

## Dealer's Manual

# ROAD Crankset

FC-9000

FC-6800

FC-5800

FC-4700

FC-4703

SM-BB9000

SM-BBR60

SM-BB92-41B

SM-BB72-41B

BB-RS500

BB-RS501

BB-RS500-PB

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## 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 manuals and technical documents are accessible online at <https://si.shimano.com>.
- For consumers who do not have easy access to the internet, please contact a SHIMANO distributor or any of the SHIMANO offices to obtain a hardcopy of the User's Manual.
- 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

- Be sure to follow the instructions provided in the manuals when installing the product.

Only use SHIMANO genuine parts. If a component or replacement part is incorrectly assembled or adjusted, it can lead to component failure and cause the rider to lose control and crash.

-  Wear approved eye protection while performing maintenance tasks such as replacing components.

#### Be sure to also inform users of the following:

- *Never use alkali- or acid-based solvents such as rust cleaners. If those solvents are used the chain might break and cause serious injury.*
- *Clean the chain with an appropriate chain cleaner regularly. Intervals between maintenance depend on the use and riding circumstances.*
- 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 hemming 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 cracking), 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:

- Install the inner cover correctly. If it 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 screws should be tightened alternately in stages rather than each fully tightened at once. Use a torque wrench to check that the tightening torques are within the range of 12 - 14 N·m. 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 screws 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:

- Be careful not to touch the teeth of chainrings. There is a danger of injury.

### NOTICE

#### Be sure to also inform users of the following:

- Be sure to keep turning the crank arm during the shift lever operation.
- When the chain is in any of the positions shown in the illustration, the chain may come into contact with the chainring or front derailleur and generate noise. If the noise is a problem, shift the chain onto the next largest sprocket or the one after.

	Double	Triple
Chainring		 
Sprocket		 

- Check that there is no excess play or looseness in any fastening sections before riding the bicycle. Also, be sure to retighten the crank arm 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, contact your place of purchase.
- Do not wash the bottom bracket with high-pressure jets of water. Water may enter the bearing section and cause noise or adhesion.
- The chainrings should be periodically washed with a neutral detergent. In addition, cleaning the chain with neutral detergent and lubricating it can be an effective way of extending the 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 improper use, such as jumping while riding or if the bicycle falls over, except if such malfunctions are caused by manufacturing methods.

## TO ENSURE SAFETY

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- 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 seizing. Use a torque wrench to securely tighten the pedals. Tightening torque is 35 - 55 N·m. The right crank arm has a right-hand thread, and the left 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 gears during use, replace the chainrings and the chain.
- When installing the left and right cups, apply grease and be sure to install the inner cover. Otherwise the waterproofing performance will worsen.
- To ensure the best performance, be sure to use only the recommended type of chain.

Crankset	Recommended chain
FC-9000	CN-9000
FC-6800	CN-6800
FC-5800	CN-HG600-11
FC-4700 FC-4703	CN-HG54

- If a squeaking noise is heard coming from the bottom bracket axle and the left crank arm connector, apply grease to the fastening section, then tighten it to the specified torque.
- If you feel any looseness in the bearings, the bottom bracket should be replaced.
- Only use chainring combinations listed below. If other chainring combinations are used, it can create poor shifting and cause the chain to jam, resulting in damage to the bicycle.

FC-9000		Top					
		55T-ME	54T-ME	53T-MD	52T-MC	52T-MB	50T-MA
Low	42T-ME	X	X	-	-	-	-
	39T-MD	-	-	X	-	-	-
	38T-MC	-	-	-	X	-	-
	36T-MB	-	-	-	-	X	-
	34T-MA	-	-	-	-	-	X

FC-6800		Top			
		53T-MD	52T-MB	50T-MA	46T-MB
Low	39T-MD	X	-	-	-
	36T-MB	-	X	-	X
	34T-MA	-	-	X	-

FC-5800		Top		
		53T-MD	52T-MB	50T-MA
Low	39T-MD	X	-	-
	36T-MB	-	X	-
	34T-MA	-	-	X

FC-4700		Top		
		52T-ML	50T-MK	48T-MK
Low	36T-ML	X	-	-
	34T-MK	-	X	X








FC-4703		
Top	Middle	Low
50T-MM	39T-MM	30T-MM

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

## **LIST OF TOOLS TO BE USED**









## LIST OF TOOLS TO BE USED

The following tools are needed for installation, adjustment, and maintenance purposes.

