

# Dealer's Manual

**SHIMANO**

***ALFINE***

**S7000 series**

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 dealer's manuals and instruction manuals can be viewed on-line on our website (<http://si.shimano.com>).
- 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.
- After reading the dealer's manual thoroughly, keep it in a safe place for later reference.

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

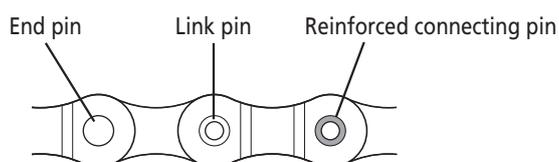
- Check that the wheels are fastened securely before riding the bicycle. If the wheels are loose in any way, they may come off the bicycle and serious injury may result.

#### 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.

#### < 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:**

- Be sure to shift the shifting lever one gear at a time. During shifting, reduce the force being applied to the pedals. If you try to force operation of the shifting lever or perform multi-shifting while the pedals are being turned strongly, your feet may come off the pedals and the bicycle may topple 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.

**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.
- 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.	Chainring	SM-GEAR										CS-S500		
			14	15	16	17	18	19	20	21	22	23	18	20	
2.0 - 2.25	FC-S501 FC-S400	45T	-	-	-	-	-	-	-	X	X	X	-	-	X
		42T	-	-	-	-	-	X	X	X	-	-	-	-	X
		39T	-	-	-	-	X	X	-	-	-	-	-	X	-

- In order to maintain proper performance of the product, it is recommended that you ask the place where you purchased the bicycle or your nearest Pro shop to carry out maintenance such as greasing the internal parts about once every two years from the first time of use (once about every 5,000 km if the bicycle is used very frequently). It is also recommended that you use the Shimano internal hub grease or lubrication kit when carrying out maintenance. If the special grease or lubrication kit is not used, problems such as gear shifting malfunction 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.

**TO ENSURE SAFETY**

- 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.

**< 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 dropout width	Applicable dropout 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.

# Installation

# Installation

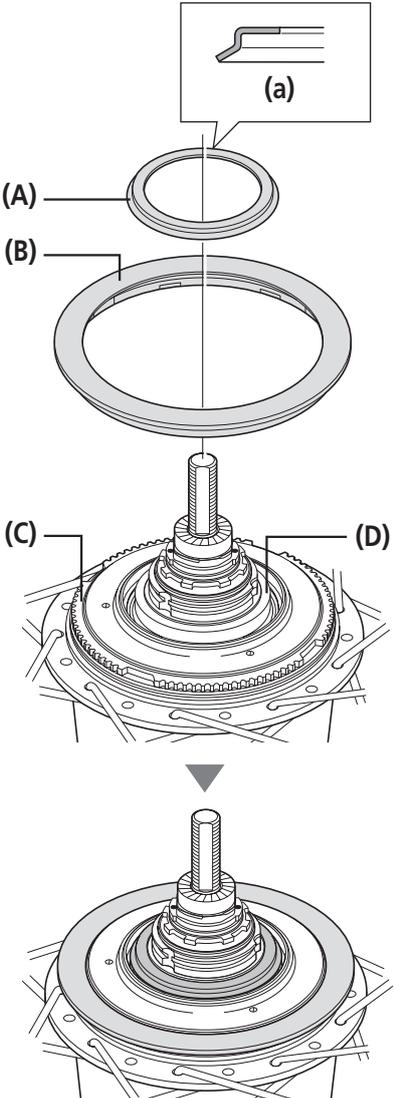
## List of tools to be used

The following tools are required to assemble the product.

Tool		Tool	
	10mm spanner		4 mm hexagon wrench
	15 mm spanner		Screwdriver
	Adjustable wrench		TL-S700-B
	2 mm hexagon wrench		TL-LR10

## 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.

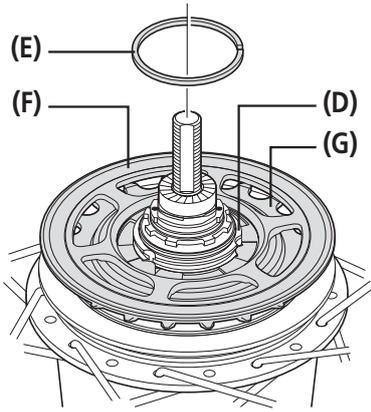
Install the right-hand dust cap B in the orientation (a).

