BROMPTON

HUB DYNAMO LIGHTING

Important information

- This data sheet includes fitting instructions for all hub dynamo parts, covering the installation of an entire dynamo set. If you are not fitting a complete set please skip to the appropriate section, listed opposite.
- If you are unsure of the fitting proccess please consult your Brompton dealer. Brompton cannot accept responsibility for any failures due to incorrect fitting or maintenance.

Sections

1) Fitting hub dynamo wheels
2) Fitting front lamp brackets
3) Connecting and fitting rear lamps
4) Routing and securing the rear loom
5) Fitting and connecting front lamps

1. Fitting hub dynamo wheels

Be sure to retain both tab-washers to safely install your new wheel.

The dynamo contacts go on the drive side of the bike pointing forwards at 90 degrees to the dropouts (fig. 1).

Insert the hub skewer from the drive side passing through the end cap and flat tab-washer with the tab facing the fork.

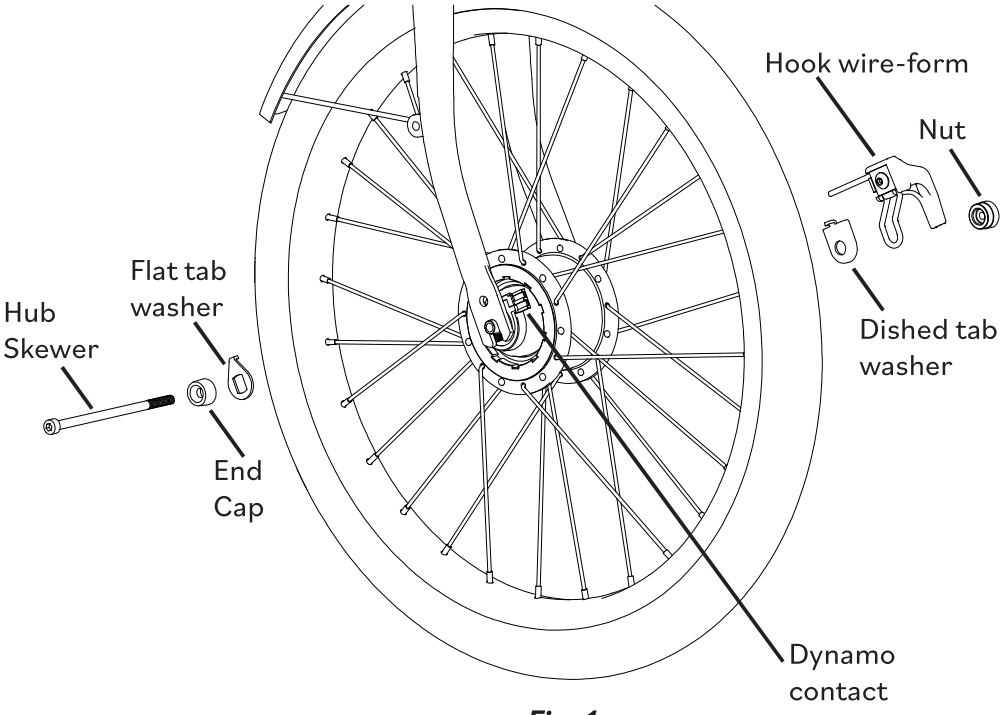


Fig. 1

On the non-drive side add the dished tab-washer with the tab facing the fork and the hook wire-form nested inside it. With the knurled detail outermost, hand-tighten the nut firmly. Ensure the axle is seated as far as it will go into the dropouts and tighten bolt with a 4mm hex drive (8Nm) while keeping the wheel central between the forks.

2. Fitting front lamp bracket

First remove any existing lamp, bracket or reflector by undoing the nut (N) on the back of the fork tube to release the brake calliper. Fit the new bracket parts in the order shown (fig. 2).

The alignment washer (AW) sits against the front of the fork tube with the wire form bracket (BRK) nested inside it. The OD16 washer must lie between the calliper and wire-form bracket to hold it in place. Smaller diameter washers are unacceptable. Tighten the spindle nut with a 10mm spanner ensuring all parts are centrally aligned. Ensure the wire-form is seated properly and is not contacting the headset.

