

BlueHeat *Air Heater (Diesel)*

Hummer H1 Wagon

1999 - 2004 6.5 Liter Diesel

Installation Instructions

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1. Foreword

1.1 Scope and Purpose

This manual is intended to support authorized Webasto trained distributors, dealers and personnel in the installation and servicing of the BlueHeat air heater.

Webasto Product North America, Inc. does not recommend the installation and servicing of Webasto products by untrained, unauthorized personnel or end-users.

Installations and servicing of Webasto products by untrained, unauthorized personnel and end-users will release Webasto Product North America, Inc. and Webasto authorized distributors, dealers and personnel from responsibility for damage to Webasto product or collateral property and personal injury.

Any use, operation, installation, modification or application of the product not described in Webasto manuals, or subjecting the product to extreme or unusual conditions beyond the limits of specified performance characteristics is misuse of the product.

The heater installation must be performed in accordance with the installation instructions within this manual.

Failure to comply with all installation instructions is a misuse of Webasto product. The same applies for repairs without using genuine Webasto service parts. This will void the air heaters "Official Marks of Conformity."

1.2 Meaning of Warning, Caution, and Attention Headings

Warning, Caution and Attention headings in this manual have the following meaning:

⚠WARNING
This heading is used to highlight that non-compliance with instructions or procedures can result in serious injuries or death to personnel.

⚠CAUTION
This heading is used to highlight that non-compliance with instructions or procedures may cause damage to equipment.

ATTENTION!
This heading is used to highlight and draw specific attention to important information.

1.3 Installation Documentation

These non-binding installation instructions apply to the Hummer H1 Wagon 6.5 liter Diesel version model year 1999 - 2004, unless technical modifications on the vehicle influence the installation, excluding all liability claims. Depending on the version and equipment in the vehicle, changes may be required to the installation work set out in these installation instructions. In any event, however, the directives in the "installation manual" and "operating manual" BlueHeat must be followed. Acknowledged engineering conventions must be observed for the installation work.

Important! All relevant state and provincial licensing regulations if any, governing the installation and use of auxiliary heating devices must be observed!

1.4 General Safety Regulations and Information

The general safety regulations for the prevention of accidents and relevant operating safety instructions must be observed at all times.

The specific safety regulations applicable to this manual are highlighted in the individual chapters by Warning, Caution and Attention notations (see section 1.2).

1.4.1 General Safety Notes

The BlueHeat heater is approved for installation in the passenger compartment, not however, the cargo space for the transportation of hazardous materials.

The maximum temperature of 40 °C (104 °F) inside the vehicle being heated must not be exceeded. Malfunctions are likely to occur in the event this temperature limit is exceeded.

⚠WARNING
Due to the risk of carbon monoxide poisoning causing death or serious injury to personnel, the heater must not be operated in enclosed areas, such as garages or workshops, without an exhaust venting system, not even if the start-up is activated by the timer or remote start device.

At filling stations and fuel depots the heater must be switched off as there is a potential danger of explosions.

Where flammable fumes or dust may build up (e.g. in the vicinity of fuel, coal, wood, cereal grain deposits or similar situations) the heater must be switched off to prevent explosions.

In the vicinity of the BlueHeat air heater, a temperature of 185 °F (85 °C) must not be exceeded under any circumstances (e.g. during body paint work). A violation of this temperature limit may cause permanent damage to the electronics.

Extracting combustion air from the vehicle interior is not permissible under any circumstance.

Exhaust pipes must be routed so that exhaust fumes will not penetrate into the vehicle's interior. Condensation accumulation in the exhaust line must be directly drained. A condensation drain hole is to be provided if required.

Do not route exhaust pipes and components within 50 mm (2 inches) of flammable materials such as polyurethane or similar foam insulation, styrene sheet insulation, fuel tanks and containers, glycol reservoirs, coolant lines, wood and paper products, carpet, tires, electrical wiring, brake and air lines or any materials deemed to be flammable or heat sensitive.

Do not terminate exhaust above flammable materials such as polyurethane or similar foam, insulation, styrene sheet insulation, fuel tanks and containers, glycol reservoirs, coolant lines, wood and paper products, carpet, tires, electrical wiring, brake and air lines or any materials deemed to be flammable or heat sensitive.

The function of any parts vital for vehicle operation must not be impaired.

Electrical lines, switch gear, and control gear of the heater must be located in the vehicle so that their proper function cannot be impaired under normal operating conditions.

The operational state of the heater, i.e. an indication "on" or "off", must be clearly visible to the operator. The BlueHeat Air heater may only be operated within the specified operating voltage range designated by type.

The coolant heater may only be operated with the specified fuel (Diesel 1, Diesel 2, Arctic grade, Kerosene and certain military spec. fuels). The fuel specified by the vehicle manufacturer for use in the engine is suitable fuel for the BlueHeat heater.

For the routing of fuel lines, the following important regulations must be adhered to:

1. Fuel lines are to be installed in such a way that they remain unaffected by torsional stresses created by vehicle movement. They must be protected against mechanical damage.
2. Fuel lines must be securely fastened to the vehicle every 30 cm. (12 inches) or less along the total length from heater to fuel tank.
3. Fuel-carrying parts are to be protected against excessive heat and are to be installed so that any dripping or evaporating fuel can neither accumulate nor be ignited by hot components or electrical equipment.
4. Fuel supply must not be by means of gravity or pressurization of the fuel tank.
5. The fuel tank must either be equipped with a vent cap or be ventilated in another way (ventilation line).

2. Installation

2.1 General Information

The installation instructions provided in this manual will take you step by step through the installation process. Follow all directions carefully and read all Warnings, Cautions and Notations as you work through these instructions and the installation of the BlueHeat air heater.

▲ CAUTION

Do not deviate from the installation instructions provided in this manual. Location of heater, fuel system and components, wiring and control devices are important for proper operation. Failure to comply with the installation instructions provided may result in poor operation or damage to heater and vehicle components.

2.1.1 Tools Required

- | | |
|----------------------------------------------|-------------------------------------------------|
| 1/4" Drive Ratchet | Drill |
| 1/4" Drive 4 inch extension | 2.5 mm (3/32 in.) drill bit |
| 10 mm six point socket, 1/4" drive | 8 mm (5/16 in.) drill bit |
| 10 mm six point deep well socket, 1/4" drive | 10 mm (25/64 in.) drill bit |
| 3/8" Drive Ratchet | Hacksaw |
| 3/8" Drive 12 inch extension | Utility Knife |
| 13 mm socket, 3/8" drive | Mechanic's wire - 2 feet |
| 15 mm socket, 3/8" drive | Hoisting equipment and safety stands |
| 17 mm socket, 3/8" drive | Vehicle manufacturer's service reference manual |
| 10 mm combination wrench | |
| 8 mm nut driver | |
| Phillips #2 screwdriver | |
| Combination side-cut/crimping pliers | |

