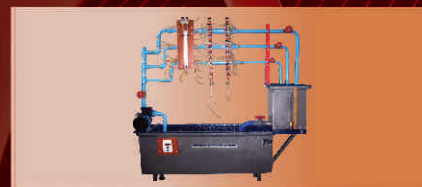




LABTEK

MECHANICAL ENGINEERING LAB EQUIPMENTS

FLUID MECHANICS LAB





Sun LabTek Equipments (I) Pvt. Ltd.

(ISO : 9001 : 2008 Certified Company)



LABTEK COVERS THE FOLLOWING LABORATORY:

- STRENGTH OF MATERIAL LAB
- THERMAL ENGINEERING LAB
- FLUID MECHANICS LAB
- DYNAMICS OF MACHINE LAB
- HEAT TRANSFER LAB
- FLUID MACHINERY LAB
- REFRIGERATION AND AIR-CONDITIONING LAB
- AUTOMOBILE ENGINEERING LAB
- APPLIED MECHANICS LAB
- CAM LAB
- M & I LAB
- DATA ACQUISITION LAB
- MECHATRONICS LAB

The company lays special emphasis on export of its products all over the world, hence has a correct knowhow of resending product and its instruction manual in printed and soft format accepted internationally.

WELCOME TO LABTEK TECHNICAL CATALOG

Established in 1999, LabTek has built a solid reputation for manufacturing and marketing laboratory equipment with strong mechanical base required in universities, engineering colleges, polytechnics, vocational schools etc. LabTek has a selection of more than 500 mechanical engineering and 800 civil engineering equipments and test rigs. With customers spread across the globe, LabTek is regarded as premier supplier of reliable, high quality and competitively priced products. We provide Turnkey solution for establishing mechanical and civil engineering laboratory with state of the art technology and solution.

R & D & QUALITY ASSURANCE:

Our R & D Engineers work in close contacts with clients to produce user friendly products and manuals providing a fulfilling teaching and learning experience. Students can complete their assignments in single laboratory session. LabTek operates a continual product improvement process through ISO procedures and customer feedback to ensure that our product stays ahead of the competition and meets customer needs. Our product specifications are reviewed in line with worldwide curriculum to comply varied syllabus requirements and hence regularly updated and new products developed.

AFTER SALES SERVICE

Company responds to customer needs quickly and considers after sales service equally important to establish a culture of customer confidence, LabTek has established long term relationships with its clients. To expedite your order or to get any particular service, please send us an e-mail or fax with product details and your contact address along with mobile /landline numbers. Our Service Engineers will respond to you quickly through e-mail/phone. We also provide installation, commissioning and training service for any customers who require assistance.

The largest established manufacturing, trading and export house of quality Technical Education Lab Equipments in INDIA



Corporate Office: B-3A, Shiv Shakti Complex, East Vinod Nagar, 1st Floor, New Delhi-110091

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CERTIFICATE

Nr IN/10/100755

SUN LABTEK EQUIPMENTS INDIA PRIVATE LIMITED

B-3A, Shiv Shakti Complex, East Vinod Nagar, New Delhi-110091 (INDIA)

Scope

Manufacturing & Trading of Scientific Lab Testing Equipments.

EA 23, Code

The Quality Management System is in accordance with

SS-EN ISO 9001:2008

Excluded requirement: None

Under the assumption that the quality system and its function is satisfactory at the surveillance and that A.g.R Certification Ltd.'s "Rules for certification" are upheld.

INDIA, 11/04/2011

Issued Date

A.g.R Certification Ltd.

