

Part 1 GENERAL INFORMATION

1.1 Scope of This Leaflet

Congratulations on your purchase of a Sturmey-Archer internal gear hub. For the best performance, please follow instructions in this leaflet. Please contact your local Sturmey-Archer dealer if any problems are experienced with the product.

⚠ Riding the gear hub out of the adjustment may cause damage to the internal parts and possible malfunction.

1.2 Lubrication

No routine lubrication is required. During a major service, the hub greases should be replenished or replaced especially for transmitted parts of internal hub. Please contact your Sturmey-Archer dealer who is equipped to carry this out.

⚠ Incorrect usage of grease may cause out of work of gear changing.

⚠ Under no circumstances should any lubricant be applied to the brake drum and brake shoes, as this may prevent the brake from functioning.

1.3 Gear Changing

Continue pedaling, but ease pressure on the pedals and select the gear required. If the bicycle is stationary simply select gear required.

⚠ Only TSS80 gear selector can fit to the internal gear hub X-RD8. Incorrect usage of selector may cause the gear hub malfunction and damage the products.

1.4 Gear Ratio

Sturmey-Archer 8 speed hub gears have the following ratios:

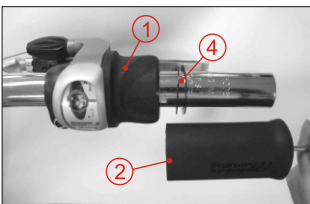
1 st gear	1	2 nd gear	1.28
3 rd gear	1.45	4 th gear	1.64
5 th gear	1.86	6 th gear	2.10
7 th gear	2.38	8 th gear	3.05

1.5 Brake Operation

To activate the brake, pull the appropriate brake lever on the handlebar. If the wheel does not run free, or cannot be locked by a full application of the brake, then adjustment is necessary (See section 5).

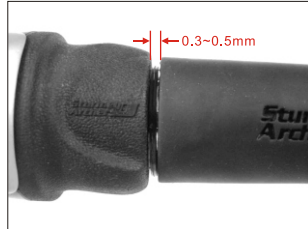
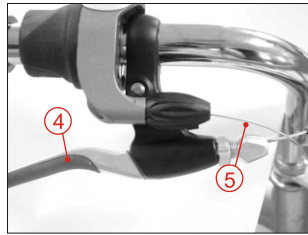
Part 2 Installation of TSS80 Gear Selector

- (1) Select 8th gear and insert it into the right side of the lever as shown in diagram 1(a). Ensure enough space to fit the end grip and plastic spacers.
- (2) Diagram 1 (b) shows that the gear selector on top of the brake lever. Ensure that no interaction between them.
- (3) To fix the gear selector by the hex socket screw to a torque during 1.5-2.5 Nm as shown in diagram 2(a). Diagram 2 (b) shows that the set of end grip which keeps 0.3-0.5 mm gap from plastic spacer providing freely rotating. There is no chemicals can be applied and air tool can be used to help when end grip is setting. Caution when twisting and the cable adjuster must run freely.



- (4) Pass through the inner cable into outer casing and connect to the gear hub (See the section 3 of this leaflet).

Notice: Avoid sharp bends and kinks in the inner cable



- (5) Readjust the related position if there exists interaction of lever and gear selector.

PART 3 Installation of Internal Gear Hub X-RD8

- (1) Install the gear selector (See information of TSS80 gear selector on section 2).
- (2) Ensure the components (sprocket 3, circlip 4, fulcrum lever 5, washer 6, C-clip 7) are fixed in sequence on the right side of the hub. Place the hub axle in fork ends to locate the inner hub. Fit lockwasher and axle nut and ensure that the serrations on the lockwasher face into the frame with the lugs located in the axle slots, as shown in diagram 1. Tightening torque is 30-45Nm.
- (3) Insert the adjusting screw 10 and nut into spigot 11 and pass inner cable through the assembly. Attach the inner cable fixing bolt unit 12 to the inner cable end and pull the inner cable while the length is 145mm from inner cable adjusting spigot unit to the fixing bolt unit, tighten both adjusting nut and fixing nut of inner cable by tightening torque 4-6Nm.

Notice: This instruction can be neglected if product bought from original supplier.

- (4) See diagram 3. Bring the cable around to the cassette joint pulley. Insert a 2mm Allen key or a #14 spoke in the cassette joint pulley, and then turn the pulley counterclockwise 13, hold so that the inner cable fixing nut is facing to the outside 14 (toward the fork end), and then slide the flats part of the cable fixing bolt into unit the gap in the pulley 15.
- (5) Let the inner cable adjusting spigot unit 10 fit into the gap of the fulcrum lever 5. Check the inner cable is correctly seated inside the pulley guide as shown in diagram 4.
- Notice: The best fit for cable adjusting spigot unit and fulcrum lever must has a small angle**
- (6) Insert torque arm 16 loosely into clip 17 and pass through a clip screw 18. With the wheel centralized and chain tensioned correctly. Insert locating washer and tighten the axle nut to a torque of 35Nm on the left axle end. Finally tighten the brake arm clip nut 19 firmly to 7Nm max as shown in diagram 5.
- (7) Brake cable fitting, see diagram 7.

-Pinch Bolt Specification

- Locate the adjusting nut 24 and spigot 25 into the adjusting screw 26 and then insert brake cable 27 into the adjusting screw unit.
- Insert the cable end into pinch bolt 28 and locate the screw 29.

-Closed End Cables Specification

- The product bought from original supplier is no needed to set.

