



MORGAN INTELLIGENT PINCH ROLL SELF-REGULATING CONTROL FOR SUSTAINED HIGH SPEED OPERATION

The patented Morgan Intelligent Pinch Roll (IPR) offers an innovative design and pioneering technology at a critical area of rod mill equipment that can increase mill production, improve yield and ensure consistent product quality.

Located at the end of the high speed wire rod mill section, the Morgan IPR and Laying Head together lay the hot rod in consistent loops on a cooling conveyor. The Morgan IPR is used to control the rolling stock at the head, body and tail end of the rolled product. Depending on material size and speed, different operation modes can be selected on the human machine interface (HMI).

The product structure includes a pinch roll mechanical frame, servo motor for control of open/close function, bed plates, rolls, material guides and unit piping.

FIELD OF APPLICATION

Long rolling mills

MAIN BENEFITS

With the market's fastest operating speeds, the Morgan IPR reduces oversized and distorted tail end rings. This ensures a well-defined and consistent ring pattern on the conveyor, and enables the rod to achieve uniform metallurgical properties and produce an excellent reformed coil package.

Customized together with a mechatronics package, the Morgan IPR provides repeatable, error-free operation, with head and tail end control of rolled products from 4 mm to 26 mm. It provides closed loop control of pinch force using servo control technology and pinch roll drive speeds.

This self-regulating system minimizes user input and set up with monitoring and controls managed through an easy-to-navigate HMI. The mechatronics package can be fully integrated into the standard Primetals LR solution for the rolling mill.



Traversing pinch roll between water boxes



Pinch roll at laying head

PRODUCT FEATURES

Built-in intelligence for repeatable, error-free operation

High quality produced at market's fastest operating speeds

Durable wear components minimize production interruptions

Flexible options available, all easily controlled with mechanical packages

TECHNICAL DATA

Closing time	0.1 to 0.15 sec
Closing time (Repeatable)	+/- 5 ms
Design speed	150 m/s
Operating speed	> 120 m/s
Product sizes	4.0 - 26.0 mm plain round
Operating modes	Full, Head, Body and Tail pinch modes

SERVICES

- Integration engineering - customized solutions
- Erection advising - planning and supervision of installation ensures system performance
- Commissioning - expertise provided for start-up and training on system operation
- Maintenance - services available, but little required
- Spare parts - customized program minimizes inventory and controls cash flow

OTHER RELATED PRODUCTS

- Morgan High Speed Laying Head
- Morgan Water boxes
- Primetals Technologies EA LR Enhanced Temperature Control System
- Morgan Vee No-Twist® Mill
- Morgan Reducing/Sizing Mill (RSM)
- Morgan Stelmor® controlled cooling conveyor
- Reform stations

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