Dealer's Manual

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

SHIMANO STEPS

E8000 Series

SC-E8000	DU-E8000
SC-E6100	SM-DUE10
SC-E7000	SM-DUE11
SC-E6010	SM-DUE80-A
EW-EN100	SM-DUE80-B
SW-E6010-L	BT-E8010
SW-E7000-L	BT-E8020
SW-E8000-L	BM-E8010
SW-M8050-L	BM-E8020
SW-M9050-L	RT-EM300
SW-E6010-R	RT-EM600
SW-E7000-R	RT-EM800
SW-M8050-R	RT-EM810
SW-M9050-R	RT-EM900
RD-M9050	RT-EM910
RD-M8050	
FC-E8000	
FC-E8050	
FC-M8050	
SM-CRE80	
SM-CRE80-B	
SM-CRE80-12-B	
SM-CDE80	

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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 owner's 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.

- The Bluetooth® word mark and logos are registered trademarks owned by the Bluetooth SIG, Inc. and any use of such marks by SHIMANO INC. is under license. Other trademarks and trade names are those of their respective owners.

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

⚠ DANGER

Be sure to also inform users of the following:

■ Handling the battery
- Do not deform, modify, disassemble or apply solder directly to the battery. Doing so may cause leakage, overheating, bursting, or ignition of the battery.
- Do not leave the battery near sources of heat such as heaters. Do not heat the battery or throw it into a fire. Doing so may cause bursting or ignition of the battery.
- Do not subject the battery to strong shocks or throw it. If this is not observed, overheating, bursting, or fire may occur.
- Do not place the battery into fresh water or sea water, and do not allow the battery terminals to get wet. Doing so may cause overheating, bursting, or ignition of the battery.
- Use the specified battery charger for charging and observe the specified charging conditions. Doing otherwise may cause overheating, bursting, or ignition.

⚠ WARNING

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

- Wear approved eye protection while performing maintenance tasks such as replacing components.

- For information on products not explained in this manual, refer to the manuals provided with each product and store them so that they can be referenced at any time.

Be sure to also inform users of the following:
- Be careful not to let yourself be distracted by the cycle computer display while riding the bicycle. Otherwise, you may fall off the bicycle.
- Before riding, check that the wheels are secured. Otherwise, you may fall off the bicycle and be seriously injured.
- Be sufficiently familiar with how to start the power assisted bicycle before riding on busy streets. Otherwise, you may start the bicycle abruptly and have an accident.
- Make sure that the light is on when riding.
- Do not disassemble the product. Disassembling it may cause injury to persons.
- When charging the battery while it is installed on the bicycle, do not move the bicycle. The battery charger's power plug may not be completely inserted into the outlet, which may lead to fire.
- Do not inadvertently touch the drive unit when it has been continuously used for a long period of time. The surface of the drive unit becomes hot and could cause burns.

■**Lithium Ion Battery**

- If any liquid leaking from the battery gets into your eyes, immediately wash the affected area thoroughly with clean water such as tap water without rubbing your eyes, and seek medical attention immediately. If this is not done, the battery liquid may damage your eyes.

- Do not recharge the battery in very humid places or the outdoors. If this is not observed, electric shocks may result.

- Do not insert or remove the plug while it is wet. If this is not observed, electric shocks may result. If there is water leaking out of the plug, dry it thoroughly before inserting it.

- If the battery does not become fully charged even 2 hours after the designated charging time, immediately unplug the battery from the outlet and contact the place of purchase. Doing otherwise may cause overheating, bursting, or ignition of the battery.

- Do not use the battery if it has any noticeable scratches or other external damage. Doing so may cause bursting, overheating or problems with operation.

- The operating temperature ranges for the battery are given below. Do not use the battery in temperatures outside these ranges. If the battery is used or stored in temperatures outside these ranges, fire, injury or problems with operation may occur.
  1. During discharge: –10 °C - 50 °C
  2. During charging: 0 °C - 40 °C

■**Items related to installation to and maintenance of the bicycle**

- Be sure to remove the battery and charger before wiring or attaching parts to the bicycle. Otherwise, an electric shock may result.

- Clean the chain with an appropriate chain cleaner regularly.
  Intervals between maintenance depend on the use and riding circumstances. Never use alkali based or acid based solvents, such as rust cleaners. If these solvents are used the chain might break and cause serious injury.

⚠ **CAUTION**

Be sure to also inform users of the following:

- Observe the instructions in the user's manual for the bicycle in order to ride safely.

- Periodically check the battery charger and adapter, particularly the cord, plug, and case, for any damage. If the charger or adapter is broken, do not use it until it has been repaired.

- Use the product under the direction of a safety supervisor or the directions for use. Do not allow physically, sensory, or mentally impaired persons, inexperienced persons, or persons with no required knowledge including children to use this instrument.

- Do not allow children to play near the product.

- If any malfunction or trouble occurs, consult the place of purchase.

- Never modify the system. This may cause a malfunction in the system.

■**Lithium Ion Battery**

- Do not leave the battery in a place exposed to direct sunlight, inside a vehicle on a hot day, or other hot places. This may result in battery leakage.

- If any leaked fluid gets on your skin or clothes, wash it off immediately with clean water. Otherwise, the leaked fluid may damage your skin.

- Store the battery in a safe place out of the reach of infants and pets.

NOTICE

Be sure to also inform users of the following:

- Be sure to attach dummy plugs to any unused ports.

- For installation and adjustment of the product, consult a dealer.

- The units are designed to be fully waterproof to withstand wet weather riding conditions. However, do not deliberately place them into water.

- Do not clean the bicycle with a high-pressure washer. If water gets into any of the components, operating problems or rusting may result.

- Handle the components carefully, and avoid subjecting them to any strong shocks.

- Do not place the bicycle upside down. Doing so may damage the cycle computer or shift switch.

- Although the bicycle still functions as a normal bicycle even when the battery is removed, the light does not turn on if it is connected to the electric power system. Be aware that using the bicycle under these conditions will be considered non-observance of the road traffic laws in Germany.

- When carrying the bicycle in a car, remove the battery from the bicycle and place it on a stable surface in the car.

- Before connecting the battery, make sure that there is no buildup of water or dirt in the connector where the battery will be connected.

- When charging the battery while it is mounted on the bicycle, be careful of the following:
  - When charging, make sure there is no water on the charging port or the charger plug.
  - Check that the battery mount is locked before charging.
  - Do not remove the battery from the battery mount while charging.
  - Do not ride the bicycle with the battery charger mounted on.
  - Close the charging port cap when not charging.
  - Stabilize the bicycle to ensure that it does not collapse during charging.

- It is recommended to use a SHIMANO genuine battery. If using a battery from another company, be sure to read the product manual thoroughly prior to use.

- Some of the important information in this dealer's manual can also be found on the device labels.

- The number found on the battery key is necessary when purchasing spare keys. Store it carefully.

- Use a damp, well wrung out cloth when cleaning the battery and plastic cover.

- If you have any questions about the use and maintenance of the product, consult the dealer where you made the purchase.

- Contact the place of purchase for updates to the component software. The most up-to-date information is available on the SHIMANO website. For details, refer to the "CONNECTION AND COMMUNICATION WITH DEVICES" section.

- 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.

■ Connection and communication with PC

A PC linkage device can be used to connect a PC to the bicycle (system or components), and E-TUBE PROJECT can be used to carry out tasks such as customizing single components or the whole system and updating firmware.

- PC linkage device: SM-PCE1 / SM-PCE02

- E-TUBE PROJECT: PC application

- Firmware: software inside each component

■ Connection and communication with smartphone or tablet

It is possible to customize single components or the entire system, and update firmware, using E-TUBE PROJECT for smartphones/tablets after connecting the bicycle (system or components) to a smartphone or tablet via Bluetooth LE.

- E-TUBE PROJECT: app for smartphones/tablets

- Firmware: software inside each component

■**Lithium Ion Battery**

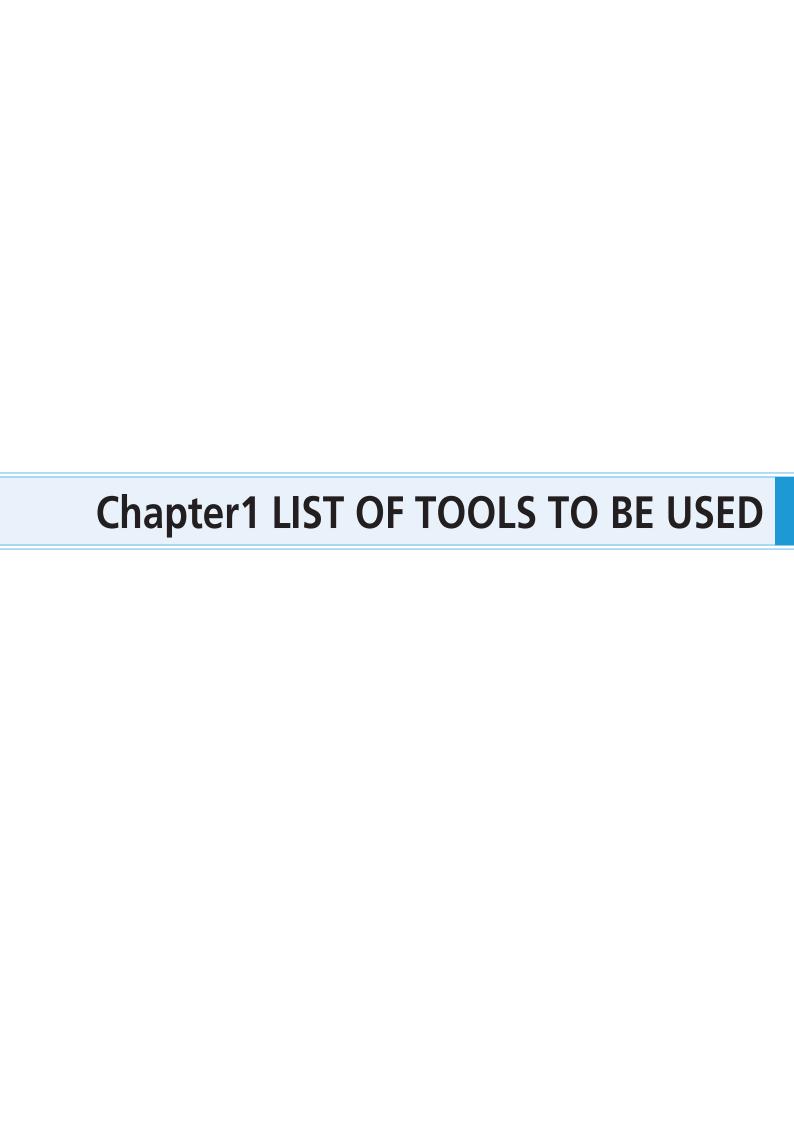|	
Europe only	**Disposal information for countries outside the European Union** This symbol is only valid within the European Union. Follow local regulations when disposing of used batteries. If you are not sure, consult the place of purchase or a bicycle dealer.

■**Items related to installation to and maintenance of the bicycle**

• Do not use thinner or other solvents to clean any of the components. Such substances may damage the surfaces.

• You should periodically wash the chainring unit with a neutral detergent. In addition, cleaning the chain with a neutral detergent and lubricating it can be an effective way of extending the useful life of the chainring unit and the chain.

> The actual product may differ from illustrations, as this manual is intended chiefly to explain the procedures for using the product.
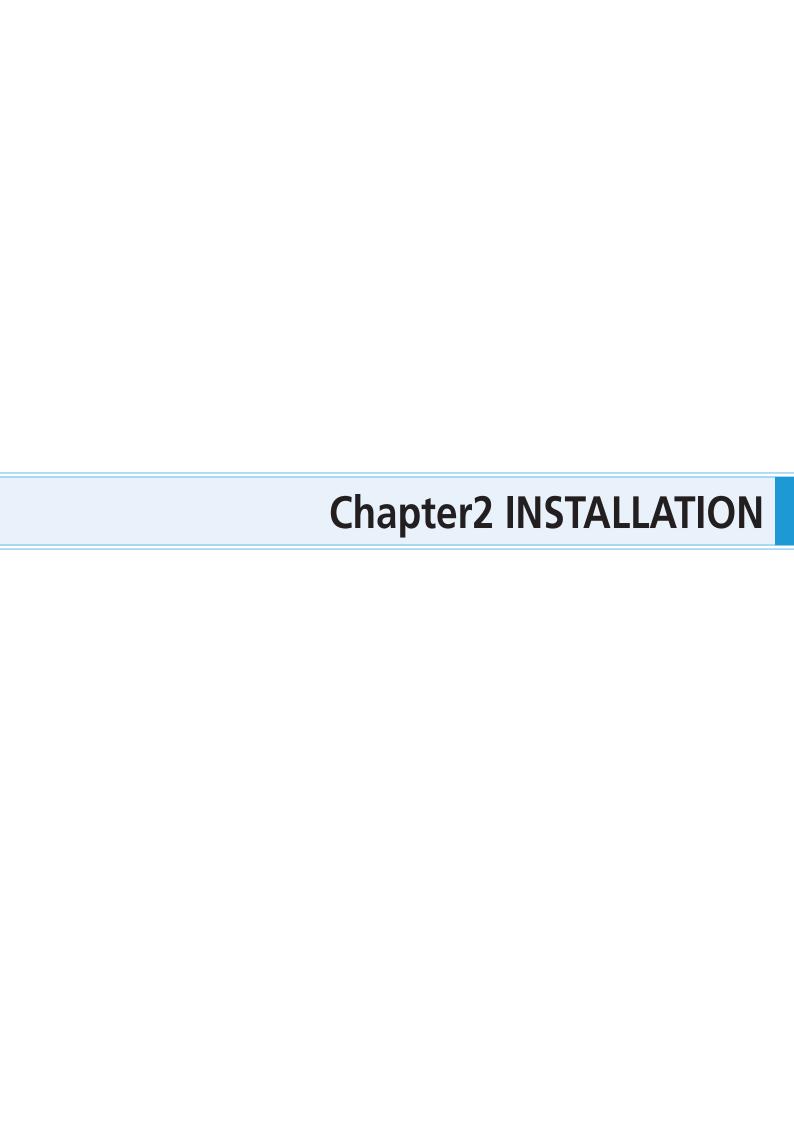
Chapter1 LIST OF TOOLS TO BE USED

LIST OF TOOLS TO BE USED

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

Component	Where to use		Tool
Cycle computers (SC-E8000)	Clamp bolt	**3**	3 mm hexagon wrench
Cycle computers (SC-E6010)	Handlebar fixing bolt	⊕2	Screwdriver [#2]
	Angle adjustment screw	⊕2	Screwdriver [#2]
Cycle computers (SC-E6100)	Clamp bolt Mounting bolt Angle adjustment bolt	⊕2	Screwdriver [#2]
Cycle computers (SC-E7000)	Clamp bolt	**3**	3 mm hexagon wrench
	Case fixing bolt	**2.5**	2.5 mm hexagon wrench
Assist switch (SW-M9050/SW-E8000)	Unit fixing bolt	**3**	3 mm hexagon wrench
	Lever fixing bolt	**2**	2 mm hexagon wrench
Assist switch (SW-E6010/SW-E7000)	Fixing bolt	**3**	3 mm hexagon wrench
Electric wire	Connector	TL-EW02	TL-EW02
Battery mount (BM-E8010)	Mount lower case	**3** / **8**	3 mm hexagon wrench / 8 mm spanner
	Key unit	**3**	3 mm hexagon wrench
	Key unit cover	**2.5**	2.5 mm hexagon wrench
	Mount upper case	**2.5**	2.5 mm hexagon wrench

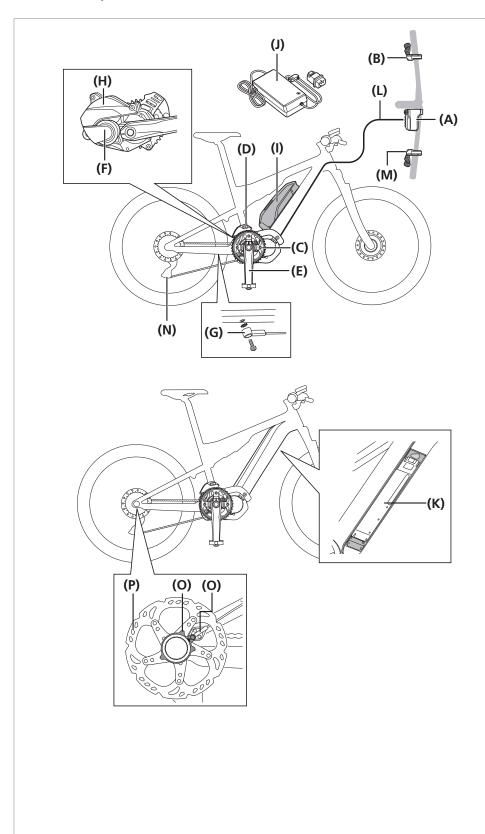| Component	Where to use		Tool
Battery mount (BM-E8020)	Mount lower case	5	5 mm hexagon wrench
	Mount upper case	+2	Screwdriver [#2]
	Key cylinder	2	2 mm hexagon wrench
	Key unit	5	5 mm hexagon wrench
	Key unit cover	+2	Screwdriver [#2]
Speed sensor (SM-DUE10)	Speed sensor fixing bolt	4	4 mm hexagon wrench
		25	Hexalobular [#25]
Speed sensor (SM-DUE11)	Speed sensor fixing bolt	10	Hexalobular [#10]
Magnet unit	Fixing bolt	+2	Screwdriver [#2]
Light cable	Mounting bolt	+2	Screwdriver [#2]
Drive unit	Drive unit fixing bolt (M8)	-	-
	Cover fixing bolt (M3)	+2	Screwdriver [#2]
Crank arm	Cap	TL-FC16 / TL-FC18	TL-FC16/TL-FC18
	Stopper plate	5	5 mm hexagon wrench
Chain device	Guide fixing bolt (M5)	3 / 4	3 mm hexagon wrench / 4 mm hexagon wrench
	Back plate fixing bolt (M6)	3	3 mm hexagon wrench
Clamp band	Clamp band	2.5	2.5 mm hexagon wrench

Component	Where to use	Tool	
Chainring unit	Lock ring	TL-FC39 / TL-FC36	TL-FC39+TL-FC36
	Chainring	TL-FC22 / TL-FC23	TL-FC22+TL-FC23
Chain guard	Chain guard fixing bolt	+2	Screwdriver [#2]

Chapter2 INSTALLATION

INSTALLATION

■ Names of parts

(A) Cycle computer/Junction [A]:
SC-E8000/SC-E6010/SC-E6100/
SC-E7000/EW-EN100

(B) Assist switch:
SW-E8000-L/SW-E6010/SW-E7000

(C) Chainring unit:
SM-CRE80/SM-CRE80-B/
SM-CRE80-12-B

(D) Chain device:
SM-CDE80

(E) Crank arm:
FC-E8000/FC-E8050/FC-M8050

(F) Drive unit:
DU-E8000

(G) Speed sensor:
SM-DUE10

(H) Drive unit cover:
SM-DUE80-A
(type that covers drive unit ports)
SM-DUE80-B
(type that covers drive unit ports
and the frame installation bolts)

(I) Battery (external type)/
Battery mount (external type):
BT-E8010/BM-E8010

(J) Battery charger:
EC-E6000

(K) Battery (built-in type)/
Battery mount (built-in type):
BT-E8020/BM-E8020

(L) Electric wire: EW-SD50

When using electronic gear shifting
(M) Shifting switch:
SW-M9050-R/SW-M8050-R/
SW-E6010/SW-E7000

(N) Rear derailleur (DI2):
RD-M9050/RD-M8050

(O) Speed sensor:
SM-DUE11

(P) Disc brake rotor:
RT-EM300/RT-EM600/RT-EM800/
RT-EM810/RT-EM900/RT-EM910

📖🔍 **TECH TIPS**

Maximum cable length (EW-SD50)
(L) ≤ 1,600 mm

■ Product specifications

Operating temperature range: During discharge	-10 - 50 °C	Battery type	Lithium Ion Battery
Operating temperature range: During charging	0 - 40 °C	Nominal capacity	Refer to the SHIMANO STEPS special battery and parts user's manual. For the latest information on manuals, see the website (**https://si.shimano.com**).
Storage temperature	-20 - 70 °C	Rated voltage	36 V DC
Storage temperature (Battery)	-20 - 60 °C	Drive unit type	Midship
Charging voltage	100 - 240 V AC	Motor type	Brush-less DC
Charging time	Refer to the SHIMANO STEPS special battery and parts user's manual. For the latest information on manuals, see the website (**https://si.shimano.com**).	Rated drive unit power	250 W

* The maximum speed up to which power assistance is provided is set by the manufacturer and is conditional on where the bicycle is to be used.

■ Installing and removing the cycle computer (SC-E8000/SC-E7000)

The example shown here is for SC-E8000

| 1 | (A)

(B)

When installing SC-E7000 on 25.4 mm diameter handlebars
(A)   (C)
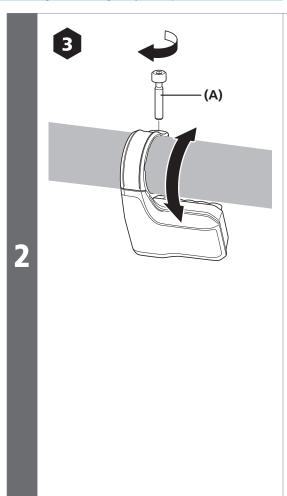
(B) | Pass the clamp band on the cycle computer over the handlebar.
< SC-E7000 >
An adapter is required for 25.4 mm diameter handlebars. | **(A)** Clamp band
(B) Cycle computer
(C) Adapter |

▶▶ Installing and removing the cycle computer (SC-E8000/SC-E7000)

2

3

(A)

Adjust the angle of the cycle computer so that it is easy to see, and then use a 3 mm hexagon wrench to tighten the clamp bolt.

2-5

(A) Clamp bolt

Tightening torque	
3	**0.8 N·m**
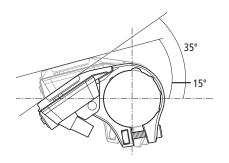
Recommended installation angle of the information display: Between 15° to 35° to the horizontal.

35°

15°

TECH TIPS
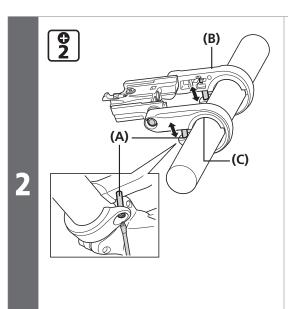
When removing the cycle computer, reverse the procedure.

■ Installing and removing the cycle computer (SC-E6010/SC-E6100)

Installation

1 Push the clamp area **(B)** open, and then install the bracket to the center of the handlebar.

2

< SC-E6010 >
Use the clamp bolt **(A)** to secure the clamp part **(B)** to the handlebar.
< SC-E6100 >
Use the clamp bolt **(A)** to temporarily install the clamp part **(B)** to the handlebar.

