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Technical Service Instructions **SI-R650F**

Rear Drive System

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

Series	DEORE XT	DEORE LX
Rapidfire M9 (Shifting lever)	ST-M750 / SL-M750	ST-M570 / SL-M570
Outer casing	SP40 sealed	SP40 sealed
Rear derailleur	RD-M750	RD-M570
Type	SGS / GS	SGS
Freehub	FH-M750	FH-M570
Gears	9	9
Cassette sprocket	CS-M750	CS-HG70-9
Chain	CN-HG93	CN-HG73
Bottom bracket guide	SM-SP17	SM-SP17

Specifications

Rear Derailleur

Model number	RD-M750		RD-M570
Type	SGS	GS	SGS
Gears	9		9
Total capacity	43T	33T	43T
Largest sprocket	34T	34T	34T
Smallest sprocket	11T	11T	11T
Front chainwheel tooth difference	22T	22T	22T

Cassette sprocket tooth combination

Model number	Group name	Gears	Tooth combination
CS-M750	as	9	11, 13, 15, 17, 20, 23, 26, 30, 34T
CS-M750	ao	9	11, 12, 14, 16, 18, 21, 24, 28, 32T
CS-M750	ap	9	12, 14, 16, 18, 20, 23, 26, 30, 34T
CS-HG70-9	ar	9	11, 12, 14, 16, 18, 21, 24, 28, 32T

Shifting lever

Model number	ST-M750 / SL-M750	ST-M570 / SL-M570
Gears	9	9

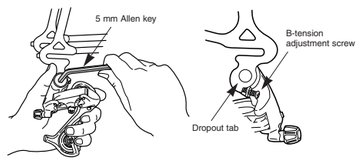
Freehub

Model number	FH-M750	FH-M570
Gears	9	9
No. of spoke holes	36 / 32	36 / 32

Installation of the rear derailleur

When installing, be careful that deformation is not caused by the B-tension adjustment screw coming into contact with the dropout tab.

Bracket spindle Tightening torque : 8 - 10 N·m {70 - 86 in. lbs.}

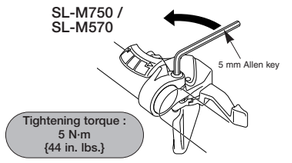


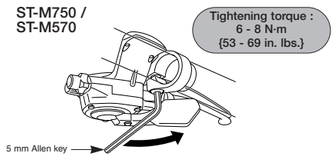
Installation of the lever

SL-M750 / SL-M570

Install the brake lever in a position where it will not obstruct brake operation. Do not use in a combination which causes brake operation to be obstructed.

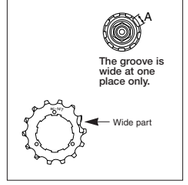
Use a handlebar grip with a maximum outer diameter of 32 mm.

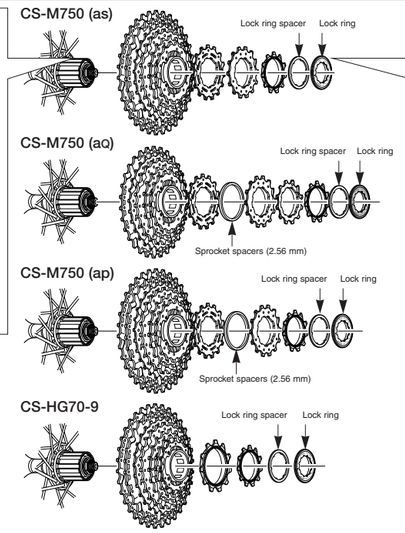




Installation of the sprockets

For each sprocket, the surface that has the group mark should face outward and be positioned so that the wider part of each sprocket and the A part (where the groove width is wide) of the freewheel body are aligned.

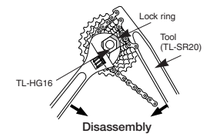




- For installation of the sprockets, use the special tool (TL-HG16) to tighten the lock ring.

