



ECHO 5 Kit UserManual



P/N: 20 2900 81 0518

Espar

SUBJECT: ESPAR CARGO HEAT OPTION (AIRTRONIC D5)
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

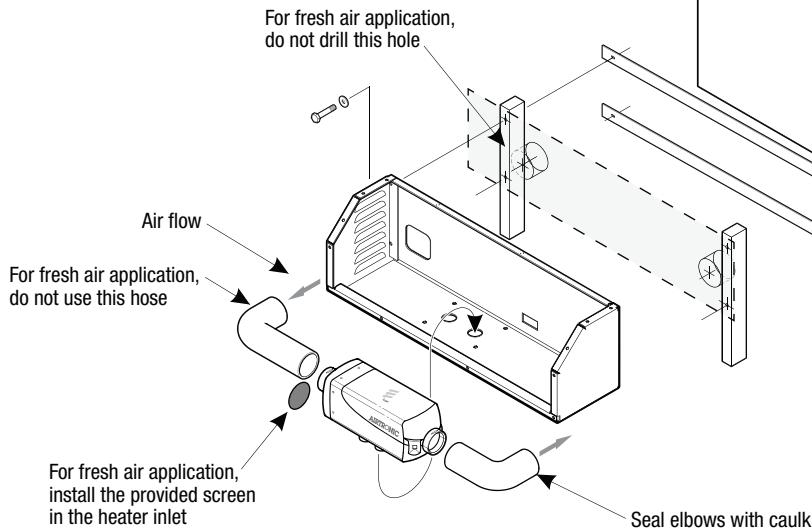
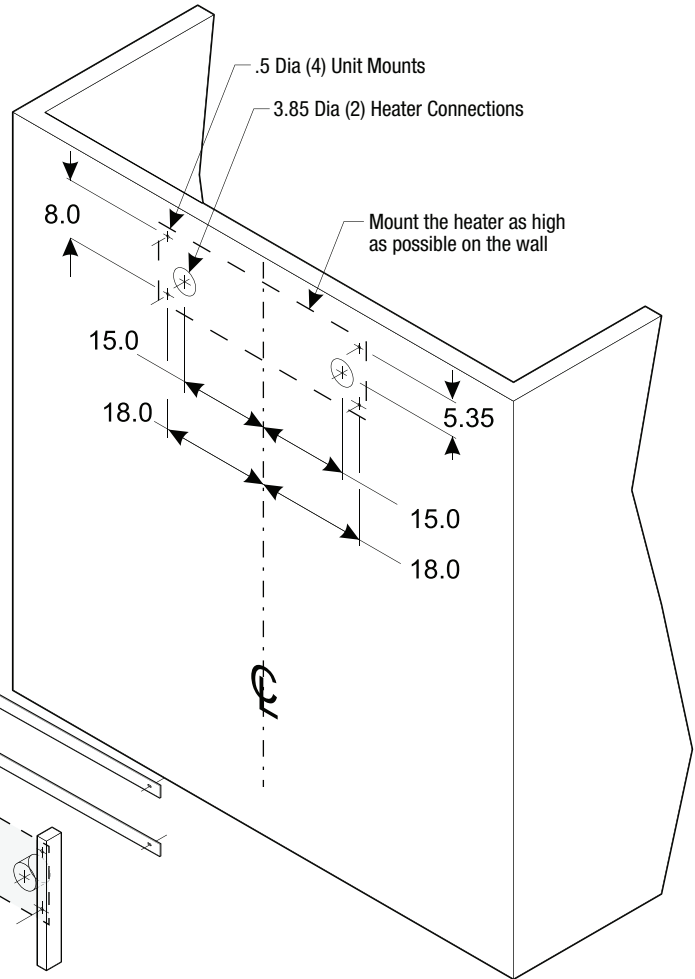
(800) 387-4800
(905) 670-0960
(905) 670-0728 Fax

NOT INCLUDED: Fuel tank.

inquiries@espar.com
www.espar.com

INSTALLATION:

