

Dealer's Manual

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

Cross Bike Wheel Set

- WH-RX830
- WH-RX31
- WH-RX05
- WH-RX010
- SM-RIMTAPE

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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 local bicycle dealer for their assistance.

- Make sure to read all instruction manuals included with the 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.

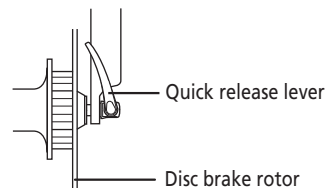
## TO ENSURE SAFETY

### 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.**
- Do not use this wheel set for rigorous activities such as competitions. This wheel set is designed for recreational use. The wheel may break, and you may fall.
- Inspect the wheels before riding the bicycle to check for broken or loose spokes and dents, damage, or cracks in the rim surface. Do not use the bicycle if any of these symptoms are found. Doing so may cause damage to the wheels and result in a fall. Also check for symptoms such as carbon peeling and cracking.
- 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 use the wheels with a rim brake. These wheels are designed exclusively for use with disc brakes. They do not support rim brakes.
- Make sure that even if the axle release lever is tightened as much as possible by hand, the axle release lever does not interfere with the disc brake rotor. If the axle release lever is on the same side as the disc brake rotor, there is a possibility they may interfere. If the lever interferes with the disc brake rotor, stop using the wheel and consult a dealer or an agency.



### CAUTION

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

- Use rim tape which can withstand high pressure, otherwise the tires may suddenly puncture and come off, which may result in severe injury. Furthermore, do not reuse rim tape after it has been removed from the wheel. If you use rim tape without fully understanding the characteristics of rim tape, the tires may suddenly puncture and come off, and severe injury may result.
- When you replace the rim tape, use the one that matches the rim size. If you use a rim tape that does not match the rim size, a sudden puncture may occur, and you may fall off the bicycle.
- The tires should be inflated to the appropriate pressure indicated on the tires before use.
- If you will be using tire sealant, consult the place of purchase or a distributor. Tire sealant may damage the tire and rim.

#### ■ Burn-in period

- Disc brakes have a bed-in period, and the braking force will gradually increase as the bed-in period progresses. You may lose control of the bicycle, which can result in serious injury due to a fall or collision.  
The same thing will happen when the brake pads or disc brake rotor are replaced.

**NOTICE****Be sure to also inform users of the following:**

- Use only the lubricants specified by SHIMANO in this dealer's manual.
- It is recommended that you ask a bicycle dealer to adjust the spoke tensions if there is any deviation in the spokes and after the first 1,000 km of riding.
- Do not use detergent or other chemicals when wiping the wheel, otherwise the sticker on the rim or the paint may come off.
- 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 only genuine SHIMANO spokes and nipples. Otherwise, the area where the spokes fit into the hub body may become damaged.
- If the wheel becomes stiff and difficult to turn, perform an inspection.
- For compatible reflectors and spoke protectors, check the specifications table (<https://si.shimano.com>).

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**

## LIST OF TOOLS TO BE USED

The following tools are required to assemble the product.

Tool		Tool		Tool	
	5 mm hexagon wrench		13 mm hub spanner		TL-LR15
	10 mm hexagon wrench		15 mm hub spanner		TL-SR21
	14 mm hexagon wrench		17 mm hub spanner		
	Spoke plug wrench		Adjustable wrench		

# INSTALLATION



# INSTALLATION

## Tire size

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

Model No.	Tire size
WH-RX830 WH-RX31 WH-RX05 WH-RX010	(622) 25C-38C

## Installation of cassette sprocket

For each sprocket, the surface with the group mark should face outward and each should be positioned so that the wide section of the sprocket is aligned with the (x) part (where the groove width is wide) on the freewheel body.

- For installation of the HG sprockets, use the SHIMANO original tool TL-LR15 to tighten the lock ring.
- To replace the HG sprockets, use the SHIMANO original tool TL-LR15 and TL-SR21 to remove the lock ring.

**(x)** The groove has only one wide section.

**(y)** Wide part

**(z)** Disassembly

**(A)** Lock ring spacer

**(B)** Lock ring

**(C)** TL-LR15

**(D)** TL-SR21

**Tightening torque**

**30 - 50 N·m**

\* The illustration of the cassette sprocket is an example. For details, refer to the dealer's manual or user's manual of the cassette sprocket to be used.

### < WH-RX830 / WH-RX31 / WH-RX010 >

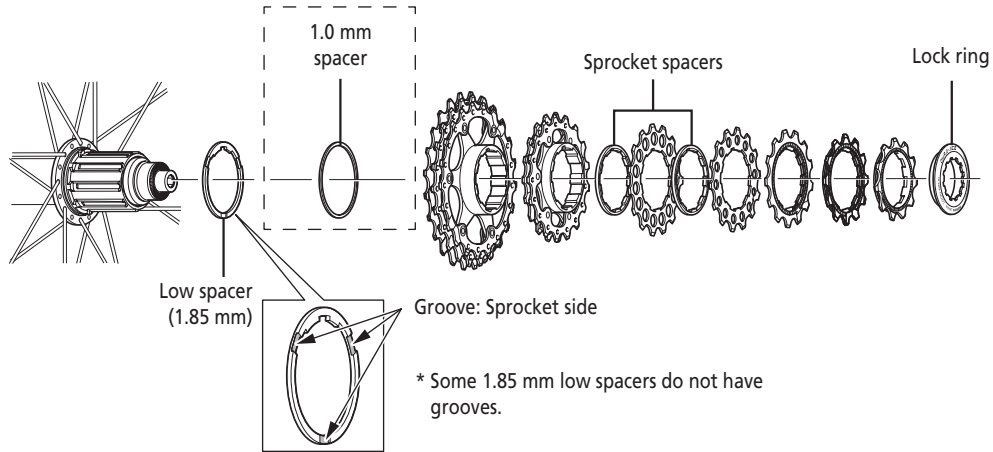
#### NOTICE

When installing a 10-speed cassette:

Install the included 1.85 mm low spacer at the position indicated in the figure.

