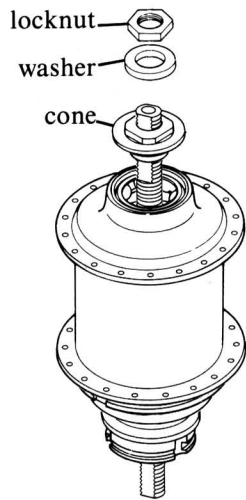


HUBS

STURMEY-ARCHER AW 3-SPEED HUB DISASSEMBLY AND ASSEMBLY

1 DISASSEMBLY

Remove left-hand locknut, washer and cone.



Turn assembly over.
Install cone, lockwasher and locknut.
Adjust bearing.

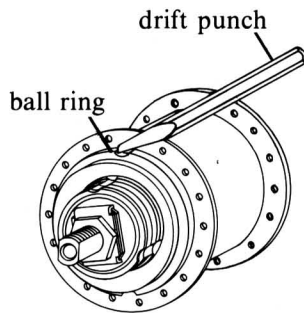
ASSEMBLY 5

Next Step



2 DISASSEMBLY

Turn assembly over.
The right-hand ball ring may have a double start thread. If the ball ring is replaced in the opposite position, the wheel may need retruing. To facilitate proper reassembly, mark the ball ring at the point nearest lubricator.



Place a drift punch as shown and loosen the ball ring by rapping the punch firmly with a hammer.

Next Step



Next Step

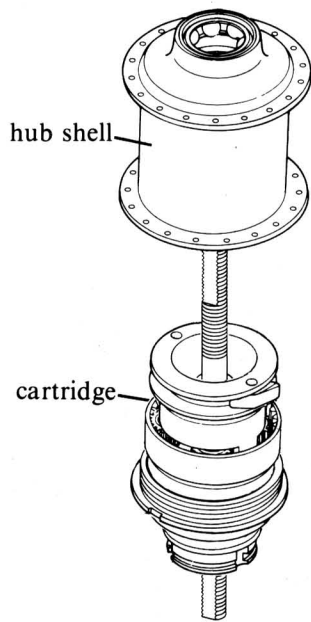


Turn assembly over.
When correctly oriented, tighten with a hammer and drift punch.

ASSEMBLY 4

3 DISASSEMBLY

Unscrew right-hand ball ring completely and remove the cartridge from the hub shell.



Thread cartridge finger tight into hub. If the mark made during disassembly is not next to the lubricator, remove and restart.

ASSEMBLY 3

Next Step
Next Page



Next Step

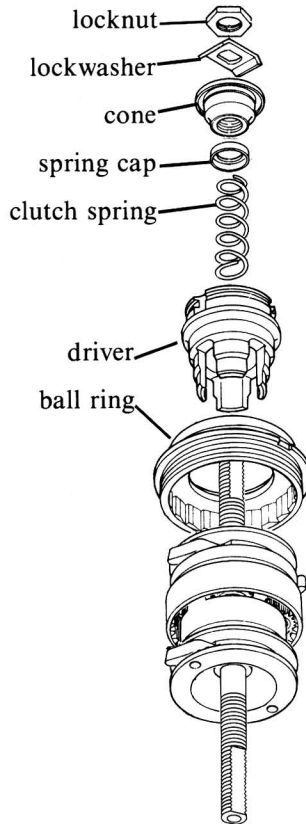


**STURMEY-ARCHER AW 3-SPEED HUB
DISASSEMBLY AND ASSEMBLY (cont.)**

HUBS 

4 DISASSEMBLY

Remove right-hand locknut, lockwasher and cone. Remove clutch spring, cap and driver.¹ Remove ball ring and gear ring.



