

# Dealer's Manual

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



Inter-11

Inter-8

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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

- **When installing components, be sure to follow the instructions that are given in the instruction manuals.**

It is recommended that you use only genuine Shimano parts. If parts such as bolts and nuts become loose or damaged, the bicycle may suddenly fall over, which may cause serious injury.

In addition, if adjustments are not carried out correctly, problems may occur, and the bicycle may suddenly fall over, which may cause serious injury.

-  Be sure to wear safety glasses or goggles to protect your eyes while performing maintenance tasks such as replacing parts.

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

- Check that the wheels are fastened securely before riding the bicycle. If the wheels are loose in any way, they may come off the bicycle and serious injury may result.

#### ■ Brake

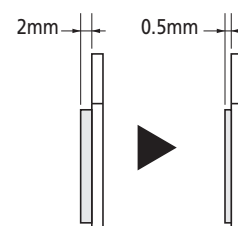
- Each bicycle may handle slightly differently depending on the model. Therefore, be sure to learn the proper braking technique (including brake lever pressure and bicycle control characteristics) and operation of your bicycle. Improper use of your bicycle's brake system may result in a loss of control or a fall, which could lead to severe injury. For proper operation, consult a professional bicycle dealer or the bicycle's owner's manual. It is also important to practice riding and braking, etc.
- If the front brake is applied too strongly, the wheel may lock and the bicycle may fall forward, and serious injury may result.
- Always make sure that the front and rear brakes are working correctly before riding the bicycle.
- The required braking distance will be longer during wet weather. Reduce your speed and apply the brakes early and gently.
- If the road surface is wet, the tires will skid more easily. If the tires skid, you may fall off the bicycle; therefore, to avoid this, reduce your speed and apply the brakes early and gently.

#### ■ Disc brake

- Please make sure to keep your fingers away from the rotating disc brake rotor. The disc brake rotor is sharp enough to inflict severe injury to your fingers if caught in the openings of the disc brake rotor while it is moving.



- The calipers and disc brake rotor will become hot when the brakes are operated; do not touch them while riding or immediately after dismounting from the bicycle. Otherwise you may get burned.
- Be careful not to allow any oil or grease to get onto the disc brake rotor and brake pads. Otherwise the brakes may not work correctly.
- If any oil or grease gets on the brake pads, consult a dealer or an agency. Otherwise the brakes may not work correctly.
- If noise occurs during brake operation, the brake pads may have been worn down to the usable limit. After checking that the temperature of the brake system has cooled down sufficiently, check that the thickness of each pad is 0.5mm or more. Or, consult a dealer or an agency.



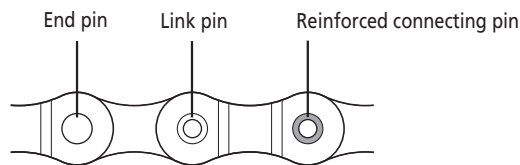
- If the disc brake rotor is cracked or deformed, immediately stop using the brakes and consult a dealer or an agency.
- If the disc brake rotor becomes worn down to a thickness of 1.5mm or less, or if the aluminum surface appears, immediately stop using the brakes and consult a dealer or an agency. The disc brake rotor may break, and you may fall off the bicycle.

**For Installation to the Bicycle, and Maintenance:**

- When installing the hub to the frame, be sure to install the correct non-turn washers to the left and right sides, and securely tighten the hub nuts to the specified torques. If the non-turn washers are installed to one side only, or if the hub nuts are not tightened sufficiently, the non-turn washer may fall out, which could cause the hub axle to rotate and the cassette joint to turn. This may then cause the handlebars to be accidentally pulled by the shifting cable, and an extremely serious accident could result.
- Assemble the wheel with 3x or 4x spoke lacing. Do not spoke the wheel radially. Otherwise, the spokes or the wheel may get damaged, or noise may occur when braking.

**< CT-S500 / CT-S510 >**

- Use neutral detergent to clean the chain. Do not use alkali-based or acidbased detergents such as rust cleaners, as they may result in damage and/or failure of the chain.
- Use the reinforced connecting pin only for connecting the narrow type of chain.
- If connecting pins other than reinforced connecting pins are used, or if a reinforced connecting pin or tool which is not suitable for that type of chain is used, sufficient connection force may not be obtained, which could cause the chain to break or fall off.
- If it is necessary to adjust the length of the chain due to a change in the number of sprocket teeth, make the cut at some other place than the place where the chain has been joined using a reinforced connecting pin or an end pin. The chain will be damaged if it is cut at a place where it has been joined with a reinforced connecting pin or an end pin.



- Check that the tension of the chain is correct and that the chain is not damaged. If the tension is too weak or the chain is damaged, the chain should be replaced. If this is not done, the chain may break and cause serious injury.

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

- Shift the shifting lever one or two gears at a time. During shifting, reduce the force being applied to the pedals. If you try to force operation of the shifting lever or shift three or more gears while the pedals are being turned strongly, your feet may come off the pedals and the bicycle may fall over, which could result in serious injury.  
Operating the shifting lever to multi-shift to a light gear may also cause the outer casing to spring out of the shifting lever. This does not affect the capabilities of the shifting lever because the outer casing returns to the original position after shifting.

**■ Disc brake**

- Disc brakes have a burn-in period, and braking force will gradually increase as the burn-in period progresses; therefore, make sure that you are aware of any such increases in braking force when using the brakes during this period. The same thing will happen when the brake pads or disc brake rotor are replaced.

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

- You can shift gears while lightly pedaling, but on rare occasions the pawls and ratchet inside the hub may produce some noise afterwards as part of normal gear shifting operation.
- The internal hub is not completely waterproof. Avoid using the hub in places where water might get inside it and do not use high-pressure water to clean the hub, otherwise the internal mechanism may rust.
- Do not disassemble the hub. If you need to disassemble it, consult the dealer where you made a purchase.
- The internal geared hub has a built-in mechanism to support shifting, and when this support mechanism operates during shifting, noise or vibration may occur. Depending on gear position, gear-shifting may feel different.  
Noise may also occur if the gear is positioned at 5 to 8 (internal 8-speed hub) or 7 to 11 (internal 11-speed hub), when the crank is turned backward or when the bicycle is pushed backward.  
All of these phenomena occur due to the built-in gear-shifting structure and are not the failure of the internal components.
- 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:**

- The cassette joint should only be used with sprockets from 16T to 23T.
- It is recommended that the chain ring of the front be set to the following gear ratio.

	Sprocket ratio	Front		Rear												
		Model No.	Gear	SM-GEAR										CS-S500		
				14	15	16	17	18	19	20	21	22	23	18	20	
11-speed	1.8 - 2.0	FC-S501	38T	-	-	-	-	-	-	X	X	X	-	-	-	-
			39T	-	-	-	-	-	-	-	X	X	-	-	-	-
			42T	-	-	-	-	-	-	-	-	X	X	X	-	-
			45T	-	-	-	-	-	-	-	-	-	-	X	-	-
8-speed	2.0 - 2.25	FC-S501	45T	-	-	-	-	-	-	X	X	X	-	-	X	
			42T	-	-	-	-	-	X	X	X	-	-	-	X	
			39T	-	-	-	-	X	X	-	-	-	-	X	-	

- To maintain the product in good working order, it is recommended to have the place of purchase or a distributor carry out maintenance such as internal oil replacement or lubrication after riding 1,000 km from the start of use and then after about once every year (or once about every 2,000 km if the bicycle is used very frequently). If the bicycle is used under harsh conditions, more frequent maintenance is required. Also, for carrying out maintenance, the use of SHIMANO internal geared hub grease or a lubrication kit is recommended. If SHIMANO grease or a SHIMANO lubrication kit is not used, problems such as a malfunction in gear shifting may occur.
- If the wheel becomes stiff and difficult to turn, you should lubricate it with grease.
- You should periodically wash the sprockets in a neutral detergent and then lubricate them again. In addition, cleaning the chain with neutral detergent and lubricating it can be an effective way of extending the useful life of the sprockets and the chain.

- If the chain keeps coming off the sprockets during use, replace the sprockets and the chain.
- If using a chain tensioner, use the special CS-S500 18T or 20T sprocket with chain guard. Do not use any other types of sprockets, otherwise the chain may come off the sprockets.

**< SG-S7001-11 >**

- When you perform oil maintenance, use the SG-S700 OIL or TL-S703 maintenance kit.  
When you replace the oil, follow the manual for TL-S703. When you replace the seal on the right side, use TL-S704.  
If SG-S700 OIL is not used, problems such as an oil leakage and gear shifting malfunction may occur.

**< CT-S500 / CT-S510 >**

- Clean the chain tensioner periodically and lubricate all moving parts and pulleys.
- If there is a large amount of play in the pulleys and an abnormal amount of noise is generated while riding, replace the pulleys.
- Do not disassemble the pulley unit.
- If the tension applied is too strong, noise may be generated while riding.
- If the chain becomes elongated and excessive looseness occurs, readjust the chain tension.

**< CT-S510 >**

Applicable hubs	Applicable sprockets	Applicable fork end width	Applicable fork end shape
Internal 7-speed / 8-speed	16 - 23T	4 - 9 mm	Vertical

- This product is for single front chainwheels only.









The actual product may differ from the illustration because this manual is intended chiefly 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	
	3mm hexagon wrench		15mm spanner		TL-S700-B
	4mm hexagon wrench		Adjustable wrench		TL-LR10
	10mm spanner		Screwdriver		

# INSTALLATION

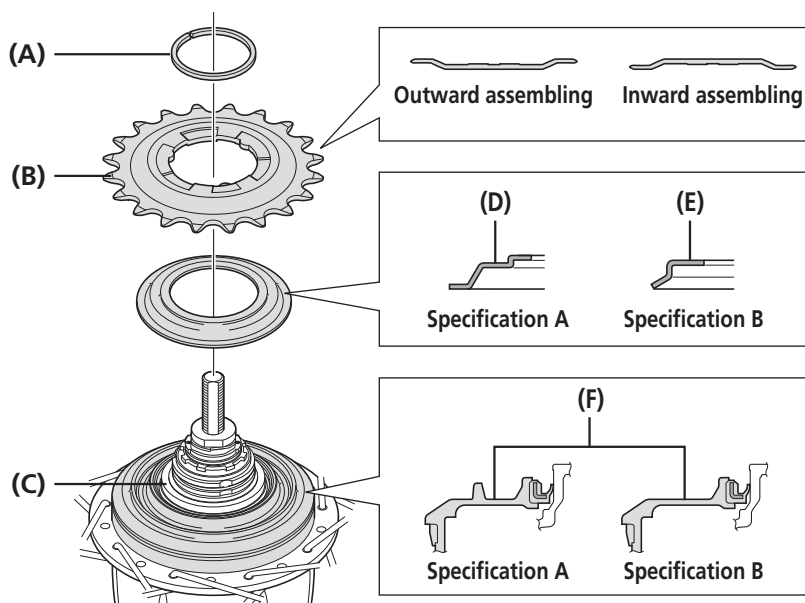
# INSTALLATION

## ■ Installation of the sprocket to the hub

Place the right-hand dust cap B/right-hand dust cap C onto the driver on the right side of the hub body.

Next, install the sprocket and secure it in place with the snap ring.

Specifications	Applicable sprockets	
	Outward assembling	Inward assembling
A	16T-23T	20T-23T
B	16T-23T	



- (A) Snap ring
- (B) Sprocket
- (C) Driver
- (D) Right-hand dust cap C
- (E) Right-hand dust cap B
- (F) Right-hand dust cap A

### NOTE

Note the orientation of the right-hand dust cap.

