

ST-7700

Shimano Total Integration

Before use, read these instructions carefully, and follow them for correct use.

SHIMANO TOTAL INTEGRATION

DURA-ACE

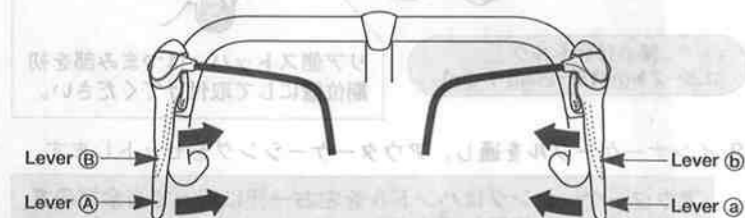
Shimano Total Integration (Dura-Ace) Features

The Shimano Total Integration Dura-Ace 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.

Operation of the levers related to gear shifting should be made only when the front chainwheel is turning.

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.

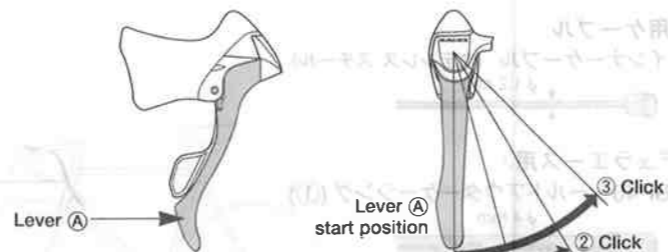
All levers return to the starting position when released.

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

Series	DURA-ACE
Shifting lever	ST-7700 / SL-7700 / SL-BS77
Outer casing	SIS-SP40
Front derailleur	FD-7700
Front chainwheel	FC-7700
Bottom bracket	BB-7700

Operation of rear derailleur levers

- 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
Ex.: from 3rd to 4th

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

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

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



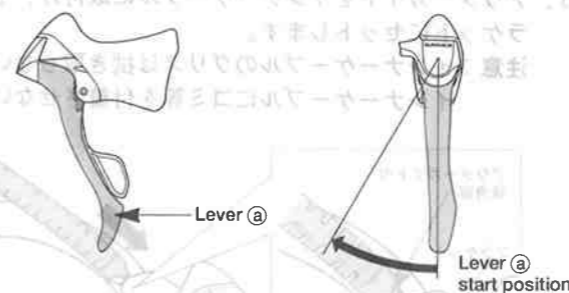
Ex.: from 4th to 3rd

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.

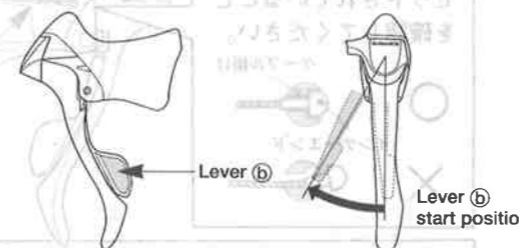
Operation of front derailleur levers

- 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 to the smaller front chainring.

Trimming (noise prevention operation)

If the chain is on the large front chainwheel and the large rear sprocket, the chain will rub in the front derailleur plate, producing a characteristic noise. When this happens, press lever b lightly (to the point where it clicks); this causes the front derailleur to move slightly towards the smaller chainwheel, thereby eliminating the noise.

Chain position

Movement of the front derailleur

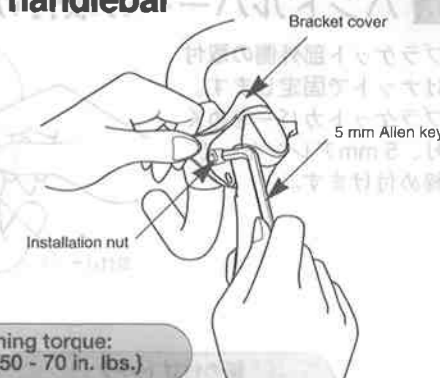
Cautions on operation

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.

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 Nm (50 - 70 in. lbs.)

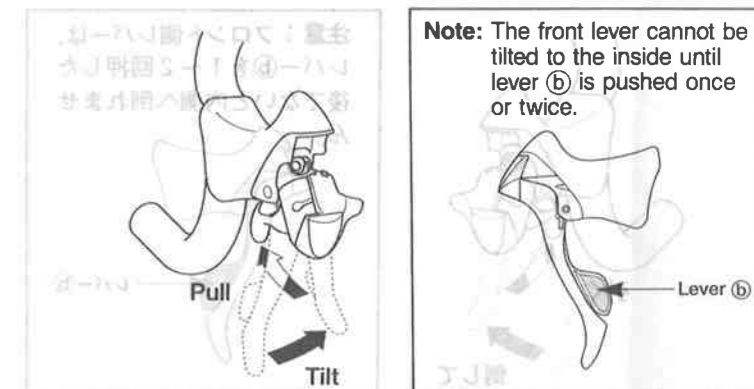
Installation of the brake cable

Cable used

- Inner cable (stainless steel)
- SLR outer casing

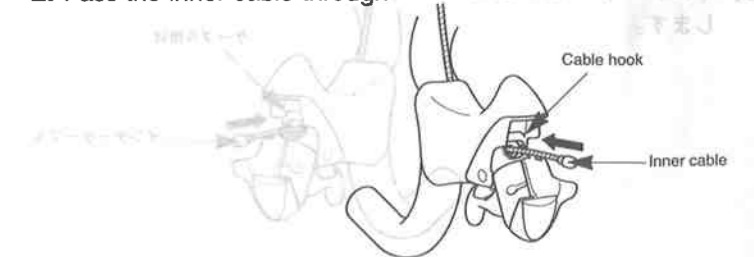
Be sure to leave some excess cable, even if cutting it to the full length of the handlebars.

