

Vol.3, No.11 November 2006

Fixed ops

Magazine

GREAT BODIES

**Fix Full Frames—
Understanding the Design.**

**Improve Shop Efficiency to
put Profits in the Fast Lane.**

**Mentor for a Lean
& Mean Workforce.**

Heating Oil

Any firm with heating can benefit from a waste-oil heater or boiler.

By Ron Foskey

Your used oil can have a second life, giving you an economical source of heat each winter. There is a way for you to turn crankcase oil, transmission fluid, hydraulic oils, number 1 fuel oil, number 2 or diesel fuel, and gear lube into essentially free heat in your fixed ops department.

Waste oil carries a cradle-to-grave liability—once you produce it, you own it. Forever. Just 1 gallon of it can contaminate a million gallons of potable water. Generators are responsible for it from the moment it is created until it is processed or burned. Onsite recycling alleviates all the environmental risks of shipping offsite.

The EPA has classified waste oils as “non-hazardous,” thereby allowing them to be used as fuel. State regulatory agencies have approved the recycling of waste oils as well, with the exception of California and New York City.

Who can benefit? Any firm with heating bills and waste oil! Automobile, truck and heavy equipment dealerships, quick lube facilities, municipal fleet maintenance shops and any other firm generating used oils and having a need for heating of air or water. The colder the weather, longer the heating season, the more one saves. Boilers, of course, are not as seasonal and can fill various needs for hot water year-round. Heating is only one of the benefits of burning used oils on site. For many, the total elimination of liabilities associated with shipping used oils off site is the primary motivation to find a use for these materials.

How hard is it to do? It's easy to recycle the used oils onsite. Significant advances in technology and design assure dependable performance and lower maintenance. Quality-designed and manufactured used-oil-fired heaters operate in similar fashion. The oils are delivered to a burner specifically designed for their combustion. They are usually pre-heated and then mixed with compressed air to create an atomizing condition. Combustion is accomplished in the primary combustion chamber area with resultant heat being

passed into the heat exchanger.

Shop air is brought into the heater and circulated over and around the heat exchanger area. This air picks up the heat from the heat exchanger and is then delivered into the shop through vents on the heater or through attached ductwork. Boilers are similar. However, instead of ambient air, water is brought into the boiler. Heat is passed from the boiler heat exchanger into the water, which exits as hot water.



The EPA has set forth simple requirements for burning units:

1. Units are not to exceed 500,000 BTU input.
2. Units must be vented to the outside.
3. Used oil that is burned must be generated onsite or delivered by do-it-yourself oil changers.

What size? How much do they burn? How are they installed? Heaters and boilers range in BTU input from approximately 140,000 to 500,000, burning approximately 1 to 3.5 gallons per hour. Oil consumption varies, depending on the range of shop temperature or water temperature desired. Unit heaters may be suspended from the ceiling, placed on stands or racks, or as part of a "Recycling Center" mounted on a stand over a Workbench Fuel Tank. Heaters are designed for heating of shop air. Boilers may heat shop air through use of remotely located hydronic units or utilize hot water for various services such as in-floor heating, car washes, etc.

What about maintenance? Consistent maintenance is the key to dependable and efficient operation of the product. This includes cleaning of ash from the heat exchanger as needed (depending on the unit design), hours of operation and the condition of the oils being recycled. An annual burner tune-up is recommended, including cleaning or replacement of the nozzle and electrodes. Other than this, oil filters need to be cleaned or replaced. Fuel tanks should be well monitored to prevent contamination of the oil and occasionally drained of water or antifreeze.

What's the payback? That's the best reason to buy—to start saving money. Payback is fast. Usually, a return on investment can be calculated with available heating and haul-off cost figures. However, the most basic part of the equation is whether or not one has used oils available and in what quantity. If not, consider "on-spec" lubricants—used oils that have been processed or cleaned and are available in many areas

at a much lower cost than conventional fuels. These lubricants are no longer considered "waste" or "used" oil and are an excellent supplement for firms who do not produce enough used oil to justify a unit purchase.

Even though these fuels are not free, as with used oil, the return on investment can still be very appealing as they are much less expensive than typical heating oils, natural gas or propane. Paybacks can actually be one year or less, depending on the cost of standard fuels, used oil disposal and the actual hours of usage.

How to choose? Designs vary by manufacturer as to configuration and air movement. Basic sizing depends on quantity of

oils available for recycling and the size and layout of the facility. Pricing can play into the decision but isn't the major concern since paybacks are usually very acceptable. Purchasers should look for atomizing type equipment, designed and assembled by reputable manufacturers in ISO shops. Units should be completely packaged, including on-board air compressors and metering pumps (for consistent fuel delivery regardless of oil mixture or viscosity-factory-tested), and backed by local distributor support.



Ron Foskey is a 24-year professional in the environmental industry, centering on combustion products. ■

**NITROFILL DEALERS
MAKE MONEY...
and friends.**

Enjoy happy Customers,
high profits, and the expertise of the
world leader in nitrogen tire inflation

99.9% Purity!
100% Profit!

NitroFill™
Nitrogen Tire Inflation System PNEUMATECH™

Visit www.NitroFillNow.com or
call 1-877-2GO FILL

TIA
Copyright 2005 KRESKA Technologies, Inc.

For information, circle 14 on RS card.