

Dealer's Manual

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

SPD Pedals

SAINT
PD-M820

DXR
PD-MX70

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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.



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



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




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.

- 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.
- 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.
- Reflectors (SM-PD60) are available for this pedal sold separately.
- Be sure to attach reflectors to the bicycle when traveling on public roads.
- If the gripping force between the shoes and the pedals (the force which stops shoes from slipping sideways) is insufficient, remove spacers to increase the force. In that case, first raise your feet from the pedals and then slide them sideways to disengage your feet from the pedals. Otherwise, you may fall and be seriously injured.
- With one foot firmly on the ground, practice engaging and disengaging the other foot from the pedal repeatedly until you become used to the operation. If you cannot get used to this operation, use the product with spacers installed.

- 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.

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 or spacers 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

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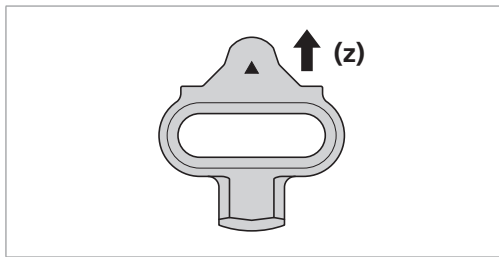
The following tools are needed for installation, adjustment, and maintenance purposes.

Tool		Tool		Tool	
	3 mm hexagon wrench		8 mm spanner		Hexalobular[#15]
	4 mm hexagon wrench		10 mm spanner		TL-PD33
	8 mm hexagon wrench		17 mm spanner		TL-PD40
	7 mm spanner		Screwdriver[#2]		TL-PD63

INSTALLATION

INSTALLATION

Cleat types



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

(z) Front

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.

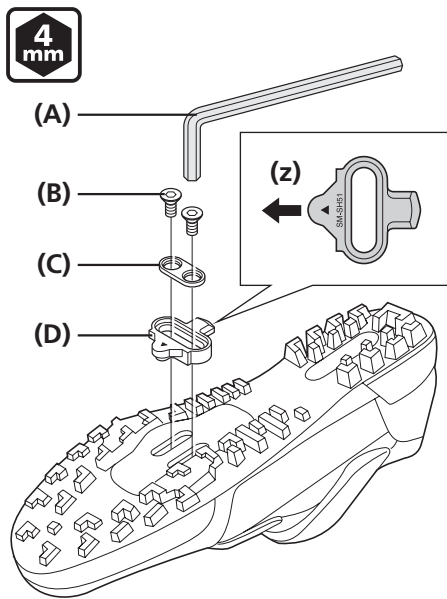
- (A) Cleat nut
- (B) Sockliner

NOTE

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

▶▶ When using cleat spacers

3



Position the cleat followed by the cleat adapter on to the sole of the shoe and then temporarily tighten them with the cleat mounting bolts. The cleats are compatible with both left and right pedals.

- (z) Position the triangular portion of the cleat toward the front of the shoe.

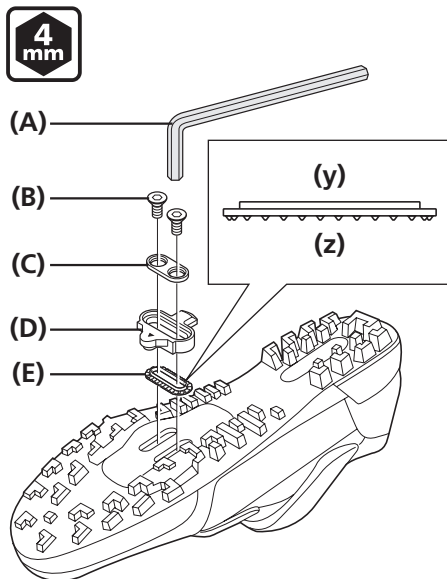
- (A) 4 mm hexagon wrench
- (B) Cleat mounting bolt
- (C) Cleat adapter
- (D) Cleat

Provisional tightening torque for cleat mounting bolts



2.5 N·m

■ When using cleat spacers



Position the cleat spacer, followed by the cleat, and then cleat adapter on to the sole of the shoe and then temporarily tighten them with the cleat fixing bolts.

