



CATALOG

Hydraulic Lab (Fluid Mechanics & Machinery)



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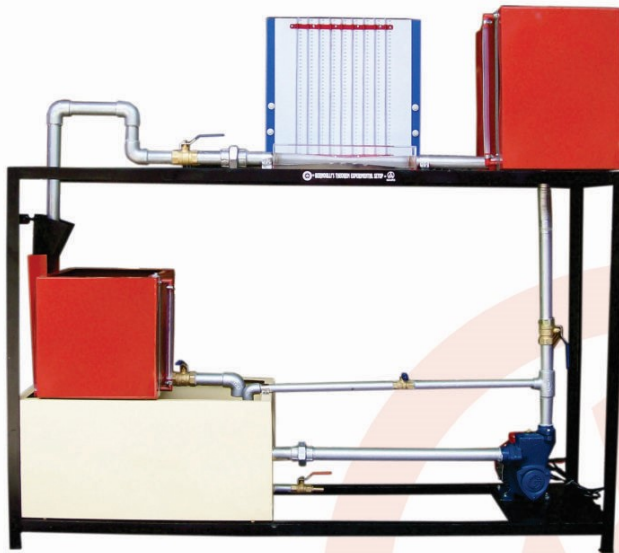
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Hydraulics Lab

GN 7201 - Bernoulli's Theorem Apparatus



Objective:

- To verify Bernoulli's theorem for the flow of real liquid
- Hydraulic grade line & the total energy line along the flow section can be plotted & can be studied

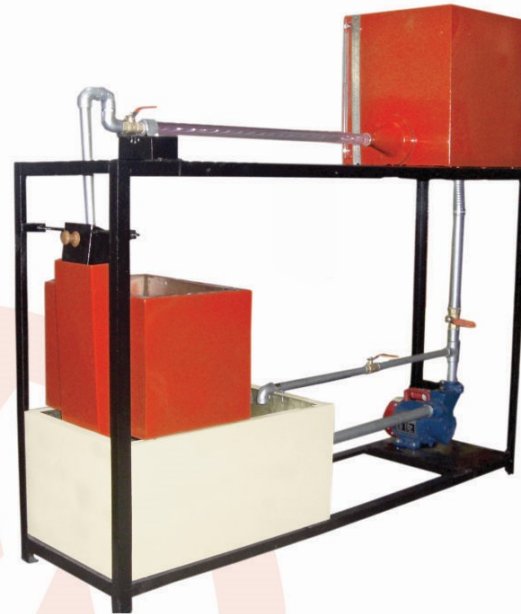
Technical Specifications:

- Flow Channel : 265mm x 75mm x 75mm (LxBxH) made of clear acrylic conduit
- Diameter of Conduit (vary cross section): 22mm, 19mm, 16mm, 13mm, 16mm, 19mm, 22mm
- Piezometer: 7 Nos. Placed equal spaced at 30mm mounted on graduated board
- Constant Head Tank: 300mm x 300mm x 450mm (LxBxH)
- Measuring Tank: 300mm x 300mm x 300mm (LxBxH)
- Sump Tank: 600mm x 300mm x 300mm (LxBxH)
- Tanks made of SS sheet
- Piezometer tube with scale provided on all tanks for water level measurement
- Piping & Fittings: GI material used
- Valves: 2nos. for drain, 1no. for inlet water control, 1no. for bypass, 1no. for outlet water control
- Pump : 0.5HP Single phase, 220VAC $\pm 10\%$
- The whole set-up is well designed and arranged in a good quality painted structure made of square pipe 1280mm x 320mm x 920mm (LxBxH)
- Power Requirement : 220VAC $\pm 10\%$, 50 Hz

Standard Accessories:

- Instruction manual, Electronic stop watch

GN 7204 - Reynold Apparatus



Objective:

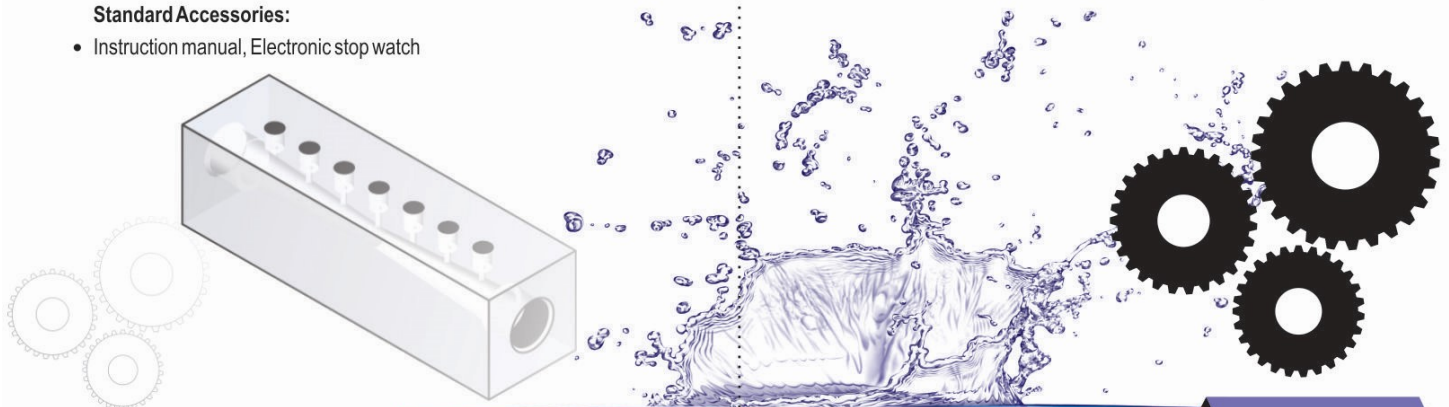
- To determine the Reynold's number and hence the type of flow from laminar to turbulent
- To study transition zone

Technical Specifications:

- Tube : Clear acrylic 750mm length, 32mm outer dia. and 25mm inner dia
- Dye Vessel : Made of material SS sheet, 1litrs capacity
- Constant Head Tank: 300mm x 300mm x 450mm (LxBxH)
- Measuring Tank: 300mm x 300mm x 300mm (LxBxH)
- Sump Tank: 600mm x 300mm x 300mm (LxBxH)
- Tanks made of SS sheet
- Piezometer tube with scale provided on all tanks for water level measurement
- Piping & Fittings: GI material used
- Valves: 2nos. for drain, 1no. for inlet water control, 1no. for bypass, 1no. for outlet water control
- Pump : 0.25HP Single phase, 220VAC $\pm 10\%$
- The whole set-up is well designed and arranged in a good quality painted structure made of square pipe 1280mm x 320mm x 920mm (LxBxH)
- Power Requirement : 220VAC $\pm 10\%$, 50 Hz

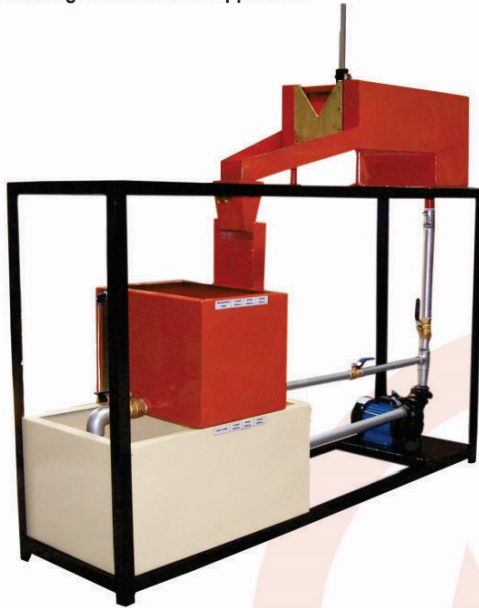
Standard Accessories:

- Instruction manual, Electronic stop watch, Solution KMnO - 10gm



Hydraulics Lab

GN 7206 - Discharge Over Notches Apparatus



Objective:

- To determine the co-efficient of discharge of different shape notches

Technical Specifications:

