TAA100

IMPULSE TURBINE

Experimental capabilities

- **Presentation constituent elements of an impulse turbine**
- **Determination of the characteristics of power and torque of the turbine as a function of the rotational speed.**
- **Study of the influence of the air flow rate on the power**
- **Study of the influence of the number of nozzle used**
- **Cycle Plotting on diagram TS (-entropie temperature)**
- **Isentropic efficiency of the turbine**

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TAA100

Operating principle

The test bench is composed of a single-stage axial turbine, mounted on bearings with 45W power

The dispenser has 4 nozzles equipped with isolation valves

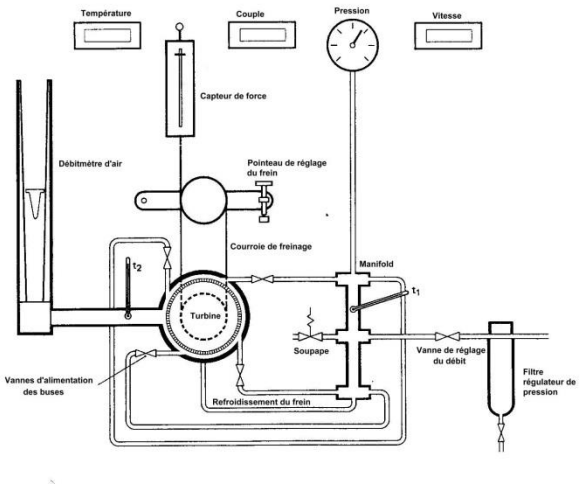
The power generated by the turbine is dissipated by an adjustable belt brake

The instrumentation which the bench is equipped allows the measurement and adjustment of the operating parameters

The robust design of this device makes it suitable for use in schools.
The equipment is set up on an Anodized aluminium frame on casters wheels. This gives it great strength and a flexibility of integration into your premises.
The manufacture of this equipment complies with the European standard for machinery manufacturing.

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

Illustrations



Technical details

Turbine: turbine single stage with axial flux ; Maximum speed: 35000tr/min; Max power: 45W

Injection nozzles : four nozzles with isolation valves.

Brake: brake with belt mounted on the shaft of the turbine. The cooling is assured by a compressed air supply

Torquemeter: force sensor with strain gauge and indicator on the panel

Temperature: Measurement of the air inlet and outlet of the turbine by probe Pt 100 three wires

Air flowrate: float flowmeter with glass tube at the turbine outlet

Rotation speed: optical sensor with npn converter

Pressure manometer: manometer with bourdon tube scale of -1 to +1 bar

Safety valve: prevents the overpressures in the turbine

Filter regulator: purifies the compressed air supplying the machine and reduces the pressure

Needle: ensures the adjustment of the tension of the belt of the brake of the turbine

Services required

- Electrical supply : 230Vac – 50 Hz
- Compressed air supply: 6-8 bars (dry air)
- Dimensions: (LxWxH mm): 800 x 500 x 600
- weight (Kg): 25

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
- Technical documentation of the components
- Lab exercises
- Certificate of conformity CE

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