

**Technical Specification for the Shot Blasting Machine**

Quantity	–	1 No.
<b>Scope of Supply :-</b>		
The scope of supply includes Supply, Installation, and Commissioning of the machine.		
Sr.No.	Description	
1.	No. of Blast Wheels	1
2.	Size of Blast Wheel	19½" x 2½"
3.	Flow Rate Kg/Wheel/Hour	15,000 (Min.)
4.	HP of Blast Wheel (Each)	25 HP (Min.)
5.	Shot Velocity	70-75 Mtrs/sec
6.	Shot Consumption	1.5 Kg/Wheel/Hour Approx
7.	Initial Charge of Shots	1500 Kgs. (Min.)
8.	Swing table door	1 nos.
9.	Turn Table Drive HP (each)	1
10.	Table Load Capacity	2200 -2500 Kg Each
11.	Bucket Elevator HP	2
12.	Type of Dust Collector	Fabric Bag
13.	Dust Collector Capacity	3000 CFM (Min.)
14.	Number of Bags	48-50
15.	Type of Cleaning	By Mechanical Shaking
16.	Dust Emission Level	Less than 80mg/N Cubic Meter
17.	Filtration Area	42 – 45 Sq. Meter
18.	Pit Depth Requirement	NIL
19.	Overall Dimensions	8800mm x 5350mm x 5000mm

**1. Blast Cabinet**

The Blast Cabinet is fabricated from 6mm thick heavy-duty prime quality steel plates, supported by strong rolled structure welded construction and engineered suitably for strength and rigidity to guarantee the optimum sturdiness. This robust rolled structure with thick plate foundation holds the machine and helps to reduce vibration. The Blast cabinet bottom is provided with mild steel perforated floor for protection against abrasion wear.

Length	:	3400 mm (Min.)
Width	:	2000 mm (Min.)
Height	:	2100 mm (Min.)



The cabinet in the direct blast zone is lined with Mn steel liners rest cabinet is lined with 6mm Rubber sheet.

## 2. Blast Wheel Assembly:

One Nos. of blast wheels station, Size 19 ½" x 2 ½" is mounted on 12mm thick heavy-duty prime quality steel plate and strategically around the cabinet and the pass-line of the work. Blast wheels are arranged to blast at an angle with the line of job movement. The unit consists of fabricated steel casing having installation of different alloy steel liners, rotor, blades, control cage, impeller and feed spout. The rotor is made out of EN grade material on CNC & VMC machines to the finest accuracy duly hardened. The drive system of blast wheel (rotor) entails a set of self-lubricated and self-aligning pedestal bearings. The rotor is dynamically balanced. The drive shaft of blast wheel is made out of EN grade material and duly precision grinded to the finest accuracy. The fabricated casing of blast wheel assembly can be easily opened up through bolts/levers for examination of various liners and parts of wheel assembly. Individual ammeter is provided on control panel to indicate abrasive flow rate / loading of turbine in terms of current loading on ammeter. Safety switches are provided on blast wheel to prevent accidents.

Size	:	19½" x 2½"
Quantity	:	1 Nos.
Drive Motor	:	25 HP (Min.), 415V/4P/50 Hz
Drive Transfer	:	Through Belt.
Flow Rate/wheel/hour	:	15000 Kg (Min.)
RPM of Turbine Wheel	:	:2250 RPM Min.
Flow Control	:	Electro pneumatic flow control valve

## 3. UTILITIES provided by Railways:

- Compressed air Supply & its connection
- Electric power supply connection

## 4. UTILITIES provided by Firm:

- Steel shots as initial fill.
- Concrete foundations, leveling pads and grout work.
- Firm has responsible for complete Supply, Commissioning and Installation of the machine at Bogie shop Motibagh Work shop, Nagpur.
- Firm is also responsible for activities which are not mention but required for successful completion of Supply, Commissioning and Installation of the machine, at MIBW/NGP.

## Make of Cardinal Material Used

Items Description	Make
<b>Electrical</b>	
Electric Motors	ABB/CG/Hindustan Motors/WEG
Switch gears, contactors, Panel accessories	Schneider/Siemens on another reputed make
Control transformer	FEMINA/Smisen Controls/MEENA
PLC	Mitsubishi/DELTA/Schneider
AC Drive	Mitsubishi/DELTA/Schneider
Electronic Timer	EAPL or Equivalent
Electric cable	LAPP/Polycab/RR Cables/Finolex/Havels
Control panel	BCH/Rittal or another reputed make



2435951/2026/O/o CWM/MIBW/NGP/SECR L&amp;T/Schneider/TC

Limit Switches	Jai Balaji/BCH or another reputed make
Proxy Sensors	Dolphin or Equivalent
Relay Card	Connectwell or Equivalent
Terminals	Connectwell or Equivalent
LED Lights	Panasonic/Havells or another reputed make
Digital Manometer	H K Instruments or Equivalent
<b>Pneumatics</b>	
Pneumatic Cylinder	Janatics or Equivalent
Solenoid Valve	Janatics or Equivalent
Air filter	Janatics or Equivalent
FRL Unit	Janatics or Equivalent
Pneumatics hose	Janatics or Equivalent
Blasting Hose	Gates or Equivalent
Pulsejet Valve	UFlow or Equivalent
<b>Mechanical</b>	
Mild. Steel Plate/Perforated Sheet/Structures	SAIL/ Essar/TATA
Blast Cabinet MN Lining	Rolled MN Sheet with 11-14% MN
Blast Wheel Liners	Austenitic Steel as per IS-276 grade I
Rubber Liners	Black/Honey Colour Natural abrasion resistant rubber having hardness <b>40 to 50 Shore A &amp; specific gravity 1.1 to 1.3</b>
Blast Wheel (Bare Wheel)	EN- 353 duly heat treated and dynamically balanced.
Bearings	LOW RPM (NBC/FAG/FSB) HIGH RPM (NTN/SKF)
Impeller, Control Cage, Blades	Moly Cr Alloy or Equivalent
Wheel Hub	EN-9 duly heat treated
Exhaust fan	Surface or Equivalent
V Belt	Fenner OR another reputed make. or Equivalent
Pulley	Fenner/Shakti OR another reputed make. or Equivalent
Gear Box	Kavitsu/Rotomotive or Equivalent
Chain	Diamond or Equivalent

**Electrical Load Requirement**

S. No.	Description	Horsepower	
1.	Blast Wheel 19½" x 2½"	25HP x 1	25HP Min,
2.	Bucket Elevator & Screw Conveyor	2HP x 1	2HP Min.
3.	Turn Table Drive	1HP x 1	1HP Min.
4.	Dust collector Fan	7.5HP x 1	7.5HP Min.
<b>Total Power</b>			<b>35.5 HP</b>

Dy.CME/MIBW/NGP

Approved

30.04.2026

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