2.2 Preparations

Heater Kit

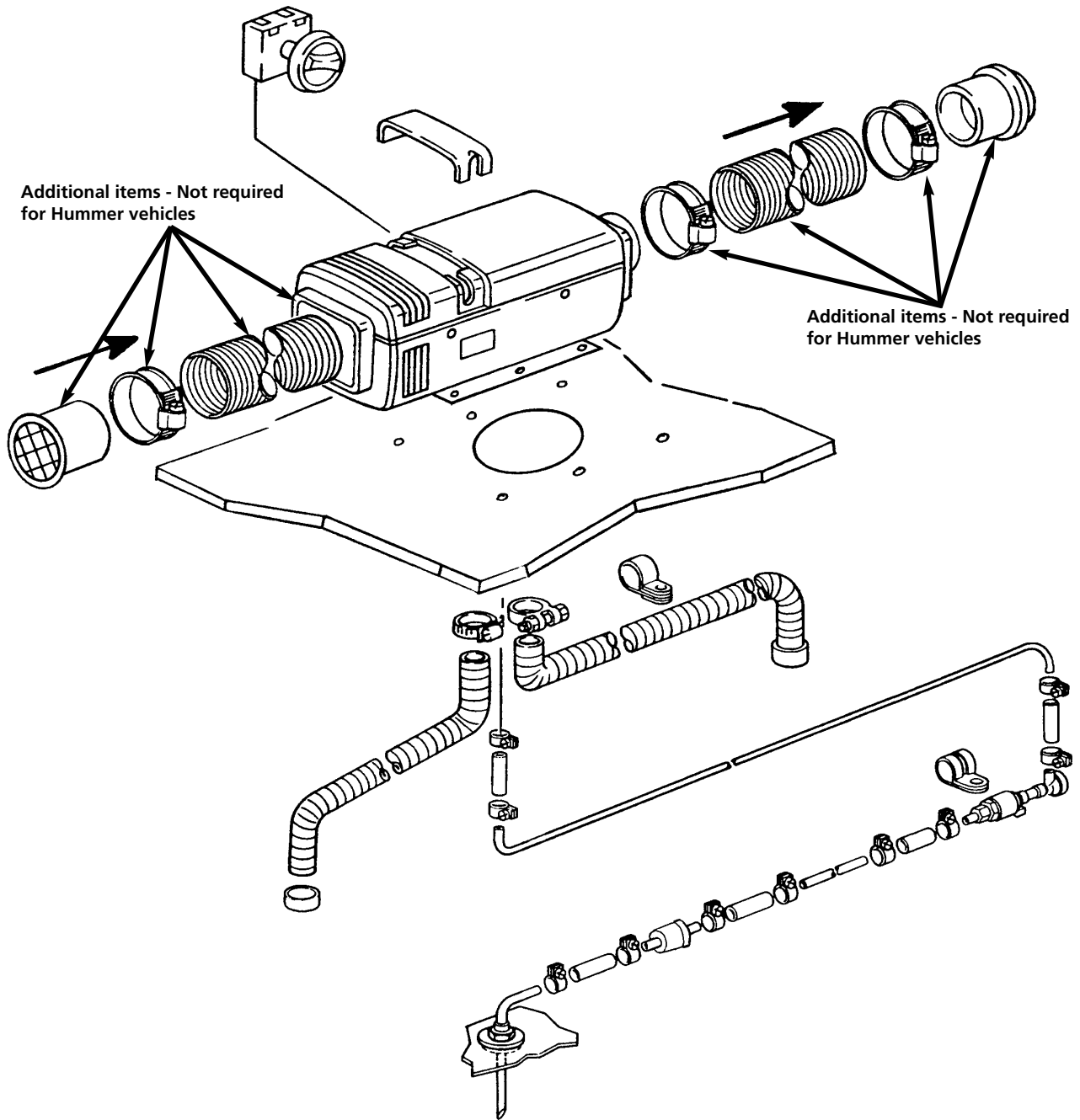
1. Verify and identify all contents of kit. Refer to illustration 2-1 to familiarize yourself with the components of the heater kit.

Vehicle

1. Disconnect negative terminal of vehicle battery(s).

2.3 BlueHeat Component Break-down - (Typical)

Illustration 2-1 shows a typical component layout for the BlueHeat. Some components may be different or not included in the vehicle specific (Hummer H1) heater kit as supplied.

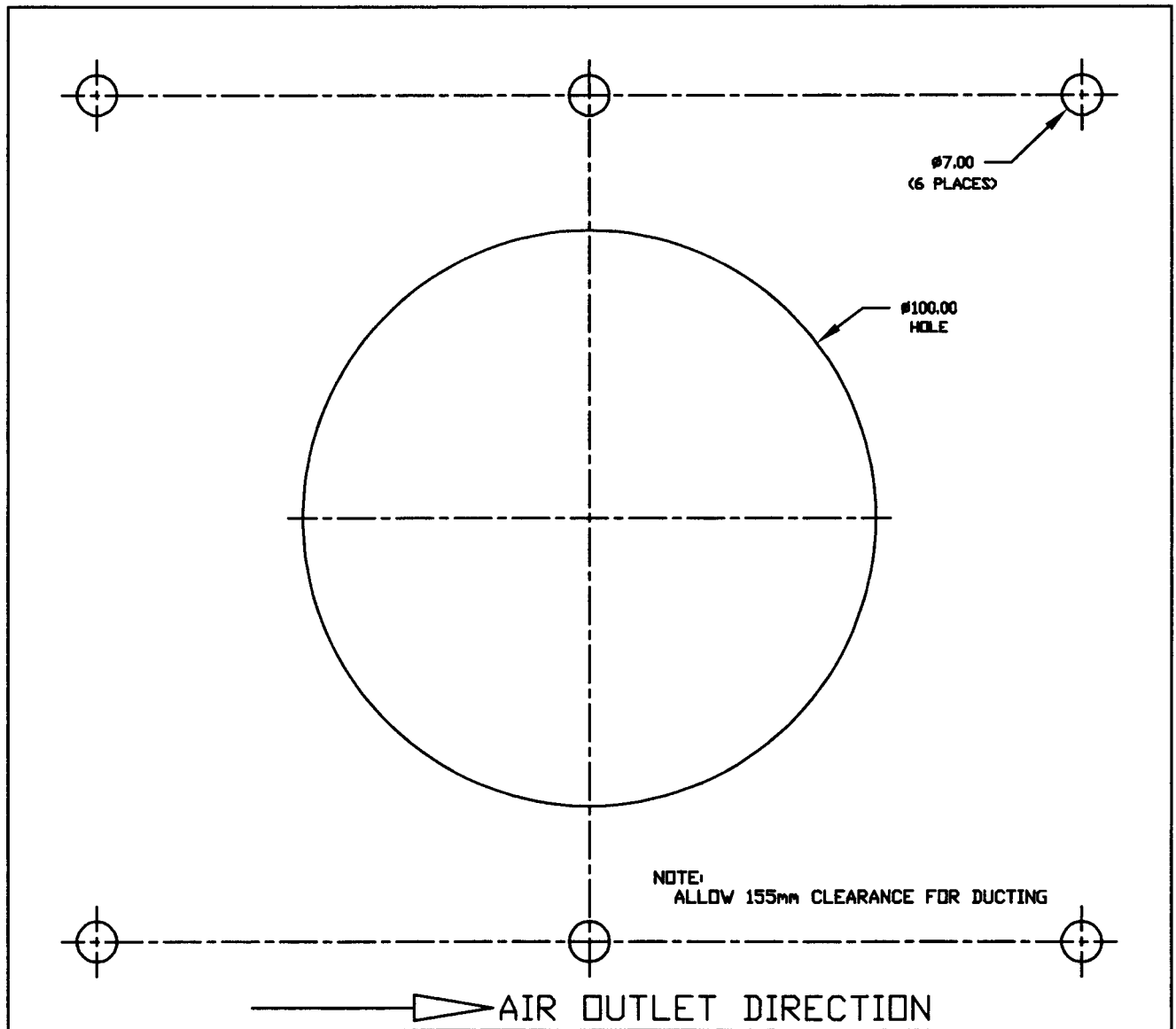


2-1: Installation Diagram Showing Component Break-down - BlueHeat (Typical)

2.4 Universal Mounting Plate

A mounting template has been included with the heater kit for ease of installation.

The template details all required hole locations and clearances (illustration 2-2). Also, check for clearance around subfloor cross-members, structures and heat sensitive components before proceeding with installation.



2-2: Example of Installation (Drilling) Template for Universal Mounting Plate - Not to Scale

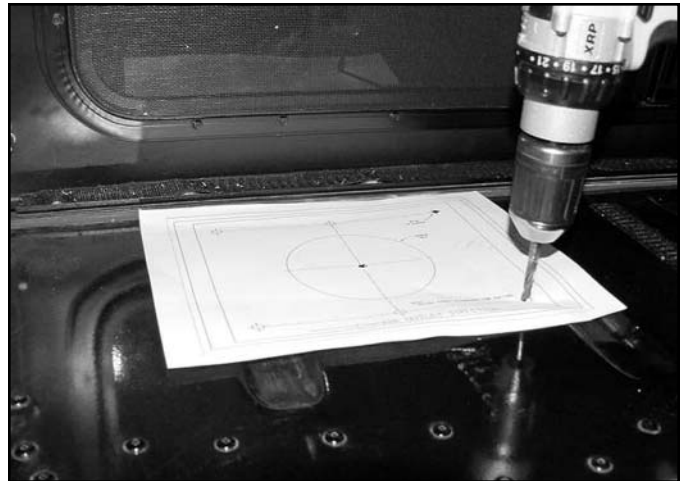
2.5 Mounting the BlueHeat Heater

- Temporarily remove the floor carpet from top of left rear inner fender well as shown in illustration 2-3. The carpet is held in place by hook & loop material.



