



**Technical Information
and Parts List**

**Three Speed Hub
with Coaster Brake
Type AWC(II)/SRC3(II)**



Part 1 GENERAL INFORMATION

This leaflet refers to the Sturmey-Archer AWC / SRC3 Three Speed Gear Hub with coaster brake, and associated controls, cables and fittings. The hub model can be identified from the markings on the hub shell.

1.1 Gear Change

Gear change is simple and smooth with the proven Sturmey-Archer indexed control system. Continue Pedaling, but ease pressure on the pedals, and select the gear required. If stationary, simply select gear required.

1.2 Gear Ratios

The AWC hub has three gears:

- 1st gear - Decrease of 25%
- 2nd gear - Direct Drive
- 3rd gear - Increase of 33%

The overall drive ratio can be altered by changing the size of the sprocket. Sturmey-Archer supply a range of sprockets from 13 to 22 teeth, suitable for 1/2" pitch x 1/8" chain.

1.3 Braking

The Sturmey-Archer coaster brake stops the bicycle safely, smoothly and quickly. To apply maximum braking effort, ensure the pedal cranks are horizontal. The remarkable brake efficiency results from the unique Sturmey-Archer design whereby the braking effort is enhanced by the mechanical advantage of the gears, regardless of which gear is selected.

Part 2 ROUTINE MAINTENANCE

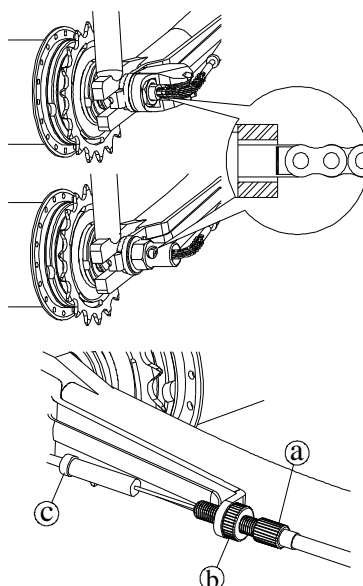
2.1 Lubrication

No routine lubrication is required. However, during assembly/disassembly the hub greases should be replenished (see Section 4). Grease types meeting the following Sturmey-Archer technical Standards should be used:-

- For Bearings SA103B
- For Brake Parts SA103E
- For all other internal parts SA103A

2.2 Gear Adjustment

1. Ensure that no more **2.5mm** of axle protrudes from the axle nut.
2. Select 2nd gear and rotate the pedal crank to ensure the gear is engaged. Turn the cable adjuster (a) until the center of the end of the indicator rod is level with the end of the axle, as show in diagram.
3. Tighten the cable-adjusting nut (b) and indicator locknut (c) to locate the gear changing system.
4. Select 3rd gear position, rotate the pedal crank, change back to 2nd gear and check adjustment. Retry the stages description above when the gear changing is not correct.



2.3 Hub Bearing Adjustment

The right hand cone is preset at the Sturmey-Archer factory and should only be disturbed during a major service. The left-hand cone only is used for normal bearing adjustment.

1. Loosen left-hand cone locknut.
2. Adjust brake arm nut until very slight side play can be felt at the wheel rim, and none at the hub.
3. Holding the brake arm nut stationary tighten the cone locknut (Torque 27 Nm).

Part 3 WHEEL FITTING

The Sturmey-Archer AWC / SRC3 Hub can be fitted into rear chainstay widths between 115mm-122mm using the appropriate spacers.

NB: This product is not designed for bicycles with vertical rear dropouts. If the wheel is removed, these instructions should be followed during re-assembly.

3.1

1. With the chain on the sprocket place the hub axle into the chainstay ends.
2. Fit washers and axle nuts. Ensure that the serrations on the anti-rotation lockwashers face into the frame with the lugs located into the chainstay slots.

NB: Ensure the correct size anti-rotation washer (item 34) is used and fitted correctly. DO NOT tighten the axle nuts at this stage or mis-alignment of the brake arm may occur.

