

## GAS COMBI BOILER TRAINER



---

### Experimental capabilities

---

- Identification of the components of a gas boiler
- Commissioning of a gas boiler
- Setting a boiler (combustion, regulation, efficiency, requires the optional combustion analyzer)
- Maintenance of a wall-mounted boiler
- Thermal study of a wall-mounted boiler installation (balance, production of heating and production DHW)
- Hydraulic study of a wall-mounted boiler installation (mixing law, flows, temperatures, pressures..)

## Operating principle

The TCF102 trainer has been designed to study a gas boiler. The installation includes a circuit for heating and DHW production that is used on a sink located next to the boiler.

The hydraulic circuit includes all the components of a conventional domestic heating circuit.

Students will begin by identifying the components of the circuit and draw the hydraulic diagram. Then they will proceed with the commissioning and system setting and will end up by analyzing the operation by recording the parameters (temperature, flow rate, pressure).

The bench is available in 3 different versions according to the type of boiler and the associated production (DHW and heating). The dissipation can be achieved by various optional benches.

The robust design of this equipment makes it perfectly suited for use in schools.

Its anodized aluminum frame with legs gives it great strength as well as great flexibility of integration into your premises. The manufacturing of this equipment meets the European machine directive

This equipment can be used alone or with other compatible equipments in our range (see last section of this document).

## Illustrations



### 1. Gas boiler:

Version 1: Power around 24KW, combi boiler, 1 direct heating circuit, condensing boiler

Version 2: Power around 24KW, combi boiler, 1 controlled heating circuit, condensing boiler

Version 3: Power around 24 KW, system boiler, 1 controlled heating circuit, condensing boiler

### 2. Gas supply line composed of standard elements:

- Pressure manometer 0-60mbars
- Volumetric gas meter
- Stop valves before and after meter

## Technical specifications

### 3. Use of Domestic Hot Water (DHW) composed of:

- A stainless steel sink with plumbing kit
- A mixer tap
- Instrumentation: flowmeter, thermometer and pressure gauge for each circuit (hot and cold water)

### 4. The unit can have two types of heating circuit :

- Direct circuit including: a flowmeter, two thermometers, a balancing valve on the return, a differential valve, two quick connectors.
- Regulated circuit including: a primary circuit, a bottle decoupling, a three-way valve, a circulating pump, 2 flowmeters, 4 thermometers, 2 balancing valves on the return, a differential valve, two quick connectors.

Version 1: 1 direct heating circuit

Version 2: 1 controlled heating circuit

Version 3: 1 controlled heating circuit

5. Power electrical box including a main switch, circuit breakers, a white indicator light for voltage presence and commissioning button.

6. Water supply line comprising two stop valves, a meter, a filter, an anti-pollution check valve.

## Services required

- Power supply: 230 Vac – 50 Hz – 6 A
- Power supply type: 1 phase(s) + Neutral + Earth.
- Water supply: 10 L/min – 2 bars
- Water disposal: at ground level
- Evacuation of fumes: suction cup diameter 60/100mm
- Supply in fuel: Natural gas (butane possible on request)
- Dimensions: (LxWxH mm): 2000 x 740 x 1950
- weight (Kg): 170

## Documentation

- User's manual
- Pedagogical manual
- Technical documentation of the components
- Lab exercises
- Wiring diagram
- Hydraulic diagram
- Certificate of conformity CE

Note : if the equipment installation is operated by our staff, all supplies and exhaust connections required must stand at less than 2m from the machine

# TCF102



## Options

- Portable combustion analyzer
- Ref : KIG100

## Additional compatible equipments

- Dissipation unit heater
- Radiators bench
- underfloor heating bench
- Radiators bench with balancing
- Balancing briefcase
- Fan heater
- Ref : AER033
- Ref : TCF120
- Ref : TCF121
- Ref : TCF122
- Ref : TCF123
- Ref : TCF124