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Heat Pump Operating Instructions & Warranty information

Warranty: Your new system is warranted 1 year against any defect including all parts and labor. In addition, your system has been registered with the manufacturer for a 10 year parts warranty (includes 1st year). Just call our service number 215-956-9400
Note: You MUST have spring and fall pre season checks performed each year by us or this warranty reverts to a 5 year parts warranty.

Heat Pump Operation

A) Most important for efficient operation:

1) Avoid frequent thermostat adjustments.
2) Keep a clean filter.
3) Keep the outside unit clean and free of obstructions.
4) System MUST be checked every spring and fall by a Certified Heat Pump Mechanic.
5) Recommended fan setting "ON".
6) **NOTE!;** All central air conditioners must be run continuously once the weather is warm enough to need air conditioning. To avoid high operating costs, and condensation on/ inside the ductwork and registers, central units cannot be run like window air conditioners and be shut down at nights or unoccupied periods or you will risk condensation damage. Its best to turn it on and leave it on and keep all windows/ doors shut. It is OK to raise the temperature to reduce the run time. Note: Condensation will form on the ductwork for up to 24 hours the first time any system is turned on. This is normal and it will go away when the unit has run long enough to reduce the humidity.
   You should turn on the air conditioning any time the outdoor temperature is over 80 degrees OR if the outdoor humidity goes over 60% RH during the summer months.
7) Temperatures in living areas will normally be within 2 degrees of the thermostat set point when the unit is operated normally. Utility and non living areas (closets, foyers, basements, etc. may vary more than 2 degrees)

B. Heat Pump Method:

1) The unit absorbs heat from outside air* and transfers it to the refrigerant circuit to transport to the indoor unit. The indoor unit transfers the heat to the air in the duct system for distribution to the building. *Geothermal units absorb their heat from the ground or water.

C. Efficiency:

1) On an average day (45 degrees), heat pump produces 2 to 3 times more heat than ordinary electric heaters
   for the same amount of money. Geothermal heat pumps can be 4 times more efficient than electric heat. Heat pumps are one of the most economical ways to heat a home. The cost of operation is lower than most gas heat and oil heat systems and uses a renewable energy source.

D. Characteristics:

1) "COOL - AIR"
   a. The average fossil fuel furnace produces approximately 110-120 degrees at the vents. On an average day the heat pump produces 90-95* degree temperatures at the vents. (*100 to 105 for geothermal systems)
   b. This air will often feel luke warm or even cool against your skin, but since the room is approximately 70 degrees there is a definite heating affect. Try to avoid placing occupants directly in the air stream if possible.

c. Since the unit operates at lower temperatures, it is totally normal for the system to run all the time when the outside temperature goes below 35 degrees. On non-geothermal units, the supply duct temperature will drop as the outdoor temperature drops.

E. Supplemental heat:

1) When the outdoor temperature decreases there is less heat outside for the heat pump to gather up and bring inside, the need arises for supplemental heat. Electric heat is the standard supplemental heat. Electric heat is in the indoor blower unit and can be turned on at any outside temperature by turning the thermostat up. Normally, the heat pump should be able to handle the entire heating needs of the house until the outside temperature drops below 35 degrees.
2) For this reason, it is very important that the thermostat is left at one temperature setting. Constant adjustment not only increase your electric bills but shortens the life of the compressing unit as well. If setback is desired, a special electronic clock thermostat must be used.
3) With electric supplemental heat, the heat pump continues to run the whole time that the supplemental heat is operating.
Gas, propane and oil furnaces can also be used for supplemental heat.
At current prices for oil and gas, you will find that the heat pump is the most economical source of heat by a large percentage.
NOTE: If you have gas or oil for supplemental heat, you will notice that the heat pump will shut down when the gas or oil supplemental heat is operating.
4). If you must adjust the thermostat, the correct procedure is:
1. Turn switch to "OFF".
2. Change setting to desired temperature.
3. Wait five minutes before turning switch back to "Heat" or "Cool".
4. Night setback is not economical for heat pumps with a standard heat pump thermostat. Even though you may save money during the night, as soon as the thermostat is set "up" the next day, you are turning the electric strip heater on as well as the heat pump and your savings are more than totally lost. Only if a programmable electronic thermostat is installed is night set back economical. They are designed to use the heat pump for recovery instead of the supplemental heat.

