

Dealer's Manual

SHIMANO
Nexus

SG-3R40

SG-3R42

SG-3S40

SG-3S42

SL-3S43J

SL-3S58J

SL-3S90

SL-3S91

SM-3S40

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IMPORTANT NOTICE

- **This dealer's manual is intended primarily for use by professional bicycle mechanics.**
Users who are not professionally trained for bicycle assembly should not attempt to install the components themselves using the dealer's manuals. If any part of the information on the manual is unclear to you, do not proceed with the installation. Instead, contact your place of purchase or a local bicycle dealer for their assistance.
- Make sure to read all instruction manuals included with the product.
- Do not disassemble or modify the product other than as stated in the information contained in this dealer's manual.
- All manuals and technical documents are accessible online at <https://si.shimano.com>.
- For consumers who do not have easy access to the internet, please contact a SHIMANO distributor or any of the SHIMANO offices to obtain a hardcopy of the user's manual.
- Please observe the appropriate rules and regulations of the country, state or region in which you conduct your business as a dealer.

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

The following instructions must be observed at all times in order to prevent personal injury and physical damage to equipment and surroundings. The instructions are classified according to the degree of danger or damage which may occur if the product is used incorrectly.

 **DANGER**

Failure to follow the instructions will result in death or serious injury.

 **WARNING**


Failure to follow the instructions could result in death or serious injury.

 **CAUTION**

Failure to follow the instructions could cause personal injury or physical damage to equipment and surroundings.

TO ENSURE SAFETY

⚠ WARNING

- **Be sure to follow the instructions provided in the manuals when installing the product.**
Only use SHIMANO genuine parts. If a component or replacement part is incorrectly assembled or adjusted, it can lead to component failure and cause the rider to lose control and crash.
-  Wear approved eye protection while performing maintenance tasks such as replacing components.

Be sure to also inform users of the following:

- 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.
- Use brake levers with mode switching mechanism in the combinations shown in the figures. The brake levers are equipped with a mode switching mechanism which can be used to make them compatible with cantilever brakes, roller brakes or V-BRAKE brakes with power modulator. **If the incorrect mode is selected, it may result in either excessive or insufficient braking force, which is highly dangerous.** Select the correct mode as shown in the figures.

Mode position	Applicable brake
<p>C : Mode position for compatibility with cantilever brakes</p> <p>R : Mode position for compatibility with roller brakes</p>	<ul style="list-style-type: none"> • Cantilever brakes • Roller brakes
<p>V : Mode position for compatibility with V-BRAKE brakes with power modulator</p>	<ul style="list-style-type: none"> • V-BRAKE brakes with power modulator

- 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 cause serious injury.

For Installation to the Bicycle, and Maintenance:

- When securing the brake arm to the frame, be sure to use an arm clip that matches the size of the chainstay, and securely tighten them with the clip bolt and clip nut to the specified tightening torque.
Use a lock nut with a nylon insert (self-locking nut) as the clip nut. It is recommended that SHIMANO made clip bolts, clip nuts, and arm clips be used. If the clip nut comes off the brake arm, or if the clip bolt or arm clip becomes damaged, the brake arm may rotate on the chainstay and cause the handlebars to jerk suddenly, or the bicycle wheel may lock and result in serious injury due to a fall or collision.
- When installing the hub to the frame, be sure to install the designated non-turn washer, and securely tighten the hub nut to the specified torque. If a non-turn washer is not installed, or if the hub nut is not tightened sufficiently, the non-turn washer may fall out, which could cause the hub axle to rotate, resulting in the handlebars being accidentally pulled by the shifting cable and leading to an extremely serious accident.
- When using a reversed rear dropout, use a chain adjuster to remove excess slack from the chain.

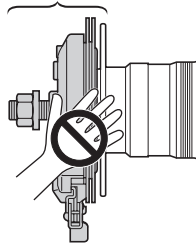
 **CAUTION****Be sure to also inform users of the following:**

- Be sure to shift one gear at a time by pushing the shift lever until you feel a click with a clicking sound. During shifting, reduce the force being applied to the pedals. If you try to force operation of the shift lever or perform multi-shifting 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 shift lever to multi-shift to a light gear may also cause the outer casing to spring out of the shift lever.
This does not affect the capabilities of the shift lever because the outer casing returns to the original position after shifting.
- Observe the combination with other products when using this product. When this product is used with ST-3S35, SB-3S20-J, SB-3S25-J, or SL-3S10 (domestic model), the indicator display is reversed.
- Never place your foot on the bell crank. Otherwise, gear shifting may not function properly.
- Do not use the SHIMANO INTER M brake system on mountain bikes. Even for other types of bicycles, continuous application of the brakes when riding down long slopes will cause the internal brake parts to become very hot, weakening braking performance; it may also reduce the amount of grease inside the brake, leading to problems such as sudden braking.
- If any of the following occurs while applying the brakes, stop riding immediately and carry out inspection and repairs:
 - 1) If an abnormal noise is heard when the brakes are applied
 - 2) If the braking force is abnormally strong
 - 3) If the braking force is abnormally weakIn the case of 1) and 2), the cause might be a lack of brake grease, so grease the mechanism with special roller brake grease.
- In order to get the best performance from the SHIMANO INTER-M brake, be sure to use SHIMANO brake cables and brake levers as a set. (The amount of movement of the inner cable must be 14.5 mm or more when the brake lever is depressed. If it is less than 14.5 mm, braking performance will suffer, and the brakes may fail to work.)
- Check that the brake arm is securely fastened to the chainstay by the arm clip. If it is not installed correctly, braking performance will suffer.