INDIA, 10/04/2014

Expiry Date



A.g.R Certification Ltd.
17 Hanover Square, Mayfair, London, W1S 1HU

90005, edition 3, 4.5.1 Certificate 9001:2008



LAB & EQUIPMENTS NAME

FLUID MECHANICS LAB

- CC, CD, CV Apparatus
- Notch Tank Apparatus
- Closed Circuit jet on vanes Apparatus
- Venturi Meter & Orifice Meter
- Closed Circuit Bernoulli's Theorem
- Closed Circuit Reynolds's Apparatus
- Rota Meter Test Rig
- Pipe Friction Apparatus
- Water Meter Test Rig
- Minor Losses Apparatus
- Pitot Tube Apparatus
- Metacentric Height



CLOSED CIRCUIT APPARATUS FOR DETERMINATION OF CO-EFFICIENT DISCHARGE (CD) CO-EFFICIENT OF CONTRACTION (CC) CO-EFFICIENT OF VELOCITY (CV) OF ORIFICES AND MOUTHPIECE

Supply Tank:

M.S Powder Coating/M.S.FRP Lining/S.S Unit of suitable size with a fixture arrangement to mount 2 replaceable orifices. A scale & Sliding arrangement for measurement of X & Y ordinate to find the velocity traverse of the water jet from orifice & provided with a micrometer contraction gauge for the measurement of contraction of water jet at the throat of the orifice.

Orifices & Mouthpiece:

Two Orifices made of gunmetal/Brass

Measuring Tank:

M.S, Power coating/M.S.FRP Lining/S.S Unit of suitable size with and overflow arrangement & provided with a PVC control valve & elbow.

Sump Tank:

M.S. Powder Coating /MS.FRP Lining/SS. Unit of suitable size for storage of water to circulate through experimental unit.

Supply Pump Set:

0.5 HP single phase [ISI marked] to pump water from the sump fitted with a control valve (Gun metal gate valve)

Main Switch:

Single phase main switch

Frame Work Mounting:

Mounted on frame work & completely fitted with all the above items as self contained unit suitable for operation without foundation.

Services Required:

Single phase power supply 200/220V & water to fill up sump Tank.



CLOSED CIRCUIT NOTCH TANK APPARATUS

Notch Tank :

Notch Tank of suitable size having arrangement to fix replaceable notches with a set of welded mesh baffles for accommodating $\frac{3}{4}$ "1" crusher stones for steadying the flow of water

Notches- (Brass):

- Trapezoidal Notch
- Rectangular Notch-100mm width
- V.Notch

Hook Gauge:

30cm range with mounting provision

Measuring Tank:

M.S, Power Coating/M.S.FRP Lining/S.S Unit of auditable size with overflow arrangement & provided with a PVC control valve & an elbow.

Sump Tank:

M.S. Powder Coating /MS.FRP Lining/SS. Unit of suitable size for storage of water to circulate through experimental unit.

Supply Pump Set:

0.5 HP single phase [ISI marked] to pump water from the sump from the sump fitted with a control valve

Main switch :

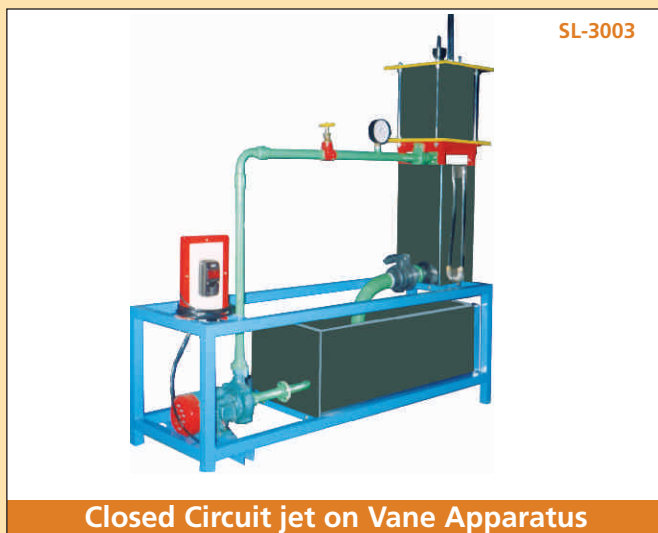
Single phase main switch

Frame Work Mounting:

Mounted on frame work & completely fitted with all the above items as self contained unit suitable for operation without foundation.

Services Required:

Single phase power supply 200/220V & water to fill up sump Tank.



