

Dealer's Manual

ROAD	GRAVEL	MTB
E-BIKE	LIFESTYLE	GENERAL

SPD Pedals

XTR

PD-M9200

PD-M9220

PD-M9100

PD-M9120

DEORE XT

PD-M8220

PD-M8100

PD-M8120

GRX

PD-M8100-UG

SHIMANO

PD-ME700

PD-MT520

PD-M540

CL-MT001

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IMPORTANT NOTICE

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

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

If any part of the information on the manual is unclear to you, do not proceed with the installation. Instead, contact your place of purchase or a distributor for assistance.

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

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

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

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

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

TO ENSURE SAFETY

WARNING

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

Be sure to also inform users of the following:

- In order to ensure child safety for children using this product, children should be given instruction on the correct use after both guardians and children have fully understood the following information. Failure to follow this instruction may lead to serious injury.
- Before attempting to ride with these pedals and cleats (shoes), make sure you understand the operation of the engagement and release mechanism. 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 cleats, apply the brakes, then place one foot on the ground and practice engaging and releasing each cleat 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 cleats from the pedals.
- Before riding, adjust the cleat retention force of the pedals to your liking. If the cleat retention force of the pedals is low, the cleats may become accidentally released and you may lose balance and fall off the bicycle. If the cleat retention force 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 cleats from the pedals beforehand so that you can quickly put your feet onto the ground at any time.
- Use a lighter cleat retention force 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 adjust the cleat retention force before riding and after replacing the pedal cleats.
- Use only SPD-compatible shoes with this product. Other types of shoes may not release from the pedals, or may release unexpectedly.
- Use only SHIMANO cleats (CL-MT001 / SM-SH51 / SM-SH56)* and make sure that the fixing bolts are tightened securely to the shoes. Failure to securely tighten the bolts may result in a fall in which the cleats do not release.

* Compatible cleats vary depending on pedals. For details, refer to [Specifications](#) section.

If the warnings above 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.

- Be sure to attach reflectors to the bicycle when traveling on public roads.
Reflectors are sold separately for models that do not come with reflectors equipped as standard. For information on compatible reflectors, contact the place of purchase or a distributor.

- Do not continue riding the bicycle if the reflectors are dirty or damaged. Otherwise, it becomes more difficult for oncoming vehicles to see you.

<Models with pins for adjusting gripping force>

- Raise your feet from the pedals then slide them sideways to disengage your feet from the pedals. 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, otherwise, you may fall and be seriously injured. If you cannot get used to this operation, use the product with spacers installed.
- Be sure to wear clothing and protective gear which is suitable for the way in which the bicycle is to be used. Because the pins are long, they may cause injury if they come into direct contact with your skin.

NOTICE

Be sure to also inform users of the following:

- Check that there is no excess play or looseness in any fastening sections before riding the bicycle.
- Check that there is no excess play or looseness in the cleats or spacers before riding the bicycle.
- If pedaling performance does not feel normal, contact your place of purchase.
- If you experience any trouble with the bearing section of the pedal, the pedal may require adjustment. Consult your place of purchase or a distributor.
- Be sure to retighten the crank arms and pedals at periodic intervals at the place of purchase or a distributor.
- 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

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

Tool	
	2.5 mm hexagon wrench
	3 mm hexagon wrench
	4 mm hexagon wrench
	8 mm hexagon wrench
	7 mm spanner
	8 mm spanner
	10 mm spanner
	15 mm spanner
	17 mm spanner
	TL-PD40
	Hexalobular[#10]
	Cross head screwdriver[#2]

Installation / removal

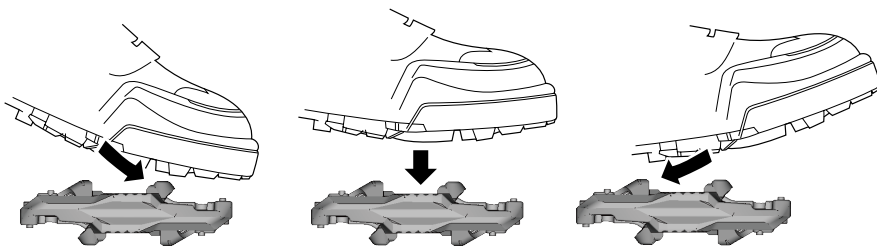
Installing the cleats

Types of cleats

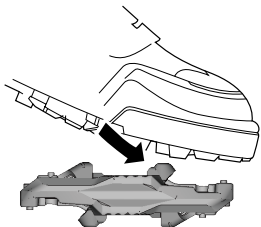
The engagement mode and release mode vary depending on the type of cleats being used.

