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CONNECTECH
— PROSPERITY THROUGH TECHNOLOGICAL INNOVATIONS —

Connectech Pvt Ltd is Pakistan's hub for advanced technological solutions. At Connectech, we are committed to shaping the future of technology in Pakistan by developing, connecting, co-creating and commercializing world-class technologies & solutions across a wide range of industries.

Specializing in cutting-edge technologies

for Industrial Products, Agricultural and Biotechnology, Space Exploration, and Medical Applications, we bring global standards of innovation and excellence to local manufacturing.

By harnessing the expertise of our skilled researchers & engineers, we strive to introduce high-quality, reliable, and efficient designs & technologies that can be transferred for mass scale production to industries to solve complex challenges. We also provide facilitation services for production process improvement through our world class labs, calibration workshops, certifications and trainings.

Through innovation, collaboration, and a commitment to fostering local talent, we are developing a strong ecosystem, aiming to be at the forefront of technological advancement in Pakistan, bridging the gap between local ingenuity and global excellence.



OUR SERVICES

- TESTING SERVICES
- MANUFACTURING SERVICES
- IT SERVICES

TESTING SERVICES

1 AERO CALIBRATION LAB

AERO Calibration Laboratory, accredited by PNAC and certified to ISO 17025 standards, is a state-of-the-art facility specializing in the calibration of electrical, electronic, and mechanical equipment. Our lab is fully equipped with advanced instruments, ensuring accurate, reliable calibration results for all your critical measurement needs. When selecting calibration services, choose a laboratory that meets the highest standards. Our controlled environment ensures the precise atmospheric conditions necessary for dependable measurements, enhancing the accuracy and longevity of your equipment.

Our rigorous quality system, combined with the expertise of our personnel, enables us to conduct calibration services aligned with diverse international standards. At AERO, our commitment to excellence delivers quality you can trust.

Our Calibration Services Include:

- Electrical and Electronic Calibration
- Dimensional and Mass Balances
- RF and Microwave Measurements
- Temperature and Humidity Calibration
- Torque Measurement
- Pressure Calibration
- Vibration Measurements

2 RELIABILITY & ENVIRONMENTAL TESTING SERVICES

The Reliability & Environmental Testing (R&E) Lab is a state-of-the-art facility equipped with cutting-edge machinery designed for life prediction and reliability testing of modules and assemblies using Accelerated Life Testing (ALT) methods. Our comprehensive environmental and electrical testing services ensure products perform reliably under harsh conditions, while the controlled environment of the R&E Lab safeguards customer products throughout the testing process.

Our services include:

- Environmental Stress Screening (ESS) Chamber
- Temperature & Humidity Chamber
- Altitude Test Chamber
- Hi-pot Tester (for electrical testing)
- ESD Simulator
- Salt Spray Chamber

3 MATERIAL, STRUCTURAL AND VIBRATIONAL TESTING

Material Testing:

Our Material Testing Lab houses two Universal Testing Machines, capable of applying static loads up to 600 KN (60 tons) and dynamic loads up to 250 KN (25 tons), along with an Advanced Video Extensometer for accurate measurements.

Capabilities:

- Ultimate Tensile and Compressive Strength
- Yield Strength
- Ductility (percentage elongation)



**TRUSTWORTHY INSIGHTS FOR
A STRONGER TOMORROW**
 PROSPERITY THROUGH TECHNOLOGICAL INNOVATION!

- Young's Modulus
- Poisson's Ratio
- Stress-Strain Graphs
- Maximum Fiber Stress for Composites
- Flexural Modulus for Composites
- Tensile Strength of Bolts

Structural Testing:

With the increasing reliance on laboratory simulations to verify structural reliability and durability, our Structural Testing Lab offers three Servo Hydraulic Test Rigs, each equipped with twelve actuators that can apply static loads up to 70 KN and dynamic loads up to 50 KN. The lab also includes a comprehensive range of load cells (200 kg to 100,000 kg), LVDTs (Displacement Transducers) ranging from ± 12.5 mm to ± 150 mm, advanced image correlation techniques for deflection measurements, and a 128-channel data acquisition system for both static and dynamic testing.

