

General Safety Information

WARNING

• **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 FH-M815/FH-M810 freehub is designed for downhill bicycle riding and freeriding. Depending on the riding conditions, the hub axle could develop cracks which may result in failure of the hub axle. This can lead to an accident that could result in serious injury or even death.

Before riding, you should carefully check your hubs to make sure that there are no cracks in the axles, and if you find any sign of a crack or any other unusual condition, DO NOT use the bicycle.

• We strongly recommend that you use the hub axle that is shipped with the Shimano hub. If you use a different hub axle to secure the hub, it may not have sufficient strength to secure the freehub, or the axle may break because of insufficient strength, and this may cause the wheel to fall off, and serious injury may occur.

• Before riding, confirm that the hub axle has been tightened with torque of 35 - 45 N·m and the wheel has been secured to the frame. Serious injury can result from falling if the wheel comes off.

• 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.

• Read these Technical Service Instructions carefully, and keep them in a safe place for later reference.

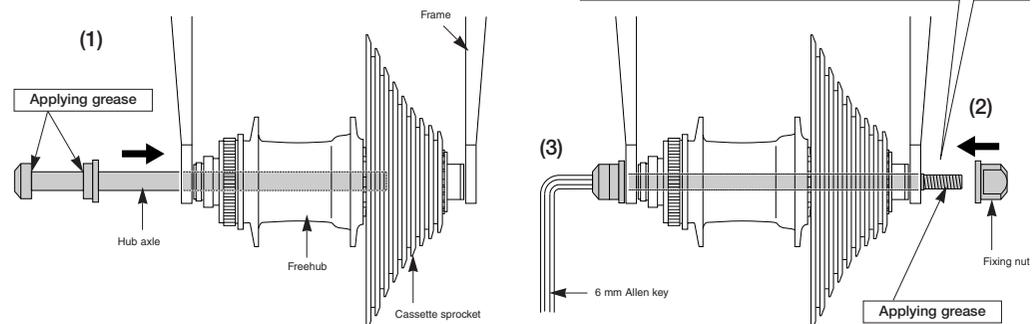
Note

- If the wheel becomes stiff and difficult to turn, you should lubricate it with grease.
- Do not apply any lubricant to the inside of the hub, otherwise the grease will come out.
- You should periodically wash the sprockets 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 sprockets and the chain.
- If the chain keeps coming off the sprockets during use, replace the sprockets 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.

Installation to the frame

- (1) Install the sprockets to the FH-M815 / FH-M810 freehub, place the freehub onto the frame and pass the hub axle through it.
- (2) Install the fixing nut to the hub axle.
* FH-M815 (ø12 mm), FH-M810 (ø10 mm / 12 mm)
- (3) Turn the hub axle to secure the freehub to the frame.

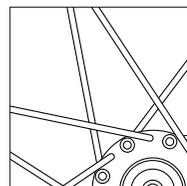
Tightening torque:
35 - 45 N·m {305 - 392 in.lbs}



Wheel spoke lacing

Rotating direction of wheel

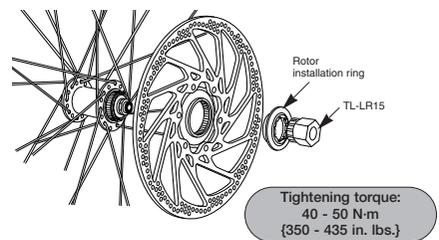
Rear left Rear right



Check that the spokes have been laced as shown in the illustration.

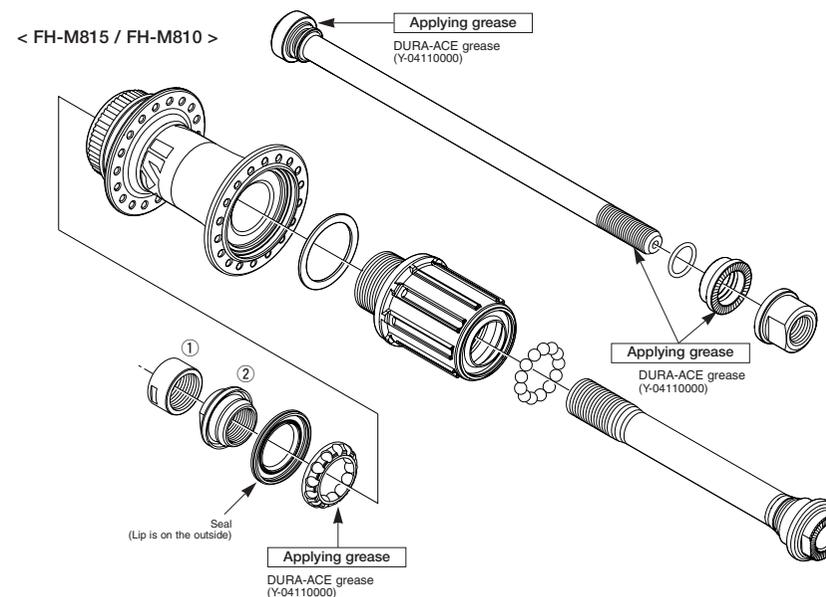
A radial assembly cannot be used.

