

Dealer's Manual

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

Pedal

Non-Series

PD-T421

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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 TO PARENT/GUARDIAN

- For child safety, make sure the child uses this product correctly by following the instructions below. Both guardians and children should gain an adequate understanding of the content of this manual. Failure to follow the provided instructions may lead to serious injury.

WARNING

- **Be sure to follow the instructions provided in the manuals when installing the product.**
It is recommended to use genuine Shimano parts only. 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:

If the warnings below are not followed, your shoes may not come out of the pedals when you intend or they may come out unexpectedly or accidentally, and severe injury may result.

- Click'R pedals are designed to be released only when intended. They are not designed to be released automatically when you have fallen off the bicycle.
- Before attempting to ride with these pedals and shoes, make sure you understand the operation of the engagement/release mechanism for the pedals and cleats (shoes).
- Before you attempt to ride with these pedals and shoes, apply the brakes, then place one foot on the ground and practice engaging and releasing each shoe from its pedal until you can do so naturally and with minimal effort.
- Ride on level ground first until you become accustomed to engaging and releasing your shoes from the pedals.
- Before riding, adjust the spring tension of the pedals to your liking. If the spring tension of the pedals is low, the cleats may become accidentally released and you may lose balance and fall off the bicycle. If the spring tension of the pedals is high, the cleats cannot be easily released.
- When riding at low speed or when there is a possibility that you might need to stop riding, (for example, when doing a U-turn, nearing an intersection, riding uphill or turning a blind curve), release your shoes from the pedal beforehand so that you can quickly put your feet onto the ground at any time.
- Use a lighter spring tension for attaching the pedal cleats when riding in adverse conditions.
- Keep cleats and bindings out of dirt and debris to ensure proper engagement and release.
- Remember to check the cleats periodically for wear. When the cleats are worn, replace them, and always check the spring tension before riding and after replacing the pedal cleats.
- Do not continue riding the bicycle if the reflectors are dirty or damaged. Otherwise, it becomes more difficult for others to see you.
- Use only SPD shoes with this product. Other types of shoe may not release from the pedals, or may release unexpectedly.
- Use only Shimano cleats (SM-SH51/SM-SH56) and make sure that the mounting bolts are tightened securely to the shoes.
- These pedals are for recreation and so are designed to be engaged with and released from the cleats more easily than SPD pedals. If these pedals are used in competition or aggressively, the cleats may become accidentally released from the pedals and you may fall off the bicycle.

NOTE

Be sure to also inform users of the following:

- Check that there is no looseness in any joints or connections before riding the bicycle.
- Check that there is no looseness in the cleats before riding the bicycle.
- If pedaling performance does not feel normal, check the bicycle once more.
- If you experience any trouble with the rotating parts of the pedal, the pedal may require adjustment. Consult a dealer or an agency.
- Be sure to retighten the crank arms and pedals at periodic intervals at the place of purchase or a bicycle dealer.
- 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 mainly to explain the procedures for using the product.

LIST OF TOOLS TO BE USED

LIST OF TOOLS TO BE USED

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

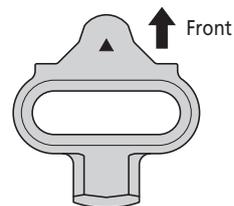
Tool		Tool		Tool	
	3mm hexagon wrench		10mm spanner		TL-PD40
	4mm hexagon wrench		15mm spanner		TL-PD63
	5mm hexagon wrench		Screwdriver[#2]		
	7mm spanner		TL-PD33		

INSTALLATION

INSTALLATION

■ Cleat types

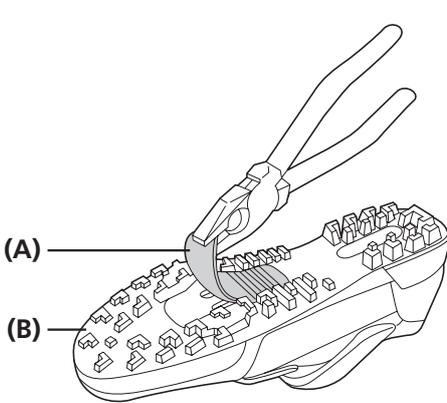
Single release mode cleats	SM-SH51 (black)
Multiple release mode cleats	SM-SH56 (silver, gold)



■ Attaching the cleats

Set the cleat on the bottom of each shoe as shown in the illustration, and then tighten the cleat mounting bolts, temporarily.

