# Dealer's Manual

| | | |
|---|---|---|
| ROAD | MTB | Trekking |
| City Touring/ Comfort Bike | URBAN SPORT | E-BIKE |

# Wheel Set

## DURA-ACE

**WH-R9200**

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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.

### Be sure to also inform users of the following:

- Check that the wheels are fastened securely before riding the bicycle. If the quick release lever is not used correctly, the wheel may come off the bicycle and result in serious injury due to a fall or collision.
- Before riding the bicycle, check the wheels to make sure that there are no bent or loose spokes, dents, scratches or cracks on the rim surface. Do not use the wheel if any of these problems are found. The wheel may break, and you may fall. Check also that there is no carbon peeling or cracking.
- Do not use the Road Wheel Set on unpaved surfaces. The Road Wheel Set is designed for paved surfaces. If the wheels are used on unpaved surfaces, they may become bent or damaged, and accidents may result.
- Be sure to read the manual for the product thoroughly, before using the product. If the quick release mechanism is not used correctly, the wheel may come off the bicycle and serious injury could result.
- Do not allow any oil or grease to get onto the brake shoes. Riding the bicycle with oil or grease on the brake shoes may prevent the brakes from operating and result in serious injury due to a fall or collision.
- Do not use in combination with bottom link-type suspension forks. With these types of forks, when the brakes are applied, the clearance between the hub axle and the brake shoes can change due to the operation of the suspension and the brake shoes may touch the spokes.

### TU: Tubular wheel

- Before riding the bicycle, check that the tires are securely glued to the rims. If the tires come off while riding, you may fall and get severely injured.
- If the braking surfaces of the carbon rims become extremely worn and the rims appear to have become deformed, do not ride the bicycle. If you continue using the rims, they may break and result in an accident that can lead to a serious injury or even death.

**⚠ 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.

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.
- Take note of the braking force during the bed-in period. Carbon rims become worn due to friction from the brake shoes, and there may be a "bed-in" period before the full performance of the rims can be obtained. As the bed-in period progresses, the braking force will become stronger. Take this increase in braking force into account for safety purposes.

**NOTICE**

Be sure to also inform users of the following:

- Use only the lubricants specified by SHIMANO.
- 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 use detergent or other chemicals when wiping the wheel, otherwise, the sticker on the rim may come off.
- Before riding the bicycle, check that there are no pieces of metal or other foreign objects sticking to the brake shoes. If any such items are present, they may cause damage to the rim when the brakes are applied.
- If the brake shoes have worn down until the grooves are no longer visible, consult your place of purchase or a distributor.
- Different brake shoes have their own characteristics. Ask the place of purchase or a distributor for details when purchasing the brake shoes.
- 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.

### TU: Tubular wheel

- For tubular models, use brake shoes for carbon rims such as R55C3 and R55C4. If you use any brake shoes other than those for carbon rims, they may provide insufficient braking force or wear quickly.
- Do not use an R55C3, R55C4 carbon rim brake shoe if it has been used with an aluminum rim. Using the shoe on an aluminum rim will cause aluminum wear fragments to be stuck on the brake shoe, which will damage the brake friction surface of the carbon rim.

### For installation to the bicycle and maintenance

- Use only 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.
- Special nipple wrenches are available as optional accessories.
- Check the specifications table ( https://si.shimano.com ) for compatible reflectors and spoke protectors.
- For information on how to install and remove the tires, refer to the manual accompanying the tire.

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 needed for installation, adjustment, and maintenance purposes.

| Tool | |
|---|---|
|  | 5 mm hexagon wrench |
|  | 17 mm hub spanner |
|  | 22 mm hub spanner |
|  | TL-FH17 |
|  | TL-WHR92 |
|  | Slotted screwdriver |

# Installation/removal

## Tire size

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

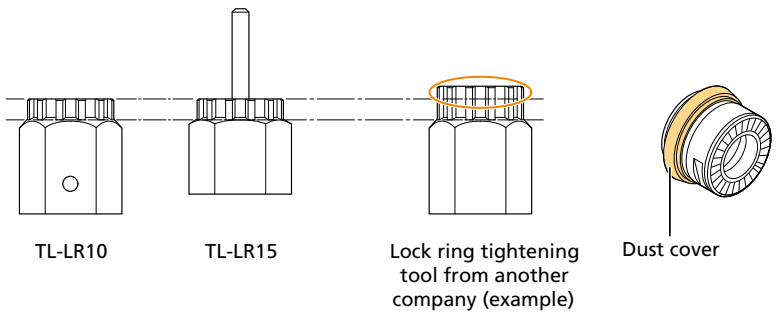
| | Wheel size | Model name | Tire size |
|---|---|---|---|
| DURA-ACE | 700C | WH-R9200-C36-TU | 25-28" - 32-28" |
| | | WH-R9200-C50-TU | |
| | | WH-R9200-C60-HR-TU | |

## Installing/removing the cassette sprocket

Refer to the dealer's manual for the cassette sprocket to install/remove the cassette sprocket.

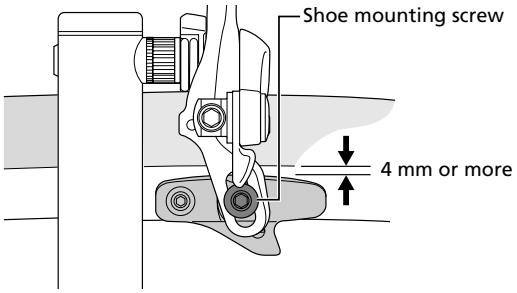
**NOTICE**

- 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.




## Brake shoe setting position

Set the brake shoe as shown in the figure.




# Combination of brake shoe and rim

Refer to the dealer's manual of the dual pivot caliper brake for information on combination of brake shoe and rim.

**NOTICE**

- Use brake shoes that are appropriate for the rim type and rim outer width.

# Maintenance

## Spoke lacing

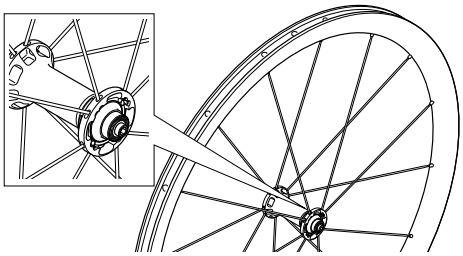
Lace the spokes as shown in the figure.

* Refer to the table for spoke tension value.

