



Engineering • Dimensional Control Survey • 3D Laser Scanning



Survey.

We start with precision. Our site surveys capture every critical dimension and condition — from structural layouts to complex piping routes — forming a solid base for accurate engineering.

Design.

Smart, code-compliant solutions. We specialize in structural modeling, piping layouts, and mechanical system design — including stress, support, and load calculations — tailored to meet client and industry requirements.

Deliver.

More than just drawings. We deliver complete engineering packages — clear, constructible, and reliable — with the documentation and calculations needed to move your project forward with confidence.





About

ABOUT | Who We Are

JAVNAS is a freelance engineering partner with over a decade of specialized experience across offshore and onshore projects in the Oil & Gas industry. Our multidisciplinary team brings proven expertise in Piping and Structural Design, Engineering Calculations, Stress Analysis, Dimensional Control Surveys, and 3D Scanning.

We deliver tailored engineering solutions for complex piping and structural systems within Oil & Gas infrastructures and industrial facilities, combining technical accuracy with fast, flexible support. Our offerings include survey and engineering services, as well as workpack documentation for the construction phase.

Whether fully embedded in your project team or delivering independent scopes JAVNAS guarantees:

1. Agile Project Execution: Flexible and adaptive project delivery to meet client requirements.
2. Code Compliance: Strict adherence to international standards, including ASME, API, and ISO.
3. Cost-Effective Solutions: Optimized designs that enhance safety, minimize risk, and reduce costs.

We are committed to providing technical clarity, practical value, and engineering excellence in every project.





