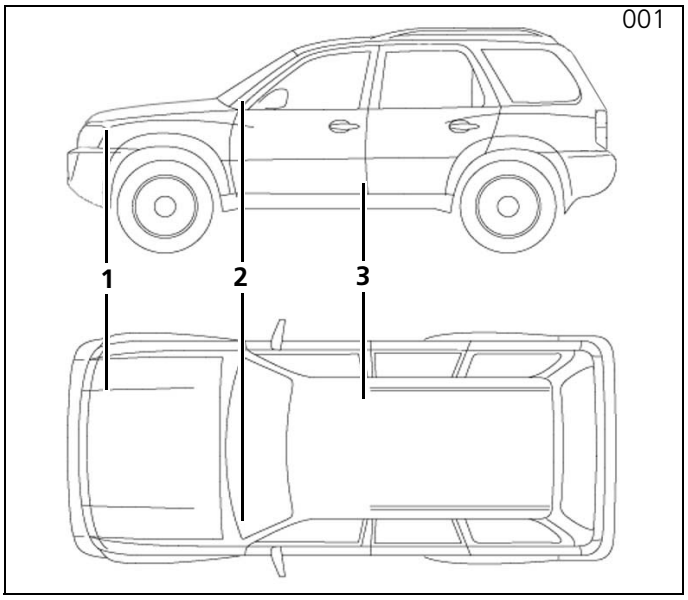
Blue*Heat* *Coolant Heater*

Webasto
Feel the drive

Thermo Top C



Honda Pilot
2002 - 2004 3.5 Liter VTEC® V-6 - AWD

Acura MDX
2003 - 2004 3.5 Liter VTEC® V-6 - AWD

Special instructions for these models
Part locations may differ slightly dependent on the vehicle model.

Legend
1 Fuse Holder / Resistor Assembly
2 Timer Control
3 Blue*Heat* Coolant Heater, Exhaust, Combustion Air Intake, and Fuel Pump

Special Tools
– Hose Clamping pliers
– Torque Wrench (1/4' Drive)

Table of Contents

DOC P/N 5000682A KIT P/N 5000512B Printed in USA Webasto Product N.A., Inc.

– Improper installation or repair of Webasto heating and cooling systems can cause fire or the leakage of deadly carbon monoxide leading to serious injury or death.
– Installation and repair of Webasto heating and cooling systems requires special Webasto training, technical information, special tools and special equipment.
– NEVER attempt to install or repair Webasto heating or cooling system unless you have successfully completed the factory training course and have the technical skills, technical information, tools and equipment required to properly complete the necessary procedures.
– ALWAYS carefully follow Webasto installation and repair instructions and heed all WARNINGS.
– Webasto rejects any liability for problems and damage caused by the system being installed by untrained personnel.

Parts List

Quantity	Part	Part Number
1	Heater Kit	5001102A
1	Installation Kit	5000512B

Vehicle Information

Manufacturer	Model	Year	Engine Type
Honda	Pilot	2002 - 2004	3.5 Liter - AWD
Honda	Acura MDX	2003 - 2004	3.5 Liter - AWD

Foreword

This installation requires special expertise from a Webasto training course to install a Webasto Thermo Top C/Z, which means that it may only be installed by a specially trained workshop or dealership. Webasto cannot accept any liability for faults and damage caused by the system being installed by untrained personnel.

Scope and Purpose

These non-binding installation instructions are intended to support authorized Webasto trained distributors, dealers and personnel in the installation of the Thermo Top C/Z and Blue*Heat* Coolant Heaters.

These non-binding installation instructions apply to the vehicles listed on the front cover of this installation document 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" Thermo Top C/Z must be followed. Acknowledged engineering conventions must be observed for the installation work.

CAUTION

Location of heater, installation of coolant lines, 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.

ATTENTION

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

Symbol Identification

Symbols that define sections in manual


Mechanical Preparation


Fuel


Electrical


Exhaust


Coolant


Combustion Air Intake

General Symbol Descriptions

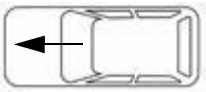

Warning


Refer to Webasto or Manufacturer Manual


Caution


Attention


Flammable or Combustible


Line of Sight/Item Location on Vehicle

General References

– Bare body parts, for example around drilled holes, must be treated with anti-corrosive coating.
– Secure hoses, cables and wiring harnesses with cable ties and fit protective hoses around them at chafing points.
– Fit edge protectors (opened fuel hose) to sharp edges.

Preparation

Heater Kit

– Verify and identify all contents of kit.

Vehicle

– Verify fuel content in tank.

CAUTION
For reasons of safety due to the possibility of fuel spillage during the installation of a fuel standpipe, it is recommended there be no more than 1/4 tank or less of fuel present. If fuel quantity is greater than 1/4 tank, make provisions to reduce quantity of fuel.

Heater Installation Site

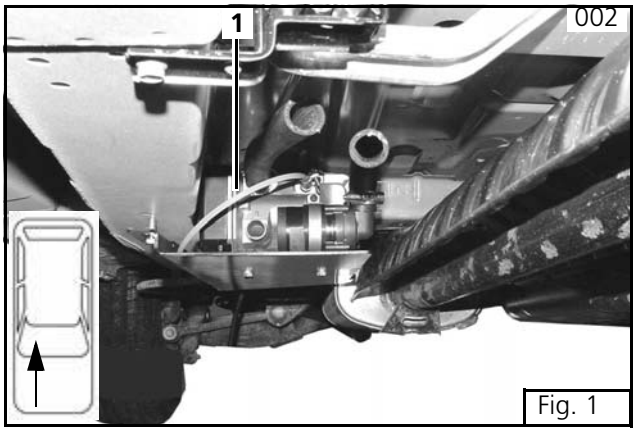


Fig. 1

ATTENTION
The Webasto Auxiliary Coolant Heater is to be installed under vehicle between exhaust and right vehicle support rail.

– (1) Webasto Auxiliary Coolant Heater and Bracket.

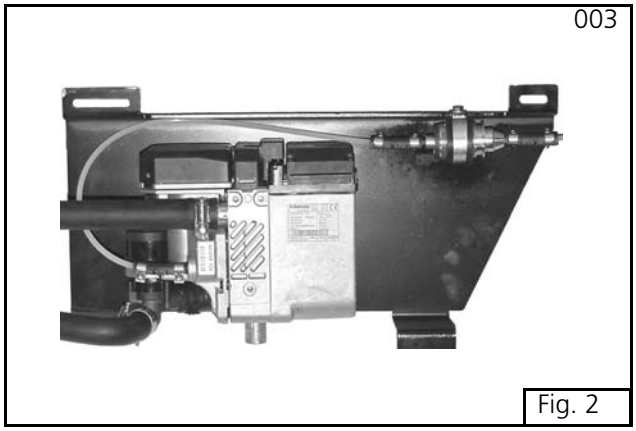


Fig. 2

ATTENTION
Complete heater and bracket assembly.

Installation

Electrical - Overview

ATTENTION

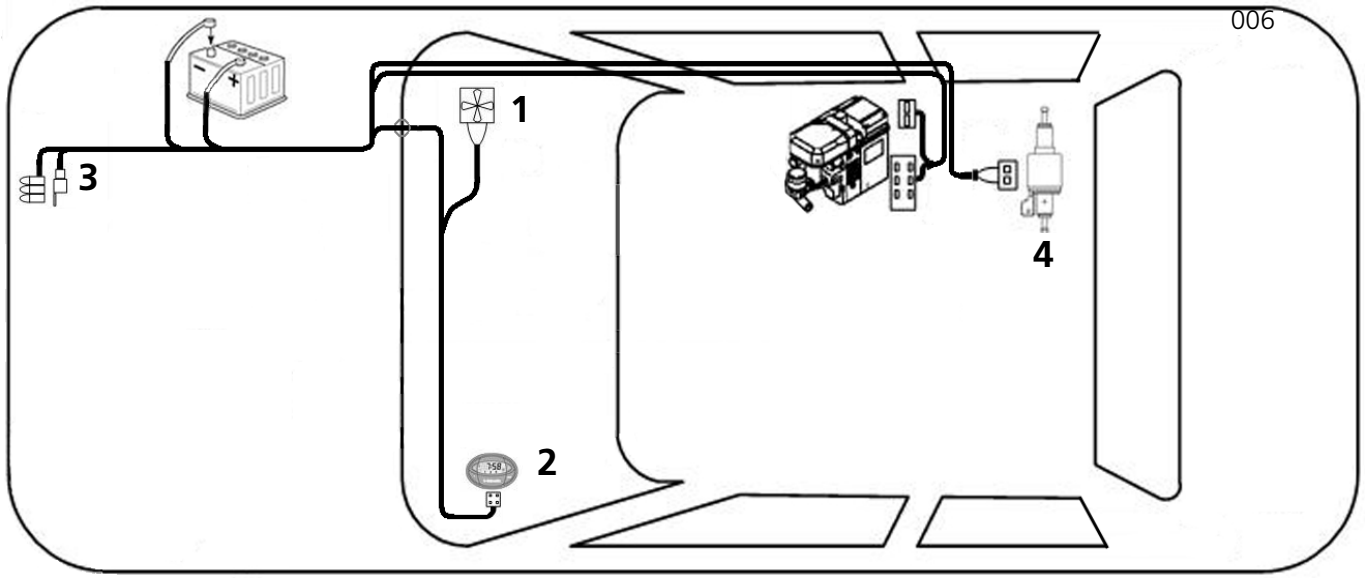
The timer control location is a recommendation only. Please consult with the customer before mounting.

