BP-9-SP
MACHINE MANUAL

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Applications

The BP-9-SP is an affordable self-propelled 230 volt single phase blast cleaning system designed for small to medium sized jobs as well as for acting as a complimentary unit on larger jobs. Ideal for edge work & hard-to-reach areas, the BP-9-SP is utilized to prepare concrete surfaces prior to the application of paint, coatings, or overlays on areas such as garage floors, balconies, basements, pool decks, & edges. The mechanics of the BP-9-SP are fairly simple. Shot from the blast wheel, which sits in a control cage, is thrown over 200 mph through an opening in the control cage & down onto to the concrete surface that is being cleaned. Due to the high rate of speed at which the shot is traveling, it acts to fracture the underlying surface which consequently produces concrete dust. After hitting the concrete surface, the shot rebounds off of it and, through a combination of the rebound effect & the use of a vacuum, the shot as well as the concrete dust move through the blast housing. Because shot is heavier than concrete dust, gravitational force causes the shot to be sent back into the shot hopper where it is continuously recycled by the machine. As for the concrete dust, it is sucked into a duct hose which travels from the blast housing to the dust collector. After traveling through the duct hose, the concrete dust is deposited in the dust collector's dust bin. Specific advantages of the BP-9-SP include that fact that it as well as all of its parts are made in the United States. As a result, there is typically no lead time when ordering parts. Also, the electrical box & electrical components of the BP-9-SP are engineered & constructed by a UL certified electrical contractor. The type W 12/3 electrical cord used in the BP-9-SP is the toughest & most wear-resistant cord available on the market today. Finally, twenty-four hour customer service comes standard with the purchase of a BP-9-SP machine

Specifications

Production Capacity	450 ft^2/hr.
Blast Pattern	9”
Travel Speed	2-80 ft/min.
Blast Motor	4 HP
Voltage	230V Single Phase
Amperage	17 A
Minimum Generator	15 kW
Dimensions	36” x 12” x 48”
Weight	318 lbs.
Power Cord Length	50 ft
Seals	Magnetic/Brushes
Distance to Edge	1.5”
Dust Collector	Required

Manufacturer

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General

All operators & maintenance personnel should read this section carefully before operating or maintaining this equipment. These safety instructions are not meant to represent an all-inclusive list of instances which could occur when operating this equipment. For, as with any piece of construction equipment, serious injury can occur if proper safety procedures are not diligently followed. All safety & warning labels posted on the machine must be followed as well as the safety program instituted by your company. There is no substitute for sound judgement in the operation & maintenance of this equipment. In cases where operating personnel have insufficient knowledge or understanding of the English language, proper translated training must be completed before use of this equipment can take place. This manual must be kept with the machine at all times so as to allow the operator easy access to its vital information. The united states department of labor's occupational safety & health administration (OSHA) provides statutory requirements, standards, & regulations relating to the use of portable tools on construction sites. These statutory requirements, standards, & regulations are posted on the osha website at www.osha.gov. The operator & maintenance personnel should understand & follow these statutory requirements, standards, & regulations.

Work Site Assessment & Inspection

Before starting blasting operations, a site assessment must be performed. During the site assessment verify the following:

1. Work area is flat, clean, & dry, free of debris, frost-free, & has no flammable liquids nearby.
2. Make sure that the machine will be able to clear all obstructions. Never blast a wet floor.
3. Never blast over bolts, nuts, screws, nails, or other debris as this may result in significant damage to the machine & serious injury to the operator.
4. Work area is well ventilated. If work area is enclosed or partially enclosed (warehouse, parking garage, tunnels, etc.), then gasoline can never be used as the fuel source for the shot blasting machine. This is because carbon monoxide, which is a byproduct all internal combustion engine, can be extremely hazardous

when allowed to accumulate in an area. An odorless, tasteless, & non-irritating gas, carbon monoxide can quickly become lethal. As a result, vapor propane must be used in all instances when the work area is enclosed or partially enclosed. The work area must still be well ventilated, however, as vapor propane also releases carbon monoxide. This means that extreme caution must still be used when using this fuel source.

