

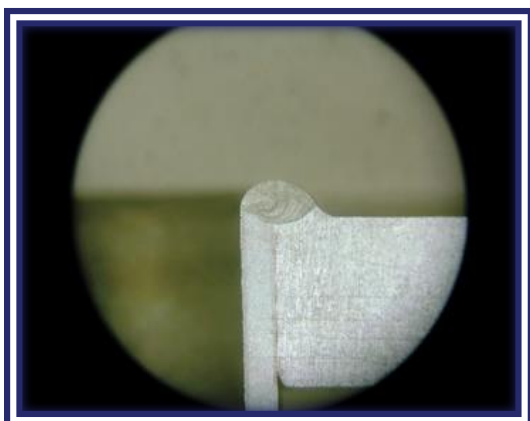
TIG LATHE WELDING

United Precision Corp. provides precision pulse TIG lathe welding solutions from design and prototype to product fabrication. Pulse Gas Tungsten Arc Welding (GTAW) is a highly adaptive metals joining process that is applicable across most weldable metal combinations and part geometries. It is particularly effective in welding very thin metals or sensitive components requiring highly controlled conditions and excellent finished joint quality. Applying this precision joining process to a programmable, automated weld lathe ensures a reliable, repeatable process, useful for applications specifying strict process control. Contact us early during development so we can assist in engineering the optimal weld configuration to meet all acceptance requirements.

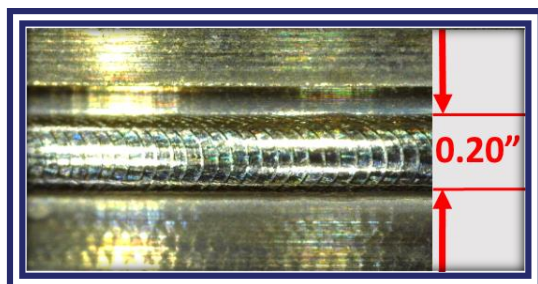
WELD TYPE: Autogenous Gas Tungsten-Arc Welding (GTAW / TIG)

SERVICES:

- Evaluation of material weldability, weld joint design, design of tooling/fixtures, custom system design and manufacture
- Production requirements per AWS D17.1 / MIL-STD-2219 / NASA-STD-5506
- Onsite engineering for technical support
- Project management of weld qualification and production testing
- Prototype / development weld
- Specializing in the joining of small precision components



PENETRATION SECTION OF STRUCTURAL WELD



SEAL WELD

WELD CAPABILITIES:

- Part diameter up to 15in. (381 mm)
- Part thickness/penetration of 0.002in. (.051mm) to 0.125in (3.18mm)
- Part weight capacity up to 100 lb. (45.3 kg)
- Precision: ± 0.005 in (0.127mm) penetration; ± 0.002 in (0.051mm) linearity
- Standard base length for parts up to 20in. (508 mm)
- Vertical or horizontal welds

TYPICAL METALS WHICH CAN BE WELDED:

- Stainless Steel 302/303/304/316/321/347 Series
- Inconel 600/625/718/X750/909
- Titanium Ti-6Al-4V, Ti-5Al-2.5Sn, Ti-6Al-2Sn-4Zr-2Mo, Ti-5Al-5Sn-2Zr-2Mo, Ti-6Al-2Nb-1Ta-1Mo, Ti-8Al-1Mo-1V
- Aluminum (Most Alloys)
- Nickel, copper nickel, monel, hastelloy, and others
- Precipitation Harden 17-4PH, 15-5PH, 17-7PH, 15-7PH, A-286

INDUSTRIES SERVICED:

- Aerospace
- Automotive
- Defense
- Entertainment
- Manufacturing
- Medical
- Pharmaceutical
- Transportation



EXAMPLE OF PRODUCTS WELDED:

- Burst Discs
- Containers
- Diaphragms
- Discs & Washers
- Filter assemblies
- Fixtures
- Heat Sinks
- Hermetic Seals
- Pipes & Tubes
- Prototypes
- Pressure Vessels
- Seal Welds
- Sensors
- Springs
- Tubes
- Valve Components

TIG LATHE WELDING BENEFITS:

- Finer dendritic structure achieved by quick solidification rate
- Greatly reduced heat conduction into area adjacent to weld seam
- Minimized porosity in arc puddle mix
- Reduced dilution of dissimilar metals
- Superior consistency and weld appearance
- Able to weld thin walled and tiny materials
- Welding can be carried out with or without fillers
- Welding variables can be precisely controlled



AUTOMATIC WELD LATHE



SAMPLE WELDED PARTS

Contact us during the preliminary stages of your design process so our skilled engineers can determine weldability and optimal process parameters based upon your base metal, thickness, surface, geometry and weld penetration.

02-001-150904

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