

ECHO 8 Kit - Installation Manual



Eberspächer

P/N: 20 2900 81 0828 0A

SUBJECT: EBERSPÄECHER CARGO HEAT OPTION (D8LC)
BENEFITS: Provides comfort heat for working vans and trucks.
Protects valuable loads from low temperatures.

Espar Products, Inc.

TOOLS NEEDED: Shop tools, Electric tools, Hose cutter.

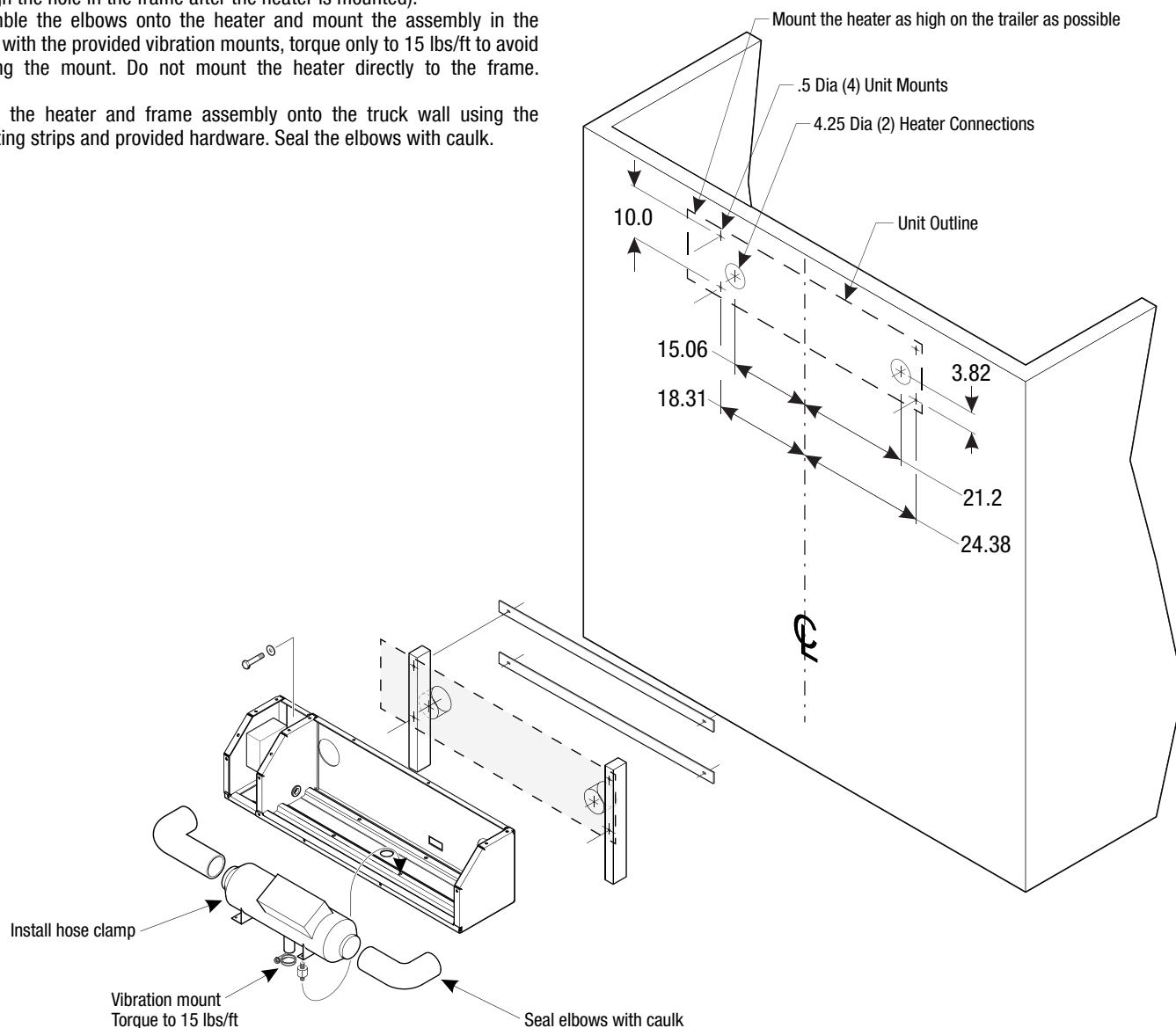
(800) 387-4800
(905) 670-0960
(905) 670-0728 Fax