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



Note: The front lever cannot be tilted to the inside until lever b is pushed once or twice.

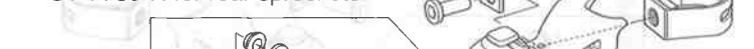
2. Pass the inner cable through.



Maintenance

As long as the mechanism is functioning smoothly, maintenance is not required. Disassemble for maintenance as described below. Do not disassemble any further.

- ST-7700-R for rear sprockets





- 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.

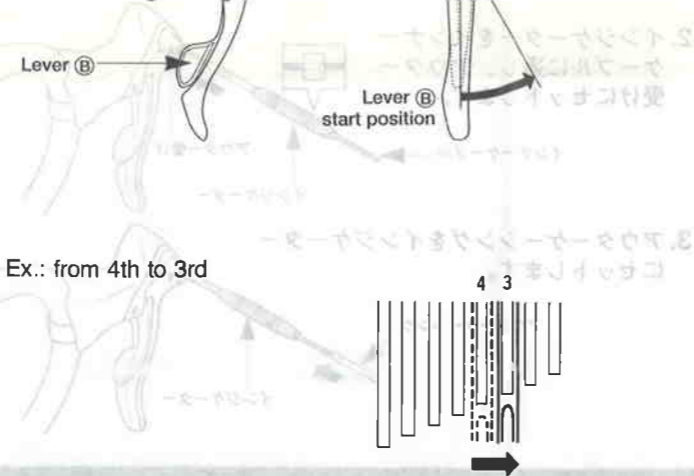
In order to realize the best performance, we recommend that the following combination be used.

Series	DURA-ACE
Shifting lever	ST-7700 / SL-7700 / SL-BS77
Outer casing	SIS-SP40
Front derailleur	FD-7700
Front chainwheel	FC-7700
Bottom bracket	BB-7700
Chain	CN-7700
Bottom bracket cable guide	SM-SP17
Rear derailleur	RD-7700
Freehub	FH-7700
Sprockets	9
Cassette sprocket	CS-7700

The ST-7700 can also be used with the Dura Ace 8-speed set.

Note

- For smooth operation, always be sure to 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.
- Because the high cable resistance of a frame with internal cable routing would impair the SIS function, this type of frame should not be used.
- For any questions regarding methods of installation, adjustment, maintenance or operation, please contact a professional bicycle dealer.



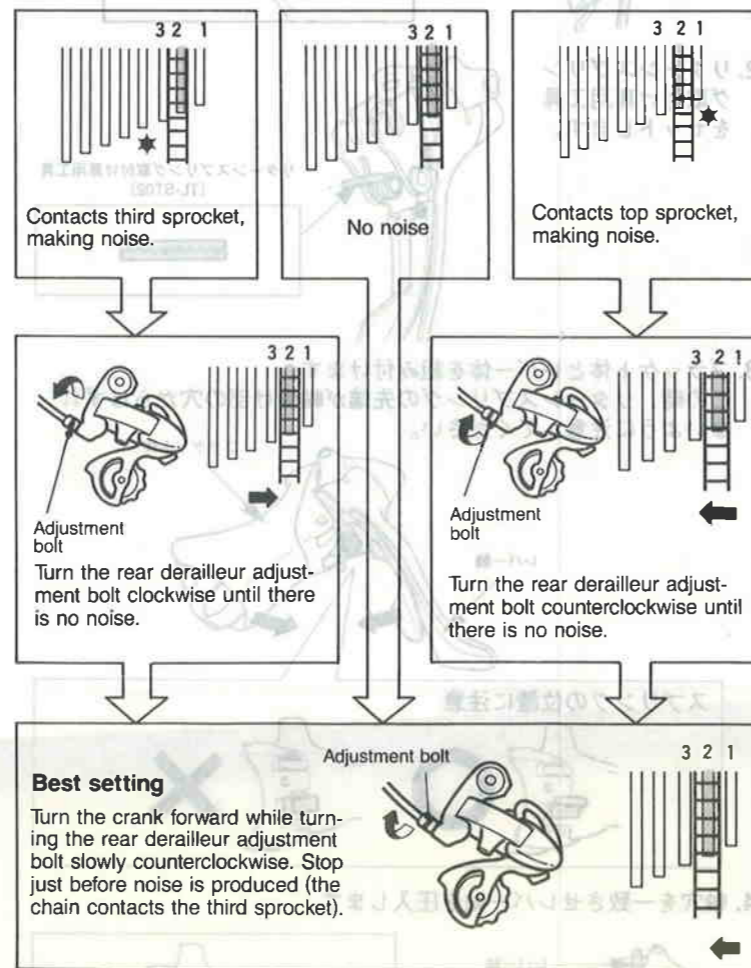
Caution on operation

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.