Closed Circuit jet on Vane Apparatus



Venturi Meter & Orifice Meter

CLOSED CIRCUIT JET ON VANE APPARATUS

Nozzle & Vane Housing :

Made of FRP lined M.S. sheet having provision for mounting interchangeable G.M nozzles with two opposite transparent sides made of acrylic sheets and accommodating mechanism to measure the force due to impact of jet on water on different vanes in KG units & having bracket to mount interchangeable vanes of different types

- a. Hemisphere
- b. Flat
- c. Inclined

Force Measuring:

Weighing scaled 1 ever

Measuring Tank:

M.S. Powder Coating/M.S.FRP Lining/S.S Unit of suitable size with overflow arrangement & provided with a PVC control valve & an elbow.

Sump Tank:

M.S. Powder Coating /MS.FRP Lining/SS. Unit of suitable size for storage of water to circulate through experimental unit.

Supply Pump Set:

0.5 HP single phase [ISI marked] to pump water from the sump from the sump fitted with a control valve

Main Switch :

Single phase main switch

Frame Work Mounting:

Mounted on frame work & completely fitted with all the above items as self contained unit suitable for operation without and foundation.

Services Required:

Single phase power supply 200/220V & water to fill up sumpTank.

CLOSED CIRCUIT APPARATUS FOR DETERMINATION OF FLOW THROUGH VENTURI METER & ORIFICE

Piping System:

Consisting of Two G.I. Pipe lines, each line fitted with a venture meter & orifice meter of size 25 mm with a gate valve & provided with a set of distribution chamber having isolating cocks to facilitate experiment on individual venture meter or orifice meter.

Differential Head Measurement:

Differential u tube manometer with mercury.

Measuring Tank:

M.S. Powder Coating/M.S.FRP Lining/S.S. Unit of suitable size with an overflow arrangement & Provided with a PVC control valve & an elbow.

Sump Tank:

M.S. Powder Coating /MS.FRP Lining/SS. Unit of suitable size for storage of water to circulate through experimental unit.

Supply Pump Set:

0.5 HP single phase [ISI marked] to pump water from the sump from the sump fitted with a control valve (Gun Metal gate Valve)

Main switch : Single phase main switch

Frame Work Mounting:

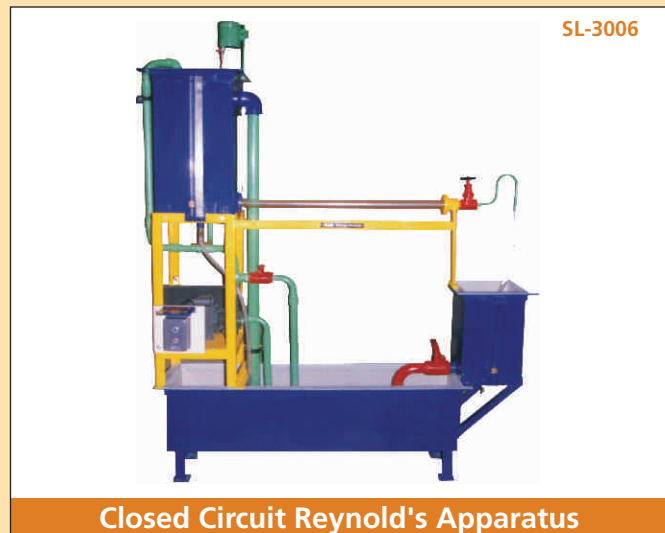
Mounted on frame work & completely fitted with all the above items as self contained unit suitable for operation without foundation.

Services Required:

Single phase power supply 200/220V & water to fill up sump tank.



Closed Circuit Bernoulli's Theorem



Closed Circuit Reynold's Apparatus

CLOSED CIRCUIT BERNOULLI'S THEOREM

Sump Tank :

Made of M.S. Powder Coating/M.S. FRP Lining/S.S. Unit of suitable size and provided with a small storage tank for supply of colored liquid with tubing & cock

Transparent Glass Tube:

A transparent tube of 12mm OD & 8mm ID & 600mm length for flow observation provided with a GM control valve.

Measuring Tank:

M.S. Powder Coating /MS.FRP Lining/SS. Unit of suitable size for suitable size with and overflow arrangement & provided with a PVC control valve & an elbow.

