VISHAY PRECISION GROUP

Product Overview

Rider Roll System

BLH • Nobel Weighing Systems

Brands of VPG Process Weighing

BLH Nobel Elektronik

www.weighingsolutions.com

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Control the Rider Roll with Direct Force and Position Measurement

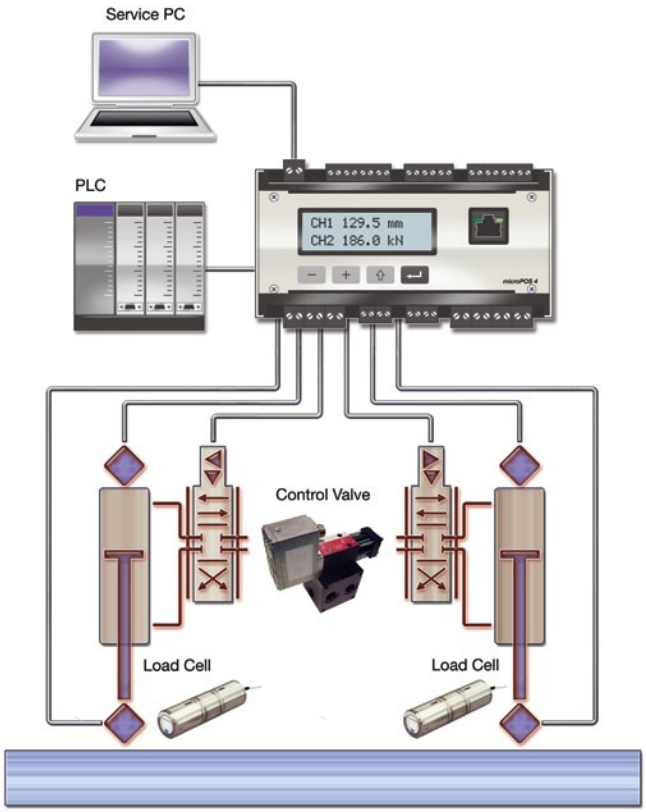
Nobel Weighing System's Rider Roll System precisely controls linear NIP force on winders and slitters by measuring the direct force and direct position of both rider roll cylinders. High-accuracy web tension load cells provide exact force measurements to the microPOS servo hydraulic position controller. Cylinder position sensor feedback closes the loop, enabling the rider roll to maintain optimal force and speed as paper feeds into the winder or slitter.

Inferential-type hydraulic control systems typically degrade as machinery ages, thereby introducing extraneous friction and vibration forces. If not accounted for, these forces cause roll kick-outs and/or inferior-quality rolls.

RRS Systems Revitalize Aging Equipment

RRS Systems give new life to aging machinery by providing many key benefits:

- Prevent roll kick-out with integral vibration detection. (Eliminating a single kick-out more than pays for the RRS System.)
- Eliminate roll defects with precise, repeatable NIP force control on every run, with any kind of paper.
- Easily select and upload known force curves for different qualities of paper. Uploaded application data controls NIP force, operating speed, and "soft" contact between the core and paper roll during splicing.
- During the reeling phase, linear NIP force is maintained as the diameter increases to ensure perfect density on the finished roll.
- Operators can enter or alter control parameters dynamically at the instrument front panel, or remotely from a PC or PLC device.



Nobel Weighing Systems delivered the first two-channel Rider Roll System in 1974. Now the fourth generation system is in production.

Total Customer Service

At Nobel Weighing Systems, we have a high level of expertise in rider roll control systems. This includes expertise in the entire production process, as well as in installation and technical support:

- We custom-fit each mechanical installation.
- We design hydraulic schedules and calculate component dimensions.
- We ensure that all installed machinery is fully operational.
- We offer external support and servicing.

Service and Maintenance Equipment

The servoTERM program is used in all installation and servicing work. This program collects all necessary information on force and position. Operational configurations are easily carried out using customized menus. The servoTERM program provides a complete overview of system status.

