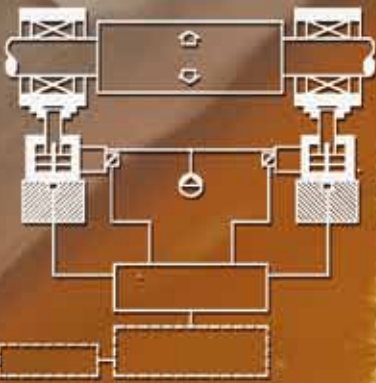


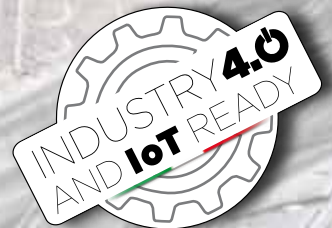
# HYDROGAP®

FULLY HYDRAULIC GAP POSITION CONTROL  
PLUS EDITION OR SMART EDITION

**PATENTED**



## SPEED & HIGH PRECISION



**COMERIO ERCOLE**

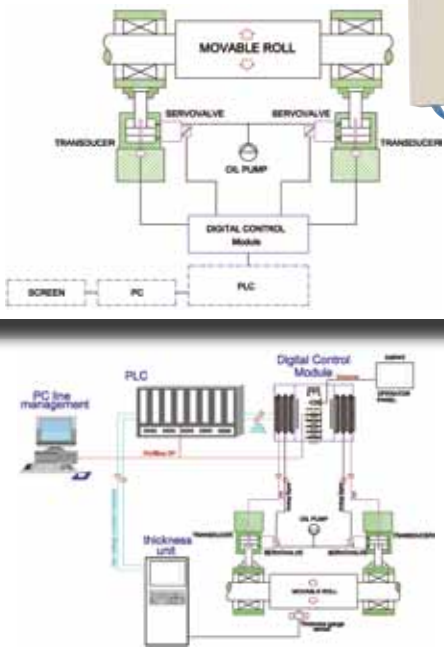
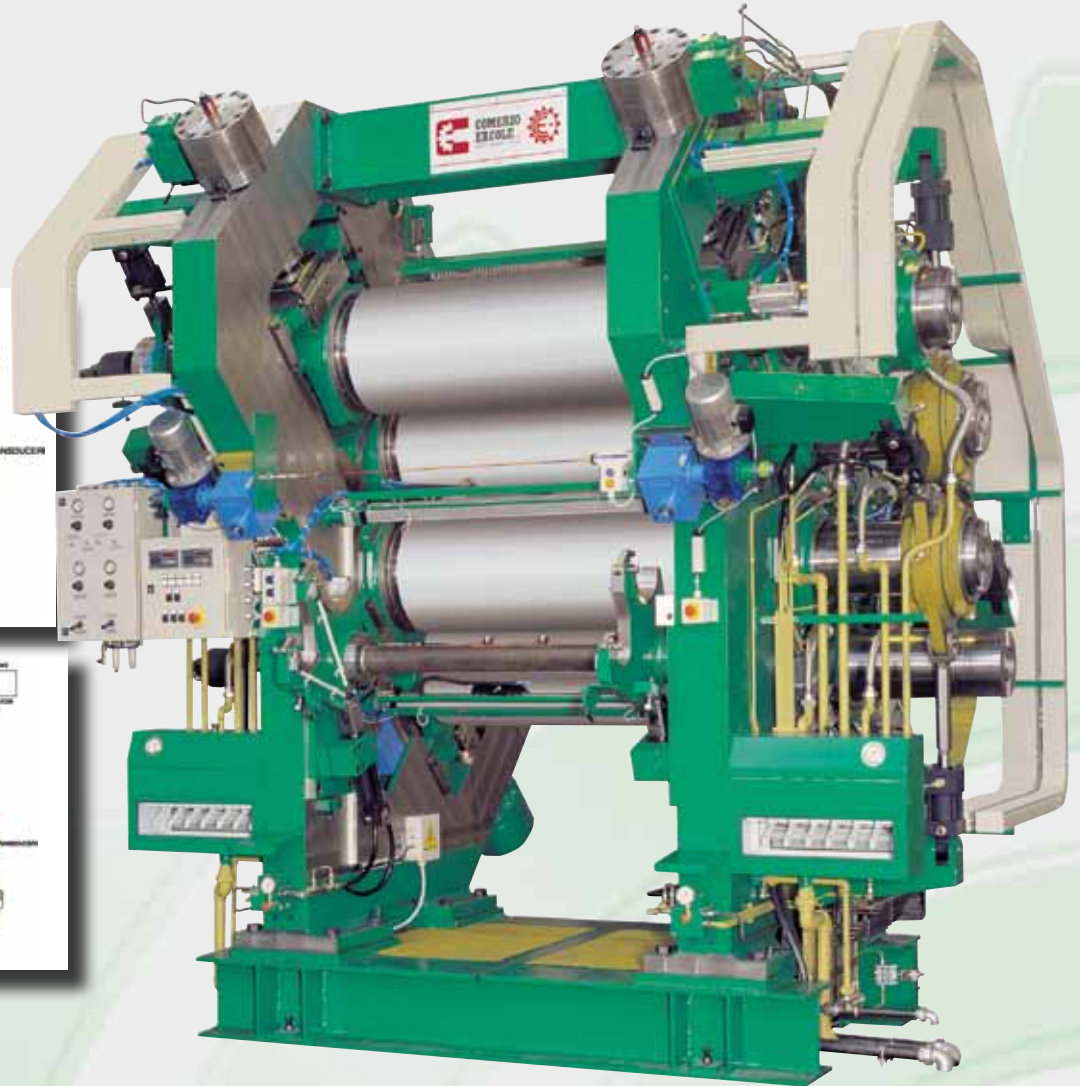
MECHANICAL CONSTRUCTIONS SINCE 1885 - ITALY