Capabilities:

- Applying loads up to 70 KN with real-time data measurement of load, displacement, and strain via a data acquisition system
- Conducting a variety of static and dynamic tests to ensure structural integrity
- Evaluating operational life with Fatigue Testing
- Performing Experimental Stress Analysis
- Calibrating load cells for accuracy

Vibration Testing Lab:

Incorporating vibration testing during product development optimizes design, reduces manufacturing costs, and assures consistent quality. Our Vibration Testing Lab is equipped with two shakers of 133.5 KN capacity and two shakers of 40 KN capacity, covering a frequency range of 5–2000 Hz. These shakers achieve maximum acceleration of 100g and velocity of 1.78 m/s. The 133.5 KN shakers can handle loads up to 12,000 kg, while the 40 KN shakers support up to 5,000 kg.

The lab supports industries requiring vibration testing, such as:

- Automotive: Exhaust systems, rubber hoses, heat exchangers, in-car entertainment
- Packaging: Testing packaging for air, ship, and road transport of fragile items
- Heavy Industry: Vibration testing of shafts and axles for trains and large machinery
- Electronics & Electrical: Ensuring earthquake resilience and reliability of electronic components and panels
- Medical Equipment: Validating durability and performance in critical applications
- Machinery Components: Testing for parts in pumps, electrical generators, and compressors

4 ENVIRONMENTAL TESTING

Offering comprehensive environmental testing services tailored to modules and assemblies in the Avionics, Aerospace, and Ground Vehicle sectors. Expertise ensures that products meet the rigorous standards required for performance and reliability in challenging conditions.

Certified to Aerospace Standard AS9100 Rev D, demonstrating a commitment to quality and excellence in environmental testing. Trust in precise and reliable testing solutions for critical applications.

Our services include following tests:

- Thermal Stress Testing Chambers
- Vibration Testing Machines
- Centrifuges for Linear Acceleration Testing
- Low Pressure Testing Chamber
- Mechanical Shock Testing Machine
- Humidity Testing Chamber
- Combined Stress Screening Setup
- Explosion-proof Centrifuge

5 MATERIAL TESTING

We offer a comprehensive range of material testing services through our state-of-the-art testing center, equipped with advanced facilities across various departments.

1. **Elemental Analysis Deptt**
 - OES/ XRF Testing
 - Combustion Analysis
 - Precision Elemental Analysis
2. **Mechanical Testing Deptt**
 - Metallic Materials Testing
 - Non-Metallic Materials Testing
 - Machine Shop
3. **Micro Analysis Deptt**
 - Metallography & Light Microscopy
 - Hardness Testing
 - Heat Treatment
 - Scanning Electron Microscopy
4. **Physio Chemical Testing Deptt**
 - Electrical & Thermal Properties
 - Oil, Paint, Grease and Adhesive Testing
 - Thermal & PCBs Testing
 - Physio-Chemical Testing

6 METROLOGY AND CALIBRATION

Offering specialized metrology and calibration services through a state-of-the-art Metrology Centre, equipped with advanced facilities to meet a variety of measurement needs.

1. **Electronics Metrology**
 - Electromechanical & Special Inst Meterage
 - Digital Multimeter and Power Supplies Meterage
 - Low Frequency, Phase & Distortion Meterage
 - Time & High Frequency Meterage
 - Vibration & Shock Meterage
2. **Dimensional Metrology**
 - Angle & Flatness Meterage
 - Opto-Mechanical Meterage
 - Precision & Gauges Meterage
 - Coordinate Meterage
 - End Meterage
3. **Universal Instrument Metrology**
 - Caliper Meterage
 - Micrometer Meterage
 - Dial Indicator Meterage
 - Linear Meterage
 - Universal Instruments & Repair LAB
4. **Mechanics & Thermotechnics Metrology**
 - Weight/Mass Meterage
 - Pressure Meterage
 - Force Meterage
 - Temperature Meterage
 - Chemistry Meterage