Vehicle HVAC Blower Motor

(Location) Passenger Foot Well Area

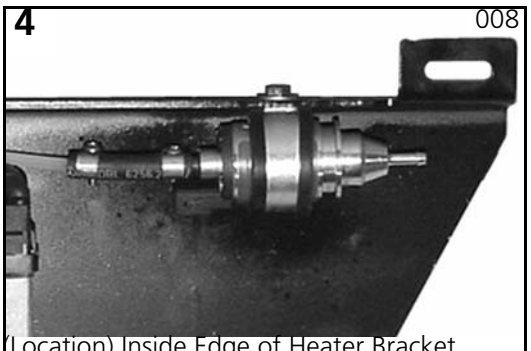
Timer Control Location

(Location) Instrument Panel



(Location) Underhood affixed to core support

Webasto Fuse Block & Relays



(Location) Inside Edge of Heater Bracket

Webasto Heater Fuel Pump

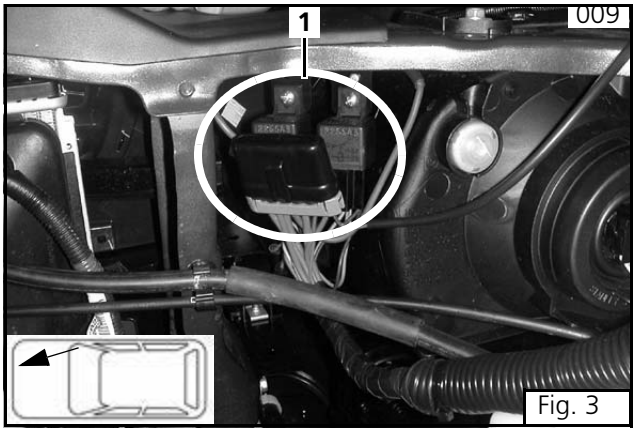


Fig. 3

Electrical Harness

ATTENTION

The electrical harness is a two part assembly. Before installing, cut wire tie holding negative side HVAC blower harness (with K3 relay) to the main harness and separate.

– (1) Webasto Mounting Bracket Assembly
Hardware used for this assembly
- (Qty.2) M3x10 Screws
- (Qty.2) M3 Kep Nut
- (Qty.4) 10-32 Pan-Head Screws
- (Qty.4) Nut M4 DIN985

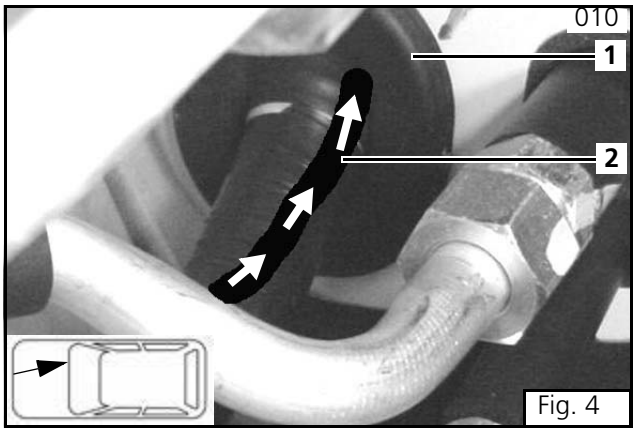


Fig. 4

– (1) Vehicle Grommet
– (2) Blower Control Harness, Timer Harness and Ignition 'ON' Cable.

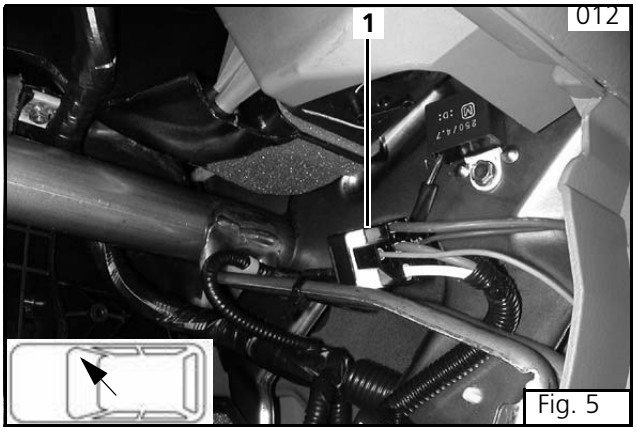


Fig. 5

ATTENTION

Secure the negative side HVAC blower harness (K3 Relay) to instrument panel structure as shown using wire ties and route harness towards blower motor connector. (Glove box is removed for picture)

Fuse Tap Connection - Relay K-1

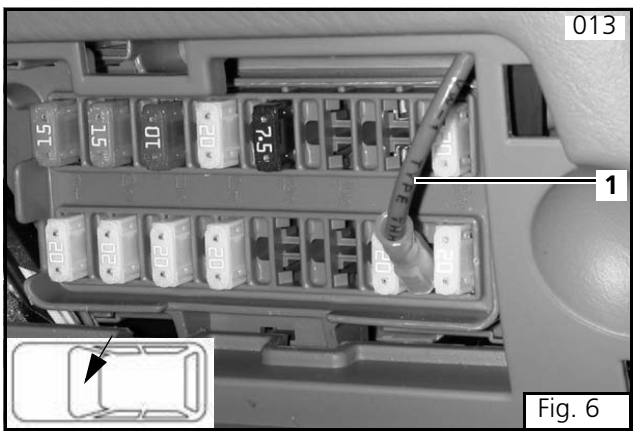


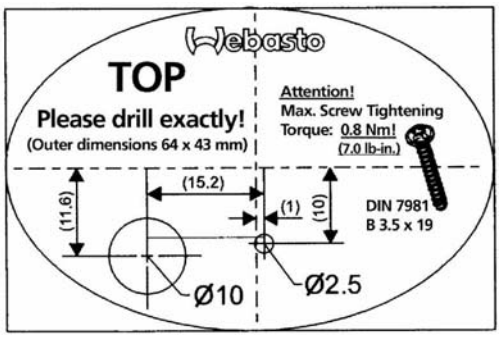
Fig. 6

ATTENTION

Connect 18 ga. Ign ON wire to a 12 VDC ign ON power source. (Determine with voltmeter or test light)

– (1) Blue Fuse Tap Wire

Timer Installation



TEMPLATE NOT TO SCALE

Fig. 7

CAUTION

Check behind panels for obstructions before drilling holes.

