Objective: To heat a stainless steel housing to 1875°F in order to fuse a piece of R6 glass to the inside of the housing. Then the housing is to be heated to 1475°F to reflow the surface of the glass to produce a quality finished surface. Oxidation of the stainless steel part is to be prevented by performing the heating within a quartz tube having an inert atmosphere.

Material: 304 stainless steel bushing measuring 0.450" OD and 0.170" thick. R6 glass insert measuring 0.191" OD and 0.155" thick.

Temperature: 1875°F to fuse the glass into the bushing. 1475°F to produce a quality finished piece.

Application: Through laboratory research, the Ameritherm Nova 1, 1kW output solid state induction power supply along with a two (2) turn helical coil were found to produce the following results:

- 1875°F was reached in five (5) seconds as shown by an IR optical pyrometer.
- Horizontal heating of the bushing to 1875°F produced a quality glass to metal seal.
- Vertical heating of the bushing to 1475°F produced an optically clear glass.
- No oxidation was observed as a result of using an inert atmosphere of 95% Nitrogen/5% Hydrogen.

Equipment: Ameritherm Nova 1, 1kW output solid state induction power supply including one (1) remote heat station containing one (1) 1.0 µF capacitor, and a two (2) turn helical coil fabricated from 3/16" tubing with a 1 1/8" OD and 5/8" high.

Frequency: 368 kHz

*Application Illustration Located on Reverse
To Heat Station

Two (2) Turn Helical Coil

304 Stainless Steel Bushing
0.450" OD x 0.170" thick

R6 Glass Insert