



SURFACE PREPARATION

PLATES, PIPES,  
PROFILES AND  
STEEL CONSTRUCTION



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 **AKYAPAKUSA®**  
METALWORKING TECHNOLOGIES



# SHOT BLASTING MACHINE FOR PROFILES AND STEEL CONSTRUCTION

The Shot Blasting System produced by Akyapak, is a completely hermetic machine for cleaning welded structural shapes, profiles, bars, plates, steel strips and pipes according to the needs of each customer.

The four lines of equipment that we produce are the PER, PL, PER-I and EST.

In the PER and PL lines the blast wheels are located at 90 degrees from the parts pass-line.

In the PER-I and EST lines, they are located at different abrasive projection angles.

The abrasive is propelled by centrifugal turbines. The number of turbines for each machine depends on the size of the parts to be blasted or the speed required.

The conveyors may be a parallel roller bed or an overhead rail conveyor that introduces the parts into the chamber continuously. The machine may be equipped an optional in-line painting system to avoid costly secondary handling of the parts.

## MAIN USES AND APPLICATIONS

- Pre-shot blasting of raw material - PER-R and PL lines
  - Process prior to the manufacture of welded structures
  - Elimination of scale and rust, improving the processes of cutting, drilling, welding, etc.
  - Reduces the level of dust in the facilities
- Shot blasting of welded structures - PER-I and EST lines
  - Process prior to the application of a coating of paint
  - Leaves the surface clean, free of rust and scale
  - Increases surface roughness improving the anchoring of the coating to be applied



# CONSTRUCTION FEATURES

## BLAST CABINET

- Manufactured with triple layer of steel
  - External in mild steel
  - Double internal protection lining
    - Manganese steel (11-14%) covering 100% of the main cabinet
    - Additional reinforcement in hot areas with high chrome cast steel plates ( $\geq 64\text{Rc}$ )
- Inlet and outlet chambers with sealing curtains to minimize abrasive escape from the blast compartment.
- Screw conveyor - Spiral 15b30 boron-steel
- Access door blast cabinet

