

General Safety Information

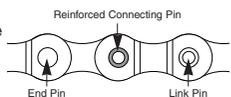
WARNING

“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.”

- Downhill bicycle riding and freeriding are inherently dangerous activities. There is a risk of being involved in an accident that can result in a serious injury or even death. It is strongly recommended that riders wear protective head and body gear and perform thorough safety checks of their bicycles before riding. Please remember that you are riding at your own risk and that you have to consider your experience and your skills very carefully.
- The FC-M815/FC-M810 crankset is designed for downhill bicycle riding and freeriding. However, depending on the riding conditions, a crank or a bottom bracket axle can develop a crack, which may result in the failure of the crank. This can lead to an accident that could result in a serious injury or even death.
- If it is difficult to install the wheel, install the quick release lever on the rotor side. If doing this, make sure that the quick release lever does not interfere with the rotor and that burns do not occur.
- 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 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-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

- 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.



- 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 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 you may fall off the bicycle.
- 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 - 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 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.
- Before riding, you should carefully check your crankset to make sure that there are no cracks, and if you find any sign of a crack or any other unusual condition, do NOT use the bicycle.
- 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.
- 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.
- Read these Technical Service Instructions carefully, and keep them in a safe place for later reference.

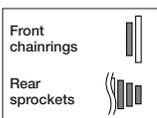
CAUTION

- If the chain is on the smallest or intermediate chainring, there is the danger of injury from the tips of the teeth on the largest chainring.

Note

- The L-size bashguard is for single front chainwheels, and cannot be used with double front chainwheels.
- Turn the top adjustment screw to adjust so that the chain does not sit on top of the bash guard.
- Make sure that the chainring combination matches the front chainwheel tooth configuration in the Product specifications table. If other combinations are used, the distance between the chainrings will be incorrect and the chain might slip off and get caught in between them.

- 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.
- If the bottom bracket shell is not parallel, gear shifting performance will drop.
- 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.
- 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.
- Use a neutral detergent to clean the crank arm and the bottom bracket. Using alkaline or acidic detergents may cause discoloration.
- If you feel any looseness in the bearings, the bottom bracket should be replaced.
- In addition, if pedaling performance does not feel normal, check this once more.
- Do not wash the bottom bracket with high-pressure jets of water.
- Apply grease to the left and right adapters before installing them.
- To ensure the best performance, be sure to use only the specified type of chain. The wide type of chain cannot be used.
- If the chain keeps coming off the chainrings during use, replace the chainrings and the chain.
- The cuffs of your clothing may get dirty from the chain while riding.
- You should periodically wash the chainrings in a neutral detergent and then lubricate them again. 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.
- 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.
- 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.



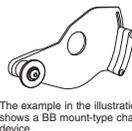
Chain Device

When installing a BB mount-type chain device to a bicycle, refer to the table below to determine the number of spacers for the right side. If the thickness of the spacers used is not as given in the table, the front chainwheel may become loose and fall off, or problems with gear shifting may occur. When installing a BB mount-type chain device or a ISCG-type chain device to a bicycle, you need to be careful to avoid interference.

< Chain Device Thickness (BB mount) >

For chain device thickness of 2.5 mm

Model number	Bottom bracket shell width		
	68 mm	73 mm	83 mm
FC-M810-1 FC-M665 FC-M810-2	2.5 mm x 1	Not needed	
FC-M815-1 FC-M815-2			2.5 mm x 1



For chain device thickness of 5.0 mm

Model number	Bottom bracket shell width		
	68 mm	73 mm	83 mm
FC-M810-1 FC-M665 FC-M810-2	Not needed	No available	
FC-M815-1 FC-M815-2			Not needed

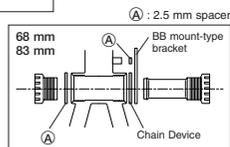
When using in combination with the FD-M665-E (2.5 mm chain device)

Model number	Bottom bracket shell width		
	68 mm	73 mm	83 mm
FC-M665 FC-M810-2	Not needed	No available	
FC-M815-2			Not needed

< Installation method >

Install the chain device and the front derailleur as shown in the illustration.

- If using in combination with an BB mount-type front derailleur, make sure that the chain device does not obstruct the BB mount-type bracket.



Bashguard

Shimano bashguards are designed together with the crank arms to provide strength, rigidity and good shifting performance. Because of this, if you do not install a bashguard, problems may occur such as the chain may fall off, the chainrings may become bent or the spider may break. Therefore it is recommended that you always install a bashguard. Similarly, if you use a bashguard which is not manufactured by Shimano, problems may occur such as poor shifting performance, or the chain may fall off, the chainrings may become bent or the spider may break. Any such problems will not be covered by your product warranty if you do not install a bashguard or if you install a bashguard which is not manufactured by Shimano.