- Notches (Made of Acrylic) : a) V Notch
b) Rectangular Notch
c) Trapezoidal Notch
- Hook Gauge : 30cm range with mounting provision
- Flow channel provided with constant head water arrangement with provision of notch replacement
- Flow Channel: 600mm x 250mm x 300mm (LxBxH)
- Measuring Tank: 300mm x 300mm x 300mm (LxBxH)
- Sump Tank: 600mm x 300mm x 300mm (LxBxH)
- Tanks made of SS sheet
- Pizometer tube with scale provided on all tanks for water level measurement
- Piping & Fittings: GI material used
- Valves: 2nos. for drain, 1no. for inlet water control, 1no. for bypass
- Pump : 0.5HP Single phase, 220VAC $\pm 10\%$
- The whole set-up is well designed and arranged in a good quality painted structure made of square pipe 1280mm x 320mm x 920mm (LxBxH)
- Power Requirement : 220VAC $\pm 10\%$, 50 Hz
- Standard Accessories:**
- Instruction manual, Electronic stop watch

GN 7208 - Impact of Jet of Vanes Apparatus

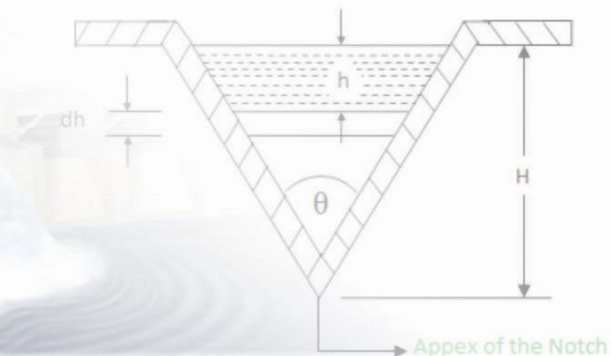


Objective:

- To verify the momentum equation by impact of jet on different shapes

Technical Specifications:

- Target (3 Nos.) Made of Acrylic : a) Hemispherical cup 100mm dia
b) Flat plate 50mm dia
c) Inclined plate 45 degree
- Nozzle (SS): 10mm dia, 75mm long
- Weighing Scale: To measure jet force
- Jet Chamber: Clear Acrylic round pipe size 250mm dia & 300mm long
- Measuring Tank: 300mm x 300mm x 300mm (LxBxH)
- Sump Tank: 600mm x 300mm x 300mm (LxBxH)
- Tanks made of SS sheet
- Pizometer tube provided with scale on all tanks for water level measurement
- Piping & Fittings: GI material used
- Valves: 2nos. for drain, 1no. for inlet water control, 1no. for bypass
- Pump : 0.5HP Single phase, 220VAC $\pm 10\%$
- The whole set-up is well designed and arranged in a good quality painted structure made of square pipe 1280mm x 320mm x 920mm (LxBxH)
- Power Requirement : 220VAC $\pm 10\%$, 50 Hz
- Standard Accessories:**
- Instruction manual, Electronic stop watch



Hydraulics Lab

GN 7210 - Pitot Tube Test Rig



Objective:

- To find the co-efficient of pitot tube
- To find the point velocity at the center of a tube for different flow rates
- To plot velocity profile across the cross section of pipe

Technical Specifications:

- Flow Channel : 200mm long made of clear acrylic conduit with attachment of pointer gauge
- Pressure Measurement: Provided "U" Tube differential manometer for head loss measurement
- Measuring Tank: 300mm x 300mm x 300mm (LxBxH)
- Sump Tank: 600mm x 300mm x 300mm (LxBxH)
- Tanks made of SS sheet
- Pizometer tube with scale provided on all tanks for water level measurement
- Piping & Fittings: GI material used
- Valves: 2nos. for drain, 1no. for inlet water control, 1no. for bypass, 1no. for outlet water control
- Pump : 0.5HP Single phase, 220VAC $\pm 10\%$
- The whole set-up is well designed and arranged in a good quality painted structure made of square pipe 1280mm x 320mm x 920mm (LxBxH)
- Power Requirement : 220VAC $\pm 10\%$, 50 Hz

Standard Accessories:

- Instruction manual, Electronic stop watch

GN 7214 - Hydraulic Ram Test Rig



Objective:

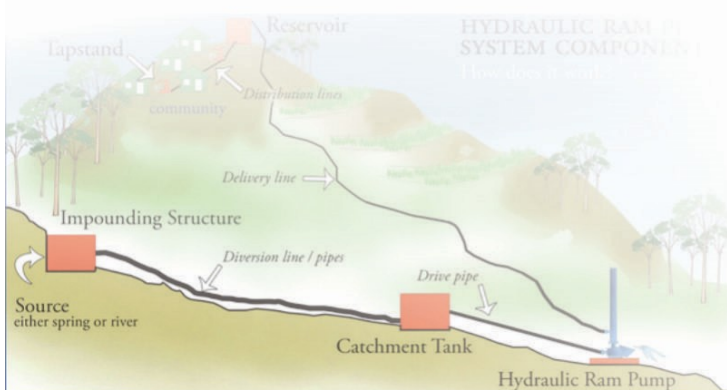
- To find out discharge of usefull and waste water
- To find out the efficiency of hydraulic ram

Technical Specifications:

- Overhead tank provided as delivery head for free fall water to ram
- Pressure vessel provided to create pressure upto 0.8kg/cm²
- Ram piston made of SS, 15mm dia
- Ram made of SS, 50mm dia
- Pressure Gauge: 30psi
- Overhead Tank: 300mm x 350mm x 1000mm
- Water Reservoir Tank: 300mm x 200mm x 150mm (LxBxH)
- Measuring Tank for Usefull Water: 300mm x 450mm x 300mm (LxBxH)
- Measuring Tank for Waste Water: 300mm x 250mm x 200mm (LxBxH)
- Sump Tank: 650mm x 450mm x 400mm (LxBxH)
- Tanks made of SS sheet
- Pizometer tube with scale provided on all tanks for water level measurement
- Piping & Fittings: GI material used
- Delivery Line: 50mm dia
- Delivery Head: 2500mm long
- Overflow arrangement provided
- Valves: 4nos. for drain, 1no. for bypass, 1no. for delivery head water control, 1no. on pressure vessel for release & measurement control
- Pump : 0.5HP Single phase, 220VAC $\pm 10\%$
- The whole set-up is well designed and arranged in a good quality painted structure made of square pipe 1580mm x 470mm x 3000mm (LxBxH)
- Power Requirement : 220VAC $\pm 10\%$, 50 Hz

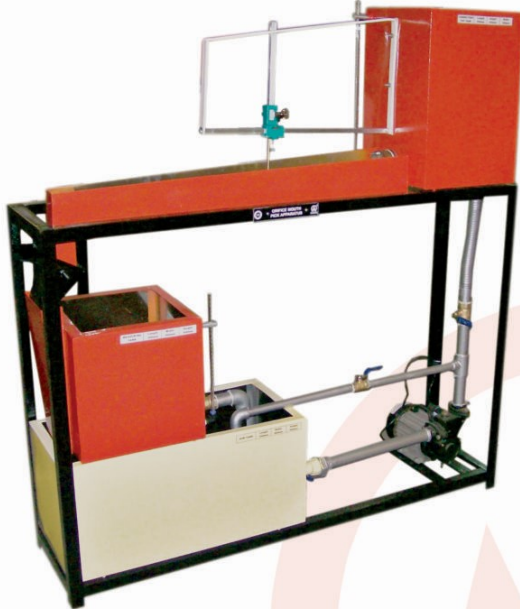
Standard Accessories:

- Instruction manual, Electronic stop watch



Hydraulics Lab

GN 7217 - Flow Through Orifice & Mouthpiece



Objective:

- To determine the co-efficient of discharge of different orifice and mouth-pieces
- To determine the co-efficient of velocity & contraction

