

FUMECO Heat Exchanger

Installation, Operation and Maintenance Manual

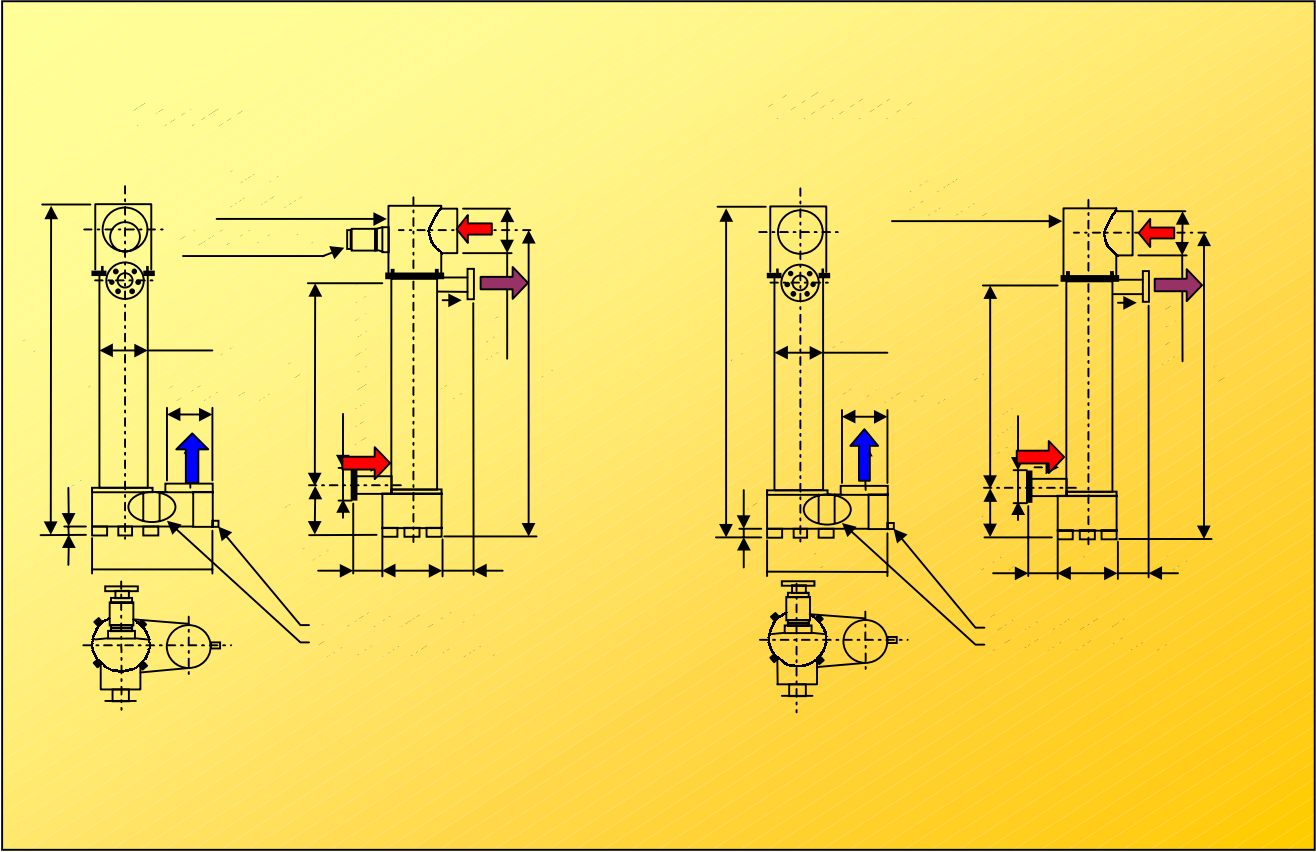


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Data Table

Type FUMECO	Maximum Boiler Output	H mm	L mm	I mm	Ø mm	Ø of Flue Entry & Exit mm	Water Connecti on Size PN10 mm	A mm	B mm	C mm	Wei ght kg	FUMECO	
												Fanne d Motor kW	Unfanned Pressure Drop mm.w.g
25.15/73	314 kW	2179	707	500	350	200	80	356	1390	2076	200	1.1	40
30.15/111	477 kW	2229	759	500	400	250	80	356	1390	2101	210	1.1	40
35.15/157	675 kW	2279	859	530	450	300	100	368	1365	2125	280	1.1	40
40.15/191	820 kW	2329	1059	580	500	350	100	368	1365	2151	340	1.1	40
45.15/273	1173 kW	2370	1059	630	550	400	125	378	1346	2167	400	2.2	40