Services

Piping & Mechanical Engineering



- Piping & Mechanical Engineering

Structural Engineering

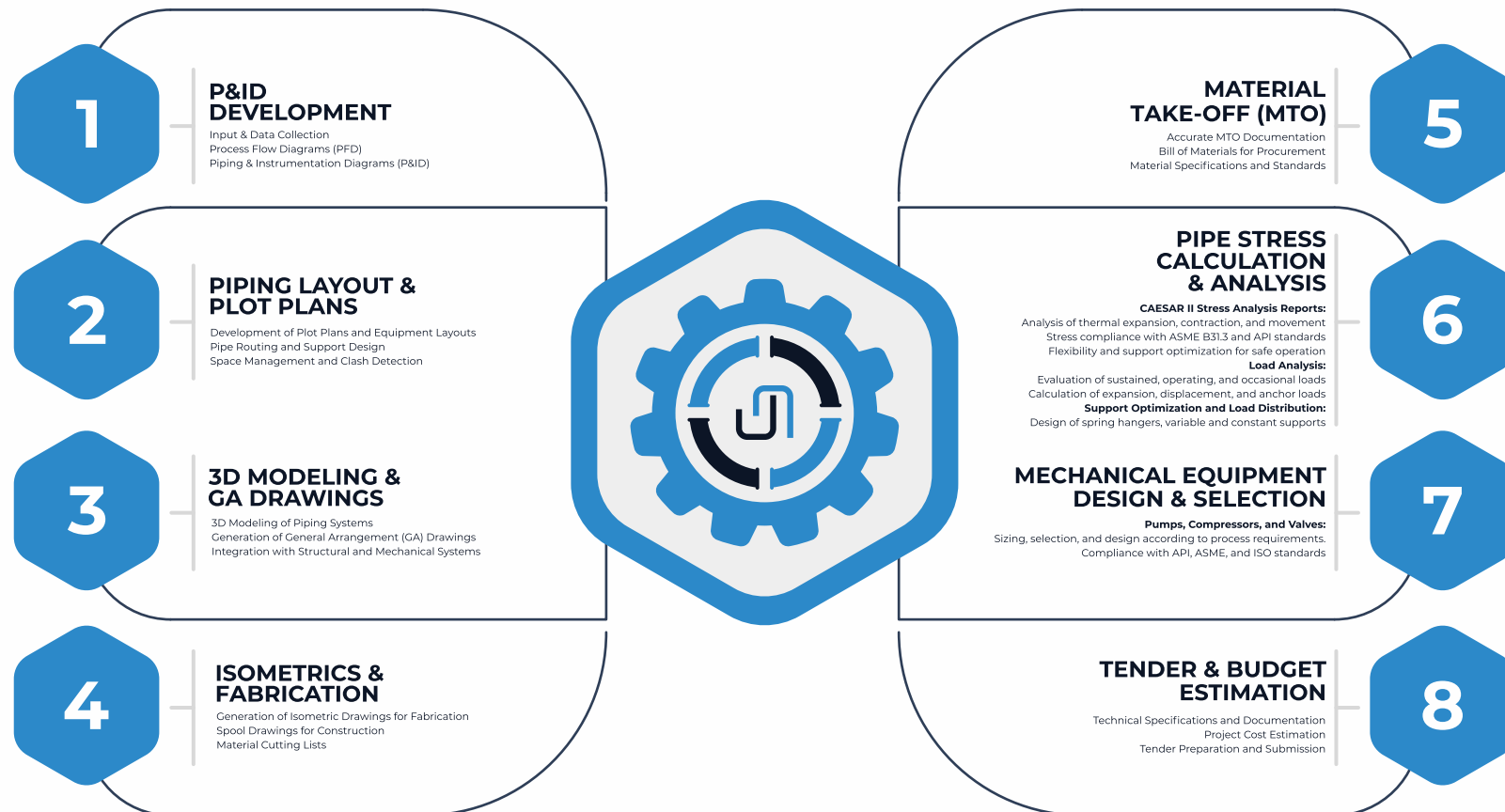
Dimensional control survey

3D scanning

Project Support Services

SERVICES

Piping & Mechanical Engineering



Structural Engineering



SERVICES | Structural Engineering



A person wearing a white hard hat and safety glasses is shown in profile. The image is heavily stylized with a blue color palette. A diagonal blue line runs from the top left to the bottom right. The person's face and the hard hat are semi-transparent, revealing a complex industrial facility with numerous pipes, scaffolding, and storage tanks, likely an oil or chemical refinery, in the background. The sky is a deep blue with some light clouds. The overall composition suggests a focus on industrial safety and engineering.

Dimensional Control Survey

SERVICES | Dimensional Control Survey



•Dimensional Control Survey:

- High-accuracy measurements for piping, structural modules, and equipment placement.
- Verification of as-built conditions against design specifications.
- Identify Flange Bolt Hole Rotations, Face deflections and As-built Coordinates.
- Like to like survey

•Survey Techniques:

- Total Station and GNSS-based measurements for offshore and onshore facilities.
- Alignment verification and monitoring during construction and installation phases.

•Stake Out Alignments:

- Precision alignment of derrick structures for drilling platforms.

Fabrication Verification Surveys:

- Ensuring fabricated components match design specifications before installation.
- Like to like survey

SERVICES | Dimensional Control Survey



•As-Built 3D Modeling:

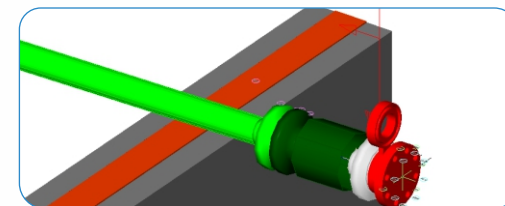
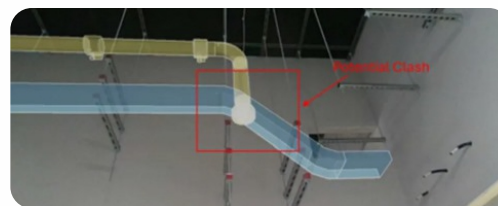
- Creation of accurate 3D models from survey data for design validation.
- Integration with Modern CAD softwares for clash detection.

•Clash Detection and Resolution:

- Identification and resolution of design conflicts before fabrication and installation.
- Reduction of on-site rework and construction delays.

