

Specification

Gear Ratios:

- Low Gear - Decrease of 25%
- Normal Gear - Direct Drive
- High Gear - Increase of 33 1/3%

Axle Lengths:

6" x 3/8" (152 x 9mm); 6 1/4" x 3/8" (159 x 9mm)

Spoke Holes:

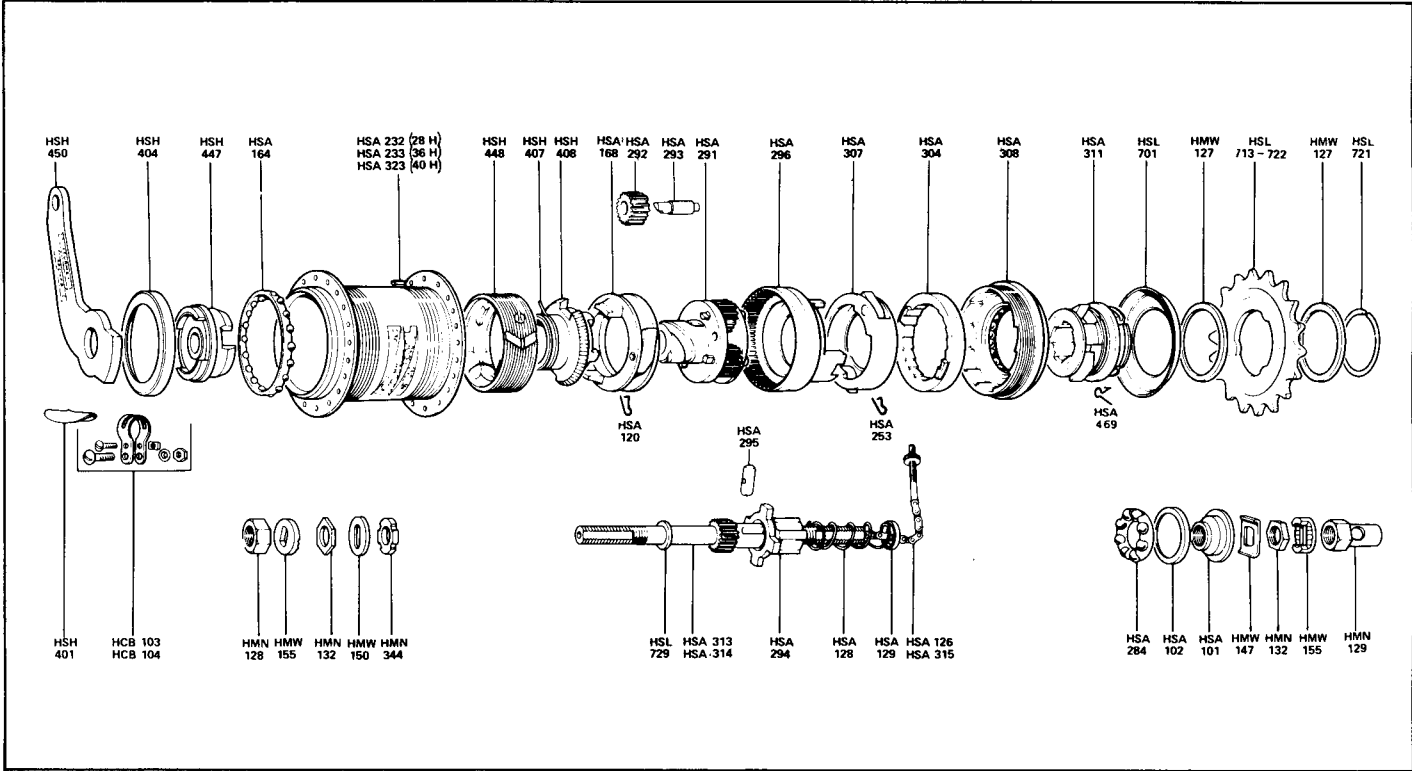
28 : 36 : 40

Sprockets:

- Pitch - 1/2" x 1/8" (13 x 3mm)
- Teeth - 13 : 14 : 15 : 16 : 17 : 18 : 19 : 20 : 22

Over Locknut Dimensions:

4 7/8" (112.7mm) (Note - this dimension can be varied to suit customer's requirements)