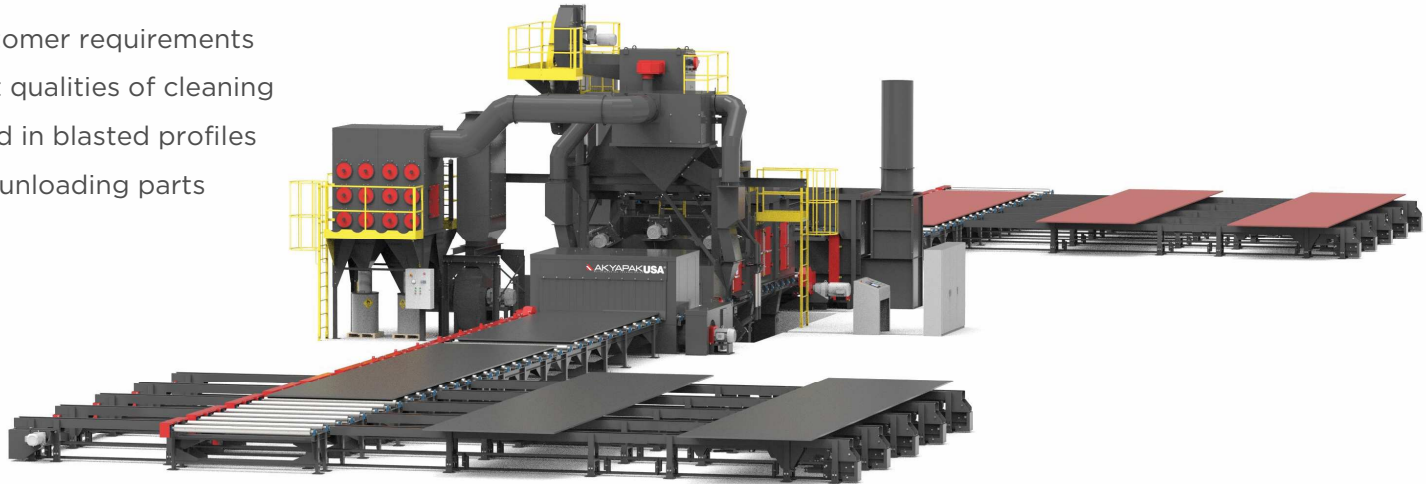




## WORK CONVEYOR

### ROLLER WORK CONVEYOR

- Parallel roller conveyor
- Conveyor length load capacity according to customer requirements
- Variable speed of advance of pieces for different qualities of cleaning
- External auger for the return of shot accumulated in blasted profiles
- Transfer and feeding equipment for loading and unloading parts



### OVER HEAD WORK CONVEYOR

- Continuous monorails hook conveyor allows to process parts in line with painting processes
- Conveyor length load capacity of hooks according to customer requirements
- Variable speed of advance of pieces for different qualities of cleaning
- External auger for the return of shot accumulated in blasted profiles



## BLAST WHEEL

- Located strategically with a correct distribution of shot on the parts to be treated resulting in a better coverage and better performance of the machine.
- Direct Drive from 10 HP up to 60 HP.
- Housing manufacture in Manganese steel (11-14%) forming together with the internal liners and double resistant wear wall.
- High chrome steel Internal liners ( $\geq 64\text{Rc}$ ). Liners attached by screw with hardened cast steel head cover for abrasion protection.
- Aligning system with control gauge, eliminates the risk of incorrect adjustment at blasted spot.
- Labyrinth seals between engine coupling and housing allowed the mount of the turbines in various possible positions



## ABRASIVE RECOVERY SYSTEM

- Bucket elevator
- High efficiency Air flow abrasive cleaning
- Upper Screw - Spiral 15b30 boron-steel
- Storage hopper for good abrasive
- Maintenance platform
- Abrasive flow control valves
- Optional
  - Automatic Abrasive Regeneration
  - Automatic abrasive curtain formation adjustment system including sensors and airflow monitoring, all controlled from the HMI

## DUST COLLECTOR

- Manufactured with mild steel – 1/8" (3,2 mm) thick.
- Cartridge media cleaning: reverse Pulse jet.
- Easy replacement of cartridges.
- Emission:  $\leq 1 \text{ mg/m}^3$
- Efficiency  $\geq 0.5 \text{ micron} / 99.9\%$
- 200L dust accumulation drum with lid transition to drum with sleeve filter
- Intermediate gravitational separator located between blast cabinet and dust collector allows for increasing the air flow inside the cabinet without risk of carrying good abrasive to the dust collector drum.
- Optional
  - Silencer and Mineral wool cover kit to reduce noise  $\leq 85\text{dBA}$  at 5ft (1.5 m).
  - Maintenance platform.



## ELECTRIC COMPONENT

- Control panel for operation control
- Components and motors: according to customer requirement IEC, Nema, UL, etc.
- PLC control: Siemens
- Emergency stop button: included
- Wire cables to connect control panel and motors
- Optional
  - Movement sensor motors
  - Cooling
  - Soft Start motors
  - Ewon for PLC programming remote communication

# TECHNICAL DATA - PROFILE AND PIPES SHOTBLASTING SYSTEM - PER-R

Model	Blast Wheel		Maximum passage section of pieces		Parts to be processed				Working speed Mts. / min (**)
	Qty.	HP	Width	Height	Profile	Structures	Plates	Pipes & Spool	
PER 4X4 R	4	10 to 60	16" 400 mm	16" 400 mm	X	-	X	X	1 to 20 ft/m  0.3 to 6 m/min
PER 6X10 R			31" 800 mm	40" 1000 mm					
PER 9x9 R			43" 1100 mm	41" 1050 mm					
PER 15x10 R			62" 1600 mm	47" 1200 mm					

Note:

(\*) The maximum parts pass size section and the production speed can be adapted to the customer precise requirement.

