

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, masflow 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
- → 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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