(A) Clamp bolt
(B) Clamp part
(C) Adapter

Handlebar compatibility table
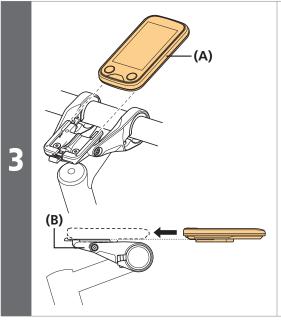
øA	øB-øA	Adapter	Fixing bolt
ø23.4 - ø24	0 - 1.1	X	15.5 mm
ø24 - ø25.5	0 - 1.1	X	20 mm
ø31.3 - ø31.9	0 - 0.6	-	20 mm

* X: Necessary

< SC-E6010 >

Tightening torque	
⊕2	1 N·m

3

Slide the cycle computer **(A)** into the bracket **(B)** as shown in the illustration. Insert it firmly until you hear it click.
< SC-E6010 >
This completes the installation.
< SC-E6100 >
Proceed to step 4.
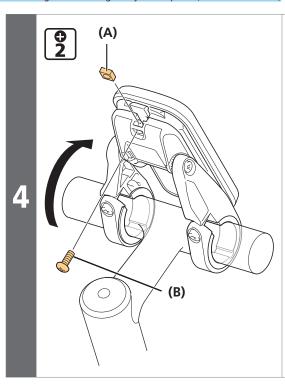
(A) Cycle computer
(B) Bracket

2-6

▶▶ Installing and removing the cycle computer (SC-E6010/SC-E6100)

4

Secure the cycle computer if necessary.
If the cycle computer will not be secured to the bracket, this step is not necessary.
Stand the cycle computer and bracket up on the stem (as though you are turning the cycle computer around).
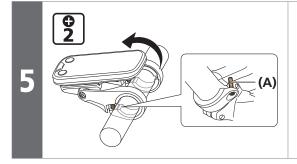Insert the square nut into the bracket and tighten the mounting bolt.

(A) Square nut
(B) Mounting bolt

Tightening torque	
	0.4 - 0.5 N·m

TECH TIPS

- This procedure is used to secure the cycle computer to the bracket, so that it cannot be easily removed. This is useful for displaying the product.

- Ask the user if they will secure the cycle computer when the product is delivered. If necessary, explain how to do so (as described to the left).

5

Return the cycle computer to its installation position if the cycle computer was stood up on the stem in step 4.
Then secure the bracket.

(A) Clamp bolt

Tightening torque	
	1 N·m

Removal

1
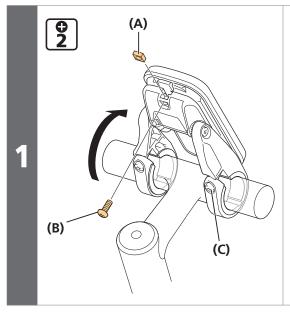
< SC-E6010 >
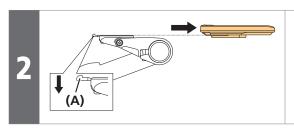This step is not necessary. Skip to step 2.
< SC-E6100 >
If the cycle computer was not secured, this procedure is not necessary. Skip to step 2.
Loosen the clamp bolt, and then stand the cycle computer and bracket up on the stem (as though you are turning the cycle computer around).
Then remove the mounting bolt and square nut.

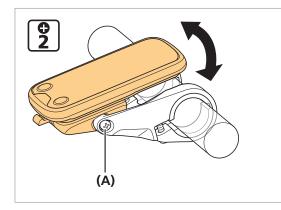**(A)** Square Nut
(B) Mounting bolt
(C) Clamp bolt

2	To remove the cycle computer, slide it while pushing the bracket lever **(A)**.	**(A)** Lever

■ Adjusting the angle of the cycle computer (SC-E6010/SC-E6100)

	Loosen the angle adjustment screw **(A)** with a screwdriver. Adjust the angle of the cycle computer to make it easier to see while riding. After determining the angle, tighten the screw to the designated torque.	**(A)** Angle adjustment screw

Tightening torque	
	0.5 N·m

■ Installing junction [A] (EW-EN100)

EW-EN100 is junction [A] with simple operation/display functionality.
Instead of a cycle computer, install it in a location around the cockpit from which the LED can be seen while riding.
This section explains how to install it to the brake hose. It can be installed to the brake outer casing using the same procedure.
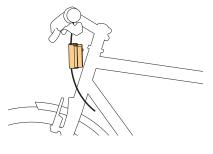
NOTICE

EW-EN100 Installation location.
- As shown in the figure, install EW-EN100 so that it does not reach the side of the frame. Otherwise, it could be damaged if the bicycle tips over and it is pinched between the frame and curb.
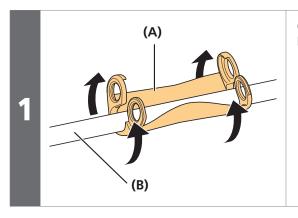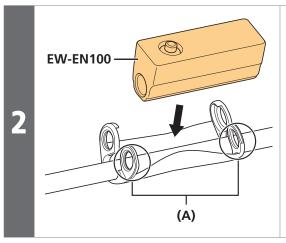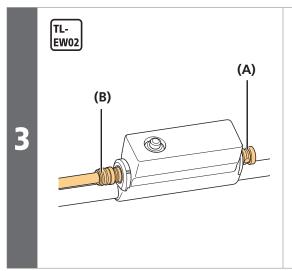
▶▶ Installing junction [A] (EW-EN100)

1	(A) (B)	Open up the adapter and set it to the brake hose.

(A) Adapter
(B) Brake hose or brake outer casing

2	EW-EN100 (A)	Bend the adapter along the brake hose.

(A) Inner side

3	TL-EW02 (A) (B)	As shown in the figure, set EW-EN100 and then connect the electric wire or dummy plug.

(A) Dummy plug
(B) Electric wire

NOTICE
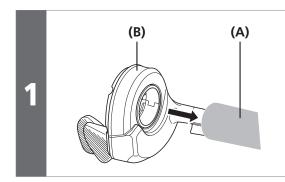
Be sure to connect either an electric wire or a dummy plug to the two E-TUBE ports on EW-EN100. Connecting both will secure EW-EN100 to the brake hose or brake outer casing.

📖🔍 TECH TIPS

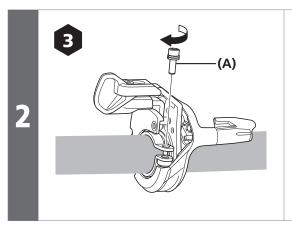When removing it, reverse the procedure.

■ Installing the switch unit

SC-E8000

1	**(B)** **(A)**	Pass the switch unit over the handlebar.

(A) Handlebar
(B) Switch unit

Supported handlebars:
Ø22.0 mm/Ø22.2 mm/Ø22.5 mm

2	**3** **(A)**	Adjust the attachment position and angle, and then use a hexagon wrench to tighten the unit fixing bolt.
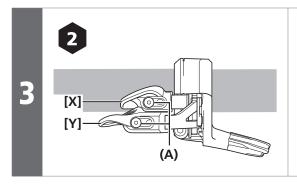
(A) Unit fixing bolt

Tightening torque	
3	**2 - 2.2 N·m**

NOTICE

Attach the lever in a position where it will not touch the brake lever when pushed all the way in.

3	**2** **[X]** **[Y]** **(A)**	Adjust the positions of lever **[X]** and lever **[Y]**.

Loosen the lever fixing bolt using an 2 mm hexagon wrench, and adjust the lever's position so that it is easy to push.
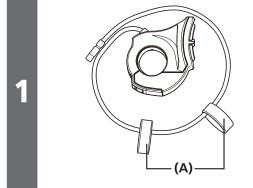
After determining the position, tighten to the designated torque. |

(A) Lever fixing bolt

Tightening torque	
2	**0.5 - 0.7 N·m**

SW-E6010

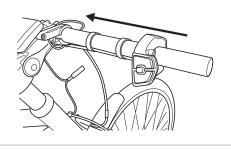|		
1	(A)	Temporarily attach the cable band **(A)** to the assist switch. Adjust the cable band according to the length of the handlebar.

(A) Cable band

📖🔍 **TECH TIPS**

Cable bands are included with the SW-E6010.

2		Attach the assist switch mounted with the cable band to the handlebar.

3	(B) (A)	Attach the assist switch to a ø 22.2 handlebar with the electric wire routed under the switch and open the fixing bolt cover **(A)**.

(A) Fixing bolt cover
(B) Fixing bolt

4	⬡**3**	Tighten the fixing bolt **(B)** to the specified tightening torque using a 3 mm hexagon wrench.

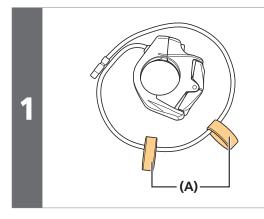| Tightening torque	
⬡**3**	**1.5 N·m**

📖🔍 **TECH TIPS**

When removing the cycle computer, reverse the procedure.
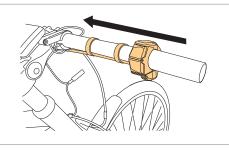
SW-E7000

| 1		Temporarily attach the cable band **(A)** to the assist switch. Adjust the cable band according to the length of the handlebar.	**(A)** Cable band 📖 **TECH TIPS** Cable bands are included with the SW-E7000.
2		Attach the assist switch mounted with the cable band to the handlebar. For a Ø22.0 to Ø22.4 handlebar, the electric wire must be facing downward.	
3		Tighten the mounting bolt **(A)** to the specified tightening torque using a 3 mm hexagon wrench.	**(A)** Mounting bolt

(A) Mounting bolt

Tightening torque	
3	**1.5 N·m**

📖 **TECH TIPS**
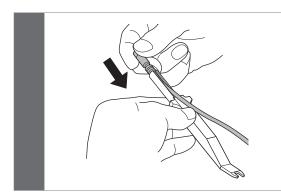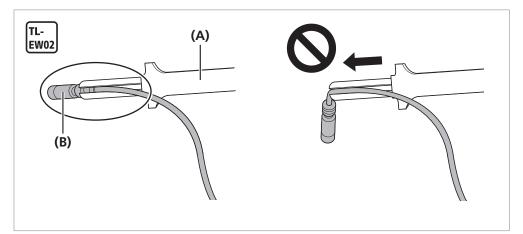
When removing the cycle computer, reverse the procedure.

■ Connecting the electric wire

	Set so that the projection on the connector is aligned with the groove in the narrow end.

2-13

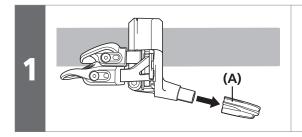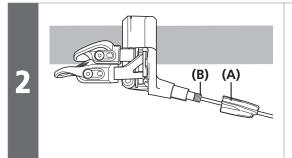|	
TL-EW02 (A) (B) 🚫	**(A)** TL-EW02 **(B)** Plug

NOTICE

• Use the SHIMANO original tool for installation and removal of the electric wire.

• When installing the electric wire, do not forcibly bend the plug.
It may result in a poor contact.

• When connecting the electric wire, push it in until it clicks in place.

Connect the electric wire to the switch unit (SW-E6010/SW-E7000)

1	(A) Remove the cable cap from the switch unit.	**(A)** Cable cap

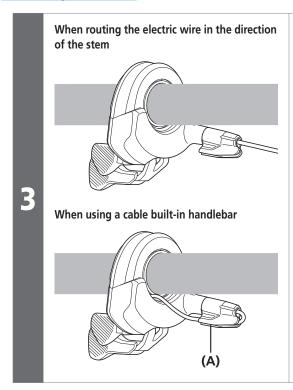|		
2	(B) (A) Pass the electric wire through the cable cap, and connect it to the switch unit.	**(A)** Cable cap **(B)** Electric wire ### NOTICE Make sure the electric wire is connected through the cable cap. If the wire is not passed through the cable cap, the electric wire connector may be damaged.

2-13

3

When routing the electric wire in the direction of the stem
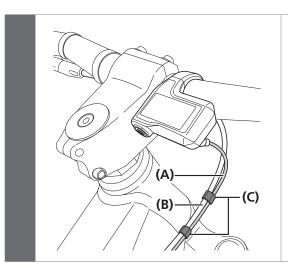
When using a cable built-in handlebar

(A)

Install the cable cap.

When routing the electric wire along a cable built-in handlebar, run the wire along the guide of the cable cap then the handlebar.

(A) Guide

Securing the electric wire (SC-E8000/SC-E7000)
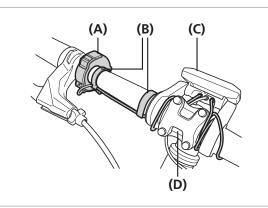
(A)
(B)
(C)

Bind the brake horse (or brake outer casing) to the electric wire connecting the cycle computer and drive unit, using the band, as shown in the illustration.

(A) Electric wire of the cycle computer
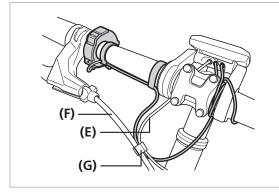**(B)** Brake horse
(or brake outer casing)
(C) Band

TECH TIPS

Bands are included with the SC-E8000/SC-E7000.

Example of routing the electric wire (SC-E6010/SC-E6100)

Example 1: Secure the electric wire of the switch unit **(A)** to the handlebar using the cable band **(B)**. Wind the excess electric wire around the area between the cycle computer **(C)** and stem **(D)**, then connect the wire to the cycle computer.

(A) Switch unit
(B) Cable band
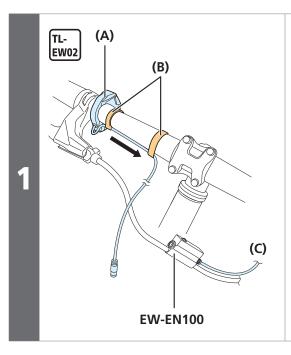**(C)** Cycle computer
(D) Stem

Example 2: Secure the electric wire of the switch unit to the handlebar using the cable band. Bind the electric wire of the assist switch and that of the cycle computer **(E)** to the brake outer casing **(F)** using the band **(G)** and connect the electric wire of the assist switch to the cycle computer.

(E) Electric wire of the cycle computer
(F) Brake outer casing
(G) Band

📖🔍 **TECH TIPS**

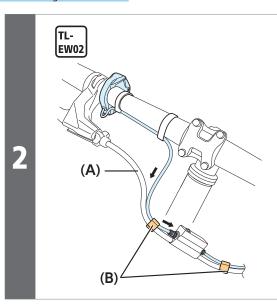Bands are included with the SC-E6010/SC-E6100.

Routing the electric wire (EW-EN100)

1

TL-EW02

EW-EN100

Secure the switch unit's electric wire.
• Determine the locations of the cable bands, and then secure the electric wire in place along the handlebar so that there is no slack.

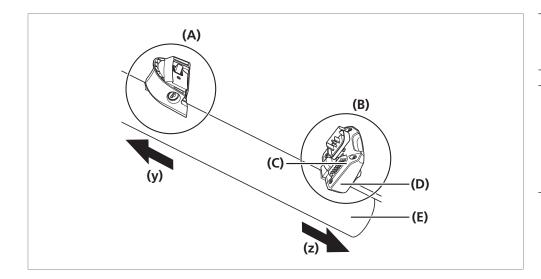**(A)** Switch unit
(B) Cable band
(C) Drive unit

2-15

▶▶ Connecting the electric wire
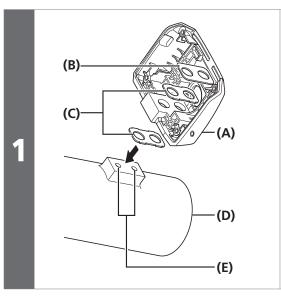
2

TL-EW02

(A)

(B)

Connect the electric wire to the E-TUBE port on EW-EN100.
• If necessary, use bands to secure the electric wire connecting the switch unit and EW-EN100 to either the brake hose or brake outer casing.
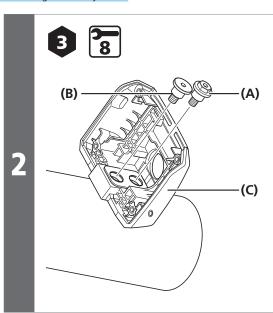
(A) Brake outer casing
(B) Band

2-16

■ Installing the battery mount

BM-E8010

(y) Front of bicycle
(z) Rear of bicycle

(A) Key unit
(B) Battery connection unit
(C) Mount upper case
(D) Mount lower case
(E) Frame

1

Set in place the rubber spacers and metal spacer on the mount lower case and align the frame mounting holes with the bolt holes in the mount lower case.

(A) Mount lower case
(B) Metal spacer
(C) Rubber spacer
(D) Frame
(E) Frame mounting hole
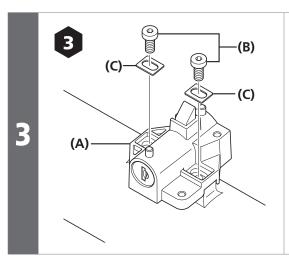
2

3 **8**

Secure the mount lower case by tightening the two types of mount fixing bolt (M5).

Tighten the mount fixing bolt (M5) (low head type) first.

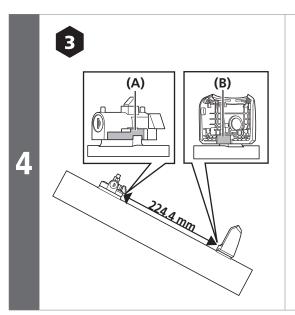**(A)** Mount fixing bolt (M5) (hexagon bolt type):
Use a 3 mm hexagon wrench or 8 mm spanner on the mount fixing bolt.
(B) Mount fixing bolt (M5) (low head type):
Use a 3 mm hexagon wrench on the mount fixing bolt.
(C) Mount lower case

Tightening torque	
3 **8**	**3 N·m**

3

3
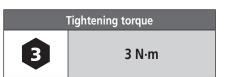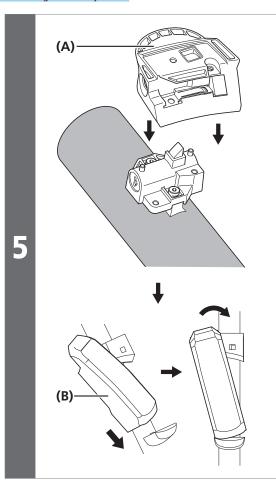
Temporarily attach the key unit with the key unit fixing bolts (M5).

(A) Key unit:
Key unit is not included with SHIMANO products.
(B) Key unit fixing bolt (M5)
(C) Washer
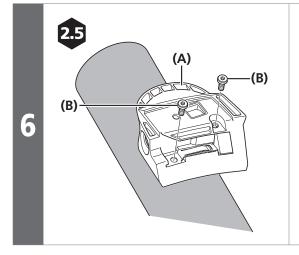
4

3

Adjust the position of the key unit so that the distance between section **(A)** of the key unit and section **(B)** of the mount lower case is **224.4 mm** and then fully tighten the key unit fixing bolts.

Tightening torque	
3	**3 N·m**

224.4 mm

2-18

5

Temporarily attach the key unit cover to the key unit and adjust so that the battery can be smoothly connected/disconnected and no noise is produced due to looseness during riding.

2-19

(A) Key unit cover
(B) Battery

6

2.5

Secure the key unit cover with the key unit cover fixing bolts (M4).

(A) Key unit cover
(B) Key unit cover fixing bolt (M4)

Tightening torque	
2.5	0.6 N·m

▶▶ Installing the battery mount

7
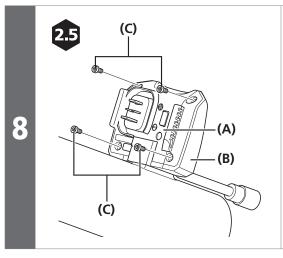
Route the power cord through the cable routing hole.
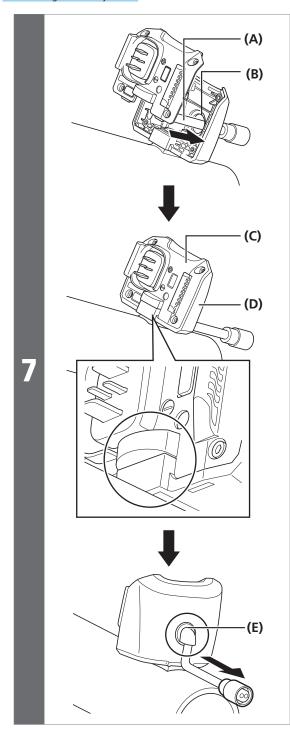
Align the protruding parts of the mount upper case and mount lower case.

Pull the power cord until the rubber bush is implanted in the cable routing hole.

(A) Power cord
(B) Cable routing hole
(C) Mount upper case
(D) Mount lower case
(E) Rubber bush
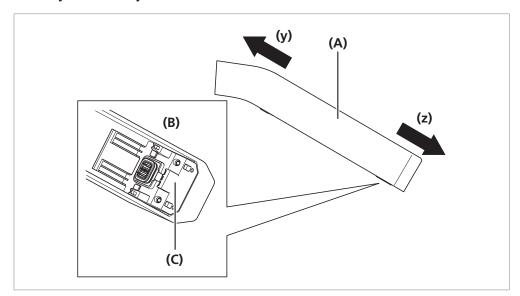
8

Tighten on the mount upper case using the mount upper case fixing bolts (M3).

(A) Mount upper case
(B) Mount lower case
(C) Mount upper case fixing bolt (M3)

Tightening torque	
2.5	**0.6 N·m**

2-20

BM-E8020

Assembly of the battery connection unit

(y) Front of bicycle
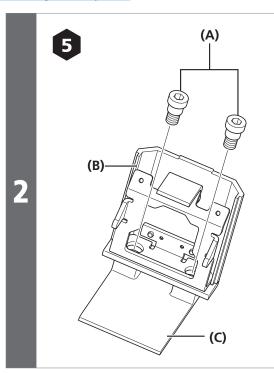
(z) Rear of bicycle

(A) Frame

(B) Battery connection unit

(C) Mount upper case and mount lower case when assembled

1

Align the frame mounting holes with the bolt holes in the mount lower case.
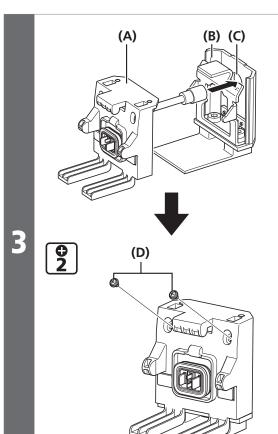
(A) Mount lower case

(B) Frame

(C) Frame mounting hole

5

2

(A)

(B)

(C)

Secure the mount lower case to the frame by the tightening the mount fixing bolts (M8).

