Case Study: Providing a Quality Controlled Production Process

Customer

Defense Manufacturer

Parts

Inner Cone and Contact Spring
*Due to the sensitive nature of this project, we cannot display full images of these two parts.

Manufacturing Requirements

These two parts have a similar form as well as features. A detailed inspection process is required throughout production to deliver high-quality parts with zero defects.

1. A progressive metal stamping die draws the beryllium copper which is only .0150 thick to the designed form. This material is one of the highest strength copper-based alloys available.
2. The parts are washed to ensure they are oil-free.
3. Vacuum heat treating is next and this specialized method removes the air and its reactive elements to provide a cleaner surface. This eliminates the oxidizing that normally occurs on metals.
4. A detailed ***AQL inspection*** is performed by Ultra after heat treating.
5. Electroless nickel plating is then completed. This technique applies more uniformly and provides greater corrosion resistance.
6. ***AQL inspection*** is performed by Ultra technicians after the plating is completed.
7. The high-frequency vibrations of the sonic welder melt together a ring and washer onto the inner cone and contact spring. This method creates a more precise and stronger weld.
8. Another ***AQL inspection*** is then completed by Ultra after the welding process.
9. A thin rubber insulating compound is applied to specific surface areas of these two parts to better localize the electricity.
10. A final ***AQL inspection*** is performed by our technicians before packaging and delivery.

Sonic Welder


AQL Inspection

Customer Outcome

Ultra identified a manufacturing process that was both efficient and cost-effective while maintaining the part's stringent requirements.

This customer trusted us to properly select certified suppliers.

Ultra's project management ensures metal stamping, services from the various suppliers and inspections are performed on-time so that delivery dates can be met.