



VACUROLL CLEANING AND DRYING SYSTEM



EFFECTIVE REMOVAL OF DIRT AND
COMPLETE EDGE-TO-EDGE DRYING



Spraying Systems Co.[®]
Experts in Spray Technology



ACHIEVE TOP QUALITY STRIP THROUGH BETTER CLEANING AND DRYING

BENEFITS

- The VacuRoll system quickly and efficiently removes dirt, debris and oil without scratching
- Unique vacuum process dries strip right to the edge and eliminates messy run-off
- Operation at high line speeds – up to 5200 ft/min (1585 m/min) – boosts production
- Lower operating costs than conventional systems – the VacuRoll system uses compressed air for just 60 seconds during system cleaning. Compressed air is not used for drying. The minimal use of compressed air eliminates the need for hoods and leaves all air for critical mill processes while in operation
- Low-noise operation
- Environmentally safe
- Minimal downtime – system is cleaned in place. Plus, the VacuRoll system operates longer without routine maintenance than other systems
- Wide range of configurations available – system is suitable for use on most cold strip and process lines; usually replaces existing equipment with minor modifications to the physical space

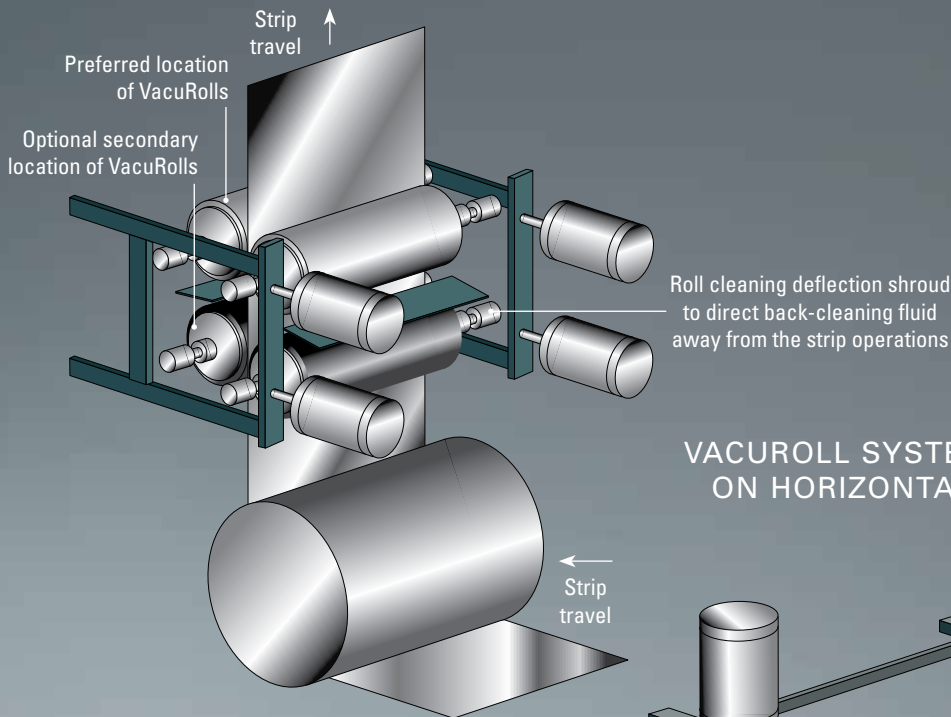
Annual maintenance costs and operating costs for the VacuRoll system are typically

US\$200,000 to US\$300,000 less

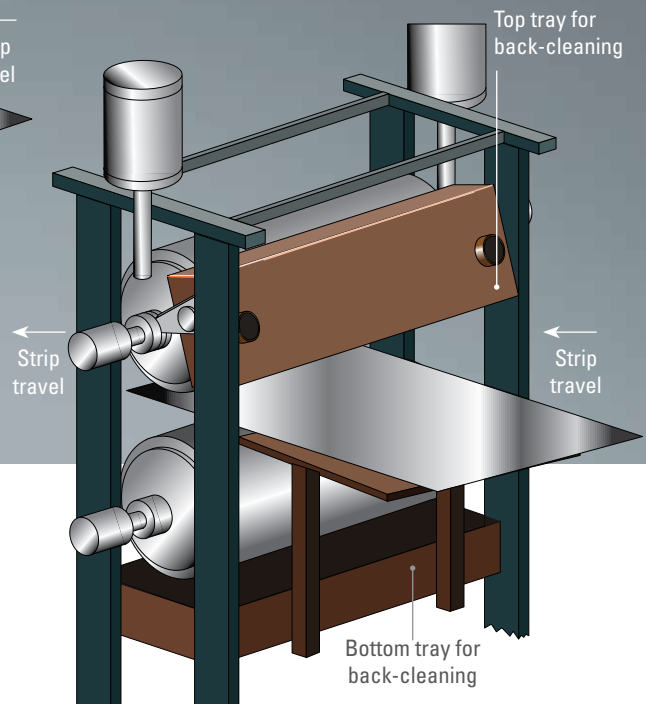
than air blow-off systems that use high volumes of compressed air and require frequent header replacement.