1



(A) Rubber cover for cleat mounting holes
(B) SPD shoe

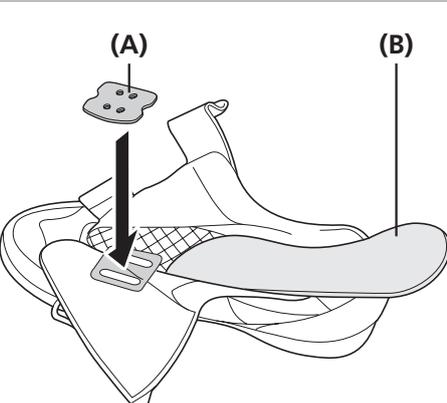
With a pair of pliers or a similar tool, pull off the rubber cover to expose the cleat mounting holes.

- (A)** Rubber cover for cleat mounting holes
- (B)** SPD shoe

NOTE

This step may not be necessary depending on the type of shoe.

2



(A) Cleat nut
(B) Sockliner

Remove the sockliner and position a cleat nut over the oval holes.

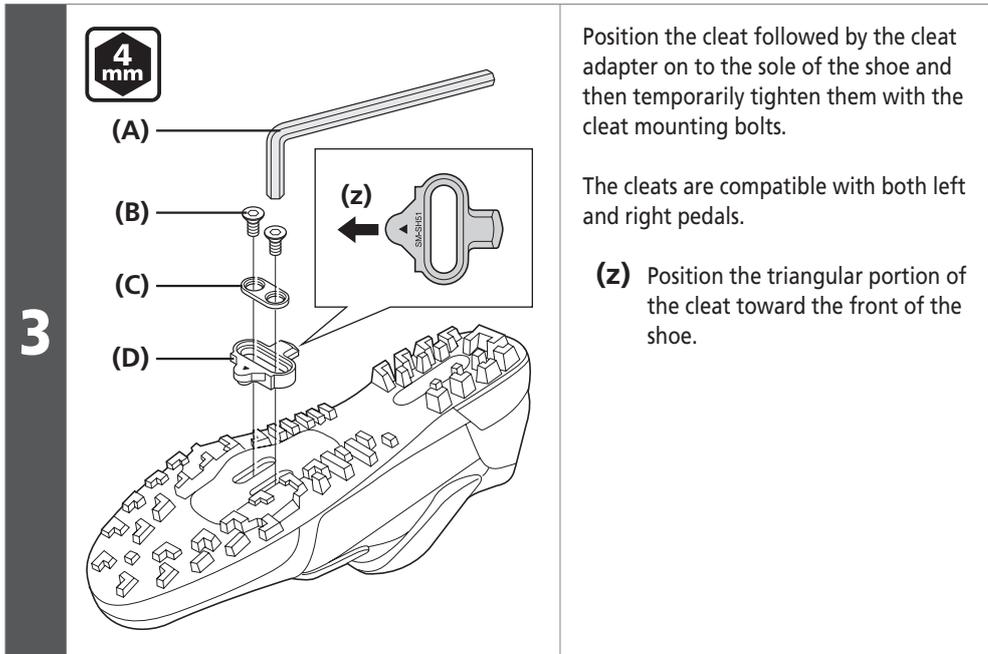
- (A)** Cleat nut
- (B)** Sockliner

NOTE

This step may not be necessary depending on the type of shoe.