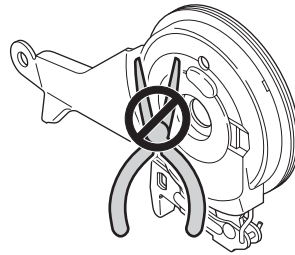
TO ENSURE SAFETY

- When the brake is used frequently, do not touch the area around the brake for at least 30 minutes after riding the bicycle. The area around the brake may become hot.

Area around the brake



- Check the state of the brake cable. If the brake cable becomes rusted, braking performance will suffer. If this happens, replace the brake cable with a genuine SHIMANO brake cable and re-check the braking performance.
- The brake unit of the INTER-M brake should never be disassembled. If it is disassembled, it will no longer work properly.



- Do not apply grease to the roller clutch. Greasing the roller clutch excessively may cause it to slip.

NOTICE

Be sure to also inform users of the following:

- It is possible to shift gears while pedaling lightly, but on rare occasions the pawls and ratchet inside the hub may produce some noise afterwards as part of normal gear shifting operation.
- During travel, stopping the pedals makes it easier to shift gears.
- The INTER-M brake is different from conventional band brakes in that the inside of the brake drum is filled with grease, causing the turning of the tire to be slightly heavier than usual. (Particularly in cold weather.)
- If the wheel becomes stiff and difficult to turn, lubricate it.
- For carrying out maintenance, the use of SHIMANO internal geared hub grease or a lubrication kit is recommended. If SHIMANO grease is not used, problems such as a malfunction in gear shifting may occur.
- The internal geared hub is not completely waterproof. Avoid using the hub in places where water might get inside it or using high-pressure water to clean the hub, otherwise the internal mechanism may rust.

For Installation to the Bicycle, and Maintenance:

- You should periodically wash the sprockets in a neutral detergent and then lubricate them again. In addition, cleaning the chain with a neutral detergent and lubricating it can be an effective way of extending the useful life of the sprockets and chain.
- If the chain keeps coming off the chainrings during use, replace the chainrings and chain.
- Use a wheel with 3x or 4x lacing. Wheels with radial lacing cannot be used. Otherwise, the spokes or the wheel may be damaged, or noise may occur when braking.
- Use only the lubricants specified by SHIMANO in this dealer's manual.
- In order to maintain proper performance, it is recommended that you lubricate the internal unit after riding 1,000 km from the start of use, then after about once every year (or once about every 2,000 km if the bicycle is used very frequently). 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.
- 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.

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

INSTALLATION

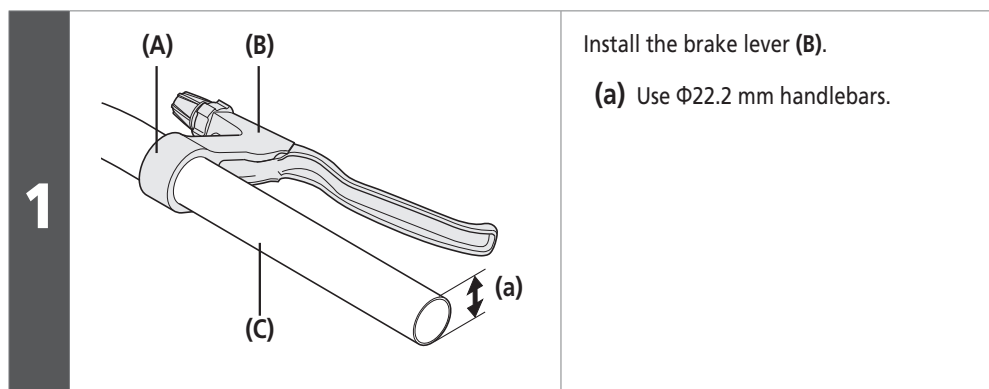
List of tools to be used

The following tools are required to assemble the product.

Tool		Tool		Tool	
	3 mm hexagon wrench		15 mm spanner		TL-LR10
	4 mm hexagon wrench		17 mm spanner		Adjustable wrench
	5 mm hexagon wrench		Cross head screwdriver [#2]		
	10 mm spanner		TL-CT12 cable cutter		

Installation of the lever

Installation of the shift lever



- (A) Brake lever band
- (B) Brake lever
- (C) Handlebar

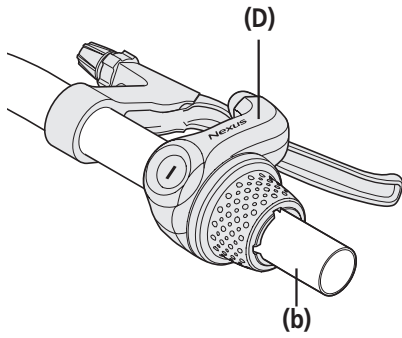


Use a brake lever with a thickness of 4.3 mm or lower to prevent the brake lever and shift lever from interfering with each other.