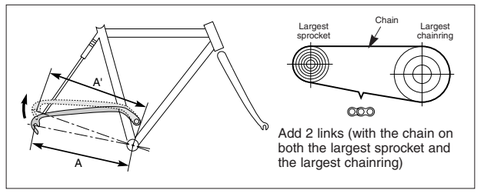
Tightening torque: 30 - 50 N·m {261 - 434 in. lbs.}

- To replace the sprockets, use the special tool (TL-HG16) and TL-SR20 to remove the lock ring.



Chain length on bicycles with rear suspension

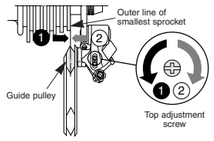
The length of A will vary depending on the movement of the rear suspension. Because of this, an excessive load may be placed on the drive system if the chain length is too short. Set the length of the chain by adding two links to the chain when the rear suspension is at a position where dimension "A" is longest and the chain is on the largest sprocket and the largest chainring. If the amount of movement of the rear suspension is large, the slack in the chain may not be taken up properly when the chain is on the smallest chainring and smallest sprocket.



SIS Adjustment

1. Top adjustment

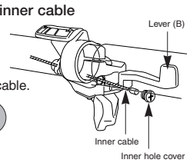
Turn the top adjustment screw to adjust so that the guide pulley is in line with the outer line of the smallest sprocket when looking from the rear.



2. Connecting and securing the inner cable

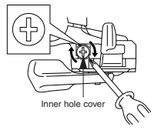
Operate lever (B) eight times or more, and check on the indicator that the lever is at the highest position. Then remove the inner hole cover and connect the inner cable.

Tightening torque : 5 - 7 N·m {44 - 60 in. lbs.}



Install the inner hole cover by turning it as shown in the illustration until it stops. Do not turn it any further than this, otherwise it may damage the screw thread.

Tightening torque : 0.3 - 0.5 N·m {3 - 4 in. lbs.}



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.

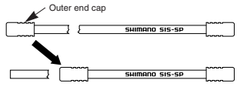


Cutting the outer casing

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

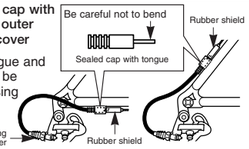


Attach the same outer end cap to the cut end of the outer casing.

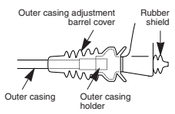


Note regarding the sealed cap with tongue, rubber shield and outer casing adjustment barrel cover

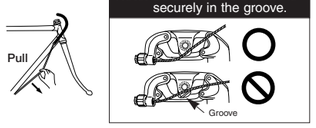
1. The sealed cap with tongue and the rubber shield should be installed to the outer casing stopper of the frame.



2. Pass the outer casing through the outer casing adjustment barrel cover. At this time, check that the outer casing fits securely into the outer casing holder on the rear derailleur side.

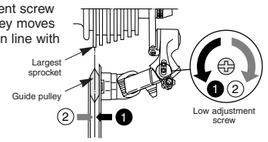


Connect the cable to the rear derailleur and, after taking up the initial slack in the cable, re-secure to the front derailleur as shown in the illustration.



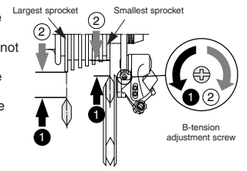
3. Low adjustment

Turn the low adjustment screw so that the guide pulley moves to a position directly in line with the largest sprocket.



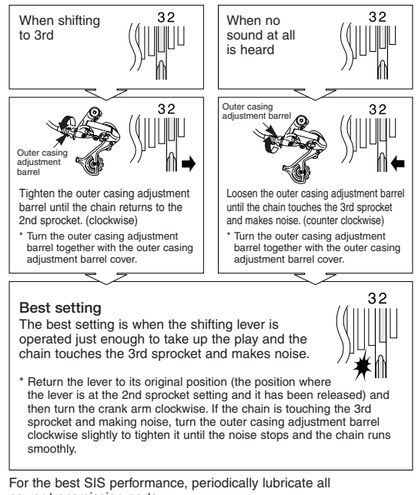
4. How to use the B-tension adjustment screw

Mount the chain on the smallest chainring and the largest sprocket, and turn the crank arm backward. Then turn the B-tension adjustment screw to adjust the guide pulley as close to the sprocket as possible but not so close that it touches. Next, set the chain to the smallest sprocket and repeat the above to make sure that the pulley does not touch the sprocket.



