

Use of vacuum for metallurgical processes

1. Application

Rotorblade of an aircraft turbine.

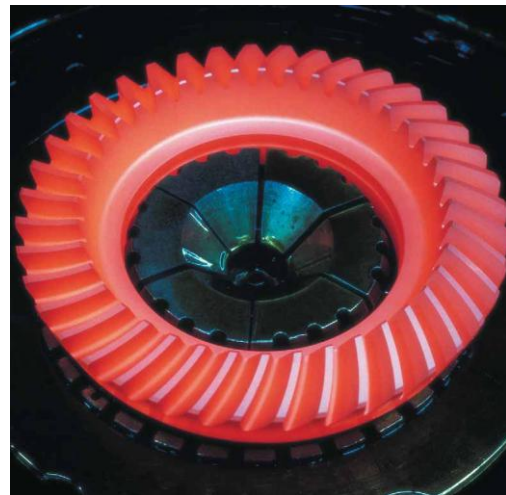
Perfect, faultless material is essential. The manufacture of aircraft turbines is a challenging process and the material requirements are high. Faulty metallurgical processes for airborne carriers may result in tragic accidents. Vacuum technology is a key element in ensuring the safety of these processes.

2. Role of vacuum technology

In order to refine steels or alloys, vacuum helps to remove residues of inherent and undesirable element traces from molten metals. Many heat treatment processes such as heating, refining, nitrating, sintering or hardening are executed in vacuum ovens. These processes enhance the quality of the metal used for steel or iron products – something of the utmost importance in the case of aircraft.

3. Vacuum technology

Depending on the plant and application, various vacuum pumps and technologies can be used. A thorough and detailed analysis of the manufacturing process is required to optimize the performance of the pumping system in order to create and maintain the appropriate vacuum during the whole process.



Example provided by VDMA member companies