



# Jyoti Ltd.

Water • Power • Progress

## JYOTI PUMPS FOR WATER & POWER



CW Pump for NTPC Aravali Power- Indira Gandhi  
STPP (3x500MW) Vertical Mixed Flow Pump -  
30000 Cum/hr x 27 m x 2.8 MW



Godavari Lift Irrigation Scheme,  
Phase II, Andhra Pradesh  
Metallic Volute Pump -  
25200 cum/hr x 131 m x 12.8 MW



INDI Lift Irrigation Scheme  
Vertical Mixed Flow Pump  
17892 Cum/hr x 35 m x 2.1 MW

ISO 9001:2015 || TUV INDIA



## About us

The Jyoti Group of Companies is a conglomeration of industrial units involved in manufacturing and marketing a wide range of electrical and hydraulic engineering equipment used extensively in the vital sectors of national and international economy

### Vision

Jyoti Ltd. Shall be a leading engineering company with Global Perspective, offering superior quality products and services for Water & Power sector through reliable, economical and innovative turnkey solution in water management, power generation, transmission and distribution areas.

### Mission

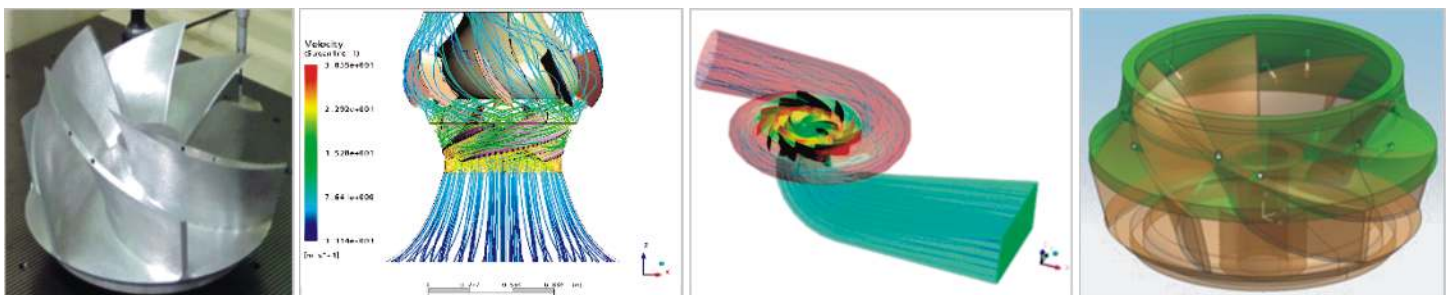
Jyoti Ltd. will be endeavor to achieve its Vision by continually upgrading its core competence through a judicious mix of indigenous research & development, technology-imports, human resource development, promoting team spirit and entrepreneurship among its employee in order to achieve total customer satisfaction and add economic value to all stakeholders of the company.

### R&D ACTIVITIES

- ❖ First R & D center in private sector approved by Department of Scientific & Industrial Research (DSIR) Government of India since 1964.
- ❖ State of Art computer facilities for Design, Analysis & Drawing preparation
- ❖ CFX COMPUTATIONAL FLUID DYNAMICS Software for Hydraulic Design & Analysis
- ❖ Mechanical design using Pro Engineer CAD / CAM / Software.
- ❖ Sump Model Using CFD Technique.
- ❖ Laboratory for Development Testing / Life Testing / Material Testing
- ❖ Pump Model Study as per IEC 60193 / JIS.

### R&D Software & its Application

- ❖ Ansys CFX Module 19 - For Hydraulic Design
- ❖ Ansys Structure - For Mechanical Analysis of Turbine/Pumps Components
- ❖ Creo-3.0 - For Modeling & Detailing of Components
- ❖ Auto Cad-2014 - For Detailing of Components & Preparing Customer Drawings



## Vertical Turbine Pump - VT

### Application

- ❖ Circulating water for Thermal, Nuclear plants
- ❖ Minor lift irrigation
- ❖ Miscellaneous pumps in Power plant
- ❖ Urban and rural water supply
- ❖ Bore hole deep well extraction
- ❖ Fire fighting
- ❖ Condensate extraction
- ❖ Mine dewatering

### Features

- ❖ Robust design ,vibration free silent operation
- ❖ Heavy duty thrust bearing assembly
- ❖ No priming required
- ❖ Energy efficient impeller, bowl design
- ❖ Suitable for dry pit / wet pit arrangement
- ❖ Higher setting length up to 40 mtr can be offered.