(A) Mount fixing bolt (M8)
(B) Mount lower case
(C) Frame

Tightening torque	
5	**10 N·m**

3

(A) (B) (C)

(D)
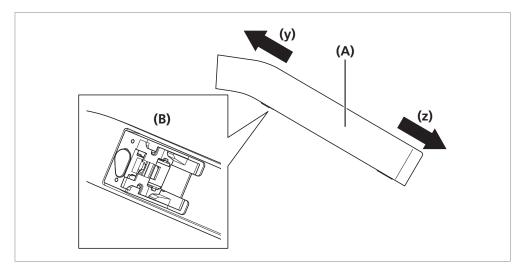
Route the power cord through the cable routing hole in the mount lower case and then tighten on the mount upper case using the mount upper case fixing bolts (M3).

(A) Mount upper case
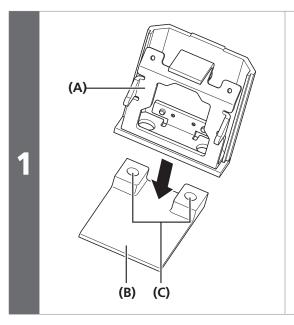**(B)** Mount lower case
(C) Cable routing hole
(D) Mount upper case fixing bolt (M3)
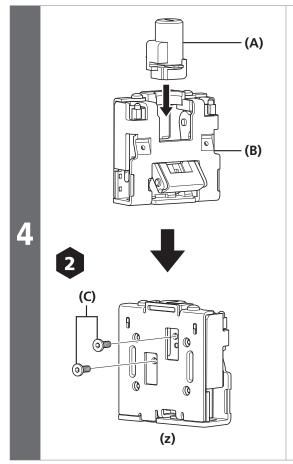
Tightening torque	
⊕ **2**	**0.6 N·m**

Assembly of the key unit

(y) Front of bicycle
(z) Rear of bicycle

(A) Frame
(B) Key unit

4

Insert the key cylinder into the key unit.

Secure the key cylinder in place by tightening the key cylinder fixing bolts (M4) from the reverse side of the key unit.
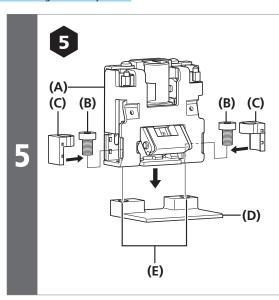
(z) Reverse side of key unit

(A) Key cylinder:
Key cylinder is not included with SHIMANO products.
(B) Key unit
(C) Key cylinder fixing bolt (M4)

Tightening torque	
2	**0.6 N·m**

▶▶ Installing the battery mount

5	**5**	Align the fixing bolt holes in the key unit with the frame mounting holes. Temporarily attach the key unit to the frame with the key unit fixing bolts (M8). Attach the bolt detachment prevention rubbers.	**(A)** Key unit **(B)** Key unit fixing bolt (M8) **(C)** Bolt detachment prevention rubber **(D)** Frame **(E)** Frame mounting hole
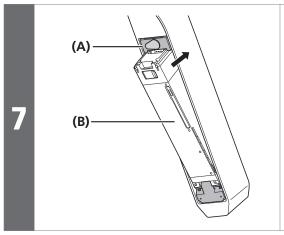
6	**5**	Adjust the position of the key unit so that the distance between section **(A)** of the key unit and section **(B)** of the battery connection unit is **347.2 mm** and then fully tighten the key unit fixing bolts.	**Tightening torque** **5** **10 N·m**
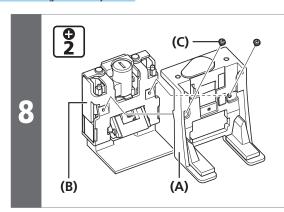
347.2 mm

7	Temporarily attach the key unit cover to the key unit and adjust so that the battery can be smoothly connected/disconnected and no noise is produced due to looseness during riding.	**(A)** Key unit cover **(B)** Battery

8

Attach the key unit cover to the key unit.

Secure in place the key unit with the key unit fixing bolts (M3).

2-25
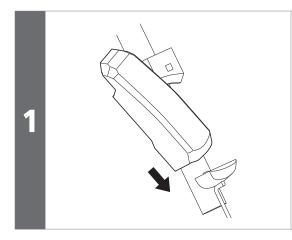
(A) Key unit cover
(B) Key unit
(C) Key unit cover fixing bolt (M3)

Tightening torque	
	0.6 N·m
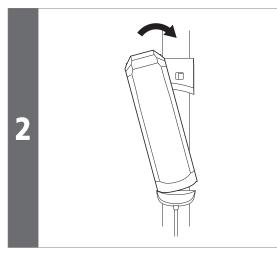
■ Installing / removing the battery

Installation of the battery

BT-E8010

2-26

1		Align the indentation in the bottom of the battery with the protrusion on the mount and insert the battery.

2		Slide the battery to the right starting from the point where it is inserted. Push in the battery until you hear it click.
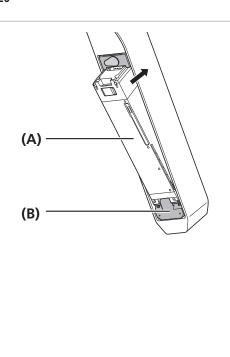
3	Return the key to the locking position, remove it, and store it in a safe place.

NOTICE

- To prevent the battery from falling out, check to see that the battery is locked after installation.
- Before riding, make sure that the charging port cap is closed.
- To prevent the battery from falling out, do not ride the bicycle with the key inserted.

BT-E8020
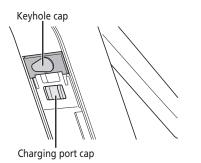
Insert the battery into the battery mount until there is a click.
- When inserted until a click is heard, the battery is locked automatically.

(A) —— (A)

(B) —— (B)

(A) Battery
(B) Battery mount
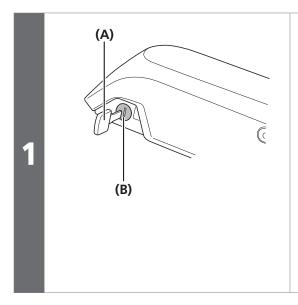
- To prevent the battery from falling out, check to see that the battery is locked after installation.

- Before riding, make sure that the keyhole cap and charging port cap are closed.

- To prevent the battery from falling out, do not ride the bicycle with the key inserted.

Keyhole cap

Charging port cap

Removing the battery

The following description may not be applicable as different types of keys are available.

BT-E8010

1		Turn off the power, then insert the key into the key cylinder in the battery holder.
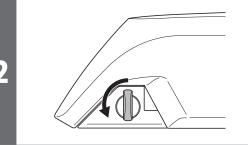
(A) Key
(B) Key cylinder

> ### *NOTICE*
>
> Hold the battery firmly and be careful that it does not drop when removing or carrying it.
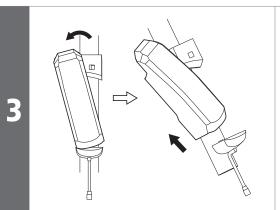
📖 TECH TIPS

- The position of the key does not affect the insertion of the battery. You can insert it regardless of the key position.
- You cannot remove the key when it is not in the inserting position.

2		To unlock the battery turn the key to the left until you feel some resistance.
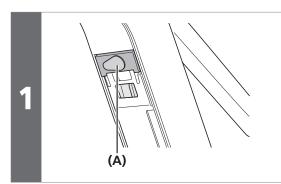
3		Hold the upper part of the battery and slide it to the left to remove it.

▶▶ Installing / removing the battery
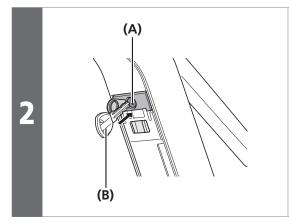
BT-E8020

If using a battery cover manufactured by another company, remove the battery cover before removing the battery.

1	(A)	Remove the keyhole cap. 2-29	**(A)** Key hole cap
2	(A) (B)	Insert the key into the key cylinder in the battery mount.	**(A)** Key cylinder **(B)** Key **TECH TIPS** • The position of the key does not affect the insertion of the battery. You can insert it regardless of the key position. • You cannot remove the key when it is not in the inserting position.
3		To unlock the battery, turn the key clockwise and push it in.	
4		Remove the key from the key cylinder, close the keyhole cap, and detach the battery.	**NOTICE** • Support the battery with your hand when detaching to make sure that it does not fall out. • Do not attach or detach the battery with the key left inserted into the key cylinder or the keyhole cap left open. The battery may be damaged from contact with the handle of the key or the keyhole cap.
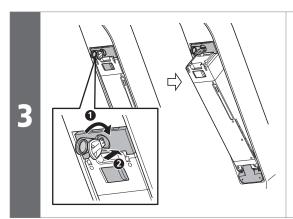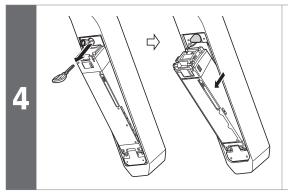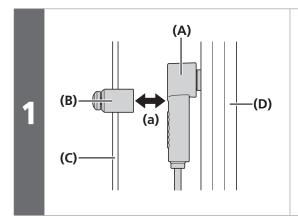
■ Installing the speed sensor

SM-DUE10

1

(A)
(B)
(a)
(C)
(D)
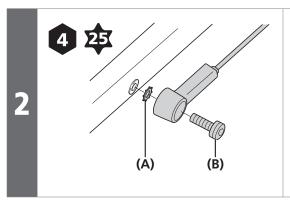
Before installing the speed sensor, check that the clearance **(a)** between the speed sensor and the magnet unit will be within 3 to 17 mm.

(A) Speed sensor
(B) Magnet unit
(C) Spoke
(D) Chain stay

📖🔍 **TECH TIPS**

When checking the clearance is within 17 mm, take wheel truing, frame distortion, etc. into account.

2

4 25

(A)   (B)

If the clearance is within the designated range, place the toothed washer between the speed sensor and the chain stay, then attach the speed sensor mounting bolt.

(A) Toothed washer
(B) Speed sensor mounting bolt (16 mm)

Tightening torque	
4 25	1.5 - 2 N·m

3

4 25

(A)   (B)

If the clearance exceeds 17 mm, use a spacer to adjust it.
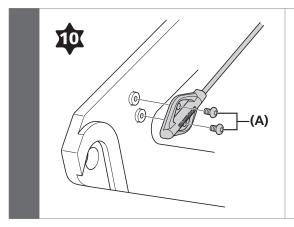
Attach the speed sensor with the speed sensor mounting bolt.

(A) Spacer
(B) Speed sensor mounting bolt (22 mm)

Tightening torque	
4 25	1.5 - 2 N·m

SM-DUE11

10

(A)

Install the speed sensor with the 2 speed sensor mounting bolts.
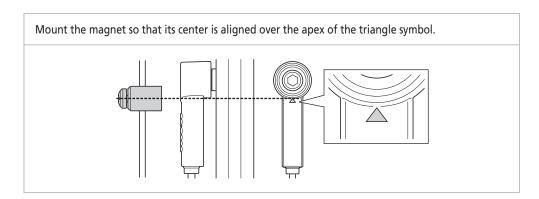
(A) Speed sensor mounting bolt

Tightening torque	
10	0.6 N·m
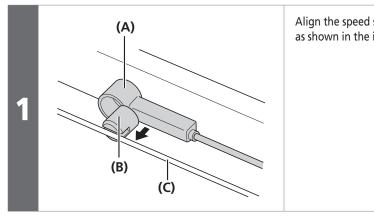
■ Mounting the magnet

SM-DUE10

Magnet mounting position

Mount the magnet so that its center is aligned over the apex of the triangle symbol.
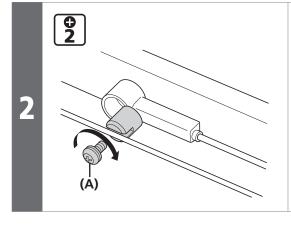
How to mount the magnet

1		Align the speed sensor and magnet unit as shown in the illustration.	**(A)** Speed sensor **(B)** Magnet unit **(C)** Spoke

2		Tighten the mounting bolt with a screwdriver.	**(A)** Mounting bolt

Tightening torque	
⊕2	1.5 - 2 N·m

SM-DUE11
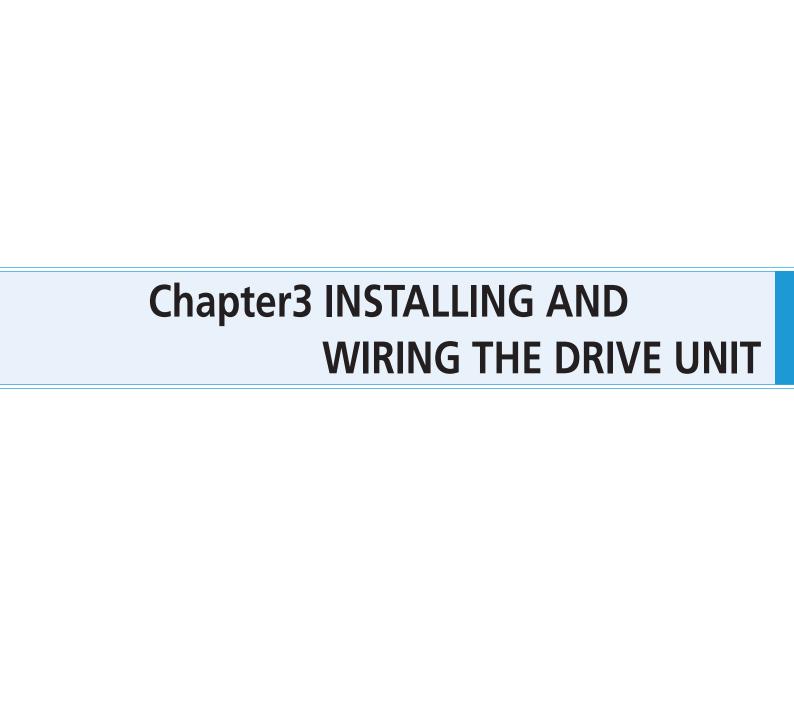
(B) (A)	Use the special magnet model for the disc brake rotor.

(A) Magnet unit

(B) Speed sensor

<div style="background:blue;color:white">*NOTICE*</div>
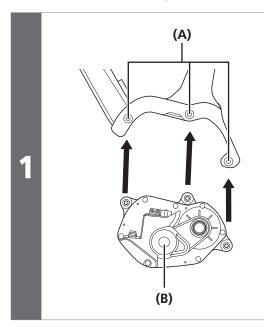
Refer to General Operations for installation of the disc brake rotor.

Chapter3 INSTALLING AND WIRING THE DRIVE UNIT

INSTALLING AND WIRING THE DRIVE UNIT

■ Installing the drive unit

Route the cables before installing the drive unit.

1

(A)

(B)
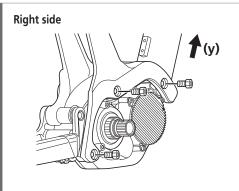
Align the drive unit with the three mounting holes on the right side and left side of the frame.

(A) Mounting hole
(B) Drive unit

NOTICE

Be careful not to pinch the cables with the frame or drive unit case.

2

Right side

(y)

Left side

(z)

First attach the drive unit fixing bolts (M8) to the right side.

After this, attach the drive unit fixing bolts (M8) to the left side.

Tighten the drive unit fixing bolts (M8) until the drive unit makes firm contact with the inside of the right side of the frame.

(y) Front of bicycle
(z) Rear of bicycle

📖🔍 TECH TIPS
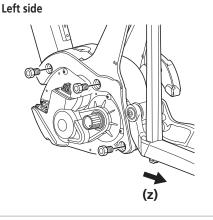
Drive unit fixing bolts (M8) are not included with SHIMANO products. Use those supplied by the manufacturer. Tighten the bolts to the following tightening torque when attaching the drive unit to the frame.

Tightening torque
10 - 12.5 N·m
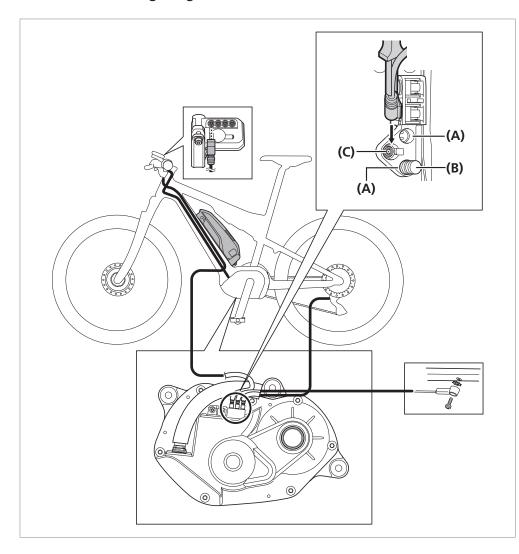
■ Drive unit wiring diagram

(A) Cycle computer port/
Rear derailleur port/E-TUBE port

(B) Dummy plug

(C) Speed sensor port

NOTICE

Be sure to attach dummy plugs to any unused ports.

📖 TECH TIPS
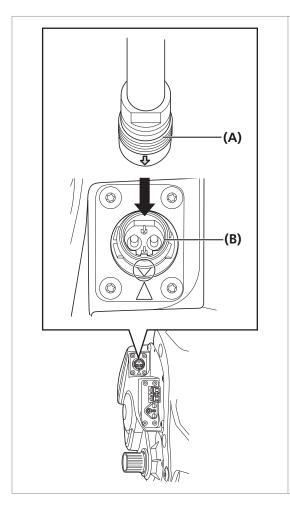
The cycle computer/rear derailleur ports can be used to connect the cycle computer or rear derailleur.

■ Connecting the power cord

Connecting to the drive unit
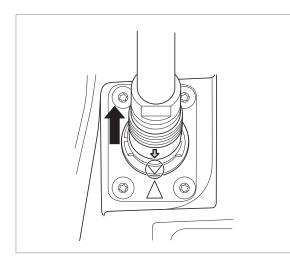
Align the arrow on the power cord with the triangle symbol on the drive unit port and insert the power cord.

Insert it until it locks into place.

(A) Power cord
(B) Drive unit port
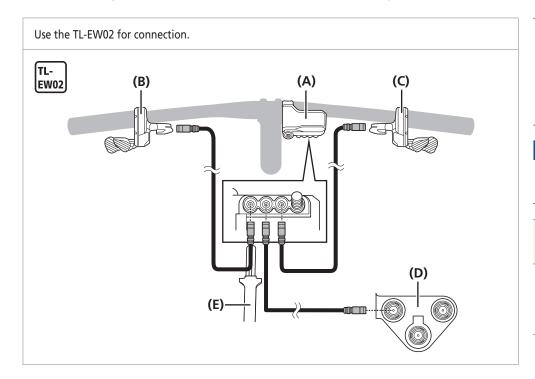
Disconnecting from the drive unit

To remove the power cord, hold it by the grooved part of its end and pull it towards yourself.

■ Connecting switches and the drive unit to the cycle computer (SC-E8000/SC-E7000)

Use the TL-EW02 for connection.

TL-EW02

(B)　　　(A)　　　(C)

(D)

(E)

(A) Cycle computer
(B) Assist switch
(C) Shift switch
(D) Drive unit
(E) TL-EW02
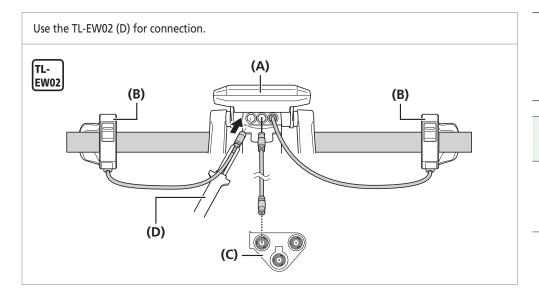
NOTICE

Be sure to attach dummy plugs to any unused ports.

📖 TECH TIPS

The electric wire connector can be connected to any port of the cycle computer, but we recommend you connect the assist switch to the switch-side port.

■ Connecting the assist switch and drive unit to the cycle computer (SC-E6010/SC-E6100)

Use the TL-EW02 (D) for connection.

TL-EW02

(B)　　　(A)　　　(B)

(D)

(C)
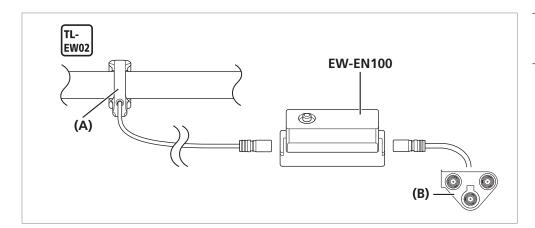
(A) Cycle computer
(B) Assist/Shift switch
(C) Drive Unit
(D) TL-EW02

📖 TECH TIPS

The electric wire connector can be connected to any port of the cycle computer, but we recommend you connect the assist switch to the switch-side port.
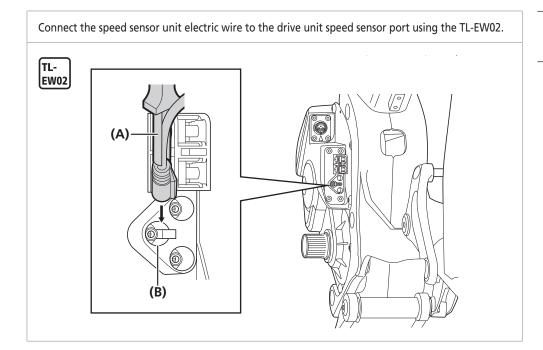
■ Connecting the switch unit and drive unit to junction [A] (EW-EN100)

(A) Switch unit
(B) Drive Unit
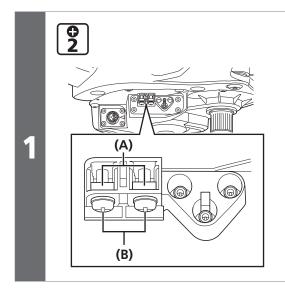
■ Connecting the speed sensor to the drive unit

Connect the speed sensor unit electric wire to the drive unit speed sensor port using the TL-EW02. 	**(A)** TL-EW02 **(B)** Speed sensor port

■ Connecting the light cable to the drive unit

1
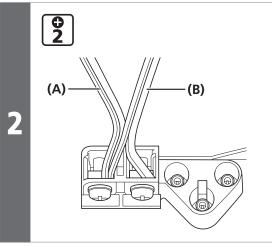
Remove the crank and drive unit cover and loosen the mounting bolts of the light connection terminals.

(A) Light connection terminal
(B) Mounting bolt

📖🔍 **TECH TIPS**

For information on compatible lights, contact a manufacturer of completed bicycles.

2
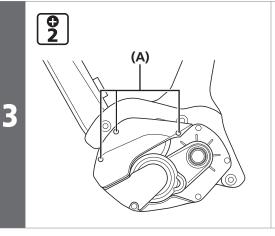
Attach the front light cable and tail light cable to the terminals and secure them with the mounting bolts.

(A) Front light cable
(B) Taillight cable

Tightening torque	
[+2 icon]	0.6 N·m

3

Attach the drive unit cover.

Tighten the cover fixing bolts (M3) in the three locations.

(A) Cover fixing bolt (M3)
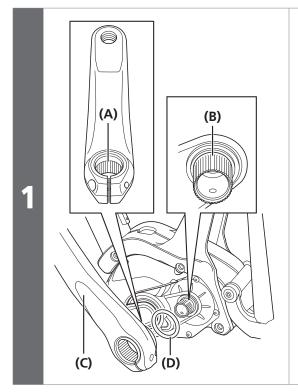
Tightening torque	
[+2 icon]	0.6 N·m

■ Installing the crank and chainring unit

Perform the procedure below for all models, regardless of whether gear shifting is electrical or mechanical.