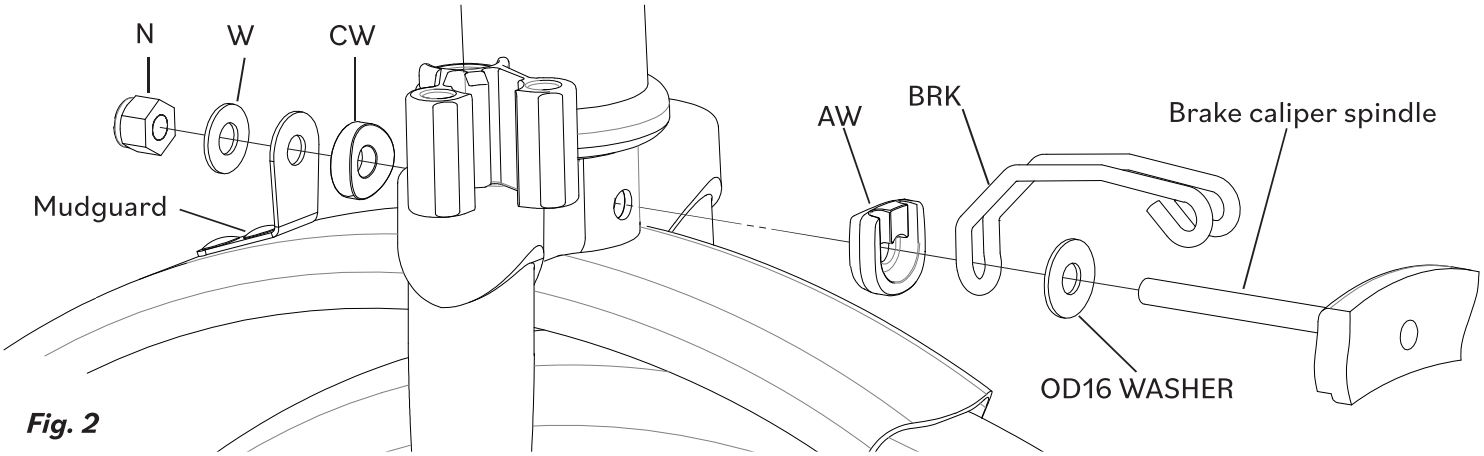


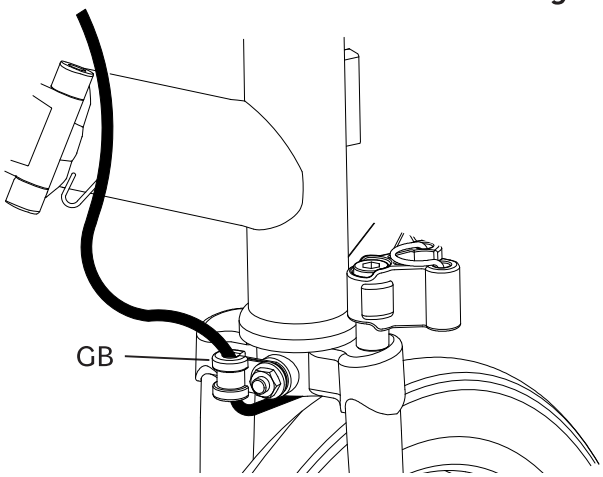
Fig. 2

Fig. 3

NO MUDGUARD

Bikes without mudguard fitted requires a guide bracket (GB) to hold the rear loom off the tyre (fig. 3). Be sure to replace this when changing lamp brackets.

When fitting the rear loom, the calliper spindle nut will have to be loosened off to allow the loom to pass through. Do not forget to fully tighten the nut after installing the rear loom.