50.15/330	1418 kW	2421	1159	680	600	450	125	381	1340	2192	470	2.2	40
55.15/411	1766 kW	2614	1259	790	650	500	125	428	1346	2360	570	3	40
60.15/475	2041 kW	2669	1359	790	700	550	150	445	1311	2390	650	3	40
65.15/523	2247 kW	2669	1409	830	750	550	150	445	1311	2390	705	3	40
70.15/651	2800 kW	2770	1468	880	800	600	200	521	1260	2467	835	3	40



GENERAL

The FUMECO heat exchanger is designed to recoup up to 24% of heat normally lost in the flue gases from conventional boilers. Effectively the FUMECO converts a standard gas fired boiler into a fully condensing unit

2 Construction

The FUMECO is a shell and tube heat exchanger manufactured in 316 grade stainless steel

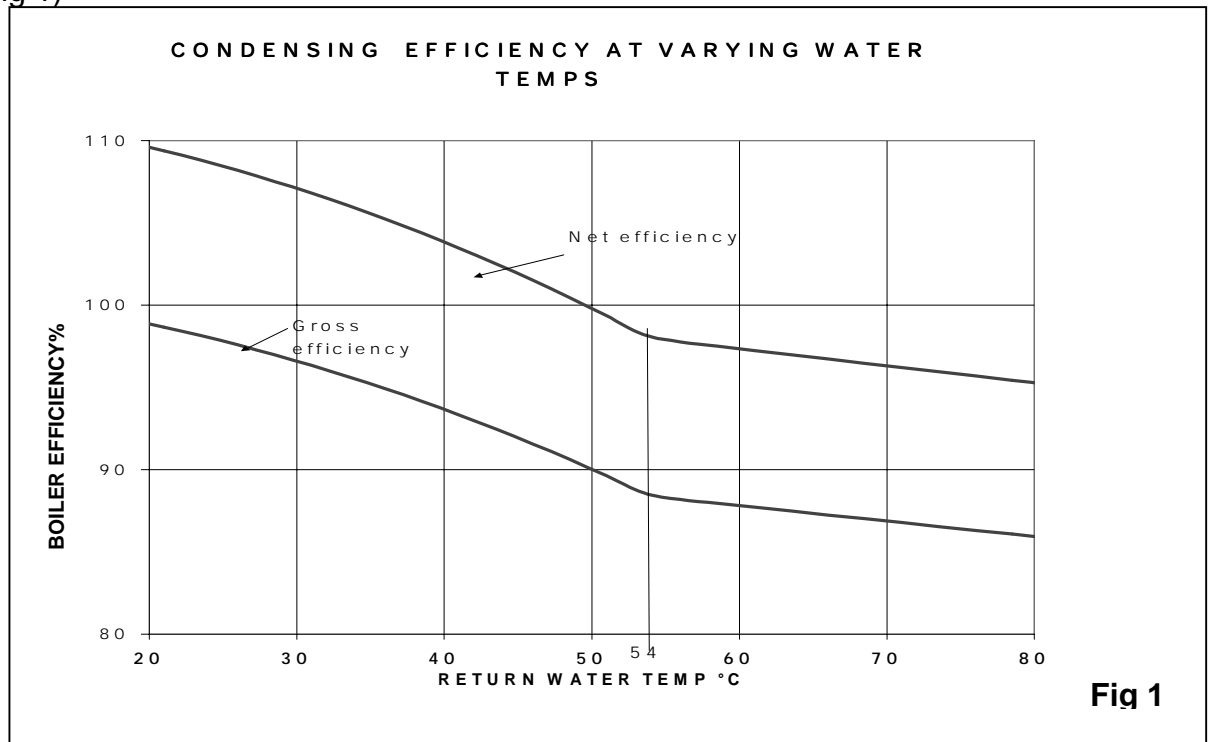
The flue collector boxes are also constructed in stainless steel