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

## Installation

### ▶▶ Installation of the CS-S500 sprocket with chain guard

2

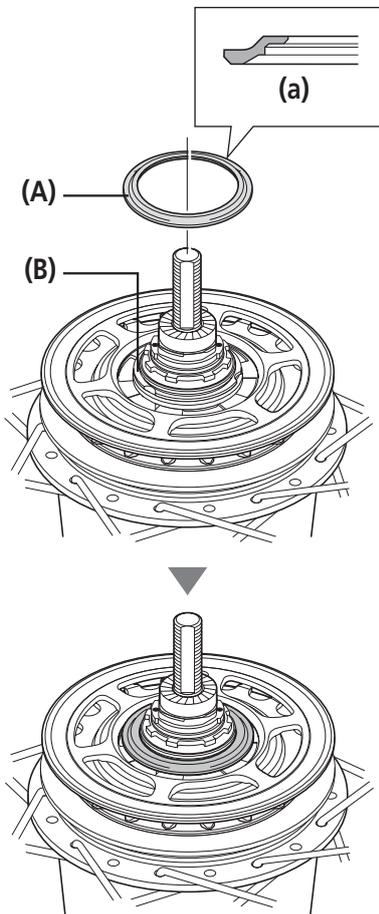


Install the CS-S500 sprocket to the driver on the right side of the hub body with the guard plate facing outward, and secure it in place with the snap ring.

- (D) Driver
- (E) Snap ring
- (F) Guard plate
- (G) CS-S500 Sprocket

### ■ Installation of the cassette joint to the hub

1



Install the driver cap to the driver on the right side of the hub body.

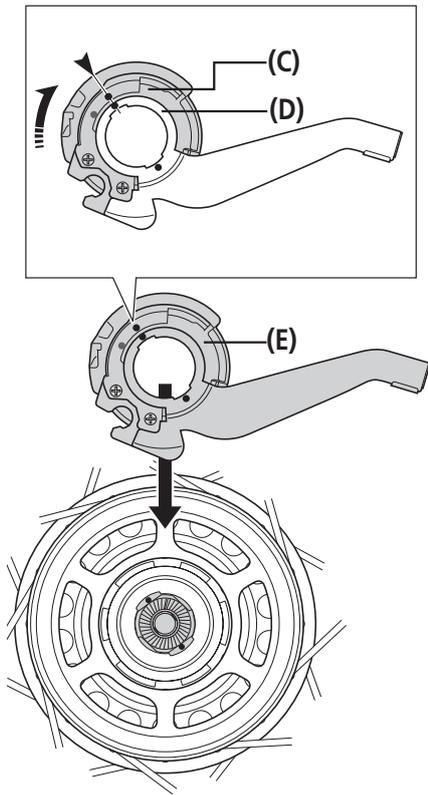
Install the driver cap in the orientation (a).

- (A) Driver cap
- (B) Driver

## Installation

### ▶▶ Installation of the CS-5500 sprocket with chain guard

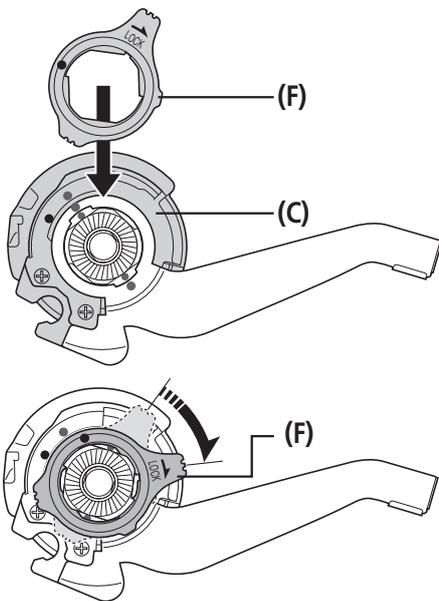
2



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.

- (C) Pulley
- (D) Bracket
- (E) Cassette joint

3



Secure the cassette joint to the hub with the cassette joint fixing ring.

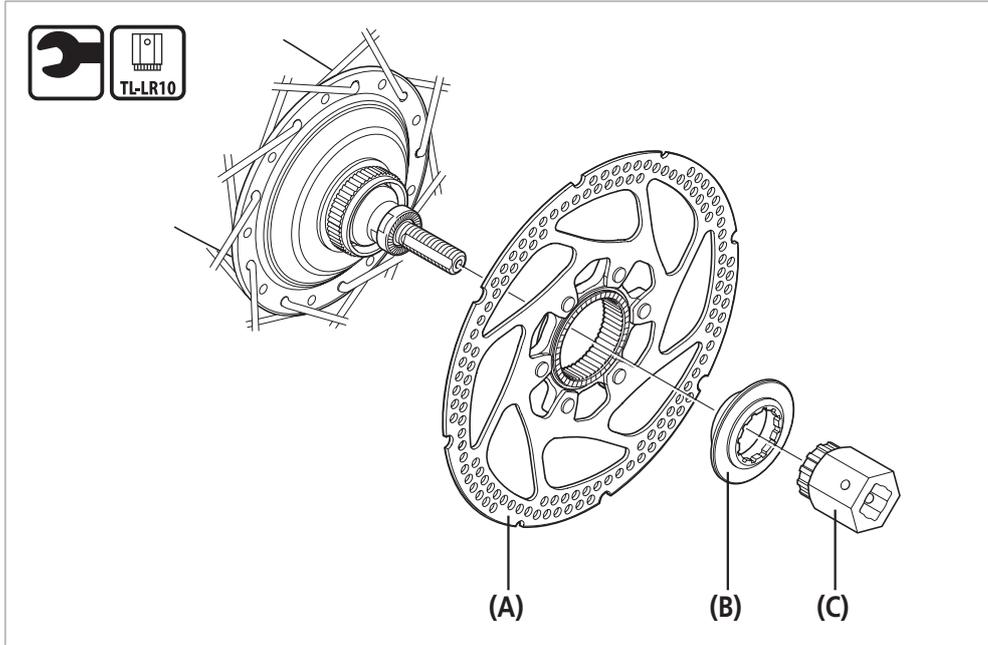
When installing the cassette joint fixing ring, align the yellow ● mark with the yellow ● mark on the cassette joint pulley, and then turn the cassette joint fixing ring 45° clockwise.

