HUB DYNAMO LIGHTING SET and PARTS

Rear lamp with standby
The rear lamp will remain lit for a number of minutes after the dynamo has stopped depending on how much charge the built in capacitor has received from the dynamo.

Fitting the rear lamp and wiring loom (part 1)
To retrofit to an ‘R’ type (rear rack fitted)
If you are replacing a bottle dynamo remove the ‘bottle’ from its mudguard stay.
Figs EL25 and EL20 show the method of fixing the rear lamp and brackets to the rear rack.
When replacing the rear reflector or rear lamp use the existing brackets/fasteners and leave the brackets H connected to the rack. Fit the rear lamp using the M5 nuts and washers N & W (fig EL25). When fitting the rear-lamp do not set the lamp too high, as it would get damaged on folding - it should be just clear of the mudguard, with the two bolts about half-way along the slots (fig EL25). Finally, fully tighten all the nuts and screws.

The rear wiring, loom should project straight backwards out of the light. Run the wiring loom round the front of the forward/innermost right hand stay, then wrap the loom 1 ½ times down the stay and then from the outside through the large hole in the RH Axle Plate and into the rear end of the RH Chainstay (fig EL46).

To retrofit to an ‘L’ or ‘E’ type (no rear rack fitted)
Bromptons fitted with a battery lamp or made late 2006 onwards and fitted with a reflector will already have a bracket H (shown in fig EL21) fitted, so there is no need to remove this bracket; simply replace the battery lamp/reflector with the rear lamp as shown. If the bike has a Brompton rear battery lamp, undo the thumbscrews attaching the lamp to the bracket H. Replace with the new dynamo light using the same thumbscrews or the M5 nuts and washers. For older Bromptons follow the appropriate instructions below.

If the bike has a reflector fitted you will need to fit the joggled bracket H. To do this, undo the rear brake nut, R, leaving the LSD attached. Remove the reflector and its bracket. Note the order of assembly of the washers, and re-assemble with the special joggled bracket, the correct way round, as shown. Secure the nut R firmly, keeping the lamp bracket level. Centre the brake caliper.

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Next fit the lamp to the bracket and secure using the M5 plain nuts and washers. The lower stop disc (LSD) may now need resetting as described at the end of this sheet.

The rear wiring loom should exit the rear lamp to the right hand side in front of the brake cross tube and inside the right hand seat stay, SSR.

The wiring loom should follow the seat stay down towards the rear axle plate. Then feed the loom from the outside through the large hole J in the right hand rear axle plate and into the rear end of the RH chainstay tube CHS (fig EL45). Don’t fit the tiewraps TW yet.

Fitting the hub dynamo wheel

Insert the hub dynamo wheel into the fork dropouts with the contacts on the right hand side of the bike. The contacts should be pointing forwards and at an angle of approx. 90 degrees to the fork dropouts (fig EL04).

Use the same tab-washers as on the old wheel (note: on some P-types there’s a special RH tab-washer), but discard any plain M8 washers. Insert the allen bolt HDB through the front axle spacer bush ASB & tab-washer, and into the axle from the RH side. Make sure the LH tab-washer and wire-form are in place, and screw into the LH nut/cap assembly (LNC) and tighten (fig EL03).

Fitting the front lamp bracket

If the bike already has a dyno front lamp, simply remove the lamp (and its wiring) from the lamp bracket. If there’s a front reflector, remove the front brake and take off the reflector bracket. Re-assemble, with the lamp bracket inside the concave washer (i.e. between washer and fork crown), and resting fully down against the brake bolt: next, keeping the lamp bracket central, re-tighten the brake and centre the calipers. If necessary bend the bracket down a little so that it does not foul on the headset bearings, nor the stop plate on the front frame when the wheel is turned well to the left.
Rear lamp wiring (part 2)
Push the wiring loom into the RH chainstay till it emerges at the forward end and then, keeping the loom under the control cable(s), draw the loom forward through the centre cable guide CGC (fig EL401), and up through the ring on the cable gatherer CGT (fig EL49). Next (without making a sharp “fold” in the loom yet), feed it down towards the rear of the front forks. Pass this forward end of the loom outside the front cable guide. CGF (fig EL49). Unless an ‘E’ version (without mudguards) feed the forward end of the wiring loom through the gap between the front mudguard and fork crown, to the left of the mudguard bracket, under the fork crown and up to the front lamp bracket. Pull the cable through so that the earth eyelet on the end of the wire lines up with the hole in the lamp bracket.