5. Each worker has a carbon monoxide monitor on their persons. These carbon monoxide monitors should be calibrated, in working order, & should be equipped with audible alarms that will warn workers if carbon monoxide levels become too high. If carbon monoxide levels exceed 35 parts per million, all work must cease immediately. This represents a potentially deadly situation which necessitates an immediate shutdown.
6. All operators & other personnel within the work area have received training on proper ventilation procedures & on proper operation procedures for the engine & for other types of equipment.
7. Floors have been thoroughly inspected. Some floor or deck surfaces may be coated with or contaminated by dangerous materials such as:

    - PCBs
    - Lead
    - Asbestos
    - Pesticides
    - Solvents
    - Cleaning fluids
    - And/or other harmful chemicals

The dust produced from shot blasting such surfaces can create a serious health threat to those who inhale or come into contact with the dust. The work area must be checked for these materials before work can begin. Blastpro manufacturing, inc. does not warrant its equipment to be suitable for, or approved for, removing dangerous materials. It is therefore the responsibility of the contractor to confirm the safety of the work area & the equipment with the proper authorities. It is also the responsibility of the contractor to warn all staff members of all the potential short-term & long-term health risks associated with inhaling & coming into contact with dangerous materials. The contractor is responsible for protecting all workers from being exposed to dangerous materials. Since the shot blasting machine has not been designed to remove, clean, profile, or alter any surface coated with or otherwise contaminated by dangerous materials, Blastpro Manufacturing, Inc. expressly disclaims any liability for injury, illness, death, or damage that might occur or result from such improper use.

8. Operator & any other personnel in the work area are wearing safety glasses with side shields, dust masks, ear plugs, hard hats, steel toed work boots, long sleeved shirts, tight fitting clothing, & gloves. It is also imperative for staff to tie back long hair & to remove all jewelry.

9. Work area has been blocked off to pedestrians, unprotected personnel, & untrained personnel. In the event pedestrians, unprotected personnel, or untrained personnel enter the work area, blasting operations are to be stopped immediately.
10. Fire extinguishers are nearby. Also, take note of the location & the contact information of fire departments close to the work site.
11. All guards & protective shields are properly installed & secured.
12. All glass & equipment, including vehicles, are protected from steel shot. This can be done by loosely hanging a sheet of visqueen or other protective material in front of the glass or equipment in a curtain-like fashion. The importance of protecting glass & equipment from steel shot cannot be overemphasized.
13. Plug or cover all floor drains to prevent steel shot from falling into the drains.
14. This equipment is only to be used for commercial purposes. This equipment is only to be operated by professional, trained, & competent operators.
15. The operator must be aware of their surroundings & use common sense. The operator is not to operate the equipment if he is tired, distracted, or under the influence of drugs, alcohol, or medication that decreases awareness.

Start-Up Procedures

After performing the site assessment safety procedures listed above, bring the shot blasting machine to the work area & perform the following procedures:

- Verify that personnel are competent & that they have read & understood the safety information in this manual. Staff must also be familiar with how to operate the machine & with all of its components. Make certain that all personnel follow all safety instructions & programs required by their company & by the worksite.
- Before putting the BP-9-SP in operation, make certain that the belt guards are in good condition.
- Inspect the BP-9-SP & dust collector for damage, tears, or other signs of wear.
- Verify that all fittings & hoses are tight.
- Inspect the dust collector. Verify that the dust bin is empty, filters are clean & clear of debris, & motors & fans are in working order. The dust collector must be emptied at the end of each job.
- Make certain that the shot valve control lever is closed except when the machine is actually in operation.
- Inspect all electrical cords on the BP-9-SP for damage, tears, or other signs of wear. If electrical cords are damaged, then do not attempt to perform blasting operations until cords have been repaired or replaced.
- Inspect the duct hose leading from the BP-9-SP to the dust collector. Make sure hose is free of debris, hose is not cracked & that holes do not exist. If necessary, replace hose.
- Make certain that all screws & other fasteners are tight.
- Check the shot storage hopper, the feed spout, & the blast wheel for foreign bodies & remove them if present.