INSTALLATION

► Installation of the lever

2



Install the shift lever (D).

- (b) The straight section of the handlebar must be 158 mm or longer.
The shift lever is installed to this straight section.

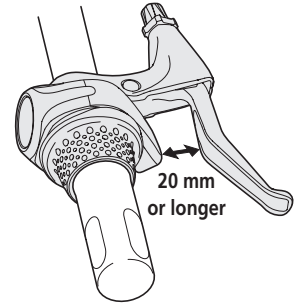
(D) Shift lever



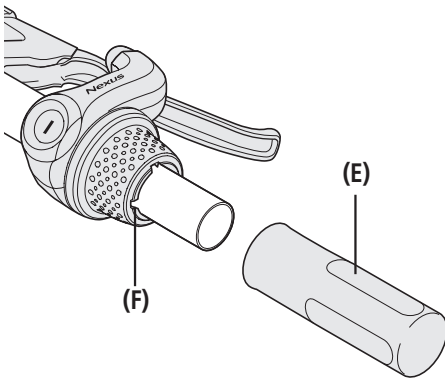
TECH TIPS

< In the case of SL-3S58J >

Leave a gap of 20 mm or more between the brake lever and the shift lever.



3



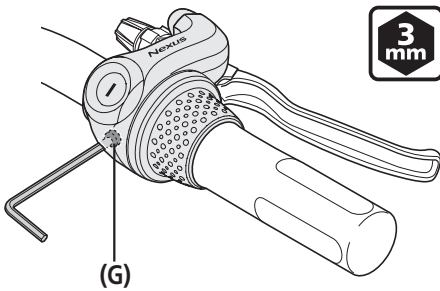
Install the half grip (E).

Leave a 0.5 mm gap between the shift lever and the half grip (F).

(E) Half grip

(F) Gap between the shift lever and the half grip

4



Tighten the shift lever.

(G) Fixing screw

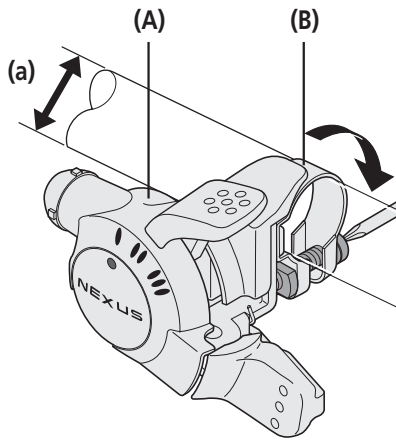
Tightening torque



2 - 2.5 N·m

Installation of the piano touch lever

1



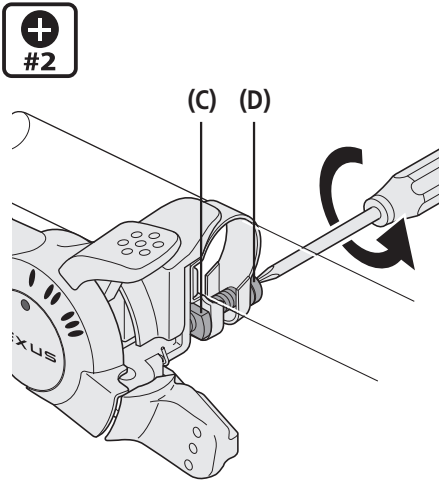
Mount the clamp band (B) to the handlebars.

(a) Use $\Phi 22.2$ mm handlebars.

(A) Piano touch lever

(B) Clamp band

2



Secure the clamp band to the handlebars with the fixing screw (D) and fixing nut (C).

(C) Fixing nut

(D) Fixing screw

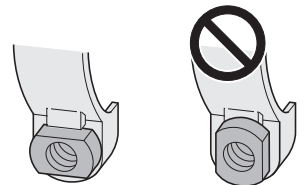
Tightening torque



2.5 - 3 N·m

NOTICE

Observe the correct orientation of the fixing nut.

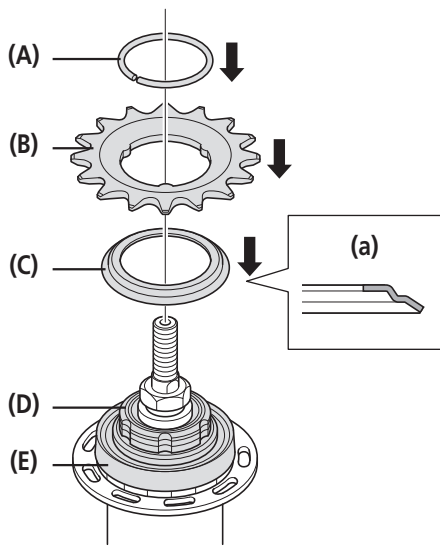


INSTALLATION

►► Installation of the bell crank type hub

■ Installation of the bell crank type hub

Installation of the sprocket to the hub



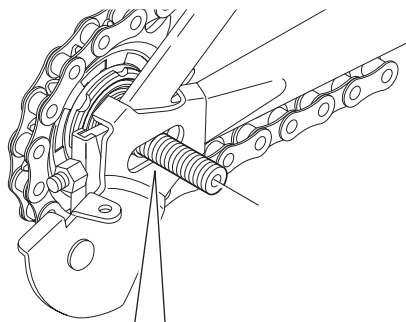
Place the right-hand waterproof cap B (C) onto the driver (D) on the right side of the hub body.