**FC-M815
FC-M810**

Front chainwheel

Specifications

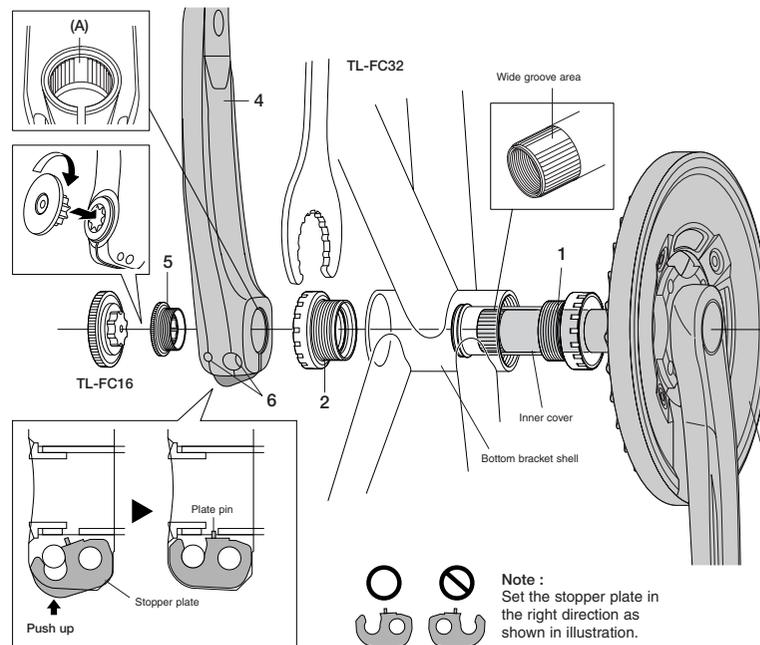
Type	Double	Single
Model number	FC-M815-2 / FC-M810-2	FC-M815-1 / FC-M810-1
Chainwheel tooth combination	36-22T	34 / 36 / 38 / 40 / 42T
Bolt circle diameter	104 mm / 64 mm	104 mm
Bashguard size	M	M (34/36T), L (38/40/42T)
Crank arm length	165, 170, 175 mm	
Pedal threads	B.C. 9/16" x 20T.P.I. (English thread)	
Applicable chain	CN-HG93 / HG73	

Model number	Chain line	Bottom bracket shell width (Thread dimensions)
FC-M815-2	54.3 mm	83 mm (1.37 X 24 T.P.I.)
FC-M815-1	57.9 mm	
FC-M810-2	46.8 mm	68, 73 mm (1.37 X 24 T.P.I.)
FC-M810-1	50.4 mm	

Installation of the Front Chainwheel

Follow the procedure in the figure.

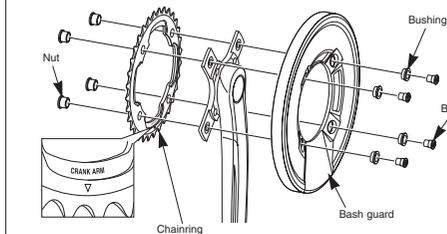
- 1, 2 Use the special tool TL-FC32/36 to install the right adapter (counterclockwise thread) and the left adapter (clockwise thread).
Tightening torque: 35 - 50 N·m (305 - 435 in. lbs.)
Note : Spacers may be necessary depending on the bottom bracket shell width. For details, refer to "Spacer installation method".
- 3 Insert the right crank unit.
- 4 Set section A of the left crank into the axle of the right crank unit where the groove is wide.
- 5 Use the TL-FC16/18 to tighten the cap.
Tightening torque: 0.7 - 1.5 N·m (6 - 13 in. lbs.)
- 6 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 to 12 - 14 N·m (106 - 122 in. lbs.).



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

Installing the chainring and bashguard

Install as shown in the illustration.

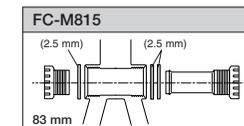
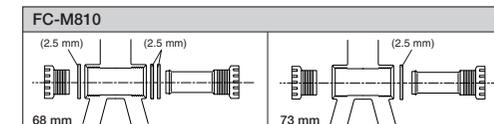


Install the chainring so that the side with the markings is on the outside, and so that the Δ marking is pointing toward the crank arm.

Tightening torque : 15 N·m [132 in. lbs.]

Spacer installation method

- (1) Check whether the width of the bottom bracket shell is 68 mm, 73 mm or 83 mm.
- (2) Next, install the adapter while referring to the illustrations below.

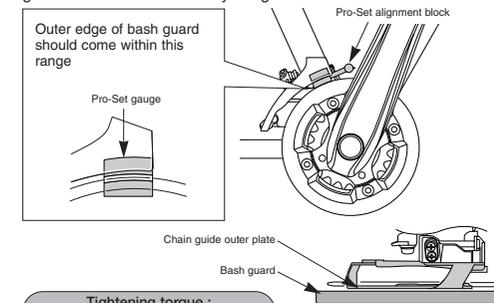


Installation of the front derailleur

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

< Front derailleur height and parallelism adjustment >

With the flat part of the chain guide outer plate on the inside of the bash guard as shown in the illustration, adjust the height of the front derailleur so that the outer edge of the bash guard is within the specified range on the Pro-Set gauge. Also adjust so that the flat part of the outer plate is parallel to the inner surface of the bash guard. Use a 5 mm Allen key to tighten.



Tightening torque : 5 - 7 N·m (44 - 60 in. lbs.)

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 the components.

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

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