- (y) Side to be inserted into cleat
- (z) Side to be inserted into sole (side with small protrusions)

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

Provisional tightening torque for cleat mounting bolts



2.5 N·m

NOTE

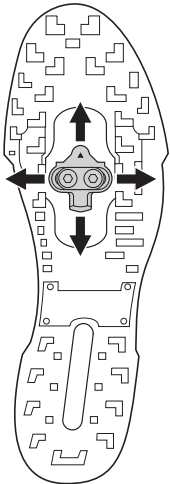
- Only use cleat spacers in the following cases. When using spacers, use only one per SPD compatible shoe.
- If blocks on the shoe soles are high, causing them to get caught on the pedals, preventing smooth engagement of the shoes with the pedals.
 - If dirt and debris builds up on the shoe soles or pedals, preventing smooth engagement of the shoes with the pedals.



The cleat spacer is only compatible with Shimano cleats (SM-SH51/SM-SH56).

■ Adjusting cleat position


1



The cleat has an adjustment range of 20 mm front to back and 5 mm right to left. After temporarily fixing the cleats, adjust them by repeatedly engaging and releasing the cleats, one by one, to determine the optimal necessary cleat positions.

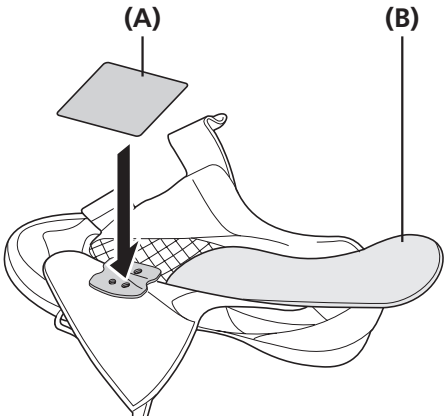
2

After the optimal cleat positions have been determined, firmly tighten the cleat mounting bolts with a 4 mm hexagon wrench.

Tightening torque	
	5 - 6 N·m

■ Waterproof seal

1



Remove the sockliner and attach the waterproof seal.

- (A) Waterproof seal
- (B) Sockliner

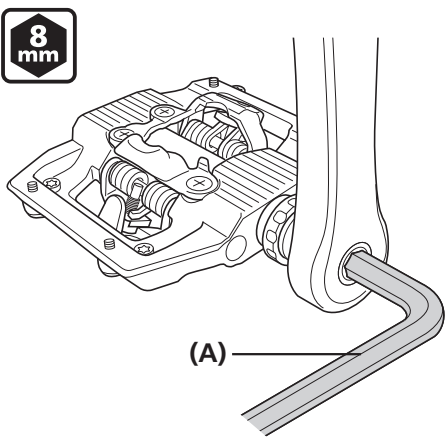
NOTE

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.

2




(A)

Use an 8 mm hexagon wrench to install the pedals to the cranks.

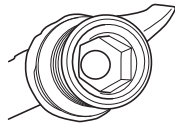

3 Remove any roughness or bumps on the joint, if detected.

(A) 8 mm hexagon wrench

Tightening torque	
	35 - 55 N·m

 **TECH TIPS**

Pay attention to the difference between the left and right pedals.

Right pedal	Left pedal
	
No notch in end of screw stem	Notch in end of screw stem
Right-hand thread	Left-hand thread

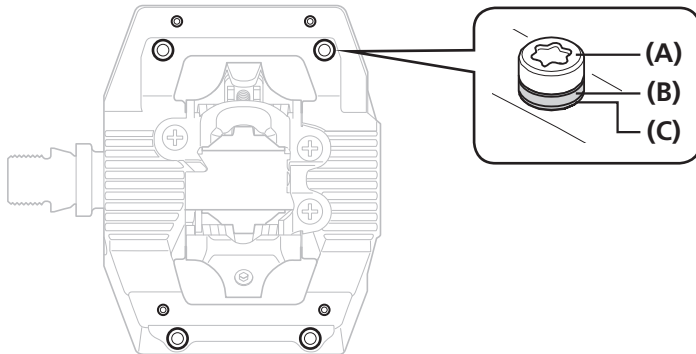
ADJUSTMENT

ADJUSTMENT

■ Using pins to adjust the gripping force

Install pins or insert spacers to the pins to adjust the gripping force between the shoes and the pedals.

