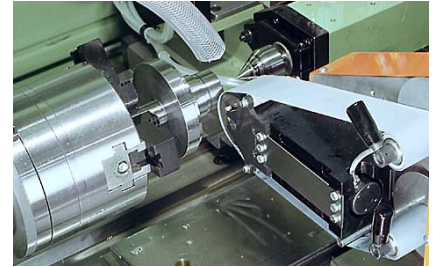


Supfina – Press Information PI 191 –10/2007

-1-

Supfina eliminates white layer Necessary material removal on hard-turned surfaces through superfinishing



Remscheid, hard turning processes should be used more frequently when the need to manufacture rotationally symmetrical components in short cycle times with low investment costs arises.

As a further argument it should be pointed out that the through hard-turning in the process chain the grinding and superfinishing processes can be shortened. However, along with the considerable advantages there are also anticipated risks. For example: process capability and functionality of the hard-turned surfaces.

In comparison with superfinishing, where the self-dressing abrasives always keep the process parameters the same, hard turning process capability is affected through the continual degradation of the cutting edge geometry until the cutting pass is completed.

Also with hard turning comes the necessity of a minimal cut depth, which the comparable spark-out operations don't warrant. It follows then that surface roughness previously produced from hard turning cannot be further improved. This leads to the fact that the surface roughness according to DIN EN ISO 13565-1 and -2 (R_k , R_{pk} and R_{vk}), as well as the bearing ratio according to DIN EN ISO 4287 (R_{mr} and t_p) cannot be systematically produced or targeted.

The well-known "soft skin", an amorphous layer on the workpiece surface caused by grinding, makes the healthy and stable surface unusable in many applications (ex. bearing races). This is also found with hard turning in a similar form. It's called "white layer". This very thin layer must be removed in many cases through a suitable manufacturing process before the workpiece can be put into service.

Author:

Uwe Friedrich
Division Leader - Supfina Lean Systems
Supfina Grieshaber GmbH & Co. KG
Tel: +49 (0) 2191-3713-661
Fax: +49 (0) 2191-3713-657

Text and photos per e-mail:
p.mich@supfina.com
Photo: Supfina Grieshaber

www.supfina.com