WARNING

- 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 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.
- Be careful not to let the cuffs of your clothes get caught in the chain while riding, otherwise you may fall off the bicycle.
- Read these Technical Service Instructions carefully, and keep them in a safe place for later reference.

Note

- If gear shifting operations cannot be carried out smoothly, clean 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.
- When the chain is in the position shown in the illustration, the chain may contact the front chainrings or front derailleurs and generate noise. If the noise is a problem, shift the chain onto the next-larger rear sprocket or the one after.
- For smooth operation, use the specified outer casing and the bottom bracket cage guide.
- Grease the inner cable and the inside of the outer casing before use to ensure that they slide properly.
- 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

FD-4600
FD-CX70
Front derailleur

Specifications

<table>
<thead>
<tr>
<th>Type</th>
<th>Band type / Brazed on type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Front derailleur installation band diameter</td>
<td>S (28.6mm), M (31.8mm), L (34.9mm)</td>
</tr>
<tr>
<td>Front chainwheel tooth difference</td>
<td>16 teeth or less</td>
</tr>
<tr>
<td>Chainstay (angle)</td>
<td>FD-4600: 61° - 66°, FD-CX70: 63° - 66°</td>
</tr>
<tr>
<td>Chain line</td>
<td>43.5mm</td>
</tr>
</tbody>
</table>

Installation of the front derailleur

1. Adjust so that the clearance between the chain guide outer plate and the large gear is 1 - 3 mm before installing.
2. The level section of the chain guide outer plate should be directly above and parallel to the largest chainring.
3. Secure using a 5mm Allen key.

Tightening torque: 6 - 7 N·m (52 - 60 in. lbs.)

1. Low adjustment
   Set so that the clearance between the chain guide inner plate and the chain is 0 - 0.5 mm.

2. Connection and securing of cable
   While pulling the inner cable, tighten the wire fixing bolt with a 5 mm allen key to secure the cable.

3. Adjustment of the cable tension
   (1) When making the cable adjustment, place the chain on the largest sprocket at the rear; and at the front, shift the chain to the inner chainring and then set it back onto the outer chainring.
   (2) Perform the trimming. (ST-4600 / ST-5700 / ST-6700)

While turning the crank arm, gently operate lever (b) and check that the front derailleur moves slightly toward the small chainring. If the front derailleur moves by a large amount and the chain is set onto the small chainring at this time, loosen the top adjustment bolt by 1/8th of a turn. Then, after returning the chain to its original position, adjust and check the trimming mechanism.

Note:

- There are two derailleur positions for the outer chainring. Make sure the derailleur is in the inner side of the two positions.

4. Top adjustment
   Set so that the clearance between the chain guide outer plate and the chain is 0 - 0.5 mm.

5. Troubleshooting chart
   After completion of steps 1 - 4, move the shifting lever to check the shifting.
   (This also applies if shifting becomes difficult during use.)

SIS adjustment

Front derailleur

Series | Type
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>TIAGRA</td>
<td>Non series (Cyclo-cross)</td>
</tr>
</tbody>
</table>

Shifting lever

- SL-4600
- SL-4700

Rear derailleur

- RD-4600-S5
- RD-4600 / RD-5700

Freehub

- FH-4600
- FH-5700 / FH-5700

Chainset cassette

- CS-4600
- CS-6700 / CS-6700

Chain

- CN-4601
- CN-6701 / CN-5701

Bottom bracket cage guide

- SM-SP17
- SM-SP17

Smallest plate:

- Chain guide outer plate

Largest plate:

- Chain guide inner plate

Front derailleur:

- Chain guide inner plate (L) to small chainring
- From large chainring
to small chainring

Front shifting:

- Chain guide outer plate (T) to large chainring
- From small chainring
to large chainring

Loosening the top adjustment screw (about 1/4 turn):

- Loose the top adjustment screw.
- Counterclockwise (about 1/8 turn).
- Tighten the top adjustment screw clockwise (about 1/8 turn).

To check the shifting:

- Turn the outer casing adjustment barrel clockwise (1/8 of a turn at a time) until shifting to the small chainring becomes smooth. We can not turn the outer casing adjustment barrel too far at this time, otherwise shifting to the large chainring will become more difficult.

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

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

SHINANO INC
1-1-7 Orihara, Sakai-ku, Sakai-shi, Osaka 590-8577, Japan

Service Instructions in further languages are available at: http://techdocs.shimano.com

---

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

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

SHINANO INC
1-1-7 Orihara, Sakai-ku, Sakai-shi, Osaka 590-8577, Japan

* Service Instructions in further languages are available at: http://techdocs.shimano.com

---

Please note: Specifications are subject to change without notice. (English)

© F&I 2011 by Shimano Inc. XBC 52R Printed in Japan.