- (C) Pulley
- (F) Cassette joint fixing ring

## Installation

► Installation of the CS-S500 sprocket with chain guard

### ■ Installation of the rotor



- (A) Rotor
- (B) Rotor fixing lock ring
- (C) TL-LR10

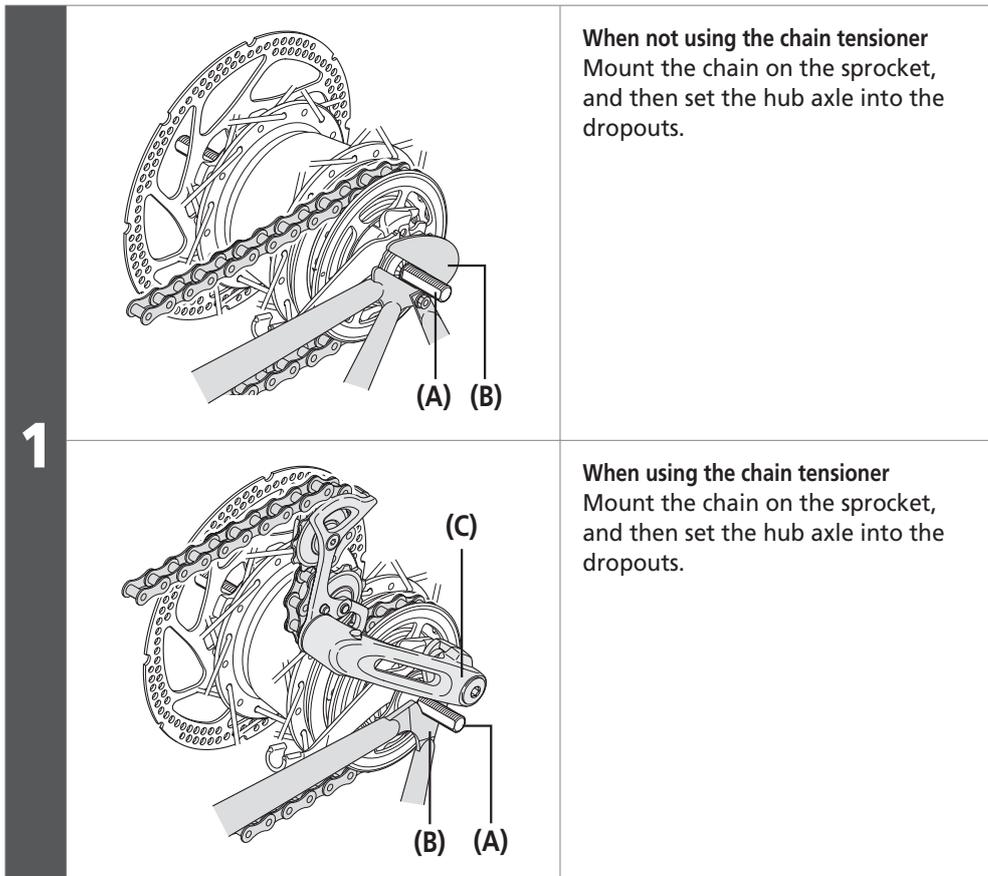
Tightening torque:



40 N·m



### ■ Installation of the hub to the frame



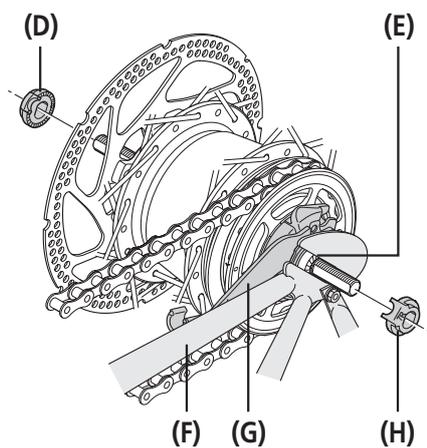
**When not using the chain tensioner**  
Mount the chain on the sprocket,  
and then set the hub axle into the  
dropouts.

- (A) Hub axle
- (B) Dropouts
- (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 dropouts. If this is done, the cassette joint can be installed so that it is almost parallel to the chainstay.

