

## AUTOMATIC BENCH OF BOILER BIOMASS

### DESCRIPTION

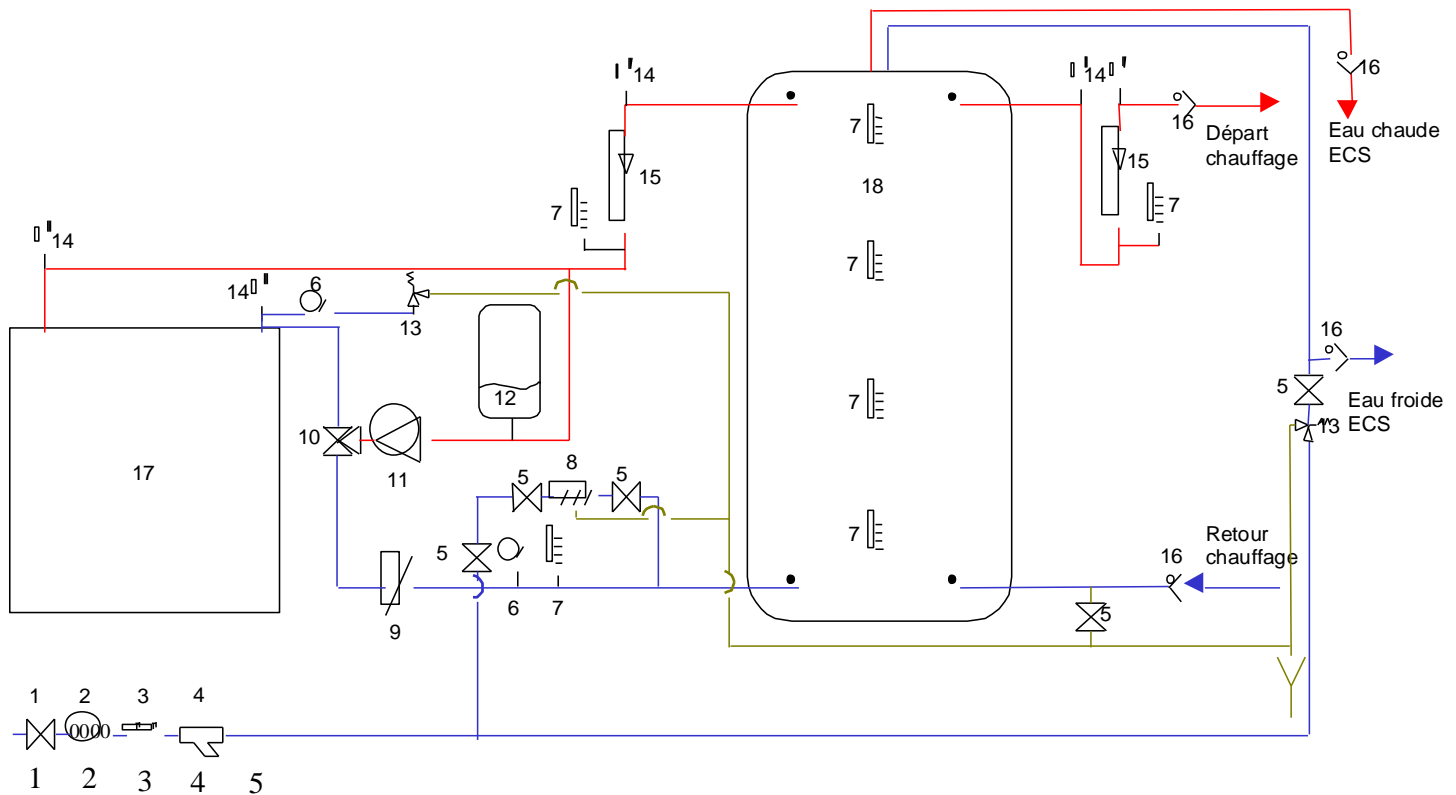
- The bench of study of a multi-fuel is delivered, instrumented with technical and teaching handbook.
- It is composed of an automatic boiler biomass HS TERM 15, 25 or 40 kw, of a domestic network hot water, a network heating high temperature by unit heater.
- Silo of a volume of 600 L allowing to receive the storage of cereals, pellet, shredded wood, oil cake of colza...
- The food to the boiler is done by an endless screw.



Boiler including/understanding:

- Automatic feeding since the silo.
- Manual Lighting.
- Ventilator of air inlet at variable speed.
- Ventilator of support of pulling.
- Circuit of spillplate of temperature integrated.

## HYDRAULIC DIAGRAM



### Technical nomenclature:

- 1) Winnow  $\frac{3}{4}$  of turn.
- 2) Water meter.
- 3) Anti-pollution valve.
- 4) Filter sieve.
- 5) Winnow.
- 6) Pressure gauge with oil bath.
- 7) Thermometer.
- 8) Disconnecting.
- 9) Desembouor.
- 10) Winnow 3 ways.
- 11) Circulator.
- 12) Surge tank.
- 13) Valve of safety.
- 14) Automatic drainer.
- 15) Flowmeter.
- 16) Quick action coupling.
- 17) Boiler MULTI-HEAT 2,5 single-phase current or Three-phase current.
- 18) Balloon ECS + heating 600 Liters.

## Teaching applications

- Handling practice real elements of heating
  - Choice of the equipment.
  - Research and identification of the components.
  - Startup.
  - Adjustment.
  - Preventive and curative Maintenance.
  - Safety Member.
  - Water Supply – water treatment of boilers.
  - Device of expansion of water...
  
- Use of the instrumentation
  - Measurement of the flows, pressures, temperatures.
  - Consumption.
  - Measurement of the emissions in chimney (option)
  
- Concepts approached:
  - Thermal Transfers in a unit heater.
  - Thermal Power.
  - Power heating ECS.
  - Assessments.
  - Outputs.



## Options

The GRA 125 SP can be equipped with the following instrumentation:

- Analyzer of combustion for the measurement of the rejections in chimney (with or without measurements of the NO1, NO2).
- Thermometer of contact.
- Meter (S) of calories.
- Lambda Probe.
- Bench of dissipation by radiators with balancing.
- Bench of dissipation floor heating and unit heater.

## Dimensions

Modulate 1:  
Length 2 m  
Width 1,2 m  
Height 1,8 m  
Weight 550 kg (without water)

Modulate 2:  
Length 3 m  
Width 1 m  
Height 2 m  
Weight 450 kg (without water)

## Utilities

WATER: network 3 bars  
ELECTRICITY: 230 V Mono or 380 V Sorting  
SMOKE: 1 exit  
diam: 150 mm

Evacuation Water Used to envisage

**The utilities must be with a maximum of 2,5 m of the installation**

**Be careful if the bench is in 230 V Mono, this one will not be able to carry out shredded wood.**