



GREENER BLAST
TECHNOLOGIES

OPERATION MANUAL



GREENER BLAST®
TECHNOLOGIES



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The Greener Blast High Performance Slurry Blasting System



It is important that all owners and operators read and fully understand the functionality and operations prior to operating the system.

Failure to operate this system in accordance with this operation guide could result in serious bodily injury or catastrophic damage to the system itself.

It is the full responsibility of the owner of this machine to ensure that all operators read this manual, and received proper training from a Greener Blast authorized factory representative. Operators must be skilled as well as comfortable with the operation of this high performance slurry system to avoid any chance of harm or injury.

The production and performance of this machine is greatly impacted by the operator's knowledge and understanding of the functionality of the system. Insufficient knowledge of this unit will result in less than optimal performance and potential harm to operator and/or unit.

In the repairing of this system only approved parts should be installed. Any unapproved alterations regarding the functionality of the system could potentially void any and or all warranties provided with the purchase of the Greener Blast system. In the event of any major machine damage or failure, it is important that the local Greener Blast distributor or GBT factory is contacted prior to any repairs. This will guarantee the fastest and most effective way to get the machine back up and running.

Greener Blast Technologies, Inc. does not promote the use of any potentially hazardous materials as a form of blasting media, including but not limited to silica sand or any form of slag.

All safety precautions regarding personal protective equipment and safe blasting habits are left to the discretion and policies in place for each individual company as well as OSHA's standards. Greener Blast Technologies, Inc. can not be held liable for any poor and unsafe blasting practices.

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Warranty

All factory Greener Blast Technology high performance slurry blasting systems come with a one year warranty. This warranty does not include wear parts or malfunctions as a result of operator error.

Greener Blast Package

Greener Blast High Performance Slurry Blasting System

1 1/4" x 50' 2 Ply Blast Hose

1/2" Extended Performance Nozzle

50' Twin Line

Dead man Switch/ Shutoff



Machine Diagram

Front



Relief Valve (ASME Rated)

Main Pot Shutoff/ Slurry Hose

Certified Lifting Lugs

Back



Inspection Cover/ Hand Hole

100 Gallon On-Board Water Tank

Lifting Pockets

Control Panel



Filling/Pressurizing Blast Vessel

- Blast Selector Switch Set to “Off”
- Inlet Air Pressure set to 125psi min. & 140psi Max.
- Main Pot Shutoff/ Slurry Hose Closed
- Vessel Blow Down Valve Open (hoses in bucket)
- Purge Valve Closed

1. Fill pot with clean potable water until water begins to flow through the “blow down valve” into the five gallon bucket.
2. Add abrasive media (See Blast Media Options chart on pg. 12) to the pot with blow down valve open allowing the water to run into the buckets below. DO NOT put over flow water back into reserve water tank.



Important!

Keep inside of portable water tank clean and grit free at all times.

3. Close “blow-down valve.” Use water captured in pail to fill the blast pot with water up to the top outer rim of the blast pot.
4. Open “air purge valve” and allow air to escape.” (water level will drop a couple inches)
5. Top off the water until it is just below the lip of the pot and sits just below black ball on the pots top bung. Open purge valve again for 3-5 second or until steady stream of water flows to ensure all air is out of the vessel, then close.
6. Shake bung/plunger so that any air trapped on the back side is released. Turn dial on control panel to “pot fill”. The pump should activate, then pull the bung/plunger up. Hold plunger up for a few seconds until the pot pressurizes and bung/plunger stays in place.

Setting Pot Pressure

Pot pressure must be set 25-30 psi higher (Max Pressure:140 PSI) than target blast pressure in neutral position (Differential varies based on the abrasive being used).

Example: Target blast pressure = 80 psi, pot pressure should be set approximately 110psi.

1. When the vessel is pressurized and purged, set pot pressure while you are not blasting (The selector switch is still in “pot fill” during this step).

