

General Safety Information

⚠ WARNING

- Check that the wheels are fastened securely before riding the bicycle. If the wheels are loose in any way, they may come off the bicycle and serious injury may 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.
- Read these Technical Service Instructions carefully, and keep them in a safe place for later reference.

Note

- Do not use the CS-4600 in any combination other than with the 10-speed super narrow chain. Other chains cannot be used as the sizes do not match.
- An 11T and a 12T lock ring are available for use with the CS-4600. Use whichever lock ring matches the sprocket configuration.
- If the wheel becomes stiff and difficult to turn, you should lubricate it with grease.
- Do not apply any oil 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.
- Parts are not guaranteed against natural wear or deterioration resulting from normal use.
- For maximum performance we highly recommend Shimano lubricants and maintenance products.

Technical Service Instructions

SI-3TF0A-001

FH-4600

Freehub

Specifications

Freehub

| | |
|-------------------------|---------|
| Model No. | FH-4600 |
| Gears | 10 |
| No. of spoke holes | 32 / 36 |
| Overlock nut dimensions | 130 mm |

SHIMANO

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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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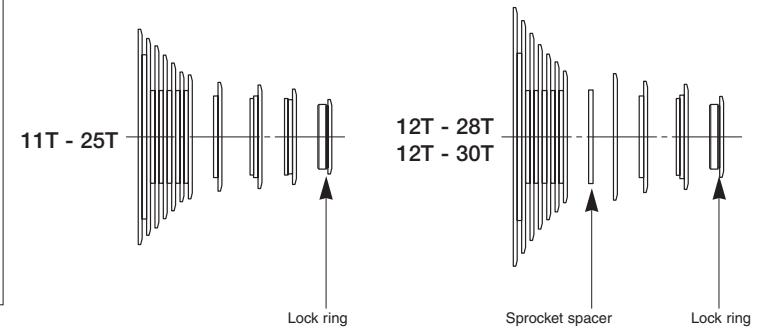
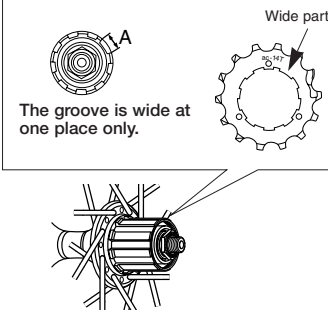
Cassette sprocket

Sprockets marked by are secured.

| Model No. | CS-4600 | | | |
|------------------------------|-----------|----------------|-----------------------------------|--|
| Sprocket tooth configuration | 11T - 25T | 11T, 12T, 13T, | 14T, 15T, 17T, 19T, 21T, 23T, 25T | |
| | 12T - 28T | 12T, 13T, 14T, | 15T, 17T, 19T, 21T, 23T, 25T, 28T | |
| | 12T - 30T | 12T, 13T, 14T, | 15T, 17T, 19T, 21T, 24T, 27T, 30T | |

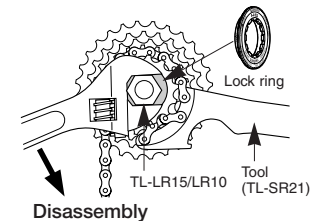
Installation of the HG sprockets

For each sprocket, the surface that has the group mark should face outward and be positioned so that the wide parts of the gear projections on 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.
- To replace the HG sprockets, use the special tool (TL-LR15/LR10) and TL-SR21 to remove the lock ring.

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



Replacement of the freewheel body

After removing the hub axle, remove the freewheel body fixing bolt (inside the freewheel body), and then replace the freewheel body.

Note:

Do not attempt to disassemble the freewheel body, because it may result in a malfunction.

Tightening torque:
35 - 50 N·m {305 - 434 in. lbs.}

