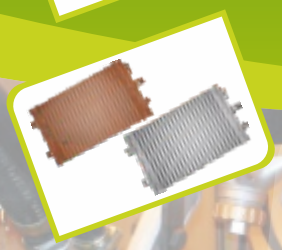


MEC SHOT®

MEC SHOT BLASTING EQUIPMENTS PVT. LTD.

An ISO 9001:2015 & ISO 14001:2015 Certified Company & Our Products Quality is CE marked

ABRASIVE BLAST CLEANING & FINISHING

CABINETS

Abrasive Blasting as a finishing process has been successfully utilized on metal, glass, ceramics, plastic and stone. Purpose includes deburring, descaling, peening, polishing, stress relieving, deflashing & cleaning.

ABOUT ABRASIVE BLASTING

The Process

It entails forceful direction of abrasive particles-dry or suspended in a liquid against the surface of metal part or product, to remove contaminants or to impart desired finish. The process is also called sand blasting, grit blasting, shot blasting or liquid honing etc.

Abrasives used

Chilled iron grit, Steel shot, Aluminium oxide, Silicon carbide, Glass beads, Walnut shell, Plastic grit, Saw dust are used as blasting media. Selection depends upon type of surface, contamination to be removed, type of finish needed & required production.

Nature of Finish obtained

It is most important to recognise that blasting always produces a "non-directional" (isotropic) matte surface as opposed to a directional surface imparted by conventional polishing methods utilizing wheels or belts. Blasted surfaces are never highly light reflective, but are of satin, matte and non glaring. Still there is no relationship between reflectivity and smoothness. A dl appearing blasted finish can be smoother than a bright or polished finish.

100 magnification micro photograph shows blasted surface (top) as opposed to polished surface (bottom).

What is a Blast Cabinet ?

Blast Cabinet is an enclosure which houses the abrasive propelling mechanism (blat gun), holds work in position and confines flying abrasive particles and dust.

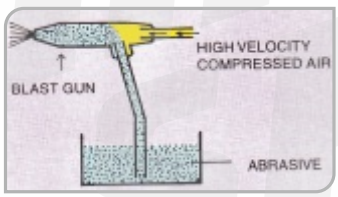
METHODS OF ABRASIVE BLASTING

What are Super Blaster (SB), Pressure Blaster (PB) and Wet Blaster (WB) machines ?

There are basically three established methods of abrasive blasting i.e. INDUCTION - SUCTION (SUPPER BLASTER), DIRECTOR PRESSURE (PRESSURE BLASTER) and SLURRY PUMPING (WET BLASTER). These are briefly described below :

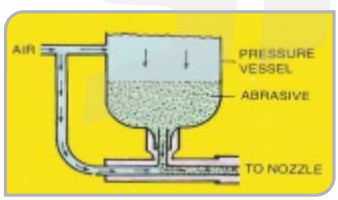
Induction - Suction

In this method, abrasive is drawn from hopper into the blast gun by a partial vacuum created by high velocity airflow. This is useful for light-weight abrasive and cleaning of light corrosion.



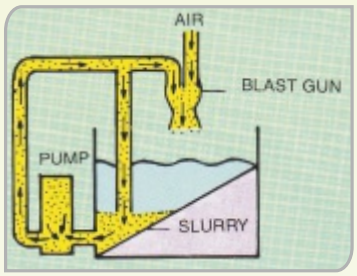
Direct Pressure

In this method, abrasive is pressurised in a pressure vessel by compressed air and then for nozzle. It imparts high abrasive velocity and blasting is faster.



Slurry Pumping

In this method, pump draws fine abrasive mixed in water (slurry) from bottom of hopper and forces it to blast gun where compressed air is introduced to atomise the slurry. Slurry is impacted on the surface to be cleaned.



Selection of Abrasives

In blasting operation, the abrasive used will substantially affect the result and cost of your operation. We offer all types of abrasives and dependable advice for right selection to obtain best results at low cost. Some of the abrasives are :

Aluminium Oxide

Brown & While types, low breakdown rate & highly effective cutting action. Suitable to treat castings, metals and where discolorations is to be avoided.

Glass Beads

Unique abrasive for cleaning, finishing and shot peening. It is chemically inert, good for shot peening & for glaring/shine finish. Does not abrade the surface and keeps job tolerances intact.

Iron Grit & Shot

Chilled iron angular grit & round shots are used extensively for removal of heavy scale and rust. It is a low cost abrasive with lowest breakdown rate. Suitable for surface preparation before recoating or painting.

