



Flue gas condenser

For increased efficiency

Thermeta Service BV is there for you with respect to improvement of the efficiency of your combustion plant. One of the best options for increasing this efficiency is to install a flue gas condenser. The flue gas condenser transfers heat from the flue gases, which usually disappear outside through the chimney, to the water of a separate group.

The flue gas condenser operates as follows: The flue gases are transferred along the pipes that have bars for increasing the heated surface and herewith transfer heat to the cooling water that is transferred through the pipes. The flue gas condenser can cool the flue gases to 40 °C or lower without any problems. The colder the condenser system, the further the flue gases are cooled and the higher the condenser efficiency. Therefore the condenser must be connected to a heating system with temperatures of max. 40 °C for high efficiency; the savings will be lower with higher temperatures. The savings provided by a condenser may be 4% to 15%, dependent on the boiler flue gas temperature and the return temperature of the condenser system. The flue gas condenser is, among

other things, applicable in combination with ground/floor heating, low-temperature heating system, return water of the heating boiler, boiler supply water from a steam boiler and other systems that can be supplied with relatively low temperatures.

Please contact Thermeta Service b.v. for any applications and advice with respect to your system.

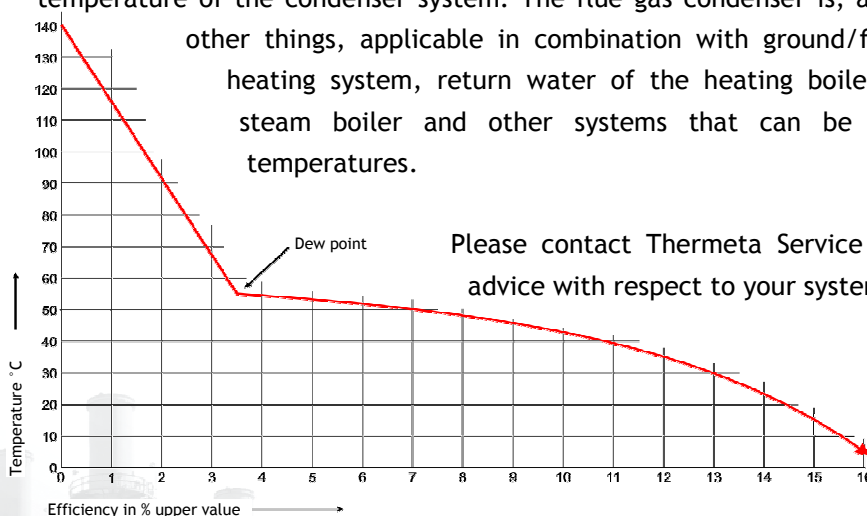
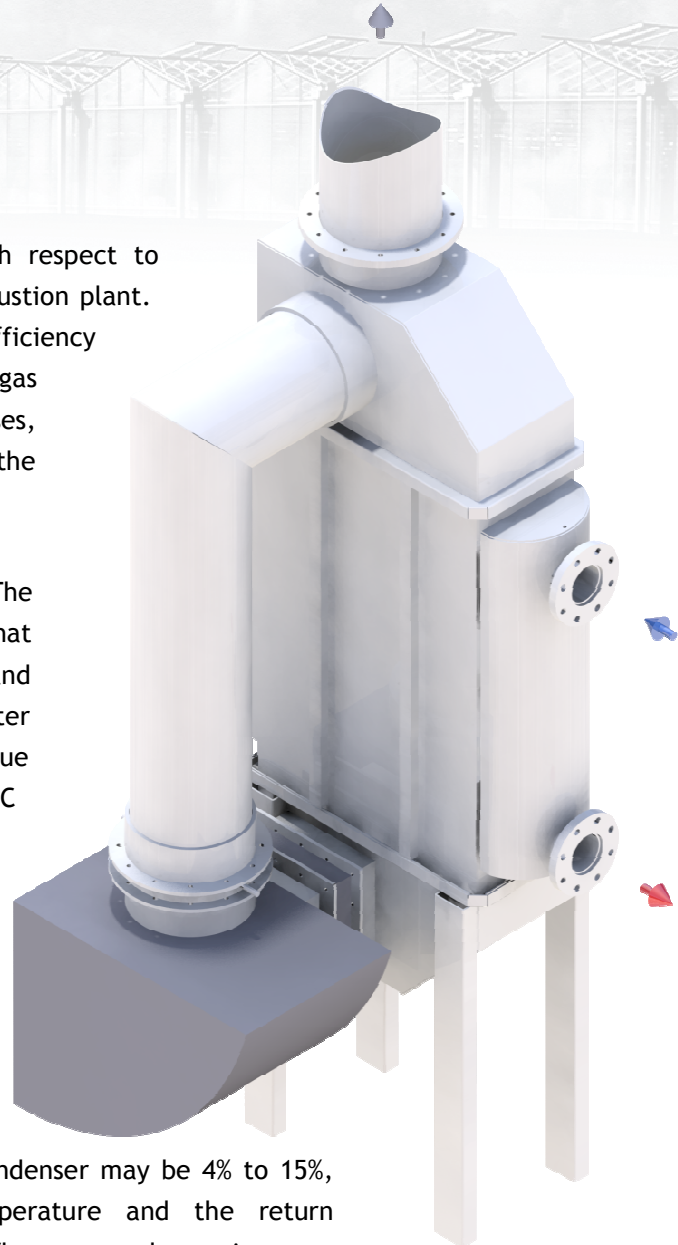