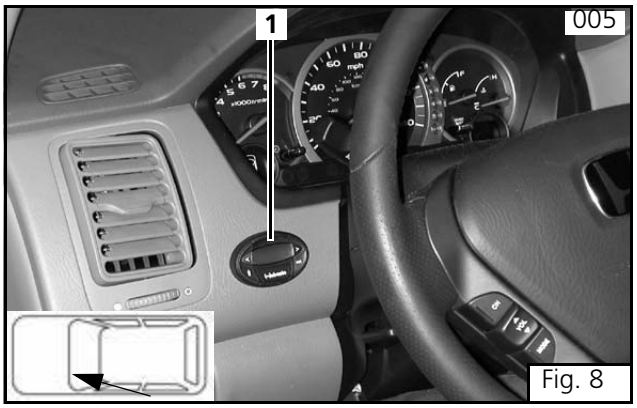


Fig. 8

– (1) Timer - Sample Location Only

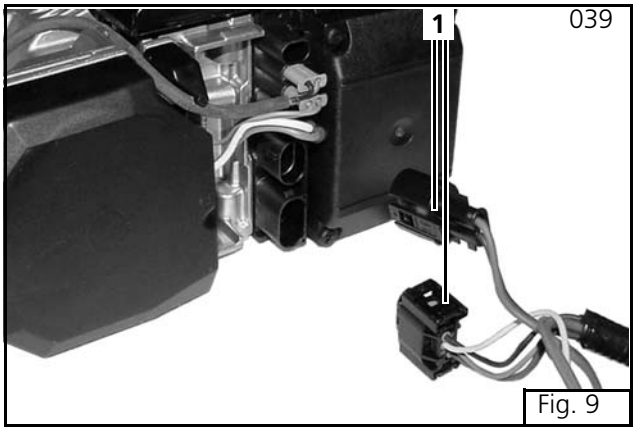
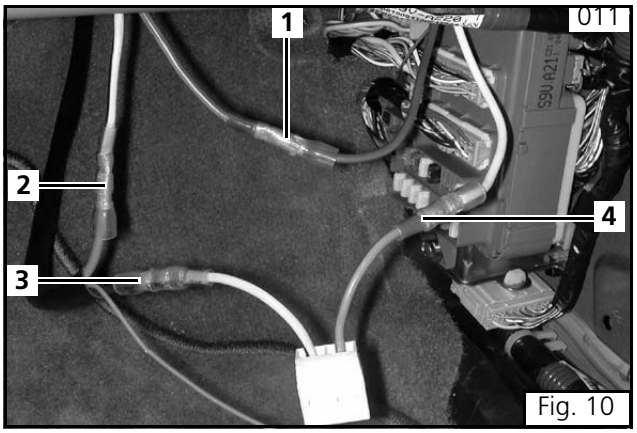


Fig. 9

ATTENTION

Route heater control/power harness with fuel pump harness from fuse block, along right inner fender area and down right side of bulkhead. Plug connectors in prior to final installation of the heater/bracket assembly.

– (1) Heater Control/Power Harness



ATTENTION
It is permissible to cut excess length from blower control wiring harness.

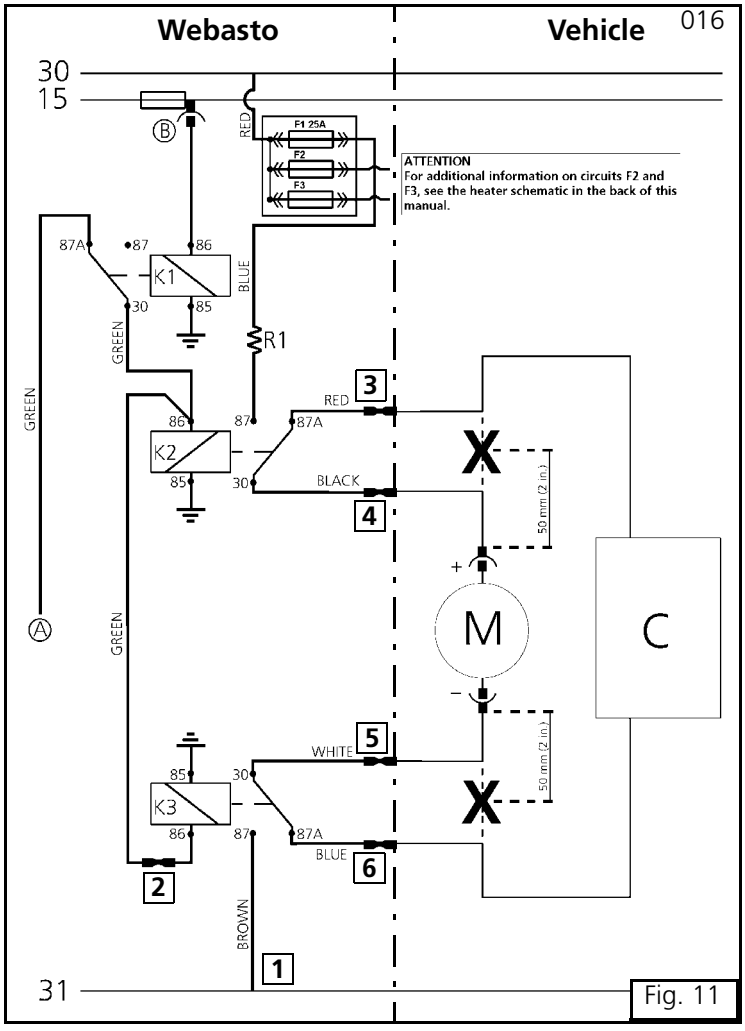
Vehicle Side

– (1) Blue wire (Vehicle) to Blue wire (heater)
– (2) Yel. wire (Vehicle) to Red wire (heater)

Blower Side

– (3) Yel. wire (blower) to Black wire (heater)
– (4) Blue wire (blower) to White wire (Heater)

3-Relay HVAC Harness Connections



HVAC Blower Wiring Connections:

– (1) Chassis ground
– (2) Splice green wire to green wire
– (3) Cut, strip and crimp
– (4) Cut, strip and crimp
– (5) Cut, strip and crimp
– (6) Cut, strip and crimp

ATTENTION
Check your wiring! Ensure that all connections have been done in accordance with the wiring diagram shown (Fig. 11). Sensitive electronic controls can be damaged if wired incorrectly!

ATTENTION
Secure HVAC blower control wiring to vehicle structures with nylon wire ties (Image not available)

Legend for Figure 11

A From Webasto Heater X1
B 12 VDC Ignition 'On' Fuse Tap
C HVAC Control Module
M HVAC Blower Motor
X Cut wire at 50 mm (2 in.) from motor
F1 Fuse - Blower Circuit 25 Amp.
K1 Relay - Ignition 'On' Interrupt
K2 Relay - Positive Side of Blower Motor Circuit
K3 Relay - Negative Side of Blower Motor Circuit
R1 Resistor - Blower Speed Control
30 Battery Positive (Constant Power)
15 Ignition (Switched Power)
31 Battery Negative (Chassis Ground)

Integration into the Fuel System

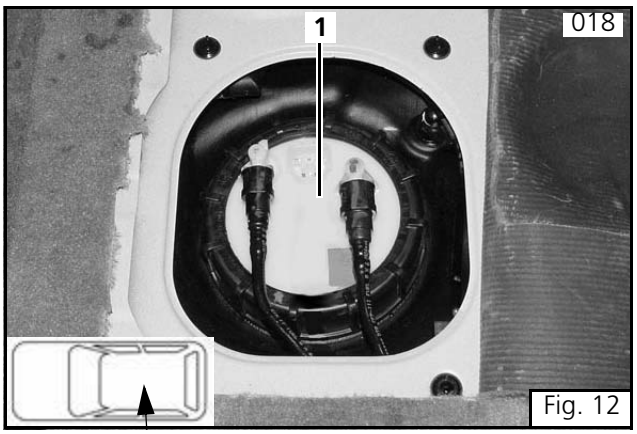


Fig. 12

ATTENTION
Vehicle sending unit is accessible via a removable panel located under the left rear seat assembly. Access using manufacturers service procedure.

– (1) Vehicle Fuel Sending Unit

Standpipe Installation

CAUTION
For reasons of safety due to the weight of fuel and the tank, it is recommended that there be no more than 1/4 tank of fuel present. If fuel quantity is greater than 1/4 of capacity, make provisions to reduce quantity of fuel.

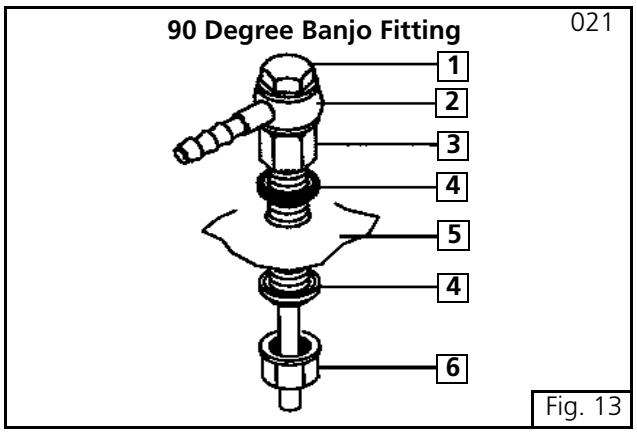


Fig. 13

ATTENTION
Note Standpipe configuration for installation into sending unit.