- On this pedal, there are 8 pin mounting locations on top and bottom in total. The pedal is shipped with the setup as shown below.
- The protrusion of the pins can be reduced by inserting spacers.



- : Spacers installed (short pins, low gripping forces)
- : Spacers not installed (long pins, high gripping forces)
- ⊙ : No pins

(A) Pin

(B) Spacer (1.75 mm)

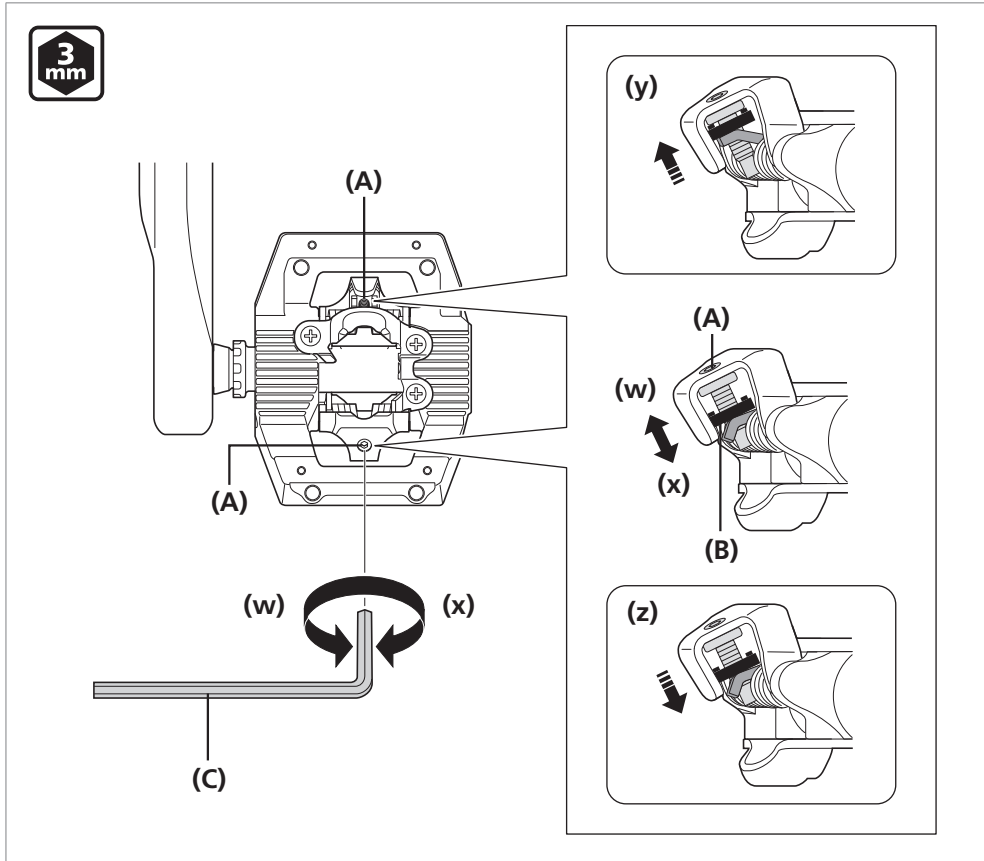
(C) Spacer (0.65 mm)

MAINTENANCE

MAINTENANCE

■ 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 four 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