(\*\*) The production can vary depending on the degree of rust, mill scale, and or other contaminants present

## RELEVANT FEATURES

- Equipped with 4 turbines and located at 90° with respect to the passage of recommended parts to process raw materials (angle profiles, I,, square and tubes) with high production volume and minimum operating cost
- Enhanced finished consistency of processed pieces.
- Automatic shot blasting process, which does not require skilled labor.
- With proper equipment operation, there are no health problems for the staff, or damage to the facilities and not pollute the environment





# TECHNICAL DATA - STEEL CONSTRUCTION SHOTBLASTING SYSTEM - PER-I

Model	Blast Wheel		Maximum passage section of pieces		Parts to be processed				Working speed Mts. / min (**)
	Qty.	HP	Width	Height	Profile	Structures	Plates	Pipes & Spool	
PER 6X6 I	4	10 to 60	31" 800 mm	27" 700 mm	X	X	X	X	1 to 20 ft/m  0.3 to 6 m/min
PER 8X15 I			31" 800 mm	40" 1500 mm					
PER 9X9 I			43" 1100 mm	41" 1050 mm					
PER 12X12 I			51" 1300 mm	55" 1400 mm					
PER 15X10 I			62" 1600 mm	47" 1200 mm					
PER 15X15 I			62" 1600 mm	67" 1700 mm					
PER 20X05 I			80" 2000 mm	20" 500 mm					

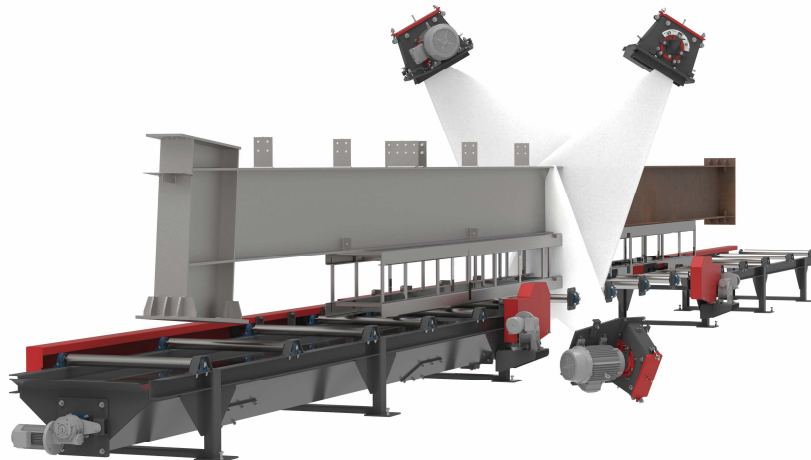
Note:

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(\*\*) The production can vary depending on the degree of rust, mill scale, and or other contaminants present

## RELEVANT FEATURES

- Equipped with 4 inclined turbines with respect to the passage of parts, they can process both simple welded structures, spools and raw materials (plates, angle profiles, H, etc. and tubes) with a high production volume and minimum cost
- Complex welded structures can be processed by passing twice through the equipment so that they are properly shot blasted.
- High production volume with minimum operating cost.
- Automatic shot blasting process, does not require specialized labor





# TECHNICAL DATA - STEEL PLATES SHOTBLASTING SYSTEM - PL-V

Model	Blast Wheel		Maximum passage section of pieces		Parts to be processed				Working speed
	Qty.	HP	Width	Height	Profile	Structur es	Plates	Pipes & Spool	
PL 1.6 V	4	10 to 40	4" 100 mm	5 ft 1600 mm	-	-	X	-	1 to 20 ft/m  0.3 to 6 m/min
PL 2.5 V				8 ft 2500 mm					
PL 3 V	6			10 t 3000 mm					

Note:

(\*) The maximum parts pass size section and the production speed can be adapted to the customer precise requirement.