– (1) Banjo Bolt
– (2) Banjo Fitting - 90 Degree
– (3) Standpipe
– (4) Sealing Washer
– (5) Fuel Tank or Sender Plate
– (6) Lock Nut

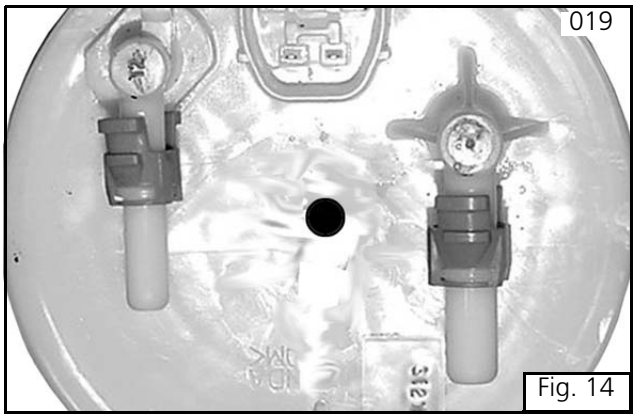


Fig. 14

ATTENTION
Remove sending unit from fuel tank and drill a 8.5 mm (21/64 in.) hole as shown. Deburr hole after drilling.

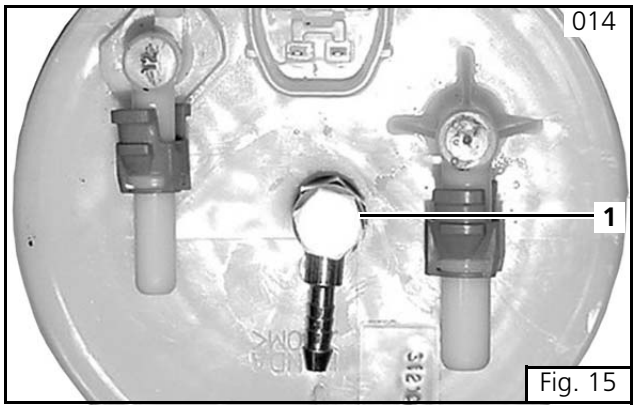


Fig. 15

– (1) Lock-nut torque: 9.0- 9.5 Nm (80 - 84 lb-in)

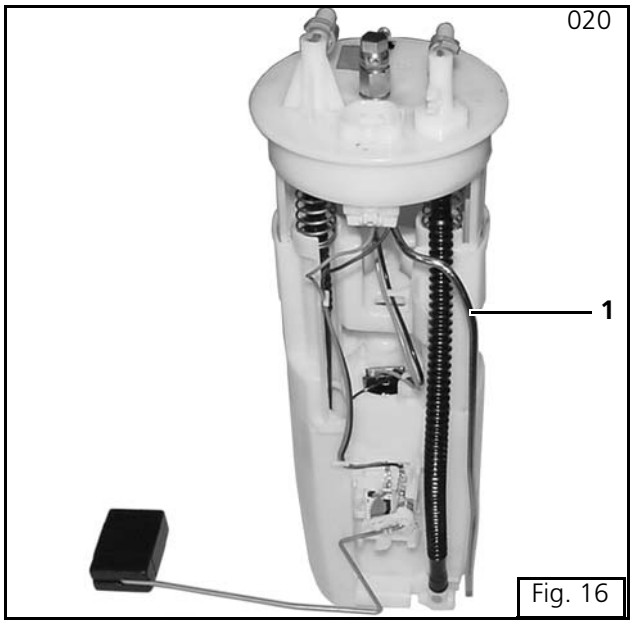


Fig. 16

CAUTION
Ensure standpipe does not interfere with any moving parts.

ATTENTION
Standpipe should sit no less than 38 mm (1.5 in.) off bottom of fuel tank with sending unit installed.

– (1) Standpipe installed

Fuel Line Routing

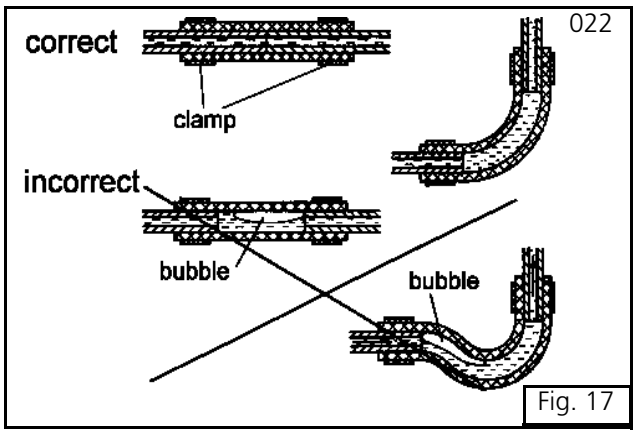


Fig. 17

ATTENTION
Observe Figure 17 for connecting fuel line correctly.

Always cut fuel line with a sharp razor knife or razor. ***DO NOT*** *cut with side cutters, scissors or similar tools as doing so will cause a restriction inside the fuel line.*

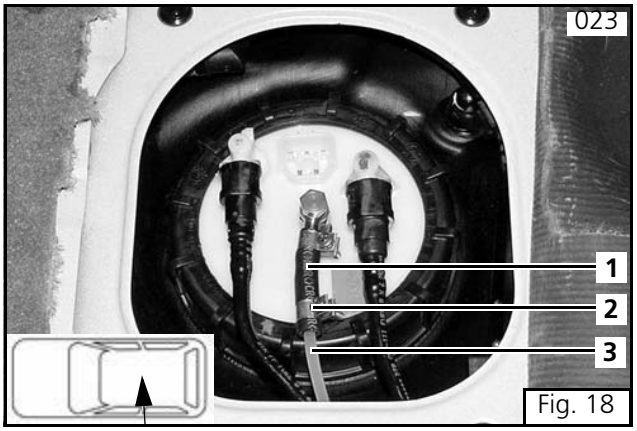


Fig. 18

– (1) Rubber Fuel Line Coupler
– (2) Fuel Line Clamp
– (3) Mecanyl Fuel Line

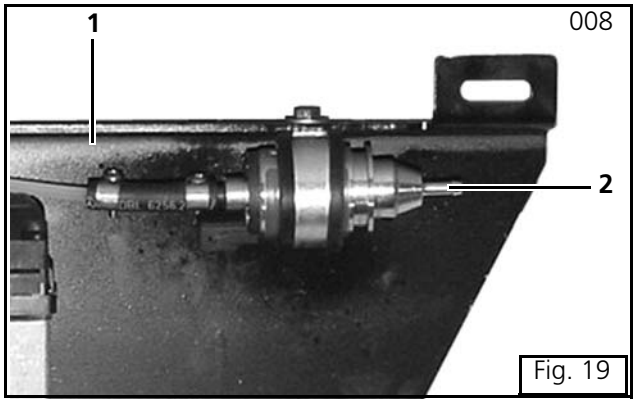


Fig. 19

– (1) Heater Bracket
– (2) Fuel Pump Outlet

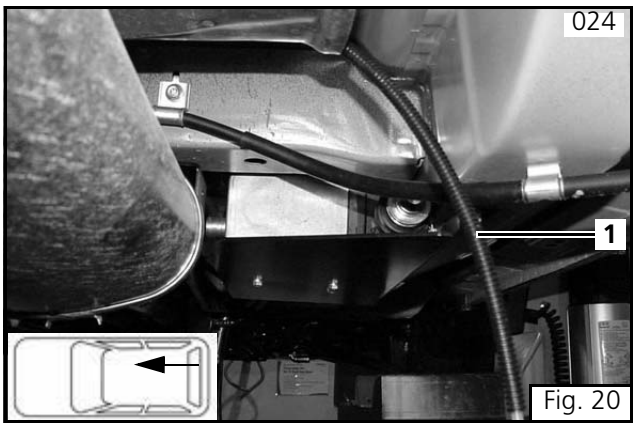


Fig. 20

CAUTION
Ensure fuel line does not come into contact with hot exhaust components or other sources of extreme heat. Ensure fuel line is kept away from moving parts.

