

Dealer's Manual

ROAD Front Chainwheel

FC-9000

FC-6800

SM-BB9000

SM-BBR60

SM-BB92-41B

SM-BB72-41B

IMPORTANT NOTICE

- This dealer's manual is intended primarily for use by professional bicycle mechanics.

Users who are not professionally trained for bicycle assembly should not attempt to install the components themselves using the dealer's manuals.

If any part of the information on the manual is unclear to you, do not proceed with the installation. Instead, contact your place of purchase or a local bicycle dealer for their assistance.

- Make sure to read all instruction manuals included with the product.
- Do not disassemble or modify the product other than as stated in the information contained in this dealer's manual.
- All dealer's manuals and instruction manuals can be viewed on-line on our website (<http://si.shimano.com>).
- Please observe the appropriate rules and regulations of the country, state or region in which you conduct your business as a dealer.

For safety, be sure to read this dealer's manual thoroughly before use, and follow it for correct use.

The following instructions must be observed at all times in order to prevent personal injury and physical damage to equipment and surroundings.

The instructions are classified according to the degree of danger or damage which may occur if the product is used incorrectly.

 **DANGER**

Failure to follow the instructions will result in death or serious injury.

 **WARNING**

Failure to follow the instructions could result in death or serious injury.

 **CAUTION**

Failure to follow the instructions could cause personal injury or physical damage to equipment and surroundings.


TO ENSURE SAFETY

WARNING

- **When installing components, be sure to follow the instructions that are given in the instruction manuals.**

It is recommended that you use only genuine Shimano parts. If parts such as bolts and nuts become loose or damaged, the bicycle may suddenly fall over, which may cause serious injury.

In addition, if adjustments are not carried out correctly, problems may occur, and the bicycle may suddenly fall over, which may cause serious injury.

-  Be sure to wear safety glasses or goggles to protect your eyes while performing maintenance tasks such as replacing parts.
- After reading the dealer's manual thoroughly, keep it in a safe place for later reference.

Be sure to also inform users of the following:

- ***Maintenance interval depends on the usage and riding circumstances. Clean regularly the chain with an appropriate chaincleaner. Never use alkali based or acid based solvents such as rust cleaners. If those solvent be used chain might break and cause serious injury.***
- Check that there are no cracks in the crank arms before riding the bicycle. If there are any cracks, the crank arm may break and you may fall off the bicycle.
- Be careful not to let the cuffs of your clothes get caught in the chain while riding, otherwise you may fall off the bicycle.
- Check the chain for any damage (deformation or crack), skipping, or other abnormalities such as unintended gear shifting. If any problems are found, consult a dealer or an agency. The chain may break, and you may fall.

For Installation to the Bicycle, and Maintenance:

- If the inner cover is not installed correctly, the axle may rust and become damaged, and the bicycle may fall over and serious injury may occur as a result.
- The two left crank arm mounting bolts should be tightened alternately in stages rather than each bolt being fully tightened all at once. Use a torque wrench to check that the final tightening torques are within the range of 12.0 - 14.0 N·m {106 - 122 in. lbs.}. Furthermore, after riding approximately 100 km (60 miles), use a torque wrench to re-check the tightening torques. It is also important to periodically check the tightening torques. If the tightening torques are too weak or if the mounting bolts are not tightened alternately in stages, the left crank arm may come off and the bicycle may fall over, and serious injury may occur as a result.

CAUTION

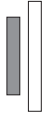

Be sure to also inform users of the following:

- There is the danger of injury from the tips of the teeth on the chainrings.

NOTE

Be sure to also inform users of the following:

- Be sure to keep turning the crank during the lever operation.
- When the chain is in the position shown in the illustration, the chain may contact the front chainrings or front derailleur and generate noise. If the noise is a problem, shift the chain onto the next-larger rear sprocket or the one after.

	Double
Front chainrings	
Rear sprockets	

- Before riding the bicycle, check that there is no play or looseness in the connection. Also, be sure to retighten the crank arms and pedals at periodic intervals.
- Use a neutral detergent to clean the crank arm and the bottom bracket. Using alkaline or acidic detergents may cause discoloration.
- If pedaling performance does not feel normal, check this once more.
- Do not wash the bottom bracket with high-pressure jets of water. Water may enter the bearing section and cause noise or adhesion.
- You should periodically wash the chainrings in a neutral detergent. In addition, cleaning the chain with neutral detergent and lubricating it can be an effective way of extending the useful life of the chainrings and the chain.
- The cuffs of your clothing may get dirty from the chain while riding.
- This product is not warranted against damage resulting from use such as jumping while riding or if the bicycle falls over, except if such malfunctions result from non conforming materials or manufacturing methods.
- Products are not guaranteed against natural wear and deterioration from normal use and aging.
- For maximum performance we highly recommend Shimano lubricants and maintenance products.

