CALDERVALE GROUP LTD

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.

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.

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.

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.

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.

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.

QPQ/Tuffriding

QPQ Liquid Nitriding (also know 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.

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

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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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