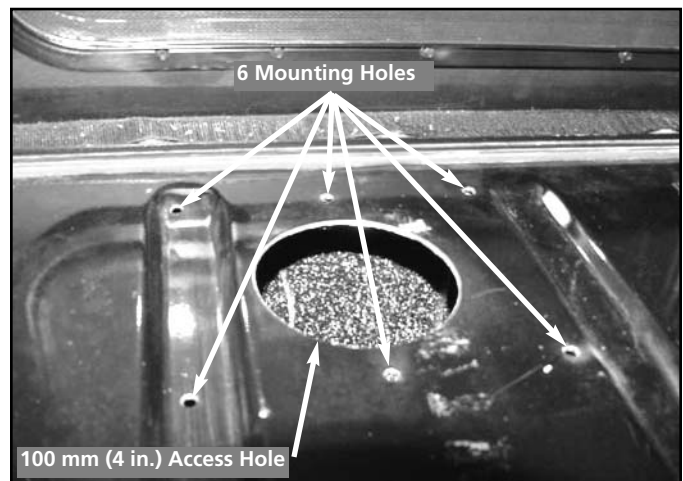
2-3: Floor Carpet Removed

- Place the heater base template on the fender well in a position so that the front of the mounting base is flush with the wheel well indent as shown in illustration 2-4.



2-4: Template In Place for Drilling

- Check for obstructions under the fender well before drilling. Remove obstructions if necessary. Drill the 6 outside mounting holes of the template using a 8 mm (5/16 in.) drill bit. Refer to illustrations 2-4 and 2-5.



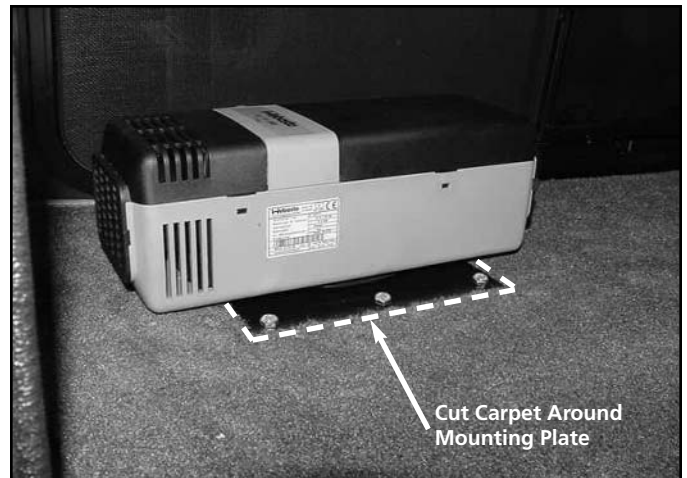
2-5: Mounting Preparation

- With a hole saw or similar large hole cutter, cut a 100 mm (4 in.) hole in the fender well following the center of the template outline. Refer to illustrations 2-6 and 2-5.



2-6: Center Access Hole - Mounting Base

- Position the carpet back in the original location.
- Temporarily place the heater in position and place 4 locator bolts through the mounting plate.
- Cut the carpet using the heater mounting plate as a template. Remove the heater and carpet remnant.
- Mount the heater with the 6 provided mounting bolts. Ensure that the heater is in the desired position and torque the 6 mounting bolts evenly. Refer to illustration 2-7.



2-7: Heater In Position

⚠ CAUTION

Do not over-tighten mounting fasteners! Doing so will distort mounting plate and heater which may result in fan motor failure. Tighten mounting fasteners sufficiently to make an air-tight seal between the heater base, gasket and floor. Ensure that the heater base with gasket cover the entire hole.

2.6 Installing the Electrical Harness

Plug the harness into the control unit receptacle socket as shown in illustration 2-8.



2-8: Heater Harness Connection

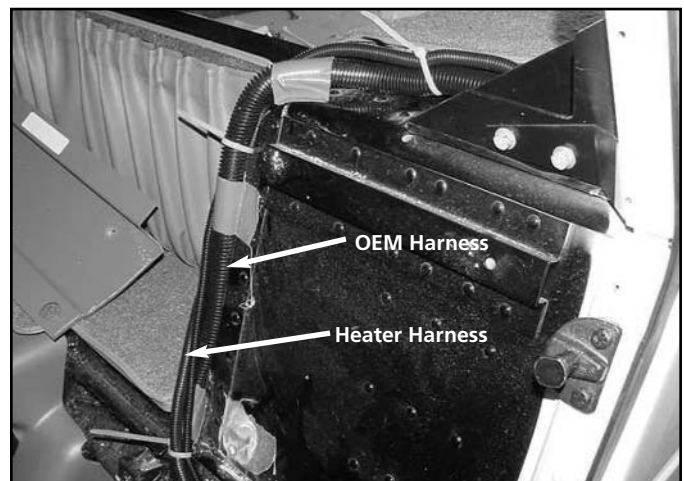
Route the harness under the carpet below the window as shown in illustration 2-9.



2-9: Carpet In Place - Harness Under Carpet

Remove the driver side rear seat from the vehicle. Refer to the vehicle manufacturers service instructions if required.

Remove the trim panel behind the seat to access the OEM electrical harness as shown in illustration 2-10.



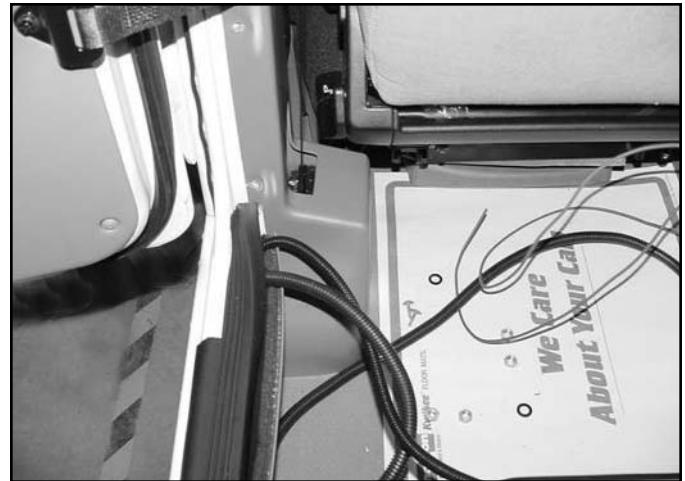
2-10: Harness Routing (1) - Rear Seat Removed

- Route the heater wire harness alongside the vehicle harness and secure to vehicle harness with nylon wire ties. Refer to illustrations 2-10 and 2-11.



2-11: Harness Routing (2) - Rear Seat Removed

- Remove the driver side rear seat-belt retractor from the C-pillar. Refer to illustration 2-12.
- Remove the C-pillar trim panel after removing the seat-belt retractor. Refer to illustrations 2-12 and 2-13.



2-12: Harness Routing (3) - Rear Door Sill

- Continue routing heater harness alongside OEM harness as shown in illustration 2-13.



2-13: Harness Routing (4) - C-Pillar Area

- Remove the driver side sill plate and route the heater harness alongside the vehicle harness. (It may be possible to loosen the panel and install the harness behind it.) Refer to illustration 2-14.



2-14: Harness Routing (5) - Driver Side Door Sill

- Remove the drivers door stop-strap retaining bolts. Remove the driver side kick panel.



2-15: Kick Panel Area (1)

- Route the heater harness behind the door stop-strap attaching bracket as shown in illustrations 2-15 and 2-16.



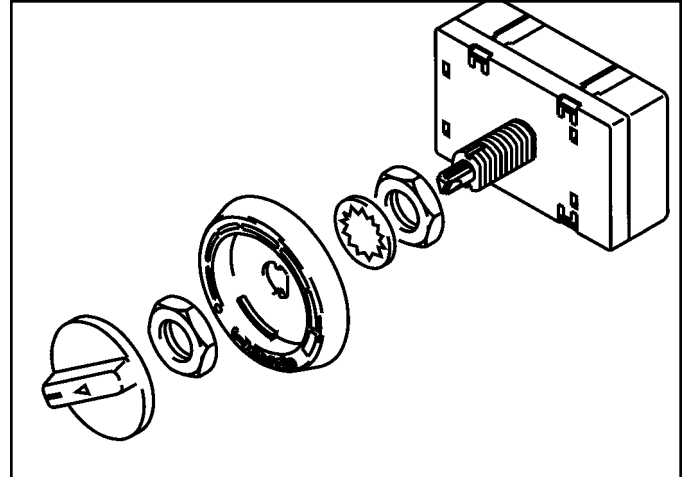
2-16: Kick Panel Area (2)

2.7 Rheostat Control Dial Installation (Standard)

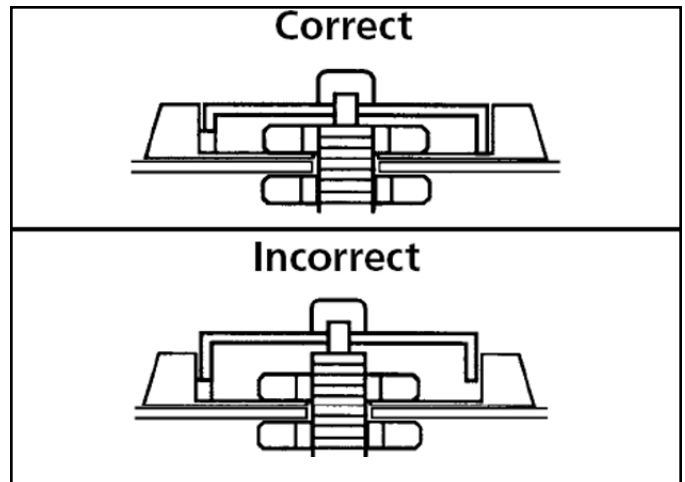
⚠ CAUTION
Check behind panels for obstructions before drilling holes..