For Installation to the Bicycle, and Maintenance:

- When installing the pedals, apply a small amount of grease to the threads to prevent the pedals from sticking. Use a torque wrench to securely tighten the pedals. Tightening torque: 35 - 55 N·m {305 – 479 in. lbs.}. The right-hand crank arm has a right-hand thread, and the left-hand crank arm has a left-hand thread.
- If the bottom bracket shell is not parallel, gear shifting performance will drop.
- If the chain keeps coming off the chainrings during use, replace the chainrings and the chain.
- When installing the left and right adapters, apply grease to them and be sure to install the inner cover. Otherwise the waterproofing performance will drop.
- To ensure the best performance, be sure to use only the specified type of chain.

Front chainwheel	Recommended chain
FC-9000	CN-9000
FC-6800	CN-6800

- If a squeaking noise is heard coming from the bottom bracket axle and the left crank arm connector, apply grease to the connector and then tighten it to the specified torque.
- If you feel any looseness in the bearings, the bottom bracket should be replaced.
- Be sure to use the specified gear tooth combination. If an unspecified gear is used, the dimension between the gears changes, and the chain may enter between the gears.

The actual product may differ from the illustration because this manual is intended chiefly to explain the procedures for using the product.

INSTALLATION

■ List of tools to be used

The following tools are needed to assemble this product.

Usage location	Tool	Note
SM-BB9000	TL-FC24 & TL-FC32 or TL-FC24 & TL-FC36	
	TL-FC24 & TL-FC33	An impact wrench cannot be used.
	TL-FC34	An impact wrench can be used.
SM-BBR60	TL-FC25 & TL-FC32 or TL-FC25 & TL-FC36	
	TL-FC25 & TL-FC33	An impact wrench cannot be used.
	TL-FC37	An impact wrench can be used.
SM-BB92-41B SM-BB72-41B	TL-BB12	Installation tool
	TL-BB13	Removal tool
Crank cap	TL-FC16 / 18	
Left crank bolt	5mm Allen key	

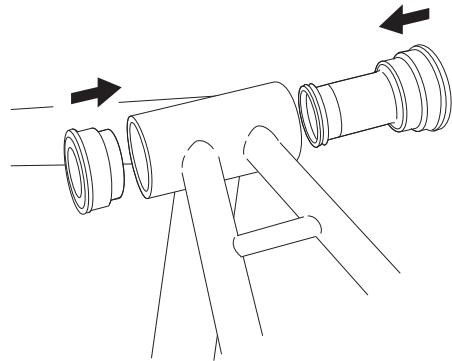
■ Bottom bracket

< SM-BB92-41B/SM-BB72-41B >

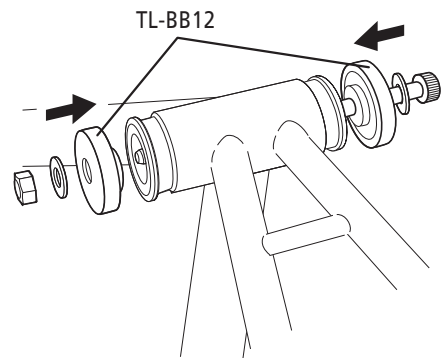
Installation

Press the bottom bracket into the hanger by using TL-BB12 correctly.

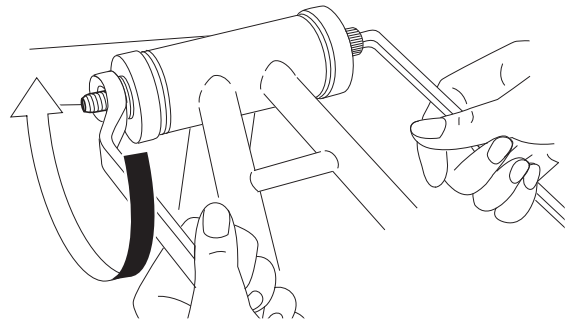
1. Insert the bottom bracket (BB) into the hanger.



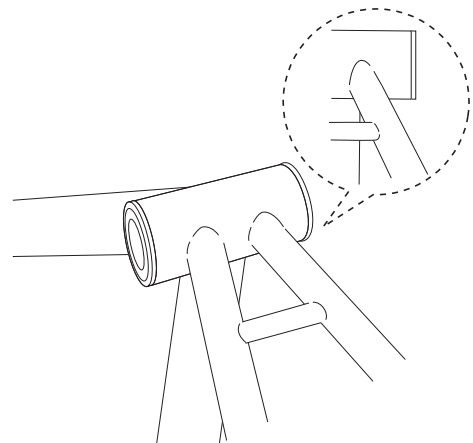
2. Insert the installation tool into the BB.