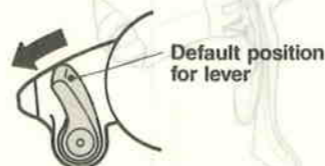
Adjustment

SIS adjustment

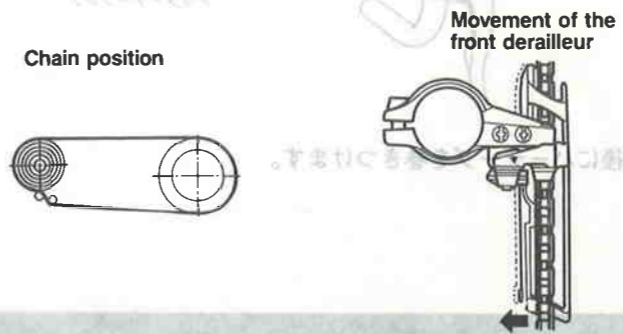
Operate the lever (A) to set the chain to the second from top sprocket.



- Adjustment with the cable stopper is also possible while riding. Tilt the rear outer stopper lever to achieve the same effect as turning the rear derailleur adjustment bolt counterclockwise.



If the chain is on the large front chainwheel and the large rear sprocket, the chain will rub in the front derailleur plate, producing a characteristic noise. When this happens, press lever (b) lightly (to the point where it clicks); this causes the front derailleur to move slightly towards the smaller chainwheel, thereby eliminating the noise.

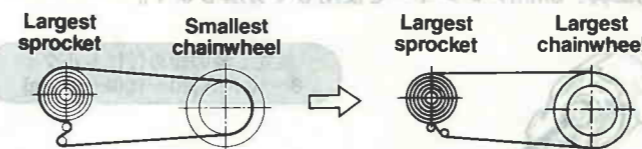


Cautions on operation

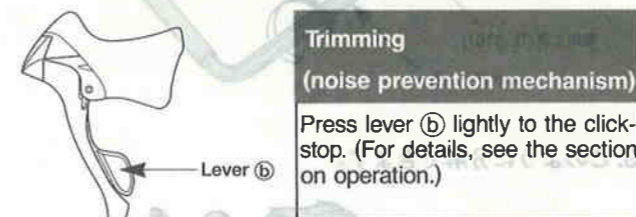
Lever (b) will also move when lever (a) is operated, but be careful not to apply pressure to lever (b). Similarly be careful not to press lever (a) when operating lever (b). Gears will not shift when both levers are pressed simultaneously.

Front gear shift adjustment

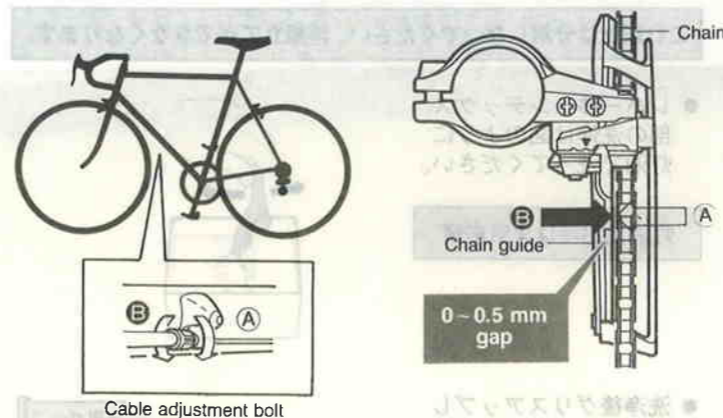
1. Set the chain on the largest rear sprocket and the largest front chainwheel.



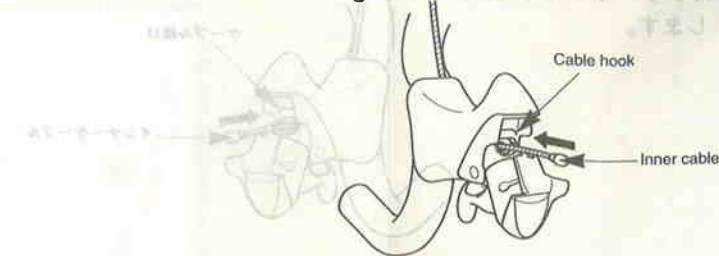
2. Complete the trimming operation.



3. After trimming, adjust the gap between the chain and chain guide to the minimum setting (0 ~ 0.5 mm) using the cable stopper outer adjustment bolt.



