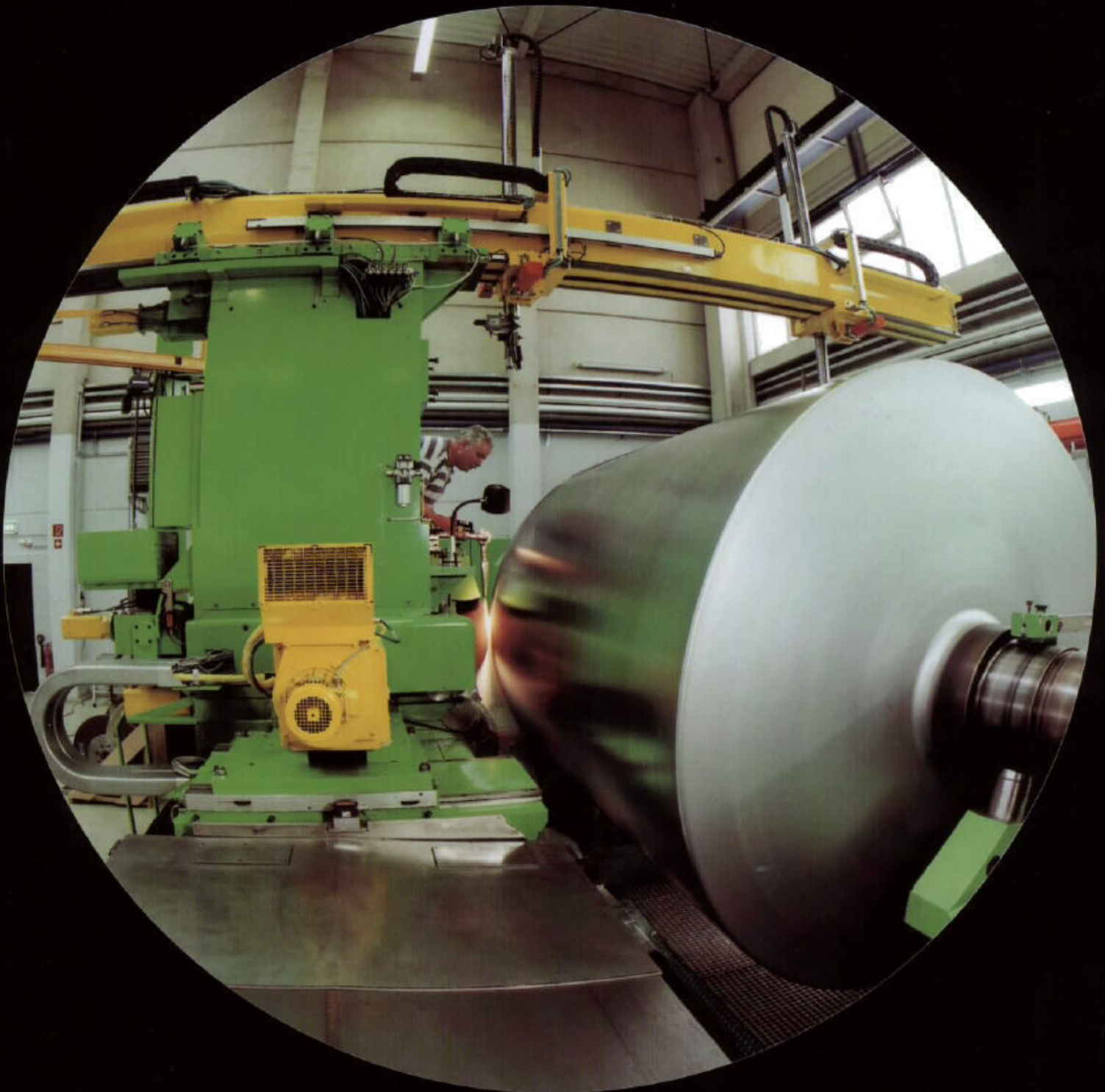




Wilhelm Bauer
Präzisions-Rundschleifen
Industriehartchrom



We have installed a new grinding machine capable of grinding rolls of up to 3.5 metres in diameter and 8 metres in length.