**CS-7900 / CS-7800 / CS-6700 / CS-6600 / CS-5700 / CS-5600:**

A 1.0 mm spacer is included with the cassette. Install it.



\* Refer to the Disc Brake section of General Operations for installation of the disc brake rotor.

# MAINTENANCE

MAINTENANCE

■ Spoke lacing

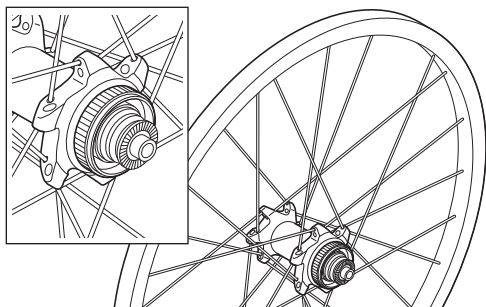
Lace the spokes as shown in the illustration.

WH-RX830

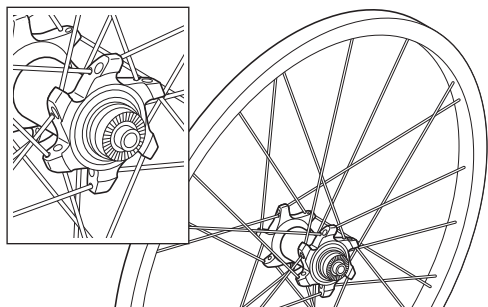
Number of spokes: 24

For front

Left side

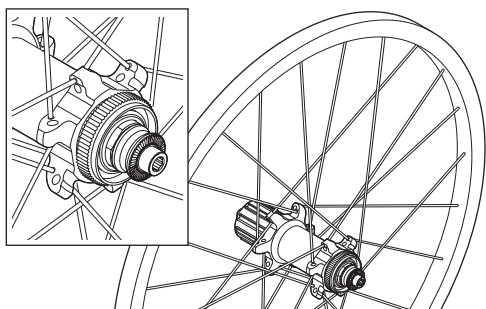


Right side

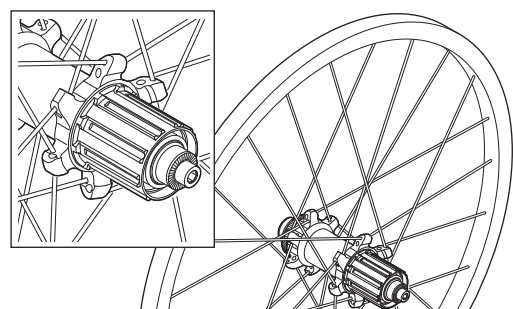


For rear

Left side



Right side



Spoke tension value			
For front		For rear	
Right side	Left (disc brake rotor) side	Right (sprocket) side	Left (disc brake rotor) side
600 - 1,000 N	800 - 1,350 N	900 - 1,350 N	600 - 900 N

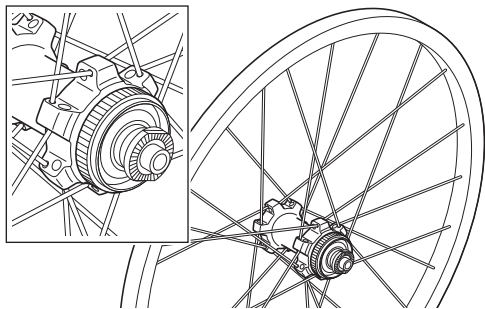
\* These values should be used as a guide only.

