TECHNICAL BULLETIN

BRASS FITTINGS

SUBJECT: No Lead Silicon Brass Soldering Recommendations
DATE: August 2017

SOLDER COMPATIBILITY

It is much more difficult for solder to adhere to no lead silicon brass versus traditional leaded brass. The lead in the brass allows the solder to adhere very easily, whereas the silicon material in the no lead brass does not act the same way as lead.

CONDUCTIVITY

The heat conductivity of the silicon brasses is much less than that of copper tube or leaded brasses. The transfer of heat from the torch tip throughout the silicon brass fitting takes longer compared to a copper fitting or leaded brass fitting. With leaded brass fittings, it is not recommended but possible to heat one side of the joint only, and still make an adequate solder joint, because the lead quickly transfers the heat evenly throughout the entire fitting. However, with no lead silicon brass, heating only one side of the joint can result in an incomplete or improper solder joint by burning the flux out on the heated side while not having enough heat for solder flow on the opposite side.

SOLDER RECOMMENDATIONS

Soldering to no lead silicon brass fittings can be accomplished using the same common practices and general rules for all solder joints, but extra consideration should be given to the following recommendations:

1. **Prep:** Always use a wire brush or sand cloth to prep the solder surface area.
2. **Applying Heat:** The most critical factor in making a proper joint is to make sure to bring the temperature of the fitting up slowly and evenly. Applying heat quickly and unevenly will cause the flux to burn out on the hot side before the opposite side is hot enough for solder to melt. Therefore, apply heat by constantly moving the torch tip around the joint, never stopping in one spot. Follow all the normal soldering techniques you would use on any other solder joint, but with extra caution on the constant and uniform application of heat throughout the entire fitting while completing the solder joint.