Dealer's Manual

ROAD	GRAVEL	MTB
E-BIKE	LIFESTYLE	GENERAL

NEXUS

NEXUS

SG-C7010-5D
SM-SG001-MA
SM-SG001-TA
SM-SG001-DS

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IMPORTANT NOTICE

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

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

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

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

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

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

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

TO ENSURE SAFETY

⚠ WARNING

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

  Only use SHIMANO genuine parts. If a component or replacement part is incorrectly assembled or adjusted, it can lead to component failure and cause the rider to lose control and crash.
- Wear approved eye protection while performing maintenance tasks such as replacing components.

Be sure to also inform users of the following:

- Because each bicycle may handle slightly differently depending on the model, 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, which could lead to serious injury due to a fall or collision.
- Check that the wheels are fastened securely before riding the bicycle. Failure to do so may result in serious injury due to a fall or collision.

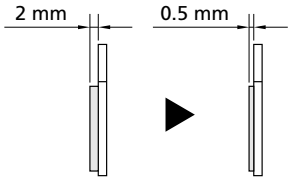
■ Brake

- Do not apply the front brake too strongly. If you do so, the front wheel may lock and the bicycle may fall forward, and serious injury may result.
- Because the required braking distance will be longer during wet weather, reduce your speed and apply the brakes early and gently. Failure to do so may result in serious injury due to a fall or collision.
- A wet road surface may cause tires to lose traction; therefore, to avoid this, reduce your speed and apply the brakes early and gently. If the tires lose traction, it may result in serious injury due to a fall or collision.

■ Rotor

- Keep your fingers away from the rotating rotor. The rotor is sharp enough to inflict severe injury to your fingers if caught.

- Do not touch the calipers or rotor while riding or immediately after dismounting from the bicycle. The calipers and rotor will become hot when the brakes are operated, so you may get burned if you touch them.
- Do not allow any oil or grease to get onto the rotor or pads. Riding the bicycle with oil or grease on the rotor or pads may prevent the brakes from operating and result in serious injury due to a fall or collision.
- Check the thickness of the pads and do not use them if they have a thickness of 0.5 mm or less. Doing so may prevent the brakes from operating and result in serious injury due to a fall or collision.



- Do not use the rotor if it is cracked or deformed. The rotor may break, and result in serious injury due to a fall or collision.
- Do not use the rotor if its thickness is 1.5 mm or less. Also do not use it if the aluminum surface becomes visible. The rotor may break, and result in serious injury due to a fall or collision.

For installation to the bicycle and maintenance

- For information on products that can be installed, check the compatibility information (https://productinfo.shimano.com).
- When installing the hub to the frame, be sure to install the correct hub mounting screws to the left and right sides, then securely tighten them to the specified torques. Failure to completely tighten the hub mounting screws may lead to serious injury due to an accident, such as that caused by rotation in the hub axle turning the cassette joint and leading to the handle being unintentionally pulled by the shifting cable.
- Assemble the wheel with 3x or 4x lacing, and do not spoke the wheel radially.

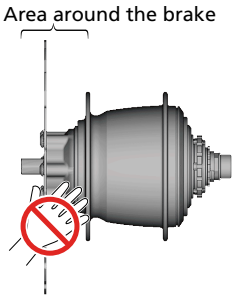
  Otherwise, the spokes or the wheel may get damaged, or noise may occur when braking.

⚠ CAUTION

Be sure to also inform users of the following:

- When shifting while pedaling, be sure to shift one gear at a time with the force being applied to the pedals reduced.

  If you try to shift multiple 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.
- Do not touch the calipers or rotor while riding or immediately after dismounting from the bicycle. The calipers and rotor will become hot when the brakes are operated, so you may get burned if you touch them.
- Disc brakes have a bed-in period, and the braking force will gradually increase as the bed-in period progresses. You may lose control of the bicycle, which can result in serious injury due to a fall or collision. (The same thing will happen when the pads or rotor is replaced.)



NOTICE

Be sure to also inform users of the following:

- Do not press the pedal strongly while shifting. When using some hubs, you can shift the gear while the assist function of E-BIKE is operating. However, doing so will increase the sound of shifting or shorten the operating life of the product.
- The internal geared hub is not completely waterproof. Avoid using the hub in places where water might get inside and do not use high-pressure jets of water to clean the hub, otherwise the internal mechanism may rust.
- The following phenomena occur due to the internal shifting structure and are not a failure of the internal components.

Phenomenon	Gear position
A sound is emitted when the bicycle is pushed back.	All speeds other than 1-speed
There is a built-in mechanism for facilitating shifting and when the mechanism operates during shifting, noise and vibrations are generated.	All speeds
Depending on the gear position, shifting may give different feels.	All speeds

- 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 following chainring and sprocket settings are recommended.

5-speed (refer to the table below for the usable combinations of chainrings and sprockets)

Wheel diameter		24 inch			26 inch		
CS-C7000 number of teeth		30	27	24	30	27	24
Chainring number of teeth	30	-	-	-	-	-	-
	31	-	-	X	-	-	X
	32	-	-	X	-	-	X
	33	-	-	X	-	-	X
	34	-	-	X	-	-	X
	35	-	X	X	-	X	X
	36	-	X	X	-	X	X
	37	-	X	X	-	X	X
	38	X	X	X	X	X	X
	39	X	X	X	X	X	-
	40	X	X	X	X	X	-
	41	X	X	X	X	X	-
	42	X	X	X	X	X	-

Wheel diameter		24 inch			26 inch		
CS-C7000 number of teeth		30	27	24	30	27	24
	43	X	X	-	X	X	-
	44	X	X	-	X	-	-
	45	X	X	-	X	-	-

