# **Specification**

**Gear Ratios:** 

- Decrease of 25% Low Gear Normal Gear - Direct Drive

High Gear - Increase of 331/3%

**Axle Lengths:** 6"×%" (152×9mm); 61/4"×%" (159×9mm)

**Spoke Holes:** 28 : 36 : 40

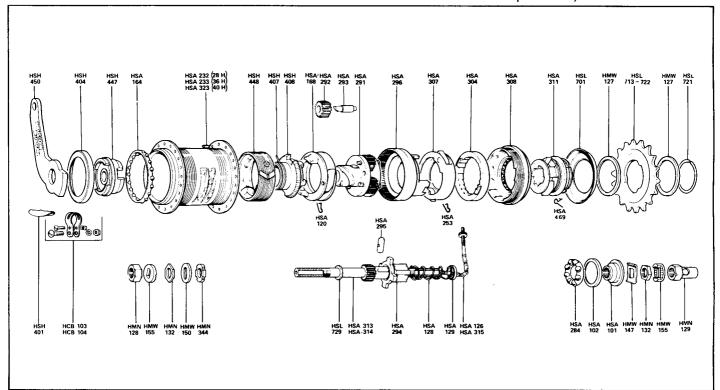
Sprockets: Pitch - 1

- ½"×½" (13×3mm) - 13:14:15:16:17:18: 19:20:22 Teeth

**Over Locknut Dimensions:** 

47/s" (112.7mm) (Note - this dimension can be varied to suit customer's

requirements)



SALES NO.	DESCRIPTION	SALES NO.	DESCRIPTION
HCB 103 HCB 104 HMN 128 HMN 132 HMN 344 HMW 127 HMW 150 HMW 155 HSA 102 HSA 126 HSA 128 HSA 128 HSA 233 HSA 233 HSA 233 HSA 291 HSA 291 HSA 292 HSA 293 HSA 294 HSA 295 HSA 296	Axle Nut R.H. Cone Locknut Brake Arm Nut Sprocket Spacing Washer Cone Lockwasher Lockwasher Serrated Lockwasher Cone R.H. Outer Dust Cap Pawl Spring (Planet Cage) Gear Indicator for 6" Axle (152mm) Clutch Spring Cap for Clutch Spring Ball Cage L.H. Pawl Ring Assembly for Planet Cage Hub Shell Assembly 28 Holes Hub Shell Assembly 36 Holes Pawl Spring (Gear Ring) Ball Cage R.H. Planet Cage Planet Pinion Pinion Pin	HSA 304 HSA 307 HSA 308 HSA 311 HSA 313 HSA 314 HSA 315 HSA 323 HSA 469 HSH 401 HSH 404 HSH 407 HSH 408 HSH 447 HSH 448 HSH 447 HSL 711 HSL 711 HSL 715 HSL 716 HSL 717 HSL 718 HSL 719 HSL 720 HSL 721 HSL 722 HSL 729	Ratchet Ring Pawl Ring Assembly for Gear Ring Ball Ring Assembly with Dust Cap Driver Assembly Axle 6" (152mm) Axle 6¼" (159mm) Gear Indicator for 6¼" Axle (159mm) Hub Shell Assembly 40 Holes Pawl Spring (Driver) Strengthening pad Outer Dust Cap for L.H. Cone Brake Actuating Spring Brake Thrust Plate Cone L.H. Brake Band Assembly Brake Arm Sprocket Dustcap Sprocket 13 Teeth Sprocket 13 Teeth Sprocket 15 Teeth Sprocket 16 Teeth Sprocket 17 Teeth Sprocket 19 Teeth Sprocket 20 Teeth Sprocket 20 Teeth Sprocket 22 Teeth Circlip for Securing Planet Cage

### **General Notes**

By observance of simple maintenance instructions, the S3C gear will give satisfactory service throughout the life-time of the bicycle.

#### Lubrication

Hub internals are lubricated before leaving the manufacturer. However, a new hub must be oiled before use, through the lubricator on the hub shell. Thereafter, add a few drops of Sturmey-Archer oil monthly. Do not use thick oil or grease as this may impair the free action of the driving pawls.

Axle Fitting

It is important that the axle is prevented from rotating in the bicycle chainstay slots. Flats on the axle are provided for this purpose. If the chainstay ends are too wide for the axle, special lock washers are supplied.

**Bearing Adjustment** 

Loosen cone lock nut HMN 132 on the left hand side and adjust HMN 344 brake arm nut - then re-tighten the lock nut. A correctly adjusted wheel has slight play at the rim only - none at the hub.

The right hand cone is fixed by the manufacturer and should not be disturbed.

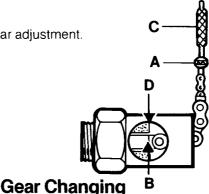
Should it be necessary to re-adjust the right hand cone, screw the cone down finger-tight and then slacken half a turn and lock in this position. Note - turning it back more than this will affect the gear engagement.

### **Gear Adjustment**

Satisfactory engagement of gears is dependent upon correct gear adjustment.

- Place the gear control in No. 2 position. Screw down indicator lock nut A.
- The end of the indicator rod B can be seen through the circular 'window' in the axle nut. Screw down cable adjuster C until the last link of the chain is clear of the end of the axle.
- 3. Adjust cable until the end of the rod is exactly level with the outside end of the axle D.
- 4. Tighten lock nut A hard up to cable adjuster C.

Note - When the brake is applied in No. 3 high gear, the gear indicator coupling will move outwards slightly. This is caused by the clutch, to which the indicator is keyed, sliding backwards over the ramps on the planet cage. Immediately the brake is released, the clutch moves down the ramp again to drive forward.



Gear change is quick and easy and should be made smoothly. Continue pedalling but ease pressure on the pedals when changing gear.

### **Gear Correction Guide**

The major cause of trouble is faulty gear adjustment. Attention to instructions under 'Gear Adjustment' will eliminate most problems and prevent excessive wear of internal components. Sluggish gear change or stiffness may be due to lack of oil. Oil the hub and cable inner wire before proceeding further. If the fault persists, the following correction guide should help to locate the trouble:

SYMPTOM	CAUSE	REMEDY  1. Replace 2. Re-adjust 3. Re-adjust 4. Lubricate cable or replace	
Slipping in low gear No. 1	Worn sliding clutch     Indicator not screwed in fully     R.H. cone wrongly adjusted     Rusty, distorted or frayed cable		
Self-changing gear action between 1st and 2nd gear	1. Worn gear ring pawls	1. Replace	
Slipping in normal gear No. 2	Gear ring dogs and/or clutch worn	1. Replace	
Slipping in high gear No. 3	Pinion pins and/or clutch worn     Weak or distorted axle spring     Incorrect R.H. cone adjustment     Grit or dirt between clutch sleeve and axle	Replace     Fit new spring     Re-adjust     Clean and lubricate	
Hubs runs stiffly. Drag on pedals	Too many balls in ball ring     Cones too tight     Chainstay ends not parallel     Corrosion      Distorted dust caps	1. Fit 24 only 2. Re-adjust 3. Correct 4. Clean and lubricate with Sturmey-Archer oil 5. Replace	
Sluggish gear change	Distorted axle spring     Bent Axle     Worn indicator chain link     Lack of oil or frayed wire	1. Replace 2. Replace 3. Replace Indicator 4. Oil or Replace	

## **Brake Correction Guide**

Noisy or juddering brake

1. Loose brake arm clip

1. Tighten clip nuts

Brake snatching or too fierce

1. Lack of oil

1. Lubricate through the oiler on the hub shell with Sturmey-Archer oil