

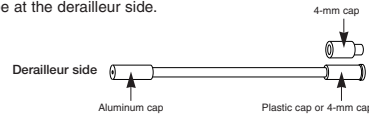
General Safety Information

WARNING

- Obtain and read the service instructions carefully prior to installing the parts. Loose, worn, or damaged parts may cause injury to the rider. We strongly recommend only using genuine Shimano replacement parts.
- Obtain and read the service instructions carefully prior to installing the parts. If adjustments are not carried out correctly, the chain may come off and this may cause you to fall off the bicycle which could result in serious injury.
- Read these Technical Service Instructions carefully, and keep them in a safe place for later reference.

Note

- Operation of the levers related to gear shifting should be made only when the front chainwheel is turning.
- For smooth operation, use the specified outer casing and the bottom bracket cable guide.
- Grease the inner cable and the inside of the outer casing before use to ensure that they slide properly.
- Use a frame with internal cable routing is strongly discouraged as it has tendencies to impair the SIS shifting function due to its high cable resistance.
- The end of the outer casing which has the aluminum cap should be at the derailleur side.



- A special grease is used for the gear shifting cable (SIS-SP41). Do not use DURA-ACE grease or other types of grease, otherwise they may cause deterioration in gear shifting performance.
- Parts are not guaranteed against natural wear or deterioration resulting from normal use.
- For maximum performance we highly recommend Shimano lubricants and maintenance products.
- For any questions regarding methods of installation, adjustment, maintenance or operation, please contact a professional bicycle dealer.

Technical Service Instructions SI-6K20A-001

ST-6600
ST-6603

Shimano Total
Integration

SHIMANO
TOTAL
INTEGRATION
**SHIMANO
ULTEGRA**

Shimano Total Integration Features

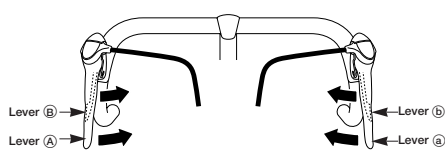
The Shimano Total Integration ULTEGRA series features a dual action control lever which actuates the brakes like a conventional brake lever, and shifts the gears when moved inward toward the center line of the bicycle. Gear shifting is now possible without ever taking your hands off the brake hoods or drops.

In order to realize the best performance, we recommend that the following combination be used.

Series	ULTEGRA	
	ST-6600 ST-6600-G	ST-6603 ST-6603-G
Shifting lever	ST-6600 ST-6600-G	ST-6603 ST-6603-G
Outer casing	SP41	
Gears	20	30
Front derailleur	FD-6600 FD-6600-G	FD-6603 FD-6603-G
Front chainwheel	FC-6600 FC-6601-G	FC-6603 FC-6604-G
Rear derailleur	RD-6600-SS RD-6600-SS-G	RD-6600-GS RD-6600-GS-G
Freehub	FH-6600	
Cassette sprocket	CS-6600	
Chain	CN-6600	
Bottom bracket cable guide	SM-SP17	

Operation

Rear Front

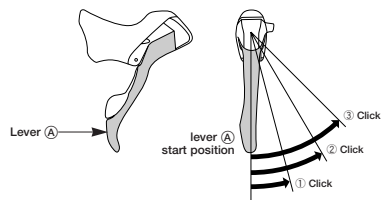


- Lever A: Shifts from smaller to larger rear sprocket.
- Lever B: Shifts from larger to smaller rear sprocket.
- Lever A: Shifts from smaller to larger chainring.
- Lever B: Shifts from larger to smaller chainring.

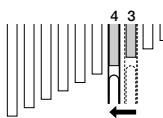
All levers return to the starting position when released.

Operation of rear derailleur lever

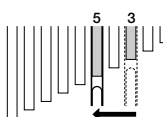
- Lever A: Shifts from smaller to larger rear sprocket. Lever A has a click stop at positions ①, ②, and ③.



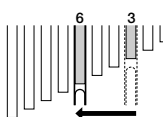
- ①: Shifts one sprocket
E.x.: from 3rd to 4th



- ②: Quick-shifts two sprockets
E.x.: from 3rd to 5th

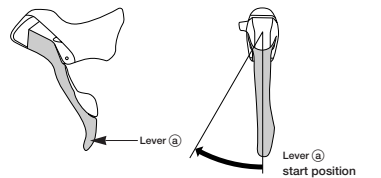


- ③: Quick-shifts three sprockets
E.x.: from 3rd to 6th

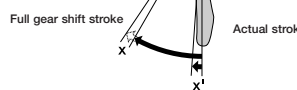


Operation of front derailleur levers (FD-6600 / 6600-G)

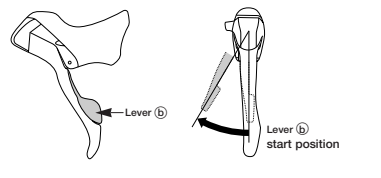
- Lever A: Shifts from smaller to larger front chainring.