3. Insert brake arm on hub loosely into the clip. With the wheel centralized, chain tensioned and aligned correctly, tighten the axle nuts to a torque of 26Nm.
4. Tighten the brake arm clip nut firmly to 7Nm max., ensuring brake arm remains in line with clip.
5. **Control Cable** - Ensure the indicator is screwed fully into the axle. Unscrew the indicator by up to half a turn if necessary to ensure easy connection to the gear cable and avoid twisting the indicator

links. Connect the indicator coupling to the gear cable adjuster and re-adjust gear (see Section 2.2)

Part 4 ASSEMBLY/DISASSEMBLY INSTRUCTIONS

If any service problems occur always refer to the fault diagnosis chart in the first instance. Problems can usually be correctly by the routine external maintenance described in Part 2. If the problem persists a close inspection of the working parts inside the hub will be necessary by a qualified cycle mechanic.

4.1 Disassembly

NB: Item numbers in the illustrations refer to exploded view overleaf.

1. Remove the indicator rod, axle nuts and spacing washers.
2. Use a screwdriver carefully to release the sprocket circlip from the drive, and then remove the spacing washers (if any), sprocket (note the order of these parts to facilitate reassembly).
3. (See Fig.1) Clamp right hand end of axle in a vice and unscrew the left hand cone locknut, and brake arm nut. Remove the left hand cone, brake arm assembly, and brake shoes. Remove the brake actuator assembly by turning hub-shell clockwise. Remove hub from vice.

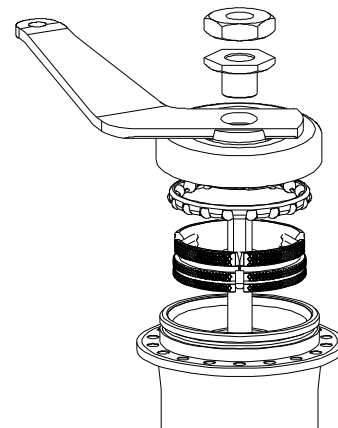


Fig. 1

4. Loosen the right hand ball ring and dustcap assembly with a C-spanner or hammer and punch. Unscrew the ball ring to release the internal assembly from the hub shell.

NB: If a replacement gear internal assembly (Item 60 on exploded view) is to be fitted, no further disassembly is required.

5. See (Fig.2). Clamp the left hand end of axle in the vice and remove right hand cone locknut, spacers (if any), lockwasher, cone and spring with cap. Lift off ball ring and ball cage assembly, together with the driver assembly. Separate the driver assembly from ball ring by compressing pawls and extracting the driver assembly through ball ring.

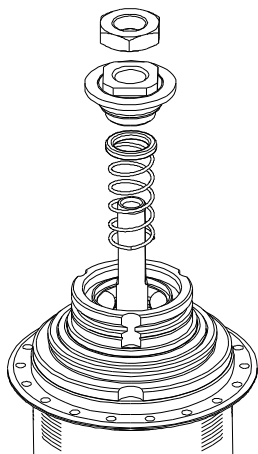


Fig. 2

6. (See fig. 3). Lift off gear ring assembly, clutch and axle key. Remove planet pinion pins and axle key. Remove axle from vice.

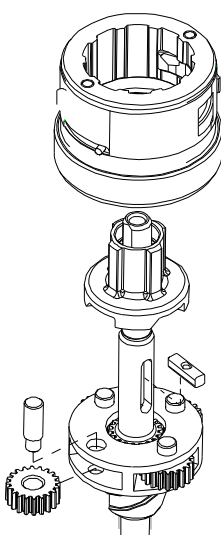


Fig. 3

7. Clamp right hand end of axle in vice and remove the two locknuts. Remove planet cage from axle and remove axle from vice.

4.2 Inspection and Repair of Internal Parts

Thoroughly clean all the internal parts and replace those worn or damaged. Specific items to be checked are:-

1. Axle - straightness, condition of thread and slots.
2. Condition of all pawls, springs, balls, ball tracks, pinions and gear ring teeth and drive slots.
3. Check free movement of driver actuator and pawl action by inserting clutch and turn.

NB: It is recommended that this assembly is not dismantled but if necessary replace with a new assembly.

4. **Gear Selector Key** - Check threads for wear and free movement in axle slot.
5. **Clutch** - Check for wear of the pinion pin pockets and also squareness of drive corner.
6. **Brake actuator assembly** - Condition of pawls and pawl spring. Brake actuator spring should be able to turn clockwise

readily, but have high resistance to turning anti-clockwise.

