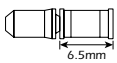
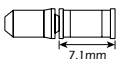
Front Drive System

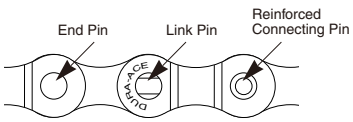
Before use, read these instructions carefully, and follow them for correct use.

⚠ WARNING

- 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 pin available. Be sure to check the table below before selecting which pin to use. 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.

Chain	Reinforced connecting pin		Chain tool
9-speed super narrow chain such as CN-7700 / CN-HG92		Silver	TL-CN31/TL-CN22
8-/7-/6-speed narrow chain such as CN-HG50 / CN-IG51		Black	TL-CN31/TL-CN22 and TL-CN30/TL-CN21

- 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 chain 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.



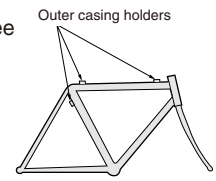
- Obtain, read and carefully service instructions when installing parts.
  A loose, worn, or damaged parts may cause injury to the rider.
  We strongly recommend that only genuine Shimano replacement parts be used.

⚠ CAUTION

- **Be sure to use only the Shimano IG chain with the IG front chainwheel. The HG or UG type of chain cannot be used.**

Note

- Apply grease to the bottom bracket before installing it.
- For smooth operation, use the specified outer casing and the bottom bracket cable guide.
- This front derailleur is for triple front chainwheel use only. It cannot be used with the double front chainwheel, as the shifting points do not match.
- When installing the top route type, choose a frame that has three outer casing holders as shown in the illustration at right.
- 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 handlebars are turned all the way.
- Grease the inner cable and the inside of the outer casing before use to ensure that they slide properly.



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

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

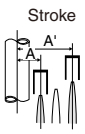
Series	ACERA-X
EZ-fire Plus	ST-EF33
Outer casing	SP40
Front derailleur	FD-M330 / FD-M330-E
Front chainwheel	FC-MC20 / FC-MC19
Bottom bracket	BB-LP27 / BB-LP27-E
Chain	CN-IG51 / CN-IG31
Bottom bracket cable guide	SM-SP18 / SM-BT18 SM-SP17 / SM-BT17

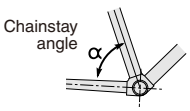
Specifications

Front Derailleur

Model number	FD-M330	FD-M330-E	
Bottom bracket	BB-LP27	BB-LP27-E	
Normal type	○	○	
Top route type	○	○	
Front chainwheel tooth difference	20T	20T	
Min. difference between top and intermediate	10T	10T	
Front derailleur installation band diameter	S, M	S, M	L
Stroke (A-A')	38 - 58 mm	38 - 58 mm	
Chainstay angle (α)	63° - 66°	66° - 69°	
Applicable chain line	47.5 mm, 50 mm	47.5 mm, 50 mm	50 mm

Installation band diameters:
S (28.6 mm),
M (31.8 mm),
L (34.9 mm)





Chainwheel

Model number	FC-MC20	FC-MC19
Chainwheel tooth combination	42T - 32T - 22T	
Bolt circle diameter	104 mm / 64 mm	Riveted
Crank arm length (mm)	170 mm, 175 mm	
Pedal thread dimensions	BC 9/16" X 20 T.P.I.	

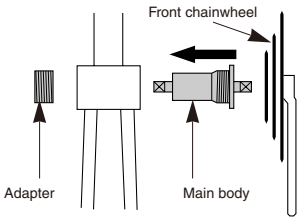
Bottom Bracket

Model number	BB-LP27		BB-LP27-E	
Front derailleur	FD-M330		FD-M330-E	
Stamped marking	MM110	LL113	MM110	LL113
Spindle length	110 mm	113 mm	110 mm	113 mm
Chain line	47.5 mm	50.0 mm	47.5 mm	50.0 mm
Thread dimensions	BC1.37" X 24 T.P.I. (68, 73 mm) M 36" X 24 T.P.I. (70 mm)		BC1.37" X 24 T.P.I. (68 mm)	BC1.37" X 24 T.P.I. (73 mm) 36" X 24 T.P.I. (70 mm)