1. Find the center line of the trailer wall. Mount the heater as close to the ceiling as possible as not to interfere with the truck cab.
2. Adjust the unit mounting hole locations left or right so at least one set of .5 inch vertical mount holes go through the wall studs. Avoid drilling the 3.85 inch holes through wall studs.
NOTE: If a fresh air intake system is desired, only drill the hole for the heater outlet in the bulkhead. In a convenient area towards the rear of the cargo box, drill a hole for air ventilation, see page 2.
3. Assemble the elbows onto the heater and mount the assembly in the frame with the provided hardware.
4. Mount the heater and frame assembly onto the truck wall using the mounting strips and provided hardware. Seal the elbows with caulk.

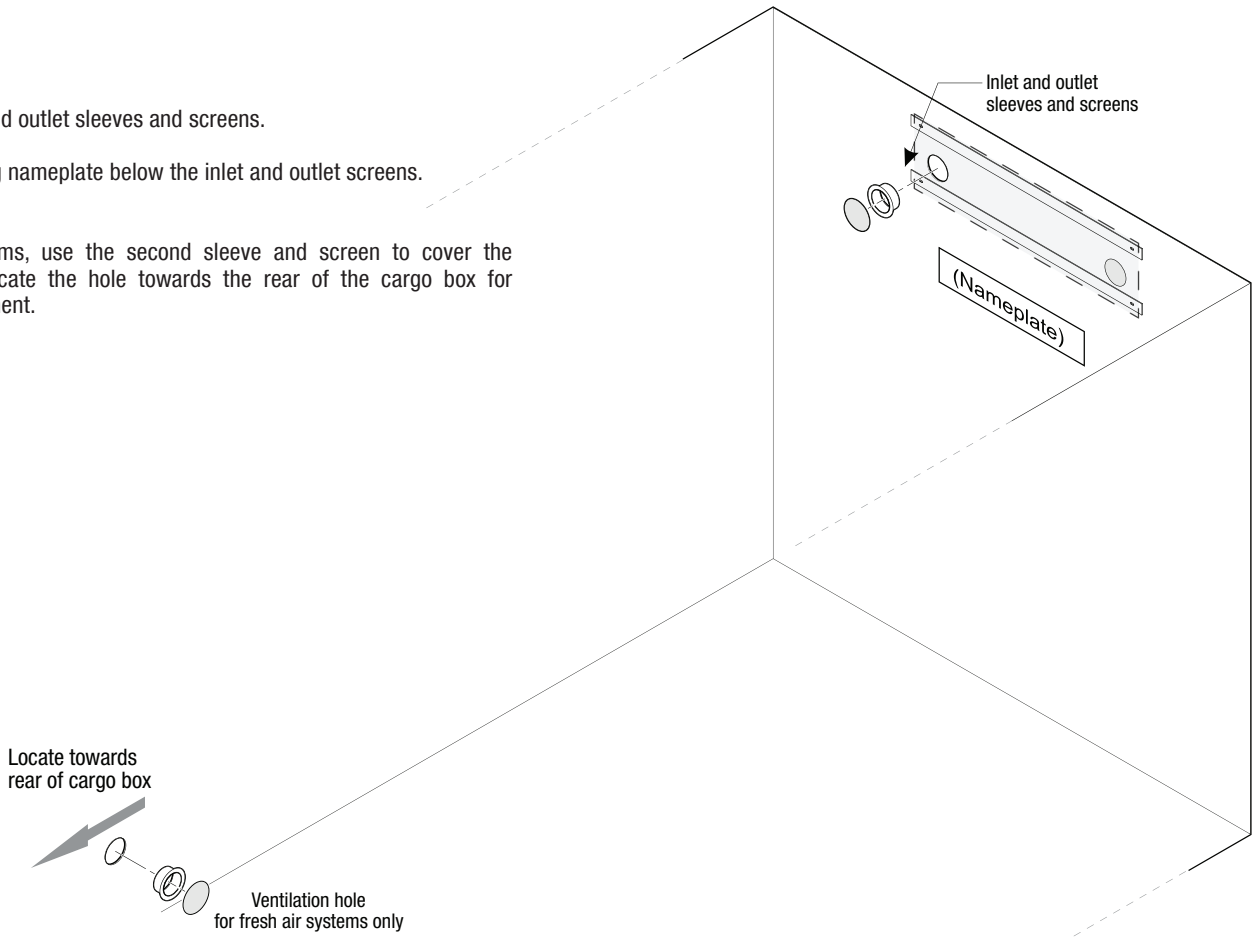


INSIDE THE BOX

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

PLEASE NOTE!

For fresh air systems, use the second sleeve and screen to cover the ventilation hole. Locate the hole towards the rear of the cargo box for adequate air movement.