7 NON-DESTRUCTIVE TESTING

The Non-Destructive Testing Centre is equipped with advanced facilities designed to deliver reliable and accurate testing solutions. Our comprehensive range of services ensures that materials and structures are thoroughly evaluated without compromising their integrity. The center offers the following services:

1. **Computed Tomography (CT)**
 - Reverse Engineering
 - 2D/3D Defect Analysis
 - Composite Analysis
 - Metrology Analysis
2. **Radiographic Testing (RT)**
 - Weldments Testing
 - Casting Testing
 - Molded Composite Testing
 - Non-metallic Material Testing
3. **Ultrasonic Testing (UT)**
 - Forging Testing
 - Plate Wave Technique for Testing of Sheet
 - Bonding / Delamination Testing
 - Winded Composite Testing
4. **Magnetic Particle Testing (MPT)**
 - Surface / Subsurface Defect Detection
 - Defect Detection of Magnetic Materials
 - Fe, Ni, Co
 - Testing of Machined parts, Bolts, Studs etc

8 EXPERIMENTAL AERODYNAMICS FACILITIES (EAF)

EAF is committed to provide wind tunnel testing support covering a wide spectrum of design & development requirements. Presently EAF houses three wind tunnels with various sized test sections and speeds. EAF is equipped with model & balance design, manufacturing and calibration capabilities to provide a complete solution for any wind tunnel test campaign.

Capabilities / Capacities

- Force-Moment Testing
- Dynamic Stability Testing
- Steady & Unsteady Pressure Testing
- Propeller Testing
- Flow Visualization
- Turbulence Measurement
- Store Release Qualification
- Hinge Moment Testing
- Intake Testing
- Aeroelastic Testing
- Wind Tunnel Balance Calibration
- Wind Tunnel Model & Balance Development
- CFD Analysis

9 EMBEDDED SYSTEMS SOFTWARE TESTING FOR AEROSPACE, UAVs & LIFE CRITICAL SYSTEM

Dedicated software testers specialize in the rigorous evaluation of embedded software across critical sectors, including UAVs, aerospace, and medical devices such as ventilators. Utilizing internationally recognized defense standards, including NASA JPL and aerospace standards DO-178B-C, the highest level of quality and safety in software performance is ensured.

Comprehensive Software Testing Techniques Include:

- Dynamic Integrated White Box Testing
- White Box Unit Testing
- White Box Static Analysis
- Technical Code Review and Visual Inspection
- Gray Box and Black Box Testing

These services provide thorough qualification for all types of embedded software, ensuring reliability in mission-critical applications.

10 SCALABLE TESTING AUTOMATION: ENHANCING QUALITY ASSURANCE FOR USER-FACING / HMI APPLICATIONS

In the aerospace industry, particularly within unmanned systems and mission planning, ensuring reliable system performance is crucial. The complexity of user interfaces presents significant challenges in testing, necessitating a comprehensive approach to manage the multitude of required test cases.

Technical Solution

An advanced automation framework simplifies this process by efficiently executing thousands of test cases across various technology stacks. Its technology-agnostic design and scalable architecture enable swift and accurate management of diverse testing requirements.

Key Features

- Scalable Automation: Rapid and efficient execution of extensive test cases.
- Universal Compatibility: Functions seamlessly with any technology stack.
- Detailed Reporting: Generates comprehensive logs and reports for in-depth analysis.
- Faster Development Cycle: Provides quick feedback to expedite issue resolution.

Quality Assurance Impact

By enhancing testing speed and thoroughness, this framework upholds high standards of safety and performance, setting a new benchmark for quality in mission planning and desktop applications.

11 MODEL BASED TESTING FACILITY: ACKNOWLEDGING ADVANCED RELIABILITY AND ROBUSTNESS

Industry best practices are integrated with proprietary tools to provide advanced formal verification capabilities, ensuring reliability and safety in complex systems.