**HYDROGAP®** means “fully hydraulic gap **POSITION** control”. Two **PATENTED** versions are available, one for calendering process **PLUS** and a simplified one for roll mixing mill process **SMART**.



**HYDROGAP® PLUS** is a system where a digital axis controller directly controls the servovalves (high precision type) to the hydraulic actuators



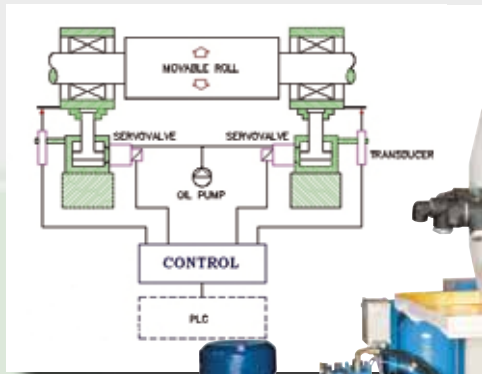
**HYDROGAP® PLUS** performances for **CALENDERING** process:

- Resolution 2  $\mu\text{m}$  \*
- Position repeatability better than +/- 2  $\mu\text{m}$
- Emergency opening speed: **10 mm/sec**
- Fast opening in case of overload
- Position accuracy for each bearing block better than +/- 5  $\mu\text{m}$
- Adjustment speed: **1 mm/sec** (adjustable)
- Feedback from a thickness measuring system
- Control of parallel roll displacement
- Position control through magnetostrictive sensors
- Fully digital control loop
- Field BUS connection: ETHERNET or PROFIBUS
- Simplified connection hardware /Easy data communication
- Calibration through USB interface

Technical performances comparison between electromechanical and fully hydraulic nip:

Notes	Electromechanical	Fully Hydraulic / HYDROGAP®
Emergency opening speed	2 mm/min	10 mm/sec
Operative adjustment speed	0.5 mm/min	1 mm/sec
	<b>NO</b> fast opening in case of overload	<b>FAST</b> opening in case of overload

\* Enhanced control system based on 0.5  $\mu\text{m}$  transducer resolution and linearity correction is available as option.



