



INDUCTION HARDENING



www.sigmatherm.in



Induction Hardening:

is a non contact heating process which utilizes the principle of electromagnetic induction to produce heat inside the surface layer of a work-piece. By placing a conductive material into a strong alternating magnetic field electrical current can be made to flow in the steel thereby creating heat due to the I^2R losses in the material. In magnetic materials, further heat is generated below the Curie point due to hysteresis losses. The current generated flows predominantly in the surface layer, the depth of this layer being dictated by the frequency of the alternating field, the surface power density, the permeability of the material, the heat time and the diameter of the bar or material thickness. By quenching this heated layer in water, oil or a polymer based quench the surface layer is altered to form a martensitic structure which is harder than the base metal.

31, Mistry Industrial Complex, Cross Road 'A', M.I.D.C, Andheri [E], Mumbai 400093. INDIA.

Sales-T: +91.22.26874629 • Service-T: +91.22.26870649 • F: +91.22.26870443 • E: info@electronicsdevices.com
E: info@edmail.in • www.sigmatherm.in

The Advantages Of Induction Heating:

Induction heating has many advantages over competitive techniques, such as radiant or conventional heating - retarding methods. ED allows you to apply the latest induction heating techniques to your specific application. The following are just some of the many benefits of induction heating.

- **Optimized consistency:** Accurate temperature control provides uniform and consistent results.
- **Improved Quality:** Contact free process induces heat in the product without touching it, reducing reject rates.
- **Minimized Distortion:** Site - specific process delivers heat exactly where it is needed as rapidly as needed, so other parts are not exposed to distortion.
- **Maximized Productivity:** Instantaneous heat allows for increased production & reduced distortion.
- **Environmentally sound:** Clean, non - polluting process, produces no smoke, waste heat, noxious emission or noise.
- **Reduce cost:** Running cost would be low comparatively other conventional methods.
- **No Scaling:** Results in better finishing in components.
- **Selective heating:** Components which are desired with required case depths.

Advantage:

- Quick and total solution of coil design & fixture based on years of experience.
- Manual, semi - automatic, automatic & CNC controlled fixtures available depending on the requirement of sophistication in production line.
- Rugged and reliable equipment
- Excellent after sales service.
- Inbuilt safety circuits for machine & operator

Equipments Supplied For Hardening

Model No.	Power	Frequency	Job Example
IH - 5	5kW	450KHz	Ball screw, small pins
IH - 10	10kW	450KHz	Engine valve tips, engine valve seat,
IH - 18	18kW	450KHz	Shafts upto 30 mm dia. pins, gears.
IH - 30	30kW	450KHz	Shaft, king pin, Gears
IH - 100	100kW	4-5KHz	Shafts and Gears
IH - 150	150kW	4-5KHz	Shafts and Gears
IH - 250	250kW	3-10 KHz	Shafts and Gears
EDI-10	10Kw	50-80KHz	Engine valve tips,
EDI-15	15Kw	50-80KHz	Engine valve tips, engine valve seat
EDI-20	20Kw	50-80KHz	Engine valve tips, engine valve seat
EDI-25	25Kw	50-80KHz	Shafts and Gears

31, Mistry Industrial Complex, Cross Road 'A', M.I.D.C, Andheri [E], Mumbai 400093. INDIA.
 Sales-T: +91.22.26874629 • Service-T: +91.22.26870649 • F: +91.22.26870443
 E: info@electronicsdevices.com • E: info@edmail.in • www.sigmatherm.in



**Electronics
—Devices—**

Worldwide Pvt. Ltd.

Making things happen