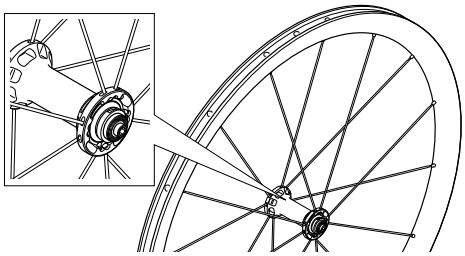
Number of spokes: 16 in front, 21 in rear

For front

Left side

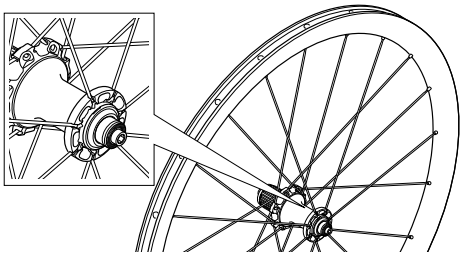


Right side

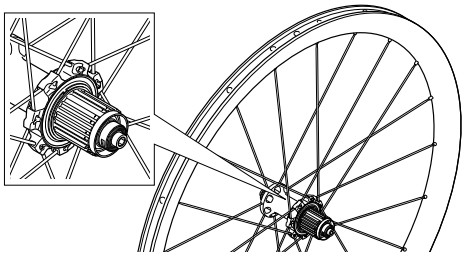


For rear

Left side



Right side



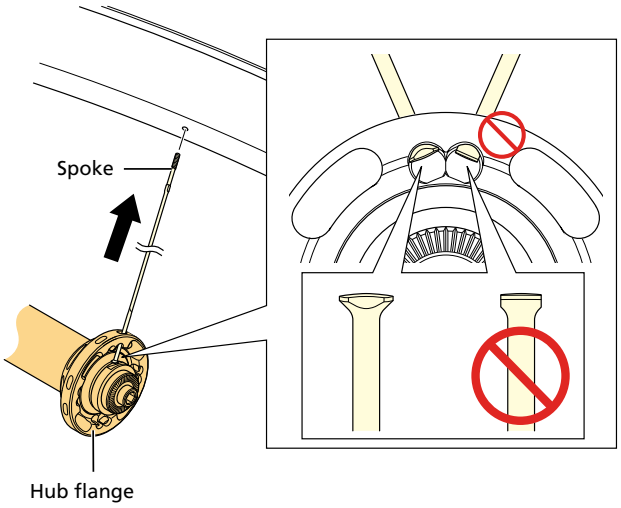
| Spoke tension value | | | |
|---|---|---|---|
| | | Left side | Right side |
| WH-R9200-C36-TU | For front | 875 - 1125 N | 875 - 1125 N |
| | For rear | 600 - 850 N | 715 - 1015 N |
| WH-R9200-C50-TU | For front | 675 - 925 N | 675 - 925 N |
| | For rear | 600 - 850 N | 1140 - 1390 N |
| WH-R9200-C60-HR-TU | For front | 675 - 925 N | 675 - 925 N |
| | For rear | 600 - 850 N | 1140 - 1390 N |

# Replacing the spokes

## Front

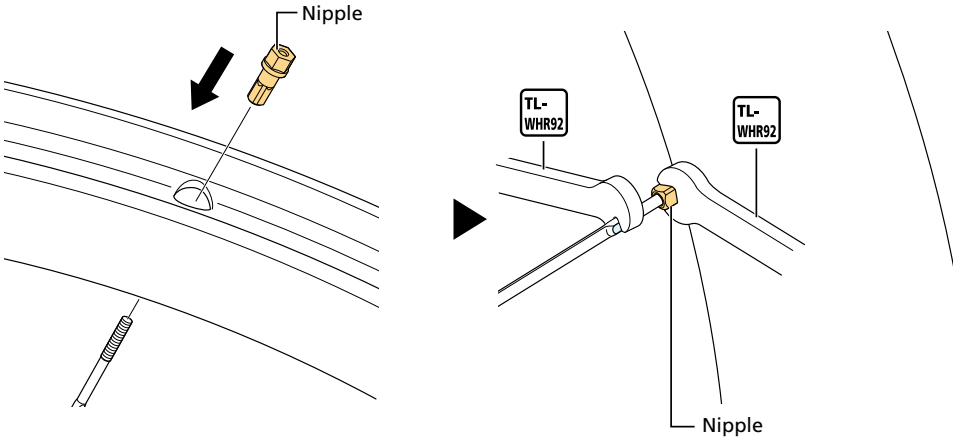
1. **Remove the spoke to replace.**

2. **Insert the spoke through the hole in the hub flange.**
   Pay attention to the spoke installation direction when setting to the hub flange as shown in the figure.



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

   Secure the flat part of the spoke with the TL-WHR92 SHIMANO original tool to stop the spoke from turning.

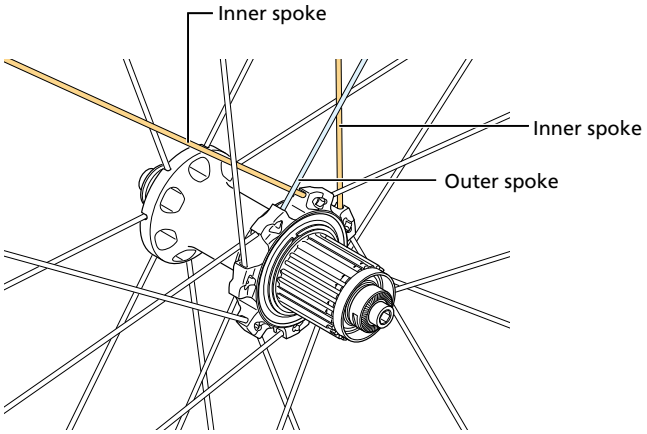



## Rear (right side)

1. **Remove the spokes.**

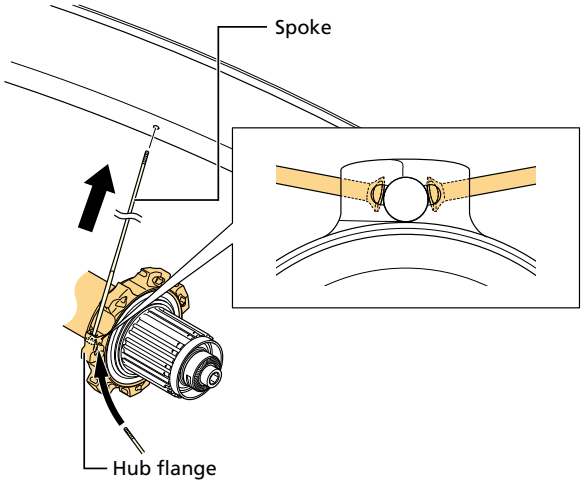
   When replacing intersecting spokes, remove two inner spokes first.

   When installing, reverse the procedure.



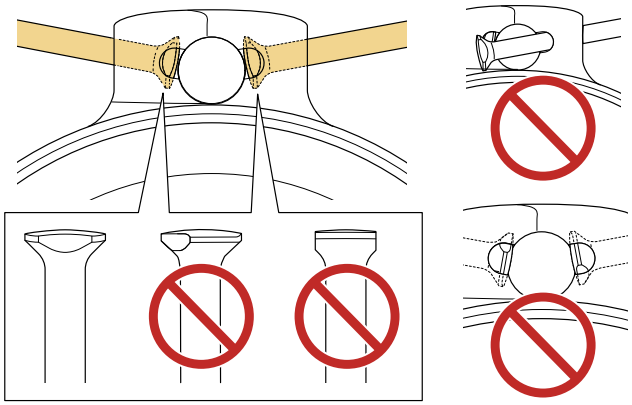
**2. Insert the spoke through the hole in the hub flange.**

Pay attention to the spoke installation direction when setting to the hub flange as shown in the figure.