**Specification A**  
If the sprocket is an inward assembling sprocket with 19T or fewer or for belt drive specifications, right-hand dust cap A will come into contact with the chain or pulley so specification B should be used instead.

**Specification B**  
If the sprocket is an inward assembling sprocket with 16T and 3 mm teeth or for belt drive specifications, remove right-hand dust cap B before use.

**■ Installation of the CS-S500 sprocket with chain guard**

**1**

Install the chain guard to the right hand dust cap of the hub body, and then install right hand dust cap B to the driver.

Install the right-hand dust cap B in the orientation (z).

- 
- (A)** Right hand dust cap B
  - (B)** Chain guard
  - (C)** Right hand dust cap
  - (D)** Driver
- 

**2**

Install the CS-S500 sprocket to the driver on the right side of the hub body with the guard plate facing outward, and secure it in place with the snap ring.

- 
- (A)** Driver
  - (B)** Snap ring
  - (C)** Guard plate
  - (D)** CS-S500 Sprocket
-

## ■ Installation of the cassette joint to the hub

**1**

(A) Driver cap  
(B) Driver  
(z)

Install the driver cap to the driver on the right side of the hub body.  
Install the driver cap in the orientation (z).

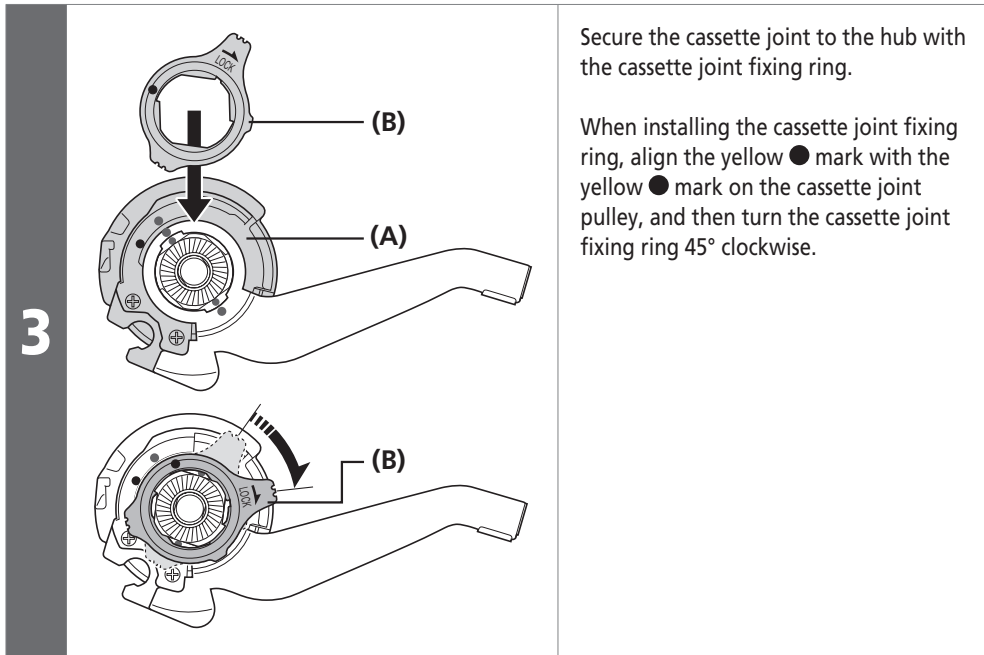
- (A) Driver cap
- (B) Driver

**2**

(A) Pulley  
(B) Bracket  
(C) Cassette joint

Turn the cassette joint pulley in the direction of the arrow in the illustration to align the red ● marks on the pulley and the bracket. With the cassette joint in this condition, install it so that the red ● mark on the cassette joint is aligned with the red ● mark on the right side of the hub body.

- (A) Pulley
- (B) Bracket
- (C) Cassette joint

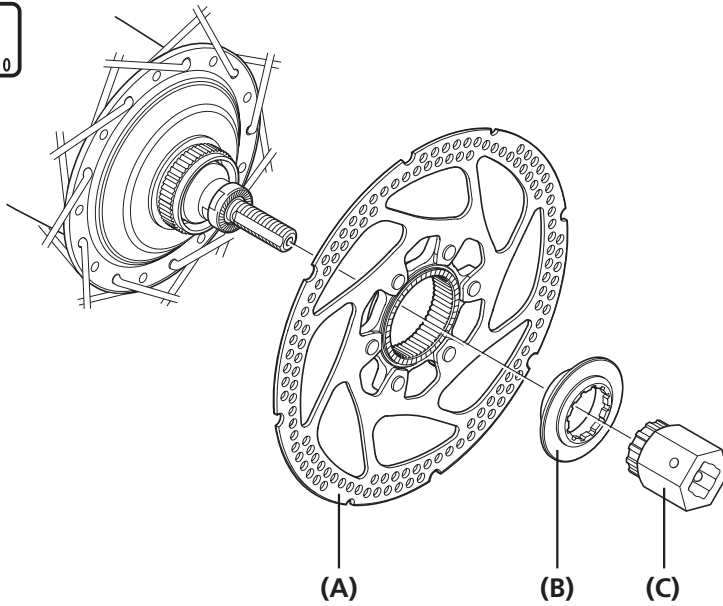
**▶▶ Installation of the cassette joint to the hub**

- 
- (A)** Pulley  
**(B)** Cassette joint fixing ring
-

**■ Installation of the disc brake rotor**

Install the disc brake rotor as shown in the illustration.

SG-S7001-8

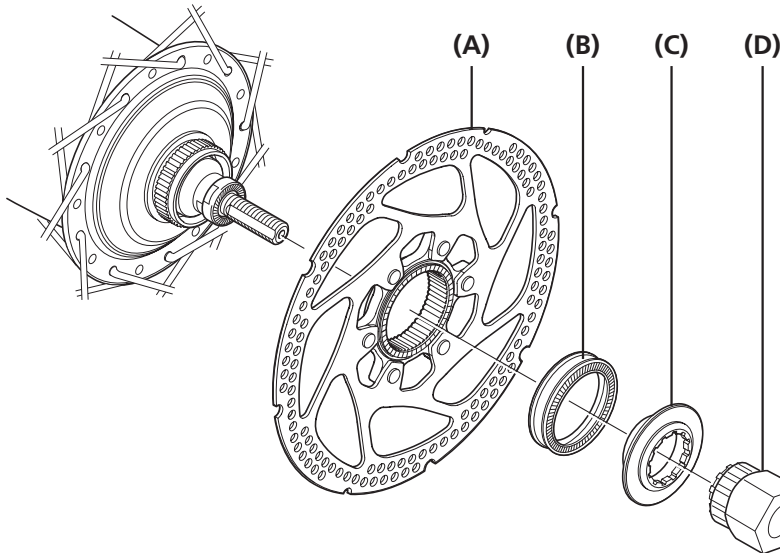


- (A) Disc brake rotor
- (B) Disc brake rotor installation ring
- (C) TL-LR10

**Tightening torque**

 	<p><b>40 N·m</b></p>
------	----------------------

SG-S7001-11



- (A) Disc brake rotor
- (B) Rotor spacer
- (C) Disc brake rotor installation ring
- (D) TL-LR10

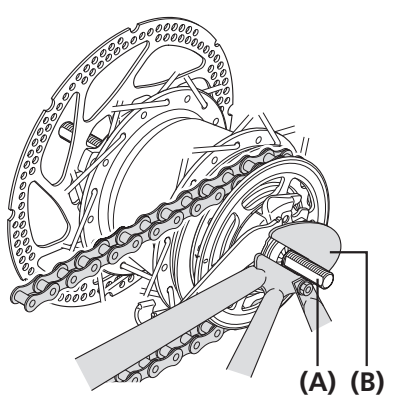
**Tightening torque**

 	<p><b>40 N·m</b></p>
------	----------------------

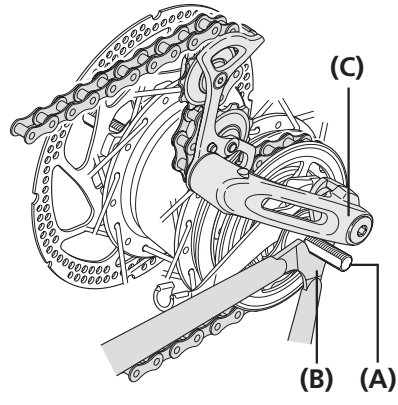


## ■ Installation of the hub to the frame

# 1



**When not using the chain tensioner**  
Mount the chain on the sprocket, and then set the hub axle into the fork ends.



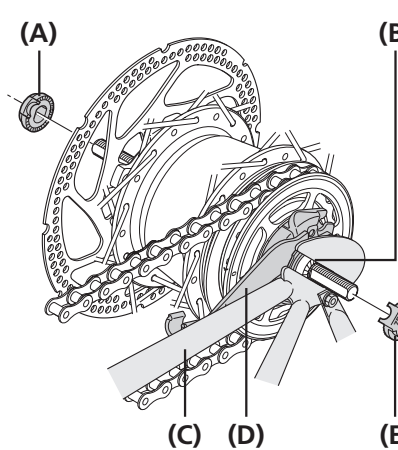
**When using the chain tensioner**  
Mount the chain on the sprocket, and then set the hub axle into the fork ends.

- (A) Hub axle
- (B) Fork ends
- (C) Chain tensioner

### NOTE

When using the chain tensioner, be sure to read these service instructions in conjunction with the service instructions for the CT-S500 chain tensioner.

# 2



Place the non-turn washers onto the right side and left side of the hub axle.

At this time, turn the cassette joint so that the projecting parts of the non-turn washers fit into the grooves of the fork ends. If this is done, the cassette joint can be installed so that it is almost parallel to the chainstay.

- (A) Non-turn washer (for left side)
- (B) Groove of fork end
- (C) Chainstay
- (D) Cassette joint
- (E) Non-turn washer (for right side)

### TECH TIPS

- Use whichever non-turn washers match the shape of the fork ends. Different non-turn washers are used at the left and right sides.
- The projecting parts should be on the fork ends side.
- Install the non-turn washers so that the projecting parts is securely in the fork ends grooves on either side of the hub axle.



Fork ends	Non-turn washer		
	Mark / Color		Size
	Right	Left	
Standard	5R/Yellow	5L/Brown	$\theta \leq 20^\circ$
	7R/Black	7L/Gray	$20^\circ \leq \theta \leq 38^\circ$
Reversed	6R/Silver	6L/White	$\theta = 0^\circ$
Reversed (full chain case)	5R/Yellow	5L/Brown	$\theta = 0^\circ$
Vertical	8R/Blue	8L/Green	$\theta = 60^\circ - 90^\circ$

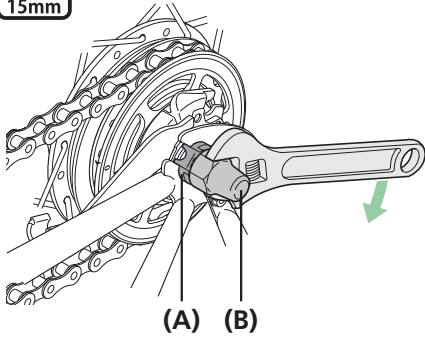
## INSTALLATION

### Installation of the hub to the frame

3



15mm



Take up the slack in the chain and secure the wheel to the frame with the cap nuts.

