Pacific Class Wood Gasifier

- Gasifies up to 45 kg of wood/hour
- Sustaining the following range of power output:

**Spark ignition engine**

- Shaft power: to 37.8kw (50.7hp)
- Electrical power: to 34kw

**Dual fuel, diesel engine**

- Shaft power: to 47.8kw (60.7hp)
- Electrical power: to 40.8kw

(Actual power output is determined by engine specification. Optimum engine size is 6 litres)

**Features**

- Wood fuel hopper, 200 litre capacity, power agitated and thermally insulated.
- Twin fan, air cooled gas conditioning system designed for easy cleaning
- Quick change, sawdust gas filter with washable, final safety filter element (Rice husk or pulverised plant material may also be used).
- Change over valve
- Start up, suction fan complete
- Test flame, burner nozzle
- Hearth and filter manometers
  - Hearth, gas exit temperature gauge
  - Space frame chassis with built in steps and operators platform
  - 6 metres of 80mm PVC pipeline
  - Operating instructions

**Dimensions**

- Length 2616 mm
- Width 1160mm
- Height 2870 mm
- Gasifier weight 900 kg
- Shipping volume 11.66 cubic metres
- Shipping weight 1500 kg

This plant incorporates an automatically timed 0.37 KW electric motor for fuel agitation. It generally operates for about 5 seconds every 3 to 5 minutes.

The Start up fan is powered by a 0.37 KW electric motor, which normally operates for 3 to 5 minutes daily while the engine is running initially on liquid fuel as the gasifier warms up to operating temperature. A small petrol engine can also be used for this function. when the main engine runs on producer gas only.

A maximum of three (3) Pacific Class gasifiers may be manifolded together to obtain larger gas volume.
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Specification

Type: Downdraught
Maximum wood consumption: 45kg/hour
Maximum gas production: 98.3 Nm³/hour (in continuous operation)
Minimum gas production: 24.6 Nm³/hour
Gas heating maximum load: 5030kJ/Mn³
Gas heating value 60% load: 4980kJ/Mn³
Maximum fuel moisture content: 24% (dry basis)
Maximum fuel ash content: 2%
Fuel Size distribution: Assessed during commissioning
Minimum bulk fuel density: 200 kg/m³ (estimated and variable)
Type of ash removal system: Manual
Ash amount produced: 0.055 kg ash/kg fuel (estimated)
Gasifier efficiency at maximum load: 71%
Gasifier efficiency at 60% load: 70%
Gasifier power consumption: 0.992 kW/hour (approx)
Gasifier start up time: 5 minutes
Suitable fuels: Wood coconut shells, corn cobs (no other fuel suitable)

Gas treatment section

Type: Baffled settling chamber, multi cyclone, precipitation by condensation, volume filtration, impingement filtration.

Filter medium: Sawdust plus washable reusable cellular sheet as final safety filter.

Filter efficiency (directly related to the size of sawdust particle used)

@ maximum flow rate of 95 Nm³/hour 88.5%
@ minimum flow rate of 53 Nm³/hour 93.7%

Cleaning: Manual
Maintenance requirements: 0.00375 labour hours/kW
Condensate production at maximum load: Variable under different site conditions

Gas tar content after gas treatment section: None visible in equipment or engine, across gasifier operating range.

Gas dust content after gas treatment section: Acceptable to engine manufacturer, proven by site testing.