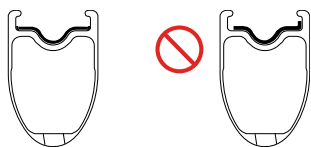
4. Affix new tubeless tape.

Start affixing the tubeless tape from the opposite side of the valve.



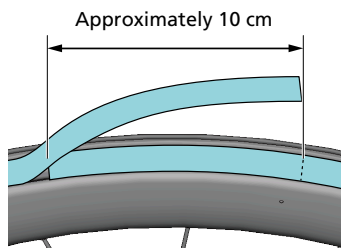
TECH TIPS

- Do not use a tool to affix the tape, as it may cause the tape to tear.
- Pull on the tape to give it some tension when affixing it in order to ensure it sits cleanly in the rim.
- When affixing the tape, align the center of the tape with the center of the rim, not off to one side.

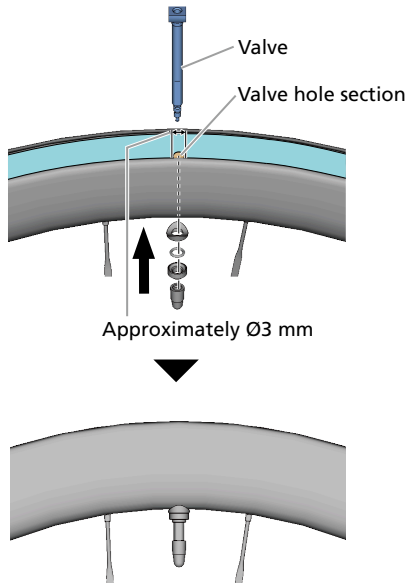


5. Securely attach both ends of the tape to the rim.

* Overlap the ends of the tape by approximately 10 cm.

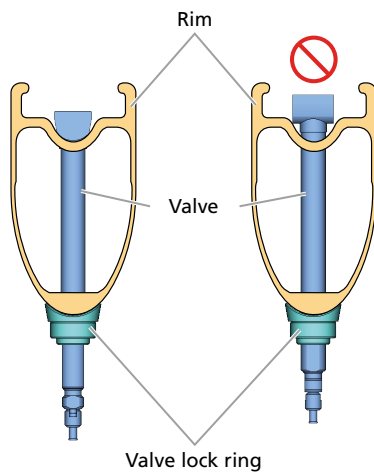


6. Punch a pilot hole in the valve hole section, then attach the valve.



NOTICE

- Note the direction of the valve.

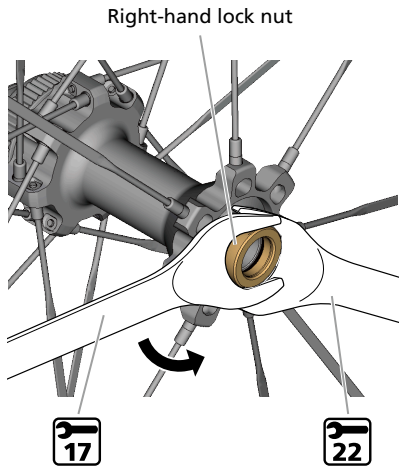


- When tightening the valve lock ring, check that the valve does not turn together with the valve lock ring.

Front hub disassembly

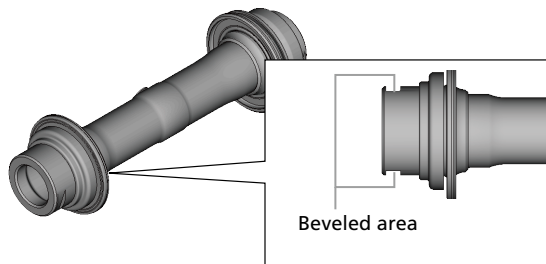
1. Loosen the right-hand lock nut on the double-lock section on the right side of the hub body.

Disassembly from the left side (rotor side) of the hub body is not possible.



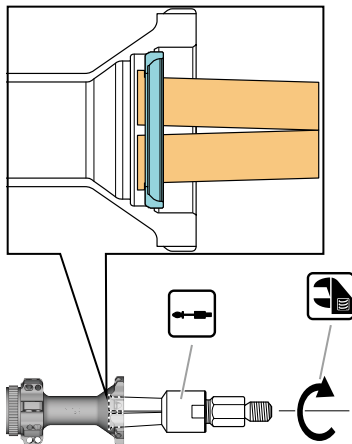
NOTICE

- Be careful not to apply excessive torque to the left side of the hub axle when loosening the right-hand lock nut. The hub axle may be damaged. When securing the beveled area of the left side of the hub axle with a hub spanner, be careful not to apply excessive force.

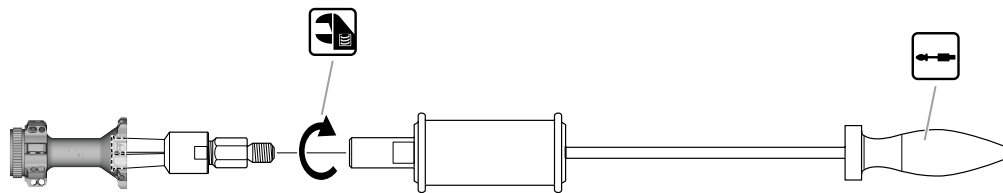


2. Remove the cups.

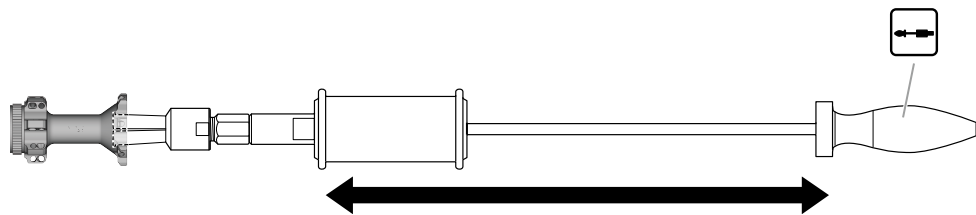
- (1) Attach the attachment of the slide hammer to the cup opening (inner diameter: 20.7 mm).



- (2) Attach the slide hammer body to the attachment, then secure the hub body.



- (3) Move the grip of the slide hammer body back and forth to remove the cup.

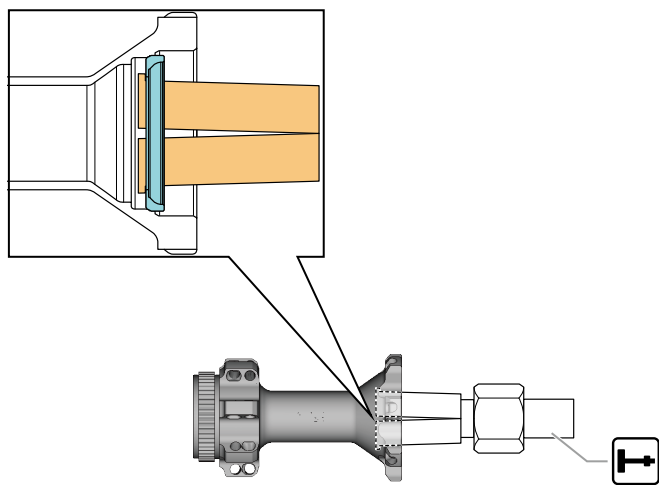


- (4) Remove the cup from the left side (rotor side) of the hub body in a similar manner.

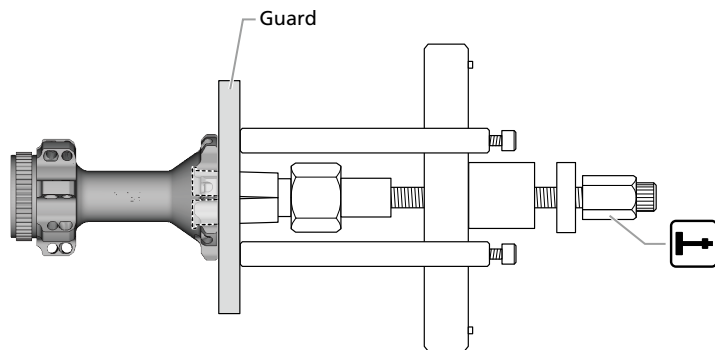
TECH TIPS

You can also use a bearing puller to remove the cup.

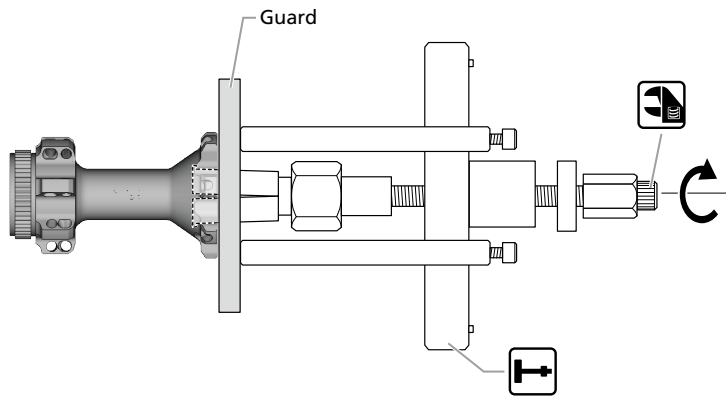
- (1) Attach the attachment of the bearing puller to the cup opening (inner diameter: 20.7 mm).



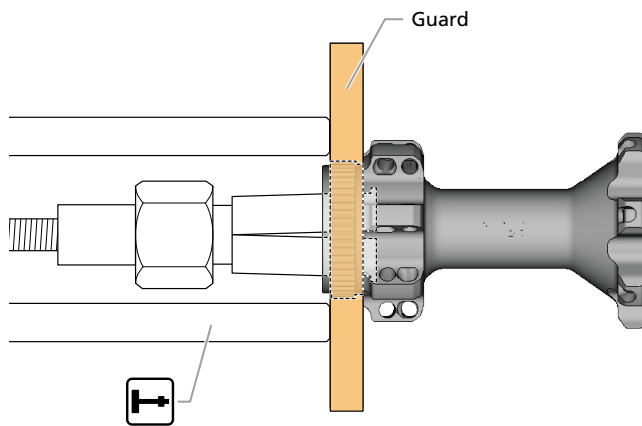
- (2) Attach the bearing puller body to the attachment and the guard to the hub body.