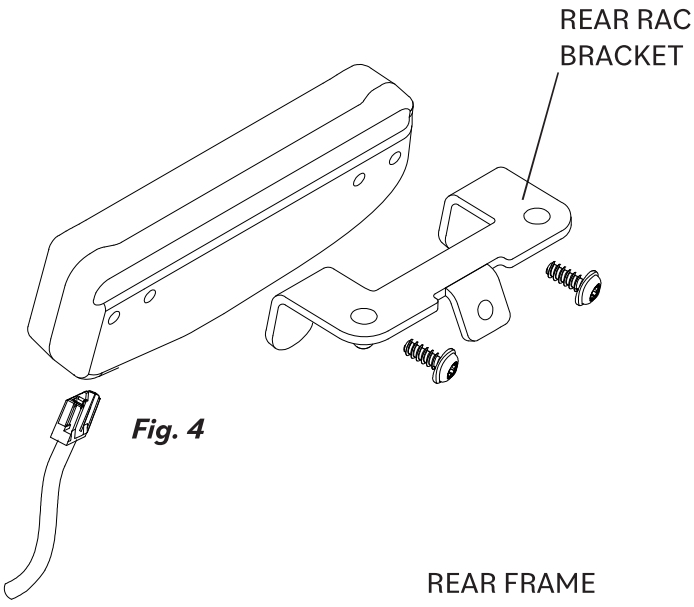


Fig. 4

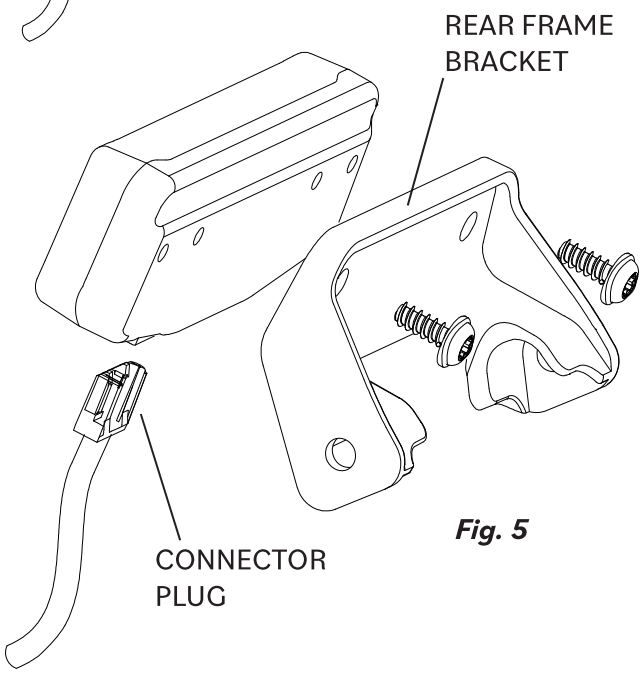


Fig. 5

3. Connecting and fitting the rear lamp

Important: The brackets differ depending if you have a rear rack or not. These are the same brackets used to mount battery lamps and reflectors. If already fitted it is easier to leave the brackets on the bike and fit the lamp to them after connecting the loom.

Fitting the rear lamp to the bracket

The rear lamps are retained with two screws on versions with rack (fig. 4) and versions without a rack (fig. 5). Fit the two screws (fig. 4,5) and tighten firmly.

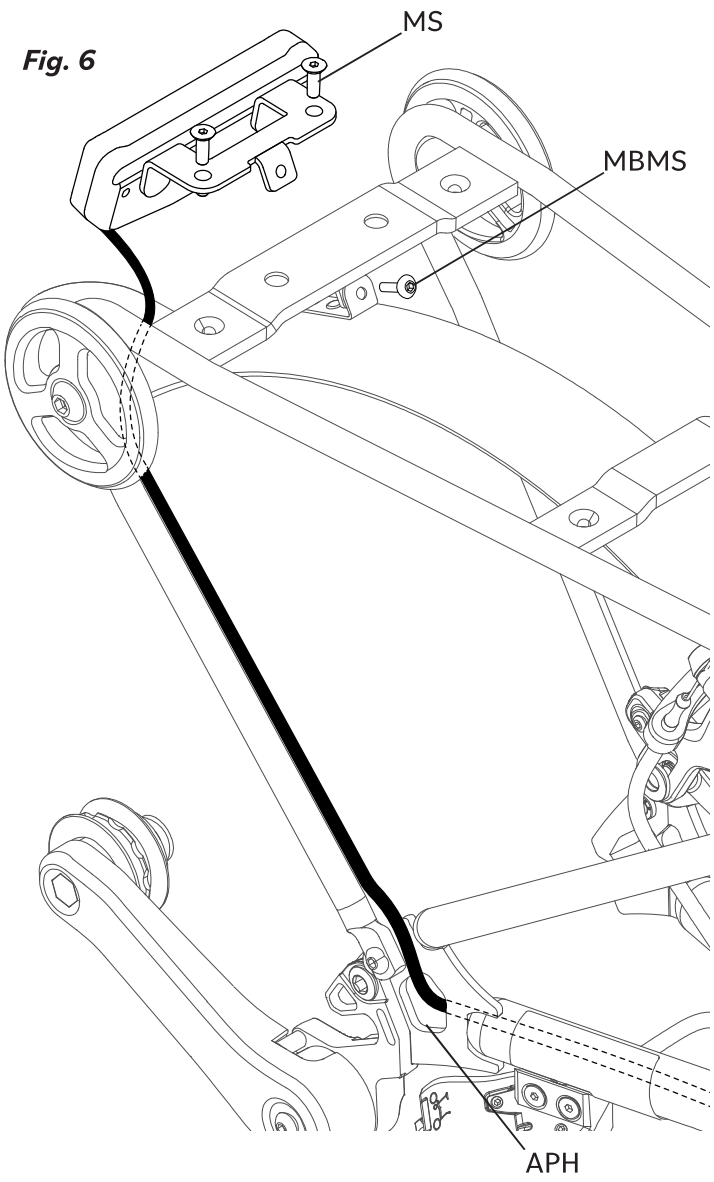
Connecting the rear lamp

With the lamp mounted to the bracket and off the bike, connect the rear loom wire to the connector plug. This will need to be prized out of new lamps or retained from your existing lamp if you are just replacing the loom.