**NOTICE**

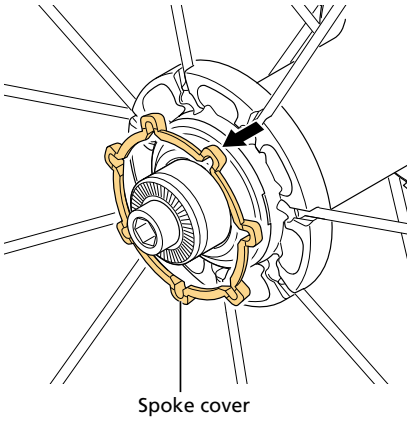
- Pay attention to the direction of the flat surface of the spoke to set it correctly as shown in the figure.



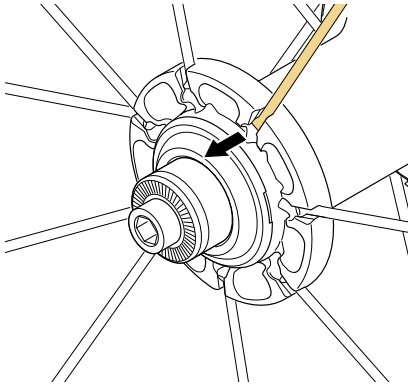
3. **Attach the nipple and tighten the spoke to the specified tension.**
   Refer to step 3 of “Front” in “Replacing the spokes.”

## Rear (left side)

1. **Remove the spoke cover using a tool such as a slotted screwdriver.**

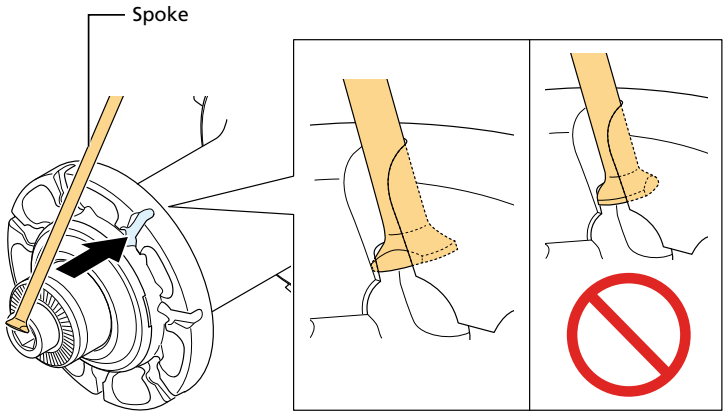



2. **Remove the spoke to replace.**



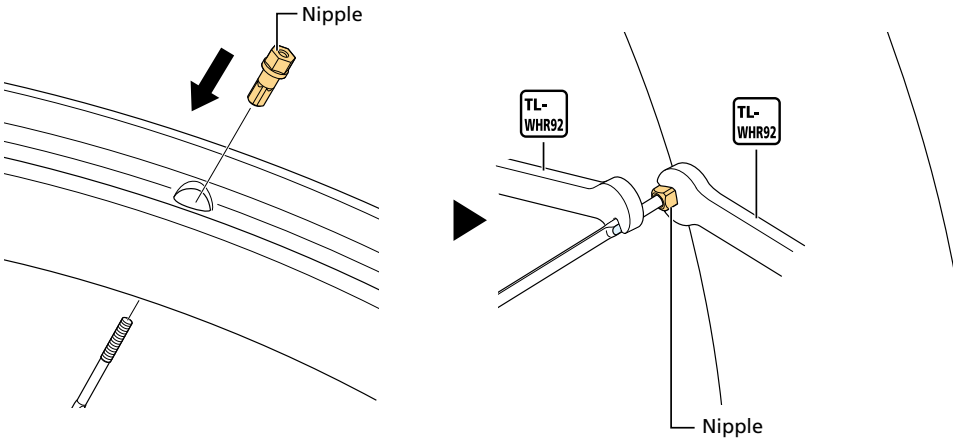
3. **Insert the new spoke into the groove on the hub flange as shown in the figure.**

   Pay attention to the spoke installation direction when setting to the hub flange as shown in the figure.

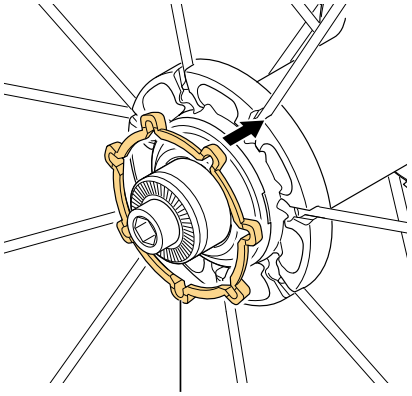



4. **Attach the nipple and tighten the spoke to the specified tension.**

   Secure the flat part of the spoke with the TL-WHR92 SHIMANO original tool to stop the spoke from turning.

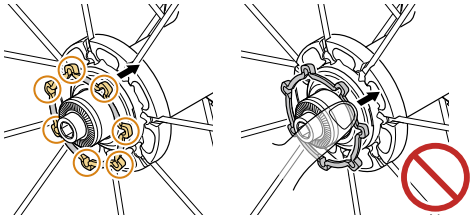


**5. Finally, reinstall the spoke cover.**




**NOTICE**

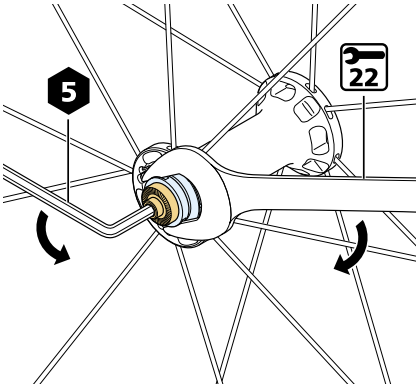
- Note the location to press when installing the spoke cover. Otherwise the spoke cover may be damaged.



# Front hub

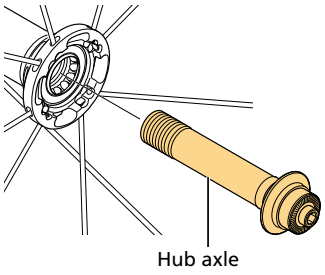
## Removing the hub axle

1. **Loosen the lock nut on the double-lock section on the right side of the hub body.**
   Disassembly from the left side of the hub body is not possible.

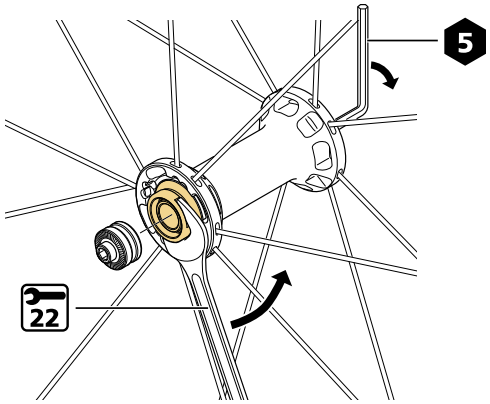



**NOTICE**

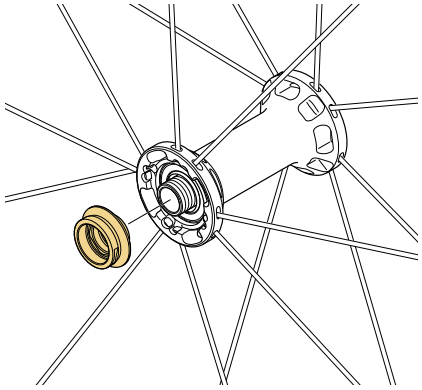
- Be careful not to apply excessive torque to the hub axle left side when loosening the lock nut. The hub axle may be damaged. When securing the end of the left side of the hub axle with a hexagon wrench, be careful not to apply excessive force.



