CrankPro® Induction Heat Treating System

Non-Rotational Induction Heat Treating for Crankshafts and Camshafts

Flexible Crankshaft Heating Solution

CrankPro® systems utilize patented technology, SharP-C™ which eliminates the rotation of the crankshaft and movement of the inductor during heating and quenching cycles. This stationary heating method provides several practical and technical benefits; reduced floor space, simple operation, robust machined coil, low part distortion and minimal part growth.

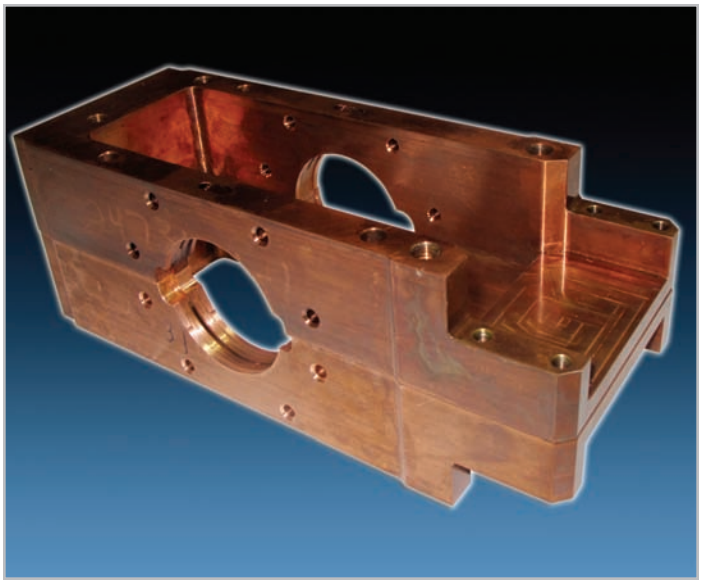
Features/Benefits:

- SHarP-C™ Technology (Stationary Hardening Process for Crankshafts).
- Short Heat times < 3 Sec. Production rates of up to 120 parts/ hour.
- Robust one piece CNC machined block coil with no brazing extends coil life significantly.
- Coils are CNC machined, certified and pinned in place with no adjustment necessary.
- One moving part and stationary crank.
- Over head gantry service.
- Low distortion from 0 - 45 microns max has been observed in production and minimal part growth.
- In process induction tempering.
- Less wasted heat and reduced floor space.
- Convertible I4 / V6 / V8.
- Maintenance from outside machine/offline.

Robust & Reliable Machined Coil

Induction coils are much more robust and rigid, being CNC machined from a solid copper block without any brazed parts. This eliminates inductor distortion and hardness pattern drift. There are far fewer components involved in the novel coil design, meaning higher reliability and longer coil life because of the smaller numbers of mechanical features that could otherwise go wrong.

CrankPro® system with gantry part handling



Robust, CNC machined copper coil

For more information, call 800/624-6297, email: sales@inductoheat.com or visit www.inductoheat.com

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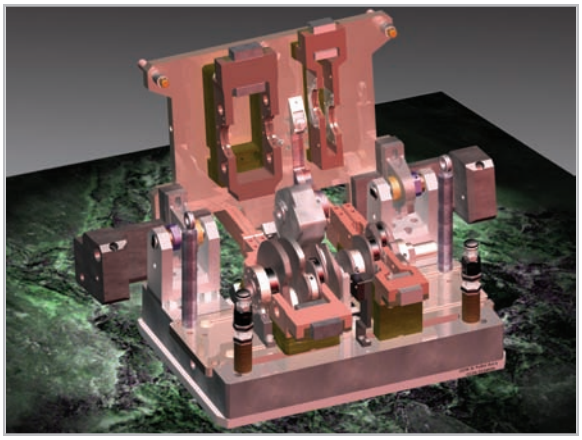
Short Heat Times For Higher Production Rates

Short heating time improves the metallurgical properties of the hardened zone by reducing grain growth, decarburization and oxidation of the pin/main surface. The hardened zone is clearly defined and "crisp" without the "fuzzy transition zone" that is present when longer heat times are utilized. The case depth consists of fine grain martensitic microstructure with a negligible amount of retained austenite and without any trace of free ferrites.



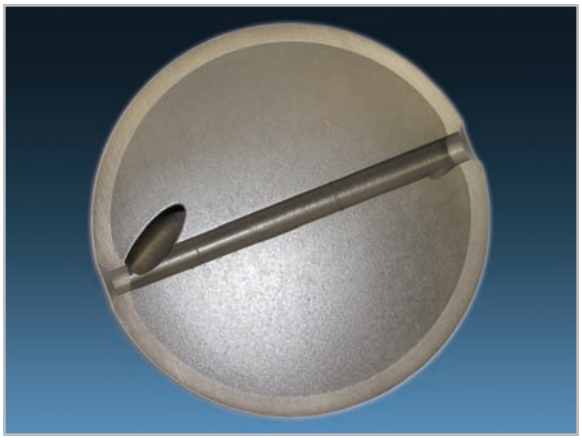
CrankPro coil & pallet

Superior Control Of Case Depth Hardening

Control of the stationary crankshaft hardening process is excellent, and is achieved by special coil design techniques. It is possible to modify the hardness profile along the circumference of the pins and the mains as well as across the width of the heat-treated journal. This superior control can also be used to prevent localized under-heating or over-heating.

Oil holes are often angled relative to the surface, thus there is less metal mass on one side of the hole than on the other. Due to the lack of metal mass on one side, there is a danger of metal overheating in this area and as a result, there is a possibility of crack initiation or even local melting there.

The advanced coil design concept used in SHarP-C process significantly decreases the induced power density in this area and eliminates these unpleasant surprises. This improved ability to control heat "across the journal width" is quite limited in conventional induction hardening processes and can also be used where there is a non-symmetrical bore as well.



Optimum case depth penetration for crankshaft pin

ISO 9001:2000 Certified