Installation of the rotor



Maintenance

These units can be disassembled as shown in the illustrations. Grease should be applied to each part at periodic intervals.



Part name	Thread type	Vertical dropout	Tightening torque
① Left hand lock nut (M15)	Right hand thread	18 mm spanner	14.7 - 19.4 N·m {128 - 169 in. lbs.}
② Left hand cone (M15)	Right hand thread	17 mm spanner	—

Note:

- When removing and installing the seal, do it very carefully so that the seal does not become bent. When reinstalling the seal, make sure that it is facing the right way, and insert it as far as it will go.
- Do not disassemble the dust-proof covers which are crimped onto the axle and the cone.
- Do not attempt to disassemble the freewheel body, because it may result in a malfunction.

Technical Service Instructions

SI-3D40A-004

FH-M815 FH-M810

Freehub

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

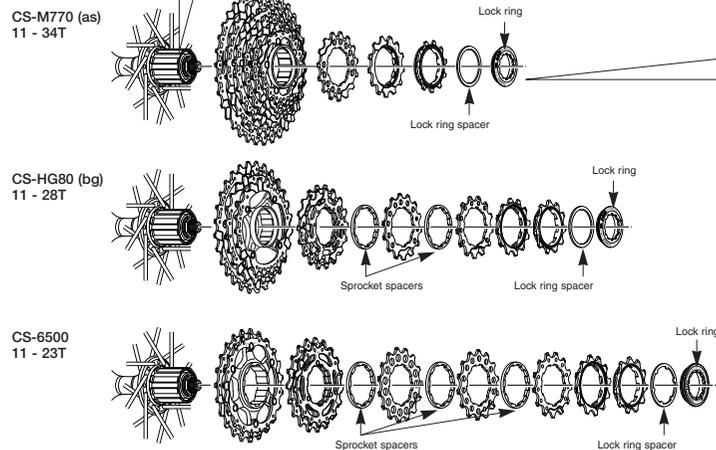
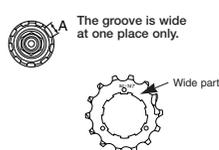
Series	SAINT	
Shifting lever	SL-M810	
Outer casing	OT-SP41 (SIS-SP41)	
Rear derailleur	RD-M810	
Type	GS / SS	
Freehub	FH-M815 / FH-M810	
Freehub axle (rear hub axle)	SM-AX80	
Front hub	HB-M810	
Gears	9	
Cassette sprocket	CS-M770 / CS-HG80 / CS-6500	
Chain	CN-HG93	
Bottom bracket guide	SM-SP17	

Specifications

Freehub	FH-M815	FH-M810
Model No.	FH-M815	FH-M810
Gears	9	9
No. of spoke holes	36 / 32	36 / 32
Overlock nut dimensions	150 mm	135 mm
Axle diameter	12 mm	10 mm / 12 mm
Applicable rear derailleur	RD-M810	RD-M810

Installation of the sprockets

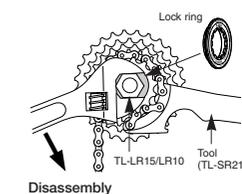
For each sprocket, the surface that has the group mark should face outward and be positioned so that the wider part of each sprocket and the A part (where the groove width is wide) of the freewheel body are aligned.



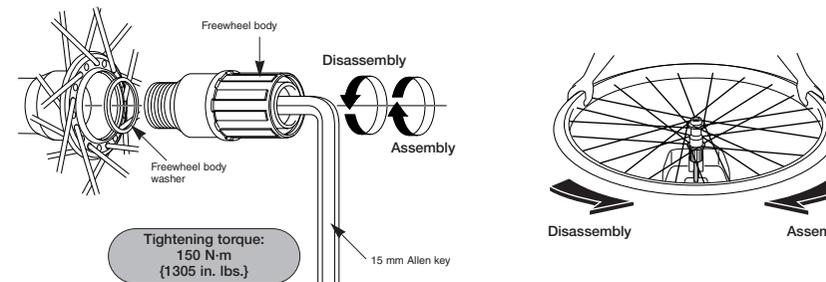
For installation of the HG sprockets, use the special tool (TL-LR15/LR10) to tighten the lock ring.

Tightening torque:
30 - 50 N·m
{261 - 434 in. lbs.}

To replace the HG sprockets, use the special tool (TL-LR15/LR10) and TL-SR21 to remove the lock ring.



Replacement of the freewheel body



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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) © Feb. 2010 by Shimano Inc. XBC SZK Printed in Japan.