For bikes without mudguards (‘E’ version)
The fitting of the front lamp bracket is the same as before but the ‘E’ version requires a P-clip GB to be fitted to the brake bolt, aligned as in fig EL341. It isn’t possible to move the wiring loom through the guide bracket after assembly to the brake bolt, so the wiring loom eyelet has first to be aligned with fixing holes in the lamp bracket, and the loom pulled reasonably taut through GB before securing the M6 nut on the brake bolt (fig EL341). Make sure that the loom will not touch the tyre when the handlebar is turned.

Wiring the front lamp
Feed the stripped end of the live (brown) wire through the connector tab CT (fig EL34), and fold it back over the long side of the TOP edge of the tab, and then “smooth” it down. Address this tab to the connector on the underside of the lamp, and press home firmly.
With the earth eyelet tucked inside the bracket (fig EL34), feed the M6 x 16 bolt through the bracket, the eyelet, and the lamp, and put the nut on, but not tight (there is no washer here). Set the lamp at the desired angle and then secure firmly in position (when choosing an angle for the lamp, make sure, if a front-carrier-block is fitted, that there is clearance between the rear of the lamp and the latch handle – if necessary bend the bracket down slightly, and reset the lamp angle). Check that the connector CN does not foul the brake assembly, and if needed, bend it back a bit.

Run the forward loom under the brake bolt, and down the front of the RH fork blade as shown in fig EL04 (on an E-version, you should check that there is no risk of the loom touching the tyre, and it may have to pass above the brake bolt here).
Tie the forward loom onto the fork using three tie-wraps:
- the lower tie-wrap TW should allow an adequate loop of wire for easy disconnection of wires when removing the wheel
- the mid tie-wrap TW to lie just above the mudguard-stay-bracket
- the top tie-wrap TW (use the long one here) to be right at the top of the fork blade, to trap neatly the loop of wire coming from the lamp (under the brake bolt).
Connect the loom to the hub dynamo. Either connector can be fitted to either hub contact. Now check that the dynamo works (the switch is on the front lamp).
Fixing the main wiring loom to the bicycle.
Before fitting any tie-wraps, pull the loom forward gently from in front of the chainwheel, until all the slack at the rear, aft of the chainstay (CHS), is removed (the loops in the loom should be neat without being strained. Then (fig EL401), using four of the tie-wraps (TW) provided, tie the dynamo loom to the lowest of the rear cables, the furthest aft tie TW1 to lie just behind the centre cable guide, CGC, when the bike is unfolded. The other three should be equi-spaced between TW1 and the cable gatherer CGT (fig EL49). Next, with these four ties in place, and the loom lying neatly alongside the cable, fold the loom back on itself at the cable gatherer CGT, and tie both parts of the sleeving together. Fit three more tie-wraps to fix the loom to the front brake cable in the positions shown in fig EL49.

On an L- or E-version. tie the loom to the inside/underside of the RH seat stay with three tie-wraps positioned as in fig EL45:
- one onto the seat stay, just forward of the brake-cross-tube
- one onto the seat stay, just aft of the pulley housing mounting and tucked under the housing (if fitted)
- one approx. 20mm forward of the R.H. axle plate.

**The Lower Stop Disc, its role in the folding process:** when you pick up the folded bike, the rear wheel cannot unfold because the lower stop disc, LSD, butts against the “folded” seat pillar, SP. The LSD can be adjusted to obtain the correct gap between itself and the SP: if the gap is too small, then the SP may foul, irritatingly, against the LSD during folding; if the gap is too large, then the rear wheel will drop away too far when the bike is picked up, so that the hook retaining the front wheel slips off the chainstay tube (CHS) on the rear frame.

On bikes shipped from our factory before March 2000 (Mk 2 bikes), the lower stop disc is an eccentric, and calls for a different approach from those fitted on later Mk3 bikes.

**Setting the Mk3 Lower Stop (fig LS1)**

The lock-nut should be slackened off. Fold the bike completely, and spin the LSD along the thread to give the correct gap of 1-2mm. Finally, using 2 spanners, 19 AF and 15 AF, tighten the lock-nut: do not overtighten, correct torque 8NM.

**Setting the Mk2 Lower Stop (figs LS11 & LS13)**

The rear brake nut, RBNUT, must be well tightened, torque 14NM: if it is not secure, the brake caliper may move off centre when fitting the lower stop disc, LSD, to it, and the RBNUT (together with the LSD) may come loose in use.

To set the lower stop correctly, partially slacken off the retaining screw so that the LSD is not loose, but can be moved by hand: fold the bike completely, and move the LSD to give the correct gap of 2-3mm. The LSD should be disposed to lie towards the LH side of the bike (fig LS13), not towards the right. Finally, re-tighten the retaining screw firmly.