NOT INCLUDED: Fuel tank.

www.eberspaecher-na.com

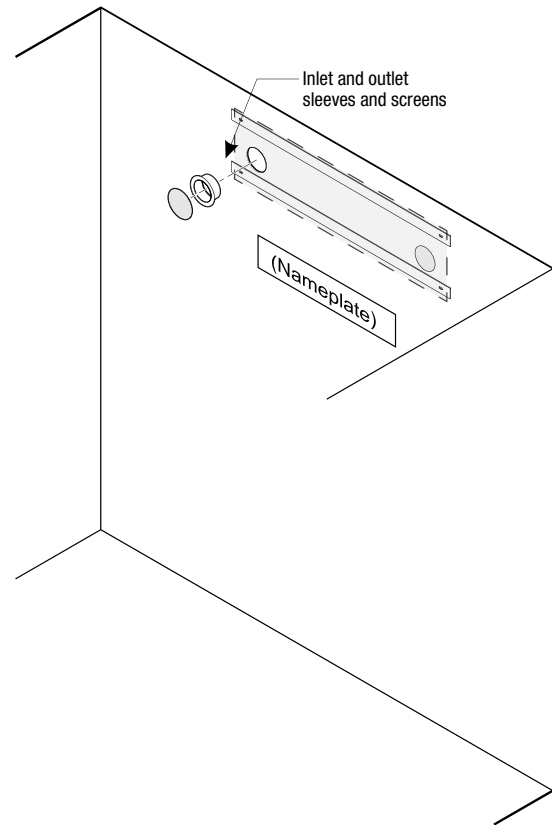
INSTALLATION:

1. Find the center line of the trailer wall, note that the heater unit is not symmetrical with the mounting holes. Horizontally, mount the heater as close to the ceiling as possible and as not to interfere with the tilt truck cab.
2. Adjust the unit hole locations left or right so at least one set of .5 inch vertical mount holes go through the wall studs. Avoid drilling the 4.25 inch holes through wall studs.
3. Temporarily mount the exhaust hose clamp onto the heater (it will not fit through the hole in the frame after the heater is mounted). Assemble the elbows onto the heater and mount the assembly in the frame with the provided vibration mounts, torque only to 15 lbs/ft to avoid twisting the mount. Do not mount the heater directly to the frame.
4. Mount the heater and frame assembly onto the truck wall using the mounting strips and provided hardware. Seal the elbows with caulk.



INSIDE THE BOX

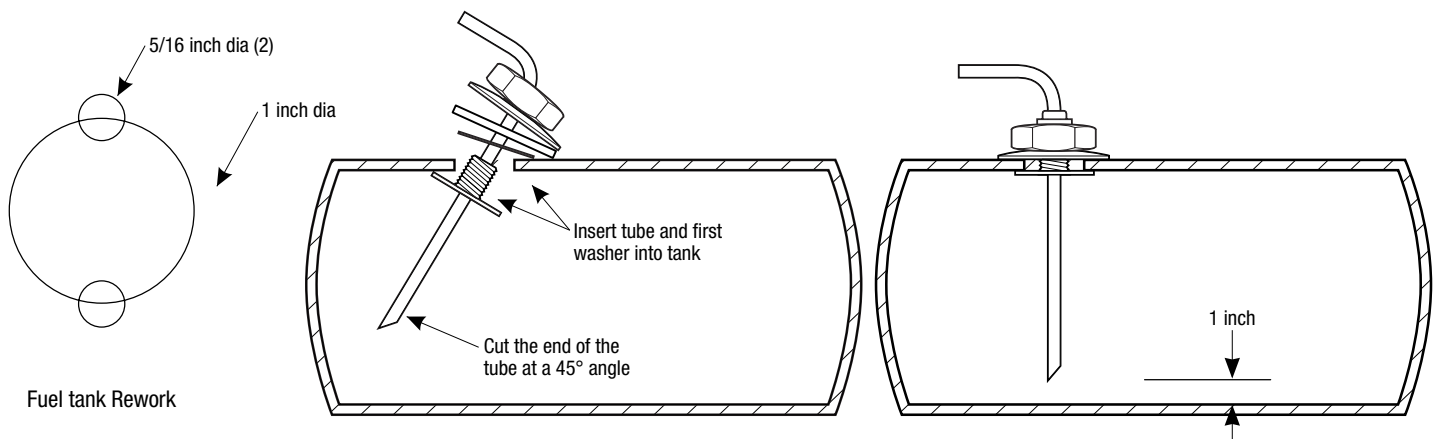
1. Install the inlet and outlet sleeves and screens.
2. Place the warning nameplate below the inlet and outlet screens.



