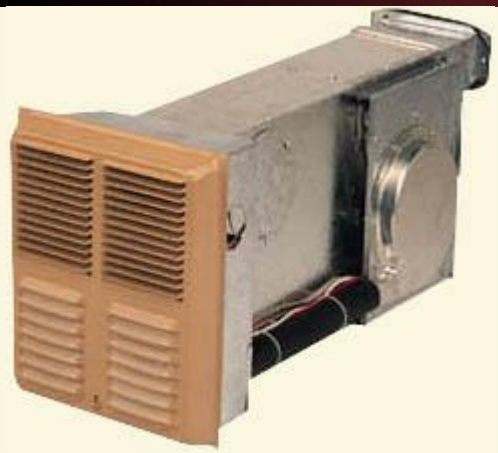
Installation of an Atwood Everest Star LP Furnace into a 1985 Volkswagen Vanagon Westfalia

After spending a lot of time on the internet scanning through a multitude of Westy websites I quickly came to realize that few options were available for compact liquid propane (LP) furnaces that vented exhaust fumes safely outside of the van. Possibly the most popular and also most expensive option is the Propex HS2000 heater weighing in at a hefty typical price of $750. While these heaters are extremely compact and use very little propane and electricity, I couldn't move past the price. Another option that a few sites mentioned was the Atwood Everest Star. This LP furnace produces 12,000 BTU's that should easily satisfy the Westy's small compartment while drawing only 1.8 or 3.4 Amps depending on which model you get (8012-II or 7912-II). The best part is the low price range of the high $200's to mid $300's. I settled on this route and picked mine up on ebay for $295. The additional parts of a thermostat ($16), copper pipe, T-connector, and wire added another $30. The cost of this furnace is less than half of the Propex heater while providing twice the BTU's. The only downfall is that more room is needed to accommodate its larger size. This was a tradeoff I was willing to make. Below are details on how I installed my Everest Star furnace. Hopefully these install steps will prove useful to others that decide to go this route. Here's to enjoying the open road in the wonderful Westy!

Specifications:

ATWOOD MOBILE PRODUCTS, LLC



Everest Star 7900 II Series and 8012II

- **Powerful**
- **Lightweight**
- **Flexible**

This furnace was carried by the American Medical Research Expedition to Mt. Everest and used in the record setting Pacific Crossing of the Double Eagle Balloon.

The dependable Everest Star II series builds on the 20-year success story of its predecessor with improvements such as: an electric shut-off on the gas valve, the new blower assembly that increases air delivery by 60%, and electronic ignition (no standing pilot).

Lightweight
Weighing in at just 23 pounds (10.4kg) and using only 1.10 ft^3 (31.11) of space, the Everest Star II can produce 12,000, 16,000 and 18,000 BTU's per hour of input heat. The compactness of the furnace optimizes space utilization and furnace placement flexibility.

Flexibility
Atwood furnaces are known for their flexibility and the new Everest Star II is no exception. It offers three different vent kits for cabinet depths ranging from 20 1/2" (524mm) up to 31 1/8" (813mm). It can be configured for front discharge only, discharge from both side ducts, or a combination of front and side ducts.

1. I installed the furnace in the small cupboard beside the fridge (Photo 1). Remove door, floor from the cupboard above, the electrical plates, and left wall board that partitions this compartment from the electrical outlets and water filler pipe (Photos 2 & 3).

Photo 1

Photo 2

Photo 3

2. Cut 3/8” off of bottom opening and left side of the door opening (Photo 4). This cut will fit the front dimensions of the furnace and still accommodate the table post and associated bracket mounted to the floor and back side of cupboard front (see bottom right corner of photo 3). A reciprocating or jig saw work well to make this cut (a small toothed blade will help avoid chipping the Formica). Place a cut line on back wall of compartment 7/8” below floor board of upper cupboard. Cut 2” up from the floor. **Be careful here!!!** Two wires and the water tank fill pipe run behind this panel so do not cut too deep. I used a utility knife and tapped it with a hammer to make a shallow cut (Photo 5). Cut the

insulation along the right side and push it off to the water filler pipe side (left) so that it remains tucked safely away from the furnace.

Photo 4

Photo 5

3. Next, shorten the back of the furnace to allow it to slide slightly farther back against the curved outer wall of the van. This is scary, no returns at this point. I marked the cut line ¾" over from the bottom back end and ran it diagonal as close to the fan casing as safely possible (Photos 6 & 7). A reciprocating saw with a metal blade was used to make this cut and an extra set of hands helps to hold the furnace steady.

