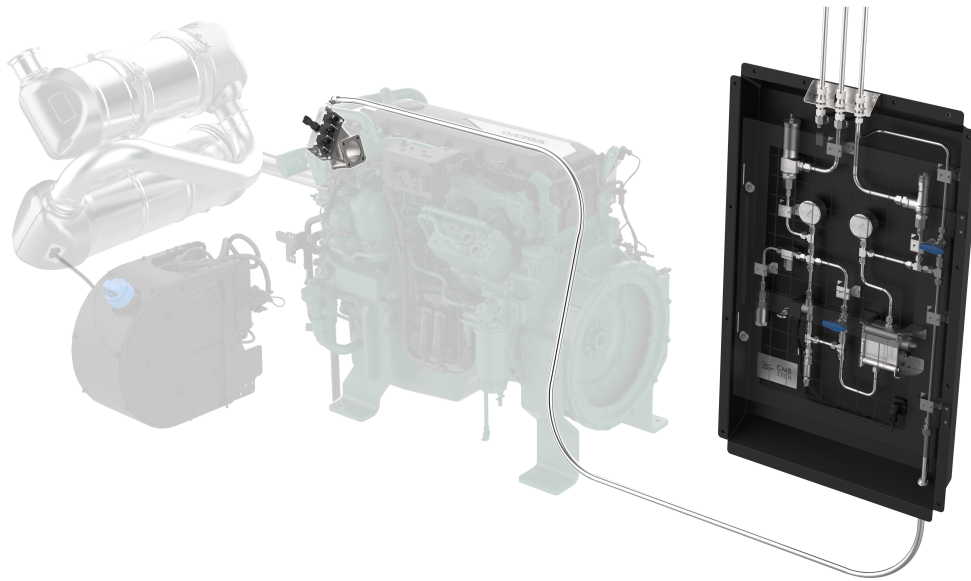


The CMB.TECH hydrogen kit is designed for stationary applications, and must be completed with the Volvo Penta TADH880-884VE.



AFFORDABLE, RELIABLE AND GREEN

Designed to combine reliability & performance with a drastic reduction of tailpipe CO₂ emissions, the CMB.TECH H₂ system injects hydrogen to replace part of the diesel consumption. This solution is flexible and can be activated when hydrogen supply is available. The original engine underwent minor changes, allowing capitalisation on proven technology, resulting in high emissions reduction for low investment costs.

EU STAGE V CERTIFIED

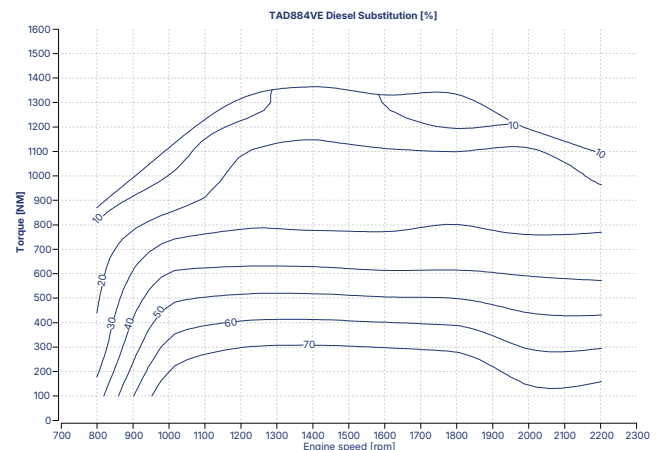
In addition to reducing CO₂ emissions in dual-fuel mode, the engine features a state-of-the-art injection and charging system with minimal losses, ensuring highly fuel-efficient diesel operation as backup. It complies with EU Stage V requirements in both diesel-only and dual-fuel modes.

DECARBONISING WHILE MAINTAINING PERFORMANCE

The dual fuel engine has the same power output, ramp-up capabilities and reliability as the original EU Stage V engine variant. HVO100 can be used to replace conventional diesel, both in diesel-only mode and in dual fuel mode.

- ▶ Dual fuel to kick-start the energy transition
- ▶ Direct CO₂ reduction due to the diesel displacement
- ▶ No impact on the engine service intervals
- ▶ Traditional fuel as pilot & full backup
- ▶ Limited extra cost to save emissions
- ▶ Designed in accordance with ISO12100

DIESEL REDUCTION WITH DUAL FUEL HYDROGEN KIT



The values presented in this document are the validated results of the D2 emissions cycle tests required for the EU Stage V certification for NRMM (Non-Road Mobile Machinery), granted by the STA (Swedish Transport Authority). Engine tests were performed under controlled conditions using an engine testbed facility fully compliant with ISO 8178-1:2020. Real world performance may vary.

*Prime power is typically 4% less than certified engine power. All dual fuel results are with respect to the certified engine power. Power, in this instance, is defined as mechanical power without fan.



