

# Rear Drive System

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

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

Series	STX RC	STX	ALIVIO
Rapidfire Plus	ST-MC33	ST-MC32 ST-MC35	ST-MC12 ST-MC15
Outer casing	SIS-SP		
Rear derailleur	RD-MC33	RD-MC32	RD-MC12
Type	SGS		GS
Freehub	FH-MC33	FH-MC32	FH-MC12
Sprockets	7		
Cassette sprocket	CS-IG60		CS-IG50
Chain	CN-IG50 / CN-IG30		
Bottom bracket cable guide	SM-SP17 / SM-BT17		

## Specifications

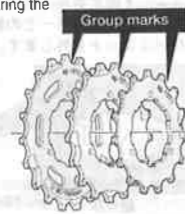
Rear Derailleur		
Model number	RD-MC33/RD-MC32	RD-MC12
Type	SGS	GS
Total capacity	38 teeth or less	35 teeth or less
Largest sprocket	32T	28T
Smallest sprocket	11T	11T
Front chainwheel tooth difference	20 teeth or less	18 teeth or less
Applicable front chainwheel (chaining tooth configuration)	FC-MC33/FC-MC32 (42T-32T-22T)	FC-MC12 (42T-34T-24T)

Cassette sprocket tooth combination		
Sprockets	Group name	Tooth combination
7	ag	11, 13, 15, 18, 21, 24, 28T

Rapidfire Plus			
Model number	ST-MC33	ST-MC32 ST-MC35	ST-MC12 ST-MC15
Sprockets	7		

Freehub			
Model number	FH-MC33	FH-MC32	FH-MC12
Sprockets	7		
No. of spoke holes	36 / 32		

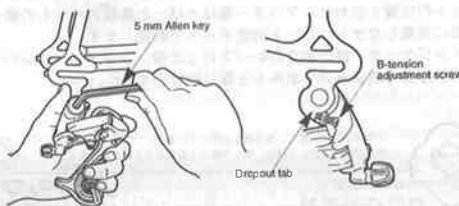
**Note**  
 • Be sure to use only the Shimano IG chain with IG sprockets. The HG or UG type of chain cannot be used.  
 • Always be sure to use the IG sprocket set bearing the same group marks. Never use in combination with a sprocket bearing a different group mark.  
 • Because the high cable resistance 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.



## Installation of the rear derailleur

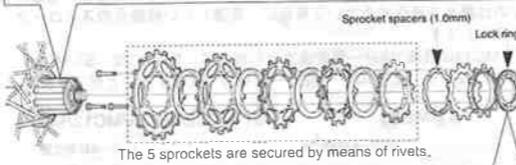
When installing, be careful that deformation is not caused by the B-tension adjustment screw coming into contact with the dropout tab.

Bracket spindle tightening torque: 8 - 10 Nm (70 - 88 in. lbs.)



## Installation of the IG sprockets

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



The 5 sprockets are secured by means of rivets.

• For installation of the IG sprockets, use the special tool (TL-HG15) to tighten the lock ring.  
**Tightening torque: 30 - 50 Nm (261 - 434 in. lbs.)**  
 • To replace the IG sprockets, use the special tool (TL-HG15) and TL-SR20 to remove the lock ring.

## Installation of the brake lever

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

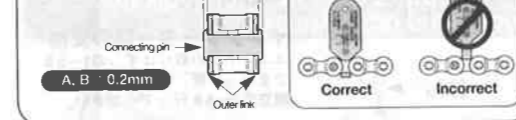
Allen key tightening torque: 6 - 8 Nm (53 - 69 in. lbs.)

## Chain length

Add 2 links (with the chain on both the largest sprocket and the largest chainring)

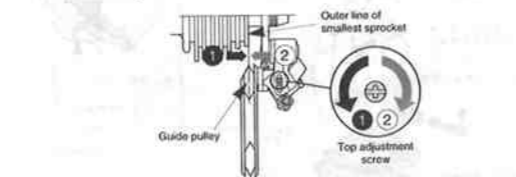
## Checking the chain connection

For IG, chains, insert the chain gauge (TL-CN24) into the inner link which is next to the chain connecting pin to check that the inner link width is correct. Check that the connecting pin protrudes past the outer link by the same amount on both sides, and that the amount of protrusion is 0.2 mm or more.

