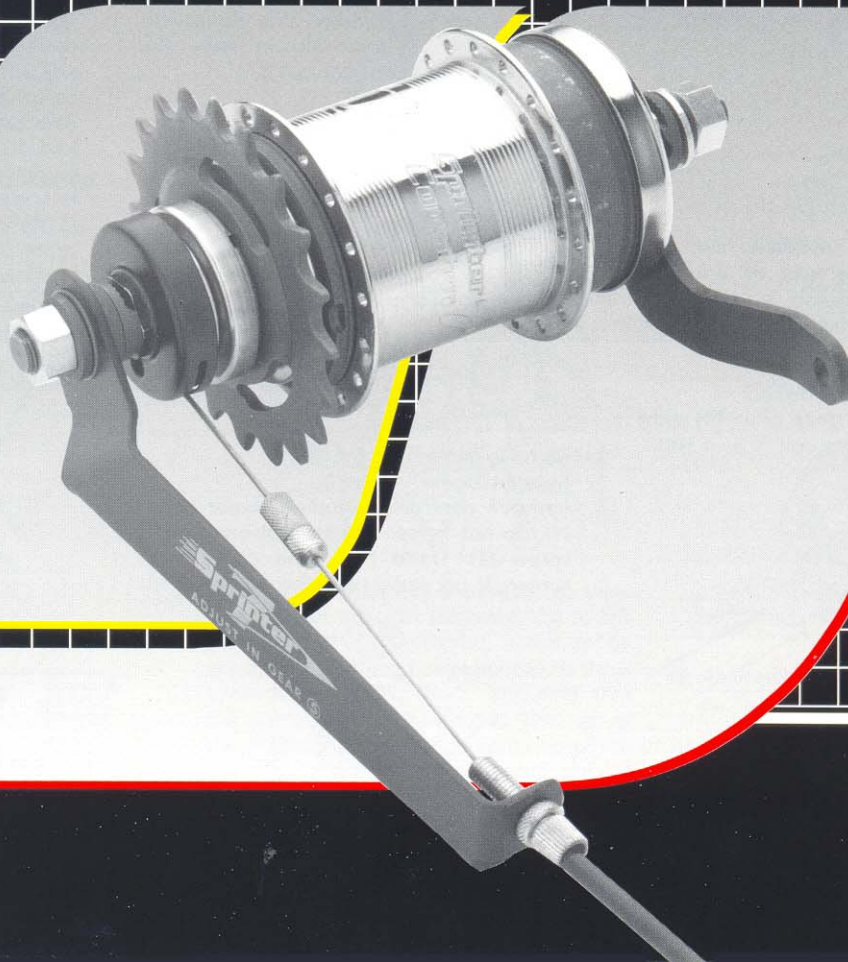


Sturnmey ***Archer***

Technical Information
and Parts List

Sprinter 7 Coaster
Seven Speed Brake Hub



Part 1 GENERAL INFORMATION

1.1 SCOPE OF THIS LEAFLET

Congratulations upon your purchase of a Sturmey-Archer SPRINTER 7-SPEED HUB. To enjoy this hub at its best please follow these few simple instructions. Remember, during the first few miles the cable system will "bed-in" which may necessitate adjustment to ensure the hub is working to its maximum potential and to prevent possible hub damage (See Part 3).

This leaflet refers to the SPRINTER 7 COASTER BRAKE HUB, part of the SPRINTER family of 7-SPEED HUB GEARS. Please contact your local approved dealer if any problems are experienced with the product.

1.2 LUBRICATION

No routine lubrication is required. During a major service the greases should be replenished to prolong the life of the gearbox. Please contact your approved dealer who is equipped to carry this out.

The following types of greases meeting Sturmey-Archer Technical Standards should be used.

For Bearings - SA103B

For Internal Parts - SA103A

For Brake Parts - SA 103E

Part 2 GEARS

2.1 GEAR CHANGING

Stop pedalling and select the gear required.

2.2 GEAR RATIOS

The Sturmey-Archer SPRINTER 7 Range have the following ratios:-

Distance travelled in metres (44T c/w. 22T Sprocket, 27" Wheel) with one revolution of the pedal.

1st Gear - 2.88 metres

2nd Gear - 3.20 metres

3rd Gear - 3.80 metres

4th Gear - 4.50 metres

5th Gear - 5.60 metres

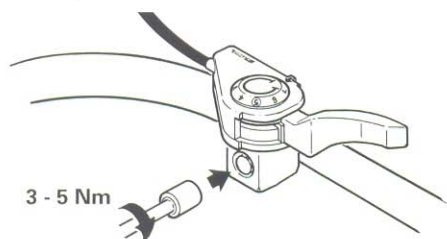
6th Gear - 6.50 metres

7th Gear - 7.50 metres

The overall distance travelled can be altered by changing the size of the rear sprocket. A range of sprockets from 14 to 22 tooth are available suitable for 1/2" pitch x 1/8" Chain.