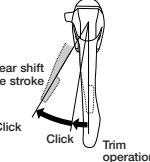
If operation of lever A does not complete the chainring shift stroke, operate lever A again for the distance (X) to complete that part of the lever stroke (X) which was short.



- Lever B: Shifts from larger to smaller front chainring.

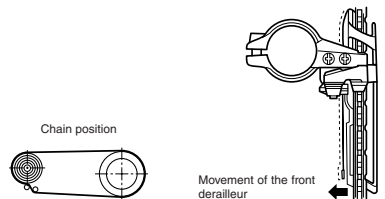


When lever B is operated, there is one click where trimming (the noise prevention mechanism) engages, and a second stronger click when the gear shift stroke is completed. After trimming, the next push will complete the gear shift stroke.

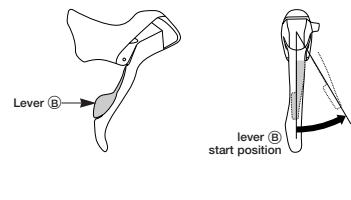


Trimming (noise prevention operation)

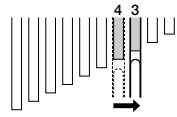
If the chain is on the large or intermediate chainring and the largest rear sprocket, the chain will rub on the front derailleur inner plate, producing a characteristic noise. When this happens, press lever B slightly (to the point where it clicks); this causes the front derailleur to move slightly toward the smaller chainring, thereby eliminating the noise.



- Lever B: Shifts from larger to smaller rear sprocket. Press lever B once to shift from a larger to one smaller sprocket.



E.x.: from 4th to 3rd



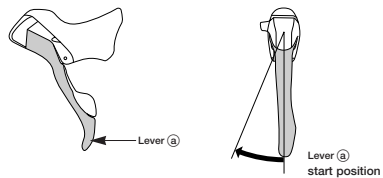
Caution on operation

Lever B will also move when lever A is operated, but be careful not to apply pressure to lever B. Similarly be careful not to press lever A when operating lever B. Gears will not shift when both levers are pressed simultaneously.

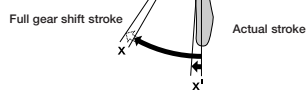
Be sure to read these service instructions in conjunction with the service instructions for the RD-6600 / 6600-G before use.

Operation of front derailleur levers (FD-6603 / 6603-G)

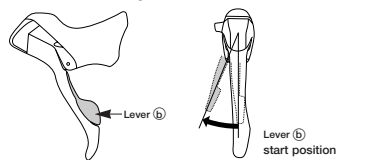
- Lever A: Shifts from smaller to larger front chainring.



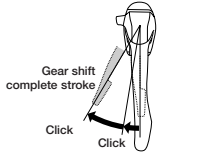
If operation of lever A does not complete the chainring shift stroke, operate lever A again for the distance (X) to complete that part of the lever stroke (X) which was short.



- Lever B: Shifts from largest chainring to intermediate chainring.



- Lever B: Shifts from intermediate chainring to smallest chainring.



Caution on operation (FD-6600 / 6600-G / 6603 / 6603-G)

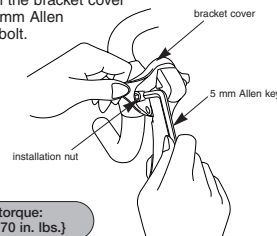
Lever B will also move when lever A is operated, but be careful not to apply pressure to lever B. Similarly be careful not to press lever A when operating lever B. Gears will not shift when both levers are pressed simultaneously.

Be sure to read these service instructions in conjunction with the service instructions for the FD-6600 / 6600-G / 6603 / 6603-G before use.

Installation

Installation to the handlebar

Secure the assembly with the installation nut on the outside of the bracket. Pull the bracket cover back and use a 5 mm Allen key to tighten the bolt.



Tightening torque:
6 - 8 N·m (50 - 70 in. lbs.)

In the case of carbon handlebars, it may be necessary to lower the tightening torque in order to prevent damage to the handlebar. Please consult the bicycle or handlebar manufacturer regarding the appropriate level of tightening torque for carbon handlebars.

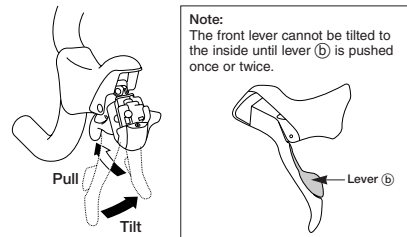
Installation of the brake cable

Cable used

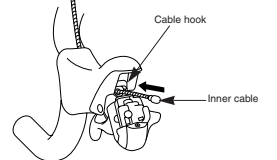
- Inner cable (stainless steel) $\phi 1.6$ mm
- SLR outer casing $\phi 5$ mm

Be sure to leave some excess cable, even if cutting it to the full length of the handlebars.