Key Capabilities

1. **Kritical:** Unique tool for agile development integrates risk-based testing by identifying critical code modules. It accelerates risk analysis from months to mere minutes.
2. **Kompare:** Designed for regression testing, Kompare assesses codebase changes, verifying modifications to maintain system integrity—reducing weeks of effort to minutes.
3. **Modletica:** This tool converts C code to UPPAAL-compatible models automatically, enabling detailed system validation and cutting model development time from weeks to minutes.

12 CALIBRATION FACILITY

Calibration Labs are equipped with state of the art calibration equipment and provide internationally-traceable calibration services for Mechanical, Electrical / Electronic and Optical equipment, CNC Machine & Multi-Axis Rotary Tables / Simulators.

Salient Features

- Traceability to international Standards
- Standard method used
- ISO17025:2017 Accredited
- Validity of calibration Results is ensured by participating in Proficiency Testing program with International institutes
- For highly sensitive or Heavy equipment On-site calibration services

13 TESTING & MEASURING FACILITIES

Our state-of-the-art testing and measuring facilities ensure precision and accuracy across various mechanical and chemical assessments.

Mechanical & Chemical Testing Facilities

We utilize advanced equipment to conduct a wide range of mechanical and chemical tests, ensuring material integrity and performance.

- CNC Universal Tensile Testing Machine (Capacity: 100 Ton)
- High-Temperature Tensile Testing Machine (Capacity: 35 Ton, up to 1000°C)
- Pendulum Impact Tester (Capacity: 406 J)
- Drop Weight Test Machine (Capacity: 10,000 J)
- Universal Hardness Tester
- Optical Emission Spectrometer
- Carbon Sulfur Analyzer

- ONH Analyzer
- XRF Metal Analyzer
- Metallurgical Microscope
- Metallography and Intergranular Corrosion Testing Facility

Non-Destructive Testing Facilities

Our non-destructive testing capabilities allow for comprehensive evaluations of materials without compromising their integrity.

- Visible and Fluorescent Dye Penetrant Testing
- Magnetic Particle Testing
- Radiographic Testing (using X-Rays & Gamma Rays)
- Conventional and Phased Array Ultrasonic Testing
- Eddy Current Testing
- Alternative Connect Field Measurement (ACFM) System
- Hydrostatic Testing (up to 600 Bar) and Pneumatic Testing (up to 30 Bar)
- Helium Leak Testing (sensitivity: 1 x 10⁻⁹ std. cc/sec) and Vacuum Testing (down to 0.7 Pa)

Measuring Facilities

Our measuring facilities are equipped with cutting-edge technology to ensure accurate measurements and assessments for various applications.

- Coordinate Measuring Machine
- Optical Profile Projector
- Portable Laser Tracker
- 3D Handheld Scanner
- Industrial Videoscope (for boroscopy)
- Coating Thickness Meter
- Portable Adhesion Tester
- Surface Roughness Tester

14 EQUIPMENT QUALIFICATION & TESTING FACILITY (EQTF)

We have established an in-house facility for the qualification of Safety Class 1E and Process Equipment in accordance with internationally accepted standards. Our comprehensive range of instruments supports various testing and evaluation processes. Additionally, our EQTF division offers certified examination services for overhead cranes and lifting accessories.

Our testing facilities include:

- Polymer Testing Facilities:**
 - Universal Testing Machine
 - Thermal Ageing Ovens
 - Environmental Chamber
 - Thermogravimetric Analyzer
 - Differential Scanning Calorimeter
 - Fourier Transform Infrared Spectrometer
 - Hardness Testing Equipment
 - Salt Spray Tester
- Electrical Testing Facilities:**
 - Insulation Resistance Testing
 - Dielectric Strength, Surge, and Tan Delta Testing.
 - Insulation Resistance Testing, Power Quality Analysis, and Impedance Analysis.
 - Portable Data Acquisition System
- Seismic Testing Facilities:**
 - Seismic Shaker Table
 - Electrodynamical Vibration Testing Machine
- LOCA Test Facility**
- Process Valves Testing**
- Pump Testing**
- Flame Testing of Cables**
- Specialized Facilities**
 - Examination of Overhead Cranes and Lifting Accessories
 - Calibration of CNC Machines

15 CHEMICAL ANALYSIS

Our comprehensive range of testing services and state-of-the-art facilities deliver precise and reliable chemical analysis for a wide range of applications.