Wheel diameter		27 inch			700C		
CS-C7000 number of teeth		30	27	24	30	27	24
Chainring number of teeth	30	-	-	-	-	-	-
	31	-	-	X	-	-	X
	32	-	-	X	-	-	X
	33	-	-	X	-	-	X
	34	-	-	X	-	-	X
	35	-	X	X	-	X	X
	36	-	X	X	-	X	X
	37	-	X	X	-	X	-
	38	X	X	-	X	X	-
	39	X	X	-	X	X	-
	40	X	X	-	X	X	-
	41	X	X	-	X	X	-
	42	X	X	-	X	-	-
	43	X	-	-	X	-	-
	44	X	-	-	X	-	-
	45	X	-	-	X	-	-

Wheel diameter		28 inch		
CS-C7000 number of teeth		30	27	24
Chainring number of teeth	30	-	-	-
	31	-	-	X
	32	-	-	X
	33	-	-	X
	34	-	-	X
	35	-	X	X
	36	-	X	X
	37	-	X	-

Wheel diameter		28 inch		
CS-C7000 number of teeth		30	27	24
	38	X	X	-
	39	X	X	-
	40	X	X	-
	41	X	-	-
	42	X	-	-
	43	X	-	-
	44	X	-	-
	45	X	-	-

-: Not usable

- In order to maintain proper performance, it is recommended that you lubricate the internal unit once a year from the start of use (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 the shifting unit may occur.
- If the wheel becomes stiff and difficult to turn, perform an inspection.
- The gears should be periodically washed with a neutral detergent then lubricated. In addition, cleaning the chain with a neutral detergent and lubricating it can be an effective way of extending the life of the gears and chain.
- If the chain keeps coming off the gears during use, replace the sprockets and chain.

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

List of tools to be used

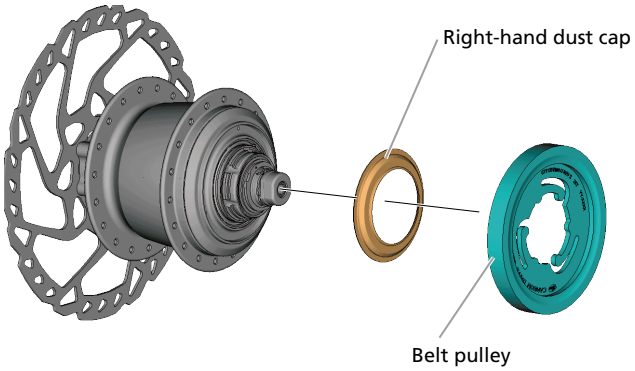
The following tools are needed for installation / removal, adjustment, and maintenance purposes.

Tool	
	Hexalobular [#25]
	10 mm spanner
	14 mm spanner
	17 mm spanner
	28 mm spanner
	5 mm hexagon wrench
	TL-FC31
	TL-S700-B
	TL-SGL01
	TL-SGN01

Installation / removal

Installing the sprocket / belt pulley

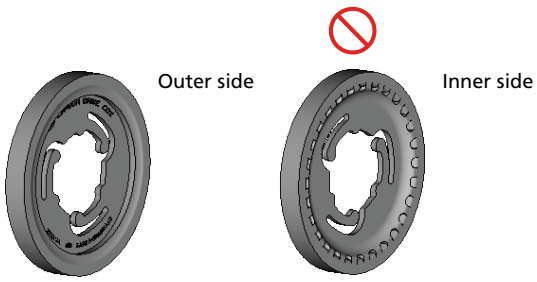
1. **Install the right-hand dust cap, then set the sprocket / belt pulley.**



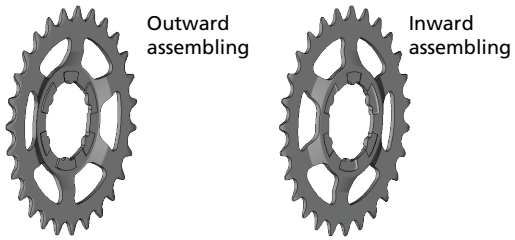
NOTICE

- Note the orientation of the right-hand dust cap, belt pulley, and sprocket.

  Belt pulley

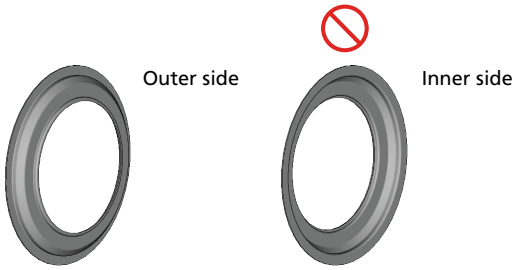


  Sprocket



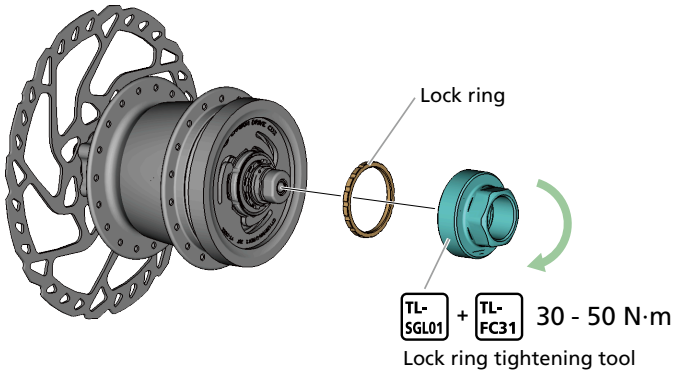
Applicable sprockets	
Outward assembling	Inward assembling
24T, 27T, 30T	24T, 27T, 30T

  Right-hand dust cap



2. Set and tighten the lock ring.

Use the TL-SGL01 + TL-FC31 to secure it.

