

Top Technology

VIESMANN

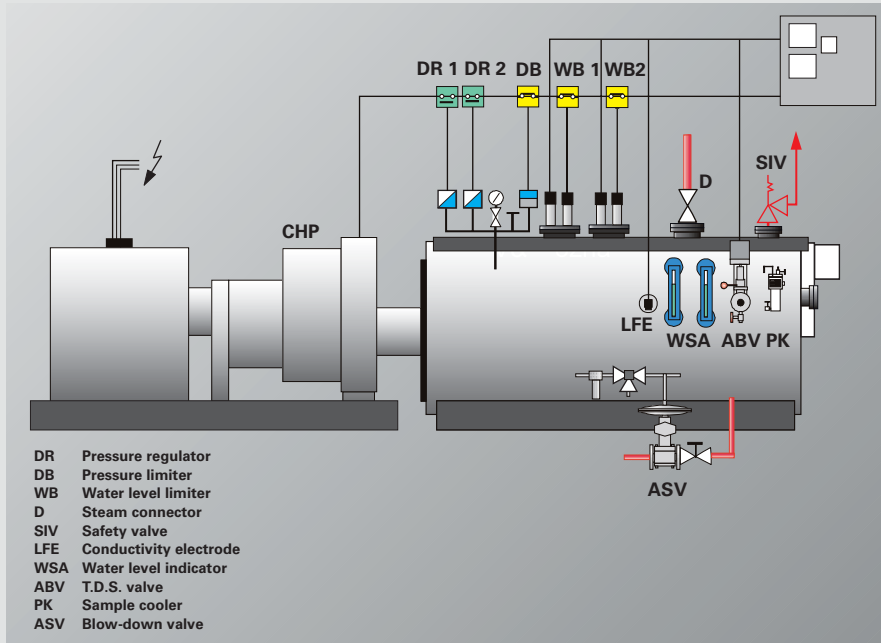
VITOMAX 200 Waste heat boiler *for hot water heating and steam generation*



Waste heat boilers utilise the heat from flue gases generated during combustion processes or the heat from hot exhaust air from industrial processes to generate hot water or saturated steam.

Due to recent changes in legislation in Germany that have resulted in the increased promotion of combined heat and power generation systems (refer e.g. to the German energy policy act on the preservation, modernisation and expansion of combined heat and power generation (Gesetz für die Erhaltung, die Modernisierung und den Ausbau der Kraft-Wärme-Kopplung)), waste heat boilers are being used in large numbers in combination with gas turbines and CHP stations. The influence of steadily increasing energy costs has also led to a rise in the use of waste heat boilers to exploit the waste heat generated in industrial processes.

Viessmann waste heat boilers ...



Viessmann waste heat boilers are available in two designs:

- Waste heat boilers without additional combustion

Here, only the flue gases/exhaust air flow are used to heat water or generate saturated steam.

- Hot water or steam boilers with waste heat utilisation

These are conventionally fired boilers that make additional use of waste heat.

The choice of which boiler variant to use depends on the specific conditions of the customer's application.

Figure 1: Schematic layout of a waste heat boiler with a combined heat and power (CHP) station



Figure 2: Steam boiler with a steam generating capacity of 4 t/h, 13 bar, with integral waste heat flue for a CHP station delivering 0.4 t/h (waste heat pipe not yet connected)

Design parameters

	Waste heat boiler w/o add. combustion	Boiler with waste heat utilisation
Proportion of output from utilisation of waste heat	100% in relation to the overall boiler output	10 to 30% in relation to the overall boiler output
Maximum exhaust temperature of the flue gas source	Suitable for flue gases from the following fuels: Heating oil and natural gas. Other fuels such as RME, animal fat, solid fuels and waste heat from contaminated exhaust air available on request.	
Minimum volume of flue gas of the flue gas source	5000 Nm ³ /h	1000 Nm ³ /h
Maximum volume of flue gas from the flue gas source	80000 Nm ³ /h (from a single source or as combined total from two flue gas sources)	10000 Nm ³ /h (from a single source or as combined total from two flue gas sources)
Maximum permissible water/steam-side pressure	25 bar	25 bar
No. of waste heat sources	1 or 2	1 or 2

Table 1: Performance data for Viessmann waste heat boilers

Table 1 shows the key technical data for the general design parameters.

Other boiler connections correspond to conventional steam and hot water boilers in the Vitomax range.

Naturally, boilers can also be supplied with all the required safety and control fittings and system components.