FUEL PICK UP PIPE INSTALLATION

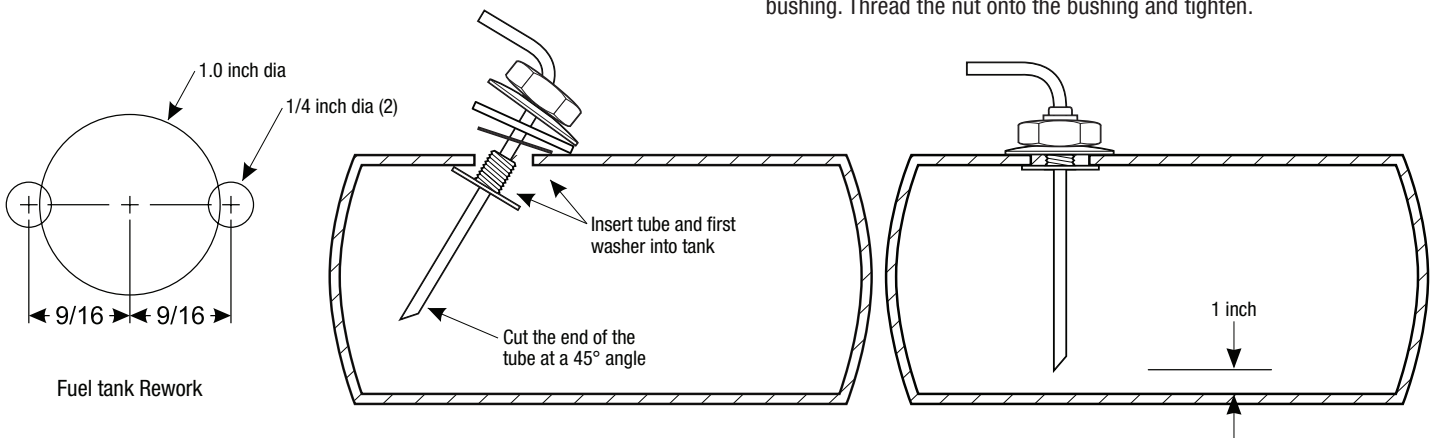
Fuel Tank not included.

1. Remove the spare fuel sensor gauge plate and drill a 1-0 inch hole, assemble as shown below. Follow steps 3 thru 6.

FUEL TANK REWORK (APPLICATIONS WITHOUT A SPARE SENSOR GAUGE PLATE)

1. Drain all diesel fuel from the tank and use nitrogen or a 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 1/4 holes first then the 1 inch hole. Use a magnet, grease or special hole saws/drills that will minimize steel chips from entering the fuel tank. Thoroughly clean and flush the tank to remove any chips.
3. Cut a 45° angle on the end of the pick-up tube so it is approximately 1.0 inch above the bottom of the fuel tank. Check for burrs.
4. Loosen the nut and slide the parts to the top of the pick-up tube elbow.
5. Holding the parts in position, slide the tube 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.