Tool		Tool		Tool	
	5 mm hexagon wrench		17 mm spanner		Hexalobular[#30]
	8 mm hexagon wrench		Soft face mallet	 	TL-FC16 / TL-FC18

The tools required for installing and removing the bottom bracket differ by model. Use the tools in the table in combination.








### SM-BB9000

Tool		Tool	
 	TL-FC24 & TL-FC32		TL-FC34
 	TL-FC24 & TL-FC33		TL-FC35
 	TL-FC24 & TL-FC36		

#### NOTICE

When using TL-FC24 & TL-FC33, an impact wrench cannot be used.




### SM-BBR60

Tool		Tool	
 	TL-FC25 & TL-FC32	 	TL-FC25 & TL-FC36
 	TL-FC25 & TL-FC33		TL-FC37



#### NOTICE

When using TL-FC25 & TL-FC33, an impact wrench cannot be used.

BB-RS500 / BB-RS501

Tool		Tool	
	TL-FC32		TL-FC36
	TL-FC33		

SM-BB92-41B / SM-BB72-41B / BB-RS500-PB

Tool		Tool	
	TL-BB12		TL-BB13

# INSTALLATION

# INSTALLATION

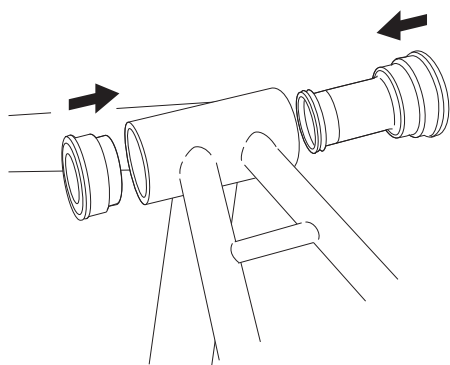
## Bottom bracket

### ■ SM-BB92-41B / SM-BB72-41B / BB-RS500-PB

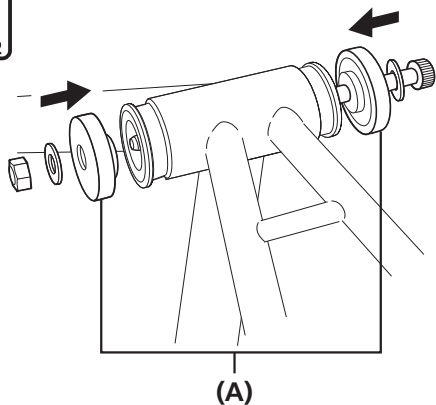
#### Installation

Press the bottom bracket into the bottom bracket shell using TL-BB12.

1. Insert the bottom bracket into the bottom bracket shell.

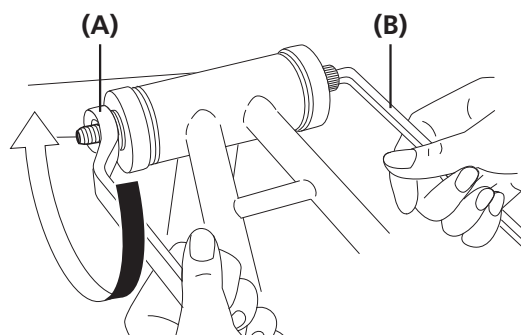


2. Insert the installation tool into the bottom bracket.



(A) TL-BB12

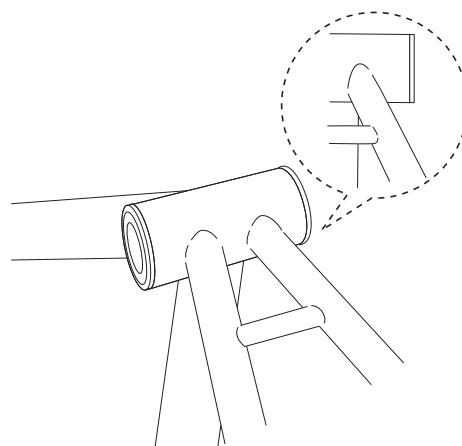
3. Press-fit the bottom bracket by tightening with a spanner while making sure that the rim of the bottom bracket stays parallel to the rim of the bottom bracket shell.



(A) 17 mm spanner

(B) 8 mm hexagon wrench

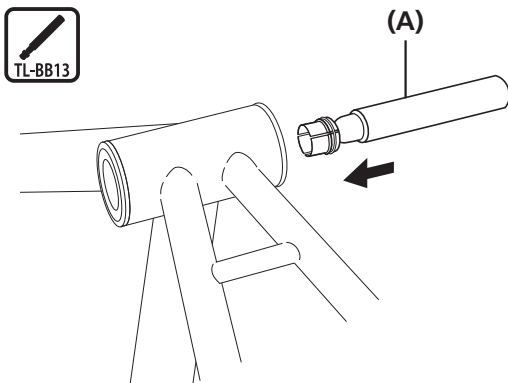
4. Check to confirm that there is no gap between the bottom bracket and the bottom bracket shell.