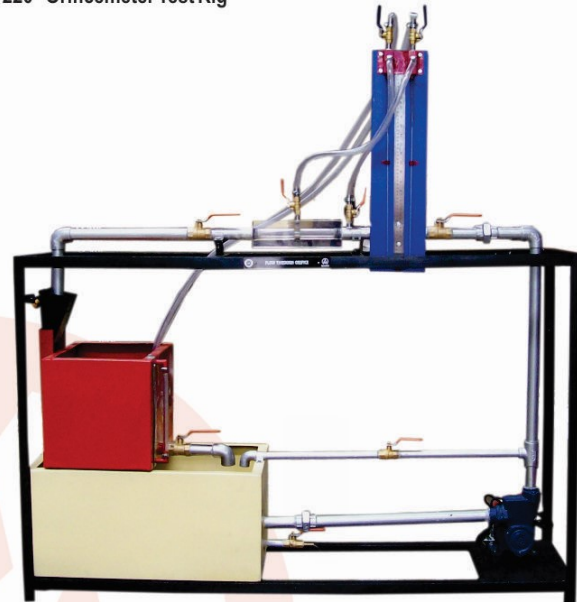
Technical Specifications:

- Orifices (2nos): Material clear acrylic dia. 10mm and 15 mm
- Mouthpieces (3nos): Material clear acrylic
 - a) Dia 10 mm (L/D = 1)
 - b) Dia 10 mm (L/D = 2.5)
 - c) Dia 12mm (L/D = 2.5)
- Pointer Gauge: To measure X-Y co-ordinates of jet
- Constant Head Tank : 300mm x 300mm x 450mm (LxBxH)
- Measuring Tank: 300mm x 300mm x 300mm (LxBxH)
- Sump Tank: 600mm x 300mm x 300mm (LxBxH)
- Tanks made of SS sheet
- Pizometer tube with scale provided on all tanks for water level measurement
- Piping & Fittings: GI material used
- Valves: 2nos. for drain, 1no. for inlet water control, 1no. for bypass
- Pump : 0.5HP Single phase, 220VAC $\pm 10\%$
- The whole set-up is well designed and arranged in a good quality painted structure made of square pipe 1280mm x 320mm x 920mm (LxBxH)
- Power Requirement : 220VAC $\pm 10\%$, 50 Hz

Standard Accessories:

- Instruction manual, Electronic stop watch

GN 7220 - Orificemeter Test Rig



Objective:

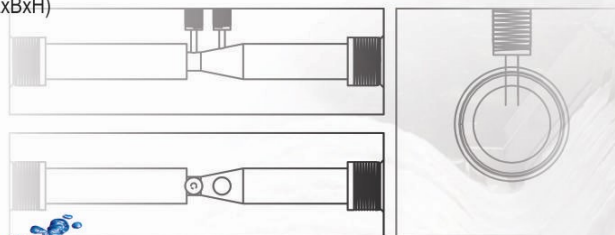
- To determine co-efficient of discharge of orificemeter

Technical Specifications:

- Orificemeter: 265mm x 75mm x 75mm (LxBxH) made of clear acrylic conduit
- Diameter of Conduit: 25mm ID, centre point dia 13mm
- Pressure Measurement : 'U' Tube differential manometer
- Measuring Tank: 300mm x 300mm x 300mm (LxBxH)
- Sump Tank: 600mm x 300mm x 300mm (LxBxH)
- Tanks made of SS sheet
- Pizometer tube with scale provided on all tanks for water level measurement
- Piping & Fittings: GI material used
- Valves: 2nos. for drain, 1no. for inlet water control, 1no. for bypass, 1no. outlet water control
- Pump : 0.5HP Single phase, 220VAC $\pm 10\%$
- The whole set-up is well designed and arranged in a good quality painted structure made of square pipe 1280mm x 320mm x 920mm (LxBxH)
- Power Requirement : 220VAC $\pm 10\%$, 50 Hz

Standard Accessories:

- Instruction manual, Electronic stop watch



Hydraulics Lab

GN 7222 -Venturimeter Test Rig



Objective:

- To determine co-efficient of discharge of venturimeter

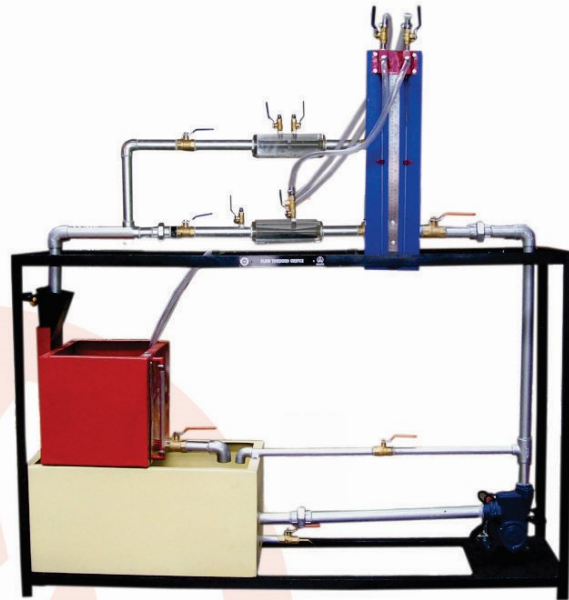
Technical Specifications:

- Venturimeter: 265mm x 75mm x 75mm (LxBxH) made of clear acrylic conduit
- Diameter of Conduit(vary cross section): 13mm & 25mm
- Pressure Measurement : 'U' Tube differential manometer
- Measuring Tank: 300mm x 300mm x 300mm (LxBxH)
- Sump Tank: 600mm x 300mm x 300mm (LxBxH)
- Tanks made of SS sheet
- Pizometer tube with scale provided on all tanks for water level measurement
- Piping & Fittings: GI material used
- Valves: 2nos. for drain, 1no. for bypass, 1no. for outlet water control
- Pump : 0.5HP Single phase, 220VAC $\pm 10\%$
- The whole set-up is well designed and arranged in a good quality painted structure made of square pipe 1280mm x 320mm x 920mm (LxBxH)
- Power Requirement : 220VAC $\pm 10\%$, 50 Hz

Standard Accessories:

- Instruction manual, Electronic stop watch

GN 7225 - Venturimeter & Orificemeter Test Rig



Objective:

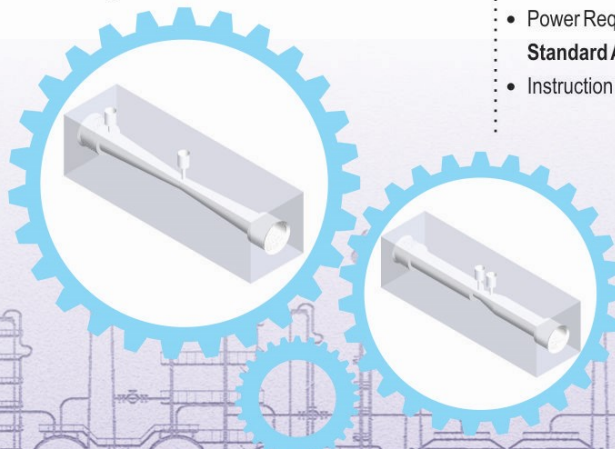
- To determine co-efficient of discharge of venturimeter
- To determine co-efficient of discharge of orificemeter

Technical Specifications:

- Venturimeter: 265mm x 75mm x 75mm (LxBxH) made of clear acrylic conduit
 - Diameter of Conduit(vary cross section): 13mm & 25mm
- Orificemeter: 265mm x 75mm x 75mm (LxBxH) made of clear acrylic conduit
 - Diameter of Conduit: 25mm ID, centre point dia 13mm
- Pressure Measurement : 'U' Tube differential manometer
- Measuring Tank: 300mm x 300mm x 300mm (LxBxH)
- Sump Tank: 600mm x 300mm x 300mm (LxBxH)
- Tanks made of SS sheet
- Pizometer tube with scale provided on all tanks for water level measurement
- Piping & Fittings: GI material used
- Valves: 2nos. for drain, 1no. for bypass, 2nos. outlet water control
- Pump : 0.5HP Single phase, 220VAC $\pm 10\%$
- The whole set-up is well designed and arranged in a good quality painted structure made of square pipe 1280mm x 320mm x 920mm (LxBxH)
- Power Requirement : 220VAC $\pm 10\%$, 50 Hz