ATTENTION!
Before installing the heater control, please confirm the installation location with the customer..

- Route the harness for the rheostat switch behind the instrument panel to the determined mounting area for the switch.
- Install rheostat control, refer to illustrations 2-17 and 2-18 for correct installation.
- Connect wiring harness to the back of the switch and secure harness with nylon cable ties.



2-17: Rheostat Switch



2-18: Rheostat Switch Correctly Installed

2.8 Timer Installation (Optional)

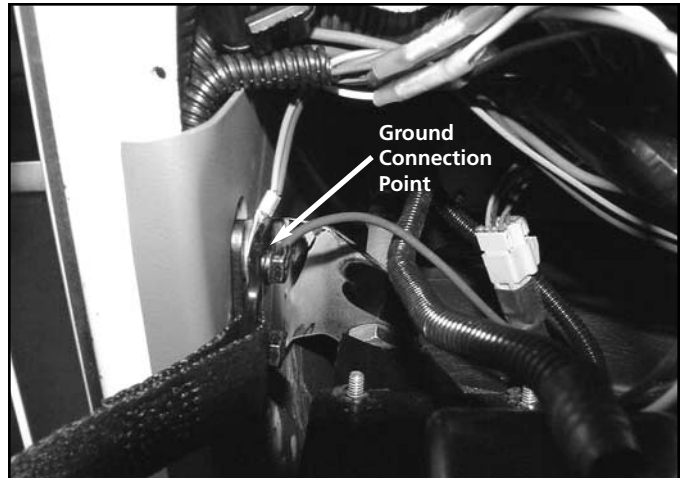
- The installation site for the digital timer shown in illustration 2-19 is only a recommendation. Before installation, please confirm the installation site with your customer.
- Route the harness for the timer behind the instrument panel to the determined mounting area for the heater timer.
- Wire the timer in accordance to the wiring diagram in chapter 4, section 4.1, illustration 4-1, page 4-1. (The harness wires may need to be cut to length depending on location of the timer).



2-19: Timer Installed

2.9 Power Harness Connection

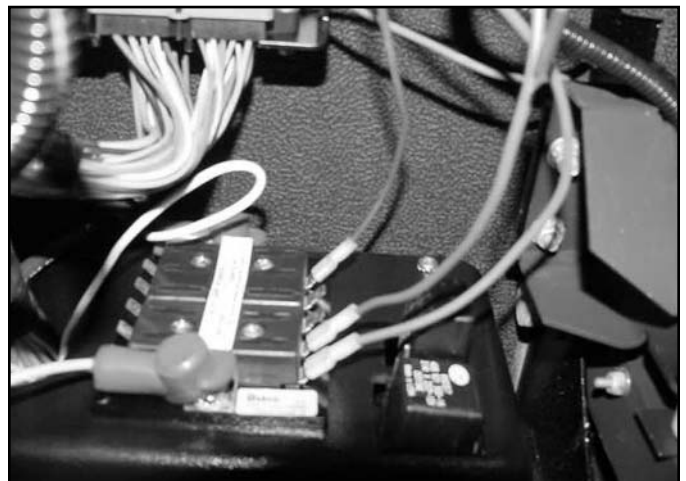
- Attach the heater harness ground splice to a known good vehicle ground (i.e. door stop-strap attaching bracket bolts). Refer to illustration 2-20.



2-20: Ground Connection Point (Suggested)

- Battery positive power can be connected to an auxiliary power junction in the body junction block located under the center console as shown in illustration 2-21.

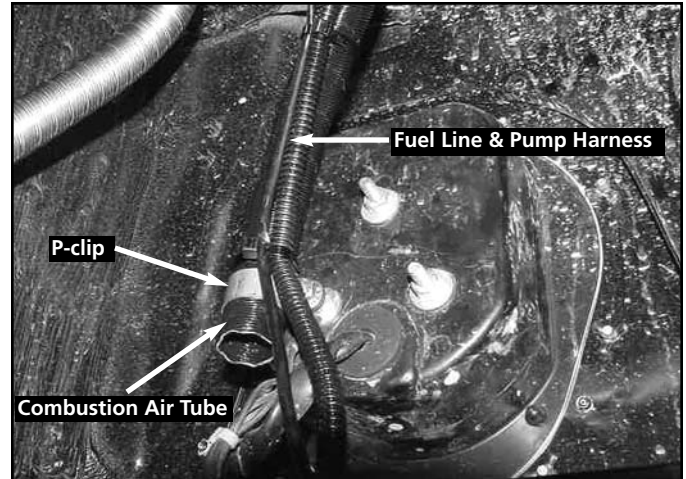
Install the 12V bulb in the timer and insert the fuse in the heater harness.



2-21: Power Connection - Heater and Timer

2.10 Combustion Air Intake Tube Installation

- Connect the combustion air intake tube to the heater with a hose clamp provided.
- Fasten combustion air intake tube to the taillight mounting bolt using a P clamp provided. Refer to illustration 2-22.



2-22: Combustion Air Intake Tube and P-clip at Taillight

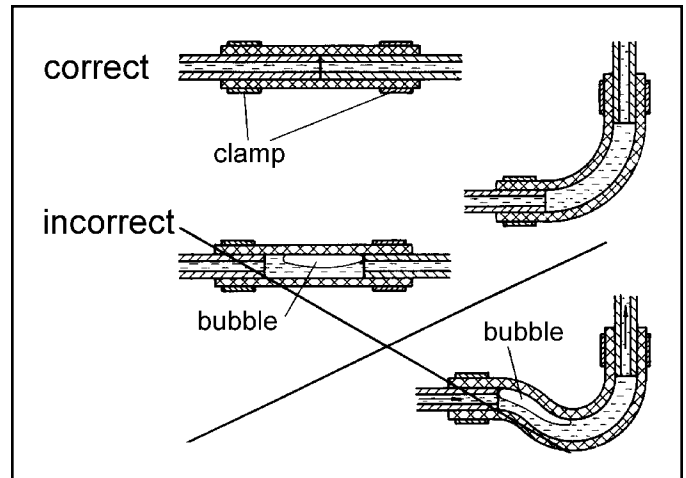
2.11 Fuel System Installation

- Pre-assemble one rubber fuel line connector with two clamps. Push rubber fuel line connector onto fuel inlet connection of heater and tighten inboard clamp. Leave outboard clamp loose ready for fuel line installation.

- Push fuel line (with split-loom) into rubber connector until it butts against heater fuel inlet tube. Tighten outboard clamp.

IMPORTANT! Illustration 2-23 shows correct fuel line connections versus incorrect connection. Please observe.

- Connect the fuel pump extension harness to the heater.
- Route the fuel line and extension harness alongside the combustion air intake tube and secure them to the tube with nylon wire ties. Take care not to collapse the intake tube! Refer to illustration 2-22.
- Route the fuel line (with split-loom) and extension harness alongside the tail light wiring to the frame rail and tie them to available harness routed to the front of the vehicle.



2-23: Correct Vs. Incorrect Fuel Line Connection

ATTENTION!
 Fuel line must be secured at 305 mm (12 in.) intervals along its total run. Keep fuel line away from heat sources such as exhaust system components.