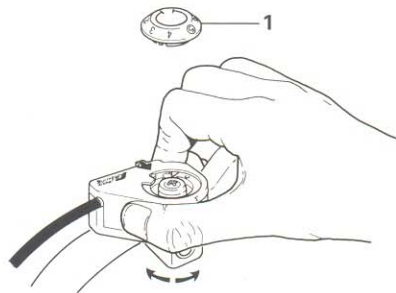
2.3 SPRINTER CONTROL FITMENT

1. Fit control set in 1st gear onto RH side of handlebar and tighten bolt to 3 - 5 Nm.



2. The control orientation can be altered to suit individual needs by removing the plastic screw cover (1) at the control centre, and loosening the cross head screw. Rotate the control to the desired position before tightening the screw and replacing the cover. The control can be

positioned either in front of or behind the handlebar.



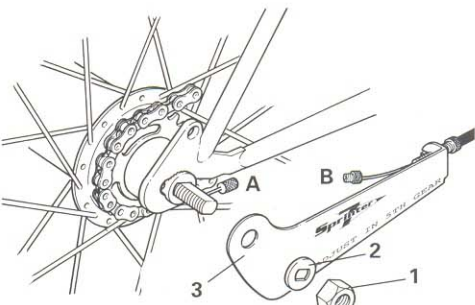
3. Run cable, as diagram, along frame and secure with clips/ties. Do not fasten too tight - the outer cable should be retained but not clamped. Smallest possible cable bend 100mm radius. Fit fulcrum lever to cable by screwing in the adjuster. To fit the fulcrum lever see Part 4.3. Adjust the gears as in Part 3.



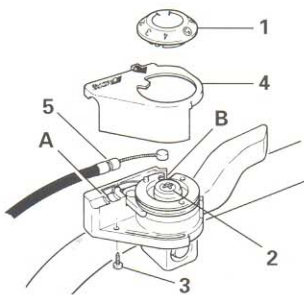
2.4 GEAR CONTROL CABLE REPLACEMENT

To remove cable:

1. Remove axle nut (1) from axle along with axle washer (2) and fulcrum lever (3). Disconnect cable connectors A & B.



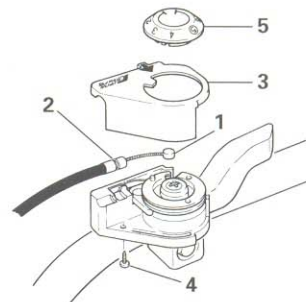
2. Remove cable from frame.
3. Select 1st gear.
4. Remove control orientation screw cover (1), do not loosen the control orientation screw (2). Undo the small cross head screw (3) on underside of control and lift



off plastic panel (4) from the top of the control. Remove outer cable (5) from recess (A) and then remove inner cable nipple from control pulley (B).

2.5 TO FIT NEW CABLES:

1. Select 1st Gear.
2. Expose inner cable.
3. Engage inner cable nipple (1) into the nipple recess in the control pulley then engage the outer cable (2) in the cable recess. Replace the top panel (3) and secure with screw (4) then replace control orientation screw cover (5).



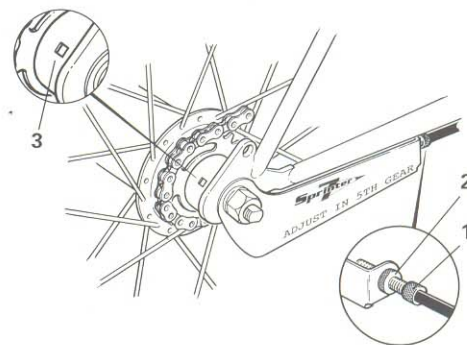
NOTE:- In the event of damage to the control the whole unit should be replaced.

4. To complete installation of the new cable repeat point 3 in Part 2.3 ensuring cable connectors are securely tightened.

Part 3 GEAR ADJUSTMENT

All types of cycle gear systems must not be ridden out of adjustment as this may damage the internal components and cause the gear to malfunction.