Our Services Cover:

- Polymers
- Composites
- Resins
- Oils and Greases
- Metals and Alloys
- Ores and Salts
- Aqueous Samples
- Organic Solvents
- Refrigerant Gases
- Acids

Advanced Testing Facilities:

- Flame Atomic Absorption Spectroscopy (AAS)
- Inductively Coupled Plasma Optical Emission Spectroscopy (ICP-OES)
- Refractometer
- Karl Fischer Titration
- Carbon-Sulfur Analyzer (CSD-230)
- Differential Scanning Calorimetry (DSC)
- Viscometer
- Multidirect Photometer
- Flash Point Apparatus
- Fourier Transform Infrared Spectroscopy (FTIR)
- Visco-Density Meter

16 SURFACE TREATMENT ANALYSIS

We offer specialized surface treatment analysis to ensure the durability, quality, and performance of your materials. Our comprehensive services help industries maintain high standards in surface treatment processes and achieve superior coating outcomes.

Our Services Include:

- Electroplating – For improved wear resistance, corrosion protection, and aesthetic finishes.
- Electroless Plating – Chemical coating solutions offering uniform thickness and enhanced surface hardness.
- Conversion Coating – Essential for creating corrosion-resistant layers on metal surfaces.
- Electropolishing – Precision polishing for smooth, clean, and corrosion-resistant surfaces.
- Alloy Coating – Custom alloy coatings designed for strength, conductivity, and wear resistance.

17 METALLURGY SERVICES

Our metallurgy testing and surface engineering services are designed to provide in-depth analysis, quality control, and material development for various industrial applications. Equipped with advanced facilities and cutting-edge technologies, we deliver precise, reliable results that support material integrity and performance.

1. Mechanical Testing

- Rockwell Hardness
- Vickers Hardness
- Micro-Vickers Hardness
- Universal Testing Machine (UTM)
- High-Temperature Tensile Testing
- Charpy Impact Testing
- Fatigue Testing
- Creep Testing

2. Alloy Development & Processing

- Vacuum Induction Melting
- Hot and Cold Rolling Mills
- Forging Hammers
- Wire Drawing Machine
- Inductively Coupled Plasma (ICP) & Optical Emission Spectrometers
- X-Ray Fluorescence (XRF)

3. Material Characterization

- Stereo & Optical Microscopy
- Scanning Electron Microscopy (SEM)
- Scanning Transmission Electron Microscopy (STEM)
- Atomic Force Microscopy (AFM)
- X-Ray Diffraction (XRD)
- Carbon/Sulfur & Gas Analyzers
- Differential Scanning Calorimetry (DSC), Differential Thermal Analysis (DTA), Thermogravimetric Analysis (TGA)
- Dilatometry

4. Corrosion Testing and Prevention

- Electrochemical Corrosion Testing
- Aqueous Corrosion Testing
- Humidity Cabinet Testing
- Salt Spray Chamber Testing
- Paint Thickness Measurement
- Paint Adhesion Testing

5. Heat Treatment

- Vacuum Furnaces (Max Temperature: 1150°C)
- Air Heat Treatment Furnaces (Max Temperature: 1100°C)
- Controlled Atmosphere Heat Treatment (H₂, N₂, Ar, Salt Bath)
- Surface Treatments: Nitriding, Carburizing, Bluing

6. Furnace Development

- Top-Loaded Very High Temperature (VHT) Furnace (Φ 1.25m, Height 2.5m)
- Vacuum Induction Melting Furnace (15 kg Capacity)
- Nitriding Furnace (Retort Diameter: 750mm, Height: 1.2m)
- Bluing Furnace (Retort Diameter: 900mm, Height: 2.2m)
- Bottom-Loaded Vacuum Heat Treatment Furnace (Φ 1.2m, Height 1m, 1250°C)

7. Surface Engineering

- Our surface engineering services include Electrodeposition, Thermal Evaporation, Cathodic Arc Physical Vapor Deposition, Pack Cementation, Fused Slurry Coatings, and Air Plasma Spraying, offering a complete solution for advanced surface treatments.

