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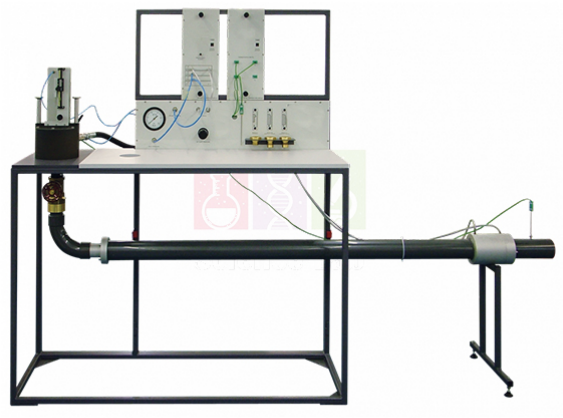
Product Name :

Laval Nozzle Pressure Apparatus

Product Code :

SLE/EA/06



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Description :

Laval Nozzle Pressure Apparatus is a floor-standing compressed-air rig for studying the adiabatic expansion of air through subsonic and supersonic nozzles. It has three interchangeable polished brass nozzles: convergent, convergent-divergent (Laval) and convergent-parallel. A stainless-steel probe on a vertical traverse maps pressure along the nozzle axis, and digital displays give pressures and temperatures at key points.

Laval Nozzle Pressure Apparatus specifications

Parameter	Detail
Nozzles	Three interchangeable, profiled and polished brass nozzles with mimics: convergent, convergent-divergent (Laval) and convergent-parallel
Air circuit	Compressed air through a pressure regulator and isolating valve; after the nozzle, flow settles in a horizontal pipe, passes an orifice and exits to atmosphere
Mass flow	Found by students from the pressures around the orifice
Instrumentation	Digital temperature and pressure displays at key points; chest pressure also on an analogue gauge
Inlet pressure	Held by the pressure regulator, with an analogue reference gauge
Axial probe	Stainless steel, on a manually adjustable vertical traverse; digital indicator shows probe position
Frame	Floor-standing; pressure chest with removable lid and nozzle traverse, worktop and instrument frame
Dimensions	2900 x 600 x 1730 mm (length x depth x height)
Weight	123 kg
Product code	SLE/EA/06
Minimum order	10 units
Dispatch	Usually within 7 to 10 working days
Manufacturer	ScienceLab (Jain Scientific Equipments Pvt Ltd), Ambala, India

Nozzle experiments on the rig

Choking in the convergent nozzle. With the isolating valve closed, fit the convergent nozzle through the chest lid and refit the lid. Raise the inlet pressure on the regulator in steps, recording chest pressure, temperatures and the orifice pressures each time. Work out the mass flow, multiply it by the square root of the absolute chest temp nst pres turi mete