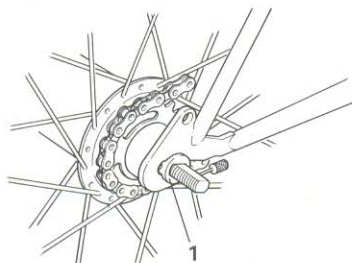
1. Select 5th gear, and rotate the pedals. Turn the cable adjuster (1), until the white mark is in full view through the adjustment window (3). Rotate pedals and select all gears. Move the control to 4th gear then select 5th gear, rotate the pedals and re-check adjustment. If the white mark is central within the window, adjustment is correct and the adjuster can be locked in place with the adjuster locknut (2). If not repeat the procedure.



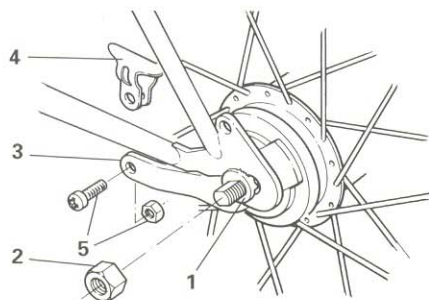
Part 4 WHEEL FITTING

The SPRINTER-7 COASTER Hub has a 134mm overlocknut dimension. It is not designed for cycles with vertical dropouts. Always maintain at least a 2:1 ratio between the numbers of teeth on the chainwheel and those of the sprocket.

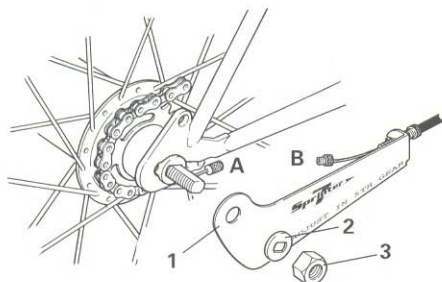
1. Fit the wheel into the bicycle frame, along with chain tensioners if fitted place the chain around the sprocket. Locate the anti-rotation washers (1) over both ends of the axle ensuring the lugs fit into the chainstay ends. Sturmey-Archer manufactures two sizes of anti-rotation washer (7.9mm and 9.5mm), ensure the correct one is fitted.



2. Fit LH axle nut (2) finger tight, and loosely fit brake arm (3) into brake arm clip (4) with nut and bolt (5), do not tighten at this point.



3. Select gear position 1 on control, then join cable connectors A & B securely. Locate the fulcrum lever (1) over the axle. Fit the thin washer (2) and axle nut (3).



4. Align the wheel, tension the chain and tighten the axle nuts to 30Nm ensuring the fulcrum lever is parallel to the chainstay. Tighten the nut securing the brake arm clip to 7Nm.

5. Replace chainguard/gear case (if fitted).

NB: Before use check and make necessary adjustments to gears (See Part 3).

Part 5 SERVICE - DEALER INSTRUCTIONS - ASSEMBLY/DISASSEMBLY

5.1 If service problems arise, they usually occur outside the hub so check that the gear adjustment and fitment are correct before removing the wheel from the bicycle.

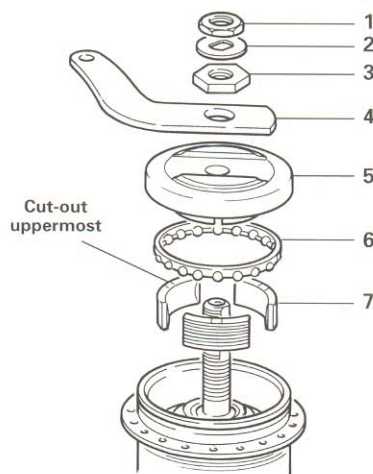
5.2 When service problems occur which cannot be corrected by attention to external maintenance, a close inspection of the

working parts inside the hub will be necessary.

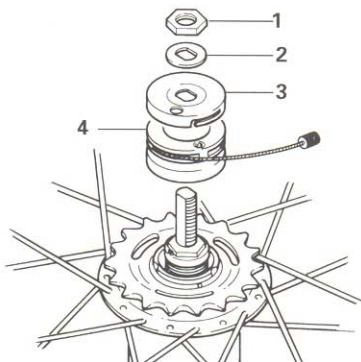
NB: The right hand end of the axle is the sprocket end. The axle should be clamped across the flats taking care not to damage the threads.