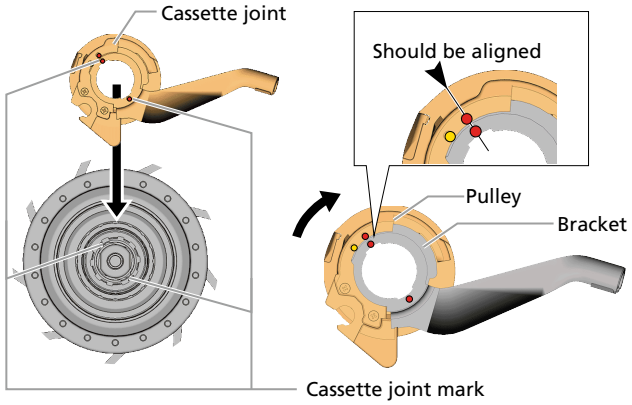


NOTICE

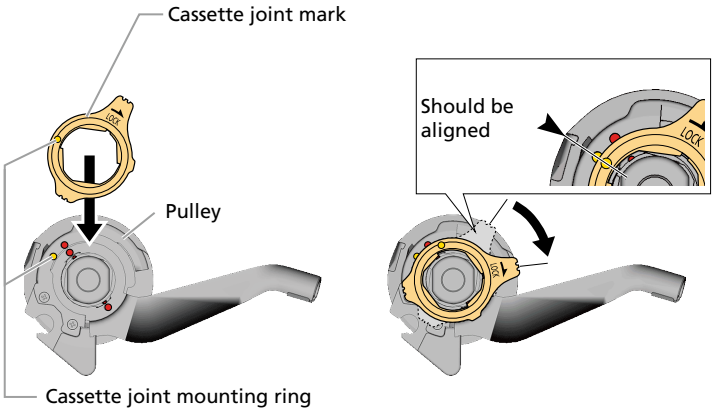
- Keep the TL-SGL01 perpendicular to the sprocket / belt pulley during use.

Installation of the cassette joint to the hub

1. **Turn the pulley to align the cassette joint marks (red). With the cassette joint in this condition, set the cassette joint to the hub body so that the marks (red) on the cassette joint are aligned with the marks (red) on the hub body.**



2. **Secure the cassette joint to the hub body with the cassette joint mounting ring.**
   (1) Align the mark (yellow) of the cassette joint and cassette joint mounting ring.
   (2) Turn the cassette joint mounting ring 45° clockwise to secure it.



NOTICE

- Hold down the cassette joint bracket securely when performing work.

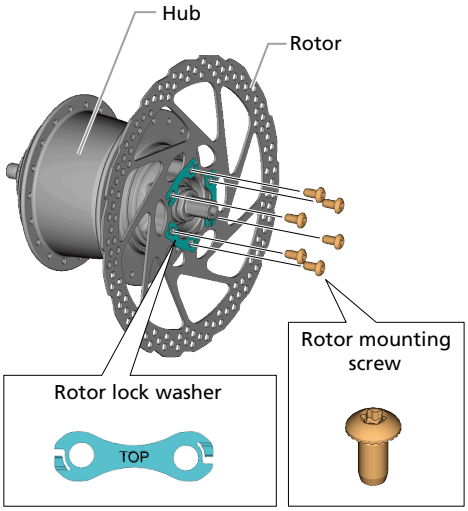
Installing the rotor

⚠ CAUTION

- Use gloves when handling the rotor. Failure to do so may result in cuts to your hands.

6-bolt type (with rotor lock washers)

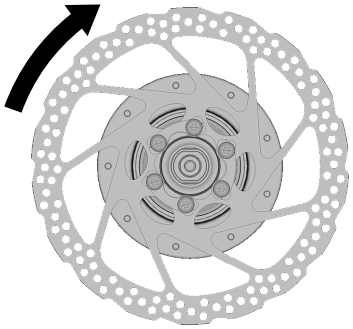
1. **Place the rotor and rotor lock washers on to the hub, then temporarily fix them in place by tightening the rotor mounting screws.**



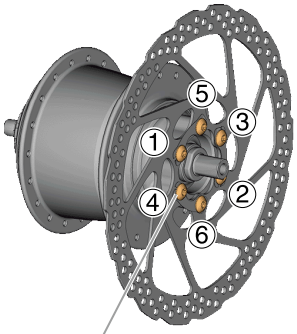
NOTICE

- Fit the rotor lock washers so that the marking “TOP” is visible.
- The rotor lock washers are not reusable. Always use new lock washers when installing the rotor.
- Use the dedicated rotor mounting screws.

2. **Wear gloves and turn the rotor clockwise with some force.**



3. **Tighten the rotor mounting screws in the order shown in the figure.**



25 2 - 4 N·m
Rotor mounting screw

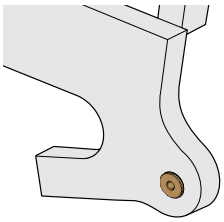
Installation of the hub to the frame

1. **Check the shape of the rear dropout, and select an appropriate rear dropout sleeve.**

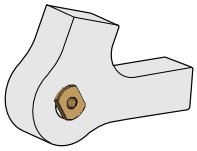
TECH TIPS

- Use a rear dropout sleeve that matches the shape of the rear dropout.

Left side



Right side

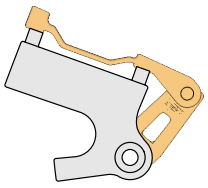


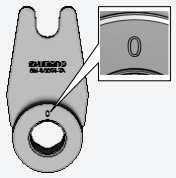
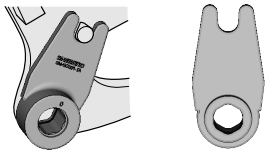
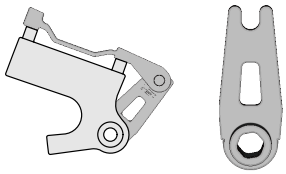
Left thru axle type		Right thru axle type			
		P 1.5 mm	P 1.0 mm	P 1.75 mm	UDH Standard
		M12 x 1.5	M12 x 1.0	M12 x 1.75	
Flat type		X	X	X	X
Tapered type		-	X	-	X

2. **Check the rear dropout on the left side, then select an appropriate torque arm and mount adapter.**

TECH TIPS

- Use a torque arm and mount adapter that match the shape of the rear dropout and the size of the rotor.

