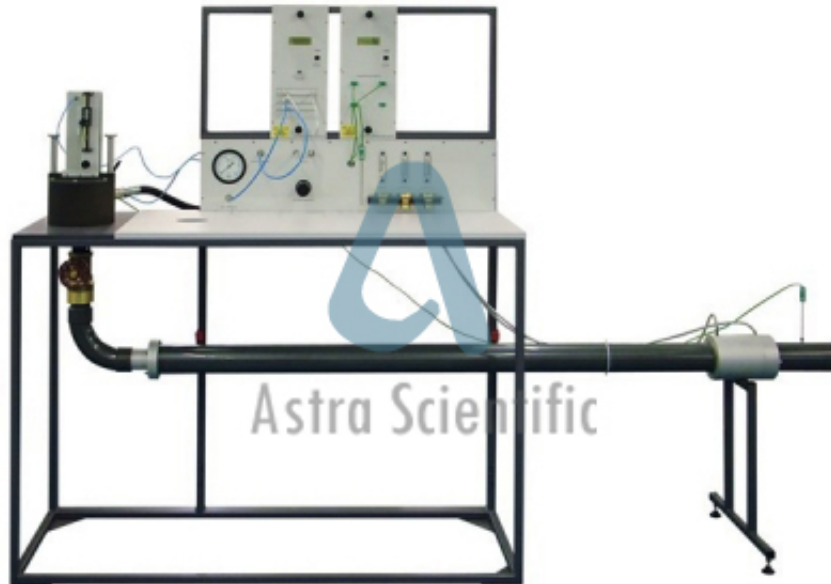


Product Name :
Astra Scientific Subsonic Air Nozzle Test Setup

Product Code :
ThermalLab0026



Description :

Astra Scientific Subsonic Air Nozzle Test Setup

Technical Specification :

The experimental apparatus connects to optional Compressor or a suitable laboratory supply of dry, clean compressed air.

It demonstrates the thermodynamic and fluid properties of the adiabatic expansion of subsonic and supersonic airflow through nozzles.

Students fit a nozzle into the chest (you test one nozzle at a time). Compressed air passes through the pressure regulator and an isolating valve. It then enters the pressure chest and passes vertically down through the nozzle, then through a precision downstream valve. The airflow then settles as it passes along a horizontal pipe, through an orifice and out to atmosphere.

The temperature and pressure displays accurately measure temperatures and pressures at key points around the apparatus, including the pressures around the orifice which students use to determine overall mass flow.

A stainless-steel probe on a manually adjustable, vertical traverse measures the pressure distribution along the axis of the nozzle. A

digital indicator measures the probe position in the nozzle. The traverse mechanism includes a pointer and a mounting for a 'mimic' of each nozzle. The pointer moves along the mimic to help students visualize the position of the probe.

The instrument frame has extra space for the optional VDAS® interface unit. VDAS® allows accurate real-time data capture, monitoring, display, calculation and charting of all the important readings on a suitable computer.

FEATURES:

- The relationship between pressure ratio and flow for convergent and convergent/divergent Laval nozzles.
- The pressure profile in convergent/divergent nozzles at various pressure ratios.
- Investigation of expansion with friction in a parallel passage at high subsonic velocities.
- Boundary layer growth under subsonic and supersonic conditions.
- The phenomenon of choked flow corresponding to sonic velocity at a nozzle throat

SPECIFICATIONS:

- For ease of visibility and for good engineering practice, the analogue gauge also shows pressure in the chest.
- A pressure chest with a removable lid and nozzle traverse mechanism;
- A pressure regulator to maintain the inlet/upstream pressure, with an analogue reference pressure gauge;
- Three interchangeable, profiled and polished brass nozzles with mimics that fit on the traverse mechanism;
- An instrument frame with digital pressure and temperature displays
- 230V, 50Hz, 1 phase

230V, 60Hz, 1 phase

120V, 60Hz, 1 phase



Astra Scientific

www.astrascientific.com, Email: info@astrascientific.com

Address: K-88, 20th Street, Annanagar, Chennai, India – 600040 **Phone:** +91-8860605265