1

(A) (B)

(C) (D)
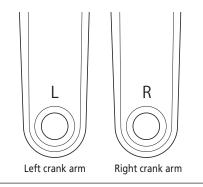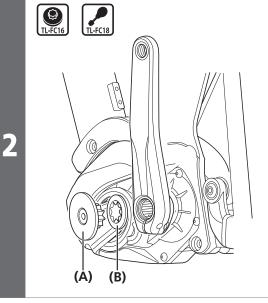
Align the wide part of the left crank arm with the wide part of the chainring through axle and then attach.

(A) Wide groove area (left crank arm)

(B) Wide part
(chainring through axle)

(C) Left crank arm

(D) Axle spacer

NOTICE
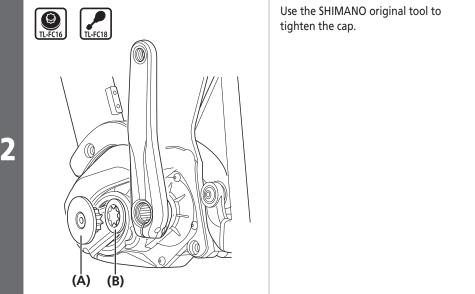
Left or right is indicated on each crank arm. Check the L and R markings when installing.

L   R

Left crank arm   Right crank arm

2

TL-FC16   TL-FC18

(A) (B)

Use the SHIMANO original tool to tighten the cap.
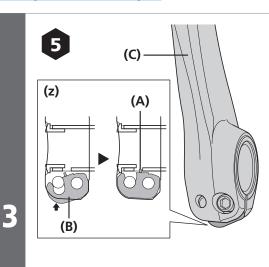
(A) TL-FC16/TL-FC18

(B) Cap

Tightening torque
TL-FC16 / TL-FC18   **0.7 - 1.5 N·m**

3-9

▶▶ Installing the crank and chainring unit

3

5

(C)

(z)

(A)

(B)

Push in the stopper plate and check that the plate pin is securely in place, and then tighten the bolt of the left crank arm.

Tighten both bolts equally to the specified tightening torque (12 - 14 N·m).

(z) The illustration is of the left crank arm (cross-section)

(A) Plate pin
(B) Stopper plate
(C) Left crank arm

Tightening torque	
5	**12 - 14 N·m**

NOTICE

• The two bolts should be tightened at the same time rather than each bolt being fully tightened separately.

• Set the stopper plate in the correct direction as shown in illustration.

4

+2

(A)

Attach the drive unit cover.

Tighten the cover fixing bolts (M3) in the three locations.

(A) Cover fixing bolt (M3)

Tightening torque	
+2	**0.6 N·m**

5

3

(A) (B)
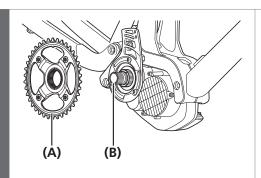
If using a chain device, temporarily tighten the back plate to the mounting member of the chainring unit.

(A) Back plate fixing bolt (M6)
(B) Back plate

6

(A)   (B)

When attaching the chainring unit, align the cutout in the chainring unit with the wide area of the chainring mounting member.

(A) Chainring unit

(B) Chainring mounting member

NOTICE
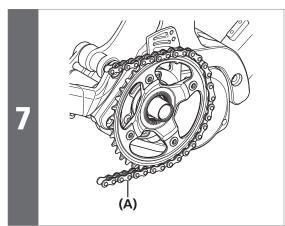
- For details on the compatibility of the chain device and chainring unit, refer to compatibility information (https://productinfo.shimano.com/).

- Note the difference between the front and back of the chainring unit. The front has a gear size (tooth number) marking.

Front

Back

7

(A)
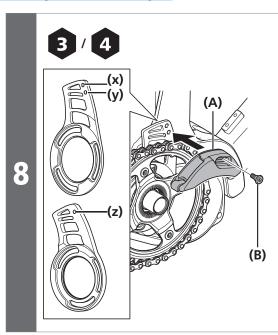
Mount the chain on the chainring unit.

(A) Chain

NOTICE

When mounting the chain, make sure to match chainring unit tooth thickness (thick/thin) and chain inner width (wide/narrow).

▶▶ Installing the crank and chainring unit

8

3 / **4**

(x)
(y)
(A)
(z)
(B)
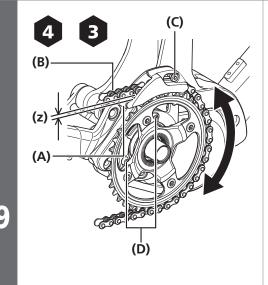
Determine the position of the guide according to the number of teeth on the crank.

Install the guide by temporarily tightening the guide fixing bolt (M5)

(x) 38T

(y) 34T

(z) 36T

(A) Guide
(B) Guide fixing bolt (M5)

9

4 **3**

(C)
(B)
(z)
(A)
(D)

If using a chain device, after attaching the chain, rotate the back plate so that the clearance between the chain and the rubber band is 0 - 1 mm.

Adjustment should be performed under the following conditions.
• Chain is engaging the smallest sprocket

• Rear suspension is fully extended

After adjustment, fully tighten the back plate and guide.
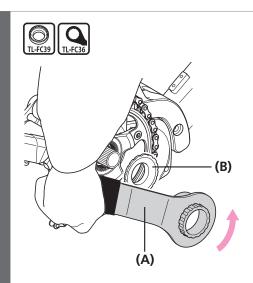
(z) 0 - 1 mm

(A) Rubber band
(B) Chain
(C) Guide fixing bolt (M5)
(3 mm hexagon wrench / 4 mm hexagon wrench)
(D) Back plate fixing bolt (M6)
(3 mm hexagon wrench)

Tightening torque	
4	**4 N·m** **(Guide fixing bolt)**
3	**5 - 7 N·m** **(Back plate fixing bolt)** **4 N·m** **(Guide fixing bolt)**

NOTICE
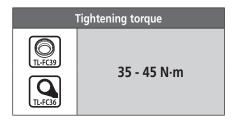
If the chain and chain device interfere with each other when SM-CDE80 is used on a bicycle with Rear suspension at sag position , please adjust angle the chain device not to touch chain in the position of Low gear.

10

TL-FC39 TL-FC36

(B)

(A)

Tighten the lock ring by hand and attach the SHIMANO original tool.

While holding the left crank, tighten the lock ring in the direction shown in the illustration.

(A) TL-FC39/TL-FC36
(B) Lock ring

Tightening torque	
TL-FC39 TL-FC36	**35 - 45 N·m**

NOTICE

- If using a torque wrench, use TL-FC39 in combination with TL-FC33.

TL-FC39   TL-FC33
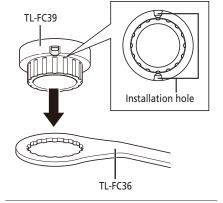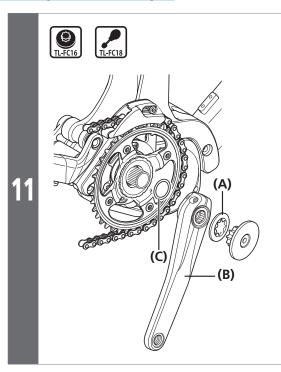
- An impact wrench cannot be used.

📖 TECH TIPS

- The lock ring has a left hand thread.
- Combine the SHIMANO original tools as in the illustration. Set TL-FC39 to TL-FC36 using the 2 installation holes on TL-FC39.

TL-FC39

Installation hole

TL-FC36

11

TL-FC16　TL-FC18

Install the right crank arm.

Use the SHIMANO original tool to tighten the cap.
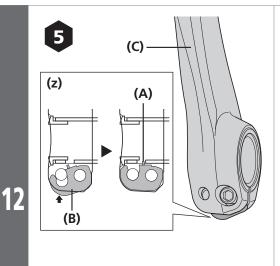
(A) Cap
(B) Right crank arm
(C) Axle spacer

Tightening torque	
TL-FC16　TL-FC18	**0.7 - 1.5 N·m**

12

5

(C)

(z)　(A)

(B)

Push in the stopper plate and check that the plate pin is securely in place, and then tighten the bolt of the right crank arm.

Tighten both bolts equally to the specified tightening torque (12 - 14 N·m).
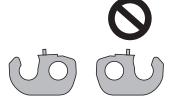
(z)　The illustration is of the right crank arm (cross-section)
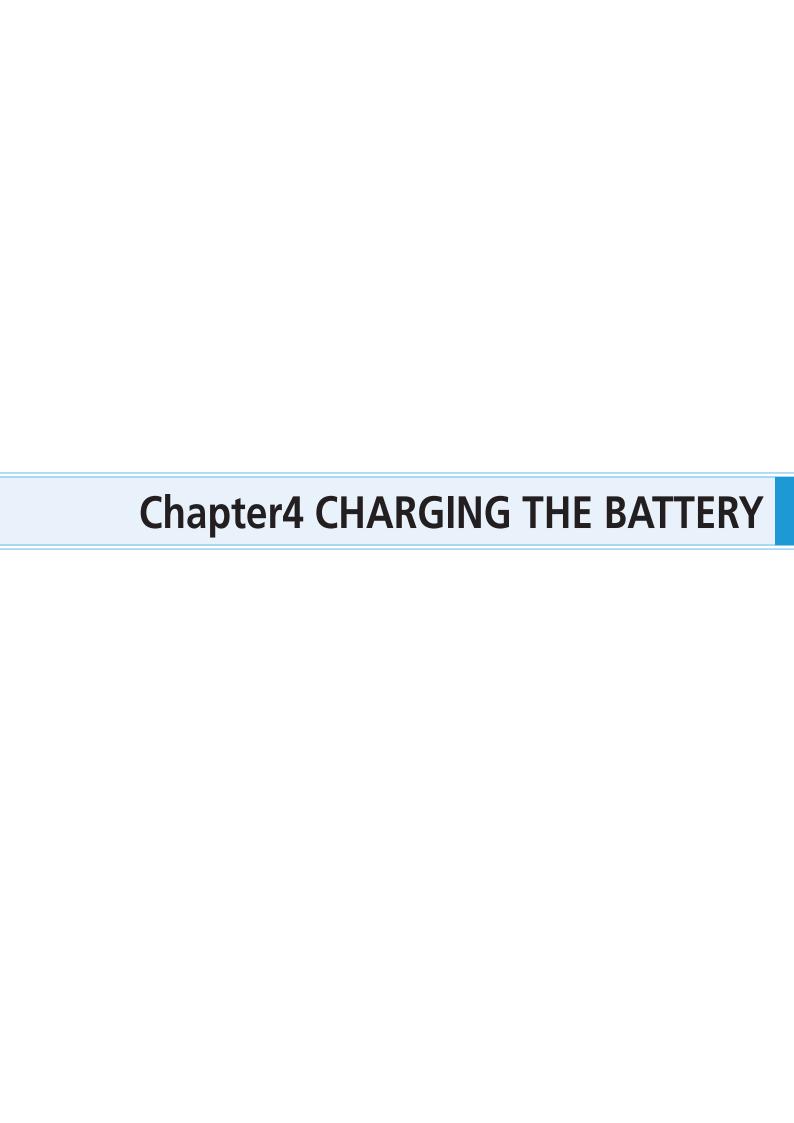
(A) Plate pin
(B) Stopper plate
(C) Right crank arm

Tightening torque	
5	**12 - 14 N·m**

NOTICE

- The two bolts should be tightened at the same time rather than each bolt being fully tightened separately.
- Set the stopper plate in the correct direction as shown in illustration.
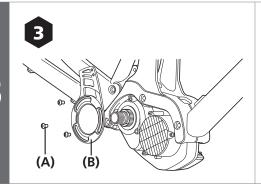
Chapter4 CHARGING THE BATTERY

CHARGING THE BATTERY

The battery cannot be used immediately after purchase as it will be in deep sleep mode. Charging the battery with the dedicated battery charger will release the battery from deep sleep mode, allowing the battery to be used.
The battery can be used when the LED on it turns on.
The battery can also be released from deep sleep mode by connecting to E-TUBE PROJECT when the bicycle is fitted with all components.
Please read the SHIMANO STEPS special battery and parts user's manual for the latest information about charging and handling the battery.

■ Proper use of the battery

Charging can be carried out at any time regardless of the amount of charge remaining, but you should fully charge the battery in the following cases. Be sure to use the dedicated charger to charge the battery.

• The battery is not ready for use at the time of shipment. Before riding, be sure to charge the battery until it is fully charged.

If the battery has become completely discharged, charge it as soon as possible. If you leave the battery uncharged, the battery may deteriorate.

• If the bicycle will not be ridden for a long time, store with the battery level at around 70%.
  Charge the battery every six months to prevent it from fully discharging.

• Do not connect to E-TUBE PROJECT while the battery is being charged.

The use of a genuine SHIMANO battery is recommended. If using a battery from another manufacturer, make sure to carefully read the owner's manual for the battery before use.

• Connect to E-TUBE PROJECT and click [Connection check] to confirm whether the battery in use is a genuine SHIMANO battery or another brand.
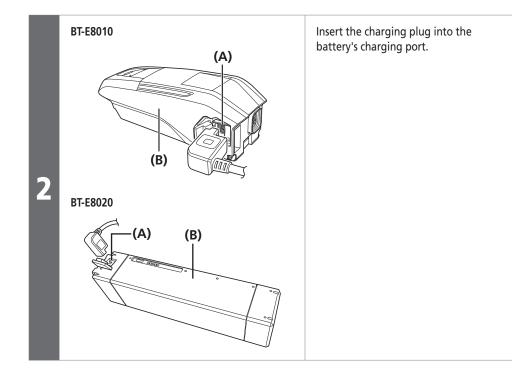
■ Charging the battery

When charging the battery alone

Battery charger: EC-E6000
Battery: BT-E8010/BT-E8020

4-3

1	Connect the battery charger's power plug to the outlet.

2	**BT-E8010** (A) (B) **BT-E8020** (A) (B)	Insert the charging plug into the battery's charging port.

(A) Charging port
(B) Battery

NOTICE
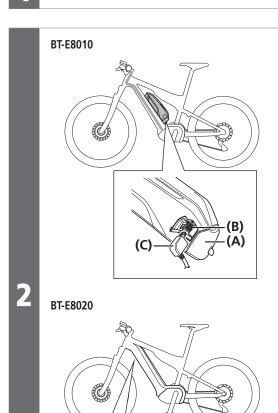
Charge the battery on a flat surface indoors.

When charging the battery while it is mounted on the bicycle

Battery charger: EC-E6000
Battery: BT-E8010/BT-E8020

1 Connect the charger's power plug to the outlet.

2

BT-E8010
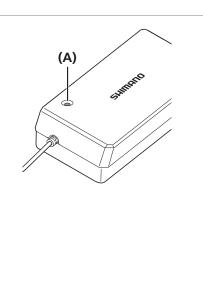
Insert the charging plug into the battery mount charging port.

(B)
(C) — (A)

BT-E8020

(C)
(B)
(A)

(A) Battery mount
(B) Charging port
(C) Charging plug

📖🔍 **TECH TIPS**

• Place the battery charger on a steady surface such as the floor before charging.

• Stabilize the bicycle to ensure that it does not collapse during charging.

■ About the charger LED lamp

After charging has started, the LED lamp on the charger lights up.

You can check the current charging status on the battery level lamp located on the battery.

○ **Lit up**	Charging (Within 1 hour after the completion of charging)
☀ **Blinking**	Charging error
● **Turned off**	Battery disconnected (1 hour or more after the completion of charging)

(A) Charger LED lamp

(A) Charger LED lamp

⚠ **DANGER**
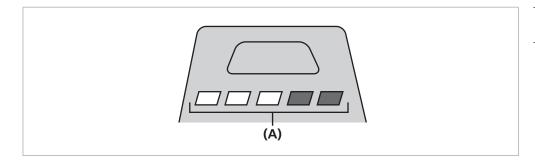
Use the battery and charger combination specified by the company for charging and follow the charging conditions specified by the company. Not doing so may cause overheating, bursting, or ignition of the battery.

NOTICE

If the bicycle is stored for an extended period of time immediately after purchase, you will need to charge the battery before using the bicycle. Once the battery is charged, it starts to deteriorate slightly.

■ About the battery LED lamps

(A) Battery LED lamp

(A)

Charging-in-progress indication

Battery level indication *1	Battery level
	0 - 20%
	21 - 40%
	41 - 60%
	61 - 80%
	81 - 99%
	100%

* 1 ▪ : No light ▫ : Lit up ▨ : Blinking

Battery level indication

The current battery level can be checked by pressing the battery's power button.

Battery level indication *1	Battery level
☐ ☐ ☐ ☐ ☐	100 - 81%
☐ ☐ ☐ ☐ ■	80 - 61%
☐ ☐ ☐ ■ ■	60 - 41%
☐ ☐ ■ ■ ■	40 - 21%
☐ ■ ■ ■ ■	20 - 1%
▨ ■ ■ ■ ■	0% (When battery is not installed on bicycle)
■ ■ ■ ■ ■	0%, Power off / Shutdown (When battery is installed on bicycle)

* 1 ■ : No light   ☐ : Lit up   ▨ : Blinking

NOTICE

When remaining battery capacity is low, system functions begin to shut off in the following order.
1. Power assistance (Assist mode automatically switches to [ECO] and then assistance shuts off. The switch to [ECO] occurs earlier if a battery-powered light is connected.)
2. Gear shifting
3. Light

▶▶ About the battery LED lamps

Error indication
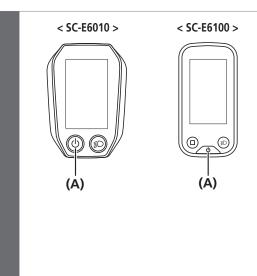
System errors and similar warnings are indicated by the battery LED lamps through various lighting patterns.

Error indication type	Indication condition	Lighting pattern *1	Recovery
System error	Communication error with the bicycle system		Make sure that the cable is not loose or improperly connected. If the situation does not improve, contact an agency.
Temperature protection	If the temperature exceeds the guaranteed operating range, the battery output is turned off.		Leave the battery in a cool place away from direct sunlight until the internal temperature of the battery decreases sufficiently. If the situation does not improve, contact an agency.
Security authentication error	This is displayed if a genuine drive unit is not connected. This is displayed if any of the cables are disconnected.		Connect a genuine battery and drive unit. Check the condition of the cables. If the situation does not improve, contact an agency.
Charging error	This is displayed if an error occurs during charging.		Remove the connector between the battery and charger, and press the power switch with only the battery connected. If an error appears with only the battery connected, contact an agency.
Battery malfunction	Electrical failure inside the battery		Use the battery power button to turn the power OFF, and then turn the power back ON.

* 1 ▰ : No light ▱ : Lit up ▨ : Blinking

■ Turning the power ON / OFF

Turning the power ON and OFF via the cycle computer (SC-E6010/SC-E6100)

< SC-E6010 >

< SC-E6100 >

(A)

(A)

< SC-E6010 >
Hold down the power button **(A)** on the cycle computer for 2 seconds.
< SC-E6100 >
Press the power button **(A)** on the cycle computer.

(A) Power button

NOTICE
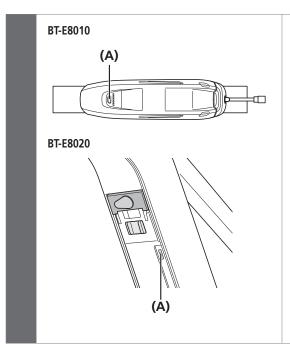
(SC-E6100)
If the battery level of the cycle computer falls to zero, the cycle computer will not start, and operations using power will not be possible. If nothing is displayed on the screen even when the power switch is pressed, perform one of the following operations to charge the battery.
- Press the power button on the body of the (main) battery to turn the power ON.
- If there is a charging port or if there is a battery mount with a connected charging port installed, charge the (main) battery from the charging port.
- Use SM-PCE1 or SM-PCE02 to connect to a PC, then charge the built-in battery from the E-TUBE PROJECT.
  The low battery level icon blinks while charging, and disappears once complete.

Turning the power ON and OFF via the battery

BT-E8010

(A)

BT-E8020

(A)

Press the power button on the battery.

The LED lamps will light up indicating remaining battery capacity.

(A) Power button

NOTICE

- When turning on the power, check that the battery is firmly attached to the holder.
- Power cannot be turned on while charging.
- Do not place your foot on the pedals when turning on.
  A system error may result.

📖 TECH TIPS

- To force power off, hold down the power button for 6 seconds.
- If the bicycle has not moved for over 10 minutes, the power will automatically turn off. (Automatic power off function)

Screen display when power is turned ON

SC-E8000/SC-E7000

SC-E6010/SC-E6100
Normal startup
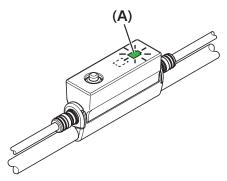
Battery level low (SC-E6100)

 * The cycle computer's battery level is low.

EW-EN100

(A)
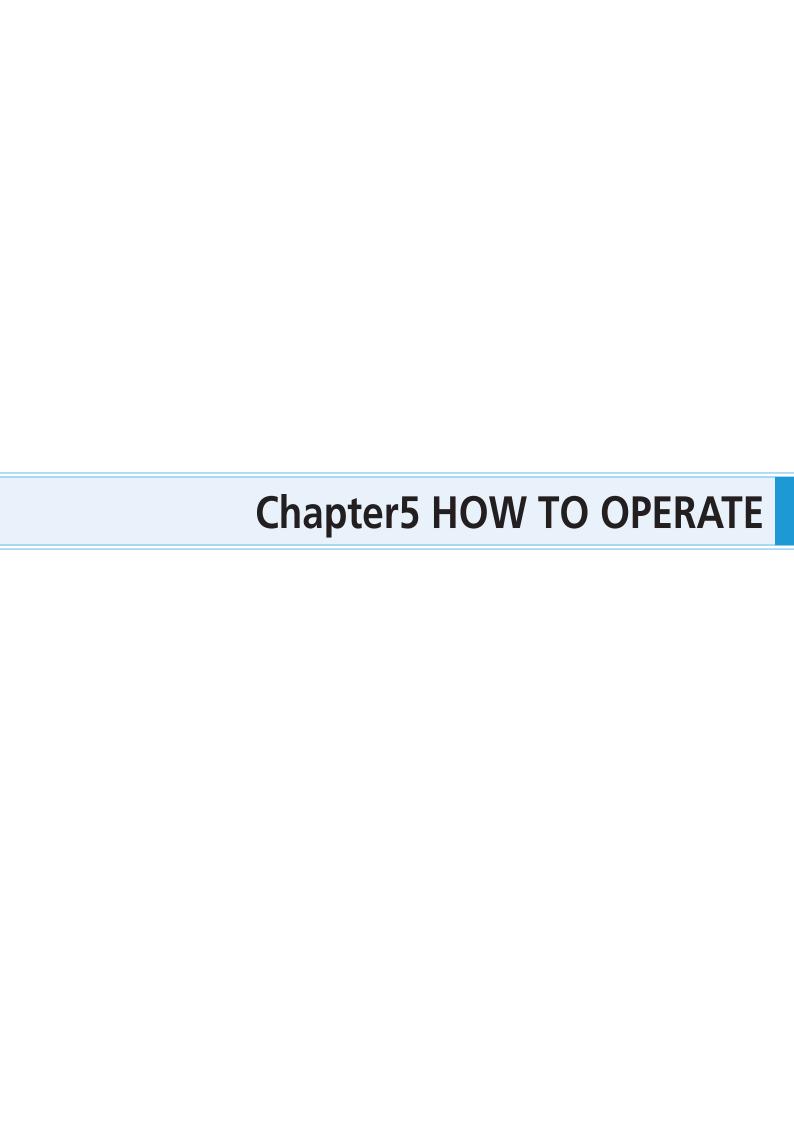
When the main power is turned ON, a screen similar to that shown below is displayed, and then switches to the basic screen.
< EW-EN100 >
When the main power is turned ON, the LED2 lights up.

