

HEAT TRANSFER IN FLUIDIZED BED TRAINER



Experimental capabilities

- Study of the flow rate and the pressure of the air on fixed or fluidized product
- Study of the heat transfer coefficient as a function of the superficial velocity, the immersion height, the size of particles

Operating principle

The GPCFL4 bench allows the study of heat transfer in fluidized bed.

The bench is comprised of a cylindrical reactor containing the alumina powder. Compressed air is sent as powder in order to fluidize it .

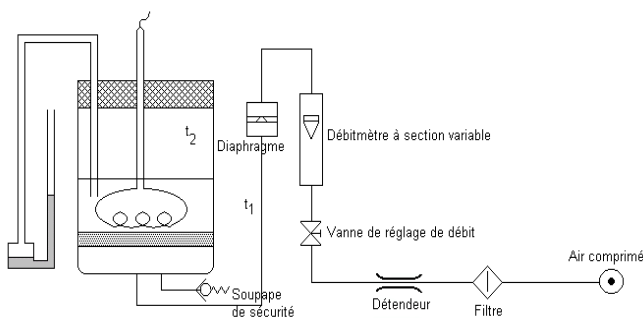
An electrical resistance causes a heat load and a heat transfer towards the bed. It is possible to measure the electrical power supplied, the temperature and air flow rates.

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

Its anodized aluminum structure on adjustable plates makes it very robust as well as a great flexibility of integration into your premises.

The manufacture of this equipment meets European machine directive.

Illustrations



The bench is installed on an aluminum profile structure equipped with four feet.
It has an electrical box with a main power disconnect switch and a 30mA differential circuit breaker.

Technical details

-Test container

In clear plastic
Usable capacity: 1.5 liters
Air distribution chamber in the lower part
Heating element

- Air network

Inline filter
Expansion Valve
Needle control valve
Air flow rate measurements
Filter of air exhaust

- Instrumentation

Measuring the pressure in the container
Measurement of air input temperature and output container
Variation of the power of the heating element
Measurement of this power by voltmeter and ammeter

Services required

- Electrical supply : 230 Vac – 50 Hz – 16 A
- Electrical network : 1 phase(s) + Neutral + Earth.
- Compressed air supply: 6-8 bars (dry air)
- Dimensions: (LxWxH mm): 750 x 650 x 800
- weight (Kg): 45

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

Documentation

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