WHAT IS SUPER FINISHING?

HPSF SUPER FINISHING

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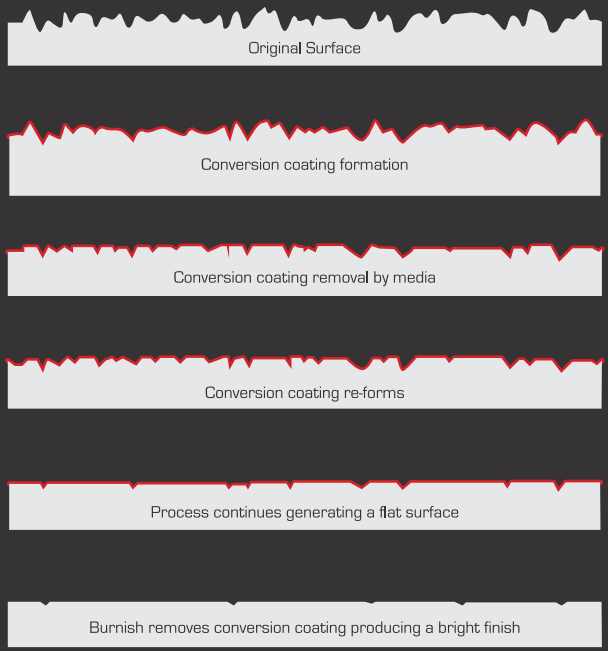
Wherever metals come into contact with each other contact stresses and friction occur. Both these conditions regulate and reduce the performance and compromise the design of the component. Super-finishing or CASF (Chemically Accelerated Surface Finishing) is a means of regaining those losses by producing a superfine finish where it is most needed. The process is carried out in specially designed vibratory finishing bowls and or tub/trough machines. These machines are utilised with high density, non-abrasive ceramic media and two specially formulated metal finishing compounds.

The unique and significant feature of the process is the surface levelling/smoothing mechanism utilised to achieve the surface finish. A reactive chemistry is used in the vibratory machine in conjunction with the media. When introduced to the vibratory machine this chemistry produces a stable, soft conversion coating across the asperities (peaks and valleys) of the components. The rubbing motion across the components developed by the machine and media effectively wipes soft conversion coating off the 'peaks' of the parts surfaces, thereby removing a micro-layer of metal. After this continual process is complete, the conversion coating is wiped off one final time using a neutral soap to produce a mirror like surface. This process does not affect the integrity of the parts either structurally or dimensionally and any very sensitive bearing areas etc. can be effectively masked if required prior to super-finishing.

THE SUPER FINISHING PROCESS



BENEFITS

A combination of elements such as friction, heat, vibration and fatigue adversely affect a range of different components across many industries. Isotropic Super-finishing & Polishing and CASF (Chemically Accelerated Surface Finishing) has transformed the performance capabilities of these metal components which in turn has created a number of performance, financial and operational benefits.

PERFORMANCE BENEFITS

- Reduce Friction
- Increase Part Durability
- Improve Corrosion Resistance
- Reduce Wear
- Reduce Lubrication Requirements and Cost
- Improve Oil Retention Properties
- Reduce Contact and Bending Fatigue
- Improve Pitting Resistance
- Reduce Vibration and Noise
- Reduce Applied Torque Requirements
- Produce a Uniform Surface Finish
- Produce a Superior Surface Finish

WORKING ADVANTAGES

- Eliminate Break-in
- Extend Component Life
- Reduce Metal Debris
- Reduce Part Failures
- Minimise Overheating

ADDITIONAL ADVANTAGES OF FRICTION REDUCTION

- Increase Fuel Economy
- Reduce Contact Fatigue
- Increase Power Density
- Lower Operating Temperature
- Extend Mean Time Between Maintenance
- Reduce Maintenance Costs