

HEMG Bolted Joint Master™

Digital Flange & Bolted Joint Integrity Management

The Problem

Over 60% of hydrocarbon leaks originate from flanged joints. The root cause is not bad materials or poor engineering — it is unverified execution. Paper torque sheets, manual sign-offs, and missing photographic records create gaps that cause startup delays, environmental incidents, and regulatory audit failures. These are preventable. Every single one.

The Solution

HEMG Bolted Joint Master™ enforces engineering-grade assembly procedures, captures real-time photographic evidence at every step, and generates permanent traceability records across the complete joint lifecycle — from first assembly through every subsequent turnaround.

Key Features

- QR-Coded Flange Tagging — every joint tagged and linked to full engineering specification, bolt grade, gasket type, torque values
- Flange Integrity Control (FIC) 4-Phase Workflow — Scope Preparation, Disassembly & Inspection, Verified Assembly, QC Assurance
- Torque & Tension Enforcement — engineering-grade values enforced at every tightening step, recorded automatically
- Photographic Evidence Capture — every step documented with timestamped photos, automatically linked to the joint record
- Complete Component Traceability — bolt grades, gasket batches, lubricants, tools, and personnel all linked to every joint
- Digital Joint Birth Certificate — permanent, audit-ready record auto-generated on completion
- Individual & Test Pack Reports — auto-generated, no manual compilation
- Re-assembly Verification — full history of every disassembly and re-assembly permanently recorded

- Long-Term Joint History — persistent lifecycle record supporting preventive maintenance and integrity reviews
- Event Dashboard — real-time progress tracking by system, area, contractor, and overall project

Standards Alignment

- ASME PCC-1: Guidelines for Pressure Boundary Bolted Flange Joint Assembly
- EN 1591-4: Qualification of Personnel Competency for Assembly of Pressure Equipment
- API 570: Piping Inspection Code

Industries Served

Oil & Gas | Refineries | Petrochemical | Nuclear | Pharmaceutical | Power Generation | Offshore FPSO | Water & Desalination | Semiconductor | Construction EPC

Technical Specifications

- Deployment: Cloud-hosted SaaS | Private cloud | On-premises available
- Platform: Web browser + iOS/Android mobile app (works offline)
- Integration: REST API for ERP/CMMS integration
- Data Export: PDF, Excel, CSV
- Languages: English | Arabic available on request

Contact

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