

Order Code : 20213501.1.5

Name : Compressible flow Unit

Compressible Flow Unit



Features

- > Variable-speed air compressor with accurate electronic speed control
- > Electronic pressure sensors
- > Standard unit includes convergent-divergent duct designed to produce Mach 1 velocity at the throat
- > Data logging option available

comprises a single stage air compressor,

complete with a test section and a throttling valve, plus an electronics console containing the necessary controls and instrumentation.

The single-stage compressor is driven by an integral three-phase AC motor. The compressor speed can be varied using an advanced torque-vector frequency inverter, which gives stable and accurate speed control plus direct electronic read-out of the torque produced by the motor. The compressor is fitted with an outlet duct incorporating a throttling valve, which allows the flow to be varied independent from compressor speed.

Note: Specifications are subject to change, Photos shown above are Indicative, Actual Product can Vary.

TESCA TECHNOLOGIES PVT. LTD.

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- Four electronic pressure sensors
- Test section made from clear acrylic
- Additional test sections available (6 off) complete with benchtop stand
- Compressor test accessory available
- Optional Data logging accessory available, complete with educational software and electronic temperature sensors

Three different discharge rates can be selected (and measured) within the range 0.2-0.6 l/s

The channel slope can be adjusted within the range 0-10%

The working section of the channel is 1.55m long, 78mm wide and 110mm deep

The equipment is self-contained and may be bench-mounted in either the classroom or laboratory by virtue of its portability

A model undershot weir and bridge pier are included for local erosion demonstrations

A water level gauge is supplied to calibrate the overshoot weir

Technical Specifications

- Compressor speed: 3,300rpm (max)
- No. stages: 1
- Motor power: 0.55kW
- Sensors: +/- 103.4 kPa 1 off
 - +/- 34 kPa 1 off
 - +/- 1744 Pa 2 off
- Complete with convergent-divergent duct capable of achieving Mach 1 velocity at the throat
- Advanced torque-vector speed control of blower motor with electronic torque measurement

The equipment is supplied with a convergent divergent test section, fitted at the compressor inlet, designed to produce Mach-1 velocity at the throat. The duct is fabricated from clear acrylic, enabling the student to see the construction and the profiles. A pressure sensing ring tapping is provided at the inlet, at the throat and at the discharge end of the diffuser. This duct allows all the major concepts of compressible flow to be demonstrated.

The electronics console includes two high range and two low-range differential pressure sensors plus a control for motor speed and displays for the compressor speed, the pressures and the motor torque.

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