Type of cleats being used	Engagement mode	Release mode
CL-MT001 (Black)	Multiple entry mode	Single release mode
SM-SH51 (Black)	Single entry mode	Single release mode
SM-SH56 (Silver, Gold)	Single entry mode	Multiple release mode

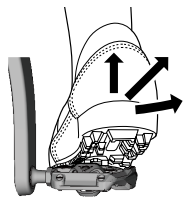
■ Multiple entry mode



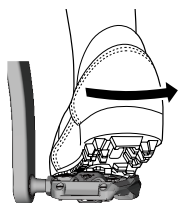
■ Single entry mode



■ Multiple release mode



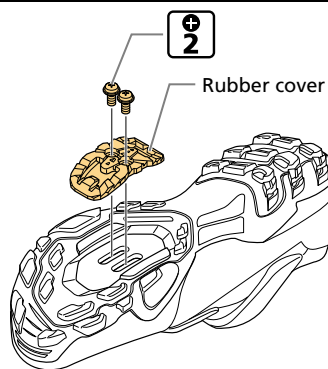
■ Single release mode



Temporarily installing cleats

1. Remove the rubber cover for the cleat mounting holes.

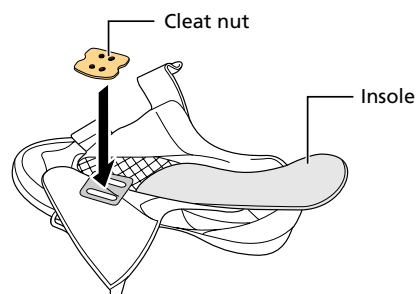
* This step may not be necessary depending on the type of shoe.



2. Set the cleat nut.

Remove the insole, then set along the elongated holes.

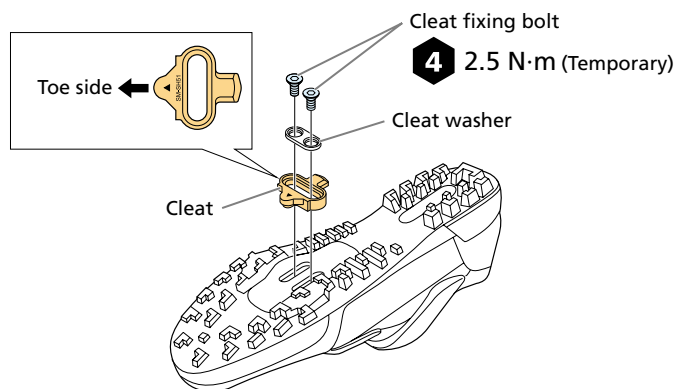
* This step may not be necessary depending on the type of shoe.



3. Temporarily install the cleats.

Temporarily tighten the cleat assembly as shown in the figure.

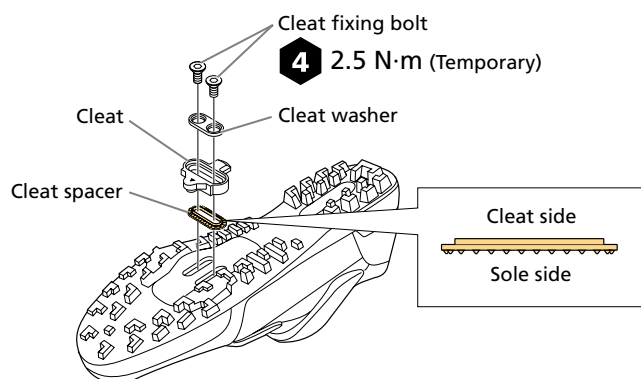
The cleats are not specific to the left or right pedals. They can be used interchangeably.



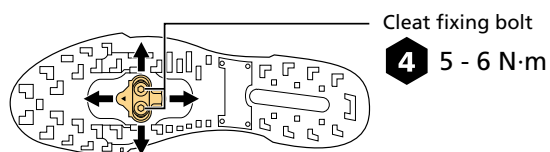
TECH TIPS

- The cleat spacer is only compatible with SHIMANO cleats (CL-MT001 / SM-SH51 / SM-SH56).
- When using spacers, use only one per SPD compatible shoe.
- The cleat spacer is not included in the PD-MT520 and PD-M540.