- (A) Non-turn washer
- (B) Cap nut
- (C) Carrier stay
- (D) Washer
- (E) Mudguard stay

#### Tightening torque



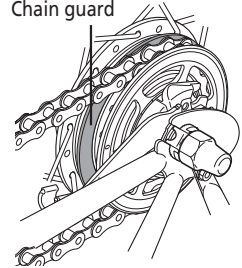
15mm

30 - 45 N·m

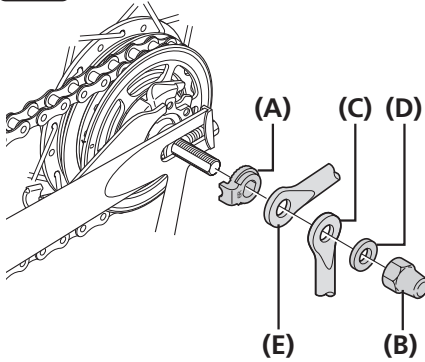
#### NOTE

When installing the hub to the frame, the chain guard may come off, so check that the chain guard is securely installed so that it will not come off. If it is not fully installed, noise may be generated.

Chain guard



15mm

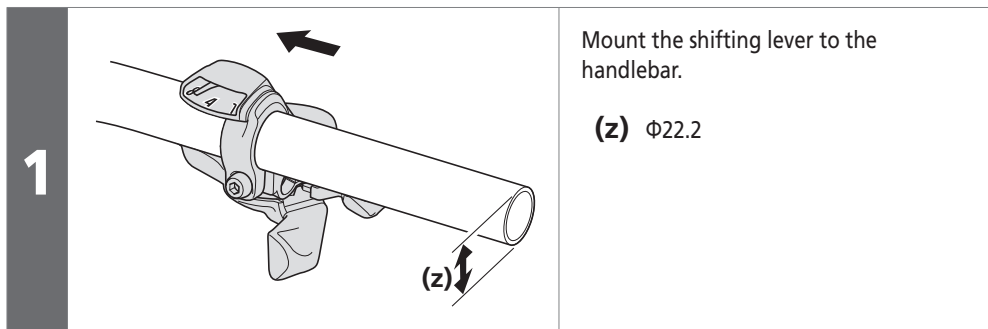


When installing a part such as a mudguard stay to the hub axle, install in the order shown in the illustration.

## INSTALLATION

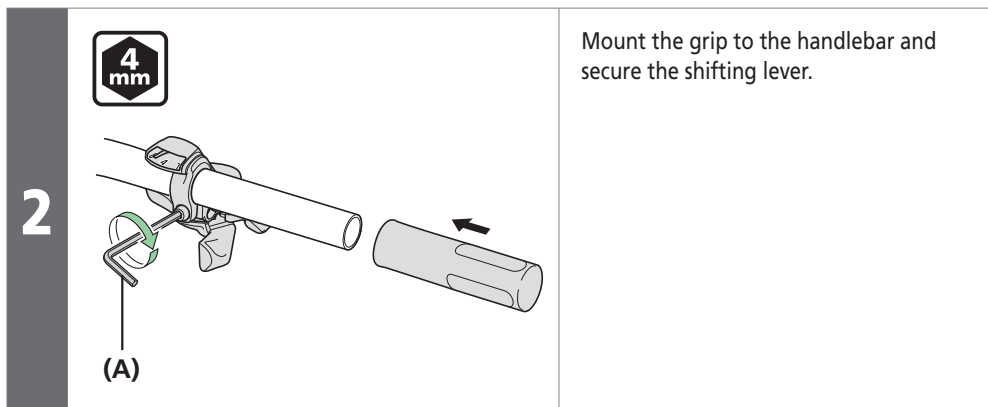
### Installation of the shifting lever

#### Installation of the shifting lever



**NOTE**

Use a handlebar with an outer diameter of  $\Phi 22.2$  mm.



(A) 4mm hexagon wrench

Tightening torque	
	5 - 7 N·m

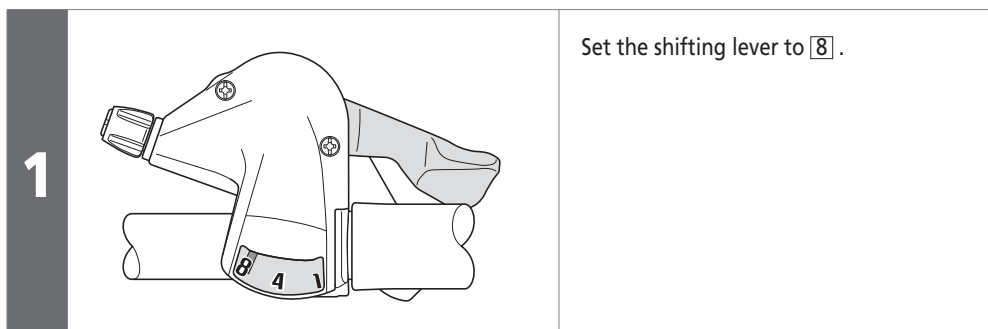
**NOTE**

Use a handlebar grip with a maximum outer diameter of  $\Phi 32$  mm.

#### Installation of the shifting cable

For internal 8-speed


##### Shifting lever side

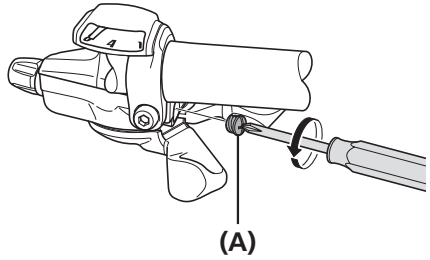


**NOTE**

- Use a shifting cable with one inner cable drum.  
Cable with one inner cable drum: OT-SP41

- Make sure that the shield cap is at the shifting lever end.

**2** 

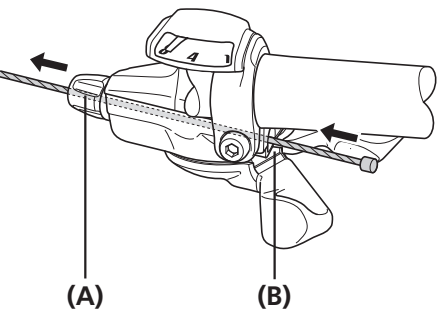


(A)

Loosen and remove the wire end hooking cap.

(A) Wire end hooking cap

**3**

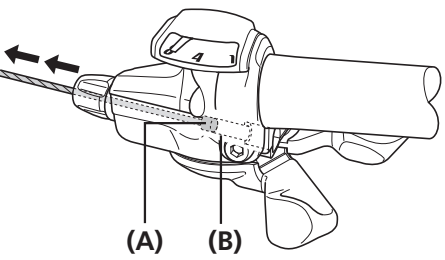


(A) (B)

Insert the inner cable into the groove in the winder unit, and then pass it through the hole in the cable adjustment barrel.

(A) Hole in cable adjustment barrel  
(B) Groove in winder unit


**4**

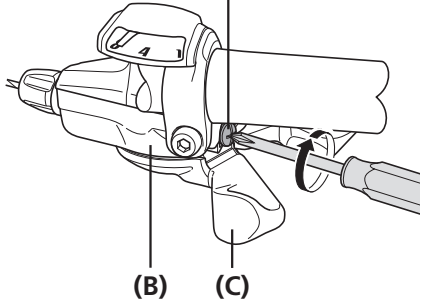


(A) (B)

Pull the inner cable so that the inner cable drum fits into the hole in the winder unit.

(A) Inner cable drum  
(B) Hole in winder unit

**5** 



(A) (B) (C)

Screw in the wire end hooking cap as shown in the illustration until it stops.

If it is turned any further, it will damage the screw thread in the cover.

In addition, the unit cover may become bent, which may cause an obstruction between the unit cover and the main lever, and the main lever may not operate correctly.

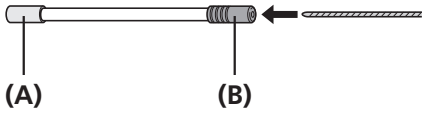
If the main lever does not return properly, loosen the wire end hooking cap slightly to make a gap between the main lever and the unit cover, and check that this improves the returning of the main lever.

(A) Wire end hooking cap  
(B) Unit cover  
(C) Main lever

## INSTALLATION

### Installation of the shifting cable

6



Pass the inner cable through the OT-SP41 outer casing through the end with the plastic cap.

(A) Aluminum cap

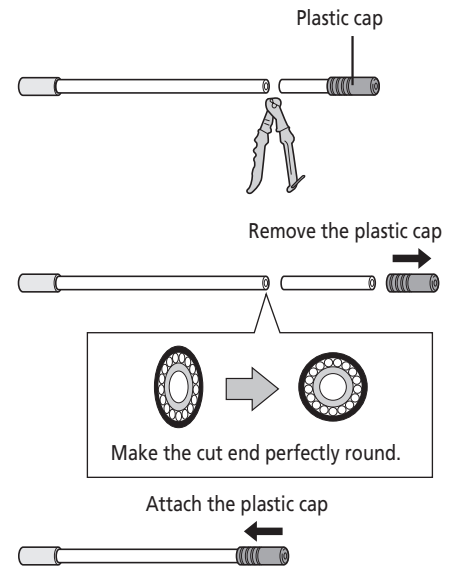
(B) Plastic cap



#### TECH TIPS

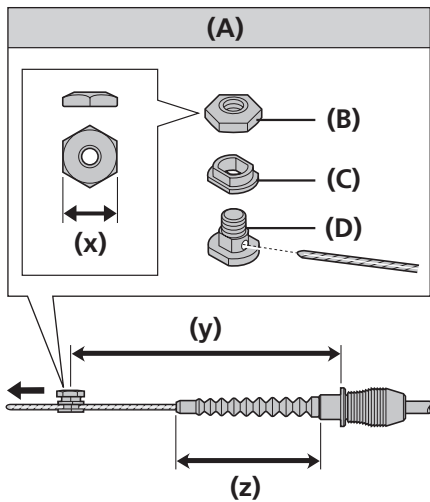
If cutting the outer casing, cut it near the end with the plastic cap while the cap is still attached.

Then make the cut end perfectly round and attach the plastic cap.



Cassette joint end

1



After checking that the end of the outer casing is sitting securely in the cable adjustment barrel of the shifting lever, attach the inner cable fixing bolt unit to the inner cable.

Then, pull the inner cable while attaching the inner cable fixing bolt unit.

- (x) 10 mm
- (y) 145 mm
- (z) 63 mm or less

- (A) Inner cable fixing bolt unit
- (B) Inner cable fixing nut
- (C) Inner cable fixing washer
- (D) Inner cable fixing bolt

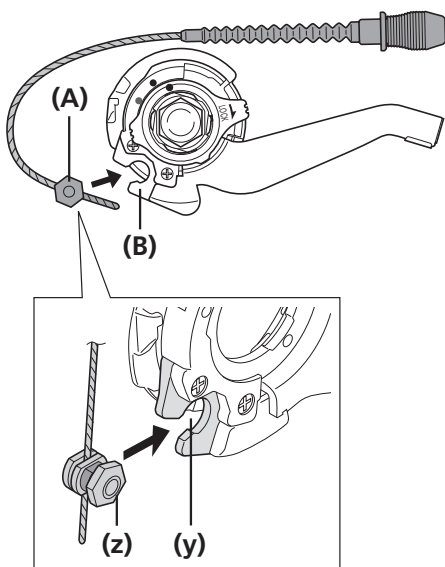
Tightening torque	
	3.5 - 5.5 N·m

**NOTE**  
Do not use this inner cable fixing bolt unit with the CJ-4S30 cassette joint.

**TECH TIPS**

When installing the inner cable fixing bolt unit, use the setting tool TL-S700-B.