ATTENTION
Cover fuel line with split loom and route from standpipe, over fuel tank, to fuel pump mounting location. Secure with wire ties where needed.

– (1) Mecanyl Fuel Line wrapped with Loom

Heater Preparation and Installation

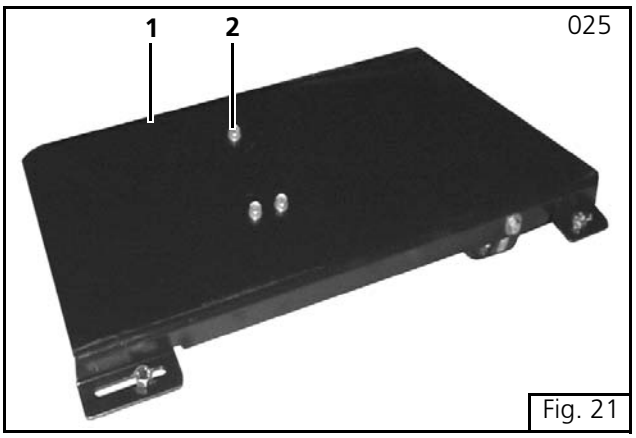


Fig. 21

ATTENTION
Using three self tapping EJOT screws, install heater mounting bracket to heater as shown.

– (1) Heater Mounting Bracket
– (2) EJOT Screws (Used for mounting heater)

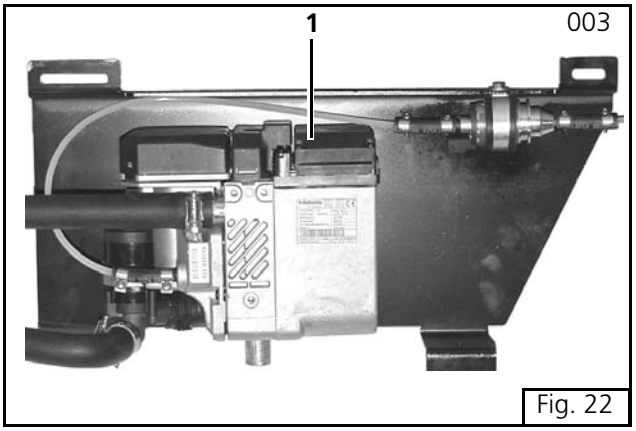


Fig. 22

– (1) Heater Mounted to Bracket. Torque EJOT Screws to 10 Nm (88.5 lb-in.)

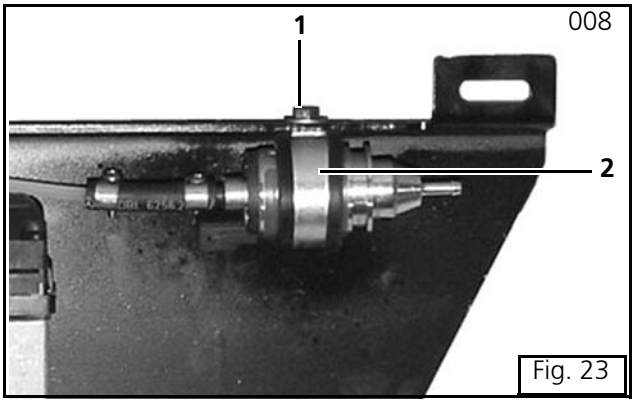


Fig. 23

ATTENTION
Torque all fuel line clamps to 1.0 - 1.4 Nm. (8.8 - 12.4 lb.-in.).

– (1) Washer - M6 and Cap Screw - M6x20
– (2) P-Clamp (Fuel Pump Retaining)

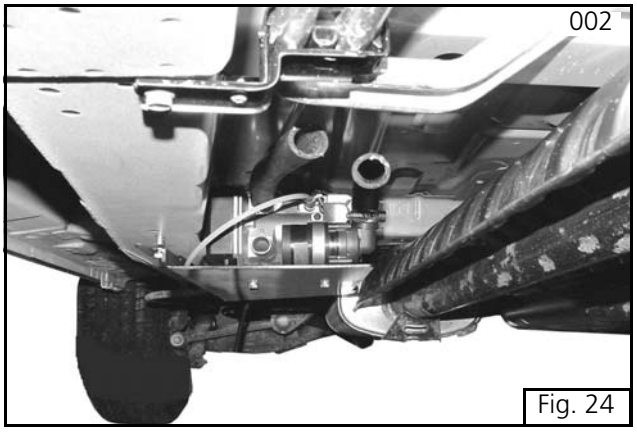


Fig. 24

ATTENTION
The Webasto Auxiliary Coolant Heater is to be installed under vehicle between exhaust and right vehicle support rail.

Combustion Air Intake and Silencer

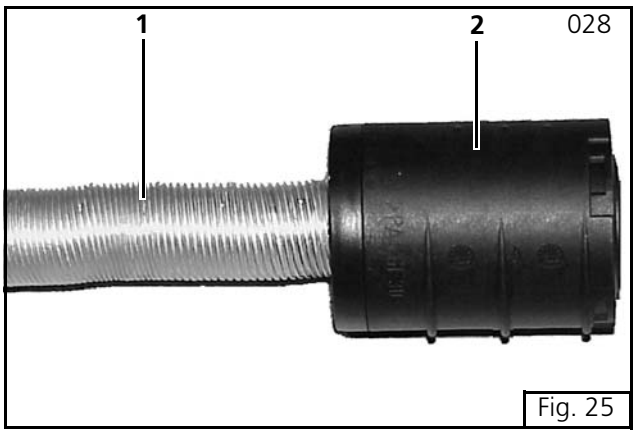


Fig. 25

– (1) Combustion Air Intake Tube
– (2) Air Intake Silencer

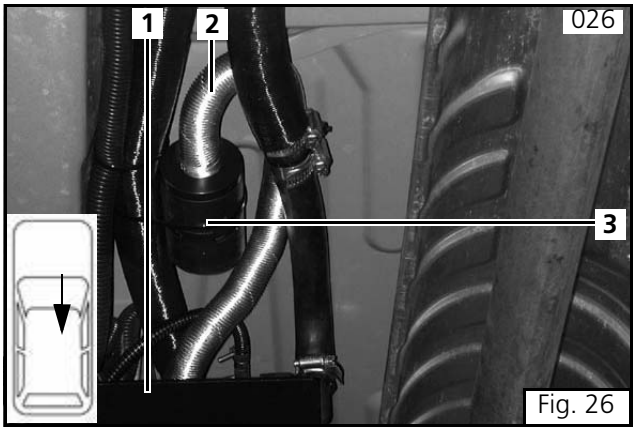


Fig. 26

ATTENTION

Observe mounting parameters. Silencer can only be positioned horizontally or vertically down. Avoid downward sags in the intake tube as condensation may collect and freeze.

– (1) Heater Mounting Bracket
– (2) Combustion Air Intake Tube
– (3) Combustion Air Intake Silencer

Exhaust Routing and Installation

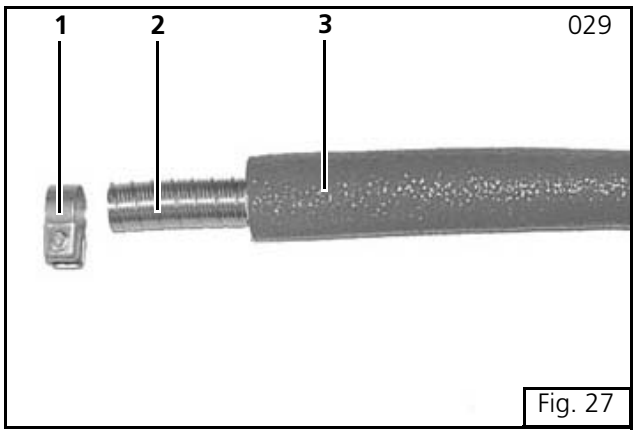


Fig. 27

ATTENTION

Torque clamp to 5.0 - 5.5 Nm (44.0 - 48.5 lb.-in.). Install Heat Insulator over exhaust tube where necessary.