- Use cleat spacers in the following cases.
 - If you are riding in conditions in which dirt or debris build up inhibits smooth engagement of the shoe and pedal.
 - If the tread on the sole of the shoe causes interference and inhibits smooth engagement of the shoe and pedal.



Adjusting and securing the cleats



1. Confirm the optimal cleat positions.

Repeatedly adjust and confirm for each foot to determine the optimal cleat positions.

* The cleat has an adjustment range of 20 mm front to back and 5 mm right to left.

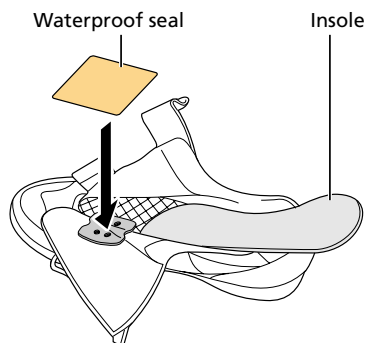
2. Securely tighten the cleats.

Tighten the two cleat fixing bolts alternately until they are both confirmed to be at the specified torque.

Installing waterproof seals

1. If your SHIMANO shoes came packaged with waterproof seals, attach the waterproof seals after securely tightening the cleats.

Remove the insole and attach the waterproof seal.

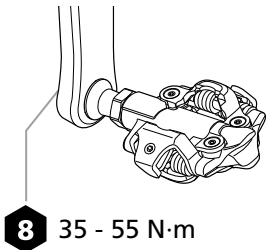


Installing to the crank

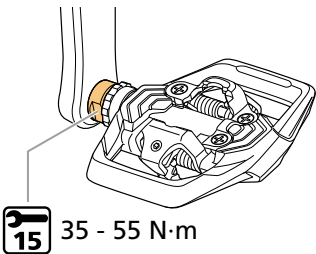
- 1. Apply a small amount of grease to the threads.
- 2. Install the pedals.

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

PD-M9200 / PD-M9220 / PD-M9100 /
PD-M9120 / PD-M8220 / PD-M8100 /
PD-M8120 / PD-M540

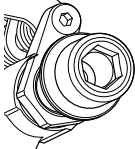
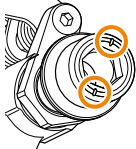


PD-ME700 / PD-MT520



NOTICE

- For the PD-M9200 / PD-M9220 / PD-M9100 / PD-M9120 / PD-M8220 / PD-M8100 / PD-M8120 / PD-M540, look for the grooves at the end of the threads to indicate which pedal is left and right.

Right pedal	Left pedal
 No grooves in thread	 Grooves in thread
Right-hand thread	Left-hand thread

- For the PD-ME700 / PD-MT520, pay attention to the left (L) and right (R) markings.

Right pedal	Left pedal
	

Right pedal	Left pedal
Right-hand thread	Left-hand thread

Adjustment

Using pins to adjust the gripping force (PD-M9220 / PD-M8220)

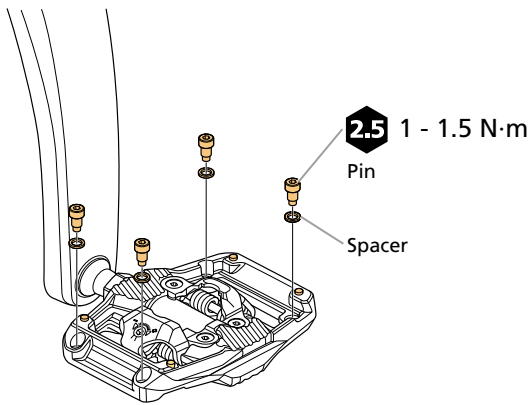
Remove or install the pins to adjust the gripping force between the shoe and pedal.

There are, in total on the top and bottom, 8 pin mounting locations on this pedal.

The protrusion of the pins can be reduced by inserting spacers.

