



# GRINDING MACHINES MODERNIZATION

New life to all Roll Grinders  
at the Pomini Tenova highest performance standards





Ternova is a worldwide partner for sustainable, innovative and reliable solutions in the metals and mining industries.

Building upon decades of experience, Ternova develop solutions that help mining and metals companies reduce costs, save energy, limit environmental impact and improve working conditions for their employees.

Ternova believes in on-the-job passion, and actively seek out professionals who truly love what they do. Their contributions to the business have helped make Ternova the industry-leading company it is today, and their passion is the driver behind the company business approach.

This approach can be summed up in four key pillars: Innovation, Reliability, Sustainability and Safety.

Through the Pomini brand, Tenova is worldwide leader in the design and supply of Roll Grinders for flat product rolling mills and Roll Texturing Machines (PDT™- Pomini Digital Texturing™), as well as of special machines for grinding of heavy components. The product range of Pomini Tenova embraces heavy, medium and light duty, fully automatic CNC roll grinders, CNC laser digital texturing machines for work rolls, fully automatic CNC roll loaders, chocking and de-chocking machines for all roll types, roll lathes, able to speed up grinding, handling and maintenance operations on rolls, and to guarantee the level of precision required by the most sophisticated rolling mills.

Pomini Tenova also supplies other equipment ancillaries such as washing machines, tilters for chocks, roll cooling systems, storage racks and other devices used in daily roll shop operations. In addition, it boasts extensive expertise in reconditioning, upgrading and fully automatic revamping of used roll grinders of any brands.

The constant pursuit of innovation in automation and machine integration for the rolling mill process combined with the precision, reliability and safety features that have always distinguished Pomini Tenova, provide our Customers with products that represent the highest level in texturing roll grinding worldwide.



## Modernization of Roll Shop Grinding Machines

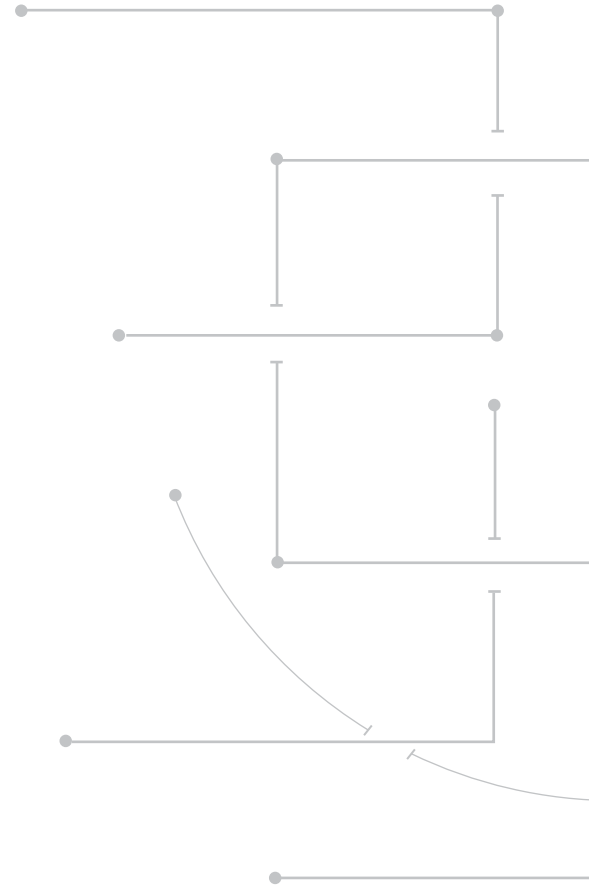
Upgrading an existing roll grinder means lower capital outlay without sacrificing performance and accuracy.

An existing machine can be upgraded mechanically and electrically to perform exactly the same tasks as the most modern roll grinding machines.

Any kind of obsolete Roll Grinder can be modernized by Pomini Tenova according to the Customer requirements and budget in order to improve the machine performance.