Walnut Shell

Used for cleaning delicate surfaces and deflashing of plastic parts. It is cheap and economical in use.

Plastic Girt

Plastic granular particles particularly acrylic and urea are most suitable for stripping surface coatings while maintaining substrate integrity and dimensional tolerances intact.

All abrasives are available in coarse, medium & fine grades to suit your particular application

Type	Mesh	mm Size
Chilled Iron Grit/Shot		
Coarse	12-18	1.40-0.85
Medium	18-52	0.85-0.30
Fine	52-85	0.30-0.18
Glass Beads		
Coarse	18-36	0.85-0.42
Medium	36-60	0.42-0.25
Fine	72-150	0.21-0.10
Aluminium Oxide		
Coarse	12-18	1.40-0.85
Medium	18-85	0.85-0.18
Fine	85-220	0.18-0.07
Silicon Carbide		
Coarse	12-18	1.40-0.85
Medium	18-85	0.85-0.18
Fine	85-220	0.18-0.07
Walnut Shell		
Medium	18-30	0.85-0.50
Plastic Grit		
Acrylic	18-30	0.85-0.50
Urea	18-30	0.85-.050

KEY FEATURES OF BLAST CABINETS

- Machine meets **OSHA Standards**
- All cabinet models are rubber lined inside (except SB models) as standard practice.
- Large vision window. Vision glass is protected by a wire screen against abrasion and glass is easily replaceable.
- Easy fitting of accessories like nozzles, hoses etc. whenever required at site.
- New ergonomic cabinet is designed to make operator relaxed while working.
- Blasting start / stop is through foot valve so that both hands of operator are free to maneuver the job or blasting nozzle.
- Air pressure gauge, air pressure regulator, moisture separator (except Wet Blaster - WB) and an air gun is provided as standard fitting.
- Continuous clog free abrasive feed is assured through mixing tube. Any standard abrasive of suitable size can be used.
- Simple operation and simple installation as the machines are ready to operate when connected with airline and electric supply. Foundation or pit for installation not necessary (except for PB models)
- Fabricated from heavy gauge mild steel steel, folded and welded construction. It incorporates sealed hand holes and gasketed doors to ensure that dust will not escape outside.
- Environmentally clean and friendly as dust collection device is attached so only clean air is discharged to atmosphere.Environmentally clean and friendly as dust collection device is attached so only clean air is discharged to atmosphere.
- Noise level of fan is kept below 80 dBA at operator's position. Proper ventilation is provided for clear visibility while blasting.
- Doors are provided with Cam Lock System, which seals the door across the width by operating a single lever, and are easy to open / close.
- High lumens for good illumination also proper ventilation for clear visibility while blasting.
- New wear plate at cyclone's inlet(in SB) increase its life, even on using highly abradable media like aluminum oxide.
- A flexible pneumatic hose has been used for air and abrasive, to reduce operator's fatigue and has long service life.
- The vibrator body is gravity casted, with high carbon harden ball and sleeves for long service life.
- **Boron Carbide Nozzle is incorporated that has three times the life of tungsten carbide.**

SUPER BLASTER - SB

Works on **INDUCTION-SUCTION** principle of abrasive delivery. The super blaster ensures continuous working and no interruption in blasting cycle. Recommended for light and medium size components where surface is to be cleaned or deburred or to impart with fine matte finish. Useful for heat treatment shops, tool, die and mould makers and shot peening of light metal components etc. SB machines are incorporated with reclaimer which ensures uniform cleaning and finishing each time and in every next operation. This is achieved by an automatic system of abrasive cleaning and separation built into the reclaimer. Dust and debris are separated and only clean and sized abrasives are carried to blast gun-ensuring a homogeneous finishing. Most cabinets of other make do not have the reclaimer as standard practice.

Options available on request

- **Rubber lining inside walls of cabinet.**
- **Reversejet cartridge filter dust collector.**
- **Higher output Blast Gun in place of standard.**
- **Foot operated treadle switch for blasting ON/OFF.**
- **Fitted with optional accessories.**

PRESSURE BLASTER - PB

Works on **DIRECT PRESSURE** principle of blasting, the pressure blaster produces high abrasive velocity resulting to cleaning of job at faster rate. A pressure vessel directly bolted below hopper of cabinet has automatic abrasive refilling arrangement. A tubular fabric bag type dust collector with generous filter area is attached with cabinet as standard feature for high efficiency of dust collection. A manual shaker is also provided for bag shaking.