- (D) Non-turn washer (for left side)
- (E) Groove of dropout
- (F) Chainstay
- (G) Cassette joint
- (H) Non-turn washer (for right side)

 **TECH TIPS**

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



Dropouts	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	$\theta = 60^\circ - 90^\circ$

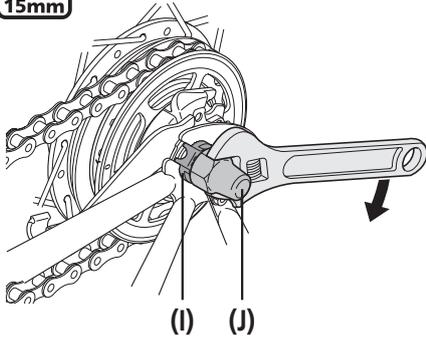
## Installation

### ►► Installation of the CS-S500 sprocket with chain guard

3



15mm



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

- (I) Non-turn washer
- (J) Cap nut
- (K) Carrier stay
- (L) Washer
- (M) Mudguard stay

Tightening torque:

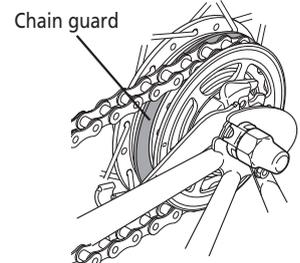


15mm

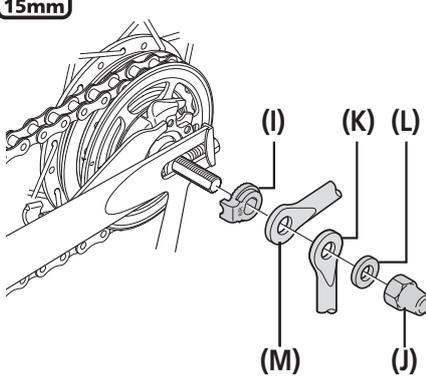
30 - 45 N·m

### 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.



15mm

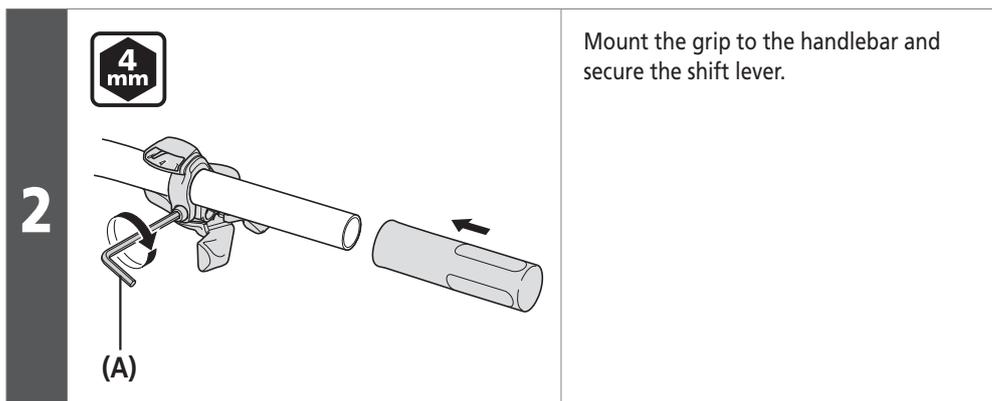
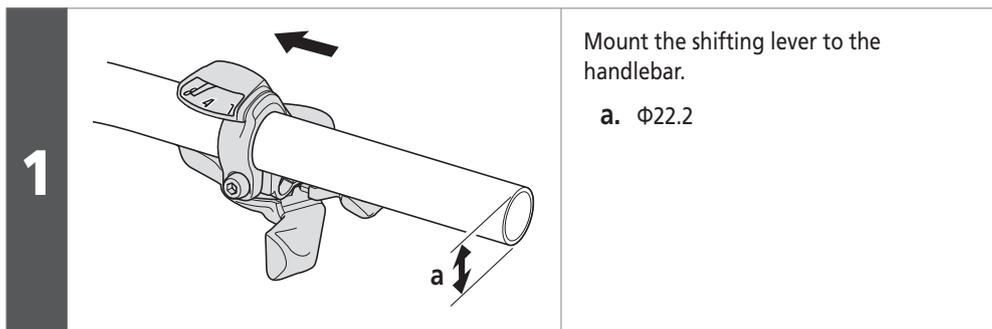


When installing a part such as a mudguard stay to the hub axle, install in the order shown in the illustration.