At first sight, this may not appear to be anything very special as machines of this size and even bigger already exist. Therefore, our wish is to present a brief overview of the particular features of this machine.

1. Thanks to modern CNC machining technology every imaginable roll profile can be produced. Tolerance deviation from set-point profile can be limited to 1 μm . The resulting profile is electronically recorded and printed.

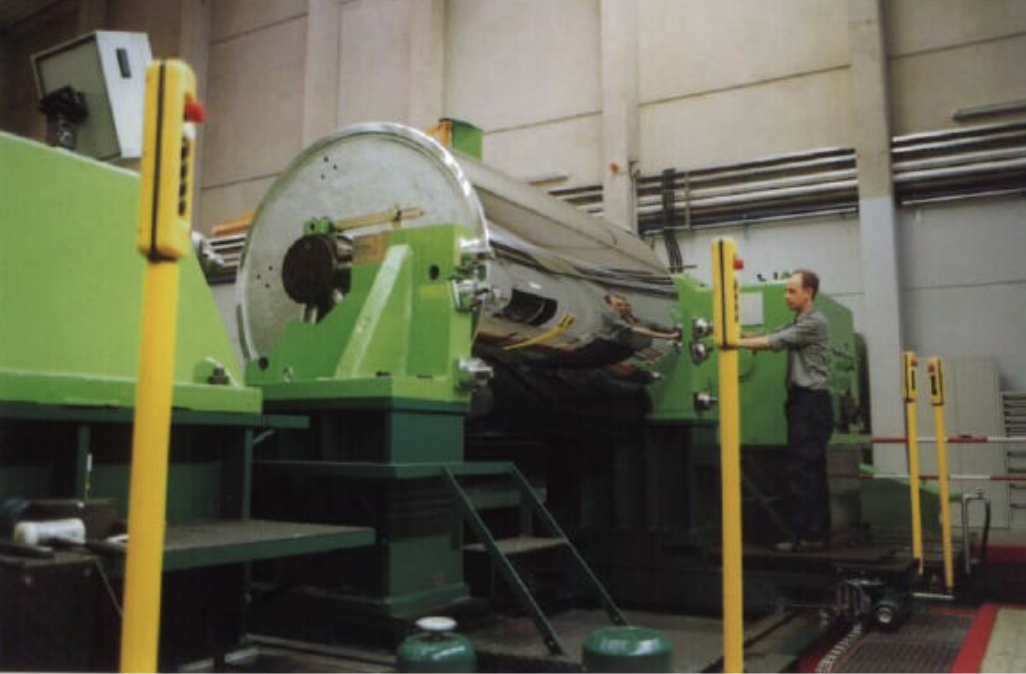
2. As we know that many rolls are now being hot ground we have equipped our machine with an efficient heating system allowing us to grind at any temperature between 20° C and 220° C. As with cold grinding, profile error can be limited to 1 μm and the grinding profile is electronically recorded and printed.

3. The problem of journal grinding, which involves the precision of roundness of the bearing seats, was eliminated effectively. The bearing seats receive an exact round and sized grinding irrespective of the roll diameter and their position to the faces of the roll. Only a perfect roundness of bearing seats allows best possible exactness of body shape and roundness.

4. The roll diameters, cold or hot, are recorded and printed via CNC measuring technology. Micrometer measuring bows are no longer used.

We are convinced that with the acquisition of this new grinding machine we have effectively rounded off our range of roll refinement machines.





Precision-grinding

Maximum dimensions
Ø 3.500 x 10.000 mm
40.000 kg

Hard chrome-plating

Maximum dimensions
Ø 2.000 x 5.500 mm
25.000 kg

Mirror finishing and mechanical matt finishing

Maximum dimensions
Ø 3.500 x 10.000 mm
40.000 kg



Our company's scope of activity embraces the mechanical and galvanic finishing of rolls.

At this point, we would like to provide an overview of technical modification of our machines and plants undertaken during the past three years in particular.

Progress makes no concessions to the technical and financial resources available to enterprises and whole regions. The recession during the early 90s highlighted this fact quite clearly enough.

It is only by concentrating on the essential features of its program that a business can ensure that the customer will continue to make use of its products and services in spite of unfavourable economic circumstances.

