aalberts surface technologies

HYPERQUENCH SOLUTION HEAT TREATING

Benefits

- Fully electric furnace complies with combustion requirements of AMS 2770
- Faster quench drop times
- High quench agitation
- Glycol, water, or air quench
- Small work zone ideal for trials and R&D

Process

The HyperQuench process is conducted in an electric drop bottom furnace. Aluminum parts are loaded into the HyperQuench racking system and lifted into the furnace hydraulically. Once the parts have soaked for their prescribed time at temperature, the bottom of the furnace opens, and the parts are dropped into the quench media (glycol, water, or air). This furnace has a fast quench drop rate, averaging seven seconds, which lends itself to many aerospace specifications which have drop time requirements under 15 seconds.

Aluminum parts are in the T4 condition after quenching and can then be transferred to an age oven if precipitation hardening is required. Parts can also be placed on dry ice after quenching to maintain the as-quenched condition.

Our HyperQuench furnace follows compliance with AMS 2770, AMS 2771, AMS 2772, AMS 2750, BAC 5602, MD helicopter and various other specifications. This furnace runs Class 2 Type D equipment per AMS 2750.

Materials

All solution heat treated aluminum alloys can benefit from the drop bottom solution heat treating process, including castings, forgings, stampings extrusions, and weldments. Parts under 0.25” thick greatly benefit from the HyperQuench process because it offers glycol quenching for limiting distortion as well as faster quench drop times to meet various aerospace specification requirements.

Applications

- Sheet metal
- R&D projects
- Low volume projects
- Stampings