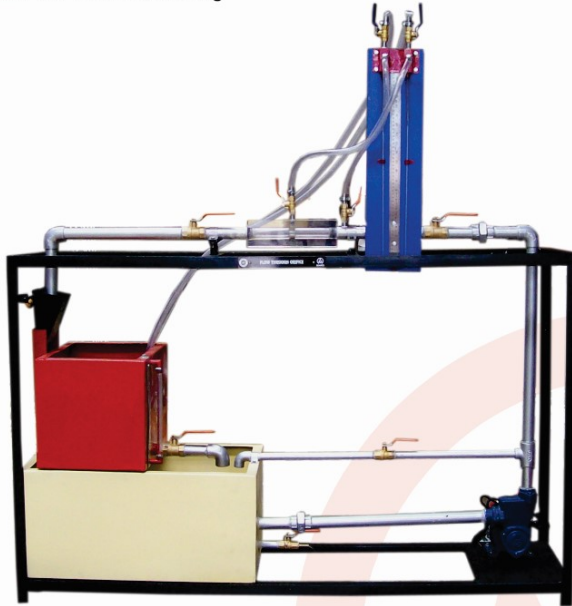
Standard Accessories:

- Instruction manual, Electronic stop watch



Hydraulics Lab

GN 7228 - Nozzlemeter Test Rig



Objective:

- To determine co-efficient of discharge of nozzlemeter

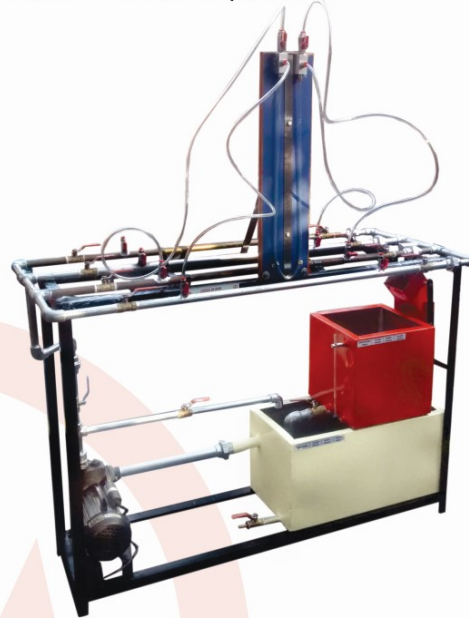
Technical Specifications:

- Nozzlemeter: 265mm x 75mm x 75mm (LxBxH) made of clear acrylic conduit
- Diameter of Conduit: 25mm ID, centre point 13mm
- Pressure Measurement : 'U' Tube differential manometer
- Measuring Tank: 300mm x 300mm x 300mm (LxBxH)
- Sump Tank: 600mm x 300mm x 300mm (LxBxH)
- Tanks made of SS sheet
- Pizometer tube with scale provided on all tanks for water level measurement
- Piping & Fittings: GI material used
- Valves: 2nos. for drain, 1no. for bypass, 1no. for outlet water control
- Pump : 0.5HP Single phase, 220VAC $\pm 10\%$
- The whole set-up is well designed and arranged in a good quality painted structure made of square pipe 1280mm x 320mm x 920mm (LxBxH)
- Power Requirement : 220VAC $\pm 10\%$, 50 Hz

Standard Accessories:

- Instruction manual, Electronic stop watch

GN 7230 - Losses due to Friction in Pipe Lines



Objective:

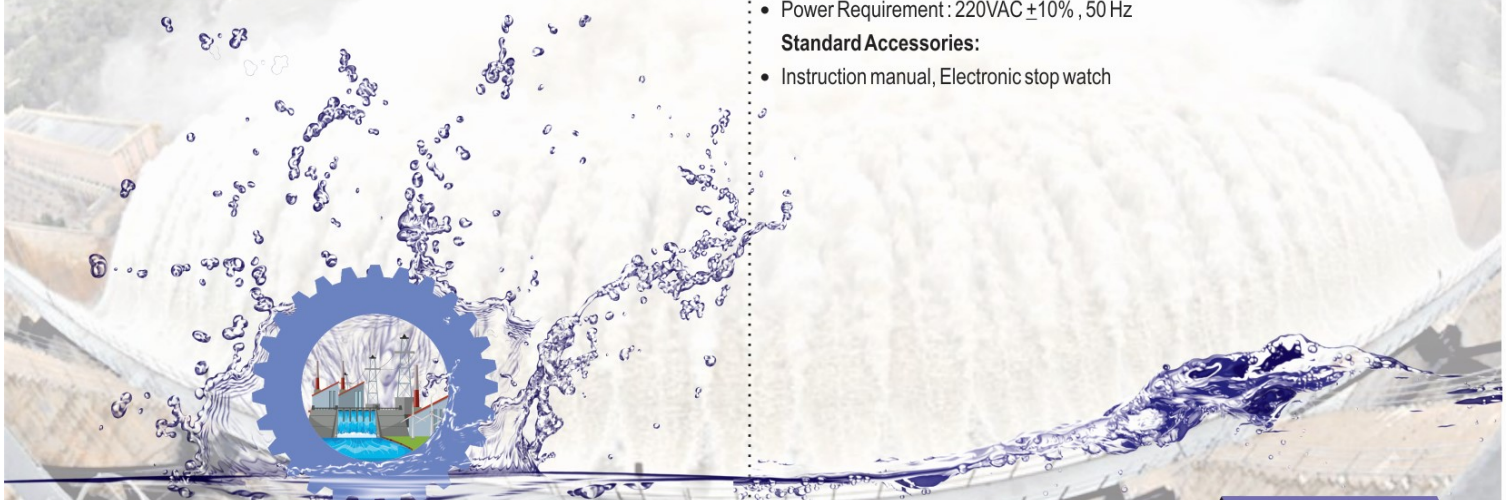
- To determine the friction factor (Coefficient of discharge) for the 4 different material of pipes

Technical Specifications:

- Pipe Line : Provided 4 nos. of different material 1300mm long ID 15mm (Aluminum, Copper, Brass, GI)
- Pressure Measurement : 'U' Tube differential manometer
- Measuring Tank: 300mm x 300mm x 300mm (LxBxH)
- Sump Tank: 600mm x 300mm x 300mm (LxBxH)
- Tanks made of SS sheet
- Pizometer tube with scale provided on all tanks for water level measurement
- Piping & Fittings: GI material used
- Valves: 2nos. for drain, 1no. for inlet water control, 1no. for bypass, 4no. outlet water control
- Tee Handle Valve: 8nos. for pressure measurement at different points
- Pump : 0.5HP Single phase, 220VAC $\pm 10\%$
- The whole set-up is well designed and arranged in a good quality painted structure made of square pipe 1600mm x 320mm x 920mm (LxBxH)
- Power Requirement : 220VAC $\pm 10\%$, 50 Hz

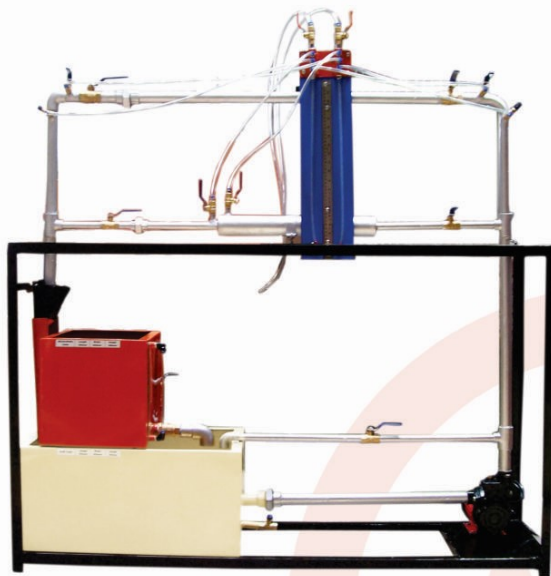
Standard Accessories:

- Instruction manual, Electronic stop watch



Hydraulics Lab

GN 7233 - Losses due to Pipe Fitting, Sudden Enlargement & Contraction



Objective:

- To determine the friction factor for the pipes

Technical Specifications:

- Pipe Line : Provided 2 nos. 1000mm long
 - 12mm Diameter (Elbow Less, Bend Less)
 - 12mm & 25mm Diameter (Sudden & Contraction)
- Pressure Measurement : 'U' Tube differential manometer
- Measuring Tank: 300mm x 300mm x 300mm (LxBxH)
- Sump Tank: 600mm x 300mm x 300mm (LxBxH)
- Tanks made of SS sheet
- Pizometer tube with scale provided on all tanks for water level measurement
- Piping & Fittings: GI material used
- Valves: 2nos. for drain, 1no. for inlet water control, 1no. for bypass, 2no. for inlet water control, 2nos. for outlet water control
- Tee Handle Valve: 8nos. for pressure measurement at different points
- Pump : 0.5HP Single phase, 220VAC $\pm 10\%$
- The whole set-up is well designed and arranged in a good quality painted structure made of square pipe 1280mm x 320mm x 920mm (LxBxH)
- Power Requirement : 220VAC $\pm 10\%$, 50 Hz

Standard Accessories:

- Instruction manual, Electronic stop watch

GN 7240 - Free & Forced Vortex Apparatus



Objective:

- To find the surface profile in a free vortex flow
- To find the surface and total head distribution in a forced vortex flow

Technical Specifications:

- DC Motor: 1HP
- DC Drive (Thyristorized Based): 2 Amps
- Voltmeter : 0 ~ 220 VDC
- Currentmeter: 0 ~ 10Amps
- RPM Meter (PNP Type): 0 ~ 1500
- Cylinder : 1no. made by acrylic pipe 600mm long, 300mm dia
- Provided with SS agitator for forced action
- Sump Tank: 600mm x 300mm x 300mm (LxBxH)
- Tanks made of SS sheet
- Piping & Fittings: GI material used
- Rotameter provided for flow measurement
- Valves: 2nos. for drain, 1no. for inlet water control, 1no. for bypass
- Pump : 0.5HP Single phase, 220VAC $\pm 10\%$
- The whole set-up is well designed and arranged in a good quality painted structure made of square pipe 1280mm x 320mm x 920mm (LxBxH)
- Power Requirement : 220VAC $\pm 10\%$, 50 Hz

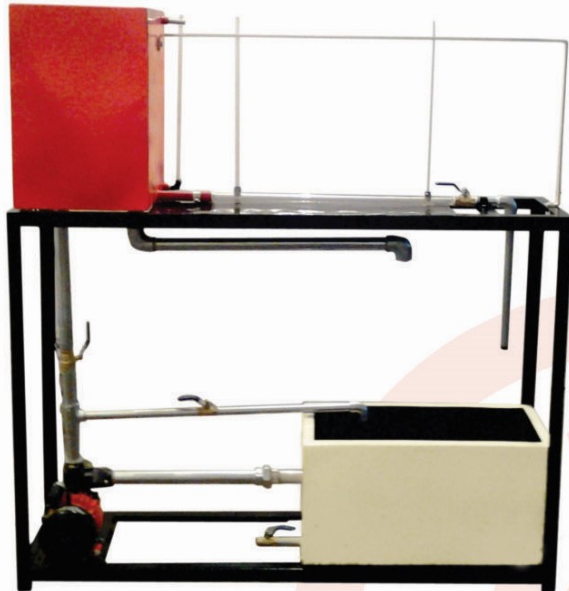
Standard Accessories:

- Instruction manual, Electronic stop watch



Hydraulics Lab

GN 7242 - Piezometer Tube Apparatus (Capillary Tube Viscometer)



Objective:

- To study piezometer tube for water level measurement
- Capillary tube viscometer study

Technical Specifications:

- Tube : Clear acrylic 700mm length, 32mm outer dia. and 25mm inner dia
- Distance between piezometer tube: 500mm
- Piezometer tube length: 450mm
- Constant Head Tank: 300mm x 300mm x 450mm (LxBxH)
- Sump Tank: 600mm x 300mm x 300mm (LxBxH)
- Tanks made of SS sheet
- Piezometer tube with scale provided on all tanks for water level measurement
- Piping & Fittings: GI material used
- Valves: 2no. for drain, 1no. for inlet water control, 1no. for bypass, 1no. for outlet water control
- Pump : 0.5HP Single phase, 220VAC $\pm 10\%$
- The whole set-up is well designed and arranged in a good quality painted structure made of square pipe 1280mm x 320mm x 920mm (LxBxH)
- Power Requirement : 220VAC $\pm 10\%$, 50 Hz

Standard Accessories:

- Instruction manual, Electronic stop watch

GN 7245 - Newton Law of Viscosity

Objective:

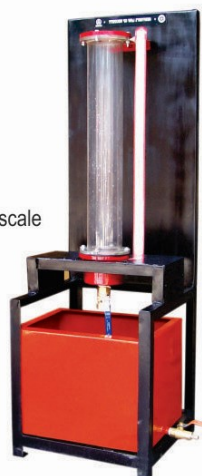
- To verify Newton law of viscosity.

Technical Specifications:

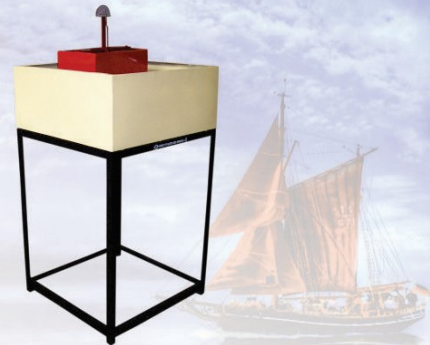
- Flow Channel: Cylinder 600mm long x 80mm dia with scale
- Valve: 2no. for drain
- SS Tank : 300mm x 300mm x 300mm

Standard Accessories:

- Instruction manual, Electronic stop watch, Steel balls



GN 7247 - Metacentric Height Apparatus



Objective:

- To determination of the metacentric height and position of the metacentric height with angle of heel of ship model

Technical Specification:

- Ship Model: Size 200 x 200mm with a horizontal guide bar for aliding weight and removable strips, graduated arc with pointer with moveable hanger and set of weights
- Pendulum and graduated arc for accurate measurement of tilt angle
- Water Tank: 600mm x 600mm x 300mm (LxBxH)
- Tanks made of SS sheet
- Valves: 1no. for drain
- The whole set-up is well designed and arranged in a good quality painted structure made of square pipe 600mm x 600mm x 900mm (LxBxH)

Standard Accessories:

- Instruction manual, Set of weights

GN 7250 - Centre of Pressure (Hydrostatic Force) Apparatus



Technical Specification:

- L shaped submerged body 100mm x 100mm x 200mm, leak proof made of clear acrylic for better front view
- Hanger Type: Made of aluminium for hanging weight
- Water Tank: 300mm x 600mm x 300mm (LxBxH)
- Tanks made of SS sheet
- Valves: 1no. for drain
- The whole set-up is well designed and arranged in a good quality painted structure made of square pipe 300mm x 600mm x 900mm (LxBxH)

Standard Accessories:

- Instruction manual, Set of weights



Hydraulics Lab

GN 7252 - Darcy's Law Apparatus



Objective:

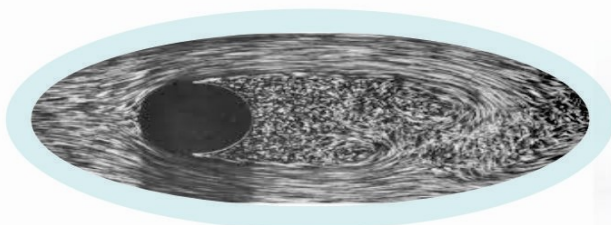
- To study the friction in different pipes and different diameters
- To determine the friction factor for Darcy – Weisbach equation

Technical Specifications:

- Pipe Line: 1" fitting with test section 3" diameter
- Pipe Test Section: Length 600mm for 3" diameter
- Pressure Measurement: 'U' Tube differential manometer
- Measuring Tank: 300mm x 300mm x 300mm (LxBxH)
- Sump Tank: 600mm x 300mm x 300mm (LxBxH)
- Tanks made of SS sheet
- Pizometer tube with scale provided on all tanks for water level measurement
- Piping & Fittings: GI material used
- Valves: 2nos. for drain, 1no. for bypass, 1no. for outlet water control
- Tee Handle Valve: 3nos. for pressure measurement at different points
- Pump : 0.5HP Single phase, 220VAC $\pm 10\%$
- The whole set-up is well designed and arranged in a good quality painted structure made of square pipe 1280mm x 320mm x 920mm (LxBxH)
- Power Requirement : 220VAC $\pm 10\%$, 50 Hz