5. SIS Adjustment

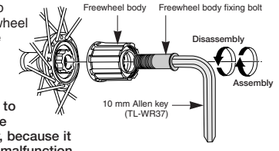
Operate the shifting lever several times to move the chain to the 2nd sprocket. Then, while pressing the lever just enough to take up the play in the lever, turn the crank arm.



For the best SIS performance, periodically lubricate all power-transmission parts.

Replacement of the freewheel body

After removing the hub axle, remove the freewheel body fixing bolt (inside the freewheel body), and then replace the freewheel body.



Note: Do not attempt to disassemble the freewheel body, because it may result in a malfunction.

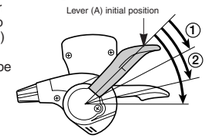
Tightening torque : 35 - 50 N·m {305 - 434 in. lbs.}

Gear shifting operation

Both lever (A) and lever (B) always return to the initial position when they are released after shifting. When operating one of the levers, always be sure to turn the crank arm at the same time.

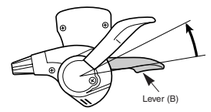
To shift from a small sprocket to a larger sprocket

To shift one step only, press lever (A) to the (1) position. To shift two steps at one time, press to the (2) position.
A maximum three-step shift can be made in this manner.



To shift from a large sprocket to a smaller sprocket

Press lever (B) once to shift one step from a larger to a smaller sprocket.



Replacement of the shifting lever unit and indicator

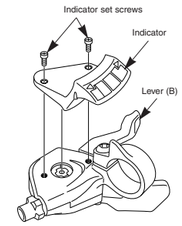
Removal of the indicator

Disassembly and reassembly should only be carried out when replacing the indicator.

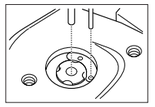
1. Remove the two indicator set screws which are securing the indicator.

Tightening torque : 0.3 - 0.5 N·m {3 - 4 in. lbs.}

2. Remove the indicator unit as shown in the illustration.
3. Operate lever (B) at least eight times to set the lever to the highest position.



4. After checking that the indicator needle is at the left edge, install the indicator as shown in the illustration.



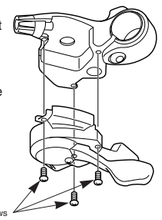
5. Check the operation of the indicator. If it does not operate correctly, re-install the indicator while taking particular note of steps 3. to 4.

Replacement of the shifting lever unit

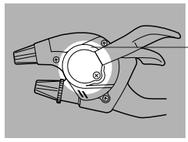
Disassembly and reassembly should only be carried out when replacing the shifting lever unit.

1. Loosen the cable fixing bolt (nut) of the rear derailleur, and then pull the inner cable out of the shifting lever unit in the same way as when installing the inner cable.
2. Carry out steps 1 - 2 for replacement of the indicator.
3. Remove the three shifting lever mounting screws, and then remove the shifting lever unit as shown in the illustration.

Tightening torque : 0.5 - 0.8 N·m {4 - 7 in. lbs.}



4. To assemble, align the shifting lever unit and the brake lever bracket and then secure the shifting lever mounting screws.
5. Carry out steps 3 - 4 for replacement of the indicator.



Do not disassemble the indicator and shifting lever unit, as this may damage them or cause mis-operation.

This service instruction explains how to use and maintain the Shimano bicycle parts which have been used on your new bicycle. For any questions regarding your bicycle or other matters which are not related to Shimano parts, please contact the place of purchase or the bicycle manufacturer.

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SHIMANO AMERICAN CORPORATION
One Holland, Irvine, California 92618, U.S.A. Phone: +1-949-951-5003

SHIMANO EUROPE HOLDING B.V.
Industrieweg 24, 8071 CT Nunspeet, The Netherlands Phone: +31-341-272222

SHIMANO INC.
3-77 Oimatsu-cho, Sakai, Osaka 590-8577, Japan

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