5.3 DISASSEMBLY

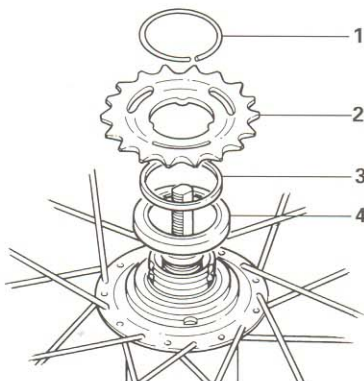
1. Clamp R.H. (sprocket) end of axle in vice, remove L.H. locknut (1), lock washer (2), spigotted brake arm locknut (3), brake arm (4), cone & dustcap assembly (5) followed by ball cage (6) and brake shoe segments (7). Note cut-out positions for replacement.



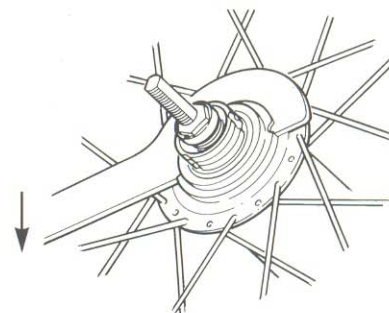
2. Remove hub from vice. Re-clamp L.H. end of axle in vice, remove locknut (1) & washer (2), adjuster cover (3) & cable drum (4).



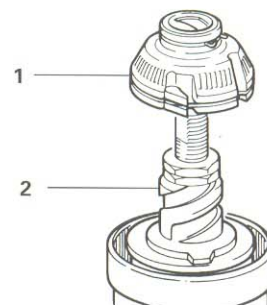
3. Using a small screwdriver, remove the sprocket circlip (1), sprocket (2), spacing washer (3), & dustcover (4). To ensure the chain alignment is maintained, carefully note the order of removal and the dishing of the sprocket.



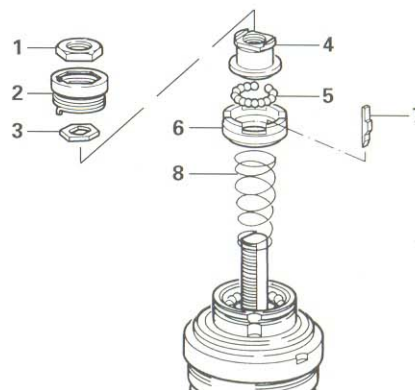
4. Remove from vice and using a "C" spanner or hammer and punch unscrew the internal from hub shell anti clockwise.



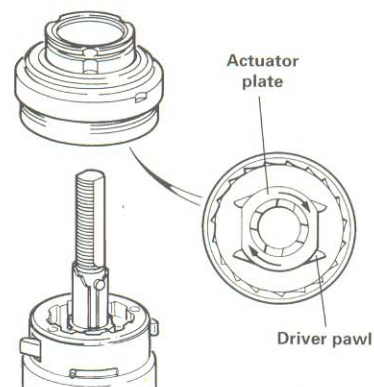
5. Before re-clamping in vice remove the brake actuator (1) from the internal (2) by rotating anti-clockwise.



6. Re-clamp L.H. end of axle in vice. Remove locknut (1), support cap & torsion spring (2), lockwasher (3). Unscrew the threaded cone (4), remove gearchange cone (6) and ball bearings (5) together, remove selector key (7) and spring (8).

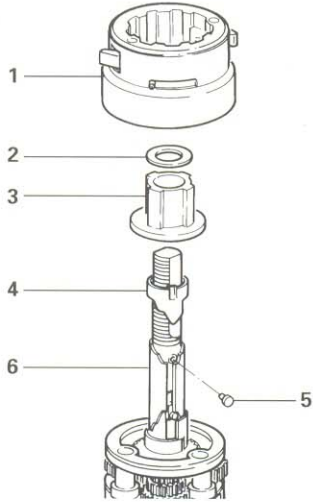


7. Remove ballring & driver assembly. To separate rotate actuator plate anti-clockwise to close brake pawls, using finger and thumb close driver pawls



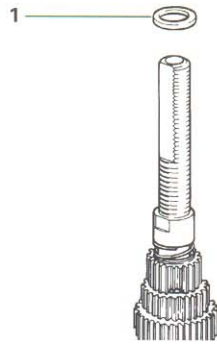
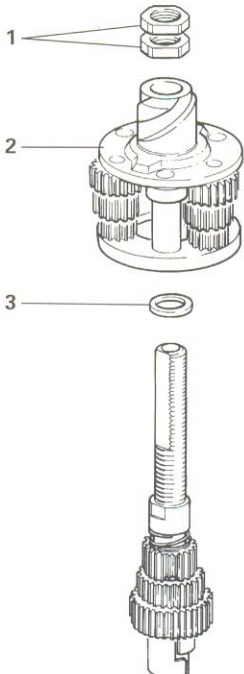
and remove driver assembly & ballcase from ballring.