- (8) Brake cable fitting, see diagram 5. Locate the brake-adjusting spigot into the slot on the torque arm 20. Counterclockwise pull the brake lever 21 and set the pinch bolt unit into the slot of brake lever 22. Adjust brake by rotating the brake cable adjuster 23.

Notice: To maintain maximum braking efficiency avoids sharp bends and kinks in the cable

- (9) Secure the cable to the frame with the outer casing bands.

Diagram 1 Installation of gear hub with other components

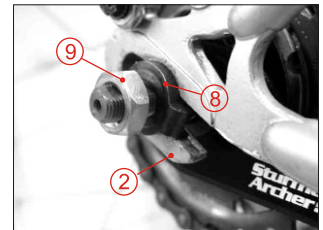
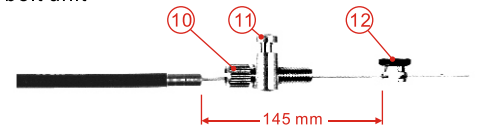


Diagram 2 Cable adjusting spigot and pinch bolt unit



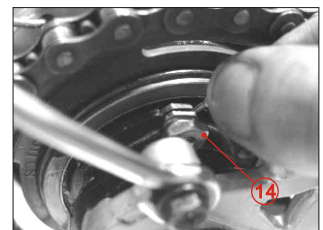
Part 4 Gear Adjustment

- (1) Select 4th gear on the control.
- (2) Turn the cable adjuster until the yellow arrow of the pulley is aligned with the notch of fulcrum lever, as show in diagram 8. Tighten the cable-adjusting nut to locate the gear changing system.
- (3) Select 1st gear, rotate the pedal crank, change back to 4th gear and check adjustment.

- (4) Retry the stages description above when the gear changing is not correct.

Notice: If attention to the above does not enable all 8 gears to be obtained, please contact your Sturmey-Archer dealer for assistance

Diagram 3 Pulley guide with cable fixing bolt



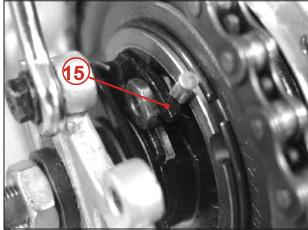
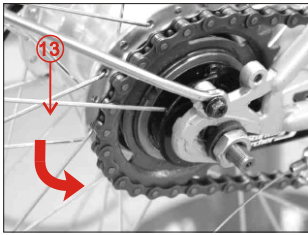


Diagram 4 Fulcrum lever and cable adjusting spigot unit

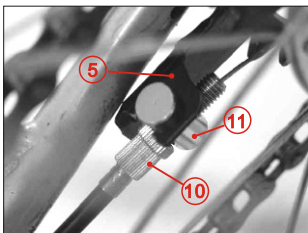
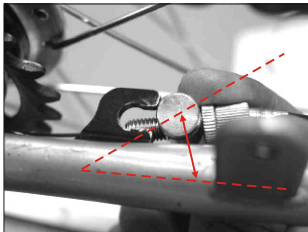


Diagram 5 Installation of the hub on left side

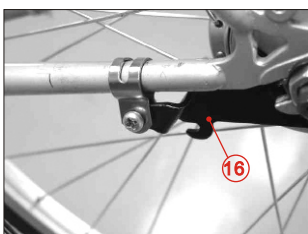
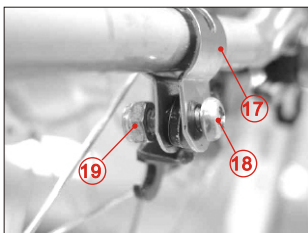


Diagram 6 Drum brake cable fitting

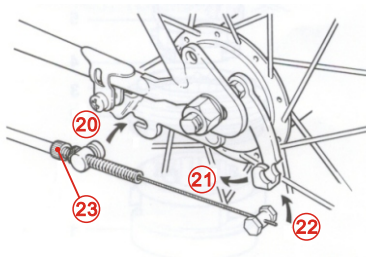
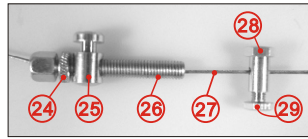
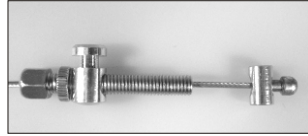


Diagram 7 Brake cable end types. (a) pinch bolt, (b) close end cable specification

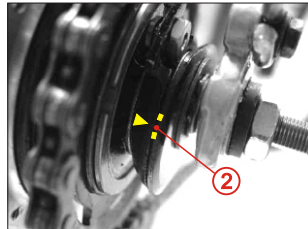
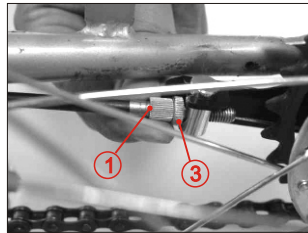


(a)



(b)

Diagram 8 Gear adjustments



Part 5 Brake Adjustment

See diagram 6 and 7:

- (1) Slacken the brake adjuster locknut 24.
- (2) Turn the adjuster 26 until the brake is applied.
- (3) Slacken the adjuster until the wheel just spins freely.
- (4) Tighten the locknut 24.

⚠ The brake adjustment must be checked or replaced if necessary before first using the bicycle, and after removing or replacing the wheel.

Notice: Riding the first few miles brake linings "bed-in" and may require re-adjustment. Should braking efficiency become impaired beyond adjustment, brake shoes or linings may need replacement. Contact your Sturmey-Archer dealer who is equipped to replace these