Insert each wire as far as possible into the small holes in the plug. Bend the bare ends sharply over so that they lay along the concaved side of the plug. The wires can go in either hole but ensure the bare wires do not touch each other. Push the plug fully into the lamp body.

Important: During fitting the rear wiring loom must exit on the drive side of the brackets. Tighten nuts firmly and check for a secure fit. Be careful not to snag or tangle the flailing loom. For details on how to route the loom see section 4.

Fig. 6



Fitting the light bracket (Rear Rack)

First electrically connect the rear loom to the rear lamp as described in section 3.

Once connected, fit the mounting screws MS x2 and tighten to 2Nm. Fit the mudguard blade mounting screw MBMS and tighten to 1.5Nm (fig.6).

Routing the rear loom (Rear Rack)

For the version with rack ; The rear loom should exit the rear lamp on the right hand side, follow the rear rack right arm (drive side) into the axle plate hole APH (fig. 6)

All versions; continue through the chainstay tube and pass through the central cable guide CCG to the front of the bike (fig. 8). Work all the loom forwards to remove the slack at the rear frame.

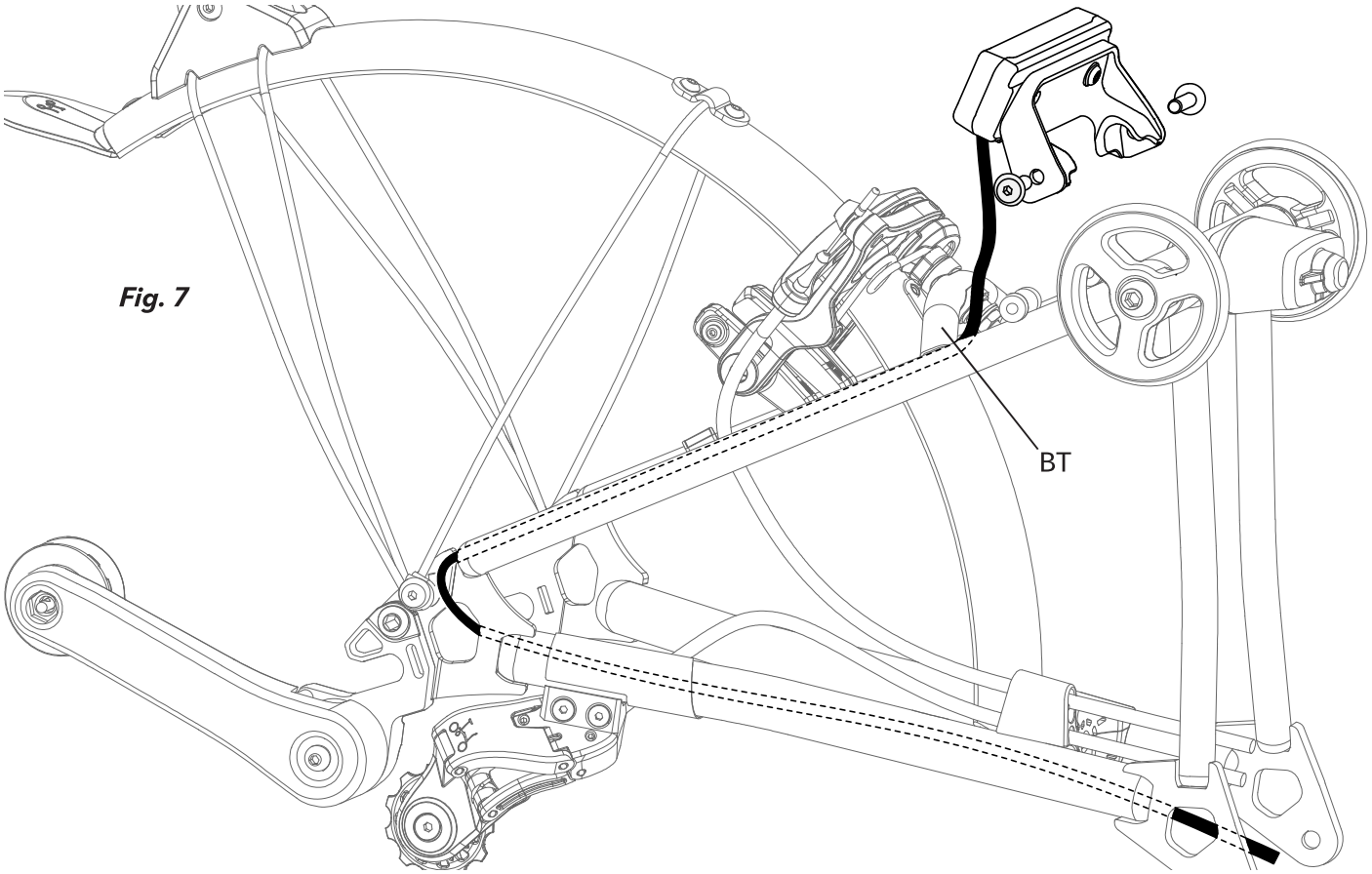
Fitting the light bracket (Rear Frame)