FUEL TANK REWORK

Fuel pickup tube not included with this kit. See options at the beginning of this bulletin.

1. Drain all diesel fuel from the tank and use nitrogen or an inert gas to purge the diesel fuel vapors from the tank prior to drilling. Keep the diesel tank filled with inert gas while drilling.
2. Drill holes per sketch below, drilling the 5/16 holes first. Use a magnet, grease or special hole saws/drills that will minimize steel chips from entering the fuel tank. Thoroughly clean and flush.
3. Cut a 45° angle on the end of the pickup tube so it is approximately 1.0 inch above the bottom of the fuel tank.
4. Loosen the nut and slide the parts to the top of the pickup tube elbow.
5. Hold the parts in position and slide the assembly into the hole at an angle until the bushing is inside the hole.
6. Tip the backup washer and slide it through the hole and position it onto the bushing. Thread the nut onto the bushing and tighten.





FUEL SYSTEM

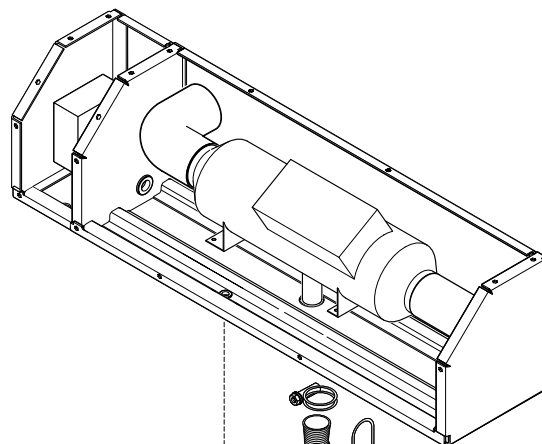
1. Position the fuel pump no more than 30 inches above the bottom of the fuel tank and, with the provided rubber clamp, mount the fuel pump at a 15°-35° angle above horizontal.

Proper mounting angle of the fuel pump is necessary to allow any air or vapor in the fuel lines to pass through the pump rather than cause a blockage.

2. Attach fuel hoses as shown and route to heater, secure with provided clamps. The fuel line from the pickup tube, to the fuel pump, to the heater should all be routed at a continuous rise. Notice that the clear fuel line must contact the nipple on the fuel pump and the heater inside the clamped rubber hose connections.