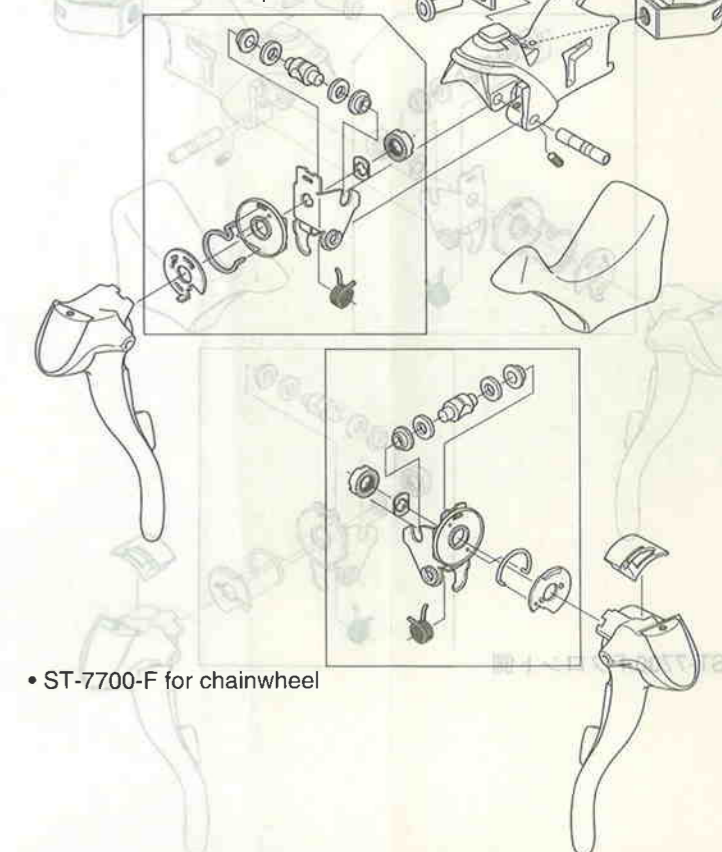
2. Pass the inner cable through.



Maintenance

As long as the mechanism is functioning smoothly, maintenance is not required. Disassemble for maintenance as described below. Do not disassemble any further.

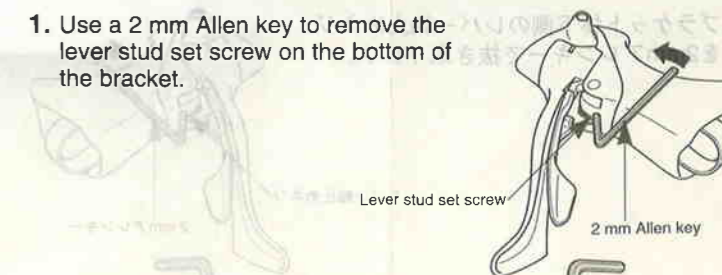
- ST-7700-R for rear sprockets



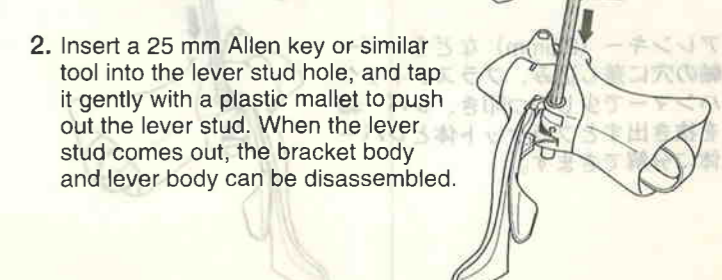
- ST-7700-F for chainwheel

Bracket and lever disassembly

1. Use a 2 mm Allen key to remove the lever stud set screw on the bottom of the bracket.



2. Insert a 25 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.



SHIMANO

These service instructions are printed on recycled paper and can be recycled again.

SHIMANO AMERICAN CORPORATION

One Shimano Drive P.O. Box 19615 Irvine California U.S.A. 92623-9615 Phone 714-951-5003

SHIMANO EUROPA

Industrieweg 24 NL-8071 CT Nunspeet Holland Phone 31-3412-72222

SHIMANO INC.

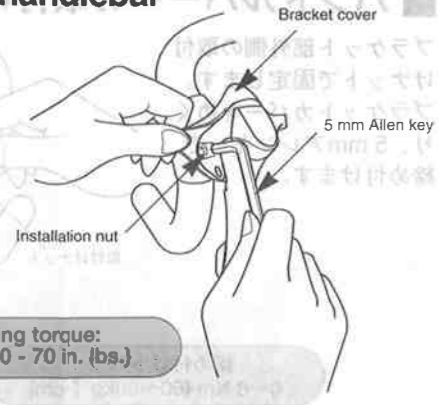
77 Oimatsu-cho 3-cho Sakai Osaka 590-77 Japan Phone 0722-23-3243

Please note: specifications are subject to change for improvement without notice. (English)
© Feb. 1997 by Shimano Inc. XBC SZK Printed in Japan.

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 Nm (50 - 70 in. lbs.)

