

Dealer's Manual

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

SPD Pedals Light Action

Non-Series

PD-EH500

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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.

Descriptions regarding SPD pedals

- SPD 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.
- 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.
- 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.

Descriptions regarding single-sided flat pedals

- If the gripping force between the shoes and the pedals (the force which stops the shoes from slipping sideways) is insufficient use pins to increase the gripping force. This will increase the gripping force. If the gripping force on the shoes is increased, you will not be able to disengage your feet from the pedals by sliding them sideways unless you first raise your feet from the pedals. To avoid falling off the bicycle and suffering serious injury, practice engaging and disengaging one foot from the pedal with the other foot firmly on the ground until you become used to the operation. If you cannot get used to this operation, remove the pins.
- Because the pins are long, they may cause injury if they come into direct contact with your skin. Be sure to wear clothing and protective gear which is suitable for the way in which the bicycle is to be used.
- Do not continue riding the bicycle if the reflectors are dirty or damaged, otherwise it becomes more difficult for oncoming vehicles to see you.
- Be sure to attach reflectors to the bicycle when traveling on public roads.

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.
- If you are unsure of how to replace the short and long pins on the pedals, consult a dealer or an agency.
- 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

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

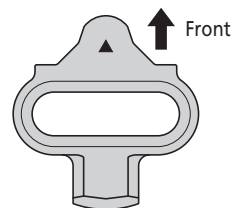
Tool		Tool		Tool	
	2 mm hexagon wrench		10 mm spanner		TL-PD40
	3 mm hexagon wrench		15 mm spanner		TL-PD63
	4 mm hexagon wrench		Screwdriver[#2]		
	7 mm spanner		TL-PD33		