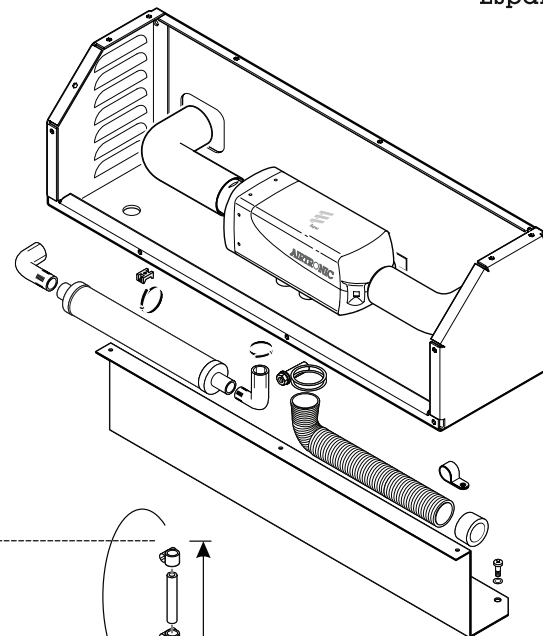
FUEL SYSTEM

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 25° 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 pick-up 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.

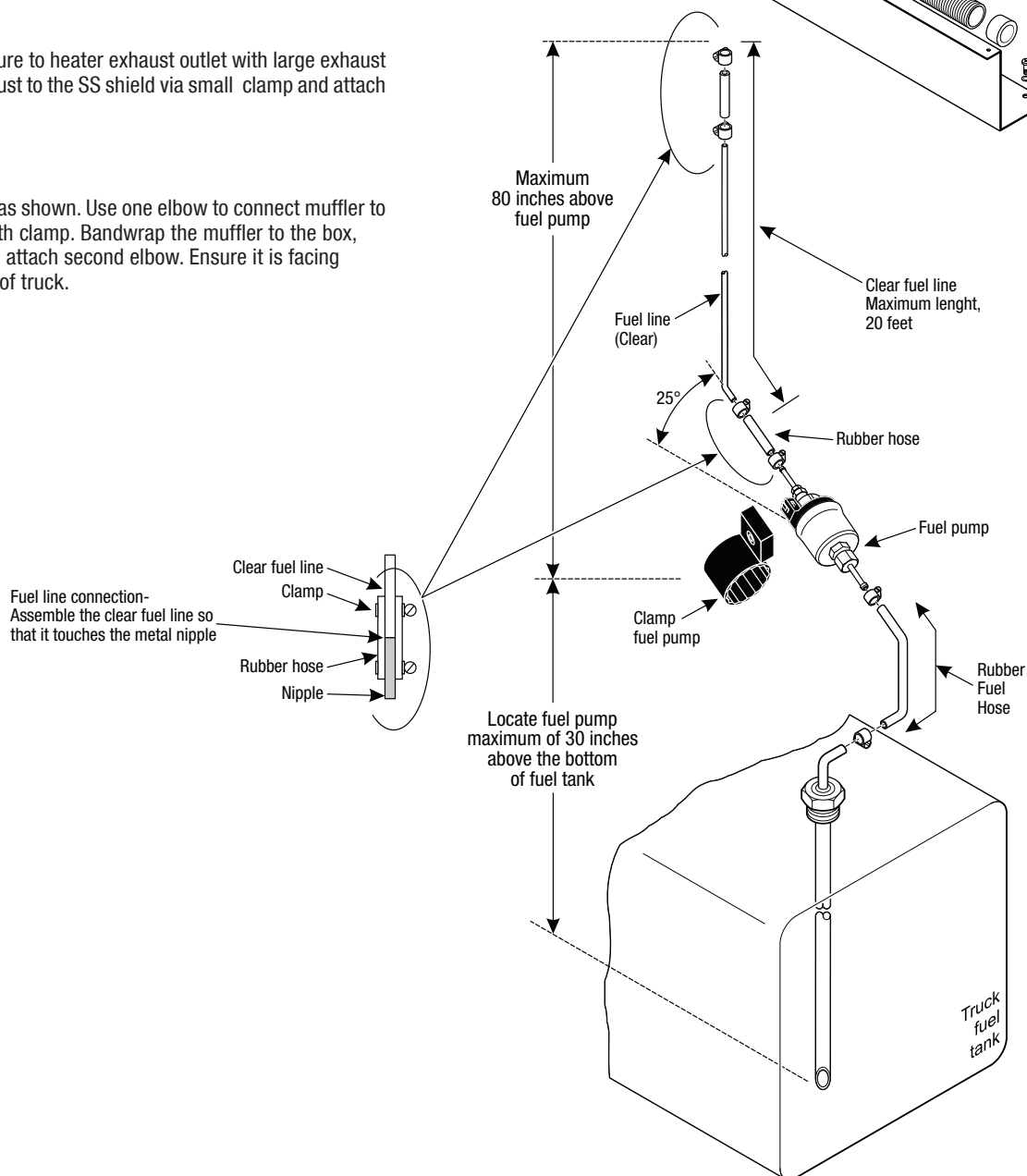


EXHAUST SYSTEM

1. Assemble exhaust tube, secure to heater exhaust outlet with large exhaust clamp, then secure the exhaust to the SS shield via small clamp and attach end cap.

