

Overview of Immersion Heaters

The use of immersion heaters is one of the most important application in the industrial heating. Most industrial heating requirements stem from the necessity to heat up some sort of medium contained in a tank such as oil, gas, asphalt, or most commonly water. A lot of these tank heaters are often called immersion heaters because of how they operate. The application of these heaters is by inserting the heating rods into the tank often submerged under the medium for various reasons such as for a better conductivity and/or a better flow control.

Immersion heaters are largely divided into two types: direct or indirect. The basic difference in the concept is whether the heating elements come into direct contact with the medium or not. The most suitable approach is usually decided by the type of medium in the tank the heater must work under. The benefit of direct contact with the heating element is the conductivity. For heating of water or other similar liquid medium, it is most efficient to submerge the heating rod into the tank directly in contact with the medium. On the other hand, there are certain medium that prevent such direct contact for reasons such as the corrosive nature of the medium or the need for a controlled heat transfer. In such cases, the heaters are usually installed in an isolated chamber inside of the tank to prevent the heating rods from being in direct contact with the medium.

The use of immersion heaters is a most simple yet a very useful way of heating without a lot of overheads. It is constructed in a very simple design with very little need for maintenance. The basic design allows to have the electric heating elements mounted on a cap type of plug to be inserted into the container tank. Depending on the setup, it can be useful in simple solutions as well as some complicated solutions (i.e. a pressurized tank). There are several different style of immersion heaters by WATTCO™, the manufacturer of industrial heating elements, such as flanged heaters, screw plug heaters, over the side heaters, circulation heaters and inline heaters. These immersion heaters are commonly used for a various industrial applications. They are a fast and efficient way to heat up liquid medium, according to the company website, in large storage container or processing equipment.

The palpable benefits of immersion heaters are that they are eco-friendly and energy efficient. The electric nature of the power source is perfect for emission-free environment, and the rising fuel cost is no longer an undermining factor. Moreover, the electric heating units leave no residual discharge while providing an immediate heat transfer, requiring virtually no periodic maintenance other than

occasional heating rod maintenance. The heating elements provided by WATTCO™ are highly durable against corrosion constructed with different grade of materials as necessary ranging from steel or stainless steel to special alloy compositions such as Incoloy® and Inconel®. In connection with the use of other necessary components of premium quality, namely thermostat control and terminal box, The WATTCO™ immersion heater is the right choice for the industrial heating application. More information can be found at <http://www.wattco.com/flange-heaters.html>.