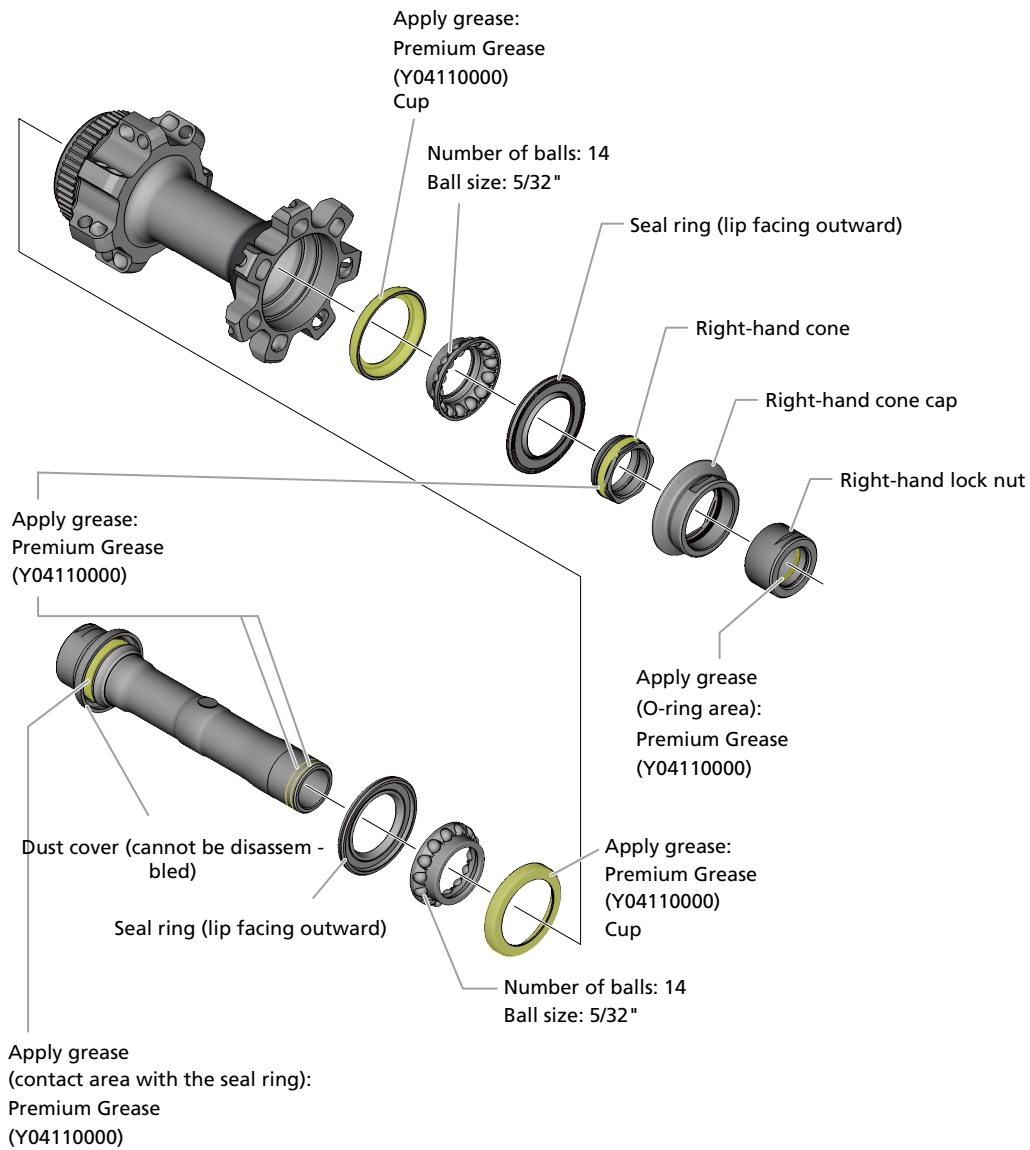
- (3) Turn the screw section of the bearing puller to remove the cup.



- (4) Remove the cup from the left side (rotor side) of the hub body in a similar manner. Ensure that the guard is in the correct position.

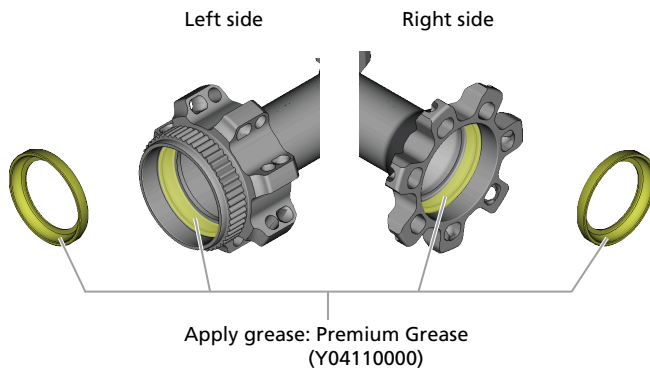


3. The disassembly can be performed as shown in the figure. Apply grease to the indicated parts at periodic intervals.



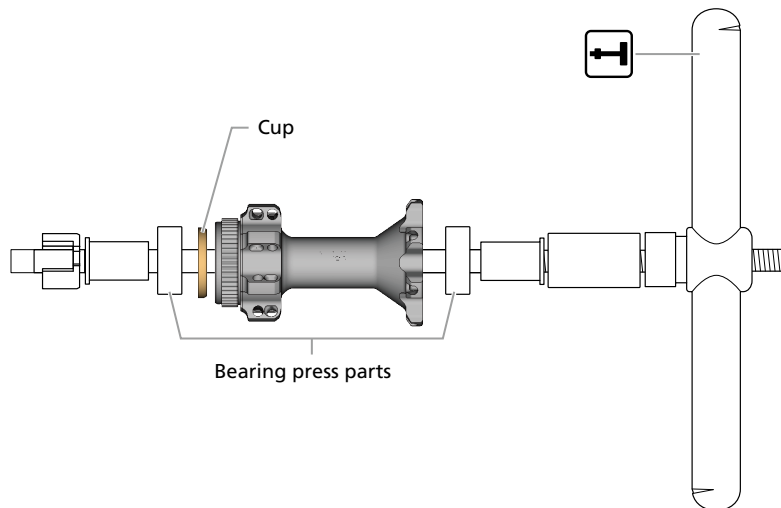
Front hub assembly

1. Apply grease to the hub body and cup.



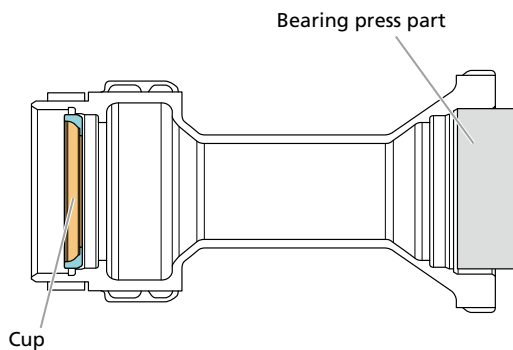
2. Install the cups.

- (1) Install the cup and bearing press parts (outer diameter 30 mm) to the hub body, and set the bearing press tool.

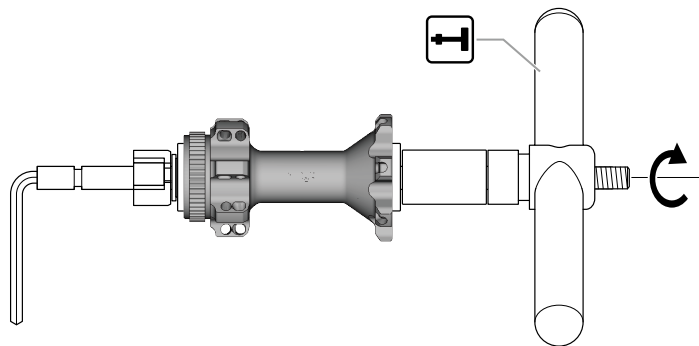


NOTICE

- Ensure that the cup is level and set to the correct position.

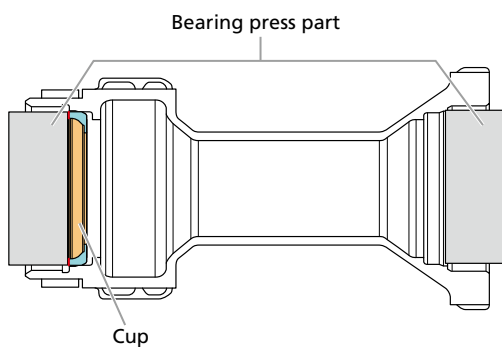


- (2) Turn the handle of the bearing press tool, and securely press-fit the cup as far as it will go.

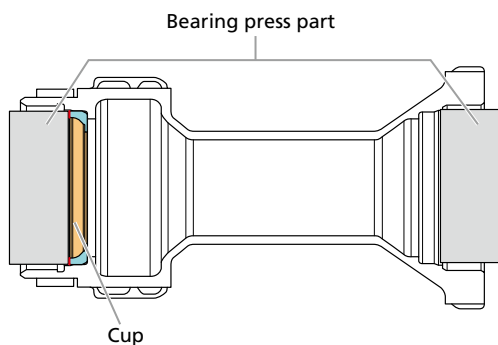


NOTICE

- Ensure that the cup is press-fit in the correct position of the hub body.

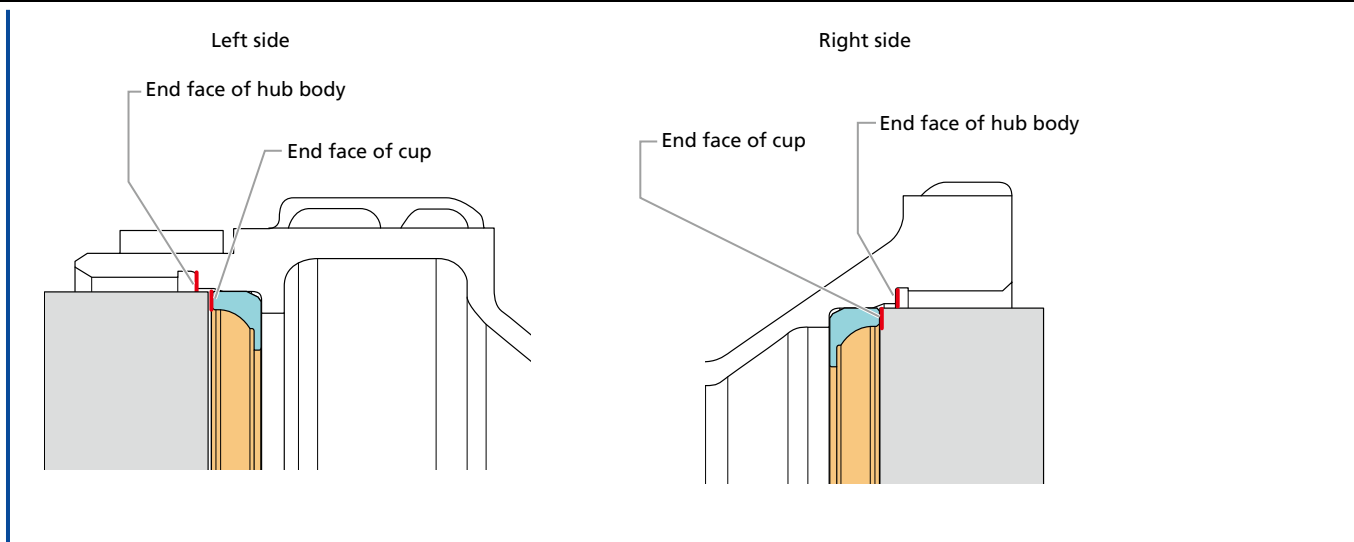


- (3) Install the bearing press parts (left: outer diameter 28 mm; right: outer diameter 30 mm) to the hub body, then turn the handle of the bearing press tool to securely press-fit the cups as far as they will go.