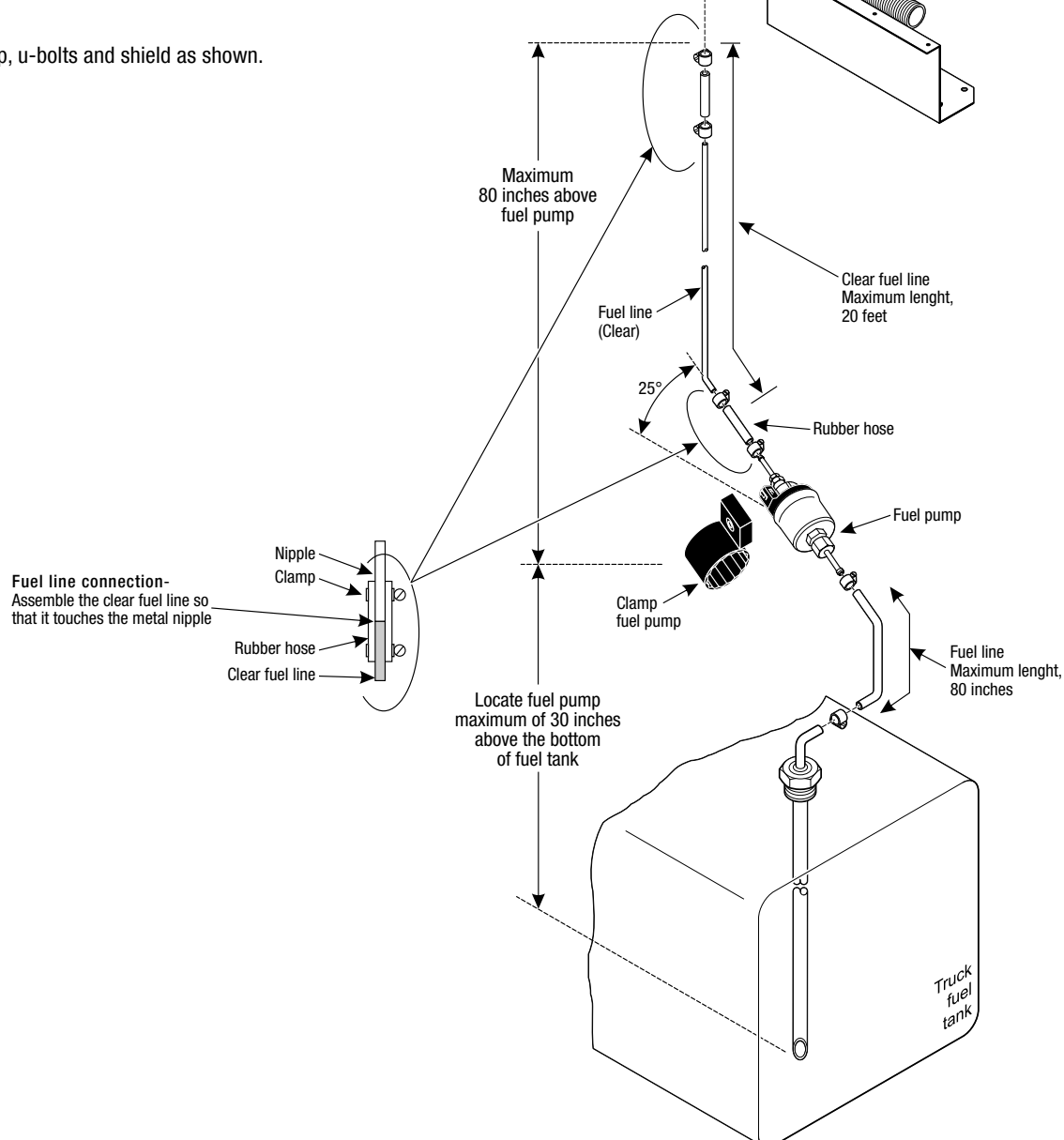
Only use a hose cutter or utility knife to cut the clear fuel line.

Do not use a wire cutter, it will pinch the fuel line closed.



EXHAUST SYSTEM

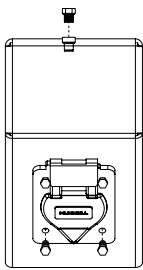
1. Assemble exhaust tube, clamp, u-bolts and shield as shown.