•Reverse Engineering:

- Generation of detailed design drawings from Surveyed data for refurbishment and upgrades.



SERVICES | Dimensional Control Survey

3 REPORTING, VERIFICATION, AND WORKPACK PREPARATION



•Dimensional Survey Reports:

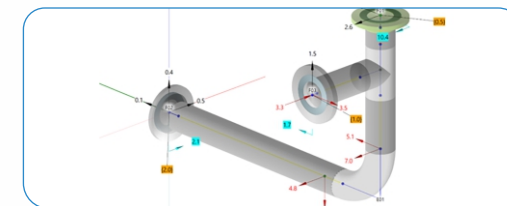
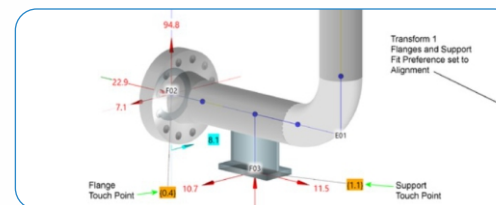
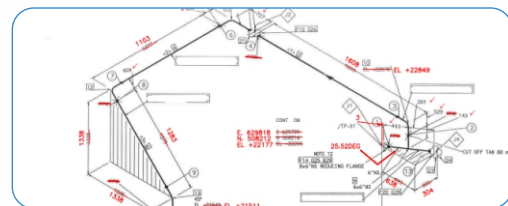
- Detailed documentation of survey findings, including tolerances and deviations.
- Alignment reports for mechanical and structural installations.

•Fit-Up Verification and Installation Control:

- On-site verification to ensure components fit within specified tolerances.
- Adjustment recommendations for alignment corrections.

•Workpack Preparation:

- Comprehensive workpacks for dimensional surveys and installations.
- Integration of redline mark-ups and as-built records.



3D Scanning



SERVICES | 3D Scanning

1

High-Resolution 3D Laser Scanning

•Advanced Scanning Technology:

Utilization of industry-leading equipment such as Leica & FARO for high-precision data capture. Capable of scanning complex piping systems, offshore platforms, industrial facilities, and structural elements with millimeter accuracy.

•Point Cloud Generation:

Creation of dense point clouds representing exact as-built conditions. High-resolution data capture for detailed 3D modeling and analysis.

•360° Scanning and Panoramic Imaging:

Complete 360-degree views of facilities for immersive visualization. Useful for virtual walkthroughs, project planning, and inspection.

•Virtual Walkthroughs:

Interactive digital tours of scanned environments for remote inspection.

Scan-to-BIM Conversion

Digital replication of scanned facilities into Building Information Models (BIM) for maintenance and future modifications.

•Reverse Engineering:

- Reconstructing legacy systems and equipment from scanned data.

SERVICES | 3D Scanning

2

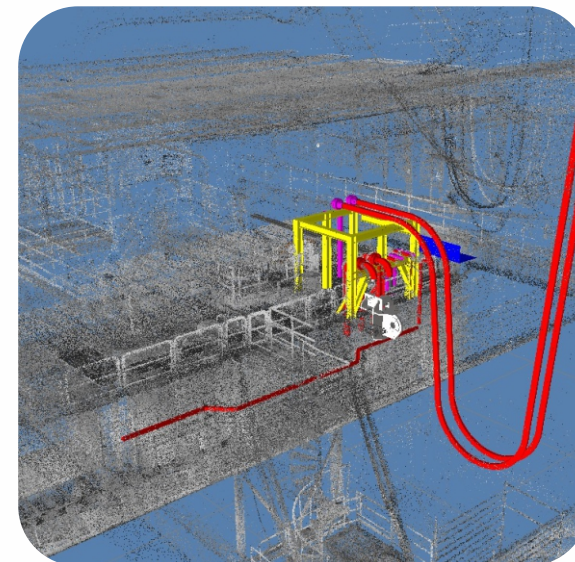
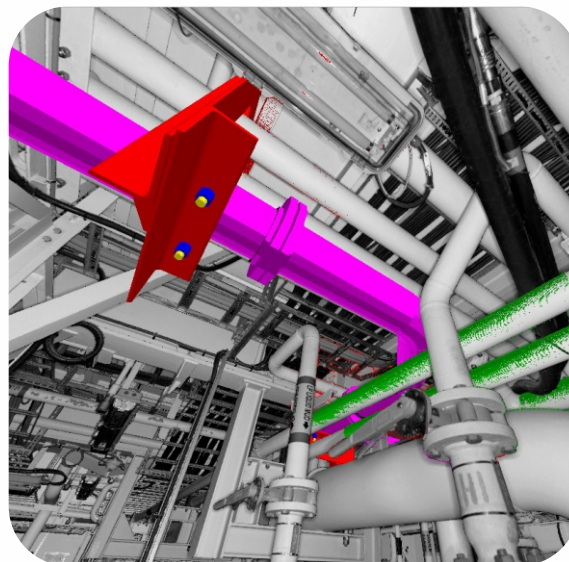
Reporting, Verification, and Workpack Preparation