3. Press-Fit the BB by tightening with a wrench while making sure that the rim of the BB stays parallel to the rim of the hanger.



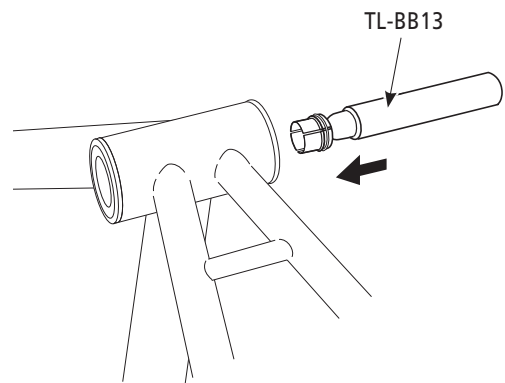
4. Check to confirm that there is no gap between the BB and the hanger.



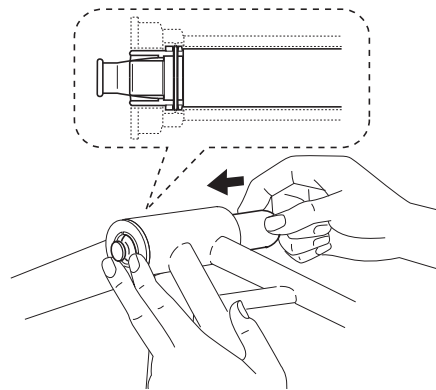
Removal

When removing the bottom bracket, use TL-BB13 correctly.

1. Insert the removal tool into the bottom bracket (BB).

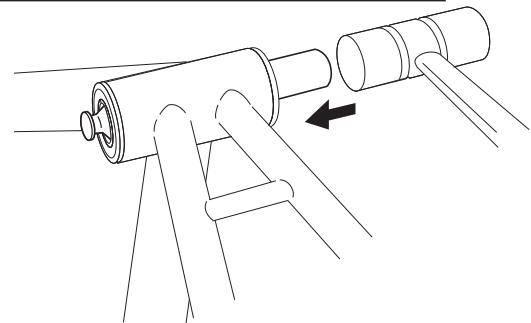


2. As shown in the illustration, hold down the flap with your fingers and push it in from the opposite side. (When pushed in, the flap opens.)

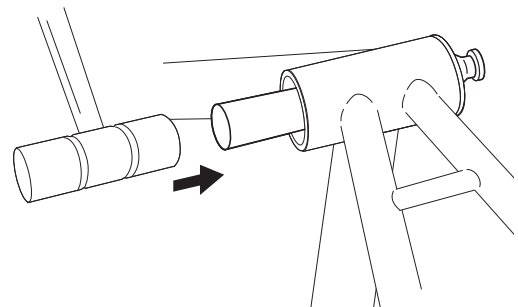


While holding open the three flaps at the end of the removal tool, push the tool in from the other side until it locks in place.

3. Tap the removal tool with a plastic mallet until the end of the BB is ejected.



4. Tap out the other end of the BB in the same way.



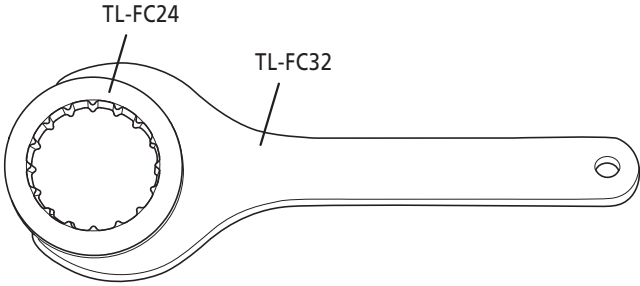
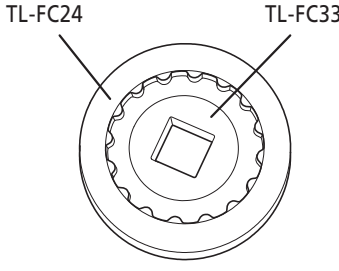
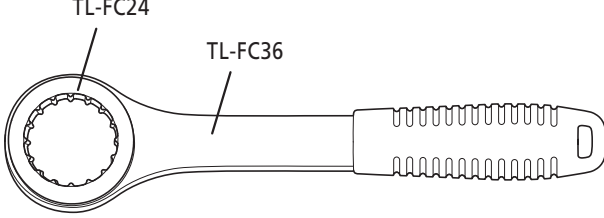
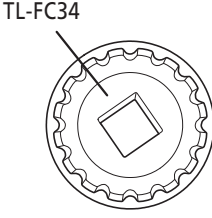
Note:

Do not reuse the adapters as they can be damaged during removal.