7. **Brake shoe segments** - Replace if worn.
8. **Left hand cone** - Condition of ball track.
9. **Brake Arm** - Replace if damaged.

4.3 Assembly

NB: All hub greases must be replenished during assembly using lubricants to the following Sturmey - Archer Technical Standards:

For Bearings SA103B

For Brake Parts SA103E

For all other internal parts SA103A

If a complete replacement gear internal assembly (Item 60 on Exploded View) is to be fitted, assembly commences at Point 5 below:

1. Locate planet cage over the axle with external screw thread facing away from axle slot. Screw first locknut down until finger tight. Slacken off 1/8 of a turn allowing free running of the planet cage with minimum axial movement. Hold the first locknut in place and screw down the second one to lock against it.
2. (See Fig. 3). Clamp left hand end of axle in vice and fit the planet pinions and pins vertical), clutch and gearing assembly.
3. (See Fig. 2). Fit the ball ring assembly then driver assembly compressing pawls to ensure driver ball track seats correctly on ball ring. Fit spring then cap.
4. Screw down the right-hand cone finger tight. Unscrew the cone by half a turn. Fit the cone lockwasher. If the washer will

not engage with the cone, unscrew the cone slightly.

NB: Under no circumstances must the right hand cone be unscrewed more than 5/8" of a turn. Fit spacer washers (if required) then cone locknut and securely tighten to 22 Nm torque. Remove from vice.

5. Insert hub assembly into the hub shell and securely tighten ball ring with C-spanner.
6. Clamp right hand end of axle in vice and fit brake actuator assembly to left hand end of axle, turning clockwise to ensure the internal screw threads engage with planet cage. Fit the brake shoes such that the two protrusions are uppermost (see Fig. 1), the tag of the brake actuator drag spring lines up with one of the cut outs, and the two segments with the small diameter downwards. Fit the axle key (ensuring threaded hole is evenly spaced (See Fig. 4). If the brake actuator drag spring has been replaced, ensure that the tag faces upwards. Ensure that all brake parts are coated with grease to Sturmey - Archer Technical Standard SA103E.

Part 5 FAULT DIAGNOSIS CHART

NB: Always check gear adjustment, condition of indicator, cable, control and tightness of fulcrum clip stop before referring to this chart		
SYMPTOM	FAULT	REMEDY
1. Difficult to change gear	- Damaged indicator - Damaged cable - Damaged control - Loose fulcrum stop - Worn/damaged clutch spring	Replace Replace Replace Tighten Replace
2. Different gear engaged to gear selected	- Gear adjustment - Bearing adjustment - Wrong indicator - Worn clutch spring - Worn gear ring drag spring - Worn gear ring pawls	Adjust Adjust Replace Replace Replace gear ring assembly Replace gear ring assembly
3. Drive jolt/slips in first gear only	- Worn brake actuator pawls	Replace pawls
4. Drive jolt/slips in first and second gears	- Worn drive pawls in driver	Replace driver assembly
5. Drive jolt/slips in second and top gears	- Worn gear ring pawls	Replace gear ring assembly
6. Drive jolt/slips in top gear only	- Worn clutch - Worn planet pinion pins	Replace Replace
7. Harsh Braking action	- Lock of lubrication	Grease all brake parts and Surfaces
8. No brake	- Worn drive pawls in driver - Worn or incorrectly fitted brake actuator drag spring	Replace driver assembly Replace