Next, install the sprocket (B) and secure it in place with the snap ring (A).

(a) Note the direction

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

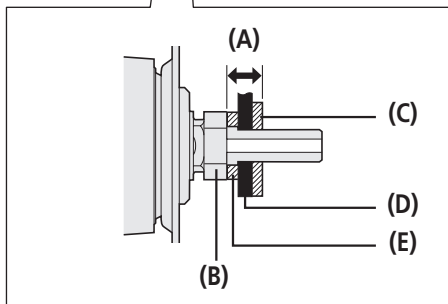
Installation of the bell crank



Install the hub to the frame.

The installation procedure differs depending on the width **(A)**.

Follow the instructions below for installation.

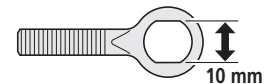


- (A)** Width A
- (B)** Lock nut
- (C)** Stand
- (D)** Rear dropout
- (E)** Chain tensioner



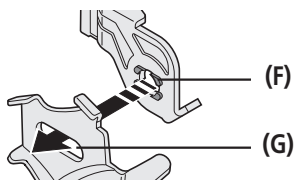
TECH TIPS

The chain adjuster to be attached to the right side should have a flat-sided hole.



< When the width A is between 5.5 and 10.5 mm >

1

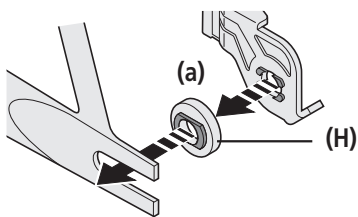


Push the non-turn part of the bracket **(F)** firmly into the oval hole in the stand **(G)** or the rear dropout.

- (F)** Non-turn part of the bracket
- (G)** Oval hole in the stand

< When the width A is less than 5.5 mm >

1



Push the protrusion of the washer with a 4 mm protrusion **(H)** into the rear dropout and the non-turn part of the bracket firmly into the indentation in the washer.

(a) Added

- (H)** Washer with a 4 mm protrusion

NOTICE

For belt-driven bicycles, make sure that the bell crank is not in contact with the screw on the frame joint. If they are in contact with each other, attach the washer with a 4 mm protrusion.

< When the width A is 10.6 mm or more >

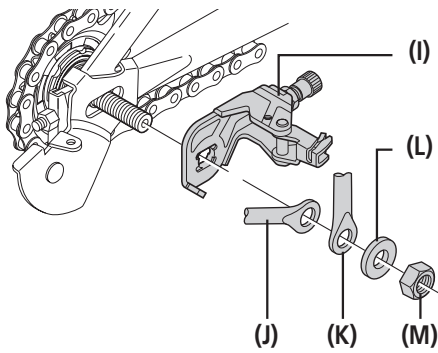
1

Use a hub with a 191.8 mm long axle.

INSTALLATION

► Installation of the bell crank type hub

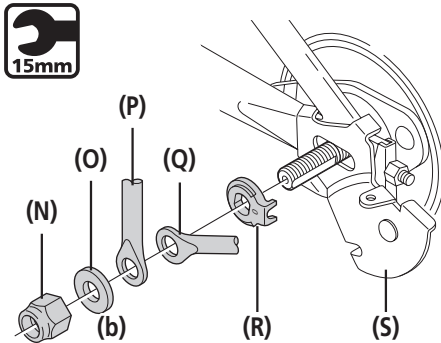
2



Mount the parts in the order shown in the illustration and temporarily fix them with the hub nut (M).

- (I) Bell crank
- (J) Mudguard stay
- (K) Carrier stay
- (L) Washer
- (M) Hub nut

3



Attach the non-turn washer (R) to the left side of the hub axle as shown in the illustration and temporarily fix it with the left hub nut (N), making sure that the non-turn washer is attached at the correct position with its protrusion oriented in the right direction.

- (b) The side with notches should face inward.

- (N) Left hub nut
- (O) Washer
- (P) Carrier stay
- (Q) Mudguard stay
- (R) Non-turn washer
Thickness: 4 mm
Color: Black
Mark: 0
- (S) Stand

Tightening torque



30 - 45 N·m

NOTICE

- The protrusion should be on the rear dropout side.
- Install the non-turn washer so that the protrusion fits securely in the rear dropout groove at the front and back sides of the hub axle.
- When installing a stand to the hub axle, place the non-turn washer onto the stand from the outer side so that the protrusion fits into the groove in the stand.
- When installing a part such as a mudguard stay to the hub axle, place it onto the outer side of the non-turn washer.

