Heat Treatment Services

We provide a full range of heat-treatment and tempering services, shot blasting, bead blasting and non-destructive testing (NDT Testing)

Case Hardening
Case Hardening is a process in which carbon diffuses into the surface layer of a component which increases wear resistance, surface hardness and fatigue strength by creating a hardened surface layer and a tough core.

Gas Nitriding
Gas Nitriding is a surface hardening process, where nitrogen is added to the surface of steel parts using dissociated ammonia as the source. Gas Nitriding develops a very hard case in a component at relatively low temperature, without the need for quenching.

Carbonitride
Carbonitriding is similar to case hardening but involves the diffusion of both carbon and nitrogen into the base steel. The carbon provides the base metal with a high carbon surface, and the nitrogen provides the case with an added boost of harden-ability.

Stress Relieving
Stress Relieving is applied to both ferrous and non-ferrous alloys and is intended to remove internal residual stresses generated by prior manufacturing processes such as machining, cold rolling and welding. Without it, subsequent processing may give rise to unacceptable distortion and/or the material can suffer from service problems such as stress corrosion cracking.

Induction Hardening
Induction Hardening is a form of heat treatment in which parts are heated by induction heating and then quenched. The quenched metal undergoes a transformation which creates a high surface hardness with a deep case capable of handling extremely high loads. Fatigue strength is increased by the development of a soft core surrounded by an extremely tough outer layer. Induction Hardening is used to selectively harden areas of a part or assembly without affecting the properties of the part as a whole.

QPQ/Tuffriding
QPQ Liquid Nitriding (also known as salt bath nitriding) is a process for producing a thin, high-hardness case that is wear and corrosion resistant, with little or no distortion of the part during processing.

Harden and Tempering
Hardening involves heating steel, keeping it at an appropriate temperature and atmosphere depending on type of material used, and then quenching it rapidly in polymer or oil.

Magnetic Particle Inspection (MPI)
Magnetic Particle Inspection (MPI), also sometimes called Magnetic Test (MT), is a non-destructive test method for the detection of surface and sub-surface discontinuities in ferrous materials.

Offering the best level of excellence in heat treatment tempering and non-destructive testing

For further information please email: tech@caldervalegroup.co.uk
Telephone for any enquiries on: +44 (0) 1236 763388
Caldervale Business Park, Dunrobin Road, Airdrie, Lanarkshire, ML6 8LS, UK.

www.caldervalegroup.com
Caldervale Group Ltd offer the following processes:

- Case Hardening
- Stress Relieving
- Induction Hardening
- Carbonitride
- Harden and Tempering
- QPQ/Tuffriding
- Normalising
- Annealing
- Gas Nitriding
- Precipitation Hardening
- Age Hardening
- Magnetic Particle Inspection (MPI)
- Shotblasting
- Bead Blasting
- Wide range of Hardness checking equipment

Quick turnaround time  
Same day service  
Excellent customer support and technical knowledge

Contact us for your FREE quotation

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