SEE THE VACUROLL CLEANING AND DRYING SYSTEM IN USE: spray.com/vacuroll

VACUROLL SYSTEM INSTALLED ON VERTICAL PASS LINE



VACUROLL SYSTEM INSTALLED ON HORIZONTAL PASS LINE



TYPICAL INSTALLATIONS AND APPLICATIONS

VACUROLL SYSTEM: IDEAL FOR A WIDE RANGE OF OPERATIONS

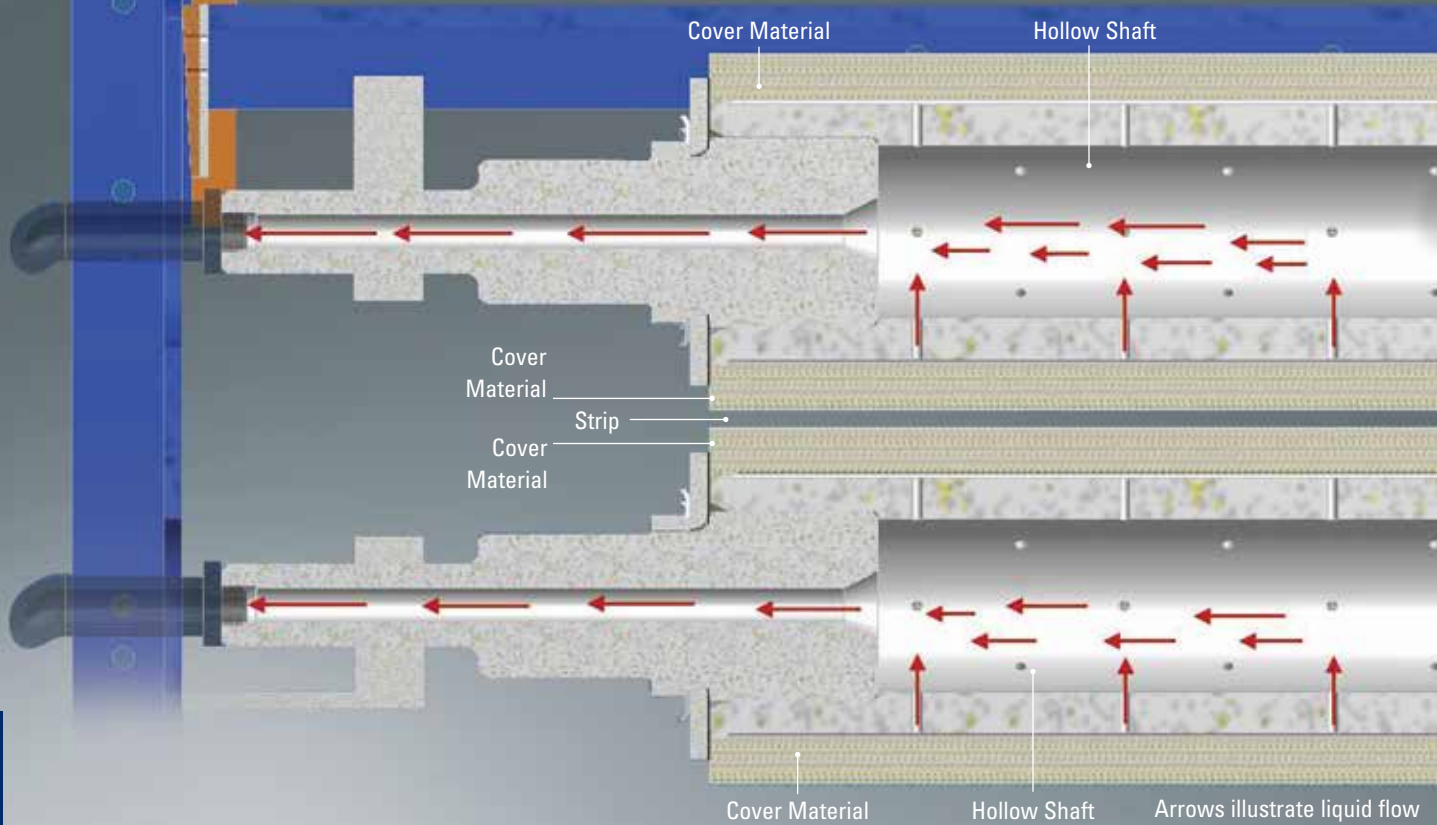
For quick and efficient removal of dirt, debris and oil from moving metal strip, the VacuRoll system is unsurpassed. The system thoroughly cleans and dries strip without scratching using a unique vacuum process. The VacuRoll system is versatile enough that it is suitable for use on any type of metal strip in nearly every mill environment.

VacuRoll systems are customized based on the contaminants to be removed and other operating conditions. Standard VacuRoll systems are designed to create an even vacuum along the full length of the roll including the edges, but can be configured to concentrate the vacuum near strip edges.

