



Virtual Reference Grinding – Joseph von Fraunhofer Award 2005

Virtual Reference Grinding (VRG) is an innovative grinding method to re-condition drying cylinders on-site and in-machine. The VRG grinding was commercially introduced in early 2005 and, to date, sixteen large Yankee dryers have been serviced in-situ.



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VRG grinding technology is unique and fundamentally different from conventional methods of roll and cylinder grinding. Grinding is not accomplished through a “geometrical-coupling” between grinder and roll or dryer, but through a “force-coupling”. Material is removed by applying grinding forces only exactly where necessary (Fig. 1).

As a consequence, the VRG grinding machine is very compact but extremely powerful, lightweight, and can be easily shipped and installed, saving considerable down-time both to service the Yankee dryer and for diagnostic purposes (Fig. 2).

“My idea to develop a grinder on this force-coupling principle was born in 1999. At that time, the German Fraunhofer Institute was contracted to further develop this innovation into a practical technical solution.”

The Fraunhofer Gesellschaft is the largest applied research organization in Germany operating a total of 80 research units with

a total staff of 12.500 scientists and engineers. Dr Ulrich Priber of the Fraunhofer Institute IWU in Chemnitz has spearheaded our VRG development from conception to a functional system. The excellent work of Dr Ulrich Priber and his team has not only resulted in a practical and unique machine tool, but has now also been awarded the 2005 “Joseph von Fraunhofer” prize. The Fraunhofer Prize is awarded to individual researchers or entire research groups at a Fraunhofer institute in recognition of excellent work in any field of applied research.

On October 19 2005, this 10,000 Euro prize was presented by the president of the Fraunhofer Gesellschaft, Prof. Dr Hans-Jörg Bullinger, to Dr Ulrich Priber and his team during the annual meeting of the general assembly (Fig. 3).

We at Voith are extremely proud of this outcome and congratulate Dr Ulrich Priber, his team, and the Fraunhofer Gesellschaft for their excellent work in developing our ideas into this unique system for the benefit of our customers.

Fig. 1: Virtual Reference Grinding (VRG).

Fig. 2: The VRG system.

Fig. 3: Dr Ulrich Priber.