INSTALLATION

▶▶ Adjusting cleat position

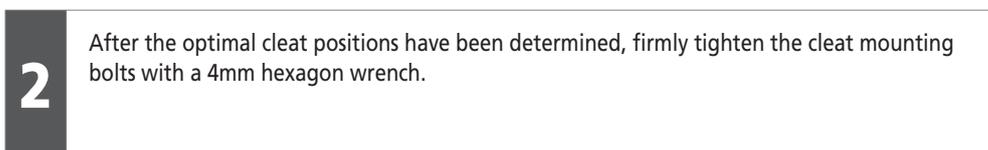
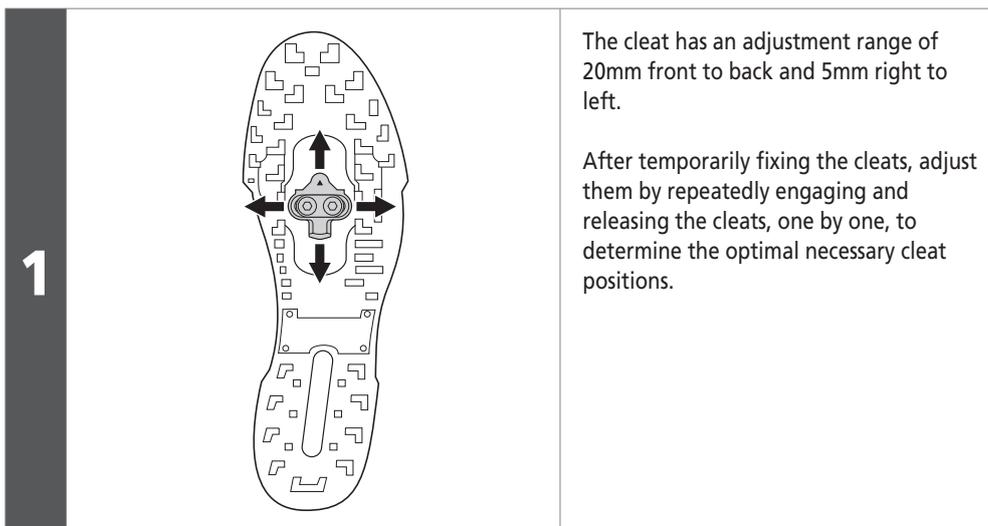


- (A)** 4mm hexagon wrench
- (B)** Cleat mounting bolt
- (C)** Cleat adapter
- (D)** Cleat

Provisional tightening torque for cleat mounting bolts

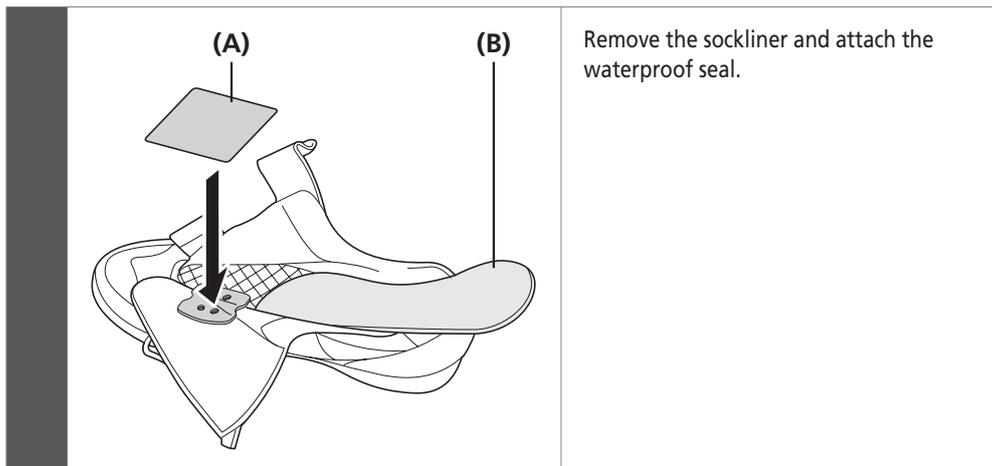
4 mm	2.5 N·m
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■ Adjusting cleat position



Tightening torque	
4 mm	5 - 6 N·m

■ Waterproof seal



Remove the sockliner and attach the waterproof seal.