The activity extends to the modernization of competitors grinding machines to make them achieve Pomini Tenova's high performance standards (at the same level of new machines).

The Pomini Revampings include the latest technologies in the field of Roll Grinding, based on a successful supply of more than 700 machines in the world.



# MODERNIZATION OF ROLL SHOP GRINDING MACHINES

## ELECTRICAL REVAMPING



The electrical revamping of the machine always includes the replacement of the existing electrical cabinets with complete new ones including the latest SIEMENS components.

The CNC is suitable for crowning any type of symmetrical and nonsymmetrical, standard and non-standard profile as well as special shapes such as CVC, UPC, etc. The **CNC SIEMENS SINUMERIK ONE** is fully integrated with the programmable logic control (PLC) **S7 1500 S** and is equipped with industrial PC of last generation with **Windows 10 platform**, so that the CNC control programs and the PC-based special software developed by Pomini Tenova with the latest roll grinding technology can easily be integrated.

The PC is used to introduce and storage data, show on the monitor and print all the profiles and the other measured data, store help files and other documentation, exchange data with Level 2 through a network, etc.



The supplied Siemens electrical and electronical equipment, including the software, is fully tested before the shipment, both when the machine is completely revamped at Pomini Tenova Workshop, and when the machine is modernized at Customer's site.



## MODERNIZATION OF ROLL SHOP GRINDING MACHINES

### MECHANICAL REVAMPING

There are many advantages from revamping your current machine, including:

- ▶ No foundation reworking or new foundation required
- ▶ Re-use of existing equipment
- ▶ Lower capital investment, up to 40% only compared to a new roll grinder
- ▶ Shorter delivery times



Case by case Pomini Tenova evaluates the condition of any roll grinder. It is essential to perform a detailed mechanical survey of the mechanisms before starting any kind of intervention.

Based on more than 100 successful revamping projects supplied to a wide range of customers in the steel, aluminium and paper industries from 1984, Pomini Tenova is the best partner for evaluating the cost/benefits of technical improvements in terms of productivity and quality at reasonable cost.

