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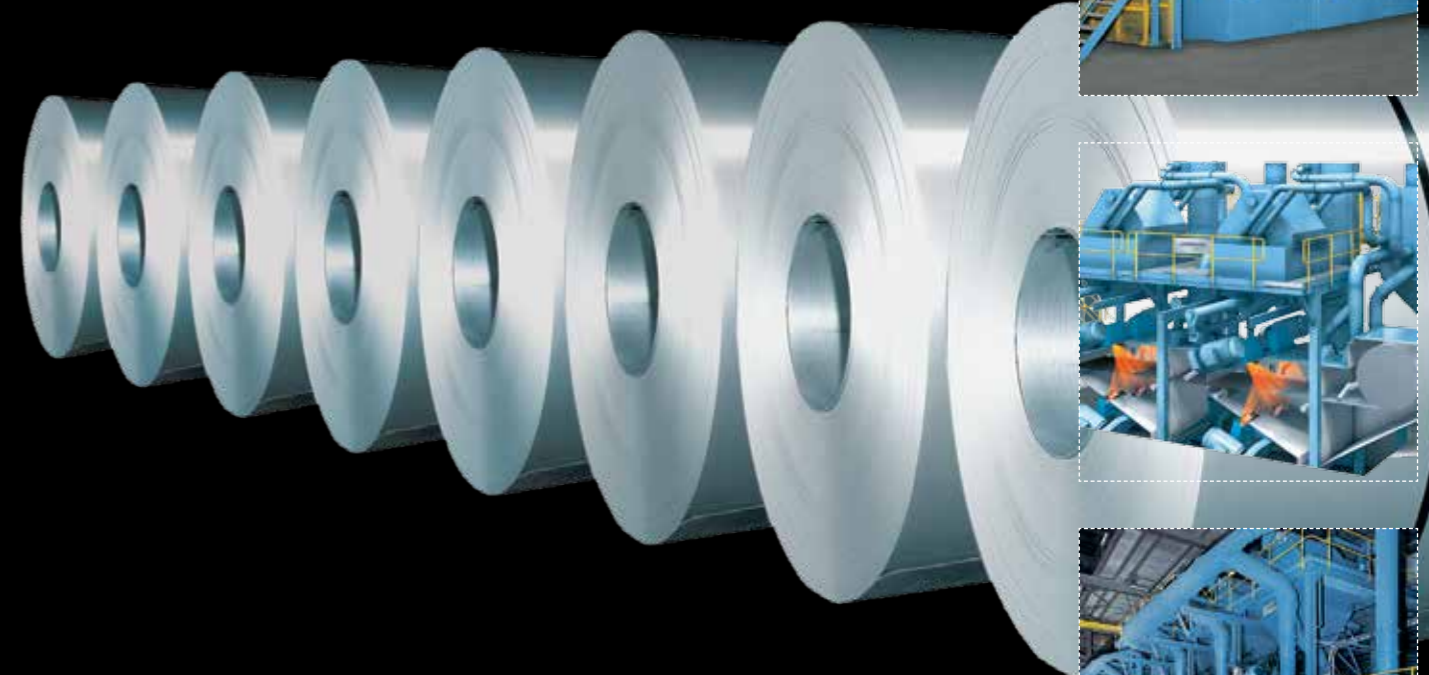
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Strip blast cleaning systems HB



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Strip blast cleaning systems



Descaling of narrow-, medium-, and wide steel strip

Mechanical pre-descaling and final chemical surface treatment of hot-rolled stainless steel strip (Cr-Ni, titanium strip) and Si-alloy strip are almost exclusively carried out in integrated processing lines that combine annealing, cooling and mechanical descaling.

Wheelabrator strip blast cleaning systems are renowned in this field and offer clear benefits:

- Reliable and economical operation resulting in a high degree of surface cleanliness
- Ecologically desirable blast cleaning. When treating stainless steel strip, combined blast cleaning systems allow for shorter pickling periods at lower cost and the use of less aggressive chemicals for the pickling baths

- Maximum utilisation of the installed blast cleaning power assures a continuous and high descaling efficiency and consistent abrasive impingement. This results in strip surface finishes of superior quality (Sa 2-2.5 ISO 8501-1 standard; depending on requirements)
- Wheelabrator strip blast cleaning systems are also used for carbon steel

During the different processing phases, Wheelabrator blast cleaning systems can be adjusted to fit specification. The adjustment will be made by regulating the abrasive throughput rate, by varying the abrasive throwing speed or the breadth of abrasive impingement. This guarantees maximum power utilisation, and the most efficient use of resources.

