

ANNUAL PREVENTATIVE MAINTENANCE INSPECTION

Well fall is almost upon us and it's time to once again think about the cooler weather that is on its way. It will only be a short time until we must fire up the furnace for those cool evenings.

The following is a list of system checks for your furnace and information pertaining to your LP supply. This information is taken from an Atwood furnace-training manual.

The following preventive maintenance and safety checks should be performed by a qualified RV technician once a year, or more, depending on the use of the furnace. Failure to properly maintain the furnace may void the furnace warranty and can result in unsafe furnace operation. Preventive maintenance is not covered under warranty.

WARNING

- o Installation, repairs and preventative maintenance should be done by a qualified service person only.
- o The furnace should be inspected before use and at least annually by a qualified service person.
- o Frequent cleaning may be required due to excessive lint from carpeting, bedding material, pet hair, etc. It is imperative that control compartments, burners and circulating air passageways of the furnace be kept clean.

WARNING

- o Label all wires prior to disconnection when servicing. Wiring errors can cause improper and dangerous operation. Verify proper operation after servicing.

AIR WHEEL

The air wheel should be clean and clear of obstructions. Starting the furnace with something in the blower will damage the wheel, making replacement necessary.

BURNER

The Burner requires no adjustments, but should be inspected annually. Burners should be cleaned with a wire brush to remove debris and corrosion build up.

COMBUSTION CHAMBER

Check the air intake and flue areas of the furnace for internal obstruction chamber, such as wasp or bird nests. The life of the combustion chamber is a function of the amount of time that the furnace has operated. Therefore, it is essential to inspect the chamber for cracks and holes. Have the chamber replaced if it has any cracks or holes - this condition is not field repairable. Chamber should be cleaned, if obstructions are present, by removing the chamber and flushing the unit out with water.

CONTROL COMPARTMENT

Clean the control compartment to remove dirt and lint.

DUCTING

The heat ducts should be clean and clear of obstructions. Check for proper duct connection. Any ducts disconnected from the furnace or outlets must be reattached.

GAS PRESSURE

Using a U-tube water manometer, with the furnace and all of the gas appliances operating, the pressure should be 11" W.C. (27mbar) and not more than 14"W.C. Improper gas pressure can cause the furnace to work inconsistently and create unbalanced combustion.

GAS SUPPLY SYSTEM

Perform a pressure-drop test according to current ANSI standards, to insure that there are no gas leaks.

GASKETS

Inspect all gaskets for tight seals. Do not reuse gaskets - always replace with new.

GENERAL

Check that the physical support of the furnace is sound and without sagging, cracks, gaps, ect.

MOTOR

The motor is lubricated and permanently sealed. It requires no oiling. Brushes and armatures are not replaceable.

RETURN AIR

The return air passage should be clean and clear of obstructions and meet the minimum square inches as specified in the installation instructions. Make sure combustibles are not stored in the furnace compartment. Filters are not recommended at these air passages.

VENTING

After checking and clearing, if necessary, the draft cap assembly must have the proper overlap between the exhaust tube and the furnace chamber tube. Any air leakage at these joints may cause improper combustion. Draft cap assembly must overlap no less than 1 1/4"(32mm), and be positioned against the door screen for proper function.

VOLTAGE

Voltage should be between 10.5and 13.5 VDC at the furnace during operation. The power at the furnace needs to be checked with each of the following power sources when applicable: generator, battery, and converter. Low voltage can cause the furnace to overheat and cycle. High voltage can cause unbalanced combustion, and excessive motor wear.

WIRE CONNECTIONS

Check the furnace for loose or disconnected wires.

GAS PRESSURE

A furnace is a consumer's friend when the outside temperature gets colder. Unfortunately though, cold is an enemy of LP gas. The BTU capacity of LP per volume decreases as the outside temperature gets colder. Therefore, based on how full the LP tanks are, the ambient temperature outside and how many BTU's the furnace is, there may not be enough gas to sustain ignition on the furnace.

Using the charts below, let's say that a 40,000 BTU furnace won't fire up, and we also know that the 65 lb. LP bottle on the RV is 40% full and it is 0 degrees F. outside. One's first thought might be that the burner or valve is bad. However, if we use the chart, the vaporization capacity of the tank in these conditions is only 38,500 BTU's. The furnace is not going to perform very well because there is insufficient BTU capacity in the tank.

If you were to put an insulated fire resistant blanket over the tanks and a 75 watt light bulb under that, you would probably raise the temperature of the bottles 10-20 degrees and almost double the BTU capacity of the tank. This in turn would allow the furnace to operate properly. So keep in mind that a furnace problem is not always a component problem.

20 lb. Bottle (*30 lb. Bottle multiply X 1.40)					
% Full	+20	0	-5	-10	-15 Degrees
60%	36,000	18,000	12,750	8,500	4,250
50%	32,400	16,200	12,150	8,100	4,050
40%	28,800	14,400	11,400	7,600	3,800
30%	25,200	12,600	10,450	7,300	3,150
20%	21,600	10,800	8,100	5,400	2,700
10%	16,200	8,100	6,075	4,050	2,025

65 lb. Under Mtd. LP Gas Tank BTU available at

% Full	+20	0	-5	-10	-15 Degrees
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60%	95,600	47,800	36,000	23,900	12,100
50%	86,000	43,000	32,250	21,500	11,750
40%	77,000	38,500	29,250	19,250	9,625
30%	68,000	34,000	25,500	17,000	8,500
20%	58,000	29,000	21,750	14,500	7,250
10%	43,200	21,600	16,200	10,800	5,400

This information is meant to be a guide for maintenance, always visit a Certified Technician for repairs.

See you on down the road!