### Options

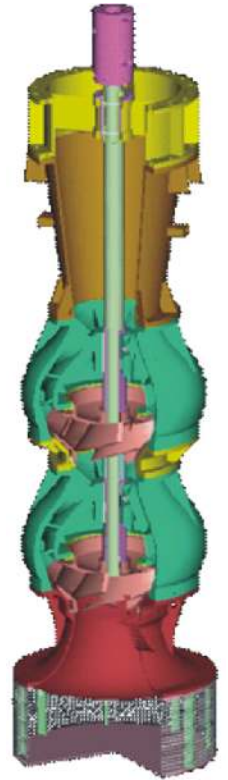
- ❖ Subsurface discharge arrangement
- ❖ Oil / Forced water lubrication
- ❖ Solid / hollow motor shaft design
- ❖ Pull out & non Pullout type
- ❖ Mechanical seal / Gland Packing
- ❖ Flexible / Rigid coupling
- ❖ Special metallurgy including duplex SS

### Standard range

Size : up to 750 mm

Capacity: Up to 4800 m3/hr.

Head Up to 225 M



Higher range can be developed on individual customer needs

## Vertical Mixed Flow Pump - VM

### Application

- ❖ Circulating water application
- ❖ Major lift Irrigation
- ❖ Urban & rural water supply
- ❖ Sea water pumping

### Features

- ❖ High efficiency impellers and bowls
- ❖ Low vibration & noise
- ❖ No priming is required
- ❖ Dry pit / Wet pit arrangement available
- ❖ Gland packing/mechanical seal

### Options

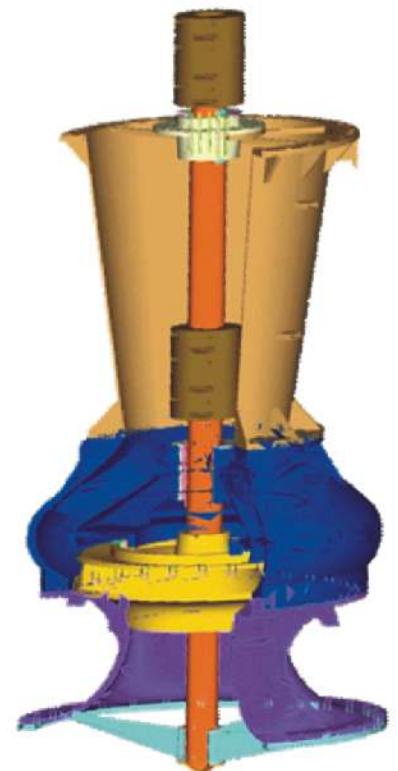
- ❖ Surface / Sub surface discharge
- ❖ Self/forced water /oil lubrication
- ❖ Closed / open Impeller
- ❖ Pullout & non pullout construction
- ❖ Special metallurgy including Duplex SS

### Standard Range :

Size : up to 1800 mm

Capacity: Up to 50000 m3/hr.

Head up to 100 M



Higher range can be developed on individual customer needs



## Metallic Volute Pumps - MV

### Application

- ❖ Large irrigation schemes/river intakes
- ❖ Cooling water applications in power plants
- ❖ Drainage & flood control

### Features

- ❖ High efficiency impellers and volute casings
- ❖ Most reliable for continuous operation with zero maintenance
- ❖ Can pump large volumes to very high heads
- ❖ Solid / Hollow connecting shaft
- ❖ No priming is required
- ❖ Forced water lubrication for seal
- ❖ Mechanical seal.

### Standard Range

Size : up to 3000 mm

Capacity : up to 100000 m<sup>3</sup>/hr.

