

MASTERING BOLTED ASSEMBLY PROCESS

Master bolted assembly, ensuring industrial reliability



Your expectations

Mastering bolted assemblies is a key factor in ensuring the performance, repeatability, and robustness of your manufacturing process.

During the **development phase of a new product or a new production line**, you need to:

- Define the requirements and specifications for the mechanization or automation of a bolted assembly process,
- Draft technical purchasing specifications for fasteners (technical specifications, fastener drawings, reference standards),
- Select the appropriate tightening equipment, organize one or more workstations, and structure material and component flows,
- Secure critical parameters (control of fastener friction coefficients and part surface adhesion coefficients, tightening data management, traceability management),
- Validate process performance.

During the **production phase**, you need to:

- Perform a production line audit following a quality issue (incorrect tightening torque, unscrewing during use, unexpected fastener failure),
- Validate the applied tightening torque through in-process production tests,
- Optimize and secure the tightening sequence,
- Implement a tightening control strategy during assembly or post-process.

Our solutions

Our bolted assembly experts support you throughout the entire lifecycle of your bolted assembly process, from design to production:

- On-site intervention to conduct a Product/Process FMEA to identify key parameters influencing bolted joint reliability,
- On-site audits with a multidisciplinary team (production, design, industrial engineering, quality, etc.) to review the entire bolted assembly value chain and resolve quality issues,
- Proposal of multiple production and material flow scenarios (manual or automated tightening tools, fastener and part feeding systems, inspection solutions),
- Support in drafting technical specifications and requirements documents,
- Development or securing of tightening sequences through instrumented testing (torque and preload measurement) conducted either on your factories or in our laboratories,
- Analysis of torque-angle curves to optimize tool parameters and define an effective control strategy,
- Execution of R&R (Repeatability and Reproducibility) studies under real production conditions.

Your benefits

- A dedicated team of bolted assembly specialists with strong expertise in methods and industrialization,
- Advanced measurement equipment incorporating the latest technologies,
- A wide range of industrial resources for comparative testing and feasibility studies,
- Availability of equipment to monitor or validate critical parameters during production ramp-up.



Question and Answer Service
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