



SM1000/P20 PRESSURE CABINET

OPERATING INSTRUCTIONS & SERVICE MANUAL



Important Safety Instructions

Read all warnings and instructions in this manual.

Do not proceed until you fully understand its contents

These WARNINGS are included for the health and safety of the operator and those in the immediate vicinity.

Save these instructions.

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SM1000/P20 STORM PRESSURE BLAST CABINET

“Contained power!” This is a cabinet with all the advantages of a blast pot, including speed and cleaning power in a contained environment. While the cabinet itself is not under pressure, it has a pressure vessel underneath. It can clean up to 10 times faster than a suction unit. Lighting is supplied by energy efficient fluorescent tubes. Both the operator and the lighting is safely protected by stainless steel mesh and safety glass. The unit is operated by a foot valve and equipped with a tungsten carbide venturi nozzle for optimal performance. It is lined with a 3mm thick urethane coating and a turntable is standard. Dust extraction is via a free-standing unit which is suitable for most applications. A flexible hose is used to connect the extractor to the cabinet.

Applications:

- Steel and stainless steel Grit Blasting
- Steel and stainless steel Shot Blasting
- High production requirements
- Surface cleaning
- Paint removal
- De-scaling
- Mould cleaning
- Etching

Technical Specification:

Air Consumption	84cfm	
	@ 7Bar/100psi	
Power	220 Volts	
Pressure Vessel	20ltr	
Steel Grit Capacity	75 kg	
Weight with Extractor	450 kg	
Dimensions	Outer	Inner
	1940mm High	860mm High
	1000mm Long	1000mm Long
	850mm Deep	850mm Deep

Requirements:

- 1" (25mm) Air Supply
- Blasting Abrasive

Optional Extras

- Cyclone (needed when steel abrasives not used)
- Loading track/trolley (needs to be built into the design of machine)
- Regulator and gauge
- Moisture Trap

Common Spares

Key:

- 1- Viewing Glass
- 2- Door handle
- 3- Door hinge
- 4- 20mm Swage
- 5- 20mm Elbow and Swage
- 6- 20mm Swage, Remote top cover and manifold cover
- 7- Pop up valve, o-ring and manhole gasket on pot
- 8- 20mm brass ball valve
- 9- 20mm bottom assembly; 20mm gate valve, 2 x barrel nipple and 20mm tee

Closer View of 20lt Blast Pot

Includes: -

- Pressure Vessel
- Remote Control Valve
- Bottom Assembly
- Side Assembly
- Exhaust Assembly
- Inlet Assembly

Designed by
Johan Nel

Date
2005/01/11

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OPERATING INSTRUCTION

1) Positioning

It is important to place the unit in the correct position. Try to be as close to your air-supply as possible.

2) Electrical Connection

2 x 220 Volt electrical motors are provided. Connect wires from light over to the 3 way connection box on extractor. The three-core wire is on the side of the light cover. This is the side on which to place the extractor.

- b) Connect plug top to your power socket
- c) The switch that's in the center of the light cover is for the light and the one towards the side is for the dust extractor.
- d) Lights are also powered by 220 Volt.

3) Air Connection

- a) Do not use snap on couplers; they cause a restriction to the air flow.
- b) Air should be supplied to the Remote Control Valve (orange)
- c) Air supply line should be a minimum of 25mm inner dimension. Keep it as short as possible.
- d) A 25mm Filter/Water Trap is recommended for inline filtration. Dry air results in best performance.
- e) Air consumption is 84 CFM at 7 BAR.
- f) When blasting with Glass Beads adjust the pressure to blast between 2-4 BAR. Fit a regulator to control the pressure.
- g) Connect the 2 x 1/2" air hoses supplied to the 2 x swages nipples just before the remote to the ball valves at the rear of the dust extractor.

4) Dust Extractor

- a) 150mm Ducting Hose must be connected from side of cabinet to rear of extractor
- b) Fasten clamps on ducting hose
- c) After every 4 hours of blasting. Stop blasting, switch off dust extractor and open the ball valves at the back of the dust extractor for at least 10min to allow time for the dust to fall off the cartridges.
- d) Empty extractor tray daily.

5) Operating Instruction

- a) Make sure air supply is connected correctly and open
- b) Switch light on
- c) Pour abrasives into cabinet through the grating to fill the blast pot.
- d) Close the door
- e) Switch on Dust Extractor
- f) Insert hands into rubber gloves and hold the Nozzle firmly
- g) Point nozzle toward item to be blasted.
- h) Depress foot pedal to start blasting operation. To stop blasting process remove foot from pedal
- i) Blast at an angle of 90 degrees and at a distance of 50 – 100mm

6) **Daily Maintenance**

- a) Drain Water out of Filter / Water Trap as often as possible or fit auto drain
- b) After every 4 hours of blasting. Stop blasting, switch off dust extractor and open the ball valves at the back of the dust extractor for at least 15min to allow time for the dust to fall off the cartridges.
- c) Empty extractor tray daily.

