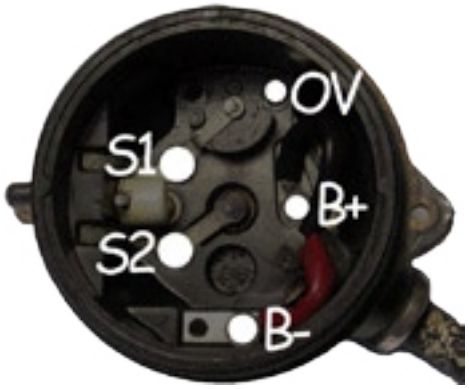
Fitting your P-series reflector unit

This is a guide to fitting a P-series reflector unit into an existing headset. Though the images on this page are of an Oldham headset, the layout of a CEAG (FX3, Headlite, etc.) headset is substantially the same.
To mount a Bisun into either an Oldham or CEAG headset, first disconnect the headset from its battery, unscrew the bezel, and remove the reflector and glass, along with any wiring attached to the reflector.

Remove the rubber sealing ring from the reflector, and fit it onto the Bisun.

Remove the pilot bulb holder (Oldham headset, some CEAG headsets), or the twin bulb mounting bar (other CEAG headsets).

The headset should now contain the two switch contacts, each held down by its own screw, and the two power input leads, and look something like the image on the left.
This would be a good time to examine the condition of the switch. Dirty contacts should be cleaned and greased, and flattened contacts could be gently bent back to shape. Even though the Bisun draws very little current from the switch contacts, if they are badly corroded, replacement should be considered, and some thought given to the waterproofing of the headset.
If the switch is stiff in operation, it is recommended that it is dismantled, cleaned and greased, since a smoothly operating switch can give useful tactile feedback in lamp operation, and greasing may also aid waterproofing.

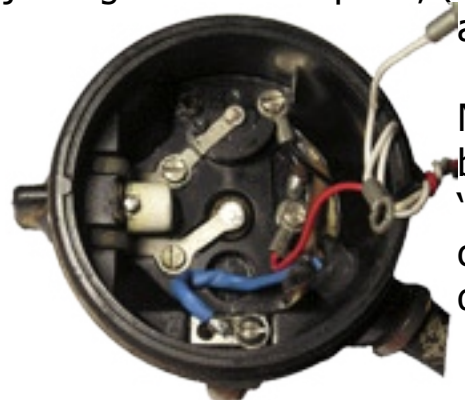


The Bisun requires the switch to be on the positive side of the circuit, hence the positive supply from the battery must be connected to the headset connection labelled 'B+' in the diagram to the left.
If the unit is to be used solely with batteries that can be connected with either polarity, (such as 4.5V Duracell packs), or with a home-made battery system that can be wired with reversed polarity at the battery end, then the incoming power connections in the headset can be left in their existing position as an alternative to switching the connections in the headset.

However, for use with lighting systems where the battery can only be connected one way round, such as FX3, Headlite, etc, the power input wires must be swapped in the headset.
In CEAG headsets, the incoming power wires are generally flexible and it is easy to swap their connections.
In Oldham headsets, the wires are sometimes stiff, and it can be more awkward

to switch them around. The extra sleeving (if present) on the leads in an Oldham headset is often the main cause of this stiffness, and carefully removing this sleeving can make fitting easier.
In any model of headset, it is recommended that initially, the connections are simply swapped around and screwed down in a position where they will not foul the reflector as in the image below. This allows the wires to adapt to their new positions, and makes the later fitting of the unit easier. A little gentle manipulation, particularly of the positive wire, can help the wires adjust to their new orientation.

In this image, the sleeving has been removed, and the wires swapped so that the positive (brown) wire is connected to the 'B+' point, and the negative wire to the 'B-' point.
The positive (red) wire from the Bisun requires to be connected to the 'B+' point, and as this involves two wires connecting to a single screw, this is the fiddliest connection to make since both wires tend to move the screw around while the fitter is trying to get the screw into the B+ hole.
It is suggested to have the Bisun connection on top of the incoming battery connection. Care should be taken to ensure that neither of the connections make make contact with the negative contact strip which runs round the inside of the headset just right of the B+ point, (visible in the above image as a brass-coloured strip), although the Bisun connections are sheathed.



Next, the negative (black) wire from the Bisun needs to be connected either to 'B-' (or its neighbour) or to the '0V' point in the headset, as in the image here. Again, check that this connection does not result in any accidental connection with other parts of the headset.

Next, connect the (white) switch input leads, each to one switch contact (S1 and S2). It does not matter which white wire connects to which switch contact.

The reflector should then be placed in the headset so that the wiring lies in the right-hand area, and does not risk fouling the switch.
Finally, the glass should be positioned on the reflector sealing ring, and the bezel aligned and screwed down.

Note that since there is no mechanism to prevent the reflector and glass rotating when the bezel is screwed down, pressure MUST be applied to the front of the glass while screwing or unscrewing the bezel to prevent rotation of the unit.