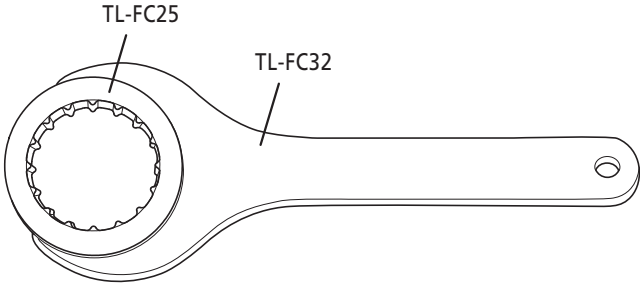
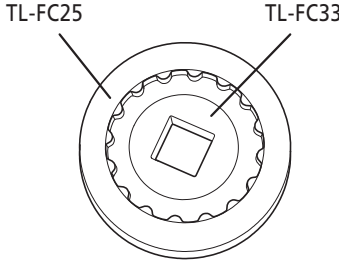
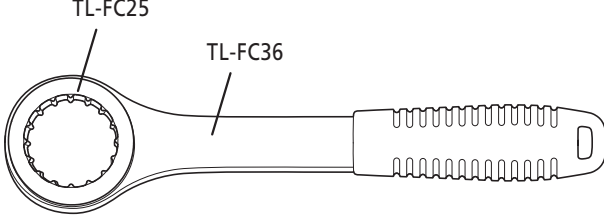
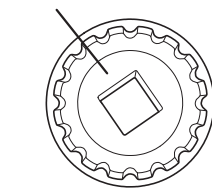
List of tool combinations

Use the tools in combination when performing work.

< SM-BB9000 >

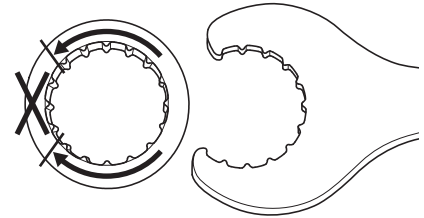
<p style="text-align: center;">TL-FC24 & TL-FC32</p>	<p style="text-align: center;">TL-FC24 & TL-FC33</p>
 <p>Diagram showing the TL-FC24 tool head and the TL-FC32 handle. The tool head has a circular, serrated inner edge. The handle is long and tapers to a small hole at the end.</p>	 <p>Diagram showing the TL-FC24 tool head and the TL-FC33 handle. The tool head has a circular, serrated inner edge. The handle is a square-shaped insert with a smaller square hole in the center.</p>
<p style="text-align: center;">TL-FC24 & TL-FC36</p>	<p style="text-align: center;">TL-FC34</p>
 <p>Diagram showing the TL-FC24 tool head and the TL-FC36 handle. The tool head has a circular, serrated inner edge. The handle is long and features a textured, ribbed grip section at the end.</p>	 <p>Diagram showing the TL-FC34 tool head. It has a circular, serrated inner edge and a square-shaped insert with a smaller square hole in the center.</p>

< SM-BBR60 >

<p style="text-align: center;">TL-FC25 & TL-FC32</p>	<p style="text-align: center;">TL-FC25 & TL-FC33</p>
 <p>Diagram showing the TL-FC25 tool head and the TL-FC32 handle. The tool head has a circular, serrated inner edge. The handle is long and tapers to a small hole at the end.</p>	 <p>Diagram showing the TL-FC25 tool head and the TL-FC33 handle. The tool head has a circular, serrated inner edge. The handle is a square-shaped insert with a smaller square hole in the center.</p>
<p style="text-align: center;">TL-FC25 & TL-FC36</p>	<p style="text-align: center;">TL-FC37</p>
 <p>Diagram showing the TL-FC25 tool head and the TL-FC36 handle. The tool head has a circular, serrated inner edge. The handle is long and features a textured, ribbed grip section at the end.</p>	 <p>Diagram showing the TL-FC37 tool head. It has a circular, serrated inner edge and a square-shaped insert with a smaller square hole in the center.</p>

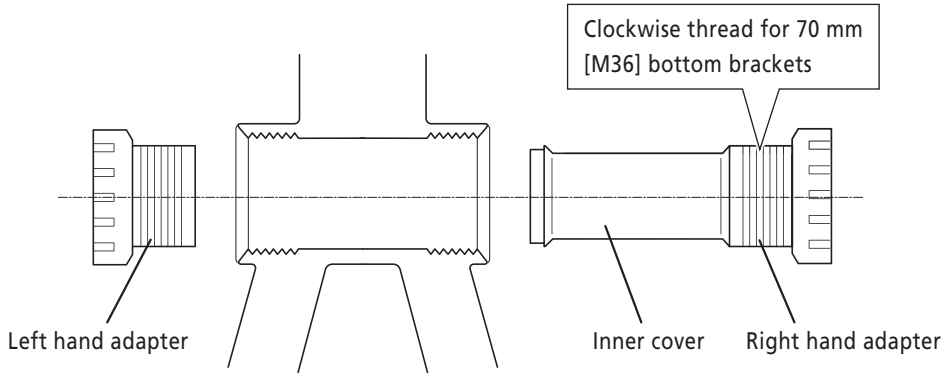
Note:

- For an impact wrench, use TL-FC34 for SM-BB9000 and TL-FC37 for SM-BBR60. Using other tools causes the tool to be damaged.
- When setting TL-FC24/25 to TL-FC32, check the installable position.
- TL-FC33/36 can be installed at any position.



When setting TL-FC24/25 to TL-FC32, check the installable position.

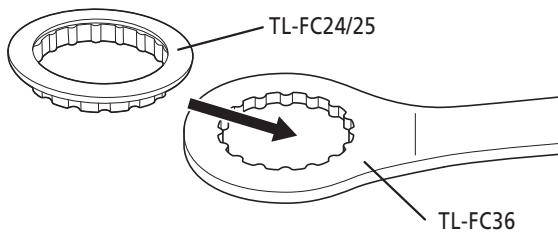
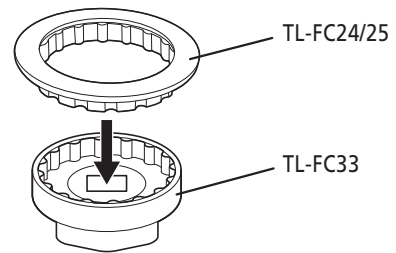
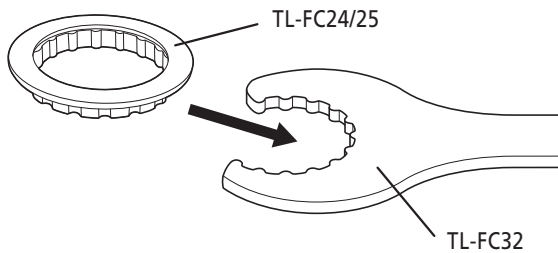
Use the TL-FC24/25/34 special tool to install the right adapter (counterclockwise thread), the inner cover and the left adapter (clockwise thread).



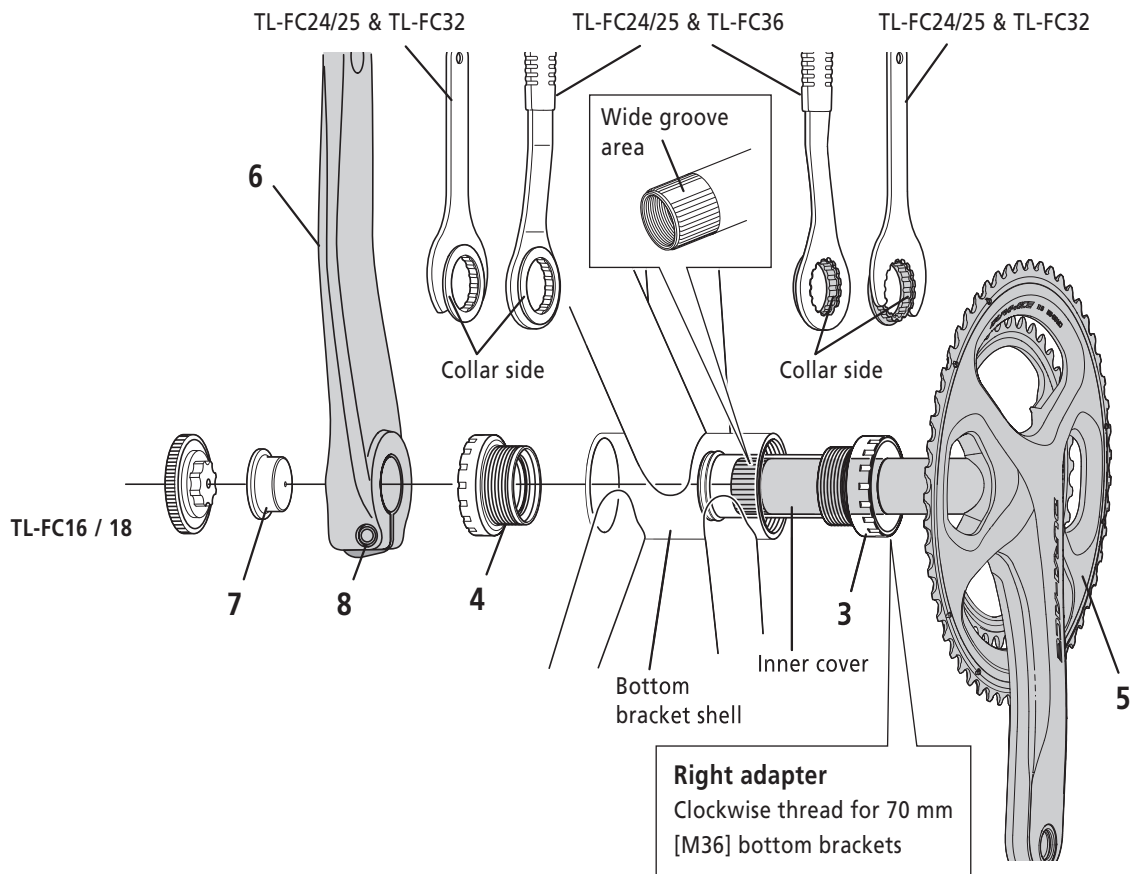
Tightening torque:
35.0 - 50.0 N·m {306 - 437 in. lbs.}

