

OIL TANK WOOD STOVE

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With the shortage of heating fuels, many homeowners and farms are looking for an alternate source of heat. Wood, one of our renewable resources is an excellent choice. In most sections of the northeast wood is in plentiful supply. Wood is a clean fuel and, when properly burned, produces little smoke or dust.

Wood that is well seasoned contains about 15 to 20 percent moisture by total weight. It is usually sold by the cord stacked in a pile 4 x 4 x 8 feet. The content of a cord varies considerably depending on the length, size and shape of the individual logs as well as how they are stacked.

A cord of the heavier hardwoods weighs about two tons and has approximately the same heating value as 200 gallons of domestic fuel oil or one ton of bituminous coal. It will produce about 20 million British Thermal Units (BTU) if well seasoned and about 17 million BTU if green. The difference is the heat used to drive off the moisture.

A wood stove that will supply a large quantity of heat for greenhouses can be made from a 275 gallon fuel oil tank (Figure 1). This tank has a radiating surface of about 50 square feet and if kept well-fired is capable of producing up to 500,000 BTU per hour. Four foot long pieces of wood may be used with this stove. The stove can be used to heat large areas by mounting a 12 to 18 inch fan about eight feet away and directing the air stream over the top of the stove. In greenhouses several fans can be arranged to move air down one side and back the other. This sets up a horizontal air flow pattern and helps to maintain a near uniform tempera-

ture throughout the building. NOTE: *This stove is not recommended for heating the basement of a house.*

This oil tank wood stove is built using a 275 gallon oval fuel oil tank. These tanks can be purchased new but a used drum is satisfactory. Sometimes a tank that has developed a few small holes and cannot be used to hold liquid can be obtained at almost no cost. Any used tank should be thoroughly drained and then cleaned with a strong detergent and water. Plugs should be put in all pipe openings. Doors and chimney can be cut using a cold chisel and a heavy hammer. Do not use a cutting torch or electric welder. This could cause an explosion of any remaining vapor.

The tank should be mounted on pipe legs with the bottom of the tank being about one foot above the floor. Pads should be welded to the bottom of the legs if the stove will be set on the ground or a wood floor.

The ideal door is a cast iron furnace door with damper. If this cannot be obtained, a chimney cleanout door or just reenforcing the steel cut out of the tank end will do. Edges of the metal should be ground or filed smooth. Fire brick or a three inch layer of sand should be placed in the bottom of the stove to prevent the tank bottom from burning through.

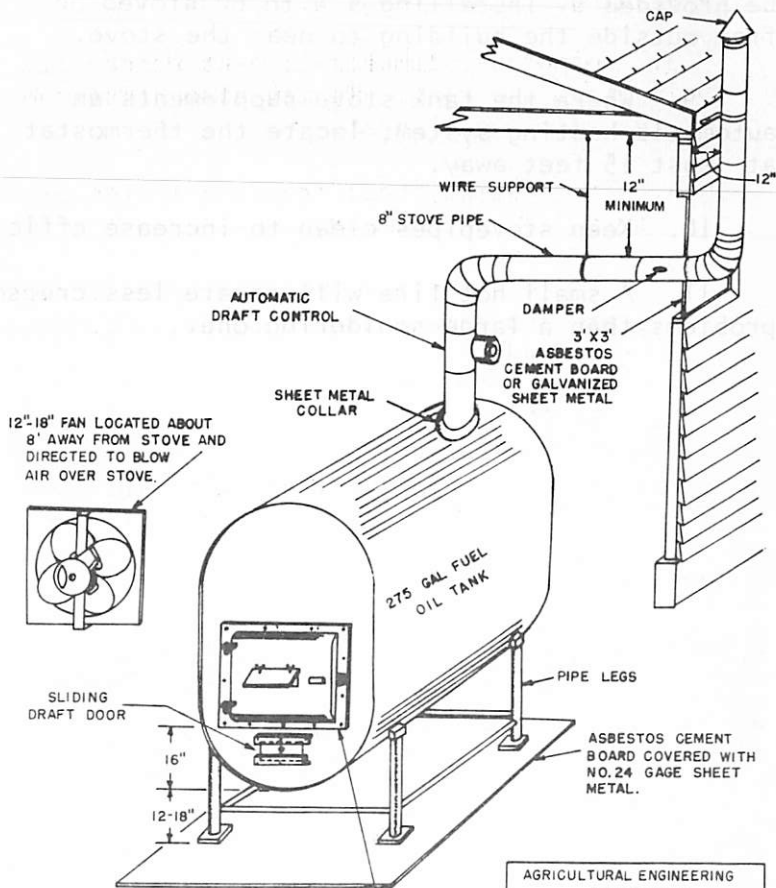
The tank stove should be installed to meet state and local building codes pertaining to heating equipment. In general, the stove should not be placed any closer than three feet from any combustible material. If it is to be placed on a wood or other combustible floor, the floor should be covered with 3/8 inch asbestos-cement board covered with No. 24 U.S. gauge sheet metal. This covering should extend at least six inches beyond all sides of the stove and at least 18 inches out from the front where the fuel supply door is located.

One factor that affects the efficiency of the stove is the length of stovepipe used. The pipe should be long enough to radiate as much heat as possible without cooling the gases to the point where creosote builds up. A stovepipe length of 10 to 15 feet is desirable.

IMPORTANT: The pipe should not be placed any closer than 12 inches from any combustible material. Where possible it should be connected to a chimney flue. If it is necessary to place it through a wooden wall, a three foot square hole should be cut in the wall and combustible material removed. This should be covered with 1/4 inch or 3/8 inch asbestos-cement board and a hole for the stovepipe cut in the center of the board. If the chimney is to be placed through a window, remove the sash and replace it with asbestos-cement board or sheet metal. The stovepipe should be securely attached to the outside of the building with stand-off brackets that keep it at least 12 inches from any combustible material. It should extend at least three feet above the highest part of the roof and be covered with a stovepipe cap. A damper and automatic draft control should be used.

To get as much heating value as possible from the wood that is burned, the following rules should be observed.

1. Use dry wood for more heat and less creosote build-up.
2. Wood should lie flat in the fire box.
3. Pack wood in the firebox with narrow spaces between pieces.
4. Keep a layer of ashes in the bottom of the firebox for insulation.
5. Do not pile wood up near the smoke outlet as the gases are drawn up the chimney before they are burned.



FUEL SUPPLY DOOR- USE DOOR FROM OLD COAL OR WOOD FURNACE, CAST IRON CLEAN OUT DOOR OR SHEET STEEL REINFORCED WITH ANGLE IRON.

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6. Use large pieces of wood to hold the fire overnight.
7. When burning dry wood, admit one-fifth the air at the base of the fire and four-fifths around and above the fire.
8. In tight buildings such as plastic covered greenhouses, air for combustion should

be provided by installing a 4 to 6" stovepipe from outside the building to near the stove.

9. Where the tank stove supplements an automatic heating system, locate the thermostat at least 15 feet away.

10. Keep stovepipes clean to increase efficiency.

11. A small hot fire will create less creosote problems than a large smoldering one.