First electrically connect the rear loom to the rear lamp as described in Section 3.

When fitting the bracket to the rear frame; the rear loom exits the rear lamp on the right hand side, pass beneath the brake tube BT and into the axle plate hole APH (fig. 7).

Once connected, fit the mounting screws x2 and tighten to 2Nm (fig. 7).

Fig. 7



4. Routing and Securing the rear loom

Both rack and non rack versions will require three cable ties.

Rack version - Fix the 3 caple ties evenly spaced along the rear rack arm.

Rear frame version - Fix one above the brake tube, one above the cable pulley mount and one near the bottom of the seat stay in that order (fig. 8).

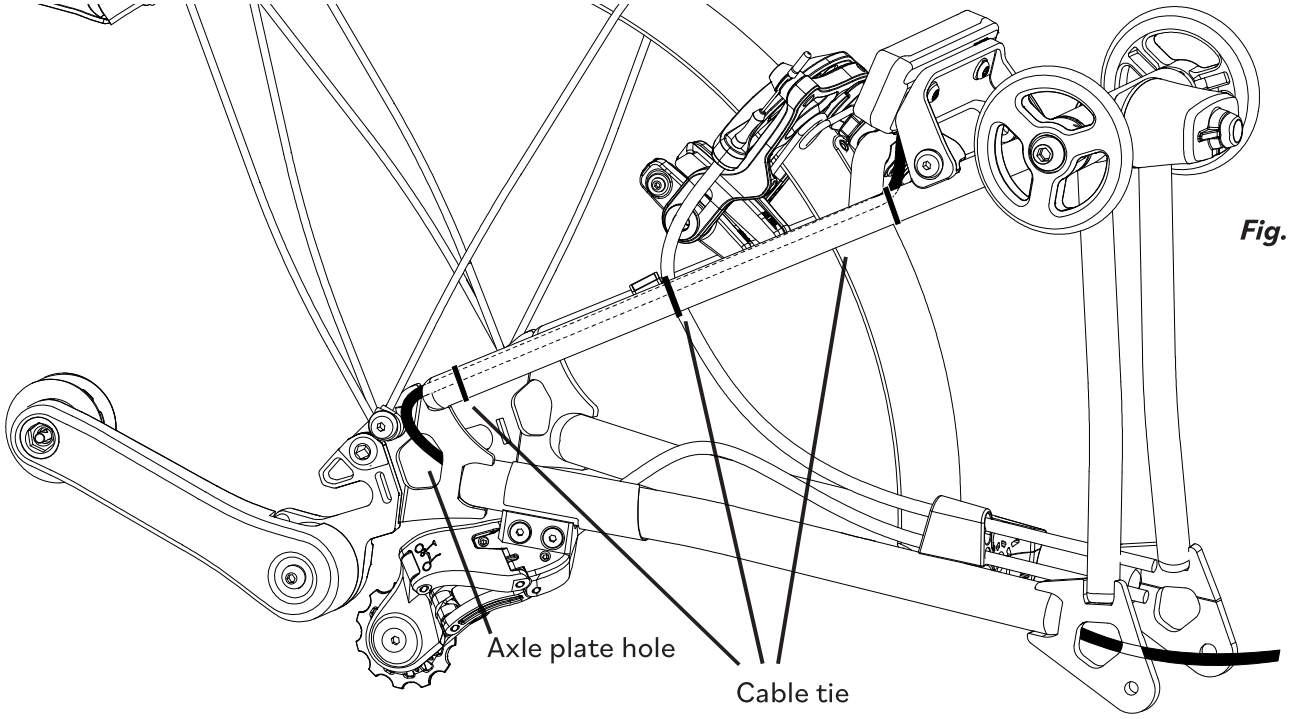


Fig. 8

Routing the rear loom (main frame)

After passing through the central cable guide CCG (fig. 9) the loom follows the main cable run passing up through the cable gatherer ring CGR (fig. 10). Loosely double back down and pass under the fork crown on the left hand side of the bike. Do not pass through the forward cable guide.

