TRACTION SYSTEM
MILD HYBRID
ON
AUTOBUS

MILD HYBRID KIT ON MERCEDES SPRINTER

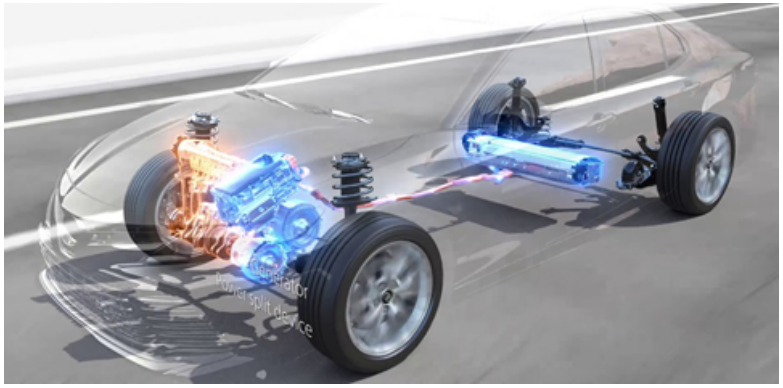
MILD HYBRID KIT ON FORD TRANSIT

MILD HYBRID KIT ON IVECO ITALO 70

The "Mild Hybrid" represents the simplest technology with which a car can be homologated as a hybrid and thus obtain the facilities typical of this classification. Its peculiarity, what it is called "light hybrid", is the presence of an electric motor that actively and constantly participates in the traction, despite being very small and is powered by a battery, just as small.

GREEN VEHICLES

The electric motor, as for all hybrid cars, also works as a generator: in the phases of deceleration and braking, in fact , recovers and stores the energy that would otherwise be lost to be able to later exploit it during traction



In this way you get a vehicle with a significant autonomy of travel compared to a full electric system and with lower purchase costs.
At the same time, the workload on the traditional engine is very low, so the hybrid engine requires much less maintenance than normal combustion vehicles.

THE ADVANTAGES OF MILD HYBRID

Vehicles with a Hybrid Green Vehicles system can boast a reduction in operating costs of up to 25%.
Fuel consumption, however, is reduced by up to 20% less than normal endothermic engines.
As a result, emissions are also significantly reduced: 15% less emissions of particulate matter, carbon dioxide and nitrogen monoxide, with undoubted advantages for the environment.

MAIN TECHNICAL CHARACTERISTICS

Main technical characteristics	
Electric motor	5kW
Cooling system	Air
Battery type	LiFeP04
Battery pack	2,5 kWh

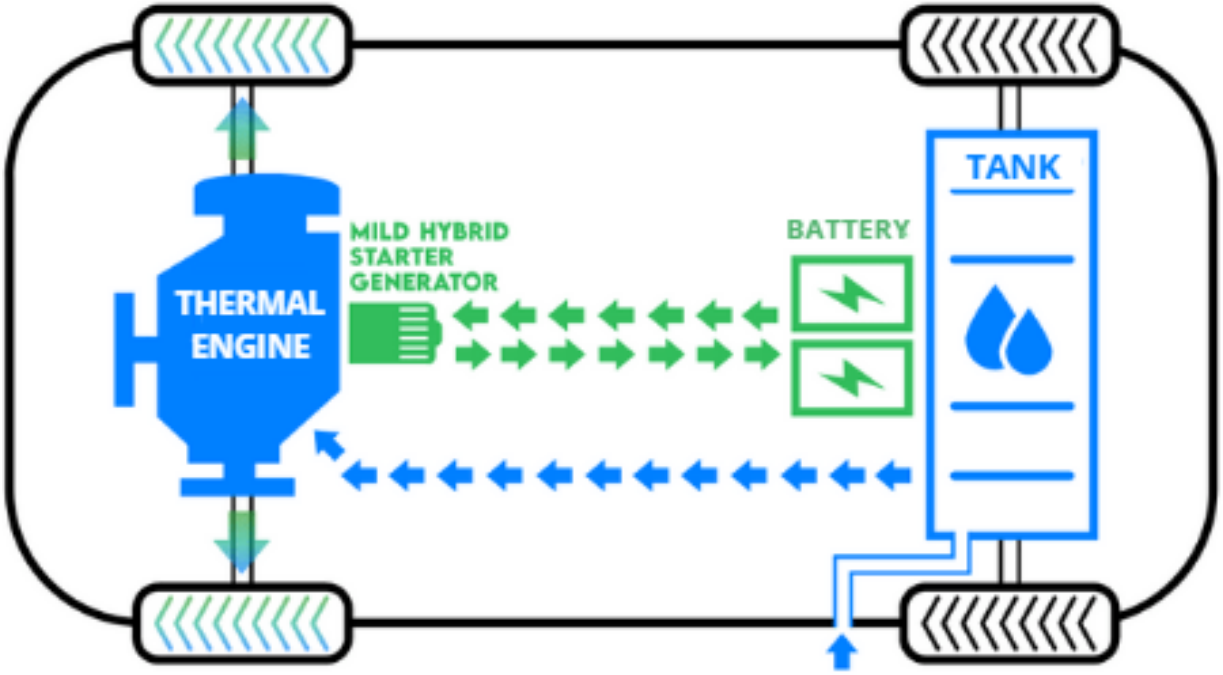
The processes that have been carried out on Mercedes Sprinter and Ford Transit vehicles are both mechanical and electronic.
More specifically, for the transformation of the vehicle with a hybrid power supply, it was necessary to couple the electric motor to the original traction system of the vehicle.

This process is divided into 3 steps: a design phase, a realization phase and, finally, a testing phase.

Focusing on the implementation phase, an electric powertrain kit was installed consisting of a 5 kW motor, the motor controller (inverter) and a battery pack with 2.5 kWh of energy.

The two engines were aligned and their rotations were synchronized by a system of two pulleys and a timing belt, which allows the transmission of the motion. The electric motor was fixed via a plate to the body of the thermal motor, so as not to suffer, but to accommodate the vibrations.

Electronically, the element that manages the whole kit is the inverter, which receives and emits the signals of acceleration and regenerative braking. The acceleration of the electric motor is connected to that of the thermal engine, so as to operate in a synchronized way, as well as the braking is coordinated with that of the vehicle.



GREEN VEHICLES

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