7) **Monthly Checks**

Cabinets

- a) Check nozzle for water and condition
- b) Check blast hose for soft places
- c) Check top and viewing glass with protective mesh
- d) Check choke valve
- e) Check bottom grit valve – gate valve
- f) Check door handles
- g) Check foam rubber on doors
- h) Check turn table for holes
- i) Check urethane lining for holes
- j) Check top lights are still working

Extractor

- a) Check cartridges for holes
- b) Check vibrator with air on
- c) Check drawer making sure it seals

POSSIBLE FAULTS AND TROUBLESHOOTING

1) No Grit Coming Out Of Nozzle

No Abrasives left	<ul style="list-style-type: none">• Add abrasives
Blockage in Nozzle	<ul style="list-style-type: none">• Release foot pedal, remove nozzle clear blockage and replace Nozzle
Blockage in Grit Valve	<ul style="list-style-type: none">• Quickly turn choke valve off and then on. If problem persists remove grit valve and check for blockages. If abrasives are muddy consider purchasing moisture trap.
Abrasive mixture in the air is too rich	<ul style="list-style-type: none">•

2) Cleaning Slow

Incorrect Blast Pressure	<ul style="list-style-type: none">• Check air supply.• Ensure minimum 25mm air supply hose is used from compressor• Increase pressure if possible
Incorrect Abrasives	<ul style="list-style-type: none">• Larger particle size generally used for removal of heavy coating• Finer particles are generally faster with light coating or rust removal• Abrasive is over recycled
Incorrect Abrasive Settings	<ul style="list-style-type: none">• If abrasives are too rich nozzle will cough – turn close grit valve Slightly• If abrasives are too lean open grit valve slightly for an even flow of Abrasives
Nozzle worn	<ul style="list-style-type: none">• Replace nozzle
Blockage in Grit Valve	<ul style="list-style-type: none">• Quickly turn choke valve off and then on. If problem persists remove grit valve and check for blockages. If abrasives are muddy consider purchasing moisture trap.

3) Too Much Dust

Pressure too high	<ul style="list-style-type: none">• Reduce Air Pressure
Extractor not sucking	<ul style="list-style-type: none">• Cartridges are blocked. Clean out cartridges or replace
Ducting Hose faulty or blocked	<ul style="list-style-type: none">• Replace or clean out
Leaking dust out the door	<ul style="list-style-type: none">• Replace door seal
Dust coming out of vents on dust extractor	<ul style="list-style-type: none">• Filter Cartridges not sealing – call for service• Damage to cartridges – Replace Cartridge
Abrasives too soft for set up	<ul style="list-style-type: none">• With glass beads, aluminum oxide, sand, garnet and other non-metallic abrasives it is advisable to increase your cleaning cycle on the extractor. Look at purchasing a Cyclone