## Installation

►► Installation of the CS-S500 sprocket with chain guard

### ■ Installation of the shifting lever



**NOTE**

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

**(A)** 4 mm hexagon wrench

**Tightening torque:**

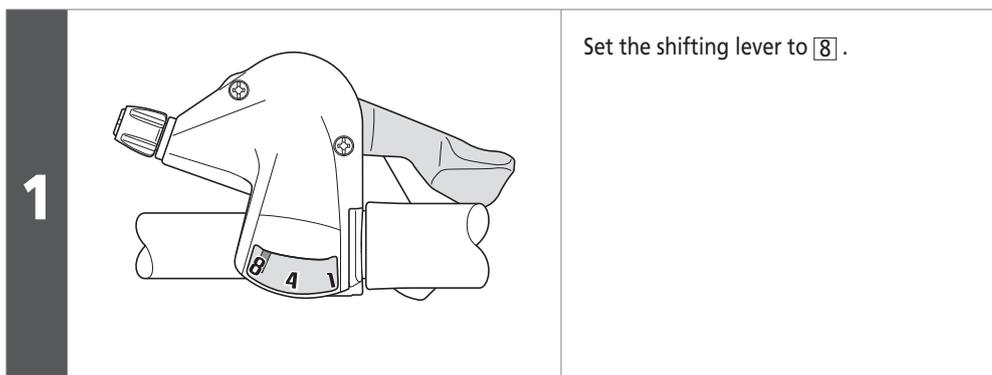
**4 mm** 5 - 7 N·m

**NOTE**

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

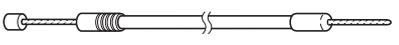
### ■ Installation of the shifting cable

#### Shifting lever side



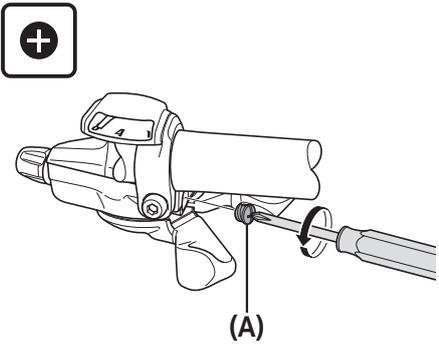
**NOTE**

- Use a shifting cable with one inner cable drum.  
Cable with one inner cable drum: SIS-SP41/SP40 ( $\Phi 4$ mm)



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

**2**

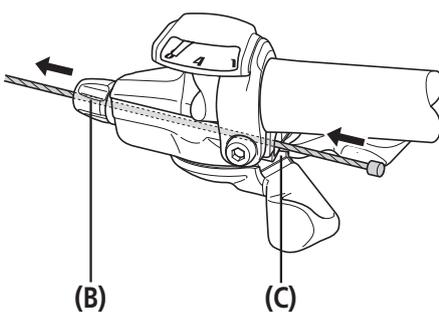


(A)

Loosen and remove the wire end hooking cap.

(A) Wire end hooking cap

**3**

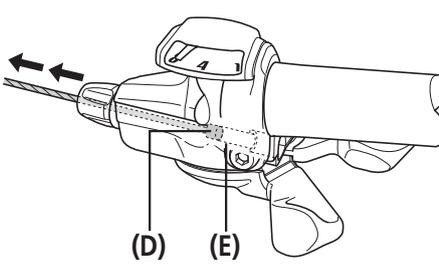


(B) (C)

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

(B) Hole in cable adjustment bolt  
(C) Groove in winder unit

**4**

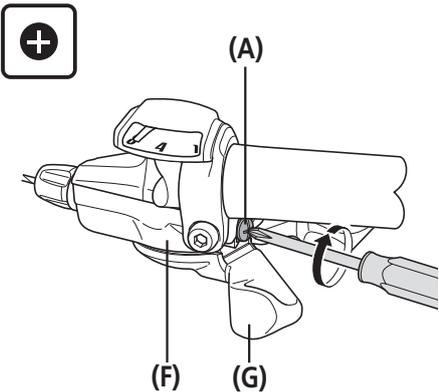


(D) (E)

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

(D) Inner cable drum  
(E) Hole in winder unit

**5**



(A) (F) (G)

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.

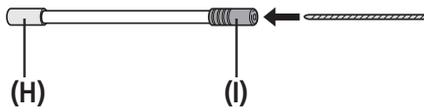
If the main lever does not return properly, loosen the wire end hooking cap slightly to make a gap between the main lever and the unit cover, and check that this improves the returning of the main lever.

(A) Wire end hooking cap  
(F) Unit cover  
(G) Main lever

## Installation

### ▶▶ Installation of the CS-S500 sprocket with chain guard

6



Pass the inner cable through the SIS-SP41/ SP40 outer casing through the end with the plastic cap.