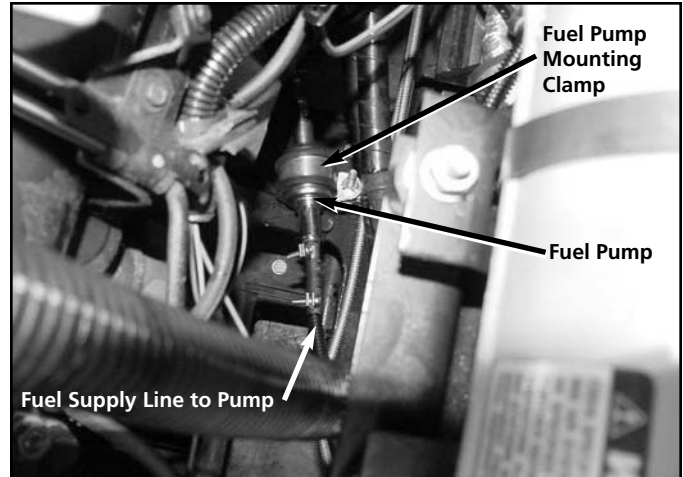
- Pre-assemble two rubber fuel line connectors with two clamps each. Push rubber fuel line connectors onto pump inlet and outlet damper of fuel pump and tighten inboard clamps on each connector leaving outboard clamps loose ready for later fuel line installation.

ATTENTION!
 A fuel filter may be supplied with your heater depending on kit model and application.
 If the heater kit being installed does not include a fuel filter and dirt in the fuel cannot be avoided or is expected, an optional filter is available from Webasto. Order genuine Webasto fuel filter PIN 487171. The filter can be installed anywhere accessible between the fuel standpipe and the fuel metering pump inlet. Typically, the filter is installed at the fuel pump inlet.

- Mount the assembled fuel pump to the transmission cooler line retaining bolt.

IMPORTANT! Fuel pump MUST be mounted horizontally to function correctly.

The retaining bolt will require replacement with a longer bolt. Refer to illustrations 2-24 and 2-25.

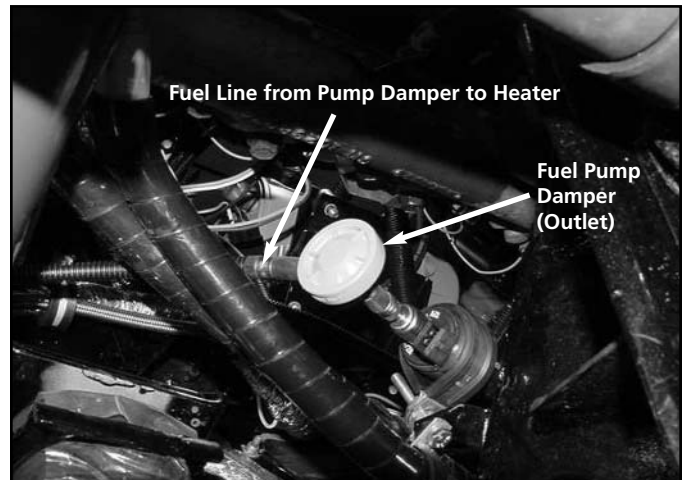


2-24: Fuel Pump Installed - Top View

- Route fuel line (with split-loom) and fuel pump extension harness from the heater to the fuel pump.
- Plug the fuel pump extension harness connector into the fuel pump receptacle.
- With a razor knife, cut fuel line (with split-loom) to proper length for connection to the fuel pump damper.

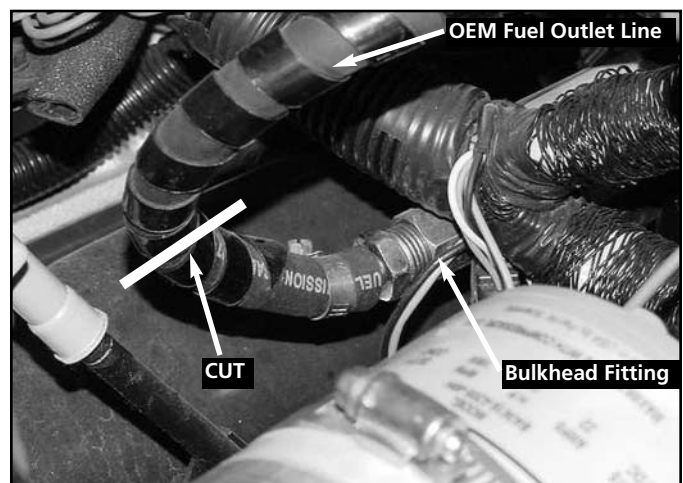
ATTENTION!

When cutting fuel line to length, ALWAYS use a sharp razor knife or blade. Never cut fuel line with side cutters or similar tools as they will crimp the line closed.



2-25: Fuel Pump Installed - Close In

- Push fuel line fully into the fuel pump damper outlet and tighten clamp.
- Secure fuel line and extension harness to adjacent harnesses and frame members where possible.
- Cut the OEM fuel pump outlet line near the bulkhead. Refer to illustration 2-26. Pay special attention when cutting the fuel line as pressure may be present.
- Place a hose clamp over each cut end.



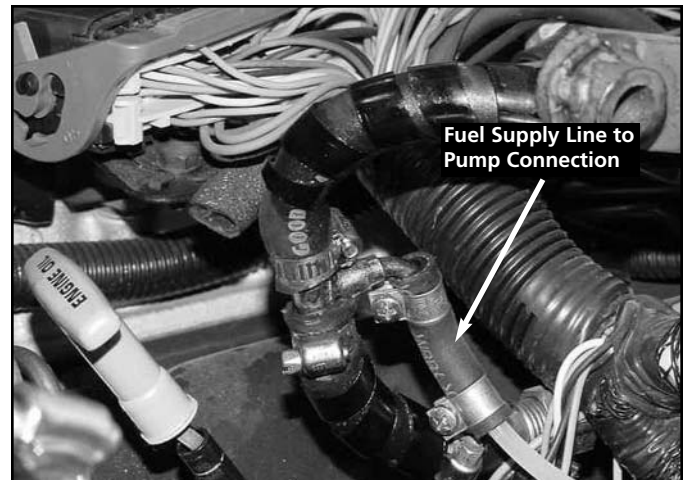
2-26: OEM Fuel Line Cut Reference

- Install fuel line Tee in the OEM fuel line and tighten clamps as shown in illustration 2-27.



2-27: Fuel Supply Tee Installed

- Pre-assemble one rubber fuel line connector with two clamps. Push rubber fuel line connector onto Tee connection and tighten inboard clamp. Leave outboard clamp loose ready for fuel line installation.



2-28: Heater Fuel Supply Line Connection at Tee

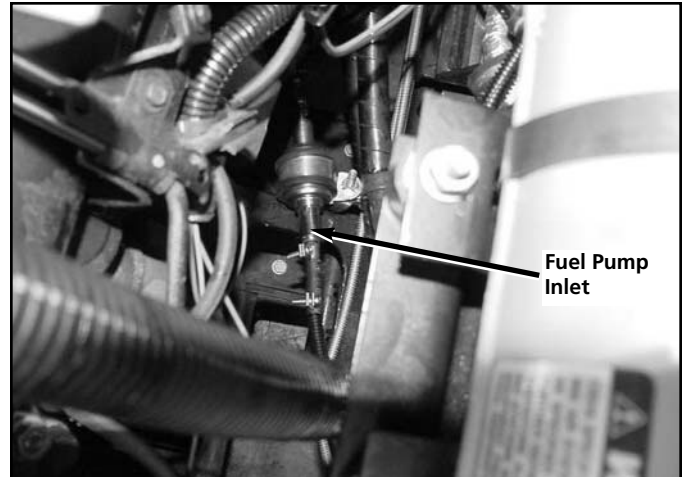
- Connect the fuel line (with split-loom) to the installed Tee and rubber connector. Push fuel line fully into the rubber connector and tighten outboard clamp. Refer to illustrations 2-28 and 2-29.



2-29: Heater Fuel Supply Line with Split-loom

- With a razor knife, cut fuel line (with split-loom) to proper length for connection to the fuel pump inlet.
- Push fuel line fully into the fuel line connector until it butts against fuel pump inlet and tighten clamp. Refer to illustration 2-30.