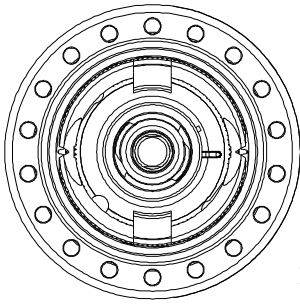


Fig. 4

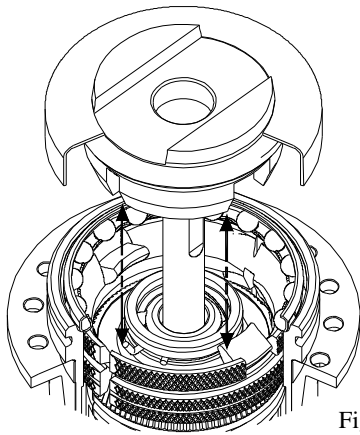
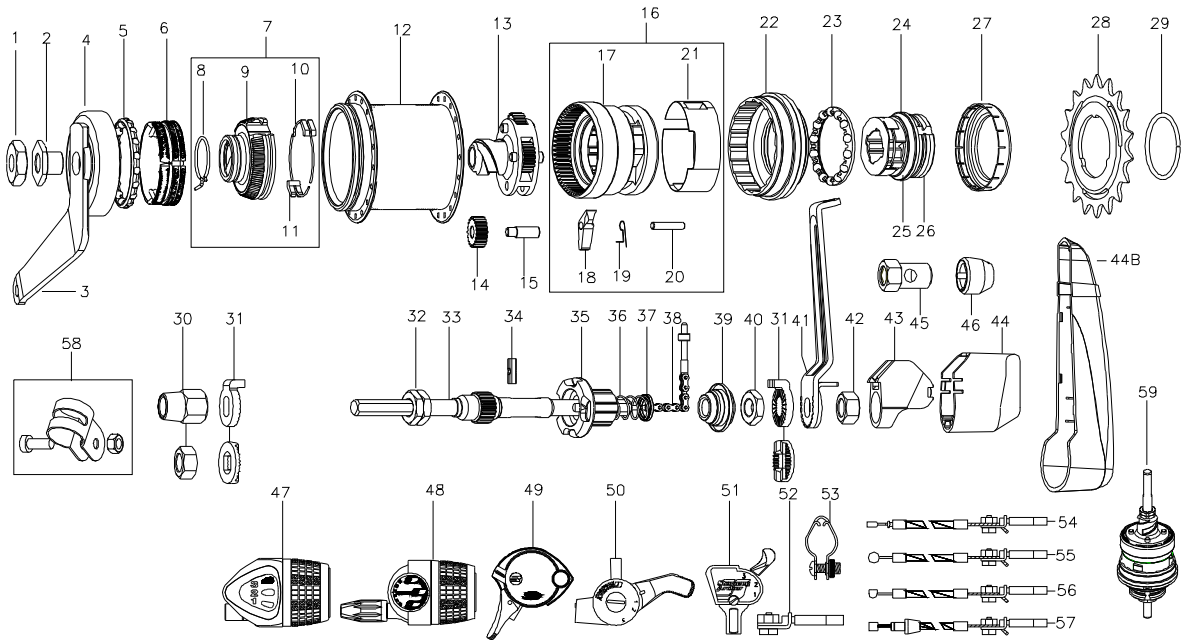


Fig. 5

7. (See Fig. 1) Fit ball cage assembly, with balls facing down. Fit left hand cone, lining up the slot on the underside of the cone (See Fig. 5) with the brake actuator drag spring tag. Slide over the axle to engage tag, checking the cone is correctly seated by rotating slightly ensuring that it engages with the brake shoes (see Fig. 5). Fit brake arm assembly, brake arm locknut and locknut. Adjust hub as described in Part 2. Remove hub from vice.
8. Assembly dustcap, sprocket and circlip in reverse order to disassembly.
9. Assembly the wheel into the bicycle (see Section 3.1).