In our case, concentration on the core of our company program could only mean one thing, namely targeted improvement of the sophistication of our machines by employing cutting-edge electronic media to give the quality of our services the last word.

To this end, for example, we purchased a conventional roll grinding machine, grinding dimensions $\varnothing 500 \times 3000$ mm, which was basically capable of cylindrical grinding only.

Following the replacement of non CNC-compatible mechanical components with modern mechanisms and drive units, the next step was to integrate the control system. To do this, we selected a partner who understood, optimised and translated our ideas into user-friendly software.

The results are positive in every respect. We are now able to supply and document any shape of roll to the highest standards of precision. In this age of certification, it is within the interests and obligations of machine manufacturers and users to provide or at least retain EDP-created documentation of their products processed at our works.

The more successful the new system is, the sooner control systems must be checked to justify their continued use. The next modification of a larger machine, grinding diameter 1500 mm, is already in progress.

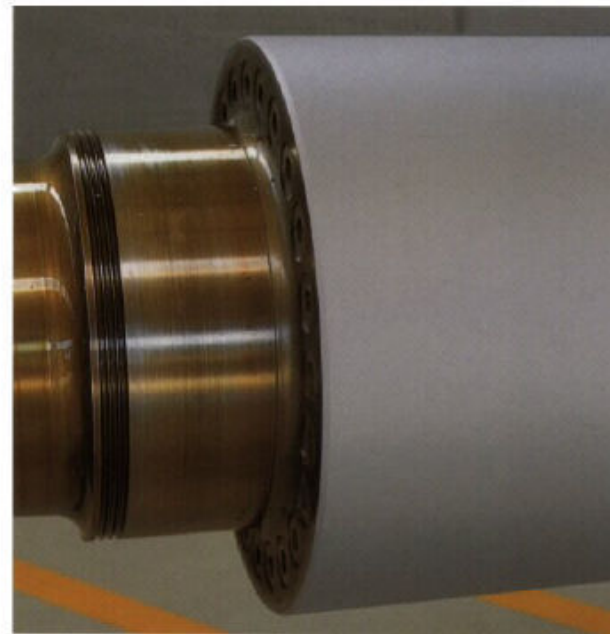
We are taking similar steps with our hard chrome systems for processing of rolls. Conventional direct-current power sources are being replaced with computer-controlled pulse-plating rectifiers to optimize the quality of the chrome plating and enable detailed documentation. Over 75% of our capacity has already been modified accordingly.



Analytical monitoring of baths

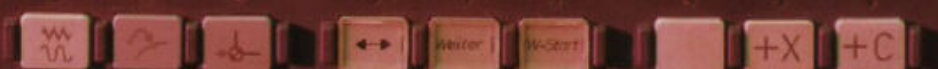
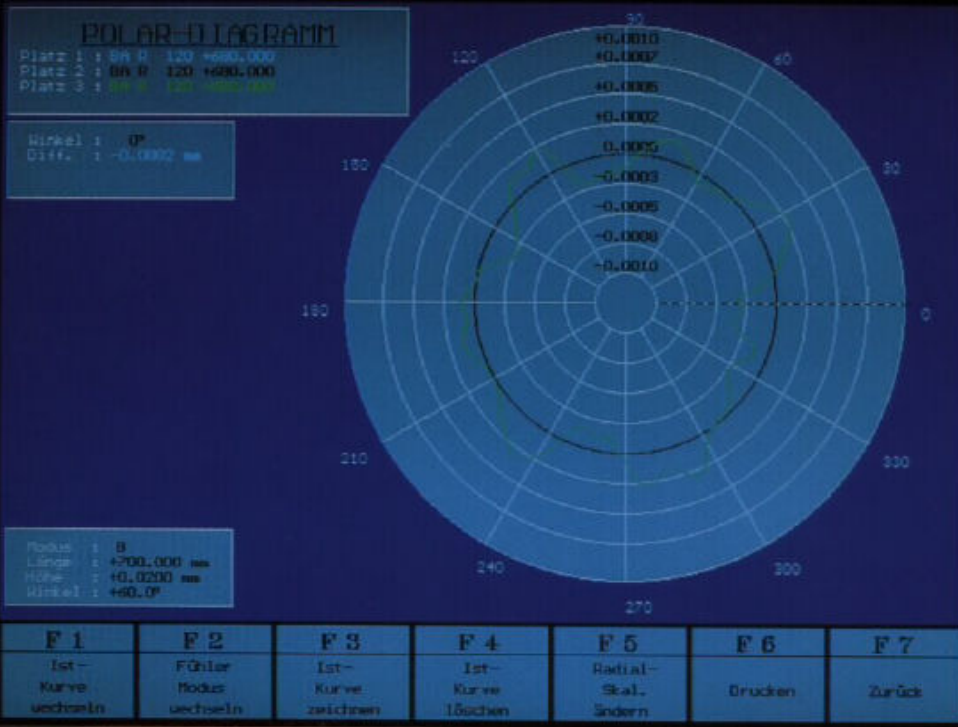