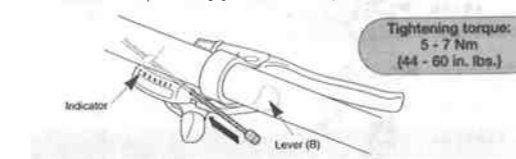


## Adjustment

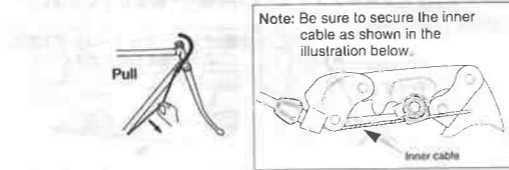
**1. Top adjustment**  
 Turn the top adjustment screw to adjust so that the guide pulley is in line with the outer line of the smallest sprocket when looking from the rear.



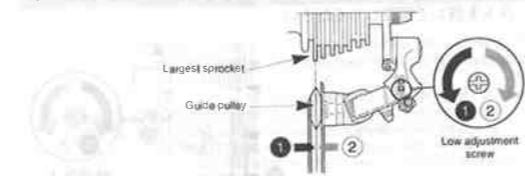
**2. Connection and securing of the cable**  
 Move lever (B) to position [1]. After checking on the indicator that the lever is at position [1], install and adjust the inner cable.



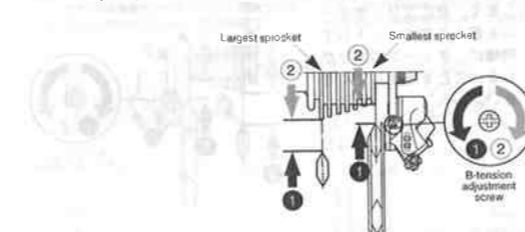
Connect the cable to the rear derailleur and, after taking up the initial slack in the cable, re-secure to the rear derailleur as shown in the illustration.



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



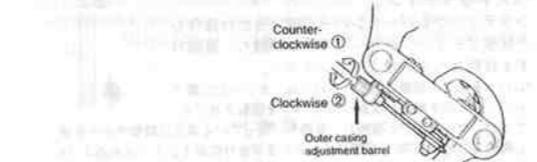
**4. How to use the B-tension adjustment screw**  
 Mount the chain on the smallest chainring and the largest sprocket, and turn the crank arm backward. Then turn the B-tension adjustment screw to adjust the guide pulley as close to the sprocket as possible but not so close that it touches. Next, set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



**5. SIS Adjustment**  
 (1) Operate the shifting lever to move the chain from the top gear to the 2nd gear.

• If the chain will not move to the 2nd gear, turn the outer casing adjustment barrel to increase the tension---(1) (counter clockwise)  
 • If the chain moves past the 2nd gear, decrease the tension---(2) (clockwise)

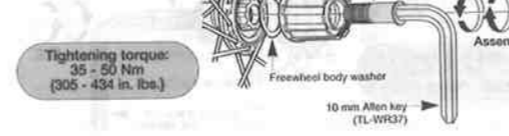
(2) Next with the chain on the 2nd gear, increase the inner cable tension (1) while turning the crank arm forward. Stop turning the outer casing adjustment barrel just before the chain makes noise against the 3rd gear. This completes the adjustment.



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

## Replacement of the freewheel body

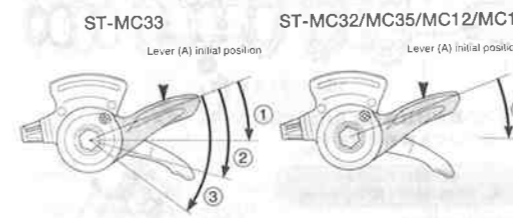
After removing the hub axle, remove the freewheel body fixing bolt (inside the freewheel body), and then replace the freewheel body.  
**Note:** Do not attempt to disassemble the freewheel body, because it may result in a malfunction.



## 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 to the (1) position; to shift two steps at one time, press to the (2) position. With the ST-MC33, a maximum three-step shift can be made in this manner. With the ST-MC32, ST-MC35, ST-MC12 and ST-MC15, one-step shifting only is possible each time the lever is pressed.



**To shift from a large sprocket to a smaller sprocket**  
 Press once to shift one step from a larger to a smaller sprocket.