## Removal

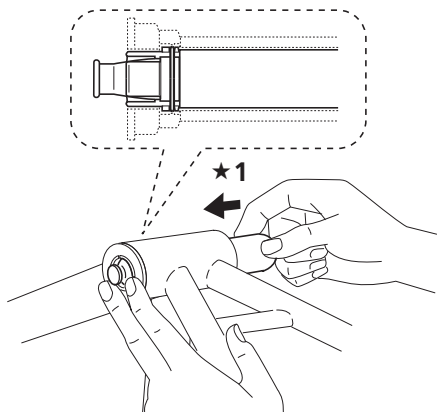
When removing the bottom bracket, use TL-BB13.

1. Insert the removal tool into the bottom bracket.



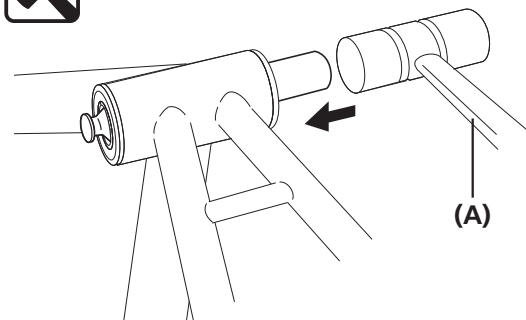
(A) TL-BB13

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.)



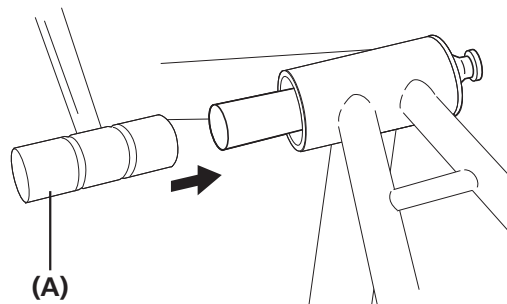
★1 While holding down the flaps at the end of the removal tool, push the tool in from the other side until it locks in place.

3. Tap the removal tool with a soft face mallet until the end of the bottom bracket protrudes.



(A) Soft face mallet

4. Tap the opposite end of the bottom bracket in the same way and remove it.



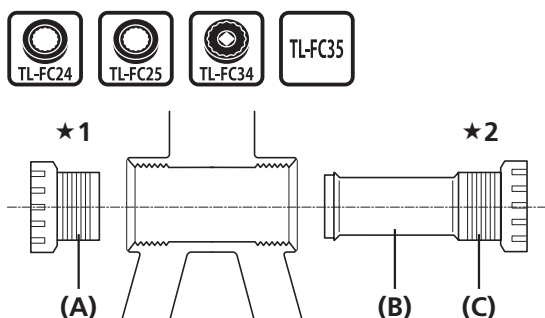
(A) Soft face mallet

## NOTICE

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

## ■ SM-BB9000 / SM-BBR60

1. Use the SHIMANO original tool TL-FC24/FC25/FC34/FC35 to install the right-hand cup (left-hand thread), the inner cover and the left-hand cup (right-hand thread).



★1 Right-hand thread

★2 Left-hand thread (Right-hand thread for 70 mm [M36])

- (A) Left-hand cup  
(B) Inner cover  
(C) Right-hand cup

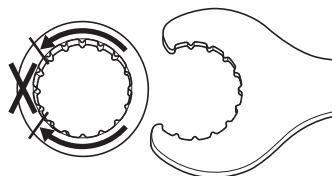
### Tightening torque

TL-FC24/FC25/FC34/FC35

35 - 50 N·m

### NOTICE

- For an impact wrench, use TL-FC34 for SM-BB9000 and TL-FC37 for SM-BBR60. Using other tools may damage the tool.
- When setting TL-FC24/FC25 in TL-FC32, check the possible setting position.
- TL-FC24/FC25 may become damaged and unusable after repeated use.
- Any position is possible when setting to TL-FC33/FC36.