A probe registers shape and concentricity



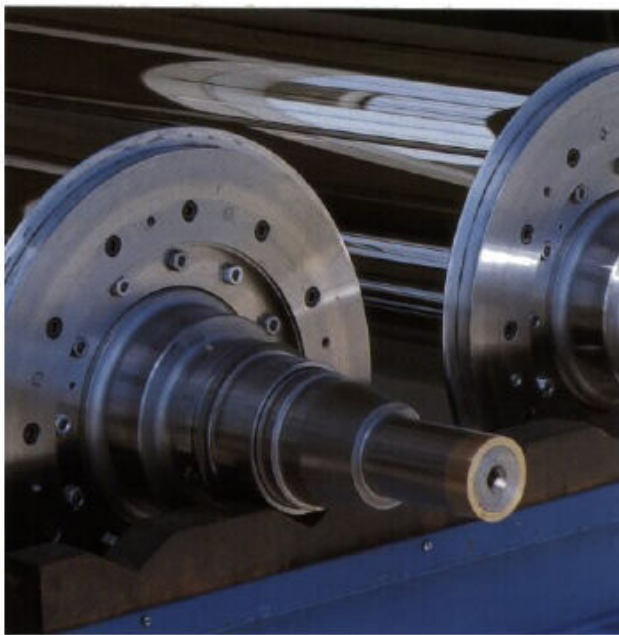
Matt chrome-plated calender roll

Through the eyes of the operator





Discussion of the results



Modern technology in two respects: rigid calender rolls with high-quality, multilayer hard chrome plating



Cooling roll on the grinding machine



A view of the workshop



Chrome bath control station



Shipment of rolls

Precision cylindrical-grinding

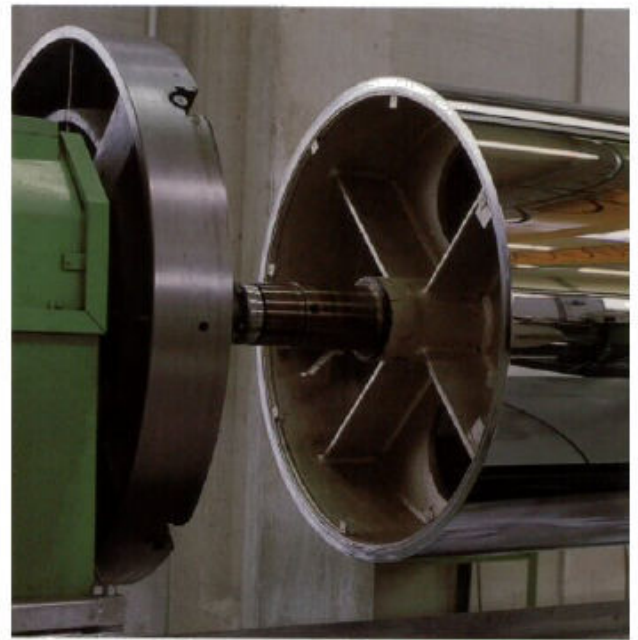
Maximum dimensions
Ø 3500 x 10000 mm
40000 kg