WH-RX31

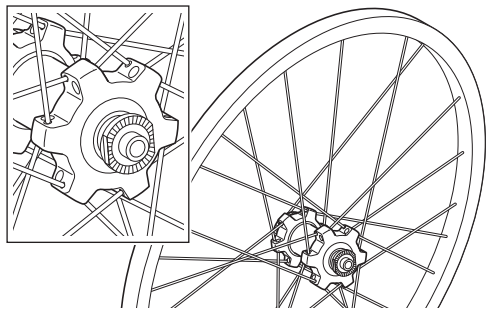
Number of spokes: 24

For front

Left side

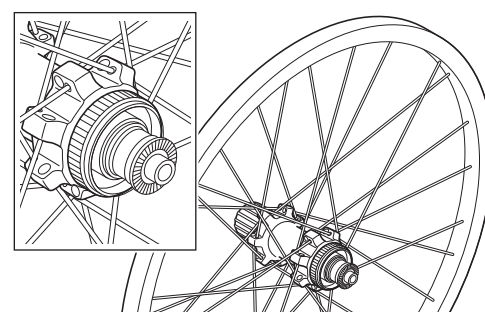


Right side

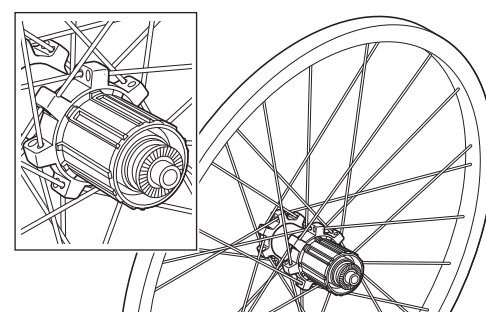


For rear

Left side



Right side



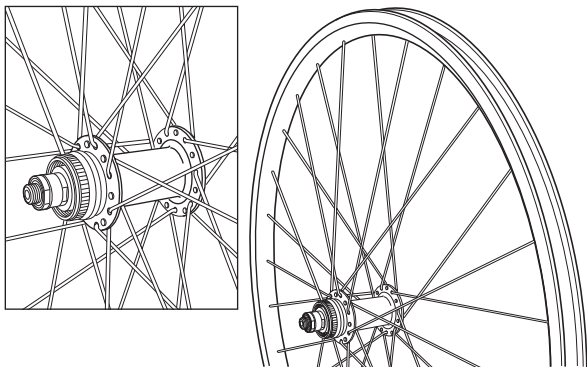
Spoke tension value			
For front		For rear	
Right side	Left (disc brake rotor) side	Right (sprocket) side	Left (disc brake rotor) side
600 - 900 N	900 - 1,300 N	1,000 - 1,400 N	600 - 900 N

\* These values should be used as a guide only.

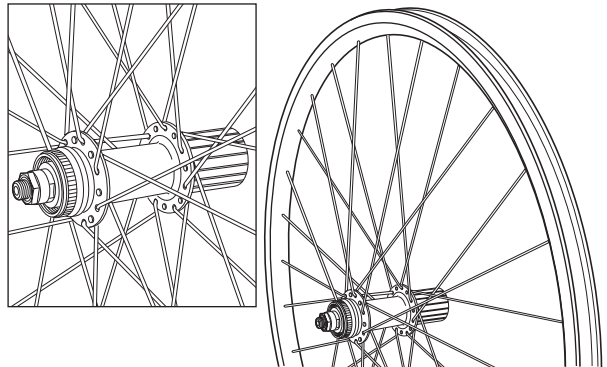
## WH-RX05 / WH-RX010

Number of spokes: 28

## For front



## For rear



Spoke tension value			
For front		For rear	
Right side	Left (disc brake rotor) side	Right (sprocket) side	Left (disc brake rotor) side
<WH-RX05> 450 - 800 N	$< 1400 \text{ N}$ $(\text{MAX-MIN} \leq 400 \text{ N})$	$< 1400 \text{ N}$ $(\text{MAX-MIN} \leq 400 \text{ N})$	<WH-RX05> 450 - 800 N
<WH-RX010> 500 - 850 N			<WH-RX010> 500 - 836 N

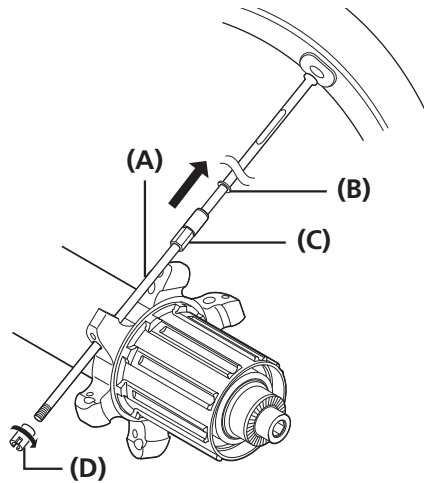
\* These values should be used as a guide only.

## ■ Replacing the spoke

Install the spokes by inserting them through the hub as shown in the illustration.

WH-RX830

1



Pass the washer and spoke plug over the spoke.

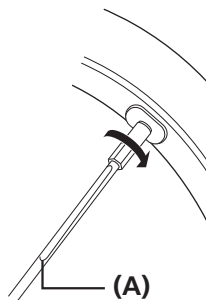
After inserting the spoke into the hole in the hub flange, tighten the hub nut. When installing, use the spoke stopper to secure the spoke so that it does not turn, and then insert a slotted screwdriver or similar tool into the groove in the hub nut to screw in the hub nut.

- (A) Spoke
- (B) Washer
- (C) Spoke plug
- (D) Hub nut

### NOTICE

- If the washer is not installed, it will not be possible to adjust the spoke tension, so be sure to include the washer.
- Tighten the hub nut as far as the edges of the thread.

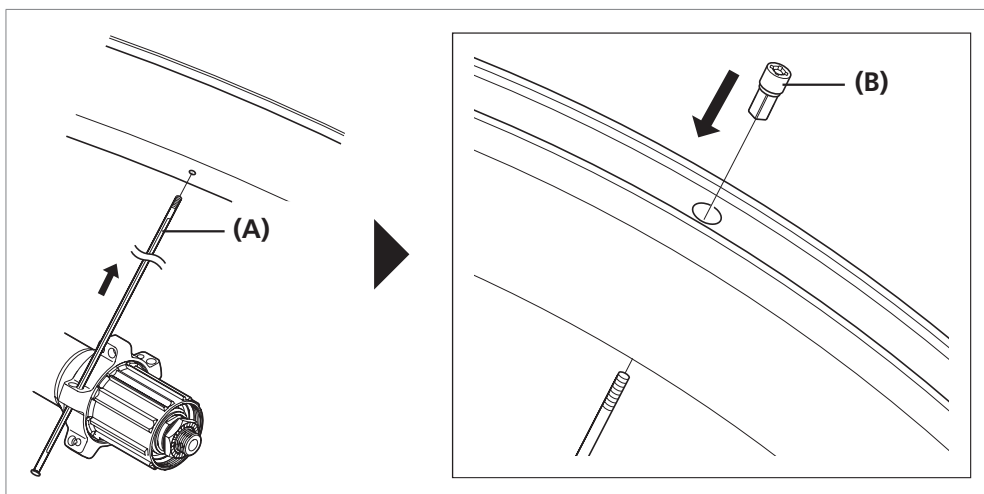
2



Turn the spoke plug clockwise to screw it into the screw hole in the rim. At this time, use the spoke stopper to stop the spoke from turning.