2. **Remove the lock nut and loosen the cone cap.**



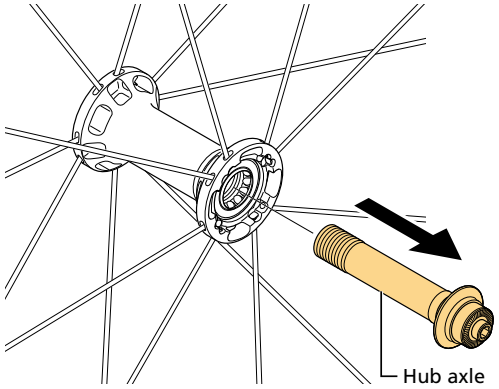

3. **Remove the cone and cone cap.**



**NOTICE**

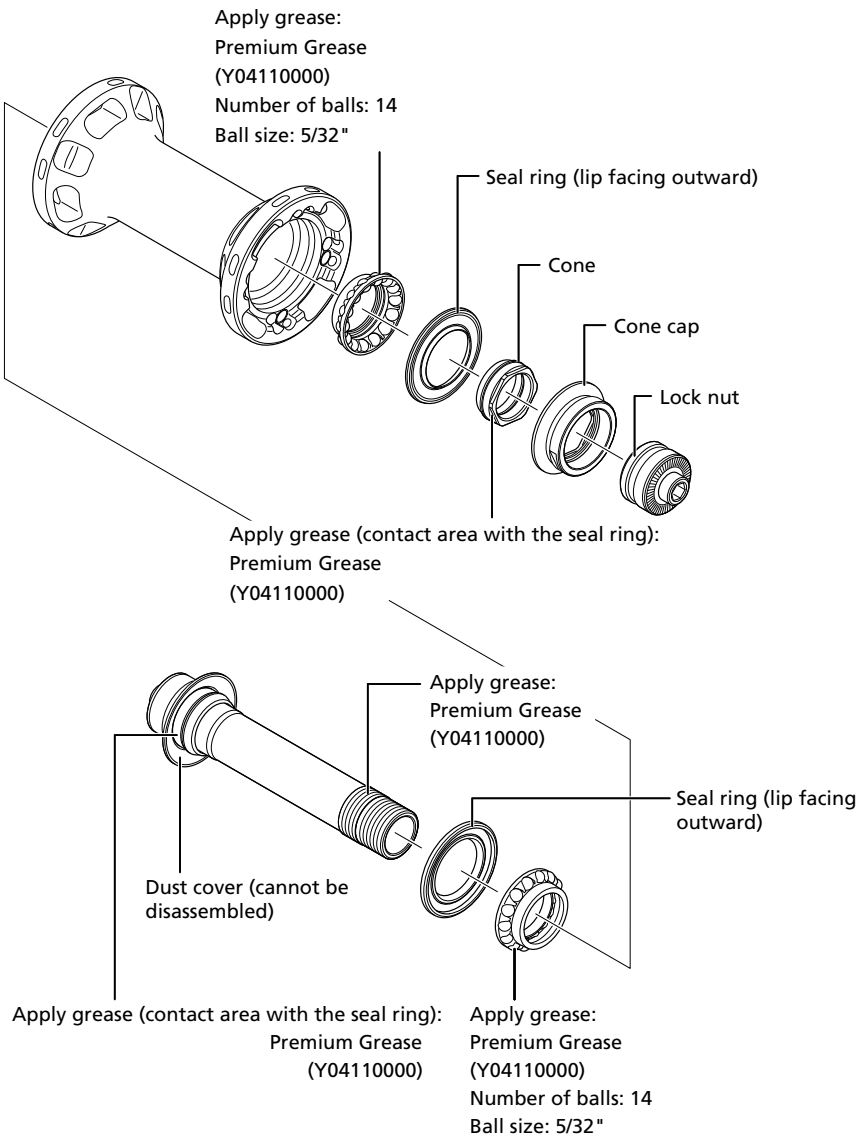
- Conduct the removal and installation of the seal very carefully so that it does not become deformed. When reinstalling the seal, check that it is facing the right way and insert it as far as it will go.

**4. Remove the hub axle from the left side of the hub body.**



## Disassembly

1. **The unit can be disassembled as shown in the figure. Apply grease to the indicated parts at periodic intervals.**




**NOTICE**

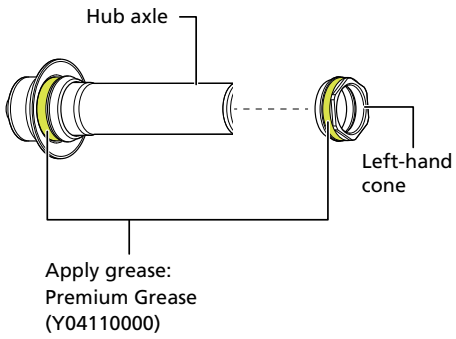
- Conduct the removal and installation of the seal very carefully so that it does not become deformed. When reinstalling the seal, check that it is facing the right way and insert it as far as it will go.

## Assembly

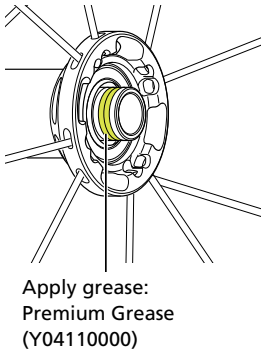
1. **Install the necessary parts such as the hub axle.**
   Install it in the reverse order from the disassembly.

**NOTICE**

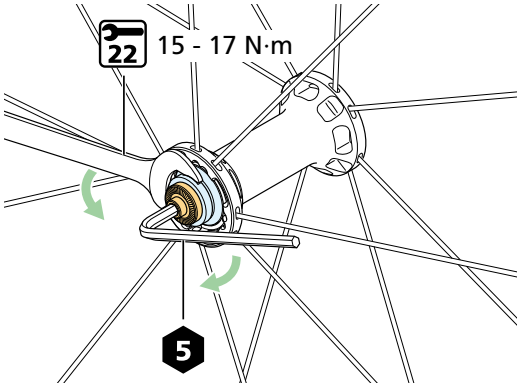
- When reinstalling the seal ring, check that the seal is facing the right way and insert it as far as it will go.
- Apply Premium Grease to the contact area with the seal ring as well as to the ball. Do not mix in any other type of grease. Only apply a thin film of grease by hand to each area.




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

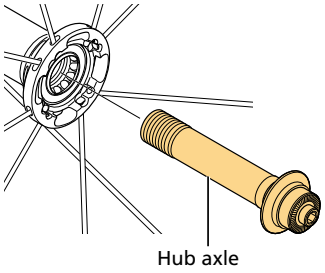


3. **After adjusting the bearing preload, tighten the lock nut on the right side of the hub body and double-lock the assembly.**

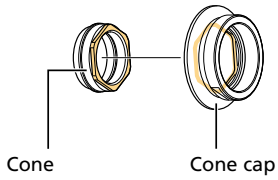



**NOTICE**

- Be careful not to apply excessive torque to the hub axle left side when tightening the lock nut. The hub axle may be damaged. When securing the end of the left side of the hub axle with a hexagon wrench, be careful not to apply excessive force.