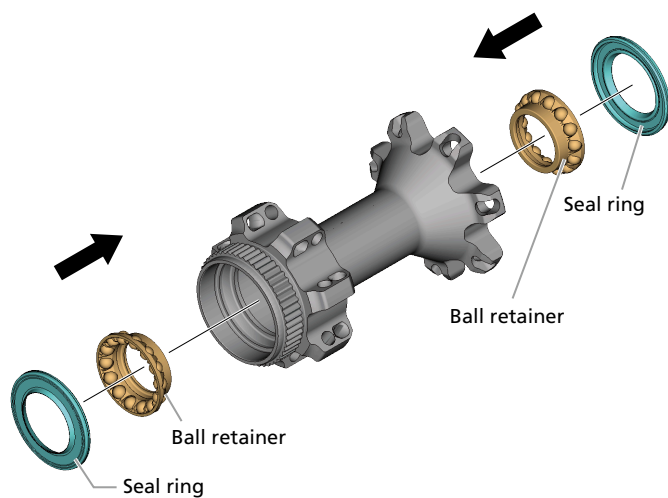
NOTICE

- Ensure that the end face of the cup is positioned inside the hub body.

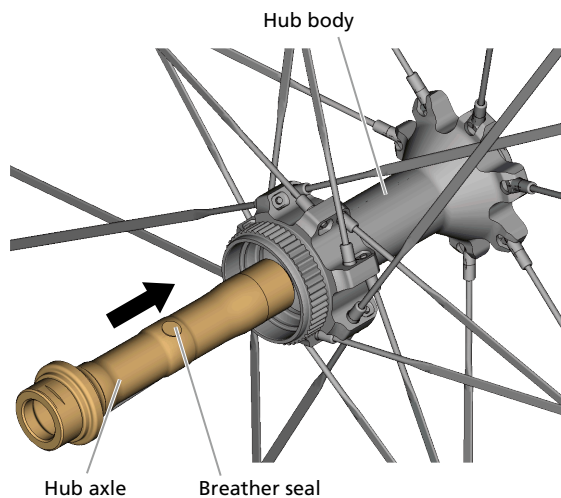


(4) Install the other side cup in the same manner.

3. Assemble the left and right ball retainers and seal rings.

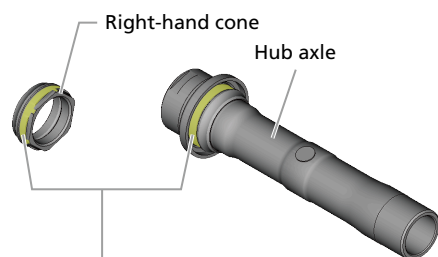


4. Install the hub axle from the left side of the hub body.



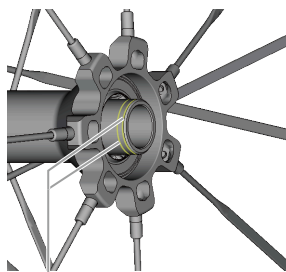
NOTICE

- When installing the hub axle, take care that grease does not adhere to the breather seal.
- Apply Premium Grease also to the contact areas with the seal ring. Do not mix in any other type of grease. Only apply a thin film of grease by hand to each area.



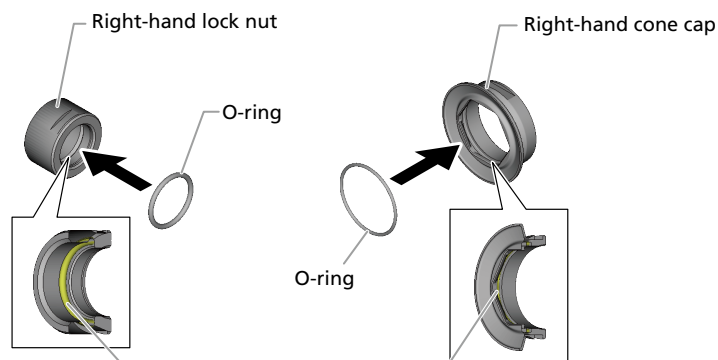
Apply grease
(contact area with the seal ring):
Premium Grease
(Y04110000)

5. After installing the axle to the hub body, apply grease to the axle threads.



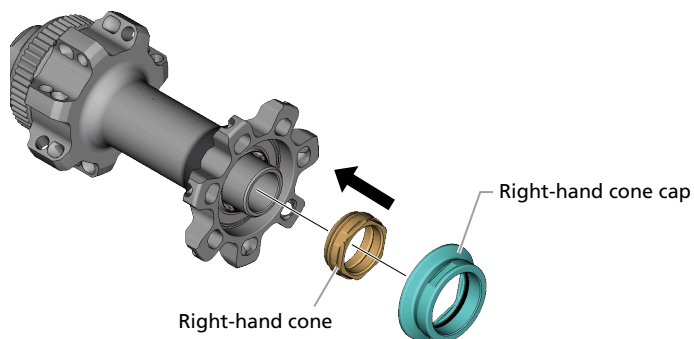
Apply grease:
Premium Grease
(Y04110000)

6. Apply grease to the O-ring areas of the right-hand lock nut and right-hand cone cap, then install the O-ring to the right-hand lock nut and right-hand cone cap.



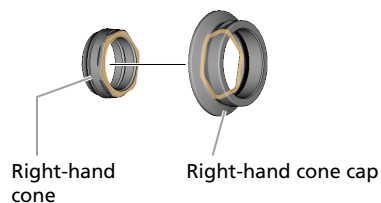
Apply grease:
Premium Grease
(Y04110000)

7. Install the right-hand cone and right-hand cone cap to adjust the bearing preload.

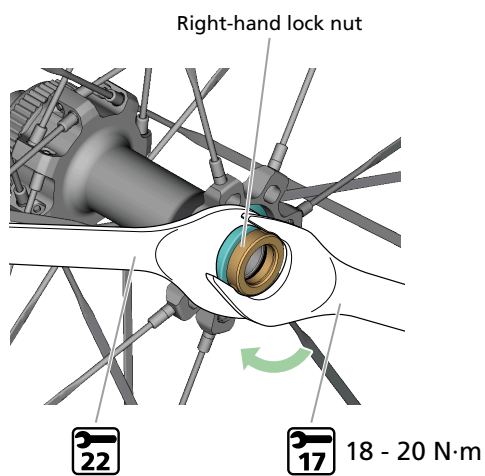


NOTICE

- Align the hexagonal surfaces of the right-hand cone and right-hand cone cap when installing them.

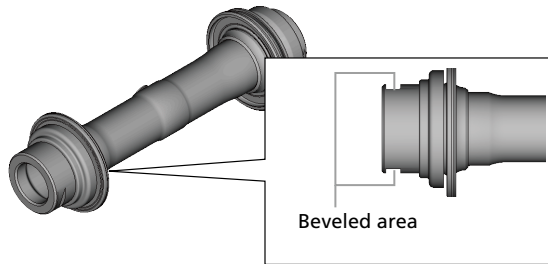


8. Tighten the right-hand lock nut and double-lock the assembly.



NOTICE

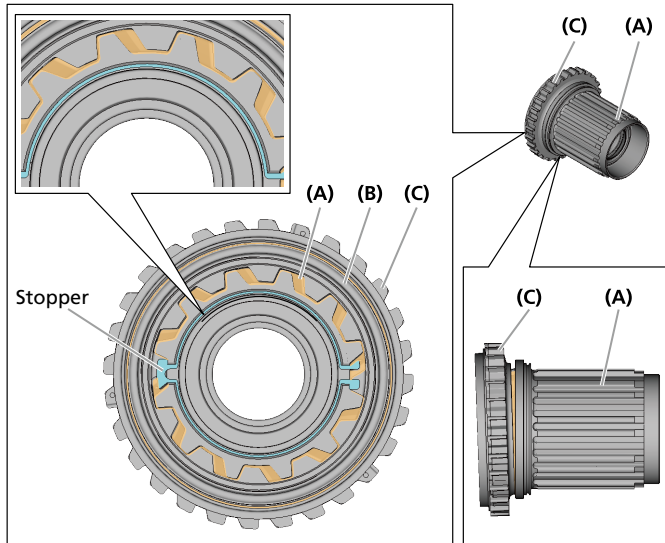
- Be careful not to apply excessive torque to the left side of the hub axle when tightening the right-hand lock nut. The hub axle may be damaged. When securing the beveled area of the left side of the hub axle with a hub spanner, be careful not to apply excessive force.



Pre-work cautions

⚠ WARNING

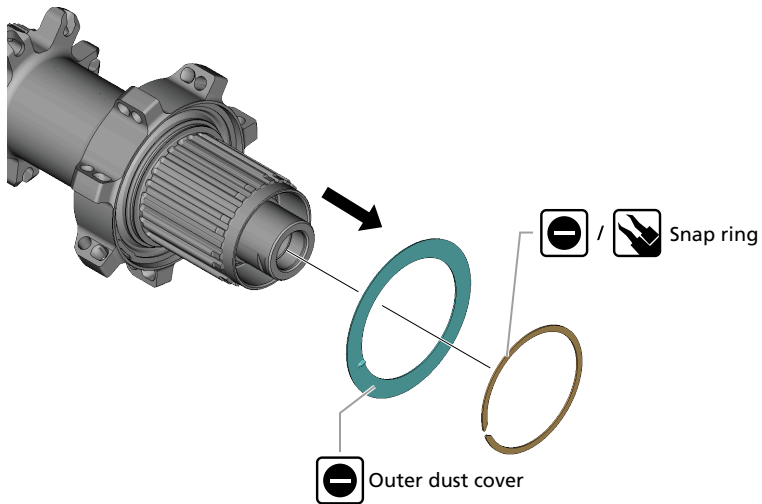
- Apply the special grease (Seal Grease for Freehub (Y38Z98000)) to the areas illustrated in the figure in step [12](#) of “Freehub disassembly.” Only apply a thin film by hand, and do not mix any other type of grease. If too much grease is used, the wrong grease is used, or grease is applied outside the specified areas, the freewheel body unit may malfunction.
- Do not apply grease or oil to the colored parts in the figure. This may lead to a malfunction in the freewheel body unit.



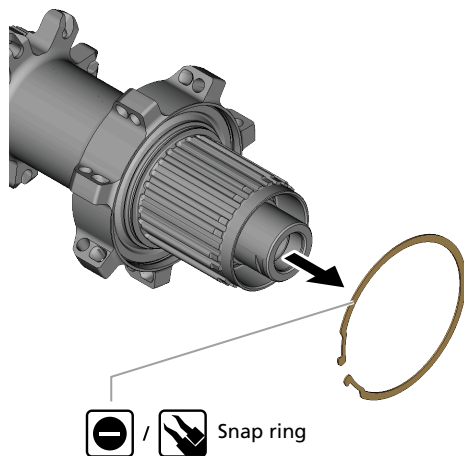
- Do not disassemble the freewheel body unit. The three parts (A), (B), and (C) form one unit (the freewheel body unit). Disassembling them may lead to a malfunction in the freewheel body unit. Do not disassemble the stopper.
- Make sure that the freewheel body unit is operating correctly before riding the bicycle by checking it several times following parts replacement or maintenance. If the freewheel body unit appears to be malfunctioning, replace it.