- Check the blast wheel blades, control cage, liners, & magnets for damages & wear. Wear grooves are acceptable until 50% of blade thickness has been worn away. When blade thickness has been worn away by more than 50%, replace all blades.
- Check the front, side, & rear seal system & brush seals for excessive wear.
- Check the tightness of the hose connections & the condition of the hose to the filter.
- Check the electrical connections for dirt & foreign body deposits.
- Verify that the electrical motors are free of dirt & other contaminants.
- Check the level of shot in the storage hopper. Refill hopper if necessary.
- Verify that the main power cable & the dust hose are free of damage. Replace or repair all damaged parts before putting the machine into operation.
- Check to confirm that all machine parts are assembled safely & correctly. It is recommended to have original spare parts & wear parts on hand. It is imperative that the machine receive special attention & regular maintenance in order to function properly & to operate safely.
- Connect the blast cleaning machine & the filter unit with the dust hose. Use hose clamps at the connections.
- Connect the supply cable of the blast cleaning machine with filter unit. Connect the electrical cable of the filter unit with the site supply.
- Make certain that the side seals are positioned correctly.
- Check that the filter dust container has been emptied.
- Always blast in a straight line away from the dust collector. Blasting in a straight line will produce the most uniform results. Never run over anything with the BP-9-SP. Running over an extension cord, air lines, rebar expansion joints, openings in floor, drains, etc. With the BP-9-SP can result in serious injury to the operator and/or damage to the equipment.
- Make certain to keep hands away from all moving parts once the machine is in operation.
- Make certain to never stand next to the blast housing while the BP-9-SP is in operation as blade failure could result in serious injury.
- Make certain that the shot hopper door is closed while the machine is in operation as the BP-9-SP throws shot which could present a serious danger if the shot hopper door is not properly closed.
- Make certain that the blast seals of the BP-9-SP are not worn out. As these seals provide the suction that is required by the machine, they will become dislodged if they become worn out. This will then result in shot being discharged from the machine. It is consequently recommended that the operator make absolutely certain that the blast seals are in good working condition before putting the BP-9-SP into operation.
- In the unlikely event of a failure, turn main power switch to the OFF position & make certain that the BP-9-SP & the dust collector have been disconnected from all power sources.

If the BP-9-SP shot blasting machine is operated using a generator as the power source, the generator must be operated in accordance with the current VDE directives (this applies to the protective earth conductor in particular) in order to ensure that all

safety devices are functioning & to eliminate possible damage to electrical components.

Operational Safety Procedures

When operating the machine, perform the following safety procedures:

- The BP-9-SP shall not be put into use unless it is attached to an appropriate exhaust hose & dust collector.
- Never operate the machine while the electrical panel door is open.
- Support personnel must keep a safe distance from the machine while it is in operation. Do not stand in front of the machine while it is in operation.
- Since the speed of the machine determines the depth of its cut, it is advised that the operator run a test pattern. Failure to run a test pattern could result in the machine gouging the floor.
- The blast pattern needs to be inspected by the operator at least every ten feet as variation in concrete means that the concrete or the coated surface may be softer in some areas than it is in others.
- Whenever the dust collector becomes full, it must be emptied. Failure to empty the dust collector could result in the machine losing its suction to the floor. If this happens, then all of the shot will fall out of the shot hopper.
- Never switch off or remove the exhaust & ventilation devices when the machine is in operation.
- A second person must be present so as to pull out the machine's plug in an emergency. The work area must then be sealed off using a red & white safety chain & a danger sign. Use a tool that is insulated against voltages.
- Make certain circuit breakers can handle the electrical load required by the machine.
- If an error occurs while the machine is in operation, it must be shut down immediately. The cause of the error must be established immediately.
- If cables become loose or scorched, the machine must be shut down immediately.

Shut-Down Procedures

When shutting down the machine, always perform the following safety procedures:

- Shut off the shot supply by pulling the shot valve handle backwards.
- Advance the machine until you are sure that no deep holes are being blasted into the surface.
- Turn off the breakers to the shot blasting machine & to the dust collector.
- Turn off the shot blasting machine as well as the dust collector & disconnect both from all power sources.
- Empty all dust from the dust collector. When removing dust from dust collector, always wear a particle mask. Concrete dust may contain particles which are extremely hazardous! These particles should never be inhaled!