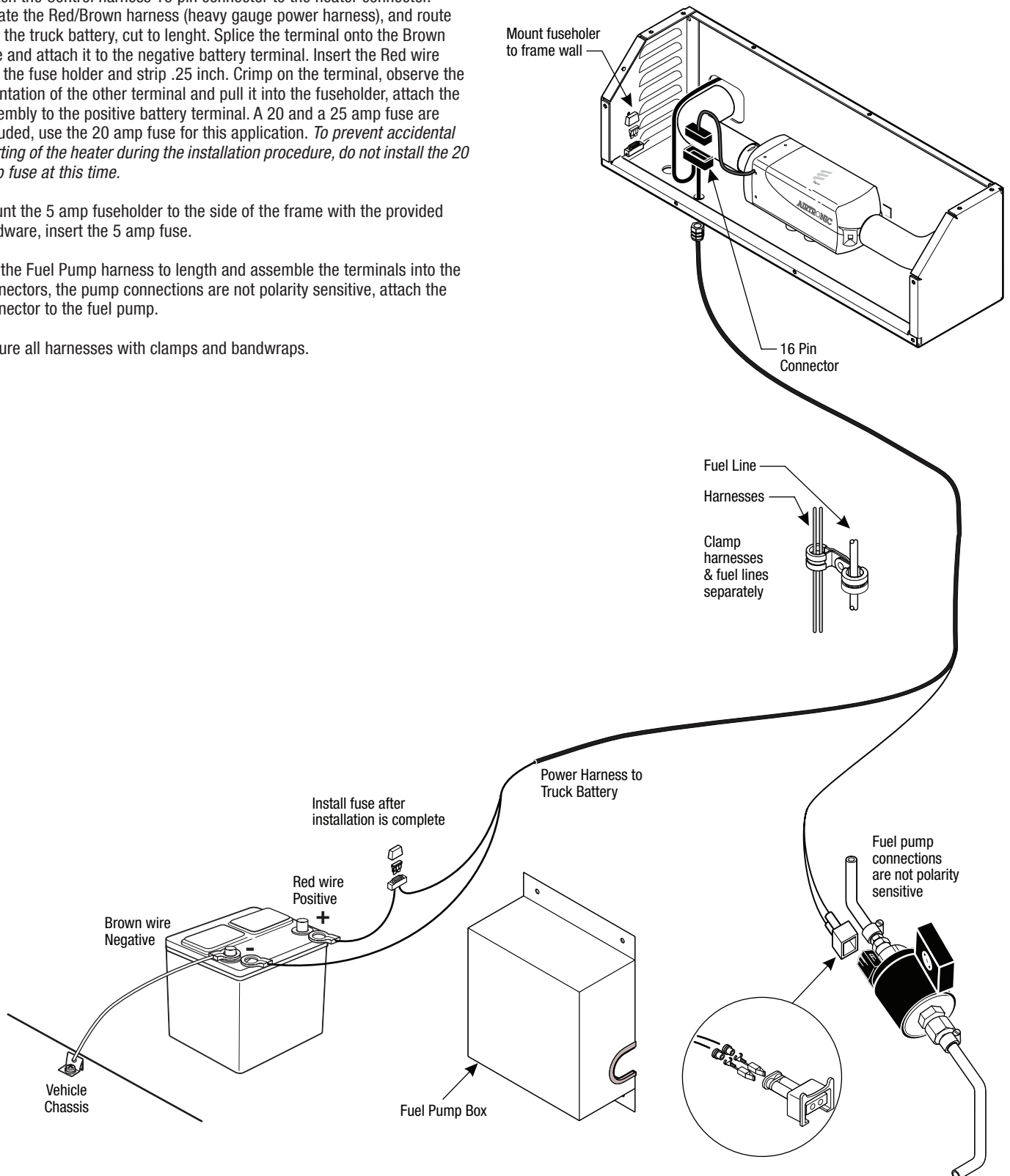
INTAKE SYSTEM

1. Assemble Air Intake Muffler as shown. Use one elbow to connect muffler to the air intake and secure with clamp. Bandwrap the muffler to the box, remove muffler end cap and attach second elbow. Ensure it is facing backwards away from front of truck.










ELECTRICAL CONNECTIONS

1. Attach the Control harness 16 pin connector to the heater connector. Locate the Red/Brown harness (heavy gauge power harness), and route it to the truck battery, cut to length. Splice the terminal onto the Brown wire and attach it to the negative battery terminal. Insert the Red wire into the fuse holder and strip .25 inch. Crimp on the terminal, observe the orientation of the other terminal and pull it into the fuseholder, attach the assembly to the positive battery terminal. A 20 and a 25 amp fuse are included, use the 20 amp fuse for this application. *To prevent accidental starting of the heater during the installation procedure, do not install the 20 amp fuse at this time.*
2. Mount the 5 amp fuseholder to the side of the frame with the provided hardware, insert the 5 amp fuse.
3. Cut the Fuel Pump harness to length and assemble the terminals into the connectors, the pump connections are not polarity sensitive, attach the connector to the fuel pump.