•3D Point Cloud Reports:

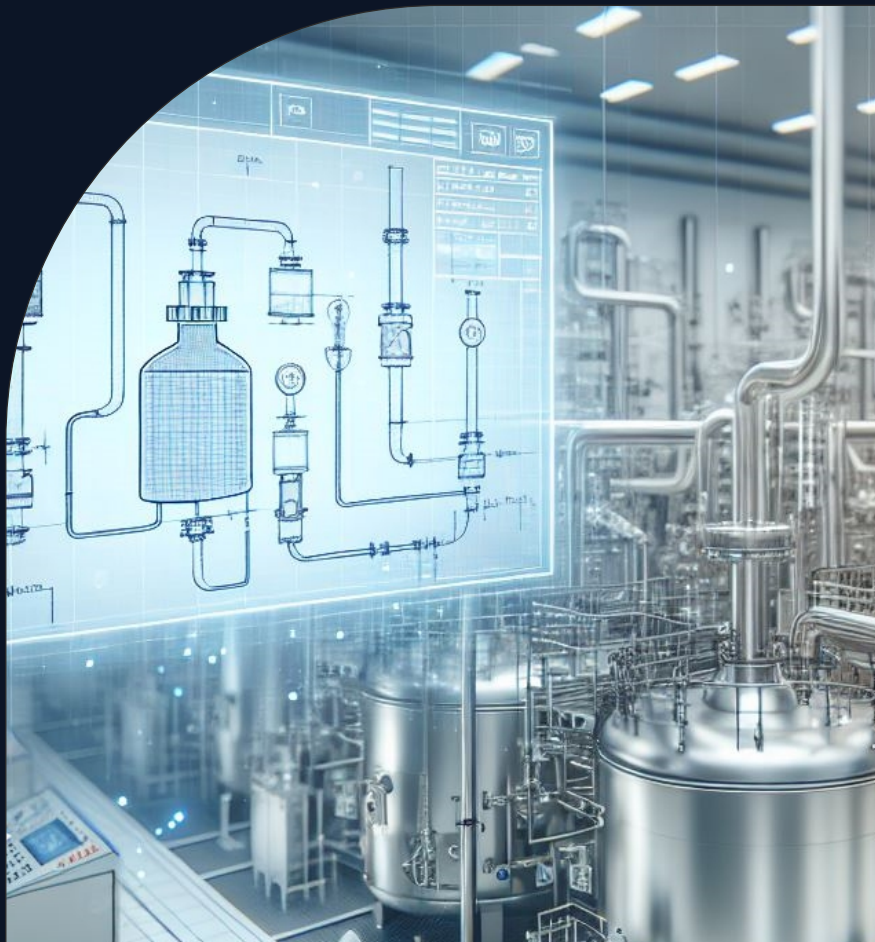
Detailed documentation of survey findings, including tolerances and deviations.
Alignment reports for mechanical and structural installations.