Item No.	Sales No.	Description	Item No.	Sales No.	Description	Item No.	Sales No.	Description
1	HMN132	Cone Locknut	27	HSL 871	Plastic Sprocket Dustcap	43	HSJ488	Gear Selector Guide
2	HMN384	Brake Adjuster Nut	28	HSL 854	Sprocket 13T(Chrome)	44	HSJ507	Gear Selector Guide Cover
3	HSH483	Brake Arm		HSL 852	Sprocket 14T(Chrome)	44B	HSA620	Gear Selector Guide Full Cover
4	HSH491	Brake Arm Assembly		HSL 850	Sprocket 15T(Chrome)	45	HMN129	R.H. Axle Nut
5	HSA164	L.H. Ball Cage Assembly		HSL 848	Sprocket 16T(Chrome)	46	HSL711	Indicator Guide
6	HSH490	Brake Shoes		HSL 846	Sprocket 17T(Chrome)	47	HSJ 907	TSS32 Shifter W/2000mm Cable
7	HSH 473	Brake Actuator Assembly (includes 2 off item 11 and 1 off items 8,9,10)		HSL 844	Sprocket 18T(Chrome)	48	HSJ 927	TSS31 Shifter W/2000mm Cable
8	HSH407	Brake Actuator Drag Spring		HSL 836	Sprocket 19T(Chrome)	49	HSJ 865	Orion Control
9	HSH476	Brake Actuator		HSL 834	Sprocket 20T(Chrome)	50	HSJ 823	Nimbus Control 22.2mm Clip
10	HSA450	Brake Actuator Pawl Spring		HSL 832	Sprocket 21T(Chrome)	51	HSJ 762	Trigger Control 22.2mm Clip
11	HSA410	Brake Actuator Pawl		HSL 830	Sprocket 22T(Chrome)	52	HSL 759	Cable Anchorage
12	HSA400	AWC Hub Shell Assembly 36 Holes	29	HSL 721	Sprocket Circlip	53	HSJ 553	Chainstay Fulcrum Clip φ15.9mm
	HSA606	SRC3 Hub Shell Assembly 36 Holes	30	HMN 128	Axle Nut L.H.		HSJ 548	Chainstay Fulcrum Clip φ17.9mm
13	HSA402	Planet Cage		HMN 388	Dome Nut New - SA logo		HSJ 753	Chainstay Fulcrum Clip φ19.1mm
14	HSA292	Planet Pinion	31	HMW 518	Lockwasher 4.0t - 9.5mm Slot	54	HSJ 101	Trigger Cable with Anchorage 550 x 1550mm Black
15	HSA401	Pinion Pin		HMW494	Serrated Lockwasher – 9.5mm Slot		HSJ 102	Trigger Cable with Anchorage 1450 x 1600mm Black
16	HSA554	Gear Ring Assembly (includes 1 off items 17&21 and 2 off items 18,19, 20)	32	HMN382	Axle Nut – 2 off	55	HSJ 802	Nimbus Cable with Anchorage 1400 x 1550mm Black
17	HSA558	Gear Ring	33	HSA539	Axle 163mm	56	HSJ 882	Twistgrip Cable with Anchorage 1450 x 1600mm Black
18	HSA119	Pawl for Gear Ring		HSA645	Axle 175mm	57	HSJ 883	Orion Cable with Anchorage 1450 x 1600mm Black
19	HSA120	Pawl Spring	34	HSA295	Axle Key	58	HSL767	Brake Arm Clip Assembly – 15.5mm
20	HSA415	Pawl Pin	35	HSA536	Clutch		HCB101	Brake Arm Clip Assembly – 15.9mm
21	HSA542	Drag Spring	36	HSA128	Clutch Spring		HCB103	Brake Arm Clip Assembly – 18.3mm
22	HSA437	Ball Ring	37	HSA129	Cap for Clutch Spring	59	HSX118	Gear Internal Assembly Complete (Axle-163mm)
23	HSA438	Ball Cage Assembly	38	HSA316	Indicator (4 Mark) for 163mm Axle		HSX145	Gear Internal Assembly Complete (Axle-175mm)
24	HSA407	Driver Assembly (includes 1 off items 25 and 26)		HSA420	Indicator (5 Mark) for 175mm Axle			
25	HSA284	Ball Cage Assembly R.H.	39	HAS101	R.H. Cone			
26	HSA102	Outer Dustcap	40	HMN405	Cone Locknut			
			41	HSJ905	Fulcrum Lever w/ Locating Washer			
			42	HMN128	L.H. Axle Nut			

Sun Race Sturmey-Archer Inc.

No.51. Hai-Shan-Jung St., Hai-Hu Village,
Lu-Ju City, Taoyuan County 338, Taiwan
Tel: +886(3)354-4979, Fax: +886(3)354-2858
<http://www.sunrace.com>; www.sturmey-archer.com
E-mail: info@sunrace.com

Sun Race Sturmey-Archer Europe

Keienbergweg 79, 1101 GE Amsterdam Z.O., The Netherlands
Tel: +31(0)20-60 90 221, Fax: +31(0)20-60 90 211
<http://www.sunrace.com>; www.sturmey-archer.com
E-mail: info@sunrace.nl

Sun Race Sturmey-Archer USA

3212 Jefferson Street #409 Napa, CA 94558-3436 USA
Tel: +1(707)259-6700, Fax: +1(707)259-6710
<http://www.sunrace.com>; www.sturmey-archer.com
E-mail: info@sunrace.com

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