2

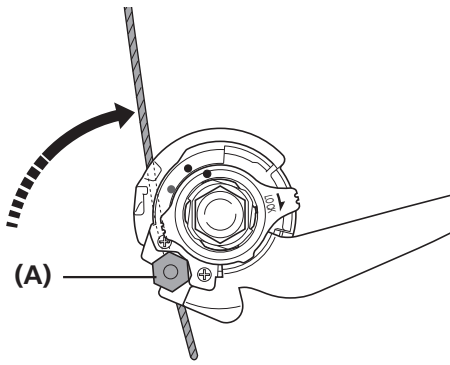


Bring the cable around to the cassette joint pulley, hold it so that the inner cable fixing nut is facing to the outside (toward the fork end), and then slide the flats part (y) of the inner cable fixing washer into the gap (z) in the pulley.

- (A) Inner cable fixing nut
- (B) Pulley

▶ Installation of the shifting cable

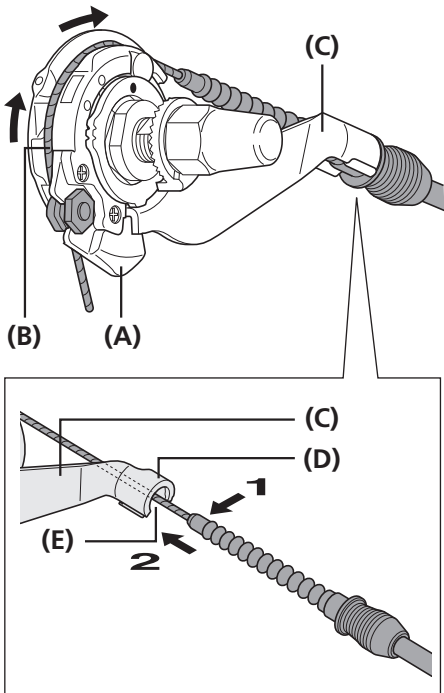
**3**



Turn the cable 60° counterclockwise and attach it to the hook.

**(A)** Hook

**4**

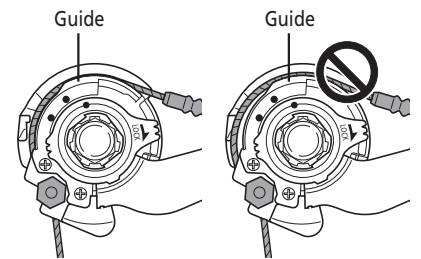


Attach the inner cable to the pulley as shown in the illustration, pass the inner cable through the slit in the cassette joint bracket, and then insert the end of the outer casing securely into the outer casing holder.

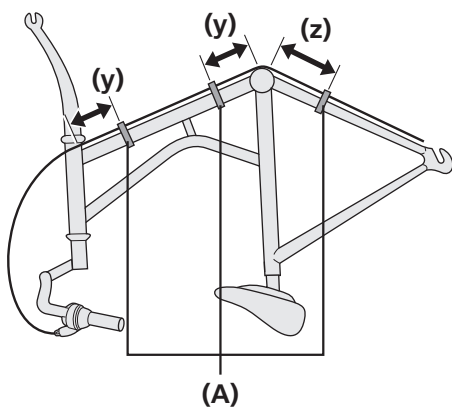
- (A)** Pulley
- (B)** Inner cable
- (C)** Bracket
- (D)** Outer casing holder
- (E)** Slit

**NOTE**

Check that the inner cable is correctly seated inside the pulley guide.



**5**



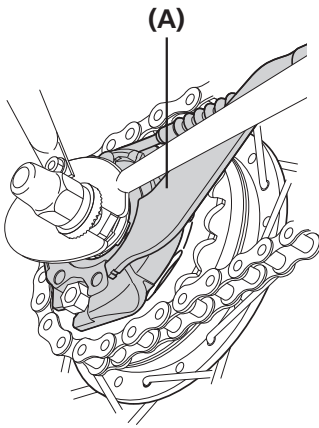
Secure the cable to the frame with the outer casing bands.

- (y)** 10 mm
- (z)** 15 mm

**(A)** Outer casing bands

**Disconnecting the shifting cable when removing the rear wheel from the frame**

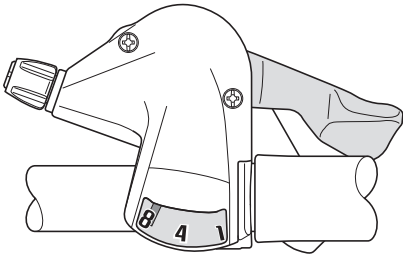
1



Disconnect the cable from the cassette joint when removing the rear wheel from the frame.

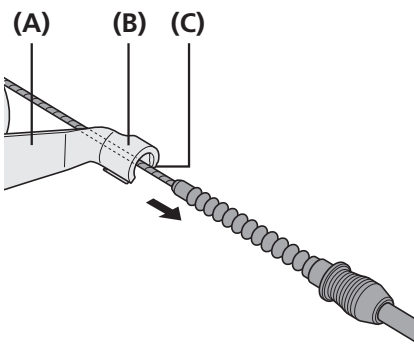
**(A)** Cassette joint

1



Set the shifting lever to **8**.

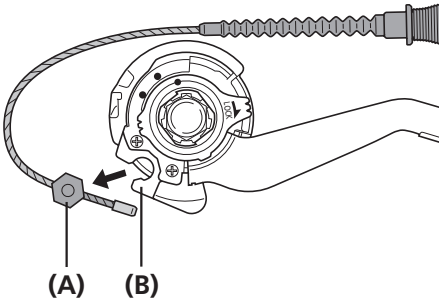
2



Pull the outer casing out from the outer casing holder of the cassette joint, and then remove the inner cable from the slit in the bracket.

**(A)** Bracket  
**(B)** Outer casing holder  
**(C)** Slit

3



Remove the inner cable fixing bolt unit from the cassette joint pulley.

**(A)** Inner cable fixing bolt unit  
**(B)** Cassette joint pulley

NOTE

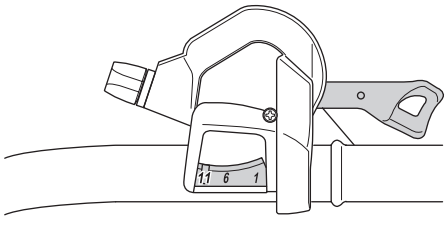
If reinstalling the cable, refer to steps 2 to 4 in "Cassette joint end".



**For internal 11-speed**

**Shifting lever side**

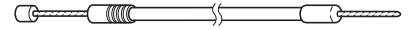
**1**



Set the shifting lever to 11.

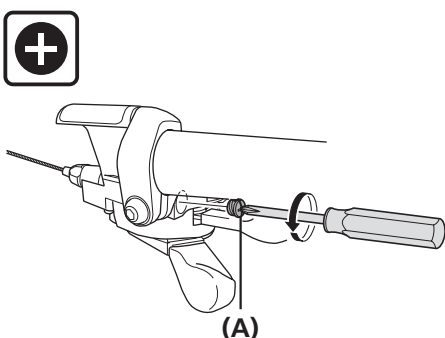
**NOTE**

- Use a shifting cable with one inner cable drum.  
Cable with one inner cable drum: OT-SP41



- Make sure that the shield cap is at the shifting lever end.

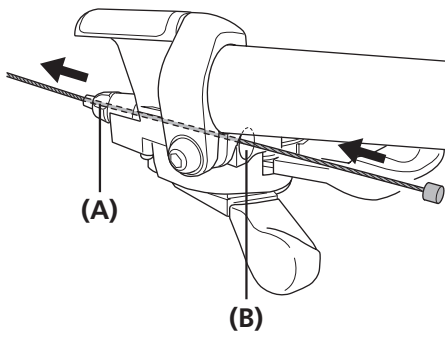
**2**



Loosen and remove the wire end hooking cap.

**(A)** Wire end hooking cap

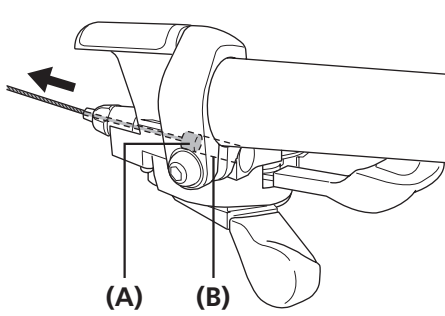
**3**



Insert the inner cable into the hole in the winder unit, and then pass it through the hole in the cable adjustment barrel.

**(A)** Hole in cable adjustment barrel  
**(B)** Hole in winder unit

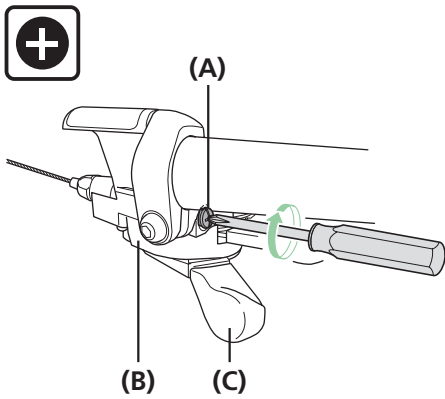
**4**



Pull the inner cable so that the inner cable drum fits into the hole in the winder unit.

**(A)** Inner cable drum  
**(B)** Hole in winder unit

5



Screw in the wire end hooking cap as shown in the illustration until it stops.

If it is turned any further, it will damage the screw thread in the cover.

In addition, the unit cover may become bent, which may cause an obstruction between the unit cover and the main lever, and the main lever may not operate correctly.

If the main lever does not return properly, loosen the wire end hooking cap slightly to make a gap between the main lever and the unit cover, and check that this improves the returning of the main lever.

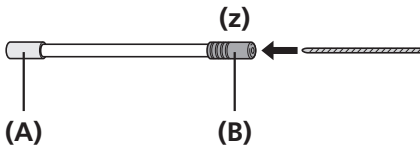
- (A) Wire end hooking cap
- (B) Unit cover
- (C) Main lever

Tightening torque



0.3 - 0.5 N·m

6



Pass the inner cable through the OT-SP41 outer casing through the end with the plastic cap.

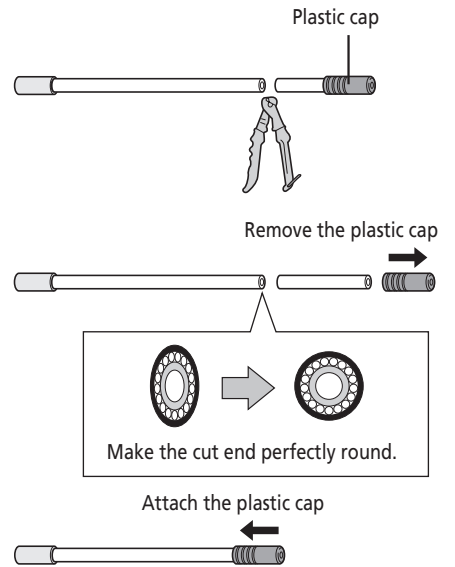
(z) Lever side

- (A) Aluminum cap
- (B) Plastic cap

TECH TIPS

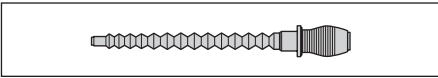
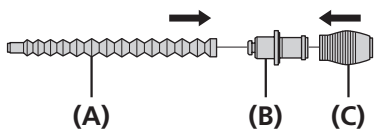
If cutting the outer casing, cut it near the end with the plastic cap while the cap is still attached.

Then make the cut end perfectly round and attach the plastic cap.