Next Step
↑
Preceding Page

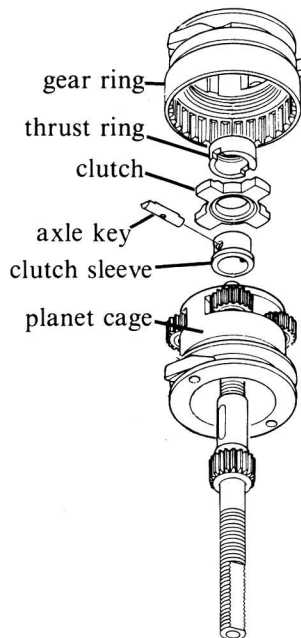
Install ball ring. Install driver, clutch spring and spring cap.¹ Install cone, lockwasher and locknut. Adjust bearing. If bearing runs rough, check spring cap.¹

ASSEMBLY 2

Next Step
↓

5 DISASSEMBLY

Lift off gear ring. Remove thrust ring.² Push out axle key. Remove clutch sleeve. Remove planet cage.



Next Step
↑

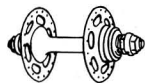
Replace planet cage. Install clutch sleeve *flange down*. Install clutch with tabs flush against planet cage. Insert axle key through both clutch sleeve and axle slot with flats facing up. Install thrust ring.² *Notches in thrust ring must engage axle key flats.* Replace gear ring.

ASSEMBLY 1



¹ Old model spring caps are too large to fit through the driver. On these hubs, the spring and cap are removed *after* and installed *before* the driver. Otherwise the spring cap will be compressed between the cone and the bearing with damage to both. Upon installation the driver must be held in place against the spring until the cone is installed.

² If thrust ring has top and bottom openings of *equal* diameter it must have a thrust washer on top of it.



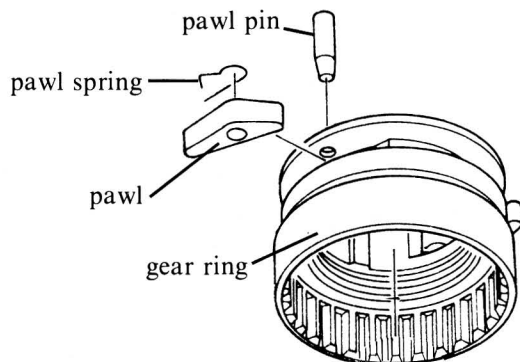
HUBS

STURMEY-ARCHER AW 3-SPEED HUB DISASSEMBLY AND ASSEMBLY (cont.) SUBASSEMBLIES

DISASSEMBLY

Gear Ring

Remove pawl pins, pawls and springs. Be careful not to lose pawl springs.



Gear Ring

Place spring in position on top of gear ring (large) pawl with hooked end bearing on the *inside surface* of the *long end* of pawl. Slide spring and pawl into slot and insert pawl pin *tapered end first*. Make sure spring is hooked around pin. Test pawl operation and repeat for other gear ring pawl.

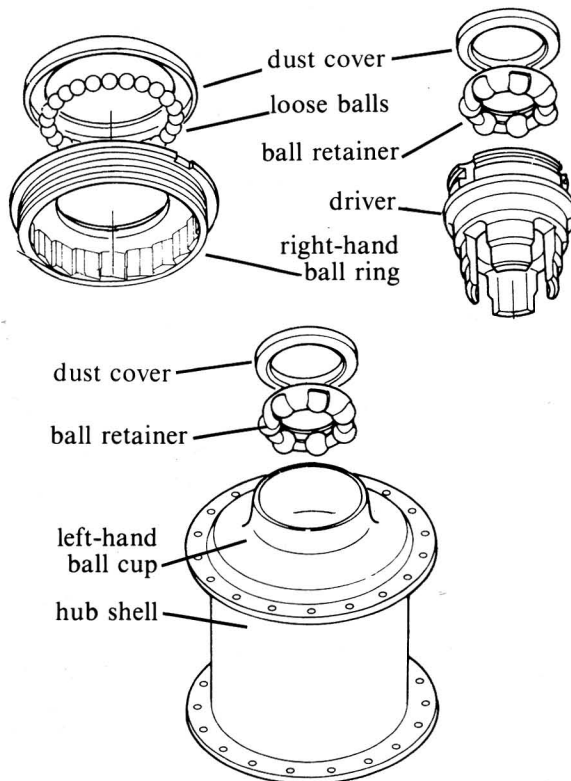
ASSEMBLY

DISASSEMBLY

Driver, Hub Shell and Ball Ring

Remove dust cover with a thin-bladed screwdriver. Work slowly around cover to avoid deforming it. Lift out ball retainer.