(H) Aluminum cap

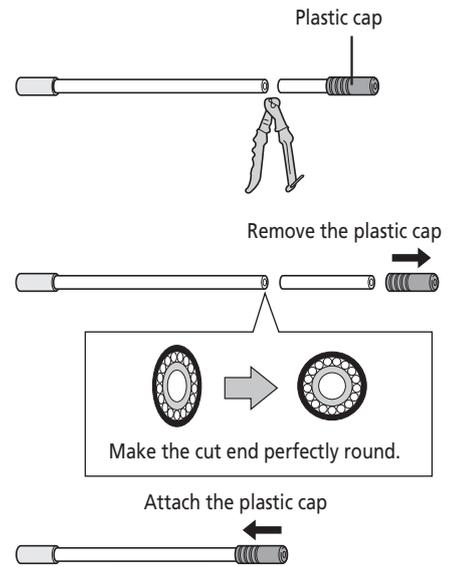
(I) Plastic cap



#### TECH TIPS

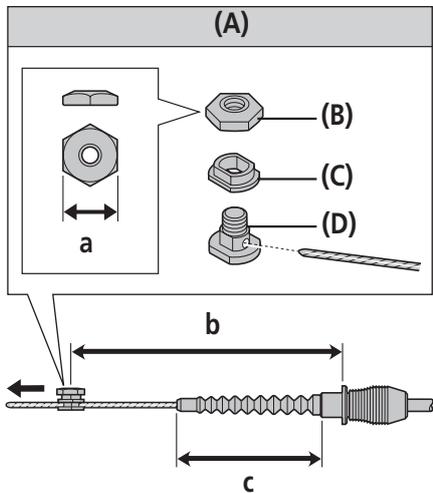
If cutting the outer casing, cut it near the end with the plastic cap while the cap is still attached.

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 bolt 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.

- a. 10 mm
- b. 145 mm
- c. 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.

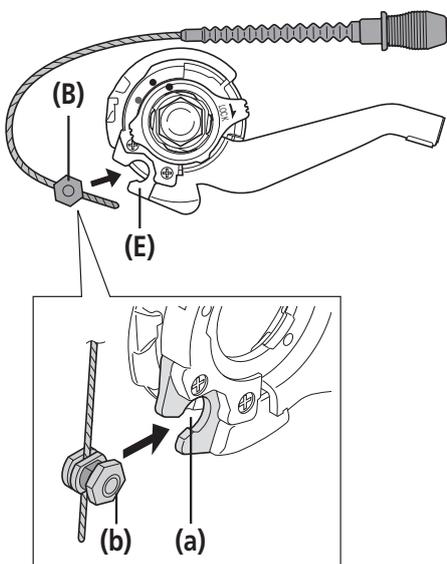


TECH TIPS

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



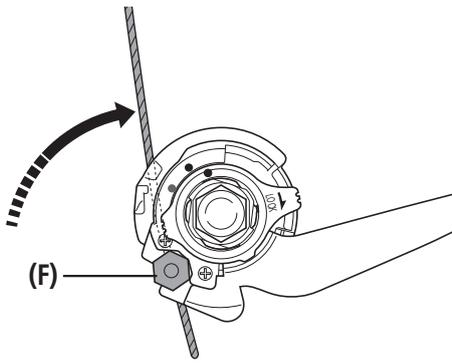
2



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 (a) of the inner cable fixing washer into the gap (b) in the pulley.

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

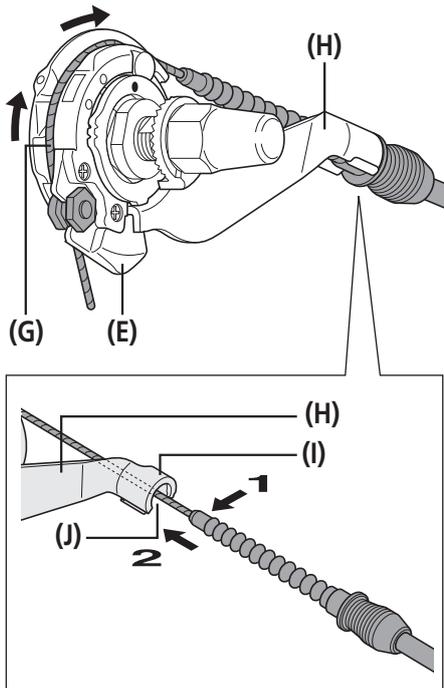
**3**



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

**(F)** Hook

**4**

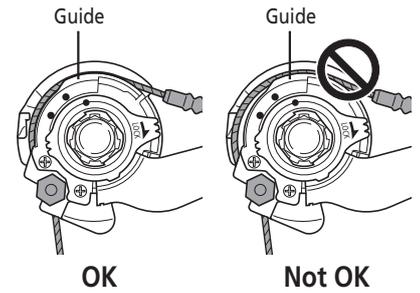


Attach the inner cable to the pulley as shown in the illustration, pass the inner cable through the slit in the cassette joint bracket, and then insert the end of the outer casing securely into the outer casing holder.

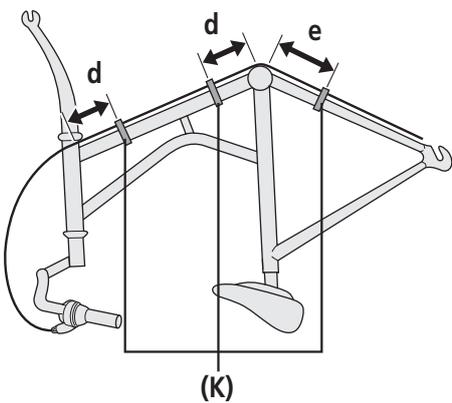
- (E)** Pulley
- (G)** Inner cable
- (H)** Bracket
- (I)** Outer casing holder
- (J)** Slit

**NOTE**

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



**5**



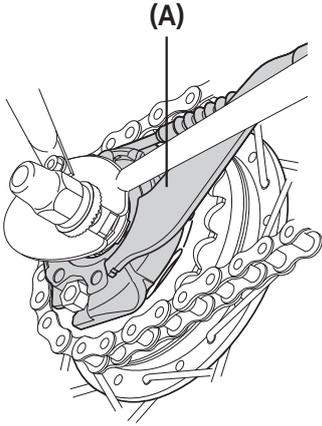
Secure the cable to the frame with the outer casing bands.