< Installation of the INTER-M brake >

4

17mm

(T) (U) (W) (V)

Install the brake arm (V) of the INTER-M brake to the chainstay (T) using the arm clip (U) and temporarily tighten the clip bolt and clip nut loosely.

Then, tighten the brake unit fixing nut (W).

- (T) Chainstay
- (U) Arm clip
- (V) Brake arm
- (W) Brake unit fixing nut

Tightening torque	
17mm	20 - 25 N·m

NOTICE

If it is impossible to temporarily attach the brake arm to the chainstay due to misalignment of the brake arm as shown in the illustration, loosen the brake unit fixing nut and turn the brake arm before temporarily attaching it to the chainstay. Then, tighten the brake unit fixing nut.

5

10mm

(X) (Y) (Z) (c)

Fix the brake arm (Z) of the INTER-M brake securely to the chainstay (X) with the arm clip (Y).

(c) If excessive force is applied to the brake arm, the wheel will become difficult to turn.

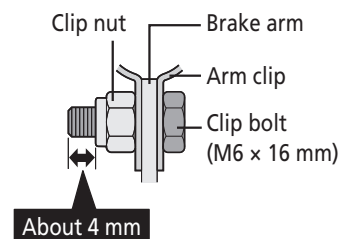
Be careful not to apply excessive force when installing.

- (X) Chainstay
- (Y) Arm clip
- (Z) Brake arm

Tightening torque	
10mm	2 - 3 N·m

NOTICE

- When installing the arm clip, securely tighten the clip bolt while holding the clip nut with a 10 mm spanner.
- After installing the arm clip, check that the clip bolt protrudes about 4 mm from the end face of the clip nut.



< Installation of the brake cable >

6

Place the cable adjustment bolt **(AA)** so that it is 15 – 17 mm from the end of the brake arm **(AB)**, and then pass the inner cable through the cable adjustment bolt of the brake arm and then through the hole in the inner cable fixing bolt **(AC)**.

(d) Should be 15 – 17 mm

- (AA)** Cable adjustment bolt
- (AB)** Brake arm
- (AC)** Hole in the inner cable fixing bolt

7

Check that both ends of the outer casing are securely inserted into the cable adjustment bolts **(AD)** of both the brake lever and brake arm.

(e) Both ends of the outer casing should be securely inserted.

- (AD)** Cable adjustment bolt

8

Pull the link **(AE)** back until it stops. Then, while pulling the inner cable **(AG)** to apply the full amount of tension to the cable, tighten the inner cable fixing nut **(AF)**.

- (AE)** Link
- (AF)** Inner cable fixing nut
- (AG)** Inner cable

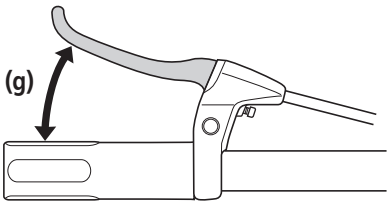
Tightening torque	
	6 - 8 N·m

NOTICE

Set the inner cable so that it passes below the link as shown in illustration **(f)**.

< Adjustment of the brake cable >

9



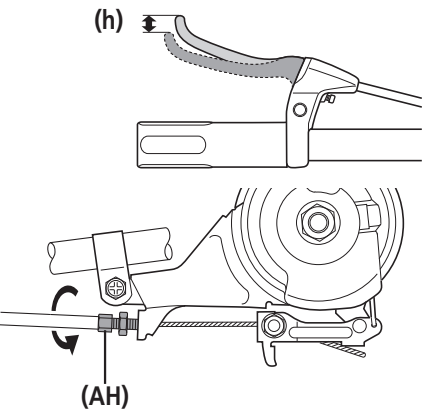
After checking that the wheel does not easily turn while the brake cable is being pulled, depress the brake lever about 10 times as far as the grip in order to run in the brake cable.

(g) Depress about 10 times

NOTICE

If the brake cable is not run in, it will need to be adjusted again after only a short period of use.

10

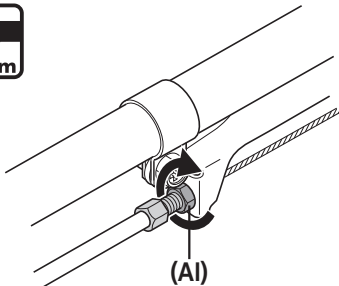


Turn the cable adjustment bolt **(AH)** so that there is about 15 mm of play **(h)** in the brake lever.

* The amount of brake lever play is the distance from the position where the brake lever is not operated to the position where a force is felt suddenly when the brake lever is pulled.


(AH) Cable adjustment bolt

11



After depressing the brake lever to check the braking performance, secure the cable adjustment bolt with the cable adjustment nut **(AI)**.