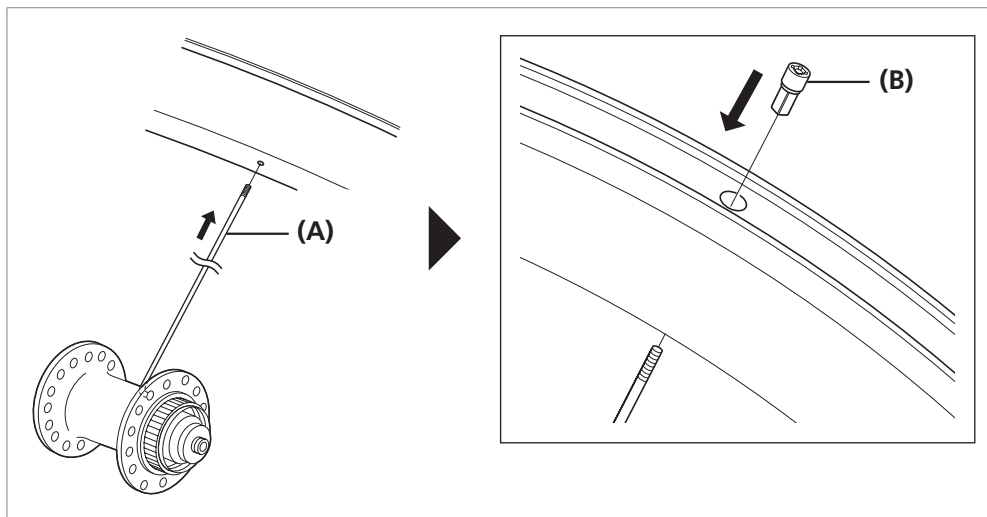
- (A) Spoke stopper

WH-RX31

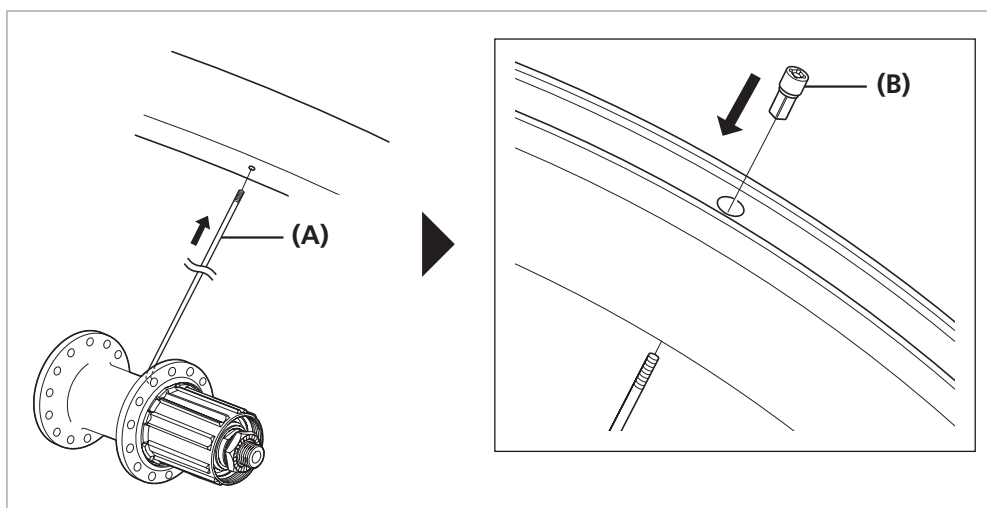


- (A) Spoke
- (B) Nipple

WH-RX05 / WH-RX010



**(A)** Spoke  
**(B)** Nipple



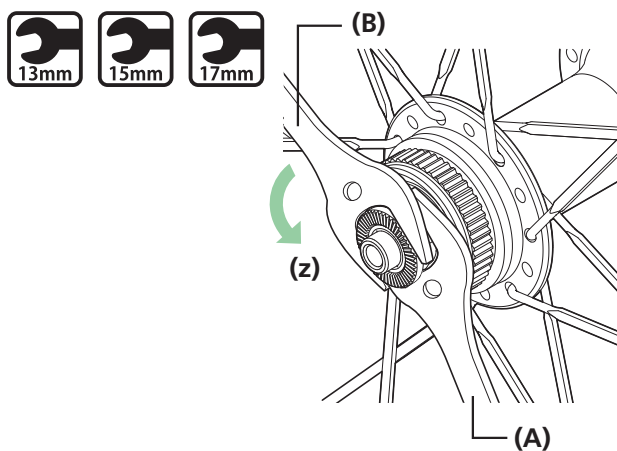
**(A)** Spoke  
**(B)** Nipple



## ■ Pulling out the hub axle

WH-RX31 / WH-RX05 / WH-RX010

1



(z) Disassembly

(A) 13 mm hub spanner (Front)  
15 mm hub spanner (Rear)

