

WARNING

Obtain, read and carefully service instructions when installing parts. A loose, worn, or damaged parts may cause injury to the rider. We strongly recommend that only genuine Shimano replacement parts be used.

CAUTION

- Be sure to shift the lever one gear at a time, and reduce the force being applied to the pedals during shifting. If you try to force operation of the shifting lever while the pedals are being turned strongly, your feet may come off the pedals and the bicycle may topple over, which could result in serious injury.
- Never place your foot on the bell crank. Doing so may cause problems with gear shifting.

TECHNICAL SERVICE INSTRUCTIONS SI-6D90A-001

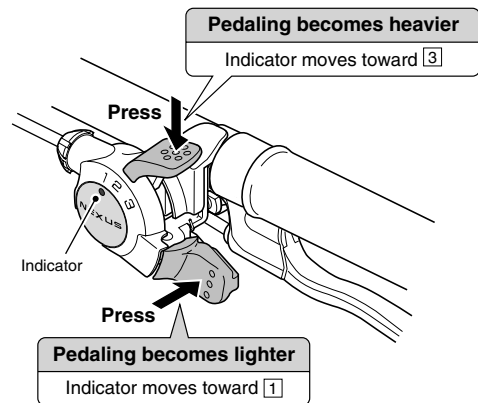
SL-3S90 Bell Crank III Piano Touch Lever Bell Crank III

Before use, read these instructions carefully, and follow them for correct use.

Be sure to read these service instructions in conjunction with the service instructions for the Inter-3 hub before use.

Operating the piano touch lever

Press to shift one step at a time.



- 1 Starting / Riding on sandy or rough road surfaces / Riding up slopes / Carrying heavy loads / Riding into head winds
- 2 Riding on flat road surfaces
- 3 Riding at high speeds

These service instructions explain how to use and maintain the Shimano bicycle parts which have been used on your new bicycle. For any questions regarding your bicycle or other matters which are not related to Shimano parts, please contact the place of purchase or the bicycle manufacturer.

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

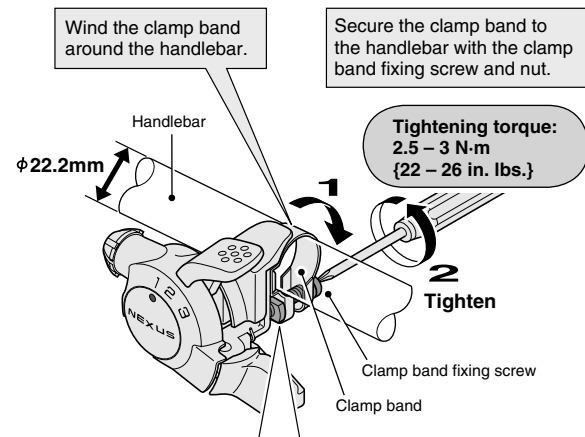
Please note: Specifications are subject to change for improvement without notice. (English)

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Installation of the lever

Install the lever as shown in the illustration.

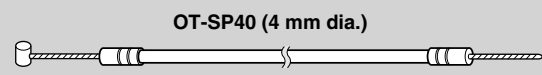


Be careful of the clamp band fixing nut setting direction.



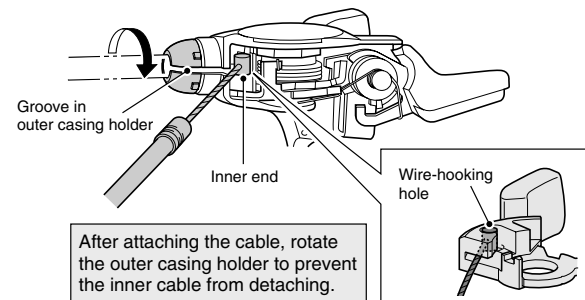
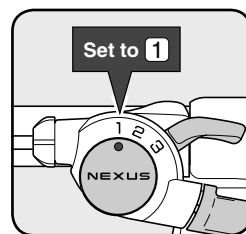
Installation of the shifting cable

Use a cable with one inner cable drum as the shifting cable.



Piano touch lever side

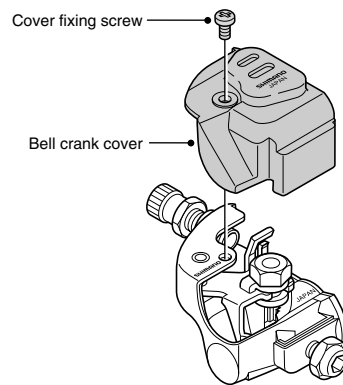
1. Set the lever to 1. Next, rotate the groove in the outer casing holder to the position shown in the following figure, hang the inner end on the wire-hooking hole, and press-fit the inner cable into the outer casing holder groove.



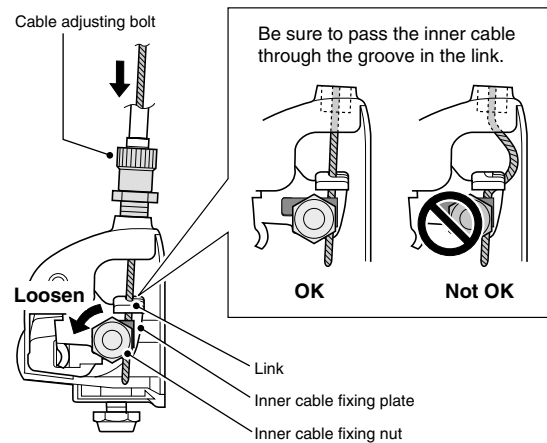
After attaching the cable, rotate the outer casing holder to prevent the inner cable from detaching.