– (1) Exhaust Clamp
– (2) Exhaust Tube
– (3) Heat Insulating Sleeve

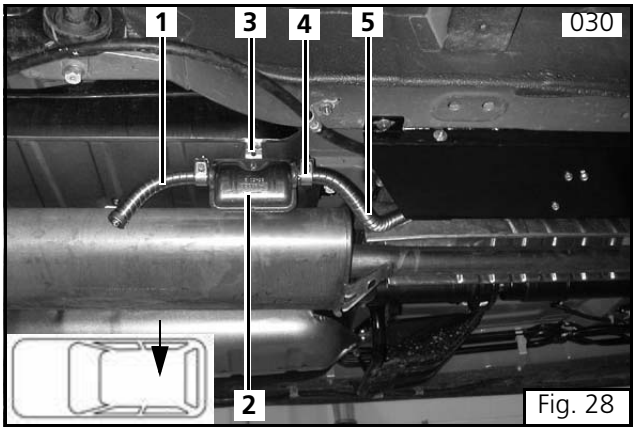
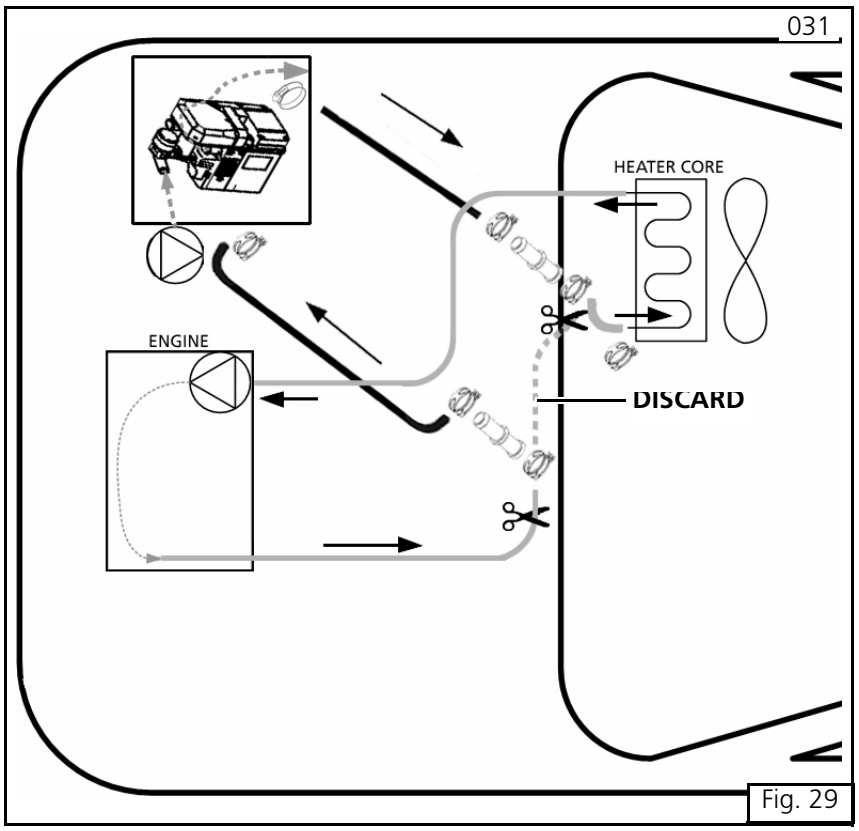


Fig. 28

– (1) Exhaust Tailpipe
– (2) Exhaust Muffler
– (3) Perforated Mounting Strap
M8x25 Cap Screw
M8 Nut
– (4) Exhaust Clamp
– (5) Exhaust Tube (Cut to length where required)

Integration into Coolant System

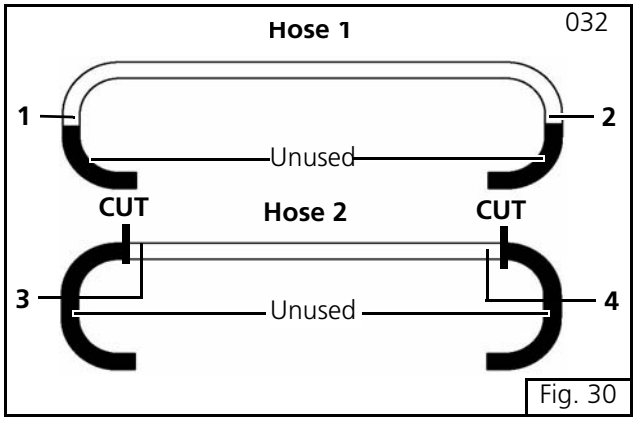


ATTENTION

Figure 29 displays the integration of the Webasto Coolant Heater into the vehicles cooling system.

Torque all hose clamps to 2.0 - 2.5 Nm (18 - 22 lb.-in.).

Install the provided protective loom over coolant lines prior to hose installation.



ATTENTION

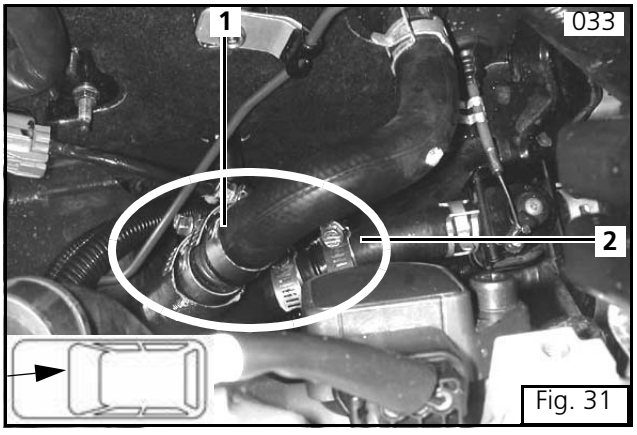
Cut provided coolant hoses according to Figure 30. Use protective loom where necessary to prevent damage to hoses.

Hose 1

– (1) Connect to Engine side Coolant Outlet.
– (2) Connect to Inlet Side of Webasto Heater.

Hose 2

– (3) Connect to Heater Core Inlet Hose.
– (4) Connect to Outlet Side of Webasto Heater.



ATTENTION

Secure coolant lines to available components with nylon wire ties. Keep lines away from hot exhaust and turbo components.

NOTE:

Also see the plumbing schematic in the back of this manual for a general outline of the coolant circuit arrangement.

– (1) Connection to Heater Core Inlet Hose
– (2) Connection to Engine Side Outlet Nipple.

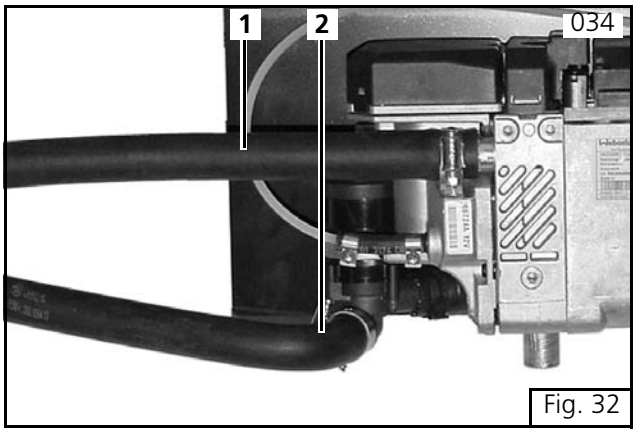


Fig. 32

– (1) Connection to Outlet Side of Heater.
– (2) Connection to Inlet Side of Heater.

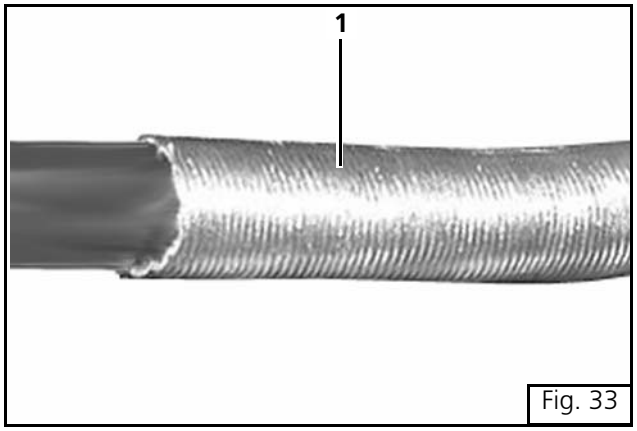


Fig. 33

– (1) Coolant Line Hose Protector
(Prevents Chafing)

Concluding Work

– Install all vehicle parts, panels and components removed during heater installation.
– Check that all hose lines, hose clamps, pipe clips and electrical connections are secure.
– Secure all loose lines and cables with nylon cable ties.
– Spray the heater components and electrical connections with an anti-corrosive wax coating.