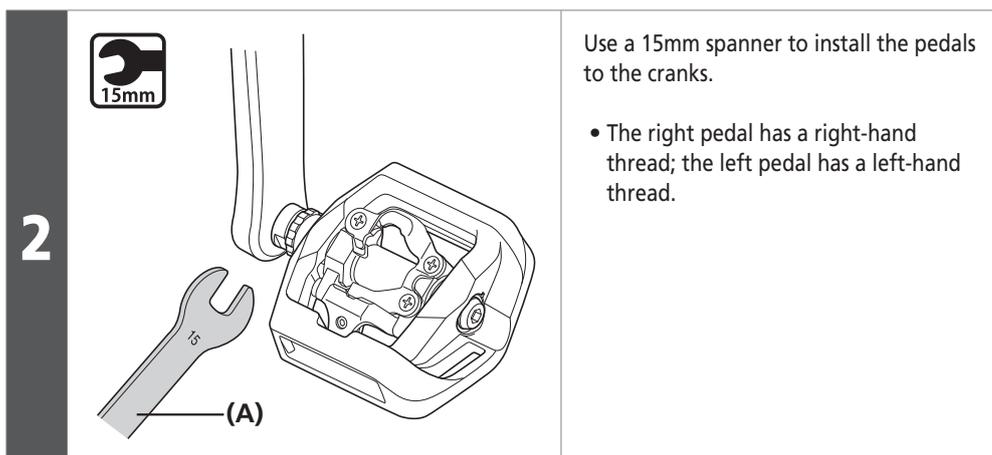
- (A) Waterproof seal
- (B) Sockliner

NOTE

The waterproof seal is supplied with Shimano shoes that require this step to be carried out.

■ Mounting the pedals on the crank arms

- 1 Apply a small amount of grease to the thread to prevent sticking.



Use a 15mm spanner to install the pedals to the cranks.

- The right pedal has a right-hand thread; the left pedal has a left-hand thread.

- (A) 15mm spanner

Tightening torque



35 - 55 N·m

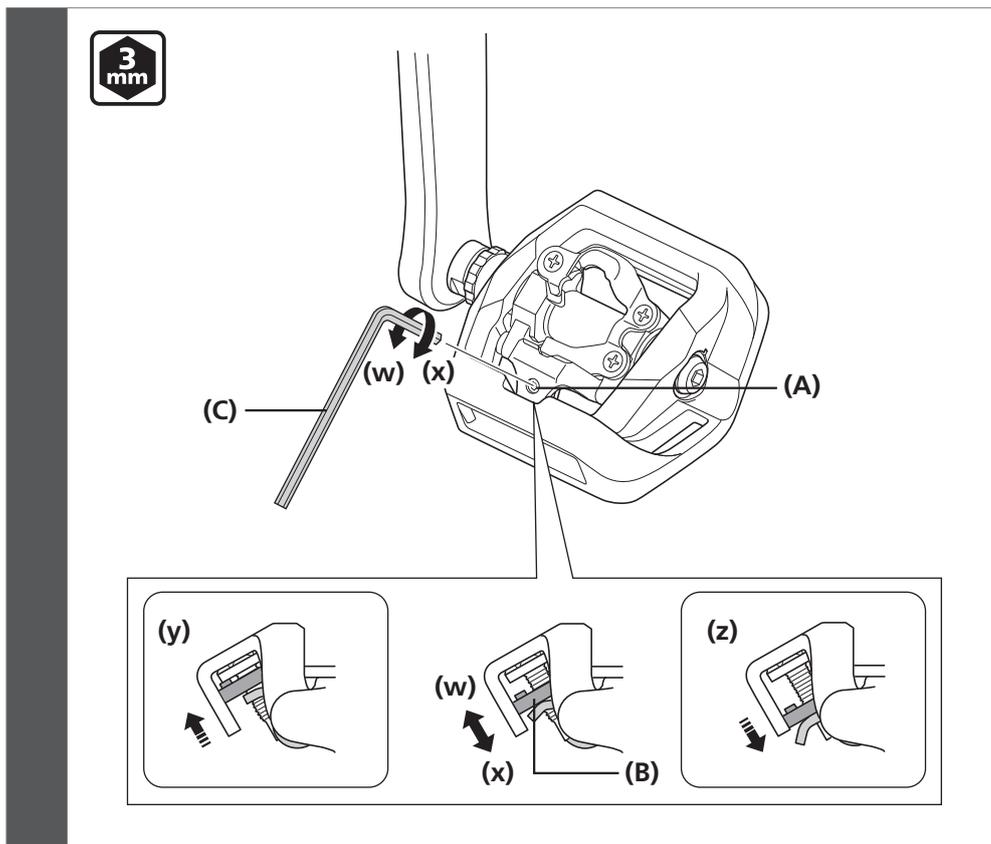
- 3 Remove any roughness or bumps on the joint, if detected.

