

TECHNICAL BROCHURE · SERVICES

Heat treatment of metals

Volumetric and surface hardening and chemical-thermal treatment: greater wear resistance, strength and service life of parts and mechanisms.

**750–900 °C**

heating temperature for volumetric hardening

7

heat-treatment types at our own section

up to 15%

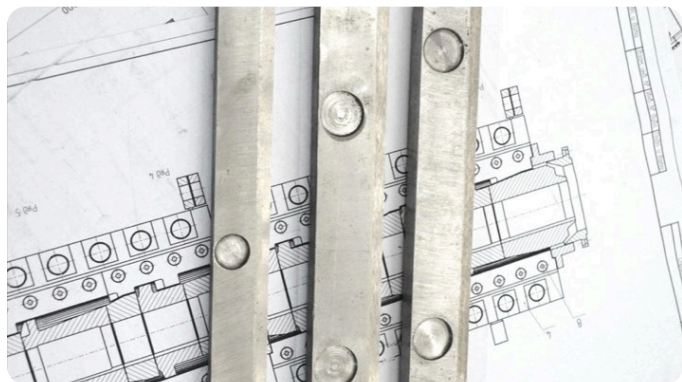
of part thickness — surface hardening depth

The following types of heat treatment can be performed at the D.ENERGY thermal section:

- hardening in a protective gas atmosphere;
- gas carburizing;
- gas high-temperature nitrocarburizing;
- gas nitriding;
- gas low-temperature nitrocarburizing;
- gas oxidizing;
- tempering, annealing, heat setting.

Advantages of heat treatment

Designers and technologists for machining, heat treatment and welding develop drawings and process routes for the products we make, guaranteeing consistently high quality. Heat treatment can significantly cut costs.



Higher wear resistance and strength of parts and mechanisms, longer service life

Heat treatment of parts consists of volumetric and surface hardening. Volumetric hardening heats steel parts, depending on the carbon content of the metal, to 750–900 °C followed by rapid cooling in air, water, oil or molten salts.

Surface hardening heats a thin surface layer (up to 15% of the part thickness deep). The hardness of the layer gradually decreases towards the center of the part, which improves its performance: the unhardened inner layers provide high toughness and the hardened surface layer provides wear resistance.

Lower costs for repair and replacement of components

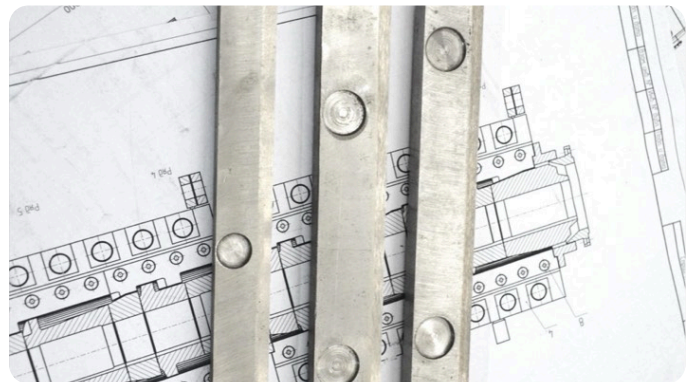
Equipment failure is only a matter of time and operating conditions. The projected service life of parts is the basis of planned preventive maintenance and of the plant's economy as a whole. A full economic assessment of losses from production stoppages caused by broken parts must consider not the workshop cost but the factory cost of repair. Reliable, prepared, tested and verified elements are guaranteed to get you through the repair period without extra costs.

Longer equipment operation without repair

Production planning becomes more efficient, equipment downtime is reduced and production capacity is used better. The payback period of the equipment as a whole shortens thanks to lower additional maintenance and repair costs.

Higher corrosion and mechanical resistance

The chemical composition of the metal in the surface layers is changed to increase fatigue limit, surface wear resistance, corrosion resistance and heat resistance. Chemical-thermal treatment takes place through the interaction of external gaseous or liquid media with the metal surface, as the active element is absorbed or diffuses into the metal in atomic form.



Need a calculation or a quotation?

Send us your requirements — we will select the model for your raw material and capacity.

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