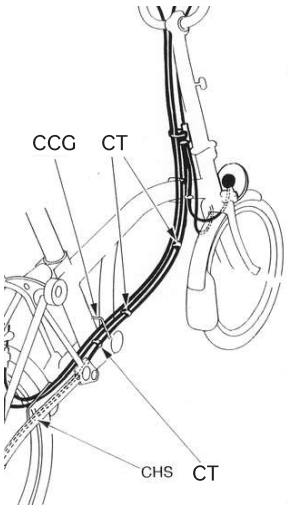


Fig. 9

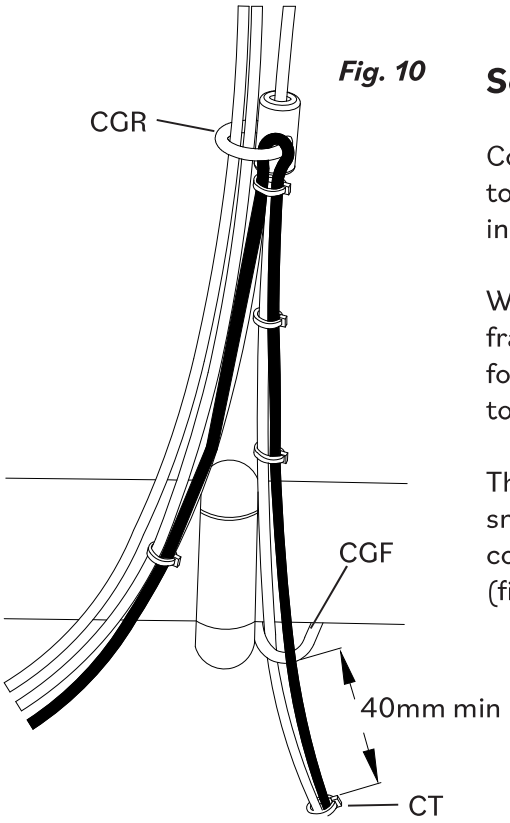


Fig. 10

Securing the Rear Loom (main frame)

Correct positioning of the cable tie is important to avoid adversely influencing the control cables, in particular the front brake cable.

When the loom is correctly secured at the rear frame continue adding the tie wraps working forwards. Keep pulling the loom along as you go to eliminate slack. (fig. 9,10).

The loom should follow the main cable run in a smooth arc and attach to the lowest possible control cable, as dictated at the rear frame (fig. 10).

5. Fitting and connecting front lamps

Route the loom so that the rear loom RL lies to the left and the front loom FL to the right after passing upwards between the two arms of the bracket B. Be sure to use a washer W each side of the mounting bolt MB as shown (fig. 11 and 12)

In all cases it is easiest to electrically connect the rear loom before mounting the lamp to the bracket B. Ensure the rear loom sits on top of the mudguard as it passes under the fork crown and does not wedge beside it (fig. 12).

Before tightening the bolt make sure the alignment is correct by setting the axis of the lamp parallel to the axis of the front frame tube FFT when the bike is unfolded (fig. 14). Check there is ample clearance of the mudguard and any luggage option. Some gentle tweaking may be required.

Important: After connecting your lamp check that the lower cable tie CT (fig. 9) is in the optimum position. The remaining loom forward of this point should provide a loop to accommodate full steering lock left and right without stressing the loom. Check that the front brake cable remains parallel to the front wheel as you fold the frame around. If it juts out to the side it may become caught on the chain-tensioner, making it difficult to unfold the bike.

Connecting front lamps to rear looms

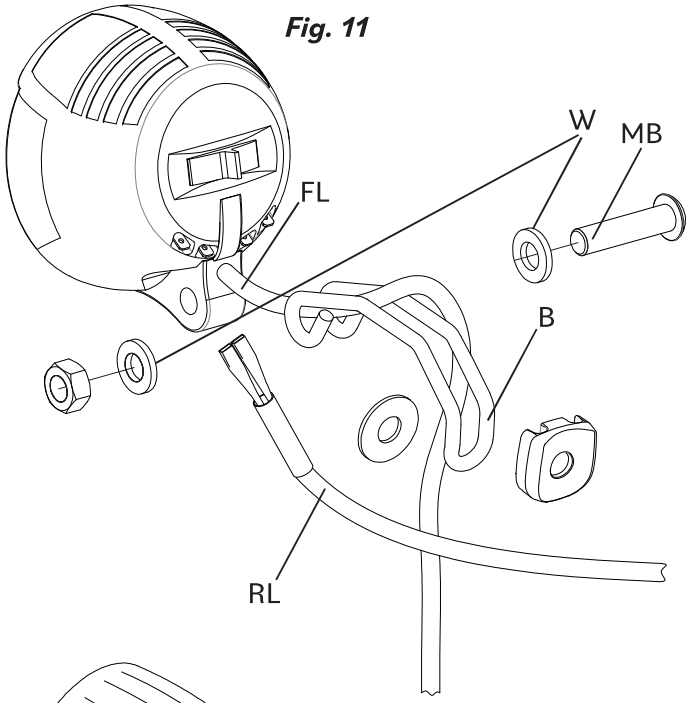
B+M Lyt LED (supplied with Shimano hub)