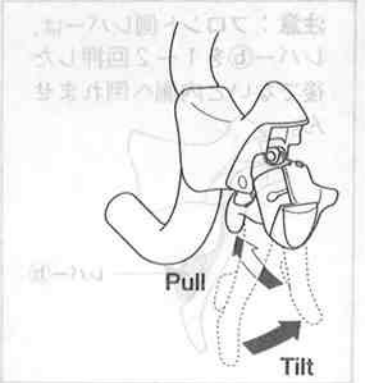
Installation of the brake cable

Cable used

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

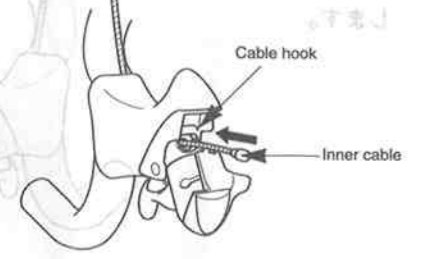
Be sure to leave some excess cable, even if cutting it to the full length of the handlebars.

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



Note: The front lever cannot be tilted to the inside until lever (b) is pushed once or twice.

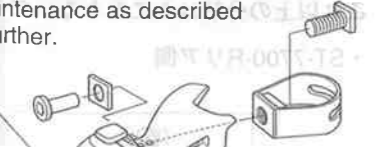
2. Pass the inner cable through.



Maintenance

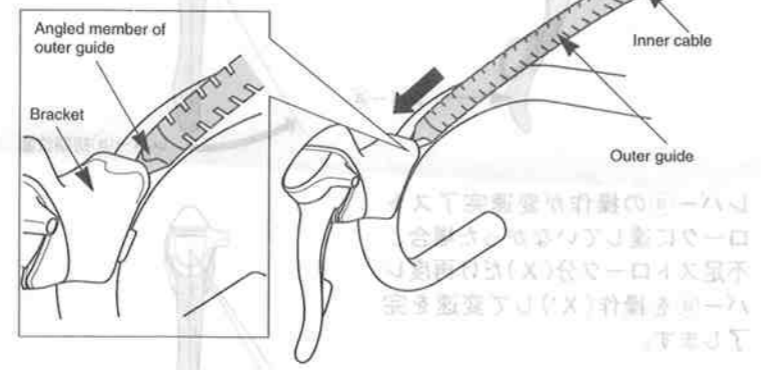
As long as the mechanism is functioning smoothly, maintenance is not required. Disassemble for maintenance as described below. Do not disassemble any further.

• ST-7700-R for rear sprockets

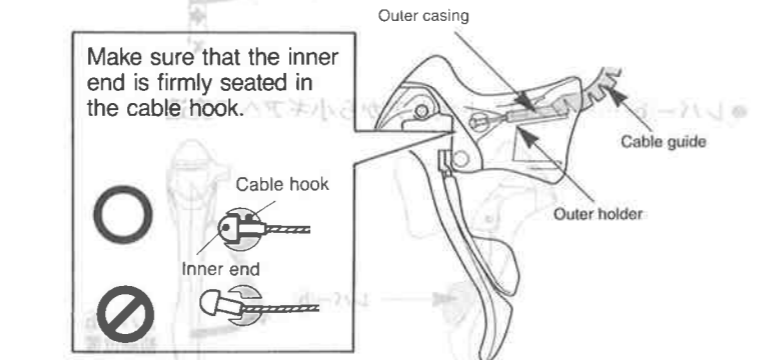


3. Fix the outer guide to the inner cable, and set the angled member in the bracket.

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.



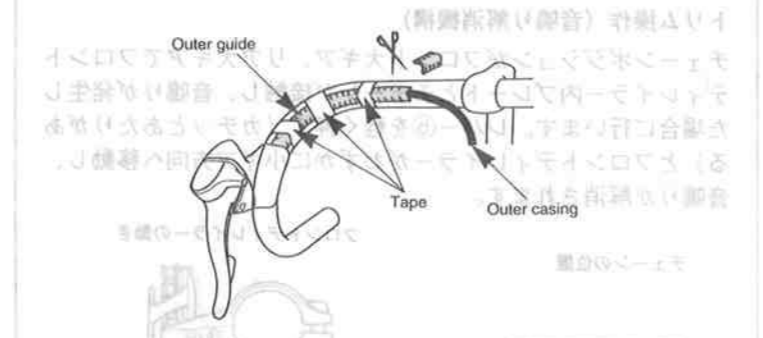
4. Set the outer casing on the inner cable, and in the bracket along the outer guide.



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

Make sure that the outer casing is firmly seated in the outer holder. Pull the bracket cover back to reveal the hole in the side of the bracket through which the seating can be confirmed.

5. 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.