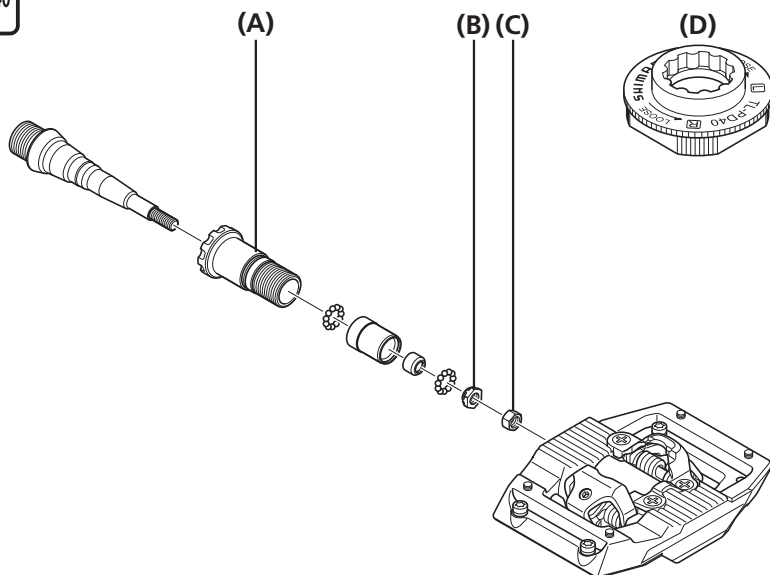
- In order to prevent accidental shoe release and ensure that release is possible when needed, make sure all spring tensions are properly adjusted.
- If the cleats are not adjusted equally, it can cause the rider difficulty in engaging or releasing the pedals. The spring tensions for the right and left 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.

■ Axle unit

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

Loosen the lock bush and remove the axle unit.

PD-M820



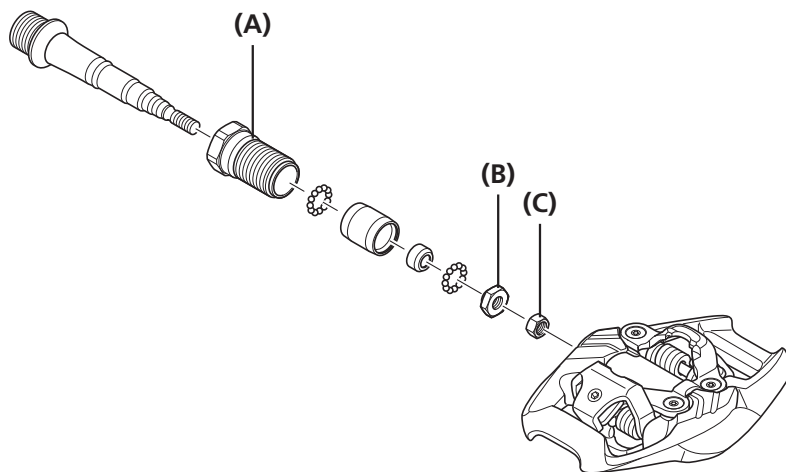
- (A) Lock bush
- (B) Cone
- (C) Lock nut
- (D) TL-PD40

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.

1

PD-MX70



2

PD-M820

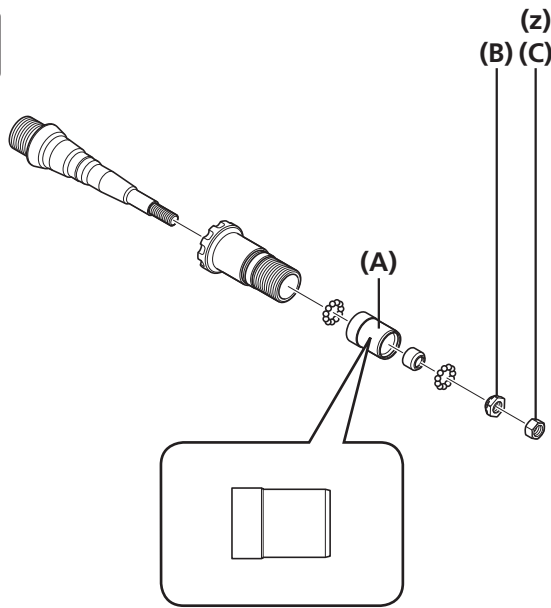
Use 7 mm and 8 mm spanners to turn the cone (8 mm) to adjust the rotation.

