

HTA BRISBANE - AEROSPACE DEFENSE LINE CARD

Process	Process Details	Components / Examples	Customer Approvals	Furnace Capability
15 Bar Nitrogen Gas Quench	High pressure gas quenching, used instead of oil quenching, provides much lower distortion levels during heat treatment, able to be applied to alloy steels which are traditionally oil quenched.	Landing Gear Components, Actuators, Geared and Input / Output Shafts	Goodrich Landing Gear (gas quench 4330v, 300M, aerm100)	Maximum Size 650 x 600 x 900 mm
25 Bar Nitrogen Gas Quench	High pressure gas quenching, used instead of oil quenching, provides much lower distortion levels during heat treatment, able to be applied to alloy steels which are traditionally oil quenched. This unique process removes manufacturing steps by reducing the amount of material required to be removed post heat treatment.	Landing Gear Components, Actuators, Geared and Input / Output Shafts	In Process - Landing Gear 4330v, aerm100, 4340, 300M	Maximum Size 650 x 600 x 900 mm
Age Hardening of PH / Mo Stainless Steels	Age Hardening of PH and Mo grades stainless steels to H conditions.	Airframe, Actuators, Landing Gear, Weapons Pylons, Missile Components, Flight Controls.	Nadcap, Boeing, Parker, Lockheed Martin	Furnace Sizes 850 x 1423 x 750 mm 900 x 900 x 1200 mm 430 Dia x 305 mm
Aluminium	Solution Treatment, Annealing and Age Treatments for sheet, wrought, forged or Cast Aluminium alloys.	Repair Panels, Air Frame Parts	Nadcap, Boeing, Lockheed Martin	Maximum Size 872 x 815 x 436 mm
Annealing	For Alloy Steels that are welded, as cast, forged or previously heat treated; this process sets a formal microstructure within a material preparing it for further hardening and tempering (draw process) or reversing a hardening and temper (draw) process.	Alloy Steels that are welded, as cast, forged or previously heat treated.		Maximum Size 650 x 600 x 900 mm
Cryogenics (Sub Zero)	Subzero transformation used after quenching of some specialised stainless steels.	Stabilizing process to obtain microstructure requirements.		Maximum Size 1000 x 560 x 560 mm
Heat Track Solutions	HTA Trademarked Customer Information Portal and Client interface. Secured Client services, accounting, job tracking, email notifications or work progression and more.	HTA's Portal for processing, accounting and live status of workflow		Access at heattracksolutions.com
Low Pressure Carburizing VAC	Seco Warwick fine carb system used for precision carburising of low alloy steels. Used in conjunction with the 25bar nitrogen quench system.	Various types of Gears, Racks and Pinions		Maximum Size 650 x 600 x 900 mm
Normalising	Normalising prior to Hardening of alloy steels that are welded, as cast, forged or previously heat treated, this process sets a formal microstructure within a material preparing it for further treatment or use.	A process used to set the microstructure in a metal prior to hardening and tempering (draw process)		Maximum Size 650 x 600 x 900 mm
Process Verification Testing	ASTM E10 Standard Test method for Brinell, ASTM E18 Standard Rockwell Methods for Rockwell Testing, ASTM E 384 Standard Test Method For Knopp and Vickers Hardness Of Materials, ARP 1820 Chord Method Of Evaluation Of Surface Microstructural Characteristics, ASTM E 1004 Standard Testing Method Eddy Current Testing.	Verification Capabilities for all processes performed.	Nadcap, Boeing, Lockheed Martin	



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Rapid Prototyping Machining Centre	Supported by Software Catia and Esprit, this addition to HTA allows us to work with our machining partners in developing split line designs for aluminium brazed components without taking up critical space on their production machinery. It also allows HTA to bring results and ideas dramatically shortening lead times from acceptance of an order to the client.	All Aluminium Vacuum Brazed Chassis, brazed part lines Stainless Steel parts using Nickel or Copper as the braze medium.		DMG EcoMill 70 - 5 Axis Working Dimensions 750 x 600 x 520 mm
Stainless Steels - Martensitic	Harden and Temper of Stainless Steels (400 series)	Hydraulic components, Actuation Systems, Spools and Valves.	Goodrich Actuation Systems Wolverhampton	Maximum Size 575 x 570 x 875 mm
Solution Treatment (PH / Mo Stainless Steels)	AMS5659 (15-5Ph), AMS5629 (13-8Mo), AMS5643 (17-4Ph), AMS5604 (17-4Ph) are some examples.	Airframe, Actuators, Landing Gear, Weapons Pylons, Missile Components, Flight Controls.	Nadcap, Parker, Lockheed Martin	Maximum Size 575 x 570 x 875 mm
Treatments for Inconel, Nickel & Super Alloys	Solution Treatment, Annealing and age treatments, per customer specs. Vacuum, Air, Nitrogen or Argon.	Engine Components, Exhaust Components		Maximum Size 575 x 570 x 875 mm
Ultrasonic Cleaning	Modernized Component Cleaning System for all critical components.			
Vacuum Aluminium Brazing	Aluminium Vacuum Brazing (AVB) process is utilised to manufacture electronic housings and chassis', the method metallurgical bonds machined aluminium components via a brazing medium. These chassis are typically used to dissipate heat in electronic assemblies and to provide solutions to weight and dimensional constraint solutions typically found in airborne systems.	Electronic cooling chassis, Cold Wall Plate Heat Exchangers, Microwave Components.	Harris, Cobham Nadcap - AWS C3.7-2011 (Aluminium Only)	Furnace Sizes: 900 x 700 x 1200 mm 1300 x 600 x 450 mm
Vacuum Nickel & Copper Brazing	Typically used where high temperature or highly stressed applications demand good cross-sectional toughness and strength for applications like hydraulic spools and actuators or high pressure fluid type manifold systems.	Hydraulics / Actuators / Fluid Transfer	Nadcap - AMS 2675 (Nickel Only)	Maximum Size 575 x 570 x 875 mm
Vacuum Titanium	Anneal, Beta Anneal or Duplex Anneal of certain Titanium Wrought alloys.	Exhaust Ducts, Fasteners, Casings, Structural & Engine Components	Airbus Helicopters	Maximum Size 575 x 570 x 875 mm
Project Management Vacuum Brazed Services	Due to the critical nature of build to print brazed components and the Intellectual Property that surrounds the techniques for successful brazing, HTA offers Project Management services and supply chain management for completion of these components prior to the next level up assembly.	Nickel Brazed Steel Components Copper Brazed Components Aluminium Vacuum Brazed Chassis used for Electronic applications.		