8. Remove drag spring and gear ring assembly (1), clutch washer (2), & clutch (3). Slide off cam selector (4) and remove pin (5) and inner selector (6).

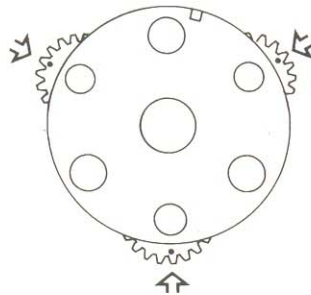


9. Remove internal from vice.

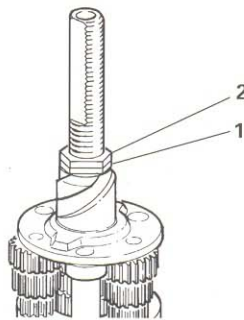
10. Re-clamp R.H. end of axle in vice. Remove axle locknuts (1). Remove planet cage assembly (2) and washer (3).



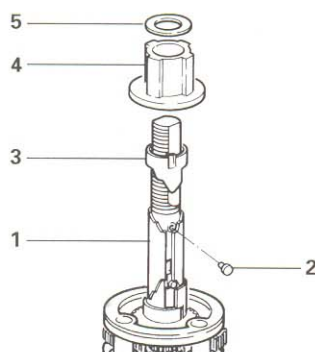
2. Set timing marks on planet pinions. Use a gear ring to hold in position while fitting planet cage assembly over sun pinions.



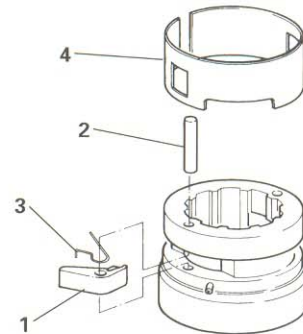
3. Fit planet cage assembly onto axle ensuring sun pinion teeth are in line. Ensure planet cage is located over all 3 sun pinions. Check that it rotates easily then screw first locknut (1) down until finger tight. Slacken off 1/8 of a turn allowing free running of the planet cage with minimum axial movement. With spanner hold the first locknut (1) in place and screw down the second one (2) to lock against it (7 - 10 Nm).



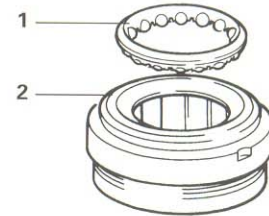
4. Remove internal from vice and re-clamp L.H. end of axle. Fit inner selector (1) and locate pin (2) in hole. Slide on cam selector (3), locate in groove, slide on clutch (4) ensuring it locates inside the planet cage, fit washer (5). Ensure clutch slides freely.



5. Take gear ring and fit the pawls (1), pawl pins (2), springs (3) and drag spring (4). Lubricate pinions & gear ring teeth. Note: It is recommended that the gear ring assembly is replaced as a unit.



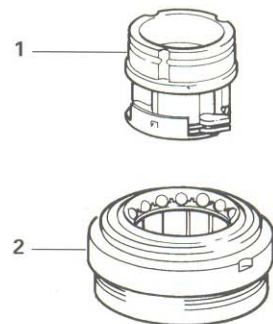
6. Lubricate the ballcase assembly (1). Place the ballcase assembly on the ballring (2) ensuring the balls are positioned downwards.



7. Grease and replace the 19 loose ball bearings in the driver. Rotate the actuator plate clockwise to compress the brake pawls.



8. Close the driver pawls using finger and thumb and with the actuator in this position fit driver assembly (1) into the ball ring assembly (2).



9. Turn drag spring (1) on gear ring (2) to close pawls and hold in position. With the brake pawls still closed by actuator plate locate the driver and ball ring assembly (3) onto gear ring by first rotating ball ring and then the driver anti-clockwise until both are located correctly on the gear ring.

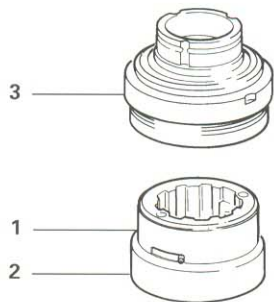
This completes disassembly. Do not attempt to remove the sun pinions from the axle.

5.4 INSPECTION

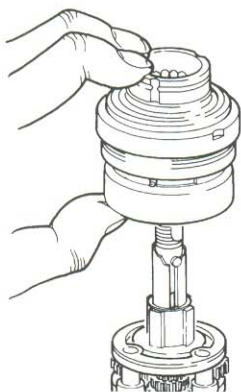
Thoroughly clean all the internal parts. Inspect all components for wear or damage, any worn or damaged components must be replaced.

