

## Tank Heaters

One of the simplest heating devices, yet widely used for various applications, is called a tank heater. The use of tank heaters is mostly to control the temperature of fluidic liquids used for the industrial purpose. It can be extremely useful to maintain the specific temperature of the liquid content in a tank in order to keep the fluidic circulation going and to maintain the smooth flow rate. WATTCO™ has a number of heating devices with such an application.

The most widely used heaters these days are probably the immersion heaters—one that operates while the heating devices are submerged in the liquid form of substances in a tank. There are several different kinds within the category of immersion heaters. All of them with the exception of the *Over the Side* heaters are used as part of the tank heater solution. Additionally, there is another kind besides the boiler heater, which is called the pipe heater of which the heating device is not quite submerged in the liquid but is installed in a pipe shaped enclosure.

The most obvious advantage of these heaters is that the power source of the heating devices are all electric, leaving behind the concern for the environmental pollution resulting from carbon dioxide. More importantly, the application of electric heaters allows the heating of the tank based environment containing liquid or gas substance in an enclosed situation with ease.

### The Use of Boiler Heaters

The general use of tank heaters is best illustrated by the use of boiler heaters. The boiler heater is a very useful method to heat water or steam in the industrial setting. It is a combination of the flanged heater built into the boiler tank in order to create a stable tank heating environment without the complicated structure of a combustion boiler. The flanged heating rods are built onto the cap that would slide into the compartment of the boiler tank causing the unit to be fully emerged into tank container itself.



*Boiler Heater by WATTCO™*

The open storage tank can contain various liquid such as water, degreasing solvents, fuel oils, heat-transfer fluids, or other caustic solutions. It is built for safety as well as energy efficiency. These

heaters are often compact in size and shape, and easy to install and to maintain. The boiler heater has to be highly moisture and contaminant resistant due to its design that brings the heating mechanism to come into a direct contact with the liquid that may cause a corrosion if not fully protected. The same is especially true if the heater is flanged. The flanged heater is particularly susceptible to corrosion, and therefore the heater is made out of exotic alloys to prevent the sheath breach.



*Boiler Tank Heater*

WATTCO™ provides a very strong specification for their boiler heaters. The application of the boiler heater is typically in two areas: hot water boiling or steam generation. The boilers can heat water up to 230 F° with the operating pressure of 30 psi to 125 psig (hydrostatic). In the application of steam generation, there are many kinds of boilers ranging from the low end application such as comfort heating, which requires only 15 psig, to a high end pressurization requiring up to 1,000 psig for certain intense applications.

There are several boiler flanges that are manufactured by WATTCO™ that can be used in the tank heater environment. They are either square or round in shape, and designed for a very compact space requirement. The installation is a snap by simply tightening a series of bolts and then just changing the assembly. It is very energy efficient as is the case with all heaters manufactured by the company.

### The Use of Pipe Heaters

A variation of the boiler heater for the tank heating application is the pipe heater. The main difference is that the pipe heater is designed to fit in through a certain type and size of the pipe and be shielded so that the heater itself does not come in contact with the medium in the tank.



*Pipe Heater by WATTCO™*

The reason for a pipe heater instead of the boiler heater has to do with the application regarding the liquid stored in the tank. The pipe heater is used in the situation whereas the heating process requires an extremely low watts in density for use with medium such as waxes. Other mediums that might require the pipe heaters would be think liquids such as tar, molasses, or other corrosive

liquids. The advantage of WATTCO™ pipe heaters is precisely that the heater itself is contained in the pipe and is not openly exposed to the medium inside the tank.

The essence of pipe heaters is that it must function as an indirect heating device. Of course, the benefit of indirect heaters is that the heater can remain clean unlike other flanged heaters that come in full contact with the medium for which they are used, collecting residue or dirt during the heating process. It also means the replacing process is on the fly without having to empty the tank since the pipe, its compartment, is completely sealed off from the tank.



The pipe heaters are very flexible in using the heating device from various setup options such as flanged, screw plug, tubular, and coiled. Different heating devices provide different advantages. For example, the coiled option is the most popular pipe heater type

*Pipe Tank Heater*

because the coiled elements offers the most efficient transfer of the heat. Moreover, the replacement of coil is relatively very simple and within most budget requirements. On the other hand, the screw plug option is a very good choice for a maintenance free solution, which is simply screwed into the coupling (NAT). The tubular option is an adequate choice for a highly vibrating environment where as the stability is the key benefit.

### Tank Heater Solution by WATTCO™

The use of tank heater in the industrial settings often involves various types of liquids that feature some extreme conditions. The heating requirements and other concerns demand an exceptional flexibility in the heater construction. Between the boiler heater setup and the pipe heater setup, WATTCO™ offers a several different types of heating devices to meet the industry needs. These various heaters collectively augment the overall function and the applicability of their tank heaters.

Furthermore, the innovation does not stop at the standard setups. Their ingenuity extends to such applications as what the band heater offers to heat up the pipe—a very important application indeed to continuously heat up the channeling liquid compounds—or what the strip heater offers to heap up a plain surface. Combining all these heating solutions together, the tank heater solution is fully covered by WATTCO™.