▲ WARNING

- · Check that the wheels are fastened securely before riding the bicycle. If the wheels are loose in any way, they may come off the
- bicycle and serious injury may result.

 Use neutral detergent to clean the chain. Do not use alkali-based or acid based detergent such as rust cleaners as it may result in damage and/or failure of the chain.
- Use the reinforced connecting pin only for connecting the narrow type of chain.
 There are two different types of reinforced connecting pins available. Be sure to check the table below before selecting which

If connecting pins other than reinforced connecting pins are used, or if a reinforced connecting pin or tool which is not suitable for the type of chain is used, sufficient connection force may not be obtained, which could cause the chain to break or fall off.

If it is necessary to adjust the length of the chain due to a change in the number of sprocket teeth, make the cut at some other place than the place where the chair

| Chain | Reinforced connecting pin | Chain tool |
|--|---------------------------|-----------------|
| 9-speed super narrow chain such as CN-7701 / CN-HG93 | Silver | TL-CN32/TL-CN27 |
| 8-/7-/6-speed narrow chain such as CN-HG50 / CN-HG40 | Black | TL-CN32/TL-CN27 |

has been joined using a reinforced connecting pin or an end pin. The chain will be damaged if it is cut at a place where it has been joined with a reinforced connecting pin or an end pin.

Check that the tension of the chain is correct and that the chain is not damaged. If the tension

is too weak or the chain is damaged, the chain should be replaced. If this is not done, the chain may break and cause serious injury.

Use a front chainwheel which is compatible with 9-speed chains in conjunction with Shimano

CN-7701, CN-HG93 and CN-HG73 chains. If a chainwheel for an 8-speed chain or less is used, front chainwheel gear shifting problems may occur, or the chain pins might fall out, causing the chain to break.

• Obtain and read the service instructions carefully prior to installing the parts. Loose, worn or damaged parts may cause the bicycle to fall over and serious injury may occur as a result. We strongly recommend only using genuine Shimano replacement

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

- If gear shifting operations do not feel smooth, wash the derailleur and lubricate all moving parts.
- If the amount of looseness in the links is so great that adjustment is not possible, you should replace the derailleur.
 You should periodically clean the derailleur and lubricate all moving parts (mechanism and pulleys).
 If gear shifting adjustment cannot be carried out, check the degree of parallelism at the rear end of the bicycle. Also check if the
- cable is lubricated and if the outer casing is too long or too short.

 If you hear abnormal noise as a result of looseness in a pulley, you should replace the pulley.
- If the wheel becomes stiff and difficult to turn, you should lubricate it with grease.
- Do not apply any oil to the inside of the hub, otherwise the grease will come out.
- You should periodically wash the sprockets in a neutral detergent and then lubricate them again. In addition, cleaning the chain
- with neutral detergent and lubricating it can be a effective way of extending the useful life of the sprockets and the chain If the chain keeps coming off the sprockets during use, replace the sprockets and the chain.
- Use a frame with internal cable routing is strongly discouraged as it has tendencies to impair the SIS shifting function due to its
- Always be sure to use the sprocket set bearing the same group marks. Never use in combination with a sprocket bearing a
- Use an outer casing which still has some length to spare even when the handlebars are turned all the way to both sides. Furthermore, check that the shifting lever does not touch the bicycle frame when the
- ndlebars are turned all the way. • 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.

 Grease the inner cable and the inside of the outer casing before use to ensure that they slide properly.
- For smooth operation, use the specified outer casing and the bottom bracket cable guide.
- Operation of the levers related to gear shifting should be made only when the front chainwheel is turning.
- If the brake fluid used in the oil disc brakes is of a type which tends to adhere to the plastic parts of the shifting lever, this may cause the plastic parts to crack or become discolored. Therefore, you should make sure that the brake fluid does not adhere to

The mineral oil which is used in SHIMANO disc brakes does not cause cracking or discoloration if it adheres to plastic parts, but

- uch parts should be cleaned with alcohol beforehand to prevent foreign particles from adhering.
- Do not disassemble the indicator and shifting lever unit, as this may damage them or cause mis-operation
- Be sure to read these service instructions in conjunction with the service instructions for the RD-M592 before use.
 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
- bicvcle dealer.

Technical Service Instructions

SI-6S70A-002

Rear Drive System



In order to realize the best performance, we recommend that the following combination be used. Series Deore RAPIDFIRE M9 (Shifting lever) SL-M590 Outer casing SIS-SP41 Rear derailleur RD-M591 / RD-M592 Туре SGS Freehub FH-M529 / FH-M590 / FH-M595 / FH-M629 Cassette sprocket CS-HG61 Chain CN-HG53 Bottom bracket guide

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.