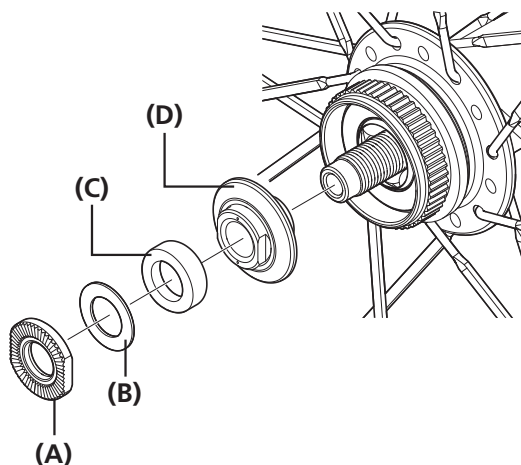
(B) 17 mm hub spanner

### Tightening torque



15 - 17 N·m

2



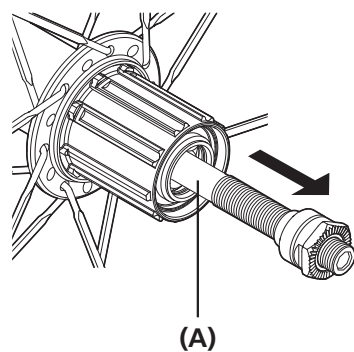
(A) Lock nut

(B) Washer

(C) Axle spacer

(D) Cone

3



(A) Hub axle

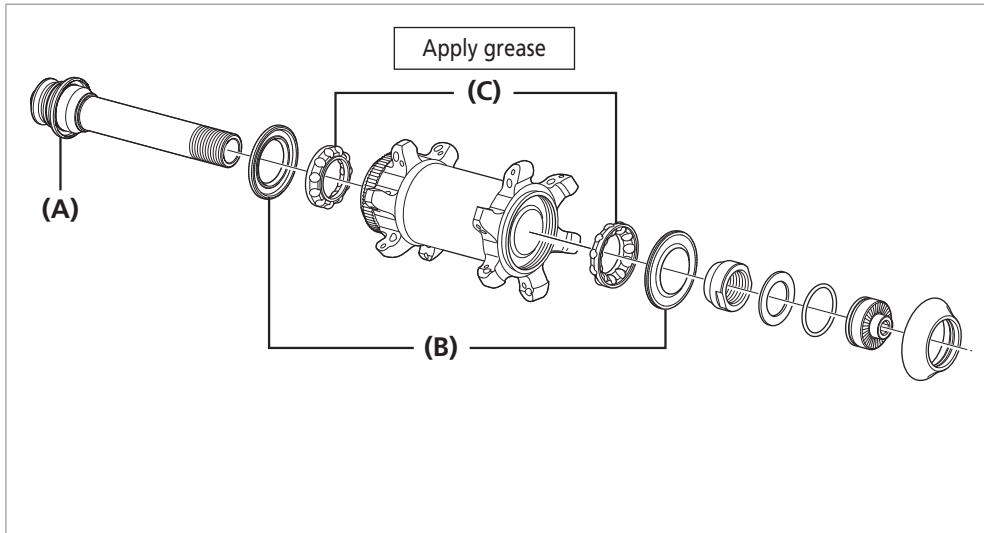
\* The illustration shows the rear side.

## Disassembly and assembly

WH-RX830-TL-F

### < Disassembly >

These units can be disassembled as shown in the illustration. Grease should be reapplied to each part at periodic intervals.



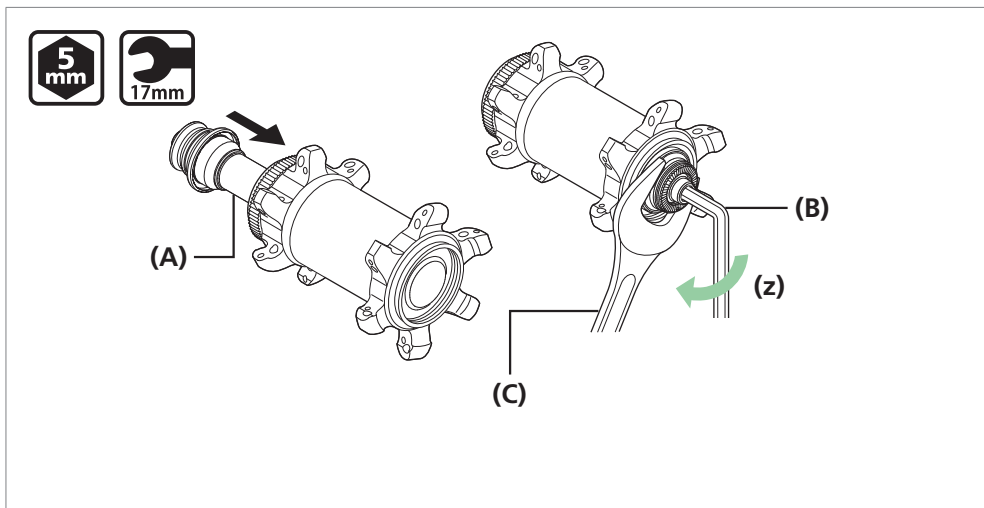
- (A) Dust cover
- (B) Seal
- (C) Premium Grease (Y-04110000)

### NOTICE

- The front hub cannot be disassembled from the left side of the hub unit (the disc brake rotor fixing spline side).
- When removing and installing the seal, do it very carefully so that the seal does not become bent. When reinstalling the seal, make sure that it is facing the right way, and insert it as far as it will go.
- Do not disassemble the dust cover which is crimped onto the hub axle.