(\*\*) The production can vary depending on the degree of rust, mill scale, and or other contaminants present

## RELEVANT FEATURES

- Steel Shot or Steel Grit can be use with excellent smooth texture surface finish
- The Plates can be loaded in a vertical or Horizontal position onto the conveyors
- Does not required additional brushes or blowers with no possibility of abrasive accumulation
- Lower operating and investment cost than the Horizontal passage equipment
- Can be complemented and interface with automatic painting and drying ovens equipment for shop primer applications



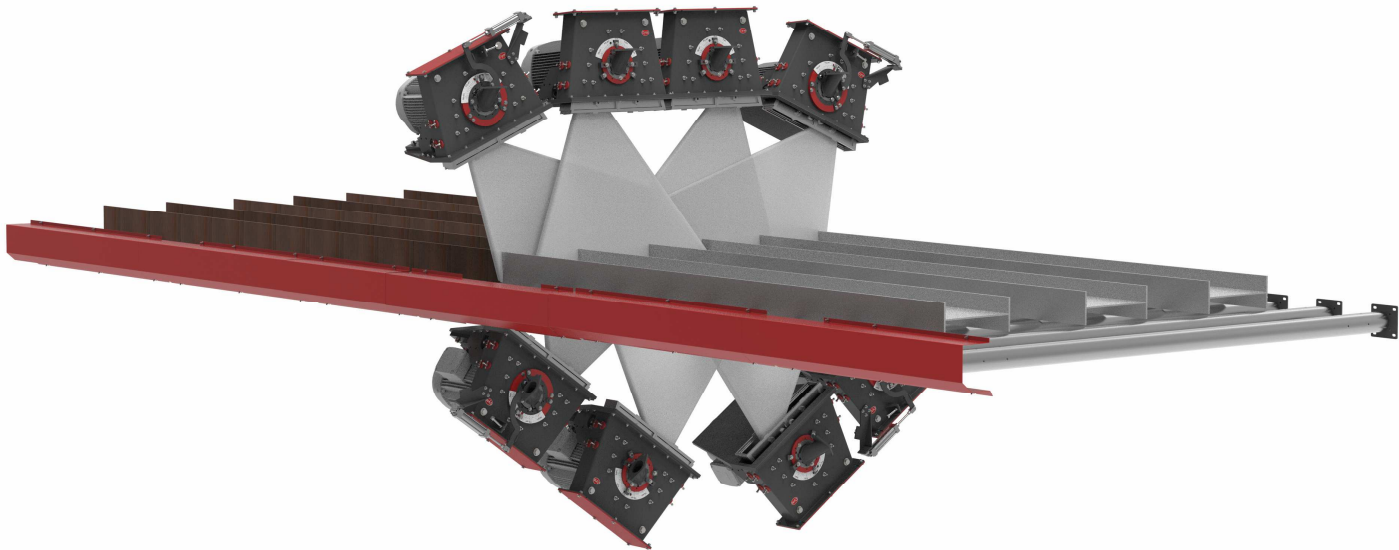
# TECHNICAL DATA - STEEL PLATES & BEAMS SHOTBLASTING SYSTEM - PL-H

Model	Blast Wheel		Maximum passage section of pieces		Parts to be processed				Model Working speed Mts. / min (**)
	Qty.	HP	Height	Width	Profile	Structur es	Plates	Pipes & Spool	
CH 1.6 H	4	10 to 40	5 ft 1600 mm	24" 600 mm	X	-	X	-	1 to 20 ft/m  0.3 to 6 m/min
CH 2.5 H	6		8 ft 2500 mm						
CH 3 H	8		10 ft 3000 mm						

Note:  
(\*) The maximum parts pass size section and the production speed can be adapted to the customer precise requirement.  
(\*\*) The production can vary depending on the degree of rust, mill scale, and or other contaminants present

## RELEVANT FEATURES

- Plates, beams, angles, round and square tubes can be processed
- Equipped with rotating brushes and blowers to remove excessive abrasive
- Optional manual or automatic height adjustment with HMI sensor.
- Ideally operate with steel shot for easier remover of accumulation
- Can be complemented and interfaced with automatic painting and drying oven equipment for shop primer applications