5.5 ASSEMBLY

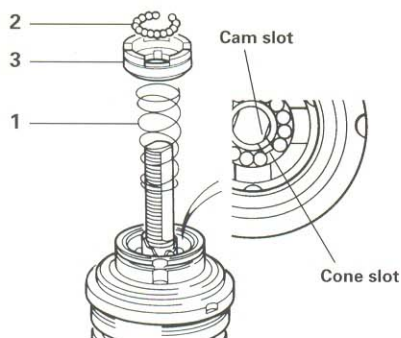
1. Re-clamp solid end of axle assembly in vice. Fit washer (1).



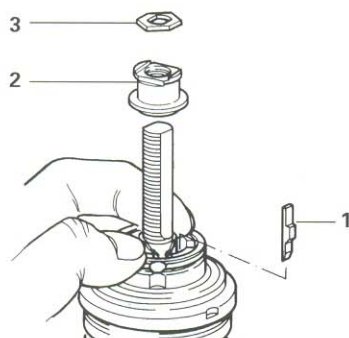
10. Supporting the whole unit fit over the clutch and planet pinions.



11. Fit conical spring (1) small end down. Grease and replace the 14 ball bearings (2) into cone (3), locate onto spring and line up the slot inside cone with the slot in the cam.

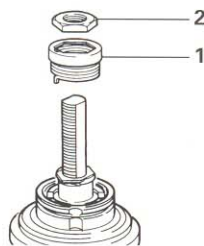


12. Hold in place and locate key (1) into slot. Keeping hold, screw on threaded cone (2), adjust until finger tight, turn cone back 1/2 a turn and lock in position with lockwasher (3). If flats do not locate, unscrew the cone until location is achieved.

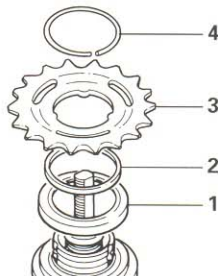


13. Using the cable drum turn unit clockwise to engage gear one and then remove the cable drum. Fit torsion spring & cap

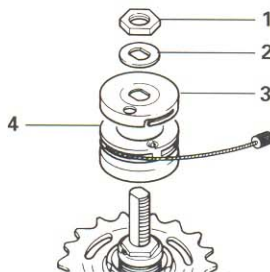
- (1) locating spring leg into one of the slots, turn cap one flat and locate on lockwasher. Screw on locknut (2) and tighten to 7 Nm.



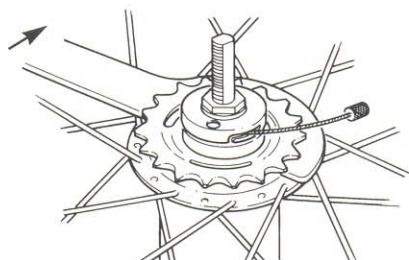
14. Fit sprocket dustcover (1), spacer (2), sprocket (3) & sprocket circlip (4).



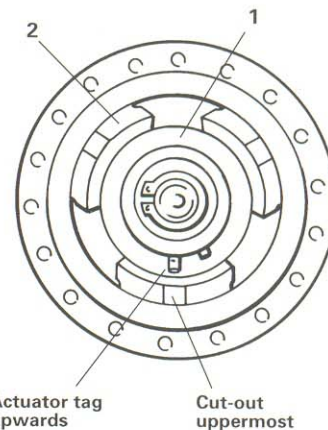
15. Locate cable drum legs into internal (this will only fit one way). Wrap cable around pulley anti-clockwise, fit adjuster cover locating cable in slot. Fit washer & locknut (tighten to 7 Nm). Remove from vice.



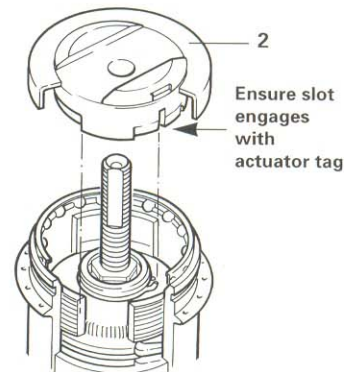
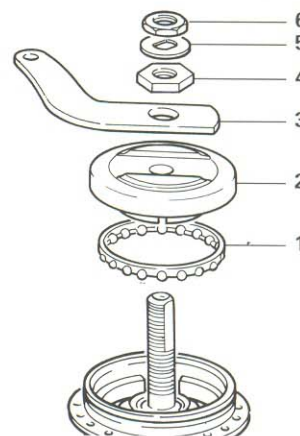
16. Ensure internal is lubricated. Insert internal into hub shell rotating anti-clockwise, then clockwise to engage the thread, tighten using "C" spanner or hammer and suitable punch.