Push the two loom connectors firmly onto the pair of connector tabs marked 'out' on the left side rear of the lamp body. It does not matter which way round the connectors go. The pair marked 'in' are redundant.

It is easiest if you half push-on one connector to the most prominent tab then half push-on the other one before firmly pushing the two on together.

Insert the bolt with washers W and set in position (fig. 12).

Fig. 11



B+M Cyo LED (supplied with SON hub)

Early Cyo lamps had an integrated rear loom so no connections had to be made and the rear loom had to be routed from the front to the back (MK1).

For ease of repair a connection was added and a separate rear loom is now required (MK2).

Push the two male tab connectors firmly into their female counterparts on the loom. It does not matter which tab connects to which connector (fig. 12).

Insert the bolt with washers and set in position as shown in (fig. 12).

Note: It is possible to convert a MK1 lamp to accept the detachable MK2 rear loom by cutting off the old loom and fitting two male connectors yourself. These are available from Brompton quoting TAB-DYNFLAMLED.

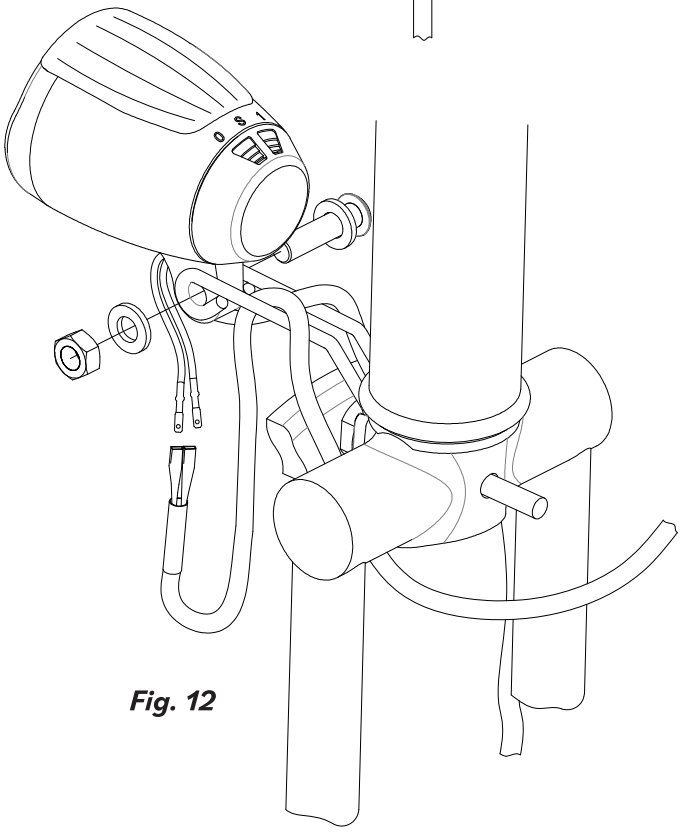


Fig. 12

Cyo features

With the switch set to ‘1’ the lamp will shine bright during motion and store charge to power a stand light when stationary. The stand light brightness is reduced to conserve power but automatically returns when moving again. The stand light can be switched off by turning the switch to ‘0’ but the stored charge will remain for several days. Please note the switch does not control the rear stand light function.

Setting the switch to ‘S’ will automatically cause the front and rear lamp to switch on in darkness. When natural lighting conditions improve the lamps will automatically deactivate. The light sensor has an 8 second turn-off delay so will not be effected by car headlights etc.