Head up to 200 M



Higher range can be developed on individual customer needs

## Vertical Propeller Pump - VP

### Application

- ❖ Irrigation
- ❖ Marine
- ❖ Dry dock
- ❖ Fishery
- ❖ Drainage & dewatering

### Features

- ❖ High efficiency impellers and diffuser
- ❖ Low vibration
- ❖ No priming is required
- ❖ Gland packing/mechanical seal

### Options

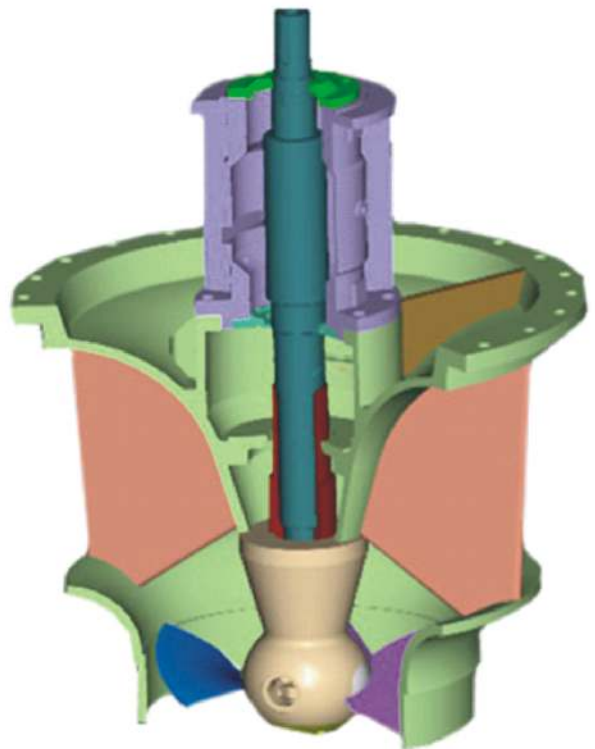
- ❖ Surface / Sub surface discharge
- ❖ Self/forced water /oil lubrication
- ❖ Pull out/non pull out construction
- ❖ Special metallurgy

### Standard Range

Size : up to 1500 mm

Capacity: up to 30000 m<sup>3</sup>/hr.

Head up to 10 M



Higher range can be developed on individual customer needs

## Horizontal Split Casing Pump

### Application

- ❖ Lift irrigation
- ❖ Urban and rural water supply
- ❖ Circulating water system
- ❖ Utility services in industries

### Features

- ❖ Adaptable to rotation in either direction
- ❖ Hydraulically balanced
- ❖ Robust construction minimum maintenance
- ❖ Facilitates ease of inspection and maintenance
- ❖ Replaceable impeller / casing wear ring.
- ❖ Replaceable shaft sleeve.
- ❖ Low NPSH requirement.

### Options

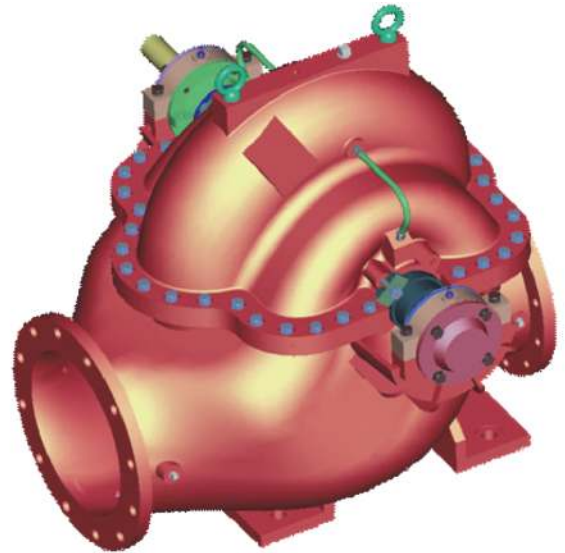
- ❖ Oil / grease lubrication
- ❖ Mechanical seal / Gland packing
- ❖ Special metallurgy including duplex SS

### Standard range

Size: Up to 1200 mm

Capacity: up to 20000 m<sup>3</sup>/hr.

