

Use of paraffinic diesel fuel pursuant to DIN EN 15940:2019-10 for heating units in the Thermo, Thermo E, Thermo E+, Thermo S and Thermo plus

Synthetic diesel fuels are created using synthesis or hydrogenation processes with various raw materials, such as:

Natural gas (<i>Gas-to-Liquid; GTL</i>)	Coal (<i>Coal-to-Liquid; CTL</i>)
Biomass (<i>Biomass-to-Liquid; BTL</i>)	Plant- based oils (Hydrogenated / Hydrotreated Vegetable Oils; HVO)

As fuel for use in diesel engines and motor vehicles, they are described in DIN EN 15940:2019-10 (Automotive fuels – Paraffinic diesel fuel from synthesis or hydrotreatment). Valeo tested some of these fuels of the DIN EN 15940:2019-10 standard which have high market shares.

Switching from conventional diesel and biodiesel to paraffinic fuels can result in gasket shrinkage within fuel-carrying parts. Partially different, clearly brighter flame colors can be seen during the combustion process.

Valeo only **approves** the fuels listed below according to DIN EN 15940:2019-10:

- **Shell GTL Fuel** (uncoloured, not Shell GTL Fuel Marine)
- **Neste Renewable Diesel®** (HVO; previously NExBTL®)
- All HVO fuels that are either equivalent to Renewable diesel fuel from Neste or are derived directly from it, but are marketed under a different brand name and are further additized at most, as follow:
 - **C.A.R.E. Diesel®** from ToolFuel
 - **Neste MY** from Neste, NL,US, SWE, FIN, Baltics / Swea Energi, SWE / Energifabriken, SWE / Biofuel Express, SWE / Colabitoil, SWE / Ecobrånslé, SWE / Futurefuels, NL / EG Group, NL / Tamoil, NL / GP Groot, NL / Goodfuels, NL

The list is regularly updated due to the dynamic market. If you need to use any other fuel, please contact the [Valeo Service Helpline](#).

The following heaters - including the corresponding Valeo fuel hoses and fuel filters - after the manufacturing date of 01/2017 may be used with the above types of fuel in compliance with the required conversions:

Thermo | Thermo E | Thermo E+ | Thermo S | Thermo plus

Conversions:

1) The use of a dust protection tube is recommended for the above specified heaters. Also see the installation instructions "Dust Protection Kits 11137558A".

2) Because the software is optimized for the older Thermo heaters – only for this units - exchange the corresponding controller for this series only (see overview page 3).

3) For heaters, fuel filters and fuel hoses before 01/2017, it is necessary to convert the fuel hoses and filters when switching to the above fuels for the first time. All external attachment parts or components must be approved for these fuels. In order to identify the parts and components to be converted, Valeo must be informed of the material and serial number (see type plate) of the heaters used.

Please contact the Valeo Service Helpline at service-valeobus@valeo.com.

Combustion with the above mentioned fuels is permitted in a range of fuel temperature from -20°C to +45°C. The operating temperature of the heater can be found in the respective installation instructions.

Specifications:

- The above fuels approved by Valeo must comply with EN 15940:2019-10
- The above-mentioned fuels approved by Valeo must meet the climatic requirements (CFPP classes)
- Mixed refuelling/mixed operation of the above-mentioned fuels approved by Valeo is permitted with diesel fuels according to DIN EN590 (and standards identical in content) in any mixing ratio.
- Mixed refuelling/mixed operation of the above-mentioned fuels approved by Valeo is not permitted with bio-diesel in accordance with DIN EN 14214 (and standards with identical contents).
- The use of a nozzle block preheater is mandatory from temperatures ≤ 0 degrees Celsius
- The use of a filter heater is mandatory from temperatures ≤ 0 degrees Celsius for all above mentioned fuels except Shell GTL
- The use of a filter heater is recommended from temperatures ≤ 0 degrees Celsius for Shell GTL (please note filter clogging due to Cloud Point)
- Fuel pump must be equipped with FKM ("Viton") seals; "NBR" is not permitted (see TI Fuel pump DOK70102)
- Fuel lines must be resistant to paraffinic fuels (according to DIN EN 15940:2019-10) FKM ('Viton') is prescribed; 'NBR' is to be excluded
- Replace the fuel pump and fuel lines at least every four years
- Replace the fuel filter annually. In the case of alternating fuelling / alternating operation of permitted fuels, a six-monthly change is recommended.
- Observance of the maintenance work;
Put the heater into operation at least every four weeks, also in summer
- The use of outdated fuel must be excluded
- The CO2 value must be checked during fuel conversion and annual maintenance

Note:

- Operation of the heater in two-line operation (suction and return line) is recommended.
- The use of a non-standard fuel will result in smoke formation and combustion problems!

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Explanation: The terms "fuel" and "combustible" are used throughout this document as synonyms for each other.

overview optimized control units (CU) for Thermo heaters		
CU programmed old	CU programmed new	customer
63482F	97821A	Standard
63859E	63859F	J.E.S.
67981D	67981E	Rail/Vossloh
96775B	96775C	Magyar
97806B	97806C	EvoBus
97808C	97808D	Detroit
97810C	97810D	Bahn-Standard
97812A	97812B	MTU Bahn 19 V
97814C	97814D	Hybrid
97818A	97818B	Rail without pump monitoring
97820A	97820B	EvoBus 2
97823A	97823B	ADL