

# You have already seen the ad. Now here is the whole story:

**THE AD HAS A GOOD POINT:**  
Your efforts to achieve some significant savings in fuel costs by burning waste oil in your hot-mix asphalt (HMA) plant's dryer/mixer burner may create some unexpected problems if you are not totally aware of what is involved. Here is the main point of that Heatec ad:

"Simply adding a waste-oil preheater to an existing system originally designed for No. 2 fuel is not enough. *The fuel system should be designed as a complete system.*"

Remember those last two words: *complete system*. If you are going to use waste oil, you must have a system that handles the waste-oil fuel from the time it is unloaded from the truck until it gets into the burner. Simply having a waste-oil preheater or some other add-on component is not enough. There are a lot of things that can happen to foul up your operation unless you have a complete system that is designed to do the job.

As a major manufacturer of items related to storing and heating various kinds of fuel for HMA plants, Heatec can help producers avoid the problems that can arise with inadequate systems.

Jerry Vantrease, the construction sales manager for Heatec, was providing an in-depth briefing on this topic recently. According to Vantrease, anyone considering the use of waste oil as a fuel for drum/dryers should talk with a few other producers who have some experience with it.

"If you find a plant manager or operator who has worked with a facility that has a overly simplified waste-oil system," said Vantrease, "you will probably hear some real horror stories. But if you talk with someone else whose management has opted for Heatec's approach

—a complete, integrated system—you will hear that they didn't experience any problems at all."

## Avoiding problems when burning waste oil

The first thing you should do is very simple and straightforward: "When the truck driver arrives with the waste-oil delivery," said Vantrease, "check to make sure that he is delivering specifically what you ordered. If you find a truckload of fuel that is bad or is not exactly what you ordered, send it back. Period."

Vantrease said that there can be a lack of consistency in the viscosity of the waste oil from one batch to another is a concern, especially if oil is from different suppliers. He said that it might be a good idea to check viscosity at delivery. In addition, a wide difference in the viscosity might require changes to preheater temperature controls.

**PROBLEMS BURNING WASTE OIL?**

Many HMA plant owners have added fuel preheaters so they can burn waste oil. But some have had unexpected problems.

- System maintenance
- Rapid switching between fuels
- Automation

Simply adding a waste oil preheater to an existing system originally designed for No. 2 fuel is not enough. The fuel system should be designed as a complete system.

The ability to rapidly switch fuels in response to market prices is important. There are times when it pays to burn waste oil. One customer told us that his new Heatec fuel system would pay for itself in about two months.

The right system allows you to achieve the maximum savings possible—without the problems.

Call us today for more information on complete fuel systems.

**HEATEC**

**HEATEC, INC.** an Astec Industries Company  
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storage tanks. But the pump also continuously recirculates the product. Why? Because it is waste oil and so it contains a lot of trash. If you do not recirculate it, the trash will settle to the bottom of the tanks and could end up clogging the entire system.

## 3 Straining and filtering before burning

With the Heatec system, waste oil being pumped from the storage tank goes through another strainer to remove any residual debris before it reaches the preheater. It is a duplex strainer that enables you to switch from one strainer to another without having to shut down the burner system while you clean one that is clogged. Magnets can be added to the strainers to ensure the removal of very fine metal particles.