ADJUSTMENT

ADJUSTMENT

■ Adjusting the spring tension of the pedals

- The spring tension of the pedals can be adjusted by turning the adjustment bolt.
- Clicking the adjustment bolt changes the tension one step. There are four clicks per turn.
- The adjustment bolt is located at the rear of each binding, resulting in two positions in total.
- Adjust the spring force to the optimal cleat holding force as needed when releasing the cleats from the bindings.
- Equalize the cleat holding forces at all positions by checking the adjustment plate position and counting the number of turns of the adjustment bolts.
- Turning the adjustment bolt clockwise increases the spring tension, and turning it counterclockwise decreases it.



- (w) Decrease
- (x) Increase
- (y) Weakest position
- (z) Strongest position

- (A) Adjustment bolt
- (B) Adjustment plate
- (C) 3mm hexagon wrench

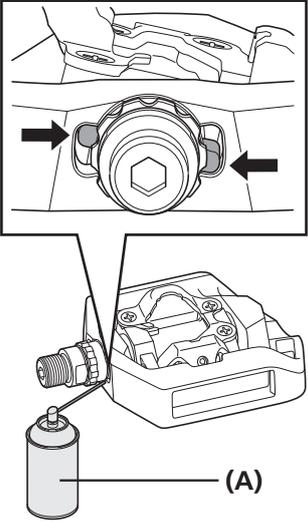
NOTE

- In order to prevent accidental shoe release and ensure that release is possible when needed, make sure all spring tensions are properly adjusted.
- If the cleats are not adjusted equally, it can cause the rider difficulty in engaging or releasing the pedals. The spring tensions for the right and left pedals should be adjusted so they are equal.
- If the adjustment plate is at the strongest or the weakest position, do not turn the adjustment bolt any further.

MAINTENANCE

MAINTENANCE

■ Maintenance of the pop-up function



The pedals are equipped with a pop-up function that keeps the binding raised so that cleats can be caught easily.

The pop-up function can become impaired by mud or lack of oil; therefore, in order to maintain best performance, periodically remove any mud and lubricate the parts shown with oil.

(A) Oil

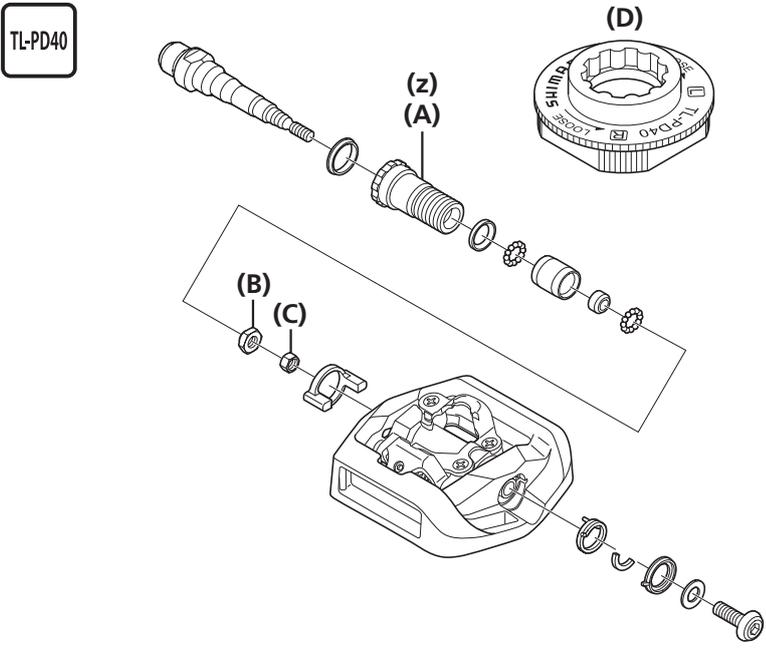
■ Axle unit

Adjustment is required if the rotating parts are not functioning properly. Follow the procedure shown below.

Loosen the lock bushing and remove the axle unit.

(z) Use TL-PD40 to remove the lock bushing.

1



(A) Lock bush
(B) Cone
(C) Lock nut
(D) TL-PD40

- (A) Lock bush
- (B) Cone
- (C) Lock nut
- (D) TL-PD40

NOTE

The lock bush of the right pedal has a left-hand thread; the lock bush of the left pedal has a right-hand thread.

2 Use TL-PD63 or TL-PD33 Shimano original tool, or a 7mm or 10mm open wrench to turn the cone (10mm) to adjust the rotation.

3

With the cone locked, tighten the lock nut (7mm).