Supply Pump Set:

0.25 HP single phase [ISI marked] to pump water from the sump fitted with a control valve (Gun Metal gate valve.)

Main Switch:

Single phase main switch

Frame Work Mounting:

Mounted on frame work & completely fitted with all the above items as self contained unit suitable for operation without and foundation.

Services Required:

Single phase power supply 200/220V & water to fill up Sump tank.

CLOSED CIRCUIT REYNOLD'S APPARATUS

Supply Tank:

M.S. Powder Coating/M.S.FRP Lining/S.S. Unit of suitable size provided with piezo meter for the measurement of total potential head.

Variable Cross Section Transparent Duct:

A transparent duct made of acrylic and of smooth variable cross section with suitably spaced 0.5m height replaceable high quality graduated glass tubes to measure the pressure head along the duct and a GM flow control valve.

Measuring Tank:

M.S. Powder Coating /MS.FRP Lining/SS. Unit of suitable size for suitable size with and overflow arrangement & provided with a PVC control valve & an elbow

Supply Tank:

M.S. Powder Coating M.S. FRP Lining/S.S Unit of Suitable size for storage of water to circulate through experimental unit.

Supply Pump Set:

0.25 HP single phase [ISI marked] to pump water from the sump fitted with a control valve (Gun Metal gate valve.)

Switch & Starter:

Single phase main switch

Frame work Mounting:

Mounted on frame work & completely fitted with all the above items as self contained unit suitable for operation without and foundation.

Services Required:

Single phase power supply 200/220V & water to fill Up sump tank.



Rota Meter Test Rig



Pipe Friction Apparatus

CLOSED CIRCUIT CALIBRATION TEST RIG FOR MEASURING DISCHARGE OF ROTA METER TEST RIG

Rota Meter:

Two Rota meters of size 20mm & 25mm for flow measurement fitted with respective pipeline

Measuring Tank:

M.S. Powder Coating/M.S.FRP Lining/S.S. Unit Measuring Tank of suitable size provided with overflow arrangement and a drain valve.

Sump Tank:

M.S. Powder Coating /MS.FRP Lining/SS. Unit of suitable size for suitable to store sufficient water for independent circulation through the unit for experimentation and arranged within the floor space of the Main unit

Supply Pump Set:

Supply Pump set to pump water from the sump to the unit through proper piping system with a gate valve to control the rate of flow and connected with a suitable switch.

Switch & Starter:

Single phase main switch

Frame work Mounting:

Rigid M.S. Frame work, Compactly fitted with all the above items, as a self sufficient package unit, suitable for operation without foundation.

Services Required:

Single phase power supply 200/220V & water to fill up sump Tank.

CLOSED CIRCUIT PIPE FRICTION APPARATUS (MAJOR LOSSES)

Piping System:

Two G.I. Pipe lines of size 20 & 25mm with taping at 2m having a set of individual gate valves & distribution chamber with isolating cocks to facilitate individual experiment on piping system

Frictional Head Loss:

Differential u tube manometer with mercury.

Measuring Tank:

M.S. Powder Coating/M.S.FRP Lining/S.S. Unit of suitable size with an overflow arrangement & Provided with a PVC control valve & an elbow

Sump Tank:

M.S. Powder Coating /MS.FRP Lining/SS. Unit of suitable size for storage of water to circulate through experimental unit.

Supply Pump Set:

0.5 HP single phase [ISI marked] to pump water from the sump from the sump fitted with a control valve (Gun Metal gate Valve)

Main Switch:

Single phase main switch

Frame Work Mounting:

Mounted on frame work & completely fitted with all the above items as self contained unit suitable for operation without foundation.

Services Required:

Single phase power supply 200/220V & water to fill up sump Tank.