PB is recommended for fast cleaning, for removal of heavy rust and corrsion using coarse abrasive, it is most suitable for etching the surface needed for rubber-lining, FRP lining and metal spaying. Castings and forgings are cleaned speedily. Blast pressure can be controlled from 30 to 90 psig. Almost all types of coarse and medium size abrasives can be used depending upon application.

Options available on request

- **Motorised bag shaking arrangement.**
- **Reversejet cartridge filter dust collector.**
- **Higher output Blast Gun in place of standard.**
- **Foot operated treadle switch for blasting ON/OFF.**
- **Fitted with optional accessories.**

WET BLASTER - WB

Works on **INDUCTION-SUCTION** principle of blasting. The most important point in wet blasting is its ability to use very fine abrasive - as fine as 5 microns. Fine abrasive particles are suspended in liquid, usually water and then pumped to a nozzle as a slurry. At nozzle, the slurry is introduced into air-stream and propelled against job. The glandless slurry pump is used to feed the slurry at positive pressure into blast gun. The wetted parts of pump are of thermoset plastic material for corrosion resistance. WB machine is useful in tool room to remove feather burrs from multitooth cutting tools, such as, milling cutters, holes, broaches and taps eliminating hours of handhoning time. It deburrs intersecting holes in precision parts which are inaccessible by any other method. The finest machined surface can be super-finished without damage to sharp edges and exact tolerances.

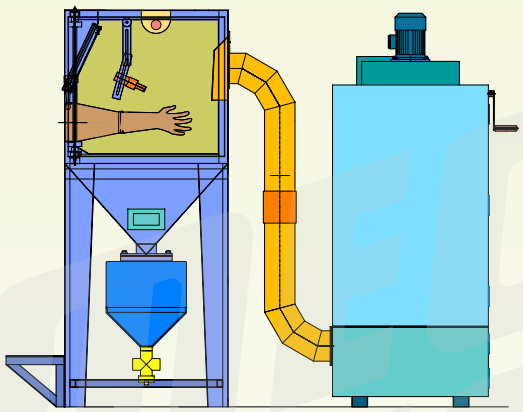
Options available on request

- **Higher capacity slurry pump for high output.**
- **Higher output Blast Gun in place of standard**
- **Foot operated treadle switch for blasting ON/OFF.**
- **Fitted with optional accessories.**

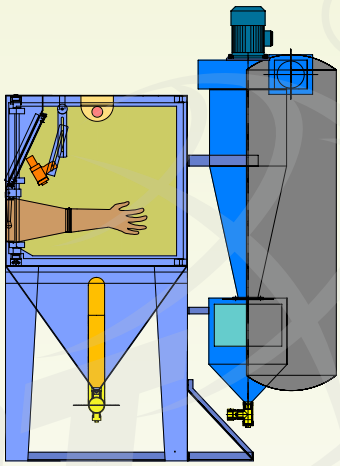
AIR REQUIREMENT CHART

Air Consumption in Cub.M / min. (Cub.ft./min.)	Air Consumption in Cub.M / min. (Cub.ft./min.)		
	4.92 (70)	5.63 (80)	6.33 (90)
Nozzle size 5 mm (PB)	0.93 (33)	1.08 (38)	1.16 (41)
6 mm (PB)	1.73 (61)	1.93 (68)	2.10 (74)
Air orifice Size 2 mm (SB, WB)	0.40 (14)	0.45 (16)	0.54 (19)
3 mm	0.54 (19)	0.59 (21)	0.68 (24)
4 mm	0.85 (30)	0.96 (34)	1.05 (37)
5.5 mm	1.67 (59)	1.87 (66)	2.07 (73)

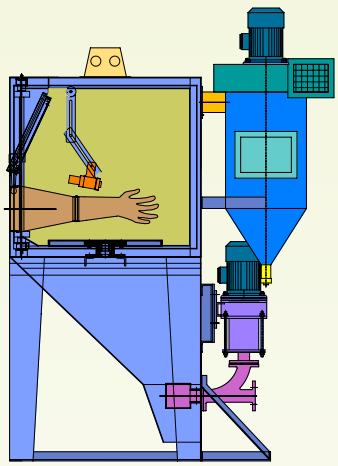
We suggest air compressor to be of 20% excess capacity.