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

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

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

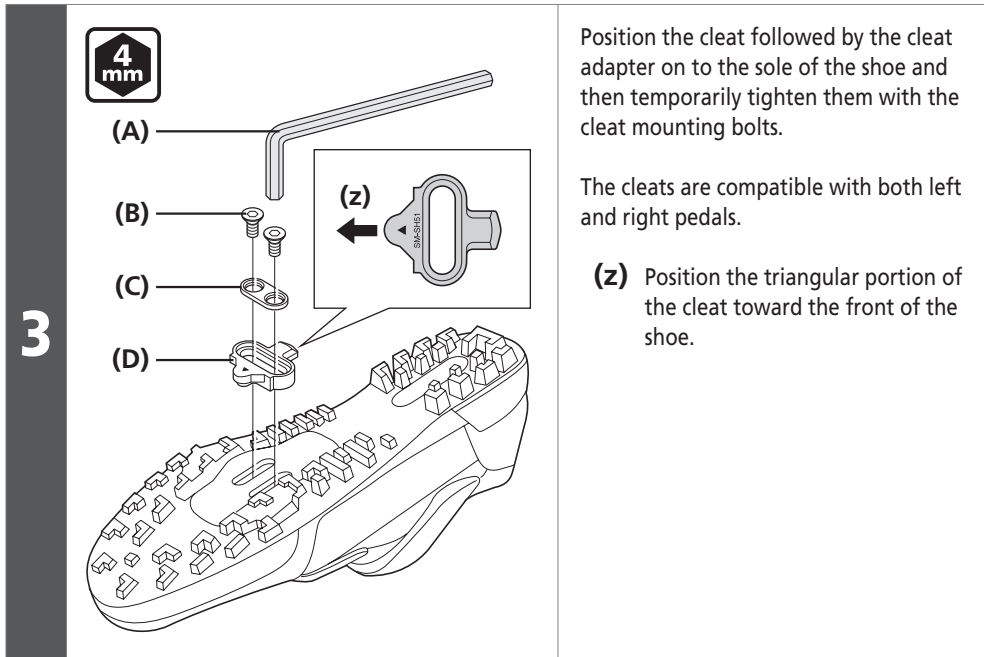
- (A)** Cleat nut
- (B)** Sockliner

NOTE

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

INSTALLATION

▶▶ Adjusting cleat position

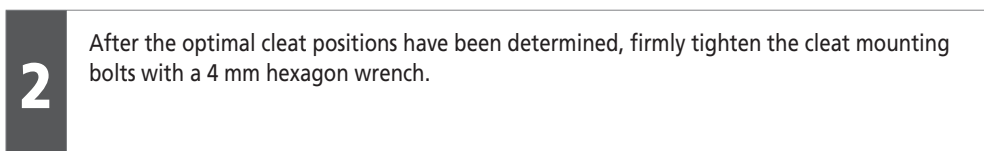
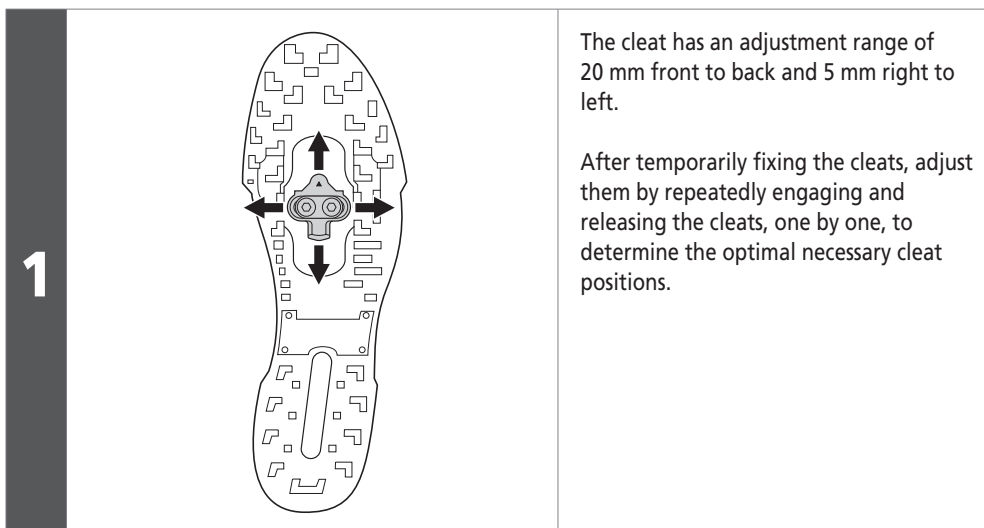


- (A) 4 mm hexagon wrench
- (B) Cleat mounting bolt
- (C) Cleat adapter
- (D) Cleat

Provisional tightening torque for cleat mounting bolts

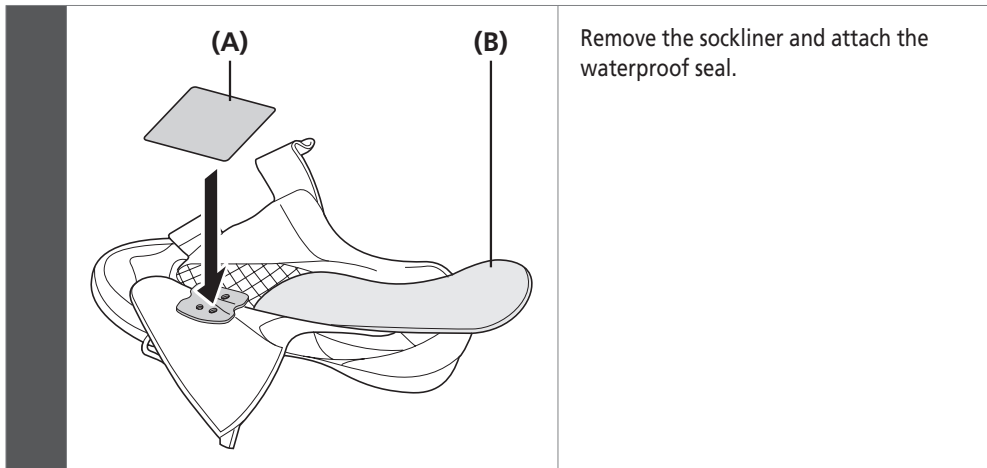
	2.5 N·m
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■ Adjusting cleat position



Tightening torque	
	5 - 6 N·m

■ Waterproof seal



Remove the sockliner and attach the waterproof seal.