- d.** 10 mm
- e.** 15 mm

**(K)** Outer casing bands

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

1

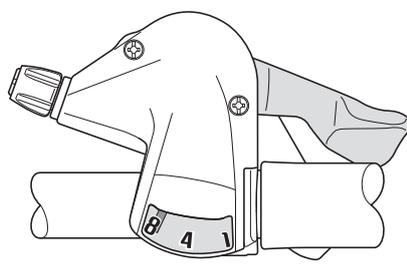


(A)

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

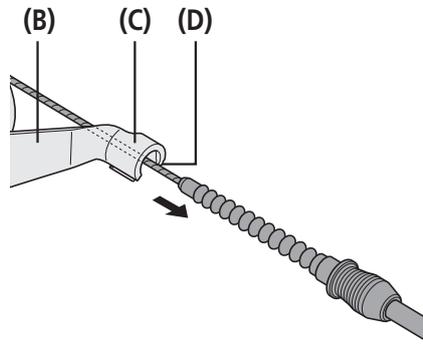
(A) Cassette joint

1



Set the shifting lever to 8.

2

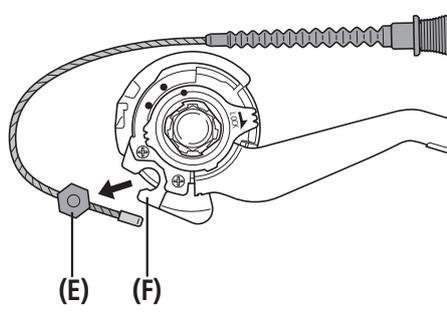


(B) (C) (D)

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.

(B) Bracket  
(C) Outer casing holder  
(D) Slit

3



(E) (F)

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

(E) Inner cable fixing bolt unit  
(F) Cassette joint pulley

**NOTE**

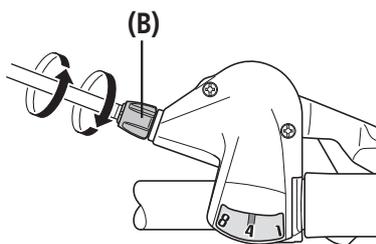
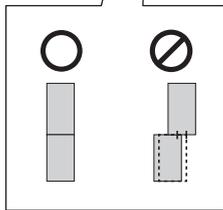
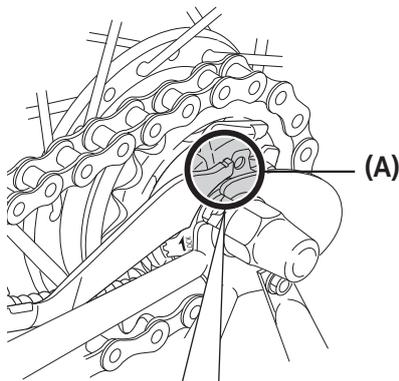
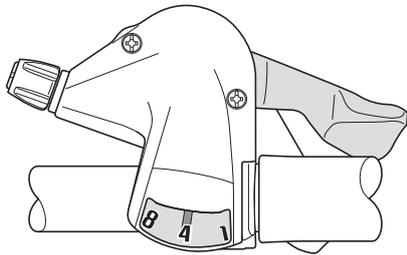
If reinstalling the cable, refer to steps 2 to 4 in "Cassette joint end".

# ADJUSTMENT

# ADJUSTMENT

## ■ Adjusting the cassette joint

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 bolt of the shifting lever to align the setting lines.

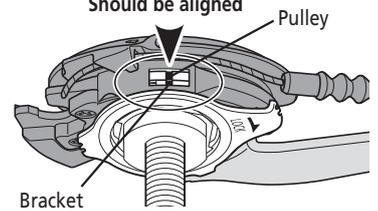
After this, move the shifting lever once more from **4** to **8** and then back to **4**, and then re-check to be sure that the yellow setting lines are aligned.