Freehub disassembly

1. Remove the outer dust cover and snap ring.

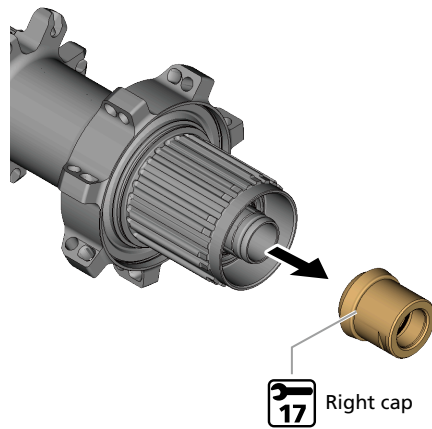


2. Remove the snap ring.



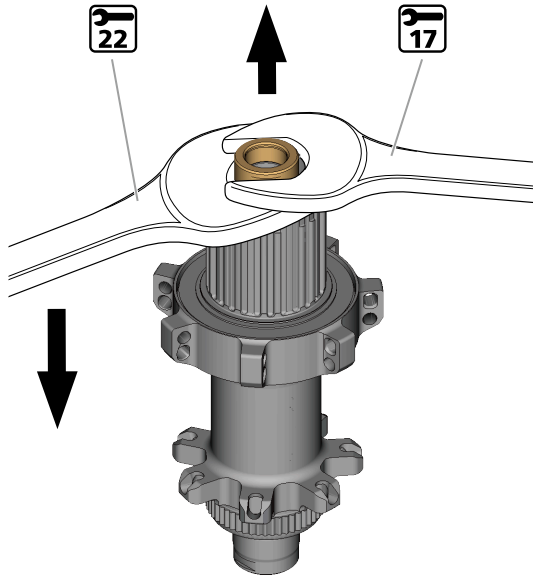
3. Remove the right cap by pulling it outwards off the end of the hub axle.

Do not try to unthread or put any angular load on the cap. Doing so may cause damage.

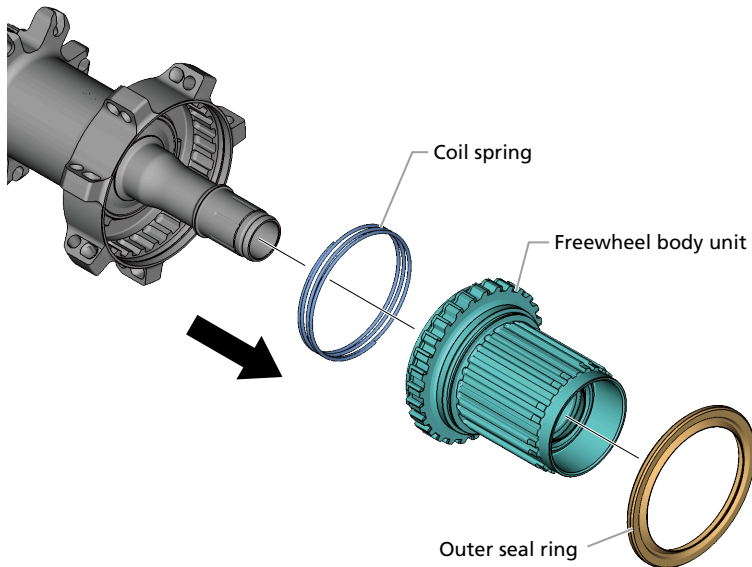


TECH TIPS

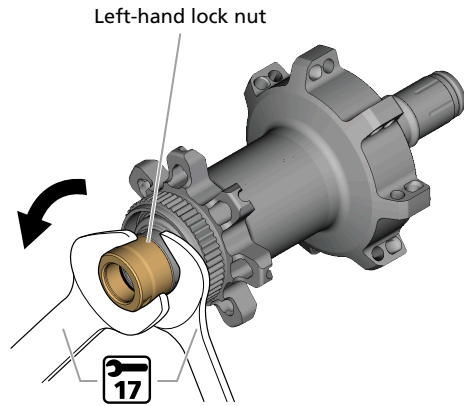
- If you cannot remove the right cap, use a 22 mm hub spanner as a lever to help pull it off, as shown in the figure. Ensure the 17 mm hub spanner is horizontal and firmly seated in the flats of the right cap.



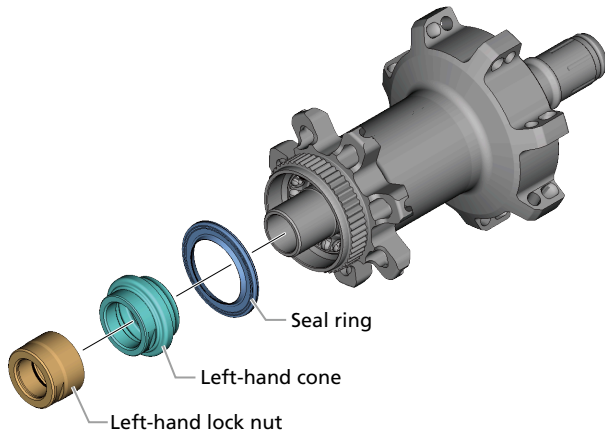
4. Remove the coil spring, freewheel body unit, and outer seal ring.



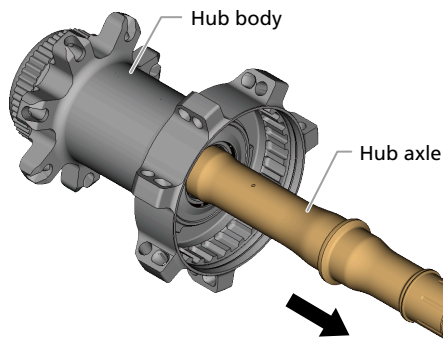
5. Loosen the left-hand lock nut on the double-lock section on the left side of the hub body.



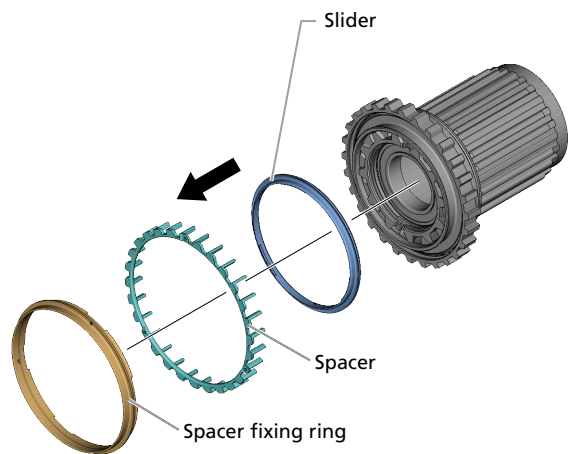
6. Remove the left-hand lock nut, left-hand cone, and seal ring.



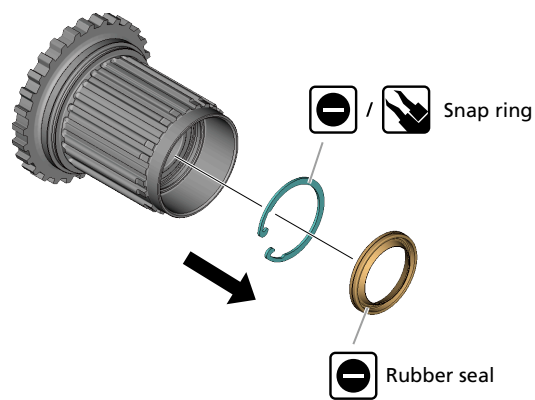
7. Pull out the hub axle from the right side of the hub body.



8. Remove the spacer fixing ring, spacer, and slider.

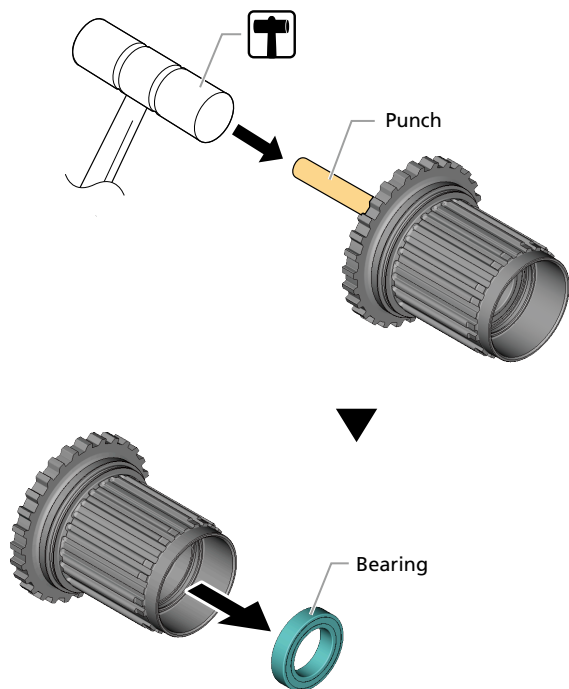


9. Remove the rubber seal and snap ring.

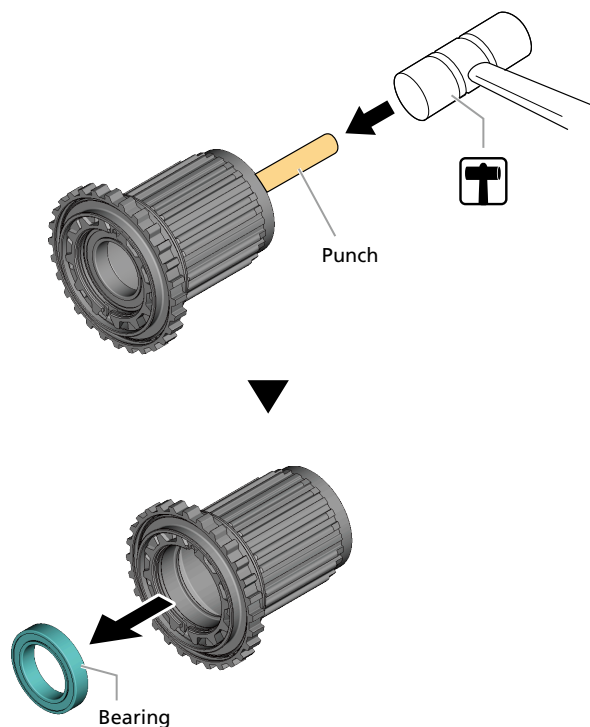


10. Remove the bearing of the freewheel body unit.

- (1) Place a punch (with a recommended diameter of 16 - 17 mm and length of 50 mm or longer) against the bearing, then strike it with a soft face mallet to push out the bearing.

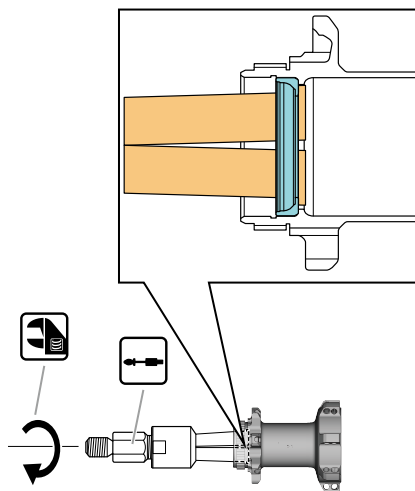


- (2) Also push out the bearing on the opposite side in the same manner.

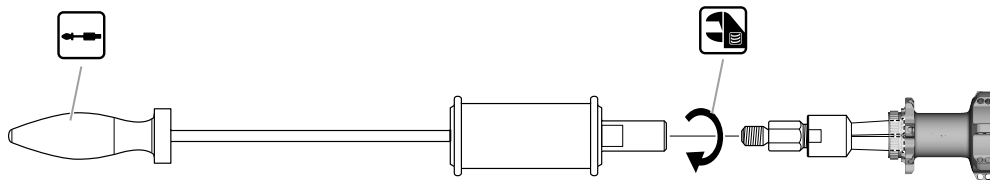


11. Remove the cups.

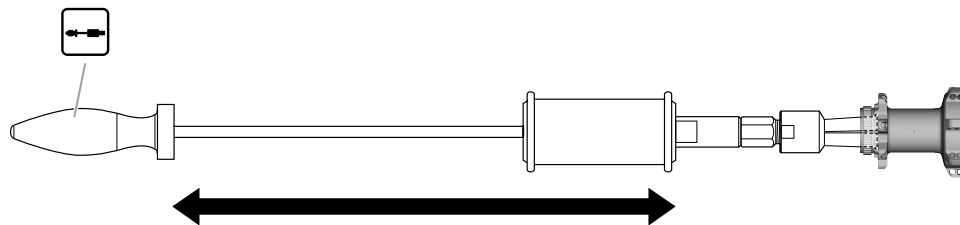
- (1) Attach the attachment of the slide hammer to the cup opening (inner diameter: 22.55 mm).