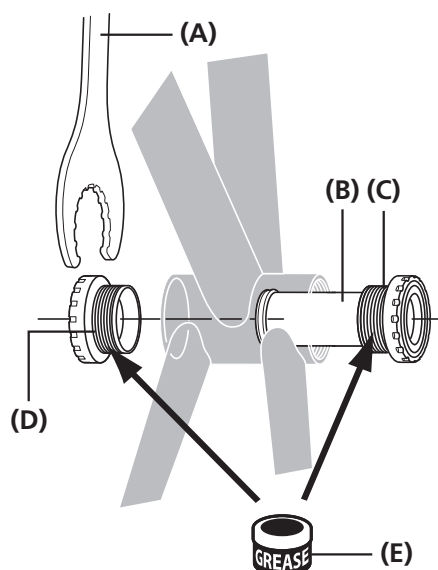


★1

★1 When setting in TL-FC32, check the possible setting position.

## ■ BB-RS500 / BB-RS501

1. Grease the left- and right-hand cups and use the SHIMANO original tool to install the right-hand cup of the bottom bracket, the inner cover and the left-hand cup of the bottom bracket.



- (A) TL-FC32  
(B) Inner cover  
(C) Right-hand cup (left-hand thread)  
(D) Left-hand cup (right-hand thread)  
(E) Apply grease: Premium Grease (Y04110000)

### Tightening torque

TL-FC32/FC33/FC34/FC36

35 - 50 N·m



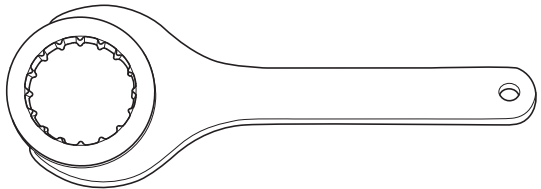


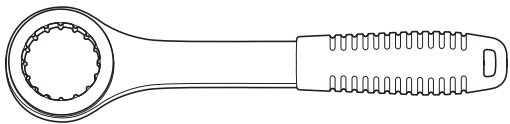


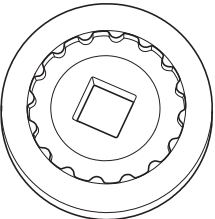
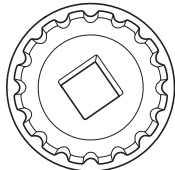

### TECH TIPS

Turn the right-hand cup clockwise when the 70 mm [M36] bottom bracket is used (right-hand thread).



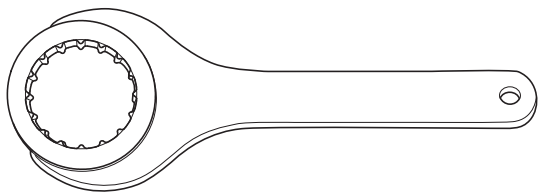


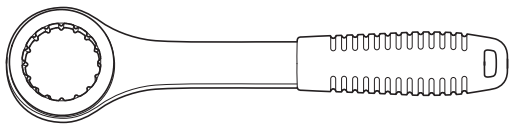


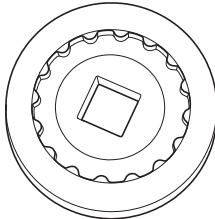
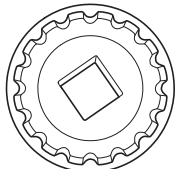

## List of tool combinations

When installing or removing the bottom bracket, use the SHIMANO original tools that are to be used in combination.

### SM-BB9000

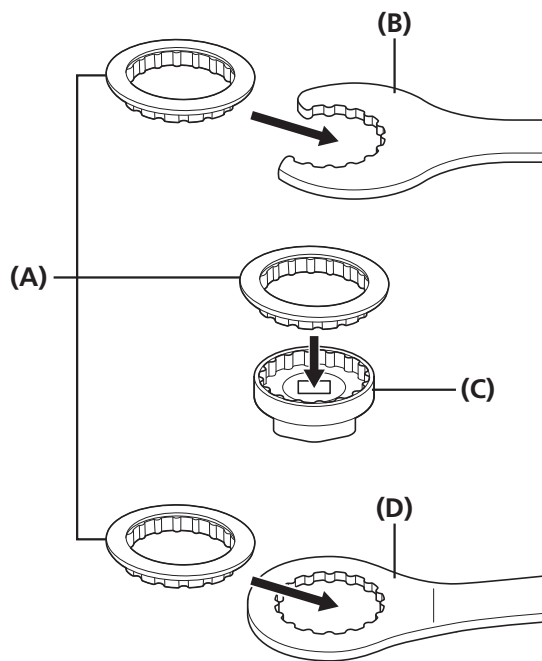
TL-FC24 & TL-FC32	
	
	
TL-FC24 & TL-FC36	
	
	
TL-FC24 & TL-FC33	
	
	
TL-FC34	
	
	

