

Dual *(direct contact water heater)*

**UP TO 100% FUEL EFFICIENCY
FLUE GAS TEMPERATURES AS LOW AS 50°F (10°C)**

DESCRIPTION

- The DUAL is a "DIRECT-CONTACT" water heater which is composed of two distinct heat transfer zones. Each zone has its own return water stream, one of which is "cold" relative to the other. This permits the DUAL to operate at very high efficiencies when it simultaneously supplies a large high temperature load and a relatively small low temperature load. Hot water is produced at temperatures as high as 185°F (85°C), when the unit is natural gas fired.

OPERATION

- The DUAL has two return water streams, one "cold" relative to the other. The warmer return water stream (i.e. from a hydronic heating load), enters the DUAL at the top of the first heat transfer zone and is uniformly distributed over the upper surface of the heat transfer packing. The water percolates down through the packing where it is heated through the "direct-contact" with the rising products of combustion. The partially cooled products of combustion then pass from the first heat transfer zone to the second.
- The "colder" return water stream (i.e. from a domestic water load, fresh air load, process load, ...etc.) enters at the top of the second heat transfer zone, is distributed over the packing, and percolates down through the packing to absorb the residual heat in the rising combustion products.
- This arrangement, with two separate return water streams, permits much higher efficiencies than could be obtained with a single return.
- The heated water collecting at the bottom(s) of the unit is then pumped directly to the process, or across a plate and frame heat exchanger to transfer its energy to a process fluid.
- The DUAL is also available in a HYBRID configuration, thereby permitting recuperation of the heat in the flue gas of existing boilers.

CONSTRUCTION

- All wetted components and materials, including the unit's shell and packing, are entirely fabricated of stainless steel and are covered by a 5 year guarantee.

APPLICATIONS

- Hydronic (space) heating or another high temperature load, with simultaneous domestic water heating, fresh air heating (via glycol loop), boiler make-up water pre-heating, and/or process water heating.



CAPACITIES

- The DUAL is available in capacities varying from 1 to 50 million BTU/hr (300 to 15,000 kW). In its HYBRID configuration, it is available for connected boiler capacities varying from 100 HP to 100,000 lb steam/hr (1000 to 30,000 kW). If you require greater capacity, contact SOFAME.

ADVANTAGES

- Very high efficiency; up to 100% (based on HHV).
- Maximum flue gas temperatures no more than 10°F (5.5°C) greater than temperature of the "cold" water return at the inlet.
- Minimum maintenance required.
- Reduced emission of atmospheric pollutants.
- No supervision required (*unit is not classed as a pressure vessel*).
- Rapid unit start-up (*instantaneous hot water production*).
- Reduction of installed boiler capacity.
- Can be installed outside

MARKETS

- Multi-unit residential
- Industrial
- Commercial
- Institutional