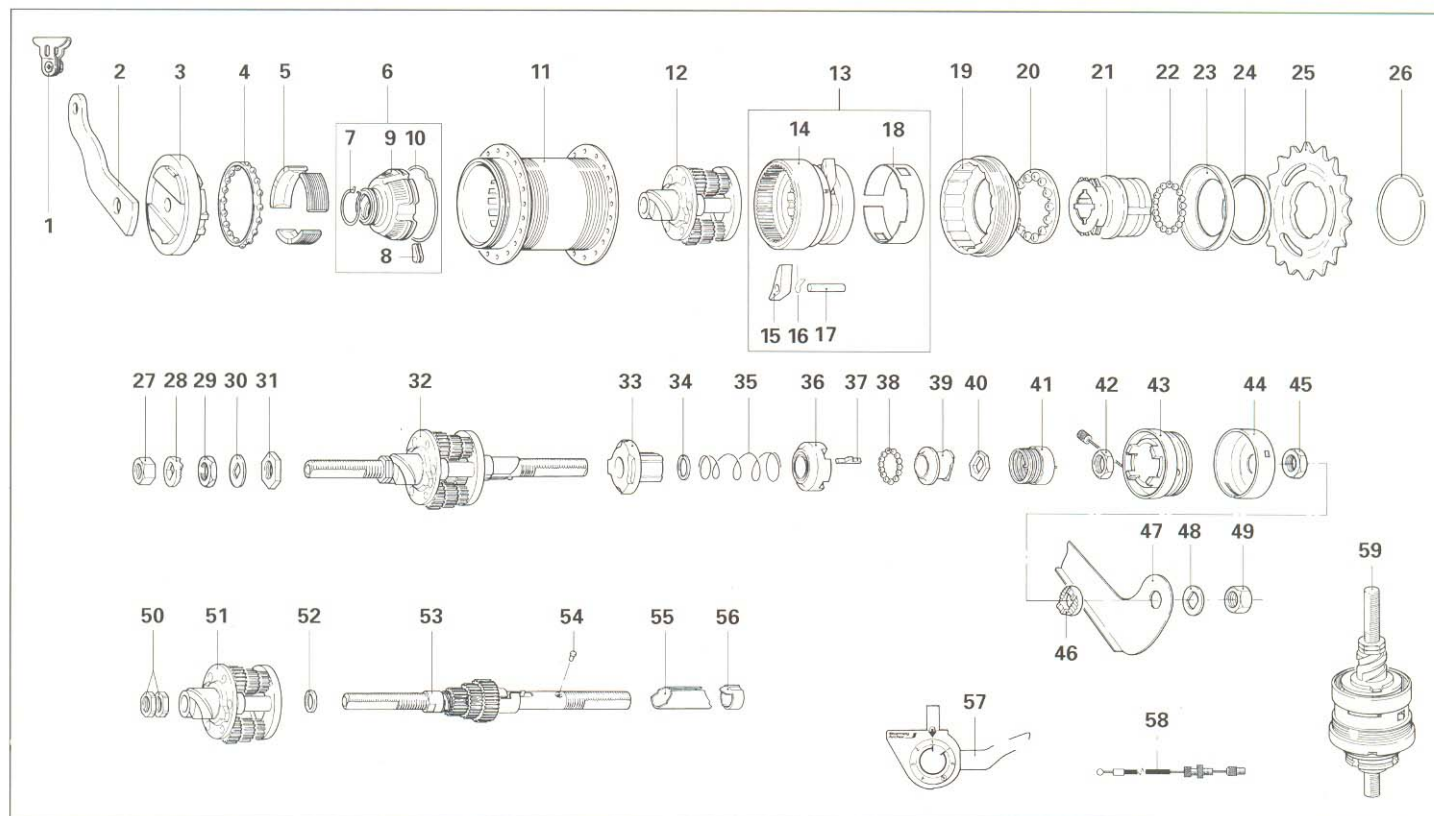
17. Clamp right hand end of axle in vice. Insert brake actuator assembly (1) to left hand end of axle ensuring spiral spline engages with planet cage spline. Fit the 3 brake shoe segments (2) ensuring that the cut outs are uppermost. The tag of the actuator must line up with one of the cut outs, and the three segments should be evenly spaced. If the drag spring has been replaced ensure that the tag faces upwards. All brake parts must be coated with grease to Sturmey-Archer technical standards SA103E.