SHIMANO

SHIMANO EUROPE B.V. Industrieweg 24, 8071 CT Nunspeet, The Netherlands Phone: +31-341-272222 and, Irvine, California 92618, U.S.A. Phone: +1-949-951-5003 Please note: specifications are subject to change for improvement without notice. (English) © Feb. 2009 by Shimano Inc. XBC SZK Printed in Japan

Specifications

Rear Derailleur

| Model number | RD-M591 | RD-M592 |
|-----------------------------------|------------------------------|------------------------------|
| Туре | SGS | SGS |
| Gears | 9 | 9 |
| Total capacity | 45T | 45T |
| Applicable sprocket combination | 11 - 28T, 11 - 32T, 11 - 34T | 11 - 32T, 11 - 34T, 12 - 36T |
| Smallest sprocket | 11T | 11T |
| Front chainwheel tooth difference | 22T | 22T |

Cassette sprocket tooth combination

| Model number | Group name | Gears | Tooth combination |
|------------------|------------|-------------------------------------|-------------------------------------|
| CS-HG61 au bg bh | ar | 9 | 11, 12, 14, 16, 18, 21, 24, 28, 32T |
| | au | 9 | 11, 13, 15, 17, 20, 23, 26, 30, 34T |
| | bg | 9 | 11, 12, 13, 14, 16, 18, 21, 24, 28T |
| | 9 | 12, 14, 16, 18, 21, 24, 28, 32, 36T | |

Freehub

| Model number | FH-M529 / FH-M590 / FH-M595 / FH-M629 |
|--------------------|--|
| Gears | 9 |
| No. of spoke holes | 36 / 32 |

Gear shifting operation

This release lever is equipped with a 2-way release mechanism which allows release operations to be carried out by either pushing or pulling

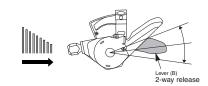
Both lever (A) and lever (B) always return to the initial position when they are released after shifting. When operating one of the levers, always be sure to turn the crank arm at the same time

To shift from a small sprocket to a larger sprocket (Lever A)

To shift one step only, press lever (A) to the (1) position. To shift two

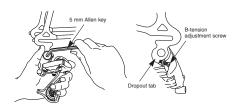
To shift from a large sprocket to a smaller sprocket (Lever B)

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



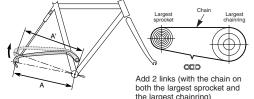
Installation of the rear derailleur (RD-M591)

When installing, be careful not to let the B-tension adjustment screw come into contact with the dropout tab, otherwise deformation may result



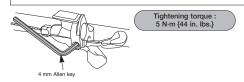
Chain length on bicycles with rear suspension

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



Installation of the lever

Use a handlebar grip with a maximum outer diameter of 36 mm.

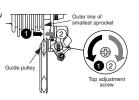


- Install the shifting lever in a position where it will not obstruct
- brake operation and gear shifting operation.

 Do not use in a combination which causes brake operation to be obstructed.
- When installing the components to carbon frame/handle bar surfaces, verify with the manufacturer of the carbon frame/parts for their recommendation on tightening torque in order to prevent over tightening that can cause damage to the carbon material and/or under tightening that can cause lack of fixing strength for

SIS Adjustment (RD-M591)

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

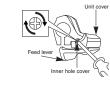


2. Connection and securing of the inner cable

Operate lever (B) 8 or more times to set the lever to the highest position, check on the indicator that the highest position is correct, and then install and adjust the inner cable.



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.

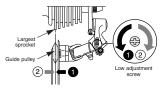


Connect the cable to the rear derailleur and, after taking up the initial slack in the cable re-secure to the rear derailled as shown in the illustration



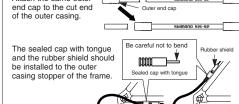
3. Low adjustment

Turn the low adjustment screw so that the guide pulley moves to



Cutting the outer casing

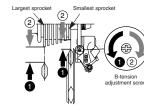
When cutting the outer casing, cut the opposite end to the end with the marking. After cutting the outer casing, make the end round so that the inside of the hole has a uniform diameter. Attach the same outer



* If the rear derailleur moves to a large degree, such as in bicycles with rear suspension, it is recommended that you replace the cap with the accessory aluminum cap. Derailleur side

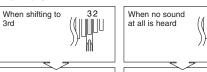
The end of the outer casing which has the aluminum cap should be at the derailleur side.

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.





Tighten the outer casing adjustment barrel until the chain returns to the 2nd sprocket, (clockwise)



32

and makes noise. (counter

clockwise)

Best setting

The best setting is when the shifting lever is operated just enough to take up the play and the chain touches the 3rd sprocket and makes noise.

Return the lever to its original position (the position where the lever is at the 2nd sprocket setting and it has been released) and then turn the crank arm clockwise. If the chain is touching the 3rd sprocket and making noise, turn the outer casing adjustment barrel clockwise slightly to tighten it until the noise stops and the chain runs smoothly. Operate lever to change gears, and check that no noise occurs

any of the gear position

For the best SIS performance, periodically lubricate all

Replacement of the indicator

Disassembly and reassembly should only be carried out when

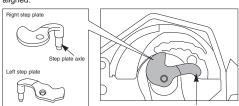
1. Remove the two indicator set screws which are securing the

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

2. Remove the indicator unit as

3. Operate lever (B) at least eight times to set the lever to the highest position.

4. Insert the axle as shown in the illustration so that that the hole in the middle of the right step plate and the hole in the lever are



The shapes of the right step plate and left step plate differ.

5. After checking that the indicator needle is at the left edge, install

Do not disassemble the indicator and shifting lever unit, as this may

■ Be sure to read these service instructions in conjunction with the service instructions for the FH-M529 / FH-M590

/ FH-M595 / FH-M629, CS-HG61 before use.