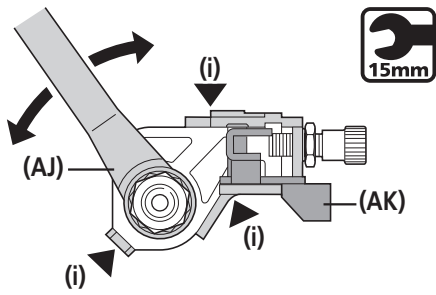
(AI) Cable adjustment nut

Tightening torque	
	1 - 2 N·m

INSTALLATION

► Installation of the bell crank type hub

12



When tightening the hub nut, pull the link (AK) towards you.

Be careful not to deform the bracket with a wrench (AJ).

(i) Be careful not to hit with the wrench

(AJ) Wrench

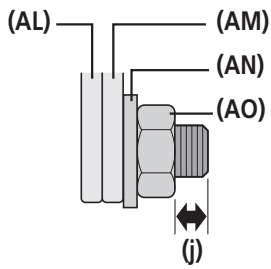
(AK) Link

Tightening torque



30 - 45 N·m

13



After tightening the hub nut (AO), check that the hub axle on the right side protrudes from the end face of the hub nut (j).

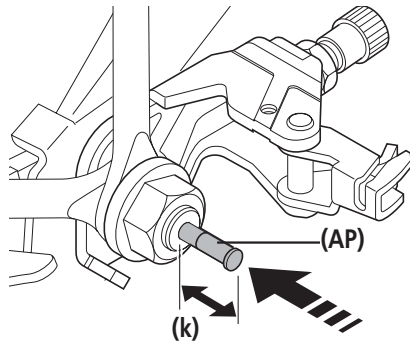
(AL) Mudguard stay

(AM) Carrier stay

(AN) Washer

(AO) Hub nut

14



Insert the push rod (AP) into the hub axle.

The push rod should protrude about 14 mm from the end face of the hub axle.

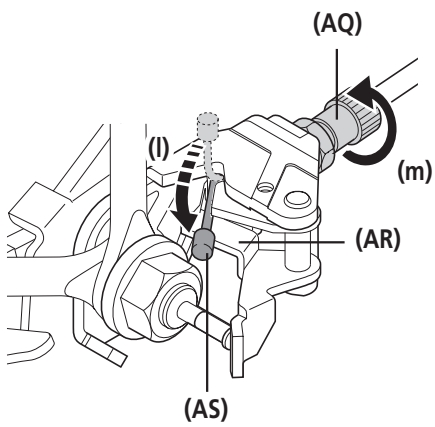
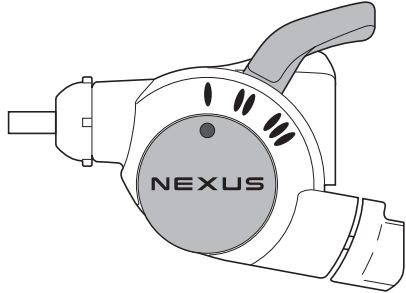
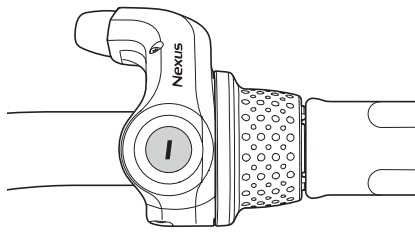
(k) About 14 mm

(AP) Push rod

INSTALLATION

► Installation of the bell crank type hub

15



Set the lever to 1.

With the cable adjustment bolt **(AQ)** of the bell crank tightened, pass the inner cable through the cable adjustment bolt.

Hook the inner cable drum **(AS)** into the groove in the link **(AR)**.

- (l)** Hook
- (m)** Tighten

(AQ) Cable adjustment bolt

(AR) Groove in the link

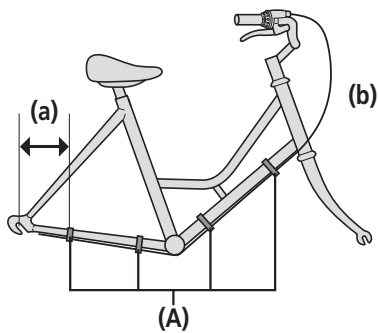
(AS) Inner cable drum



TECH TIPS

For information on how to adjust the SM-3540 bell crank, refer to the instruction manual supplied with the shift lever.

Securing the shifting cable to the frame



Secure the cable to the frame with the outer casing bands **(A)**.

- (a)** 20 - 25 cm
- (b)** Slacken the cable to prevent strain from being placed on the cable when turning the handlebars.

(A) Outer casing bands

ADJUSTMENT

ADJUSTMENT

■ Adjusting the bell crank

1

Set the shift lever to 2.

Then, turn the cable adjustment bolt (A) counterclockwise to align the red line on the push rod (B) groove with the end of the hub axle.

(a) Align the red line with the end of the hub axle.

- (A) Cable adjustment bolt
- (B) Red line on the push rod

2

While turning the crank, move the shift lever from 3 to 1 then back to 3; repeat this two or three times and check to see that the gears are being shifted.

Move the shift lever from 1 to 2 again and make sure that the red line on the push rod is aligned with the end of the hub axle. If they are not aligned, perform readjustment.

TECH TIPS

If they are not aligned, turn the cable adjustment bolt for fine adjustment.

3

After adjusting the bell crank, fix the cable adjustment bolt with the cable adjustment nut (C).