Standard Accessories:

- Instruction manual, Electronic stop watch



GN 7255 - Axial Fan Flow Apparatus



Objective:

- To find out flow rate of air through axial fan
- Study the characteristics of air blower

Technical Specifications:

- Air Flow Measurement Unit: 2000mm
- Test Section: 1000mm
- ID Test Section: 124mm & 72mm
- OD Test Section: 127mm & 75mm
- Orifice Diameter: 35mm
- ID Orifice Pipe; 72mm
- DC Motor: 1HP
- DC Drive: 2Amp
- Energy Meter
- RPM Meter (PNP Type): 0 ~ 1500
- U- Tube manometer for air flow measurement
- The whole set-up is well designed and arranged in a good quality painted structure
- Power Requirement : 220VAC $\pm 10\%$, 50 Hz

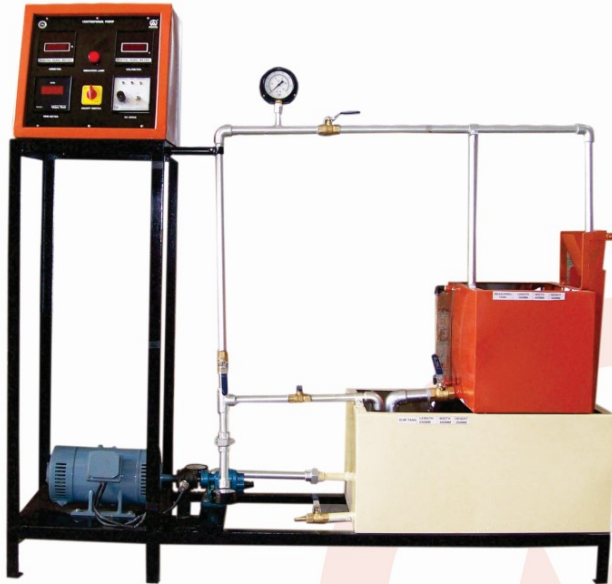
Standard Accessories:

- Instruction manual, Electronic stop watch



Hydraulics Lab

GN 7262 - Centrifugal Pump Test Rig (Single Stage)



Objective:

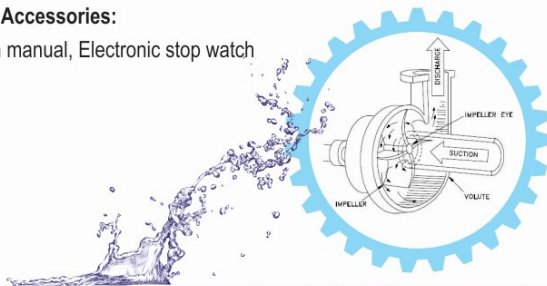
- To determine total head, pump output, overall efficiency and pump efficiency of the centrifugal pump
- To plot head vs discharge, pump efficiency vs discharge, pump output vs discharge

Technical Specifications:

- Pump Capacity: 1HP
- RPM: 2800
- DC Motor: 1HP / 3000RPM
- DC Drive (Thyristorized Based): 2Amps
- Voltmeter: 0 ~ 220VDC
- Currentmeter: 0 ~ 10Amps
- RPM Meter (PNP Type): 0 ~ 3000
- Energy meter provided for energy measurement
- Measuring Tank: 300mm x 300mm x 300mm (LxBxH)
- Sump Tank: 600mm x 300mm x 300mm (LxBxH)
- Tanks made of SS sheet
- Pizometer tube with scale provided on all tanks for water level measurement
- Piping & Fittings: GI material used
- Valves: 2nos. for drain, 1no. for bypass, 1no. for outlet water control
- Pressure Gauge: 0~2Kg/cm²
- Vaccume Gauge: 0~ -760mmHg
- The whole set-up is well designed and arranged in a good quality painted structure made of square pipe 1600mm x 320mm x 920mm (LxBxH)
- Power Requirement : 220VAC \pm 10% , 50 Hz

Standard Accessories:

- Instruction manual, Electronic stop watch



GN 7263 - Centrifugal Pump Test Rig (Double Stage)



Objective:

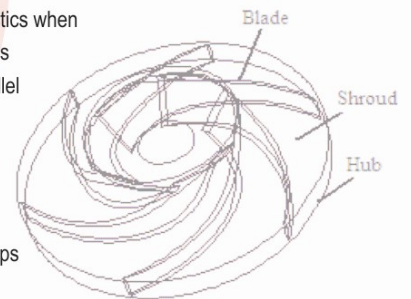
- Study of centrifugal pump characteristics when
 - Pumps are connected in series
 - Pumps are connected in parallel

Technical Specifications:

- Pump Capacity: 1HP - 2nos.
- Speed: 2800RPM
- DC Motor: 1HP - 2nos.
- DC Drive (Thyristorized Based): 2Amps
- Voltmeter : 0 ~ 220VDC
- Currentmeter: 0 ~ 10Amps
- RPM Meter (PNP Type): 0 ~ 3000 - 2nos.
- Energy meter provided for energy measurement
- Measuring Tank: 300mm x 300mm x 300mm (LxBxH)
- Sump Tank: 600mm x 300mm x 300mm (LxBxH)
- Tanks made of SS sheet
- Pizometer tube with scale provided on all tanks for water level measurement
- Piping & Fittings: GI material used
- Valves: 2nos. for drain, 7no. for bypass, 1no. for outlet water control, 4no. for water control
- Pressure Gauge: 0~2Kg/cm²
- Vaccume Gauge: 0~ -760mmHg - 2nos.
- Rotameter provided for flow measurement
- Pump : 0.5HP Single phase, 220VAC \pm 10%
- The whole set-up is well designed and arranged in a good quality painted structure made of 'C' channel
- Power Requirement : 220VAC \pm 10% , 50 Hz

Standard Accessories:

- Instruction manual, Electronic stop watch



Hydraulics Lab

GN 7265 - Reciprocating Pump Test Rig



Objective:

- To find the efficiency of reciprocating pump

Technical Specifications:

- Reciprocating Pump type: Double acting cylinder
- RPM: 320
- DC Motor: 1HP
- DC Drive (Thyristorized Based): 2Amps
- RPM Meter (PNP Type): 0 ~ 1500
- Energy meter provided for energy measurement
- Measuring Tank: 300mm x 300mm x 300mm (LxBxH)
- Sump Tank: 600mm x 300mm x 300mm (LxBxH)
- Tanks made of SS sheet
- Pizometer tube with scale provided on all tanks for water level measurement
- Piping & Fittings: GI material used
- Valves: 2nos. for drain, 1no. for bypass, 1no. for outlet water control
- Pressure Gauge: 0~2Kg/cm²
- Vacume Gauge: 0~ -760mmHg
- The whole set-up is well designed and arranged in a good quality painted structure made of square pipe 1600mm x 320mm x 920mm (LxBxH)
- Power Requirement : 220VAC \pm 10% , 50 Hz

Standard Accessories:

- Instruction manual, Electronic stop watch



GN 7267 - Air Compressor Test Rig (Single Stage)

Objective:

- To calculate the volumetric efficiency
- To calculate isothermal Horse Power
- To calculate compression ratio

Technical Specifications:

- Type: Single Stage
- Single Cylinder Capacity: 4.9CFM
- Working pressure: 7 Kg/cm²
- Motor: 1 HP
- Compressor Capacity: 50lbs
- Digital Temperature Indicator: 0-199.9°C, with multi-channel switch
- Temperature Sensor: RTD J Type, 2nos.
- Pressure Measurement: Orifice meter with 'U' Tube differential manometer
- Pressure Gauge: Bourdon type
- Air Tank: 27ltrs (300mm x 300mm x 300mm) LxBxH capacity with safety & shut off valve
- Control Panel: RPM indicator with proximity sensor, energy meter, and compressor on/off switch
- The whole set-up is well designed and arranged in a good quality painted structure made of square pipe
- Power Requirement : 220VAC \pm 10% , 50 Hz