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

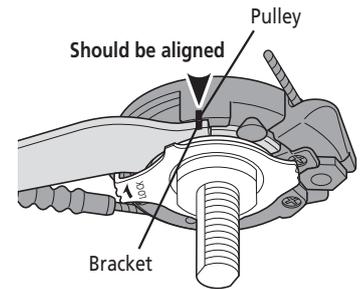
### TECH TIPS

- 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 aligned



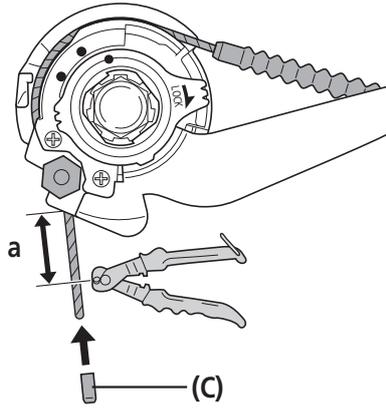
< When bicycle is upside down >



## 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.

- a. 15 – 20 mm

(C) Inner end cap

# MAINTENANCE

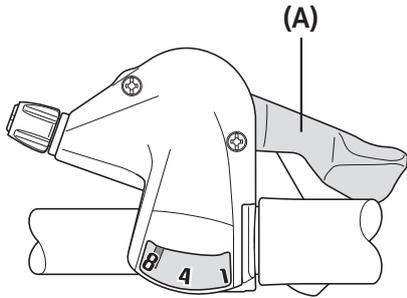
# MAINTENANCE

## ■ Replacement and assembly of the indicator unit

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

### Removal

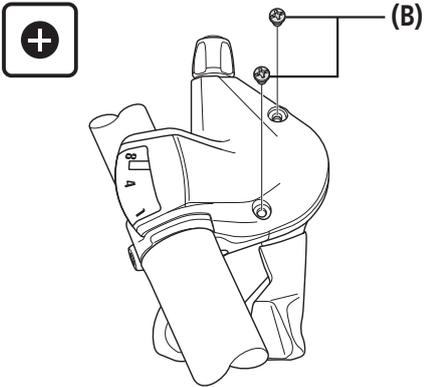
**1**



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

**(A)** Release lever

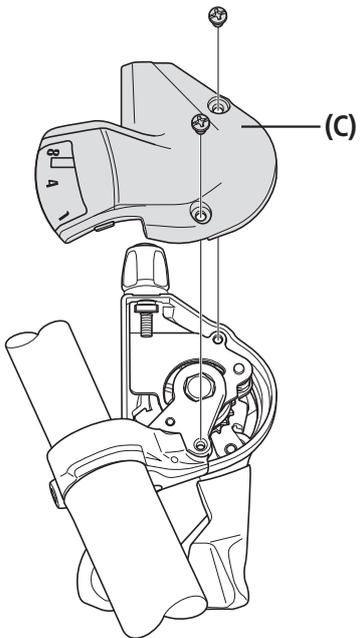
**2**



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

**(B)** Cover fixing screws

**3**

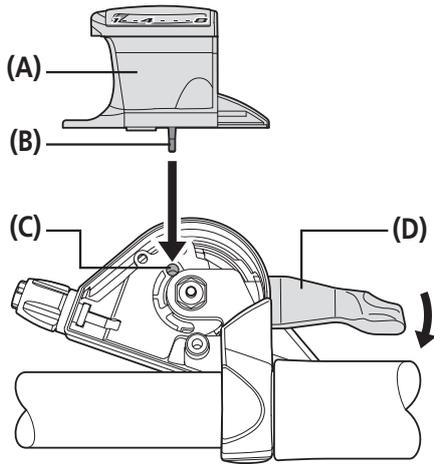


Remove the indicator unit as shown in the illustration.

**(C)** Indicator unit

**Installation**

**1**

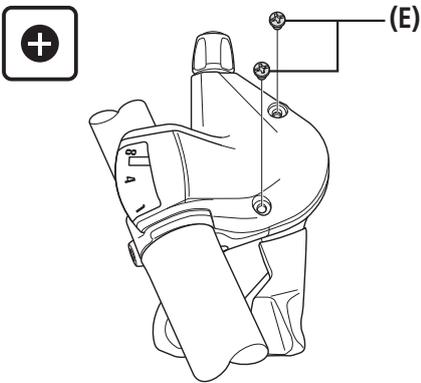


Check that the needle of the indicator is on the left side ([8] position), and then install the indicator unit so that it is facing straight upward.

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.

- (E) 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.

**Oil maintenance of the inner set unit**

In order to maintain proper performance of the product, it is recommended that you ask the place where you purchased the bicycle or your nearest Pro shop to carry out maintenance such as greasing the internal parts about once every two years from the first time of use (once about every 5,000 km if the bicycle is used very frequently). It is also recommended that you use the Shimano internal hub grease or lubrication kit when carrying out maintenance. If the special grease or lubrication kit is not used, problems such as gear shifting malfunction may occur.

**(A)** WB maintenance oil set  
(Y00298010)



**(A)**

**1**



Fill the bottle with WB oil to a height of 95mm.

**a.** 95 mm

**2**



Immerse the internal unit into the oil from the left side. Immerse until the oil reaches up to ring gear unit 1.

**b.** ring gear unit 1

**3**



Keep the internal unit immersed as illustrated for approximately 90 seconds.

## MAINTENANCE

### ▶ Oil maintenance of the inner set unit

4



Remove the internal unit from the oil.

5



Let the excess oil drain off for approximately 60 seconds.

6



After lubrication is complete, reassemble by following the usual procedure.



#### TECH TIPS

##### <Maintenance oil>

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

# SHIMANO

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

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