Senior ASME Pressure Vessel Fitter

Position Summary

The Senior ASME Pressure Vessel Fitter is responsible for the layout, fitting, and assembly of pressure vessels, heat exchangers, pipe spools, and custom welded fabrications in accordance with **ASME Section VIII, Div. 1**, approved fabrication drawings, and customer specifications.

This role requires advanced technical fitting skills, strong blueprint interpretation, precision layout, problem-solving abilities, and the ability to independently complete complex vessel assemblies. The successful candidate will demonstrate a high level of workmanship, attention to detail, and leadership while maintaining safety, quality, and productivity standards.

Key Responsibilities

Fabrication & Fitting

- Independently perform complete layout, fitting, and assembly of ASME pressure vessels, tanks, nozzles, supports, internals, and custom fabricated components.
- Interpret complex fabrication drawings, bills of materials (BOMs), weld maps, and fabrication packages with minimal supervision.
- Perform advanced layout of shells, heads, saddles, stiffeners, reinforcing pads, and internal structures.
- Accurately establish vessel centerlines, reference points, elevations, and nozzle orientations.
- Fit nozzles, flanges, couplings, and connections, ensuring correct location, projection, orientation, and alignment.
- Prepare, square, align, and assemble components while maintaining specified dimensional tolerances.
- Perform shell-to-shell, shell-to-head, and other complex fit-ups, ensuring proper joint preparation and alignment.
- Plan and sequence fitting operations to improve efficiency, maintain accessibility, and minimize distortion and rework.
- Ensure proper root gaps, bevel angles, lands, and joint configurations in accordance with drawings and applicable Welding Procedure Specifications (WPS).
- Perform tack welding where authorized and appropriately qualified, in accordance with applicable procedures and requirements.

Tools & Equipment

- Operate cutting torches, plasma equipment, grinders, drills, and other fabrication tools.
- Accurately use precision measuring equipment, including levels, squares, calipers, micrometers, measuring tapes, and pi tapes.
- Set up and utilize jacks, clamps, strongbacks, fixtures, and alignment tools for complex assemblies.

- Safely operate overhead cranes, hoists, and rigging equipment in accordance with training and company procedures.
- Select appropriate tools and fitting methods to maintain quality and improve productivity.
- Identify and report equipment or tooling issues that may affect safety, quality, or production.

Workmanship & Quality

- Maintain high standards of dimensional accuracy, fit-up quality, and overall workmanship.
- Verify squareness, alignment, nozzle orientation, weld preparation, and dimensional tolerances throughout fabrication.
- Ensure assemblies meet approved drawings, customer specifications, and applicable ASME fabrication requirements.
- Understand and follow inspection requirements, including QC hold points and required fit-up inspections.
- Identify drawing discrepancies, material issues, and fabrication concerns before proceeding with work.
- Work with Quality Control and Engineering to resolve nonconformances and technical issues.
- Minimize rework, fitting errors, and material waste through accurate planning and execution.
- Maintain proper material identification and traceability throughout fabrication.
- Maintain high standards of housekeeping, 5S, and workstation organization.

Collaboration & Leadership

- Work closely with welders, supervisors, engineering, and QC to ensure fabrication requirements are met.
- Mentor junior fitters and apprentices in layout techniques, fitting practices, and quality standards.
- Provide guidance and technical support on complex fitting and assembly challenges.
- Identify opportunities to improve fabrication methods, assembly sequences, and overall shop efficiency.
- Communicate drawing discrepancies, material shortages, and production concerns promptly.
- Support continuous improvement initiatives focused on quality, productivity, Lean manufacturing, and 5S.
- Demonstrate leadership through workmanship, reliability, accountability, and a commitment to quality.
- Support production schedules while maintaining safety and workmanship standards.

Required Experience & Qualifications

- **7+ years of fitting experience in an ASME Section VIII pressure-vessel fabrication environment.**

- Proven ability to independently lay out, fit, and assemble complete pressure vessels and complex fabricated assemblies.
- Advanced blueprint reading skills, including the ability to interpret detailed fabrication drawings, weld symbols, elevations, and dimensional tolerances.
- Strong experience with vessel layout, nozzle positioning, shell and head alignment, and complex fit-up procedures.
- Demonstrated ability to maintain accurate dimensions and produce fit-ups that meet welding and inspection requirements.
- Solid knowledge of:
    - ASME Section VIII, Div. 1 fabrication requirements
    - Welding Procedure Specifications (WPS) and weld joint preparation requirements
    - Pressure vessel construction methods and assembly techniques
    - Dimensional tolerances, alignment, and distortion control
    - ASME B31.1/B31.3 piping requirements (an asset)
- Experience working with carbon steel and stainless steel; experience with exotic alloys is an asset.
- Strong proficiency with precision measuring instruments and layout equipment.
- Experience with overhead cranes, rigging, and handling large fabricated assemblies.
- Ability to troubleshoot complex fitting challenges and work independently with minimal supervision.
- Previous experience mentoring or leading junior fitters is an asset.

Physical Requirements

- Able to lift up to 50 lbs as required.
- Able to stand for extended periods and work in various positions, including bending, kneeling, and crouching.
- Comfortable working on large industrial fabrications and in restricted-access areas while following applicable safety procedures.
- Comfortable working with heavy industrial equipment in a welding and fabrication environment.
- Able to safely wear and use required personal protective equipment.

Key Competencies

- Advanced fitting and precision layout skills
- High-level blueprint and weld-symbol literacy
- Strong dimensional accuracy and attention to detail
- Ability to independently complete complex vessel assemblies
- Strong troubleshooting and problem-solving abilities
- Pride in workmanship
- Safety-first mindset
- Leadership and mentoring abilities
- Good communication and teamwork skills
- Strong organization and time management
- Ability to prioritize and meet deadlines