Power Connection

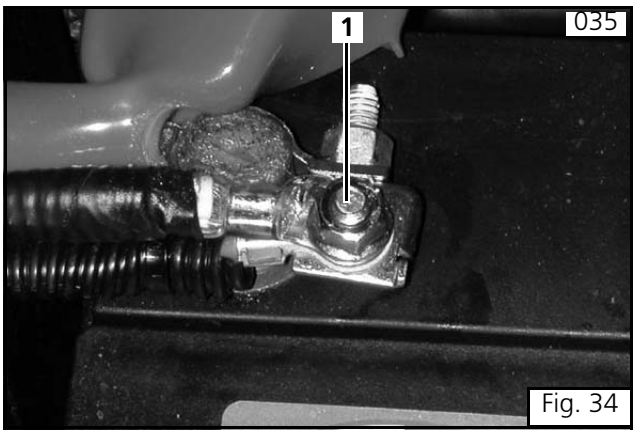


Fig. 34

ATTENTION
Connect red power lead to positive battery terminal.

– (1) Positive Battery Terminal

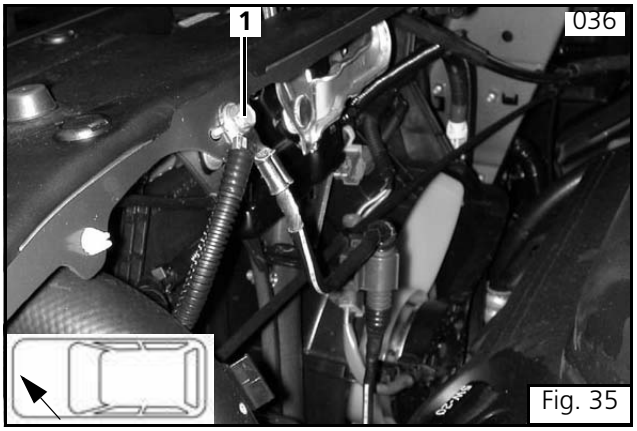


Fig. 35

ATTENTION
Connect heater ground wire to ground stud located on core support left of hood latch assembly.

– (1) Vehicle Ground Stud

Final Inspection and Initial Start-up

Final Inspection

Inspect installation for:

- Loose fasteners.
- Exhaust system routing and clamp tightness.
- Combustion air intake tube routing and clamp tightness.
- Loose coolant line clamps.
- Pinched coolant lines.
- Routing of coolant lines and coolant lines securely tied and protected against chafing and related damage.
- Loose fuel line clamps.
- Routing of fuel lines and fuel lines securely tied and protected against chafing and related damage.
- Loose wiring connections and battery connections.
- routing of wiring harness and wiring harness securely tied and protected against chafing and related damage.
- Check operation of vehicle heater fan with Webasto heater OFF.

Initial Start-up

1. Top off cooling system with coolant per engine/vehicle manufacturers recommendations.
2. Set interior heater control to maximum heat position (hot) and switch off air conditioning system.
3. Start the vehicle engine and run on fast idle for 5 minutes to purge any remaining air from the Webasto heater and coolant system. While the engine is running check:
   - Hose connections for leaks.
   - Coolant level in expansion tank. (Add coolant as needed)
4. Switch off the engine.

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 successfully. After 3 consecutive unsuccessful start attempts, the webasto control unit enters into Heater lockout. See Heater Lockout section for reset instructions.

5. Switch on the Webasto heater by means of the instant heat button on timer and check:
   - Timer panel and instant heat indicator illuminates.
   - Circulating pump in operation.
   - Initiation of start-up sequence.
   - Successful start-up and operation.
6. Allow heater to run for 20 minutes or until coolant is heated to temperature. Re-tighten all hose clamps.

ATTENTION

Engine coolant temperature gauge may read lower than actual Webasto heater output temperature. This is due to the location of the temperature gauge sensor on engine.

Heater Lockout Reset Procedure

The Blue*Heat* is designed with a lockout safety feature built into the control unit. After 3 consecutive unsuccessful startup attempts, the heater will lock itself out from any further start attempts. The heater may also enter the lockout mode after experiencing an overheat condition.

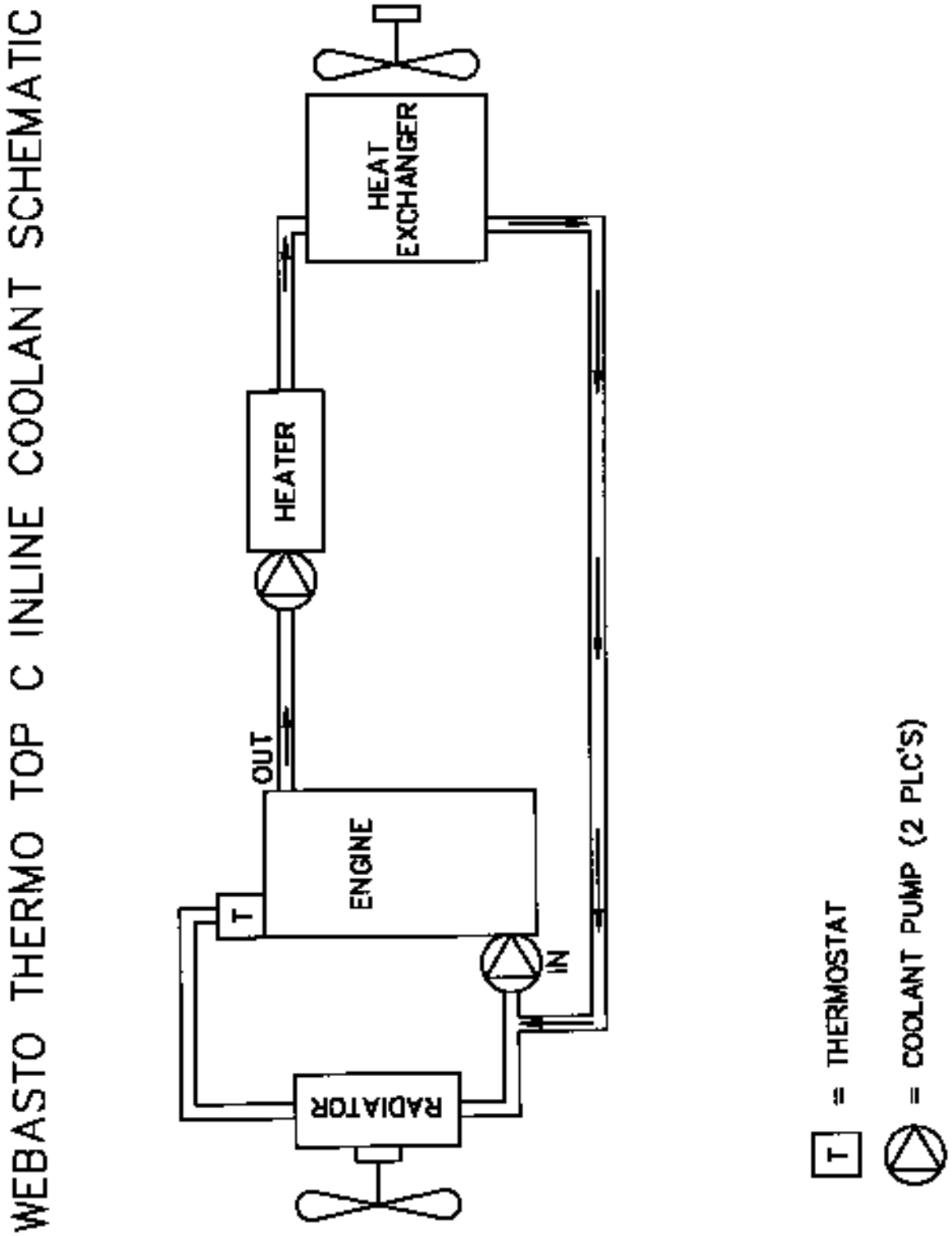
Reset Heater "Lockout" mode by performing the following procedure:

1. Ensure timer or switch is in the "OFF" position. Turn timer or switch to the "On" position. Remove main fuse F2 (20 Amp), reinsert after 5 seconds.
2. Cycle timer or switch off and then back on once more. Remove fuse F2 once again and reinsert after 5 seconds. Heater should attempt to start after inserting fuse.