- Empty all shot from the shot hopper on the shot blasting machine. Shot should never be left in shot blasting machine after work is performed. Never move or transport shot blasting machine with shot in the shot hopper as this may result in damage to the equipment.
- Make certain that all dust has been removed from the dust hopper. Dust left in the dust hopper has the potential to catch on fire and/or explode without notice.
- After completing work, clean all stray shot from work area. Shot can be cleaned with a magnetic broom or with a shop vacuum. Never leave stray shot in work area as shot represents a slip & fall hazard. Stepping & falling on steel shot can result in serious injury or even death.

Maintenance Procedures

When performing maintenance on the shot blasting machine, make certain that the following safety procedures are followed:

- Verify that the shot blasting machine & the dust collector are not in operation. Attempting to perform maintenance operations on the shot blasting machine and/or the dust collector while they are in operation can lead to serious injury or death.
- Make certain that the shot blasting machine is in the safety off position (valve is closed, blast machine is switched off, dust collector is switched off, all drives are at a standstill, & main plugs have been pulled).
- Never connect or disconnect power cables when voltage is present or while under load.
- Make sure that the shot blasting machine is on a level & stable surface.
- Allow the blast wheel to stop completely.
- Verify that all moveable parts of the shot blasting machine are completely still & secured against accidental movement.
- Make certain that all maintenance personnel are wearing lint-free cleaning cloths.
- Avoid contact with rotating motor parts, drives, or driven components.
- If repairing the underside of the shot blasting machine, then be certain to use jack stands. Never work under equipment that is not properly blocked.
- All repairs to electrical components, including wiring, should be performed by a licensed electrician.
- Failure to replace loose or damaged parts could cause damage to the equipment and/or serious injury or death to the operator.
- All replacement electrical components are to be identical to the components originally supplied with the shot blasting machine. Substitution of these parts with other electrical parts can result in damage to the shot blasting machine & injury to those nearby.
- All replacement electrical components are adjusted correctly.
- Make certain that electrical equipment is inspected regularly.
- All other repairs must be completed by competent, qualified personnel.
- Failure to replace loose or damaged parts could cause damage to the equipment and/or serious injury or death to the operator.

- Verify that aggressive cleaning products are not used.
- Make certain to never weld, flame cut/torch, or perform any grinding work on the shot blasting machine without written authorization from the manufacturer.
- Make certain that process materials & replaced parts are disposed of safely & in an environmentally-appropriate manner.
- After performing maintenance operations on the shot blasting machine, verify that all safety labels, guards, control panels, housings, lids, seals, casters, & other parts that have been replaced are secure.
- Remove & properly dispose of all maintenance refuse such as shot from the work area.

The tasks listed in the following check list must be completed before the machine can be put into operation; completing these tasks is essential in order to increase the efficiency & safety of the machine:

Blades	Check for excessive wear.
Blast Wheel	Check for balance & excessive wear.
Top Liner	Check for excessive wear.
Lower Liner	Check for excessive wear.
Shot Valve	Make sure shot is not leaking from shot hopper.
Filters	Make sure filters are secure & not clogged, ripped, or wet.
Wheels	Check for excessive wear.
Belts	Check for quality & tension.
Dust Collector Latches	Make sure latch firmly secures door.

Operating Instructions

Start Up:

1. Verify that all personnel are competent & that they have read & understood the safety information in this manual. All personnel must follow all safety instructions & programs required by their company & the worksite.
2. Verify that the shot blasting machine is on a level, clean, debris-free & dry surface. Connect the hose from the dust collector to the shot blasting machine. Verify that all clamps are secure.
3. Verify that the dust bin in the dust collector is empty & that the hose is free of debris. The dust bin should be emptied whenever it becomes full as well as after each & every job.
4. Verify that shot hopper contains no shot. The shot hopper should be emptied whenever it becomes full as well as after each & every job.
5. Make certain that the feed spout, seals, liners, control cage, blast wheel, & hopper parts are in good working condition.
6. Make certain that all electrical components are free of damage or excessive wear.
7. Make certain that the exhaust hose has no holes, leaks, deformities, or restrictions present.