(A) LED2

Chapter5 HOW TO OPERATE
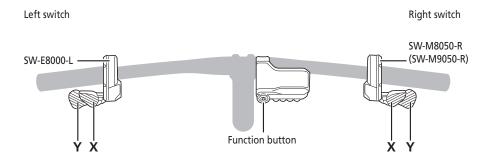
HOW TO OPERATE
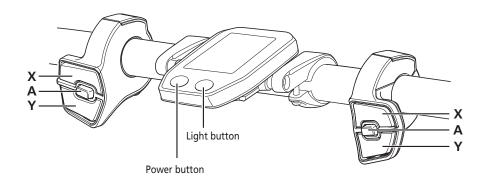
■ Cycle computer and switch units

The operation procedure provided here refers to cases where the cycle computer is set to the default values.
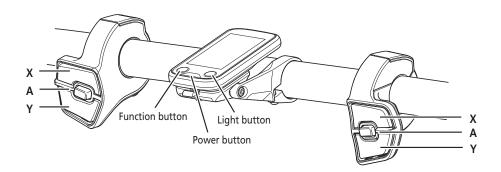
SC-E8000/SW-E8000-L/SW-M8050-R (SW-M9050-R)
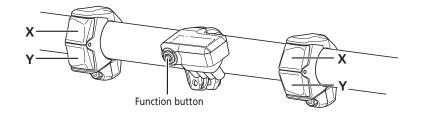
Left switch   Right switch

SW-E8000-L   SW-M8050-R
                                                                    (SW-M9050-R)

Y   X   Function button   X   Y

SC-E6010/SW-E6010

X
A
Y

X
A
Y

Light button

Power button

SC-E6100/SW-E6010

X
A
Y

Function button   Light button

Power button

X
A
Y

SC-E7000/SW-E7000

X

Y

X

Y

Function button

5-2

▶▶ Junction [A]
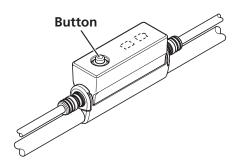
Left switch (default: for assistance)		Right switch (default: for electronic shifting)	
Assist-X	**When riding:** Increase assistance **When setting:** Move cursor or change setting	Shift-X	**When riding:** Shift up
Assist-Y	**When riding:** Decrease assistance **When setting:** Move cursor or change setting	Shift-Y	**When riding:** Shift down
Assist-A	**When riding:** Switch traveling data displayed on cycle computer **When setting:** Switch cycle computer screen or confirm setting changes	Shift-A	Not used.

Cycle computer (SC-E6010/SC-E6100)			
Function button (SC-E6100)	**When riding:** Switch traveling data displayed on cycle computer **When setting:** Switch cycle computer screen or confirm setting changes	**Light button**	Light ON/OFF
		Power button	Main power ON/OFF

Cycle computer (SC-E8000/SC-E7000)	
Function button	**When riding:** Switch traveling data displayed on cycle computer **When setting:** Switch cycle computer screen or confirm setting changes

■ Junction [A]

EW-EN100 has the function to change the assist mode and can be used in place of a cycle computer.

Button

Junction [A] (EW-EN100)	
Button	**Press:** Changes assist mode (each time button is pressed) **Hold (around two seconds):** Turns the light ON/OFF
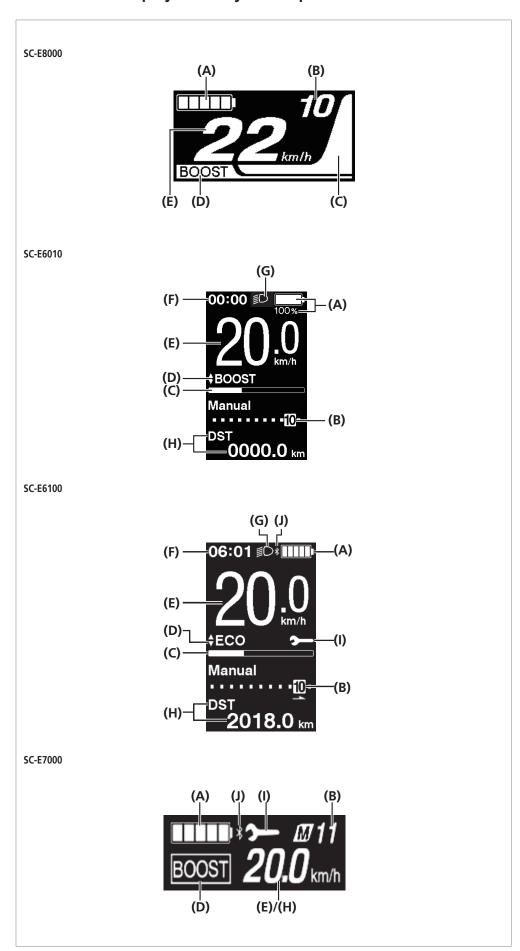
NOTICE

It is not recommended to operate the button on EW-EN100 while riding. Select your preferred assist mode prior to riding.

📖 TECH TIPS

- A switch unit connection is required to change to walk assist mode.
- The function of switching to and from setting mode can be assigned to the button. Refer to "Setting Mode (EW-EN100)" in "HOW TO OPERATE."
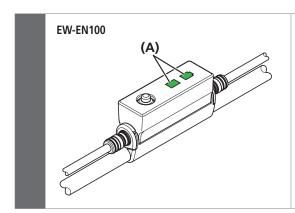
■ Basic screen display of the cycle computer

SC-E8000

SC-E6010

SC-E6100

SC-E7000

(A) **Battery level indicator**
Displays the current battery level.

(B) **Gear position (Only displays when electronic gear shifting is in use)**
Displays the currently set gear position.
  🔟 Current gear position (SC-E6010/SC-E6100)
  ⚏ Shifting advice*1 (SC-E6100)
  This notifies you of the recommended timing at which to shift based on the bicycle riding conditions.

(C) **Assist gauge**
Displays assistance level.

(D) **Current assist mode**

(E) **Current speed***2
Displays the current speed. The display can be switched between km/h and mph.

(F) **Current time**
Shows the current time.

(G) **Light icon**
Indicates that the light connected to the drive unit is lit.

(H) **Traveling data display**
Displays the current traveling data.

(I) **Maintenance alert**
Indicates that maintenance is required. Contact your place of purchase or a bicycle dealer if this icon is displayed.

(J) **Bluetooth® LE icon**
Displayed when connected over Bluetooth LE.

*1 Only for electronic gear shifting.

*2 [Manual]/[M] will always be displayed for rear derailleur models.

■ Displaying the basic status of junction [A]

EW-EN100 (A)	The LEDs indicate the following statuses. • Current battery level • Current assist mode Refer to "Battery level indicator" (next section) in "HOW TO OPERATE" and "Switching the Assist Mode" in "HOW TO OPERATE."	**(A)** LED

■ Battery level indicator

SC-E8000/SC-E6100/SC-E7000

Display	Battery level
	100 - 81%
	80 - 61%
	60 - 41%
	40 - 21%
	20 - 1%
	0%

SC-E6010

Display	Battery level
	100%
↕	↕
	0%
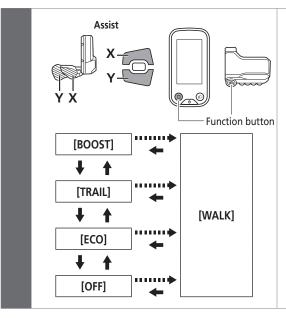
EW-EN100

LED2 display	Battery level
(lit up)	100 - 21%
(lit up)	20% or less
(flashing)	Nearly empty

(A)

The battery level is shown as an icon.
< EW-EN100 >
LED2 shows the battery level when the power is ON.

(A) LED2

🔖🔍 **TECH TIPS**

- For SC-E8000/SC-E7000, the battery level indicator will flash when the battery level is low.

- The cycle computer and battery use zero to indicate a battery level where the entire system (including the lights which remain on after the assist function stops) ceases to function. Therefore, assist may stop before 0% is indicated, depending on the settings.

■ Switching the assist mode

Switching the assist mode with the switch unit

Press Assist-X or Assist-Y to switch assist modes.
If no assist switch is connected when using SC-E6100 or SC-E7000, you can also hold down the function button to switch to assist mode.

[BOOST]: Assist boost
[TRAIL]: Assist trail
[ECO]: Assist eco
[OFF]: Assist off
[WALK]: Walk assist

↑ : Short press Assist-X
↓ : Short press Assist-Y
▪▪▪▪▶ : Long press Assist-Y
◀ : Short press Assist-X (This operation is for canceling [WALK] mode)
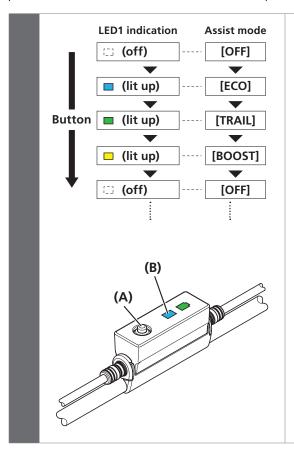
TECH TIPS

If a switch unit is connected to EW-EN100, the LED will indicate the assist mode (as shown in the next section).

Switching the assist mode with EW-EN100

Explain to the customer that it is not recommended to operate the device while riding.

Press the button.
- The assist mode switches each time the button is pressed. LED1 display switches each time the assist mode is switched.

(A) Button
(B) LED1

LED1 indication	Assist mode
(off)	[OFF]
(lit up)	[ECO]
(lit up)	[TRAIL]
(lit up)	[BOOST]
(off)	[OFF]
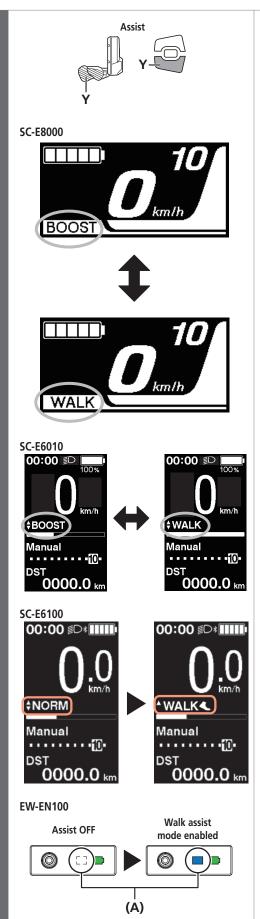
■ Walk assist mode

- The use of the walk assist mode function is prohibited by law in some regions.

- The walk assist function operates at a maximum of 6 km/h. During electronic gear shifting, the assist level and speed are controlled by the gear position.

- Switching to walk assist mode requires a switch unit that has been assigned the change assist mode function.

- The intelligent walk assist function activates when an electronic gear shifting system (such as XTR or DEORE XT SEIS) is connected.
  The system provides assistance according to the detected gear position.
  "Intelligent walk assist" generates higher torque when ascending a sudden slope at low speed.
  The "quick walk assist" function can be started immediately by pressing the switch when in any mode.

Switching to walk assist mode

Assist

Y

Y

SC-E8000

10
0 km/h
BOOST

↕

10
0 km/h
WALK

SC-E6010

00:00 ▣ ▭
100%
0 km/h
⇕BOOST
Manual
·········10·
DST
0000.0 km

⬌

00:00 ▣ ▭
100%
0 km/h
⇕WALK
Manual
·········10·
DST
0000.0 km

SC-E6100

00:00 ▣▶※▥
0.0 km/h
⇕NORM
Manual
·········10·
DST
0000.0 km

▶

00:00 ▣▶※▥
0.0 km/h
⬆WALK🌙
Manual
·········10·
DST
0000.0 km

EW-EN100

Assist OFF   **Walk assist mode enabled**

◉ [ ] ▮   ◉ ▮ ▮

(A)

With your feet off the pedals and current speed at [0 km/h], hold down Assist-Y until [WALK] displays.
< EW-EN100 >
Without stepping on the pedals and with the current speed at [0 km/h], hold down Assist-Y until the LED1 lights up blue.

(A) LED1
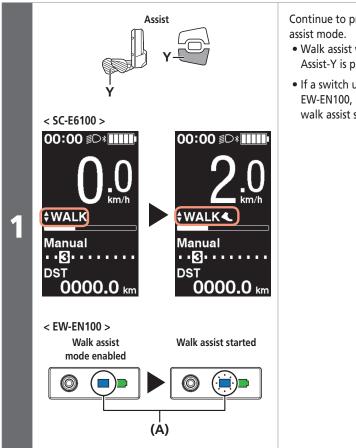
TECH TIPS

- If Assist-Y is not pressed for one minute or more, the mode active before [WALK] mode was set is re-activated.
- If the bicycle is not moved after [WALK] mode is activated, walk assist is automatically inactivated. To re-activate [WALK] mode, momentarily release Assist-Y and then hold down Assist-Y.
- The walk assist function can operate at a maximum of 6 km/h.
- The assistance level and speed vary with the gear position.

Walk assist mode operation

Prior to operation, firmly grip the handlebar and note your surroundings. When walk assist begins, the bicycle will be driven by the drive unit.

1

Assist

Y

Y

< SC-E6100 >

00:00 | 0.0 km/h | ‡WALK | Manual · · 3 · · · · · · · · | DST 0000.0 km

▶

00:00 | 2.0 km/h | ‡WALK☾ | Manual · · 3 · · · · · · · · | DST 0000.0 km

< EW-EN100 >

Walk assist mode enabled

Walk assist started

(A)
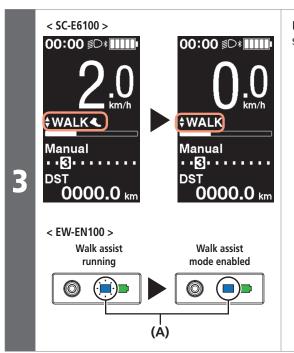
Continue to press Assist-Y while in walk assist mode.
- Walk assist will function only while Assist-Y is pressed.
- If a switch unit is connected to EW-EN100, LED1 will flash blue when walk assist starts.

(A) LED1
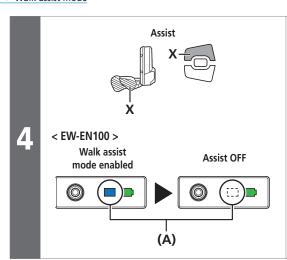
2 Carefully push the bicycle together with walk assist.

3

< SC-E6100 >

00:00 | 2.0 km/h | ‡WALK☾ | Manual · · 3 · · · · · · · · | DST 0000.0 km

▶

00:00 | 0.0 km/h | ‡WALK | Manual · · 3 · · · · · · · · | DST 0000.0 km

< EW-EN100 >

Walk assist running

Walk assist mode enabled

(A)

Removing your finger from Assist-Y will stop walk assist.

(A) LED1

5-10

Walk assist mode

4

Assist

X

X

< EW-EN100 >

Walk assist mode enabled   **Assist OFF**

(A)
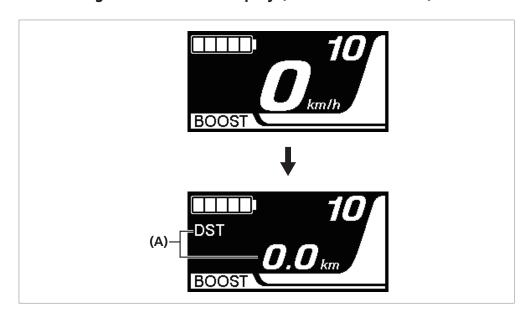
Press Assist-X to exit walk assist mode.
• [WALK] mode is canceled, and the system restarts in the mode it was in prior to setting [WALK] mode.
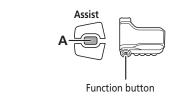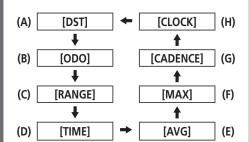
(A) LED1

■ Switching the travel data display (SC-E8000/SC-E6010)

(A) Traveling data display

(A) Traveling distance

Assist

A

Function button

(A) [DST] ← [CLOCK] (H)

(B) [ODO] [CADENCE] (G)

(C) [RANGE] [MAX] (F)

(D) [TIME] → [AVG] (E)

* The Walk assist mode function may not be able to be used in certain regions.

The type of travel data displayed changes each time you press Assist-A or the cycle computer's function button.

(A) Traveling distance

(B) Cumulative distance

(C) Traveling range *1, 2

(D) Traveling time *3

(E) Average speed *3

(F) Maximum speed *3

(G) Crank rotation speed *3

(H) Current time *4

*1 The battery level is not displayed while displaying the traveling range.When [RANGE] is displayed, the battery level is not displayed. The traveling range should be used as a reference only.

*2 When walk assistance is functioning, the on screen display [RANGE] changes to [RANGE ---].

*3 Optional item: You can configure the display settings in E-TUBE PROJECT. For details, refer to the "CONNECTION AND COMMUNICATION WITH DEVICES" section.

*4 Displayed constantly on SC-E6010.

NOTICE

• When traveling data is displayed, the screen returns to speed display after 60 seconds.

• When speed data is displayed, pressing Assist-A or the function button changes the traveling data displayed starting with [DST].

Resetting the traveling distance (SC-E8000/SC-E6010)

You can clear the traveling distance in the main screen.

1	Change the traveling data display to [DST] and press Assist-A or the function button for 2 seconds.
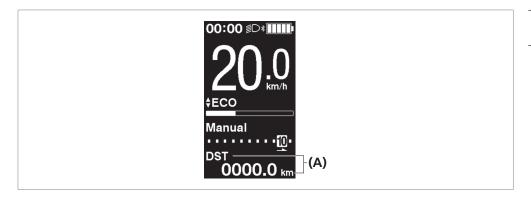
2	Release the finger when the [DST] indication starts blinking. In this state, pressing Assist-A or the function button again clears the traveling distance.

TECH TIPS
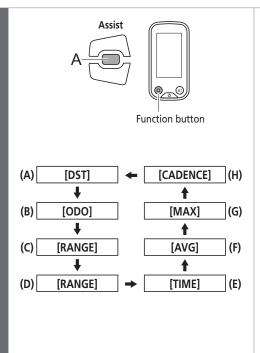
- If left alone for 5 seconds, the [DST] indicator light stops blinking and the display returns to the basic screen.
- When the traveling distance is cleared, [TIME], [AVG] and [MAX] are also cleared.

■ Switching the travel data display (SC-E6100)
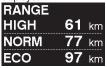
00:00
20.0 km/h
⇕ECO
Manual
DST
0000.0 km ─(A)

(A) Traveling data display

Assist

A

Function button

* The Walk assist mode function may not be able to be used in certain regions.
The type of travel data displayed changes each time you press Assist-A or the cycle computer's function button.

(A) [DST] ← [CADENCE] (H)
↓ ↑
(B) [ODO] [MAX] (G)
↓ ↑
(C) [RANGE] [AVG] (F)
↓ ↑
(D) [RANGE] → [TIME] (E)
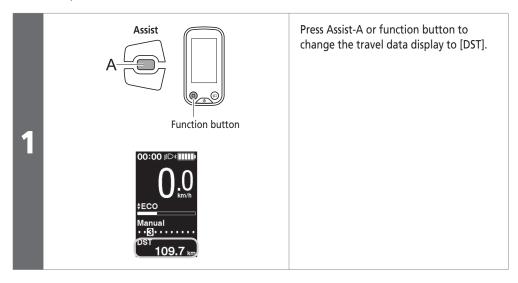
(A) Traveling distance
(B) Cumulative distance
(C) Traveling range *1
(D) Traveling range for each assist mode *1*2*3
(E) Traveling time *3
(F) Average speed *3
(G) Maximum speed *3
(H) Crank rotation speed *3 *4

*1 The battery level is not displayed while displaying the traveling range. Traveling range figures are approximations to be used for reference purposes only.

*2 This data is displayed as follows. Gear shifting mode and gear position are not displayed.
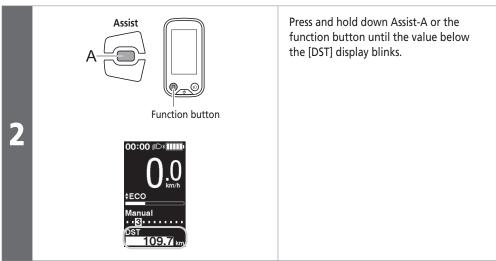
RANGE
HIGH 61 km
NORM 77 km
ECO 97 km

*3 Optional item: You can configure the display settings in E-TUBE PROJECT. For details, refer to the "CONNECTION AND COMMUNICATION WITH DEVICES" section.

*4 Cadence is only displayed when pedaling is assisted while using electronic gear shifting.

Clearing the traveling distance (SC-E6100)

You can clear the traveling distance in the main screen. When the traveling distance is cleared, [TIME] (traveling time), [AVG] (average speed), [MAX] (maximum speed) are also cleared.

1		Press Assist-A or function button to change the travel data display to [DST].

2		Press and hold down Assist-A or the function button until the value below the [DST] display blinks.

3	Press Assist-A or the function button again. • Travel data is cleared. • If nothing is done for five seconds after the number for [DST] begins flashing, it will stop flashing and the screen will return to the basic screen.

5-15

■ Switching the travel data display (SC-E7000)

(A) Current speed display
(B) Traveling data display

(A) Current speed display

Assist

A

Function button

* The Walk assist mode function may not be able to be used in certain regions.

The type of travel data displayed changes each time you press Assist-A or the cycle computer's function button.

(A)	Current speed
(B)	[DST]
(C)	[ODO]
(D)	[RNG]
(E)	[TME]
(I)	[CLK]
(H)	[CAD]
(G)	[MAX]
(F)	[AVG]

(A) Current speed
(B) Traveling distance
(C) Cumulative distance
(D) Traveling range *1
(E) Traveling time *2
(F) Average speed *2
(G) Maximum speed *2
(H) Crank rotation speed *2*3
(I) Current time *2

*1 The traveling range should be used as a reference only.
*2 Optional item: You can configure the display settings in E-TUBE PROJECT.
*3 Cadence is only displayed when pedaling is assisted while using electronic gear shifting.

