New standards for diesel heating

The Combi D space and water heater has proved a great success for Truma since its introduction in 2008. Now Truma has launched a next generation version. We find out more from project manager Paul Kreß

Words and photo Terry Owen

Truma clearly sees its New Generation Combi D heater as beacon of light in the world of RV diesel heaters, and there's no doubt it represents a major step forward. Significantly more efficient, lighter and easier to fit, it's bound to ensure that Truma stays right at the top of this segment of the market.

Aboutcamp BtoB: What were the drivers for creating a new generation Combi D heater?

Paul Kreß: In the fourteen years since the launch of the first-generation Combi D we have gained much experience whilst, at the same time, our customers' needs have begun to change. For example, the huge rise in fuel costs means that fuel efficiency is now more important than ever. Also there has also been a big trend to off-grid camping and the use of panel vans, so we needed to optimise for those markets. Diesel (EN950) is also becoming more popular as a heating fuel due to its wide availability and ease of use.

Aboutcamp BtoB: Have you managed to improve fuel efficiency?

Paul Kreß: We've achieved an improvement of 25%, mostly by changing the combustion air set up. The first-generation heater has a three-pipe setup, whereas the new generation has a pipe-in-pipe setup, similar to the propane version. This means that heat from the exhaust gas is used to warm the com-

bustion air, giving a big gain in terms of efficiency. Another new feature is the introduction of pressure and temperature sensors for the ambient air. These ensure we can operate the burner at maximum efficiency at all times. The result is cleaner burning and reduced emissions. The arrangement eliminates the need for the altitude kit we have for the first-generation heater.

Aboutcamp BtoB: Have you also manged to improve battery consumption efficiency?
Paul Kreß: Yes, we've succeeded in reducing battery consumption by about 25%. One way we've done this is to reduce the number of stop/starts by redesigning the burner to better match the required temperature. Previously the burner operated at 2, 4 or 6 kW settings. Now it can operate at 1 kW increments from 1 to 6 kW. The new arrangement also helps to reduce fuel consumption whilst extending the life of the burner.

Aboutcamp BtoB: Is there just a single burner for all these outputs?
Paul Kreß: Yes, but it is brand new and powered by a new control board and combustion air fan.

Aboutcamp BtoB: What other ways have you improved battery efficiency?
Paul Kreß: We now control the glow plug according to relevant parameters such as combustion air temperature.

Aboutcamp BtoB: What about noise – is this reduced?
Paul Kreß: There is less noise overall as there are fewer starts and stops to disturb the end user. Also, in the 1kW setting, which is mostly running at night, the heater is more silent than before.

Aboutcamp BtoB: Have you managed to realise any weight savings?
Paul Kreß: Yes, the new generation heater is 15% lighter than the first one. Much of this has been achieved by eliminating the exhaust chimney and fan associated with the previous one. The heater is now virtually the same weight as the propane version.

Aboutcamp BtoB: Is the new heater interchangeable with the propane version?
Paul Kreß: Yes, the size and footprint are the same. This means OEMs can decide much later in the build process which one they want to fit.

Aboutcamp BtoB: How does the water heating time compare to the first-generation heater?
Paul Kreß: This is improved due to the increase in efficiency of the appliance. We also now have a Hot Water Boost mode which allows the water to reach higher temperature and reheats faster. This translates to longer showers.

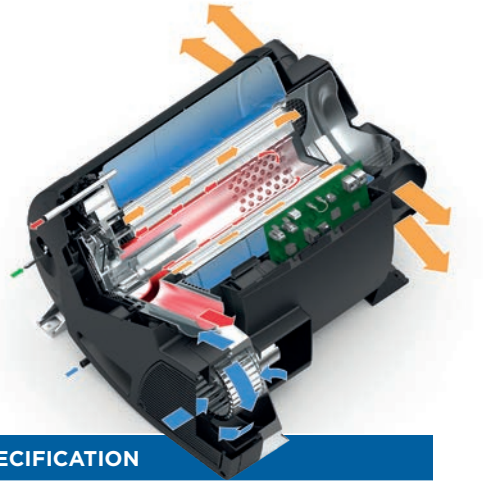
Aboutcamp BtoB: Is the water temperature user selectable?
Paul Kreß: Users can select 40°C, 60°C and now additionally Hot Water Boost by selecting 70°C on iNet X Panel or Boost on CP-Plus Panel.

Aboutcamp BtoB: What protection is there to make sure the water does not get too hot?
Paul Kreß: A sensor controls the heat input, and a bi-metal switch acts a failsafe backup. This is similar to the first-generation Combi D.

Aboutcamp BtoB: How many versions of the new generation heater are being produced?
Paul Kreß: As before we have both 4 and 6 kW versions but now each comes with an electric heating option, thus making a total of four models. The electric option on our first-generation heater proved very popular in some markets so that's why we've now included it in the 4 kW version.
The electric versions are denoted by the letter 'E' at the end with heating provided by two 900 watt elements. These can be used at the same time as diesel up to a maximum power of 3.9 kW (Combi D4 E) or 6.9 kW (Combi D6 E). This latter figure compares to 5.8 kW on the first-generation model.

Aboutcamp BtoB: When will the new generation model be available to the market?
Paul Kreß: It is available now to OEMs and will become available to the aftermarket from 1st January 2023. In the meantime, the previous generation model is being phased out as customers adapt to the new model.

Aboutcamp BtoB: Can you tell us anything about costs?
Paul Kreß: The cost of new heater is broadly similar as the previous one, despite the improvements.



TECHNICAL SPECIFICATION	
Fuel	Diesel as per EN 590
Water capacity	10 litres
Heating time from approx. 15°C to approx. 60°C	**Hot water mode**: approx. 24 minutes (based on EN 15033) **Heating and hot water mode**: approx. 80 min.
Pump pressure	max. 2.8 bar
System pressure	max. 4.5 bar
Rated heat input (automatic operating levels)	**Diesel mode**: Combi D 4 (E): 1 kW- 4 kW Combi D 6 (E): 1 kW- 6 kW **Electrical mode**: Combi D 4 E/Combi D 6 E: 900W / 1800W **Mixed mode** (diesel and electric): Combi D 4 E: max. 3.9 kW Combi D 6 E: max. 6.9 kW
Maximum rated heat output in diesel mode	Combi D 4 (E): 4.4 kW, Combi D 6 (E): 6.6 kW
Fuel consumption	Combi D 4 (E): 0.1 - 0.4 l/h Combi D 6 (E): 0.1 - 0.6 l/h 0.1 l/h with average heat output of 1000 W
Air flow rate	4 warm air outlets: max. 287 m3/h
Power consumption at 12 V	Heater + water container: 0.4- 8.1 A Heating up water container: 0.5 A
Power consumption at 230 V	900 W: 3.9A 1BOOW: 7.8A
Weight of heater Weight of heater with periphery	Combi D 4 E, Combi D 6 E: 15.6 kg Combi D 4, Combi D 6: 14.8 kg Combi D 4 E, Combi D 6 E: 16.8 kg Combi D 4, Combi D 6: 16.0 kg
Type approval	E1 122R-OO 0232 E1 1OR-06 5277