

Dealer's Manual

ROAD	GRAVEL	MTB
E-BIKE	LIFESTYLE	GENERAL

SHIMANO E-BIKE SYSTEMS Speed Sensor

SHIMANO (E-BIKE)

EW-SS300

EW-SS301

EW-SS302

SM-DUE10

SM-DUE11

SM-EWSS1

SM-EWSS2

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IMPORTANT NOTICE

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

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

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

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

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

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

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

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

TO ENSURE SAFETY

WARNING

- **Be sure to follow the instructions provided in the manuals when installing the product.**

Only use SHIMANO genuine parts. If a component or replacement part is incorrectly assembled or adjusted, it can lead to component failure and cause the rider to lose control and crash.

-  Wear approved eye protection while performing maintenance tasks such as replacing components.
- For information on products not explained in this manual, refer to the manuals for each product.

Be sure to also inform users of the following:

- Do not disassemble or modify the product. This may cause the product to not operate correctly, and you may suddenly fall and be seriously injured.
- For installation to the bicycle and maintenance
 - Be sure to remove the battery and charging cable before wiring or attaching parts to the bicycle. Failure to do so may cause an electric shock.

NOTICE

Be sure to also inform users of the following:

- Safety precautions
 - If any malfunction or trouble occurs, consult the place of purchase.
 - For any questions regarding methods of installation and maintenance, please contact your place of purchase.
 - For installation and adjustment of the product, consult the place of purchase.
 - Handle the components carefully, and avoid subjecting them to strong shock.
 - For maximum performance we highly recommend SHIMANO lubricants and maintenance products.

The actual product may differ from the illustration because this manual is intended mainly to explain the procedures for using the product.

Anti-tampering function

Be sure to also inform users of the following:

The tampering of peripheral devices related to the drive unit or assist control of E-BIKE is prohibited, including both software and hardware modifications. Be sure to convey this information to customers.

Tampering (*1) may reduce the service life of and even cause extensive damage to the assist control system, bike components including the drive unit, and the bike itself. Furthermore, because modifying this system will likely void the warranties of SHIMANO products, the user may be forced to pay substantial costs to repair or replace items affected by tampering.

SHIMANO E-BIKE SYSTEMS have a sensor that detects tampering and will display error code [E295](#) (refer to the [error and warning codes](#) on si.shimano.com) when tampering (*1) is detected. Error code [E295](#) can be temporarily cleared by turning the power off, then on again. However, after the allowable number of times displaying the error code has been exceeded, SHIMANO E-BIKE SYSTEMS will enter Safe Mode ([E299](#)). While in Safe Mode ([E299](#)), the assist function of the drive unit will stop.

*1: Tampering refers to the state where a product does not comply with national or regional standards.

For details on error/warning codes, check the latest versions below:



<https://si.shimano.com/error>

Booklet structure

■ User's Manual

SHIMANO E-BIKE SYSTEMS user's manuals are split among several booklets, as described below.

The latest manuals are available on our website (<https://si.shimano.com>).

For information on the target model that is not included in the links shown in the table below, search on the above website.

Name	Details
SHIMANO E-BIKE SYSTEMS User's Manual	This is the basic manual for SHIMANO E-BIKE SYSTEMS. It contains the following content: • Quick guide • Basic operations when riding • How to operate assist bicycles that use flat handlebars, such as city, trekking, or MTB type bicycles
SHIMANO E-BIKE SYSTEMS User's Manual for Drop Handlebar Bicycles	This booklet describes how to operate assist bicycles that use a drop handlebar and are controlled using dual control levers. This should be read along with the SHIMANO E-BIKE SYSTEMS User's Manual.
SHIMANO E-BIKE SYSTEMS Special Battery and Parts User's Manual (Gen.2) (standard type / type supporting range extender from another company)	It contains the following content: • How to charge and handle the SHIMANO E-BIKE SYSTEMS special battery • How to attach and remove the SHIMANO E-BIKE SYSTEMS special battery to the bicycle • Using the satellite charging port • How to read the battery LEDs when charging or during an error
SHIMANO E-BIKE SYSTEMS Cycle Computer User's Manual (clamp band type / bracket installation type / switch unit integrated type)	It contains the following content: • Method for configuring settings via the main body buttons and switch unit • Wireless communication method (supported models only)
Switch Unit User's Manual * 1 (wireless gear shifting type / with LED indicator function / without LED indicator function)	This is the assist switch and shift switch user's manual. It describes switch unit handling and operations.
Satellite System ON/OFF Switch User's Manual	It describes the handling and operations of the satellite system ON/OFF switch.