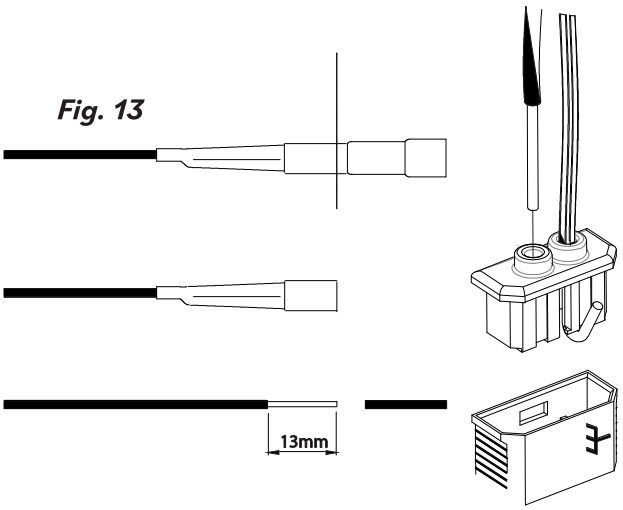
Adapting hub connectors

It is possible to convert SON connectors to accept a Shimano connector plug (Fig 13). Cut where indicated, to leave as much wire as possible. Pull off the remaining heat shrink and strip 13mm of insulation off the end.

To fit a Shimano connector plug, separate the parts by depressing the small tab on the back. Insert each wire as far as possible into either hole and bend the bare strands sharply upwards keeping them confined to the grooves. Ensure the two bare ends do not touch each other.

Note: When removing SON connectors, hold them as low down as possible to avoid stressing the wires. Gently work them side to side without jerking or bending the connectors.

Fig. 13



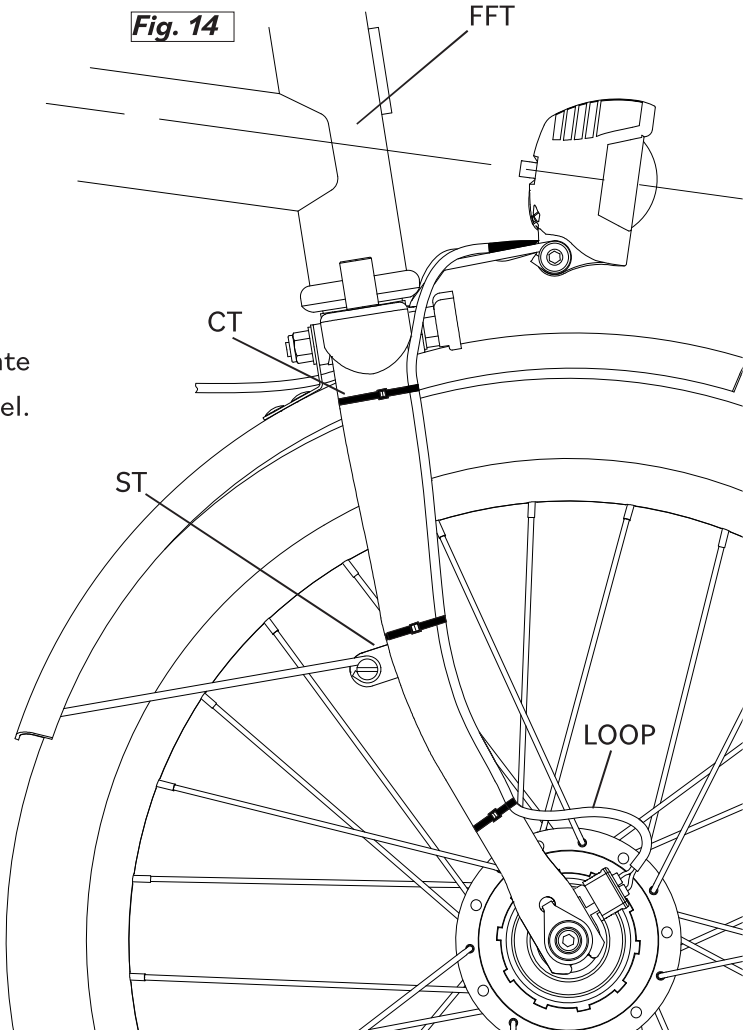
Securing the front loom

Securing the front loom is the same for all front lamps. Connect the loom to the hub then secure it to the right hand fork blade with three cable ties (fig 14).

Loosely position the longest Cable ties CT at the top and manipulate the loom so that it just clears the calliper and headset cup before pulling tight (fig. 14).

Place the middle cable tie just above the mudguard-stay-tab ST and position the lower cable tie to leave an adequate loop to allow easy disconnection when removing the wheel.

Fig. 14



Final checks

Switch on the lamp and check that both the front and rear lamps illuminate when you spin the wheel. Also check that the lamps do not illuminate when the switch is off. If either lamp fails to illuminate, double check all connections.

Double check all nuts and bolts are tight, especially the front wheel bolt. Trim all cable ties off without leaving sharp protrusions.

Ensure looms are secure along their lengths and will not become easily caught or snagged when riding or folding/unfolding.