**Cassette joint end**

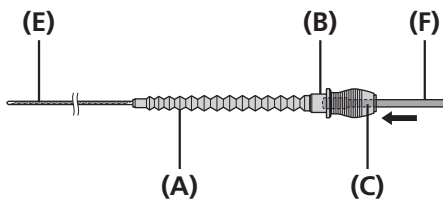
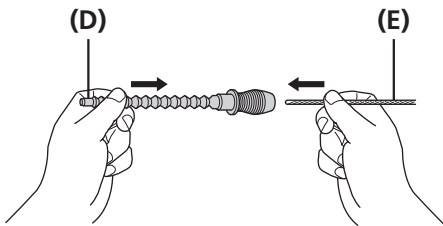
**1**



Install the rubber cover and rubber bellows to the outer casing holder unit.

- (A)** Rubber bellows
- (B)** Outer casing holder unit
- (C)** Rubber cover

**2**



Wipe away any grease which may be on the inner cable and, while holding the end of the rubber bellows, pass the inner cable through. Be careful not to pierce the rubber bellows with the end of the inner cable at this time.

Slide the rubber bellows onto the inner cable.

After this, insert the outer casing into the rubber cover and set it into the outer casing holder unit. Push the outer casing so that it securely touches the holder unit.

- (A)** Rubber bellows
- (B)** Outer casing holder unit
- (C)** Rubber cover
- (D)** End of rubber bellows
- (E)** Inner cable
- (F)** Outer casing

**NOTE**

Use a new inner cable. Do not use a cable which has had the end cut off. Pay attention to the end of the inner cable.



**3**

TL-S700-B  
10mm

(A)

(B)

(C)

(D)

(x)

(y)

(z)

After checking that the end of the outer casing is sitting securely in the cable adjustment barrel of the shifting lever, attach the inner cable fixing bolt unit to the inner cable.

Then, pull the inner cable while attaching the inner cable fixing bolt unit.

- (x) 10 mm
- (y) 184 mm
- (z) 75 mm or less

- (A) Inner cable fixing bolt unit
- (B) Inner cable fixing nut
- (C) Inner cable fixing washer (Black)
- (D) Inner cable fixing bolt (Black)

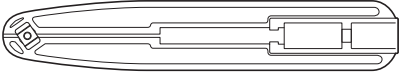
Tightening torque	
	3.5 - 5.5 N·m

**NOTE**

This inner cable fixing bolt unit is designed only for CJ-S700. 7-step and 8-step fixing bolt units cannot be used.

**TECH TIPS**

When installing the inner cable fixing bolt unit, use the setting tool TL-S700-B.



**4**

(A)

Turn the lever of the pulley clockwise. In the following steps 5 and 7, continue to work in this condition.

- (A) Pulley lever

**5**

(A)

(B)

(z)

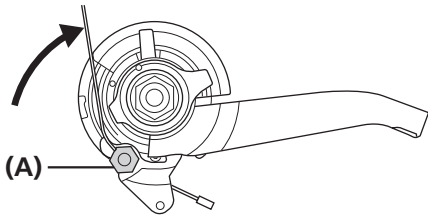
(y)

Bring the cable around to the cassette joint pulley, hold it so that the inner cable fixing nut is facing to the outside (toward the fork end), and then slide the flats part (y) of the inner cable fixing washer into the gap (z) in the pulley.

- (A) Inner cable fixing nut
- (B) Pulley

▶ Installation of the shifting cable

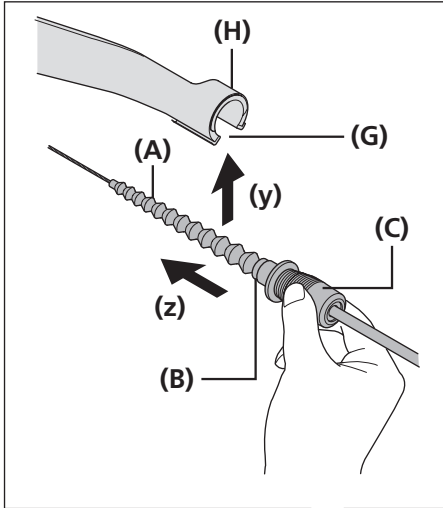
**6**



Turn the cable 60° counterclockwise and attach it to the hook.

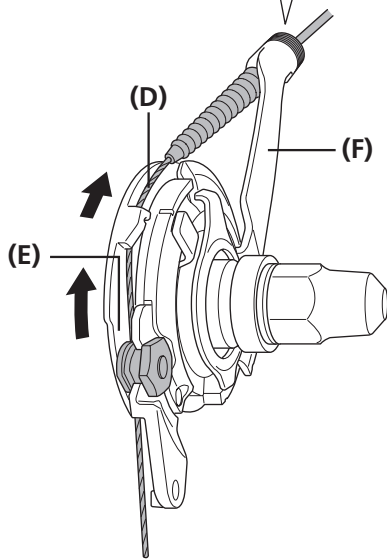
**(A)** Hook

**7**



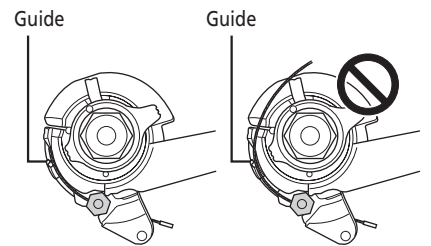
Set the inner cable in the pulley as shown in the illustration and, while holding the rubber cover, insert the rubber bellows of the inner cable into the slit in the cassette joint bracket (y) and securely set the outer casing holder unit into the outer casing holder of the cassette joint (z). Be careful not to damage the rubber bellows at this time.

- (A)** Rubber bellows
- (B)** Outer casing holder unit
- (C)** Rubber cover
- (D)** Inner cable
- (E)** Pulley
- (F)** Bracket
- (G)** Slit
- (H)** Outer casing holder

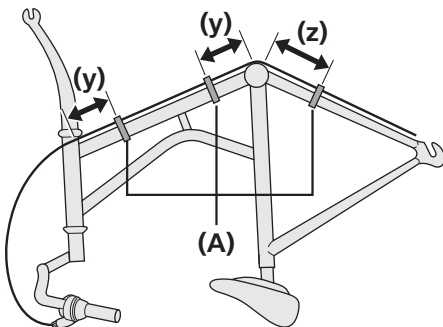


**NOTE**

Check that the inner cable is correctly seated inside the pulley guide.



**8**

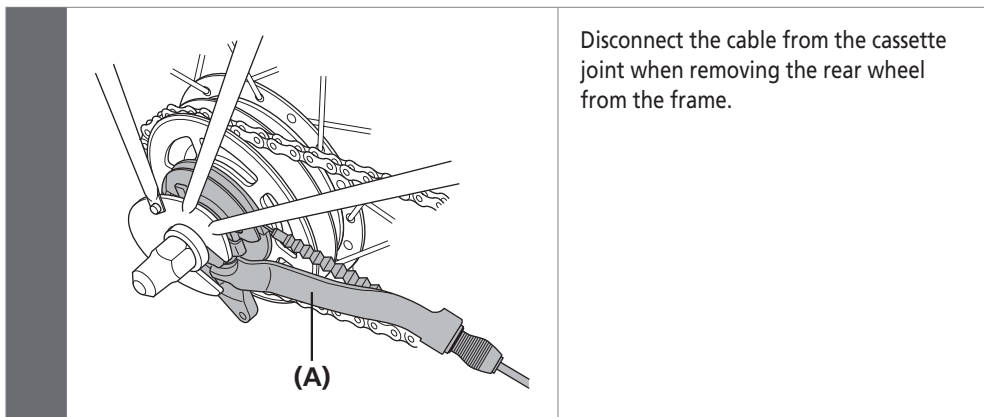


Secure the cable to the frame with the outer casing bands.

- (y)** 10 mm
- (z)** 15 mm

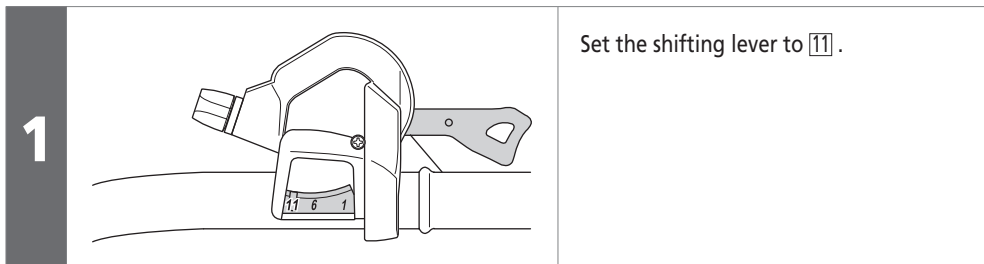
**(A)** Outer casing bands

**Disconnecting the shifting cable when removing the rear wheel from the frame**

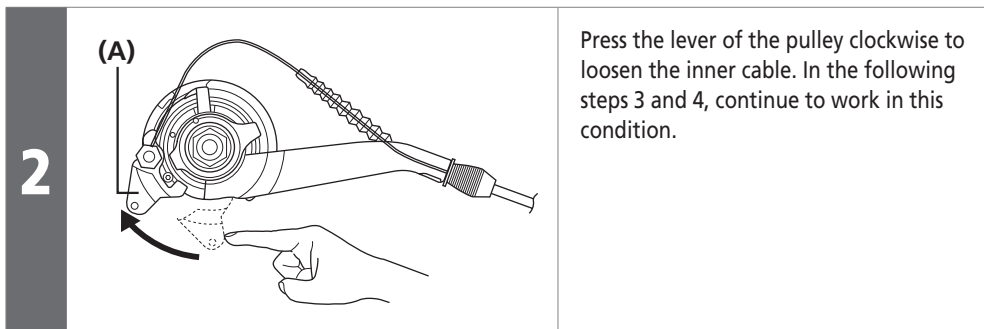


Disconnect the cable from the cassette joint when removing the rear wheel from the frame.

**(A)** Cassette joint

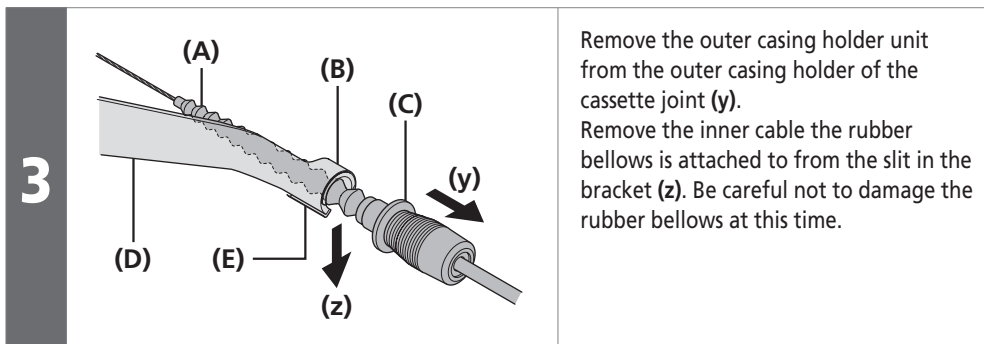


Set the shifting lever to **1**.



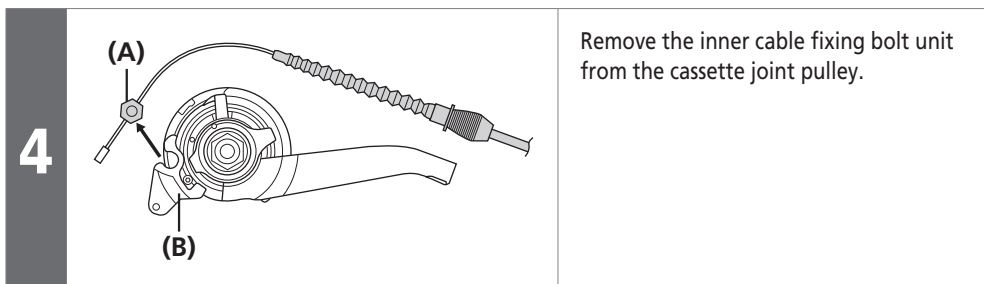
Press the lever of the pulley clockwise to loosen the inner cable. In the following steps 3 and 4, continue to work in this condition.