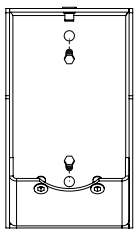
ELECTRICAL CONNECTIONS

1. Attach the Control harness 16 pin connector to the heater connector. Route the harness through the grommet and into the electrical component area. Locate the Red/Brown harness (heavy gauge power harness), cut to length, splice a terminal onto the Brown wire and attach to the ground terminal. Strip the end of the Red wire and splice to the 30 amp fuse. Save the cut off length of the power harness for the next step. To prevent accidental starting of the heater during the installation procedure, remove the 30 amp fuse.
2. Use the saved length of the power harness to connect the unit to the truck battery. In the unit, splice a terminal onto the Brown wire and attach to the ground terminal. Strip the end of the Red wire and splice to the BAT wire from the relay. Route the harness through the rear grip connector to the truck battery. Attach the Red wire to positive terminal of the truck battery and the Brown wire to the negative terminal.
3. Route the control harness through the unit rear connector grip and into the driver cab area. See next page for wire connections to controller.
4. Drill a 5/8 inch hole through the bulkhead and route the sensor bulb inside the truck box. To accurately measure air temperature, mount the sensor away from the heater vents. Seal the bulkhead hole with caulking.
5. Attach the Fuel Pump connector to the fuel pump.
6. Install the standby power box to the front of the truck box, again, in an area which is accessible to the driver. Route the control harness through the unit front connector grip and splice the H2 wire to the 10A 600V Bussmann fuse, the H1 wire to the H1 splice from the transformer and the CH wire to the ground terminal in the electrical component area, see wiring diagram.
7. Secure all harnesses with clamps and bandwraps.

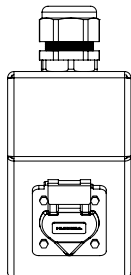
SHORT POWER OUTLET BOX



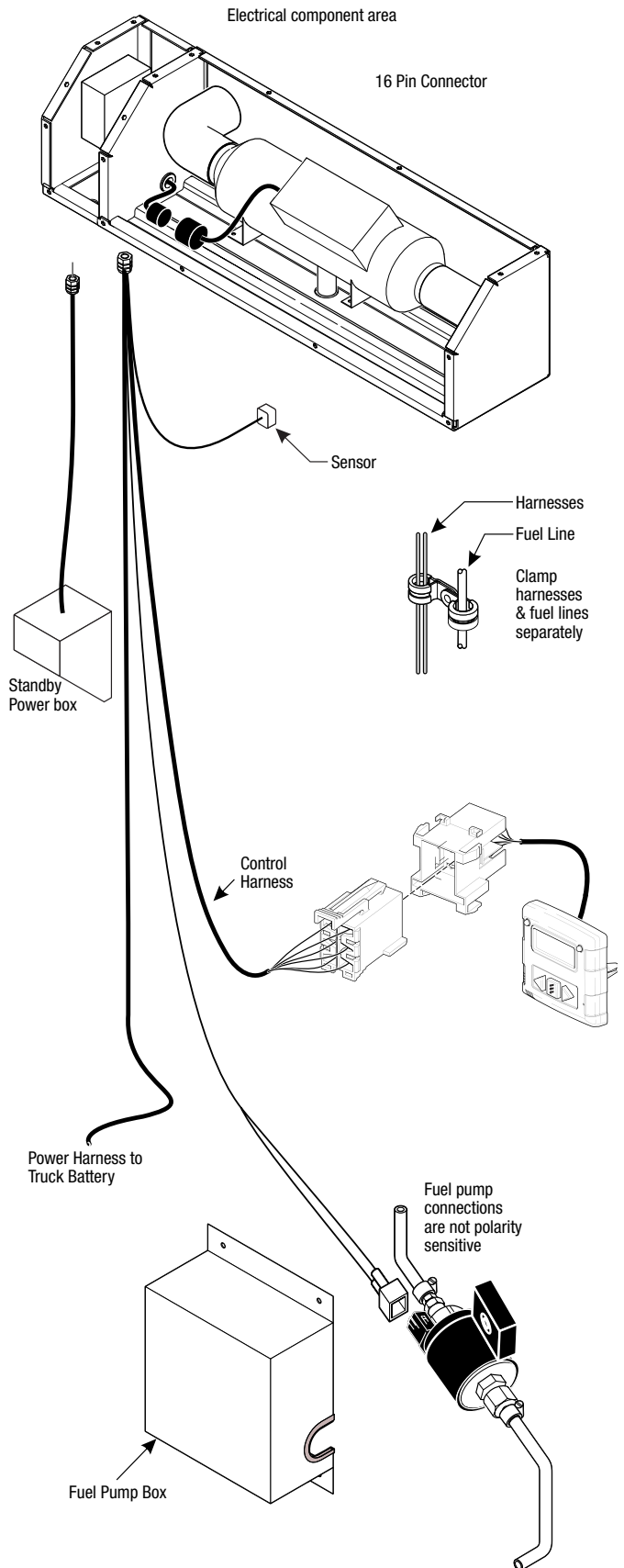
1. To install the shore power outlet first you must remove the front cover.
2. Start by removing the bottom front two bolts from the receptacle, as well as the bolt on the top of the box as shown on the diagram. (do not remove the two top bolts on the receptacle).



