



R.VAC+[®]

Process descriptions:

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Vacuum hardening is a through-hardening process and is used for higher-alloy materials to achieve appropriate strength and tensile strength values without impairing the component surface (no oxidation of the workpiece).

Industries using this process:

- Mechanical engineering, tool and die manufacturing, medical engineering, racing, plastics processing industries, aviation

Materials:

- Hot-forming tool steels
- Cold-forming tool steels
- High-speed tool steels
- Steels with high chromium contents (martensitic corrosion-resistant steels)

Main features:

- Comparatively low degree of dimensional change
- Blank, clean surfaces
- Precise process control (thermocouples, mass flow controller, quenching medium, ...)
- Process parameters that are accurately adjusted to materials
- Different quenching media (helium & nitrogen)

Plant dimensions:

- Chamber furnace: Max. 1,200 × 900 × 900mm
- Shaft furnace: Ø 1,000 × 2,000 mm
- Max. 4t

Major use and purpose of the process:

- For adjustment of the strength and toughness properties of the material
- For adjustment of the corrosion properties

Throughput duration:

- Upon request

Possible preparation treatment of the surfaces for optimum surface condition:

- Free from grease, oil, processing agents or drawing and casting skins
- No corrosion
- Clean cooling channels
- No erosion skin
- Avoid sharp edges if possible

Required information:

- Material
- Hardness (test position(s), tolerance)
- Subsequent processing steps (e.g. erosion, nitriding)
- Maximum application temperature

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