## 4 Fuel pump specifically for waste oil

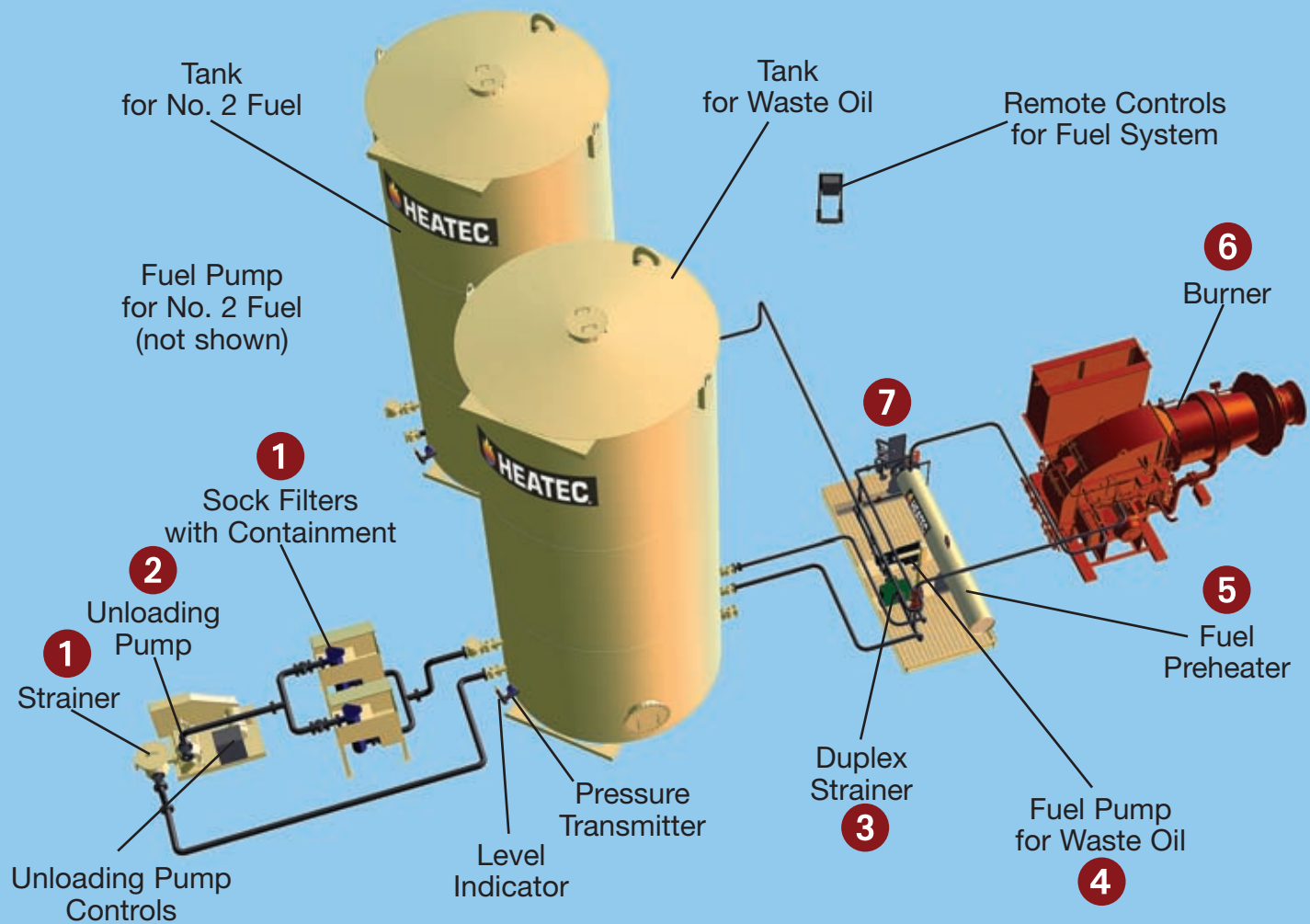
The fuel pump must be designed for use with waste oil. You should not use a pump that is intended for regular No. 2 oil. If you check the specifications for such a pump, you will find a caution note:

*"Not for use with waste oil!"*

It takes a special kind of pump to move waste oil—and that is why such a pump is an integral part of Heatec's system.

## 5 Pump the waste oil to a fuel preheater

In the Heatec system, waste oil is pumped into a preheater that increases the temperature of the waste oil about 100°F (38°C) above its unheated temperature before it moves to the HMA plant's burner. The preheater is equipped with a special modulating controller instead of an on-off unit. The modulating controller keeps the temperature of the waste oil to within plus or minus 1°F (0.3°C).



## The 7 Key Components in Heatec's Complete Waste-Oil Fuel System

### 5 Pump the waste oil to the burner

When the waste oil is heated, it is pumped to the burner—and the burner must be equipped to use waste oil as a fuel. If it was not designed as a combination burner capable of using both kinds of fuel, then it must be modified in the field. Fortunately, there are usually kits that can be installed for this purpose.

### 7 Recirculate unburned waste oil

Some of the waste oil that goes into the burner will not be burned as fuel. In the Heatec system, this unused waste oil is taken back to the suction side of the fuel pump instead of being dumped back into the storage tank. The reason

for this is simple: The unburned waste oil is already heated and only needs to be moderately reheated in order to achieve the desired temperature again. This saves on energy costs. One other suggestion: All fuel lines between the waste-oil tank and the burner should be insulated.

### All of the system's components work smoothly together

Vantrease pointed out that this waste-oil fuel system did not just evolve. It was designed to work as a unit to achieve a specific

purpose: The efficient, effective, and economical use of waste oil as a fuel for HMA plants.

"We carefully designed each set of components to make them easy to install and easy to use," said Vantrease. "If you look at the diagram, you will see the network of piping, valves, and controls that help to make this a complete system. In some cases, all of these valves and conduits can be controlled remotely from the control house if that is what the operator wants. It can be a totally automated

system where you pick which fuel you want to use and the valves open and close automatically.

"For example: Some operators like to start their system with No. 2 oil and then switch over to waste oil after everything is up and running. This system will let you do that without a problem."

Vantrease was emphatic when he cautioned those in the industry to look at all of their options carefully before they decide what kind of equipment they are going to buy for this application.

"Of course, you want to save on operating costs by using waste oil as a fuel," said Vantrease. "But you should remember that improperly handling waste oil could turn out to be a problem by itself." ▼▼▼

### FOR MORE INFORMATION

about Heatec equipment, call Jerry Vantrease at Heatec:

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