■ Installing the front chain wheel

1. Set TL-FC24/25 to TL-FC32/33/36 and install it to the adapter from the side of the collar of TL-FC24/25.



2. Follow the procedure in the figure.



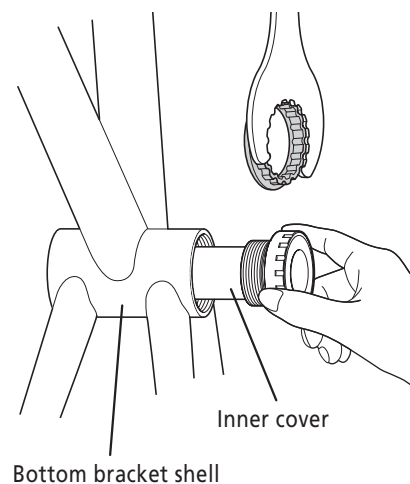
3. Check that the inner cover is installed to the right adapter unit, insert the right adapter from the right side of the hanger, and tighten 2 to 3 turns with your hand.

70 mm <M36> is a right-handed screw

Use TL-FC24/25 or TL-FC34/37 to tighten the right adapter.

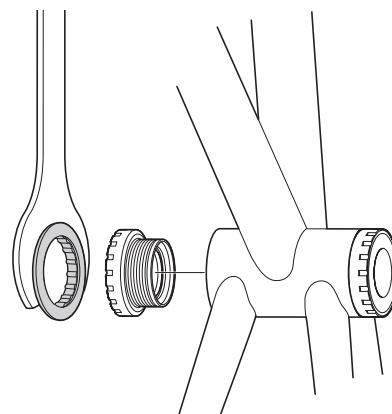
* When using TL-FC24/25, set TL-FC24/25 to TL-FC32/33/36 and install it to the adapter so that the collar of TL-FC24/25 is on the side of the screw.

Tightening torque:
35.0 - 50.0 N·m {306 - 437 in. lbs.}

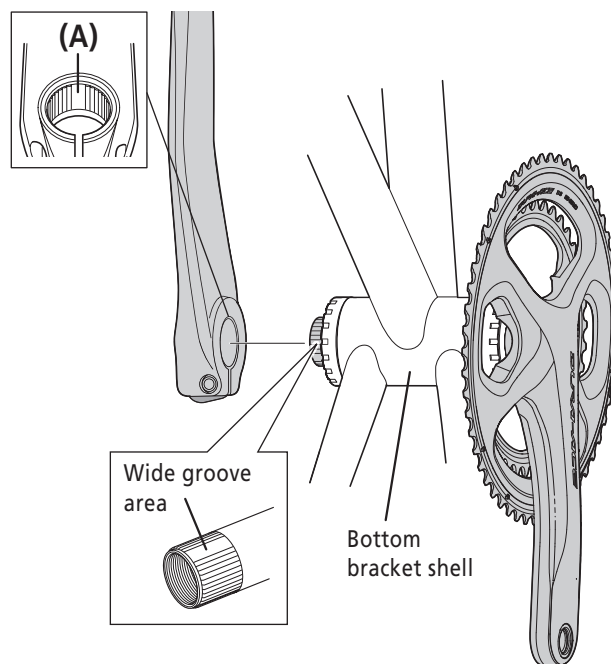


4. Install the left adapter (clockwise thread).

Tightening torque:
35.0 - 50.0 N·m {306 - 437 in. lbs.}



5. Insert the right crank unit.
6. Set section (A) of the left crank into the axle of the right crank unit where the groove is wide.