Assembly Options

Mounting Load Cells in Cylinders

Load cells mounted in the rider roll cylinders measure true resultant force without adding the mechanical friction force introduced by inferential hydraulic systems.

Mounting Load Cells under Rider Roll

Force (pillow) block mounting under the rider roll beam also yields true resultant force measurement. Mechanical friction force from cylinders and guides is eliminated from the load cell readings. Optimal force measurement ensures constant, accurate, and linear NIP force control on the rider roll.

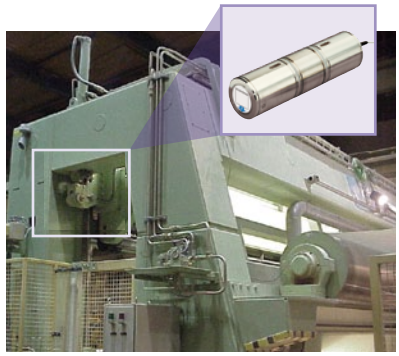
Electronically manipulated modulating control valves govern the pressure and flow of the hydraulic cylinders. Should vibration begin, electronic flow control automatically “freezes” the control valve to prevent roll kick-out. Simple pressure-control systems do not have the ability to freeze/maintain control valve pressure and leave the winder vulnerable to a kick-out.

RRS system electronics are digitally configured and optimized for rider roll control. The system is user-friendly from both installation and maintenance points of view.

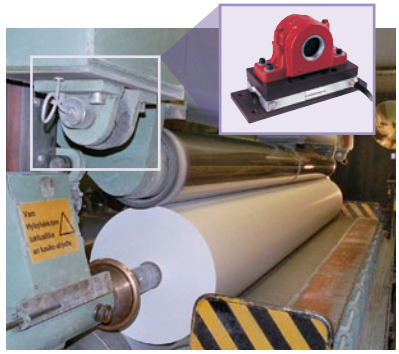
In addition to improved roll quality, the RRS offers advantages in maintenance as well as increased durability. All mechanical movement is servo controlled, ensuring that acceleration and deceleration occurs smoothly without exerting undue stress on machine parts.

The system can be easily installed on both new and existing machinery—including winders with adjustable paper width and rewinders.

We offer assistance and support in both planning and installation.



Load cells mounted in cylinders



Load cells mounted under rider roll

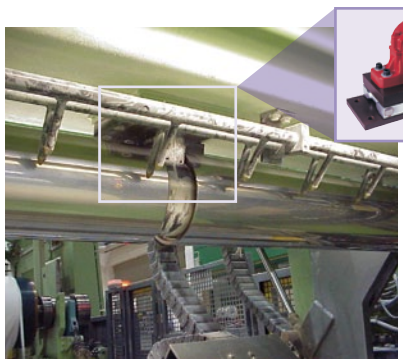
Direct Measurement Advantages

Safe, Reliable, User-Friendly

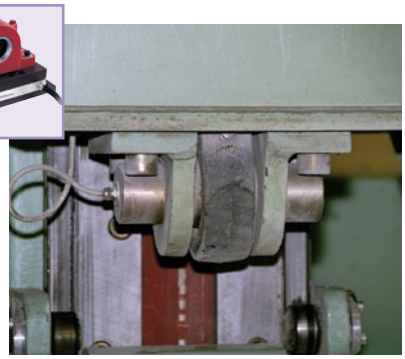
The ability to measure direct force and direct position provides controlled parallel contact with the roll core. Soft, precise core contact eliminates deformation in the core and in the finished paper roll. Using load cells to monitor cylinder vibration significantly minimizes the risk of roll ejection. In the event of vibration, load cell faults, or mechanical friction, an alarm is sent to an external unit.

Parameters are easily configured on a standard PC and all settings can be saved to disc. The simple calibration of parameters made possible by RRS microPOS allows for quick installation. The system menu gives a status report of the system during operation or maintenance. The system is programmed for single-channel force control and pressure force control systems.

This allows for optimum control of the rider roll’s linear force.



Load cells in the bearing bracket



Load cells in cylinder attachments

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