



## Rear Wheel removal and refitting

### Removing the chain tensioner:

Park the bike, with the gear trigger(s) in top gear and high gear(s) engaged (back pedal and forward pedal to engage).

Hub-gear control: on a bike with a Sram 3-spd, press the spring clip C on the adjustor A to disconnect the adjustor from the gear chain: on a bike with a Sturmey hub, slacken off the knurled locknut N and unscrew the barrel B.

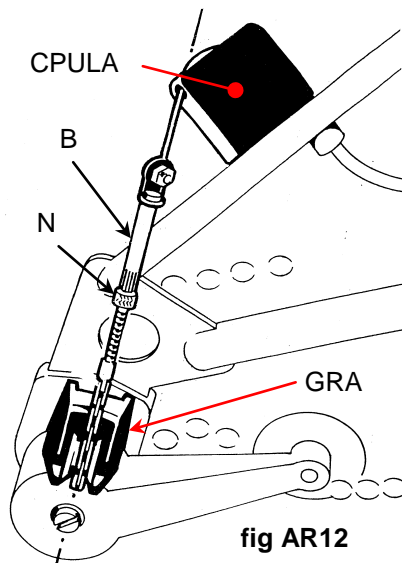


fig AR12

The gear (indicator) chain GICH will be left hanging loose from the end of the axle and should be unscrewed from the hub and withdrawn. On a 5-speed, the guide roller assembly GRA must also be withdrawn from the end of the axle.

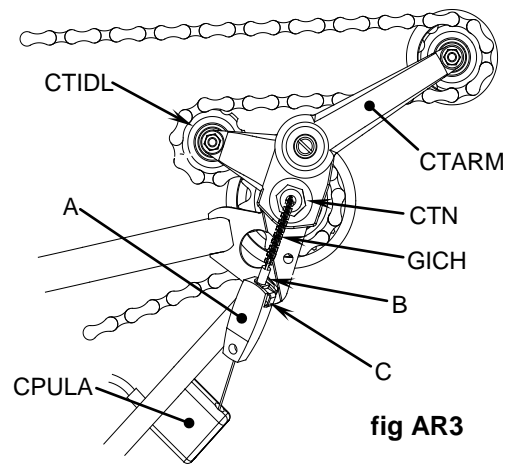


fig AR3

Move the sprung arm, CTARM, anti clockwise and lift the chain off; allow the CTARM to move back clockwise until it comes to a stop; undo the securing nut CTN (on a 3/6-speed this is a special nut, and on a 1/2/5-speed it is a standard wheel nut) and remove it together with its washer(s); the chain tensioner assembly may now be removed by drawing it sideways off the end of the axle.

### Removing the wheel:

Slacken the wheel nuts by few turns, enough to allow any tab-washer to disengage from the axle plate. If the axle or tab-washer tends to stick in the slots, push the rim from side to side or gently tap the axle end.

**Fitting the wheel:** make sure the chain passes round the rear sprocket (as above, make sure you fit a new chain if using new sprocket(s)). Drop the axle into the slots, with the tab washers, if handed, the correct way round. On earlier bikes with a Sturmey hub and *sintered* tab-washers, the tabs on these washers under the wheel nuts must project **into** the axle slot, and it is these (not the axle) that should be in contact with the end of the slots on the frame. Otherwise make sure that on each side the axle is seated against the end of the slot, and do up the wheel nuts, torque 22NM

### Fitting the chain tensioner:

First arrange the chain so that it is running true over both chainwheel and rear sprocket (on a derailleur, providing high gear is selected, this should be the outer sprocket); next, the chain tensioner body has two flanges on its inner face - these pass either side of the axle plate when fitting the chain tensioner; address the chain tensioner to the axle plate and press home, making sure that the fixed idler sprocket CTIDL lies above (with the rear frame inverted) the chain as per fig AR3. For a derailleur bike, the chain and the fixed idler on the chain-tensioner-base, CTIDLB, have to lie between the "uprights" of the chain-pusher-plate: so, with the LH trigger up and the chain-tensioner inclined slightly outwards as in fig DR14 (chain not shown in this figure), feed the idler CTIDLB between these uprights, and then feed the chain-tensioner base onto the rear axle plate till it abuts squarely.

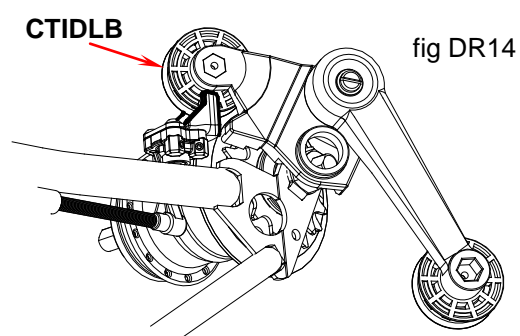


fig DR14

## Secure the chain tensioner:

on a 3-speed, use the chain tensioner nut CTN and its washer. Though similar, the nut and washer needed on a Sturmey hub are different from those for Sram: the Sturmey nut should NOT be done up too tight, a little firmer than hand tight suffices (max torque 5NM). For a Sram hub, up to 8NM.

on a 5-speed, use a standard wheel nut, with the anti-rotation washer under this nut, and with the tab washer (TBW) abutting the chain tensioner. It is essential that the TBW, which provides location for the guide roller assy (GRA) is at the correct angle, such that the GRA aligns with the indicator chain when that is connected to the control cable. To obtain the correct position, screw on the nut, just tight enough to prevent the tab washer from moving: fit the GRA over the TBW, and turn it (and the TBW) clockwise until it points accurately towards the cable pulley assy. (CPULA). Remove the GRA, and do up the nut firmly, but not too tight (torque approx. 10NM): take care not to knock the TBW whilst doing this. Misalignment can cause poor gear selection and damage to the hub.

If fitting a new chain tensioner or wheel to a non-derailleur bike, check at this stage whether the idler wheels, CTIDL, are in line with the rear sprocket (fig CT3). If not, then check that the rear sprocket has the correct spacers: if these are OK, then add or remove washers W under the idler wheels to suit.

Now draw up the slack in the chain and feed it over the idler wheel on the sprung arm CTARM (you have to part-fold the rear frame to do this) - check that the chain is flowing correctly by turning the cranks.

For a bike with hub-gears, screw the indicator chain GICH into the hub, and make sure it is fully screwed home. On a 5-speed, fit the GRA and push it home firmly.