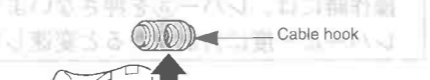


6. Finally, wrap the handlebar with the finish tape.



Lever and bearing assembly disassembly

1. Remove the cable hook.

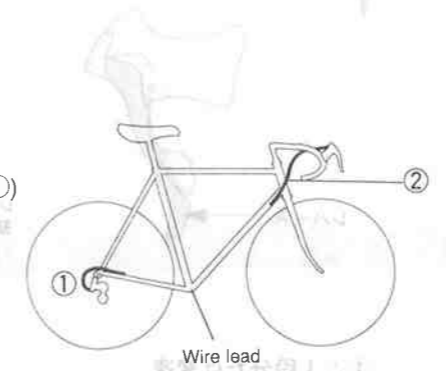


Installing the shifting cable

Cable used
• Inner cable (stainless steel) $\phi 1.2\text{ mm}$

<For Dura-Ace>
• SP40 sealed outer casing (1) $\phi 4\text{ mm}$

• SP40 outer casing (2) $\phi 4\text{ mm}$



Inserting the inner cable

Insert the inner cable into the outer casing from the end with the marking on it. Apply grease from the end with the marking in order to maintain cable operating efficiency.

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 it round so that the inside of the hole has a uniform diameter.

Attach the same outer end cap to the cut end of the outer casing.

• Rear lever

Push lever (b) at least 8 times to make sure the mechanism is in top gear before installing.

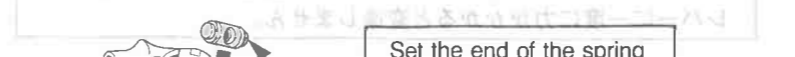
1. Depress the brake lever, and then pass the inner cable through the cable hole.

2. Pass the inner cable through the indicator, and place the indicator against the outer casing holder.

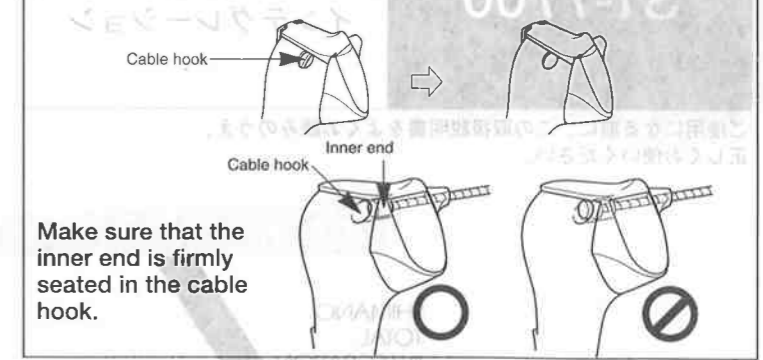
3. Attach the outer casing to the indicator.

Assembling the bracket and lever

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

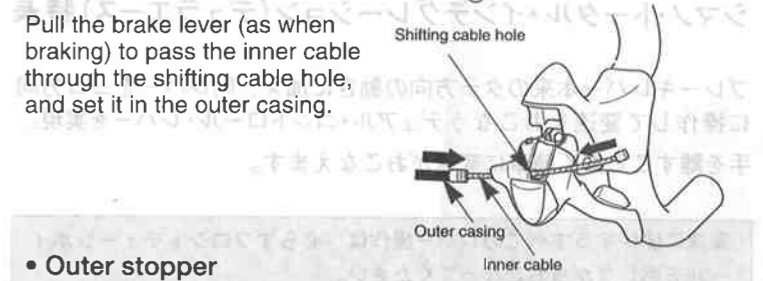


If the cable hook does not align with the shifting cable hole, press lever (b) again until it does, and then install the cable.



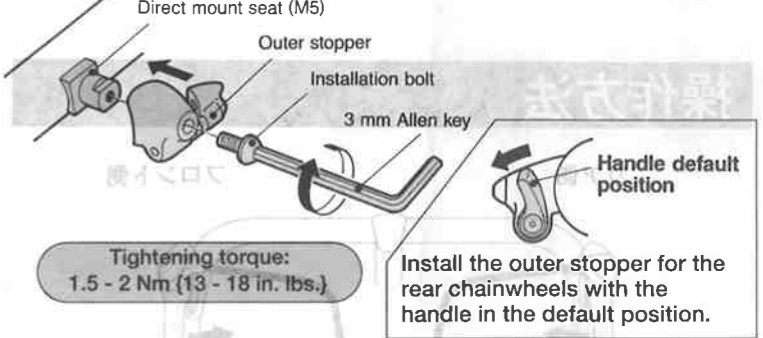
• Front lever

Push lever (b) at least two - three times before installing.