# TECHNICAL DATA - STEEL CONSTRUCTION SHOTBLASTING SYSTEM - EST

Model	Blast Wheel		Maximum passage section of pieces mm (*)		Parts to be processed				Working speed Mts. / min (**)
	Qty.	HP	Width	Height	Profile	Structures	Plates	Pipes & Spool	
EST 8 x 15	8	10 to 60	31” 800 mm	60” 1500 mm	X	X	X	X	1 to 20 ft/m  0.3 to 6 m/min
EST 15 X 10			62” 1600 mm	47” 1200 mm					
EST 15 X 15			62” 1600 mm	67” 1700 mm					
EST 15 X 20	12		62” 1600 mm	80” 2000 mm					
EST 15 x 30			12-16	62” 1600 mm					
EST 25 X 15	100” 2500 mm			60” 1500 mm					
EST 25 X 25	100” 2500 mm			100” 2500 mm					
EST 35 X 17	140” 3500 mm			67” 1700 mm					

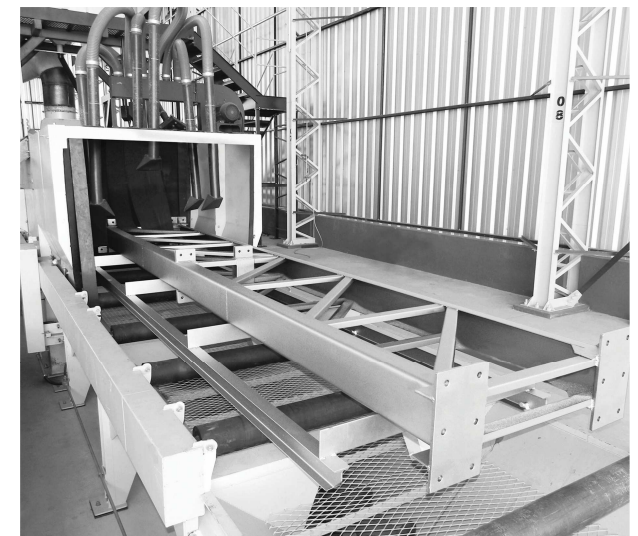
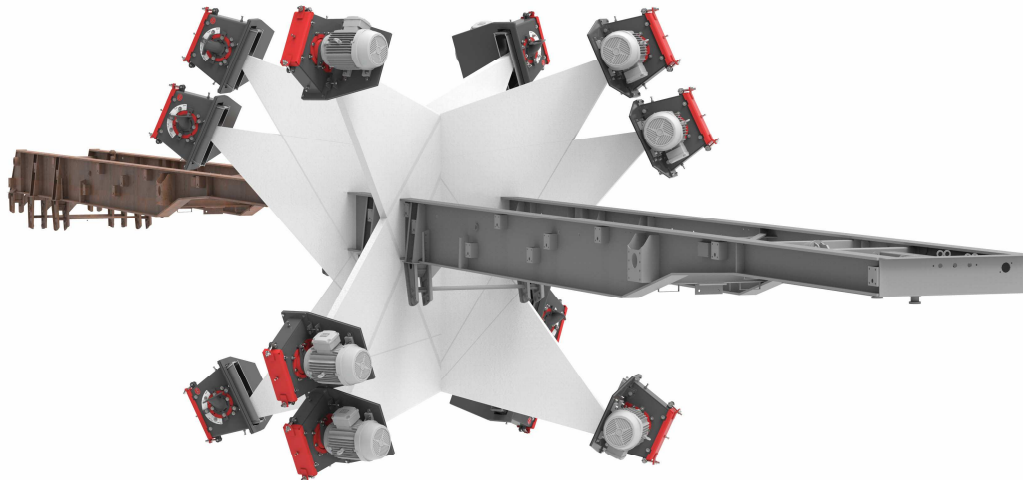
Note:

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(\*\*) The production can vary depending on the degree of rust, mill scale, and or other contaminants present

## RELEVANT FEATURES

- They process all types of welded structures, spools and raw materials (plates, angle profiles, L, H, etc. and tubes), with high production volume and minimum operating cost.
- Equipped with 8, 12 or 16 turbines, blasting the pieces at multiple angles of impact achieve a correct cleaning homogeneity in the processed parts
- Using continuous monorails hook conveyor to process parts in suspended load allowing to work in line with painting processes
- Homogeneity of finish in the processed pieces.

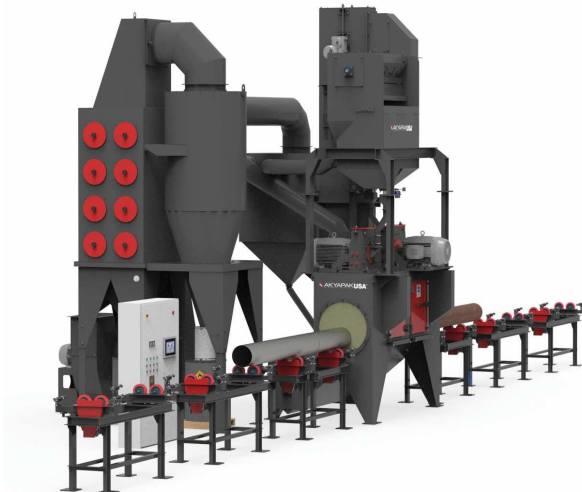
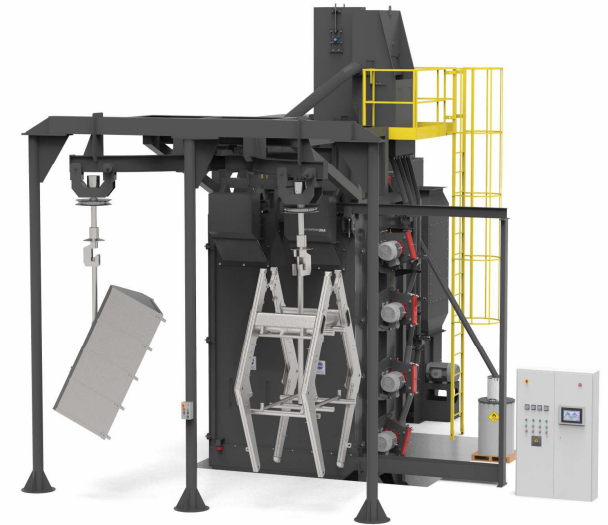




# OTHER SHOT BLASTING EQUIPMENT USED IN THE STEEL INDUSTRY

## SPINNER HANGER

- The hook shot blasting lines are characterized by their great versatility, since they allow processing different kinds of components, such as small and sensitive parts as well as more complex parts which may be heavy or large
- At Akyapak we have equipment to process different load volumes and weights, and according to the requirements of each customer, we offer different loading options in batch processes (CAB) or continuous overhead rail blast machine (TUN).



## PIPES - TUB

- Equipment for external and internal shot blasting of tubes used in the manufacture of gas pipelines, oil pipelines, aqueducts and other industries.
- Our wide portfolio allows shot blasting of tubes of very varied sizes and thicknesses, in diameters ranging from ½" (12 mm) to more than 10 ft (3000 mm) and shot blasting speeds between 10 ft<sup>2</sup> (1 m<sup>2</sup>) to more than 215 ft<sup>2</sup> (20 m<sup>2</sup>) per minute.

## BLAST ROOMS

- Flexible blasting process allows to process all kinds of pieces that, due to their size or complexity, cannot be processed in automatic shot blasting machines
- One or more operators are inside the blast room during the blasting process using pressure blast pot to project the abrasive.
- In combination with nozzle manipulators installed in the blast room, surfaces can be automatically processed.





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