## Assembly and replacement of the shifting lever unit and indicator (ST-MC32/MC12/MC35/MC15)

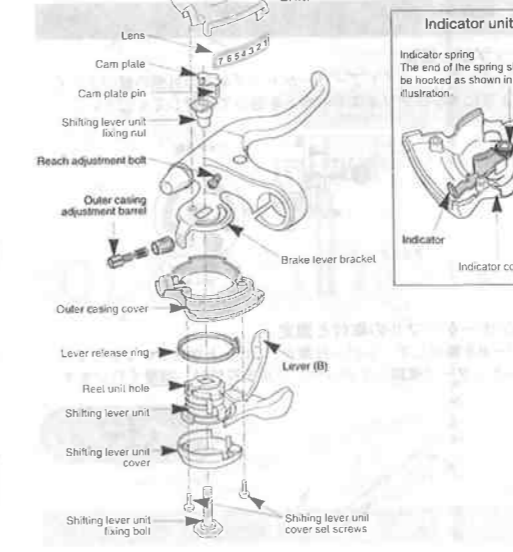
Disassembly and reassembly should only be carried out when replacing the shifting lever unit or indicator.

**Removal of the shifting lever unit**  
 1. Loosen the cable fixing nut of the rear derailleur, and then pull the inner cable out of the shifting lever unit.  
 2. Remove the outer casing adjustment bolt and the reach adjustment bolt.  
 3. Remove the indicator set screw.  
 4. Remove the two set screws of the shifting lever unit cover, and then remove the indicator cover.  
 5. Remove the cam plate.  
 6. Remove the shifting lever unit fixing bolt, and then remove the shifting lever unit.

**Replacement and assembly of the shifting lever unit**  
 1. Align the shifting lever unit with the brake lever bracket, and then secure the shifting lever unit with the shifting lever unit fixing bolt and nut.  
**Tightening torque: 2.5 Nm (22 in. lbs.)**

2. Align the cam plate pin with the hole of the reel unit, and then install the cam plate.  
 3. Press lever (B) 6 or more times to set the lever to the highest position.  
 4. Install the lens to the indicator unit, and then after positioning the indicator unit correctly, secure it with the set screw.  
 5. Install the shifting lever unit cover with the two set screws.

**Replacement of the indicator**  
 After carrying out steps 1 - 5 for removal of the shifting lever unit, carry out steps 2 - 5 for replacement and assembly of the shifting lever unit.



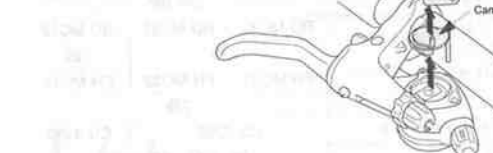
## Assembly and replacement of the indicator (ST-MC33)

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

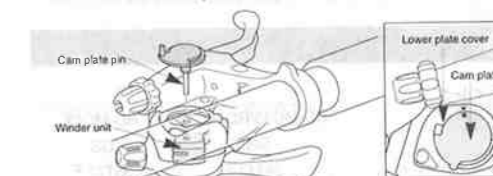
1. Remove the reach adjustment bolt of the brake lever bracket.  
 2. Remove the two cover set screws which are securing the indicator.



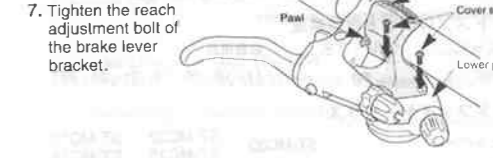
3. Remove the indicator unit and cam plate as shown in the illustration.  
 4. Operate lever (B) 7 or more times to set the lever to the highest position.



5. Insert the cam plate pin from above after aligning the cam plate pin with the winder body. Align the ● mark on the cam plate with the ▼ mark on the lower plate cover.



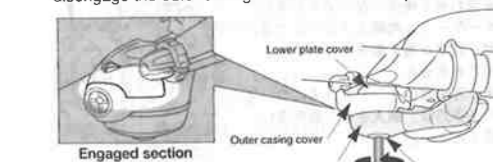
6. After checking that the indicator needle is at the left edge, place the indicator unit so that it is aligned with the lower plate cover and the pawl of the brake bracket as shown in the illustration, and then secure it by tightening the two cover set screws.



## Removal, replacement and assembly of the shifting lever unit (ST-MC33)

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

1. Loosen the cable fixing nut of the rear derailleur, and then pull the inner cable out of the shifting lever unit.  
 2. After removing the outer casing adjustment barrel of the shifting lever, carry out steps 1. to 3. of "Assembly and replacement of the indicator."  
 3. Remove the unit fixing bolt while pushing the unit fixing nut, and then remove the shifting lever unit while being careful not to disengage the outer casing cover and the lower plate cover.



4. To assemble, align the shifting lever unit with the brake lever bracket, and then secure the shifting lever unit with the unit fixing bolt while being careful not to disengage the outer casing cover and the lower plate cover.  
 5. After carrying out steps 4. to 7. of "Assembly and replacement of the indicator," install the outer casing adjustment barrel of the shifting lever.

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