Clearing the traveling distance (SC-E7000)

You can clear the traveling distance in the main screen. When the traveling distance is cleared, [TME] (traveling time), [AVG] (average speed), and [MAX] (maximum speed) are also cleared.
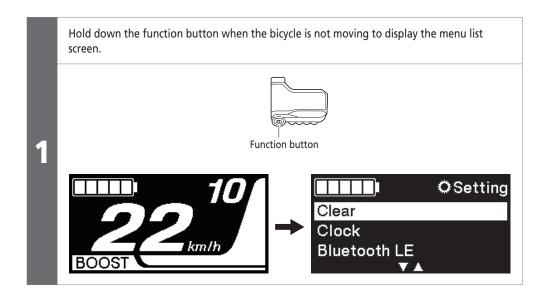
| 1 | Press Assist-A or the function button to switch the traveling data display to [DST]. |

| 2 | Continue to hold Assist-A or the function button until the number displayed for [DST] flashes. |

| 3 | Press Assist-A or the function button again.
• The traveling data is cleared.
• If nothing is done for five seconds after the number for [DST] begins flashing, it will stop flashing and the screen will return to the basic screen. |
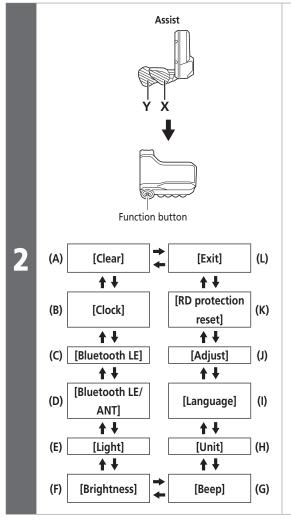
■ About the setting menus

Accessing the setting menu (SC-E8000)

1 Hold down the function button when the bicycle is not moving to display the menu list screen.

Function button

2

Assist

Y   X

Function button

Press Assist-X or Assist-Y to select the various menus.
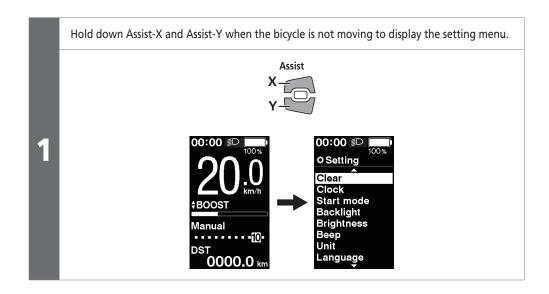
Press the function button to display the setting screen for the selected menu.

(A) [Clear] ⇄ [Exit] (L)

(B) [Clock]   [RD protection reset] (K)

(C) [Bluetooth LE]   [Adjust] (J)

(D) [Bluetooth LE/ ANT]   [Language] (I)
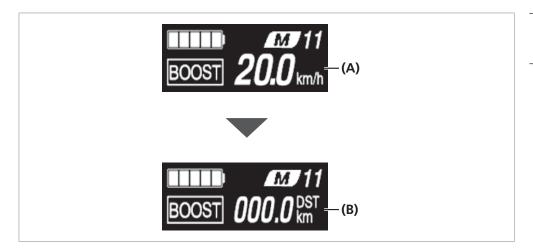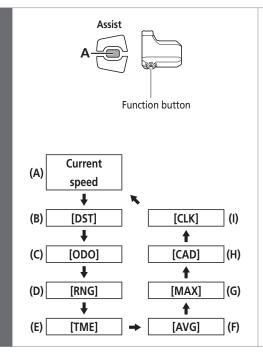
(E) [Light]   [Unit] (H)

(F) [Brightness] ⇄ [Beep] (G)

(A) Clear settings
(B) Clock setting
(C) Bluetooth LE pairing
(D) Bluetooth LE/ ANT connection status
(E) Turning the light on/off
(F) Display backlight brightness setting
(G) Turning the beep noise on/off
(H) Switching between km and miles
(I) Language setting
(J) Adjusting the electronic gear shifting unit
(K) Activating RD Protection Reset*
(L) Return to the main screen

📖🔍 TECH TIPS

* In order to protect the system when the bicycle falls and is subjected to a strong impact, the RD Protection function will activate and momentarily severe the connection between the motor and the link, impairing the proper function of the rear derailleur. Executing RD Protection Reset restores the connection between the motor and the link, as well as the function of the rear derailleur.

Accessing the setting menu (SC-E6010)

1

Hold down Assist-X and Assist-Y when the bicycle is not moving to display the setting menu.

Assist

X
Y

00:00 ▯▯ ▭ 100%

20.0 km/h

⬍BOOST

Manual · · · · · · · · · ·｜⑩｜

DST 0000.0 km

➡

00:00 ▯▯ ▭ 100%

⚙ Setting
▲
Clear
Clock
Start mode
Backlight
Brightness
Beep
Unit
Language
▼

2

Assist

X
Y

⬇

A

(A)	[Clear]	⇄	[Exit]	(K)
(B)	[Clock]		[RD protection reset]	(J)
(C)	[Backlight]			
(D)	[Brightness]		[Adjust]	(I)
(E)	[Beep]		[Font color]	(H)
(F)	[Unit]	⇄	[Language]	(G)

Press Assist-X or Assist-Y to select the various menus. Press Assist-A to display the setting screen for the selected menu.

[Start mode] and [Auto] are displayed on the menu list screen; however, they are not available for use.

(A) Clear settings

(B) Clock setting

(C) Turning the display backlight ON/OFF

(D) Display backlight brightness setting

(E) Turning the beep noise ON/OFF

(F) Switching between km and miles

(G) Language setting

(H) Changing the font color

(I) Adjusting the electronic gear shifting unit

(J) Activating RD Protection Reset*

(K) Return to the main screen
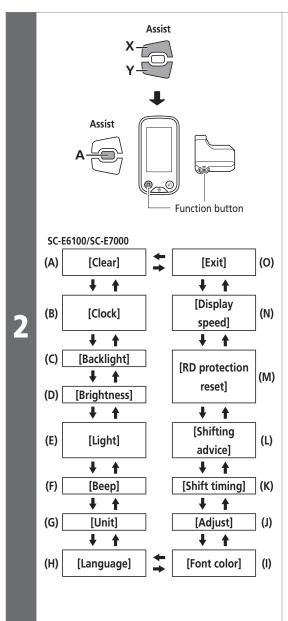
📖🔍 **TECH TIPS**

* In order to protect the system when the bicycle falls and is subjected to a strong impact, the RD Protection function will activate and momentarily severe the connection between the motor and the link, impairing the proper function of the rear derailleur. Executing RD Protection Reset restores the connection between the motor and the link, as well as the function of the rear derailleur.

Accessing the setting menu (SC-E6100/SC-E7000)

1

Hold down Assist-X and Assist-Y when the bicycle is not moving to display the menu list screen.

Assist

X
Y

Y X

< SC-E6100 >

< Basic screen >

00:00 〇〉〈 ⅢⅢⅢ
0.0 km/h
⇕ECO
Manual
·· 3 ········
DST
0000.0 km

< Setting menu screen >

00:00 〇〉〈 ⅢⅢⅢ
⚙Setting
▲
Clear
Clock
Start mode
Backlight
Brightness
Beep
Unit
Language
▼

< SC-E7000 >

< Basic screen >

ⅢⅢⅢⅢ 🅼11
BOOST 0.0 km/h

< Setting menu screen >

⚙Setting
Clear ▲
Clock ▼

▶▶ About the setting menus

Assist

X
Y

Assist

A

Function button

SC-E6100/SC-E7000

(A) [Clear] ⇄ [Exit] (O)

(B) [Clock] [Display speed] (N)

(C) [Backlight]

(D) [Brightness] [RD protection reset] (M)

(E) [Light] [Shifting advice] (L)

(F) [Beep] [Shift timing] (K)

(G) [Unit] [Adjust] (J)

(H) [Language] ⇄ [Font color] (I)

Press Assist-X or Assist-Y to select the various menus. Press the function button to display the setting screen for the selected menu.
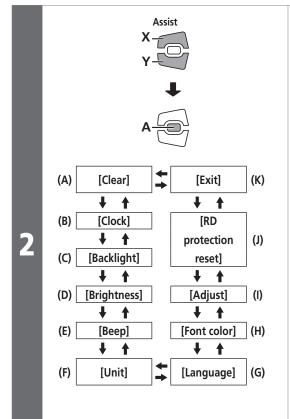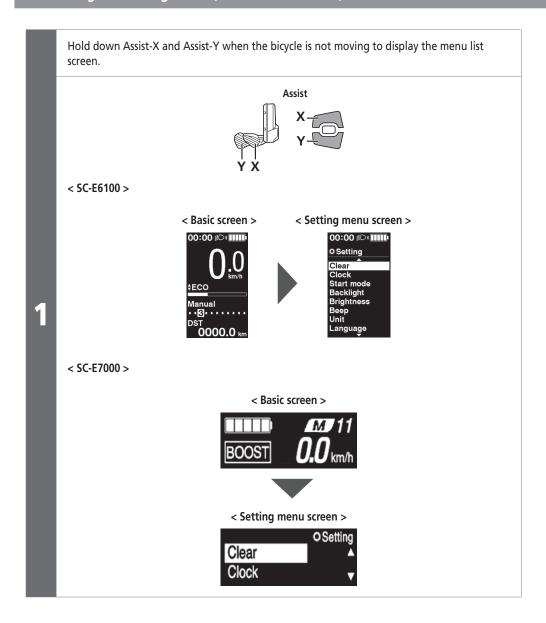
[Start mode] and [Auto] are displayed on the menu list screen; however, they are not available for use.

(A) Clear settings

(B) Clock setting
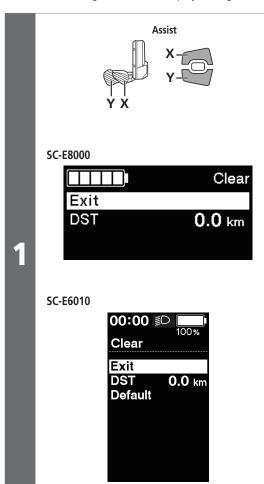
(C) Turning the display backlight on/off (SC-E6100)

(D) Display backlight brightness setting (SC-E6100)

(E) Turning the light on/off (SC-E7000)

(F) Turning the beep noise on/off

(G) Switching between km and miles

(H) Language setting

(I) Changing the font color

(J) Adjusting the electronic gear shifting unit

(K) Adjusting the timing at which gear shifting advice is displayed (SC-E6100)

(L) Adjusting the gear shifting timing (SC-E6100)

(M) Activating RD Protection Reset*

(N) Adjusts the displayed speed to match another device.

(O) Return to the main screen

📖🔍 **TECH TIPS**

* In order to protect the system when the bicycle falls and is subjected to a strong impact, the RD Protection function will activate and momentarily severe the connection between the motor and the link, impairing the proper function of the rear derailleur. Executing RD Protection Reset restores the connection between the motor and the link, as well as the function of the rear derailleur.

[Clear] Setting reset

Resets the traveling distance and display settings.

1

Assist

X
Y

Y X

SC-E8000

Clear
Exit
DST   0.0 km

SC-E6010

00:00 🔆 🔋
100%
Clear
Exit
DST   0.0 km
Default
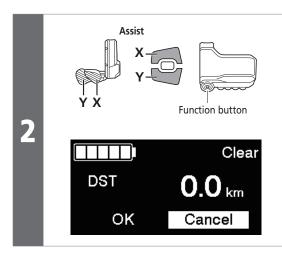
Press Assist-X or Assist-Y to select [DST].

Configurable items	Details
[Exit]	Return to the menu list screen
[DST]	Reset the traveling distance
[Default]*	Reset the display settings

* SC-E6010/SC-E6100 only

When the display settings are reset, the following will be reset to their default settings.

Configurable items	Default value
[Backlight]	[ON]
[Beep]	[ON]
[Unit]	[km]
[Language]	[English]
[Brightness]	[3]
[Font color]	[White]

2

Assist

X
Y

Y X

Function button

Clear
DST   0.0 km
OK   Cancel

To reset traveling distance, select [OK] using Assist-X or Assist-Y and press the function button to confirm.

After resetting, the screen will automatically return to the menu list screen.
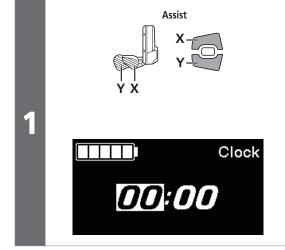
A reset confirmation screen is not displayed on SC-E6010/SC-E7000/SC-E6100.

📖🔍 **TECH TIPS**

When the traveling distance is reset, [TIME] / [TME] (traveling time), [AVG] (average speed), and [MAX] (maximum speed) will also be reset.

[Clock] Time setting
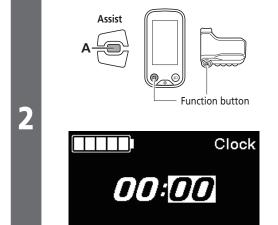
Configure the clock setting.

1

Assist

X

Y

Y X

Clock

00:00

Press Assist-X or Assist-Y to adjust the time.

2

Assist

A

Function button

Clock

00:00

Pressing Assist-A or the function button enables the set value and moves you to the minutes setting.

3

Press Assist-X or Assist-Y to set the minutes.
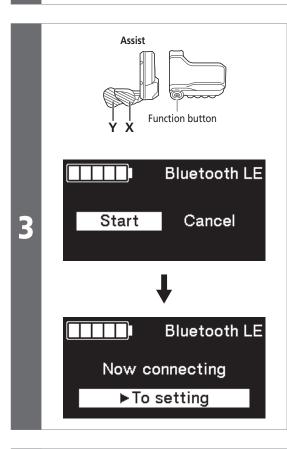
4

Pressing Assist-A or the function button enables the set value and takes you back to the menu list screen.

[Bluetooth LE] (SC-E8000)

E-TUBE PROJECT for smartphones/tablets may be used if a Bluetooth® LE connection is established with a smartphone/tablet.

1 Before setting up a connection, turn on the Bluetooth LE function on the smartphone or tablet.

2 Open E-TUBE PROJECT and set it to listen for Bluetooth LE signals.

3

Assist

Y   X   Function button

Bluetooth LE

Start   Cancel

↓

Bluetooth LE

Now connecting

▶To setting

Press Assist-X or Assist-Y to select [Start].
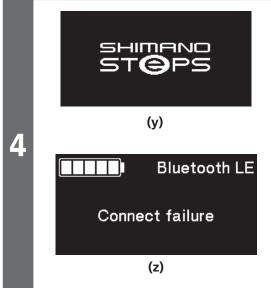
To start Bluetooth LE pairing, press the function button to confirm.

If you press the function button during Bluetooth LE pairing, the transmission will be interrupted, then the screen will return to the menu list screen.

Item	Details
[Start]	Starts Bluetooth LE pairing
[Cancel]	To not perform pairing, select [Cancel]

4

SHIMANO STEPS

(y)

Bluetooth LE

Connect failure

(z)

When connection is successful, the SHIMANO STEPS logo is displayed on screen.

If a connection is not successful, a message indicating this is displayed.

After a successful connection or a connection failure, press one of Assist-X/Assist-Y/function button or the screen will automatically return to the setting menu after awhile.

(y) Connection successful

(z) Connection failed

| 5 | When connection is successful, the unit name will display in E-TUBE PROJECT. |

| 6 | Select the unit name displayed on screen.
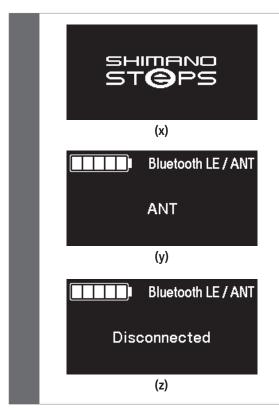
To disconnect, cancel the Bluetooth LE connection from the smartphone/tablet. (The cycle computer will exit connection mode and return to regular operation mode.) |

[Bluetooth LE/ANT] Wireless connection status display

Current status of wireless connections can be displayed on screen.
For details on ANT connection, refer to "ANT connection" in the section "About wireless functions".

(x)

(y)

(z)
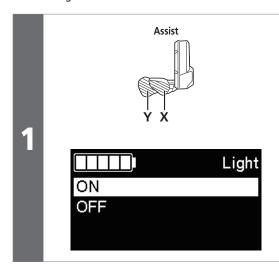
Select [Bluetooth LE/ANT] from the menu list screen and confirm to display current wireless connection status.

(x) When connected via Bluetooth LE

(y) When an ANT signal is being emitted

(z) When neither Bluetooth LE nor ANT is connected

[Light] Light ON/OFF (SC-8000/SC-E7000)

Turns the light connected to the drive unit ON/OFF.

1

Press Assist-X or Assist-Y to select the required setting.

Item	Details
[ON]	Keep light always on
[OFF]	Keep light always off

5-26
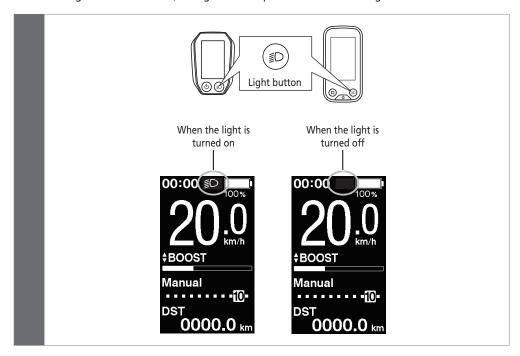
2	**Assist** A —⬤ Function button	Press Assist-A or the function button to confirm the setting. • After confirmation, the screen will automatically return to the menu list screen. If using SW-E6010, this can also be operated with Assist-A.

[Light] Light ON/OFF (SC-E6010/SC-E6100)

When the drive unit is connected, push the light button on the cycle computer to turn the light on. An icon indicating that the light is on appears on the screen. Push the button again to turn the light off. Once the light is turned off, the icon on the screen disappears.
 * If no light is connected to the drive unit and [Backlight] is set to [MANUAL], pressing the light button turns the cycle computer's backlight on and off.
 * When using SC-E8000/SC-E7000, the light can be operated from the setting menu.

Light button

When the light is turned on

When the light is turned off

00:00 100%
20.0 km/h
↕BOOST
Manual
• • • • • • • • • 10
DST 0000.0 km

00:00 100%
20.0 km/h
↕BOOST
Manual
• • • • • • • • • 10
DST 0000.0 km

TECH TIPS
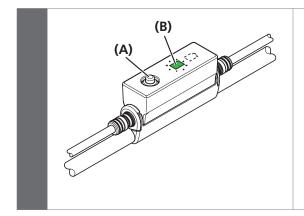
- The light turns OFF in conjunction with the power.
- When the battery power is OFF, the light will not turn on.

Light ON/OFF (EW-EN100)

If a light is connected to the drive unit, the cycle computer or junction [A] can be used to operate the light. This section describes how to operate the light using EW-EN100.

(B)

(A)

Hold the button down until the light turns ON (around two seconds).
- When the light turns ON, LED1 will flash.

(A) Button
(B) LED1

TECH TIPS
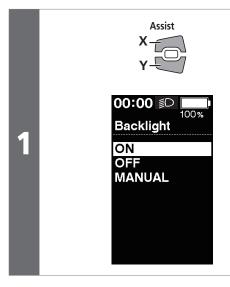
- The light turns OFF when the main power is turned OFF. The light will not turn ON when the main power is OFF.
- The light cannot be turned OFF by pressing the button while riding.

[Backlight] Backlight setting (SC-E6010/SC-E6100)
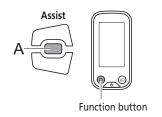
Configure the display backlight.

1	Assist X Y 00:00 ⬚ 🔋 100% **Backlight** ON OFF MANUAL	Press Assist-X or Assist-Y to select the required setting. **Configurable items** / **Details** **[ON]** — Keep light always on **[OFF]** — Keep light always off **[MANUAL]** — The light turns ON/OFF in conjunction with the drive unit it is connected to

Configurable items	Details
[ON]	Keep light always on
[OFF]	Keep light always off
[MANUAL]	The light turns ON/OFF in conjunction with the drive unit it is connected to
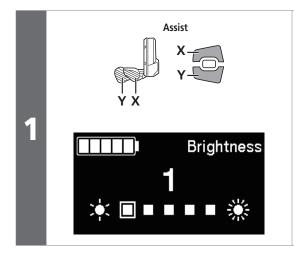
2	Assist A Function button	Press Assist-A or the function button to confirm the setting. • After confirmation, the screen will automatically return to the menu list screen.

[Brightness] Backlight brightness setting (SC-E8000/SC-E6010/SC-E6100)
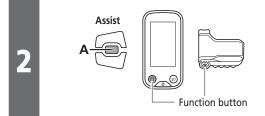
The brightness of the backlight can be adjusted as needed.

1	Assist X Y Y X ▮▮▮▮▮ 🔋 **Brightness** **1** ☼ ▣ ▪ ▪ ▪ ▪ ☀	Press Assist-X or Assist-Y to adjust the brightness.

📖🔍 TECH TIPS
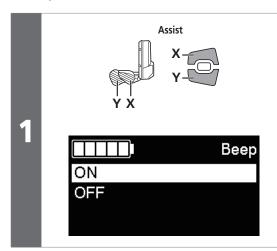
The brightness can be adjusted in 5 levels.

2	Assist A Function button	Press Assist-A or the function button to confirm the adjusted value. • After confirmation, the screen will automatically return to the menu list screen.

[Beep] Beep setting

The beep noise can be turned on/off.
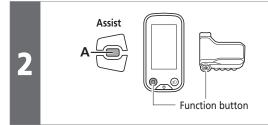
1	**Assist** X — Y — Y X ⬛⬛⬛⬛⬛ Beep ON OFF	Press Assist-X or Assist-Y to select the required setting. | Item	Details
---	---
[ON]	Enable beeps
[OFF]	Disable beeps	

TECH TIPS
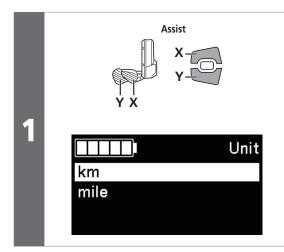
Even when [Beep] is set to [OFF], a beep will sound when there is a misoperation, system error, etc.

|		
2	**Assist** A — Function button	Press Assist-A or the function button to confirm the setting. • After confirmation, the screen will automatically return to the menu list screen.

[Unit] Km/mile switch

Distance units (km/miles) can be switched.

1

Assist

Press Assist-X or Assist-Y to select the required setting.

Item	Details
[km]	Displays in km
[mile]	Displays in miles
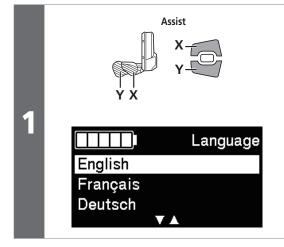
2

Assist

Function button

Press Assist-A or the function button to confirm the setting.
- After confirmation, the screen will automatically return to the menu list screen.