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

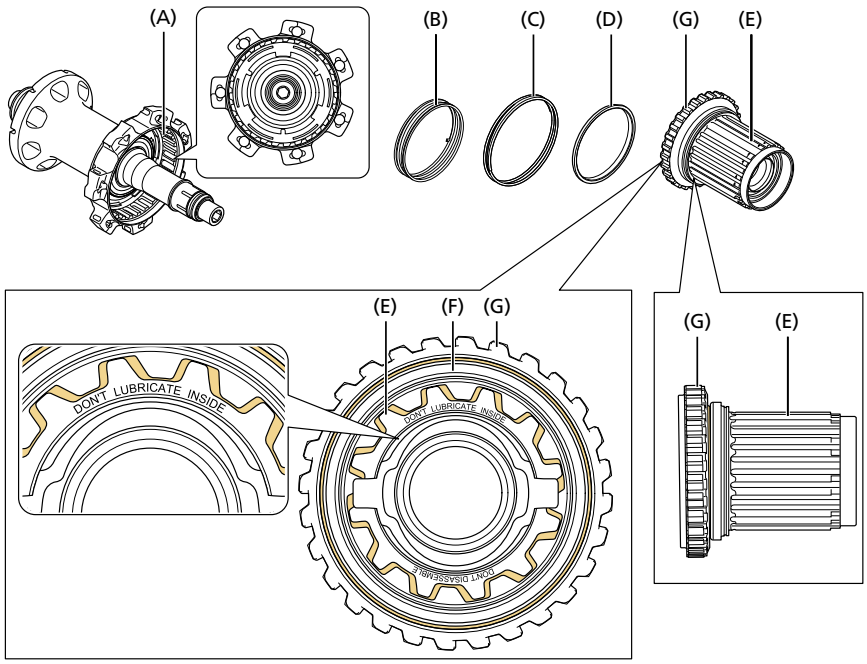


# Freehub

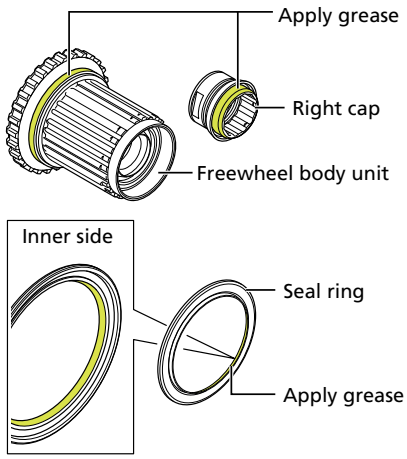
## Pre-work cautions

**⚠ WARNING**

- Except for the seal portion of (E), do not apply grease or oil to parts (A) through (G). This may lead to a malfunction in the freewheel body unit.

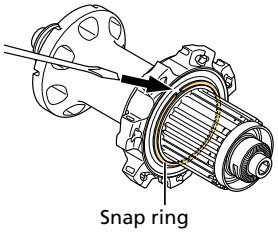



- Do not disassemble the freewheel body unit. The three parts (E), (F) and (G) form one unit (the freewheel body unit). Disassembling them may lead to a malfunction in the freewheel body unit.
- Make sure that the freewheel body unit is operating correctly before riding the bicycle by checking it several times following parts replacement or maintenance. If the freewheel body unit appears to be malfunctioning, replace it.
- Apply the special grease (Seal Grease for Freehub) to the areas illustrated in the figure. 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.

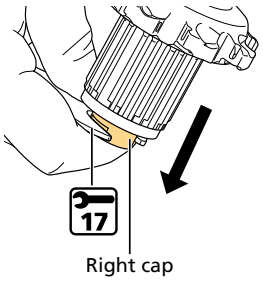



## Disassembly

1. **Remove the snap ring.**
   Insert the tip of a tool such as a slotted screwdriver in the split on the snap ring, and expand the snap ring to remove it.

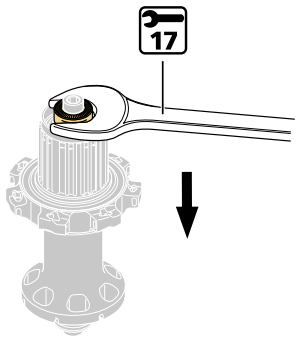


2. **Remove the right cap by pulling it outwards off the end of the hub axle.**
   Do not try to unthread or put any angular load on the cap. Doing so may cause damage.

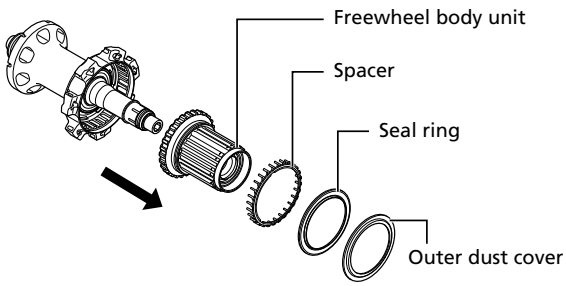



## TECH TIPS

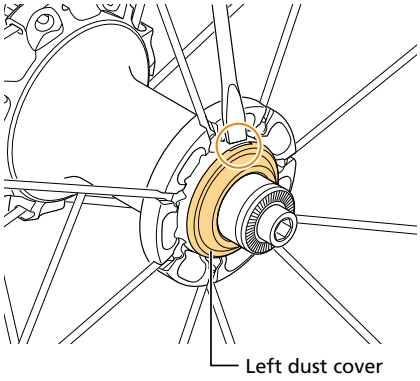
- If you cannot remove the right cap, remove it using a 17 mm hub spanner, as shown in the figure. Ensure that the 17 mm hub spanner is horizontal.



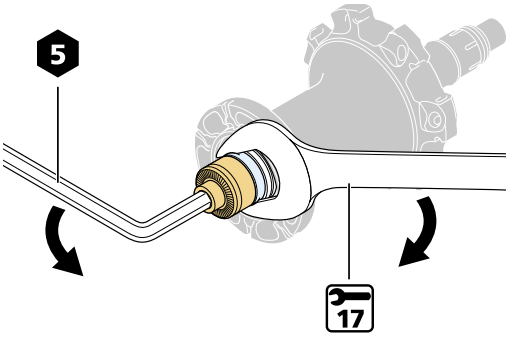

3. **Remove the freewheel body unit.**
   The outer dust cover, seal ring, and spacer can be removed at the same time by pulling on the freewheel body.



