

## LNG Tanks for new generation Natural Gas Trucks



The actual main limit of the use of natural gas in long range trucks is due to the fact that the natural gas (fuel) has been stored as a gas in compressed cylinders, and this leads to a significant weight increase due to heavy tanks and decreased load capacity with a consequently low vehicle driving range.

Today this limit can be overcome using liquid methane (LNG) stored in cryogenic fuel tanks.

Most of truck manufacturers are already producing new full LNG trucks or dual fuel ones (diesel + LNG) and market looks to become every day bigger for those kind of vehicles that are less polluting and that can guarantee a better economy for the owner (low cost of the LNG compared with diesel). Trucks provided with LNG tanks can achieve a driving range of 1.400 km but the main problem still is that there is a lack of infrastructure of LNG stations. Today the main market for LNG trucks is Italy where there are already 21 LNG stations present and in the first quarter 2018, nearly 13% of new registered heavy duty vehicles hauliers sold were with LNG propulsion (due also to Italian National Incentives). There are many fleets driving with more than 100 LNG trucks.

LNG can also be retrofitted on diesel trucks already on the market, in this case trucks can become dual fuel (diesel + LNG) and reduce drastically consumption and emissions.

Now going back to the LNG technology, liquid methane is 600 times denser than gas at low pressure (about 2.5 times denser than gaseous methane at 200 bar), this provides considerable benefits in terms of transportable volume and consequently in terms of vehicle autonomy.

The advantages related to the cryogenic tank installation on board are:

- Reduced size and weight of the fuel tank;
- Greater vehicle autonomy;
- High fuel economy;
- Significant costs reduction;

- Substantially environmental impact reducing;
- Full accessibility to urban areas.

**This innovation is currently available to the market and is capable of restoring competitiveness in transport sectors improving the environmental quality at the same time.**



**E4 - 110R - 0104I9L**

**PASSED TEST :**

- ☒ **HOLD-TIME TEST**  
measured hydrostatic pressure at 120 or more hours is less than nominal primary relief valve pressure setting of the tank
- ☒ **DROP TEST**
  - 9 m drop test of the fuel tank on the most critical area of the tank
  - 3 m drop test on the piping end
- ☒ **BONFIRE TEST**  
designed to demonstrate the fire protection system efficiency, tank must resist at temperature at least 590 °C without burst and not exceeding maximum inner design pressure.

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## Contact information



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