PD-MX70

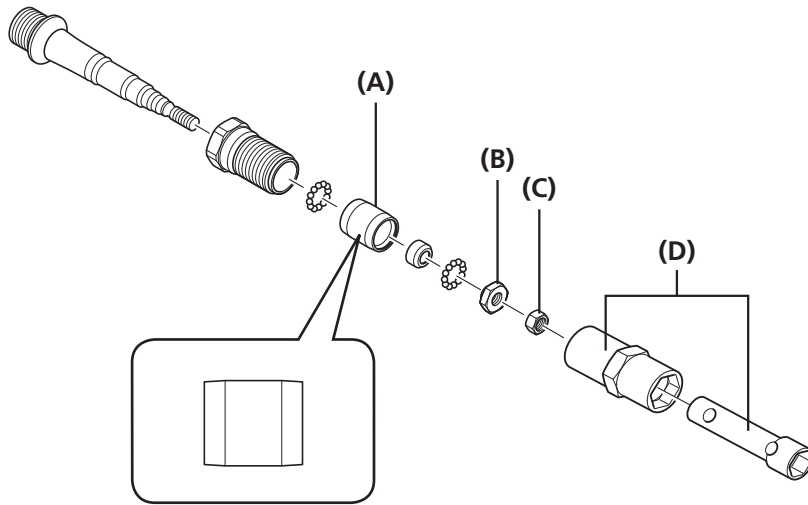
Use the Shimano original tool TL-PD63 or TL-PD33, or 7 mm and 10 mm spanners to turn the cone (10 mm) to adjust the rotation.

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

PD-M820



PD-MX70



3

(z) 7 mm spanner

(A) Body cup

(B) Cone

(C) Lock nut

(D) TL-PD63/33

Tightening torque



5 - 7 N·m

NOTE

- Both the cone and lock nut are threaded left-hand for the right pedal and right-hand for the left pedal.
- Adjust the cone so as to achieve a smooth rotation without looseness when the axle unit is set into the pedal.
- When assembling the body cup, please note the direction of the parts.



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



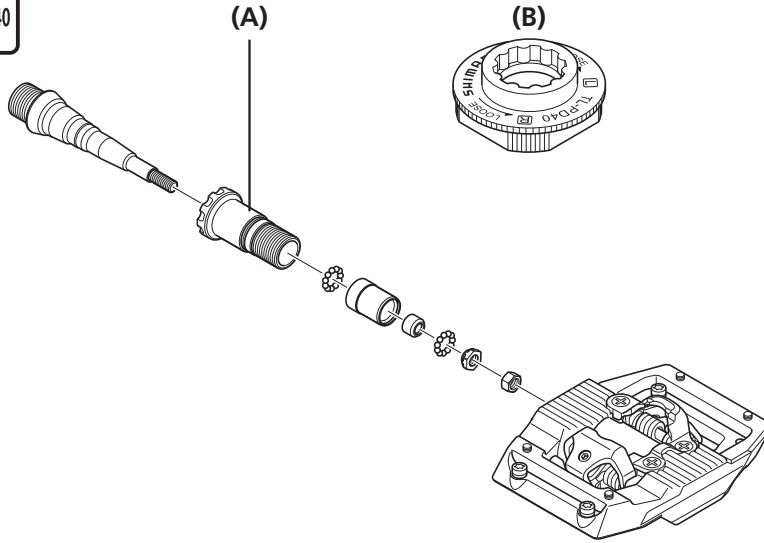
Apply grease to the extent that it does not flow out when the axle is set into the pedal (about 1.5 g).

