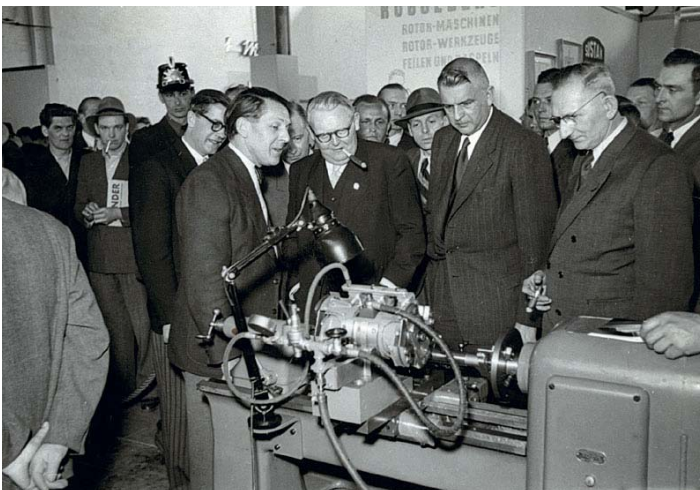


Editorial Article RB 024/07

A New Generation of Attachments

What started with the first air-powered stone superfinishing attachments continues today as one of the most modern universal superfinishing units.



In the year 1950 the first patent entitled "Verfahren und Vorrichtungen für den Antrieb von arbeitsleistenden Schwingsystemen" (Process and Mechanisms for the Drive of work-producing Oscillation Systems) was awarded to Karl Wieck, an engineer and later part owner of Supfina. An air-powered attachment based on further patents was built for the fine finishing (superfinishing) of cylindrical work pieces, ex. piston rods, shaft bushings and paper mill rolls.

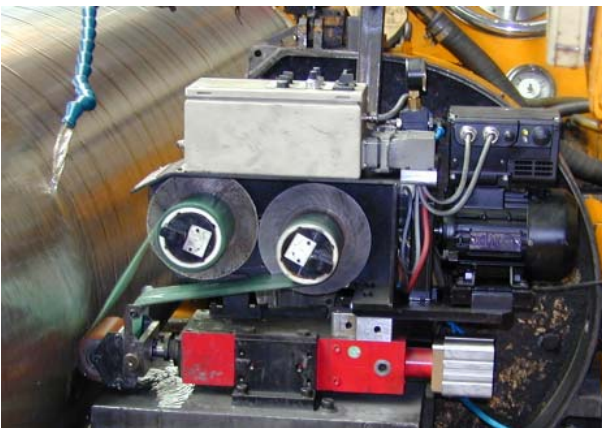
Supfina Grieshaber GmbH & Co. KG
Greulingstrasse 33
D-42859 Remscheid

☎ 02191 / 3713-0
Fax 02191 / 3713-657

Internet: <http://www.supfina.com>
Email: info@supfina.com



After further development, worth was put on the cost-effective and stable-process technology of the pneumatic stone superfinishing attachments. The oscillation motor must produce as uniform and fast movement as possible, in order to guarantee that the stone guides move the ceramic abrasive stone in an exactly parallel axis to the work piece. Only so can the surface structure and geometry of bearing surfaces and sealing areas (ex. transmission and balance shafts) be targeted for improvement.



Still finer surface structures and better cycle times have been achieved through the development of new, flexible finishing abrasive films, ex. Lapping and Finishing films. A further advantage of these new films is that the superfinishing operation can be carried out without finishing oil as coolant. However, the new abrasives demanded considerably higher requirements of the superfinishing attachment. Along with engineering criteria such as an infinitely adjustable oscillation amplitude, which is unaffected by contact force, a low as possible natural frequency of the unit was necessary.

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Concurrently, though, the advantages of the ceramic finishing stones should stay available to the user. This led to a new generation of superfinishing unit, in which all abrasive-specific advantages could be combined into one unit. The abrasive film can be switched out for ceramic finishing stones in seconds through one setscrew.

Superfinishing attachments are in use everywhere today, where cost-effective and rapid production methods for the fine-surface production are needed.

Depending on the part count and size of the work pieces, these units can be easily retrofitted to a conventional grinding machine or lathe. The unit can also be integrated into a CNC system, through which the individual unit functions and process parameters can be controlled from the machines controls.

Author:

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

Photos: Supfina Grieshaber

Text and Photos electronically per e-mail: p.mich@supfina.com