

CRYOGENIC SYSTEM FOR CYCLIC THERMAL TREATMENT OF STEELWORK



Cryogenic system



Steel articles

Areas of Application

The cryogenic system is designed to implement the comprehensive technology for steelwork treatment. The technology combines deep cold cyclic treatment and tempering and improves operating properties of special steels

Specification

Temperature control range, °C	-173...+150
Cooling rate within the range from +20°C up to -173 °C, °C /min	1–5
Keeping at deep cold, temperature (-173) °C, h	24–48
Keeping at hot temperature (+150 °C), h	5–6
Cryogenic agent: liquid nitrogen; flask volume	≥15

IPR Protection

IPR3

Advantages

The cryogenic system with deep cold treatment of high-precision figurine-shaped steelwork (gearings, cutters, drills, bearings and others) enables relieving internal stresses, improving the microstructure and hardness uniformity, increasing the service life of steelwork 1.5–2 times, and reducing the maintenance costs; the system is software-controlled

Stage of Development.

Suggestions for Commercialization

IRL3, TRL3

Customized cryogenic system manufacture and warranty service; open to investors and business partners for serial production

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