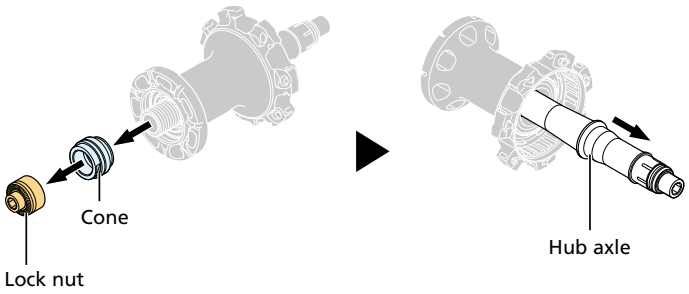
4. **Remove the left dust cover using a tool such as a slotted screwdriver.**



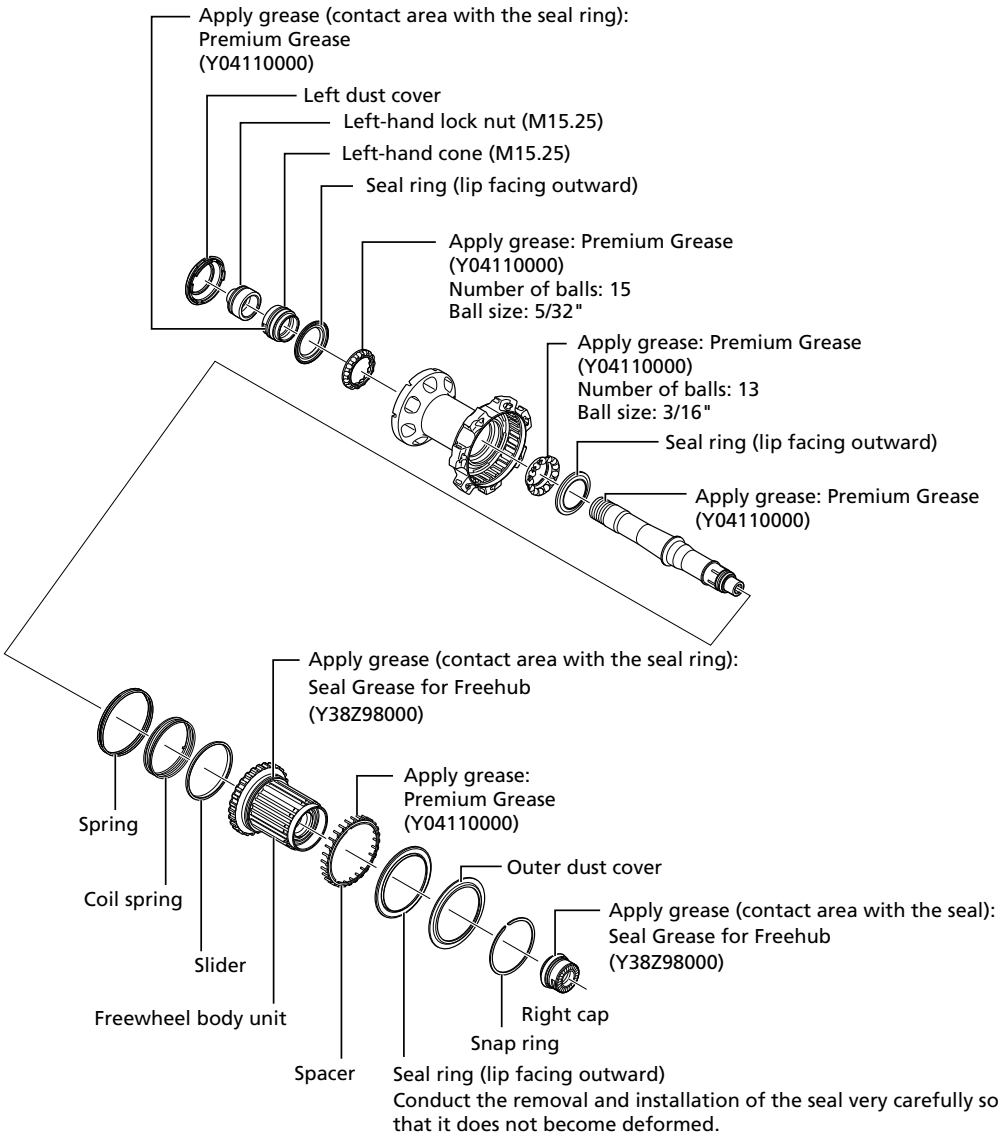

5. **Loosen the lock nut on the double-lock section on the left side of the hub body.**
   Remove the hub axle from the right side of the hub body.




6. **Remove the lock nut and cone, then remove the hub axle from the right side of the hub body.**

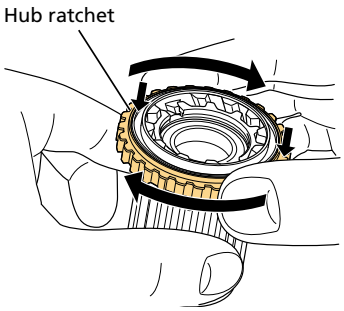


**7. The unit can be disassembled as shown in the figure. Apply grease to the indicated parts at periodic intervals.**

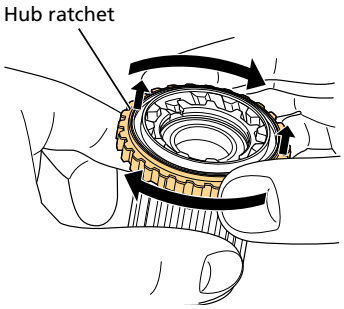


**NOTICE**

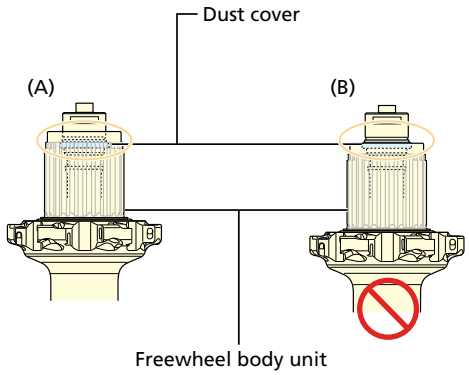
- Do not attempt to disassemble the freehub body. If this is not observed, problems with operation may occur.
- Conduct the removal and installation of the seal very carefully so that it does not become deformed. When reinstalling the seal, check that it is facing the right way and insert it as far as it will go.
- Do not attempt to disassemble the dust cover which is crimped onto the right cap.
- Place the freehub body 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.




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 rings fail to firmly engage after several attempts, it may be indicative of a fault in the freehub body.



- The correct position for the dust cover is where it is hidden in the freewheel body unit, as shown in illustration (A). If the dust cover is in the position shown in illustration (B), repeat the assembly process from the beginning.



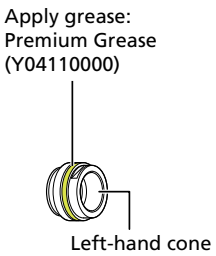

## Assembly

### Installing the hub axle

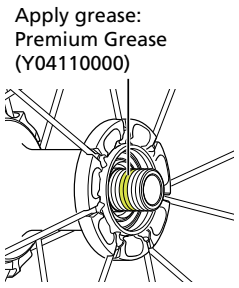
1. **Install the necessary parts such as the hub axle.**
   Install it in the reverse order from the disassembly.

**NOTICE**

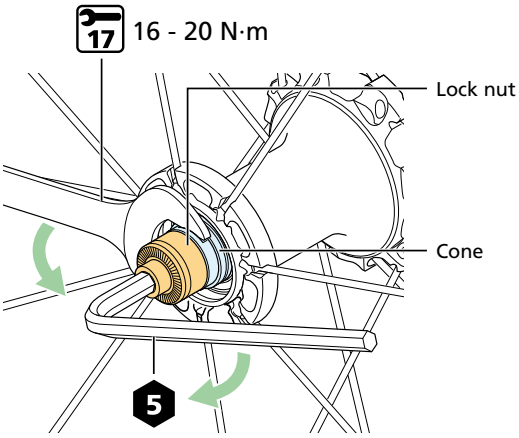
- Apply Premium Grease to the contact area with the seal ring as well as to the ball. Do not mix in any other type of grease. Only apply a thin film of grease by hand to each area.



