

Impulse turbine unit

DESCRIPTION

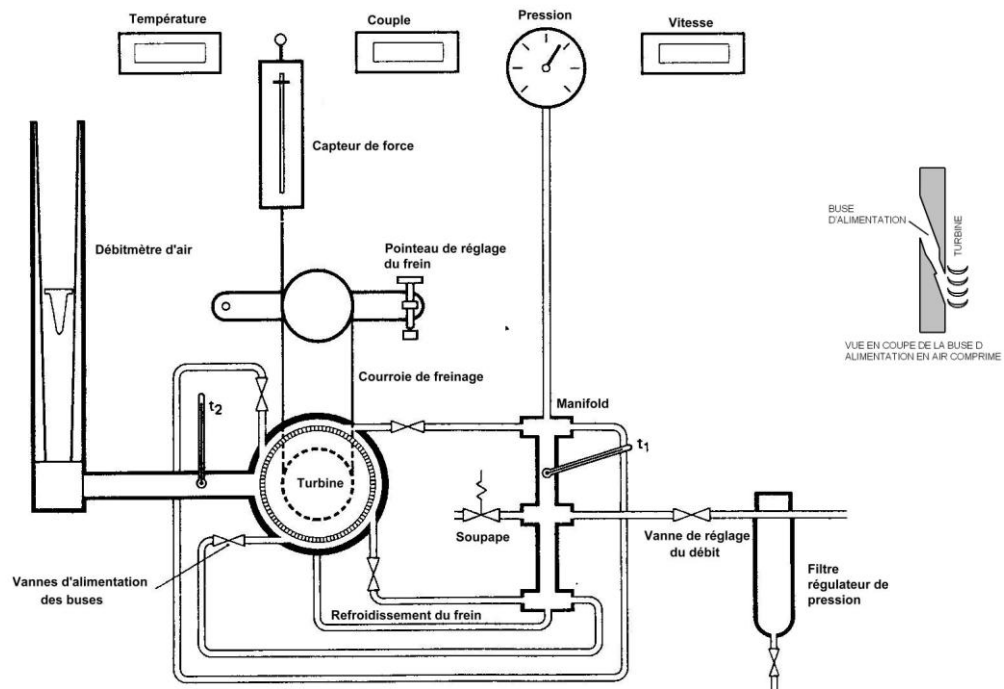
- v The bench is composed of an axial turbine (power=45W)
- v The distributor is equipped with 4 stop valves
- v The power generated is dissipated by a variable belt brake
- v The bench is supplied with different sensors like tachometer, temperature sensors...
- v The impulse turbine unit is delivered complete with instrumentation, and includes a technical and instruction manual.



SUGGESTED APPLICATIONS

- Description of the different elements of an impulse turbine
- Calculation of the torque, the mechanical power at different speeds of rotation
- Study of the influence of air flow on the generated power
- Study of the cycle on a T-S diagram (temperature –entropy)
- Isentropic output of the turbine

Principle diagram



Turbine : simple stage turbine with axial flow;
maximum speed : 35000tr/min ; max power :
45W

Stop valves : four valves

Brake : belt brake mounted on the shaft of
the turbine

Torque meter : gauge mounted on the brake
and linked to a numeric indicator on the
cabinet

Temperature : measure at the inlet and the
outlet of the turbine

Air flow : variable area flowmeter at the
outlet of the turbine

Speed of rotation : optic sensor linked to a
numeric indicator on the cabinet

Pressure manometer : bourdon manometer
(0-4 bars)

Safety valve : avoid high pressure in the
turbine

Regulation filter : set the air pressure at the
turbine inlet and purified it

Screw : is used to set the brake

UTILITIES

Electricity : 230 V / 50 Hz

Compressed air: 7 bars

DIMENSIONS :

Length : 800 mm

Width : 500 mm

Height : 600 mm

weight : 25 kg