Remove left-hand ball cup only if necessary. Cups with wrench flats are left-threaded, all others press fit. Support hub flange on two blocks of wood and pound out press fit cup with a third block and a hammer.



Driver, Hub Shell and Ball Ring

Install left-hand ball cup in hub shell if it was removed. Non-threaded cups can be pressed into threaded hub shells. Start cup straight and pound in with a soft hammer or a hammer and a block of wood.

Install balls or ball retainer. *Orient retainer as shown*. Start dust cover straight by hand and tap home with a soft hammer.

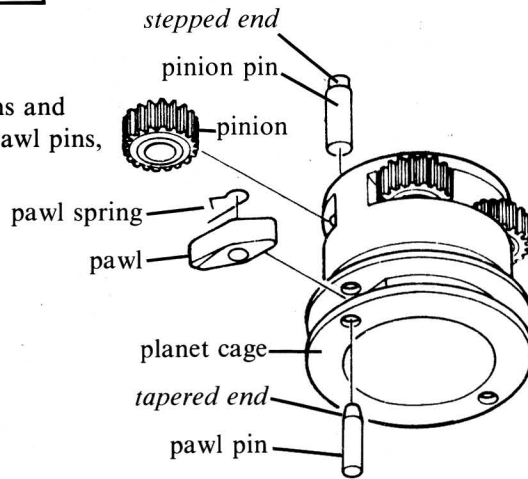
ASSEMBLY

**STURMEY-ARCHER AW 3-SPEED HUB
DISASSEMBLY AND ASSEMBLY (cont.)
SUBASSEMBLIES**

DISASSEMBLY

Planet Cage

Remove pinion pins and pinions. Remove pawl pins, pawls and springs.



Planet Cage

Slide pinion into slot and replace pinion pin *stepped end out*. Repeat for remaining pinions. Place pawl spring in position on planet cage (small) pawl, with hooked end bearing on *inside surface of long end* of pawl. Slide pawl and spring into slot and insert pawl pin *tapered end first*. Make sure spring is hooked around pin. Repeat for remaining pawl. Pawls must point clockwise, viewed from above. Check pawl operation before proceeding.

ASSEMBLY

CLEANING

Clean all parts, including outside of hub shell and axle bore, in a suitable solvent. Be very careful not to introduce dirt or grit after cleaning.

POINTS TO CHECK

Numbers in parenthesis refer to parts chart and exploded drawing.

1. Clutch (18), gear ring internal dogs (20), and small ends of pinion pins (15) for rounded or chipped driving edges (rounding to even $\frac{1}{64}$ " (0.4 mm) at the corners of these parts may cause hub to slip out of gear)
2. Pawls (12, 21), ball ring (22) and left ball cup in hub shell (8) for worn or chipped corners
3. Sun pinion (9), planet pinions (14) and gear ring (20) for wear or chipping
4. Bearing surfaces of left ball cup (8), ball ring (22), driver (25) (inside and out), cones (5) and pinion pins (15) for wear and pitting
5. Axle key (16) and indicator chain for stripped threads
6. Clutch spring (32) for length and tension (compare with new spring)
7. Dustcaps and ball retainers for straightness

8. All threaded parts for stripped or damaged threads

9. Axle (9) for straightness

LUBRICATION

Lubricate ball bearings by filling the spaces between balls with grease. Be careful not to grease pawls. Lightly oil other internal parts with a *good cycle oil*. (WD-40 is too light for lasting lubrication, 3-in-1 Oil gums up with age.) Add about two teaspoons (8 ml) of oil when assembled.