The inlet flue box can be swivelled through 360° for easy alignment with existing flue systems

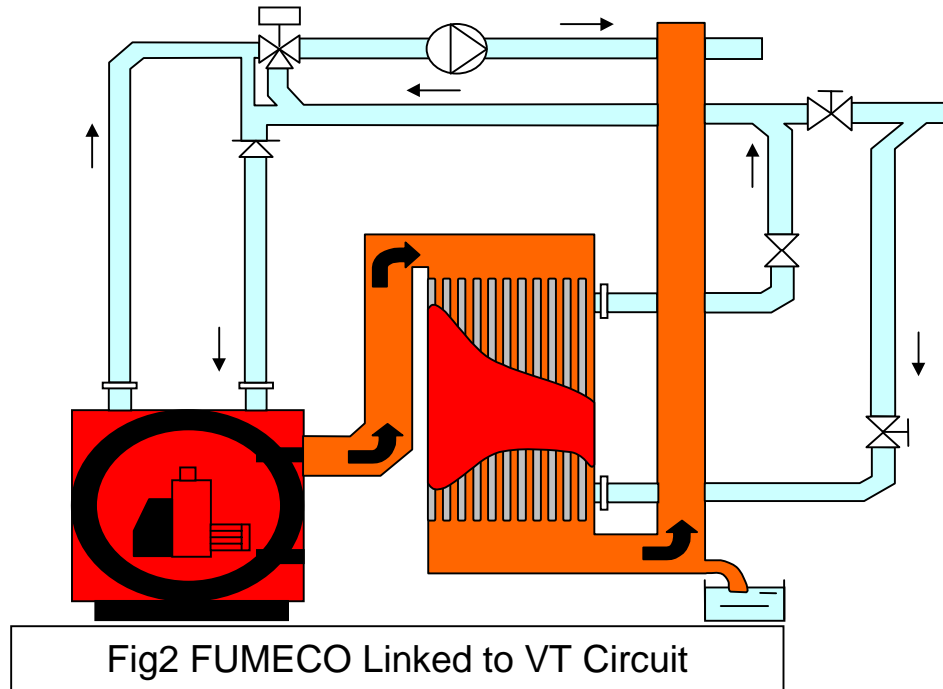
Two versions of the FUMECO are available, with or without fan. The unfanned version can be used where there is already a fan in the flue or where the boiler/burner unit is capable of sufficient over pressure to overcome the resistance of the FUMECO

3 Sizing the Fumeco

The proportion of energy recovered by the Fumeco depends on the water temperature entering the unit. The nominal dew point of the flue gases when firing on natural gas is about 54°C . Therefore to start condense recovery (latent heat) the water entering the unit will need to be below 54°C. As the water temperature reduces the more energy is recovered (see fig 1)