Closed Circuit Bernoulli's Theorem



Minor Losses Apparatus

WATER METER TEST RIG

Pump set:

0.5 HP, 1Ph, Monoblock, Make: Kirloskar /CRI/CG/Equivalent

Sump tank:

1000 x 300 x 400 mm, SS304 or MS with FRP coat

Collecting Tank:

300 x 300 x 400 mm, SS304 or MS with FRP coat

Flow meter:

A turbine type flow meter 1" x 1"

Piezometer:

A graduated glass tube (graduation in cm)

Experimental Capability:

Actual & Theoretical Discharge, Co-Efficient of Discharge

Manual:

Self explanatory Instruction manual with sample calculation

Optional Feature @ Extra:

Computerized data acquisition system with software

MINOR LOSSES APPARATUS

Pump set

0.5 HP, 1Ph, Monoblock, Make: Kirloskar /CRI/CG/Equivalent

Sump tank

1000 x 300 x 400 mm, SS304 or MS with FRP coat

Collecting Tank

300 x 300 x 400 mm, SS304 or MS with FRP coat

Pipes & fittings

$\frac{3}{4}$ " pipe line with various fittings like bend, elbow, collar, expansion, contraction and gate valve

Head Measurement

Acrylic body Manometer, 200-0-200 mm with Mercury

Piezometer

A graduated glass tube (graduation in cm)

Experimental Capability

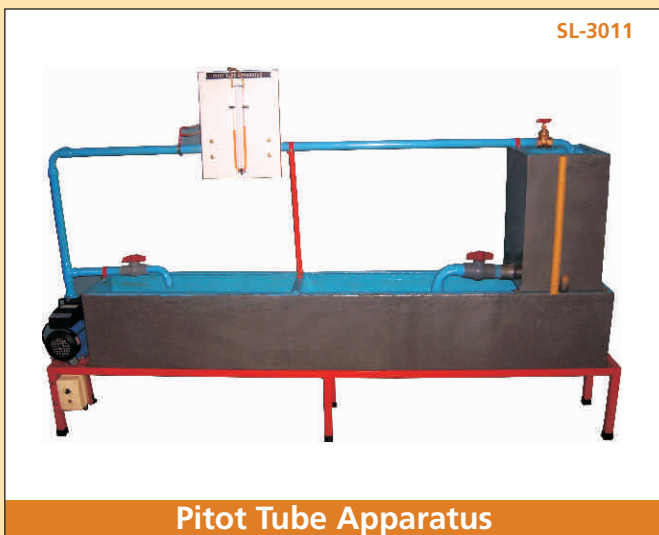
Actual Discharge, loss of head for different fittings/ loss factor

Manual

Self explanatory Instruction manual with sample calculation

Optional Feature @ Extra

Computerized data acquisition system with software



PITOT TUBE APPARATUS

Sump Tank:

1.0x0.3x0.4m (LBH)

Collecting Tank:

0.3 x 0.3 x 0.4m

Pump:

0.5 HP Pump set

OBJECTIVE:

To determine the Velocity of flow of water using Pitot Tube

DESCRIPTION:

The experimental set up consists of fiber glass coated MS / SS sump tank and collecting tank, suitable pump set with control valves to regulate flow. The equipment consists of Pitot Tube fixed on the pipe line. A Piezo meter arrangement is provided on the collecting tank for discharge measurement.

INSTRUCTION MANUAL:

Self-explanatory operating manual provided with the system, which contains brief theory and practical exercises and a set of sample calculation report.

Utilities required to be arranged by the customer:

Electric supply:

230 V, 5 Amps AC, 50 Hz, single phase electric supply with proper earthing.

Apparatus for Determination of Metacentric Height

Model:

Semi Circular Sectioned hollow ship model, provision for loading as Cargo and warship, fine arrangement for accurate angle measurement extra weight in Metric Unit for tilting coupled

Sump Tank:

M.S. Powder Coating/MS. FRP Lining/S.S. Unit water tank of suitable size a drain plug for floating the model ship.

QUALITY POLICY

The Management and the staff of LabTek is committed to provide Educational training equipments and test & measurement products and services on par with international standards with and emphasis on cost effectiveness, customer satisfaction and market coverage. It is our endeavor to create a culture of total quality where continuous improvement of our products by increasing involvement of people through customer oriented, flexible, multiple job functions with emphasis on cost consciousness becomes a way of life.

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