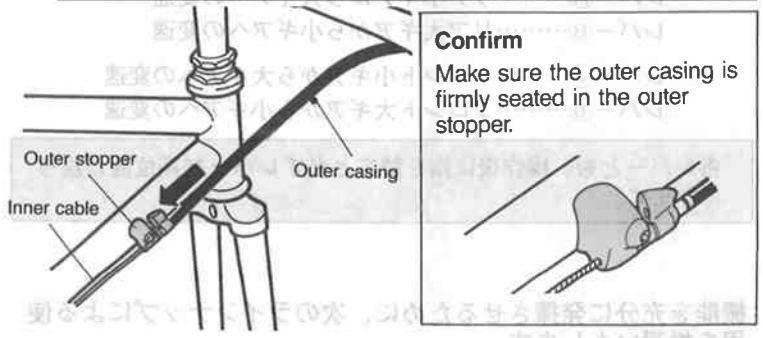
• Outer stopper

1. Install the outer stopper to the down tube.



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

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

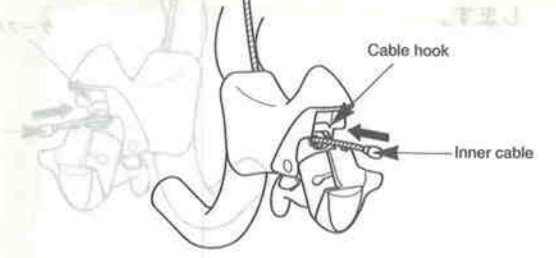


Confirm
Make sure the outer casing is firmly seated in the outer stopper.

5. Remove the return spring installation tool with pliers.



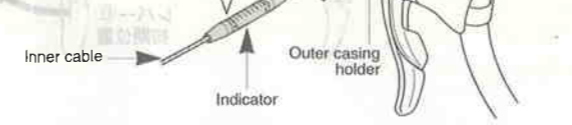
2. Pass the inner cable through.



6. Finally, wrap the handlebar with the finish tape.



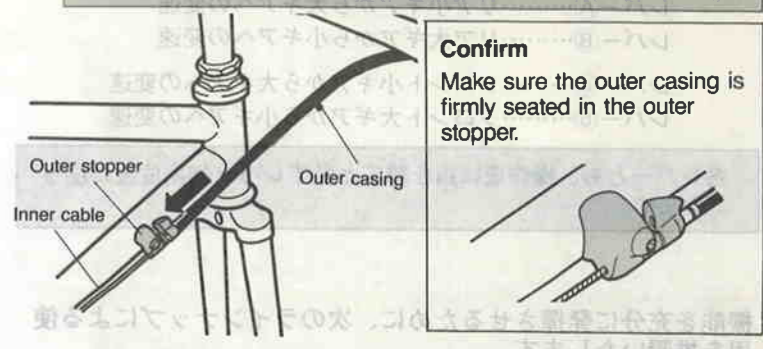
2. Pass the inner cable through the indicator, and place the indicator against the outer casing holder.



3. Attach the outer casing to the indicator.



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

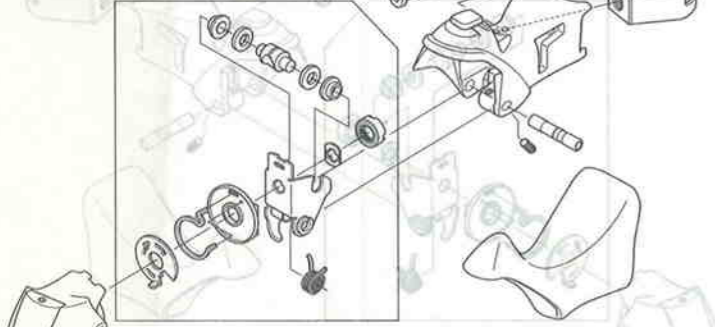


Confirm
Make sure the outer casing is firmly seated in the outer stopper.

Maintenance

As long as the mechanism is functioning smoothly, maintenance is not required. Disassemble for maintenance as described below. Do not disassemble any further.

- ST-7700-R for rear sprockets

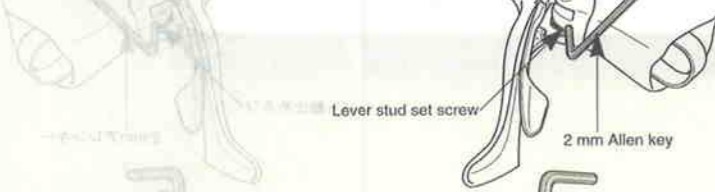


- ST-7700-F for chainwheel



Bracket and lever disassembly

1. Use a 2 mm Allen key to remove the lever stud set screw on the bottom of the bracket.



2. Insert a 25 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.



Lever and bearing assembly disassembly

1. Remove the cable hook.



2. Disassemble using the special tool and a 5 mm Allen key.



3. Disassemble as shown.



Do not disassemble any further as reassembly may not be possible.

- Use kerosene to wash the lever index member as shown below.

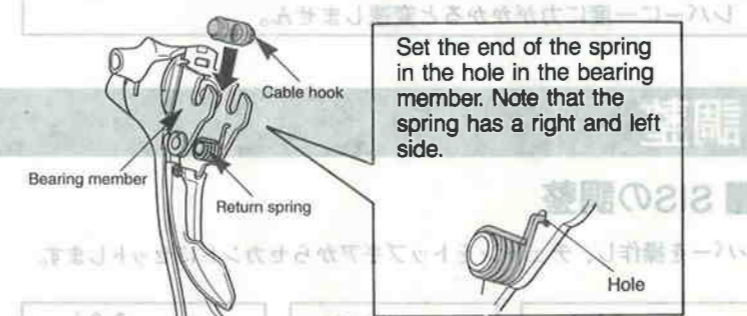
Do not smoke or use any open flames when cleaning with kerosene.