[Language] Language setting

Configure the language setting.

1

Assist

Press Assist-X or Assist-Y to select the required setting.

Language
English
French
German
Dutch
Italian
Spanish

2

Assist

Function button

Press Assist-A or the function button to confirm the setting.
- After confirmation, the screen will automatically return to the menu list screen.
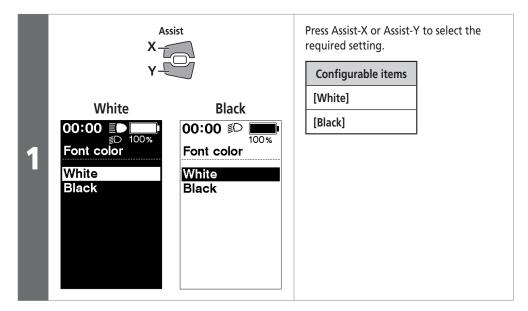
[Font color] Font color setting (SC-E6010/SC-E6100/SC-E7000)

Switches the font color between black and white.
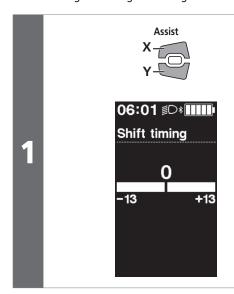
|		
1	**Assist** X Y **White**　　　**Black** 00:00 100% Font color White Black 00:00 100% Font color White Black	Press Assist-X or Assist-Y to select the required setting. **Configurable items** [White] [Black]
2	**Assist** A Function button	Press Assist-A or the function button to confirm the setting. • After confirmation, the screen will automatically return to the menu list screen.

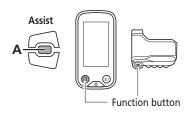## [Shift timing] Display timing setting (SC-E6100)
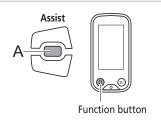
Set the timing at which gear shifting advice is displayed.

1	**Assist** X ▭ Y ▭ 06:01 ▰▷❋ ▮▮▮▮ **Shift timing** **0** −13　　+13	Press Assist-X or Assist-Y to adjust the values. • Pressing Assist-X to increase the value adjusts the display timing to make pedaling easier. • Pressing Assist-Y to decrease the value adjusts the display timing to make pedaling harder.
2	**Assist** A ▭ Function button	Press Assist-A or the function button to confirm the setting. * The screen will automatically return to the setting menu screen.

[Shifting advice] Shifting advice setting (SC-E6100)
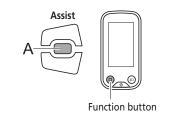
Sets whether to display the recommended gear shifting timing on the cycle computer during manual gear shifting.

1

Assist

X
Y

06:01 ⬡D⁕▕▐▐▐▐

Shifting advice

ON
OFF

Press Assist-X or Assist-Y to move the cursor to the item you want to configure.

Configurable items	Details
[ON]	Enables the gear shifting advice function, which displays an icon to notify the user of the recommended timing for gear shifting during manual gear shifting.
[OFF]	Disable the shifting advice function

2

Assist

A

Function button

Press Assist-A or the function button to confirm the setting.
 * The screen will automatically return to the setting menu screen.
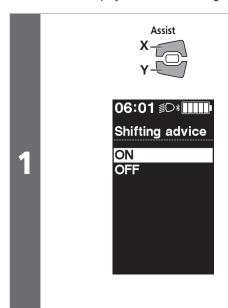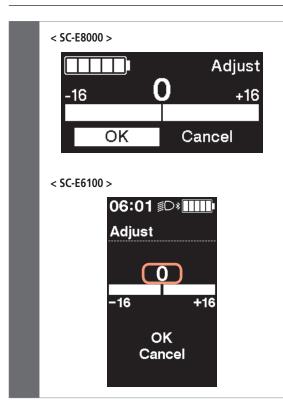
[Adjust] Gear shifting adjustment with the electronic gear shifting unit

Gear shifting adjustment is performed with the electronic gear shifting unit.

> ⚠ **CAUTION**
>
> Perform adjustment only when gear shifting feels unusual.
> Under normal conditions, performing unnecessary adjustment may worsen gear shifting performance.
> Improper adjustment may cause gear engagement skipping, resulting in an accidental fall.
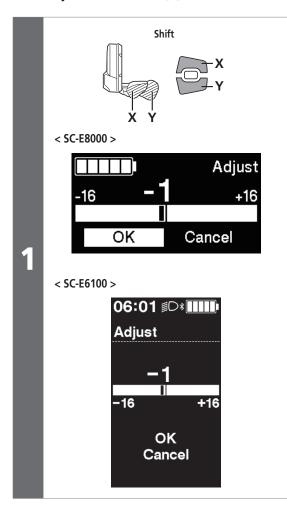
< SC-E8000 > < SC-E6100 >	Open the Adjust screen and check whether the adjustment value is set to [0].

📖 **TECH TIPS**
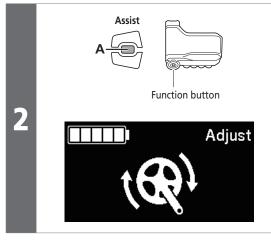
The settings have a range of -16 to 16.

▶▶ About the setting menus

If the adjustment value is [0]

1	**Shift** X Y X Y < SC-E8000 > < SC-E6100 >	Press Shift-X or Shift-Y to adjust the adjustment value up or down by 1 speed.
2	**Assist** A Function button	Press Assist-A or the function button and after selecting [OK], adjust by rotating the crank. Shift gears to check whether the condition has improved.

The condition has improved

Adjust the adjustment value by 1 speed in the same direction and check the gear shifting operation again.

Repeat these steps until any noise or unusual feeling disappears.

3

< SC-E8000 >

< SC-E6100 >
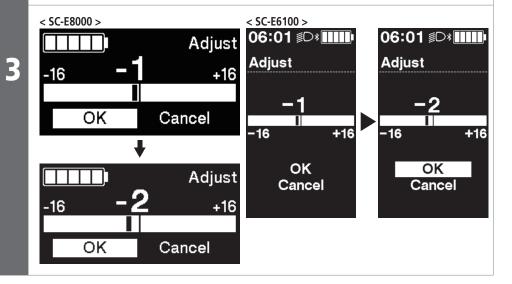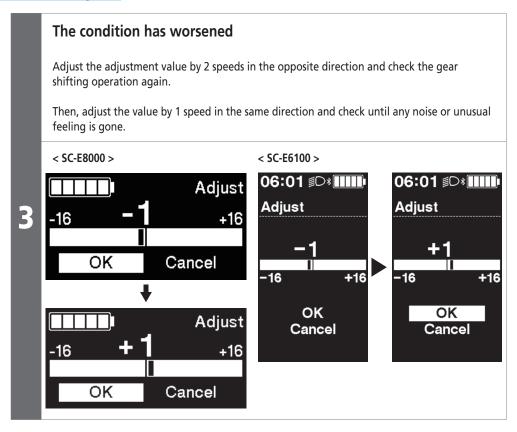
No apparent change

Adjust the adjustment value by 1 speed in the same direction and check the gear shifting operation again.

If the condition has improved, see **"The condition has improved"** to continue.

If the condition has worsened, see **"The condition has worsened"** to continue.

3

< SC-E8000 >

< SC-E6100 >

The condition has worsened

Adjust the adjustment value by 2 speeds in the opposite direction and check the gear shifting operation again.

Then, adjust the value by 1 speed in the same direction and check until any noise or unusual feeling is gone.

3

< SC-E8000 >

< SC-E6100 >

4 Finally, go for an actual ride and check for any noise or unusual feeling.

If the adjustment value is not [0]

Press Shift-X or Shift-Y and revert the adjustment value to [0].

Shift

X
Y

X Y

< SC-E8000 >

< SC-E6100 >
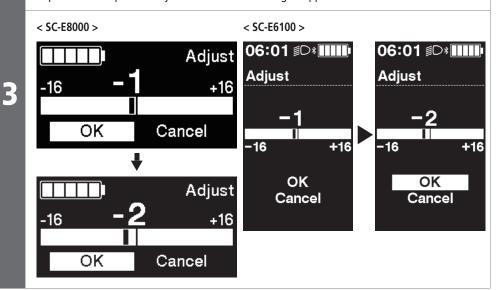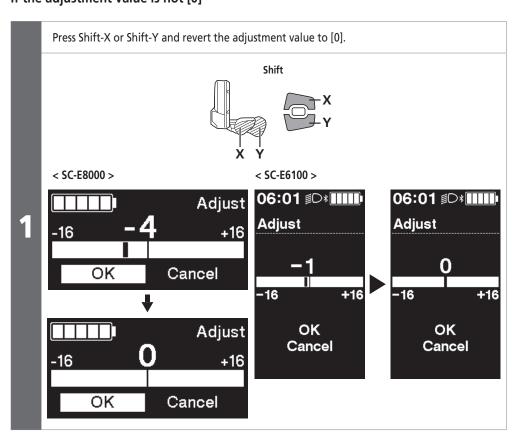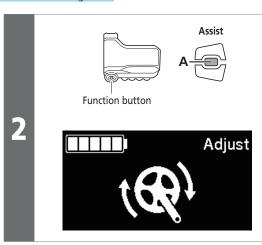
1

Assist

A — Function button

Adjust

Press Assist-A or the function button and after selecting [OK], adjust by rotating the crank.

Shift gears to check whether the condition has improved.
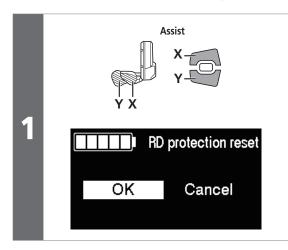
If there is any noise or unusual feeling, see **"If the adjustment value is [0]"** to continue.

3 Finally, go for an actual ride and check for any noise or unusual feeling.
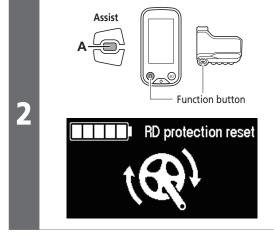
[RD protection reset] Reset RD protection

In order to protect the system when the bicycle falls and is subjected to a strong impact, the RD Protection function will activate and momentarily severe the connection between the motor and the link, impairing the proper function of the rear derailleur. Executing RD Protection Reset restores the connection between the motor and the link, as well as the function of the rear derailleur.

1

Assist

X
Y
Y X

RD protection reset

OK   Cancel

Press Assist-X or Assist-Y to select [OK].

Item	Details
[OK]	RD Protection Reset will operate
[Cancel]	Returns to the setting menu.

2

Assist

A — Function button

RD protection reset
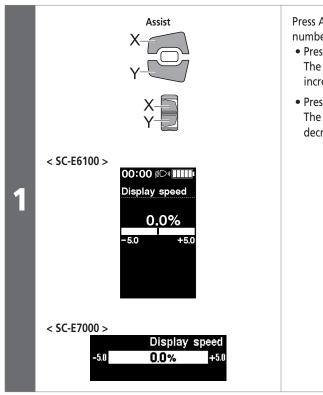
Press Assist-A or the function button and after selecting [OK], recover the connection between the motor and the link by rotating the crank.

5-39

[Display speed] Adjusting the display speed (SC-E6100/SC-E7000)

Adjusts the displayed speed when there is a difference between the speed displayed on the cycle computer and other devices.
If the display on the cycle computer is adjusted, the actual speed may be higher than the displayed speed. Keep this in mind if riding in an area with a speed limit.

| **1**	Assist X Y X Y < SC-E6100 > 00:00 📶🔦⚡️▐▌▌▌ **Display speed** **0.0%** −5.0　　+5.0 < SC-E7000 > **Display speed** −5.0　**0.0%**　+5.0	Press Assist-X or Assist-Y to adjust the number. • Press Assist-X to increase the number. The number displayed for the speed increases. • Press Assist-Y to decrease the number. The number displayed for the speed decreases.

2	Assist A Function button	Press Assist-A or the function button to confirm the setting. * The screen will automatically return to the setting menu screen.

[Exit] Close setting menu screen

Returns to the basic screen.

1	Press Assist-X or Assist-Y to select [Exit] on the setting menu screen.
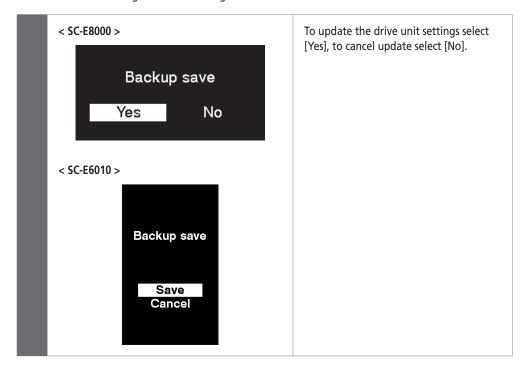
2	Press Assist-A or the function button to confirm. After confirmation, the screen will return to the basic screen.

Update confirmation window for the drive unit settings backup data (SC-E8000/SC-E6010)

The cycle computer has a function to automatically back up drive unit settings.
In the following cases, when the cycle computer power is turned ON, a window confirming whether to update the backup data is displayed:

• Reinstalling the cycle computer on a bicycle with different settings

• If the drive unit settings have been changed via E-TUBE PROJECT

< SC-E8000 > Backup save Yes No **< SC-E6010 >** Backup save Save Cancel	To update the drive unit settings select [Yes], to cancel update select [No].

If the settings cannot be accessed due to a drive unit malfunction, they can be accessed using E-TUBE PROJECT.

■ Setting Mode (EW-EN100)

It is impossible to switch to the setting mode when riding the bicycle.

RD protection reset
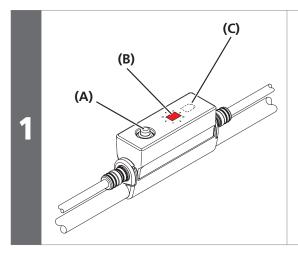
In order to protect the system when the bicycle falls and is subjected to a strong impact, the RD Protection function will activate and momentarily severe the connection between the motor and the link, impairing the proper function of the rear derailleur. Executing RD Protection Reset restores the connection between the motor and the link, as well as the function of the rear derailleur.

1

Hold the button down (for roughly eight seconds) until LED1 flashes red.
- Once LED1 is flashing, release the button. When only LED1 is flashing red, the system is in the RD protection reset mode.

(A) Button
(B) LED1
(C) LED2

NOTICE

Mount the bicycle to a maintenance stand or otherwise secure it in place so that the rear wheel can be spun freely.

2

Turn the crank arm.
- The rear derailleur moves, and the connection between the motor and link is restored.

Adjust

Adjust gear shifting for the electronic gear shifting rear derailleur.
- A switch unit configured as a shifting switch is required to set this.
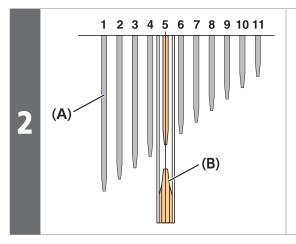
1

Turn the main power ON.

NOTICE
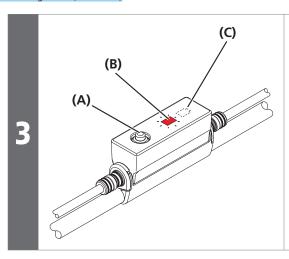
- Mount the bicycle to a maintenance stand or otherwise secure it in place so that the rear wheel can be spun freely.

- Perform adjustment only when gear shifting feels unusual. Under normal conditions, performing unnecessary adjustment may worsen gear shifting performance.

2

Shift the rear derailleur to the fifth gear position from the largest sprocket.

(A) Largest sprocket
(B) Guide pulley

5-42

3
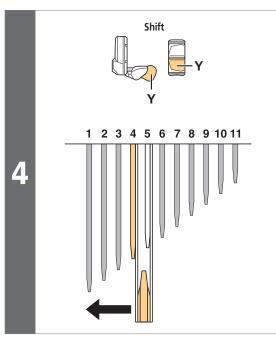
Hold the button down (for roughly five seconds) until LED1 lights up red.
• Once LED1 is flashing, release the button. When only LED1 is flashing red, the system is in the adjust mode.

(A) Button
(B) LED1
(C) LED2

4

Shift

Y

Y

1 2 3 4 5 6 7 8 9 10 11

Press Shift-Y while turning the crank, and move the guide pulley toward the largest sprocket.
• Move it to the position where the chain makes contact with the fourth gear and a subtle noise is heard.

TECH TIPS
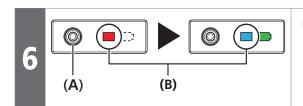
The guide pulley can move 16 steps inward and 16 steps outward from the initial position, for a total of 33 positions.

5

Shift

X

X

1 2 3 4 5 6 7 8 9 10 11

Press Shift-X five times to move the guide pulley five steps toward the smallest sprocket.
• This position will serve as the target for adjustment.

▶▶ Setting Mode (EW-EN100)

| **6** | (A)   (B) | Press the EW-EN100 button.
• The adjustment change is finalized and the system exits adjust mode. | **(A)** Button
(B) LED1 |

5-44

| **7** | Press Shift-X and Shift-Y while turning the crank, and try shifting gears.
• If fine adjustment is required, return to step 3 and repeat the rear derailleur adjustment process. |

■ Error messages on the cycle computer

Warnings

< SC-E8000 > < SC-E7000 > < SC-E6010 > < SC-E6100 >	If the situation is resolved, this indication will disappear. If the situation does not improve, consult an agency.

List of warnings

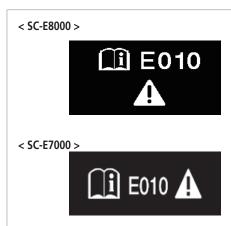| Code	Display preconditions	Operational restrictions while warning is displayed	Remedy
W010	Temperature of the drive unit is higher than it is during times of normal operation.	Power assistance may be lower than usual.	Stop using the assist function until the temperature of the drive unit drops.
W011	The traveling speed cannot be detected.	The maximum speed up to which power assistance is provided may be lower than usual.	Check the following: • Whether the speed sensor is installed in the correct position. • Whether the magnet included with the disc brake rotor has not come off. Refer to the Disc Brake section of General Operations for steps on reattaching the magnet.
W013	Initialization of torque sensor was not completed successfully.	Power assistance may be lower than usual.	With your foot off the pedal, press the battery power button and turn on the power again.
W020	If the temperature exceeds the guaranteed operating range, the battery output is turned OFF.	No system functions will start.	If it has exceeded the temperature in which discharge is possible, leave the battery in a cool place away from direct sunlight until the internal temperature of the battery decreases sufficiently. If it is below the temperature in which discharge is possible, leave the battery indoors, etc. until its internal temperature is at a suitable temperature.

▶▶ Error messages on the cycle computer

Code	Display preconditions	Operational restrictions while warning is displayed	Remedy
W032	An electronic derailleur may have been installed in place of a mechanical derailleur.	Power assistance provided in [WALK] mode may be lower than usual. * The Walk assist mode function may not be able to be used in certain regions.	Reinstall the derailleur for which the system is configured to support.

Errors

< SC-E8000 >

< SC-E7000 >

< SC-E6010/SC-E6100 >

If an error message is displayed on the entire screen, follow one of the procedures below to reset the display.

• Press the power switch of the battery.

• Remove the battery from the mount.
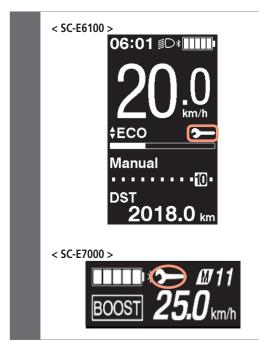
List of errors

Code	Display preconditions	Operational restriction when an error is being displayed	Remedy
E010	A system error was detected.	Power assistance is not provided during riding.	Press the power switch of the battery to turn on the power again.
E013	An error was detected in the drive unit's firmware.	Power assistance is not provided during riding.	Consult an agency.
E014	The speed sensor may have been installed in the wrong position.	Power assistance is not provided during riding.	Check whether the speed sensor is installed in the correct position. If the speed sensor is not in the correct position, the error will be resolved by installing it in the correct position and riding the bicycle for a little while.

5-46

▶▶ Error messages on the cycle computer

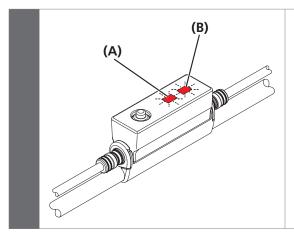| Code	Display preconditions	Operational restriction when an error is being displayed	Remedy
E020	A communication error between the battery and drive unit was detected.	Power assistance is not provided during riding.	Check that the cable between the drive unit and battery is properly connected.
E021	Battery connected to drive unit conforms with system standards but is not supported.	Power assistance is not provided during riding.	Press the power switch of the battery to turn on the power again.
E022	Battery connected to drive unit does not conform with system standards.	No system functions will start.	Press the power button of the battery to turn it on again.
E023	Electrical failure inside the battery.	No system functions will start.	Press the battery power button to turn the power ON again.
E024	Communication error with the bicycle system.	No system functions will start.	Make sure that the cable is not loose or improperly connected.
E025	This is displayed when a genuine drive unit is not connected. This is displayed if any of the cables are disconnected.	No system functions will start.	Connect a genuine battery and drive unit. Check the condition of the cables.
E033	The current firmware doesn't support system operation.	Power assistance is not provided during riding.	Connect to E-TUBE PROJECT and update firmware for all unit.
E043	The cycle computer's firmware may be partially corrupt.	Power assistance is not provided during riding.	Consult an agency.

Maintenance alert (SC-E6100/SC-E7000)

< SC-E6100 > 06:01 **20.0** km/h ⬆ECO Manual • • • • • • • • 10 • DST **2018.0** km < SC-E7000 > BOOST **25.0** km/h M11	This notifies the user that the bicycle requires maintenance. An icon is displayed on the cycle computer screen when the bicycle reaches the set odometer or date. You must connect to E-TUBE PROJECT to configure this setting. Refer to the help manual for E-TUBE PROJECT for details.

■ EW-EN100 Error Indication

When an error occurs, the two LEDs on EW-EN100 will quickly flash red at the same time.