Standard Accessories:

- Instruction manual, Electronic stop watch



GN 7269 - Air Compressor Test Rig (Double Stage)

Objective:

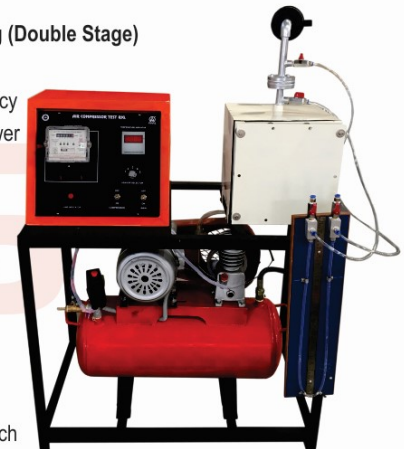
- To calculate the volumetric efficiency
- To calculate isothermal Horse Power
- To calculate compression ratio

Technical Specifications:

- Type: Double Stage
- Double Cylinder Capacity 10 CFM
- Working pressure: 7Kg/cm²
- Motor: 2HP
- Compressor Capacity: 100lbs
- Digital Temperature Indicator: 0-199.9°C, with multi-channel switch
- Temperature Sensor: RTD J Type, 2nos.
- Pressure Measurement: Orifice meter with 'U' Tube differential manometer
- Pressure Gauge: Bourdon type
- Air Tank: 27ltrs (300mm x 300mm x 300mm) LxBxH capacity with safety & shut off valve
- Control Panel: RPM indicator with proximity sensor, Energy meter, and compressor on/off switch
- The whole set-up is well designed and arranged in a good quality painted structure made of square pipe
- Power Requirement : 220VAC \pm 10% , 50 Hz

Standard Accessories:

- Instruction manual, Electronic stop watch



Hydraulics Lab

GN 7272 - Tilting Bed Flow Channel (Hydraulic Flume)



Objective:

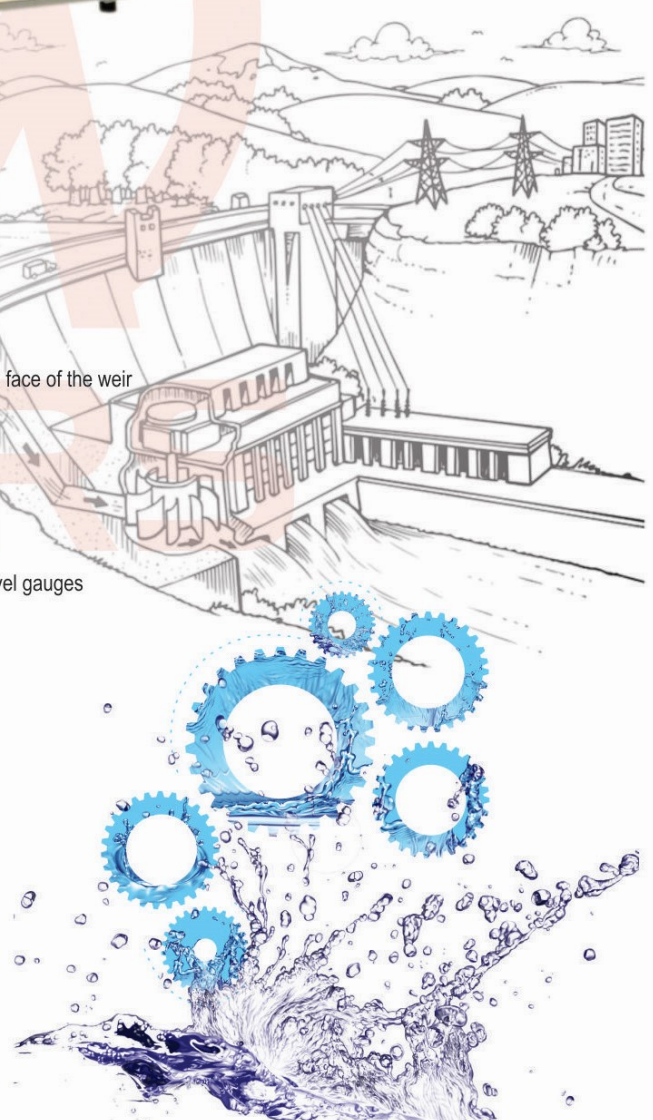
- Study of flow characteristics over a hump placed in an open channel
- Determination of Manning's coefficient of roughness 'n' for the given channel bed
- To observe the Hydraulic Jump phenomenon
- Study of velocity distribution in open channel
- Study of flow through a horizontal contraction in a rectangular channel
- Calibration of broad crested weir and to study the pressure distribution on the upstream face of the weir

Technical Specifications:

- Flow channel 2450mm x 125mm x 300mm (maximum)
- Flow channel with all three walls made of clear acrylic
- Three gates provided
- Venturi flume, V notch, sharp and broad crested weirs made of nylon block, 3 vernier level gauges
- Pressure Measurement: Orifice meter with 'U' Tube differential manometer
- Constant Head Tank: 300mm x 300mm x 500mm (LxBxH)
- Sump Tank: 700mm x 600mm x 500mm (LxBxH)
- Tanks made of SS sheet
- Pizometer tube with scale provided on all tanks for water level measurement
- Piping & Fittings: GI material used
- Valves: 1no. for drain, 1no. for bypass, 1no. for outlet water control
- Pump : 1HP Single phase, 220VAC $\pm 10\%$
- The whole set-up is well designed and arranged in a good quality painted structure made of square pipe 2300mm x 370mm x 1150mm (LxBxH)
- Power Requirement : 220 VAC $\pm 10\%$, 50 Hz

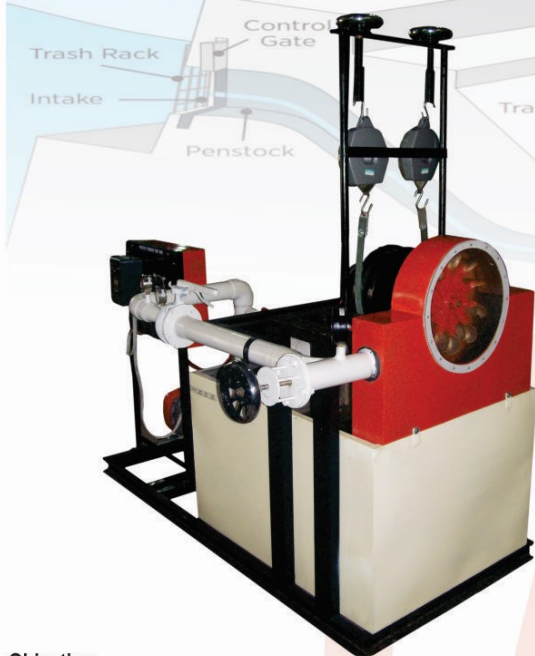
Standard Accessories:

- Instruction manual, Electronic stop watch



Hydraulics Lab

GN 7275 - Pelton Turbine Test Rig



Objective:

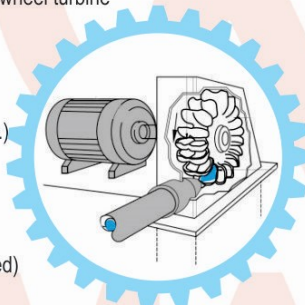
- To study the operation of a pelton wheel turbine
- To determine the output power of pelton wheel turbine
- To determine the turbine efficiency

Technical Specifications:

- Turbine Type: Pelton
- Output Power: 1HP at 1000RPM (approx.)
- Spoon: 16nos. Made of aluminium
- Discharge: 400LPM Approx.
- Supply Head: 25M
- Spear and Nozzle: SS-304 (Material Used)
- Rotor Shaft: Stainless steel
- Jet pressure control through spear headed nozzle and screw handle arrangement
- Rope brake arrangement with weighing balance
- Drum Diameter: 200mm
- Discharge measurement through pitot tube with manometer
- Sump Tank 250litrs: 700mm x 600mm x 600mm (LxBxH)
- Tanks made of SS sheet
- Pizometer tube with scale provided on all tanks for water level measurement
- Piping & Fittings: GI material used
- Valves: 1nos. for drain, 1no. for bypass, 1no. for outlet water control
- Pressure Gauge: 0~4Kg/cm²
- Control Panel: Fitted with mains indicator, star delta starter/ BSDL starter & MCB for overload protection
- Pump : 5HP Three phase, 440VAC $\pm 10\%$
- The whole set-up is well designed and arranged in a good quality painted structure made of 'C' channel
- Power Requirement : Three phase 440 VAC $\pm 10\%$, 50 Hz