F. Defrost cycle:

1) When the temperature falls below 45 degrees, frost can form on the outside coil.
2) When the frost gets too thick the unit will automatically remove it.
3) When the unit enters a defrost cycle it makes a slight whooshing sound. The outdoor fan will not be running and the unit makes a humming sound while it is defrosting. When unit has completed the defrost cycle it is usually accompanied by a louder whooshing sound and a cloud of steam* appearing at the unit, this is normal. The unit should not defrost more than once an hour under normal weather conditions. * It is steam, not smoke. Please do not call the fire department.
4) Extreme weather conditions such as ice storms or very heavy snows may overwhelm the defrost systems ability to keep the unit clear. After such conditions occur you should inspect the outdoor unit and clear it of snow and /or ice if need.
5) Anytime the heat is on there may be water or ice around the bottom of the heat pump.
6) Geothermal units never need defrosting so they do not have defrost cycles.

G. Maintenance:

1) Filter must be serviced monthly without fail.
a. Washable foam type: wash with hose and detergent.
b. Disposable: Throw away filter and replace with new one. Note! Use of high efficiency 1" thick filters may cause problems. These filters are very restrictive and may harm your system.
c. The outside unit should be kept clean, and free of any obstruction. The coil should be hosed out several times each summer to remove grass clippings, leaves, dust and insects, etc.

NOTE! Regular maintenance by a trained technician is required by the equipment manufacturers for extended warranties to be honored. Replacing the filter is only 1 item on a 30 item checklist!

H. Other:

1) The entire system should be checked every Spring and Fall by a certified heat pump mechanic, to insure lasting efficiency and unit life.
2) Keep any heat producing devises (space heater, T.V., lamps) away from thermostat.
3) Do not put any bush, tree, flower bed, wood pile, etc. within 4 feet in any direction of the outdoor unit. This is to permit room for air flow and service. Keep snow clear of unit.
4) Grass should be kept low and nothing is to be stored behind the outdoor unit. Mulch must be kept low and never contact the unit base or it will rot.

Failure of the heater or air conditioner to operate:

NO HEAT - DO THE FOLLOWING BEFORE CALLING FOR SERVICE OR THERE WILL BE A SERVICE CHARGE.

a. Set the thermostat to the highest setting and set "MODE" switch for "HEAT".
b. Set thermostat fan switch to "ON".
c. Make sure filter is clean and blower door is on tight.
d. Make sure all switches and circuit breakers are "ON".
e. For gas furnaces, make sure the pilot is lit if it has one.
(older units have pilots. Lighting instructions are inside heater. Newer units have electronic ignition)
*NOTE: It is impossible to check a circuit breaker by looking at it. You must turn it to "OFF" and then return it to "ON". to be sure. Also, if it is the first time that the unit has been turned on this season, it may take as long as 24 hours of running before the unit shuts off.
Try to anticipate extremely hot weather and turn the system on the day before its needed.

NO AIR CONDITIONING: (same as no heat, except)

a. Set thermostat mode switch to "COOL" and set as low as possible.
b. Air conditioner must run several hours (8 hours) before the temperature will start dropping.
c. Do not run the air conditioning when outside temperature is below 65 degrees.

GENERAL TEST: Heating

a. We recommend testing the heating the first day that the temperature goes below 50 degrees. Set thermostat mode switch to "HEAT" and set as high as possible. After the heater has been running approximately 30 minutes, the larger of the two copper tubes leaving the air conditioner should be hot** to the touch. USE CAUTION. CAN CAUSE BURNS!
Warm air should be coming out of the vents too.
If the pipe or vents are cool or cold follow the failure check list.
b. Some heat pumps have a safety switch inside the unit. Consult the owners manual.
c. Leave the thermostat alone as much as possible to reduce wear on the unit and keep operating costs as low as possible
d. The heater burner and fan operation should be tested before the cold weather arrives.
e. Keep any heat producing devise such as a space heater, television, and lamps away from the thermostat.