### SM-BBR60

TL-FC25 & TL-FC32	
	
	
TL-FC25 & TL-FC36	
	
	
TL-FC25 & TL-FC33	
	
	
TL-FC37	
	
	

## Installation of the crankset

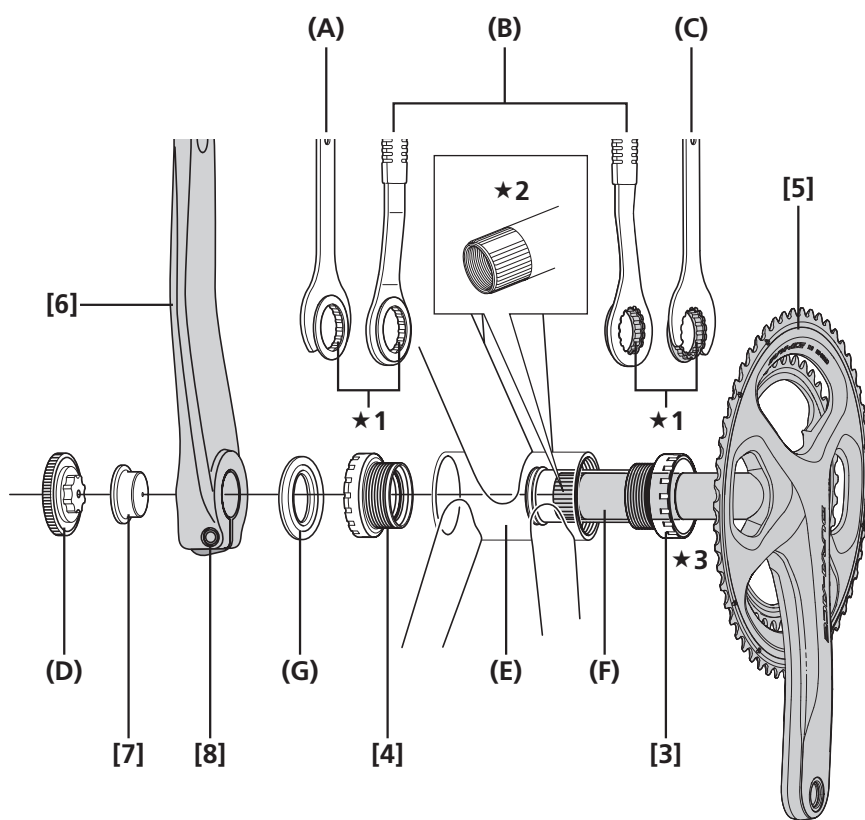
1. Combine the SHIMANO original tools as in the illustration.



- (A) TL-FC24/FC25
- (B) TL-FC32
- (C) TL-FC33
- (D) TL-FC36

## 2. Follow the procedure in the illustration.

Carry out the installation with the collar of TL-FC24/FC25 facing the bottom bracket.

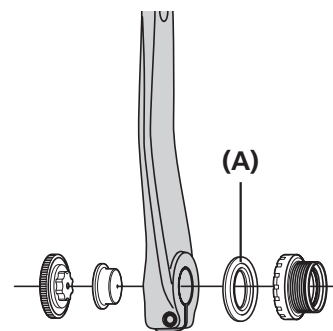


- ★1 Collar side
- ★2 Wide part
- ★3 **Right-hand cup**  
Right-hand thread for  
70 mm [M36]

- (A) TL-FC24/FC25 & TL-FC32
- (B) TL-FC24/FC25 & TL-FC36
- (C) TL-FC24/FC25 & TL-FC32
- (D) TL-FC16/FC18
- (E) Bottom bracket shell
- (F) Inner cover
- (G) Spacer

## NOTICE

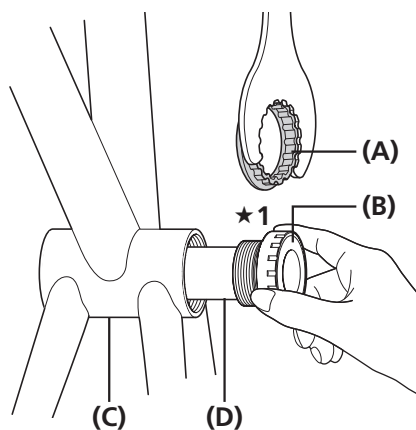
For front triples, include a spacer.