18 LEAK TESTING SERVICES

We provide comprehensive leak testing for all types of vacuum equipment, including vessels, vacuum lines, valve stations, and complete vacuum systems.

Available Leak Testing Techniques:

- Hydrostatic Leak Testing
- Helium Sniffer Leak Testing
- Helium Vacuum Leak Testing

19 VACUUM TECHNOLOGY REPAIR AND MAINTENANCE SERVICES

We offer expert repair and maintenance services for a wide range of vacuum technology equipment, ensuring optimal performance and longevity.

Our Services Include:

- Vacuum Pumps: Repair and maintenance for Rotary, Roots, Turbo-molecular, Ion, Diffusion, Ejector, and more.
- Vacuum Gauges: Servicing Thermovac, Capacitance, Thermocouple, Hot & Cold Cathode, Bourdon, and other gauge types.
- Vacuum Valves: Maintenance for Bellow-sealed, Gate, Globe, Magnetic, Motorized control, Electro-pneumatic, and more.
- Vacuum Traps: Repair and upkeep of Liquid Nitrogen traps, Ice traps, Oil-mist filters, and Baffles.

20 QUALIFICATION SERVICES

We specialize in providing comprehensive qualification services, meticulously designed to ensure compliance and excellence across industrial applications. Our expertise covers a broad range of critical qualification services, including:

- Qualification of Class 1E equipment of NPPs
- Life Estimation and condition monitoring of electric cables of NPPs
- Performance Testing of Pumps and valves
- Calibration of CNC Machines, electrical, mechanical process equipment.
- Qualification of Lifting Equipment & Accessories
- Polymer Characterization
- Site Installation and Commissioning
- Mechanical vibration testing & seismic qualification.

MANUFACTURING SERVICES

1 PROCESS EQUIPMENT SERVICES

We specialize in providing comprehensive equipment services and solutions, including:

- Pressure vessels – For safe and efficient storage and handling of pressurized materials.
- Heat exchangers and condensers – Designed for optimal energy transfer in industrial processes.
- Columns and distillation towers – Custom-engineered for efficient separation processes.
- High-pressure piping and penstocks – Engineered for maximum durability under extreme pressures.
- HP heaters and air pre-heaters – Boosting energy efficiency in industrial heating applications.
- Storage tanks, cylinders, and flasks – Reliable solutions for storage and containment needs.
- Equipment for cement, sugar, and fertilizer plants – Tailored for industry-specific requirements.
- Equipment for oil and gas field plants, refineries, and steel-making plants – Supporting high-demand processes in complex industrial environments.
- Food irradiation plants – Ensuring food safety and preservation through specialized processing.
- Chemical and hydrocracking reactors – Essential for refining and chemical production processes.
- Boiler drums, water drums, and steam drums – Designed to handle high-pressure steam and water applications.
- Steam generators – Providing reliable steam production for various industrial uses.
- Pressurizers – Managing pressure stability in critical systems.
- Wind turbines – Efficient solutions for renewable energy generation.

Our equipment solutions meet industry standards, ensuring performance, reliability, and longevity for critical operations across sectors.

2 MECHANICAL EQUIPMENT SERVICES

We specialize in delivering high-quality mechanical equipment services, tailored to meet the demands of various industrial applications. Our expertise spans a wide range of essential equipment, including:

- Cranes (EOT, Gantry & Jib)
- Industrial Stacks
- Roller Supporters / Welding Positioners
- Transport Bogies up to 200 Ton
- Shot Blasting Equipment
- Isostatic Presses
- Industrial Furnaces
- High Precision Parts / Jigs & Fixtures
- Toolings for Power Plants
- Shielding / Special Purpose Doors
- Steel Structures

3 POWER PLANT EQUIPMENT

We specialize in delivering high-performance equipment solutions tailored to meet the critical needs of power plant operations. Our expertise covers a comprehensive range of essential power plant equipment, including:

- Pressure Retaining Equipment Nuclear Power Plants (Safety Class 1,2 & 3)
- Equipment for Hydel Power Plants (Penstock, Spiral Casing, Draft Tube Cone, etc.)

