

BLAST MACHINE OPERATING PROCEDURE

Safety

1. The following additional protective clothing and equipment must be worn:
 - a) coveralls (optional)
 - b) face shield
 - c) gloves
 - d) respirators are recommended when working around abrasive dust
 - e) ear plugs
2. Never blow compressed air on yourself or anyone else.
3. Keep abrasive swept up around the blast machine.
4. Keep platform clear of obstructions.
5. Never climb on or work beneath parts hung on paint line.

NOTE: Operator should NEVER enter the blast machine alone. Always have someone with you.

Blast Machine Start Up

1. Check the peak in the abrasive storage hopper. It should be within 6" of the screen; within 6" to the left or the right of the middle of the hopper. If not, call (Company) maintenance and note the level and peak position, left or right of center.
2. Check to ensure the separator swinging baffle swings freely and lip is free of debris. Clean beginning of each shift.
3. Check that the dust buckets and pails are in place and the dribble spouts are sealed.
4. Clean photo sensors at the entrance to the blast machine. Use "Kim Wipes" or a clean cotton cloth to clean. Lightly wipe the dust off the photo sensor lens and mirror.
5. Check the abrasive level in the auto feed hopper. If low add abrasive.
6. Turn the main power control breaker on. All red indicator lights go on.
7. Check the dust collector breaker switch. If it is turned off turn it on.
8. Some red alarm indicator lights may go on. Push machine stop button and red indicator lights will go out. If any stay on, contact (Company). The "dust collector photogenic switch open" light will be on when the dust collector differential pressure is below 3" of W.C. Anytime the pressure is above of 3" W.C. the light will be off.
9. Turn the program switch to 1.
10. Program selector manual push button must be on.

11. The dust collector switch must be in auto.
12. Abrasive on-off switch must be "Off".
13. Push the machine start button.
14. Dust collector will start.
15. Rotary screen, elevator, cross screw and long screw sequence starts.
16. Check to ensure the wheels switch is on ((Company) machine will start all eight wheels in sequence automatically).
17. Turn program selector switch to required program.
18. Check to ensure the abrasive switch is on.
19. Wheels will come up to speed and abrasive will start automatically when the photo sensor eyes at the entrance detect parts entering the blast machine. Wheels will slow to minimum speed and abrasive will shut off if the photo sensor eyes do not detect any parts entering the blast machine for 4 minutes.

Note: When parts break the light beams on the entrance of the blast machine the wheels and abrasive will activate.

When restarting the machine after it has been running, all wheels must come to a complete stop (all green wheel indicating lights off) before restarting.

Note: When restarting blast machine after part retrieval or maintenance, and there are parts between wheels and photo eye, "Photo Eye Bypass" button must be pushed before paint line is started, or parts between wheels and photo eye will not get blasted. Photo eye bypass button is on a timer and will turn off automatically.

During Operation

1. Select appropriate abrasive program.
2. Check the abrasive level light every thirty minutes of abrasive run time.
 - a) Light Off - Hopper is full.
 - b) Light On - Abrasive needs to be added. The auto feed hopper will add abrasive automatically.
 - c) Do not allow the feed hopper to add any more than 10 times in 1 hour. If it does, contact your Production Supervisor. (Check abrasive adder counter every hour and record.)
3. Check the abrasive level in the auto feed hopper. If the abrasive level is below the barrel piercing tube, the barrel needs to be changed. The remainder of abrasive in the barrel is to be dumped into the feed hopper before a new barrel is placed on top of the auto feed hopper.
4. Blow all abrasive off of parts.

5. Check the dust collector and wheel amp readings every hour of abrasive run time and record. Contact (Company) if amps are out of parameters. +/- 3 amps, according to the chart on the control panel, for more than 1 minute.
6. Check and record the differential pressure every hour of abrasive run time and record.
7. Check and record the abrasive add counter reading every hour of abrasive run time and record. Tap the side of the barrel to determine the abrasive level in the barrel.
8. Check the dust pails for usable abrasive or anything abnormal in the pails and record any comments in the comment section of the record sheet. If an excessive amount of abrasive is in the pail, then contact (Company).
9. Check swinging baffles every time you start the machine to ensure it swings freely. Also check the screens to ensure that they are free of debris and abrasive is flowing freely through the baffles.
10. Clean photo-eyes at the cabinet entrance as often as possible.
11. Never leave the blast machine unattended.
12. Ensure that good housekeeping is carried out (all abrasive must be swept up as soon as possible and put back into the machine).
13. Report any unusual noises or occurrences to your supervisor.
14. Do not allow any empty hooks to enter the blast machine.

Blast Machine Related Fire

Note: Always be aware of available fire fighting equipment in area.

1. Shut blast machine off.
 - a) Push the track emergency stop button.
 - b) Turn the power control breaker off.
2. Proceed to the fire and try to contain it if possible.
3. If the fire cannot be contained quickly, follow Emergency Evacuation Procedure.

Warning: There are possible hazards with combustion by products when abrasive dust is burned. Wear a respirator in such cases.