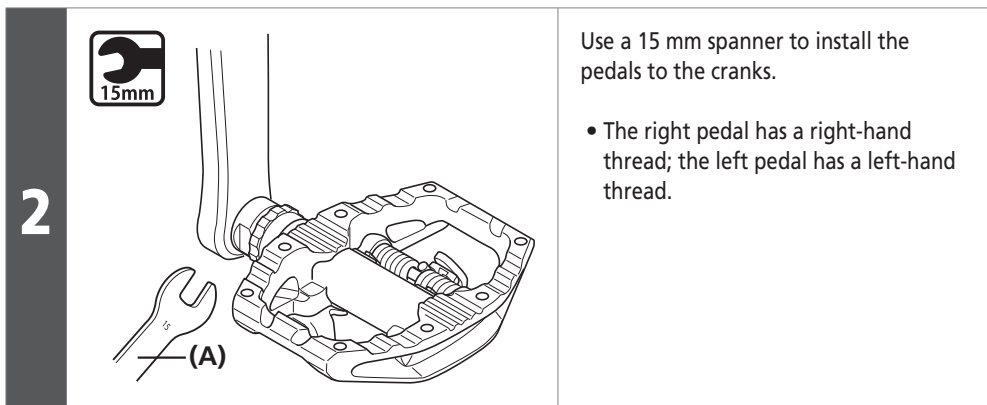
- (A) Waterproof seal
- (B) Sockliner

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 15 mm 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) 15 mm spanner

Tightening torque



35 - 55 N·m

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

ADJUSTMENT

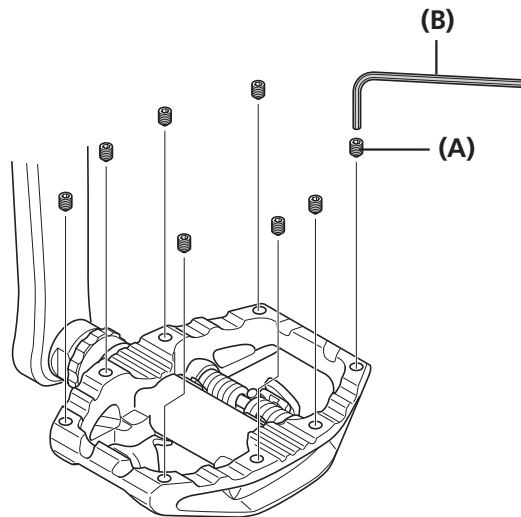
ADJUSTMENT

■ Adjusting the gripping force

Remove and install the pins to adjust the gripping force of the shoe and pedal.

Replacing the pins

Use a 2 mm hexagon wrench to replace the pins.



(A) Pin

(B) 2 mm hexagon wrench

Tightening torque



1 - 1.5 N·m

WARNING

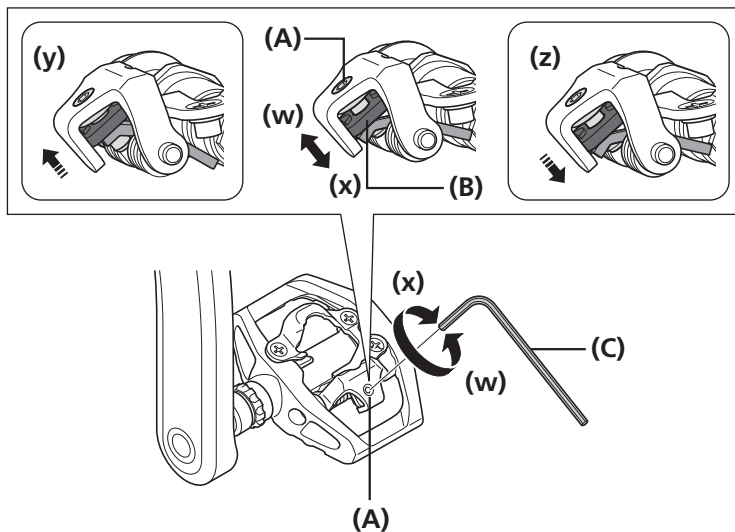
- If the gripping force between the shoes and the pedals (the force which stops the shoes from slipping sideways) is insufficient use pins to increase the gripping force. This will increase the gripping force. If the gripping force on the shoes is increased, you will not be able to disengage your feet from the pedals by sliding them sideways unless you first raise your feet from the pedals. To avoid falling off the bicycle and suffering serious injury, practice engaging and disengaging one foot from the pedal with the other foot firmly on the ground until you become used to the operation. If you cannot get used to this operation, remove the pins.
- Because the pins are long, they may cause injury if they come into direct contact with your skin. Be sure to wear clothing and protective gear which is suitable for the way in which the bicycle is to be used.

ADJUSTMENT

▶▶ Adjusting the spring tension of the pedals

■ 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)** 3 mm 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

■ 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.