Installation of the Front Derailleur, Bottom Bracket and Front Chainwheel

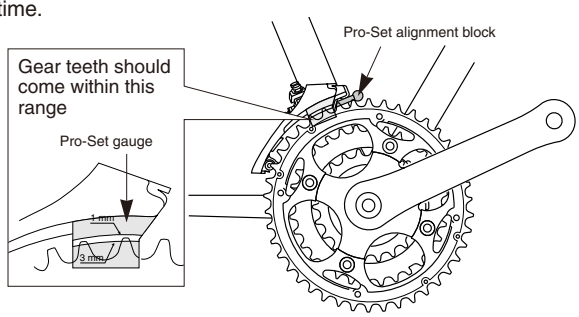
< FD-M330 >

Install using the TL-UN74-S special tool. First install the main body, then the adapter. After this, use an 8 mm Allen key to install the front chainwheel.

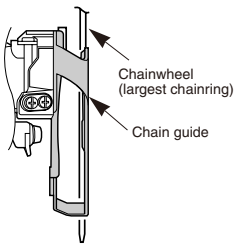


Adapter / bottom bracket tightening torque:
50 - 70 Nm {435 - 608 in. lbs.}
Front chainwheel tightening torque:
35 - 50 Nm {305 - 435 in. lbs.}

Adjust and then install the front derailleur as shown in the illustration. Do not remove the Pro-Set alignment block at this time.



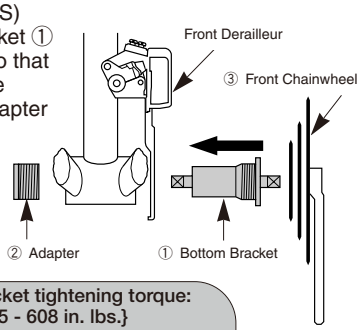
The level section of the chain guide outer plate should be directly above and parallel to the largest chainring. Secure using a 5 mm Allen key.



Tightening torque:
5 - 7 Nm {44 - 60 in. lbs.}

< FD-M330-E >

Use the special tools (TL-UN65 and TL-UN74-S) to install the bottom bracket ① and the front derailleur so that they face as shown in the illustration. Install the adapter ②, and then use an 8 mm Allen key to install the front chainwheel.



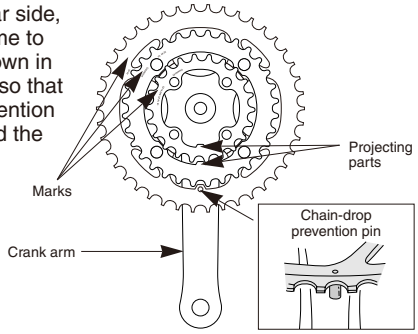
Adapter / bottom bracket tightening torque:
50 - 70 Nm {435 - 608 in. lbs.}
Front chainwheel tightening torque:
35 - 50 Nm {305 - 435 in. lbs.}

Installaation of the chainrings

Be sure to use the following combination for the tooth configuration.

M 42-32-22 (FC-MC20)

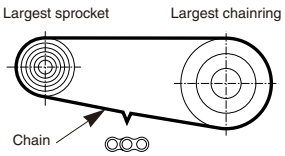
Position so that, when looking from the rear side, the **M**-□ marks come to the positions as shown in the illustration, and so that the chain-drop prevention pin is directly behind the crank arm.



The features of the SIS will not be obtained if the chainrings are installed in the incorrect position, or if a chainring with a mark other than **M**-□ is being combined. Therefore, be sure to install them in the correct position.

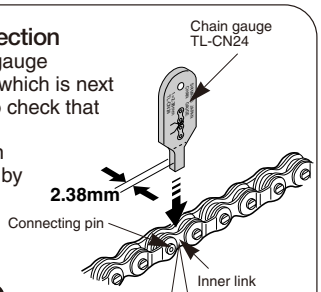
Chain length

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

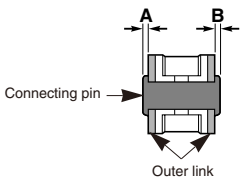


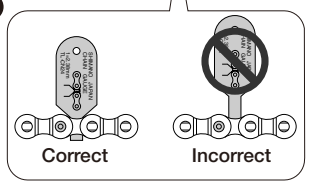
Checking the chain connection

For, 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 pro-trudes past the outer link by the same amount on both sides, and that the amount of protrusion is 0.2 mm or more.