Total head: Up to: 165 Meters



Higher range can be developed on individual customer needs

## End Suction Pump - ES Pump

### Application

- ❖ Water supply
- ❖ Irrigation
- ❖ Chemical Industries
- ❖ Process Industries

### Features

- ❖ Robust construction smooth operation
- ❖ Shaft fitted with Replaceable Shaft sleeve
- ❖ Low vibration & Noise
- ❖ Simple in construction

### Option

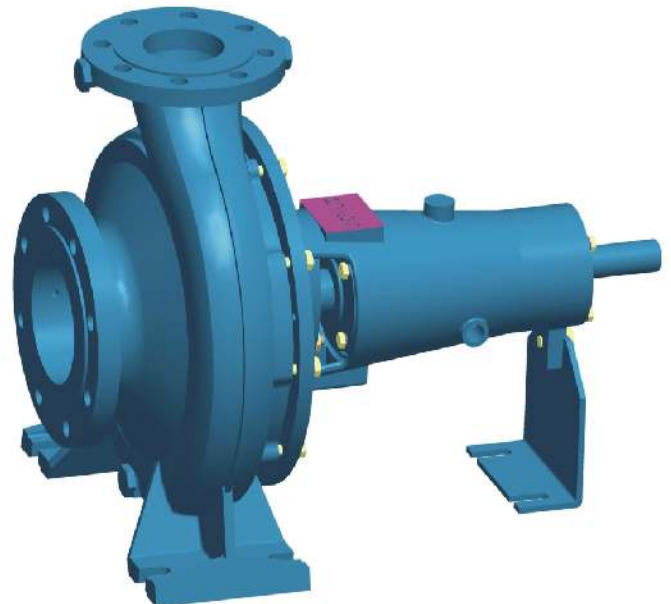
- ❖ Oil / grease lubrication
- ❖ Mechanical seal / Gland packing
- ❖ Bush / Love Joy Coupling

### Standard range

Size: up to 600 mm

Capacity: Up to 3600 m<sup>3</sup>/hr.

Total Head : up to 70 M



Higher range can be developed on individual customer needs

## Vertical Non Clog Centrifugal Pump - VNC

### Application

- ❖ Sewage and effluent treatment
- ❖ Corrosive and abrasive slurry
- ❖ Storm water handling
- ❖ Recirculation and tertiary treatment

### Features

- ❖ Robust construction smooth operation
- ❖ Facilitates ease of inspection and maintenance
- ❖ Impeller with back vanes for reducing axial thrust
- ❖ Suitable for dry / wet pit arrangement
- ❖ Heavy duty thrust bearing assembly
- ❖ Enclosed shaft eliminates need of cross girder network.
- ❖ Shaft fitted with Replaceable Shaft sleeve
- ❖ Can handle solids up to 160 mm size

### Options

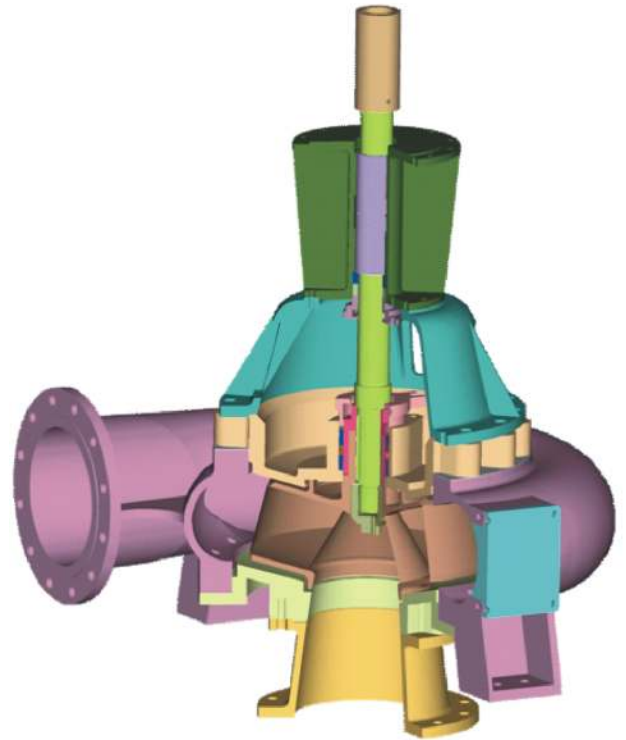
- ❖ Suspension pipe assembly
- ❖ Special metallurgy including duplex SS

### Standard range

Size: Up to 600 mm

Capacity: up to 4500 m<sup>3</sup>/hr.