** this test will not work for hybrid (oil or gas backup) units. The pipe will be cool anytime the backup unit is running

GENERAL TEST: Cooling

a. We recommend testing the air conditioner the first day that the temperature goes above 75 degrees. Set thermostat mode switch to "COOL" and set as low as possible. After the air conditioner has been running approximately 30 minutes, the larger of the two copper tubes leaving the air conditioner should be cool to the touch and warm air should be coming out of the unit. If the pipe is warm or the air coming out of the unit is not warm, follow the failure check list.
b. Some air conditioners have a safety switch inside the air conditioner. Consult the owners manual.
c. Leave the thermostat alone as much as possible to prevent compressor failure. If you must change the setting, first turn the thermostat switch "OFF", then make your adjustment, then after waiting 5 minutes return the switch to "COOL". The same procedure does not have to be followed for the heater.
d. The heater burner and fan operation should be tested before the cold weather arrives.
e. Keep any heat producing devise such as kerosene heater, television, and lamps away from the thermostat.

We highly recommend that you consider purchasing one of our planned service agreements so that you can be sure that your equipment will receive the best possible care. Please call our office today for a free

REPAIR SERVICE:

1). If after performing the above tests and instructions you still have a problem, please call for service.

2). Our office is open from 8:30 to 4:30 Monday through Friday and we employ an answering service to take after hours calls. We prefer to get calls as early in the morning as possible to permit efficient scheduling.

3). We expect you to use any supplemental heaters at your disposal, (fire places, space heaters, etc.), to help maintain the house temperature.

WARNING: Any repairs or modifications to the heater and or air conditioner. except by our personnel could affect your warranty, unless authorized or agreed upon this contractor. We reserve the right not to service any unit altered by others. This includes humidifiers, and air cleaners etc..

OPTIONAL DEVICES AVAILABLE:

Humidifiers, air cleaners, programmable thermostats, wifi remote access thermostats, UV air sanitizers, attic fans, extended warranty plans, maintenance and service agreements. If we can be of any service please feel free to call, our professional staff is waiting to serve you
We accept all major credit cards.

F) DUCT BALANCING:

A. Duct balancing is a common sense approach to reducing air flow to areas receiving too much air and increasing it in rooms not receiving enough. If there is a problem, follow these instructions.

1). Make sure filter is clean. (Filters should be checked monthly).
2). We recommend that the fan switch be left "ON". **NOTE**: Up to a 5 degree difference between rooms is normal. Also areas such as basements, foyers and laundry rooms are not expected to be the same as the rest of the building.
3). Be sure the register(s) are open and not obstructed by furniture in room(s) in question.
4). Shut the registers in the non-affected areas and especially in the area near the thermostat.
5). If this causes a problem in these areas open the register partially. Remember even a register that appears to be closed will often leak a significant amount of air.
6). If the area near the thermostat is unsatisfactory to begin with, the only action that can be taken is to readjust the thermostat in the proper direction.
7). If there are dampers in the duct system they should be adjusted the same as #2 above.
8). Consider zoning the system into 2 or more zones and each with its own thermostat. (Please call for a free estimate).
9) Rooms over unheated areas (such as garages) have special characteristics. If these rooms are not comfortable it becomes even more important to run the fan on "ON". If it is not run on "ON", the room maybe cold even though there is sufficient air leaving the vents when the unit is running. This is due to the thermostat location being in a more comfortable area of the house. This will cause the unit to shut down before the problem room is comfortable. In some homes small electric heaters are installed to supplement the heat in these rooms. If your home has one, it should be turned on as soon as the main heating system is turned on.

Do not forget to do these proactive measures to begin with.

1- Close drapes on sunny windows in the summer and open them in the winter
2- Do heat producing activities such as clothes drying during the coolest times of the day in the summer.
3- Turn off heat producing appliances such as lights and TVs when not in use especially in the summer

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