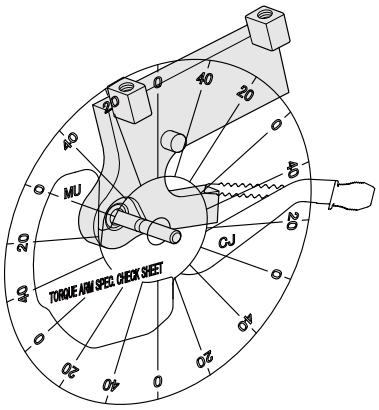


Torque arm / mount adapter		Angle		
		0°	20°	40°
				
Direct type		Direct type 0°	Direct type 20°	Direct type 40°
Mount adapter type		Mount adapter type 0°	Mount adapter type 20°	Mount adapter type 40°

Frame		Rotor	
		180 mm	203 mm
Post mount	160 mm direct	R180P/P	-
	180 mm direct	-	R203P/PM

Checking the torque arm

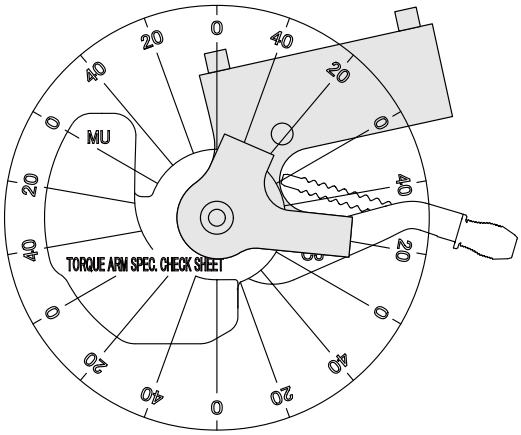
(1) Align the center of the torque arm check sheet with the center of the rear dropout.



NOTICE

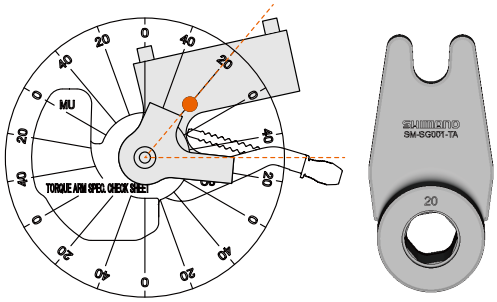
- Print the torque arm check sheet on a transparent film sheet before use.

(2) Rotate the torque arm check sheet, and ensure that the illustrations of the cassette joint and motor unit are in appropriate positions where they will not interfere with the frame.



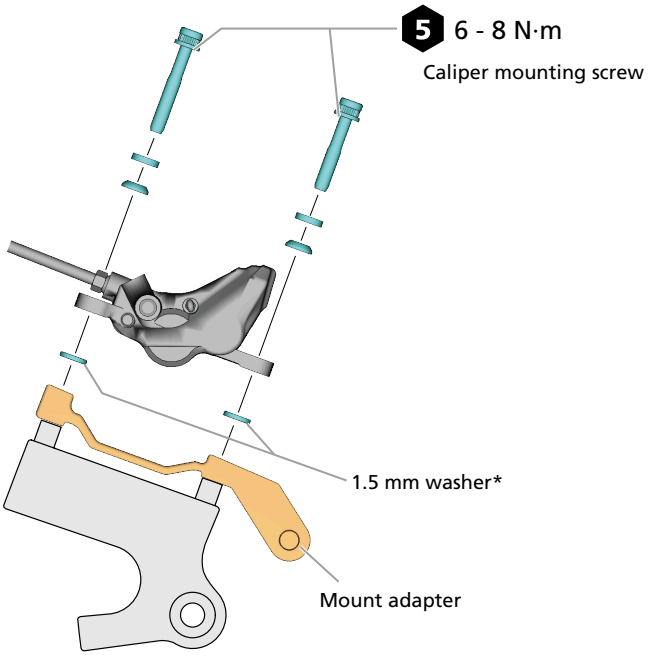
NOTICE

- Align the scale of the torque arm check sheet and the pin to determine the appropriate angle for the torque arm.



3. Install the mount adapter and brake caliper to the frame.

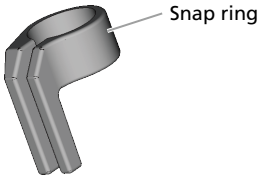
Readjust the position of the brake caliper after installing the rotor.



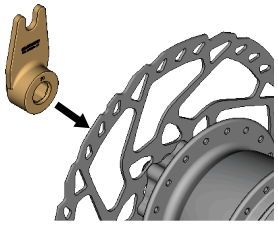
* Not used for the R180P/P.

NOTICE

- After securing the caliper mounting screws, secure the brake caliper with a snap ring, as indicated in the dealer's manual of the brake caliper.