- (2) Attach the slide hammer body to the attachment, then secure the hub body.



- (3) Move the grip of the slide hammer body back and forth to remove the cup.

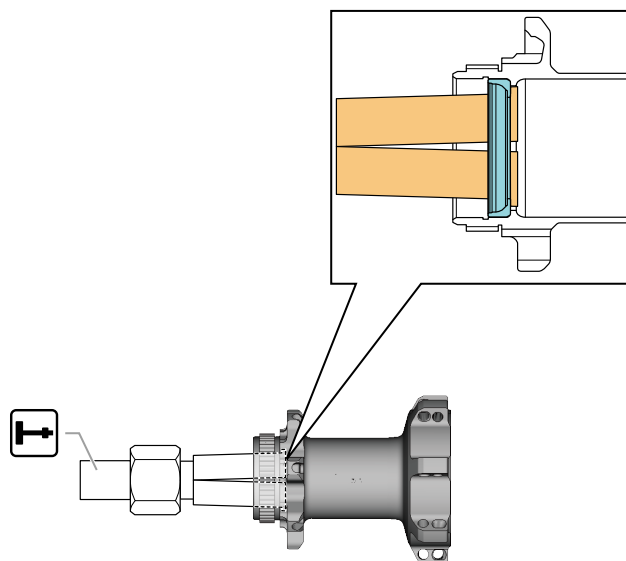


- (4) Remove the cup from the right side of the hub body in a similar manner.

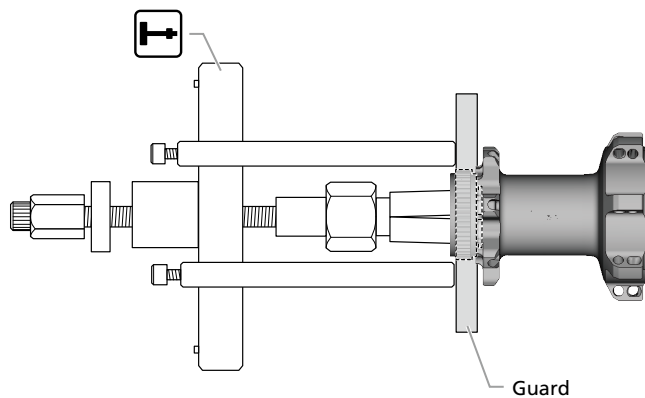
TECH TIPS

You can also use a bearing puller to remove the cup.

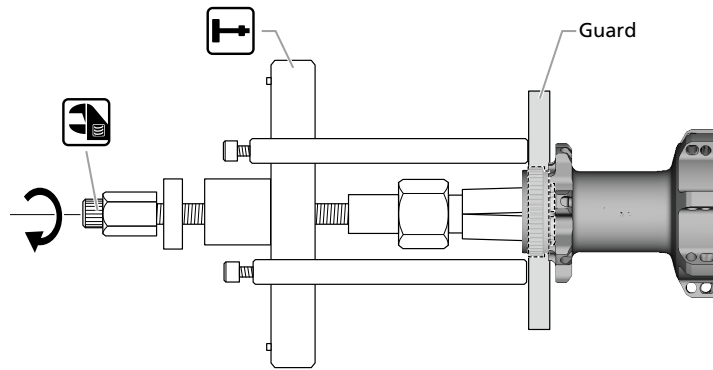
- (1) Attach the attachment of the bearing puller to the cup opening (inner diameter: 22.55 mm).



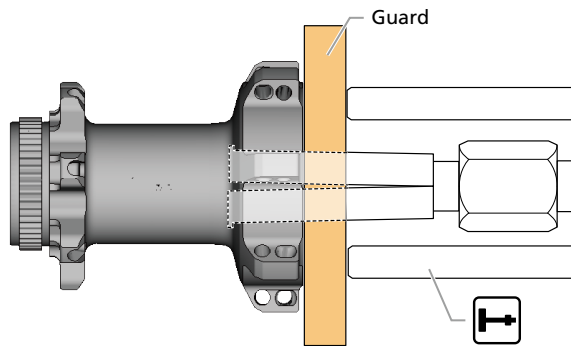
- (2) Attach the bearing puller body to the attachment and the guard to the hub body. Ensure that the guard is in the correct position.



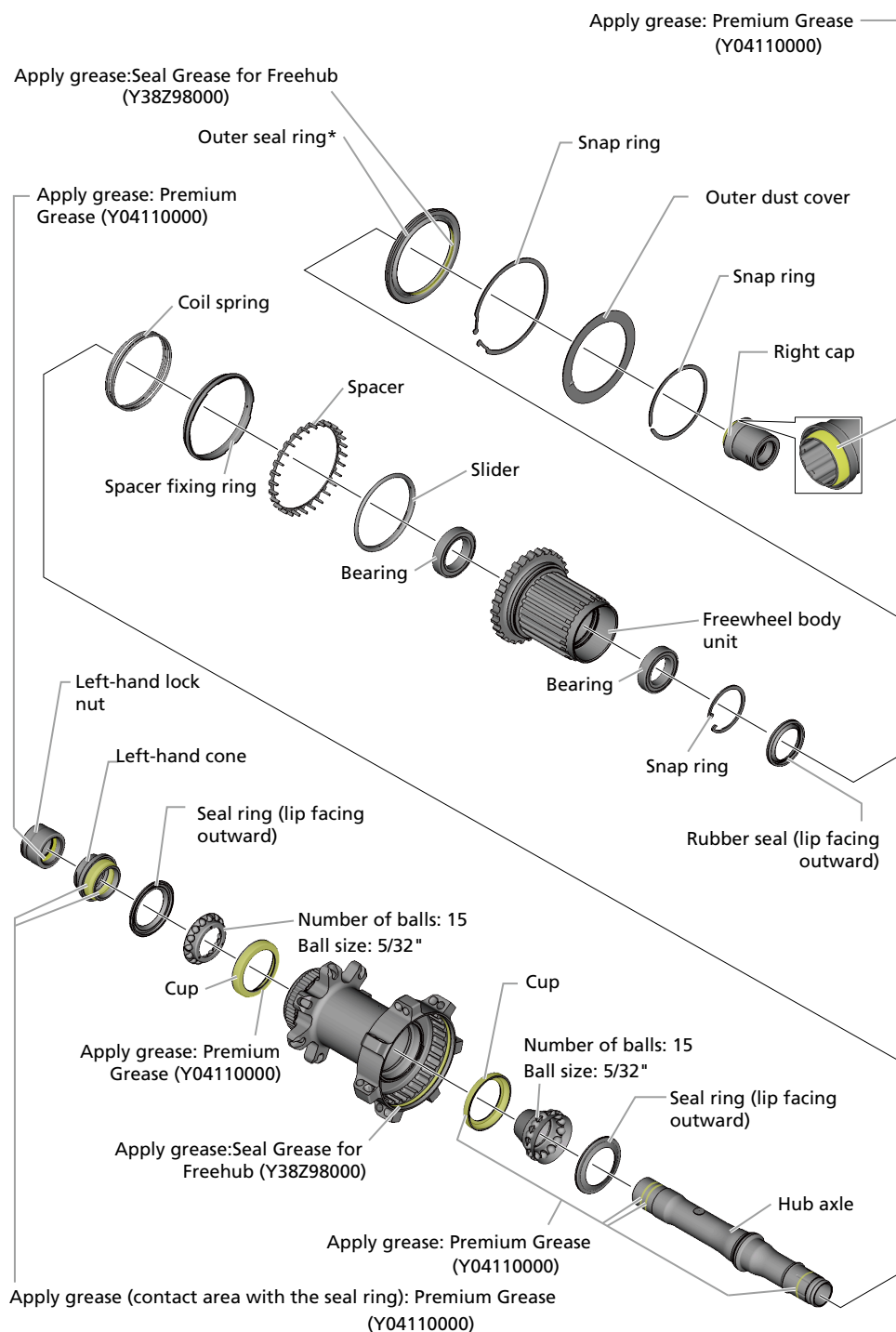
- (3) Turn the screw section of the bearing puller to remove the cup.



- (4) Remove the cup from the right side of the hub body in a similar manner.



12. The disassembly can be performed as shown in the figure. Apply grease to the indicated parts at periodic intervals.



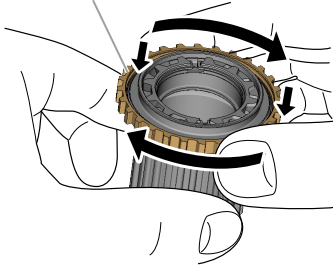
*Check that the outer seal ring orientation is correct when installing it.

NOTICE

- Do not attempt to disassemble the freewheel body unit. If not observed, problems with operation may occur.
- Install/remove the outer seal ring, seal ring and rubber seal very carefully so that they are oriented correctly, parallel to the hub, and not deformed. When reinstalling the outer seal ring, seal ring and rubber seal, check that they are facing the right way and insert them as far as they will go.

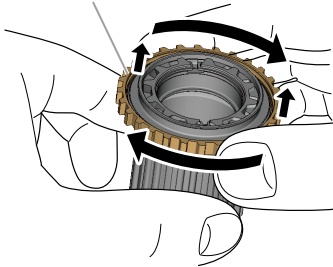
- Do not attempt to disassemble the dust cover which is crimped onto the cap.
- Place the freewheel body unit down on a work surface with the hub ratchet facing up. Spin the hub ratchet clockwise while pushing downwards on it, as shown in the figure. Ensure that this firmly engages the hub ratchet, and that the hub ratchet cannot be spun freely.

Hub ratchet



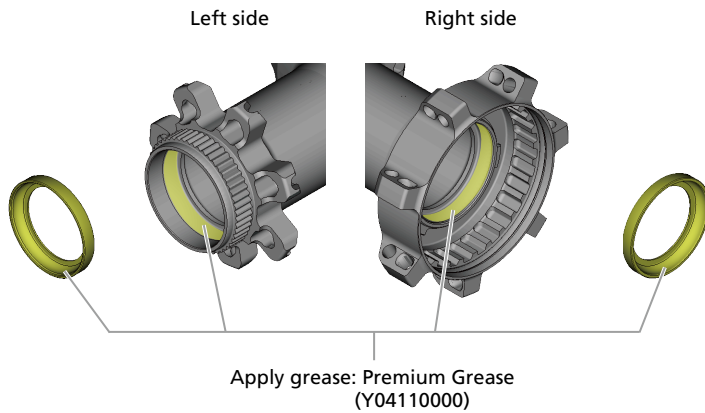
If the two hub ratchets do not engage, reset the position of the ratchets by turning clockwise while pulling up on the hub ratchet, then repeat the previous step. If the ratchets fail to firmly engage after several attempts, it may be indicative of a fault in the freewheel body unit.