Bell crank side

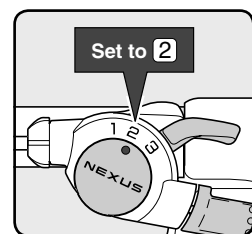
2. Loosen the cover fixing screw, and then remove the bell crank cover.



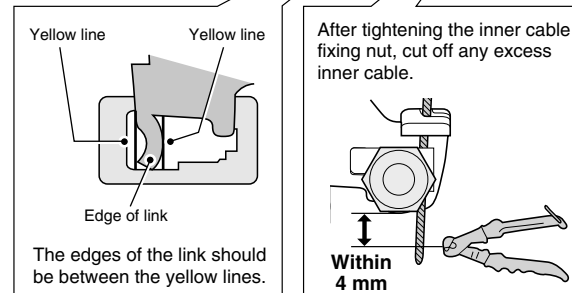
3. Set the inner cable into the link of the main bell crank unit.
 - 1) Loosen the inner cable fixing nut on the main bell crank unit. Next, pass the inner cable from the cable adjusting bolt along the groove in the link and then in between the link and the inner cable fixing plate.



- 2) Set the lever to 2. Next, pull the inner cable so that the edges of the link on the main bell crank unit are between the two yellow lines on the window, and then tighten the inner cable fixing nut at that position.



Tightening torque: 4 - 6 N-m {35 - 52 in. lbs.}

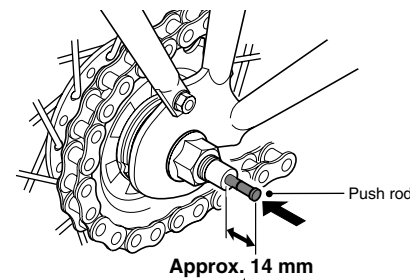


4. Replace the bell crank cover and tighten the cover fixing screw.

Tightening torque: 0.4 - 0.7 N-m {3 - 6 in. lbs.}

Installation of bell crank

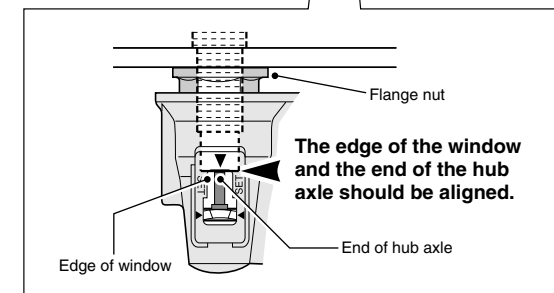
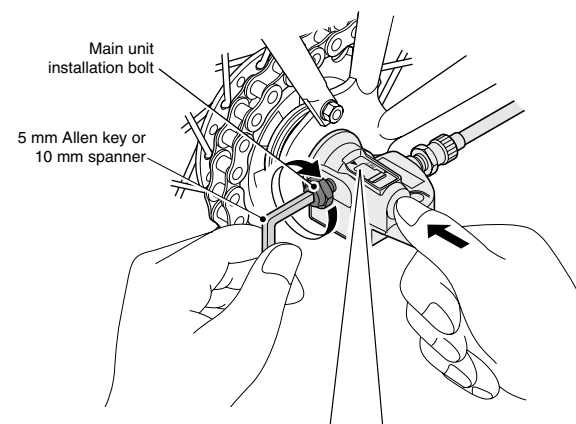
1. Insert the push rod into the hub axle.



The end of the push rod should project from the end of the hub axle by approximately 14 mm.

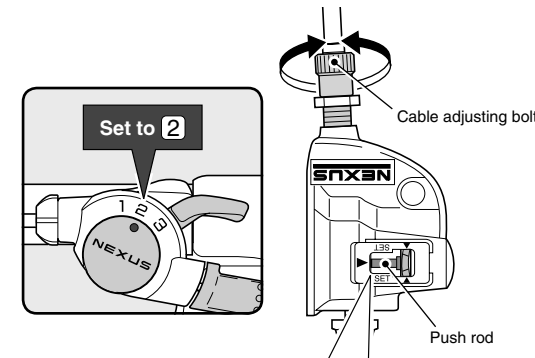
2. While pushing the main bell crank unit onto the hub axle, align the serrations inside the main bell crank unit with the flange nut, and then push the main bell crank unit on until it touches the end of the hub axle. In this position, tighten the main unit installation bolt onto the hub axle.

Tightening torque: 3 - 5 N-m {26 - 44 in. lbs.}

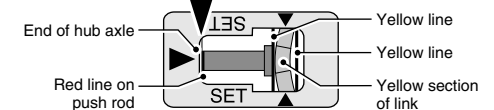


Adjusting bell crank

1. Set the lever to 2. Next, turn the cable adjusting bolt until the red line on the push rod is aligned with the end of the hub axle.



The red line on the push rod and the end of the hub axle should be aligned.



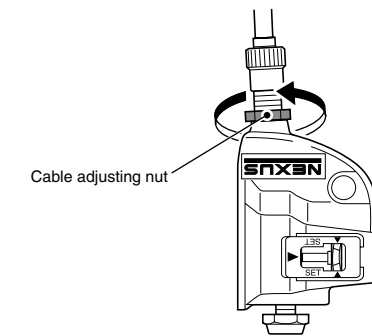
If the red line on the push rod is not visible, adjust so that the yellow section of the link is between the two yellow lines on the window.

Note: Look at the two yellow lines from directly above during adjustment.

2. While turning the crank arm, move the lever from 3 to 1 and then from 1 back to 3 two or three times to check the gear shifting. Set the lever back to 2 and check that the red line on the push rod is aligned with the end of the hub axle.

If they are not aligned, turn the cable adjusting bolt to make fine adjustments.

3. After adjusting the bell crank, tighten the cable adjusting nut to secure the cable adjusting bolt.



Securing the shifting cable to the frame

Secure the cable to the frame with the outer casing bands.