- Spacers installed (short pins, low gripping force)
- Spacers not installed (long pins, high gripping force)

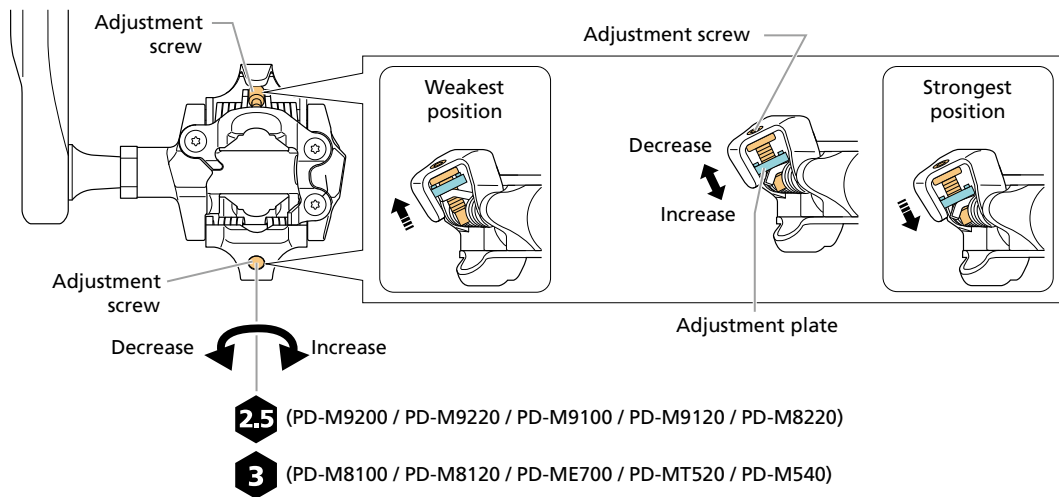
* The spacer is not used for the PD-M8220.



Maintenance

Adjusting the cleat retention force of the pedals

1. Turn the adjustment screw and adjust to the optimal cleat retention force when releasing the cleats from the bindings.
 - Turning the adjustment screw clockwise increases the cleat retention force, and turning it counterclockwise decreases it.
 - Clicking the adjustment screw once changes the tension one step. There are four clicks per turn.
 - The adjustment screw is located at the rear of each binding, resulting in four positions in total for the two pedals.
 - Equalize the cleat retention forces at all positions by checking the adjustment plate position and counting the number of turns of the adjustment screws.



NOTICE

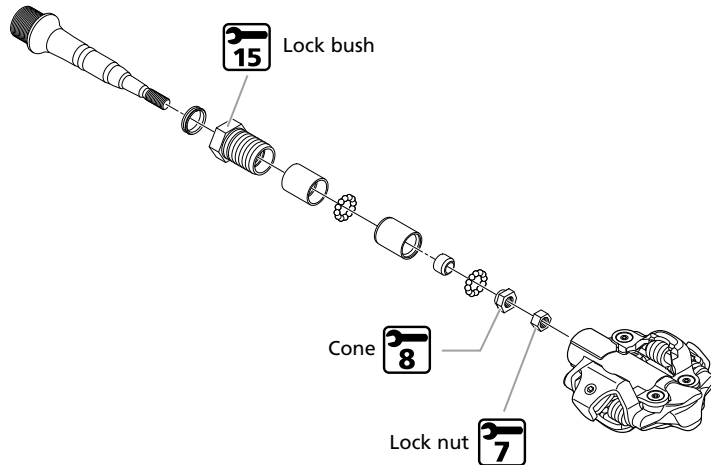
- In order to prevent accidental cleat release and ensure that release is possible when needed, make sure that the cleat retention force is properly adjusted.
- If the cleats are not adjusted equally, it can cause the rider difficulty in engaging or releasing the cleats. The cleat retention force for the right and left pedals should be adjusted so they are equal.

Adjusting axle bearings

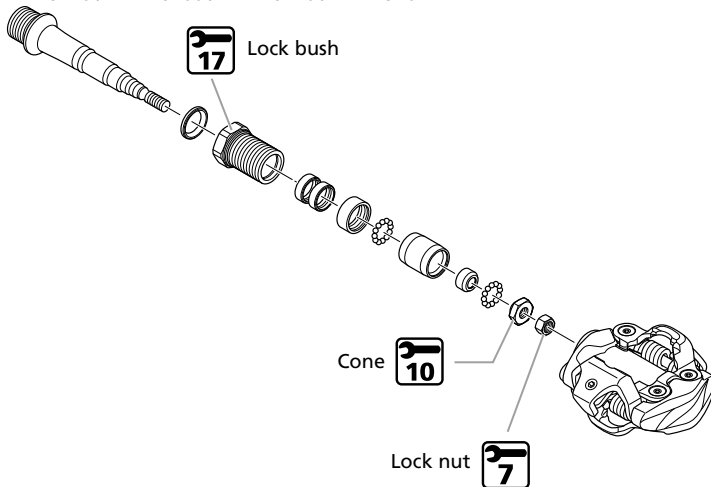
Follow the procedures shown below to adjust the axle unit if the pedals do not rotate smoothly, or if rotation is loose.

