

TH 102 TRAINING BOILER, 200 kg/hr



GENERAL DESCRIPTION

This is a set of steam boiler and standard accessories for a study of boiler performance.

The basic unit consists of a small industrial type boiler with a burner, a feed water system, a fuel system, and instruments for monitoring boiler operation as well as instruments for control and safety. The complete unit is arranged as a package on a pallet for easy site installation. Optional equipment are available for additional experiments.

Instruction manual is also included.

EXPERIMENT CAPABILITIES:

- Pressure, temperature and flow measurements.
- Heat of combustion, heat given to steam and boiler efficiency.

TECHNICAL DATA

The boiler set consists of:

- Boiler unit:
 - Type : Vertical, water tube
 - Rated output : Approx. 125 kW (107,800 kcal/h)
 - Equivalent evaporation : Approx. 200 kg/h steam
 - Maximum working pressure : 10 kg/cm² (0.98 MPa)
 - Measuring instruments : Pressure gauge for steam outlet
 - Safety devices : Temperature for feed water, outlet steam and exhaust stack
 - Safety valve
 - Low level alarm
 - Boiler accessories : Steam pressure regulator
 - : Steam separator
 - : Feed water pump
 - : Stack, 2x 2.4 m stainless steel with elbows
- Burner:
 - Type : Forced draft, pressure atomized
 - Control : On-Off
 - Fuel : Diesel or kerosene (LPG is available as an option)
- Fuel system : Fuel tank, fuel meter and oil strainer.
- Feed water system : Resin filter, soft water tank and water meter.
- Power supply : 220 V, 1 Ph, 50Hz. Other power supply is available on request.

OPTIONAL EQUIPMENT

A Condenser and Cooling Tower

Both condenser and cooling tower should be used together

• TH 102-013 Condenser

Description

The unit is used for studying of heat transfer in a heat exchanger as well as recover condensate for reuse. The unit consists of a counter flow steam tube heat exchanger and instruments for measurement of temperatures and cooling water flow rate.

Typical experiment

- Condenser heat transfer efficiency

Technical data

- Type : Steam tube
- Accessories : Cooling water pump, condensate transfer pump, water meter, condensate tank.

OPTIONAL EQUIPMENT

- TH 102-014 Cooling Tower

Description

The unit is used for recovering of condenser cooling water as well as studying of cooling tower efficiency. The cooling tower is to recycle cooling water in case TH102-013 condenser is used. The unit consists of a cooling tower unit, a storage tank, a circulating pump and temperature gauges.

Typical experiment

- Cooling tower efficiency

- B • TH 101-021 Sand filter for water with suspended materials
- C • TH 101-022 Carbon filter for water with odour or rust
- D • Portable pH meter



Boiler Package

Net (unpacked) shipping dimensions WxLxH : 180 x 300 x 200 cm
 Net weight : Approx. 800 kg

Cooling Tower

Net (unpacked) shipping dimensions WxLxH : 110 x 110 x 150 cm
 Net weight : Approx. 95 kg