



Bi-Fuel Generating Sets

The FG Wilson range of Bi-fuel generating sets underlines our commitment to meet your specific needs. These generating sets are specifically designed to allow conventional diesel engines to operate on a mixture of natural gas (70%) and diesel (30%). This design will ensure cleaner emissions and lower generator running costs.

This range of generating sets offers many of the advantages of spark ignition gas sets such as:

- Cleaner emissions
- Lower maintenance costs
- Lower operating costs (where natural gas is competitive with diesel in price)

While maintaining the advantages of diesel engines over their gas-fuelled equivalent, Bi-fuel generating sets can offer:

- Diesel generator power ratings maintained
- Quick starting
- Diesel load acceptance/rejection
- Smaller space requirements per kVA
- Lower weight
- Lower initial capital cost

These benefits are achieved by using gas for up to 70% of the fuel required by the engine without affecting the output rating of the set. This alternative will be most financially attractive where the set runs for long periods throughout the year and where gas prices are low relative to diesel.

Technical Outline

The proprietary mixing system introduces gas to the combustion airflow immediately upstream of the turbo(s), where it is mixed with air and compressed as normal. The gas controls are set to maximise the gas percentage at any stable load, above a minimum engine load of 30%.

All engine parameters such as exhaust temperature, lube oil & cooling water temperatures are kept within normal 'diesel' limits for that particular engine. Gas injection is controlled by a throttle operated by the ComAp electronic control system IntelliDrive BF according to the required engine output and speed. The electronic governor reduces the diesel fuel input to the engine, maintains speed stability and deals with load steps. The engine automatically starts and shuts down on diesel fuel only. The operation mode is switched to bi-fuel upon a predefined output level.

Sets are supplied fitted with all necessary Bi-fuel equipment including the gas venturi, gas control & monitoring panel and an internationally acceptable gas train. All standard FG Wilson diesel control panels and options are available with Bi-fuel sets.

Site Gas Set Up (Natural Gas)

Details of site natural gas composition are required for approval with all enquiries. All sets are tested in our test bays using natural gas having a gross calorific value of 36.9 – 42.3 MJ/ m³ - a methane number of 75.

Re-calibration at site may be necessary to suit local gas composition and ambient conditions. Full technical documentation for re-calibration will be supplied with each set.

Minimum site requirements: Gas pressure – 3 psi

Recommended minimum gas specification: Methane >75%, Propane < 2%, Hydrogen Sulphide < 50ppm (gas/diesel mix and generator output dependent on exact site gas composition)

Applications

- Prime Power
- Baseload
- Peak Shaving
- Environmental or Fuel
- Storage Constraints

Gas Control System Features Available

- Critical Engine Parameters
- Natural Gas Pressure
- Data Logging System
- Real Time Display of Data
- Remote Monitoring
- Auto-Switching of Fuel Modes

Customer Benefits

- Reduced Energy Costs
- Energy Flexibility
- Lower Exhaust Emissions
- Extended Run-Time for Standby Diesel Sets
- Lower Capital Costs (Relative to 100% Gas Sets)
- Fast Payback

Reduced Emissions (Dependant on gas specification)

- NO_x
- CO₂
- SO_x
- Visible Emissions
- Particulate Matter
- Non Methane Hydrocarbons
(Additional Reduction using Catalytic Converters)

Internationally Accepted Gas Train

- Dual Solenoid Valve
- Gas Filter
- Gas Regulator
- Manual Shut off Valve (Optional)

GENERATOR MODELS AVAILABLE FOR UPGRADE

Generator Set Model	Engine Model
PBF1250P3	4012-46TWG2A
PBF1350P1	4012-46TWG3A
PBF2000-1	4016-61TRG1
PBF2250-1	4016-61TRG2
PBF2500-1	4016-61TRG3

Note: No other models currently available for Factory upgrade.

FG Wilson has manufacturing facilities in the following locations:

Northern Ireland • Brazil • China • India • USA

With headquarters in Northern Ireland, FG Wilson operates through a Global Dealer Network.

To contact your local Sales Office please visit the FG Wilson website at www.FGWilson.com

FG Wilson is a trading name of Caterpillar (NI) Ltd

In line with our policy of continuous product development, we reserve the right to change specification without notice.



ComAp Controller



Gas Train



Air Intake Mixer

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