Reference: Exploded view

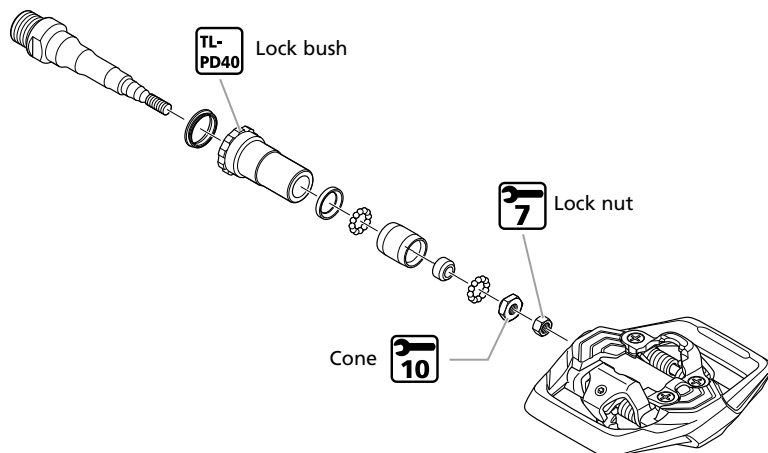
PD-M9200 / PD-M9220 / PD-M9100 / PD-M9120



PD-M8220 / PD-M8100 / PD-M8120 / PD-M540



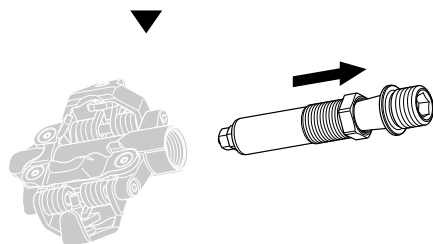
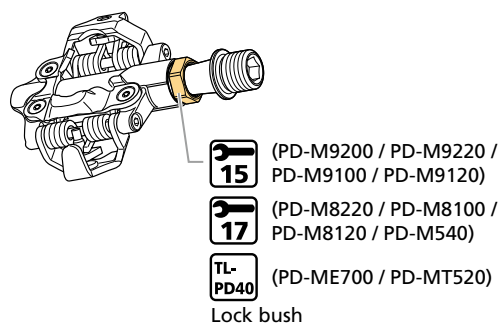
PD-ME700 / PD-MT520



1. Loosen the lock bush and remove the axle unit.

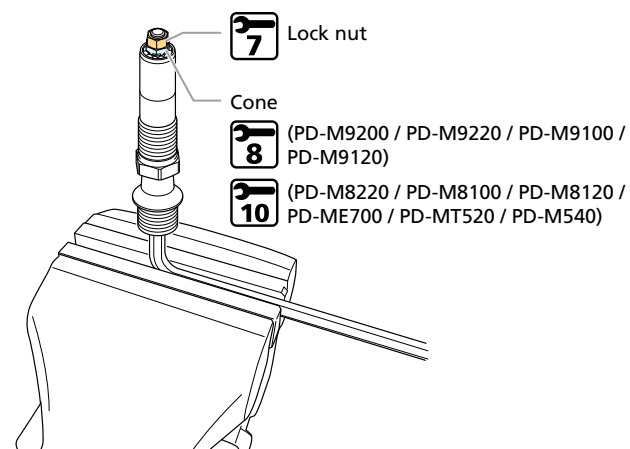
The lock bush of the right pedal has a left-hand thread; the lock bush of the left pedal has a right-hand

thread.



2. Loosen the lock nut.

Use a vise or an axle vise to hold the axle unit in place. Use the tools indicated in the figure to perform the adjustment.