### SECOND LIFE HAS STARTED AFTER MANY YEARS OF HARD WORK



| BEFORE: 72" x 26' Farrel Roll Grinder 1964

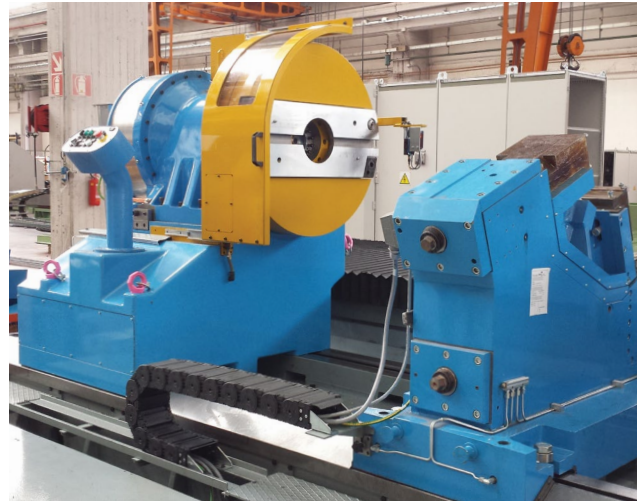


| AFTER: 72" x 26' Farrel Roll Grinder 2017

## SPECIAL ACCESSORIES TO IMPROVE YOUR GRINDING PROCESS

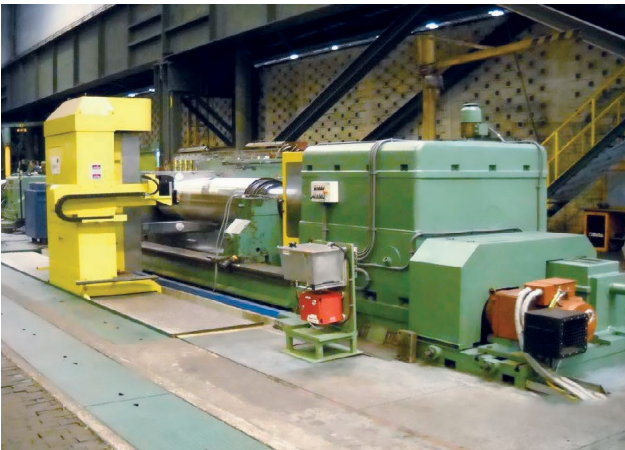


| Patented Independent Caliper



| Headstock with Torque Motor

The other special accessories developed by Pomini, such as for example the Independent caliper and the Eddy Current and Ultrasound detection device, will boost the productivity of the roll grinder and the quality of the ground rolls reaching the same tight tolerances and surface finishing of the new Pomini Roll Grinders



| Independent Caliper applied to a Competitor Roll Grinder



| Caliper for Paper Application



| Special Caliper Application on Farrell 72"



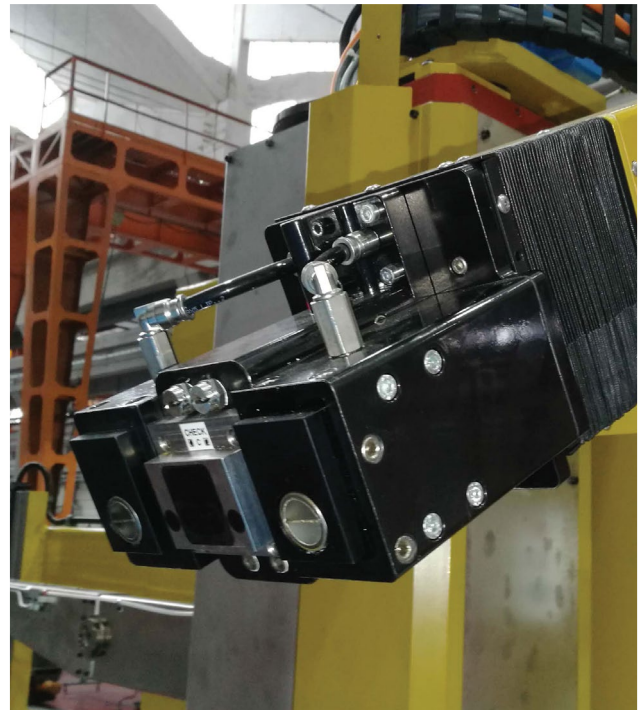
| Replacement Caliper Mounted on Independent Bed



## POMINI INSPEKTOR SYSTEM

The Pomini Inspektor System has been designed to:

- ▶ improve system performance by making sure smaller defects are detected with greater repeatability and
- ▶ reliability, faster and in more positions (e.g. deeper inside the roll)
- ▶ reduce hardware complexity and decrease the number of system circuit boards.
- ▶ use off-the-shelf standard components wherever possible
- ▶ improve roll surface quality through real time multi-sensor roll vibration analysis



Eddy Current inspection is carried out during the grinding cycle to detect surface-breaking cracks, bruises and voids caused by thermal and mechanical stress or mill accidents affecting the roll. Roll surface quality is a customer top priority and rolls known to be expensive, the Pomini Inspektor delivers a very high resolution to help operators identify roll surface defects immediately.

The test head consists of several sensors arranged in a continuous array. This eliminates the possibility of a gap between the area scanned by one sensor and the area scanned by the next one. The sensors have been designed and positioned to scan a wide contiguous strip. The system also measures absolute probe phase changes as well as amplitude changes, improving differentiation between different defect types.

Different frequencies can be selected via software to improve defect detection in different roll materials. A very small sensor array head, with two integrated distance proximity sensors, is used to reduce mechanical interference with chocks and enable 100% scanning of the roll table surface.







# Sustainable solutions for a green transition of metals

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