Part Retrieval

Note: To be done between runs unless fallen parts will be damaged.

1. Stop and lockout the paint line if parts are on the line inside the blast machine. If there are no parts on the line inside the blast machine, it is not necessary to stop the line. Check to make sure no parts will be entering the machine while you are inside. They could swing through the flaps and injure you.
2. Follow blast machine shutdown, process steps 1 & 2.
3. Lockout blast machine main power control breaker switch as per lockout procedure.
4. Allow wheels to stop turning before entering blast cabinet.
5. Open finger seals by:
 - a) NPL – turn the keyed switch beside the emergency stop button on the blow-off platform
 - b) SPL – automatically opens when the machine shuts down and the main power switch is turned off
 - c) EPL – open the side cabinet door and then they will open automatically

NOTE: Do not stand in front of finger seals when they are about to open, you could be injured.

6. Enter cabinet and remove any parts or debris on the floor.
7. Close cabinet doors and flaps.
8. ***Load the parts on the line immediately after the run so as to not short assembly.***
9. Unlock breakers and return the locks and keys to their designated place.
10. Follow blast machine “Start Up” procedure.
11. Start paint line when ready.

Blast Machine Shutdown

1. Turn the program switch to position 1.
2. Turn abrasive switch to off position.
3. Press machine stop button.
4. The abrasive will stop flowing to the wheels immediately. In 1 minute, the wheels will stop and the ramp down for 90 seconds. The east, west, cross screw conveyor and bucket elevator will all stop in 4 minutes. The dust collector will remain on for 8 - 9 minutes. These times start as soon as step 1 is done.
5. Turn off main power control breaker.

Machine/Area Cleaning

Make sure all appropriate equipment and electrical sources are locked out.

1. Follow steps 1 - 9 of "Part Retrieval Procedure" (if there are no parts coming on the line, skip step 1).
2. Call the forklift driver to empty the dust buckets from beneath dust collector, into the Lorras bin outside, at the end of the day.
3. Sweep up and recycle or dispose of all the abrasive on the floor around the blast machine.
4. Empty the garbage cans and dust pails. Empty the dust pails into the dust bucket from underneath the collector.
5. If there are excessive amounts of abrasive in the dust pail, contact (Company).
6. Sweep the top of the blast machine completely.
7. Unlock all locks and return them to their designated places.

Fire Alarm

1. Shut blast machine off.
 - a) Press the emergency Stop Button.
 - b) Turn power control breaker off.
2. Evacuate the plant as per emergency evacuation procedure.

Blast machine Cap Removal and Blow-Out Procedure

Blast machine operator must remove screw-on caps for the following parts, blow out all the shot and replace screw-on caps. Avoid over tightening, we must also follow procedure.

BLAST MACHINE CLEAN UP DUTIES

Emp. Init. Top of Blast Machine

- ◆ _____ Clean off "I" beams (only if track is stopped and locked out)
- ◆ _____ Clean off top of separator
- ◆ _____ Clean off top of elevator
- ◆ _____ Clean floor around hopper and elevator
- ◆ _____ Clean top of blast machine on both sides of track (only if track is stopped and locked out)

Inside Blast Machine

CAUTION - Follow Blast Machine lockout procedure.

- ◆ _____ Take out all pieces, plugs, and caps that have fallen off inside the blast machine.
- ◆ _____ Clean off steel plating on the blast machine floor.

Outside The Blast Machine

- ◆ _____ Sweep up the shot from the floor around the blast machine
- ◆ _____ Clean grates and lid of the elevator where abrasive is added
- ◆ _____ Sweep underneath the blast machine and platform
- ◆ _____ Clean top of controls panels
- ◆ _____ Dispose of all empty abrasive drums.

Note: Never direct compressed air toward an electric motor. Dust will enter the motor and damage it.

COMMENTS: _____

BLAST MACHINE OPERATION RECORD SHEET

START UP CHECK

	TIME					
1. In comment section, document where peak is (also left or right of center). Also where level is in respect to the screen.						
2. Check the separator swinging baffle, it must swing freely.						
3. Are the dust buckets and pails in place?						
4. Are the dribble spouts sealed?						
5. Clean photo sensors at the entrance of the blast machine. Use Kim wipes or cotton cloth to clean. Lightly wipe the dust off the photo sensors.						
6. Check the abrasive level in the auto feed hopper.						
7. Check to ensure the air valve for the abrasive adder is on.						

Note: The start up check sheet must be done every time the blast machine starts up. Not just at the initial start up at the beginning of the day or shift.

END OF RUN

Note: The end of run check sheet must be done every time the blast machine shuts down. Not just at the end of the day or shift.

1. Lockout the blast machine.						
2. Remove parts from inside the blast cabinet.						
3. Remove hooks, plugs and debris from the cabinet floor grating.						
4. Clean the tramp metal screens at the separator discharge. Do not drop any debris into the hopper.						
5. Blow off abrasive dust that has built up on the separator lip.						
6. Remove lockout.						