18. Lubricate and fit ball cage assembly (1) with balls facing down. Fit left hand cone (2) rotating to ensure that it engages with the brake shoe segments and that the slot engages with the actuator tag. Fit the brake arm (3) and spigotted brake arm locknut (4). Adjust brake arm nut until minimum side play can be felt at the rim and none at the hub. Holding the brake arm nut stationary locate axle washer (5) and cone locknut (6) tightening to 7 - 10 Nm. NB. Adjusting the cone too tight will effect gear selection



19. Assemble the wheel into the bicycle as described in Part 4



Item No.	Sales No.	Description	Item No.	Sales No.	Description	Item No.	Sales No.	Description
1	*HSL 767	Brake Arm Clip Assembly with Integral Pad 15.5mm	24	HMW 127	Sprocket Spacing Washer 1.6mm	43	HSJ 848	Cable Drum
	*HCB 101	Brake Arm Clip Assembly 15.9mm	25	*HSL 714	Sprocket 14 teeth	44	HSJ 850	Adjuster Cover
	*HCB 103	Brake Arm Clip Assembly 18.3mm		*HSL 715	Sprocket 15 teeth	45	HMN 379	Locknut
2	HSJ 484	Brake Arm		*HSL 716	Sprocket 16 teeth	46	*HMW 155	Serrated Lockwasher 7.9 mm Slot
3	HSJ 480	L.H. Cone and Dustcap Assembly		*HSL 717	Sprocket 17 teeth		*HMW 494	Serrated Lockwasher 9.5 mm Slot
4	HSA 164	L.H. Ball Cage Assembly		*HSL 718	Sprocket 18 teeth		*HMW 515	K48 Lipwasher 9.5mm Slot
5	HSJ 478	Brake Shoe Segments		*HSL 719	Sprocket 19 teeth	47	HSJ 844	Fulcrum Lever
6	HSJ 473	Brake Actuator Assembly, (incl. 2 off Item 8, 1 off Items 7, 9 & 10)		*HSL 720	Sprocket 20 teeth	48	HMW 150	Washer
7	HSJ 407	Brake Actuator Drag Spring		*HSL 747	Sprocket 21 teeth	49	HMN 128	Axle Nut
8	HSJ 482	Brake Actuator Pawl	26	*HSL 722	Sprocket 22 teeth	50	HMN 382	Axle Locknut - 2 off
9	HSJ 476	Brake Actuator	27	HSL 721	Sprocket Circlip	51	-	Planet Cage (See Item 12)
10	HSJ 475	Brake Actuator Pawl Spring	28	HMN 128	Axle Nut	52	HMW 327	Axle Washer
11	HSA 541	Hub Shell Assembly 36 holes	29	*HMW 155	Serrated Lockwasher 7.9 mm Slot	53	HSA 544	Axle & Sun Pinion Assembly
12	HSA 545	Planet Cage		*HMW 494	Serrated Lockwasher 9.5 mm Slot	54	HSA 514	Selector Pin
13	HSA 543	Gear Ring Assembly (includes 1 off Items 14 & 18 and 2 off items 15, 16, 17)		*HMW 515	K48 Lipwasher 9.5mm Slot	55	HSA 512	Inner Selector
14	HSA 548	Gear Ring	30	HMN 132	Cone Locknut	56	HSA 511	Cam Selector
15	HSA 547	Pawl for Gear Ring	31	HMW 150	Lock Washer	57	HSJ 845	Sprinter 7 Control
16	HSA 120	Pawl Spring	32	HMN 381	Spigotted Brake Arm Locknut	58	HSJ 847	Control Cable Complete
17	HSA 530	Pawl Pin	33	-	Axle Assembly (See Item 53)	59	HSX 136	Gear Internal Assembly Complete
18	HSA 542	Drag Spring	34	HSA 510	Clutch			
19	HSA 492	Ball Ring	35	HMW 329	Clutch Washer			
20	HSA 438	Ball Cage Assembly	36	HSA 517	Clutch Spring			
21	HSA 528	Driver Assembly	37	HSA 516	Selector Cone			
22	HSA 520	4mm Ball Bearings - 19 off	38	HSA 519	Selector Key			
23	HSL 701	Outer Dust Cap	39	HSA 520	4mm Ball Bearings - 14 off			
			40	HSA 531	Cone			
			41	HMW 328	Lockwasher			
			42	HSA 546	Torsion Spring & Support Cup Assy			
				HMN 379	Locknut			

* Optional Fitment

REPRESENTED THROUGHOUT THE WORLD

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