A, B ≧ 0.2mm

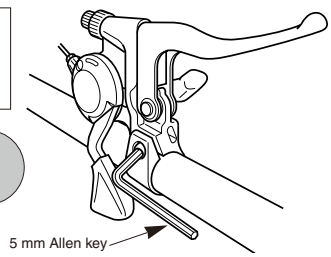




Installation of the brake lever

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

Allen key tightening torque:
6 - 8 Nm
{53 - 69 in. lbs.}

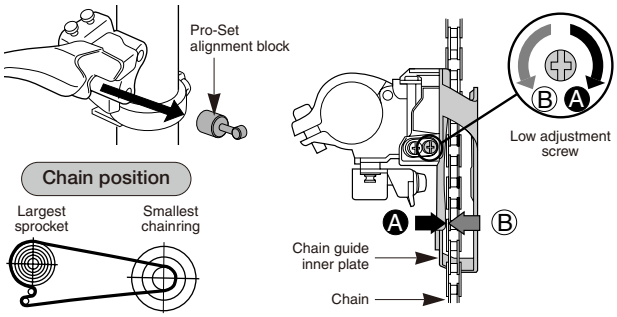


SIS adjustment

Be sure to follow the sequence described below.

1. Low adjustment

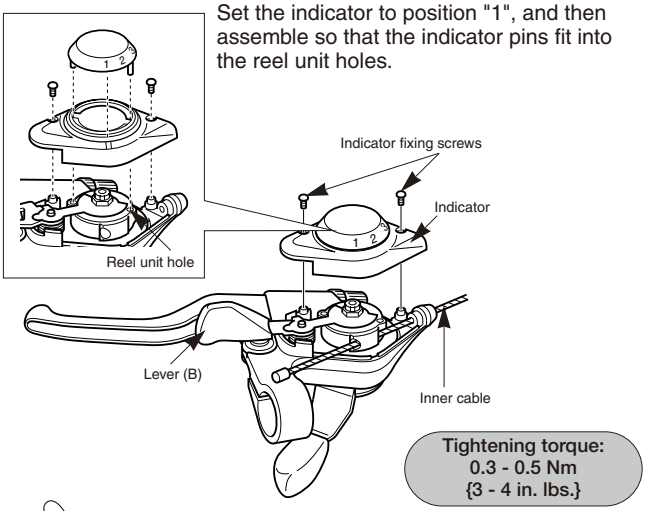
First remove the Pro-Set alignment block.
Next, set so that the clearance between the chain guide inner plate and the chain is 0-0.5 mm.



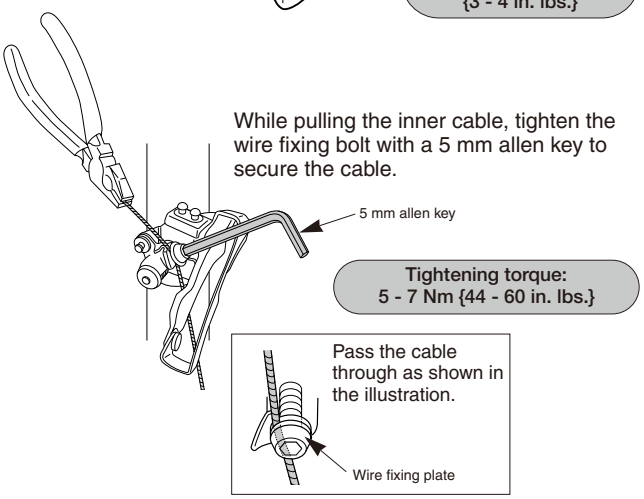
2. Connection and securing the inner cable

Remove the two indicator fixing screws which are securing the indicator, and then remove the indicator unit as shown in the illustration.
Operate lever (B) two or more times to set the lever to the lowest position. Pass the inner cable through the lever hole and hook it onto the lever, and then secure the indicator unit with the two indicator fixing screws.