### < Assembly >

Use the 17 mm hub spanner for installing the hub axle and a 5 mm hexagon wrench to tighten the lock nut so as to double-lock the mechanism as shown in the illustration.



(z) Tighten

- (A) Hub axle
- (B) 5 mm hexagon wrench
- (C) 17 mm hub spanner

### Tightening torque

5 mm

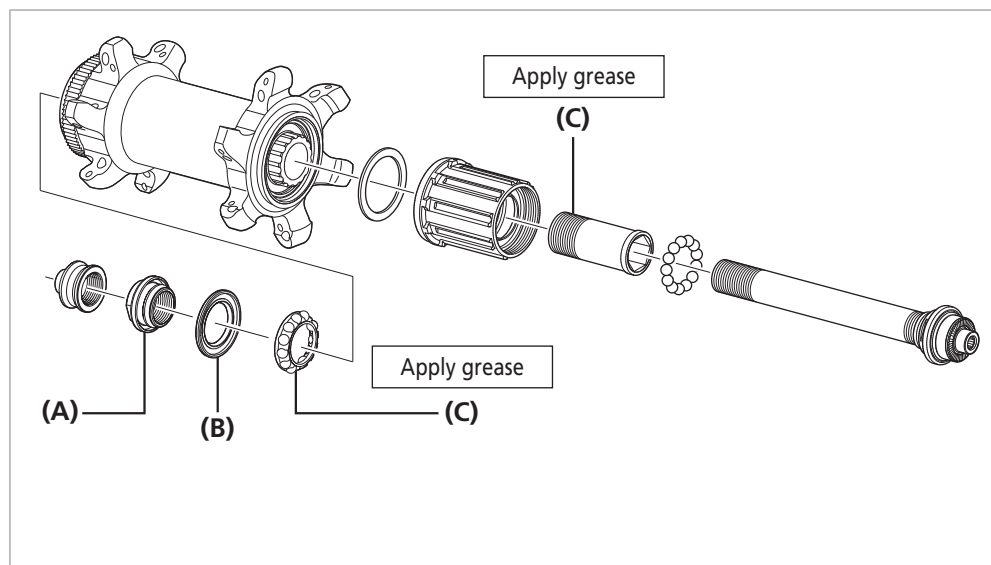
17 mm

15 - 17 N·m

## WH-RX830-TL-R

### < Disassembly >

These units can be disassembled as shown in the illustration. Grease should be reapplied to each part at periodic intervals.



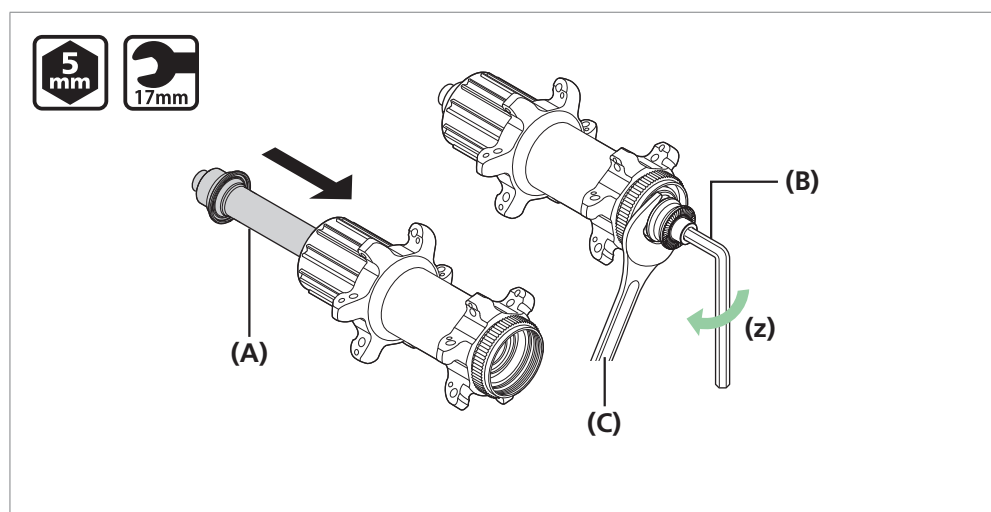
- (A) Cone with dust cover  
(Cannot be disassembled)
- (B) Seal (Lip is on the outside)
- (C) Premium Grease (Y-04110000)

### NOTICE

- When removing and installing the seal, do it very carefully so that the seal does not become bent. When reinstalling the seal, make sure that it is facing the right way, and insert it as far as it will go.
- Do not disassemble the dust cover which is crimped onto the cone.
- Do not attempt to disassemble the freewheel body, because it may result in a malfunction.

### < Assembly >

Use the 17 mm hub spanner for installing the hub axle and a 5 mm hexagon wrench to tighten the lock nut so as to double-lock the mechanism as shown in the illustration.