TECH TIPS

PD-M9200 / PD-M9220 / PD-M9100 / PD-M9120 / PD-M8220 / PD-MT520 / PD-M540

- Right-hand thread: Black (without notches)

If the fitted lock nut is black (without notches), the cone and the lock nut have a right-hand thread.



Right-hand thread: Black
(without notches)

- Left-hand thread: Black (with notches)

If the fitted lock nut is black (with notches), the cone and the lock nut have a left-hand thread.



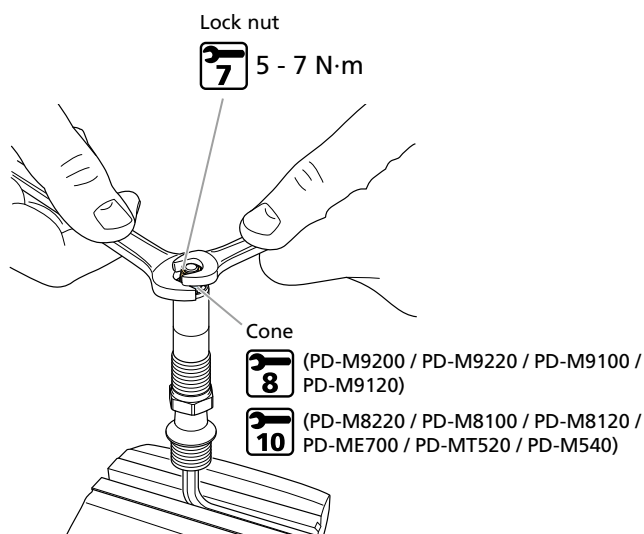
Left-hand thread: Black
(with notches)

- Additional preload will be added to the bearing assembly when it is installed to the pedal. Adjust the bearing assembly so there is a slight amount of play initially.

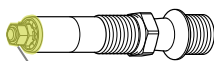
3. Turn the cone to adjust the bearing preload.

4. With the cone held secure, tighten the lock nut in place.

If there is excess play in rotation after setting the axle unit into the pedal, readjust from Step [2](#).



5. Remove old grease and apply an appropriate amount of new grease to the end of the axle unit.

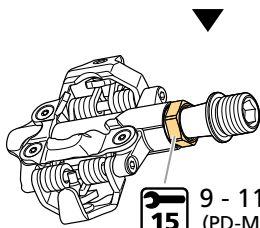
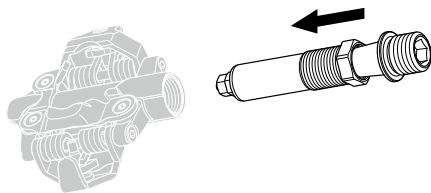


Grease number: Premium Grease
(Y04110000)

TECH TIPS

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

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



 9 - 11 N·m
(PD-M9200 / PD-M9220 / PD-M9100 / PD-M9120)

 9 - 12 N·m
(PD-M8220 / PD-M8100 / PD-M8120 / PD-M540)

 10 - 12 N·m
(PD-ME700 / PD-MT520)

Lock bush

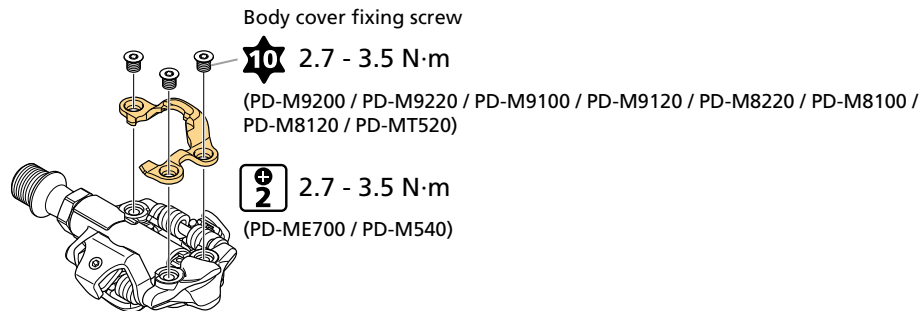
Replacing body covers

Cleats and body covers become worn and need to be replaced periodically.

When, due to wear, the cleat release starts to become too tight or too loose, immediately replace the cleats and body covers with new ones.

1. Replace body covers as shown in the figure.

Tighten the three screws uniformly using equal torque.