8. Verify that the switch on the control panel of the shot blasting machine is set to the OFF position.
9. Verify that the switch on the control panel of the dust collector is set to the OFF position.
10. After confirming proper voltage with a voltmeter, insert the plug from the shot blasting machine into a 230 volt electrical outlet. Site power should never drop below 187 volts.
11. After confirming proper voltage with a voltmeter, insert the plug from the dust collector into a 230 volt electrical outlet. For the dust collector, use an outlet which is operated by a separate circuit breaker than is being used to power the shot blasting machine.
12. Make sure that any hardwiring or circuit breaker changes are performed by a licensed electrician.
13. Before loading the steel shot into machine, turn the switch on the shot blasting machine & the dust collector to the ON position for two minutes so as to verify that the circuit breaker will not trip.
14. Disconnect the hose from the shot blasting machine to verify that the dust collector has proper suction.
15. After verifying proper suction, reconnect the hose to the shot blasting machine.
16. Check the seals on the shot blasting machine to verify that the seals are set at the proper height. The seals should be rubbing the surface of the concrete or steel.
17. Insert drive pin.
18. Place a handful of steel shot in front of the shot blasting machine.
19. Push the shot blasting machine over the handful of steel shot. This will attach the steel shot to the magnetic seals & prevent shot from escaping from the shot blasting machine. Be certain to dispose of any shot that remains on the surface to be blasted.
20. Pour steel shot into the shot blasting machine shot hopper to the bottom of the screen.
21. Turn the switch on the shot blasting machine to the ON position, turn pot switch up to desired speed & drive the shot blasting machine forward as you push the shot valve to open the shot valve, & verify that the blast pattern is uniform. If blast pattern is uniform, then proceed to step #23. If blast pattern is not uniform, then release the shot valve handle to close the shot valve, turn the switch on shot blasting machine to the OFF position, & proceed to step #21.
22. Adjust the control cage (if necessary, refer to Setting the Blast Pattern section below).
23. Turn the switch on the shot blasting machine to the ON position, open the shot valve, squeeze the shot valve handle & push the shot blasting machine. Be sure to verify that the blast pattern is uniform.
24. Once blast pattern is uniform, start shot blasting.
25. After approximately ten feet of shot blasting, close the abrasive valve, stop the machine, shut off blast wheel & inspect the recently blasted area.
26. If test area appears to have been blasted evenly, proceed to step #27.
27. If test area appears to have been blasted unevenly, then go to the section in this manual that addresses “Setting the Blast Pattern.” After adjusting the blast pattern to a satisfactory degree, proceed to step #27.

28. After confirming that the shot blasting machine is blasting in an even, desired pattern, begin to once again walk behind the machine to operate it in a forward direction. Make certain to not exceed the amperage rating for the operating voltage.
29. If blasting becomes inadequate, it may be necessary to adjust travel speed. A faster speed will produce a more shallow profile while a slower speed will produce a deeper profile.
30. Once a satisfactory profile has been obtained, continue to blast in straight lines. Blasting in straight, consistent lines gives the best results.
31. In order to clear small obstructions on the surface being cleaned, simply pull up on the steering handle. Caution must be used whenever lifting up on the steering handle. This is because such a maneuver can cause the magnetic seal between the shot & the surface to be broken. If this seal is broken, shot may escape from the machine at a very high velocity.

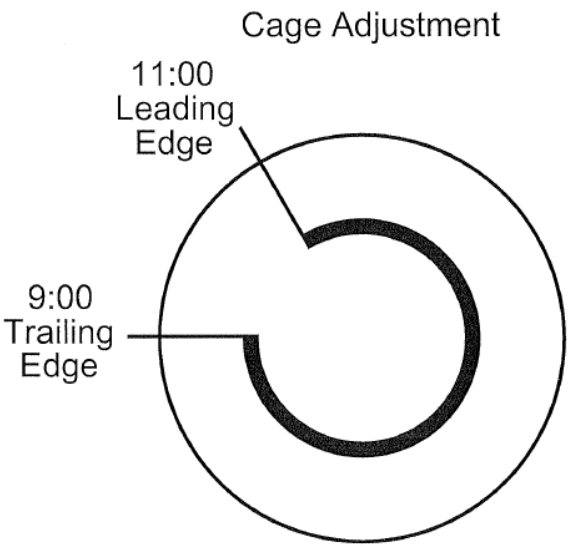
Setting the Blast Pattern:

Setting the proper blast pattern is determined by trial & error. The importance of selecting the proper blast pattern cannot be overstated. An improper or unevenly distributed blast pattern will result in excessive blasting on either the right side or left side of the machine & will leave shadows or “track” lines in the blast pattern.