- Be sure to regrease after cleaning.



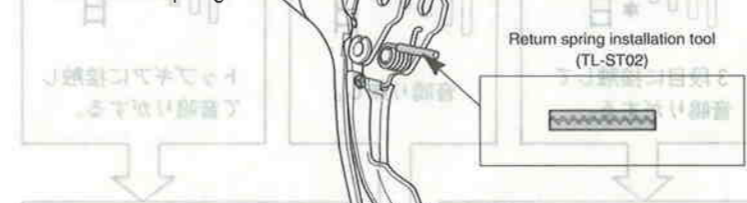
Assembling the bracket and lever

1. 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.

2. Set the special installation tool for the return spring.



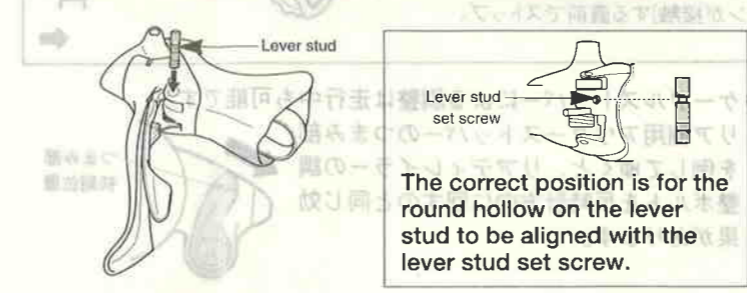
3. Assemble the bracket and lever. Be careful that the end of the return spring does not protrude from the hole in the bearing member at this time.



Make sure the spring is properly positioned.

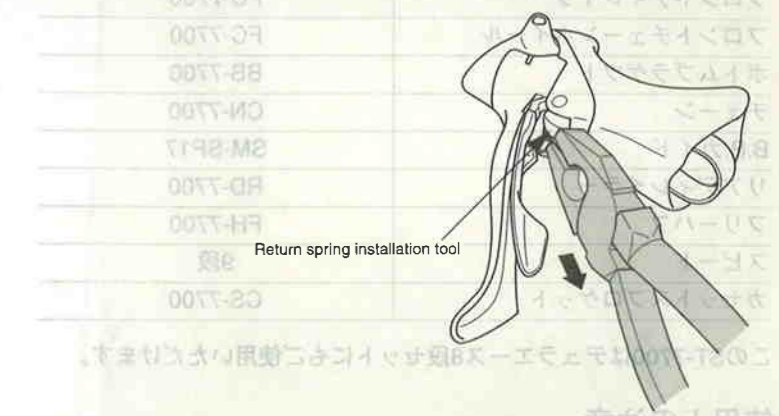


4. Align the stud holes, and then press-fit the lever stud.

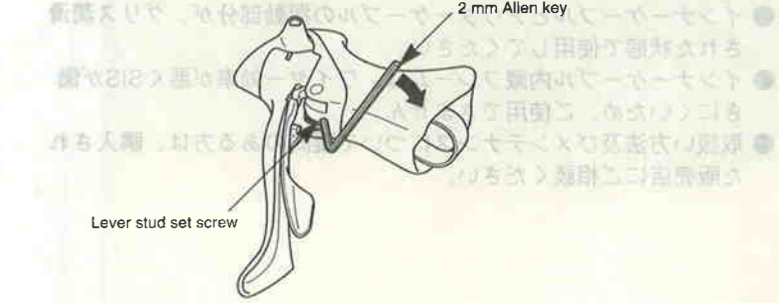


The correct position is for the round hollow on the lever stud to be aligned with the lever stud set screw.

5. Remove the return spring installation tool with pliers.

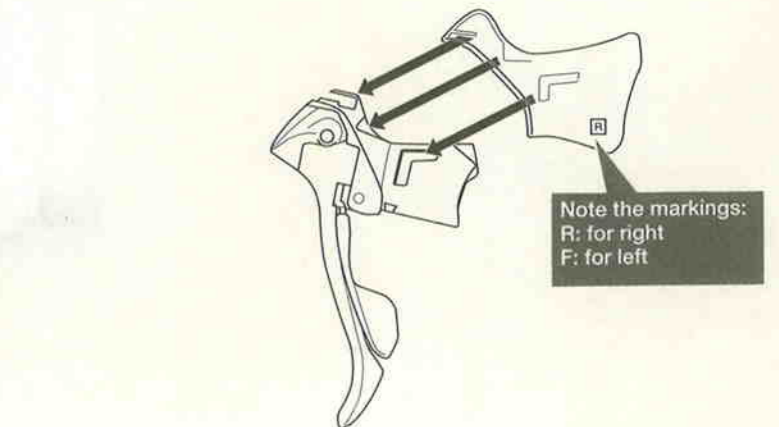


6. Tighten the lever stud set screw until it is even with the surface of the bracket.



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
F: for left

Wipe a little rubbing alcohol inside the bracket cover to make installation easier.