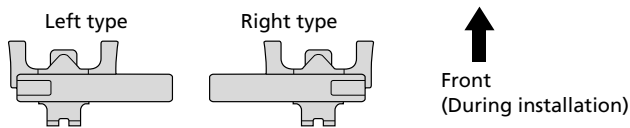
Installing / removing the reflectors

Installing the reflectors

The model of reflector to use varies depending on the axle of pedal.

Use SM-PD60 for standard axles, or SM-PD22 for short axles.

There are left and right types of SM-PD60 reflectors.



SM-PD60 / SM-PD22

1. Set the spring force to the weakest setting so that the reflector is easier to insert.

Adjust by turning the adjustment screw on the pedal body.

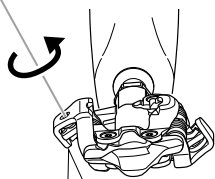
Adjustment screw



(PD-M9200 / PD-M9220 / PD-M9100 /
PD-M9120 / PD-M8220)

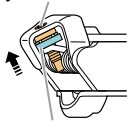


(PD-M8100 / PD-M8120 / PD-ME700 /
PD-MT520 / PD-M540)



Weakest position

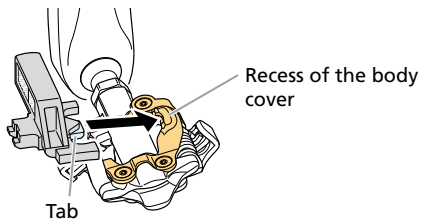
Adjustment screw



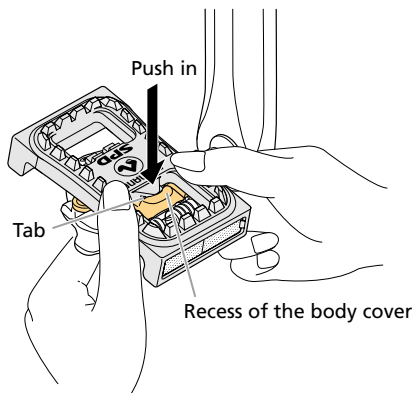
Adjustment plate

2. Insert the reflector tab into the recess of the body cover in the pedal body.

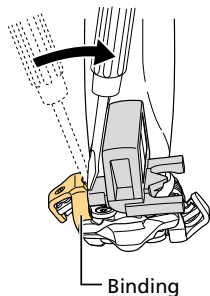
SM-PD60



SM-PD22



- 3. Fit the tab on the opposite side into the binding on the pedal body.**
As shown in the figure, use a slotted screwdriver or other tool to fit it.



- 4. Set the spring force to the strongest setting to prevent detachment.**
Adjust by turning the adjustment screw on the pedal body.

Adjustment screw

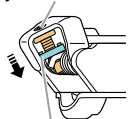
2.5 (PD-M9200 / PD-M9220 / PD-M9100 /
PD-M9120 / PD-M8220)

3 (PD-M8100 / PD-M8120 / PD-ME700 /
PD-MT520 / PD-M540)



Strongest position

Adjustment screw



Adjustment plate

Removing the reflectors

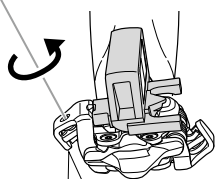
SM-PD60 / SM-PD22

1. Turn the adjustment screw on the pedal body to adjust the spring force to the weakest setting.

Adjustment screw

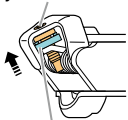
2.5 (PD-M9200 / PD-M9220 / PD-M9100 /
PD-M9120 / PD-M8220)

3 (PD-M8100 / PD-M8120 / PD-ME700 /
PD-MT520 / PD-M540)



Weakest position

Adjustment screw

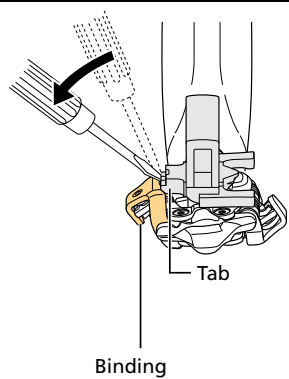


Adjustment plate

2. Pry the reflector tab out from the binding of the pedal body.

As shown in the figure, use a slotted screwdriver or other tool to pry it out.

* If using the side from which the reflector was removed as the SPD pedal, readjust the cleat retention force prior to use.



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