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

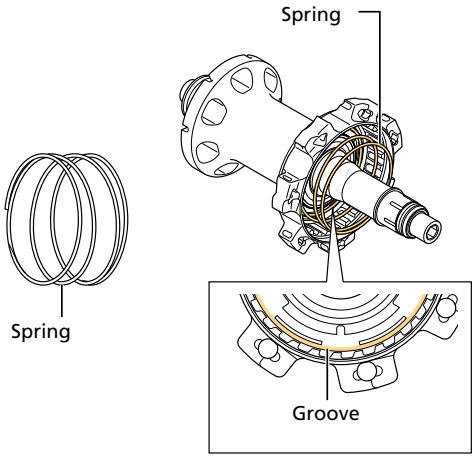


3. **After adjusting the bearing preload, tighten the lock nut on the left side of the hub body and double-lock the assembly.**



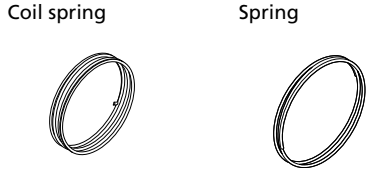

## Installing the spring/coil spring

1. **Fit the spring into the groove in the hub.**
   Insert the spring into the groove specified in the figure.

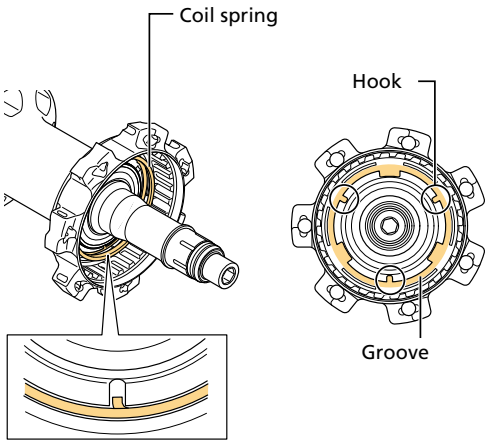



**NOTICE**

- The coil spring and spring have different shapes.

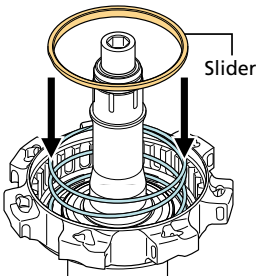


2. **Fit the coil spring into one of the grooves in the hub.**
   Fit the stopper hook into a hook engagement. There are three hook engagements in total, and any of them can be used for the installation.




## Installing the slider

1. **Set the slider on top of the coil spring.**

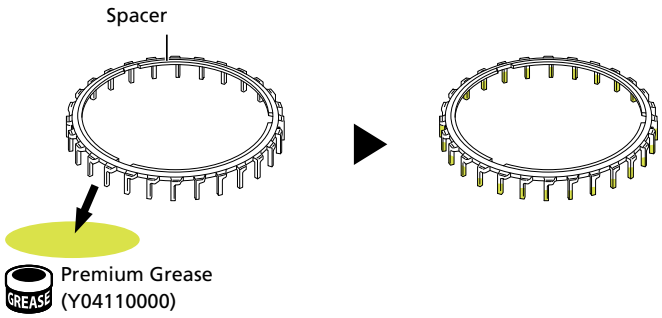



**NOTICE**

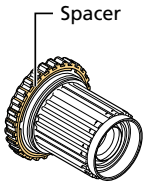
- Note the direction (up and down) of the slider.

## Installing the spacer

1. **Apply grease to all the spacer tips (approximately 2 mm).**

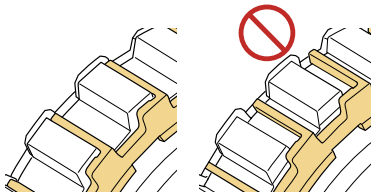



2. **Install the spacer as shown in the figure.**



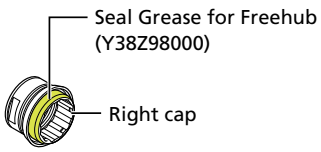

**NOTICE**

- Pay attention to the position of the spacer.



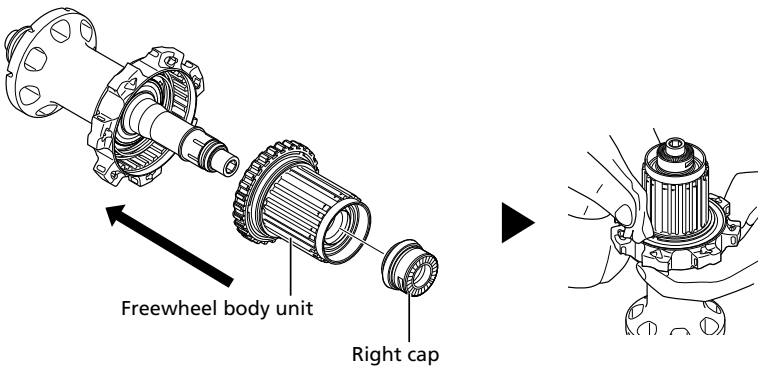
## Installing the snap ring

1. **Apply grease to the seal portion of the right cap.**
   Do not apply grease outside of the indicated areas.



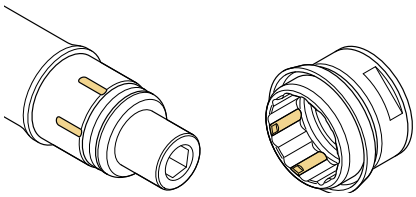
2. **Install the freewheel body unit with spacer and right cap.**

   Use a clean rag to wipe off excess grease applied to the spacer.




**NOTICE**

- When attaching the right cap to the hub axle, align the grooves of the hub axle with the protrusions of the right cap.

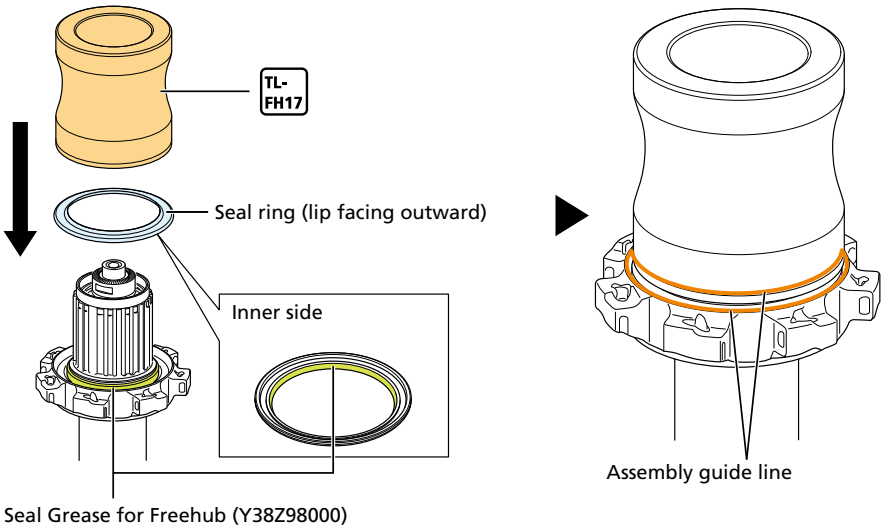


**3. Install the seal ring.**

(1) Apply grease to the seal ring and the seal portion of the freewheel body unit. Do not apply grease outside of the indicated areas.