Total head: Up to: 70 Meters



Higher range can be developed on individual customer needs

## Horizontal Non Clog Centrifugal Pump - NC

### Application

- ❖ Sewage and effluent treatment
- ❖ Corrosive and abrasive slurry
- ❖ Storm water handling
- ❖ Paper and pulp mills
- ❖ Sugar industries
- ❖ Re-circulation and tertiary treatment

### Features

- ❖ Robust construction smooth operation
- ❖ Hand hole cover facilitates cleaning
- ❖ Impeller with back vanes for reducing axial thrust.
- ❖ Suitable for dry / wet pit arrangement
- ❖ Shaft fitted with Replaceable Shaft sleeve
- ❖ Can handle solids up to 160 mm size

### Options

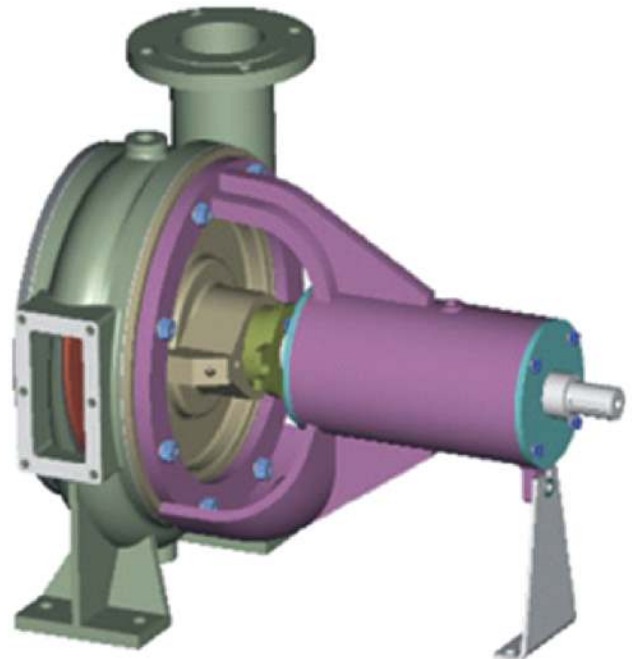
- ❖ Forced water lubrication
- ❖ Special metallurgy including duplex SS