Helpful Hint: Inside the control panel an in-line relief valve has been installed. If during this step the maximum pressure (150PSI) is exceeded this valve will let go (making a loud humming sound). In this case the pot pressure must be turned down until the humming stops. At this point pot pressure can now be dialed back up.

If while setting the pot pressure, you happen to exceed the desired setting, simply back off on the regulator slightly and crack the Air Purge Valve for a second to relieve the excess pressure and repeat the step (Air Purge Valve is located on the vessel).

Setting Blast Pressure

1. Selector switch is still in “pot fill” for this step. Have the operator activate the dead man control and dial the blast pressure in to the target setting. Remember, this is 25-30 psi lower than where you set the pot pressure to in the previous step. While blasting, blast and pot pressures should be about equal.

**Offshore Model (serial number GBTI-OS) and units with serial number G20074 and above:
Blast pressure can be adjusted in neutral state (Deadman control not activated).**

Important Note: Compressed air volume is critical for the operation of this machine. With compressors of 375cfm and less, this machine will max out compressors supply. If so, while setting the blast pressure, watch the inlet supply pressure. If that begins to rapidly drop, you have exceeded the capability of your compressed air supply. What does this mean? You will need to get a larger compressor, pick a lower blast pressure, or reduce the blast nozzle size to reduce the amount of compressed air being consumed (see attached nozzle/air consumption guide).

Blast Pressure cannot be adjusted while machine is active. If you choose to reduce the target blast pressure, you must start over and reset the pot pressure procedure. Trying to increase or decrease the pot pressure settings while you are running the machine will result in inefficient, or no media delivery. Initial pot pressure setup prior to blasting is critical to the operation of the system.

Emergency Shut-Off

All Greener Blast units come equipped with an Emergency Shut-Off switch. This switch allow the units operator to completely deactivate the machine with a quick and simple motion.

On/Run- System will function when dead man is activate.

Off- System will not activate.

Operating the Machine

1. You can now shift the main pot shut off/ slurryhose ball valve to the open position. Activate the machine with selector switch in the pot fill position until material begins to exit the hose (This will jump start the media flow). When material begins to exit nozzle selector switch can be flipped to “blast”.
2. Start with the abrasive metering knob at “off”. Turn the knob counter clockwise to approximately 12 o'clock. Please note that it could take 10 – 20 seconds for abrasive delivery depending on hose length. Test blast a section of the substrate you are blasting and see if you are achieving the desired production. If necessary, continue to turn the knob counter clockwise until you achieve the desired result. Note: In most cases, you should not have to go beyond 1/2 turn of this dial (9 o'clock) to achieve the desired result. You are now ready to blast!

Helpful hint: As you are running the machine, make note of how the water pump is cycling (the bang..bang..bang). When the abrasive is being metered properly, the pump should be stroking about every 4-7 seconds this is what controls the abrasive flow. If the pump is cycling rapidly, or barely at all, something is not set correctly.

Rinsing Function

(WATER ONLY)

1. Main Pot Shutoff/ Slurry Hose valve is off
2. Blast selector switch set to off
3. Surface rinse selector set to rinse
4. Rinse away

Surface Blow Down Function

(AIR ONLY)

1. Main Pot Shutoff/ Slurry Hose valve is off
2. Blast selector switch set to off
3. Surface rinse selector set to off
4. You can now dry your surface

Important Things to Remember

1. When you are not blasting for any extended length of time, the main pot/slurry valve **MUST** be closed. This is especially critical when the compressor is shut down (Blast hose will fill with the remaining blast media).
2. The machine performs best with a #8 straight bore nozzle. # 6 - # 12 Straight bore nozzles can be used effectively depending on the job requirements and the desired surface finish.
3. When you are blasting, the pot pressure and blast pressure will equalize somewhat, and show different values than you selected during the set up phase. This is normal. **Do not** try to adjust pot & blast pressures while running.