4. Secure all harnesses with clamps and bandwraps.



DIGI-MAX CONTROLLER INSTALLATION



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

Two options are available for Digi-Max installation:

1. DIGI MAX CONTROLLER INSTALLED INSIDE THE CARGO BOX (CONTROLLER SENSOR USED)

Route the control harness (7 core) through the bulkhead. Choose a location for the DIGI-MAX controller which is accessible to the end user. To accurately measure air temperature, locate the DIGI-MAX Controller away from the heater vents. See diagram for pin location. The DIGI MAX will now use the temperature sensor located inside the DIGI-MAX Controller itself. 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	Harness Brown/White Ground Reference
Grey/Red	Connect to pin 4	Grey/Red Temperature set point
Grey	Connect to pin 5	Grey Temperature sensor
Blue/White	Connect to pin 6	Blue/White Diagnostic

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

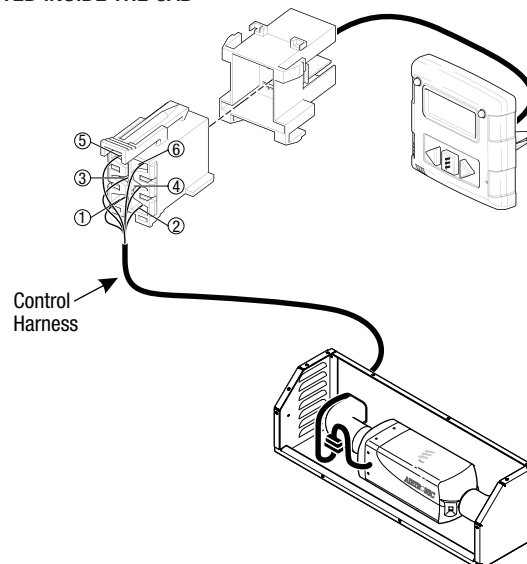
Route the remote temp sensor through the bulkhead. Inside the mounting box Splice the Brown wire on the remote temp sensor onto the Brown/White wire on the harness control, and the white wire on the remote temp sensor onto the Grey wire on the control lead. To accurately measure air temperature, mount 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

