



DUAL FUEL - SOLUTIONS

- REDUCED COSTS BY USE OF GAS FAST RETURN ON INVEST.
- ADVANCED TECHNOLOGY FOR HIGH CONVERSION RATES.
- RELIABLE COMPONENTS ENSURE HIGH AVAILABILITY.
- FOR DIFFERENT SIZED HIGH OR LOW-SPEED ENGINES.
- OPTIMIZE FUEL EFFICIENCY AND REDUCE ENVIRONMENTAL IMPACT

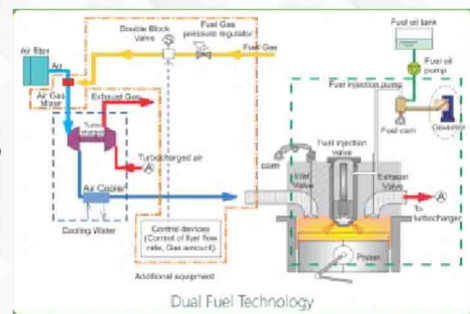
DUAL FUEL ENGINE

Dual fuel engines are a type of engine that can operate using a mixture of two different fuels, diesel and natural gas. In this system, a small amount of diesel acts as an ignition source, while natural gas replaces a significant proportion of diesel in the combustion process. This results in a reduction in environmental impact, as the engine emits fewer pollutants. The gas is inserted into the engine through a Venturi-based system, which includes a gas train and air-gas mixer that operates at atmospheric pressure.

TECHNOLOGY WORKS

The gas used for Dual Fueling is sourced from either piped gas or from local storage. It is injected into the combustion air stream via a Gas Train consisting of a gas filter, a gas pressure regulator and a solenoid valve. A throttle valve at the end controls the proportion of the gas injected. The gas train is designed to accept input gas at low pressure and deliver it to the engine at a slightly negative pressure.

The controller system constantly monitors and adjusts the amount of gas being injected into the engine, ensuring optimal performance and efficiency. The advanced technology of the logic controller allows for precise control of the fuel mixture, resulting in a cleaner and more sustainable energy source.



DUAL FUEL SYSTEM COMPONENTS: AIR GAS MIXER (AGM)

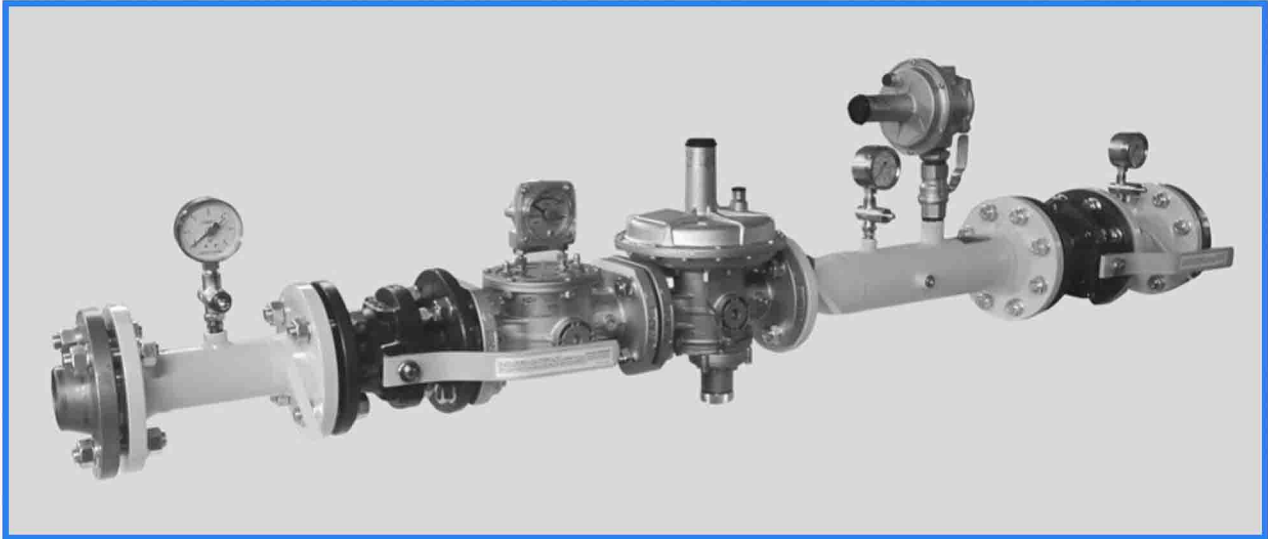
The gas mixer is an indispensable component of the fuel system, which takes care for quality of the mixture. Mixers provide a very homogeneous air and gas mixture and an optimal Air to Fuel Ratio (AFR) over the entire speed and load range of the engine.

- ▶ Located between the Air Filter and the Turbocharger

THE GAS TRAIN COMPONENTS ARE

- ▶ Gas Filter
- ▶ DMV Double Solenoid
- ▶ Zero Pressure Regulator

CONVERT TO DUEL FUEL (DIESEL + NATURAL GAS)



DUAL FUEL CONTROLLER

Controller monitors critical engine and Dual-Fuel System parameters and activates / deactivates gas mode according to programmed limits. It provides safety to the engine, while operating in the Dual-fuel mode.



- Engine exhaust temperature
- Engine frame vibration
- Inlet gas pressure
- Electrical Load on the engine

- Audio/Visual alarms for any abnormality
- Control command to Solenoid valve
- Command for gas proportion
- Switching command to safe mode in case of malfunctioning

SYSTEM ATTRIBUTES

- Fits a range of high-speed engines.
- Simple and hassle-free operation.
- Advanced safety features included.
- Monitors exhaust temperature and engine knock.
- Minimal moving parts for reliability.
- Seamless switching between operational modes.
- Gas control proportional to KW loading.

SAFETY FEATURES

AUDIO/VISUAL ALARMS FOR:

- Excess exhaust temperature.
- Excess engine vibration.
- Gas supply failure.
- PNG supply ratio management according to load (KW) on engine

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