



DERAILLEUR TRIGGER, REPLACING PARTS.

If you are fitting a new trigger housing, fit it at the same position and orientation as before, to avoid clashing with the front spokes when folded. You may of course choose another position, but

- some adjustment of the handlebar nipple may be needed, or
- the bell may end up exposed to damage when folded, or
- the cable routing may not be satisfactory.

The notes which follow deal with cable setting and other matters which might be of relevance when fitting new trigger parts.

subtext dr cab trig rem

Disconnecting cable at trigger. Move the derailleur lever up. Unscrew the screw holding the trigger cap, and remove the cap. Lift the lever, with the cable still attached, away from the trigger housing. Slacken the small grub screw in the threaded nipple TN where the cable is anchored (1.5mm hex key needed), and withdraw the cable: take care not to lose the threaded nipple, which can drop out the moment the cable is withdrawn.

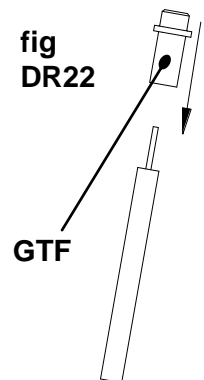
subtext dr cab trig fit

Connecting the cable to the trigger:

Note about override spring. By design, the trigger moves the cable almost twice as far as is needed to effect the gear change: so, while the trigger is being pulled down, the actuator on the rear-frame will reach the low-gear position before the trigger is fully down, the excess cable movement being absorbed by the override spring at the bottom end of the cable. This means a) that, with the trigger up (high gear), it is OK to have a little slack (up to about 3mm) in the cable, and b) that, as the cable stretches over time, no cable-adjustment is needed. The procedure outlined below for connecting the cable will keep the initial slack to a minimum, so that as much as possible of the trigger motion is reserved to cope with future cable stretch.

Down on the rear-frame, check that the two cable stops are pressed against the loop on the cable guide CGR, and that the cable outer is seating properly in its cable-stop. (If you have made any changes to the actuator (CHPUA), the high-gear stop screw should have been set.)

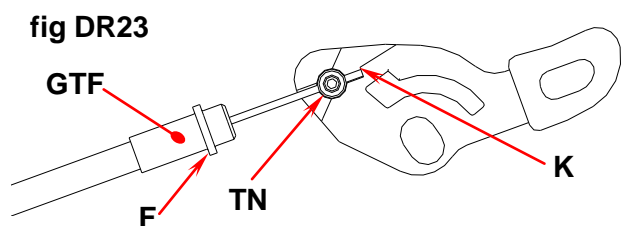
Don't forget to fit the cable-stop GTF over the loose end of the cable, fig DR22. Also (if necessary) slacken off the grub screw in the threaded nipple TN far enough for the inner cable to pass through. *Note:* the cable-stop supplied with this kit has a diameter of 4mm, and is only suitable for 4mm cable without ferrules - so if you are retaining the cable, and it is 5mm diam (or has a metal ferrule), you should use the cable-stop from the trigger you are replacing.



Next, fig DR23, with the TN in place through the hole in the lever (**and the lever still out of the trigger housing**) feed the inner cable through the nipple TN at the angle shown till the cable abuts the surface K on the lever. Do up the screw in the nipple to secure the cable. [Note: if you allow more cable to extend past the nipple than is allowed by surface K, this loose end will interfere with the free movement of the lever, and cause poor gear-changing.]

Now, holding the ferrule GTF in one hand and the lever in your other hand, pull the inner cable out a couple of times (taking care not to kink the cable). You will feel the resistance of the springs: this action should make sure that the cable ends and stops are all settled correctly in place.

When assembling the lever into the trigger housing, the bike should be **fully unfolded** in order to set the cable correctly. This correct setting is obtained by fitting the ferrule GTF so that its flange F engages one particular preferred slot of the four slots S, fig DR24, in the housing. To do this, fit the lever part-way onto its pivot (the raised boss), and then pull "gently" down (see note below) on the ferrule, away from the lever: allow the lever to rotate anti-clockwise till it turns no further. At this stage decide which slot to fit the ferrule into: the correct slot is the one in line with the flange F, or else the next available slot **nearer** to the trigger-lever (i.e. such that the cable-inner becomes slightly slacker). Feed the lever fully into position on its pivot in

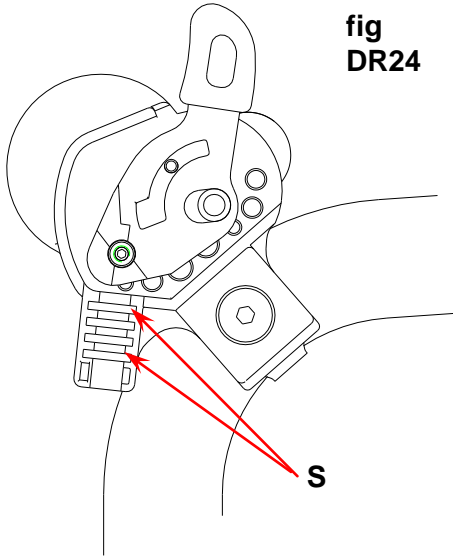
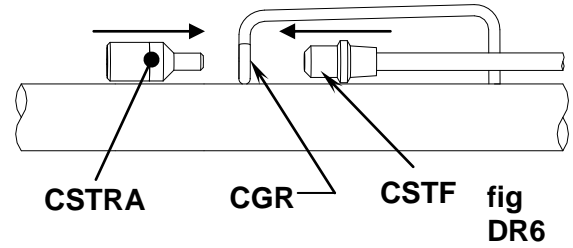


the housing, and let the cable ferrule drop squarely into the selected slot. Secure the trigger cap back into place, squeezing it together towards the housing where the cable enters.