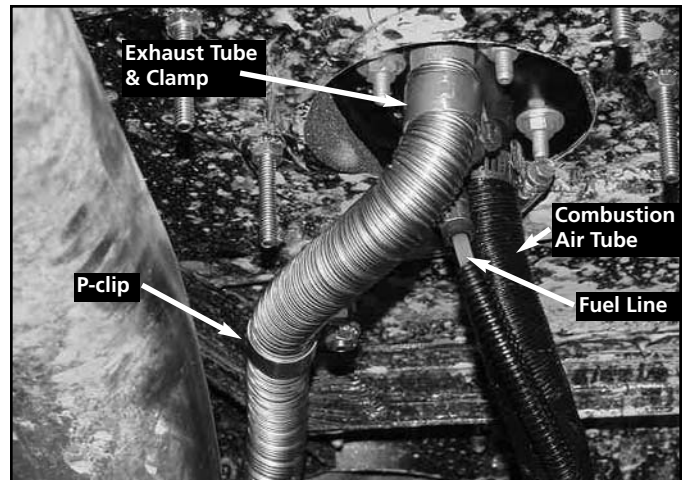
Secure fuel line (with split-loom) to adjacent harnesses with nylon wire ties



2-30: Fuel Supply Line Connection to Fuel Pump Inlet

2.12 Exhaust Tube Installation

- Mount exhaust pipe to the heater with the exhaust clamp provided. Refer to illustration 2-31.
- Double nut a heater mounting bracket bolt to provide spacing for the exhaust tube and P-clip.
- Install a P-clip around the exhaust tube and attach it to the bolt prepared in the previous step. Secure tube and P-clip with a nut. Refer to illustration 2-31.

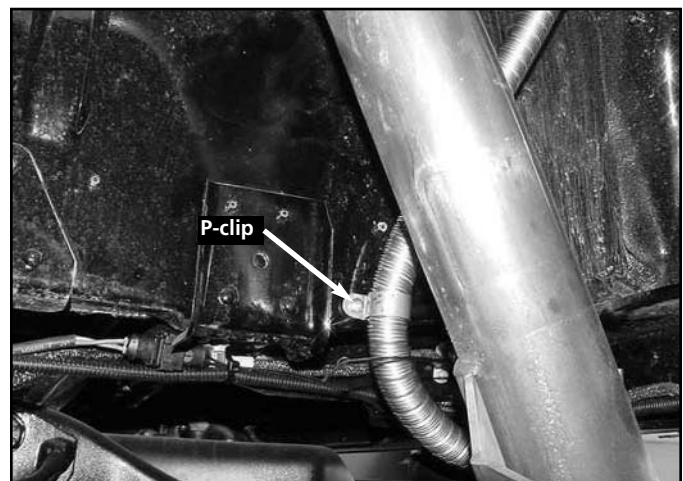


2-31: Exhaust Tube Connection and P-clip

- Route the exhaust down the wheel well behind the vehicle exhaust. Secure the exhaust at the bottom of the wheel well with a P-clip. Refer to illustration 2-32.

CAUTION

The exhaust tube becomes hot during operation. Keep exhaust tube a minimum of 50 mm (2 in.) from heat sensitive components and materials.

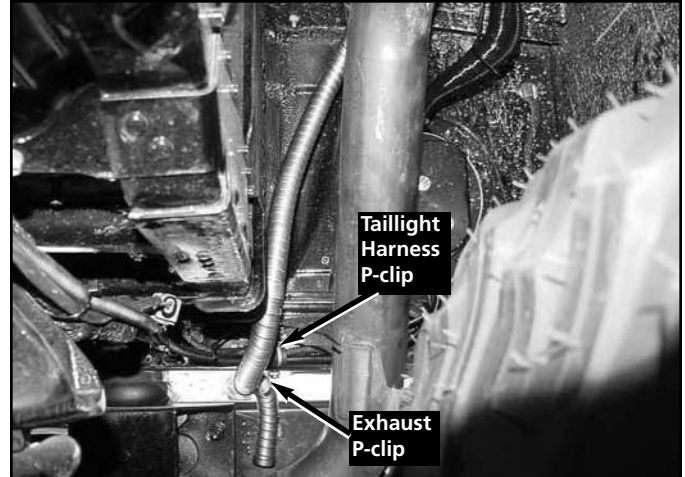


2-32: Exhaust Tube Routing and P-clip

⚠ WARNING

Due to the risk of carbon monoxide poisoning causing death or serious injury to personnel, the exhaust tube must be so routed that the possibility of exhaust gases entering the passenger area is avoided.

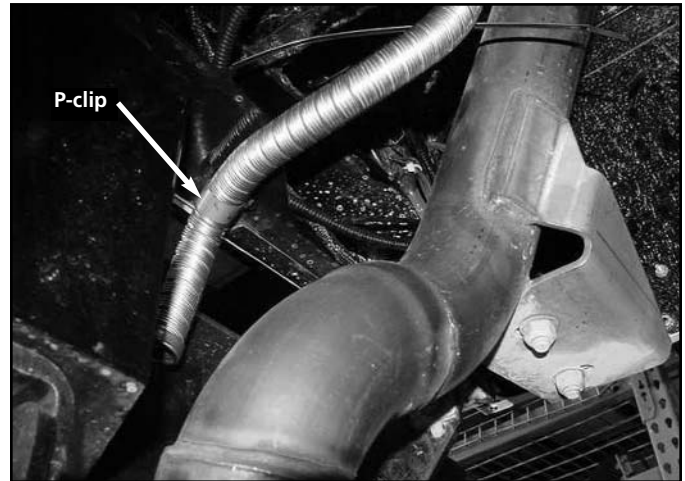
- Route the exhaust under the rear of the vehicle.



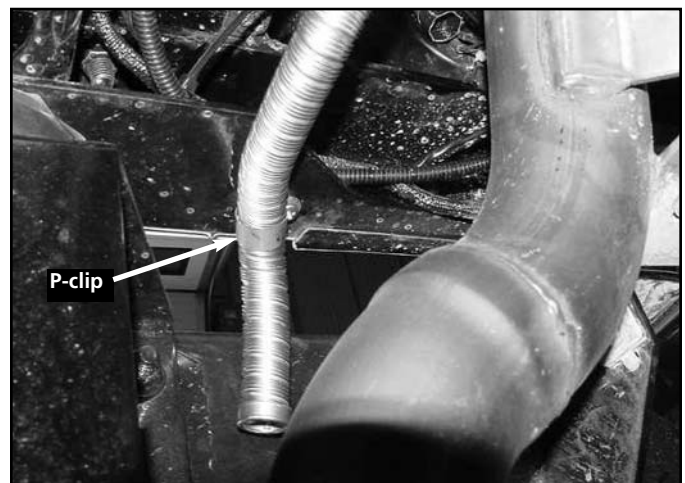
2-33: Exhaust Tube Termination

- Locate the left tail light harness and P-clip. Using the same hole as the tail light harness P-clip, install a P-clip around the exhaust tube and mount the tube and P-clip to the same hole as the tail light harness P-clip.

NOTE: By replacing the existing harness P-clip bolt with a longer one, the tail light P-clip can be used to secure the fuel pump harness and fuel line. P-clip may require minor modification.



2-34: Exhaust Tube Termination - Close In



2-35: Exhaust Tube Termination - Close In at P-clip

2.13 Final Inspection and Initial Start-up

2.13.1 Final Inspection

Inspect installation for:

- loose fasteners.
- exhaust system routing and clamp tightness.
- combustion air intake tube routing and clamp tightness.
- loose fuel line clamps.
- routing of fuel lines and fuel lines securely tied and protected against chaffing and related damage.
- loose wiring connections and battery connections.
- routing of wiring harness and wiring harness securely tied and protected against chaffing and related damage.
- install access panels, rear left seat and all other items removed during installation of heater.

2.13.2 Initial Start-up

1. Set time and day of week on heater timer according to operating instructions found in the owners manual.
2. Switch on the Webasto heater by means of the instant heat button on timer and check:
 - timer panel and instant heat indicator illuminates.
 - initiation of start-up sequence.
 - successful start-up and operation (heat produced at heater outlet).

ATTENTION!

More than one start-up attempt of the heater may be required to purge air from fuel system before heater will start. Cycle heater Off and On after each failed start attempt until heater starts and runs successfully.

3. Maintenance/Troubleshooting

⚠ WARNING

Although simple maintenance procedures can be performed by the owner, any operational problems, major repairs due to damage, subsequent installations or alterations must be performed by a properly trained Webasto specialist.

⚠ CAUTIONS

Always use genuine Webasto service and replacement parts to ensure trouble-free operation of the heater.

3.1 Heater Maintenance

The Webasto BlueHeat heater is designed for minimal maintenance. Under normal circumstances it should be inspected for proper function at least once annually, preferably, just prior to the heating season.

