AUTOFRETTAGE PROCESS

Aquarèse has developed processes following developments in the automobile industry of HDI (High Diesel Injection) diesel engines based on the Common Rail principle (direct high-pressure injection). Autofrettage is one of these processes.

Objective

To increase the fatigue behaviour of hollow mechanical parts significantly.

Principle

The Autofrettage process imparts residual compression stress to the inside walls of hollow parts.
For a few seconds, the part is subjected to a pressure (3,000 to 8,000 bars) generating a plastic distortion of the inside wall which is similar to preloading strain-hardening.

Application fields

- Automobile: Common Rail system distributors (ramps or spheres) and conductors
- Aircraft industry
- Arms industry
- Nuclear chemistry