



Tesca Mini Steam Power Plant 32459 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 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.

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



Note: Specifications are subject to change.

Tesca Technologies Pvt. Ltd.

IT-2013, Ramchandrapura Industrial Area, Sitapura Extension,
Near Bombay Hospital, Vidhani Circle, Jaipur-302022, Rajasthan, India,
Tel: +91-141-2771791 / 2771792; Email: info@tesca.in, tesca.technologies@gmail.com
Website: www.tescaglobal.com

System Components & Specifications

- Boiler:
 - Type: Fire tube vertical boiler
 - Equivalent Evaporation: Approx. 7Kg/H steam
 - Maximum working pressure: 5 Kg/cm² (0.49MPa)
- Boiler Accessories: Steam separator, manual feed pump, safety valve, level gauge and low level alarm.
- Fuel: Liquefied Petroleum gas
- Feed water tank: Stainless steel with level gauge
- Feed Pump: Hand operated
- Steam Engine:
 - Type: Single cylinder, double acting
 - Plant output at maximum working pressure
 - : Mechanical, approximately 7 W
 - : Electrical, approximately 2 W
- Power output measurement: Mechanical brake dynamometer
- Electrical power system: DC generator with resistive load
- Condenser: Shell and tube type
- Measuring instruments:
 - Pressure gauge: Boiler steam outlet
 - Flow meters: 2 each
 - Spring balance and weights for dynamometer torque
 - Graduated cylinder and stop watch for condensate measurement
 - Voltage and current digital display
- Accessory: Boiler cleaning kits
- Power supply: 220 V, 1 Ph, 50Hz
- All necessary interconnecting pipework, valves and fittings, together with electrical cabling, are included.

Optional Accessories

- 'Sci-Cal' Data Acquisition System: Software for data display and analysis
- Sensors with computer interface unit for key data acquisition instead of analog data measuring instruments
- 'Sci-Cal' PLC Computer control
- **32459.1** : Digital flue gas analyzer for O₂ and CO contents
- **32459.2** : Pressure digital display
- **32459.3** : Torque digital display instead of spring balance and weight
- **32459.4** : Mini Electric Boiler instead of LPG boiler and LPG system. By using electric boiler.
- **32459.5** : Electric feed pump
- **32459.6** : Condenser cooling unit: The unit is to cool condenser cooling water and make this equipment to be self-contained instead of using outside water supply. It is completed with transfer pump.
- **32459.7** : Fuel weight totalizer for fuel flow rate measurement.
- **32459.8** : Cooling water flow sensor
- **32459.9** : Condensate weight totalizer for steam

rate measurement




Flow	Power	Efficiency	...
1.0	0.5	10.0	...
2.0	1.0	20.0	...
3.0	1.5	30.0	...
4.0	2.0	40.0	...
5.0	2.5	50.0	...
6.0	3.0	60.0	...
7.0	3.5	70.0	...
8.0	4.0	80.0	...
9.0	4.5	90.0	...
10.0	5.0	100.0	...

Experiment Capabilities

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

Dimensions & Weights:

Dimensions: 80cm(W) x 95cm (L) x 155cm (H)

Weight: @ 95 Kgs

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