To ensure trouble-free operation, the following should be part of an annual and periodical inspection:

1. Operate the heater a minimum of 10 minutes every month to keep fresh fuel in the system and the fuel pump lubricated.
2. Keep the heating air outlet clear of obstructions.
3. Keep the heater inlet grille clear of obstructions.
4. Inspect the combustion air tube and exhaust tube for obstructions and damage. Check to ensure they are securely attached to the heater and vehicle. Repair damaged items where necessary.
5. Inspect the fuel system and all connections for leaks. Tighten clamps if loose. Ensure fuel line is well secured to the vehicle. Replace fuel filter if equipped.

3.2 Troubleshooting

Troubleshooting requires profound knowledge about structure and theory of operation of the heater components and should only be performed by authorized Webasto trained specialists.

For the purpose of this manual, only those items as they pertain to installation will be covered under troubleshooting. For malfunctional problems beyond the scope of this manual, please call Webasto Product North America, Inc. directly @ 1-800-555-4518 (USA) or 1-800-667-8900 (Canada).

In the event of a heater malfunction, first check the following two items to eliminate them as cause for trouble:

- A. Power Supply
 - Fuse blown?
 - Power at fuse?
- B. Fuel Supply
 - Fuel in tank?
 - Clean, unrestricted fuel supply?

3.2.1 Heater Shuts Off Automatically

The heater will automatically shut off if a malfunction occurs. To clear a malfunction, switch heater off with the timer instant On/Off button. Wait 2 seconds and turn on once again to reset the heaters control unit. Should the heater fail to start or continues to malfunction, consult your Webasto specialist.

3.2.2 Heater Emits Black Smoke from Exhaust

Check the combustion air intake tube and exhaust tube for obstructions or damage. Clear obstructions as necessary or replace damaged tubes. Should condition persist, consult your Webasto specialist.

3.2.3 Self-Diagnostic System (Malfunction Codes)

A code will be entered on the face of the optional 7-day timer. These codes indicate a malfunction and subsequent operational interruption. There are ten codes available depending on the nature of the malfunction (see table 3-1).

The malfunction code will also be stored in the control unit memory for later retrieval.

ATTENTION!

Specialized diagnostic equipment is required to read malfunction codes stored in the control unit memory. Consult your Webasto specialist for details.

ATTENTION!

After any correction of a malfunction, a functional test has to be performed with the heater installed in the vehicle.

ATTENTION!

Ambient air temperature must be below the set point on the temperature control knob before heater will start.

3.2.4 Diagnostic Code Table

Symptom	Probable Cause	Check and Correct
No Function	Electrical wiring, fuses Control unit	Fuses Battery connections Power at red wire and ground at heater brown wire Consult your authorized Webasto Specialist
Code F 01 No combustion achieved after start and repeat start	Fuel system Combustion air Burner	Fuel level - No fuel - Fuel system not primed Type of fuel being used Plugged fuel filter - replace Fuel line connections and clamps (air bubbles in fuel lines) Air intake or exhaust - restricted or plugged Consult your authorized Webasto specialist
Code F 02 Flame-out during operation	Fuel supply (shortage) Burner	Restriction in fuel system Plugged fuel filter - replace Fuel line connections and clamps (air bubbles in fuel lines) Type of fuel being used Consult your authorized Webasto Specialist
Code F 03 Low voltage for more than 20 seconds	Electrical system	Load test batteries Corrosion at connections Loose connections
Code F 04 Flame sensor permanently hot		Consult your authorized Webasto Specialist
Code F 05 Flame sensor		Consult your authorized Webasto Specialist
Code F 06 Temperature sensor		Consult your authorized Webasto Specialist
Code F 07 Fuel metering pump		Consult your authorized Webasto Specialist
Code F 08 Combustion air fan		Consult your authorized Webasto Specialist
Code F 09 Ceramic igniter (glow pin)		Consult your authorized Webasto Specialist
Code F 10 Temperature limiter	Overheat condition	Motor/fan obstruction, heating air flow blocked, ducting damaged or temperature limiter faulty. Repair problem, switch heater off and back on.

Table 3-1: Diagnostic Codes - BlueHeat Diagnostic

ATTENTION!

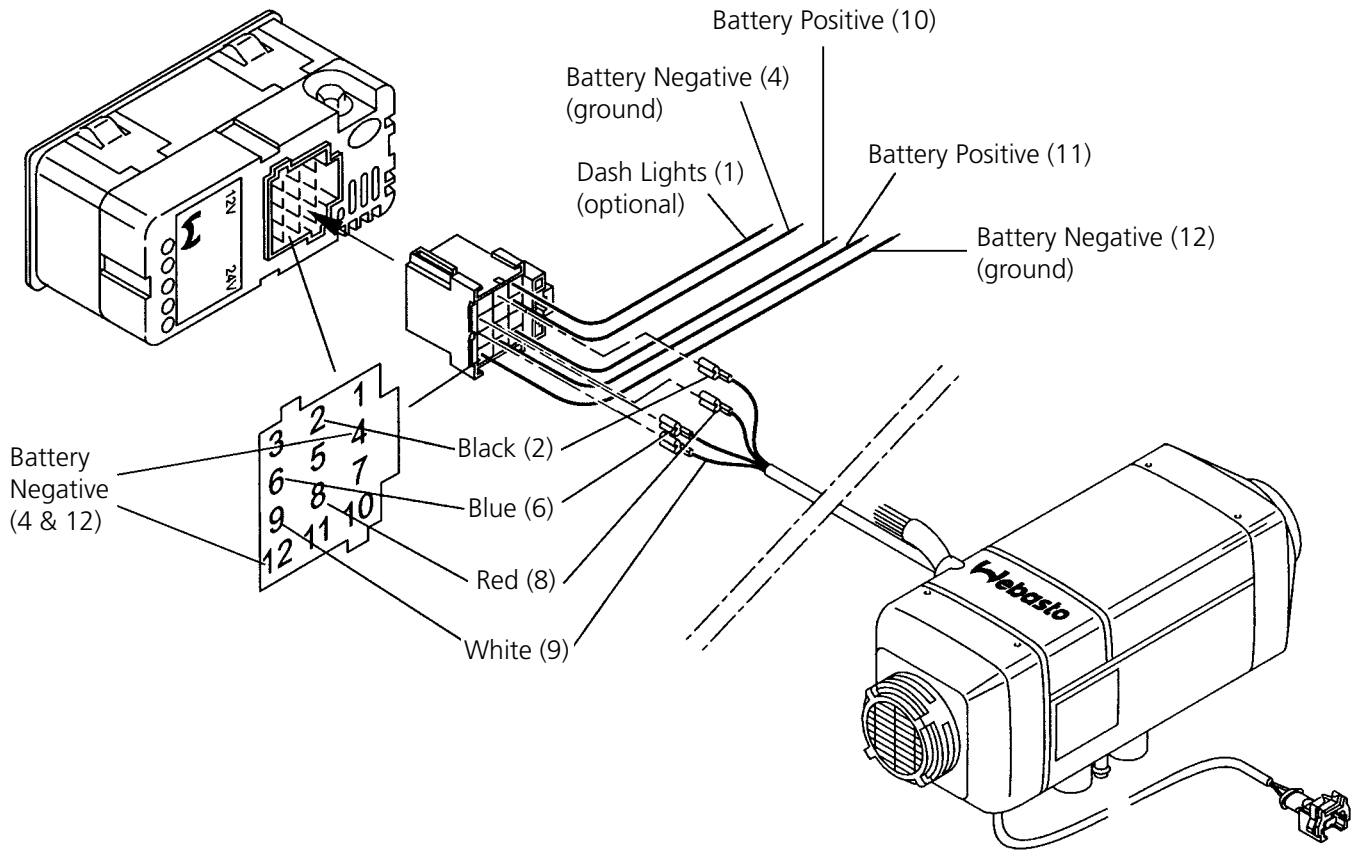
Specialized diagnostic equipment is required to read malfunction codes stored in the control unit memory. Consult your Webasto specialist for details.

ATTENTION!

After any correction of a malfunction, a functional test has to be performed with the heater installed in the vehicle.