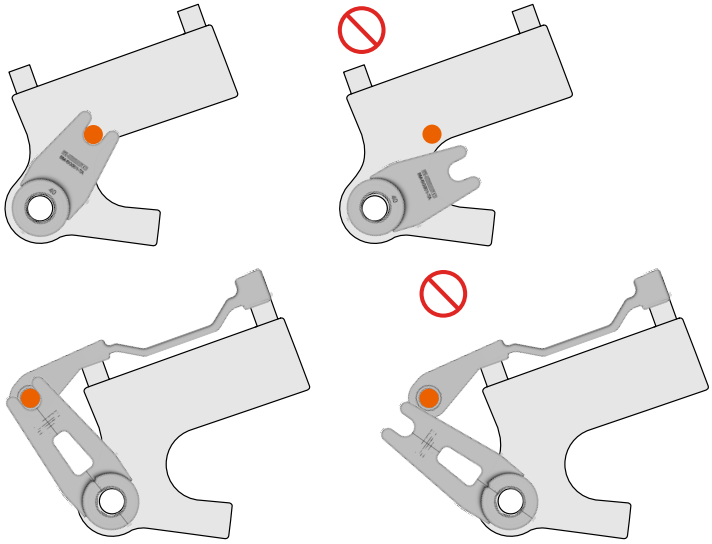


4. **Insert the torque arm into the hub axle.**



⚠ WARNING

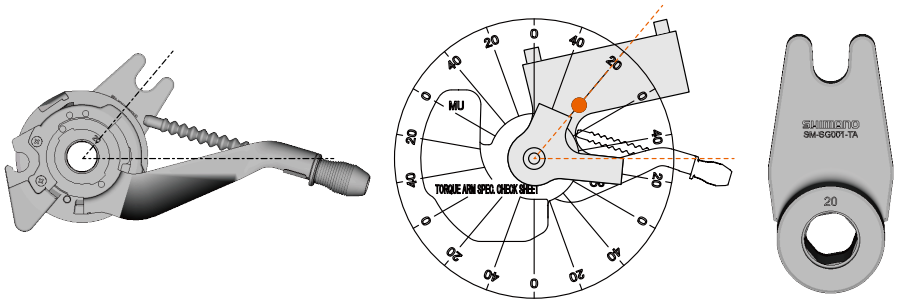
- Ensure that the tip of the torque arm is securely installed to the pin. If it is not installed correctly, the hub axle may turn and break, causing the wheel to fall off, or the shifting cable may get caught and cause the handlebar where the shifter is installed to be pulled unexpectedly. This may cause you to fall off the bicycle which could result in serious injury.



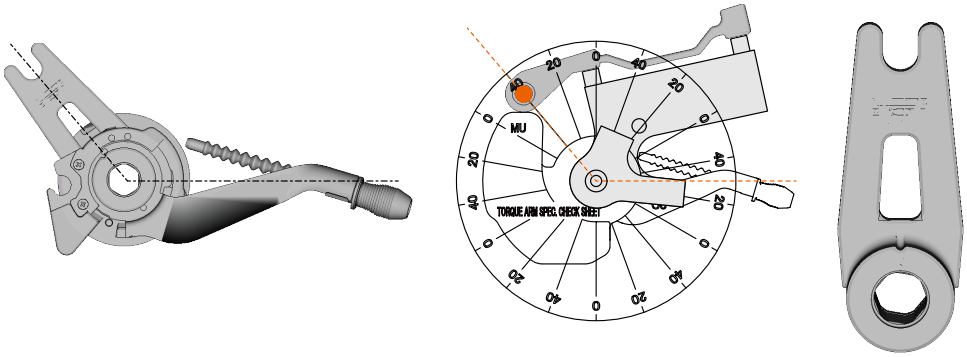
NOTICE

- Install the torque arm so that the angle of the motor unit and cassette joint from the pin matches that determined in the procedure for checking the torque arm.

Direct type

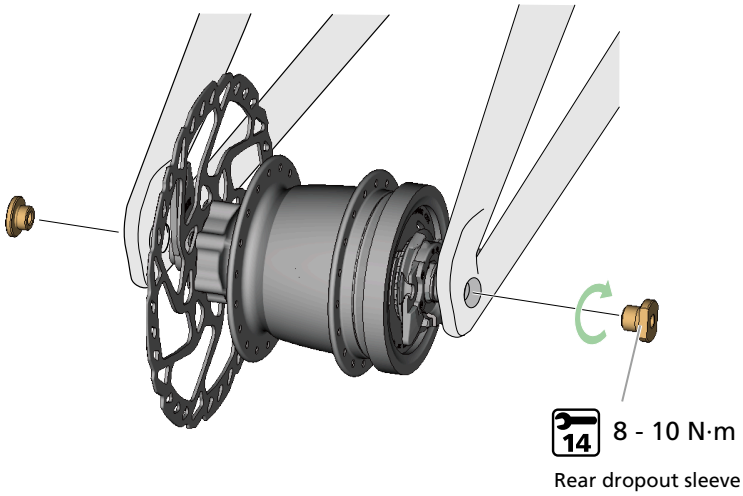


Mount adapter type



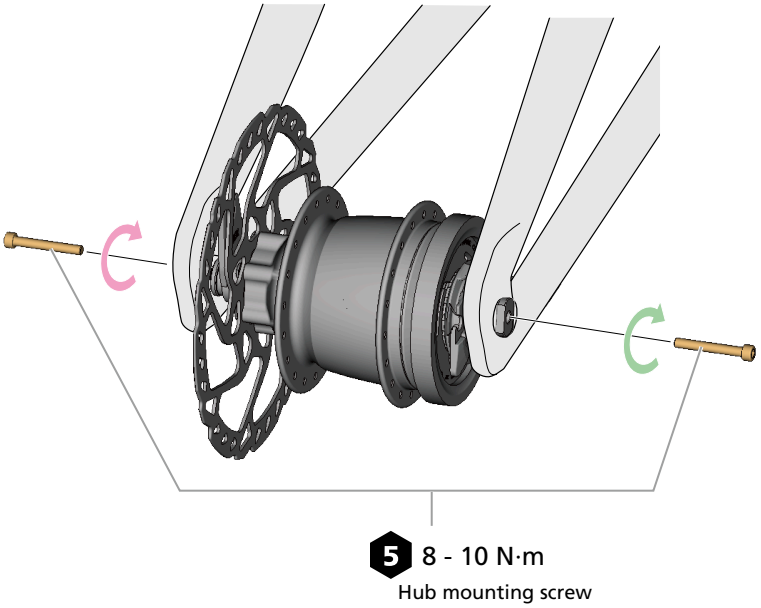
5. Install the hub onto the frame.

