

# HL 351

## Domestic heating boiler



The illustration shows a similar unit.

### Learning objectives/experiments

- function of an oil burner
- operation of a heating boiler with an oil burner
- burner adjustment during operation
- temperature measurements in different areas of the combustion chamber
- calculation of the heating capacity of a heating boiler
- function of a plate heat exchanger
- temperature distributions in a plate heat exchanger

### Description

- **trainer for oil burners**
- **transparent oil tank**
- **can be extended to form a complete heating system**

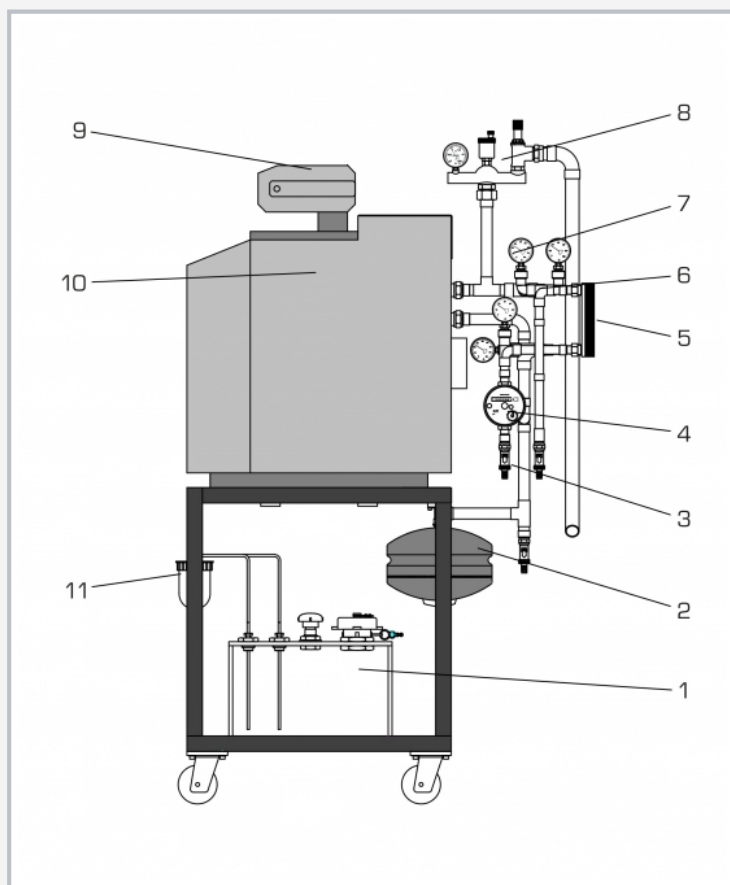
Different operating points can be investigated by changing the oil pressure after the preset boiler water temperature has been reached.

An integrated hot water circuit with plate heat exchanger simulates the heating circuit in a house. The heat generated can be dissipated via cooling water connections, enabling continuous operation. The heat transferred can be calculated.

Connections for an external heating circuit are provided on the rear of the boiler. This allows the HL 351 to be expanded into a complete heating system using training panels from the HL series.

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1 oil tank, 2 expansion vessel, 3 cold water connections, 4 water meter, 5 heat exchanger, 6 circulating pump, 7 thermometer, 8 boiler safety group, 9 control unit, 10 boiler, 11 double-strand oil filter

### Specification

- [1] functional heating boiler with oil burner
- [2] boiler with control unit
- [3] heating and cooling circuit equipped with expansion vessel, pump, boiler safety group, thermometers, water meter, heat exchanger
- [4] transparent oil tank with filling and bleed connections
- [5] dissipation of generated heat via plate heat exchanger and cold water connection

### Technical data

#### Boiler

- nominal rating: 17...21kW
- control unit with temperature limiter

#### Burner

- nominal power: approx. 18kW

#### Pump

- power consumption: 70W
- max. flow rate: 60L/min
- max. head: 4m

Plate heat exchanger: 3kW, 10 plates

Boiler safety group in accordance with DIN 4751

- 2.5bar
- 50kW

Oil tank: 15L

Water meter: 2.5m<sup>3</sup>/h

#### Measuring ranges

- temperature: 4x 0...120°C

230V, 50Hz, 1 phase

230V, 60Hz, 1 phase

120V, 60Hz, 1 phase

LxWxH: 1510x810x1620mm

Weight: approx. 230kg

### Required for operation

water connection, drain

ventilation & exhaust gas routing required

### Scope of delivery

- 1 trainer
- 1 manual

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Optional accessories

065.86000      HL 860      Exhaust gas analyser