1. Verify that the blast wheel is rotating in the direction shown on the blast housing.
2. Place a sheet of steel approximately ¼” thick under the machine & then blast with the shot valve fully open for approximately 30 seconds. Do not move the machine during this time.
3. After blasting for thirty seconds, shut down the machine & inspect the blast pattern. The “hot spot” should be in the center of the width blasted. The “hot spot” can be altered by rotating the control cage in small increments. Rotating the control cage in a counter-clockwise direction will move the “hot spot” to the right while rotating the control cage in a clockwise direction will move the “hot spot” to the left. If you visualize a clock, the opening of the control cage should be set at approximately 11:00 (leading edge) & 9:00 (trailing edge) on the clock. The size of steel shot used will impact where the “hot spot” appears in the blast pattern. The operator will need to adjust the control cage based upon the size of steel shot utilized.

The setting of the control cage will vary depending both on the size of shot used & on the type of surface being blasted. When altering the position of the control cage, make sure to only adjust it in small increments. Keep adjusting the control cage until the desired blast pattern has been obtained. Once the desired blast pattern has been obtained, the blast pattern should remain consistent. Four factors may affect the blast pattern. Of these, the control cage setting is the most crucial. Other factors that may also affect the blast pattern include the size of the shot being used, the wheel rotation, & the worn wheel kits. If adjusting the control cage setting does not allow the desired blast pattern to be achieved, then it is important to narrow down what is causing the problem. First, take into consideration the size of shot being used. If this does not resolve the problem, then check

and, if necessary, replace the wheel rotation & the worn wheel kits. The proper control cage setting is described in the following figure:



Shut Down:

1. Close the shot valve.
2. Stop the shot blasting machine forward & turn the speed control knob to zero.
3. Turn off the blast wheel.
4. Turn off the shot blasting machine.
5. Turn off the dust collector.
6. If this is only a temporary stoppage, then check the dust collector & empty it if necessary. If this stoppage is the result of being done for the day, then empty the dust collector no matter the amount of dust within it.
7. If this is only a temporary stoppage, then check the shot hopper & empty it if necessary. If this stoppage is the result of being done for the day, then empty the shot hopper no matter the amount of shot within it.
8. Make certain that the shot blasting machine is in a safe location if it is to be left at the job site. If the shot blasting machine is to be transported, then please refer to the section in this manual that addresses “Transportation.”

Transportation

When transporting the shot blasting machine, it is strongly recommended that personnel act in a manner so as to reduce the potential that damage takes place as a result of using excessive force or of using incorrect loading & unloading procedures. Personnel must remove any shot from the machine before it is transported. Also, the machine may only be lifted by using the suspension eyelets; forklifts should never to be used to transport the shot blasting machine.

Dust Collector Function

The most fundamental part of the dust collector is referred to as the filter chamber. Air containing dust particles enters the filter chamber from the blast head via the exhaust hose. This air then moves into the dust collector inlet connection located on the left, front side of the dust collector. Next, the air passes through a plenum & moves through filter cartridges. These filter cartridges capture the dust particles & prevent them from moving on with the air. Now dust-free, the air then passes to the clean air portion of the dust collector where it is subsequently released back into the environment by way of the silencer box.