Insert the left and right rear dropout sleeves determined in step 1 into the frame, then install the hub while aligning the torque arm with the rotation prevention pin.

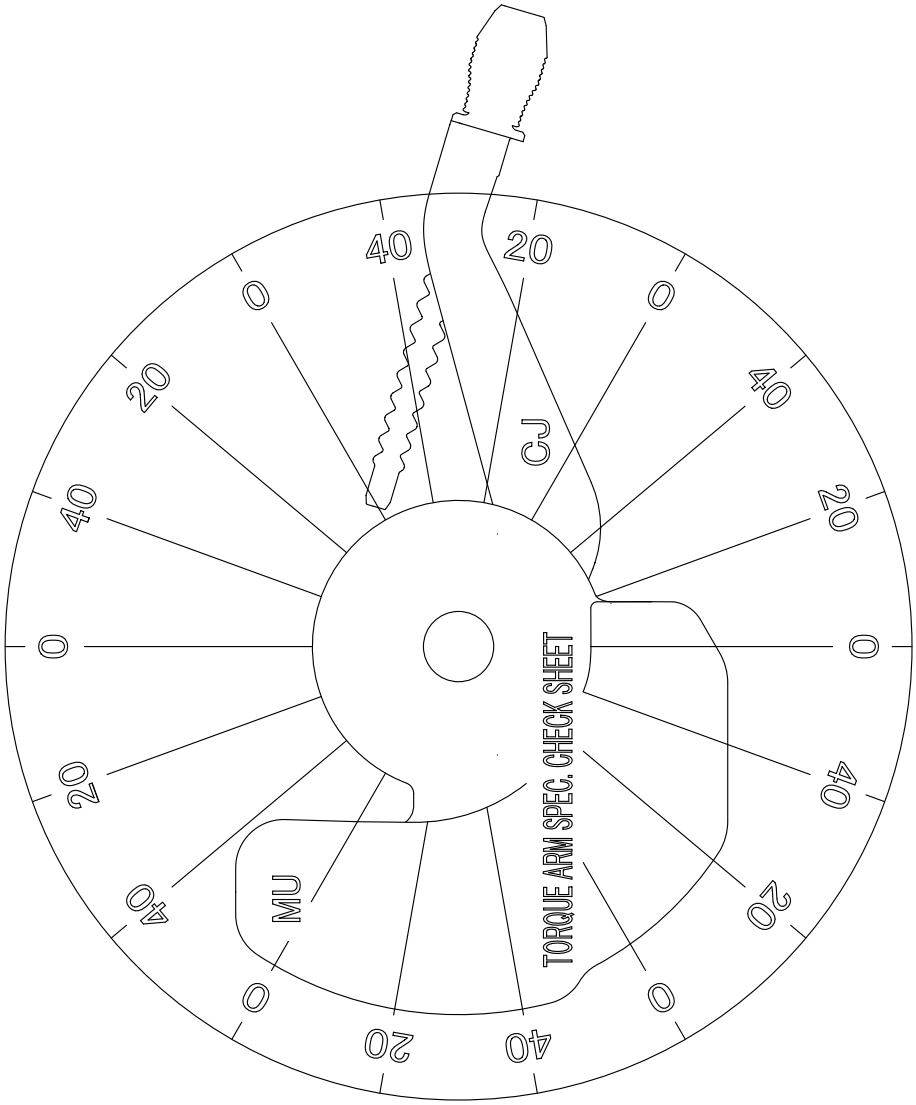


6. Secure the hub.

Install the hub mounting screws to secure the hub.


5
8 - 10 N·m
Hub mounting screw

Torque arm check sheet



Installing the shifting cable

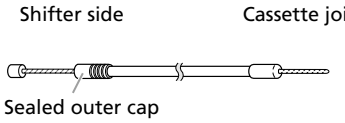
Shifter side

1. **Install the inner cable and outer casing aligned with the shifter.**

   For details, refer to the dealer's manual of the shifter .

NOTICE

- Make sure that the sealed outer cap is at the shifter end.

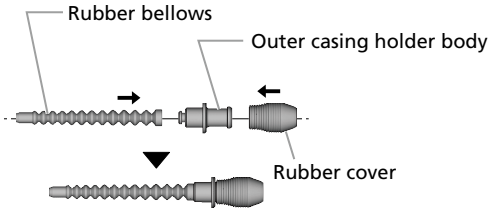


Cassette joint side

1. **Operate the shifter and set to the specified gear position.**

   SG-C7010 : 5-speed

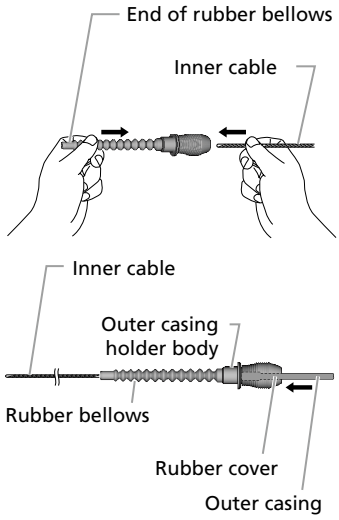
2. **Install the rubber cover and rubber bellows to the outer casing holder body.**



3. **Pass the inner cable through.**

   (1) 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.

   (2) Insert the outer casing into the rubber cover and set it into the outer casing holder body. Push the outer casing so that it securely touches the outer casing holder body.



