

# WHAT IS OIL DOWNSIZING?

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One morning the oil furnace and boiler companies woke up to discover they were the Canadian bad guys -- everybody was condemning oil burning heating and the government was even paying people to scrap them. The oil furnace and boiler companies had to admit that they had been pretty contented and lazy up to that point; with more oil furnaces than any other kind in Canada at the time, they hadn't done much more about mileage than Chrysler before the energy efficient push in cars. By high noon on that same shocking day (the one we call the late 1970's oil crises) they had dusted off all kinds of old research projects. Low and behold, there were suddenly a variety of legitimate attachments available for oil furnaces and boilers which can effectively make a big one smaller and make all of them much more efficient.

## NOT SO LONG AGO - ALL FURNACES AND BOILERS WERE OVERSIZED

In an effort to be sure that your heating appliance could fully heat your house on the coldest day of the year, furnaces were purposefully oversized for the normal requirements of the house. In addition it wasn't until the 80's and 90's that we started to build somewhat energy efficient houses. With new housing or energy efficient renovations, we need much less heat than was installed years ago. The cold spells have less effect on the house and just in general the energy requirement has been reduced. So you do not want to replace that old oil furnace or boiler with something the same size. You must get a heating contractor to look at your recent fuel bills, take into consideration your energy efficient efforts with windows, doors and insulation. He can no longer just calculate a furnace size by the square footage of your house. And with programs like Dual Energy or Tri-Energy controllers, an old oil furnace will be called upon for heat so rarely it they can limp along for many years without costing you a lot of money.

## Downsize the old appliance or buy a new energy efficient one

For a while it was difficult to justify installing a new oil furnace to replace the old one -- the word was "Off Oil". Today, if oil really is the most available fuel in your area, you can now find new high efficiency oil furnaces. If you have a very old furnace, with the present and future cost of oil you should probably scrap it, even if it is still heating. It is simply costing you too much in fuel. But if that old oil appliance has a number of years life left in it, you might want to consider not just tuning it up, but using it less with Dual Energy and Tri-Energy options as well as DOWNSIZING it. Here's how:

- Clean it inside and out and tune it up with a service call.
- Have the service man reduce the size of the oil nozzle, cutting back on the amount of oil it burns, and effectively making it a smaller furnace. Some efficiency is lost in the furnace itself but greater efficiency is gained in the whole system by operating closer to the system's maximum: the system now better fits the house.
- Increase the fan speed to draw more heat out of the furnace. This should be balanced with changes in the nozzle size to maintain sufficient flue temperatures. (Increasing the water pump speed on a water system will have the same effect, but is not usually practical to do.)
- Increase "fan-on" time before and after operation to draw more heat from the furnace.
- Install burner "retention heads" to burn the oil more completely and squeeze out all the heat possible.
- Install a solenoid valve on the oil line to eliminate losses during start-up and shut-down" (A "clutch coupling" does the same thing -- don't bother with both.)
- You can save energy by installing automatic dampers designed to stop flue losses when the furnace is not in operation. Do not use them if the chimney is a critical part of your ventilation system.

--Chimney heat reclaiming devices or "flue heat exchangers" can effectively recover much of the heat lost up the chimney of an inefficient furnace. They become uneconomical and dangerous if not cleaned regularly and if your flue temperatures are already low because of a smaller nozzle and faster fan.

-- Ensure that after having sealed the house well you have provided enough air for easy combustion in the furnace. An air-starved furnace compensates by gobbling up oil.

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