•Workpack Preparation:

Comprehensive workpacks for Point Cloud model.









Project Support Services

SERVICES | Project Support Services

JAVNAS provide comprehensive Project Support Services to ensure smooth execution and regulatory compliance for both offshore and onshore projects. Our services focus on precision, safety, and efficiency from planning to final handover.

1. Workpack and TDC Preparation

Development of Workpacks with P&IDs, isometrics, and GA drawings.
Preparation of Technical Delivery Condition (TDC) Reports for material specifications and regulatory compliance.
Clear documentation for construction, inspection, and handover.

2. Field-to-Office Coordination

Real-time data transfer from site to design team.
Immediate design adjustments based on field data.

3. Site Verification and Fit-Up Review

Pre-installation verification of piping routes, flange alignment, and structural supports.
Inspection of fit-up tolerances and bolt hole alignment.
Final as-built documentation and handover packages.

4. Material Coordination

Sourcing of piping materials, valves, and flanges as per project specifications.
Preparation of Material Requisition Lists (MRL) and Bill of Materials (BOM).

5. Construction and Installation Support

On-site supervision during installation of piping systems and structural components.
Dimensional Control Surveys to verify alignment and fit-up during construction.
Immediate adjustments to prevent clashes and ensure smooth installation.

6. Project Close-Out and Handover Documentation

Complete As-Built Documentation for final verification.
Handover of Inspection and Test Plans (ITPs) and Operation Manuals.
Final review of Workpacks and Dimensional Survey Reports for client approval.



Training

- **Piping Design Training**
- Structural Design Training
- Dimensional Control Survey and 3D Scanning Training

TRAINING | Piping Design Training

Our Piping Design Training Program is designed to equip participants with the core skills required for effective drafting and layout of piping systems in Oil & Gas and industrial projects. The training emphasizes fundamental design principles, drafting techniques, and practical drawing skills using Modern CAD software.

COURSE MODULES:

Fundamentals of Piping Design:

- Understanding of P&ID (Piping & Instrumentation Diagrams) and PFD (Process Flow Diagrams).
- Identification and use of piping components: valves, fittings, flanges, and supports.

3D Piping Drafting:

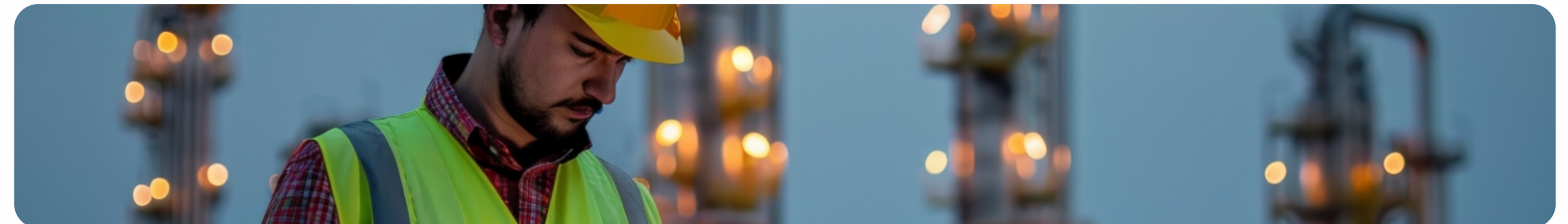
- Hands-on training with Modern CAD software for 3D visualization.
- Basic pipe routing techniques and model navigation.

Isometric Drawing and Spool Drafting:

- Drafting Isometric Drawings for fabrication and installation.
- Preparation of Spool Drawings with clear annotations for welding and assembly.

Plot Plans and Equipment Layouts:

- Drafting plot plans for optimal equipment placement and pipeline routing.
- Integration with mechanical and structural layouts for clash-free designs.



TRAINING | Structural Design Training

COURSE MODULES:

Structural Steel Drafting:

- Basics of structural layout design for pipe racks, platforms, and skids.
- Identification of beams, columns, braces, and supports in technical drawings.

