



HOT WATER BOILER SYSTEMS

Medium & High Temperature

Temperatures to 400° F. Pressures to 300 PSI

201 Med & High Temp Hot Water Boilers

HISTORY

Since the days of the Roman Empire, hot water and hot gases have been circulated as a heating media. About 1920 a new concept in industrial and process heating was first successfully tested in Europe. In 1927 the first technical journals were written in the United States concerning high temperature Liquid & Hot Water Systems. Newer, stronger materials were developed, pressures and temperatures were increased, and by 1930, many 400°F circulating systems were in operation in England.

Parker Boiler began to furnish Hot Water Boilers in this growing field in the post-World War II days. In 1953 the first Medium/High Temperature Water Systems were installed by Parker Boiler. These systems have operated extremely well and the owners attest to their satisfaction. Numerous systems have followed, proving that High Temperature Hot Fluid for process heating is successful.

HOT WATER SYSTEM DEFINITIONS

LT/LP

Low Temperature below 250°F and Low Pressure less than 160 PSIG.

MT/MP

Medium Temperature 250° to 350°F with less than 150 PSIG.

HT/HP

High temperature above 350°F and High Pressure less than 300 PSIG.

Closed System

One in which the fluid is continuously circulated with no water make-up or lost fluid. Parker Direct Fired Hot Water Boilers are well suited for this type of system.



The Parker bent steel tube, all welded construction is the ideal boiler for high temperature applications. Pictured is the Boiler Room at HMT Technology Corp. in Eugene, Oregon. Here, four T-4600's provide the heat source for a metal plating line (350°F), and three T-6800's serve the building heating needs of the facility.

Open System

One in which the fluid is heated and then used, so make-up is required. The Parker Indirect Heater is the unit of choice for this type of system.

Examples:

A Domestic Hot Water System with heater, pump and storage tank constitute LT/LP open system, because water would normally be in the 140°F range with a pressure of 100 PSI or less.

The closed water system on plating tanks, where the circulating water is less than 350°F, and approximately 115°F PSI, would be a MT/MP system.

A 400°F circulating Thermal Liquid Heater or Hot Water Boiler operating on a jacketed kettle, platen, calendar rolls, etc., would be an example of a HT/HP system. A broad classification embodying MT/MP and HT/HP systems are used in our nomenclature at Parker Boiler Company as High Temperature High Pressure Systems.

APPLICATIONS

Metal Plating and Anodizing Tanks
Laminating Presses
Chemical Plants
Building Heat
Greenhouses
Food Processing
Wine Processing
Meat Processing
Plastics Manufacturers
Kiln Dryers
Parts Washing Systems

ADVANTAGES

Lower Initial Equipment Cost

The comparative cost of the High Temperature Hot Water Heating Equipment is considerably less than the same capacity in steam. Frequently a savings of as much as 25% can be obtained in original equipment cost.

Lower Operating Cost

Maintenance and operating costs will result in a large cost saving. This saving results from: (1) Lower fuel expense, due to higher operating efficiency and less system radiation losses;

(2) Lack of steam trap discharge losses; (3) Virtually no feed water make-up; (4) Drastically reduced costs, from labor savings by the elimination of water softening, blowdowns, and boiler water treatment (5) Boiler attendants are normally not required and the system can remain in operation without supervision and can be started with a time clock.

Long Equipment Life

Since little or no water is induced into the closed system, corrosion or scale problems are held at a minimum. These systems typically run for long periods of time with little maintenance.

Applicable To

Variable Elevation Installations

Since the circulating system depends on a pump for circulation, it is not important that the pipe be graded in order for condensate to reach a low point. The distribution piping system is easy to install with fewer complications than steam systems.

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