**(A)** Pulley lever



Remove the outer casing holder unit from the outer casing holder of the cassette joint (y). Remove the inner cable the rubber bellows is attached to from the slit in the bracket (z). Be careful not to damage the rubber bellows at this time.

- (A)** Rubber bellows
- (B)** Outer casing holder
- (C)** Outer casing holder unit
- (D)** Bracket
- (E)** Slit



Remove the inner cable fixing bolt unit from the cassette joint pulley.

- (A)** Inner cable fixing bolt unit
- (B)** Cassette joint pulley

**NOTE**

If reinstalling the cable, refer to steps 4 to 7 in "Cassette joint end".

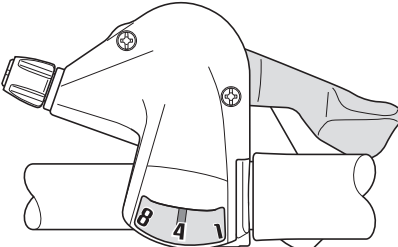
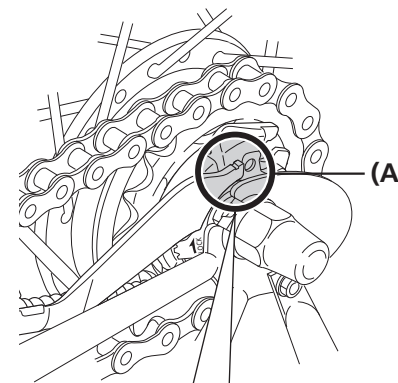
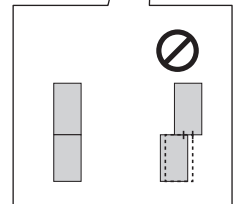
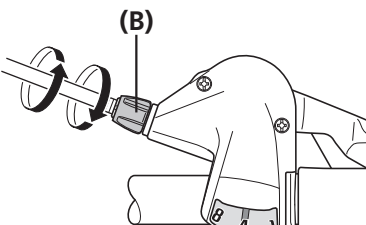
# ADJUSTMENT

# ADJUSTMENT

## ■ Adjusting the cassette joint

For internal 8-speed

1

Change the shifting lever setting from [8] to [4].

Check to be sure that the yellow setting lines on the cassette joint bracket and pulley are aligned at this time.

If the yellow setting lines are not aligned, turn the cable adjustment barrel of the shifting lever to align the setting lines.

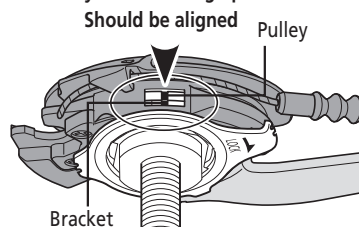
After this, move the shifting lever once more from [4] to [8] and then back to [4], and then re-check to be sure that the yellow setting lines are aligned.

- (A) Yellow setting lines
- (B) Cable adjustment barrel

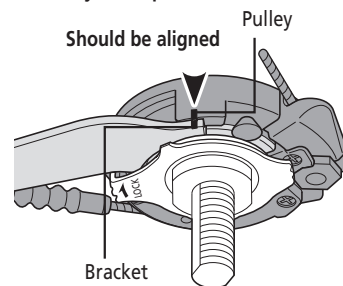
### TECH TIPS

- The yellow setting lines on the cassette joint are located in two places. Use the one that is easiest to see.

< When bicycle is standing up >



< When bicycle is upside down >

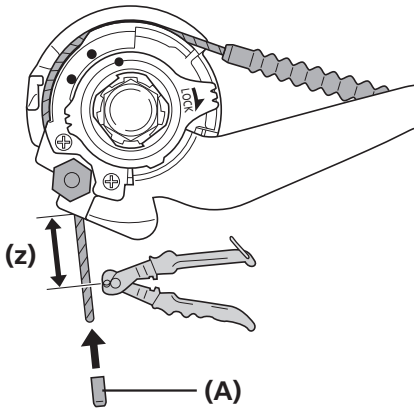




## ADJUSTMENT

### ▶▶ Adjusting the cassette joint

2



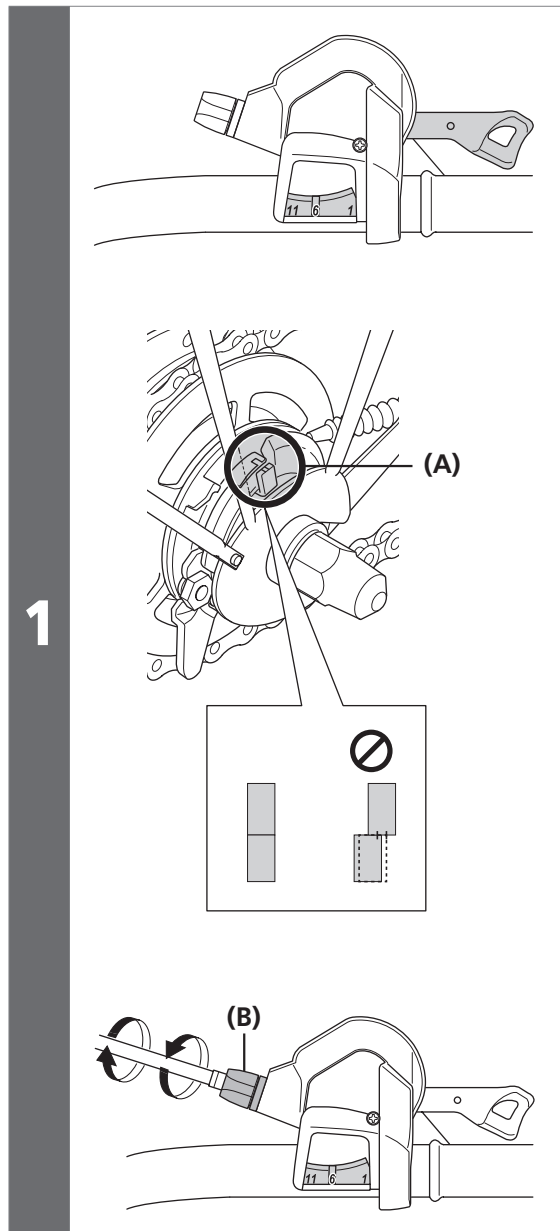
After adjusting the cassette joint, cut off the excess length of inner cable.

Then install the inner end cap.

**(z)** 15 – 20 mm

**(A)** Inner end cap

For internal 11-speed



Set the shifting lever from **11** to **6**.  
Check to be sure that the yellow setting lines on the cassette joint bracket and pulley are aligned at this time.

If the yellow setting lines are not aligned, turn the cable adjustment barrel of the shifting lever to align the yellow setting lines.

After this, move the shifting lever once more from **6** to **11** and then back to **6**, and then re-check to be sure that the yellow setting lines are aligned.

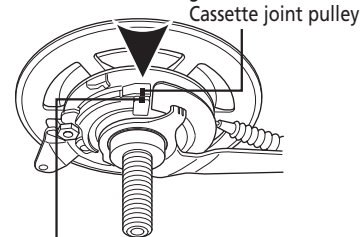
- (A)** Yellow setting lines
- (B)** Cable adjustment barrel

**TECH TIPS**

- The yellow setting lines on the cassette joint are located in two places. Use the one that is easiest to see.

< When bicycle is standing up >

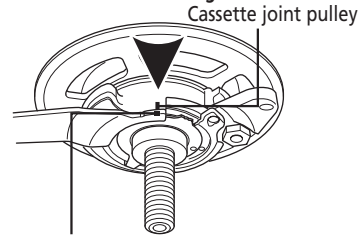
Should be straight



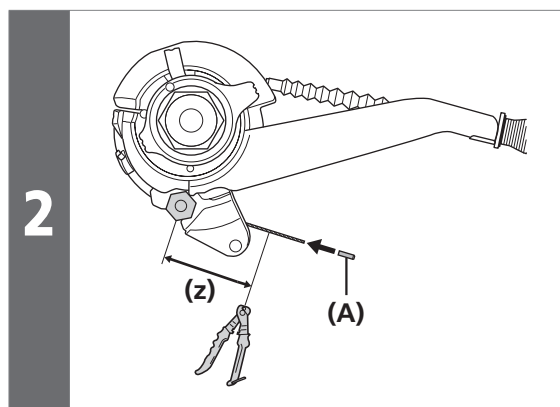
Cassette joint bracket

< When bicycle is upside down >

Should be straight



Cassette joint bracket



After adjusting the cassette joint, cut off the excess length of inner cable.

Then install the inner end cap. After attaching the inner end cap, bend the inner cable outward (toward the frame end) to prevent it from coming in contact with the chain.

**(z)** 25 – 30 mm

- (A)** Inner end cap

# MAINTENANCE

# MAINTENANCE

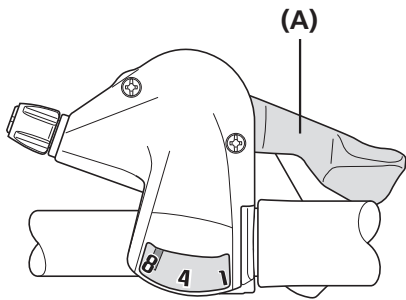
## ■ Replacement and assembly of the indicator unit

Disassembly and assembly should only be carried out when removing and replacing the indicator unit.

### For internal 8-speed

#### Removal

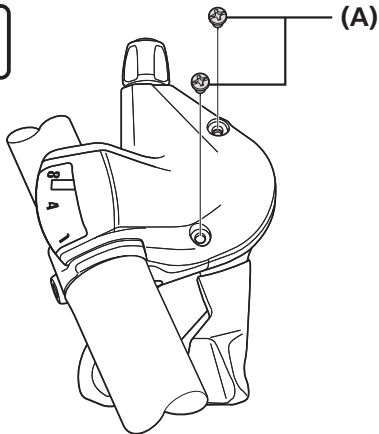
**1**



Operate the release lever 7 times or more to set it to **8**.

**(A)** Release lever

**2**

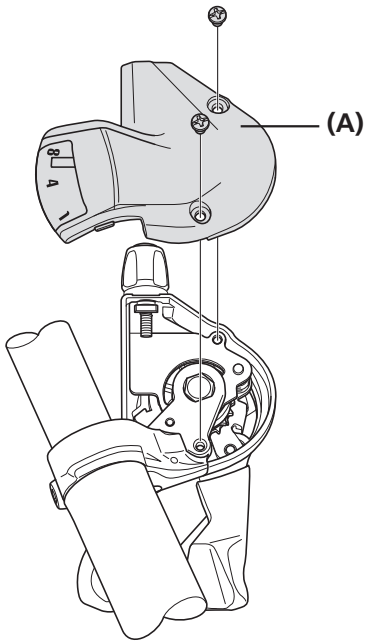


Loosen and remove the two cover fixing screws which are securing the indicator unit.