TL-PD40

1

- (A) Lock bush
- (B) Cone
- (C) Lock nut

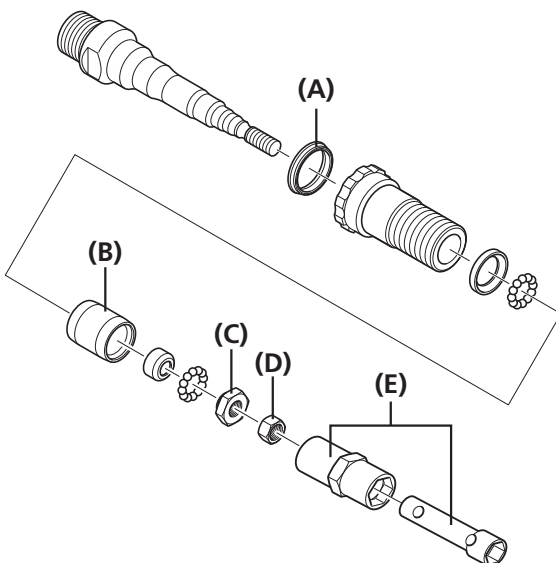
NOTE

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 7 mm or 10 mm open wrench to turn the cone (10 mm) to adjust the rotation.

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

TL-PD63 TL-PD33



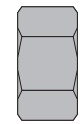
3

- (A) Rubber seal
- (B) Body cup
- (C) Cone
- (D) Lock nut
- (E) TL-PD63/33

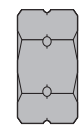
Tightening torque	
TL-PD63	5 - 7 N·m
TL-PD33	

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.
- When assembling the rubber seal and body cup, please note the direction of the parts.

 **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 1.5 g).

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

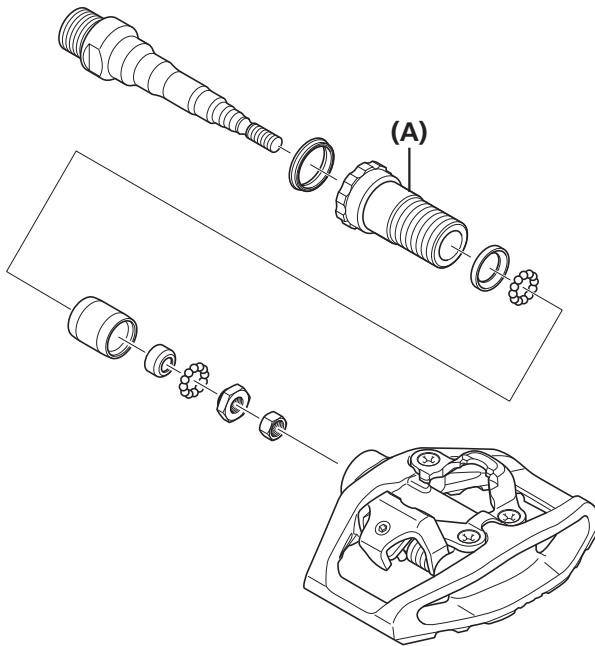
4

►► Replacement of the body cover

5

Insert the axle unit into the pedal, then tighten the lock bush.

TL-PD40



(A) Lock bush

Tightening torque

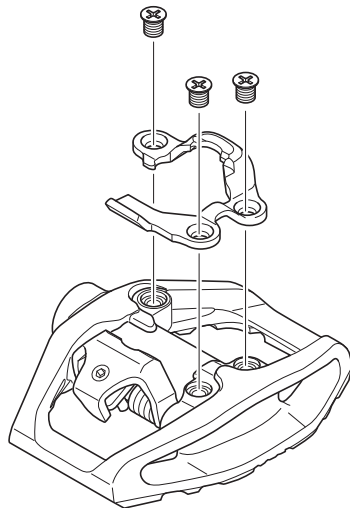
TL-PD40

10 - 12 N·m

■ Replacement of the body cover

+

#2



Tightening torque

+

#2

2.5 - 3.5 N·m

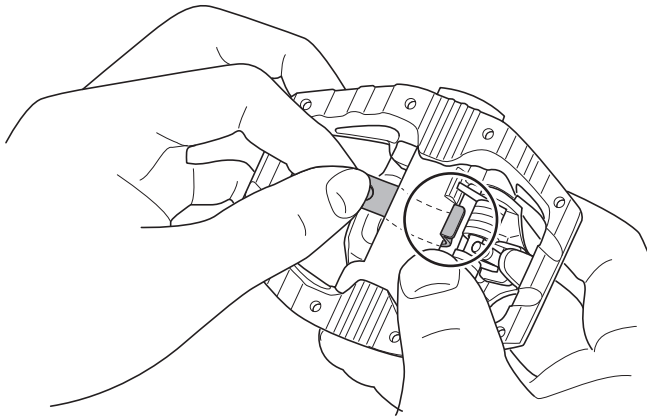
NOTE

Tighten the three screws equally.