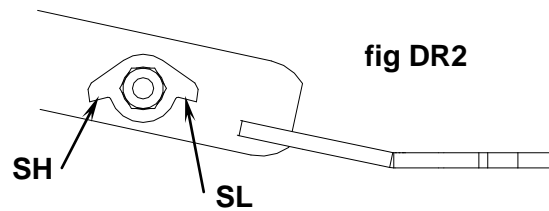
Note: when putting a pre-load onto the cable, this must be a gentle pre-load only, to take up the slack without moving the inner relative to the outer, i.e. a load just sufficient to make sure that the cable outer abuts properly against its stops.

If an appropriate slot for the GTF cannot be found, the cause may be

a) that the cable outer is not seating correctly in the CSTF or in the GTF, b) that the CSTF is not bearing against the loop in the CGR, or else c) that the cable supplied is the wrong length (the outer should be 1173mm and the inner (excluding the nipple) 1297mm).



Checking that the cable is set OK in the trigger. Operate the trigger a few times, and move it back to the UP position. Rotate the cranks forward. The actuator CHPUA should be fully "out", with the stop-screw H contacting the surface SH of the "wing plate": if it isn't in contact, then the cable is too tight, and the ferrule GTF needs to be moved up a slot in the trigger. Also check for play in the cable: grasp the cable outer just where it comes out of the trigger and pull it up and down, but not hard enough to move the CHPUA: if there is more than 3mm of slack, then the ferrule GTF needs to be moved down a slot. A further check is to move the trigger *slowly* down from the up position while pedalling forward: the CHPUA should complete its movement to the inner, low-gear position well before the trigger has latched down.



DERAILLEUR ADJUSTMENT.

After any changes or maintenance on the rear frame fittings or wheel, the settings should be checked. With a new chain pusher, the derailleur stop screws must be adjusted.

You should also be aware that, for satisfactory gear changes and smooth running, apart from these stop screws, two key elements of the system have to move freely: the actuator (or "chain-pusher"), and both idlers on the chain tensioner.

Chain pusher adjustment.

Use the stop screws, fig DR9, on the chain pusher. The idea is that, in high gear, the inner face of the inner upright IU, fig DR16, shall be as close as possible to the idler wheel, without any rubbing pressure while the idler rotates (to give the slickest change with minimum wear): when the setting is right, you should just be able to see daylight between the two while turning the cranks *forwards*, perhaps with occasional contact. Use a 2mm hex key in the forward stop screw H for adjustment.

The same principle applies for the lower gear setting, only this time, fig DR17, the inner face of the outer upright OU has to just not rub on the idler, and the rear stop screw L is used for adjustment.

Cable adjustment should seldom be necessary, as the trigger moves the cable twice as far as the movement of the chain-pusher (an over-ride spring *inside* the dogleg DL absorbs this movement).

Derailleur trouble shooting.

If the derailleur still malfunctions after adjustment, or if turning the adjustor screws has no useful effect, and there is no obvious sign of dirt obstructing free movement, then the procedure for diagnosis is as follows. Step 1, remove the chain tensioner: this allows you to identify whether the problem lies with the idlers on the chain tensioner (they should be free to move in and out 7mm) or with the chain-pusher. If the chain-pusher does not move freely, and the cause is not obvious, try slackening the M3 screw slightly (there is supposed to be clearance). Step 2, remove this M3 screw completely: this allows you to identify whether there is a problem with the cable and the dogleg link DL (e.g. dirt on the spring, misalignment of cable and cable stops, etc.), or with the chain-pusher (e.g. hidden dirt, seized bearing: you may need to remove the chain pusher from the frame).

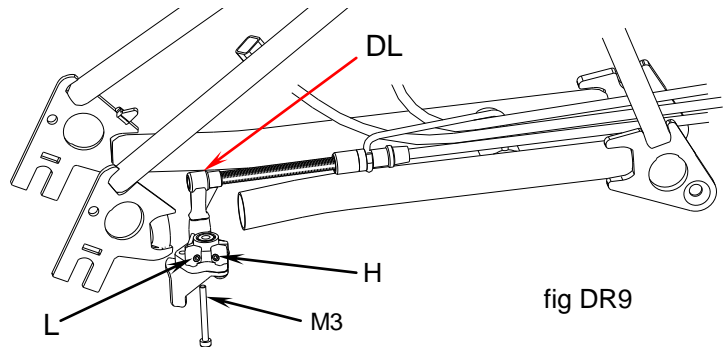


fig DR9

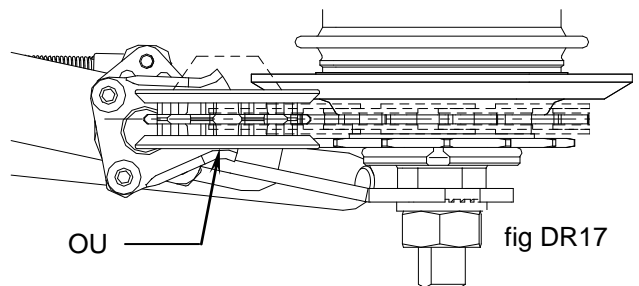
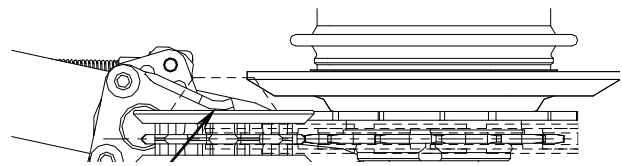


fig DR17