

15. Valve bodies for high pressure compressors

Pulsatile high gas pressures up to 4000 bar (58.000 PSI) are controlled by these complex components. Such pressure ranges are required for the liquidification of gas. In addition to the cyclic mechanical loads, the chemical aggressivity of the compressed media affect the material. Both influences promote fatigue of the materials.

Earlier, the parts were treated by shot peening and/or autofrettage (plastic overextension by hydrostatic interior pressure). Both procedures, were replaced by deep rolling with ballpoint HG6 and EF deep rolling tools on the lathe. Fig. 15-1, shows a part of the treatment with the hydrostatic tool ballpoint HG6 at the concave contour.

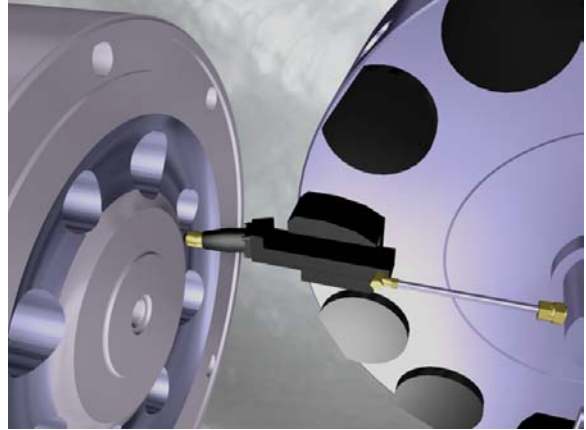


Fig. 15-1: deep rolling of a valve plate