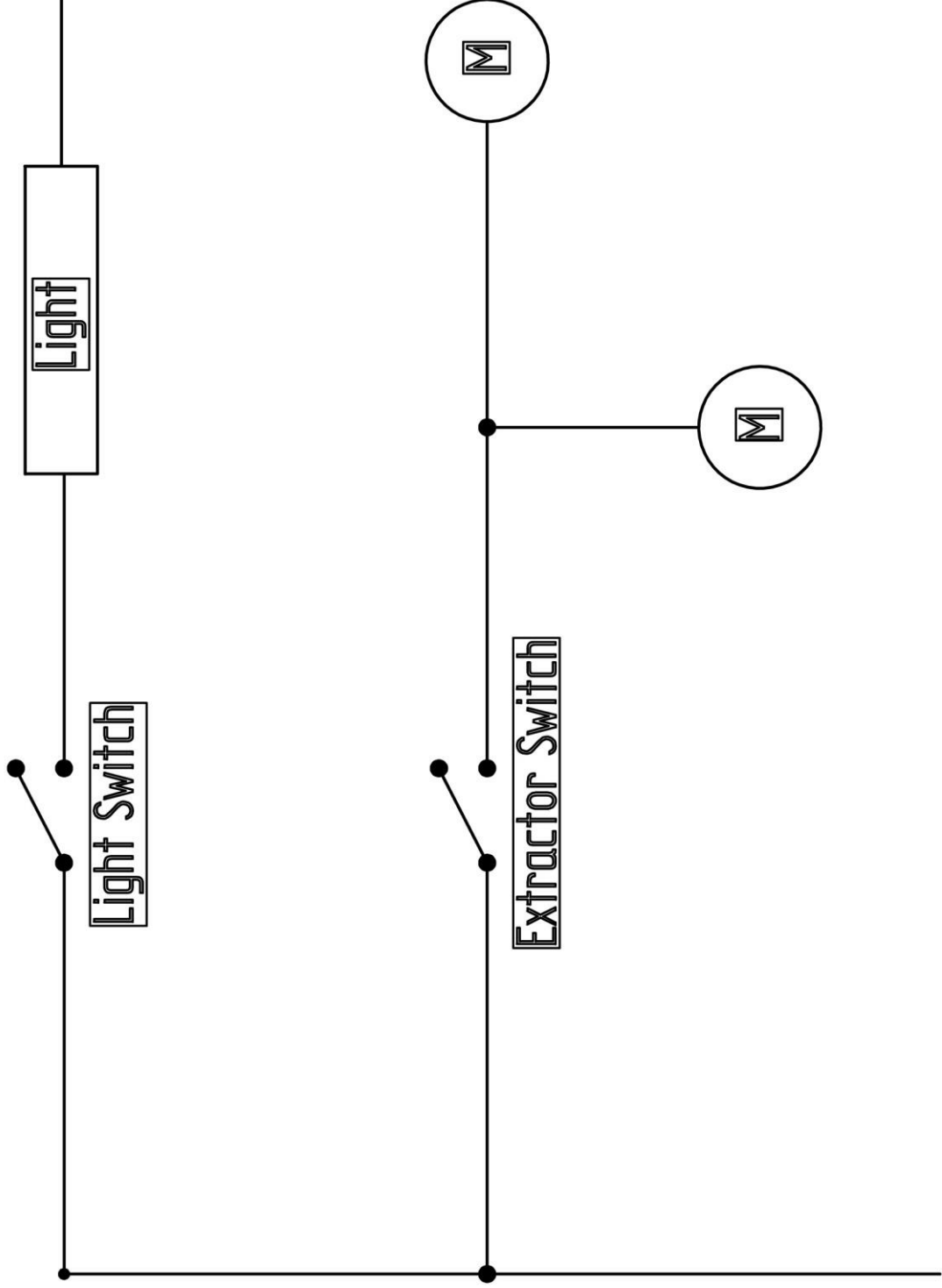
4) Does Not Want To Blast

Faulty foot valve	<ul style="list-style-type: none">• Replace foot valve
Faulty signal hose	<ul style="list-style-type: none">• Check for air leaks throughout hose and with fittings
Very low pressure	<ul style="list-style-type: none">• Remote control valve requires at least 3 BAR to operate
Piston stuck in remote control valve	<ul style="list-style-type: none">• Remote requires a service
Safety valve on remote control valve open	<ul style="list-style-type: none">• Close valve

5) **Does Not Stop Blast**

- | | |
|--|--|
| Remote Control Valve continues to exhaust. | • Remote Control Valve needs a service kit with a diaphragm for exhaust. Call for a service. |
| Foot pedal might be stuck | • Check hoses for blockages or else replace foot valve. |
| Piston stuck in remote control valve | • Remote requires a service |

SM1000 P20 Pressure Cabinet
Electrical Diagram



Installation Procedure for Storm Pressure Blast Cabinet

Start

1. Unpack complete unit and place double extractor fan next to the pressure blast cabinet. Place foot step in front of cabinet as shown in the photo.



Electrical

2. Two electrical cables will be found on top of the cabinet connected to the light box. One is stripped the other has a plug. The stripped end needs to be fitted to the extractor. The plug will be connected to your wall plug once all is correctly fitted.



3. Connect the stripped electrical cable to the extractor fan. The connection point can be found between the fan motors on the extractor fan. Open the white plastic box and connect the extractor to the cabinet. Any qualified electrician would be able to do this for you.



Air

4. Connect main air supply to cabinet. Ideally use a 20-25mm air supply hose with matching fittings.



5. Connect the two 13mm hoses to the extractor from the cabinet as per pictures. These hoses are for the vibrators and so it makes no difference to which side they are connected. Secure hoses with clamps.



6. The finished air vibrator assembly should look as follows.



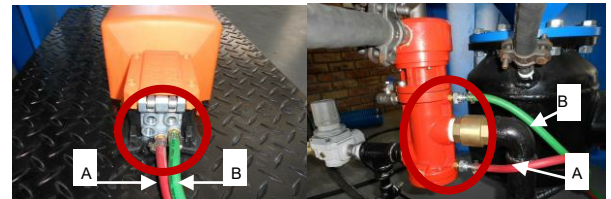
Dust extraction

7. Connect ducting hose to cabinet door and rear of extractor. Secure using clamps.



Foot valve

8. Connect hose to the foot valve and remote under the cabinet as shown. Once connected place foot valve on step so that it can easily be operated. *Follow the hose colours (A & B) in these pictures for clarity*



Final Assembly

9. Insert the slide rack into the slotted side of the cabinet. Special cuts and grooves have been made to ensure a perfect fit.

**Note. The specially designed slide rack will only be delivered if ordered as extra.*

10. Ensure the rack has been pushed in all the way and is locked in place into the bracket on the

other side of the cabinet.

**Note. The specially designed slide rack will only be delivered if ordered as extra.*

11. Place the turntable tray on top of rack so that it fits and spins freely.

**Note. The specially designed slide rack will only be delivered if ordered as extra.*



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