TO ANSWER THE QUESTION…

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WHY SPECIFY A “BRYAN INDIRECT WATER HEATER?

Quite often we are asked, “Just what are the advantages of the Bryan Indirect Water Heater over a Direct Fired Heater?

We can sum up in one statement our reasons for designing and producing the Indirect Water Heater. “The demand for a water heater which will operate efficiently over a long number of years before replacement is required.”

Our experience, coupled with that of others involved in commercial and industrial water heating, indicates a three to five year life expectancy for direct fired heaters, depending, of course, upon the nature of the water and the nature of the application and usage. With a direct fired water heater, when replacement is necessary, the complete unit must be replaced, including such things as burners, controls, jacket, and accessories. Periodic water heater replacement then is very expensive.

What causes a direct-fired water heater to fail in such a short time? Two things: (1) Scale formation and sludge. Accumulations are built up on the water side of the heating surfaces, which prevents proper heat flow from the heating surfaces and ultimate burning out and failure. (2) Corrosion on the water side of the heating surfaces caused by large amounts of corrosive compounds in the water at elevated temperatures.

Both of these problems are at their extreme with a direct fired water heater, due to the very high temperatures encountered on the fire side of the heating surfaces and on the water side immediately adjacent to the heating surfaces.

The rapidity of deterioration that takes place is dependent upon the temperatures involved. With a direct-fired water heater, the water heating surfaces are exposed to 2000 degrees F or more. With the Bryan “Water to Water” Indirect Heater, we are exposing the heating surfaces to temperatures of 220 degrees F or less, maintaining the inside of the heating surfaces to below critical scaling temperatures and critical corrosion temperatures. Even with the steam type indirect water heater sometimes used, only slightly higher temperatures are encountered, thus the subsequent difficulties of extreme heat flux are avoided. Therein lies the success of the Bryan Indirect Water Heater.

The primary water in the Bryan Indirect Water Heater circulates internally in the boiler and is a completely closed system, acting as a medium of the heat transfer from the primary heat exchanger, the boiler tubes, to the secondary heat exchanger, the indirect heating coils. With this arrangement, the possibility of scale in the primary heat exchanger water tubes is eliminated and corrosion maintained at a minimum. At the same time, because of the low temperatures involved, both scale formation and corrosion are minimized in the secondary heat exchanger coils.

If, and when, over a period of time, the secondary heat exchanger coils should become obstructed with a scale or sludge accumulation, they can easily be removed and cleansed or replaced. It is not necessary to replace the complete unit, as in the case of most direct-fired water heaters.

The Bryan Indirect Water heater can be furnished for almost any application, tank or tankless, up to as high as 4680 gallons per hour, 100 degree rise. Most direct fired heaters are made only in the smaller sizes, requiring a number of the smaller heaters to be installed, connected together to carry the load. This of course, increases equipment and installation costs and requires much more valuable space.

The tankless arrangement is becoming more and more popular because, by increasing the heater size at nominal expense, the high cost, the space requirement, and the complication of the storage tank, its circulator, controls, and piping are all eliminated.

Where it is necessary to use a storage tank, Bryan can furnish the “Water-Pak” with the heater, tank, circulator, piping, and accessories assembled on a steel base, ready for connections to fuel, electrical, and service lines.

The Bryan Indirect Water Heater can be furnished for a multi-purpose system application, utilizing the boiler water for space heating in the conventional manner, and using all, or part, of the indirect heat exchanger capacity for domestic water heating, pool heating, snow melting, etc. We can furnish coil capacity sized just to take care of the amount of hot water required. Many of these are being used in apartment houses, motels, restaurants, and schools.

The installation of a Bryan Indirect Water Heater is no more complicated than the Direct Fired Heater. The boiler is shipped completely assembled and wired at the factory. Connections required are the fuel connection, the flue connection, cold-water connection to the boiler proper, and the flow and return connections for the service hot water.

Thousands of installations all over this country during the past thirty-plus years have conclusively proven the reliability of this heater.

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