**HYDROGAP® SMART** performances for **ROLL MIXING MILL** process:

- Resolution 25  $\mu\text{m}$
- Position repeatability:  $\pm 25 \mu\text{m}$
- Emergency opening speed: **10 mm/sec**
- Fast opening in case of overload
- Position accuracy for each bearing block: **better** than  $\pm 100 \mu\text{m}$
- Adjustment speed: **1 mm/sec** (adjustable – available design up to 5 mm/sec as option)
- Control of simultaneous roll displacement
- Fully digital control loop
- Field BUS connection: ETHERNET or PROFIBUS
- Simplified connection hardware / Easy data communication
- Calibration through USB interface

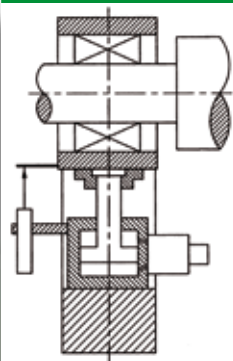
**HYDROGAP® MAIN TECHNICAL FEATURES** common to **CALENDERING** and **ROLL MIXING MILL** process:

- ✓ “**POSITION CONTROL**” of the roll at preset value;
- ✓ Maintaining of the set value, up to max preset value whatever is the separating force;
- ✓ Change of the set-point by the operator;
- ✓ Serial link connection to PLC or PC for data transmission;
- ✓ Connection to a network for line supervision;
- ✓ Increased operator and Machine safety and elimination of breaking disks.

**HYDROGAP® MAIN ADVANTAGES:**

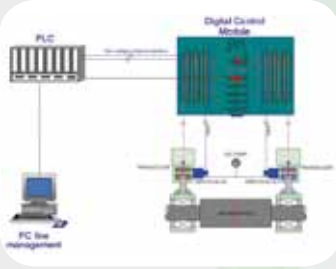
- **NO** wearing of mechanical parts
- **NO** mechanical clearances of moving parts
- Reduction of start –up times / Scrap reduction
- Cutting handling costs
- Easier maintenance
- High speed roll **positioning**
- **Fast** opening in case of emergency
- High positioning **repeatability**
- Protection of roll integrity – hard material
- Roll Emergency opening in case of power failure
- Operator **safety**
- **Cost saving**

Upon request **HYDRONIP®** device is available. **HYDRONIP®** is the HYDROGAP® technological and technical evolution introduced and patented by COMERIO ERCOLE for an high performance calendering process





Enhanced control system based on 0.5 µm transducer resolution and linearity correction is available as option



### HYDROGAP® PLUS

SPEED & HIGH PRECISION

HYDROGAP® PLUS performances for **CALENDERING** process:

- Resolution 2 µm
- Position repeatability **better** than +/- 2 µm
- Emergency opening speed: 10 mm/sec
- Fast opening in case of overload
- Position accuracy for each bearing block **better** than +/- 5 µm
- Adjustment speed: 1 mm/sec (adjustable)
- Feedback from a thickness measuring system
- Control of roll parallelism
- Fully digital control loop
- Field BUS connection: ETHERNET or PROFIBUS
- Simplified connection hardware /Easy data communication
- Calibration through USB interface

### HYDROGAP® SMART

SPEED & PRECISION

HYDROGAP® SMART performances for **ROLL MIXING MILL** process:

- Resolution 25 µm
- Position repeatability: +/- 25µm
- Emergency opening speed: 10 mm/sec
- Fast opening in case of overload
- Bearing block position accuracy **better** than +/- 100 µm
- Adjustment speed: 1 mm/sec (adjustable)
- Control of simultaneous roll displacement
- Fully digital control loop
- Field BUS connection: ETHERNET or PROFIBUS
- Simplified connection hardware /Easy data communication
- Calibration through USB interface



Choose the Original  
Choose Success!



PATENTED



# COMERIO ERCOLE

## MECHANICAL CONSTRUCTIONS



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