CURTISS-WRIGHT

Surface Technologies

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Fighting Fatigue and Premature Failure

Curtiss Wright Surface Technologies India Pvt Ltd provides surface treatments such as Controlled Shot Peening for critical components used in aerospace, automotive, power generation, chemical processing, press dies and tools, subsea oilfield, defence and other industrial markets.

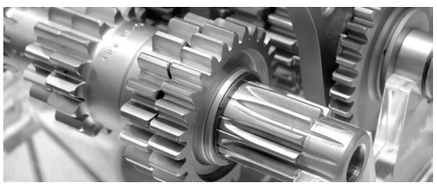
We currently service customers in all regions of India, supported by the vast experience of peening applications available throughout the Curtiss-Wright Surface Technologies group worldwide, also providing a source of reference and advice on many aspects of materials and component improvement.

We can provide help on initial design criteria, enabling cost effective production, making critical components last longer and perform more efficiently, reducing maintenance costs and plant downtime.

Approvals include: ISO 9001:2008, AS9100C and NADCAP

Metal fatigue accounts for over 70% of premature failures in and can lead to sudden catastrophic failure.

Fatigue cracks can be initiated for many reasons but a key cause is where tensile residual stresses are introduced during the manufacturing process which adds to the service load and aggravates the onset of fatigue. However, if these detrimental tensile stresses are converted to beneficial compressive residual the onset of fatigue is suspended.



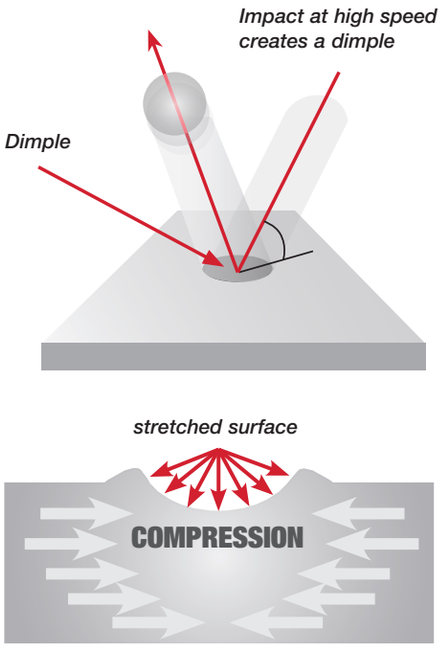
Controlled Shot Peening

For many years Controlled Shot Peening has been proven to fight metal fatigue and is included by many OEM's as part of the manufacturing process. In addition, this surface treatment is used to prevent corrosion fatigue, stress corrosion cracking, intergranular corrosion, fretting, galling, spalling and wear increasing the life and performance of components. It can also be used to correct distortion of the component caused during the manufacturing process.

The Process

Controlled Shot Peening is a cold worked process where media known as shot is propelled onto the surface of a component using pre-determined specifications and criteria. This action creates an indentation in the material surface causing it to stretch or yield but at the same time the substrate tries to retain its shape and this reaction induces a beneficial compress stress, eliminating harmful tensile residual stresses.

Process controls are rigidly maintained to ensure the reliability and repeatability so that each application meets the required specification. This involves regulating the media, intensity and coverage and shot direction to ensure consistent processing. Mechanised and robotically controlled equipment is also used to further ensure that the process is consistent and repeatable.



Shot peening process

Please contact us to find out more about our services and to discuss your requirements.

For more information on all our services and full worldwide contact details: www.cwst.in

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As well as providing protection and improving performance and life, our services also prevent the premature failure of components by addressing the issues of:

FATIGUE – initiation and propagation of cracks can be prevented or delayed by the tailored induction of engineered compressive residual stresses

GALLING – contact adhesion between opposing surfaces can be minimised by the application of a suitable coating and/or surface modification

FRETTING – the protection of the base material through coatings and/or alteration of the mating surface contact points and by introducing deep residual compressive stresses, can minimise fretting damage which can lead to fretting fatigue

STRESS CORROSION CRACKING – replacing surface tensile residual stresses with an engineered layer of compressive residual stress can eliminate stress corrosion cracking

CORROSION – the application of a suitable coating system and, where appropriate, the induction of residual compressive stresses can protect components from corrosion

INTERGRANULAR CORROSION – disrupting the grain boundary network at the metal surface, removes the pathway for the corrodant to travel, avoiding the possibility of intergranular attack

WEAR – improving friction characteristics and increasing mating hardness reduce wear

Curtiss-Wright Surface Technologies (CWST) is a global organisation specialising in surface treatments which improve performance and extend the life of critical components, prevent premature failures and enable component designs to achieve their maximum potential.

We provide our customers with surface engineering excellence whenever and wherever they need us with over 70 international divisions and on-site processing worldwide, working in partnership to meet our customer's needs.

Industry approvals include: AS9100 Rev C, NADCAP, ISO 9001:2008, ISO 13485, FAA plus other specific OEM, company and industry approvals as required.

We share technical expertise and processing techniques throughout our network of international facilities, assisting customers in their endeavour to form global partnerships.

CURTISS-WRIGHT SURFACE TECHNOLOGIES:

- **Extend the life of critical components**
- **Prevent premature failures**
- **Enable component designs to achieve their maximum performance**

Bangalore – India facility

Curtiss Wright Surface Technologies India Pvt Ltd – Bangalore Division

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Quality approvals include: ISO9001:2008, AS9100C, NADCAP