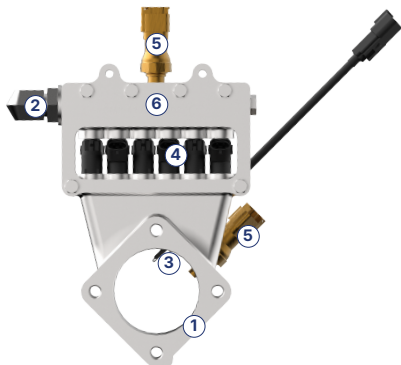
CMB
.TECH

DUAL FUEL HYDROGEN KIT

VOLVO PENTA TADH880-884VE

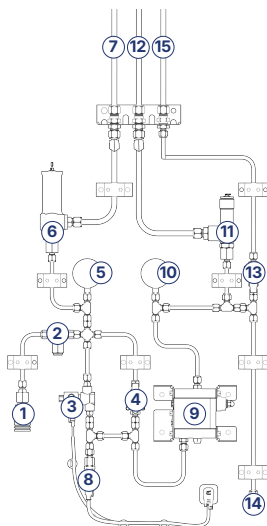
MAIN COMPONENTS

INJECTION SYSTEM



- | | |
|---|-----------------------------------|
| 1 | H ₂ injection manifold |
| 2 | H ₂ supply connection |
| 3 | Thermal fuse |
| 4 | H ₂ injectors |
| 5 | 2x Pressure/Temperature sensors |
| 6 | H ₂ injection rail |

GAS TRAIN

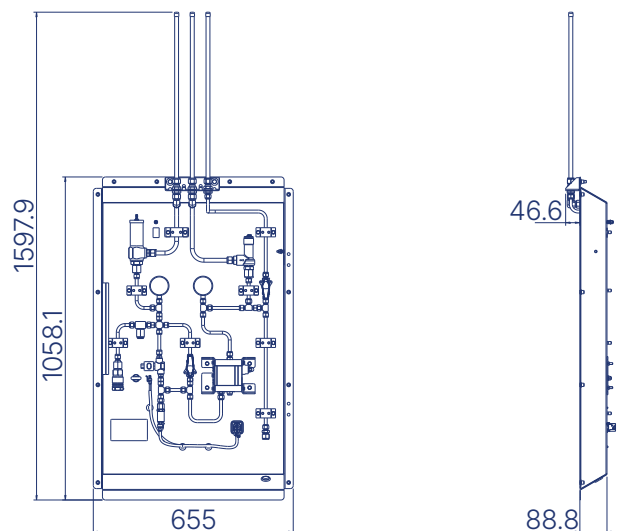
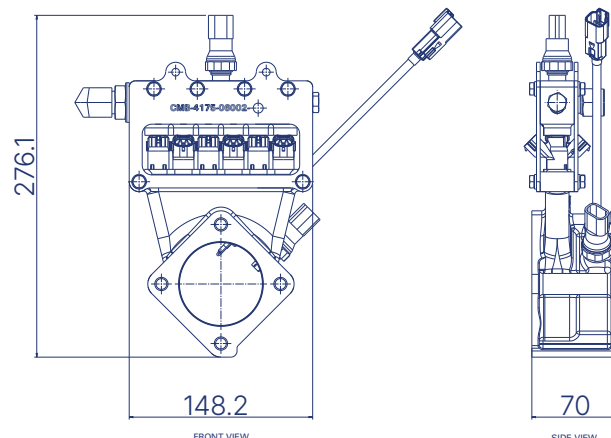


- | | |
|----|---------------------------------------|
| 1 | High pressure input |
| 2 | Hydrogen filter |
| 3 | Solenoid shut off valve |
| 4 | High pressure shut off bypass valve |
| 5 | High pressure gauge |
| 6 | High pressure reduction valve (PRV) |
| 7 | High pressure vent line |
| 8 | Pressure sensor |
| 9 | Pressure regulator |
| 10 | Low pressure gauge |
| 11 | Low pressure PRV |
| 12 | Low pressure vent line |
| 13 | Low pressure manual purge valve |
| 14 | Low pressure connection flexibel hose |
| 15 | Purge vent line |

TECHNICAL DATA

Operating modes	Diesel and dual fuel
Maximum inlet pressure	350bar
Minimum inlet pressure	25bar
Ambient temperature limits	-15° -- 40°C
H ₂ consumption	0-4kg/h
Minimum H ₂ grade	Grade A (ISO14687:2019)

DIMENSIONS



This system can only be used in combination with the Volvo Penta TADH880-884VE engine for stationary applications. In case of interest, please contact both Volvo Penta and CMB.TECH to obtain the necessary information and offers, as both parts need to be offered together to ensure compliancy to certification.

DISCLAIMER: Products illustrated may differ from production models. Not all models are available in all markets, and standard equipment may vary between different markets. CMB.TECH has made every effort to ensure that displayed facts and figures are correct at time of publication and reserves the right to make changes without prior notice at any time.