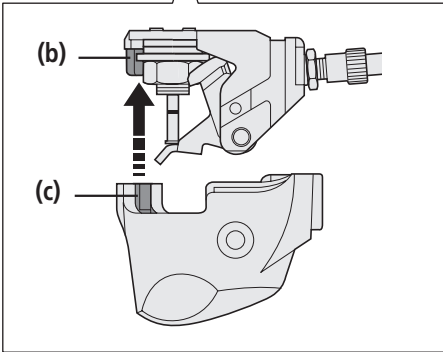
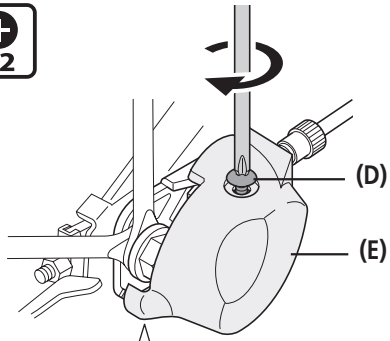
- (C) Cable adjustment nut

Tightening torque	
	1.5 - 2.5 N·m

ADJUSTMENT

▶▶ Adjusting the bell crank

4



Fit (b) of the bracket to (c) of the bell crank cover (E) to attach the cover to the bracket and fasten it with the cover fixing screw (D).

(D) Cover fixing screw

(E) Bell crank cover

Tightening torque



0.5 - 1 N·m

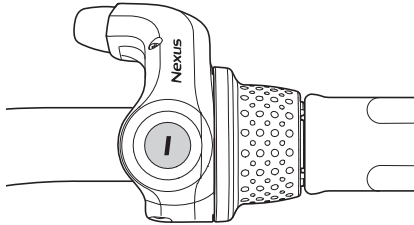
MAINTENANCE

MAINTENANCE

■ Replacement of the shifting cable

Shift lever

1



Set the shift lever to 1.



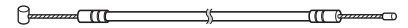
TECH TIPS

Use a shifting cable with two inner cable drums.

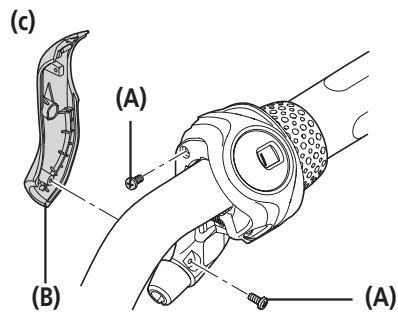
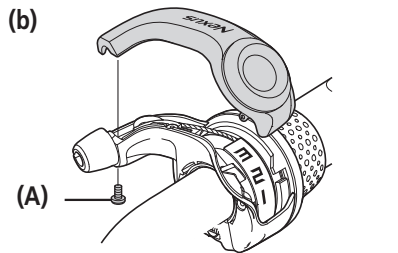
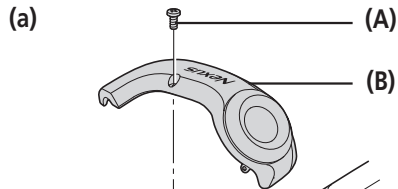
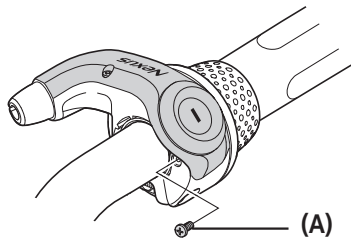
* The shape differs depending on the model.

Cassette joint
side

Shift lever
side



2



Loosen the two cover fixing screws (A) and remove the cover (B).

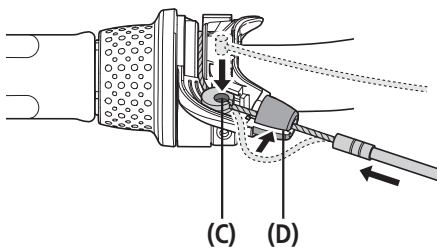
- (a) From above
- (b) From below
- (c) In the case of SL-3558J

- (A) Cover fixing screw
- (B) Cover

NOTICE

The cover can be attached either from above or below, depending on its type. Check the specifications and remove the cover accordingly.

3



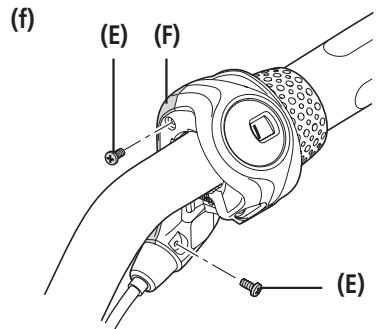
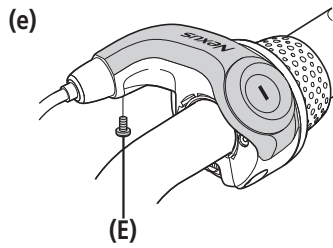
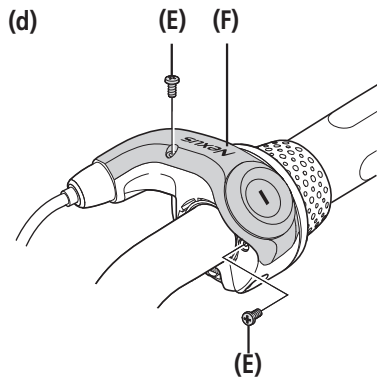
Mount the inner cable to the connecting cable.