4

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

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

PD-M820



(A) Lock bush

(B) TL-PD40

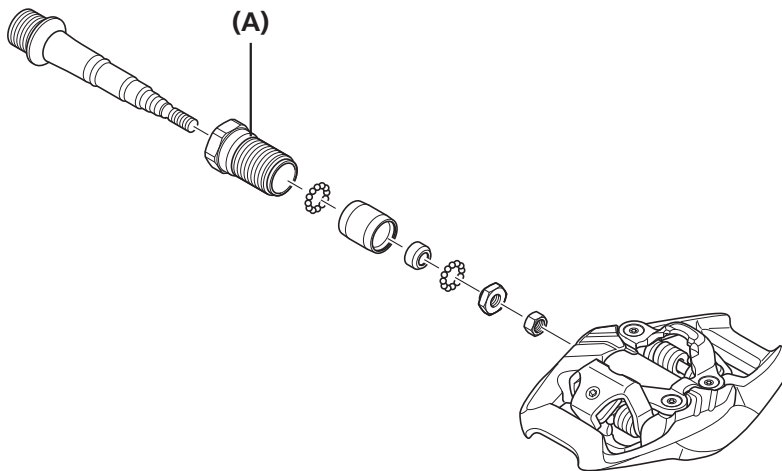
Tightening torque



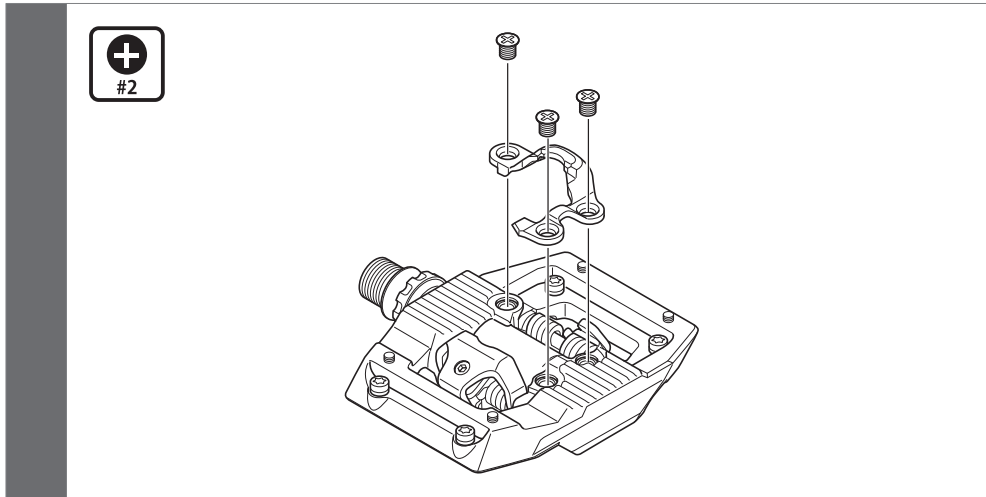
10 - 12 N·m

5

PD-MX70



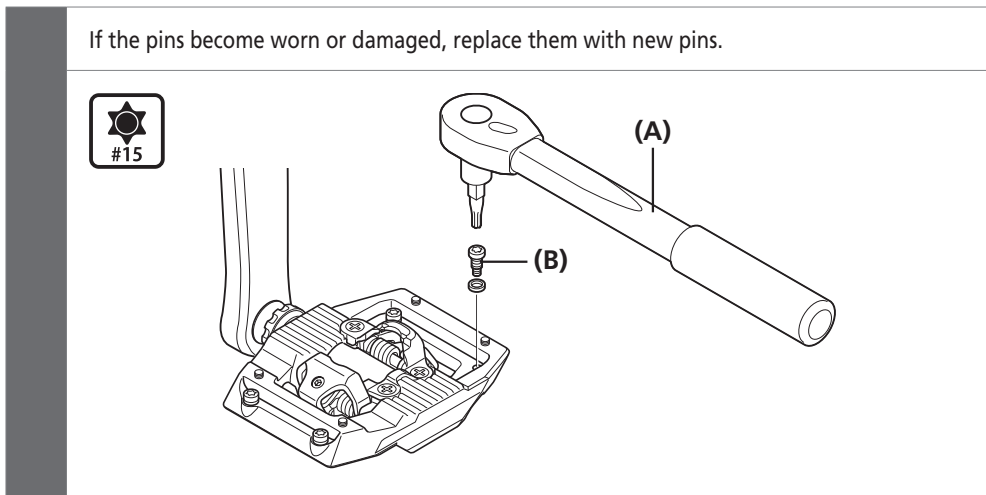
■ Replacement of the body cover



Tightening torque	
	2.7 - 3.5 N·m

NOTE
Tighten the three screws equally.