7. Use the TL-FC16/18 to tighten the cap.

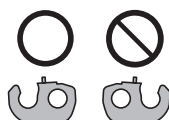
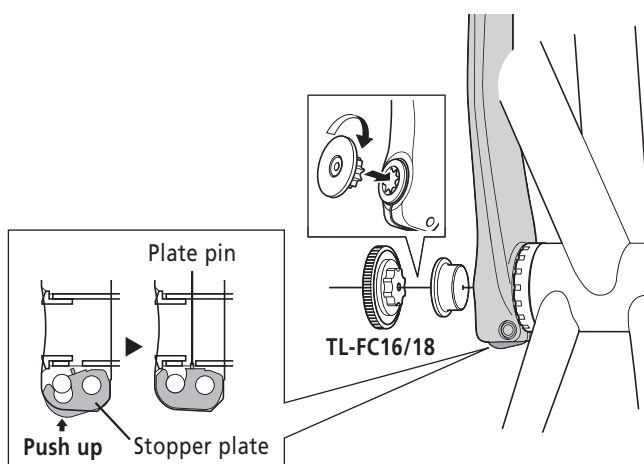
Tightening torque:
0.7 - 1.5 N·m {6 - 13 in. lbs.}

8. Push in the stopper plate and check that the plate pin is securely in place, and then tighten the bolt of the left crank arm. (5 mm Allen key)

Note:

Each of the bolts should be evenly and equally tightened.

Tightening torque:
12.0 - 14.0 N·m {105 - 122 in. lbs.}



Note:
Set the stopper plate in the right direction as shown in figure.

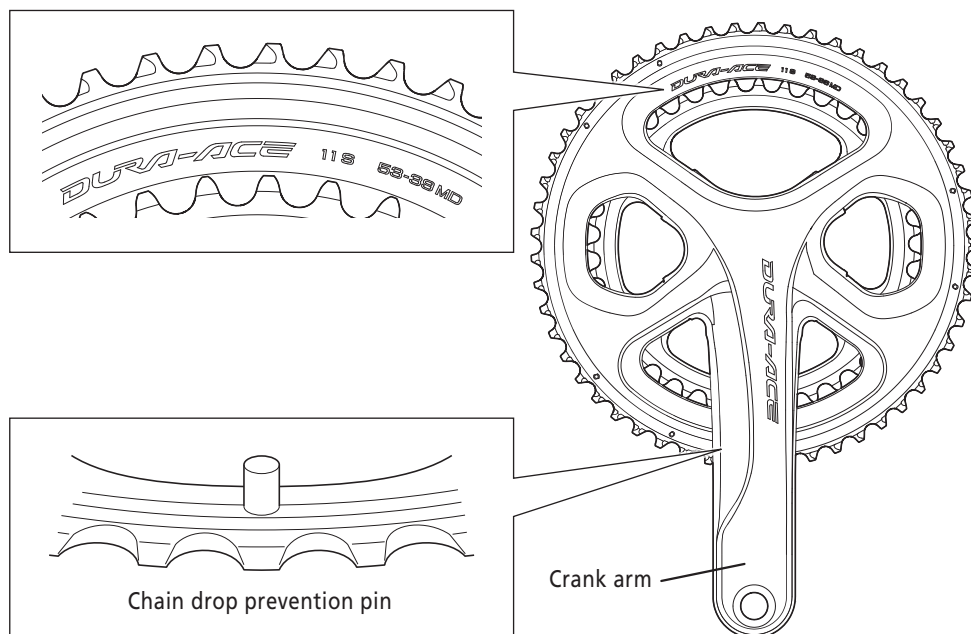
MAINTENANCE

Installation of the chainrings

- Smooth shifting will not be possible if the chainrings are incorrectly installed, so be sure to install the chainrings in the correct positions.
- Use the correct combination of genuine Shimano bolts, chainrings and crank arm, otherwise the large chainring may become damaged by the bolts.