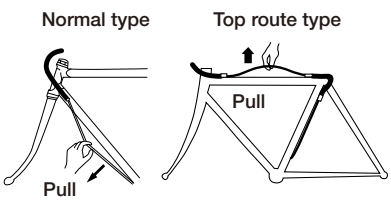
Set the indicator to position "1", and then assemble so that the indicator pins fit into the reel unit holes.



While pulling the inner cable, tighten the wire fixing bolt with a 5 mm allen key to secure the cable.

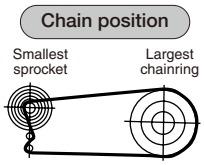


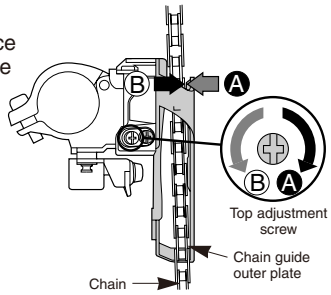
After taking up the initial slack in the cable, re-secure to the front derailleur as shown in the illustration.



3. Top adjustment

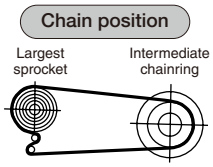
Set so that the clearance between the chain guide outer plate and the chain is 0-0.5 mm.

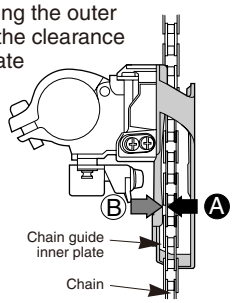




4. Adjustment of the intermediate chainring

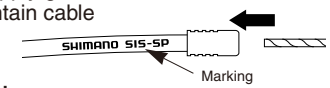
When carrying out adjustment, set the chain to the largest sprocket, and at the front, set the chain to the intermediate chainring. Adjust using the outer casing adjustment barrel so that the clearance between the chain guide inner plate and the chain is 0-0.5 mm.





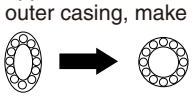
Inserting the inner cable

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.

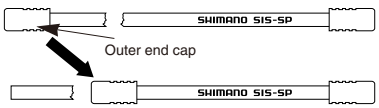


Cutting the outer casing

When cutting the outer casing, cut the opposite end to the end with the marking. After cutting the outer casing, make 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.



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.)

If the chain falls to the crank side.	Tighten the top adjustment screw clockwise (about 1/4 turn).
If shifting is difficult from the intermediate chainring to the largest chainring.	Loosen the top adjustment screw counterclockwise (about 1/8 turn).
If shifting is difficult from the intermediate chainring to the smallest chainring.	Loosen the low adjustment screw counterclockwise (about 1/4 turn).
If there is interference between the chain and the front derailleur inner plate at the largest chainring.	Tighten the top adjustment screw clockwise (about 1/8 turn).
If there is interference between the chain and the front derailleur outer plate at the largest chainring.	Loosen the top adjustment screw counterclockwise (about 1/8 turn).
If the intermediate chainring is skipped when shifting from the largest chainring.	Loosen the outer casing adjustment barrel counterclockwise (1 or 2 turns).
If there is interference between the chain and front derailleur inner plate when the rear sprocket is shifted to the largest sprocket when the chainwheel is at the intermediate chainring position.	Tighten the outer casing adjustment barrel clockwise (1 or 2 turns).
If the chain falls to the bottom bracket side.	Tighten the low adjustment screw clockwise (about 1/2 turn).

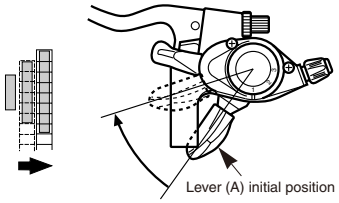
Gear shifting operation

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 chainring to a larger chainring

When lever (A) is pressed once, there is a shift of one step from a small chainring to a larger chainring.

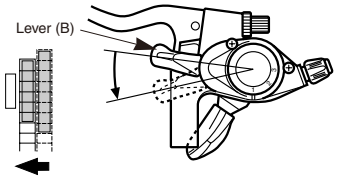
Example:
from intermediate chainring to largest chainring.



To shift from a large chainring to a smaller chainring

When lever (B) is pressed once, there is a shift of one step from a large chainring to a smaller chainring.

Example:
from largest chainring to intermediate chainring.



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®

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