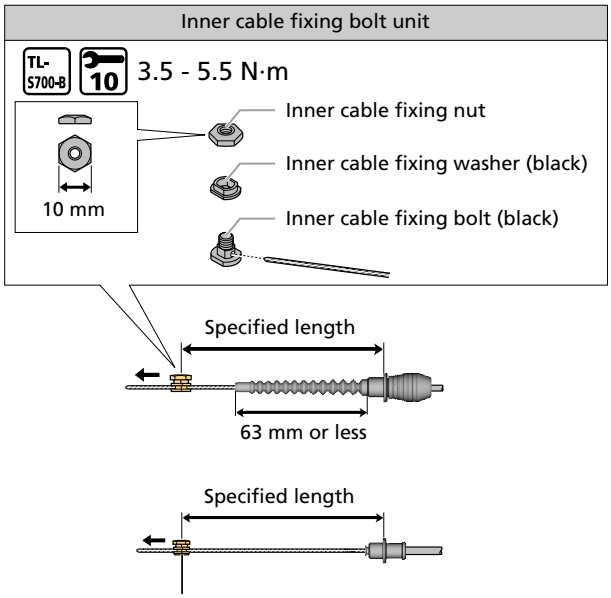
NOTICE

- Use a new inner cable; do not use a cable which has had its end cut off. Pay attention to the end of the inner cable.

4. Install the inner cable fixing bolt unit.

After checking that the end of the outer casing is securely set in the cable adjustment barrel of the shifter, secure the unit at the specified length while pulling the inner cable.

SG-C7010 (internal 5-speed): 145 mm



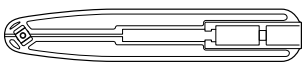
NOTICE

- Use the special inner cable fixing bolt unit.

TECH TIPS

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

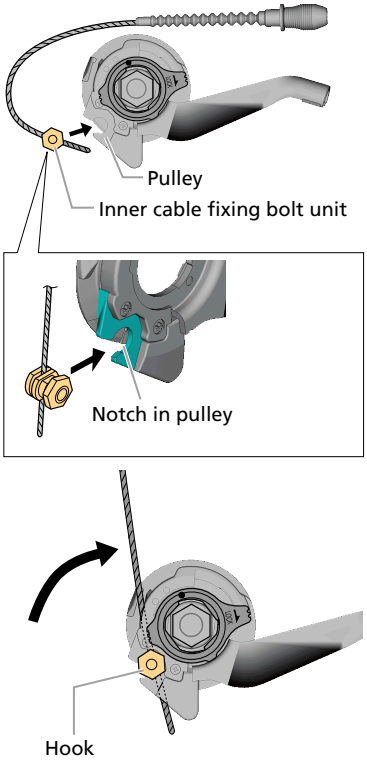
TL-S700-B (145 mm)



5. Secure the inner cable fixing bolt unit.

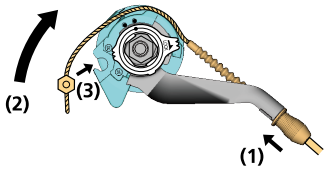
(1) Fit the inner cable fixing bolt unit into the notch in the pulley.

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



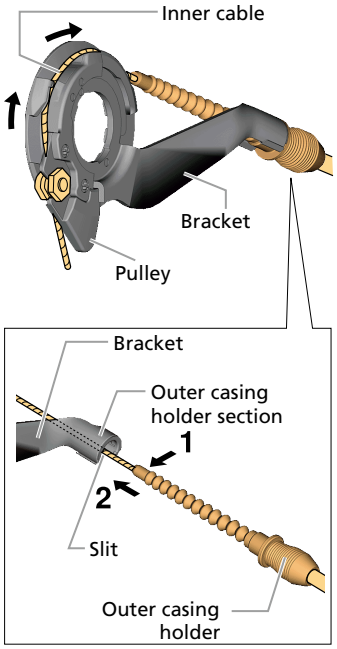
TECH TIPS

- The outer casing holder of the cassette joint can be installed first by turning the pulley of the cassette joint.



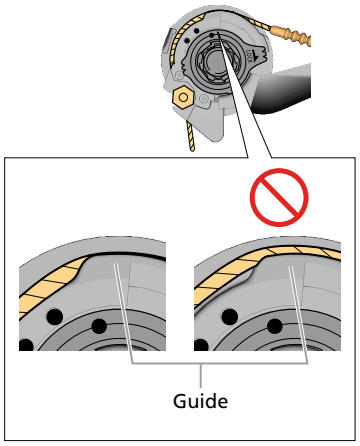
6. Secure the inner cable and outer casing.

Place the inner cable in the pulley as shown in the figure, insert the inner cable into the slit in the cassette joint bracket, then secure the outer casing holder in the outer casing holder section of the cassette joint.

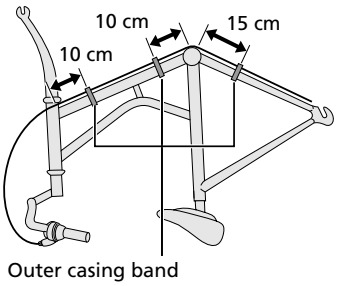


NOTICE

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



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



Adjustment

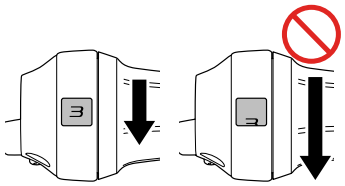
Adjusting the cassette joint

1. **Operate the shifter and set to the specified gear position.**

   SG-C7010 : 5-speed to 3-speed

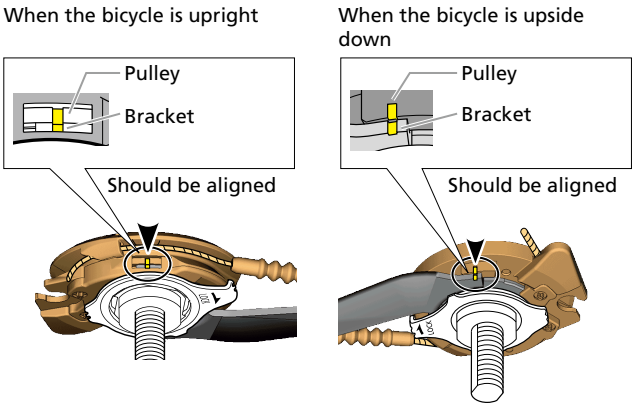
NOTICE

- When setting, do so gradually and with minimal force so as to avoid over-shifting.If you over-shift, the setting line will not return to the proper position, and the setting lines may not be aligned at the correct position. (Refer to step 2)



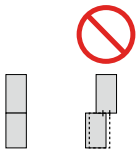
2. **Turn the cable adjustment barrel and align the setting lines.**

   Check that the yellow setting lines on the cassette joint bracket and pulley are aligned with each other. The yellow setting lines on the cassette joint are located in two places; above and below.