- (A) Spacer

3. Check that the inner cover is installed to the right-hand cup. Insert the right-hand cup from the right side of the bottom bracket shell, and tighten 2 to 3 turns with your hand.

Use TL-FC24/FC25 or TL-FC34/FC37 to tighten the right-hand cup.



★1 Right-hand thread for 70 mm [M36]

- (A) TL-FC24/FC25
- (B) TL-FC34/FC37
- (C) Bottom bracket shell
- (D) Inner cover

## Tightening torque

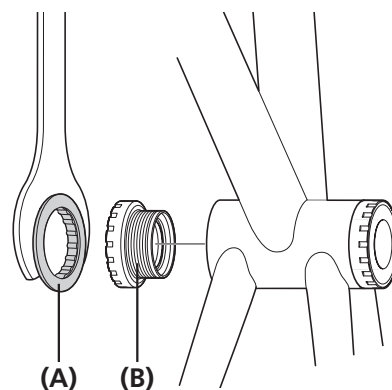
TL-FC24/FC25 or TL-FC34/FC37

**35 - 50 N·m**

## TECH TIPS

When using TL-FC24/FC25, set it into the compatible SHIMANO original tool, as in the illustration, and carry out the installation with the collar of TL-FC24/FC25 facing the bottom bracket.

4. Install the left-hand cup (right-hand thread).



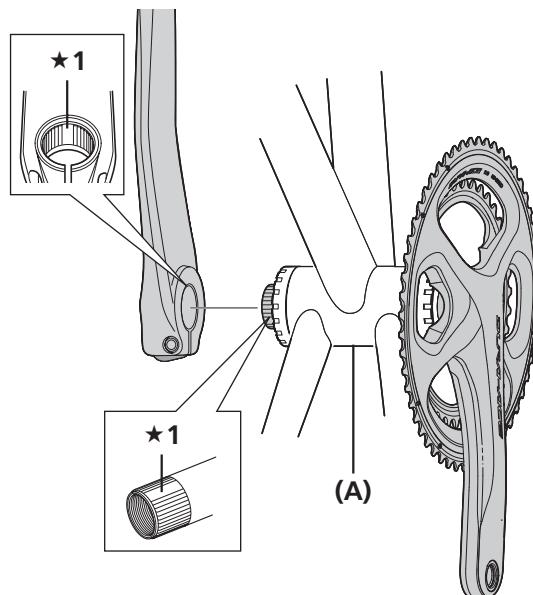
- (A) TL-FC24/FC25
- (B) TL-FC34/FC37

## Tightening torque

TL-FC24/FC25 or TL-FC34/FC37

**35 - 50 N·m**

5. Fully insert the right crank arm unit until it touches the bottom bracket.
6. Set the wide groove area of the left crank arm into the axle of the right crank arm unit where the groove is wide.

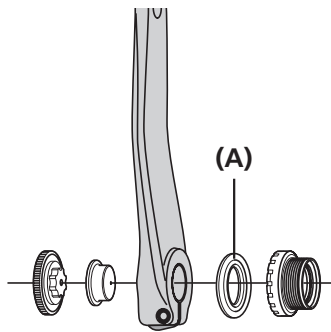


★1 Wide part

- (A) Bottom bracket shell

## NOTICE

For front triples, include a spacer.



(A) Spacer

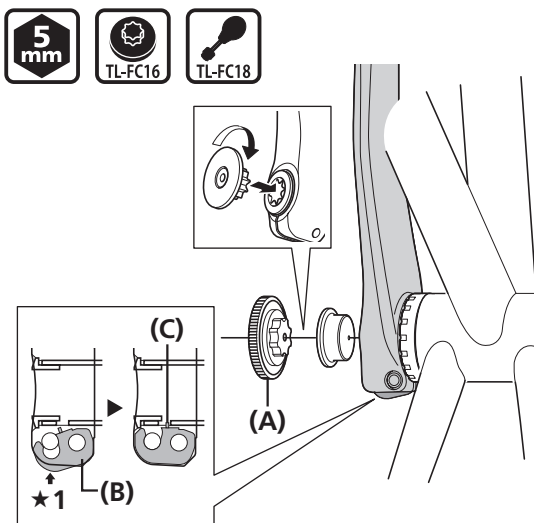
- 7.** Use TL-FC16/FC18 to tighten the cap.

### Tightening torque

TL-FC16/FC18

0.7 - 1.5 N·m
---------------

8. Push in the stopper plate and check that the plate pin is securely in place, and then tighten the screws of the left crank arm.



