



Installation and Owners manual

For ACU-HEAT VEHICLE

Approximate Installation Time: 3-5 Hours

Tools Required:

***#2 Phillips Screw Driver; Power Drill; 7/64" Drill Bit; 1"-4" Hole Saw; Jig Saw;
Hose Cutter; Wire Crimper; Teflon Plumbers Tape; Marine Sealant; Pencil.***



HEATER CRAFT®

Heater Craft 2 Year Limited Warranty

Heater Craft warrants your hydronic Heater* system to be free from defects in material and craftsmanship under normal use and service by the original consumer purchaser for a period of (2) two years from the date of purchase. This limited warranty does not apply if the system has been damaged by accident, improper installation, unreasonable use, lack of proper maintenance, unauthorized repairs or modifications, or causes not arising from defects in materials and craftsmanship.

Heater Craft's obligation under this warranty are limited to repair of the product at Heater Craft's production facility, or the replacement of the product at Heater Craft's option and at Heater Craft's expense. Any expense involved in the removal, reinstallation, or transportation of the product is not covered by this warranty. Prior to return of any product to Heater Craft customer must first call Heater Craft customer service (208) 687-4400 and request a return authorization number. This number must be marked on exterior of carton for easy identification. ***Warranty product received at Heater Craft without a Return Authorization Number may be returned at expense of sender.***

Send defective product to:

**Heater Craft
6672 Boekel Road
Rathdrum, ID 83858
Attn: Warranty Dept.**

Postage must be prepaid, and the original dated proof-of-purchase must be included. Heater Craft will not be liable for any damages sustained in transport due to improper packaging or handling. The acceptance by Heater Craft of any product returned shall not be deemed as an admission that the product is defective or in any violation of any warranty.

This warranty is Heater Craft's only express warranty of this product. No implied warranty shall extend beyond (2) two years from the date of the original consumer purchase. Heater Craft will not be liable for any damages, for loss of use of this product, nor for any consequential damages, costs or expenses.

Some states do not allow limitations on how long an implied warranty lasts or the exclusion of incidental or consequential damages, so the above limitations and exclusions may not apply to you. This warranty gives you specific legal rights and you may also have other rights not mentioned here that vary from state to state.

****Any Heater product subjected to direct saltwater use will have a (1) one year warranty. Direct saltwater use is defined as having saltwater circulating through the heater core pipes.***

Guidelines And Definitions

These instructions contain information that is important for you to know and understand. The information provided relates to safety issues for the installation and use of our products. To help you identify important information, we use the following system.

Warning –

Important Safety information – A hazard that may cause an injury, serious injury, or loss of life.

Caution –

Information for preventing improper operation of, or damage to equipment.

Note –

Information pertaining to the installation, operation, and/or maintenance of this product that you should pay special attention to.

Heater Craft will not be held liable for any accidental damage to persons and/or property resulting from any installation not completed within the specified guidelines started herein.

Heater Engine Installation

Warning – Hot engine coolant can cause severe burns! Never open the cap on a hot radiator. Some vehicles are equipped with electric fans that may start without warning even with the engine shut off. Wait until the engine has cooled completely before installation.

Heater Hose Identification

Output hose:

This hose would typically originate from the intake manifold or thermostat housing.

Return hose:

This hose would typically route to the water pump on front of the engine.

Note – Our heater units are equipped with with 5/8" or 3/4" heater core outlets. Please make sure that you have the proper size of heater hose and fittings for your installation. If the hoses and heater core outlets are not the same size, it is necessary to install a hose coupling with the proper hose sizes to prevent coolant leakage.

Engine Installation (replacing existing heater)

1. Loosen the radiator petcock or remove the lower radiator hose and drain the engine coolant into a clean suitable container.
2. Remove the existing heater.
3. Install the new heater (as outlined in the Heater Unit Installation section)
4. Connect existing hoses to the new unit. It makes no difference which side of core outlets to which the hoses are attached.

Heater Engine Installation *(Continued)*

Warning – Hot engine coolant can cause severe burns! Never open the cap on a hot radiator. Some vehicles are equipped with electric fans that may start without warning even with the engine shut off. Wait until the engine has cooled completely before installation.

Engine Installation (In series with existing heater)

1. Loosen the radiator petcock or remove the lower radiator hose and drain the engine coolant into a clean suitable container.
2. Remove the existing heater.
3. Route a hose from the existing heater unit to the new heater unit.
4. Attach the return hose from the existing heater unit to the new heater unit. It makes no difference which side of the heater core outlets to which hoses are attached.
5. Route a return hose from the new heater unit to the port where the return hose was removed from step 2.

Heater Unit Installation

1. Locate an area to mount the heater unit. Be sure the unit will be in an area with adequate air circulation.

Caution – The heater unit should be mounted below the level of the radiator cap. If it is mounted above this level it is possible for air to be trapped in-line. If there is air trapped in-line it will not allow the water to circulate efficiently and may cause the engine to overheat. If the heater unit is mounted above the radiator cap it may be necessary to install an in-line air bleed valve at the highest point.

2. Attach the brackets and mount the heater unit.

Note – It may be easier to make the hose and wiring connections before mounting the heater unit. Some heater models are equipped with adjustable brackets for different mounting situations.

3. Cut the water/coolant hoses to length, attach them with hose clamps, and secure them in place.

Note – The hose clamps should be fastened near the end of the hose to prevent the hose end from "mushrooming" and to prevent coolant leakage.