The equipment is equally suitable for continuous as well as for push-pull pickling lines.

Specific surface finish requirements can be met by operating several machine modules in sequence. Cold-rolled steel strip can pass through the system without blast cleaning.

Machine design and mode of operation



High-performance strip blast cleaning system equipped with 24 blast wheels for strip widths of up to 2100 mm



Blast cleaning cabin of HB-4-Systems



Wide strip and narrow strip after blast cleaning

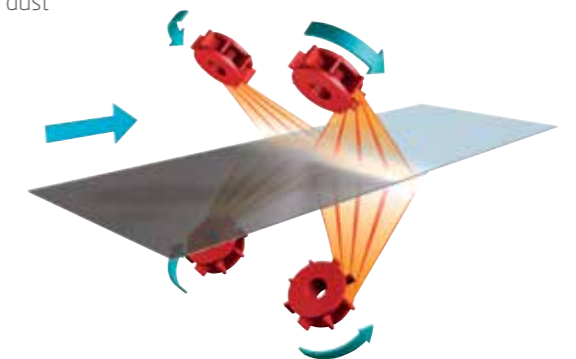
The machines consist of self-contained and can be installed with or without foundation pit.

Structural features and sub-assemblies

- Blast cleaning cabin made of hard manganese steel: Four blast wheels for each module, two for the upper side and two for the underside of the strip. Rubberised rollers located at the entry and exit sides of the blast cleaning cabin serve to support the strip
- Abrasive removal device: After each blast cleaning cabinet, a compressed air blower removes abrasive residue from the upper side of the strip and returns it to the abrasive circulation system for re-use

- Abrasive return and reconditioning system with pneumatic separator: A pneumatic separator cleans the circulating abrasive. Aligned to consumption, new abrasive is supplied. As a result, the operating mix and blast power are constantly maintained
- Dust extraction system: Blast cleaning and abrasive removal cabinet, circulatory system and separators are connected to the dust collection system

The strip roll-out can be straight or run diagonally upwards, depending on the arrangement of the module groups and the subsequent pickling operation.



Horizontal medium- and wide strip blast cleaning



Operating Principle

These systems are designed for transversal blast cleaning. Each module contains four blast wheels having a maximum throwing speed of 78 m/s. The individual modules run in sequence. In this configuration, the systems obtain a strip passage speed of up to 150 m/min.

The blast wheel set up can be regulated to obtain full coverage of the strip width, by controlling the blast pattern and continuous maximum abrasive impingement.

The staggered position of the blast wheels prevents blasting interference.

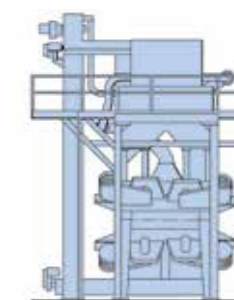
Blast cleaning power remains constant regardless of the strip width. Only strip passage speed is adjusted based on the width of the strip.



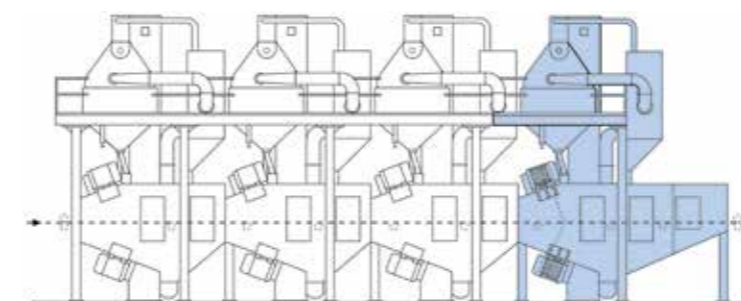
Technical specifications

Medium-/Wide strip machines		HB-4/1600 module	HB-4/2100 module
Strip widths	mm	600-1600	1550-2100
Speed of passage	m/min*	ca. 20	ca. 15
Blast wheels		4	4
Capacity per wheel	kW	90	90
Abrasive throughput rate/wheel max.	kg/min	1200	1200
Dimensions			
Length	mm	6500	6500
Width	mm	8000	8500
Height	mm	8250	8250
Power requirement (without dust extr.)	kW	490	490
Dust extraction capacity	m³/h	22500/25000**	30000/33000**