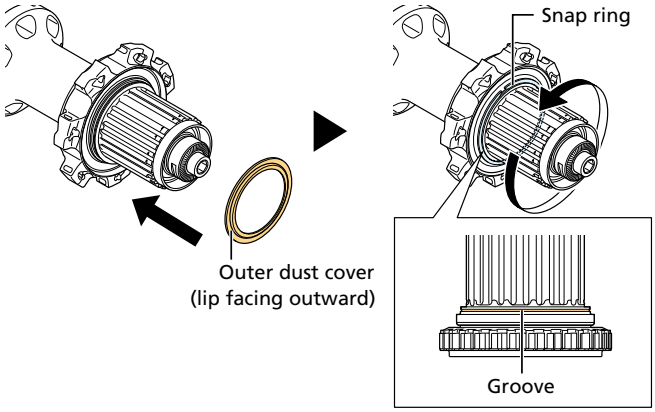
(2) Ensure the lip on the inner diameter of the seal ring is facing outwards. Be careful not to damage the seal ring during installation.

(3) Use TL-FH17 to install the seal ring.



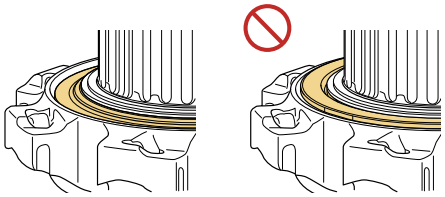
4. **Install the outer dust cover and snap ring.**

   Seat one end of the snap ring into the groove, then work it in around the circumference of the freewheel body until it is fully seated.



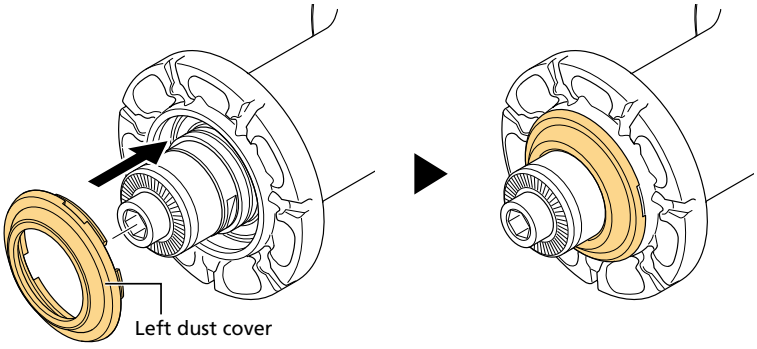

**NOTICE**

- Note the direction of the outer dust cover.



5. **Double check that the snap ring is fully secured along the entire circumference of the groove.**

6. **Install the left dust cover.**




# Replacing the freewheel body unit

Refer to " Disassembly " and " Assembly " when replacing the freewheel body unit.

The procedure from step 5 in “Disassembly” is unnecessary, since the hub axle does not need to be removed.

# Cautions regarding the use of tubular tires and rims

## Important safety information

Compared to clincher tires, tubular tires require greater expertise when handling and mounting them. Additionally, greater care is required in their maintenance. Always inspect the wheels prior to use.
These precautions must be observed in order for the optimum performance features of this product to be obtained. If they are not observed, the tires may come off the rims or damage to the tires may occur resulting in severe injury to the rider.
Make sure that you read and fully understand the following points on using tubular tires. Furthermore, if you are not confident that you have enough knowledge and experience in installing and removing the tires or carrying out maintenance, ask an authorized bicycle dealer or a professional bicycle technician for assistance.

**⚠ WARNING**

Do not use these tubular tires if you are not confident that they have been installed by someone with an adequate level of knowledge and experience.

- When securing the tires to the wheel rims, use a special adhesive designed exclusively for tubular tires. If any other type of adhesive is used, it might not secure the tires in place with sufficient force, and it may also cause deterioration of the rim material.
- When cleaning the rim surfaces, use only a cleaning agent which is exclusively designed for tubular tires. If any other type of cleaning agent is used, it may cause deterioration of the rim material. If using carbon rims, do not rub the surfaces of the rims vigorously with sandpaper or anything similar. Otherwise, the carbon fiber layer of the rims may peel off when replacing the tires.
- Confirm that the tire is secured to the rim surface before using it. If the adhesive is not applied correctly to the rim surfaces, it may not hold the tires securely in place, and the tires may easily come off the rims. Particularly when using the rims for the first time, always be sure to clean the rim surfaces thoroughly with the correct cleaning agent to remove any traces of grease and other foreign materials, then apply a thin layer of adhesive to the rim surface to create a secure bond between the rim and the wheel. When this has been done, apply more adhesive evenly to the rim at a thickness which is just sufficient to cover the roughness of the tire and no more, then install the tire. When using rims that contain carbon fiber material, if the tires are not attached properly, or if the wrong type of adhesive or cleaning agent is used, it may not be possible to obtain the same adhesion force between the rim and the tire as with aluminum rims, and the strength of the carbon fiber rims may also be reduced.
- Understand the properties of the adhesive before using it. Depending on the type of adhesive used, there may be large differences in factors such as adhesion force, the time it takes to dry, durability, and the sensitivity to conditions such as temperature and humidity. Therefore, you should pay particular attention to the adhesion force when using the wheels.
- Always check the tires before use by applying force to the tires to make sure they are properly attached to the rims.
- The adhesion force of the tires may deteriorate after long periods of use, therefore it is best to re-apply the adhesive periodically. If using carbon rims, use a rim cement cleaner or similar when replacing the tires to assist in peeling the tires off gently in order to avoid pulling away the carbon fiber layer.
- Take care of the adhesive force of the tire and rim surface. If you do not apply any adhesive to the adhesion surface of the tire when installing the tire to the rim, the adhesion force between the tire and the rim will be weaker. If you want the tires to adhere to the rims with greater force (such as when riding in criterium competition races and track races where hard turning and acceleration are required) you can use adhesive to adhere them more firmly.

- Take care when continuously using the brake. If the rims become hot as a result of continuous use of the brakes when riding down long descents, sudden loss of tire adhesion force may occur. If you think that this might happen at some stage, pay particular attention to selecting and re-applying the adhesive at some point. Loss of adhesion force can still occur even if measures are taken to prevent it, so if it still occurs, replace the wheels and discontinue using the tubular type of tires.
- Also check the tires before use. If there are large cracks in the tires, they may burst during use, and so they should be replaced beforehand. In addition, the seam covers may come off the tires after long periods of use, and so check the tires before riding the bicycle.
- If you feel a problem or abnormality, stop using the bicycle and consult a place of purchase or a distributor.
- For any questions regarding methods of installation and maintenance, please contact your place of purchase or a distributor.

***NOTICE***

- If any adhesive gets on the painting surface of the rim, use a cloth to wipe it off before it dries. Do not use detergent or other chemicals, such as rim cement cleaners, as they may remove the paint.

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