■ Replacing and installing the reflectors

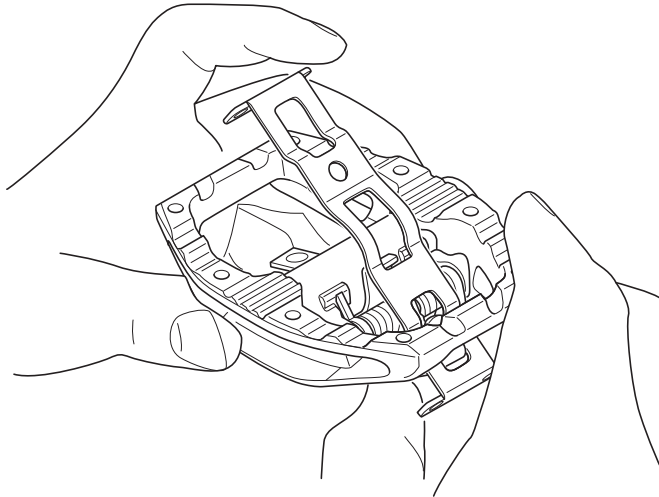
Set the lower plate so that the hook on the lower plate comes over the spring on the SPD pedal.

1



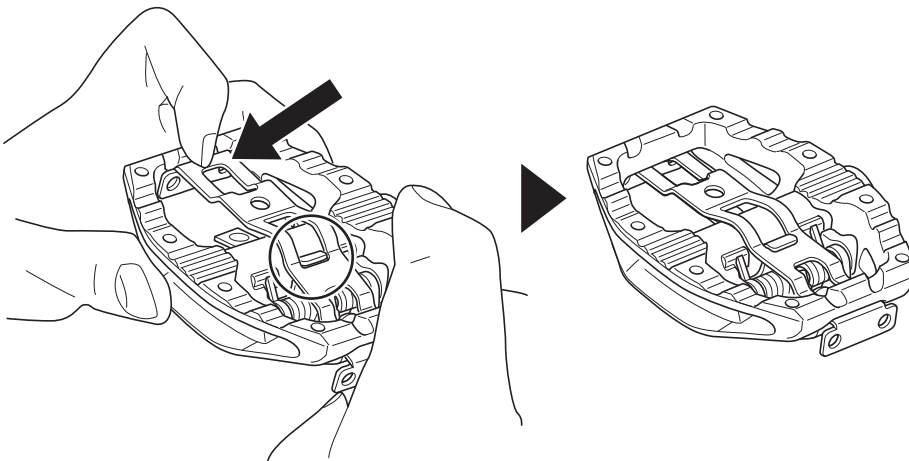
Insert the upper plate as shown in the illustration.

2



Catch the hook on the lower plate in the hole in the center of the upper plate and combine the upper and lower plates.

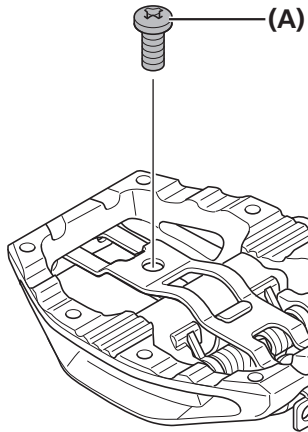
3



▶▶ Replacing and installing the reflectors

4

Secure with the plate fixing bolt.



(A) Plate fixing bolt

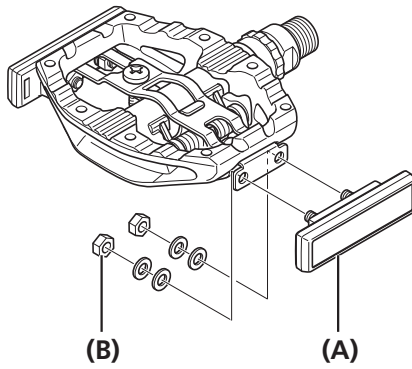
Tightening torque



0.5 - 1 N·m

5

Install the reflectors to the front and rear using the reflector fixing nuts.



(A) Reflector

(B) Reflector fixing nut

Tightening torque



0.5 - 1 N·m

SHIMANO

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

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