



MAIN/FRONT FRAME REPLACEMENT.

If the old frame you are replacing is a short-wheel-base type (where the wheel base is 1015mm rather than 1045mm, and the hinge is forged and hand-brazed, rather than a casting), then you will need to fit new cables, as the frame supplied here is a new, long-wheel-base type. Do NOT retain the original cables from a short-wheel-base bike, as these will quickly become damaged through stretching during folding.

If you do need these new cables, you will need to specify the type of rear-hub (Sturmey or Sram), whether a derailleur cable is needed, and for the brakes, whether the levers are marked Brompton or not, and whether the brakes are reversed or not (brakes are considered to be reversed if the RH lever operates the rear brake rather than the front). If dynamo lighting is fitted, you will also need to order a wiring loom.

Headset cups:

1. Cups for an alloy headset are fitted to a replacement frame whose colour is standard for a superlight bike. But for all other colours, the cups fitted are for a steel headset (and if the bike is a superlight model with alloy headset, then these would need to be changed).
2. If the original headset is of the earlier type, 1" diameter rather than 1 1/8" diameter, and you are not replacing the front fork and the handlebar support, then you will need adaptor sleeves (Brompton Part No QHEADSETBUSH), to use with the original headset bearing cups.

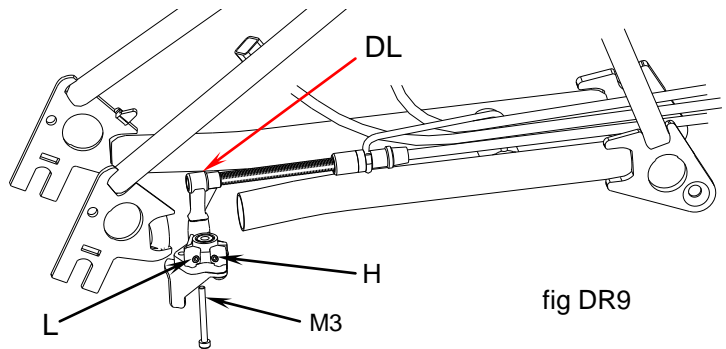
Special tools needed: special spanner(s) for bottom bracket set, crank extractor, thin 36mm AF spanner for headset.

Dismantling.

Any gear control levers should be in the up position (with the corresponding gear engaged).

Rear end.

1. Remove the chain from the idler wheel on the spring-loaded arm of the chain tensioner.
2. Remove the chainwheel and RH crank and the LH crank (a special extractor tool is needed for this - do not attempt to remove it without the right tool).
3. Cables: note how the cables are routed before disconnecting these - they (or the new cables) must be reassembled following exactly the same routing. Disconnect the rear brake cable from the caliper and the hub-gear control cable(s) from the cable anchorage near the rear hub. If a derailleur is fitted, disconnect the dogleg DL (fig DR9) by removing the M3 screw, and next, pulling apart the two cable stops (against spring pressure), lift the inner cable out of the loop on the rear cable guide.
4. Dynamo (if fitted). Remove any wiring connected to the body of the dynamo which passes forward to the front of the bike. If the earth leads terminate in eyelets trapped by the mounting bolt, then the dynamo has to be removed.
5. Withdraw all the cables forward, through the centre cable guide on the main frame. Unless you have to change the cables, these can be left attached to their controls if you wish.
6. Disconnect the rear frame from the main frame, as described below.



Front end:

1. Disconnect the front brake cable from the caliper (note its routing first). If lighting is fitted, cut the tie wrap attaching the dynamo wiring loom to the front cable guide.
2. Remove the handlebar catch.
3. Slacken off the steering bearing lock-nut.
4. Fold the handlebars (not clipped in, though) and undo the expander cone bolt 3 or 4 turns, and tap it down.
5. Remove the handlebar stem assembly (with the handlebars still folded - to avoid stretching the cables), and put on one side (with care, assuming cables are still connected).
6. Undo the steering bearing lock-nut and the screwed race and withdraw the fork, with the front wheel and brake etc. attached.

Remove the saddle, and withdraw the seat pillar: if it's a telescopic seat-pillar, the clamp band has to be removed. Do not allow any oil or grease onto the seat pillar.

Remove the bottom bracket bearing assembly from the original main frame.