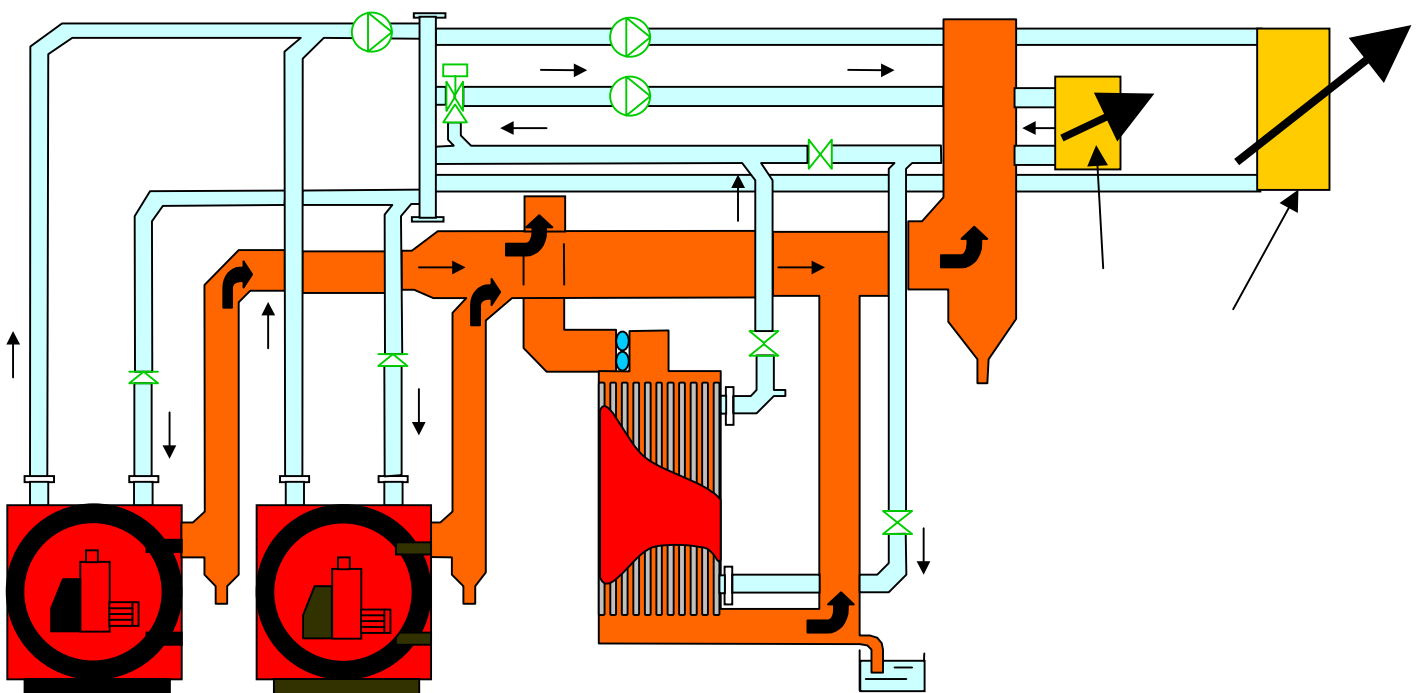


If the whole system runs at low temperature or its variable temperature then size the unit to suit the maximum boiler output and fitted into the main boiler return



Where there is a mixture of high temperature and variable temperature circuits it is possible to size the FUMECO units to suit the load on the variable temperature circuits on

Where multiple boilers are installed the FUMECO will be installed in parallel with the flue system rather than in series (see fig 3)



3 System requirements

Pipework

Install the FUMECO into the circuit return pipework with a by pass between the connections as shown in figure 3. This will enable the flow to be balanced on the system.

Ensure that water is always flowing through the FUMECO when any boiler is firing otherwise very high water temperatures and boiling may result

Condensate Drain

Run the condensate drain to a suitable gully using plastic pipework . A deep seal trap should be fitted to prevent the escape of flue gases through the pipework. There should also be an air break to prevent syphoning the trap. Do not use copper

Flue system

The Flue system downstream of the FUMECO must meet normal condensing boiler criteria ie

- **Corrosion resistant smoothwall**
- **Water and gas tight**
- **Free draining**
- **Vertical discharge**
- **Adequately drained**

Flue connections to the FUMECO should have a removable section to allow maintenance of the flueways

Electrical connections

All motors supplied with the FUMECO are suitable for 3 phase 400v electrical supply

The unit should be fitted with a local suitably sized fused isolator .