IDEAL FOR:

- Cold mills
- Galvanizing lines
- Temper mills
- Paint lines
- Z mills
- Processing lines
- Cleaning lines
- Slitting lines
- Continuous annealing lines





VACUROLL CLEANING AND DRYING SYSTEM: HOW IT WORKS



The rollers are hollow steel shafts with several keyways of different sizes and shapes. The shafts are covered with a material consisting of many paper-thin disks that are pressed into a semi-solid formation.

A vacuum pump is attached to one or both ends of the VacuRoll shaft.

As fluid is removed from the strip, it passes through the cover. Dirt and solid contaminants are pulled into the roll cover away from the moving metal surface to prevent scratching of the strip. The fluid continues to flow through the hollow center of the roll shaft to the vacuum pump and then is returned to the system for re-use.

The roll cover is cleaned one to three times per day or after a pre-determined number of coils. A fluid, typically the fluid being removed, is pumped through the roll from the inside to remove dirt and solids from the roll cover. A small amount of compressed air is then used to accelerate the cleaning process. The fluid phase and air phase last approximately 60 seconds and can be repeated as necessary to ensure the covering is completely clean.

The rolls are typically reground and recovered at four- to six-month intervals and are replaced after four regrindings.

COMPARING STRIP DRYING OPTIONS

	VacuRoll System	Air Blow-Off	Wiper Bars	Wringer Rolls
Cleaning Effectiveness	Vacuum process removes dirt, contaminants and oil at high and low line speeds	Adequate removal of dirt and debris at low line speeds; staining can be caused by moisture in the air, poor edge drying and mist re-depositing on strip surface	Adequate removal of dirt and debris when wipers are new; effectiveness compromised at higher line speeds	Poor performance at strip edges
Strip Damage/Scratches	Absorbs metal slivers into the roll cover away from strip surface	None	Likely to scratch because metal slivers embed in wiper bars	Skidding along strip surface and metal slivers likely to embed as roll covers harden and wear
Drying Effectiveness	Up to 98% edge-to-edge even on tread plate or embossed surfaces	Varies – fluid spills off edges and re-deposits on strip and equipment	Varies – fluid passes through tears in bar material	Performance diminishes as rolls wear, frequent width changes or heavy gauge
Noise	Low – similar to background noise	High – similar to loud siren; operator discomfort	None	None
Operating Cost	Low – no compressed air required for strip cleaning/drying; vacuum pump requires little energy; periodic roll regrinding and roll cover replacement	High consumption of compressed air; frequent replacement of headers after wrecks	Frequent replacement of wipers – several times per shift	Frequent roll cover replacement
Maintenance	Low – roll shafts are cleaned in place; cover remains in near-new condition with high coefficient of friction to ensure proper roll tracking	Frequent maintenance required on compressors and headers	High – wipers wear quickly and require frequent replacement	High – roll covers wear quickly and require replacement
Environmental Issues	Fluid from vacuum is discharged in a controlled manner; fluids may require removal from contained air stream	Mist caused by compressed air use requires exhaust hood and other safety equipment	None	None
Purchase Price	Higher, but low operating costs result in eight-to twelve-month payback; ongoing annual savings	Headers low cost; compressors high cost	Moderate – directly opposing bar clamping frame required	Moderate – roll support framework for higher loading forces required



VACUROLL CLEANING AND DRYING SYSTEM SPECIFICATION SHEET

To determine if the VacuRoll system is suitable for your strip or process line, complete the information below and fax it to **1.888.95.SPRAY**. This form is also available at www.spray.com/vacuroll.

Name: _____ Title: _____

Company: _____

Address: _____

City: _____ State/Province: _____

Zip/Postal Code: _____ Country: _____

Telephone: _____ Fax: _____

Email: _____

Application (please describe): _____

Operating requirements (indicate units)

Strip width: Min _____ in or mm Strip width: Max _____ in or mm

Strip gauge: Min _____ in or mm Strip gauge: Max _____ in or mm

Product type(s): _____

Shape considerations (describe all that apply): _____

Waviness (describe): _____

Turned edges (describe): _____

Excessive roughness (describe): _____

Strip speed: Normal _____ ft/min or m/sec Strip speed: Max _____ ft/min or m/sec

Wrap angle: Min _____ degrees Wrap angle: Max _____ degrees

Max strip tension at min width: _____ lb or N Max strip tension at max width: _____ lb or N

Fluids to remove and amount: _____ mg/ft² or mg/m² (side one)

Fluids to remove and amount: _____ mg/ft² or mg/m² (side two)

Contaminants to remove and amount: _____ mg/ft² or mg/m² (side one)

Contaminants to remove and amount: _____ mg/ft² or mg/m² (side two)

Fluid supply temperature: _____ °F or °C Pressure: _____ psi or bar

Strip temperature: Normal _____ °F or °C Strip temperature: Max _____ °F or °C

Existing method of cleaning: _____

Problems: _____



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