**(A)** Cover fixing screws

▶▶ Replacement and assembly of the indicator unit

3

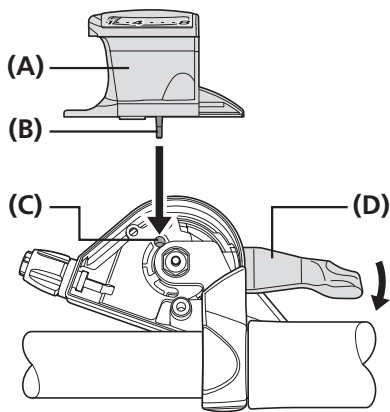


Remove the indicator unit as shown in the illustration.

(A) Indicator unit

## Installation

1

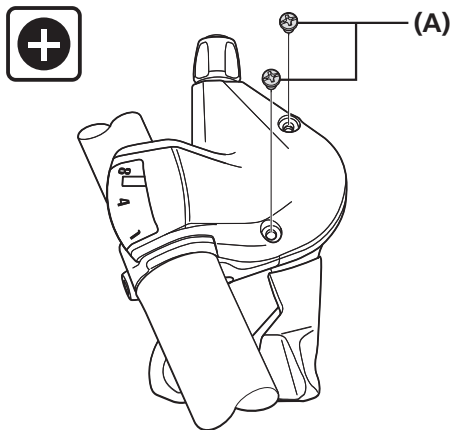


Check that the needle of the indicator is on the left side ( [8] position), and then install the indicator unit so that it is facing straight upward.

Insert the pin of the change plate that is protruding from the bottom of the indicator unit into the hole in the winder unit at this time.

- (A) Indicator unit
- (B) Pin of change plate
- (C) Hole in winder unit ( [8] position)
- (D) Release lever

2



Secure the indicator unit with the two cover fixing screws.

- (A) Cover fixing screws

### Tightening torque



0.3 - 0.5 N·m

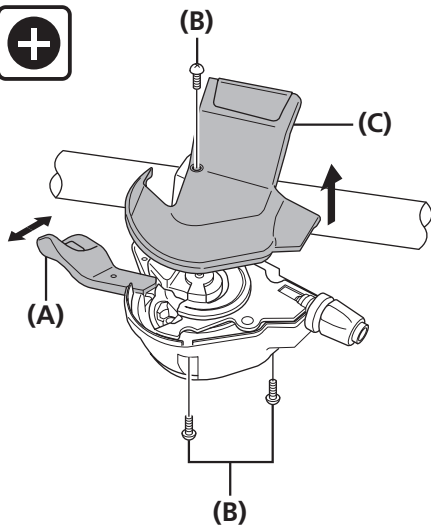
3

Operate the main and the release levers, to check their operation.

If they do not operate correctly, reinstall the indicator unit while taking particular note of step 1.

**For internal 11-speed**

**Removal**



Operate the release lever 10 times or more to set it to **[11]**.

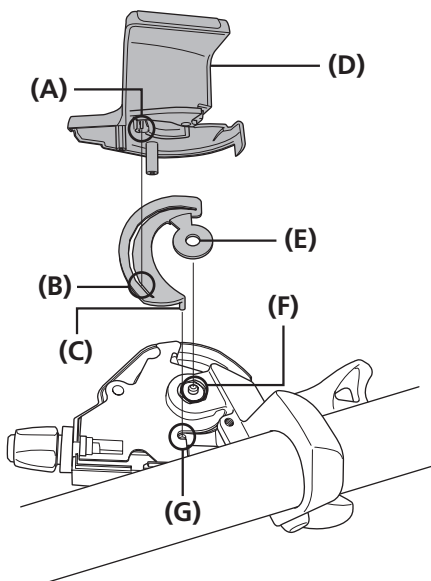
Loosen and remove the three cover fixing screws which are securing the indicator unit.

Remove the indicator unit as shown in the illustration.

- (A)** Release lever
- (B)** Cover fixing screws
- (C)** Indicator unit

**Installation**

**1**



Check that the needle of the indicator is on the left side (**[11]** position), and then install the indicator unit so that it is facing straight upward.

At this time, check that the main axle is installed in the cam unit hole and that the pin of the cam unit is installed in the winder unit hole, and then insert the indicator shaft protruding from the bottom of the indicator unit into the groove of the cam unit.

- (A)** Indicator shaft
- (B)** Cam unit groove (**[11]** position)
- (C)** Cam unit pin
- (D)** Indicator unit
- (E)** Cam unit hole
- (F)** Main axle
- (G)** Winder unit hole

**2**

Secure the indicator unit with the three cover fixing screws.

**3**

Operate the main and the release levers, to check their operation.

If they do not operate correctly, reinstall the indicator unit while taking particular note of step 1.

**Tightening torque**



**0.3 - 0.5 N·m**

▶▶ For internal 8-speed (oil maintenance kit: Y00298010)

## ■ For internal 8-speed (oil maintenance kit: Y00298010)

Content of kit: WB maintenance oil, Container

### General Safety Information

#### WARNING


- When changing the oil, be careful that no oil gets on the disc brake rotor, brake pads, on the rim when using rim brakes, etc. If oil gets on any of these parts, there is a danger that brake performance may be reduced. Take care of this problem according to the procedures in the brake instruction manual.
- Since there is a risk of explosion or fire, do not smoke, eat, or drink while using this oil. In addition, keep it away from ignition sources such as heat, sparks, open flames, or high temperatures and prevent it from catching fire due to static electricity sparks or other sparks.
- Use only outdoors or in a well-ventilated area. Inhalation of oil mist or vapors may cause nausea. Be careful to provide ventilation and use a respirator-type mask. If mist or vapor is inhaled by mistake, go immediately to an area with fresh air, stay warm and quiet, and seek professional medical advice if required. If breathing stops, perform artificial respiration, and if breathing is difficult, provide the affected person with oxygen.


#### Cautions regarding handling of WB maintenance oil :

- Contact with eyes may result in irritation. Use safety glasses when handling, and avoid contact with eyes. In the event of eye contact, flush eye with fresh water for 15 minutes or more, and seek medical assistance if any abnormal symptoms occur.
- Contact with skin may cause a rash and discomfort. Use gloves when handling. In the event of skin contact, wash well with soap and water. If skin condition becomes abnormal, seek medical assistance immediately.
- Do not drink. If it is drunk by mistake, do not induce vomiting; make the affected person drink 1 to 2 cups of water and seek medical assistance immediately. If the affected person loses consciousness, do not give the person anything by their mouth. If vomiting occurs naturally, tilt the body to prevent inhalation.
- After use, be sure to wash hands thoroughly.
- When storing, close the container tightly to prevent water or foreign materials from entering; store out of reach of children; do not store in areas subject to direct sunlight, areas subject to temperatures above 40°C, areas subject to water or high humidity where rust is likely to occur, or in areas where there is a risk of freezing.
- Dispose of used oil, old oil, or oil used for cleaning in accordance with applicable local laws and regulations.
- To maintain the product in good working order, oil should be changed after the first 1,000 km from start of use of the product, and once every year thereafter (after every 2,000 km if bicycle is ridden frequently).
- When performing maintenance, use WB maintenance oil. If the WB maintenance oil is not used, problems such as an oil leakage and gear shifting malfunction may occur.
- Disposal of Used Oil: Follow local county and/or state codes for disposal. Use caution when preparing the oil for disposal.
- Read this manual carefully, and keep it in a safe place for later reference.
- The latest product safety data sheets are accessible online at <https://si.shimano.com>.



▶▶ For internal 8-speed (oil maintenance kit: Y00298010)

<b>1</b>		<p>Fill the bottle with WB oil to a height of 95mm.</p> <p><b>(z)</b> 95 mm</p>
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<b>2</b>		<p>Immerse the internal unit into the oil from the left side. Immerse until the oil reaches up to ring gear unit 1.</p> <p><b>(z)</b> Ring gear unit 1</p>
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<b>3</b>		<p>Keep the internal unit immersed as illustrated for approximately 90 seconds.</p>
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▶ For internal 8-speed (oil maintenance kit: Y00298010)

<p>4</p>		<p>Remove the internal unit from the oil.</p>
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<p>5</p>		<p>Let the excess oil drain off for approximately 60 seconds.</p>
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<p>6</p>		<p>After lubrication is complete, reassemble by following the usual procedure.</p>
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 **TECH TIPS**

- <Maintenance oil>**
- The maintenance oil is reusable. Refill it as needed.
  - Store it with the lid closed after use.

▶▶ In the case of 11-speed internal geared hub (Oil maintenance kit: Y13098023)

## ■ In the case of 11-speed internal geared hub (Oil maintenance kit: Y13098023)

Tools included in the kit: Syringe, Tube, Bleed nipple, O ring, Container

### General Safety Information

#### WARNING

- When changing the oil, be careful that no oil gets on the disc brake rotor, brake pads, on the rim when using rim brakes, etc. If oil gets on any of these parts, there is a danger that brake performance may be reduced. Take care of this problem according to the procedures in the brake instruction manual.
- Since there is a risk of explosion or fire, do not smoke, eat, or drink while using this oil. In addition, keep it away from ignition sources such as heat, sparks, open flames, or high temperatures and prevent it from catching fire due to static electricity sparks or other sparks.
- Use only outdoors or in a well-ventilated area. Inhalation of oil mist or vapors may cause nausea. Be careful to provide ventilation and use a respirator-type mask. If mist or vapor is inhaled by mistake, go immediately to an area with fresh air, stay warm and quiet, and seek professional medical advice if required. If breathing stops, perform artificial respiration, and if breathing is difficult, provide the affected person with oxygen.

#### Cautions regarding handling of SG-S700 OIL :

- Contact with eyes may result in irritation. Use safety glasses when handling, and avoid contact with eyes. In the event of eye contact, flush eye with fresh water for 15 minutes or more, and seek medical assistance if any abnormal symptoms occur.
- Contact with skin may cause a rash and discomfort. Use gloves when handling. In the event of skin contact, wash well with soap and water. If skin condition becomes abnormal, seek medical assistance immediately.
- Do not drink. If it is drunk by mistake, do not induce vomiting; make the affected person drink 1 to 2 cups of water and seek medical assistance immediately. If the affected person loses consciousness, do not give the person anything by their mouth. If vomiting occurs naturally, tilt the body to prevent inhalation.
- After use, be sure to wash hands thoroughly.
- When storing, close the container tightly to prevent water or foreign materials from entering; store out of reach of children; do not store in areas subject to direct sunlight, areas subject to temperatures above 40°C, areas subject to water or high humidity where rust is likely to occur, or in areas where there is a risk of freezing.
- Dispose of used oil, old oil, or oil used for cleaning in accordance with applicable local laws and regulations.
- To maintain the product in good working order, oil should be changed after the first 1,000 km from start of use of the product, and once every year thereafter (after every 2,000 km if bicycle is ridden frequently).
- When performing maintenance, use only Shimano SG-S700 OIL. If SG-S700 OIL is not used, problems such as an oil leakage and gear shifting malfunction may occur.
- Disposal of Used Oil: Follow local county and/or state codes for disposal. Use caution when preparing the oil for disposal.
- Read this manual carefully, and keep it in a safe place for later reference.
- The latest product safety data sheets are accessible online at <https://si.shimano.com>.

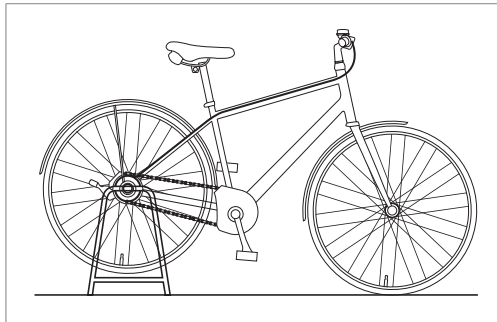


#### TECH TIPS

When using a 1L can of oil, it may become impossible to suck out oil with a syringe when there is only a little oil left. First, transfer all oil to a different container.