PRESSURE BLASTER (PB)



SUPER BLASTER (SB)



WET BLASTER (WB)

CABINET SPECIFICATIONS

MODEL	PRESSURE BLASTER (PB)			SUPER BLASTER (SB)			WET BLASTER (WB)	
	PB-9182	PB-12090	PB-150120	SB-6060	SB-9182	SB-12090	WB-9182	WB-12090
Working Chamber mm								
Height A	775	900	900	600	775	900	775	900
Width B	910	1200	1500	600	910	1200	900	1200
Depth C	820	900	1200	600	820	900	820	900
Door Opening mm								
Width G	730	800	1100	500	730	800	730	800
Height H	675	800	800	500	675	800	675	800
Overall Dimension mm								
Height D	2130	2030	2080	1660	2120	2570	1940	2235
Width	1100	1365	1665	800	1070	1365	1070	1365
Depth P	2500	2430	2730	1500	1400	1700	1500	1700
Dust or Mist Collector or								
Reclaimer Fan Motor HP	1.0	1.0	1.5	0.5	1.0	1.5	0.5	1.0
Fan Capacity (M^3/min)	14.16	14.16	22.66	5.66	11.32	16.98	5.66	11.32
Fan Capacity (CFM)	500	500	800	200	400	600	200	400
Filter Cloth Area (M^2)	7.5	7.5	10.0	1.0	2.0	4.0	---	---
Slurry Pump Motor (HP)	---	---	---	---	---	---	1.0	1.0
Airjet Orifice mm	---	---	---	*2,3	*3,4,5.5	3,*4,5.5	*3,4,5.5	*3,4,5.5
Blast Nozzle mm	*5,6	*5,6	*5,6	*6,8	*8,10,12	8,*10,12	*8,10,12	*8,10,12
Abrasive Storage Capacity Litres (CFT)	28(1.0)	42(1.5)	42(1.5)	28(1.0)	28(1.0)	42(1.5)	42(1.5)	42(1.5)
Pit Size mm								
Width	---	600	900	---	---	---	---	---
Length		2180	2530					
Depth		510	600					
Weight in Kg (appro.)	580	650	760	250	380	490	400	525
Abrasive Feed	Direct Pressure			Induction Suction			Glandless Pump	

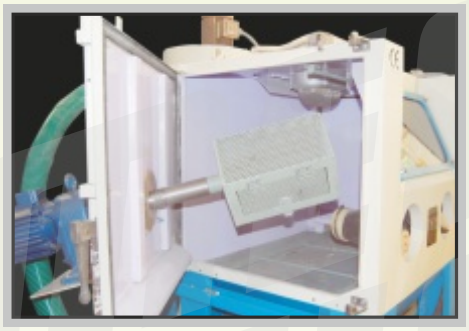
* The size supplied unless other wise specified. All motors used are 415V/3P/50Hz. specifications are for guidance & subject to change without notice.

QUALITY OF COMPRESSED AIR

The quality of compressed air recommended is 1600 ppm at - 10° C dew point. However, instrument air is normally used in practice. Air dryer is recommended to get dry and moisture free air.

OPTIONAL ACCESSORIES

To increase your production, use following accessories with the Blast Cabinet



Tumble Basket

Tumble basket is mounted on side door to suit cabinet size. Basket is easily removable when not needed. Blast period is controlled by a timer. It is suitable for automatic batch blasting of smaller parts, such as balls, rings, screws, nuts, tools etc.

Tumble Basket Length / Dia (mm) : 300/250 & 350/300
Load Capacity (Kg.) : 20 & 25

Inside Turntable

The turntable is fixed inside the cabinet on bearing for easy and free manual rotation of jobs.

Turn Table Diameter (mm) : 500 & 700
Load Capacity (Kg.) : 50

Workcar with Turntable & Mounted Track Extension

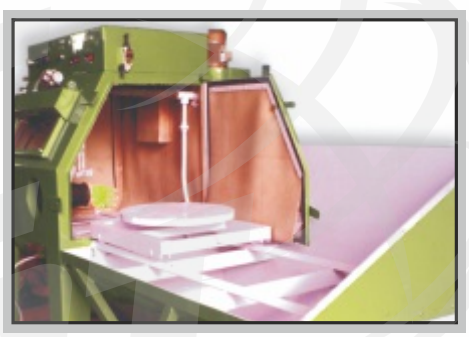
The Turntable is fixed on workcar. The track extension is provided inside of cabinet to facilitate workcar movement. It is ideal for handling large and heavy components.