### (z) Tighten

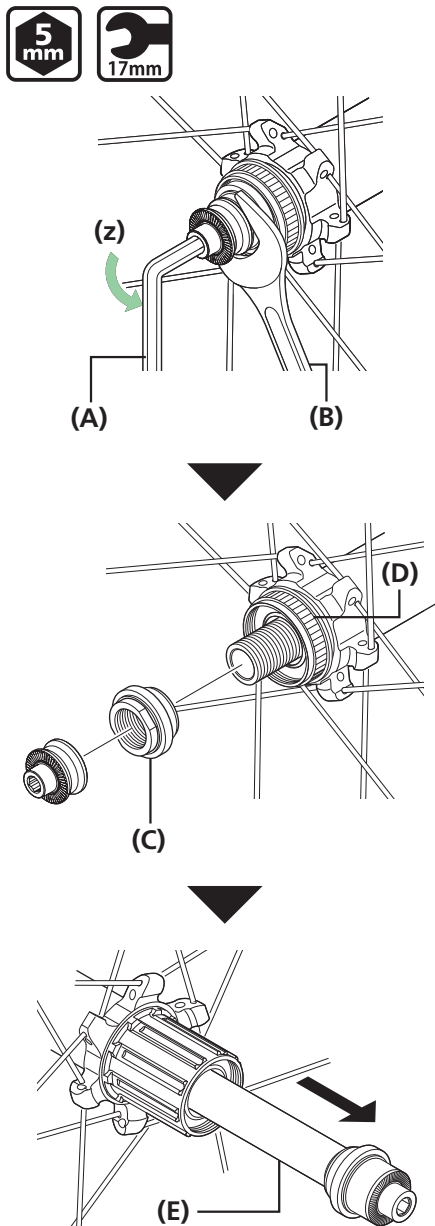
- (A) Hub axle
- (B) 5 mm hexagon wrench
- (C) 17 mm hub spanner

### Tightening torque

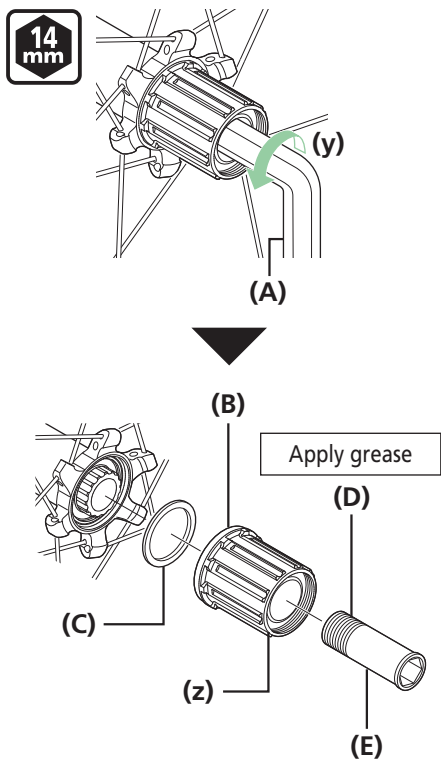


15 - 20 N·m

**WH-RX830-TL**



2



After removing the hub axle, remove the freewheel body fixing screw (inside the freewheel body), and then replace the freewheel body.

(y) Disassembly

(z) Do not disassemble the seal.

(A) 14 mm hexagon wrench

(B) Freewheel body

(C) Freewheel body washer

(D) Premium Grease (Y-04110000)

(E) Freewheel body fixing bolt

Tightening torque < Assembly >



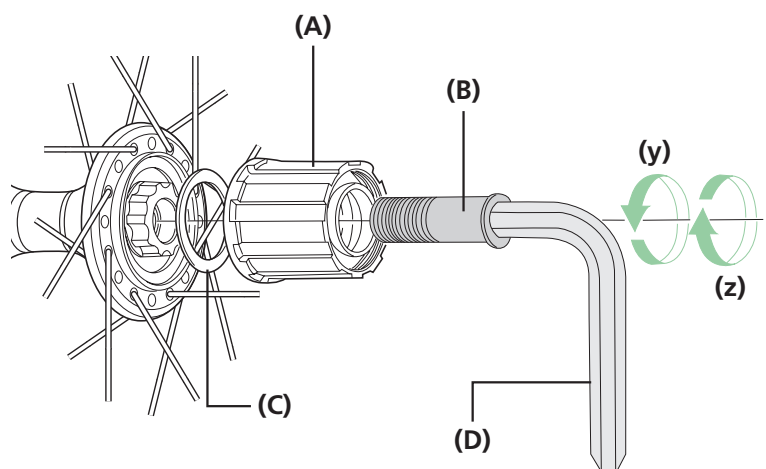
45 - 50 N·m

### NOTICE

- Be sure to apply grease to the thread of the freewheel body fixing screw, otherwise looseness or sticking may occur.
- Do not attempt to disassemble the freewheel body, because it may result in a malfunction.

## WH-RX31 / WH-RX05 / WH-RX010

After removing the hub, remove the freewheel body fixing screw (inside the freewheel body), and then replace the freewheel body.



**(y)** Disassembly

**(z)** Assembly

**(A)** Freewheel body

**(B)** Freewheel body fixing bolt

**(C)** Freewheel body washer

**(D)** 10 mm hexagon wrench

## Tightening torque



35 - 50 N·m

**NOTICE**

Do not attempt to disassemble the freewheel body, because it may result in a malfunction.

## ■ Installing and removing tubeless tires

### TO ENSURE SAFETY

#### ⚠ WARNING

- After reading the user's manual carefully, keep it in a safe place for later reference.

