

TS120 iss 5 : Cab Heater installation instructions

Refer to drawing CD1096 for the circuit layout

- 1) The cab heater should be supplied as a kit including:
 - a) 1 x cab heater
 - b) 1 x relay and fuse assembly
 - c) 1 x 3 metre link harness (to be cut to make 2 link harnesses)
 - d) 1 x length of flexible conduit
 - e) 1 x 8-way tab housing with 8 x crimp tabs
 - f) 1 x 6-way receptacle housing with 6 x crimp receptacles
 - g) 1 x in-line fuse holder with 1 x 3A blade fuse
 - h) 1 x Dash switch (optional)
 - i) 2 x M10 yellow crimp ring terminals

- 2) Mount the heater unit near the cab floor with the outlet directed towards the footwell. Avoid placing the heater directly on the cab floor in order to prevent dirt and water ingress.

- 3) Fix the relay/fuse assembly in a clean, dry, accessible location, preferably near to the vehicle's main fuse board and power distribution studs. Note the 'Power In' (6-way) and 'Power out' (8-way) connectors.

- 4) Run the link harness supplied from the main power distribution studs or battery connections to the 'Power In' connector on the relay/fuse assembly. **Do not connect to the power distribution studs at this stage.** If no 0V connection exists, it is permissible to drill an 8mm hole in an unobtrusive part of the chassis, clean off any paintwork and fix an M8 steel stud with a plain and spring washer.

- 5) When the length of the harness from the power studs to the 'Power in' connector is determined, cut the link harness to length. It will now become two link harnesses (harness 1 on 'Power in' side, harness 2 on 'Power out' side). Note that there must be no bundles or coils of cable, nor should there be any tension when connected.

- 6) Position lengths of flexible conduit over harness 1 to prevent cable damage as appropriate, and crimp 6 x receptacle terminals to the cut cables. **Refer to notes on crimping in section 12.** Insert the terminals into the receptacle housing supplied and mate with the 'Power in' connector on the relay/fuse assembly. Secure the harness with cable ties, ensuring that all sharp edges are avoided. It is also recommended that mating connectors are held together with a cable tie.

- 7) The remaining part of the link harness (harness 2) should be sufficiently long to reach from the relay/fuse 'Power out' connector to the heater connector (If it is too short, new cables may be used, providing the cross-sectional area of the heating element cables is at least 1.5 mm²). Cut off and discard any excess harness length.

- 8) Position lengths of flexible conduit over harness 2 to prevent cable damage as appropriate, and crimp 8 x tab terminals to the cut cables. **Refer to notes on crimping in section 13.** Insert the terminals into the tab housing supplied and mate with the 'Power out' connector on the relay/fuse assembly and the heater connector. Secure the harness with cable ties, ensuring that all sharp edges are avoided. It is also recommended that mating connectors are held together with a cable tie.

- 9) Run an orange or yellow cable from the dash switch (optional) to the red butt splice on the relay/fuse assembly. The dash switch must be supplied with 24V alternator or ignition signal via the fuseholder and 3A fuse supplied. If the dash switch requires illumination, a separate 0V cable must be run to it.
- 10) With the dash switch in the 'OFF' position, connect the ring terminals to the power distribution or battery studs (M10 ring terminals are supplied if required. Always use the correct crimp tool). It is recommended that the terminals are secured with a plain washer, spring washer and a Nyloc nut.
- 11) Start the engine before switching the heater on. Run the heater to ensure satisfactory operation. If there is a problem, switch off immediately, remove the fuses and contact Caldotherm for advice.

12) Maintenance

- a) Clean with a damp cloth. Do not allow the internal components to get wet.
- b) The inlet filter (if fitted) can be removed and washed out if blocked.
- c) Occasionally check that the connections, fuses and relays are secure

13) Notes on Cables, Stripping and Crimping

- a) Heating element cables must be at least 1.5 mm² cross-sectional area. Caldotherm can supply additional lengths on request.
- b) Cables should be stripped back by approximately 6mm before crimping (or 12mm and folded double for thin cables). Never use side cutters or plier-type wire strippers, as these can damage or remove strands of wire.
- c) Due to the high currents required, crimping quality is vital. Always use a correct ratchet crimping tool for any crimp connections. Cheap, non-ratchet tools or needle-nose pliers **will not do** and can result in burned-out cables! An example crimp assembly should be included in the kit to illustrate good crimps.
- d) Avoid running cables against a sharp edge – use a short length of flex conduit if necessary.
- e) Avoid taut cables.
- f) Do not bundle or coil extra lengths of cable, particularly heating element cables. Cut to length instead.
- g) If in doubt, re-crimp or call Caldotherm.
- h) Approved tools can be supplied by Caldotherm:

Uninsulated tab/receptacle crimp tool	HT1129
Insulated (red/blue/yellow) crimp tool	HT1130
Wire strippers	HT1131