* 1 SHIMANO E-BIKE SYSTEMS compatibility with wireless gear shifting will be provided in a future firmware update.

■ Dealer's Manual

SHIMANO E-BIKE SYSTEMS dealer's manuals are split among several booklets, as described below.

The latest manuals are available on our website (<https://si.shimano.com>).

Name	Details
SHIMANO E-BIKE SYSTEMS Dealer's Manual	This is the basic manual for SHIMANO E-BIKE SYSTEMS. • Overall wiring diagram • Overall flow of operations for installing the SHIMANO E-BIKE SYSTEMS components to an assist bicycle • Installation / removal and maintenance of the drive unit area
SHIMANO E-BIKE SYSTEMS Dealer's Manual for Drop Handlebar Bicycles	It specializes in the following information regarding assist bicycles that use a drop handlebar and are controlled using dual control levers. This should be read along with the SHIMANO E-BIKE SYSTEMS Dealer's Manual. • Overall wiring diagram • Cautions to follow when installing the drive unit
SHIMANO E-BIKE SYSTEMS Speed Sensor Dealer's Manual (this document)	This manual describes SHIMANO E-BIKE SYSTEMS speed sensor installation.
SHIMANO E-BIKE SYSTEMS Special Battery and Parts Dealer's Manual (Gen.2) (standard type / type supporting range extender from another company)	It contains the following content: • How to install the battery mount • How to install the satellite system ON/OFF switch and satellite charging port
SHIMANO E-BIKE SYSTEMS Cycle Computer and Switch Unit Parts Dealer's Manual (Gen.2)	It contains the following content: • Installation and maintenance of the SHIMANO E-BIKE SYSTEMS special cycle computer and switch unit • How to connect to the PC version of E-TUBE PROJECT
SHIMANO E-BIKE SYSTEMS Chain Device Dealer's Manual	This manual describes the installation and maintenance of the SHIMANO E-BIKE SYSTEMS special chain device.

List of tools to be used

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

Tool	
	4 mm hexagon wrench
	Hexalobular[#10]
	Hexalobular[#25]
	Cross head screwdriver[#2]
	Adjustable wrench
	TL-LR11
	TL-LR15
	TL-FC36

Installation / removal

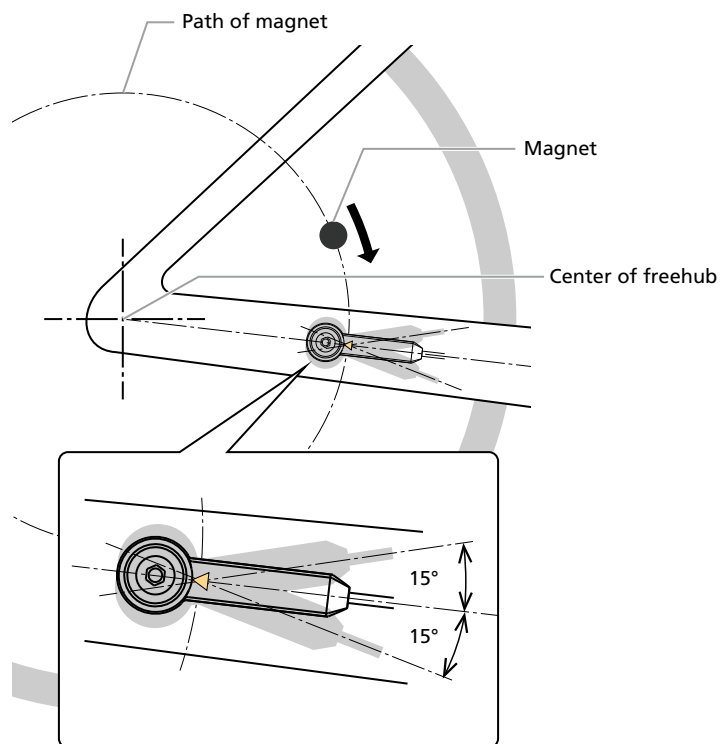
Generic type

For models: EW-SS300 (SD300 type), SM-DUE01 (SD50 type)

The generic type speed sensor can be installed regardless of the type of brake, such as rim brake, roller brake, or coaster brake. Install the magnet on a spoke on the rear wheel.