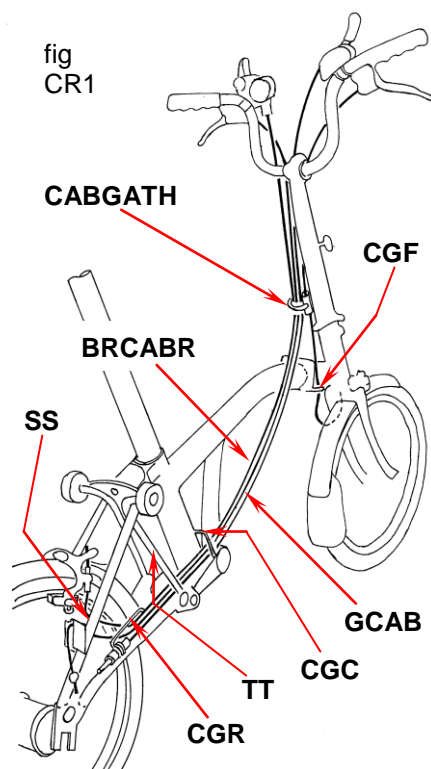
Re-assembly.

Fit the bottom bracket bearing assembly to the new main frame.

Fit the seat pillar, and saddle and set the seat clamp quick release *very slightly over-tight*.

Front end.

1. Reassemble the front fork (complete with the front wheel etc.), fit the screwed race and tighten until correctly adjusted: fit the anti-rotation washer and do up the steering locknut, and then back it off 1 turn. (If the headset is 1" rather than 1 1/8", then you will have to remove the bearing cups from the new front frame, and fit adaptor sleeves to enable the original cups to be fitted.)
2. Fit the handlebar catch (the correct way up, see below), and secure it, but not tight.
3. Fit the h'bar pin to the steerer tube, making sure that the cables, if still connected to the controls, are correctly routed (in front of the h'bar, to the left of the h'bar stem, to the right of the main-frame tube).
4. Lightly tighten the expander cone bolt (enough to grip the handlebars, yet still permitting the stem to rotate without undue force, for alignment later), and set the handlebars so that they lie alongside the front wheel with the LH end of the handlebar (the RH end as you look at it when folded) about 12mm closer to the tyre than the RH end. Before finally tightening the expander bolt, check that when unfolded the bars are square to the wheel. When all is OK (sometimes a slight compromise between correct folding and correct riding position), fully tighten the expander cone bolt (16Nm).
5. Tighten the steering bearing lock-nut: while doing this, check that the bearings do not acquire any "tight spots": if they do, release the lock-nut, back off the screwed race slightly, and start again.
6. Reconnect the front brake cable, routing it correctly. If dynamo lighting is fitted, fit a tie wrap, loosely, to attach the loom to the front cable guide, CGF.
7. Set the handlebar catch (and if necessary the nipple) at correct angle, as below.

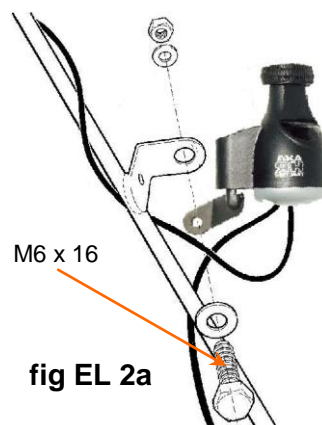
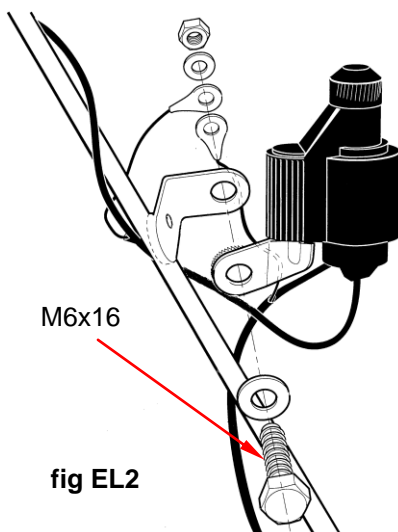
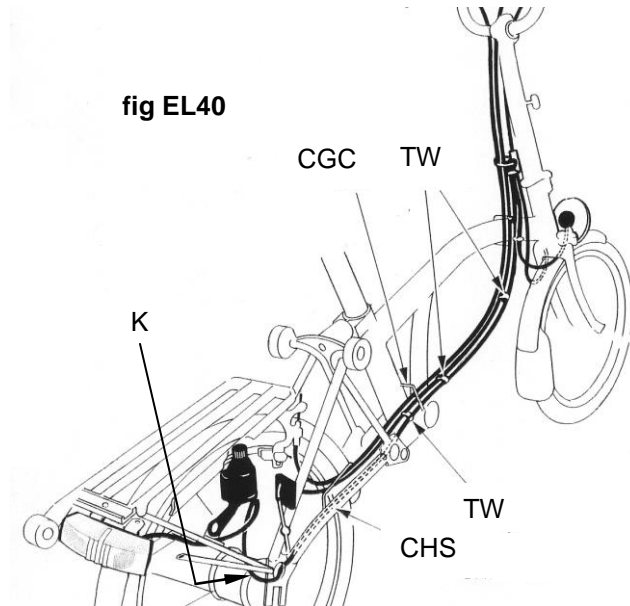


Rear end.

