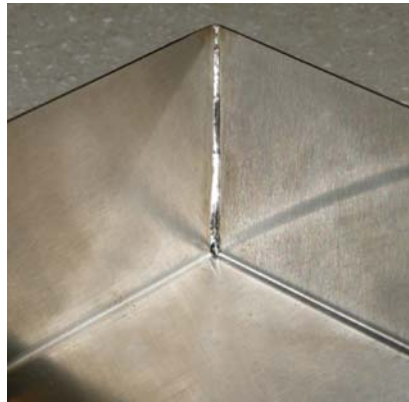
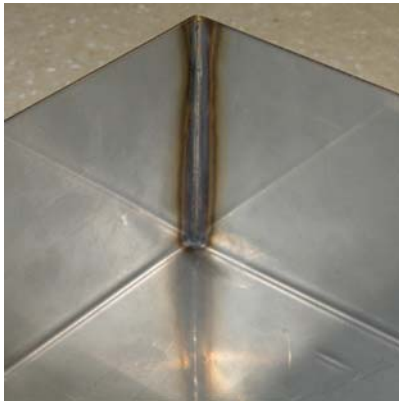


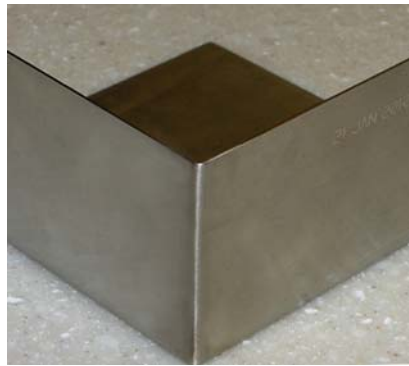
TIG WELDING TECHNIQUES WITH LIGHT GAUGE STAINLESS STEEL

Gas Tungsten Arc Welding (GTAW) is frequently referred to as TIG welding. TIG welding is a popular choice of welding processes for the bio-pharma industry where high quality, precision welding is required. In TIG welding, an arc is formed between a nonconsumable tungsten electrode and the metal being welded. Inert gas such as argon or helium is fed through the torch to shield the electrode and molten weld pool. TIG welding of thin gauge stainless steel requires greater welder dexterity than MIG or stick welding. Attention to heat and dwell is critical in order to form a contiguous 'pool'. Normally heat sinks are required to draw off heat from TIG corner welds. Application of low pressure argon on the inside of a corner weld eliminates oxidation and tell-tale burn marks.



TIG welding requires a sharp tungsten electrode, perfect heat control and a steady hand. The TIG weld to the left shows even heat distribution on either side of the weld. The weld is contiguous and even.

The weld on the right is the same as the weld on the left except that low pressure argon gas was used to purge oxygen during the weld.



The weld on the left was accomplished without inert gas; however the weld shows excellent continuity and heat distribution.

Low pressure gas was used to purge oxygen during the welding on the right. Additionally the corner was lightly sanded and polished to make the weld substantially invisible.

Electro-polishing removes unwanted particles, oxides and burn marks as well as eliminating both high and low spots resulting in a basically featureless surface with an RA rating under 10 when using 2B mill finish stainless. The EP process minimizes particulate and optimizes cleaning.

Laser engraved date coding provides permanent product identification for use in stainless steel product maintenance programs.

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