4 DESIGN & ENGINEERING SERVICES

Our Design & Engineering setup features a highly experienced, dedicated team equipped with state-of-the-art tools and advanced software. We handle development, detailed engineering design, and analysis of process and mechanical equipment for power plants, chemical and petrochemical facilities, and other engineering sectors, ensuring full compliance with relevant international codes and standards.



TRANSFORMING INDUSTRIES THROUGH CUTTING EDGE TECHNOLOGIES

PROSPERITY THROUGH TECHNOLOGICAL INNOVATION!

5 FABRICATION FACILITIES

Our fabrication setup includes Pressure Vessel and Light Fabrication Shops, featuring a robust 150-ton material handling capacity. Equipped with advanced facilities, we ensure precision and efficiency in every project.

Our capabilities include:

1. DISH END FORMING

Set of dishing presses and flanging machines make it possible to cold-form torispherical, ellipsoidal and hemispherical dish ends of diameter up to 6.5 meters with plate thickness of 32 mm for carbon steel and 24 mm for stainless steel in accordance with ASME codes.

2. PLATE ROLLING

Plate bending and rolling up to thickness of 120 mm (cold) and 250 mm (hot) carbon steel plates having width up to 4000 mm

3. MECHANICAL TUBE EXPANSION

Set of tube expansion machines, i.e. hydraulic torque controlled, Electric current controlled and Hydrostatic Tube Expansion for Heat Exchangers which can handle jobs up to:

- Diameter Range: 5 mm to 64 mm
- Depth of Extension: 08 mm to 525 mm

4. OTHER FORMING CAPABILITIES:

- Tube Bending Machine
- Section Forming Machine
- Hydraulic Press Machine
- Thread Forming Machine

5. CLEAN ROOM FACILITY

Clean Room area developed as per ISO- Class 5, Level-II work F6242 RCCM-2012 having temperature and humidity controlled environment, automatic shoe cover machine, dust free and polished stainless steel flooring for assembling heat exchangers and specialized safety class equipment.

6 WELDING FACILITIES

Our advanced welding facilities are equipped to handle intricate projects involving stainless steel, carbon steel, and aluminum alloys, catering to a wide range of engineering, manufacturing, and processing industries.

Available Welding Machines

Automatic Saddle Type Nozzle-to-Shell Welding Machine

Automatic Orbital TIG Welding Machine

CNC Narrow Gap Welding Station

TIG/MIG Nozzle Cladding Station

Available Welding Processes

- Gas Tungsten Arc Welding (GTAW/TIG)
- Submerged Arc Welding (SAW)
- Submerged Arc Strip Cladding
- Shielded Metal Arc Welding (SMAW)
- Flux Core Arc Welding (FCAW)
- MIG/MAG Welding
- Plasma Welding

7 MACHINING FACILITIES

Our major machining facilities feature robust CNC vertical and horizontal lathes, along with milling and boring machines, capable of handling large and heavy-duty tasks. We also offer a range of CNC and conventional lathes and milling machines designed for small to medium-sized jobs.

Machining Facilities Include:

- CNC Vertical Boring and Turning Mill
- CNC Table Type Milling and Boring Machine
- CNC Moving Column Milling and Boring Machine
- CNC Precision Boring and Milling
- CNC Vertical Machining Center
- CNC Table Type Milling and Boring
- Radial Drilling Machine
- CNC Horizontal Machining Center

- CNC Horizontal Machining Center
- Wire Cut Machine
- CNC Precision Sinking EDM

8 HEAT TREATMENT FACILITIES

Our heat treatment facilities include:

1. FURNACES

- 30 m Annealing Furnace
- 12 Meter Plate Heating Furnace
- Bogie Hearth Furnace
- Air Circulating Chamber Furnace
- Pit Type Gas Carburizing Furnace

