

## TH 102 TRAINING BOILER, 200 kg/hr, 10 kg/cm<sup>2</sup>



### 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.

### TYPICAL EXPERIMENTS

- 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 k cal/h.)
  - Equivalent evaporation approx 200 kg/h steam at 0 MPa gauge.
  - Maximum working pressure : Upto 0.9 MPa gauge.
  - Measuring instruments : Pressure gauge for steam outlet.
  - : Temperatures for feed water, outlet steam, and exhaust stack.
  - Safety valve : Safety valve.
  - : Low level alarm.
  - Boiler accessories : Steam separator.
  - : Feed water pump.
  - : Stack 6 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 : 220V 1Ph.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 TH101-013 condenser is used.

The unit consists of a cooling

tower unit, a storage tank, a circulating pump, and one wet bulb temperature sensor.

- Typical experiment

- Cooling tower efficiency.

B. TH 101-021 Sand filter for water with suspension 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.