3. Using two of the self taping bolts secure the base of the box onto the trailer.

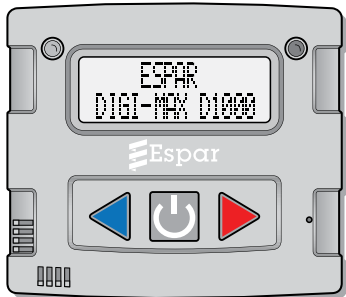


4. Place the cover back onto the box base and secure the two lower front bolt.

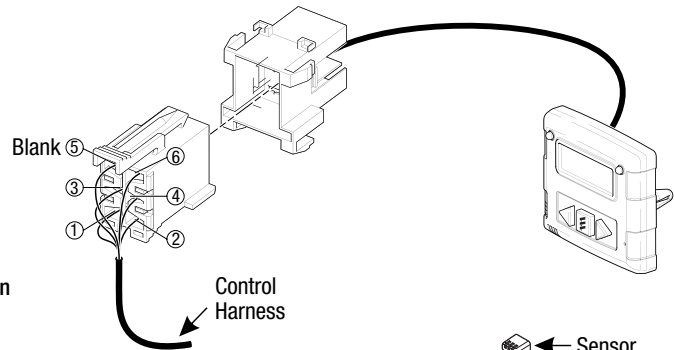




DIGI-MAX CONTROLLER INSTALLATION

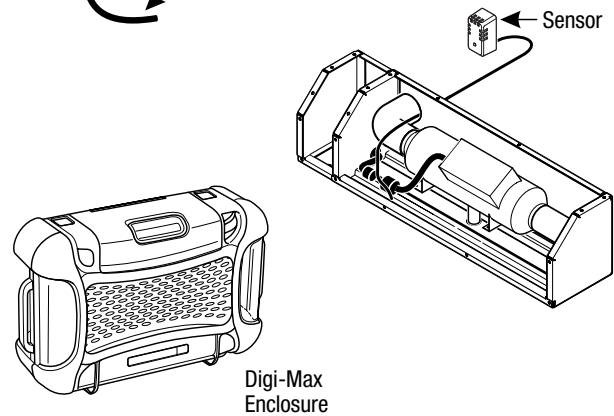


- Right button
- Left button
- Sensor
- Green LED – Heater enabled
- ON/OFF Key
- Service / Maintenance button
- Red LED – Heater requires attention



DIGI MAX CONTROLLER MOUNTED INSIDE DRIVER CAB (EXTERNAL TEMP SENSOR USED)

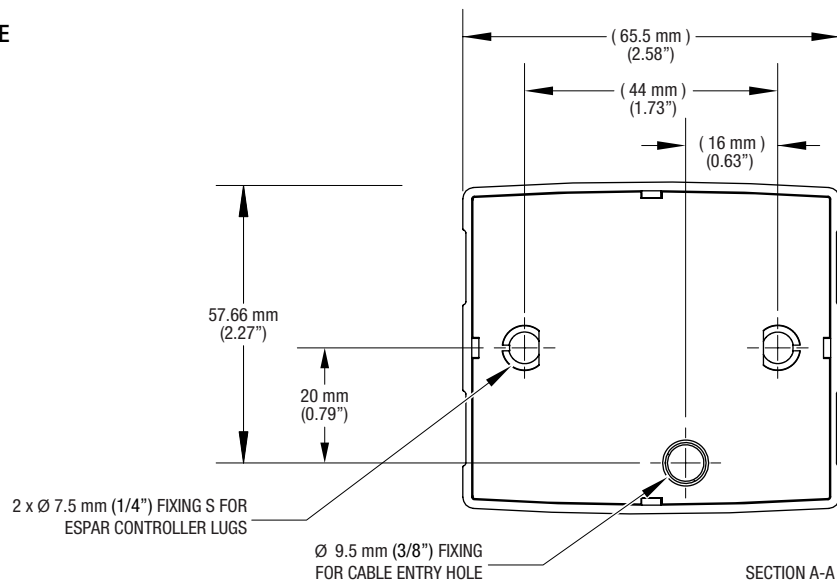
Route the remote temp sensor through the bulkhead into the cargo box. To accurately measure air temperature, mount the remote temp sensor away from the Heater vents.
Route the control lead into the cab and follow diagram to connect to DIGI MAX controller.
To mount the controller See Controller mounting instruction.