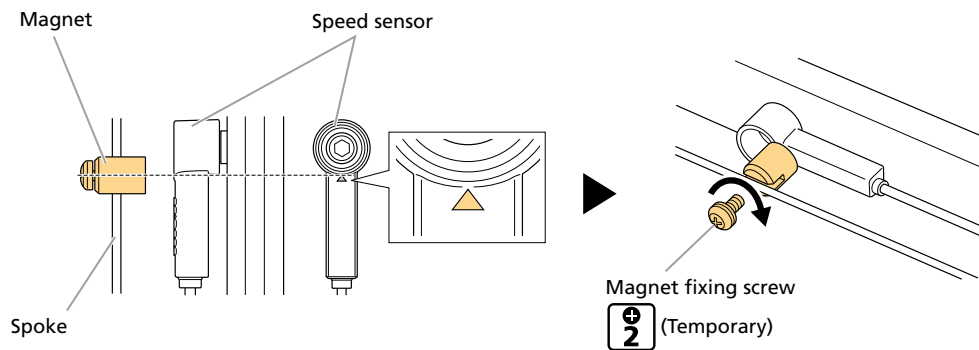
NOTICE

- For details on the compatibility of the speed sensor and drive unit, refer to [this link](#).
- Refer to the dealer's manual of your drive unit when connecting the speed sensor and drive unit.
- Refer to the installation angle in the figure when installing a generic type speed sensor. It may not operate correctly if it is installed with the position of the Δ marking exceeding the allowed range.



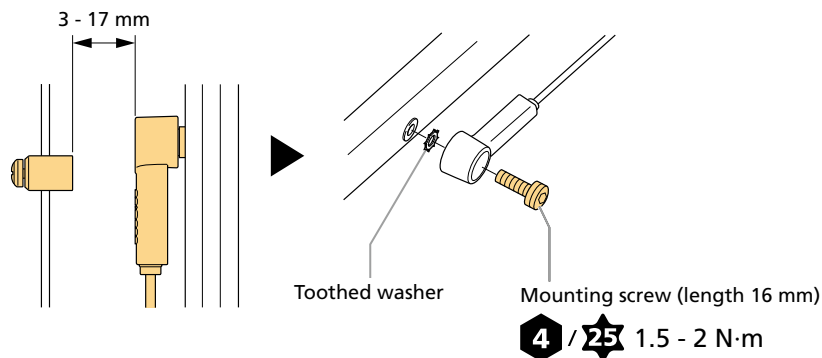
1. Temporarily install the magnet to the spoke.

Determine the installation position of the magnet so that the center of the magnet is aligned with the tip of the Δ marking on the speed sensor.

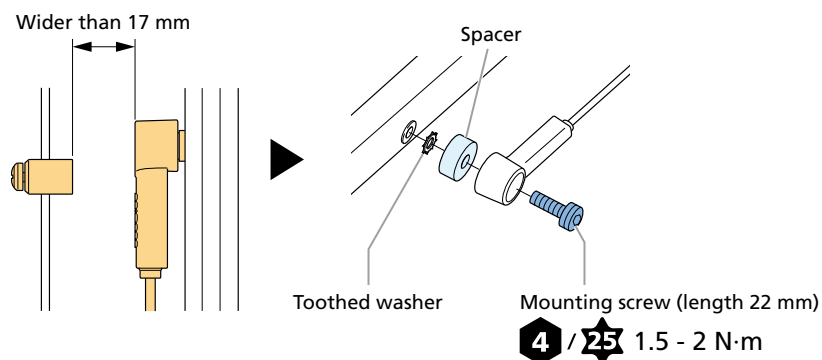


2. Install the speed sensor.

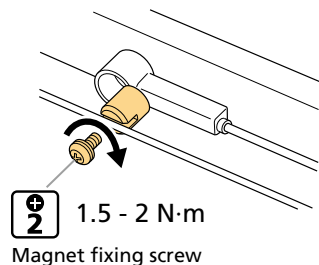
Clearance between speed sensor and magnet is 3 to 17 mm



