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# 1998 Technical Bulletins

**For More Information, Contact Steam Way International at (303) 355-3566**

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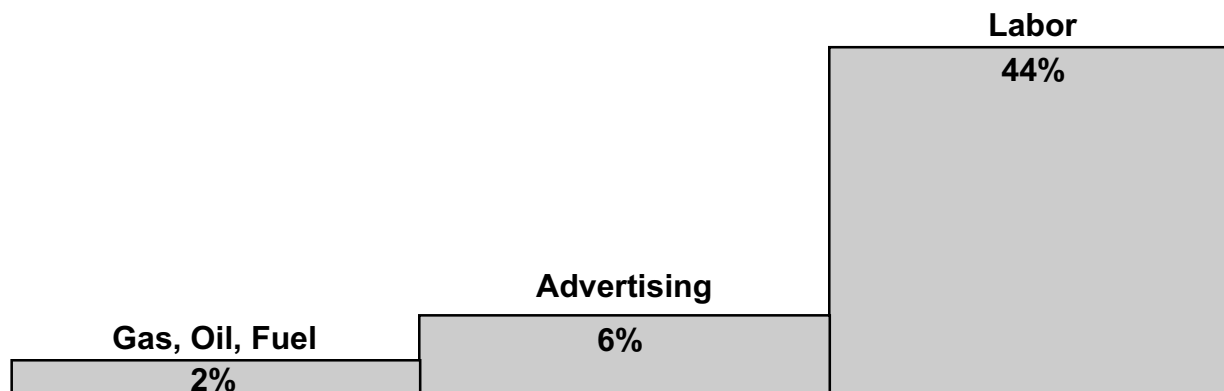
## HOW MUCH COULD "FREE HEAT" REALLY BE COSTING YOU?

Truck mounted carpet cleaning advertisements and brochures are full of statements today announcing the advantages of "free heat". Free heat is supposedly the result of using various types of heat exchanger systems to heat the cleaning solution during the carpet cleaning process. The concept sounds simple enough; by using radiant heat produced by the power plant to heat the solution, there is allegedly no cost to heat your water. The key question for the professional cleaner is not whether a heat exchanger can heat water, but rather is it really "free"? Let's look at a few facts concerning the cleaning production of the various types of heating systems.

### WATERFLOW AND HEAT - G.P.M., P.S.I., AND SUCH

Part of the cleaning process in hot water extraction cleaning relies on the dilution and dissolving ability of water on soil, as well as its ability as a carrying agent. The cleaning process requires the physical flow or movement of water. Most cleaners are familiar with the measurement of waterflow in P.S.I. (pounds per square inch). However, by reducing the size of the jet tip, we can maintain P.S.I. This, however, costs us waterflow. Waterflow is measured in gallons per minute (G.P.M.). The ability of any heating system to attain, and maintain higher solution temperatures directly relates to waterflow. In order to maintain solution temperatures with a heat exchanger system, you have to reduce your waterflow. When you reduce your waterflow, you reduce your cleaning capability. In soiled carpeting, more wand passes are required to do the same job in cleaning with a heat exchanger system compared to a fuel oil fired system. Is reduced productivity free? Hardly! In order to clean efficiently and as fast as