Workcar Length (mm) : 600, 750 & 900
Track Extension Length (mm) : 1500

Turntable with Water Wash Pan (for WB only)

The Turntable is fixed on workcar. The water wash pan is provided with splash to facilitate rinsing of components after wet blasting operation. It is suitable for handling of large and heavy components.

Workcar Lenght (mm) : 600 & 750
Water Wash Pan Length (mm) : 1500



SELECTION CRITERION FOR PB, SB & WB

Parameters	PB	SB	WB
Production output	Medium & High	Low & Medium	Low & Medium
Blast cleaning	Thick & Hard Deposits	Thin Deposits	Fine Deposits
Deflasting & Deburring	Hard Metal Parts	Soft Metal & Plastic	Soft Metal Parts
Abrasive size used	Coarse & Medium	Medium & Fine	Fine & Superfine
Shot peening Intensity	Medium & High	Low & Medium	Low Intensity

CABINET SELECTION GUIDE

Select cabinet size to suit job size.
Select nozzle size to suit production output & compressed air availability.
Select higher size nozzle for higher output if compressed air is available accordingly.
Select higher pressure for faster output & coarse finish & vice-versa.

APPLICATIONS OF ABRASIVE BLASTING & SHOT PEENING PROCESS

- Remove heat treat scale, rust, corrosion and paint.
- Remove residual film from moulds and dies.
- Remove slag, oxides and discolouration from weld joints.
- Cleaning and deburrning of ferrous and non ferrous castings.
- To produce decorative matte or stain finish.
- To produce surface ideal for lubracation retention.
- to improve metal wear, finish and appearance.
- to prepare surface for pre-place and pre-anodize.
- To prepare surface for coating and painting.
- Texturizing and etching of rollers.
- Deflashing and deburrning of thermoset plastic parts.
- Shot peening for producing residual compressive stresses.
- To improve strength, fatigue life and reduce corrosion.
- Shot peening blades, gears, spring and transmission components.

TYPICAL INDUSTRIES ORIENTED APPLICATIONS

Automotive Industries

- Surface preparation of wornout parts like crankshaft etc. before reclamation.
- Cleaning of pistons, cylinder heads, valves.
- Surface preparation of pistion rings before chrome plating & nitriding.
- Cleaning and deburring casted and moulded parts.
- Cleaning of chassis and bodies of truck and buses before painting.
- Shot peening of gears, shafts, axle and transmission parts.

Aircraft Manufacturer and Maintenance

- Cleaning and stripping of old paint before repainting.
- Spot cleaning to remove scale, rust and corrosion.
- Shot peening of landing gears, shafts, blades and engine parts.
- Shot peening of weld joints.

Tyre & Rubber Industries

- Cleaning of tyre moulds.
- Cleaning and texturizing of dies and moulds for thermoset plastic components.

Ship Building & Repair

- Blast cleaning to remove scale, corrosion, rust and paint from deck, hull and superstructures.
- Shot peening of turbine blades, gear boxes & transmission parts.
- Shot peening of weld joints.

Engineering Industries

- Cleaning and deburring of castings
- Cookware cleaning prior to teflon coating.
- Cleaning of LPG cylinders prior to zinc coating.
- Cleaning and deburrning machined parts.
- Pipe and tube cleaning.

Electrical & Electronic Industries

- Cleaning of rotors and housings.
- Cleaning of brushes and armature core slots.
- Cleaning of dies and moulds.
- Deburring and deflashing of thermoset plastic parts.
- Shot peening of shafts, rotors.

Steel Industries

- Texturizing and etching of rollers.

Glass Industries

- Cleaning of moulds and dies
- forsting and etching.

Medical & Surgical Instruments

- Glare free finishing of surgical and hospital instruments.
- Deburring hypodermic needles.

Textile Industries

- surface preparation of wornout parts before reclamation.
- Surface preparation of parts prior to hard coating.
- Cleaning and deburring textile machine parts.

New

Xtiro

Compact Blast Cabinet with New Features:

- Sliding Door
- Compact & Dust Free
- Good illumination

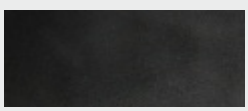
Suction Blasting Cabinet for Small Job Handling at Low Cost

New

Compact Blast Cabinet

with covered Reclaimer Dust Collection

COLOR SHADE COMMON



Metallic Black

COLOR SHADE VARIANT

Metallic Cypress Blue

Metallic Green

Metallic Pink

Mec Shot Blasting Equipments Pvt. Ltd.

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