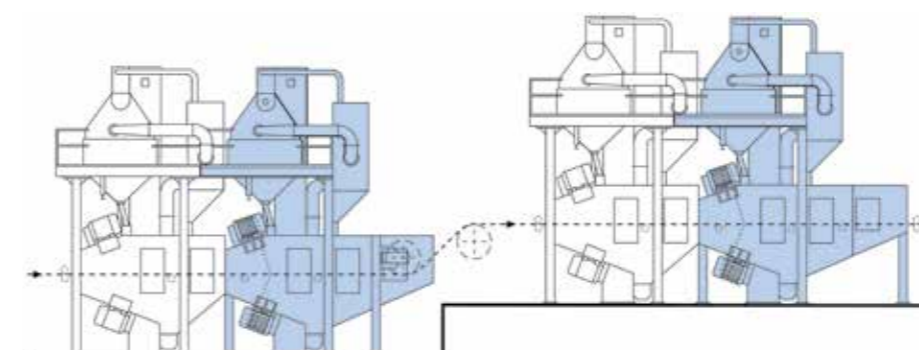
More modules can be added to extend the blast cleaning system. The technical specifications indicated refer to each module.
*Exact speed referring to specific strip material, strip widths, type of scale, and surface finish will be indicated upon request.
** Module with straight outlet



View of a strip blast cleaning system (HB)



Arrangement of 4 modules with straight strip exit



Strip blast cleaning systems (HB) in a module system (examples)

HB-4	□
HB-2x4	□ □
2x HB-2x4	□ □ □ □
3x HB-2x4	□ □ □ □ □ □
HB-3x4	□ □ □
HB-2x4 / HB-3x4	□ □ □ □ □ □
2x HB-3x4	□ □ □ □ □ □ □ □
HB-4x4	□ □ □ □ □ □ □ □

More combinations and larger groups are possible according to requirements.

Horizontal narrow strip blast cleaning systems



Integrated horizontal narrow strip blast cleaning machine HB-4/600 descaling hot-rolled steel strip of up to 600 mm wide for the production of tubes; speed of strip passage approx. 30 m/min (image left)

Narrow strip blast cleaning machine equipped with 4 blast wheels for upper side (2 wheels) and underside (2 wheels) of the strip. The blast wheels can be operated at different speeds. The blast cleaning cabin can be adapted to suit different strip widths. A strip width indicator assists in repositioning the blasting stream. (image right)

Narrow strip machines		HB-4/600
Strips widths	mm	600
Blast wheels		4
Capacity per wheel	kW	45
Abrasive throughput rate/wheel max.	kg/min	550
Dimensions		
Length	mm	5200
Width	mm	4500
Height	mm	6000
Power requirement (without dust extr.)	kW	230
Dust extraction capacity	m ³ /h	10000

Speeds of passage for specific material, strip widths, scale type and surface quality will be indicated upon request.

Operating principle

This system is designed for longitudinal blast cleaning from 4 blast cleaning wheels at a maximum throwing speed of 78 m/sec. The blast wheels are inclined to the strip plane at an angle to prevent blasting interference. The optional abrasive throwing angle fully converts the installed power into descaling force. All blast cleaning wheels can quickly and automatically be adjusted to suit a new strip programme, assuring the best possible use of the blast stream.



Quality is evident in the smallest detail



Three strip descaling machines HB-2x4/1600 operating in sequence



Safe operation, simple maintenance

The design concept of the blast cleaning system transports the strip without damaging the surface. Thorough abrasive cleaning and complete dust extraction render the strips leaving the machine cleaned. Simple, but highly effective sealing elements prevent stray abrasive from interfering with the machine operation.

Large service doors and the special structure configuration permit easy access for inspection and maintenance work. All blast wheels are easily accessible for periodic check-ups and replacement of wear parts or sub-assemblies. Components with close tolerance allow fast removal and installation of spare parts.

Original spare and wear parts of Wheelabrator materials and workmanship are recommended to keep the blast cleaning system in perfect operating condition. The blast cleaning system can be run without operator attendance and only requires periodic inspection.

Savings in production cost

Integration in existing production lines is possible without major modification work. Optimum utilisation of the blast cleaning power covering the whole width of the strip helps to obtain a high degree of cleanliness after processing and can significantly reduce final pickling costs.

Wheelabrator blast wheels

Wheelabrator blast wheels are renowned for high capacity and maximum energy efficiency. These blast wheels come in various power ratings for a high degree of flexibility.

The amount of abrasive can be adjusted from the operator panel. The abrasive is mechanically pre-accelerated and delivered to the blast wheel in a continuous stream. This ensures optimal power usage from the drive motors. High wear resistant materials ensure the maximum service life of the blast wheel. Unique design features facilitate the rapid and simple replacement of wear parts.