Hub ratchet



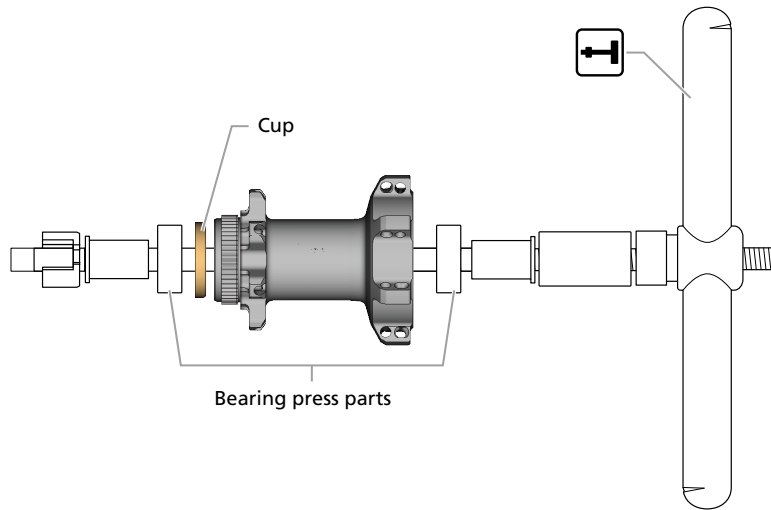
Freehub assembly

1. Apply grease to the hub body and cup.



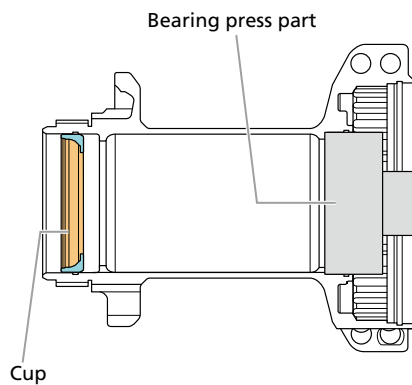
2. Install the cups.

- (1) Install the cup and bearing press parts (outer diameter 30 mm) to the hub body, and set the bearing press tool.

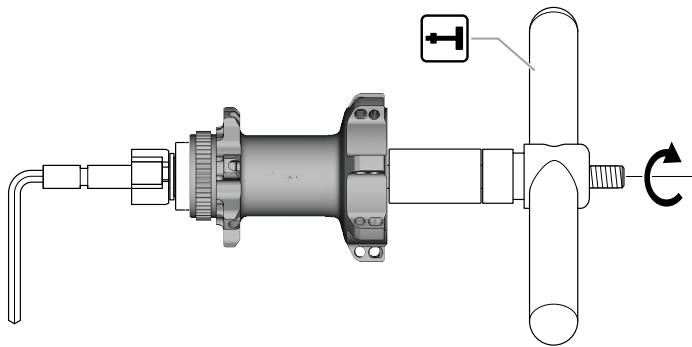


NOTICE

- Ensure that the cup is level and set to the correct position.

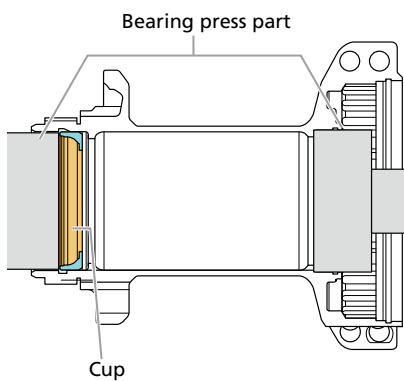


- (2) Turn the handle of the bearing press tool, and securely press-fit the cup as far as it will go.

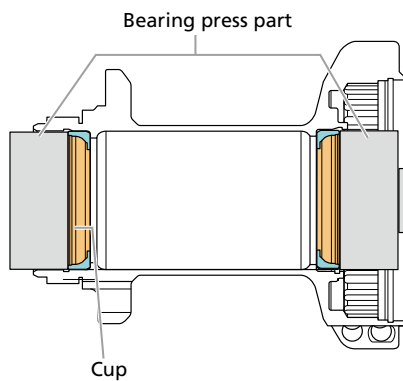


NOTICE

- Ensure that the cup is press-fit in the correct position of the hub body.



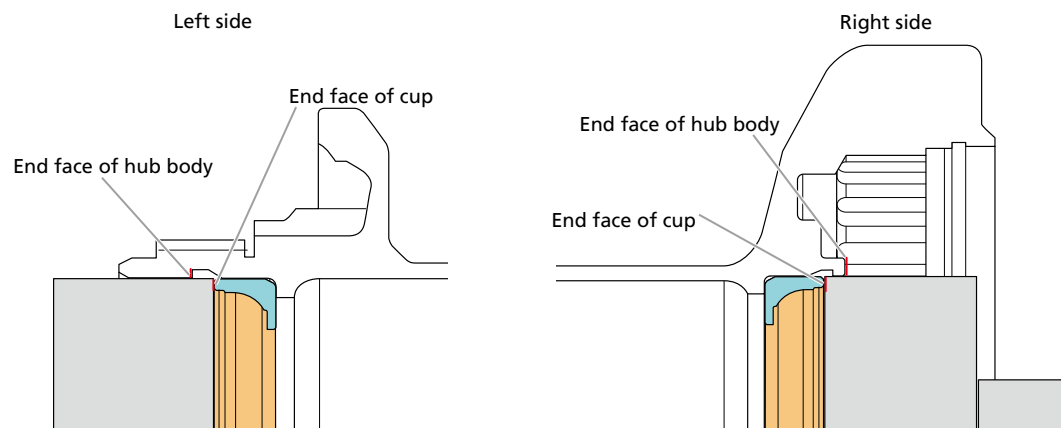
- (3) Install the right side cup in the same manner.
- (4) Install the bearing press parts (outer diameter 30 mm) to the left and right of the hub body, then turn the handle of the bearing press tool to securely press-fit the cups as far as they will go.



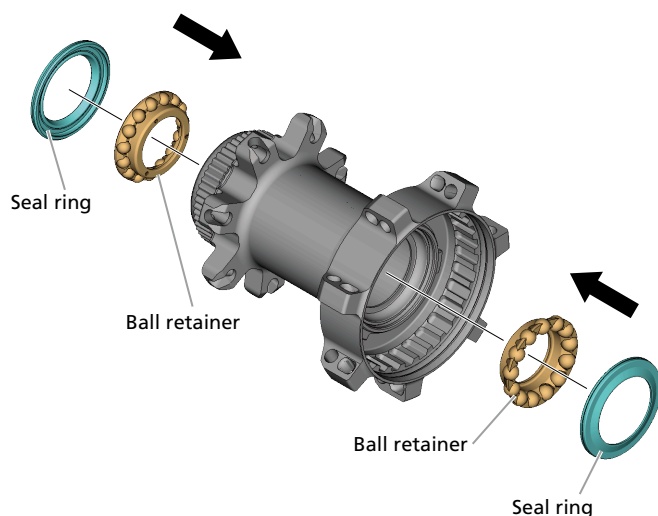
NOTICE

- Make sure to install the bearing on the left side first.

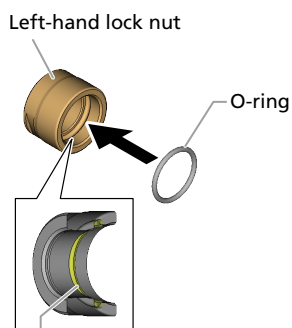
- Ensure that the end face of the cup is positioned inside the hub body.



3. Assemble the left and right ball retainers and seal rings.



4. Apply grease to the O-ring area of the left-hand lock nut, then install the O-ring to the left-hand lock nut.



Apply grease:
Premium Grease
(Y04110000)

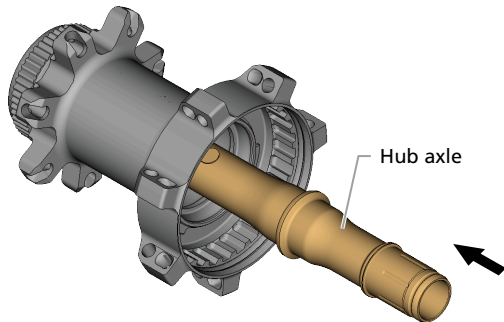
NOTICE

- Apply Premium Grease to the contact area with the seal ring. Do not mix in any other type of grease. Only apply a thin film of grease by hand to each area.

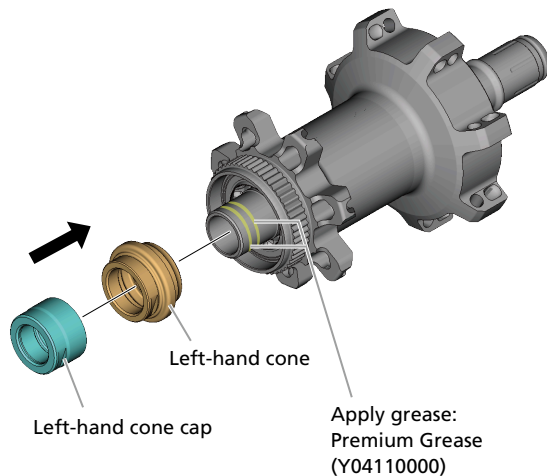
Apply grease
(contact area with the seal ring):
Premium Grease
(Y04110000)



5. Insert the hub axle into the hub body.



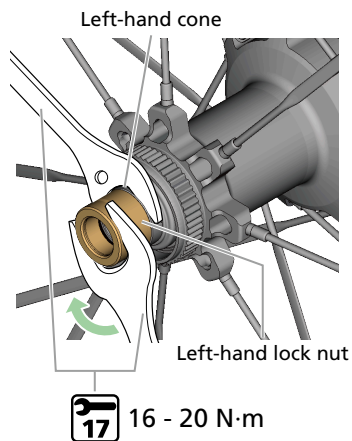
6. Apply grease to the hub axle threads, then install the left-hand cone and left-hand lock nut to adjust the bearing preload.



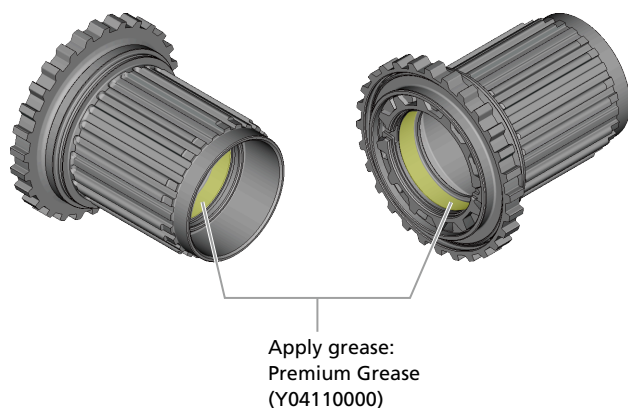
NOTICE

- When inserting the left-hand cone, ensure that the hub body and hub axle are parallel. If it is inserted with an excessive tilt, the seal ring may turn inside out.