NOTICE

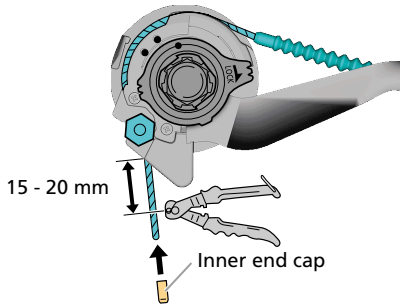
- If the area of the pulley and bracket marked by the setting line overlap by two thirds or less, the gears may not be properly engaged during pedaling, resulting in abnormal noise or free spinning of the pedals.



3. **Operate the shifter and recheck that the yellow setting lines are aligned.**

Operate the shifter again from step 1 to check.

4. **Cut off the excess length of inner cable, then install the inner end cap.**



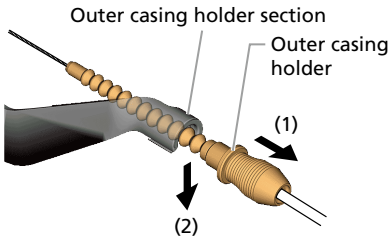
Maintenance

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

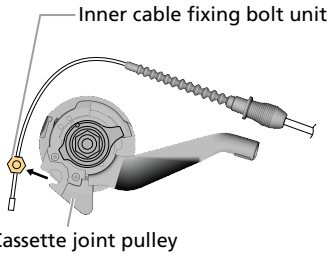
1. **Set the shifter to the specified gear.**

   SG-C7010 : 5-speed

2. **Pull the outer casing holder out from the outer casing holder section.**

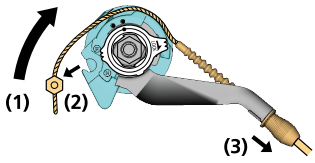


3. **Remove the inner cable from the pulley guide, and remove the inner cable fixing bolt unit.**



TECH TIPS

- If it is difficult to remove the shifting cable, the outer casing holder can be pulled out from the outer casing holder section of the cassette joint by turning the pulley of the cassette joint.

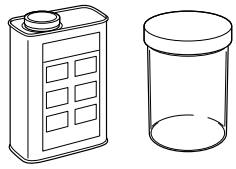


Oil maintenance of the internal unit

Oil Maintenance Kit: Y00298010

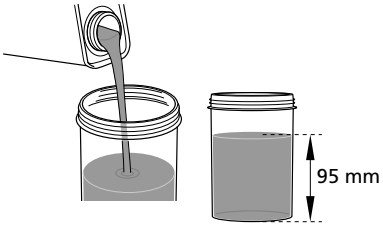
In order to maintain proper performance, it is recommended that you lubricate the internal unit once a year from the start of use (or once about every 2,000 km if the bicycle is used very frequently). If the bicycle is used under harsh conditions, more frequent maintenance is required.

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 the shifting unit may occur.

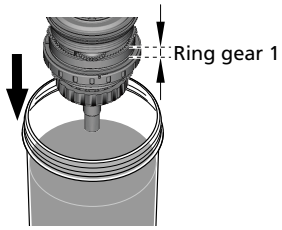


WB Maintenance Oil Set
(Y00298010)

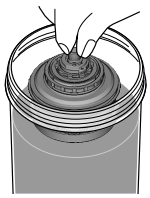
1. **Fill the container with maintenance oil to a height of 95 mm.**



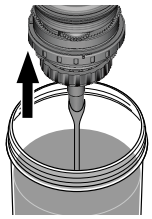
2. **Immerse the internal unit in the oil from the left side of the hub until the oil reaches up to ring gear 1, as shown in the figure.**



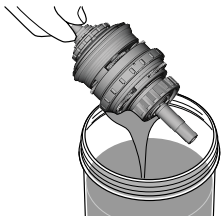
3. **Keep the internal unit immersed in oil for approximately 90 seconds.**



4. **Remove the internal unit from the oil.**



5. Let excess oil drain off for approximately 60 seconds.



TECH TIPS

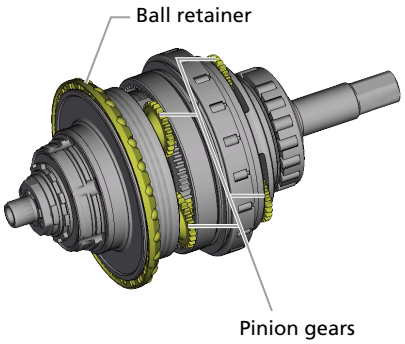
About maintenance oil

- Maintenance oil is reusable.

  Replenish as needed.
- Store it with the lid closed after usage.

NOTICE

- After oil maintenance, it is recommended that you apply Grease (Y04130100) to the ball retainers and pinion gears.



6. Reassemble the hub.

(1) Use the TL-SGN01 to adjust the left-hand cone until the hub shell rotates smoothly and the hub axle has no excess play.

(2) Use the TL-SGN01 to tighten the left-hand lock nut.

The image shows an example.

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