4

Remove old grease and apply an appropriate amount of new grease to the bottom of the pedal linkage.

Tightening torque



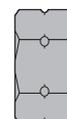
5 - 7 N·m

NOTE

- Right-hand thread: Black-colored (without slit)
If the fitted lock nut is black-colored (without slit), the cone and the lock nut have a right-hand thread.



- Left-hand thread: Black-colored (with slit)
If the fitted lock nut is black-colored (with slit), the cone and the lock nut have a left-hand thread.



- Adjust the cone so as to achieve a smooth rotation without looseness when the axle unit is set into the pedal.



TECH TIPS

The rotating parts are fastened when the axle unit is set into the pedal. Adjust them slightly loosely before setup.



TECH TIPS

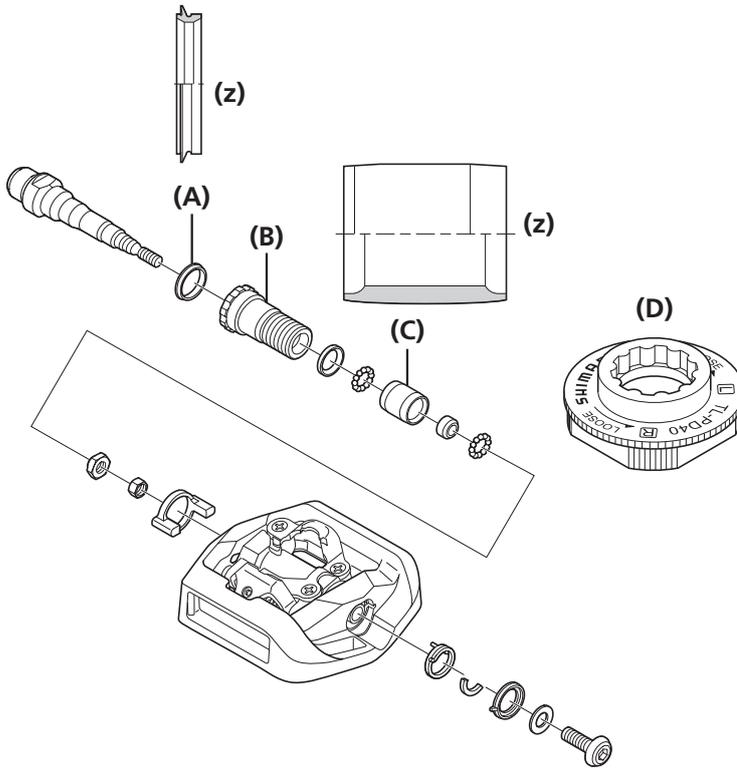
Apply grease to the extent that it does not flow out when the axle is set into the pedal (about 1.5g).

▶▶ Replacement of the body cover

Tighten the lock bush and insert the axle unit.

(z) When assembling the rubber seal and body cup, please note the direction of the parts.

TL-PD40



5

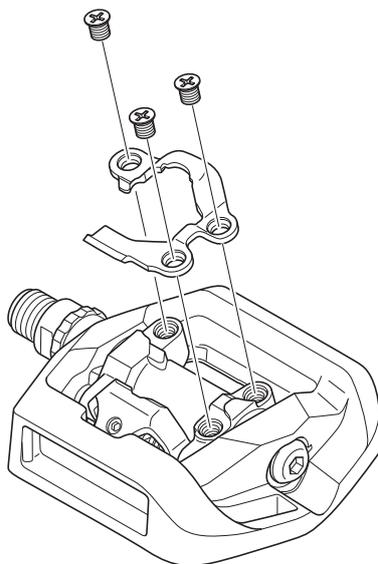
- (A)** Rubber seal
- (B)** Lock bush
- (C)** Body cup
- (D)** TL-PD40

Tightening torque

TL-PD40	10 - 12 N·m
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■ Replacement of the body cover

⊕
#2



Tightening torque

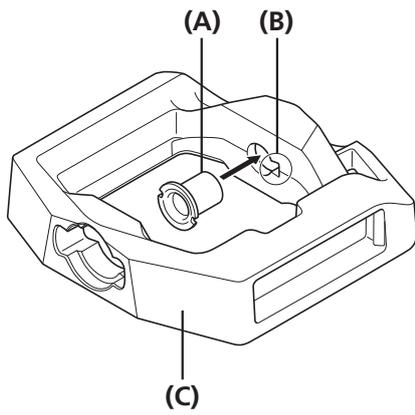
⊕ #2	2.5 - 3.5 N·m
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NOTE

Tighten the three screws equally.