Clearance between speed sensor and magnet exceeds 17 mm



3. Secure the magnet.



4. Route the electric wire for the speed sensor to the frame along the chainstay and wire it to the drive unit.

Rotor with magnet / magnet adapter type

For models: EW-SS301 (SD300 type), SM-DUE11 (SD50 type)

Use in combination with a rotor with magnet, or magnet adapter that is tightened together with a rotor (rear wheel only for both).

NOTICE

- For details on the compatibility of the speed sensor and drive unit, refer to [this link](#).
- Refer to the dealer's manual of your drive unit when connecting the speed sensor and drive unit.
- For information on how to install the rotor, refer to the "DISC BRAKE" section of " [General Operations](#) ".

1. Install the rotor to the wheel.

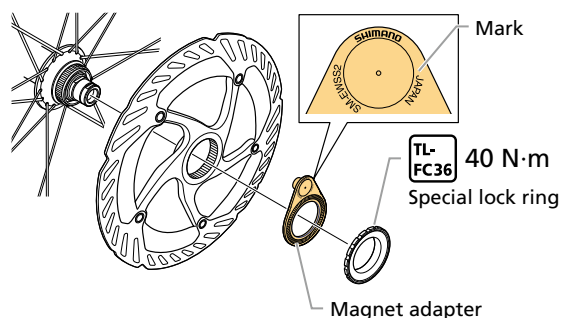
For rotor with magnet

Refer to the "DISC BRAKE" section of " [General Operations](#) " for the installation method.

For magnet adapter (CENTER LOCK type: SM-EWSS2)

Install the magnet adapter together with the rotor so that the mark on the magnet adapter is facing toward you.

Secure with TL-LR11 and an adjustable wrench or TL-FC36.



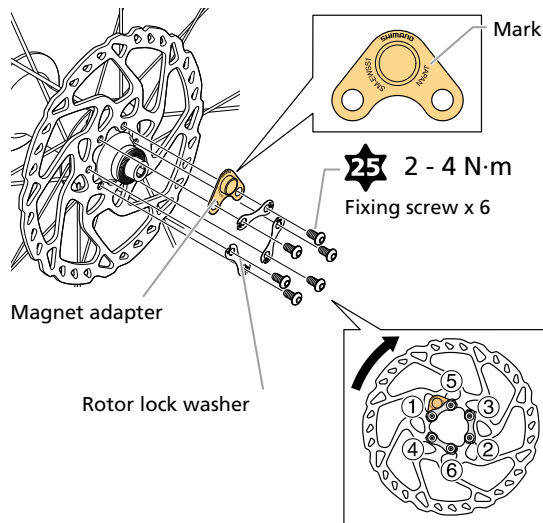
	External spline type	Internal and external spline type
Special lock ring		
Tightening tool	TL-FC36	TL-LR11 and adjustable wrench or TL-FC36

For magnet adapter (6-bolt type: SM-EWSS1)

Install the magnet adapter together with the rotor so that the mark on the magnet adapter is facing toward you.

- (1) Install the rotor, magnet adapter, and rotor lock washers to the wheel, in that order.
- (2) Wear gloves, and tighten the fixing screws while applying force to turn the rotor in the clockwise direction.

Tighten the fixing screws in the order shown in the figure.