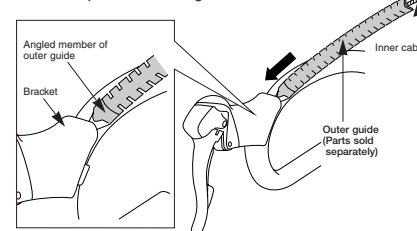
- Tilt the lever in (as when shifting) to make it easier to pass the cable through the cable hook.



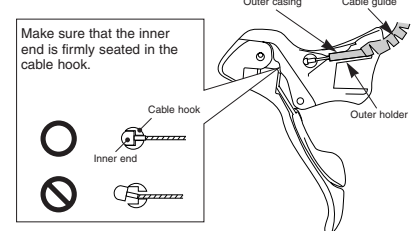
- Pass the inner cable through.



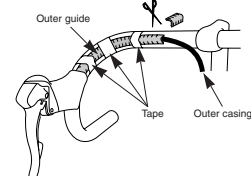
- Fix the outer guide to the inner cable, and set the angled member in the bracket.
Note: Do not wipe the grease on the inner cable off. Also, be careful that the inner cable does not pick up dust and foreign matter.



- Set the outer casing on the inner cable, and in the bracket along the outer guide.



- Bring the outer casing along the front of the handlebar and cover it with the outer guide. Now cut the outer guide to the length of the handlebar, and tape it temporarily in place.

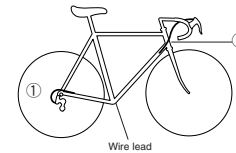


- Finally, wrap the handlebar with the finish tape.

Installing the shifting cable

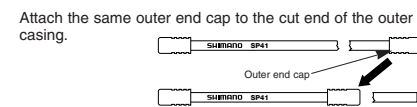
Cable used

- Inner cable (stainless steel) $\phi 1.2$ mm
- SP41 sealed outer casing (①) $\phi 4$ mm
- SP41 outer casing (②) $\phi 4$ mm



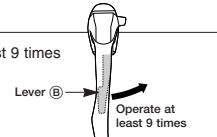
Cutting the outer casing

When cutting the outer casing, cut the opposite end to the end with the marking. After cutting the outer casing, make the end round so that the inside of the hole has a uniform diameter.

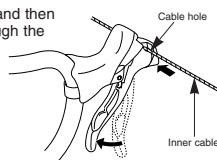


Rear lever

Operate lever B at least 9 times to set the lever to the highest position.

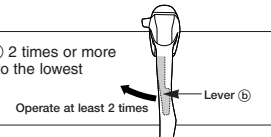


Depress the brake lever, and then pass the inner cable through the cable hole.

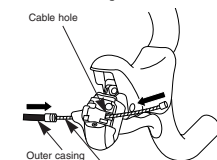


Front lever

Operate lever B 2 times or more to set the lever to the lowest position.

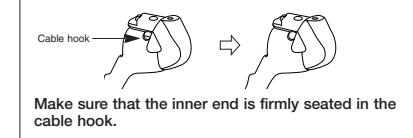


Depress the brake lever, and then pass the inner cable through the cable hole.

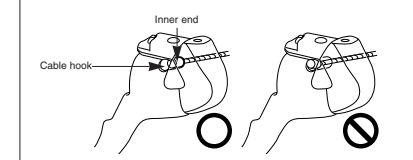


<ST-6600 / 6600-G>

If the cable hook does not align with the shifting cable hole, press lever B again until it does, and then install the cable.



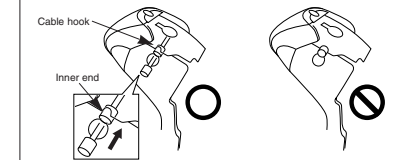
Make sure that the inner end is firmly seated in the cable hook.



<ST-6603 / 6603-G>

If the cable hook does not align with the shifting cable hole, press lever B again until it does, and then install the cable.

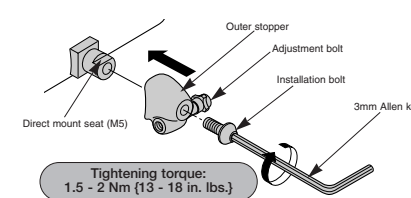
Make sure that the inner end is firmly seated in the cable hook.



- Put the cable hook in to the bearing member, and set the return spring.

Outer stopper

- Install the outer stopper to the down tube.