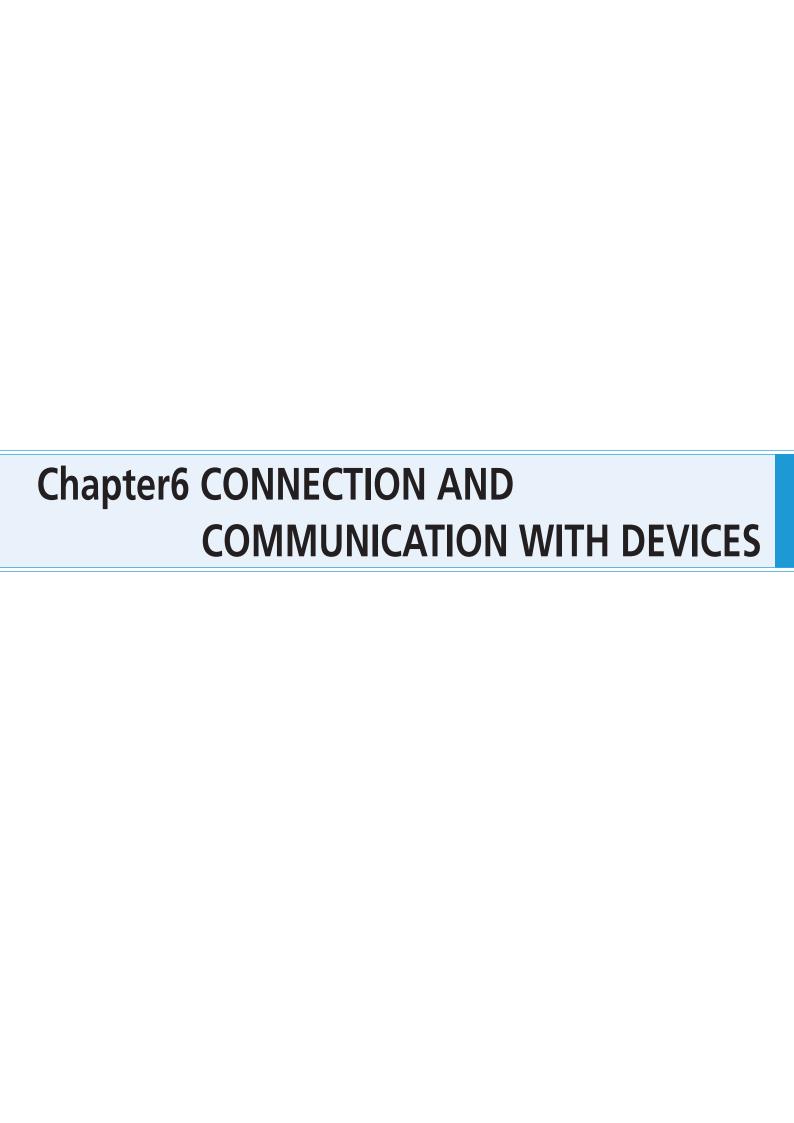|		
(B) (A)	If this occurs, follow one of the procedures below to reset the indication. • Press the battery power switch to turn the power OFF. • Remove the battery from the mount. If the situation does not improve even after turning the power back ON, consult with a distributor.	**(A)** LED1 **(B)** LED2

Chapter6 CONNECTION AND COMMUNICATION WITH DEVICES

CONNECTION AND COMMUNICATION WITH DEVICES

The system can be configured and firmware can be updated when the bicycle is connected to a device.

You need E-TUBE PROJECT to configure SHIMANO STEPS and update firmware.

Download E-TUBE PROJECT from our support website (**https://e-tubeproject.shimano.com**).

For information on how to install E-TUBE PROJECT, check the E-TUBE support website.

NOTICE

- You need SM-PCE1 and SM-JC40/SM-JC41 to connect SHIMANO STEPS to a PC. They are not required if there is an available port.
- Firmware is subject to change without notice.
- PC connection and communication are not possible during charging.
- Connecting to devices is not possible while charging.

■ About wireless functions

Functions

ANT connection (SC-E8000/SC-E7000/SC-E6100)

The wireless unit can send all information displayed on the basic screen of the cycle computer to an external device.

TECH TIPS

The latest functions can be checked by updating the software via E-TUBE PROJECT. For details, consult the place of purchase.

Bluetooth® LE connection (SC-E8000/SC-E7000/SC-E6100/EW-EN100)

The wireless unit can send all information displayed on the basic screen of the cycle computer to an external device.

E-TUBE PROJECT for smartphones/tablets may be used if a Bluetooth® LE connection is established with a smartphone/tablet. SC-E7000/SC-E6100/EW-EN100 are compatible with E-TUBE RIDE, which can be used to check traveling data on a smartphone connected over Bluetooth LE.

How to make connections

ANT connection (SC-E8000/SC-E7000/SC-E6100/EW-EN100)

When the main power is turned ON for SHIMANO STEPS, communication can be received at any time. Switch the external device to connection mode and then connect it. For SC-E8000, you can check [Bluetooth LE/ANT] to confirm whether the connection was successful.

Bluetooth® LE connection (SC-E8000)

Generally, Bluetooth LE transmission will begin automatically when the cycle computer is turned ON, however, pairing can be started by [Bluetooth LE] menu when connectivity is poor.

Bluetooth® LE connection (SC-E7000/SC-E6100/EW-EN100)

Communication can only be received under the following conditions. Switch the external device to connection mode in advance.

• Within 15 seconds of the main power for SHIMANO STEPS turning ON.

• Within 15 seconds of operating any button other than the SHIMANO STEPS power switch.

■ 2.4 GHz digital wireless system

2.4 GHz-frequency digital wireless technology, which is the same technology used for wireless LAN.
However, on very rare occasions, objects and places may generate strong electromagnetic, waves and interference, which may result in incorrect measurement.

• Television, PC, radios, motors/engines, or in car and trains.

• Railroad crossings and near railway tracks, around television transmitting stations and radar bases.

• Other wireless computers or digitally controlled light.

■ Drive unit setting backup function for the cycle computer

To check the drive unit settings backed up to the cycle computer, export the PDF report from the E-TUBE PROJECT [Unit log acquisition] menu. When exchanging the drive unit, send the report along with the unit to your place of purchase or a local bicycle dealer.

■ Settings customizable in E-TUBE PROJECT

< SC-E8000 >

Drive unit setting	Light connection	Sets whether to use a light.
Display monitor settings	Display units	Switches the display unit between km and mile.
	Display switchover	You can select whether to display the items Traveling time, Average speed, Maximum speed, Cadence (crank rotation speed) and Range overview.
	Time setting	Sets the time.
	Beep setting	Switches the beep sound ON or OFF.
	Backlight brightness setting	The backlight's brightness can be adjusted.
	Display language	You can choose from English, French, German, Dutch, Spanish, and Italian.
Other functions		• Error check • Update firmware • Preset • Unit log acquisition * For details, download E-TUBE PROJECT and refer to the manual provided.

▶▶ Settings customizable in E-TUBE PROJECT

< SC-E6010 >

Switch function setting		Changes the functions to assign to switches A, X, and Y of SW-E6010. Functions that can be assigned vary depending on the type of switch. • The same function cannot be assigned to different switches.
Switch mode setting		Sets SW-E6010 to be used for either assist mode switching or gear shifting.
Drive unit setting	**Light connection**	Sets whether to use a light.
Display monitor settings	**Display units**	Switches the display unit between km and mile.
	Time setting	Sets the time.
	Backlight setting	Switches the backlight of the cycle computer ON or OFF.
	Backlight brightness setting	The backlight's brightness can be adjusted.
	Beep setting	Switches the beep sound ON or OFF.
	Display language	You can choose from English, French, German, Dutch, Spanish, and Italian.
	Font color setting	The font color can be set to white or black.
	Traveling time	Switches the traveling time indication ON or OFF.
	Average speed	Switches the average speed indication ON or OFF.
	Maximum speed	Switches the maximum speed indication ON or OFF.
	Range overview	Switches the traveling range list indication ON or OFF.
Other functions		• Error check • Update firmware • Preset • Unit log acquisition * For details, download E-TUBE PROJECT and refer to the manual provided.

▶▶ Settings customizable in E-TUBE PROJECT

< SC-E6100/SC-E7000 >

Switch function setting		Assigns functions to each operation switch on the switch unit.
Drive unit setting	Light connection	Sets whether a light is connected to the drive unit.
	Gear shifting timing *1	Adjusts the gear shifting timing during automatic gear shifting. Also sets the timing at which gear shifting advice is displayed.
	Gear shifting advice *2	Sets whether to display the recommended gear shifting timing on the cycle computer during manual gear shifting.
	Riding characteristics	Selects the output characteristics of the drive unit.
	Maximum assist speed	Assist is provided up to the set speed. The maximum assist speed is determined by law, depending on the country of use.
	Maintenance alert	Notifies the user when maintenance is required by displaying an icon on the cycle computer when the set odometer or date is reached.
Display settings	Display units	Switches between displaying km or miles.
	Time setting	Sets the time displayed on the cycle computer.
	Backlight setting	Turns the display backlight ON/OFF.
	Backlight brightness setting	Sets the display brightness.
	Beep setting	Turns the operation sound ON/OFF.
	Display language	Sets the display language.
	Font color setting	Switches the font color between black and white.
	Traveling data display	Sets whether to display each item (traveling time, average speed, maximum speed, cadence (crank rotation speed), and traveling range) on the cycle computer.
Multi shift mode setting *3		When a switch unit is used as a shifting switch, this sets the maximum number of gears that can be shifted by holding the switch down.
Other functions		• Error log • Update firmware • Preset • Acquire unit log

*1 Only for electronic gear shifting.

*2 Only for electronic gear shifting with the gear shifting mode set to [Manual].
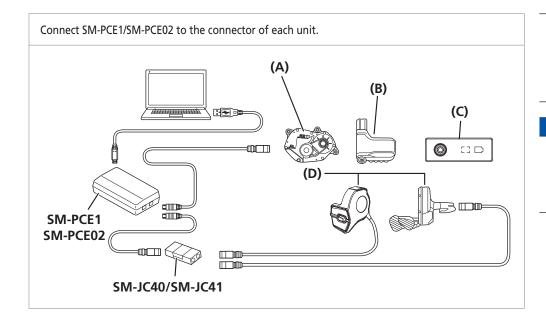
*3 Electronic gear shifting rear derailleur models only.

NOTICE
When the SC-E6010 firmware is updated, the time set for the cycle computer is reset to match the computer's clock.

■ Connecting to the PC

When connecting only individual units

Connect SM-PCE1/SM-PCE02 to the connector of each unit.

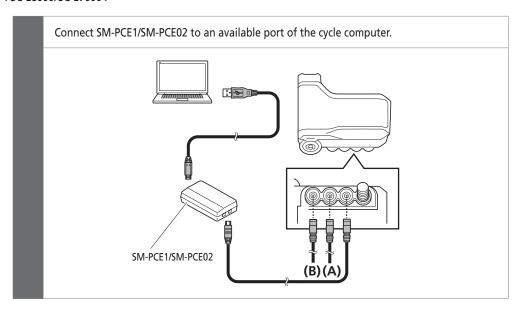**SM-PCE1**
SM-PCE02

SM-JC40/SM-JC41

(A) Drive unit
(B) Cycle computer
(C) Junction [A]
(D) Switch unit

NOTICE

- SM-JC40 or SM-JC41 is required to connect a single switch unit to a PC.

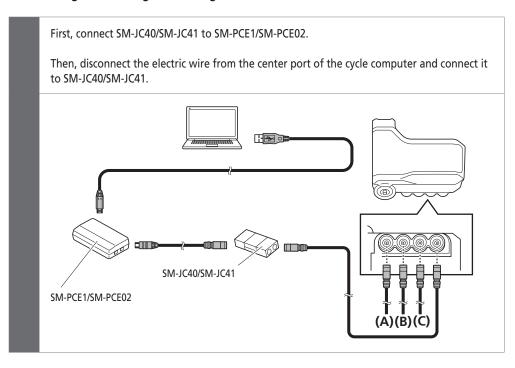- Individual units cannot be connected via wireless connection.
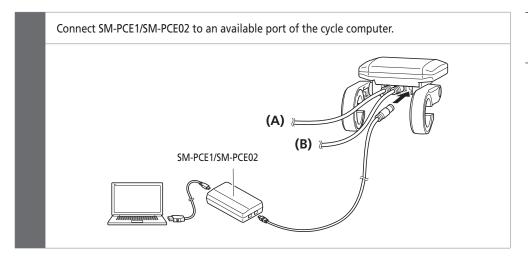
Connecting to the bicycle

< SC-E8000/SC-E7000 >

Connect SM-PCE1/SM-PCE02 to an available port of the cycle computer.

SM-PCE1/SM-PCE02
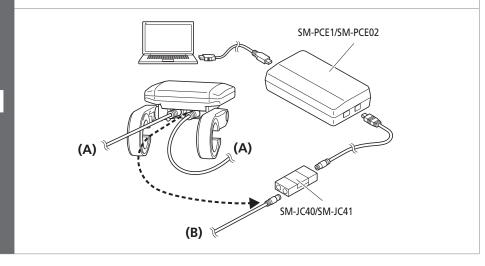
(B)(A)

(A) Switch unit
(B) Drive unit

When using electronic gear shifting

First, connect SM-JC40/SM-JC41 to SM-PCE1/SM-PCE02.

Then, disconnect the electric wire from the center port of the cycle computer and connect it to SM-JC40/SM-JC41.

SM-JC40/SM-JC41

SM-PCE1/SM-PCE02

(A)(B)(C)

(A) Assist switch
(B) Drive unit
(C) Shift switch

< SC-E6010/SC-E6100 >

< When the cycle computer has an available port >

Connect SM-PCE1/SM-PCE02 to an available port of the cycle computer.	**(A)** Switch unit
	(B) Drive Unit

(A)
(B)
SM-PCE1/SM-PCE02

< When the cycle computer has no available port >

1 First, connect SM-JC40/SM-JC41 to SM-PCE1/SM-PCE02. Then, disconnect the electric wire from the center port of the cycle computer and connect it to SM-JC40/SM-JC41.	**(A)** Switch unit
	(B) Drive Unit

SM-PCE1/SM-PCE02
(A)   (A)
SM-JC40/SM-JC41
(B)

2 Connect the electric wire to the available port of SM-JC40/SM-JC41 and the center port of the cycle computer.

< EW-EN100 >

< When junction [A] has a free port >
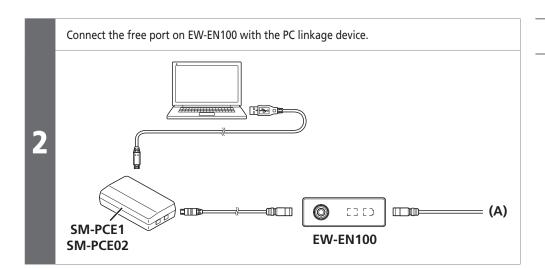
Connect as follows if EW-EN100 is not connected to anything other than a drive unit.

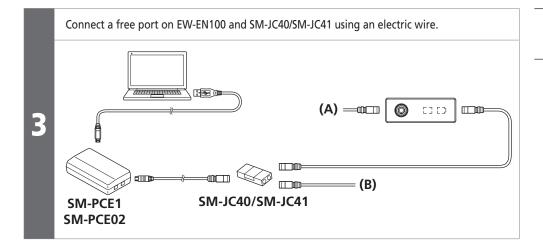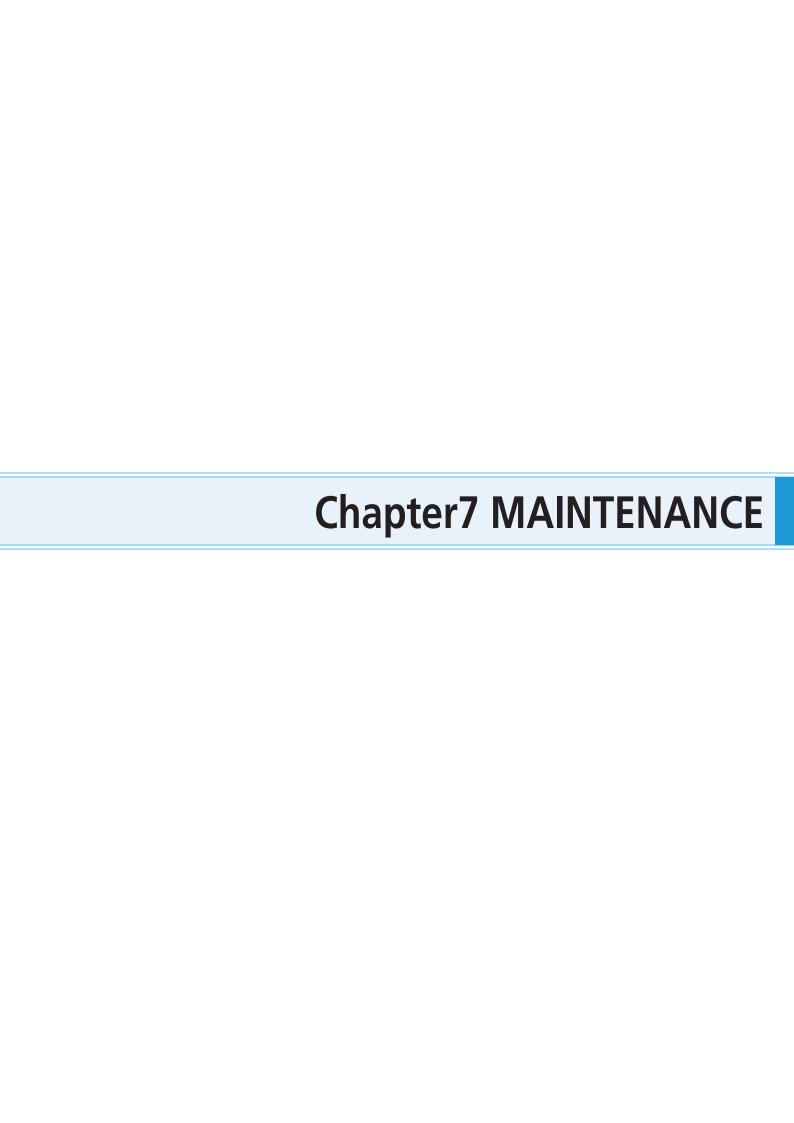| **1**	Remove the dummy plug from a free port on EW-EN100.

2	Connect the free port on EW-EN100 with the PC linkage device.

SM-PCE1
SM-PCE02

EW-EN100

(A) Drive unit

< When junction [A] does not have a free port >

Connect as follows if a switch unit is connected and there are no free E-TUBE ports on EW-EN100.

1	Connect SM-JC40/SM-JC41 to the PC linkage device.

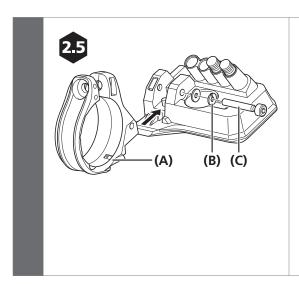| **2**	Disconnect the electric wire connected to the drive unit from EW-EN100, and connect it to SM-JC40/SM-JC41.

3	Connect a free port on EW-EN100 and SM-JC40/SM-JC41 using an electric wire.

SM-PCE1
SM-PCE02

SM-JC40/SM-JC41

(A) Switch unit
(B) Drive unit

Chapter7 MAINTENANCE
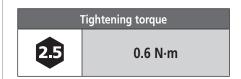
MAINTENANCE

■ Replacing the clamp band (SC-E7000/SC-E8000)

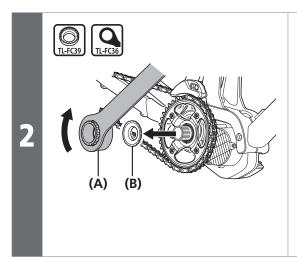|	
2.5	Remove the case fixing bolt with a 2.5 mm hexagon wrench and replace the clamp band. (A) (B) (C)

(A) Clamp band
(B) Washer
(C) Case fixing bolt

Tightening torque	
2.5	**0.6 N·m**

NOTICE

< SC-E8000 >
If using a handlebar with a thick diameter, reinstall it using the included Ø35 mm clamp band.

■ Replacing the chainring unit

1	Perform procedures with the chain installed to the rear wheel. Attach the left and right crank arms using TL-FC16.

2 — While holding the wheel, use the SHIMANO original tool to loosen the lock ring in the direction shown in the illustration.

(A) TL-FC39/TL-FC36
(B) Lock ring

NOTICE

- If using a torque wrench, use TL-FC39 in combination with TL-FC33.

TL-FC39   TL-FC33

- An impact wrench cannot be used.

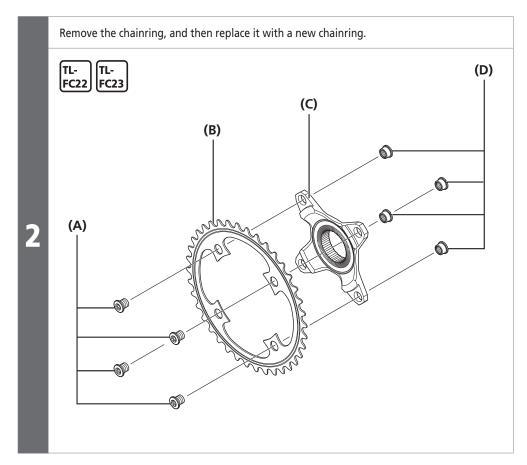|	
3	Remove and then replace the chainring unit. To install a chainring unit, refer to "INSTALLING AND WIRING THE DRIVE UNIT" and "Installing the crank and chainring unit". Refer to "Replacing the Chainring" when replacing the chainring.

■ Replacing the chainring

The chainring has a correct orientation.
Refer to "Replacing the Chainring Unit" for information on how to remove the chainring unit.
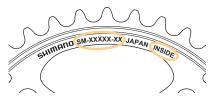
1	Remove the chainring unit.

2	Remove the chainring, and then replace it with a new chainring.

(A) Gear fixing bolt
Use TL-FC23.

(B) Chainring

(C) 4 arm adapter

(D) Gear fixing nut
Use TL-FC22.

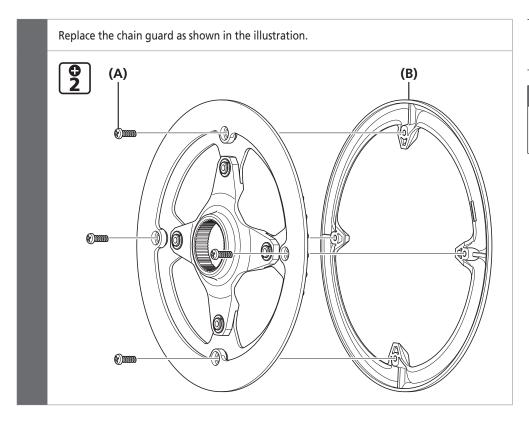| Tightening torque	
TL-FC23	**12 - 14 N·m**

NOTICE

• Install the chainring so that "INSIDE" or the printed model name is on the 4-arm adapter side.

• The 4 bolts should be tightened uniformly over the course of multiple times rather than fully tightened at once.
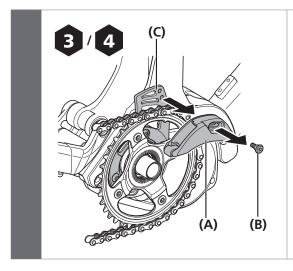
Replacing the chain guard (SM-CRE80 44T Double chain guard)

Replace the chain guard as shown in the illustration.

(A) Chain guard fixing bolt
(B) Chain guard

Tightening torque
0.7 N·m

■ Replacing the guide of the chain device

Loosen the guide fixing bolt (M5) to remove the guide from the back plate, and then replace it.

(A) Guide
(B) Guide fixing bolt (M5)
(C) Back plate

NOTICE

- A chain device cannot be used with SM-CRE80 (44T CL: 50 mm Double chain guard).
- When replacing it, use the included guide fixing bolt.

7-5

SHIMANO