2. HIGH PRESSURE HIGH TEMPERATURE TEST LOOP

The High Pressure High Temperature Test Loop is designed for conducting dynamic and various other tests on materials and components that operate under high pressure and temperature conditions. Key tests include:

- Pump Tests
- Heat Exchanger and Process Equipment Tests
- Transient Characteristic Tests of Pressurizers
- Sealed Equipment and Seal Material Tests
- Valve Structure and Modeling Tests
- Thermal Measuring Instruments and Equipment Tests
- Electrical Heating Element Endurance Tests
- Primary Instrument Tests



SECURE YOUR DIGITAL ASSETS, SECURE YOUR SUCCESS

PROSPERITY THROUGH TECHNOLOGICAL INNOVATION!

IT SERVICES

1 INTELLIGENT MAP-BASED IMAGE LOCALIZATION SYSTEM

Intelligent map-based image localization system is deep learning based indigenously developed precise real-time solution to obtain position fix of aerial vehicles.

Features

- Trainable for various terrains and scenarios
- High matching accuracy
- Removal of false positive matches
- Real time position fix

Applications

- Autonomous GPS-denied environment navigation
- Reconnaissance and surveillance
- Combat situational awareness
- Mapping

2 VIRTUAL REALITY IN INDUSTRIAL TRAINING

Our VR solutions offer an innovative, immersive approach to training for industries such as automotive, healthcare, construction, and more. Through our state-of-the-art VR training programs, operators can build expertise, reduce risks, and boost operational efficiency—all in a dynamic, safe environment.

Our Key Benefits:

- **Immersive Learning Experience**
Engage in realistic VR simulations that let operators interact with complex machinery and equipment safely. This hands-on experience ensures deeper understanding and better knowledge retention.
- **Reduced Training Time**
Customizable VR modules target specific tasks, enabling faster skill acquisition and proficiency. Less time spent in training means more time maximizing productivity.
- **Enhanced Safety**
VR simulations allow operators to practice high-risk tasks or procedures in a completely safe environment, reducing accidents and promoting workplace safety.
- **Cost-Effective**
Eliminate the need for physical training setups with our accessible VR solutions, which provide a flexible, cost-effective alternative to traditional training.

3 INFORMATION SECURITY LAB

The Information Security Lab is a specialized facility focused on comprehensive cybersecurity testing and evaluation, where experts rigorously assess the security of systems and networks. By simulating cyber-attacks, conducting risk analysis, and ensuring compliance with security standards, the lab helps identify vulnerabilities and strengthen digital defenses, supporting the development of secure technology solutions.

- Non-Invasive methods with Zero Downtime
- Comprehensive Assessment and In-depth Analysis
- Customized, Intelligence-Driven Assessments for your Organization
- OT-Centric Expertise to Help Achieve your Security Goals
- Strategic and Actionable Recommendations

Our Services

- Network Architecture Review
- Risk based Vulnerability Assessments
- ICS Network & Web Penetration Testing
- OT Asset Inventory
- IT/OT integration & Configuration Review
- ICS component Assessment

Standards to Conduct Assessment

- OWA SP
- NIST SP 800-82
- IEC 62443
- PTES
- OS S TMM

4 3D MODELLING, RENDERING, ANIMATION & SIMULATION

Our advanced suite of services in 3D modeling, rendering, animation, and simulation is designed to elevate industrial training. We specialize in providing innovative learning solutions that address the needs of professionals across various industries. By utilizing state-of-the-art technologies, we enable operators to master complex processes and techniques with increased efficiency and precision.

Key Benefits:

- **Immersive Visualization:** Our 3D models and high-quality renderings provide highly realistic, detailed visuals, offering professionals a deeper understanding of their work.
- **Interactive Learning:** Through dynamic animations and simulations, operators engage with virtual environments, practicing tasks in a controlled setting and receiving immediate feedback.
- **Time-Efficient Training:** Our services streamline the training process, reducing both time and costs while enhancing the effectiveness of each session.
- **Enhanced Skill Retention:** Immersive learning solutions foster better knowledge retention, leading to improved job performance and greater skill confidence.