### Standard range

Size: up to 600 mm

Capacity: up to 3600 m<sup>3</sup>/hr

Head up to 70 M



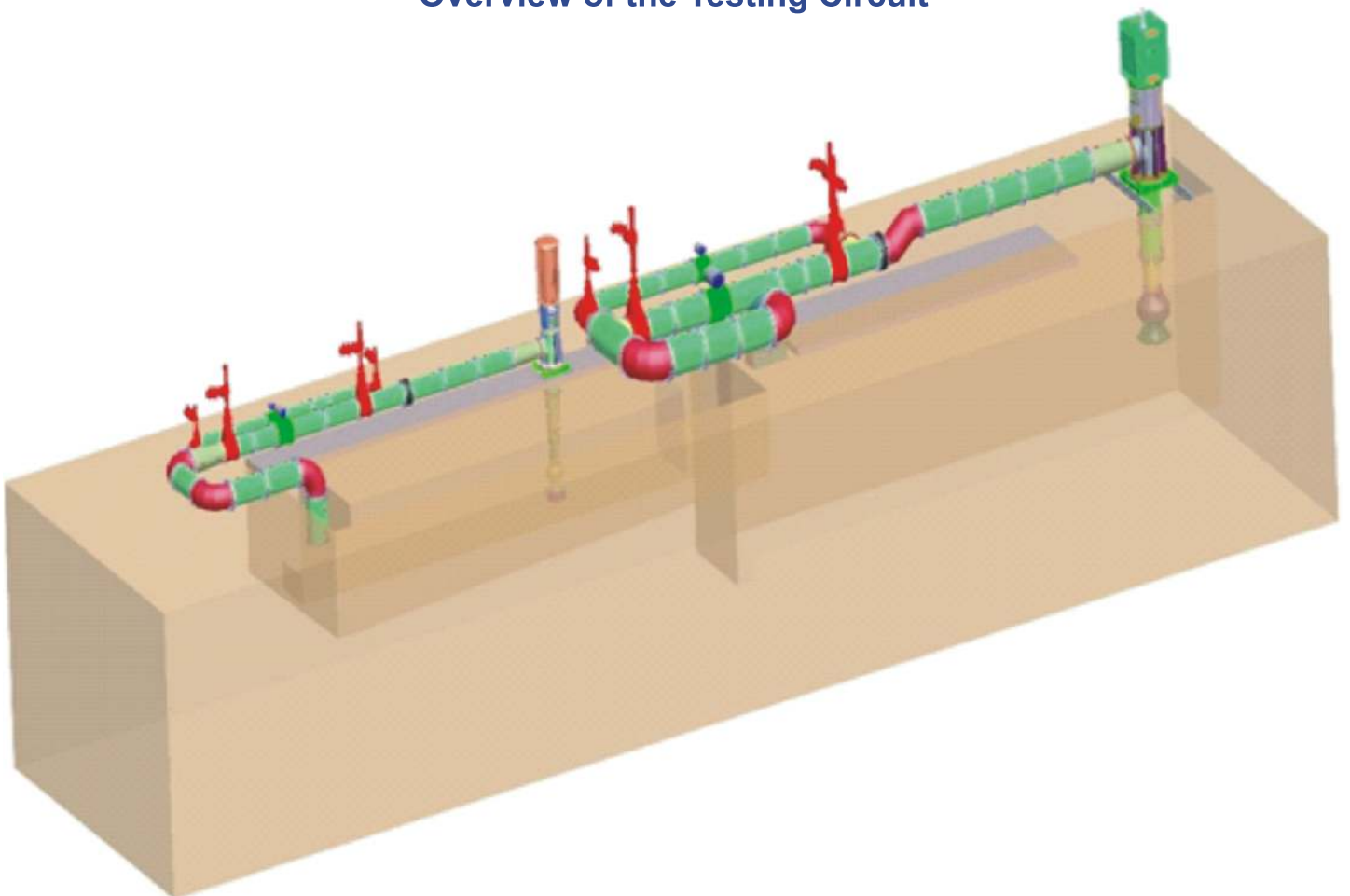
Higher range can be developed on individual customer needs

- ❖ Single Point Responsibility from Concept to Commissioning.
- ❖ In House manufacturing of Pumps, motor, HT Panels, LT Panels, Current Transformer & Potential Transformer.
- ❖ Strategic Tie up to With World renowned Companies for the Latest Technology and Products.
- ❖ Has Commissioned Switchyards from 11KV TO 220KV FOR Pumping & Hydro Products.
- ❖ Has Commissioned hydro station with single unit up to 8MW and Pumping station with single unit up to 16 MW and has till date commissioned more than 60 irrigation and Power with electrical, mechanical, Control & instrumentation including SCADA System & Wireless Communication.
- ❖ Has all required infrastructure in house for design & manufacturing, strong vendor base and strong partners for election, testing Commissioning including operation & Maintenance at site.

### Testing Facility.

Jyoti Ltd. has recently set up the state-of-the-art Test Bed where the pump with capacity up to 50,000 m<sup>3</sup>/hr. and Motor rating up to 6 MW can be tested. Provision is made for testing of both vertical & horizontal pumps. With this all the CW pumps up to 800 MW Power Projects can be indigenously tested at Jyoti Works in Vadodara.