**Chart 1      What Is Your Biggest Expense?**



**PRESENTED AS A PERCENTAGE OF TOTAL EXPENSES**

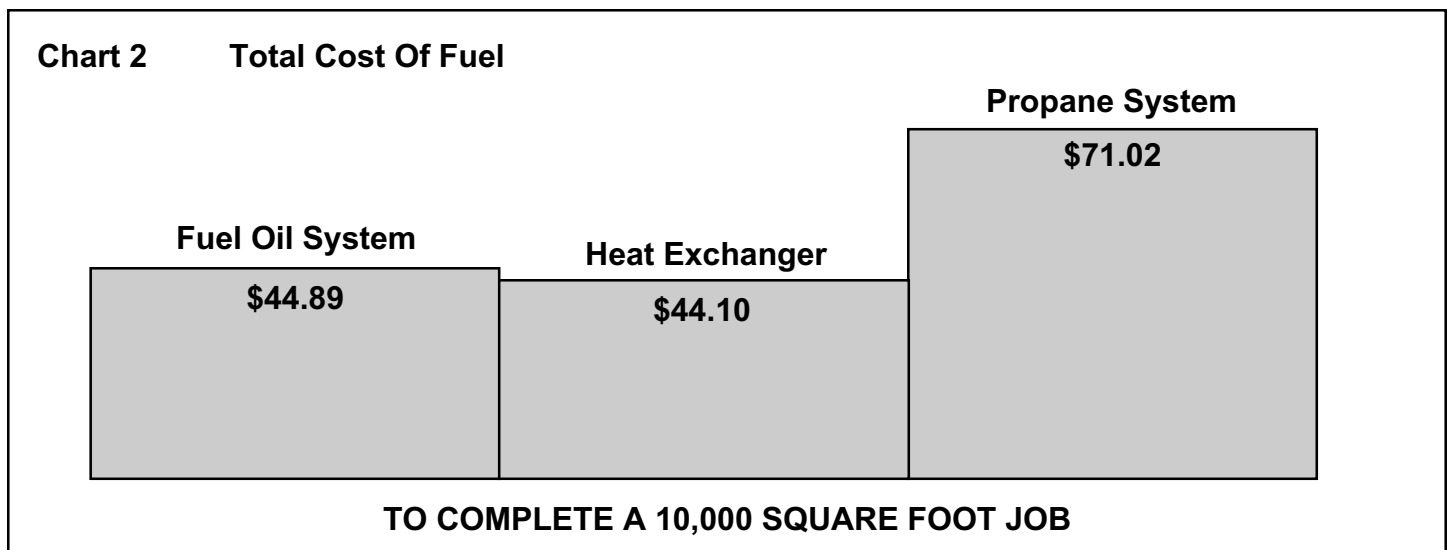
possible, an on-demand fuel oil fired heating system is the best choice. Of course, your vacuum recovery system should be in balance with your solution waterflow. A direct driven positive displacement blower will do this.

### WHAT IS YOUR BIGGEST EXPENSE?

Any professional that has investigated their cost of doing business knows the single biggest expense of any carpet cleaning job is labor. The costs of fuel to heat the water is insignificant in comparison to its advantages in the cleaning process. Labor costs average around 35 to 45 percent of income. Fuel expenses range around 2 to 3 percent and that includes running the power plant itself! When I use an on-demand fuel oil heating system to heat the water (and keep it at) a more productive temperature, chemical usage is reduced, drying times are reduced, and chemical action is increased. If using a heat exchanger increases the amount of chemical used, increases customer inconvenience by extending drying times, and causes your chemicals to be less efficient, is that really free? Hardly! The only way the cost of heating your water can hurt your profitability is if it reduces your efficiency. In reality, on-demand fuel oil heating systems are the least expensive to operate.

### B.T.U.'S AND YOU

Simply stated, heating capacity is measured in BTU (British Thermal Units). It is a scientifically measured fact that there is more



BTU in a gallon of fuel oil than in a gallon of propane. More heat can be produced in less coil space. By far, the most efficient heating system is an on-demand fuel oil heating system.

### THE TOTAL COST OF FUEL TO COMPLETE A JOB

Due to the ability of an on-demand fuel oil fired heating system to maintain hotter cleaning solution temperatures, the chemical activity is at least two times greater than other heating systems, allowing more square feet of carpet per hour to be cleaned. Quite simply, hotter water not only cleans better, it cleans faster! The total cost of fuel to clean 10,000 square feet of carpeting is virtually the same for a fuel oil fired system as it is for a heat exchanger with a self contained power plant or a power take off set up. The cost of propane is higher than both.