Recharging the Blast Pot

1. Close main pot/slurry valve
2. Turn blast selector switch the off position
3. Open blow down valve and discharge water into buckets
4. Begin to add abrasive once water stops discharging from the blow down valve
5. Top off water and repeat step 3 – 6 shown in initial filling procedure at the beginning of this manual.
6. At this point, you should be able to switch the selector switch to blast and go back to work without readjusting pot & blast pressures

Blast Media Options

Blast Media	Lbs. Per Cubic Foot	Machine Capacity (5.5 Cubic Ft.)
Volumes may vary (Machine can be over loaded)		
Garnet	140Lbs.	770Lbs.
Recycled Glass	100Lbs.	550Lbs.
Glass Bead	95Lbs.	522Lbs.
JetMag	82Lbs.	451Lbs.
Sodium Bicarbonate/Baking Soda	60Lbs	330Lbs.
Aluminum Oxide	110Lbs.	605Lbs.
DuPont Star Blast XL	145Lbs.	797Lbs
Numerous Others...		

Air Flow Pressure Through Blast Nozzle- CFM

Pressure	50	60	70	80	90	100	120
Nozzle Size	(Achievable blast pressure will vary depending on compressor)						
#8	200	225	250	275	300	340	430
#10	300	350	400	450	500	550	680
#12	430	500	575	650	700	800	1,100

Trouble Shooting Tip

Problem	Corrective Action
Grit delivery is not smooth: (slugging/surging)	Air pocket in vessel. Bleed purge valve and try again
Pot/differential pressure is too low.	Repeat initial pot & blast pressure steps
Blast Stream Seems wetter than it should be	Pot/differential pressure is too high. Repeat initial pot & blast pressure steps
Water Pump is not cycling	Pump may be stuck between cycles, crack air purge valve to get it cycling again.
Pump is cycling erratically	Air was not completely relieved from pot.
Machine won't develop any blast pressure	If compressed air supply is deemed sufficient, the blast pressure regulator, or regulator pilot valve may be malfunctioning. Emergency switch must be in on position for machine to function.
Cannot control pot pressure, or pot pressure is maxed out during setup	Pot pressure regulator may be malfunctioning

Water Pump Maintenance

Water pump maintenance is extremely critical as the pump is the center piece to your Greener Blast machine functioning at an optimal level. Keeping your water pump running smoothly is quite simple.

Keep water tank clean of all grits!

Keep screen filter on pump inlet clean and restriction free, to ensure optimal water flow.

Decommissioning Your GBT Unit

Important! Turn off air compressor and open the system air purge valve (located under the air supply inlet) to ensure all compressed air is release from the system before disconnecting your supply line.

Overnight/Short term:

1. Simply close off the Slurry Hose/ main pot valve.
2. Turn off your air supply. Pot can remain pressurized.
3. Your machine will be ready for blasting the following morning.

Long Term:

1. Close off the Slurry Hose/ main pot valve.
2. Activate dead man to blow blast hose clean.
3. Disconnect Slurry Hose/ main pot valve.
4. Open Slurry Hose/ main pot valve and allow material to flow out. This process can expedited with the air compressor on and the machine switched to pot fill. Throttle the Main Pot Shut-off/ Slurry Hose to ensure pot remains pressurized. This will force the material out under hydraulic pressure rather than gravity.
5. Rinse inside pot until clean water runs out of Main Pot Shutoff/ Slurry Hose. This will remove any and all potential media that may remain in the bottom bowl of your blast pot.
6. Reconnect Slurry Hose/ main pot shutoff valve.
7. Your machine is now fully decommissioned and ready for long term storage.



Using Rust Inhibitor (Steel Only)

Use rust inhibitor of choice at ratio recommended by manufacturer.

1. Pre-charge blast vessel first with recommended ratio.
2. Add recommended product into 100 gallon on-board water tank.

(On recharge: Capture water in buckets and reuse to top off blast pot. **DO NOT** put back in 100 gallon on-board water tank.)

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