Hard chrome-plating

Maximum dimensions
Ø 2000 x 5500 mm
25000 kg

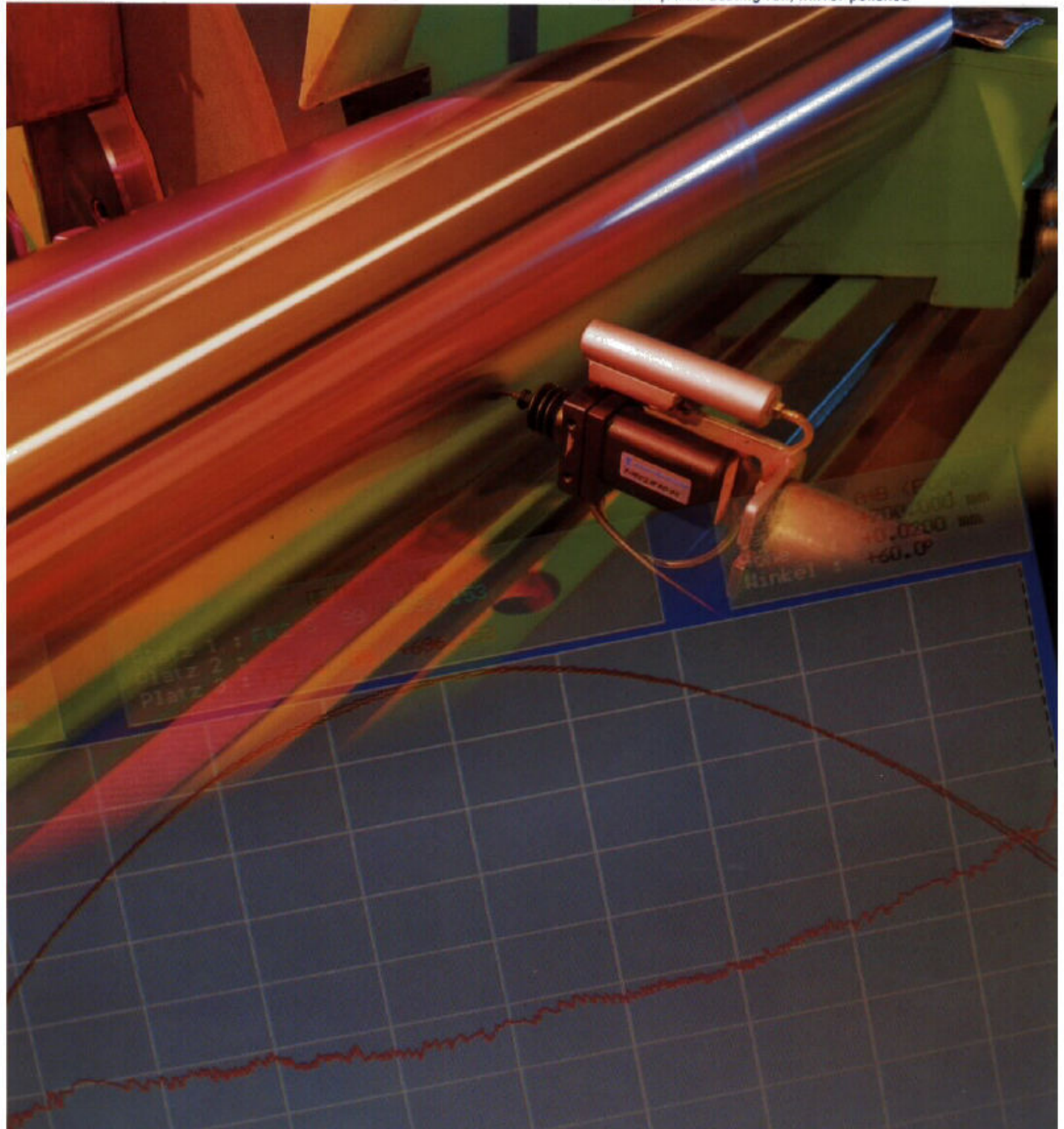
**Mirror finishing and
mechanical matt finishing**

Maximum dimensions
Ø 3500 x 10000 mm
40000 kg



Chrome-plated heating roll, mirror polished

Crowned roll





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