3D Structural Drafting:

- Hands-on drafting with Modern CAD software for high-detail 3D modeling.
- Creation of General Arrangement (GA) Drawings and fabrication-ready designs.

Connection Detailing and Drafting:

- Drafting of bolted and welded connections for stability and assembly.
- Preparation of fabrication drawings for workshop and field installations.

Support Structures and Foundations:

- Drafting of pipe racks, cable trays, and equipment foundations.
- Understanding of standard structural symbols and notations in technical drawings.



TRAINING | Dimensional Control Survey and 3D Scanning Training

1. INTRODUCTION TO DIMENSIONAL CONTROL SURVEY AND 3D SCANNING:

Fundamental Principles:

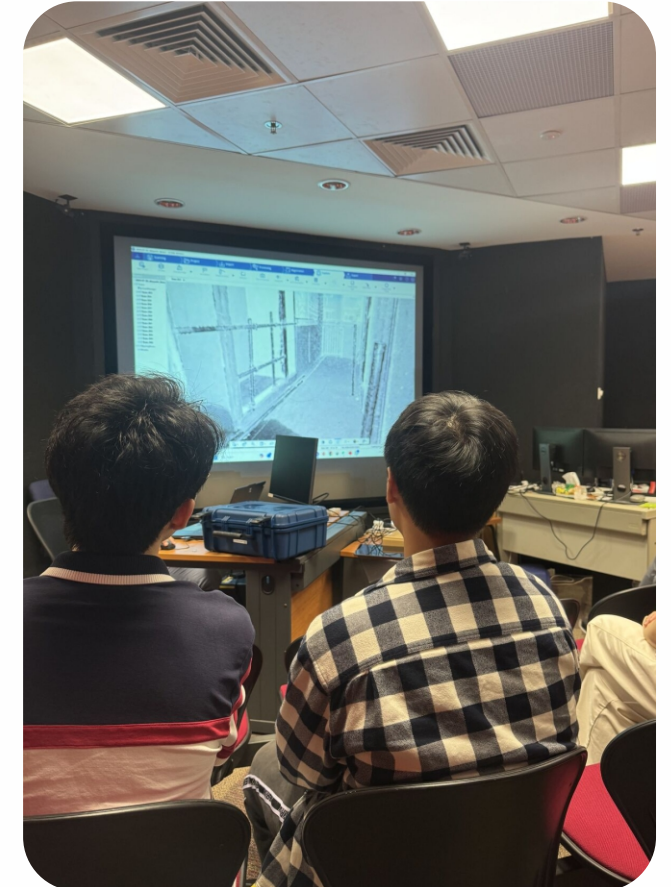
- Understanding the role of Dimensional Control in industrial projects.
- Basics of Geodetic Surveying and Coordinate Systems for accurate alignment.

Survey Equipment Introduction:

- Overview of Total Stations, GNSS Equipment, and 3D Laser Scanning.
- Applications in piping systems, structural elements, and equipment installations.

Industry Applications:

- Application of Dimensional Control in offshore platforms, onshore facilities, and fabrication yards.



- Dimensional Control Survey and 3D Scanning Training

TRAINING | Dimensional Control Survey and 3D Scanning Training

2. SURVEY TECHNIQUES AND EQUIPMENT USAGE:

•Data Collection Techniques:

- High-precision measurements using Leica, Trimble, and FARO technologies.
- Establishing control networks and setting reference points for construction accuracy.

•3D Laser Scanning and Point Cloud Generation:

- Capturing detailed geometric data for platforms, modules, and piping layouts.
- Processing point clouds into 3D models for design validation and clash detection.

•Field Techniques:

- Alignment verification, equipment layout, and structure positioning.