#### ⚠ CAUTION

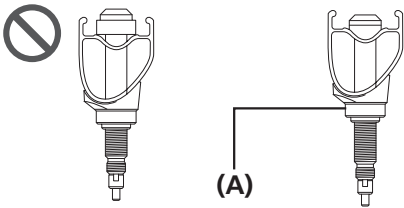
- When using an inner tube, do not add additional rim tape on top of the tubeless tape. Doing so may make it difficult to install or remove the tire, and it may cause damage to the inner tube resulting in a sudden puncture, which can cause the bicycle to fall over.

#### NOTICE

- The tires should always be installed and removed by hand. Never use tools such as tire levers. They can damage the seal between the tires and the rims and cause air to leak out.
- If you tighten the valve lock ring too much, the valve seal may become deformed, and air leaks may occur.
- If the tires are difficult to fit, use plain water or soapy water to help them slide more easily.
- Products are not guaranteed against natural wear and deterioration from normal use and aging.

### HOW TO USE

1

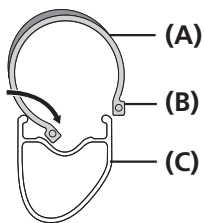


Installing tubeless tire valves

Install the valve so that it faces as shown in the illustration. When tightening the valve lock ring, check that the valve does not turn together with the valve lock ring.

(A) Valve lock ring

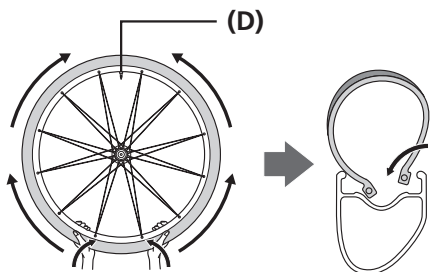
2



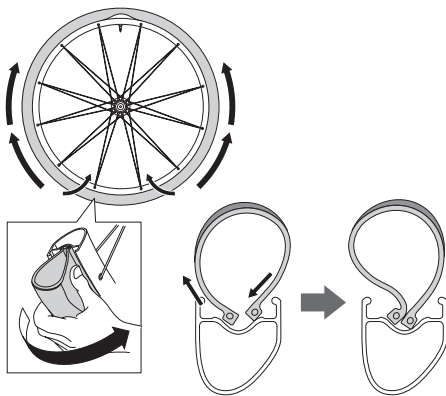
#### Installing the tires

Insert the bead on one side of the tire as shown in the illustration. Check that there are no foreign particles in the tire bead, rim and valve at this time.

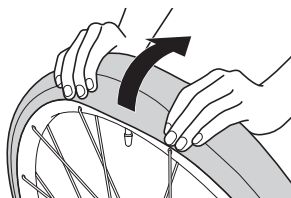
- (A) Tire
- (B) Bead
- (C) Rim
- (D) Air valve



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

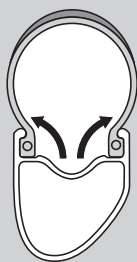


It will become more difficult to insert the bead at the side of the air valve. In such cases, lift up the bead by hand starting from the opposite side of the tire, and work your way around to the location of the air valve.

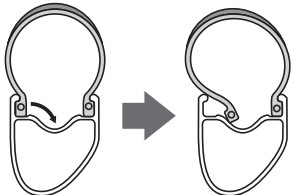
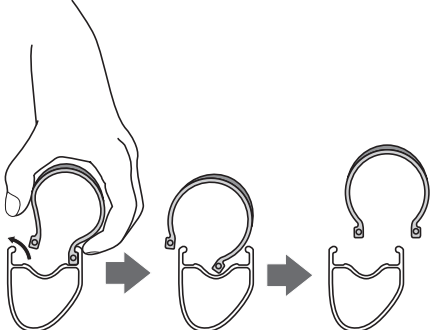


Lastly, grip the tire with both hands as shown in the illustration and insert the tire into the rim.

Inflate with air to lock the beads of the tires into the rim as shown in the illustration. After this, deflate the tire and check that the bead is locked into the rim. Then re-inflate the tire to the standard air pressure for use. If the bead is not locked into the rim, the bead is separating from the rim when the tire is deflated. (Max : Tire pressure 800 kPa / 116 psi)






		<p>Removing the tires</p> <p>To remove the tire, deflate it and push one side of the bead into the center groove of the rim.</p>
3		<p>Remove the bead on one side of the tire starting from the point closest to the air valve, and then remove the bead on the other side of the tire.</p>

### NOTICE

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 push in the beads on both sides, inflate the tire once more to lock the beads, and then remove the tire by starting the procedure from the beginning again.

4	<p>Notes when using inner tubes</p> <p>Loosen the locking ring of the air valve and remove the air valve.</p>	
		<p>Insert the bead on one side of the tire as shown in the illustration.</p>
	<ul style="list-style-type: none"> <li>• Liberally moisten the outer edges of the rim and the tire beads, and place the slightly-inflated inner tube inside the tire so that it can slide smoothly.</li> <li>• Check that the air valve of the inner tube is appropriate for use with the rim.</li> <li>• Insert the bead on one side of the tire starting from the side of the rim opposite the air valve. Be careful not to pinch the tube at this time. If necessary, use soapy water.</li> <li>• Inflate the inner tube until the tire locks into place.</li> </ul>	



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Please note: specifications are subject to change for improvement without notice. (English)

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