1. Connect the rear frame to the main frame, as described below.
2. Feed each rear cable through to the rear frame and connect it up. Take care to route these correctly, fig CR1: in front of the h'bar, to the left of the h'bar stem, to the right of the main tube, through the cable guide CGR, inside the tube TT, and, except for a derailleur cable, inside the tube SS). The gear cable should lie below the rear brake cable; if the bike has both hub gears and derailleur, the derailleur cable should be lowest. If a new derailleur cable is being fitted, instructions for doing so are normally provided.
3. If the bike has a derailleur, and you are *re-fitting the old cable*, first pull the two cable stops apart against spring pressure to show the inner wire, and feed this wire through the gap in the loop on the rear cable guide: press the cable stops together to butt against the loop in the cable guide. Connect the M3 screw through the actuator and into the dogleg DL. Do up the screw until it stops, and then **back it off one full turn** (do not overtighten this screw, as the thread in the dogleg can be stripped).
4. If dynamo lighting is fitted, the loom must pass through the RH chainstay and out through the hole in the rear axle plate up to the dynamo, as in fig EL40.
5. Fit the dynamo (fig EL2 or EL2a), with the earth eyelets (if present) trapped by the bolt, and set the dynamo at the correct angle: the securing bolt must be done up firmly. Finally make the necessary wiring connections to the dynamo body.

Fit the chainwheel (torque on axle nut 32NM), and connect the chain. Check the chain line, and ensure correct chain flow over the chain tensioner and rear sprocket(s). Set the gears.

Finally readjust the seat clamp quick release to give the correct closure force.



Dismantling the rear hinge.

The socket head countersunk screws at each end of the rear hinge (fig FR6) are inserted during assembly of the bike using a locking compound and a torque-wrench. As a result, it is sometimes impossible to unscrew them, but you should try first.

(Note: you should be aware that, when one screw is removed, the whole weight of the rear frame is being taken by the other screw and bracket, and that therefore the rear frame, if pushed sideways, may become damaged.)

Using a 5/32" or 4mm allen key (provided with the kit), and ensuring that it is fully engaged in the socket in the screw, loosen the screws. Considerable force is needed for this, and there are three possible outcomes:-

1. if you manage to loosen both screws, all is well, but there still remains the problem that, once you have removed one screw, the other cannot be removed because the rear hinge spindle to which it is attached will tend to turn with the screw. The technique, once you have established that both screws can be moved, is as follows. Nip one screw up tight, and unscrew the other completely: clean this screw and then screw it in and out of the rear hinge spindle until it feeds in and out fairly freely. Now nip this screw up tight and repeat the process for the other screw. Finally unscrew both at the same time: if the spindle still spins with the screw, you can normally prevent this by applying slight lateral force to the rear frame such that there is increased friction between the hinge spindle and its bearings.
2. if you manage to loosen one screw only, then, first, unscrew this screw almost completely, and secondly, using the 1/4" drill bit (provided with the kit), drill out the head of the other screw: once this has broken free, and the other screw is finally removed, the rear frame can be removed.
3. if neither screw can be loosened, use the 1/4" drill bit provided to remove the head of both screws.

In the case of 2 and 3, you should discard the old rear hinge spindle. In all cases, you should discard the screws, even if they were unscrewed in the normal way.

Re-assembly of the rear hinge.

If you have removed the hinge spindle, or are fitting a fresh spindle, smear some grease on the bore of the bushes in the main frame. As it is vital that no grease enters the thread in the rear hinge spindle when you feed it in, you should avoid applying excess grease. Also put a temporary stopper of say paper in the end of the spindle-thread. Feeding the spindle through the bushes: you should be able either to press it right through by hand, or tap it lightly into position. If you need to hammer hard, then the spindle is too tight a fit in the bushes (which would cause it quickly to deteriorate).

Fit the nylon washers at each end of the spindle, and with the rear frame in place, do up the screws. You must use a thread locking compound such as Loctite Nutloc, and secure the screws using a torque of 10NM.

Fig FR6