■ Replacing the cage

1



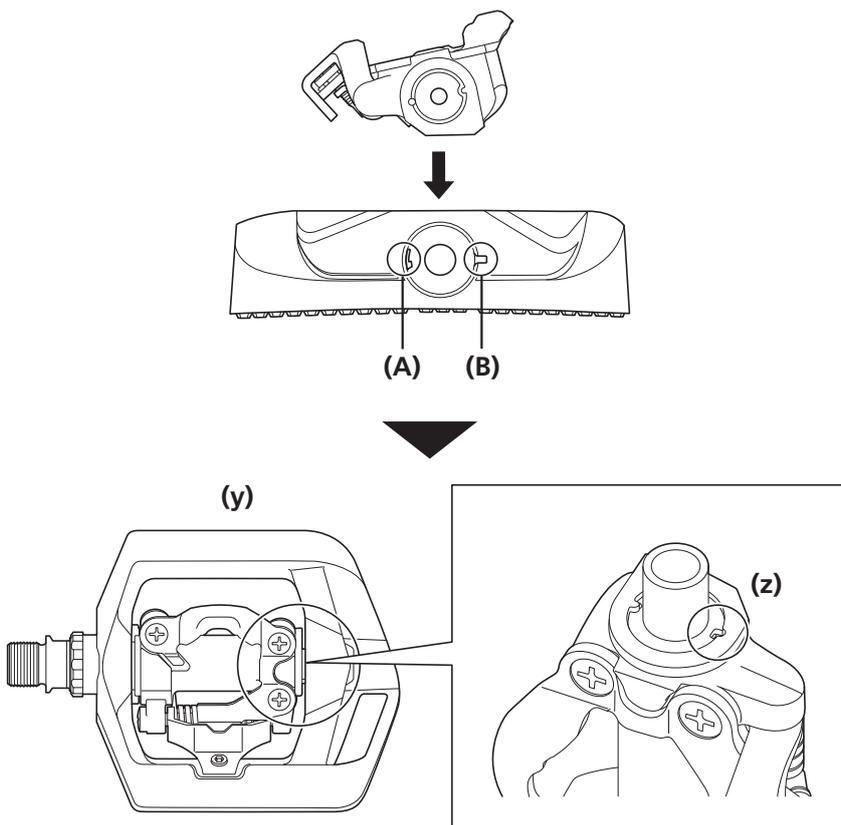
Insert sleeve to the cage as illustrated in the figure.

- (A) Sleeve
- (B) Sleeve hole
- (C) Cage

2

Align the hole of the sleeve with the groove on the pedal body and set the pedal body to the cage.

- (y) Pedal body after sub-assembly
- (z) Groove on pedal body for positioning the sleeve



- (A) Sleeve hole
- (B) Cage groove

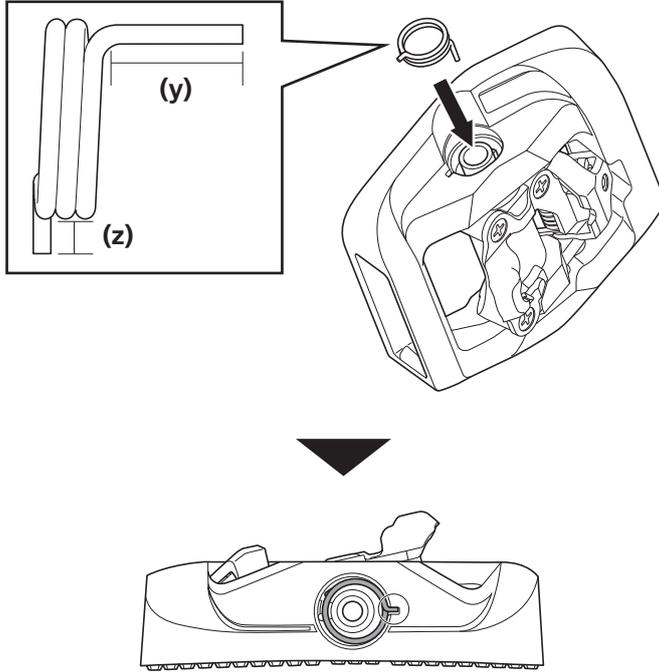
Install the cage spring to the cage.

