

SPECIALIZED STUB WELDING

EXTEND TOOL LIFE WITH EXPERT STUB WELDING

Wellbore Integrity Solutions (WIS) DRILCO specializes in stub welding for alloy steel and nonmagnetic stainless-steel drilling tools.

Throughout a drilling tool's life cycle, connections may require multiple reworks or develop defects that can remove the tool from service. DRILCO's stub welding services restore these tools by adding material to the end of the component and performing post-weld machining to return it to its original dimensional specifications.

By extending the usable life of drilling tools, DRILCO stub welding services help reduce overall asset ownership costs while maximizing equipment value and performance.

Methods of Stub Welding

Our specialized welding processes, including Submerged Arc Welding (SAW), Hot Wire GTAW, and Friction Welding, produce high-quality, reliable welds. Our fully automated stub welding systems ensure repeatable weld quality and process consistency. Every weld is inspected to verify the absence of defects in accordance with ASME BPVC Section IX requirements.

Submerged ARC is a process that utilizes a continuously fed consumable solid or tubular electrode. The molten weld pool and arc zone are protected from contamination by a layer of granular flux, which also provides a current path between the electrode and the base material. This process allows for deep weld penetration and, because the weld is submerged beneath the flux, eliminates weld spatter.

Hot Wire GTAW utilizes a tungsten electrode to produce the weld. A constant-current power supply maintains the arc through a column of ionized gas. This process provides greater control than many alternative welding methods, resulting in stronger, higher-quality welds.

Friction Welding is a solid-state welding process that generates heat through mechanical friction with the addition of lateral forces to plastically displace and fuse the materials into one part. Friction welding produces very limited and narrow heat-affected zone regions resulting in excellent metallurgical properties in the joint area. There is no melting, hence no solidification defects occur such as gas porosity and segregation.





Highly Trained Welders. Stringent Testing Methods.

Through our quality management systems, we deliver consistent performance while complying with industry regulations.

Qualification

We understand that every weld is exposed to harsh downhole environments. To perform reliably under these conditions, welds must be free of voids, porosity, and other defects. Our welders maintain the highest levels of quality by adhering to rigorous industry standards and qualification requirements.

Qualification requirements are based on:

- API Specification 5DP, Sections 6.4 and 6.7
- API RP 5C6
- ASME Welding Code requirements

DRILCO Welding Procedure Qualification Records (WPQRs) comply with all applicable requirements of ASME Section IX, Article II, Section QW-256.1.

All mechanical and chemical testing is performed in accordance with applicable ASTM, ASME Section IX, and API specifications.

Qualified Materials

- 1340 Alloy Steel
- 4130 to 4145 Alloy Steels
- Nonmagnetic Stainless Steels, including:
 - P530
 - P550
 - 15-15 HS

Other Available Services

Tubular Inspection Services

Our qualified personnel provide a full range of inspection services in accordance with third-party and customer-defined standards.

Machine Shop Services

Whether servicing standard tubular connections or proprietary connections requiring licensing, DRILCO machine shops are available 24/7 to repair, rethread, and recut tubular components.

Tubular Management Services

Tubular management services provide inventory visibility, storage location management, and centralized maintenance programs that help reduce repair time and improve asset utilization.

Premium Hardbanding Services

We provide application-specific hardbanding solutions for both openhole and cased-hole drilling applications, increasing tubular durability and maximizing wear resistance.