⚠ WARNING

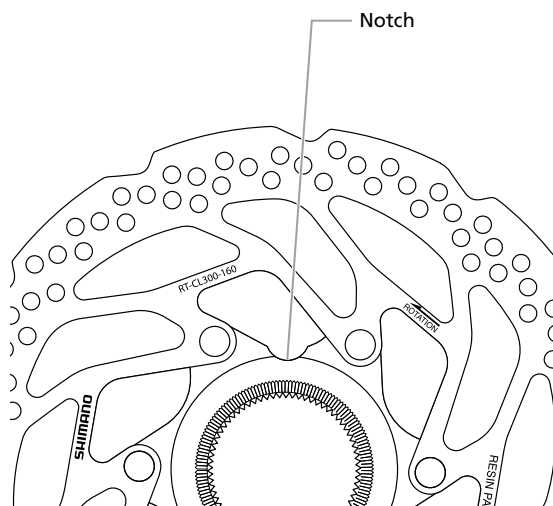
Be sure to use the supplied special lock ring for installing SM-EWSS2. The thread of a regular lock ring is not long enough. Therefore, the lock ring cannot be tightened sufficiently, which can cause it to fall off or damage the thread on the hub side.

- The special lock ring is marked “FOR ABS & SENSOR MAGNET.”
- The lock ring washer is installed to the special lock ring and cannot be easily removed.

NOTICE

SM-EWSS2

- Install the magnet adapter so that its convex section does not interfere with the rotor.
- For RT-CL300, install the magnet adapter so that its convex section is aligned with the notch shown in the figure.

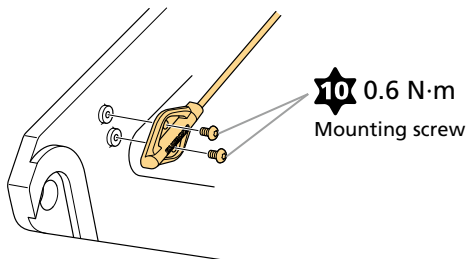


SM-EWSS1

- Fit the rotor lock washers so that the marking “TOP” is visible.

- The rotor lock washers are not reusable. Always use new lock washers when installing the rotor.
- Be sure to use the supplied fixing screws.

2. Install the speed sensor to the frame.



3. Affix the wire for the speed sensor to the chainstay and wire it to the drive unit.

4. Install the rear wheel in the frame.

Lock ring with magnet type

For model: EW-SS302 (SD300 type)

Use in combination with a rotor (rear wheel only) secured with a lock ring with magnet.

NOTICE

- For details on the compatibility of the speed sensor and drive unit, refer to [this link](#).
- Refer to the dealer's manual of your drive unit when connecting the speed sensor and drive unit.
- For information on how to install the rotor, refer to the "DISC BRAKE" section of "[General Operations](#)".

TECH TIPS

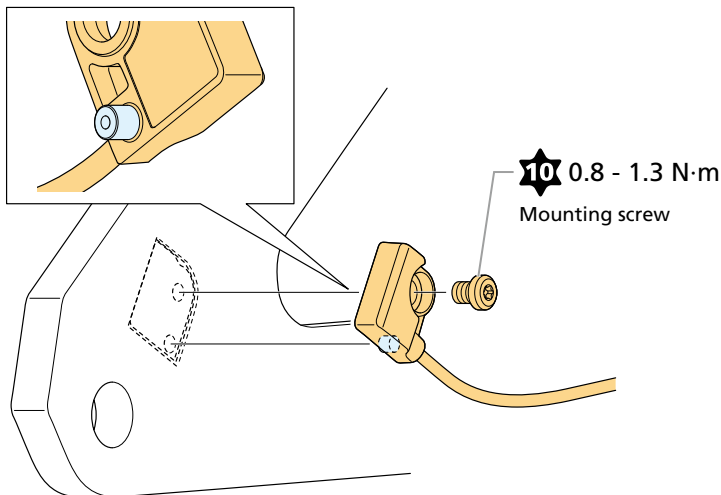
- For details on rotors that have a lock ring with magnet, refer to [this link](#).

1. Install the rotor to the wheel using the lock ring with magnet.

- Refer to the "DISC BRAKE" section of "[General Operations](#)" for the installation method.
- The lock ring with magnet is the internal spline type. Install it using the TL-LR15 SHIMANO original tool.

2. Install the speed sensor to the frame.

Insert the protrusion of the speed sensor into the frame, and secure the speed sensor.



3. Affix the wire for the speed sensor to the chainstay and wire it to the drive unit.

4. Install the rear wheel in the frame.

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