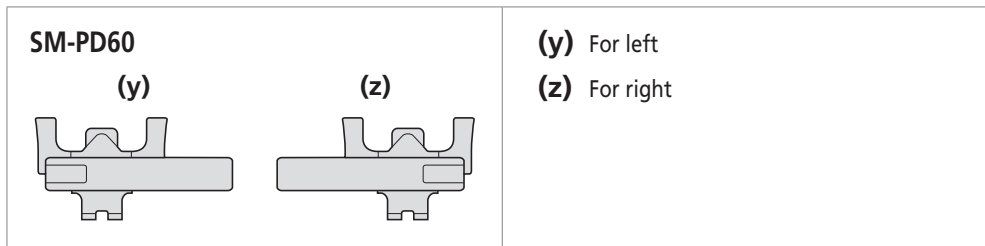
■ Pin



- (A) Hexalobular[#15]
- (B) Pin

Tightening torque	
	2 - 2.5 N·m

■ Mounting the reflectors

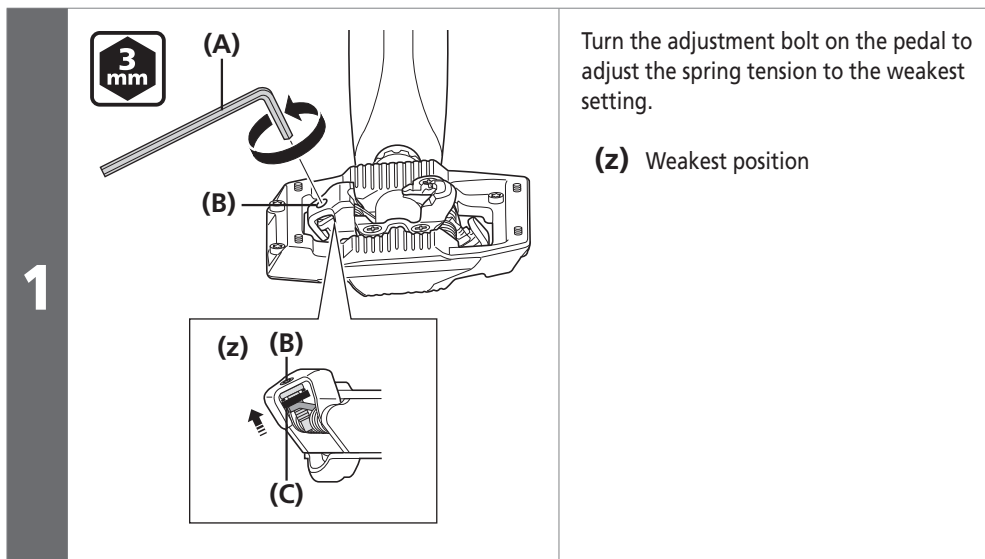


NOTE

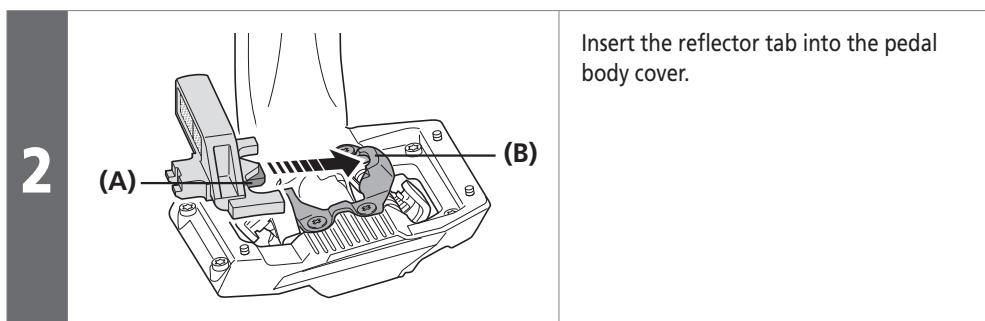
The reflectors for the left and right pedals are different.