TRAINING | Dimensional Control Survey and 3D Scanning Training

3. DATA PROCESSING AND AS-BUILT MODELING:

Software Training:

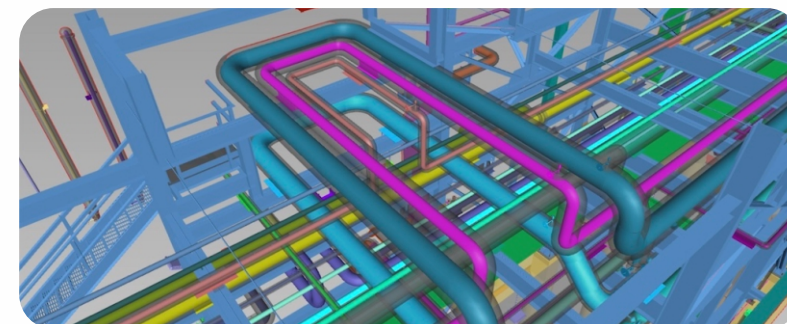
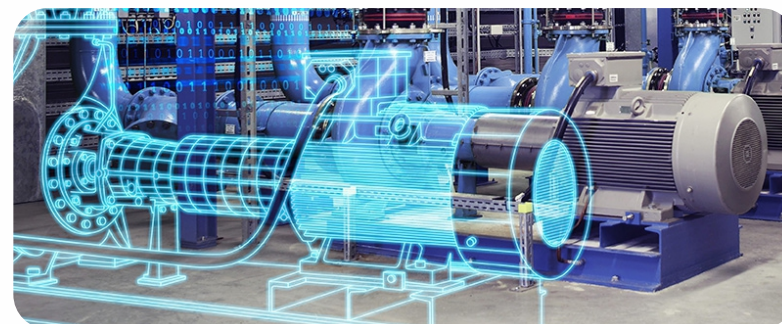
- Hands-on experience with GeoNET Survey Data Calculation Software:
- Calculation of bolt hole rotations, flange face deflections, and geometric verifications.
- Advanced analysis of alignment and survey accuracy for offshore and onshore facilities.
- Training with Modern CAD Software for 3D modeling and layout visualization.

Converting Survey Data:

- Transformation of survey data into accurate as-built drawings.
- Integration of point cloud data into 3D CAD models for clash detection and validation.
- Clash Detection and Verification:
- Identifying discrepancies between design and as-built conditions.
- Generating redline mark-ups for field adjustments and modifications.

Reverse Engineering:

- Reconstructing legacy systems and equipment from scanned data for upgrades and optimization.
- Real-time adjustment and verification during construction and installation.



TRAINING | Dimensional Control Survey and 3D Scanning Training

4. REPORTING AND WORKPACK PREPARATION:

Dimensional Survey Reports:

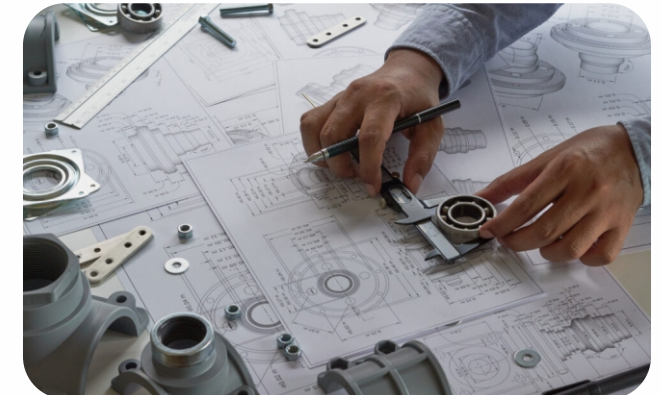
- Producing comprehensive survey reports, including alignment verification and tolerance analysis.
- Documentation for as-built conditions and final installation verification.

Fit-Up Verification and Installation Control:

- On-site verification to ensure components fit within specified tolerances.
- Adjustment recommendations for alignment corrections during installation.

Workpack Documentation:

- Preparation of detailed workpacks for construction and installation teams.
- Integration of dimensional data into project documentation for easy reference.





 JAVNAS