★1 Push up

(A) TL-FC16/FC18

(B) Stopper plate

(C) Plate pin

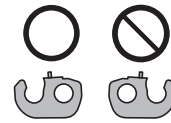
### Tightening torque

5 mm hexagon wrench

**12 - 14 N·m**

## NOTICE

- The two screws should be tightened alternately in stages rather than each screw being fully tightened at once.
- Set the stopper plate in the correct direction as shown in illustration.



# MAINTENANCE

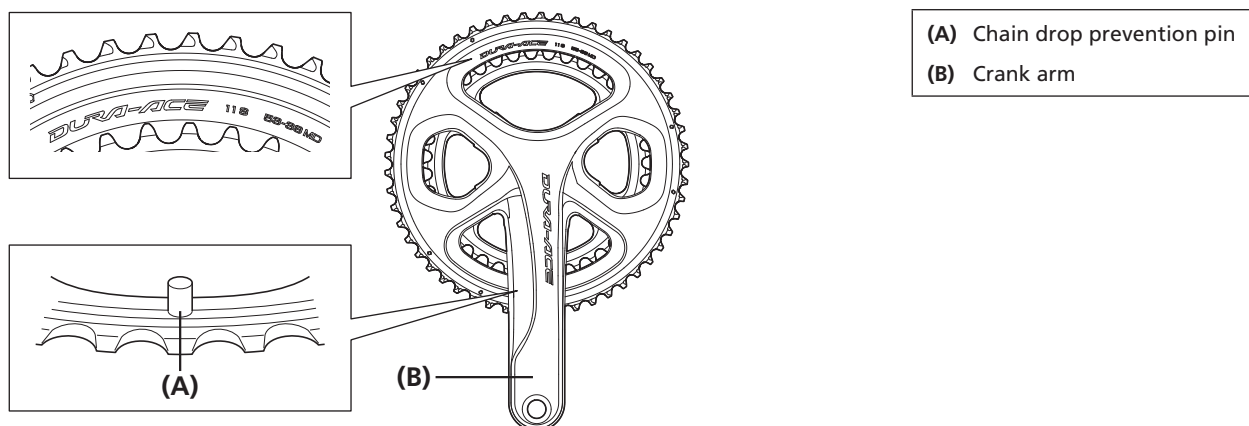
# MAINTENANCE

## Installation of the chainrings

- Gear shifting performance will be reduced if the installation positions of the chainrings are incorrect. Be sure to install the chainrings in the correct positions.
- Make sure to use the correct combination of SHIMANO genuine parts, otherwise the crank arms or chainrings may become damaged.

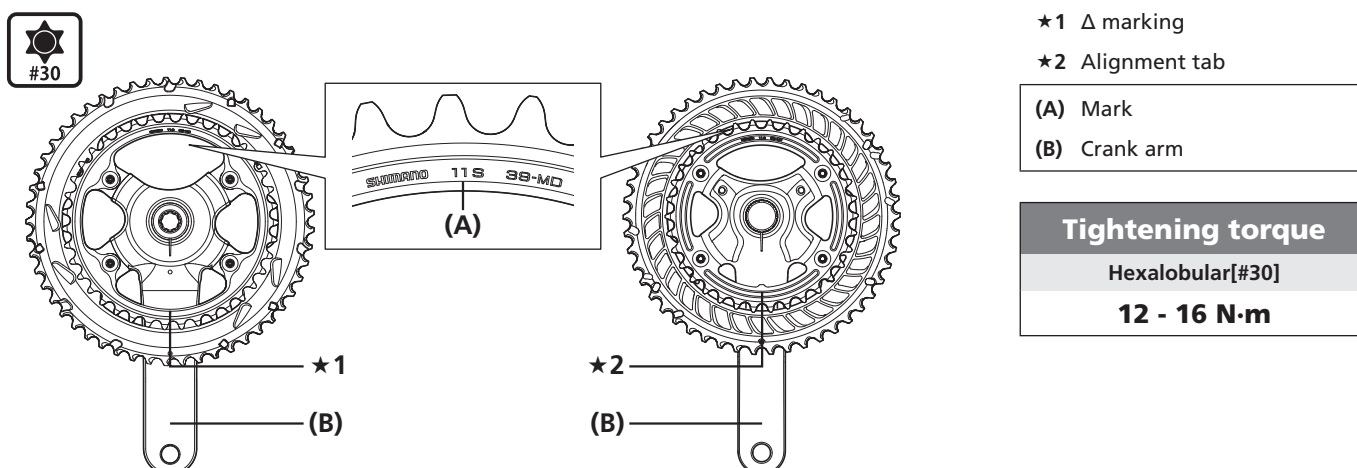
### Outer side

1. With the marked surface of the largest chainring facing outward, set the chainring with the chain drop prevention pin aligned with the crank arm.