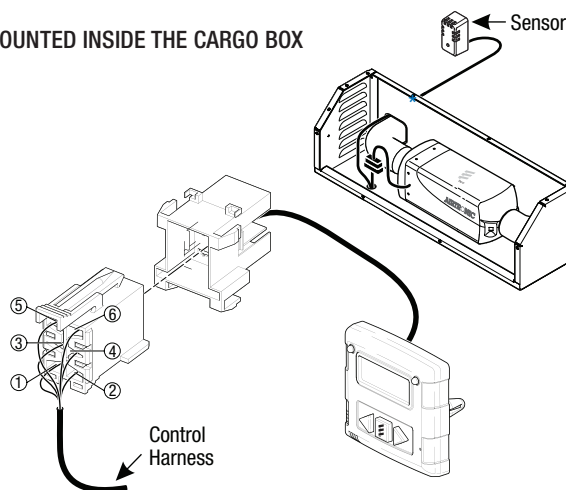
PIN CONNECTIONS

CONTROLLER		HARNESS
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Grey/Red	Connect to pin 4	Grey/Red Temperature set point
Grey	Do not connect	Grey Temperature sensor
Blue/White	Connect to pin 6	Blue/White Diagnostic

DIGI-MAX MOUNTED INSIDE THE CAB



DIGI-MAX MOUNTED INSIDE THE CARGO BOX



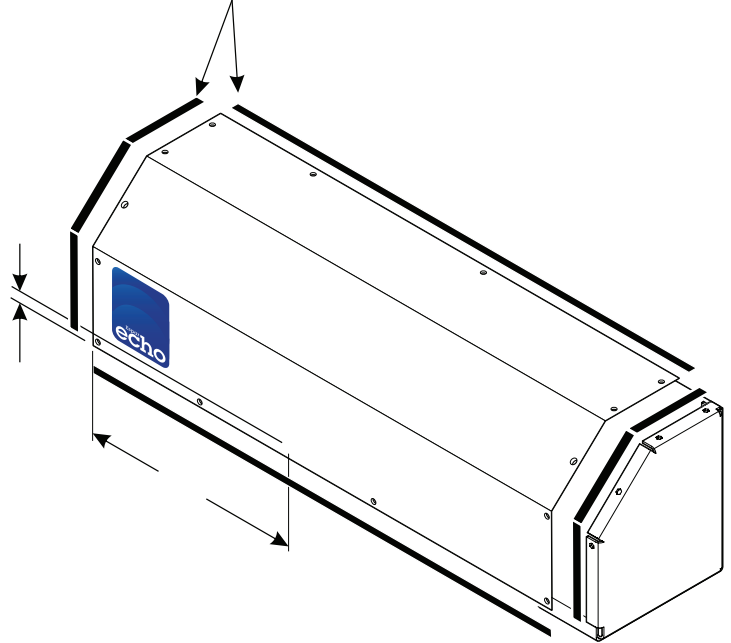
- * Splice Brown (temp sensor) wire with Control Harness Brown/White wire.
- * Splice White (temp sensor) wire into control Harness Grey wire.

PREPARE THE UNIT COVER

Install the neoprene strip on the edge of the frame that mates with the cover.

START THE HEATER

1. Install the unit cover.
2. Set the Digi-Max above the box temperature, the heater should start. Cycle the thermostat above and below the box temperature and observe operation.
3. If the heater performs correctly, place unit in service. If there are problems, refer to the troubleshooting section of the included Espar manuals.



DIGI-MAX DRILLING TEMPLATE