Figure 1: The relationship between flue gas temperature and efficiency improvement

(Source: Handbook heating in greenhouse farming).

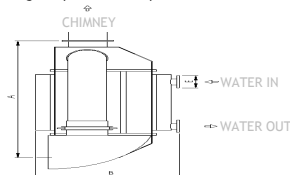


Technical data

- Flue gas condensers are completely made of aluminium. The condenser pipes have been made of aluminium (50 ST) with a wall thickness of 5 mm. The lower box, the upper box, pipe plates and the water tanks have been made of 4 mm thick aluminium. The chimney is of 2-3 mm aluminium (57 S).
- The flue gas condensers are for extra costs available in steel or stainless steel 304/316.
- The condenser pipes have aluminium bars for increasing the heated surface. The condenser operates according to the counterflow principle in which maximum heat is transferred to the water flowing through the condenser pipes. Thanks to this construction, the condenser can be installed in a relatively small room.
- Flue gas condensers have a large heated surface on the flue gas side and large resistances on de flue gas and the water sides. They are corrosion resistant and easy to mount. Contrary to the small dimensions (see figure 1 and table 1), the condensers have a large heat transfer and deliver maximum energy savings of up to 15% efficiency improvement.
- Figure 2 displays the relationship between flue gas temperature and efficiency increase. This figure shows the large effect of the released latent heat (condensation heat at re-cooling) with re-cooling of flue gases from about 60 °C to 40 °C (7%) compared with re-cooling from about 150 °C to 60 °C (4%). However, this latent heat increase requires about 80% of the total heated surface.
- The flue gas condensers can be delivered in single or combination models, dependent on the application. Of course, you can always contact Thermeta Service BV for possible applications and advice with respect to your system.

Type	Boiler capacity		Condenser capacity		Heated surface (m ²)	A (mm)	B (mm)	C (mm)	D (mm)	E (PN-10)	Resistance Fuel gas (Pa)	Resistance Water (Pa)	Water flow (m ³ /h)
	kW	Mcal/h	Mcal/h	kW									
EKA 1	291	250	20	23	20	1923	893	217	300	80	300	5.000	5
EKA 2	582	500	67	78	41	1923	1143	285	300	80	360	6.000	15
EKA 3	872	750	100	116	62	1923	1143	347	300	100	420	6.500	25
EKA 4	1.163	1000	134	156	82	1923	1143	412	300	100	370	4.000	30
EKA 5	1.454	1250	167	194	100	1923	1143	477	300	100	350	4.000	40
EKA 6	1.745	1500	201	234	133	2379	1393	477	400	100	360	4.500	50
EKA 7	2.035	1750	234	272	156	2379	1393	477	400	100	420	5.000	55
EKA 8	2.326	2000	268	312	182	2579	1643	477	400	100	390	6.500	65
EKA 9	2.908	2500	335	390	229	2579	1643	542	400	125	380	7.500	80
EKA 10	3.489	3000	402	468	285	2579	1643	607	500	125	410	8.000	95
EKA 11	4.071	3500	469	546	342	2679	1893	607	500	125	430	10.500	110
EKA 12	4.652	4000	536	623	360	2679	1893	672	500	125	490	11.000	125
EKA 13	5.234	4500	603	701	402	2679	1893	737	600	125	500	11.000	140
EKA 14	5.815	5000	620	721	442	2679	2043	737	600	125	550	10.500	145
EKA 15	6.978	6000	804	935	538	2679	2043	802	600	125	570	10.500	190
EKA 16	8.141	7000	939	1.092	626	2779	2043	867	700	125	610	11.000	220
EKA 17	9.304	8000	1.073	1.248	701	2779	2043	867	700	125	680	11.000	260

Larger capacities on request



Dimensions and technical data are subject to change without prior notice