Installation

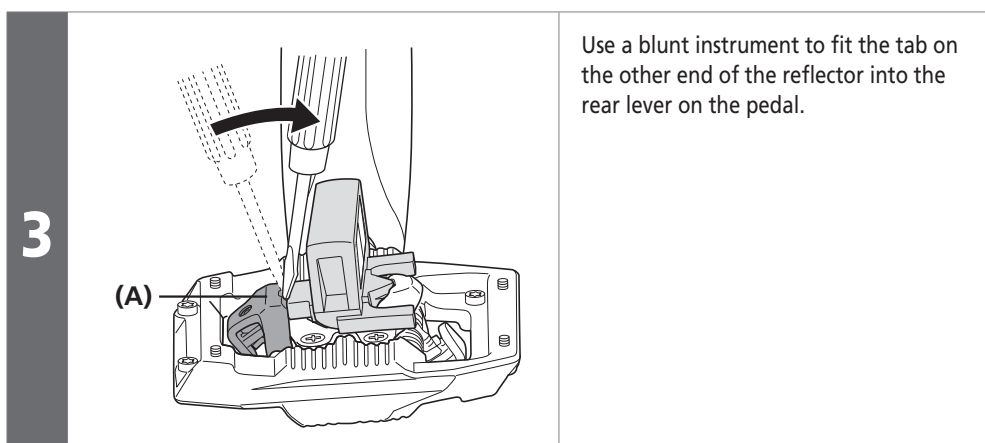
The illustration shows the right pedal.



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



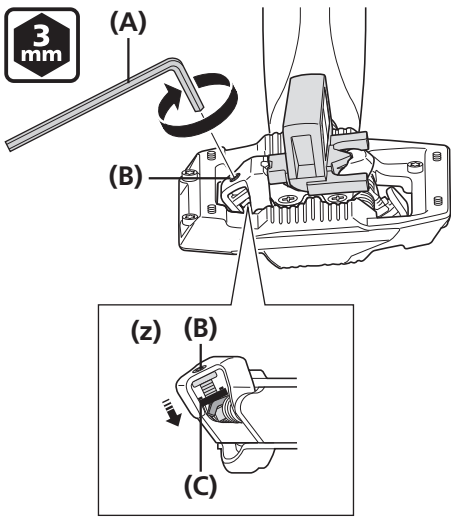
(A) Tab
(B) Body cover groove (cleat hooking area)



(A) Rear lever

▶ Mounting the reflectors

4



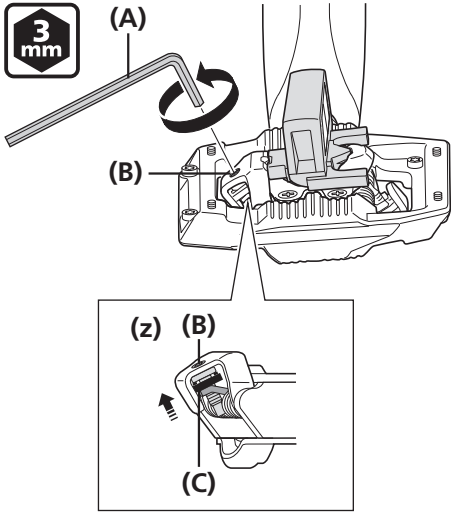
Turn the adjustment bolt on the pedal to adjust the spring tension to the strongest setting.

(z) Strongest position

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

Removal

1

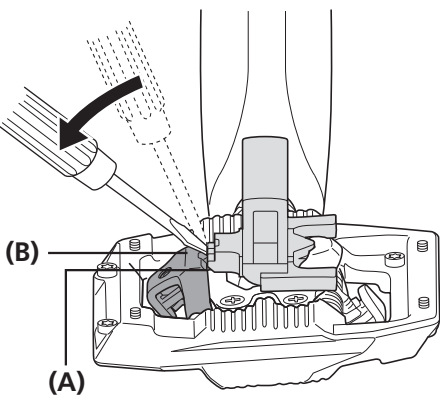


Turn the adjustment bolt on the pedal to adjust the spring tension to the weakest setting.

(z) Weakest position

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

2



Use a blunt instrument to pry the reflector tab out from the rear lever of the pedal.

- (A)** Tab
- (B)** Rear lever

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

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