The hose can connect to either heater core outlet.

Be sure the hoses are not kinked or pinched in any way, and do not contact any moving parts, sharp objects or edges.

Venting

1. Locate the area(s) for mounting the hot air vent(s).

Note – Vents should be located so the heat will blow out in a desirable direction and allow easy access for adjustments. They should be in area(s) that are protected from gear or persons damaging them.

2. Drill or cut the proper size hole to match the vents that you are using

Heater Craft vents:

- H-504 Directional Euro Vent uses a 3" hole saw
- H-506 Directional louvered Vent uses a 4 1/4" hole saw.

3. Mark the location of the mounting holes and pre-drill.

4. Install the vents in place and attach the vent hose to them. Secure the vent hose with a plastic tie or hose clamp.

5. Route the vent hose to the heater unit.

Note – Vent hoses should be routed to keep from being damaged.

6. Cut the vent hose to length, attach with a plastic tie or hose clamp, and secure in place.

Note – Vent hoses should be kept short as possible for greater heating efficiency.

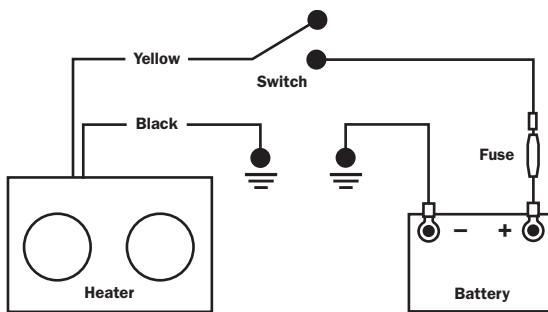
Wiring The Fan Motor

1. The wires from the heater unit are color-coded and correspond as follows.

Single-speed fan motor:

The fan motor and switch should be protected with an in-line fuse. The fuse rating should be greater than the amperage draw of the fan motor.

- Red or Yellow lead – on/off switch (power source)
- Black lead – ground

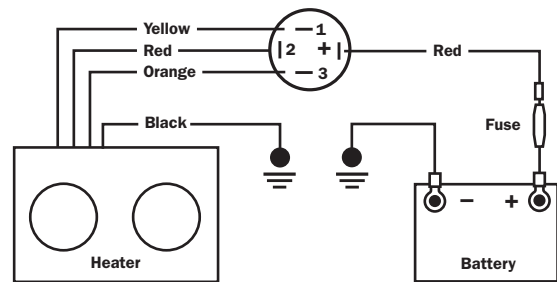


Single-speed fan motor

3-speed fan motor:

A four-position switch is needed for full operation. The fan motor and switch should be protected with a 15-amp in-line fuse.

- Yellow lead – Low speed
- Red lead – Medium speed
- Orange lead – High speed
- Black lead – ground



3-speed fan motor

Wiring The Switch And Switch Plate

1. The wires from the heater unit are color coded and correspond as follows:

Note – Route the wires away from moving parts and secure them from sharp objects or edges.

2. Route the BLACK wire to a ground source and attach.

3. Route the fan wires to the fan switch and attach.

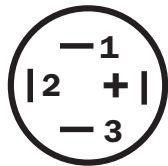
Part numbers: E-112 Switch and E-113 Mounting plate.

1. Locate a place to install the heater fan switch.

2. Drill the proper size hole for your installation:

- Without the switch mounting plate, drill a 7/16" hole.
- With the switch mounting plate, drill a 1 1/8" hole.
- To mount the switch plate, pre-drill a 5/64" hole for the mounting screws provided and mount the switch plate.

E-112 Switch Wiring Diagram



Terminal 1 – Yellow wire, low-speed
Terminal 2 – Red wire, medium speed
Terminal 3 – Orange wire, high speed
Terminal + – Red wire, power source

Testing The Installation

Warning: Carbon Monoxide (CO) is emitted from the engines' exhaust. Do not run the engine without proper ventilation.

1. Test the fan motor on all settings.

2. Check all hot-air outlets to make sure there are no air restrictions.

3. Refill engine-cooling system to the required level. Operate engine until normal operating temperature is reached.

Warning: Rotating fan blades can cause serious injury. Some vehicles are equipped with electric fans that may start without warning, even with the engine shut off. Keep hands, hair loose clothing, and tools away from all moving parts.

4. Shut off the engine and check the heater core, hose connections, and all hoses for coolant leaks.

5. After the engine has cooled, recheck the coolant level.

Questions, please call us For Technical Support (208) 687-4400, www.heatercraft.com

Operation Warning:

Carbon Monoxide (CO) is emitted from the engines' exhaust. Do not run the engine without proper ventilation. Do not run the engine in a confined space or where back drafting may occur. For more information about carbon monoxide refer to ABYC standards: A-7, T-22(1), and TH-23; or contact one of the following agencies.

American Boat and Yacht Council, Inc **410-956-1050**

United States Coast Guard **754-441-3287**
www.uscgboating.org

National Marine Manufacturers Association **313-946-6200**
www.nmma-medialink.com

Boat U.S. **703-823-9550**
www.boatus.com

Heater Craft
6672 Boekel Road
Rathdrum, ID 83858
Attn: Technical Support
(208) 687-4400
Fax (208) 687-9700
www.heatercraft.com