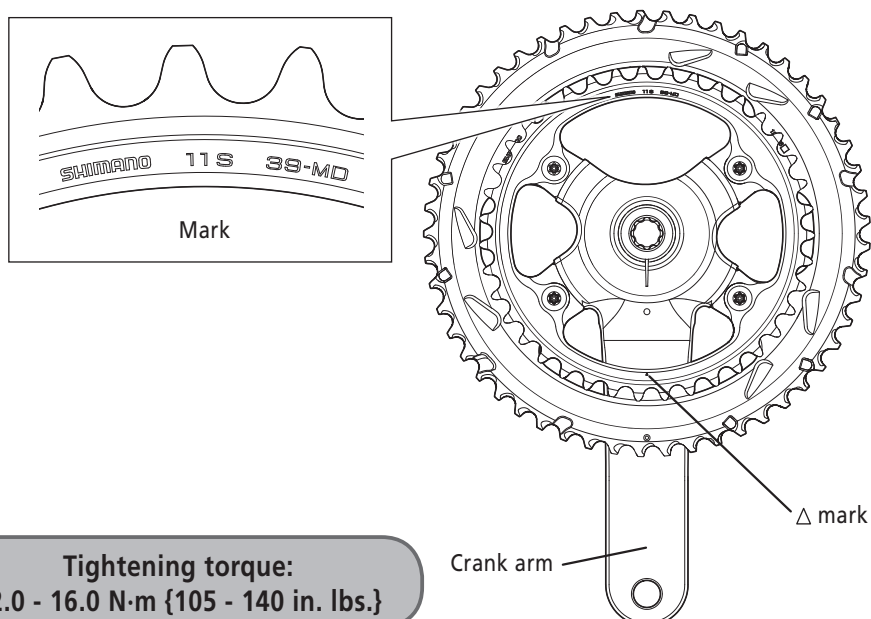
Outer side

With the marked surface of the larger chainring facing out, set the larger chainring so that the chain drop prevention pin is lined up with the crank arm position.



Inner side

With the marked surface of the smaller chainring facing away from the crank arm, set the chainring so that the Δ mark is lined up with the crank arm position.



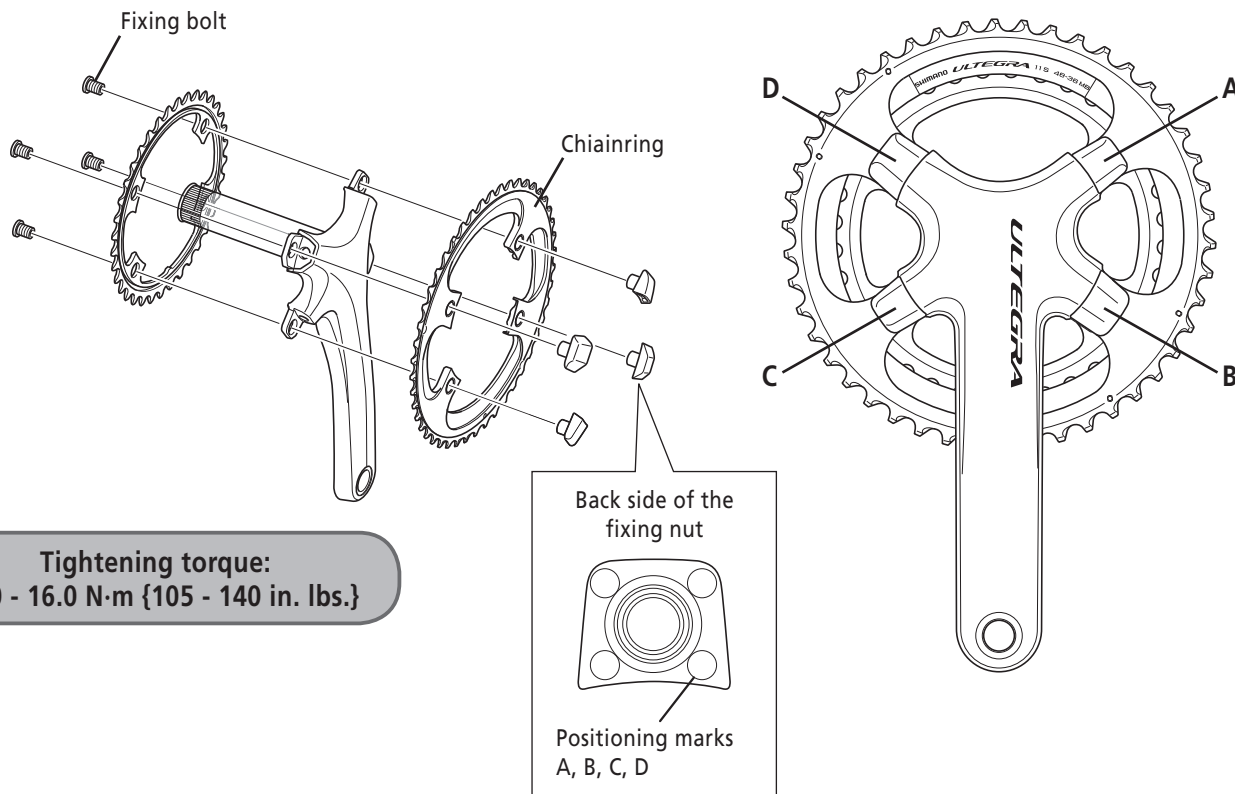
Tightening torque:
12.0 - 16.0 N·m {105 - 140 in. lbs.}

< FC-6800 (46-36) >

For this model, the fixing nuts are separated from the largest gear.

All the four fixing nuts have different shapes. Check the positioning mark on the back side of the nut before mounting.

* The fixing nuts can be mounted at any position and function the same way.



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Please note: specifications are subject to change for improvement without notice. (English)

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