Insert the longer side of the spring into the holes in the sleeve and the pedal body, and pull out the shorter side of the spring to the groove of the cage.

(y) Long

(z) Short

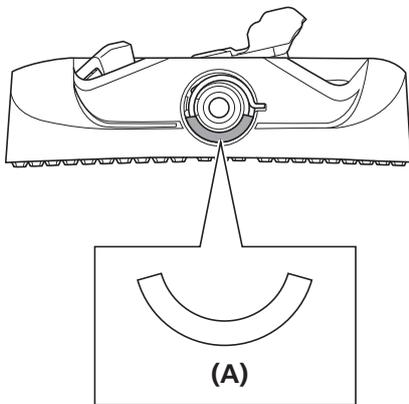
3



NOTE

Apply grease to the spring.

4

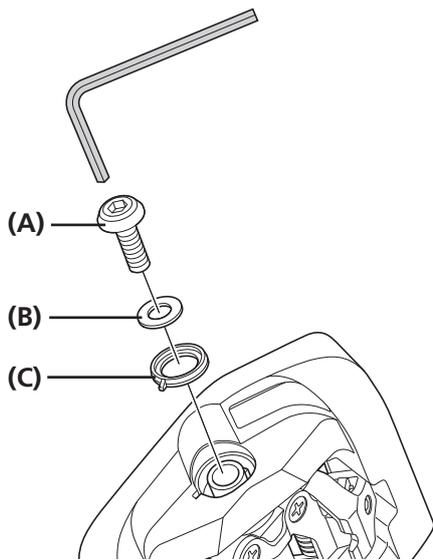


Install the spring pusher as shown in the figure.

(A) Spring pusher

▶▶ Replacing the cage

5



Install the resin cap and the cap washer, and then tighten them with the cage-fixing bolt.

- (A) Cage-fixing bolt
- (B) Cap washer
- (C) Resin cap

Tightening torque



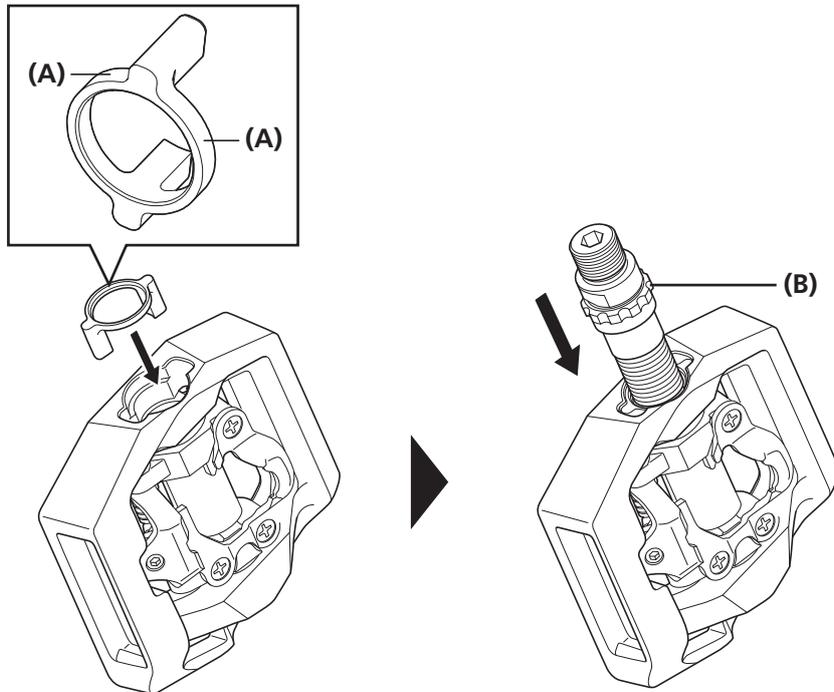
7 - 8 N·m

NOTE

A locking agent is applied onto the cage-fixing bolt. Do not reuse used bolts as they can cause looseness.

6

As shown in the figure, apply grease to the sleeve and install the axle unit.



- (A) Grease
- (B) Axle unit

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

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