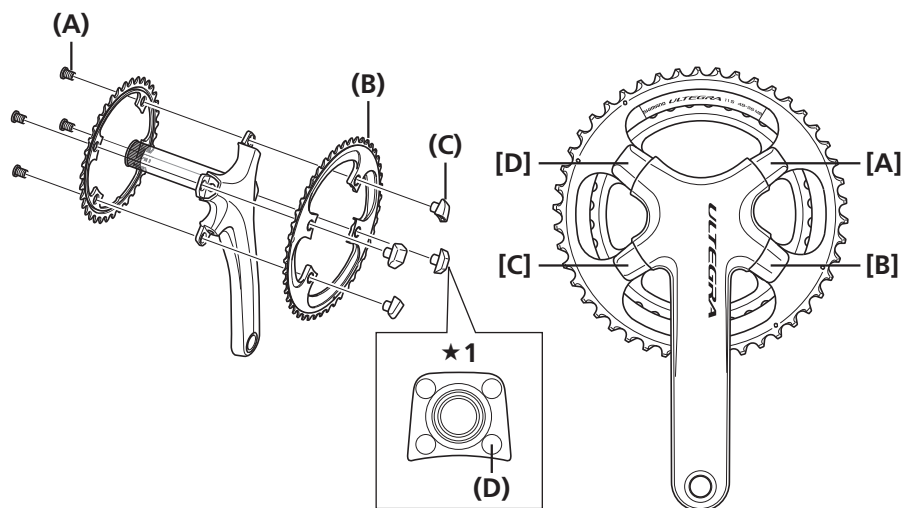
### Inner side

1. With the marked surface of the smallest chainring facing away from the crank arm, set the chainring with the Δ marking or alignment tab aligned with the crank arm.



## FC-6800 (46-36)

- For this model only, the fixing nuts are separate from the largest chainring.  
All four fixing nuts have different shapes. Check the positioning mark on the reverse side of the nut before mounting.  
\* Mounting in a position other than the specified one will not affect function.



★ 1 Reverse side of the fixing nut

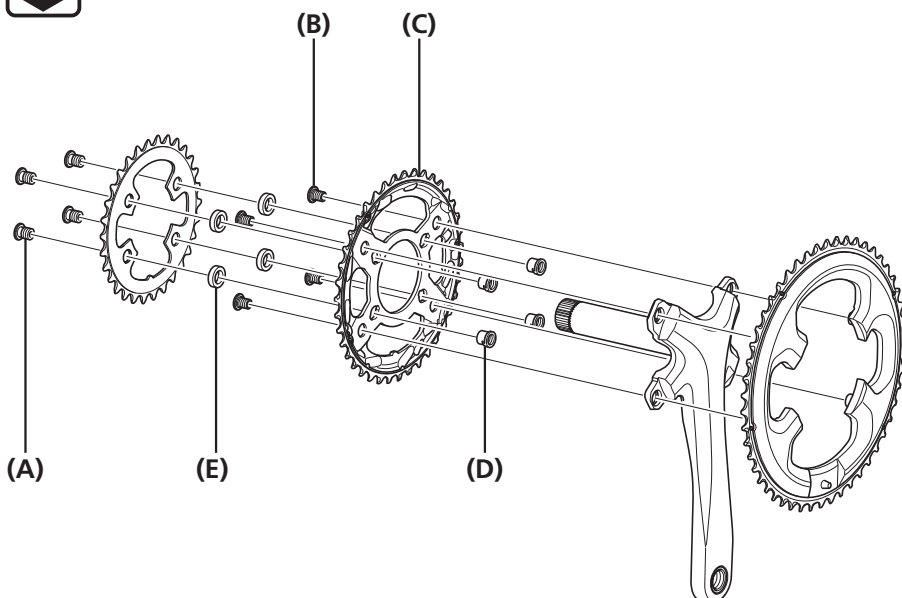
- (A) Mounting bolt
- (B) Chainring
- (C) Fixing nut
- (D) Positioning marks [A] [B] [C] [D]

### Tightening torque

Hexalobular[#30]

**12 - 16 N·m**

## FC-4703



- (A) Mounting bolt (Long)
- (B) Mounting screw (Short)
- (C) Chainring
- (D) Fixing nut
- (E) Spacer

### Tightening torque

5 mm hexagon wrench

**12 - 16 N·m**

# SHIMANO

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