Mini Steam Power Plant

Model BSG 011M1

FEATURES

- Miniature model steam system of an Industrial Power System
- Simple construction allows easy training
- Low cost introduction to steam studies
- Ease of installation
- Comprehensive instrumentation

Sci-tech Mini Steam Power Plant Model BSG 011M1 is the smallest in our comprehensive range of Steam Power Products and has been designed to allow teaching establishments to give students an appreciation of steam and its properties, without the larger capital investment normally required. A small gas fired boiler supplies steam to a single cylinder double-acting reciprocating engine which drives, by means of a belt, a small DC generator with switchable resistive loading. The exhaust steam from the engine is condensed in a water cooled

Designed, Developed & Marketed by **Sci-tech UK**
47, Underwood Road,
Reading, Berkshire, RG30 3LZ. United Kingdom.
Tel.no. 00 44 77 8060 7589
Emails: patrick@sci-tech.biz; sci-tech@sci-tech.biz
scitechenggpvtltd@yahoo.com.

condenser, the condensate being measured by weighing the collecting beaker provided. Instrumentation to measure various temperatures throughout the plant, steam pressure, fuel and cooling water flow, together with voltage and current loading on the DC generator, is provided.

Specifications

- Electrical Steam Boiler with a design pressure of 4 bar g
- Gas consumed from and at 100^{0}C
- Boiler Feed Pump (Centrifugal) and Feed Water Tank
- Steam Engine: Single cylinder double acting reciprocating
- Model Steam Engine: Stroke 19.05 mm. Normal Power output 3.3 watts at 1200 rpm
- Steam Engine: single rotor stage model steam turbine, diameter 75mm
- DC Generator: Coupled to the engine by a driving belt, with resistive load bank of 4 lamp bulbs each with nominal rating of 6V@0.03A (i.e. 20 Ohms giving off 1.8 watts)

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- Condenser Unit: Shell and Tube atmospheric type condenser. Condensate collection by metal beaker. Minimum cooling water flow rate 0.5 litres/min.
- INSTRUMENTATION comprehensive instrumentation is supplied comprising:
  Pressure: Boiler steam via 0-6 bar pressure gauge
  Temperatures: Ambient air
  Boiler feed water
  Boiler steam
  Turbine steam inlet
  Turbine steam exhaust
  Condenser cooling water inlet
  Condenser cooling water outlet
  Condensate
  Flowmeters: Fuel(gas)
  Cooling water (50-800cc/mm)
  Voltmeter: 0-10V DC
  Ammeter: 0-1A DC
- All necessary interconnecting pipework, valves and fittings, together with electrical cabling, are included.

Experiment Capabilities

- Demonstration of steam power generation cycle
- Thermal and plant efficiency
- Heat balance and energy utilization
- Power generation
- Fuel consumption

Specifications, Model Photos and design subject to changes without any notice

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