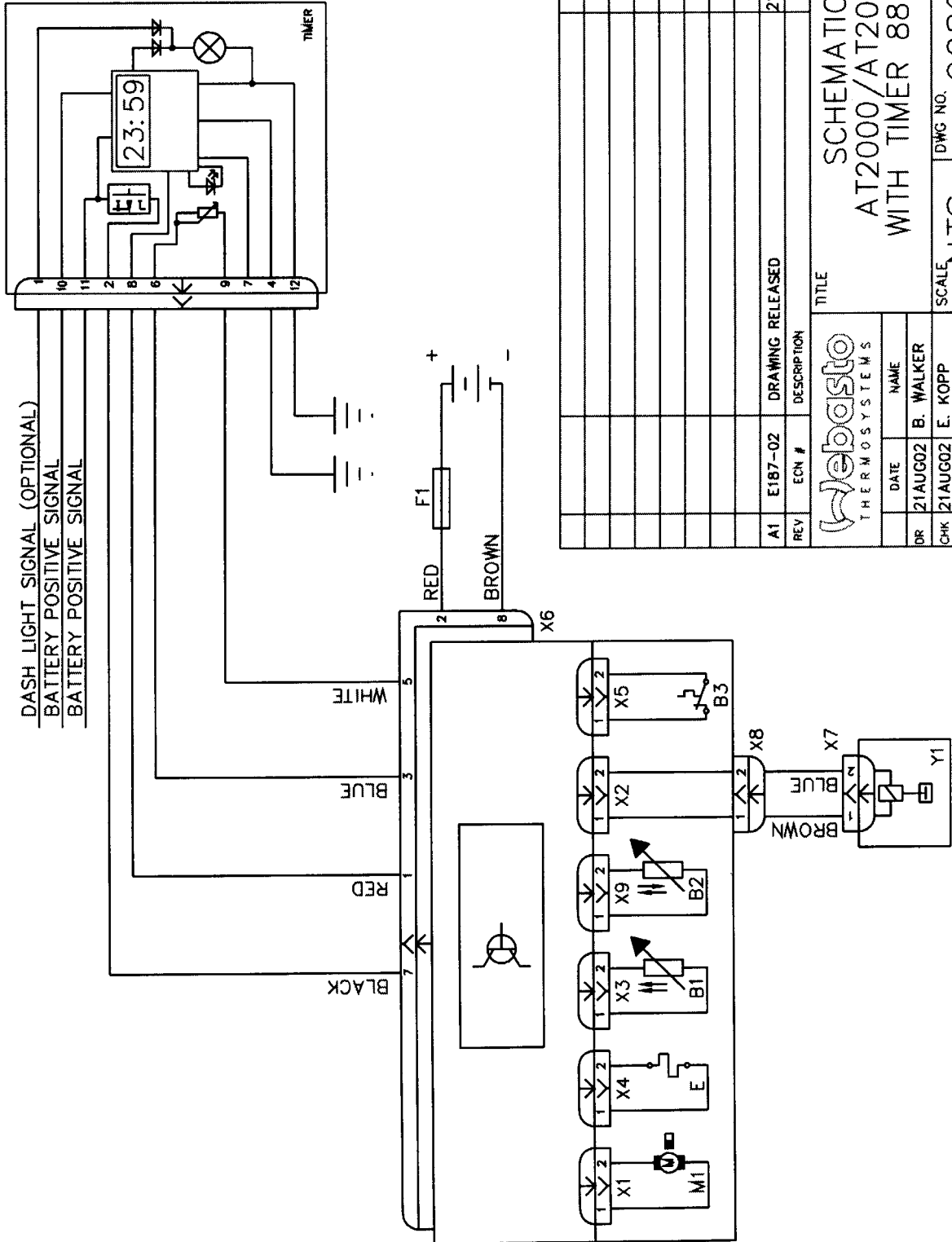
4. Schematics

4.1 Optional Timer Wiring Diagram



4-1: BlueHeat with timer 88206A (7-Day Digital Timer Model 1531 with Temperature Rheostat)

4.2 Wiring Schematic - Optional Timer



DASH LIGHT SIGNAL (OPTIONAL)
 BATTERY POSITIVE SIGNAL
 BATTERY POSITIVE SIGNAL

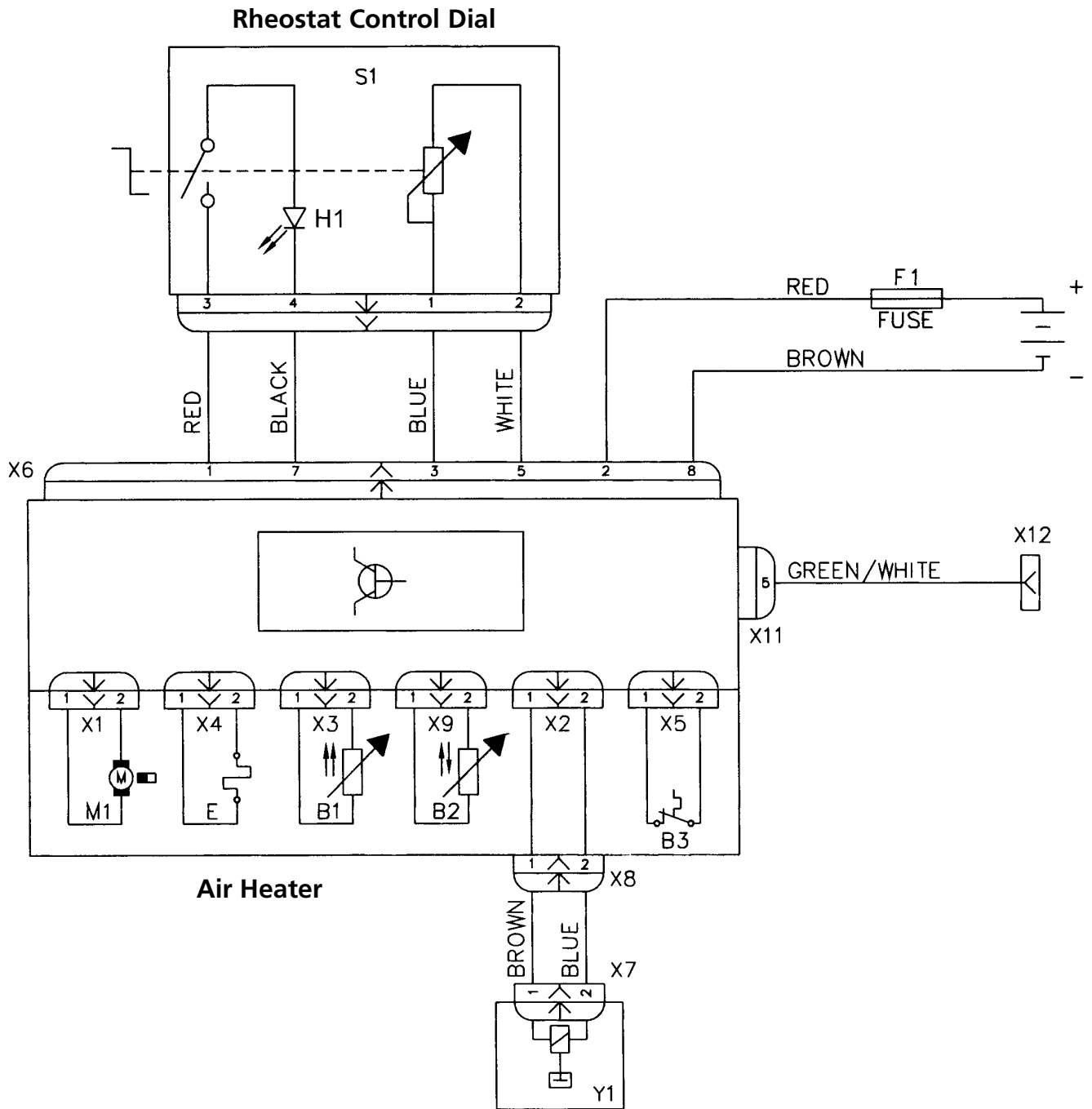
REV	ECN #	DESCRIPTION	DATE	DR	EK	MG
A1	E187-02	DRAWING RELEASED	21AUG02	BW	EK	MG

		TITLE SCHEMATIC AT2000/AT2000S WITH TIMER 88206A	
DATE	NAME	SCALE	DWG NO.
21AUG02	B. WALKER	N.T.S	908254A
CHK	21AUG02	E. KOPP	
APPR	21AUG02	M. GRUPE	

THIRD ANGLE PROJECTION 		ALL DIMENSIONS ARE IN mm 908254A
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4.3 Wiring Schematic - Rheostat Control Dial





Webasto Product N.A., Inc.

Technical Assistance Hotline

USA: (800) 555-4518

Canada: (800) 667-8900

www.webasto.us

www.techwebasto.com