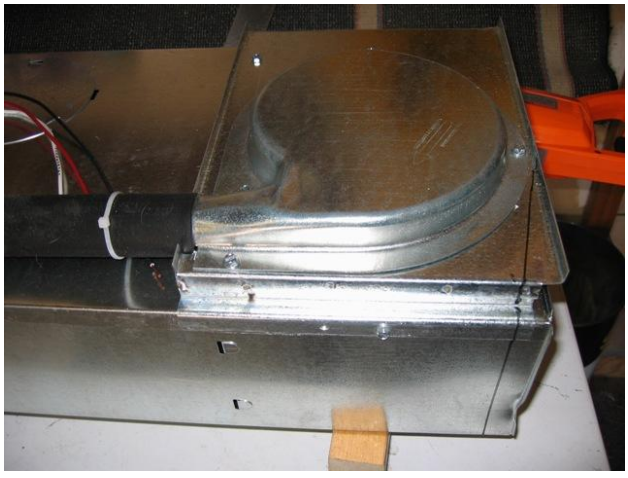


Photo 6

Photo 7

4. Test fit the furnace in the compartment to insure that your cuts allow a good fit. Trace the back corners of the furnace on the inside of the van wall, subtract the distance in from the edge of the furnace that the exhaust cover rests on the back of the furnace and trace this on the inner van wall. Remove the furnace and drill a hole on the top two corners. Then trace the exhaust manifold on the outside of the vehicle using the two drill holes as guide points (Photo 8).

Photo 8

Use a hole saw and drill to place an opening large enough to accommodate a reciprocating saw and then cut the remainder of the opening out (Photos 9 & 10). This is really scary!! Cutting a whole in your Westy!!!

Photo 9

Photo 10

5. Drill a hole through the floor on the left side of where the furnace will sit but just right of where you plan to position the partition that you removed (that is if you plan to put it back in). Be aware of where your propane tank rests below so as to avoid it. Also, create a wood spacer block for the back of the furnace to rest on and screw this down to the floor. I cut a gap out of the partition wall to provide great air intake for the fan at the back of the furnace but liked the idea of putting the partition back in just to support the cupboard floor above when reinstalled (Photo 11).

Photo 11

Carefully feed enough of the copper pipe through the floor allowing for a gradual bend to where it will connect at the front end of the furnace while avoiding kinks in the line. Underneath the van bend the copper line towards the front of the vehicle where you will need to install a T connector (Photos 12 & 13). A 5 foot length of 3/8" copper pipe worked perfect for this application. I fastened the line to the undercarriage using a small rubber insulated clamp (Photo 14).

Photo 12

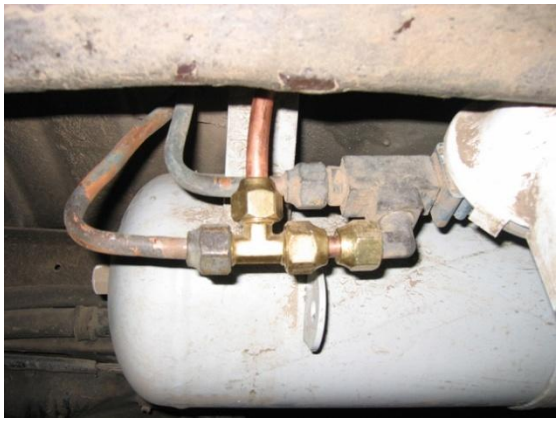


Photo 13

Photo 14

6. Run three wires (red, black, and white) behind the fridge and the cabinet to its right. I decided to place the thermostat just up and behind the headrest of the drivers seat on the end of the bunk support (Photo 15) so that I could reach out of the upper bunk on cold mornings and push the thermostat up while staying in bed. Thus, I ran the wires up the back right corner of the cabinets below the sink, into the frame of the vehicle above and behind the sink and finally fished them out of a small hole I drilled just below the ceiling. Some people affix the thermostat to the closet wall which could be reached if you were sleeping on the lower bed.

Photo 15

7. Finally, you will need to make a spacer board that takes up the remaining ¾" to 1" left between the cabinet front and the furnace mounting flanges (distance may vary a bit between Westy's). Others have cut an old Westy table for this spacer which looks nice. However, I wanted to maintain the functionality of my outlets and thus made one from some scrap wood. I painted the spacer frame brown to match my Westy's interior trim and fastened it to the cabinet face by running the screws from inside the cabinet into the back of the spacer frame. Finally, I slid the furnace back into place, attached the wires and LP line, and placed two screws through the furnace mounting flange into my spacer frame (Photo 16). Because the back seat opens and folds down just above the furnace I wanted to make sure that it did not get too hot when the furnace ran for extended periods. As a result, I fastened an L shaped piece of roof flashing (typically used around chimneys) to the bottom of the seat to act as a heat shield (Photo 17). One last addition is a vent accessory for this furnace that you can pick up cheap and directs the air away from the bench seat out into the main cabin area (Photo 18). This feature is particularly nice when the back seat is folded down into a bed. **NOTE: Test-run your furnace outside with the doors and windows open on the van. The instructions indicate that a coating will burn off during the first use and you don't want to inhale these fumes. Let the furnace heat up and run for a while to take care of this concern. It is also a good idea to test all propane fittings for leaks.**

Photo 16

Photo 17

Photo 18

8. I have used the furnace several times in March in Colorado and Utah during the evenings and it worked very well. I turn the thermostat down at night (if you are a light sleeper you may hear the furnace running as it makes some noise like any other camper furnace) and flip it back up in the morning before crawling out of bed. The amount of propane use was minuscule. With a new kid on the way I will be running the furnace on a low setting throughout the night. The draw on the auxiliary battery is also small, especially if you drive between evenings and recharge it. I put an Odyssey 1200 which fit perfect and has great specs. After two evenings of running the furnace and driving very little the battery was still cranking strong. I hope this information helps other Westy folks stay warm and allows you to get out during the colder times of year. Happy travels!