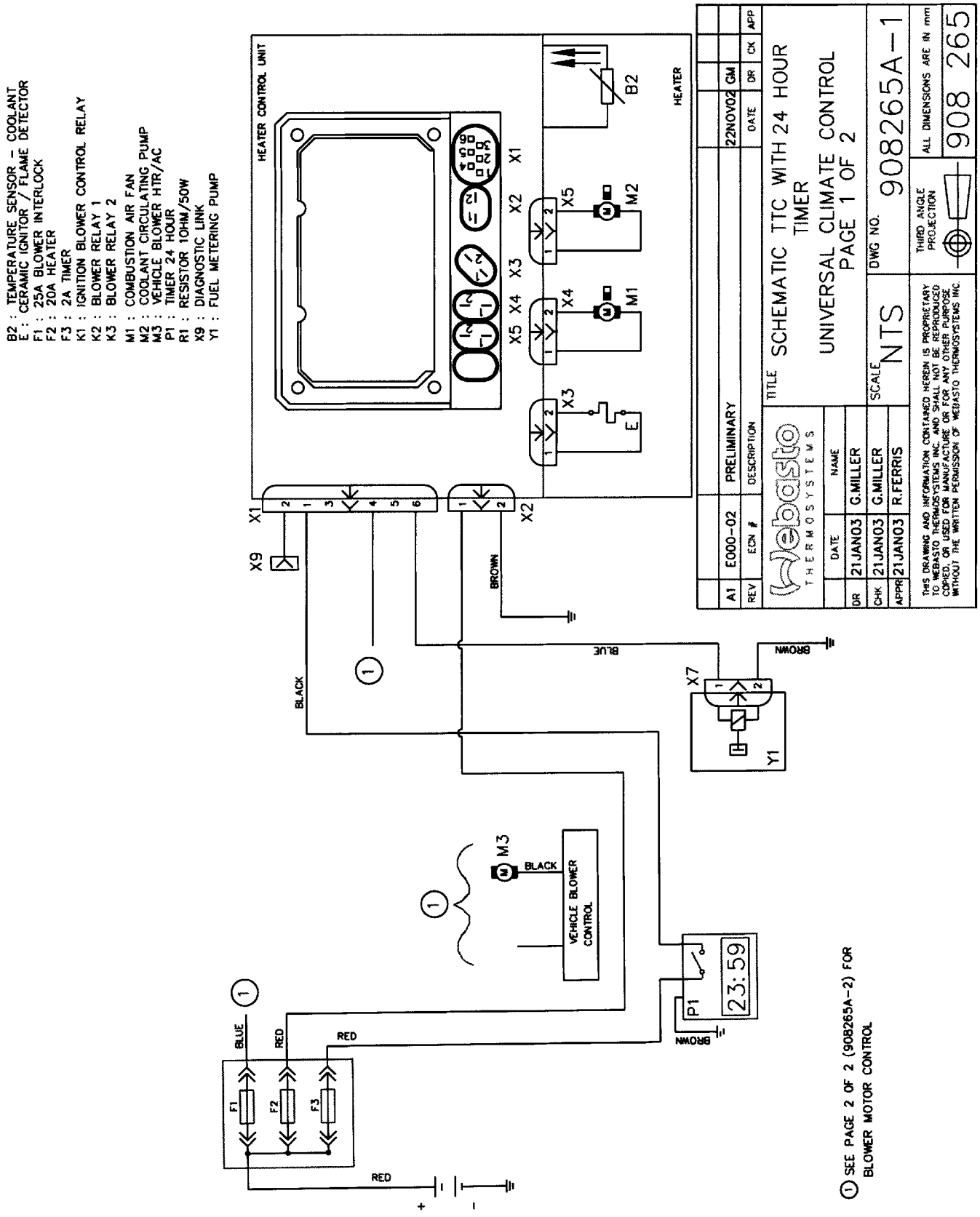
ATTENTION

– Coolant temperature must be below the lower threshold before heater will attempt to start.
– The engine coolant must be below 86 °F (30 °C) before the Webasto heater will attempt to start.
– Should the heater fail to start or operate correctly, call your Webasto technical representative at:
1-800-555-4518

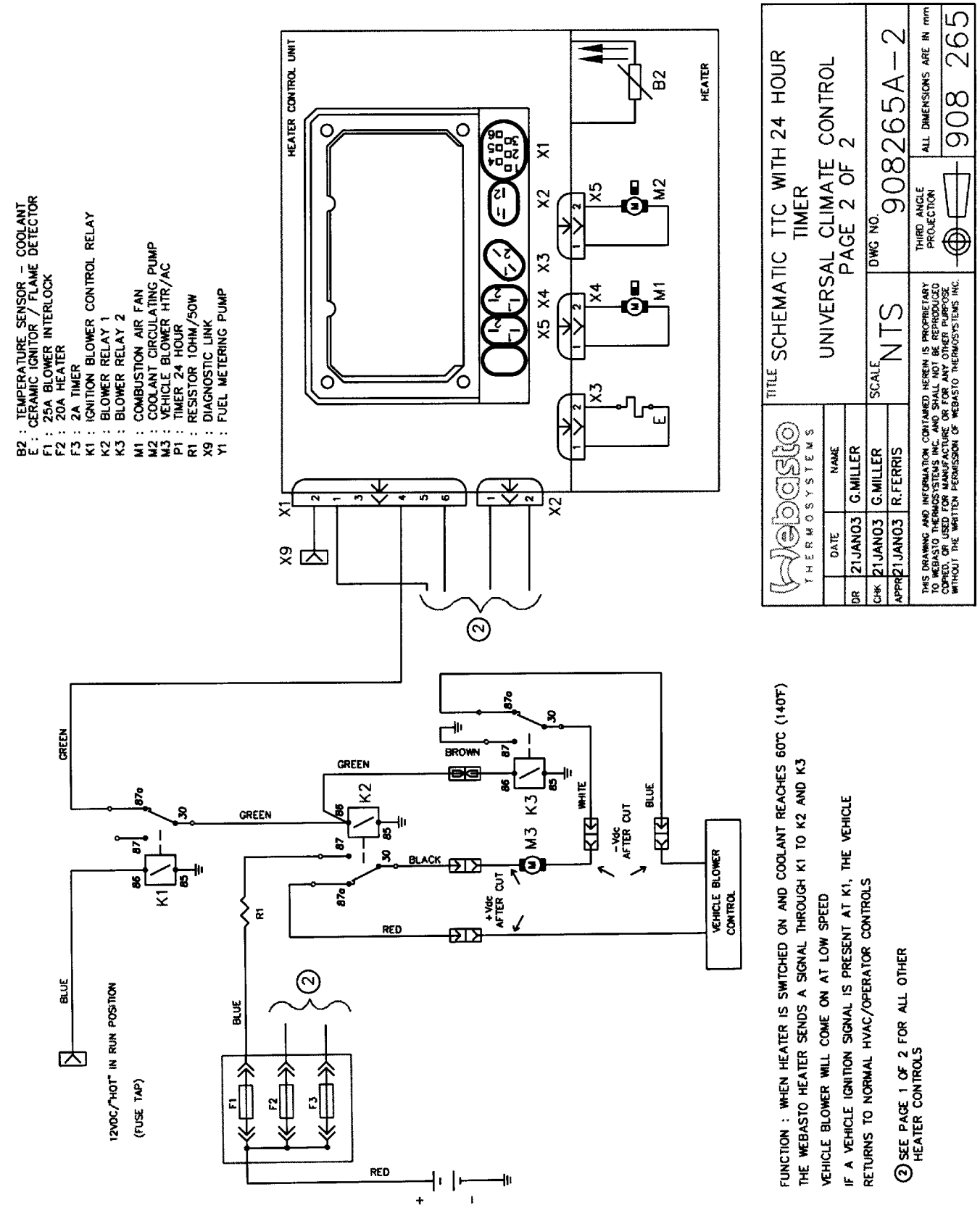
Heater Plumbing Schematic - Inline Method



Wiring Schematic Part 1 - Heater Control



Wiring Schematic Part 2 - Blower Control



Webasto

Feel the drive

Webasto Product N.A., Inc.
Technical Assistance Hotline
USA: (800) 555-4518
Canada: (800) 667-8900

www.webasto.us
www.techwebasto.com

Org.5/2004 Rev. N/A P/N 5000682A