7. Tighten the left-hand lock nut and double-lock the assembly.

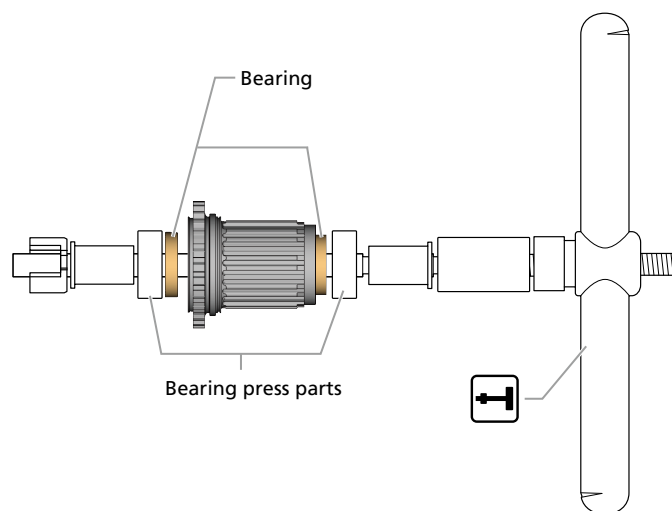


8. Apply grease to the freewheel body unit.

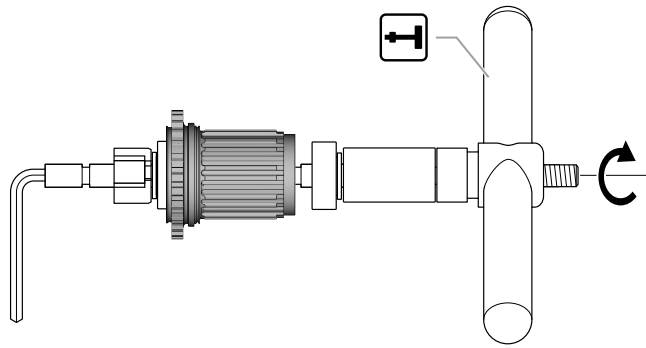


9. Install the bearings.

- (1) Install the left and right bearings and bearing press parts (left: inner diameter 17 mm, outer diameter 26 mm; right: inner diameter 15 mm, outer diameter 24 mm) to the freewheel body unit, and set the bearing press tool.



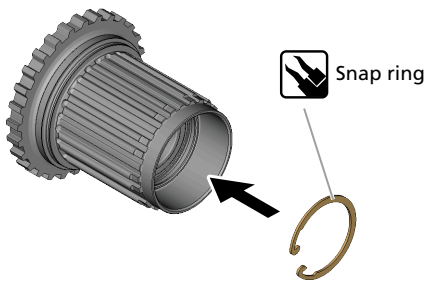
- (2) Turn the handle of the bearing press tool, and press-fit the bearings.



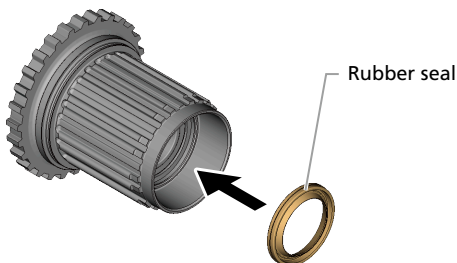
NOTICE

- The bearing press parts should touch both the outer race and inner race of the bearing.

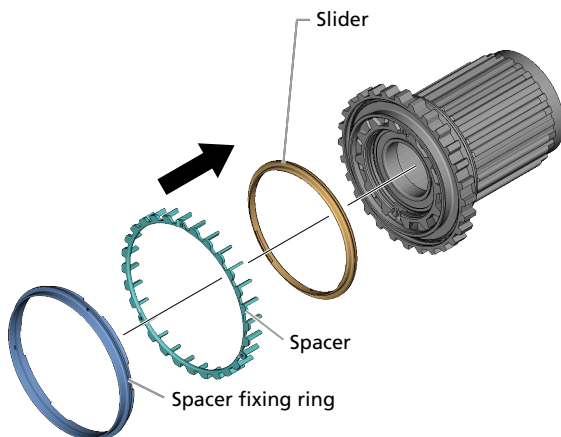
10. Install the snap ring to the freewheel body unit.



11. Install the rubber seal to the freewheel body unit.

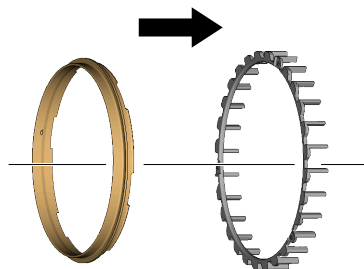


12. Install the slider, spacer, and spacer fixing ring.

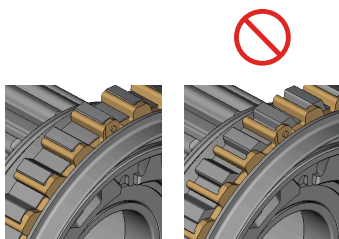


NOTICE

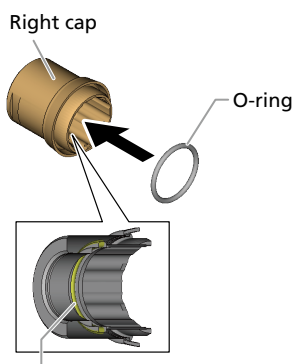
- Pay attention to the orientation of the spacer fixing ring.



- Pay attention to the position of the spacer.



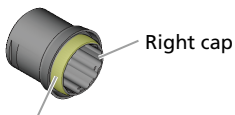
13. Apply grease to the O-ring area of the right cap, then install the O-ring to the right cap.



Apply grease:
Premium Grease
(Y04110000)

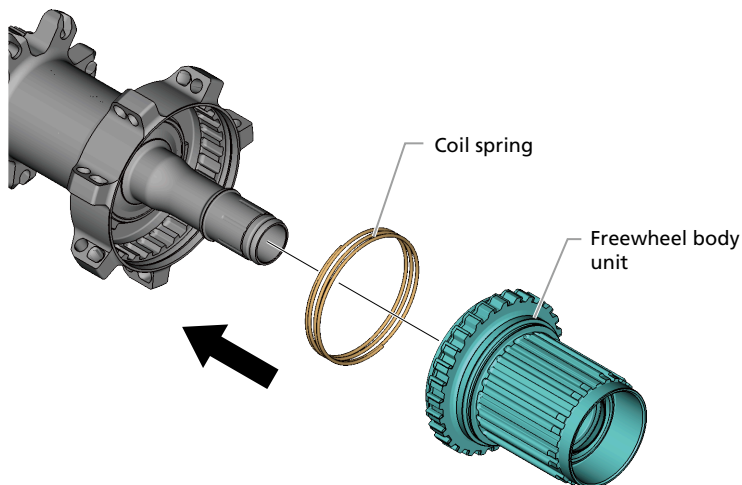
NOTICE

- Apply Premium Grease to the contact area with the seal ring. Do not mix in any other type of grease. Only apply a thin film of grease by hand to each area.

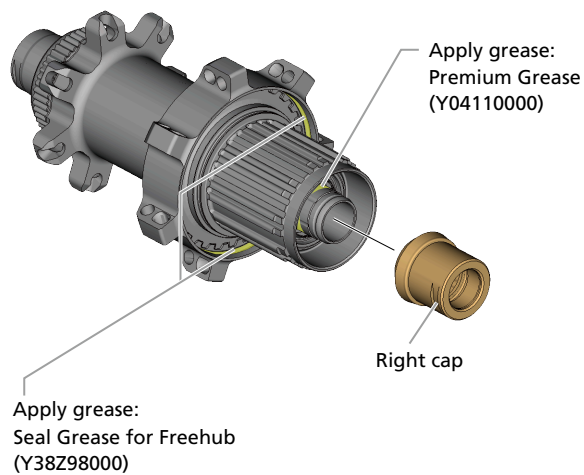


Apply grease:
Premium Grease
(Y04110000)

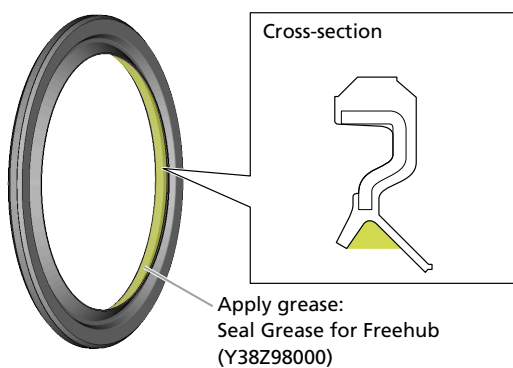
14. Install the coil spring and freewheel body unit.



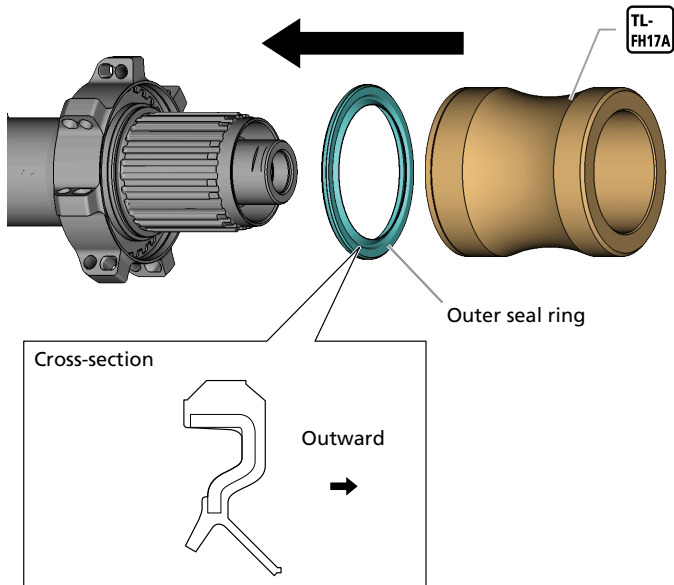
15. Apply grease to the hub axle and groove in the hub body, then install the right cap.



16. Apply grease to the groove inside the lip of the outer seal ring.

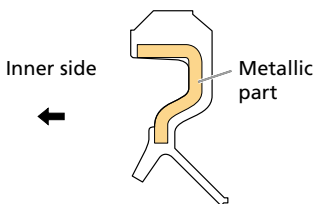


17. Install the outer seal ring.

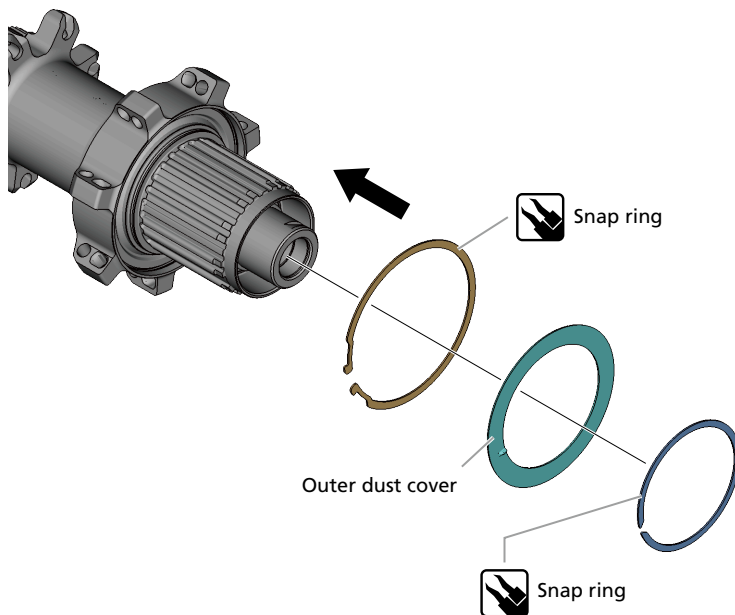


NOTICE

- Install/remove the outer seal ring very carefully so that it is oriented correctly, parallel to the hub, and not deformed. When installing the outer seal ring, check that it is facing the right way.
- Install so that the metallic part of the outer seal ring faces the inner side.



