

## General Safety Information

### ⚠ WARNING

- 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 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.
- **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.

### Note

- Be sure to use only the applicable chain and bottom bracket.
- 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 you feel any looseness in the bottom bracket axle, 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 bottom bracket before installing it.
- 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.
- 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.
- 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

SI-0086A-001

**FC-M521**  
**FC-M443 / FC-M443-8**  
**FC-M442 / FC-M442-8**



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## Specifications

### ■ Front chainwheel

Model number	FC-M521		FC-M443		FC-M443-8		FC-M442	FC-M442-8
Rear sprockets	9		9		9		9	9
Front chainwheel tooth combination	44 - 32 - 22 T	48 - 36 - 26 T	44 - 32 - 22 T	48 - 36 - 26 T	44 - 32 - 22 T	48 - 36 - 26 T	44 - 32 - 22 T	44 - 32 - 22 T
Bolt circle diameter	104 / 64 mm							
Crank arm length	170 / 175 mm							
Pedal thread dimensions	B.C. 9/16" x 20T.P.I. (English thread)							
Applicable chain	CN-HG73 / CN-HG53							
Applicable bottom bracket	BB-ES25-AK / BB-ES25-E		BB-UN26 (-K)		BB-ES25 (-K)		BB-UN26 (-E)	BB-ES25 (-E)
Applicable front derailleur	FD-M530 / M531		FD-M510 / M511					

### ■ Bottom Bracket

Model number	BB-ES25-AK / BB-ES25-E		BB-UN26 (-K)		BB-UN26-K	BB-ES25		BB-ES25-K
Spindle length	121AK / 121E*		117.5	LL123	117.5K	121	126	121K
Chain line	50 mm		47.5 mm	50 mm	47.5 mm + t	47.5 mm	50 mm	47.5 mm + t
Shell width (Thread dimensions)	68 / 73 mm (1.37 X 24 T.P.I.)							
t : Chain case thickness	1.5 - 2.1 mm		-		1.5 - 2.1 mm	-		1.5 - 2.1 mm

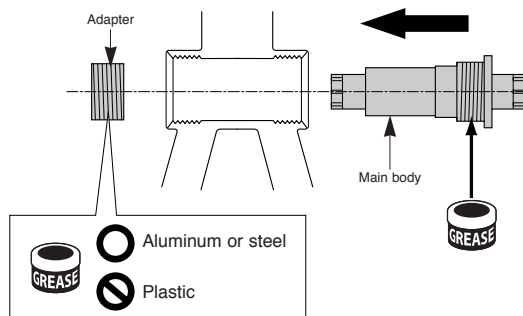
Model number	BB-UN26 (-E)		BB-ES25 (-E)	BB-ES25 (-E)
Spindle length	MM110 (E)	LL113 (E)	113 (E)	118 (E)
Chain line	47.5 mm	50 mm	47.5 mm	50 mm
Shell width (Thread dimensions)	68 / 73 mm (1.37 X 24 T.P.I.)			

\* 68 mm bottom bracket shell width : 121 also can be used.  
 73 mm bottom bracket shell width : 121 must be used.

## Installation of the Bottom Bracket

Install using the special tool TL-UN74-S / TL-UN66. First install the main body, then the adapter.

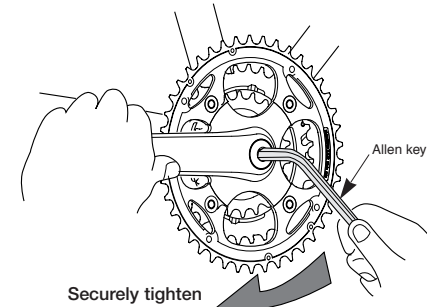
Adapter / bottom bracket tightening torque:  
 50 - 70 N·m {435 - 608 in. lbs.}



## Installation of the front chainwheel

Use an Allen key to install the front chainwheel.

\* There are two types of crank arm mounting bolts for the FC-M521 with sizes of 10 mm and 8 mm respectively. Check the bolt sizes and use the appropriate Allen key to install.



Front chainwheel tightening torque:  
 35 - 50 N·m {305 - 435 in. lbs.}

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