

Flue System & Flue Gas Economiser

Ensbury LT Boilers

Flue System

Hamworthy Ensbury boilers are designed to be used with natural draught flue systems, which should be designed in accordance with current regulations. The following points should be noted:

- The boiler is designed for connection to a single flue system, or a common flue header, where part of a multiple boiler installation.
- Under part load conditions, flue gases leaving the boiler will be at lower temperatures, circa 95°C for gas fired and 120°C for oil fired.
- The flue system should be designed to maintain atmospheric pressure at the boiler flue connection at all times. If at any time a suction condition is likely to arise, then it is recommended that a draught stabiliser be fitted to the flue system.
- The flue system must be self supporting and facilitate access for cleaning and maintenance near the boiler connection.
- When designing the flue system, care must be taken to ensure that any condensate that may form within the system can be drained safely to a suitable waste point, and that the flue and drain materials are resistant to the corrosive effects of the condensate.
- Ensbury boilers are suitable for installation in a balanced compartment in accordance with the requirements of BS 6644.

Flue Gas Economiser

Flue gas economisers are designed for use with boilers, to extract energy that otherwise would be expelled through the flue system. Hamworthy offer the Arne range of flue gas economisers and the free-standing design allows use in new or existing boiler installations, and with virtually any type of non-condensing boiler. Fitted to the flue system, heat is transferred to the heating system return water, further increasing the energy efficiency performance. Dependent on application and return water temperature, it is possible to achieve operating efficiency performance gains up to 18%.



Hamworthy Arne flue gas economiser.

Range	Application	No. of Models	Boiler Outputs
Arne Eco	Individual boilers	12	95kW to 6470kW
Arne Eco Turbo	Multiple boilers	4	400kW to 1430kW

There are two ranges of Hamworthy Arne flue gas economiser, each having several models to suit different applications and power requirements. Flue gases enter the economiser at the top and exit from the bottom ensuring condensate flows to the bottom of the sump for draining. Waterways within the Arne flue gas economisers are constructed from grade 316L stainless steel smooth tubes, combining low resistance to the passage of flue gases with tolerance to the acidic nature of flue gas condensate. Heat is recovered from the flue gases by two processes. Firstly, sensible heat is extracted by significantly reducing the flue gas temperature from typically 190°C for Ensbury boilers, or higher from other steel boilers, circa 220°C. Secondly, latent heat is extracted by condensation of the water vapour present in the combustion gases, when the return water temperature is below 55°C. *For further details of Hamworthy Arne flue gas economisers, refer to publication 500002501.*