### IS "FIRELESS" TECHNOLOGY FIRELESS?

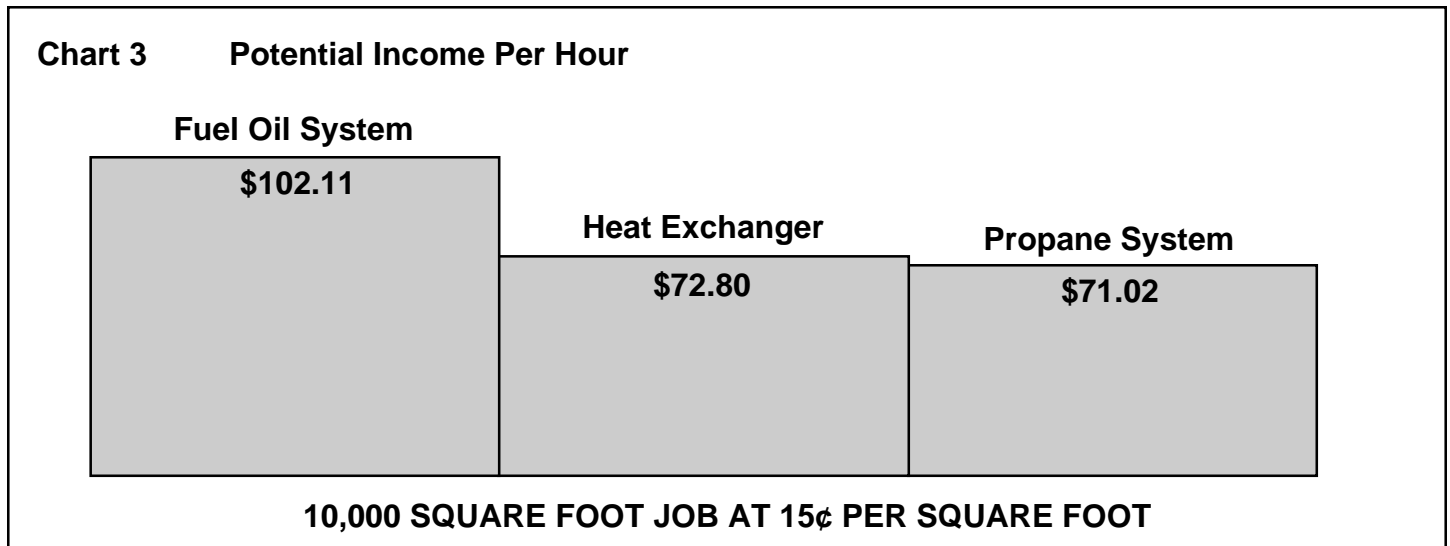
In order to run any truck mounted system, you have to fuel the power plant, whether it be the van engine, an air cooled engine, or a water cooled engine. Gasoline is responsible for running the vast majority of truck mounts. If you compare the Material Safety Data Sheets of Gasoline and Kerosene (Fuel Oil), you will see the flammability of gasoline is of far more concern than that of Kerosene. In truth, the vast majority of the small amount of fires that do occur in cleaning equipment are caused by a gasoline leak. Does that mean all gasoline engines are dangerous? Of course not! Proper, routine maintenance of all cleaning equipment is the responsibility of any professional that is using that equipment. Although heat exchanger units don't use "fire" to heat the

water, their power plant is their greatest potential source of fire. Professionalism in running any type of equipment is a necessity.

### PRECISE CONTROL OF TEMPERATURE

Simply stated, no heat exchanger system, even so-called "multiple source" systems can maintain cleaning solution temperatures equal to that of an on-demand fuel oil system. The heating capacity of a radiator, an engine manifold or exhaust, or any component on a truck mount is inadequate when subjected to water flow requirements for many carpets.

If the extreme soiling conditions of a carpet call for the technician to "kick up" the heat, he can only do that with a fuel oil fired system. If temperatures that maintain sanitizing levels are required to be maintained across the carpet fiber for indoor air quality purposes, only a full oil fired system can do that. If a particularly delicate carpet fiber or construction calls for lower cleaning solution temperatures, only the control involved with a thermostatically controlled heating system on a fuel oil fired system can do that.



In summary, there can be a high cost to free heat. Professional carpet cleaners realize that under real world conditions, higher maintained solution temperatures means a higher potential income. "Free" heat could be costing some companies up to \$34,000 per year or \$30.00 in net income per 10,000 per square feet of carpet being cleaned.

Truck mounted carpet cleaning machines equipped with on-demand fuel oil fired heating systems are the most efficient way to clean carpeting and in reality "cost" far less than the so called "free heat" of heat exchangers.

### ABOUT THE AUTHOR:

Gregory S. Bloss is the President of Steam Way International in Denver, Colorado. Greg has been involved in the cleaning industry since 1982 and has been instrumental in the development of many innovative truck mount features.

Steam Way International is a Denver based manufacturer of truck mounted and portable carpet cleaning equipment and a complete line of cleaning solutions. They can be reached by calling 1-800-447-8326.