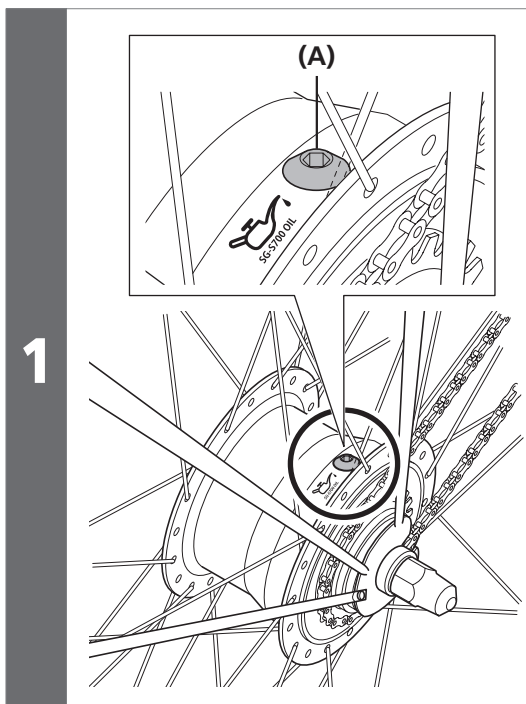
▶▶ In the case of 11-speed internal geared hub (Oil maintenance kit: Y13098023)

## Internal geared hub: Oil replacement



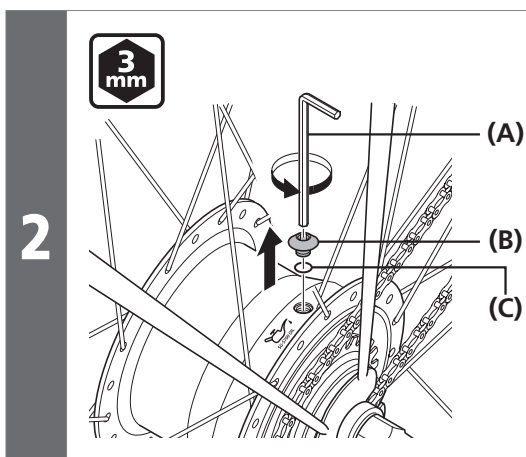
Using a stand, etc., enable the rear wheel to turn while performing work.

### Draining out the old oil



Rotate the wheel slowly until the oil port is facing up.

**(A)** Oil port



Remove the oil port bolt and O-ring.

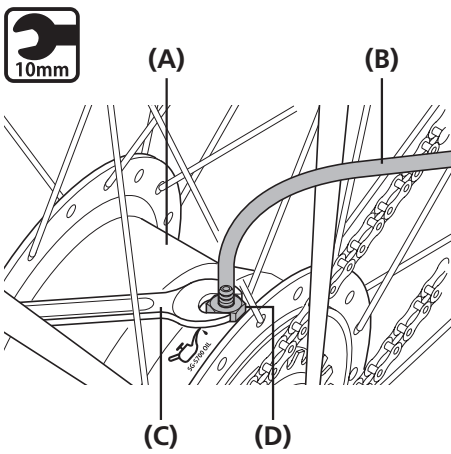
- (A)** 3mm hexagon wrench
- (B)** Oil port bolt
- (C)** O-ring

**NOTE**

Be careful that the oil port is facing up; if the oil port bolt is loosened when it is not facing up, the oil inside may leak out.

▶ In the case of 11-speed internal geared hub (Oil maintenance kit: Y13098023)


**3**



Attach the bleed nipple with tube attached to the hub shell.

- (A) Hub shell
- (B) Tube
- (C) 10mm spanner
- (D) Bleed nipple

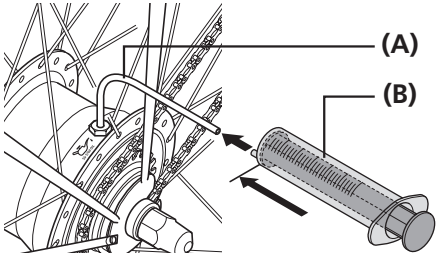
- (A) Hub shell
- (B) Tube
- (C) 10mm spanner
- (D) Bleed nipple

Tightening torque	
	1 - 3 N·m

 **TECH TIPS**

Check that the O-ring is properly installed on the bleed nipple.

**4**

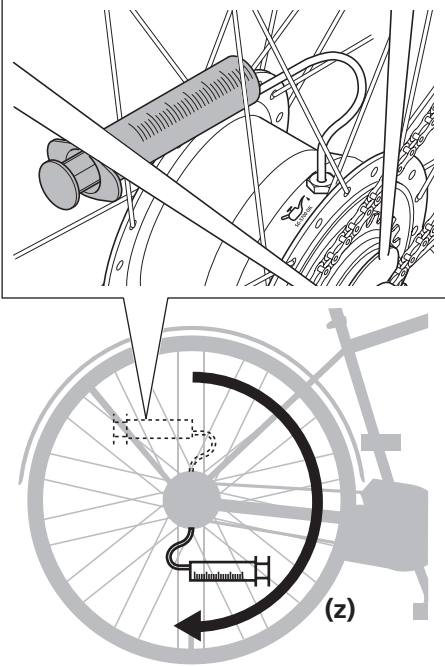


With the piston of the syringe pushed fully in, firmly connect the syringe to the tube.

- (A) Tube
- (B) Syringe

- (A) Tube
- (B) Syringe

**5**



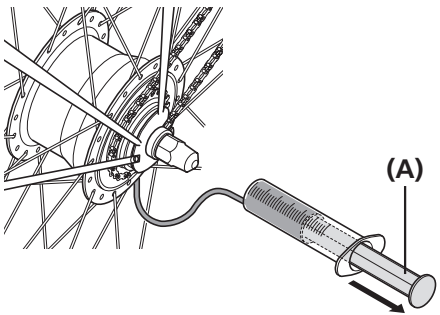
Insert the syringe between the spokes, and slowly turn the wheel forward until the oil port is facing down.

(z) Turn in forward direction

**6** Wait about 5 minutes with the hub kept still and not turning so that the oil settles.

▶▶ In the case of 11-speed internal geared hub (Oil maintenance kit: Y13098023)

**7**



Pull the piston out slowly to draw out the oil inside the hub shell.

(A) Piston

(A) Piston

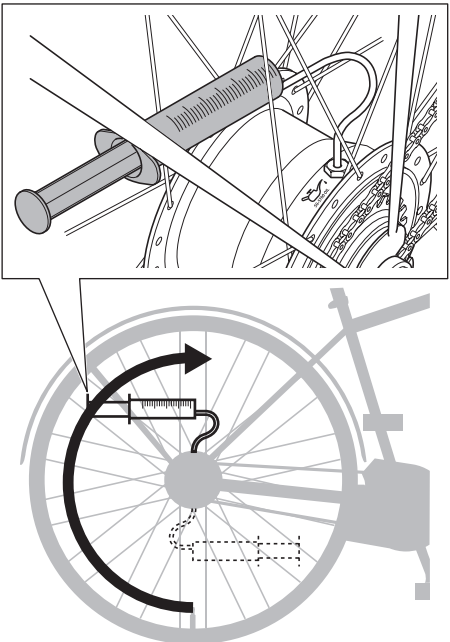
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**NOTE**

If the piston is pulled out quickly, air is likely to be mixed in.

---

**8**



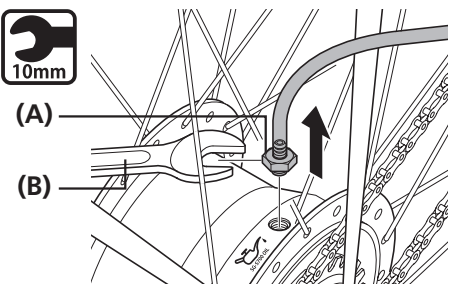
Rotate the wheel slowly until the oil port is facing up.

**NOTE**

To make sure that the syringe does not get caught by the chain case, etc., store the syringe between the spokes when turning the wheel.

---

**9**



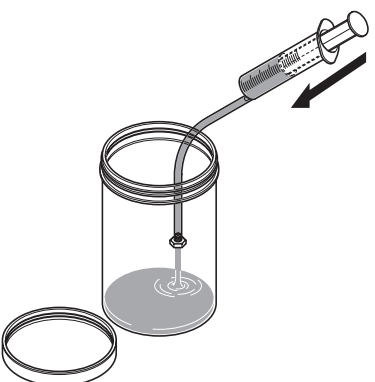
While being careful that the tube does not come off the syringe, remove the bleed nipple.

(A) Bleed nipple  
(B) 10mm spanner

(A) Bleed nipple  
(B) 10mm spanner

---

**10**



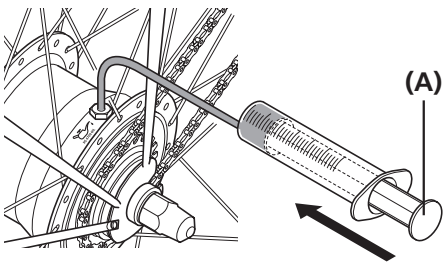
Remove the old oil from the syringe.

▶ In the case of 11-speed internal geared hub (Oil maintenance kit: Y13098023)

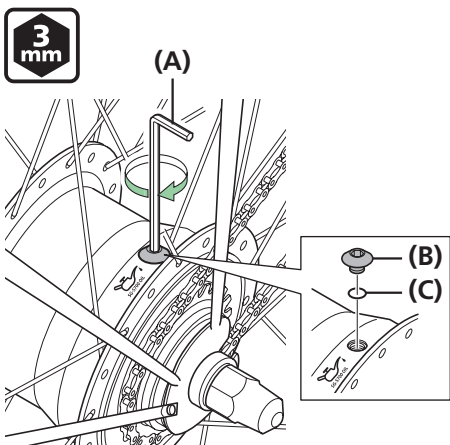
**Cleaning the inside**

**1** Attach the bleed nipple to the hub shell.


**2** Suck 25ml of new oil into the syringe and connect it firmly to the tube.


**3**  Push the piston to inject the new oil into the inside of the hub.

**4** After pulling back the piston to reduce the internal pressure, remove the bleed nipple.

**5**  Install the O-ring and the oil port bolt.


**Tightening torque**

 **1 - 3 N·m**


 **TECH TIPS**

If the syringe or tube becomes dirty when removing old oil or cleaning the inside of the hub, clean the syringe and tube using parts cleaner, etc., if necessary.

**(A)** Piston

 **TECH TIPS**


When the oil is forced in, the internal pressure will increase and the piston may push back. If the piston is periodically pulled back to reduce the pressure inside the hub, the oil will be easier to inject into the inside of the hub.

 **TECH TIPS**

If the bleed nipple is removed without pulling back the piston, the oil may flow back into the piston together with air from inside the tube and spill out of the piston.

- (A)** 3mm hexagon wrench
- (B)** Oil port bolt
- (C)** O-ring

**Tightening torque**

 **2 - 3 N·m**

▶▶ In the case of 11-speed internal geared hub (Oil maintenance kit: Y13098023)

**6** While performing gear-change operations, turn the pedals to turn the wheel for about 1 minute.

**7** Keep the wheel still without rotating for about 1 minute.

**8** Remove the oil from inside by following the procedures in **Draining out the old oil** above.

### **Injecting new oil**

**1** Inject 25ml of new oil into the hub by following steps **Cleaning the inside 1 - 5** above.

**2** Clean off any oil that may have gotten on the hub, etc.



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

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