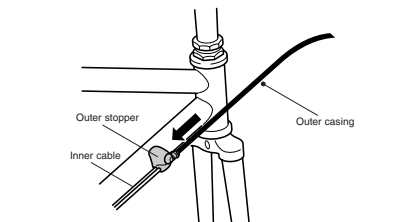


Tightening torque:
1.5 - 2 Nm (13 - 18 in. lbs.)

Install with the adjustment bolt tightened. The adjustment range for the adjustment bolt is six full turns.

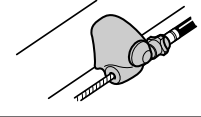
- Pass the inner cable through, and set the outer casing.

Be sure leave some excess in the outer casing, even if cutting it to the full length of the handlebars.



Confirm

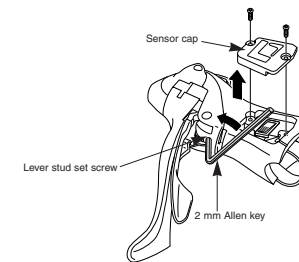
Make sure the outer casing is firmly seated in the outer stopper.



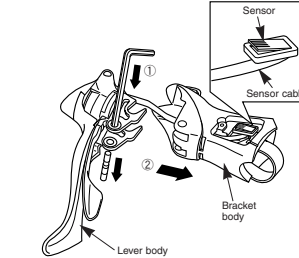
Maintenance

Bracket and lever disassembly

- Remove the sensor cap, and use a 2 mm Allen key to remove the lever stud set screw on the bottom of the bracket.



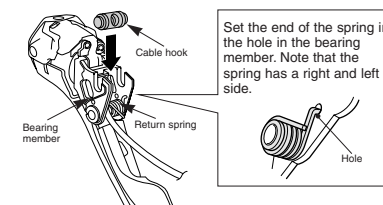
- Insert a 2.5 mm Allen key or similar tool into the lever stud hole, and tap it gently with a plastic mallet to push out the lever stud. When the lever stud comes out, the bracket body and lever body can be disassembled. After this, pull the sensor cable out from the bracket body.



Note: When removing the sensor cable, do not apply too much force when pulling the cable, otherwise the sensor may become damaged. Use a tool to hold the sensor in place and pull the cable out carefully.

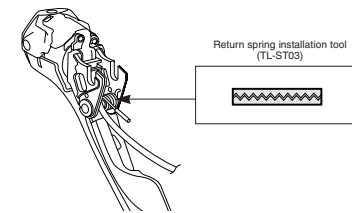
Assembling the bracket and lever

- Put the cable hook in to the bearing member, and set the return spring.

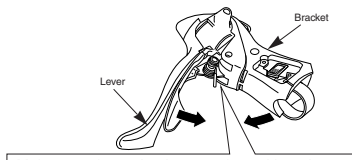


Set the end of the spring in the hole in the bearing member. Note that the spring has a right and left side.

- Set the special installation tool for the return spring.



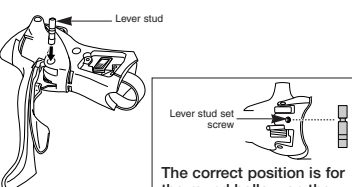
- First insert the sensor cable into the bracket body, and then assemble the bracket body and lever body. Be careful that the end of the return spring does not protrude from the hole in the bearing member at this time.



Make sure the spring is properly positioned.

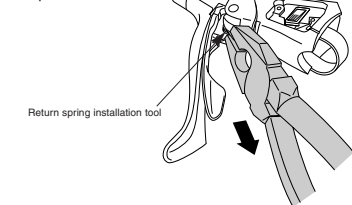


- Align the stud holes, and then press-fit the lever stud.

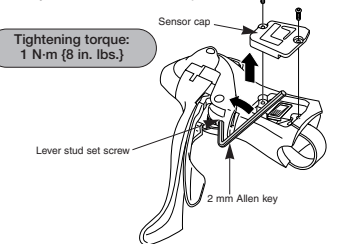


The correct position is for the round hollow on the lever stud to be aligned with the lever stud set screw.

- Remove the return spring installation tool with pliers.

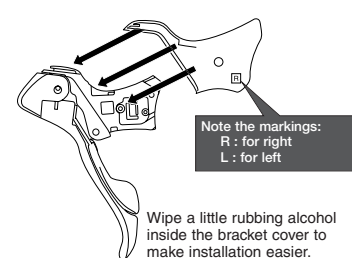


- Tighten the lever stud set screw until it is even with the surface of the bracket. Lastly, install the sensor cap.



Replacing the bracket cover

The tabs on the bracket cover each fit to a matching slot on the bracket.



Note the markings:
R: for right
L: for left

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