Standard Accessories:

- Instruction manual, Electronic stop watch, Tachometer



GN 7278 - Francis Turbine Test Rig



Objective:

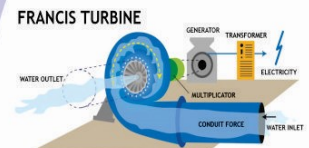
- To study the operation of a francis turbine
- To determine the output power of francis turbine
- To determine the turbine efficiency

Technical Specifications:

- Turbine Type: Francis
- Output Power: 1HP at 1000RPM (approx.)
- Runner: Curved Vanes
- Discharge: 1000LPM Approx.
- Supply Head: 10M
- Rope brake arrangement with weighing balance
- Drum Diameter: 200mm
- Discharge measurement through pitot tube with manometer
- Sump Tank 250litrs: 700mm x 600mm x 600mm (LxBxH)
- Tanks made of SS sheet
- Pizometer tube with scale provided on all tanks for water level measurement
- Piping & Fittings: GI material used
- Valves: 1nos. for drain, 1no. for bypass, 1no. for outlet water control
- Pressure Gauge: 0~4Kg/cm²
- Vaccume Gauge: 0~ -760mmHg
- Control Panel: Fitted with mains indicator, star delta starter/ BSDL starter & MCB for overload protection
- Pump : 7.5 HP Three phase, 440VAC $\pm 10\%$
- The whole set-up is well designed and arranged in a good quality painted structure made of 'C' channel
- Power Requirement : Three phase 440 VAC $\pm 10\%$, 50 Hz

Standard Accessories:

- Instruction manual, Electronic stop watch, Tachometer



Hydraulics Lab

GN 7281 - Kaplan Turbine Test Rig



Objective:

- To study the operation of a kaplan turbine
- To determine the output power of kaplan turbine
- To determine the turbine efficiency

Technical Specifications:

- Turbine Type: Kaplan (Vertical shaft design)
- Output Power: 1HP at 1500RPM
- Propellor made of die cast iron
- Discharge: 1000LPM
- Supply Head: 8M
- Rope brake arrangement with weighing balance
- Drum Diameter: 200mm
- Flow measurement through pitot tube with manometer
- Sump Tank 250lits: 700mm x 600mm x 600mm (LxBxH)
- Tanks made of SS sheet
- Pizometer tube with scale provided on all tanks for water level measurement
- Piping & Fittings: GI material used
- Valves: 1nos. for drain, 1no. for bypass, 1no. for outlet water control
- Pressure Gauge: 0~4Kg/cm²
- Vaccume Gauge: 0~ -760mmHg
- Control Panel: Fitted with mains indicator, star delta starter/ BSDL starter & MCB for overload protection
- Pump : 10HP Three phase, 440VAC ±10%
- The whole set-up is well designed and arranged in a good quality painted structure made of 'C' channel
- Power Requirement : Three phase 440 VAC ±10% , 50 Hz

Standard Accessories:

- Instruction manual, Electronic stop watch, Tachometer

GN 7284 - Air Blower Test Rig



Objective:

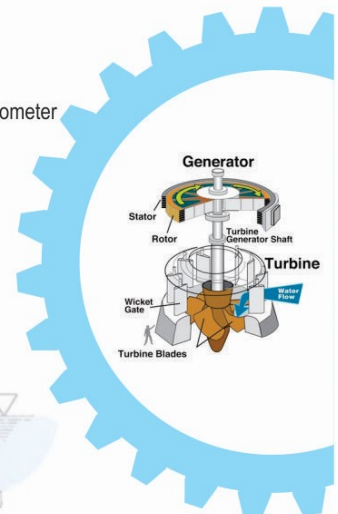
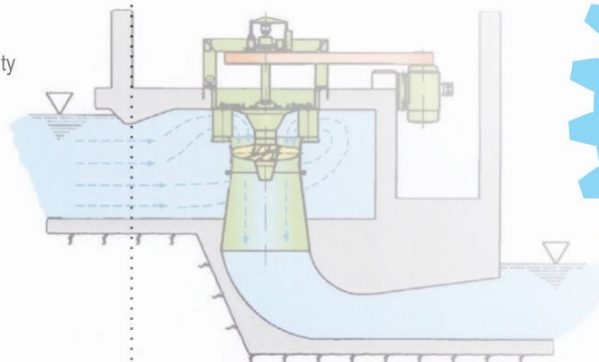
- To find out flow rate of air
- Study the characteristics of air blower

Technical Specifications:

- Length of Test Section: 1000mm
- ID of Test Section: 72mm
- OD of Test Section: 75mm
- Orifice Diameter: 35mm
- Blower: 16no.
- Orifice Pipe Inside Diameter: 72 mm
- Dimmer state: 2Amps.
- Voltmeter: 0 ~ 220VDC
- Currentmeter: 0 ~ 20Amps
- RPM Meter with PNP sensor
- U- Tube manometer for air flow measurement
- Blower motor: 1HP Single phase, 220VAC ±10%
- The whole set-up is well designed and arranged in a good quality painted structure made of square pipe
- Power Requirement : 220 VAC ±10% , 50 Hz

Standard Accessories:

- Instruction manual, Electronic stop watch, Tachometer

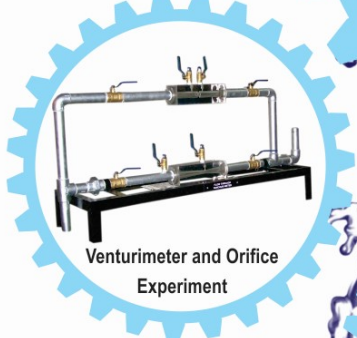


Hydraulics Lab

GN 7285 - Hydraulic Bench

Objective:

- Can do following experiments using experimental modules
 - Bernoullis Theroem Experiment
 - Reynold Experiment
 - Venturimeter and Orifice Experiment
 - Nozzelmeter Experiment
 - Flow Over Notches Experiment
 - Flow Through Orifice & Mouthpiece Experiment
 - Losses Due to Friction in Pipe Line Experiment
 - Losses in Pipe Fittings, Sudden Enlargement & Contraction
 - Impact of Jet of Vanes Experiment
 - Pitot Tube Experiment



Technical Specifications:

- Hydraulic Bench Tray: 1200mm x 600mm x 150mm
- Measuring Tank: 300mm x 600mm x 300mm (LxBxH)
- Sump Tank: 600mm x 600mm x 400mm (LxBxH)
- Tanks made of SS sheet
- Pizometer tube with scale provided on all tanks for water level measurement
- Piping & Fittings: GI material used
- Valves: 2nos. for drain, 1no. for bypass, 1no. for inlet water control
- Pump : 1HP Single phase, 220VAC $\pm 10\%$
- The whole set-up is well designed and arranged in a good quality painted structure made of square pipe 1200mm x 600mm x 1150mm (LxBxH)
- Power Requirement : 220VAC $\pm 10\%$, 50 Hz

Standard Accessories:

- Instruction manual, Electronic stop watch

Optional Experimental Modules:

- GN-BT Bernoullis Theroem Experiment
- GN-RN Reynold Experiment
- GN-VO Venturimeter and Orifice Experiment
- GN-NZ Nozzelmeter Experiment
- GN-FN Flow Over Notches Experiment
- GN-FT Flow Through Orifice & Mouthpiece Experiment
- GN-PF Losses Due to Friction in Pipe Line Experiment
- GN-PS Losses in Pipe Fittings, Sudden Enlargement & Contraction
- GN-IJ Impact of Jet of Vanes Experiment
- GN-PT Pitot Tube Experiment