18. Install the snap ring to the hub body. Install the outer dust cover and snap ring to the freewheel body unit.



Replacing the freewheel body unit

Refer to “ [Pre-work cautions](#) ”, “ [Freehub disassembly](#) ”, and “ [Freehub assembly](#) ” when replacing the freewheel body unit.

The procedure from step [5](#) in “Freehub disassembly” is unnecessary, since the hub axle does not need to be removed.

NOTICE

- If the cassette gets caught in the spline of the freewheel body unit and cannot be removed by hand, replace the freewheel body unit.

Installing and removing the tubeless tires

Important safety information

⚠ WARNING

- The tires should be installed and removed by hand. If this is difficult, a resin tire lever for tubeless wheels may be used. In such cases, be sure to check that the rim surface has not been dented, scratched, or cracked as there is a risk of causing damage to the air seal between the tire and the rim, which would result in air leakage. For carbon rims, check that there is no carbon peeling or cracking, etc. Finally, make sure that there is no air leakage.

⚠ CAUTION

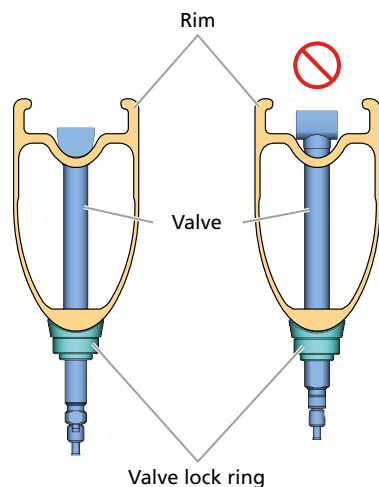
- When using an inner tube, do not add additional rim tape on top of the tubeless tape. Doing so may make it difficult to install or remove the tire, and it may cause damage to the inner tube resulting in a sudden puncture, which can cause the bicycle to fall over.
- Do not overtighten the valve lock ring. If you tighten the valve lock ring too much, the valve seal may become deformed, and air leaks may occur.

NOTICE

- If the tires are difficult to fit, use tap water or soapy water to help them slide more easily.
- Products are not guaranteed against natural wear and deterioration from normal use and aging.

Installation

1. Install the valve on the rim.

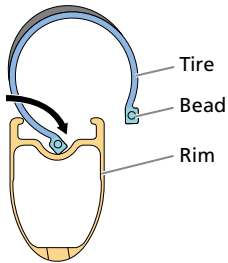


NOTICE

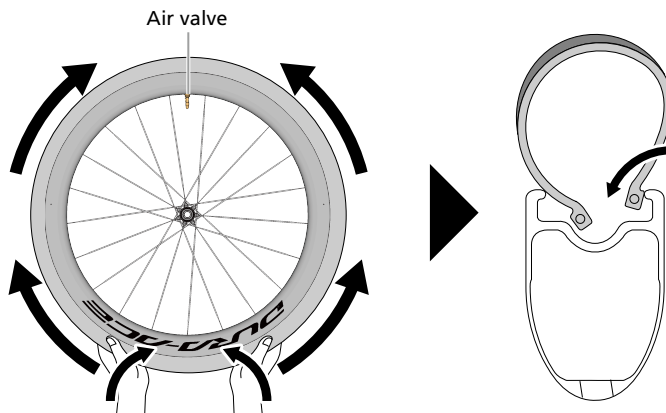
- Note the direction of the valve.
- When tightening the valve lock ring, check that the valve does not turn together with the valve lock ring.

2. On one side of the tire, push the bead into the center groove of the rim.

* Check that there are no foreign particles or damage in the tire bead, rim, and valve.

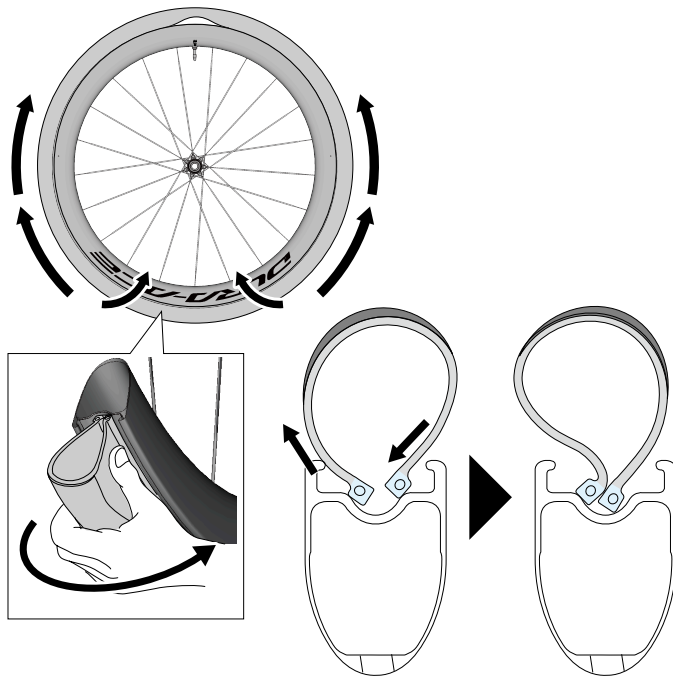


3. Set the bead on the other side of the tire starting from the point opposite the air valve.

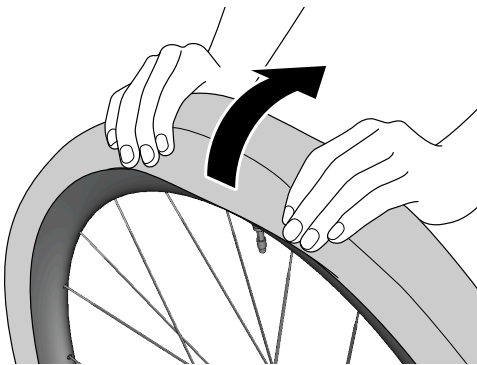


TECH TIPS

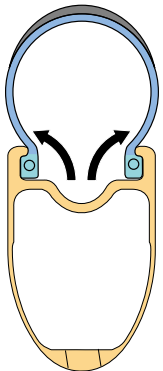
- If the final section of the bead at the air valve is difficult to mount, make sure the whole bead is pushed into the center groove of the rim. Start from the opposite side of the air valve and work your way around each side to the location of the air valve.



- 4. Grip the tire with both hands and insert the tire into the rim.**



- 5. Inflate with air to lock the beads of the tires into the rim.**



- 6. Deflate the tire and check that the beads are locked into the rim.**

When deflating the tire, the tire may separate from the rim if the bead lock is released from the rim and cause air leaks while riding.

7. Inflate the tire until it is at an appropriate pressure.

⚠ WARNING

- Use the appropriate air pressure indicated on the tire and rim. If the maximum pressures indicated on the tires and rims differ, be sure not to exceed the maximum pressure with the lower value. A higher pressure than indicated can cause a sudden puncture and/or sudden release of the tire, which can result in serious injury.

WH-R9370-TL (28 mm): Maximum pressure = 6.5 bar / 94 psi / 650 kPa

WH-R9370-TL (29 - 32 mm): Maximum pressure = 6 bar / 87 psi / 600 kPa

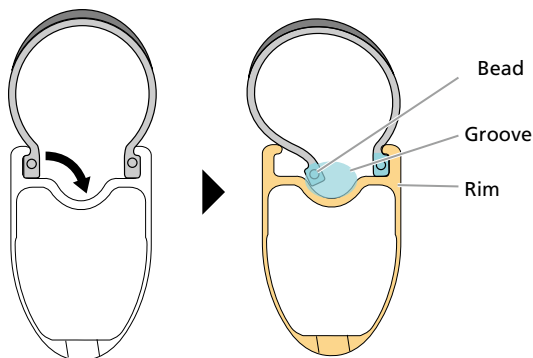
WH-R9370-TL (33 - 40 mm): Maximum pressure = 5 bar / 72 psi / 500 kPa

WH-R9370-TL (41 - 45 mm): Maximum pressure = 4 bar / 58 psi / 400 kPa

* The tire widths are shown in parentheses.

Removal

- 1. To remove the tire, deflate it and push one side of the bead into the center groove of the rim.**

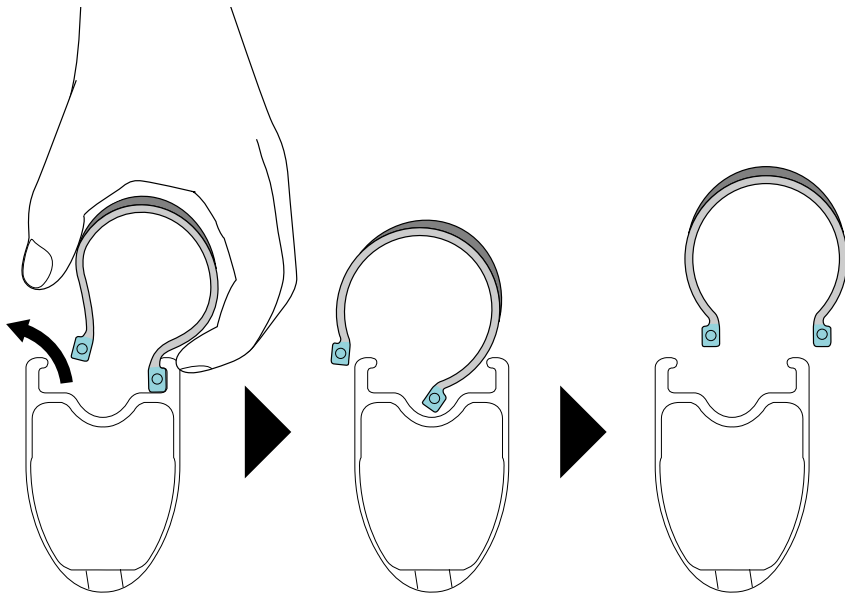


TECH TIPS

- Be sure to only push in the bead on one side of the tire. If you push the beads in on both sides, the tires will be difficult to remove. If you accidentally unseat both beads, inflate the tire once more to lock the beads, then restart the procedure from the beginning.

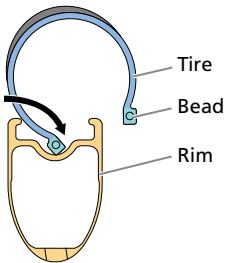
- 2. Remove the beads.**

* Remove the bead on one side of the tire starting from the point closest to the air valve, then remove the bead on the other side of the tire.



Installing an inner tube

1. Loosen the valve lock ring and remove the air valve.
2. On one side of the tire, push the bead into the center groove of the rim.



3. Insert the inner tube into the tire.

Inflate the inner tube slightly to give it a firm shape, then insert it into the tire.

NOTICE

- Check that the air valve and size of the inner tube are supported for the rim and tire being used.
- Contact your place of purchase for the specifications of supported tubes.

4. Insert the bead from the opposite side of the air valve.

Be careful not to pinch the tube at this time.

If necessary, use soapy water.

5. Inflate the inner tube until the tire locks into place.

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