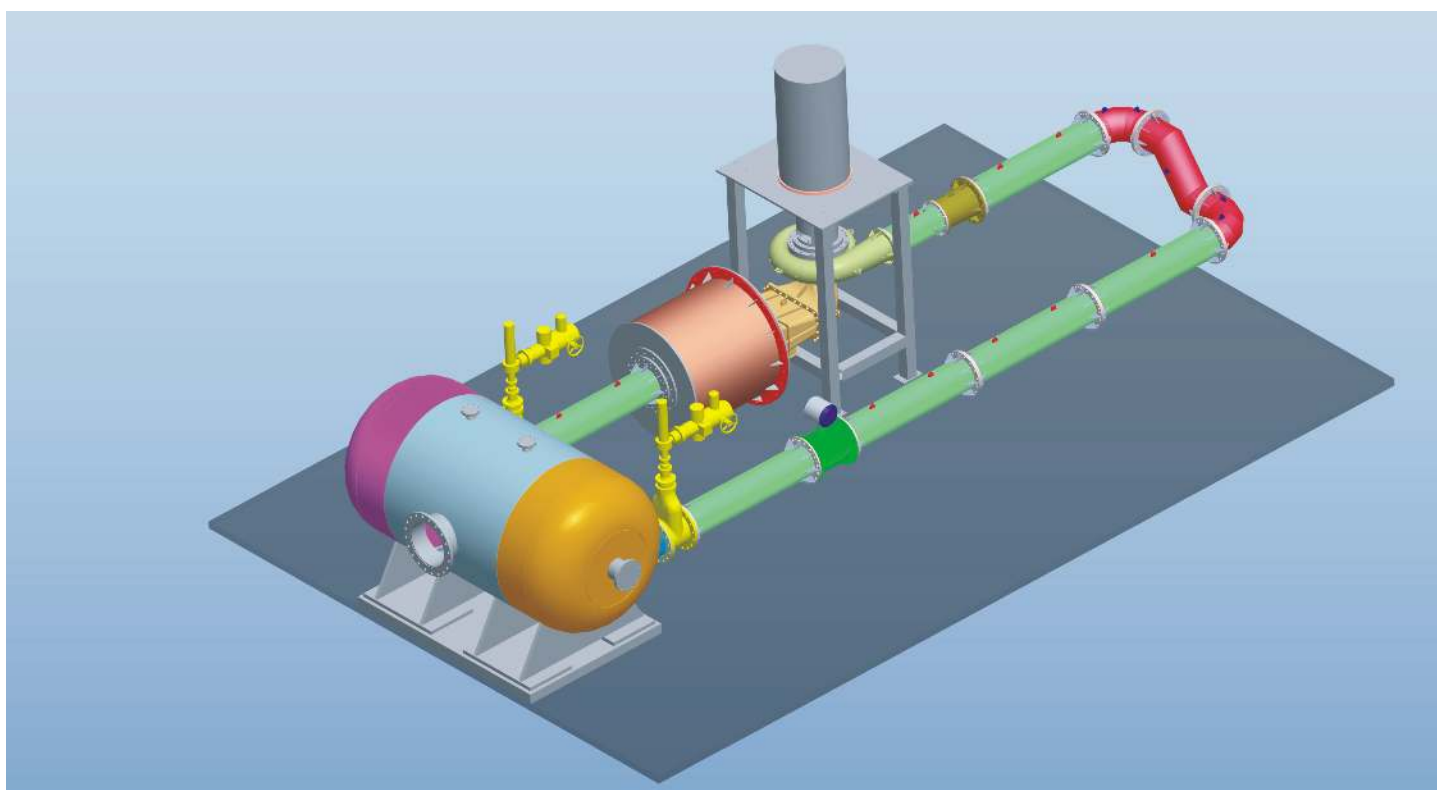
### Overview of the Testing Circuit





## Features of testing Facility

- ❖ Sophistication (accuracy & reliability)
- ❖ Automation in testing (simple & consistent)
- ❖ Compliance to international standards
- ❖ Improved material handling capacity
- ❖ The power for Testing of Pumps is indigenously available.
- ❖ New HT alternator of 4 MW capacity made in house for the entire power requirement for testing.
- ❖ SCADA system provided with Lab View software for data acquisition and processing.
- ❖ Remote monitoring provision is made. (pump performance can be observed from anywhere within the company premises)



FOR FURTHER ENQUIRIES  
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