

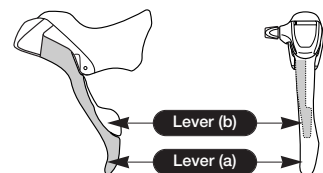
**WARNING**

- 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**

- Operation of the levers related to gear shifting should be made only when the front chainwheel is turning.
- For smooth operation, use the specified outer casing and the bottom bracket cable guide.
- Grease the inner cable and the inside of the outer casing before use to ensure that they slide properly.
- Use a frame with internal cable routing is strongly discouraged as it has tendencies to impair the SIS shifting function due to its high cable resistance.
- A special grease is used for the gear shifting cable. Do not use DURA-ACE grease or other types of grease, otherwise they may cause deterioration in gear shifting performance.
- Please refer to the Service Instructions for the ST-4600 for details on installation and maintenance.
- Be sure to read these service instructions in conjunction with the service instructions for the FD-4603 before use.
- 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.

**Gear shifting operations**



Lever (b) will also move when lever (a) is operated, but be careful not to apply pressure to lever (b). Similarly be careful not to press lever (a) when operating lever (b). Gears will not shift when both levers are pressed simultaneously.

Type of shifting	Lever operation
Smallest chainring → Intermediate chainring 	Lever (a)  Operate lever (a) until gear shifting is complete.
Intermediate chainring → Largest chainring 	Lever (a)  Operate lever (a) until gear shifting is complete.
Largest chainring → Intermediate chainring 	Lever (b)  Operate lever (b) until gear shifting is complete.
Intermediate chainring → Smallest chainring 	Lever (b)  Operate lever (b) until gear shifting is complete.

**Trimming (noise prevention mechanism) operation**

Depending on the position of the chain after shifting, the chain may rub against the chain guide outer plate or the chain guide inner plate of the front derailleur, producing a characteristic noise. If this sort of thing happens, you can press lever (a) or lever (b) slightly to move the front derailleur a little way so that it does not touch the chain. This operation is called "trimming". Trimming can be carried out whether the chain is on the largest, intermediate or smallest chainring. If noise occurs when the chain is in one of the positions shown below, carry out trimming to eliminate the noise.

Chain position	Symptom	Trimming operation	
		Lever operation	Front derailleur movement
Largest chainring  Intermediate chainring  Smallest chainring 	Chain contacts outer plate  Outer plate Chain	Lever (a)  Click (Hits)	trimming operation Before trimming → After trimming Front derailleur movement 
Largest chainring  Intermediate chainring  Smallest chainring 	Chain contacts inner plate  Inner plate Chain	Lever (b)  Click (Hits)	trimming operation Before trimming → After trimming Front derailleur movement 

Technical Service Instructions SI-6UP0A-001

**ST-4603** Front DUAL CONTROL Lever

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

Series	TIAGRA
Shifting lever	ST-4603
Outer casing	OT-SP41
Gears	30
Front derailleur	FD-4603
Front chainwheel	FC-4603
Rear derailleur	RD-4600-GS
Freehub	FH-4600
Cassette sprocket	CS-4600
Chain	CN-5600
Bottom bracket cable guide	SM-SP17



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