The motor should be interlocked to the boilers to ensure that both units run together

4 Installation And Assembly

Fumeco is delivered packed on its side on a pallet with the fan assembly packed separately

Siting

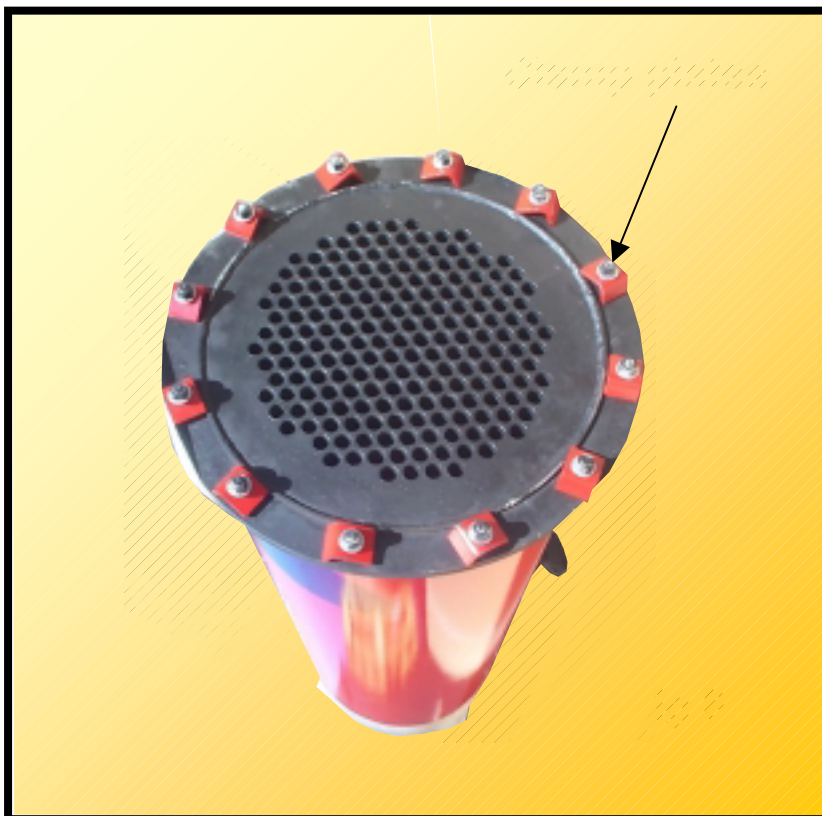
Decide on a suitable position for the unit avoiding complicated and resistive flue runs.

Remove the unit from the pallet and position on a suitable level base adequate to support the weight of the unit when full

The fan housing is fitted with a rope sealing gasket (fig5). Loosen the clamps on top of the main unit (fig 6) and position the fan housing on top then tighten down the clamps



Fig 5



Connect flue system taking into account of maintenance requirements of the FUMECO
 Connect pipework ensuring that the unit is adequately vented
 Connect the electrical supply to the fan motor allowing sufficient flexible wiring to allow removal of the fan housing for maintenance .

6 Maintenance

Occasional maintenance is required but is only a matter of cleaning out any debris from the lower flue box via the cleanout door (Fig 7). Frequency once per year.

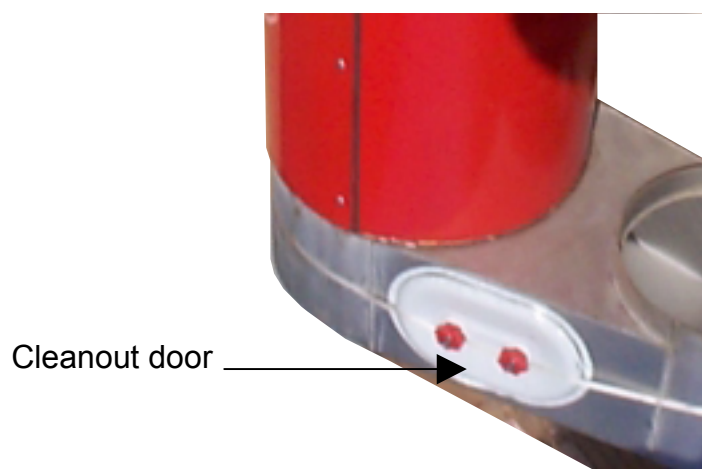


FIG 7

Approximately biannually the top fan housing should be removed .
 Check the fan unit and motor and maintain as necessary.

Wash down the tubes using a hose and mains water

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All descriptions and illustrations contained within this leaflet have been carefully prepared, but we reserve the right to make changes and improvements in our products which may affect the accuracy of the information in this leaflet.

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