Hook the inner cable drum in the hole in the connecting cable (C) and fit the inner cable into the groove in the outer casing holder (D).

Then, insert the outer casing into the outer casing holder.

- (C) Hole in the connecting cable
- (D) Groove in the outer casing holder

4



Fasten the cover (F) with the two cover fixing screws (E).

- (d) From above
- (e) From below
- (f) In the case of SL-3558J

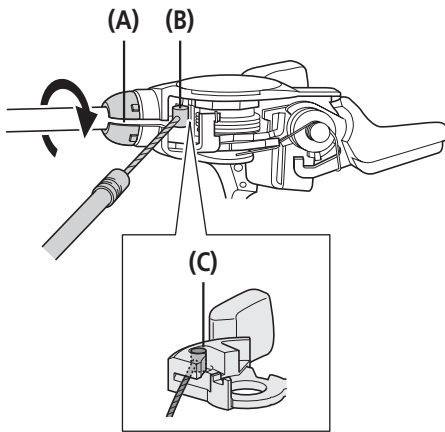
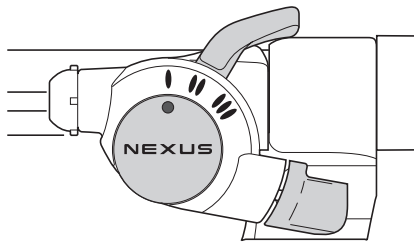
(E) Cover fixing screw

(F) Cover

Tightening torque	
	0.1 - 0.2 N·m

NOTICE

The cover can be attached either from above or below, depending on its type. Check the specifications of the cover before attaching it.

Piano touch lever

Set the lever to 1.

Then, adjust the position of the groove in the outer casing holder (A) of the lever to the position shown in the illustration. Hook the inner end (B) into the hole in the cable hook (C) and fit the inner cable into the groove in the outer casing holder.

- (A) Groove in the outer casing holder
- (B) Inner end
- (C) Hole in the cable hook

**TECH TIPS**

After connecting the cable, turn the outer casing holder so that the inner cable does not come off.

■ Oil maintenance of the internal assembly

In order to maintain proper performance, it is recommended that you lubricate the internal unit after riding 1,000 km from the start of use, then after about once every year (or once about every 2,000 km if the bicycle is used very frequently).

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.

(A) WB maintenance oil set
(Y00298010)



(A)

1



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

(a) 95 mm

2



Immerse the internal unit into the oil from the left side until the oil reaches up to ring gear unit 1, as shown in the illustration.

(b) Ring gear unit 1

3



Keep the internal unit immersed for approximately 90 seconds.

MAINTENANCE

▶ Oil maintenance of the internal assembly

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 the hub.



TECH TIPS

<Maintenance oil>

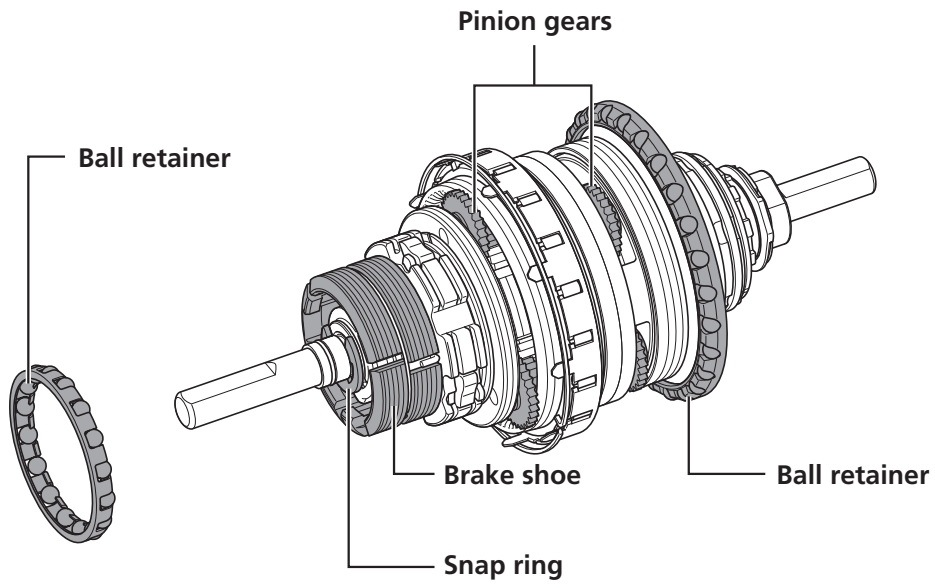
- Maintenance oil is reusable. Refill it as needed.
- Store it with the lid closed after use.

MAINTENANCE

▶▶ Oil maintenance of the internal assembly

NOTICE

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



The illustration shows an example.

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

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