SALES NO.	DESCRIPTION	SALES NO.	DESCRIPTION
HCB 103	Brake Arm Clip Assembly 1/16" (17.4mm)	HSA 304	Ratchet Ring
HCB 104	Brake Arm Clip Assembly 1/2" (12.7mm)	HSA 307	Pawl Ring Assembly for Gear Ring
HMN 128	Axle Nut L.H.	HSA 308	Ball Ring Assembly with Dust Cap
HMN 129	Axle Nut R.H.	HSA 311	Driver Assembly
HMN 132	Cone Locknut	HSA 313	Axle 6" (152mm)
HMN 344	Brake Arm Nut	HSA 314	Axle 6 1/4" (159mm)
HMW 127	Sprocket Spacing Washer	HSA 315	Gear Indicator for 6 1/4" Axle (159mm)
HMW 147	Cone Lockwasher	HSA 323	Hub Shell Assembly 40 Holes
HMW 150	Lockwasher	HSA 469	Pawl Spring (Driver)
HMW 155	Serrated Lockwasher	HSH 401	Strengthening pad
HSA 101	Cone R.H.	HSH 404	Outer Dust Cap for L.H. Cone
HSA 102	Outer Dust Cap	HSH 407	Brake Actuating Spring
HSA 120	Pawl Spring (Planet Cage)	HSH 408	Brake Thrusting Spring
HSA 126	Gear Indicator for 6" Axle (152mm)	HSH 447	Cone L.H.
HSA 128	Clutch Spring	HSH 448	Brake Band Assembly
HSA 129	Cap for Clutch Spring	HSH 450	Brake Arm
HSA 164	Ball Cage L.H.	HSL 701	Sprocket Dustcap
HSA 168	Pawl Ring Assembly for Planet Cage	HSL 713	Sprocket 13 Teeth
HSA 232	Hub Shell Assembly 28 Holes	HSL 714	Sprocket 14 Teeth
HSA 233	Hub Shell Assembly 36 Holes	HSL 715	Sprocket 15 Teeth
HSA 253	Pawl Spring (Gear Ring)	HSL 716	Sprocket 16 Teeth
HSA 284	Ball Cage R.H.	HSL 717	Sprocket 17 Teeth
HSA 291	Planet Cage	HSL 718	Sprocket 18 Teeth
HSA 292	Planet Pinion	HSL 719	Sprocket 19 Teeth
HSA 293	Pinion Pin	HSL 720	Sprocket 20 Teeth
HSA 294	Clutch	HSL 721	Sprocket Circlip
HSA 295	Key for Axle	HSL 722	Sprocket 22 Teeth
HSA 296	Gear Ring	HSL 729	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.

Gear Adjustment

Satisfactory engagement of gears is dependent upon correct gear adjustment.

1. Place the gear control in No. 2 position. Screw down indicator lock nut A.
2. 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.

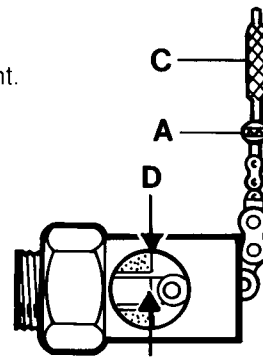
Note - When the brake is applied in No. 3 high gear, the gear indicator coupling will move outwards slightly. This is caused by the clutch, to which the indicator is keyed, sliding backwards over the ramps on the planet cage. Immediately the brake is released, the clutch moves down the ramp again to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

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 Changing

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
Slipping in low gear No. 1	<ol style="list-style-type: none"> 1. Worn sliding clutch 2. Indicator not screwed in fully 3. R.H. cone wrongly adjusted 4. Rusty, distorted or frayed cable 	<ol style="list-style-type: none"> 1. Replace 2. Re-adjust 3. Re-adjust 4. Lubricate cable or replace
Self-changing gear action between 1st and 2nd gear	<ol style="list-style-type: none"> 1. Worn gear ring pawls 	<ol style="list-style-type: none"> 1. Replace
Slipping in normal gear No. 2	<ol style="list-style-type: none"> 1. Gear ring dogs and/or clutch worn 	<ol style="list-style-type: none"> 1. Replace
Slipping in high gear No. 3	<ol style="list-style-type: none"> 1. Pinion pins and/or clutch worn 2. Weak or distorted axle spring 3. Incorrect R.H. cone adjustment 4. Grit or dirt between clutch sleeve and axle 	<ol style="list-style-type: none"> 1. Replace 2. Fit new spring 3. Re-adjust 4. Clean and lubricate
Hubs runs stiffly. Drag on pedals	<ol style="list-style-type: none"> 1. Too many balls in ball ring 2. Cones too tight 3. Chainstay ends not parallel 4. Corrosion 5. Distorted dust caps 	<ol style="list-style-type: none"> 1. Fit 24 only 2. Re-adjust 3. Correct 4. Clean and lubricate with Sturmey-Archer oil 5. Replace
Sluggish gear change	<ol style="list-style-type: none"> 1. Distorted axle spring 2. Bent Axle 3. Worn indicator chain link 4. Lack of oil or frayed wire 	<ol style="list-style-type: none"> 1. Replace 2. Replace 3. Replace Indicator 4. Oil or Replace

Brake Correction Guide

Noisy or juddering brake	<ol style="list-style-type: none"> 1. Loose brake arm clip 	<ol style="list-style-type: none"> 1. Tighten clip nuts
Brake snatching or too fierce	<ol style="list-style-type: none"> 1. Lack of oil 	<ol style="list-style-type: none"> 1. Lubricate through the oiler on the hub shell with Sturmey-Archer oil