WIRING PIN CONNECTIONS

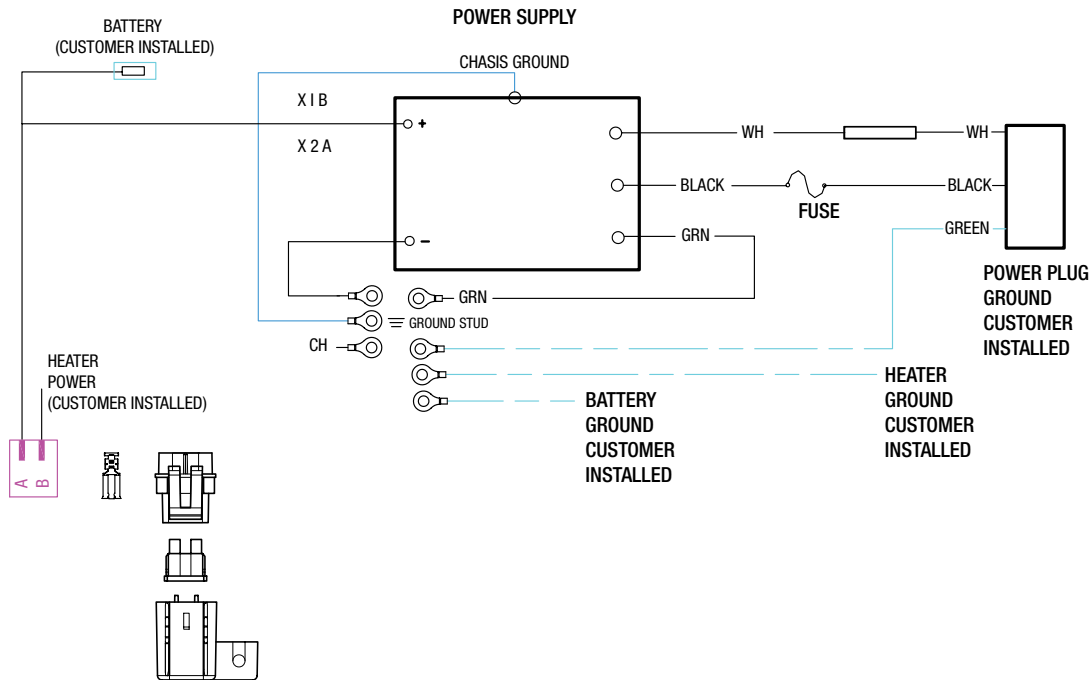
CONTROLLER		HARNESS	
Red	Connect to pin 1	Red, + Power	
Yellow	Connect to pin 2	Yellow, ON/OFF	
Brown/White	Connect to pin 3	Brown Ground Reference	
Grey/Red	Connect to pin 4	Grey Temperature set point	
Grey	Do not connect		→ Do not connect Black wire.
Blue/White	Connect to pin 6	Blue Diagnostic	

DIGI-MAX DRILLING TEMPLATE



START THE HEATER

1. Install the 30 amp fuse removed previously. Install the unit cover.
2. Set Digi-Max above the box temperature, the heater should start. Cycle the Digi-Max set point above and below the box temperature and observe operation.
3. Connect 120 volt power to the standby power box. Temporarily disconnect the 12 volt connection at the battery. Test the unit as described in step 2 and observe operation. Reconnect 12 volt battery connections.
4. If the heater performs correctly, return unit to service. If there are problems, refer to the troubleshooting section of the included Eberspächer manuals.



PLACE LID ON BASE AND BOLT