Dust Collector Maintenance

The dust collector must be examined habitually. This is because adequate ventilation is essential for the dust collector. It is therefore vital that the following areas are routinely examined:

- Adequate ventilation is available at all times. Ventilation irregularities can have a negative effect on the efficiency of both the shot blasting machine & the dust collector. Poor ventilation results in excessive wearing of the blast wheel & liner wear. Despite conventional wisdom, shot is not the primary cause of wear & tear to shot blasting machines. In actuality, it is the dust & other contaminants produced by these machines that typically cause their parts to wear prematurely. As a result, it is essential that proper ventilation be supplied to the machine at all times by keeping the dust collector free of excessive contamination.
- The hose connections between the blast head & the dust collector must be tight.
- The hose must be in good condition. Flattened spots, holes, & wear spots should be corrected without haste. Hose must be replaced if necessary.
- Filter cartridges must be kept in good, working condition.

If the dust collector is not in proper, working order, then this can have a detrimental effect on the entire system. Improper ventilation can result in inadequate abrasive cleaning which hastens blast wheel & liner wear. It is, consequentially, essential that the dust collector be well maintained. A dust collector that receives timely, regular maintenance will result in less shot contamination which will help to both reduce operating costs & increase overall effectiveness. Before inspecting or removing filter cartridges, make sure that the shot blasting machine shot blasting machine is on a level surface. Also, make sure that the machine has been properly immobilized. Finally, verify that shot blasting machine is in the off position & has been disconnected from all power sources.

Inspection Timetable

The shot blasting machine contains parts that are continually exposed to steel shot moving at high rates of speed. The combined effect of contact with steel shot traveling at high rates of speed & exposure to concrete dust causes these parts to deteriorate. As a result, the operator or maintenance personnel should inspect the machine wear parts

prior to operation & replace these parts when necessary. Wear parts & inspection times on the machine, other than inspection prior to use, are listed below:

Part	When to Inspect	Evidence of Wear
Feed Spout	50 hours	Thin Spots
Blast Wheel	5 hours	Blades deteriorated > 50%
Control Cage	5 hours	Deteriorated edges
Blast Wheel Hub	10 hours	Missing pins/deterioration
Liners	50-75 hours	Warping, holes, deterioration
Blast Housing	50-75 hours	Thin sections or other deteriorations
Deflector Plate	50 hours	Thin spots; wearing at welds
Separator	100 hours	Thin spots; wearing at welds; warping
Top cover	50 hours	Inside edge erosion

Parts of the machine which should also be inspected regularly but are not exposed to steel shot are the control panel, motor, electric cords, dust collector hose, filters, & motors. If any of these components show signs of wear, they should be repaired so that they are in the same working condition as when they were new. If they cannot be repaired, then they should be replaced immediately. Prior to any repair work, secure the machine against unintentional switching-on. Put the machine in the safety off position. The supplier's operating & maintenance instructions should also be followed during service & maintenance procedures.

Blast Wheel Removal & Installation

When the blades on the blast wheel are deteriorated by 50% or more, then the blast wheel should be replaced. To replace the blast wheel, perform the following steps:

1. Verify that the shot blasting machine is turned off & disconnected from all power sources.
2. Remove the feed spout & the control cage.
3. Remove the four mounting nuts, flat washers, & lock washers that secure the control cage mounting assembly to the blast housing. Do not loosen any other screws on the control cage mounting assembly since they are used to set the gap between the blast wheel & the control cage. Remove the control cage mounting assembly.
4. Remove the socket head cap screw & lock washers from the blast wheel & remove the blast wheel.
5. Check the wheel hub for wear & replace if necessary.
6. Install new blast wheel using the new socket head cap screw & lock washers that are included in the wheel kit. Be sure that the new blast wheel is seated properly on the wheel hub before tightening the socket head cap screw.
7. Reinstall the control cage mounting assembly to the blast housing.
8. Install the new control cage that was included with the wheel kit. Rotate the wheel by hand to be sure that the control cage & the wheel do no touch. The initial window setting for the control cage should be between 8:30 & 10:30.

9. Reinstall the feed spout.
10. Energize the blast motor momentarily to check for good balance & proper clearance before shot blasting.
11. See the section in this manual about “Setting the Blast Pattern” before adjusting the control cage.

Only blast wheels manufactured by Blastpro Manufacturing, Inc. should be used by the shot blasting machine. Other blast wheels that have not been tested by Blastpro Manufacturing, Inc. could result in damage to the equipment or injury to the operator.

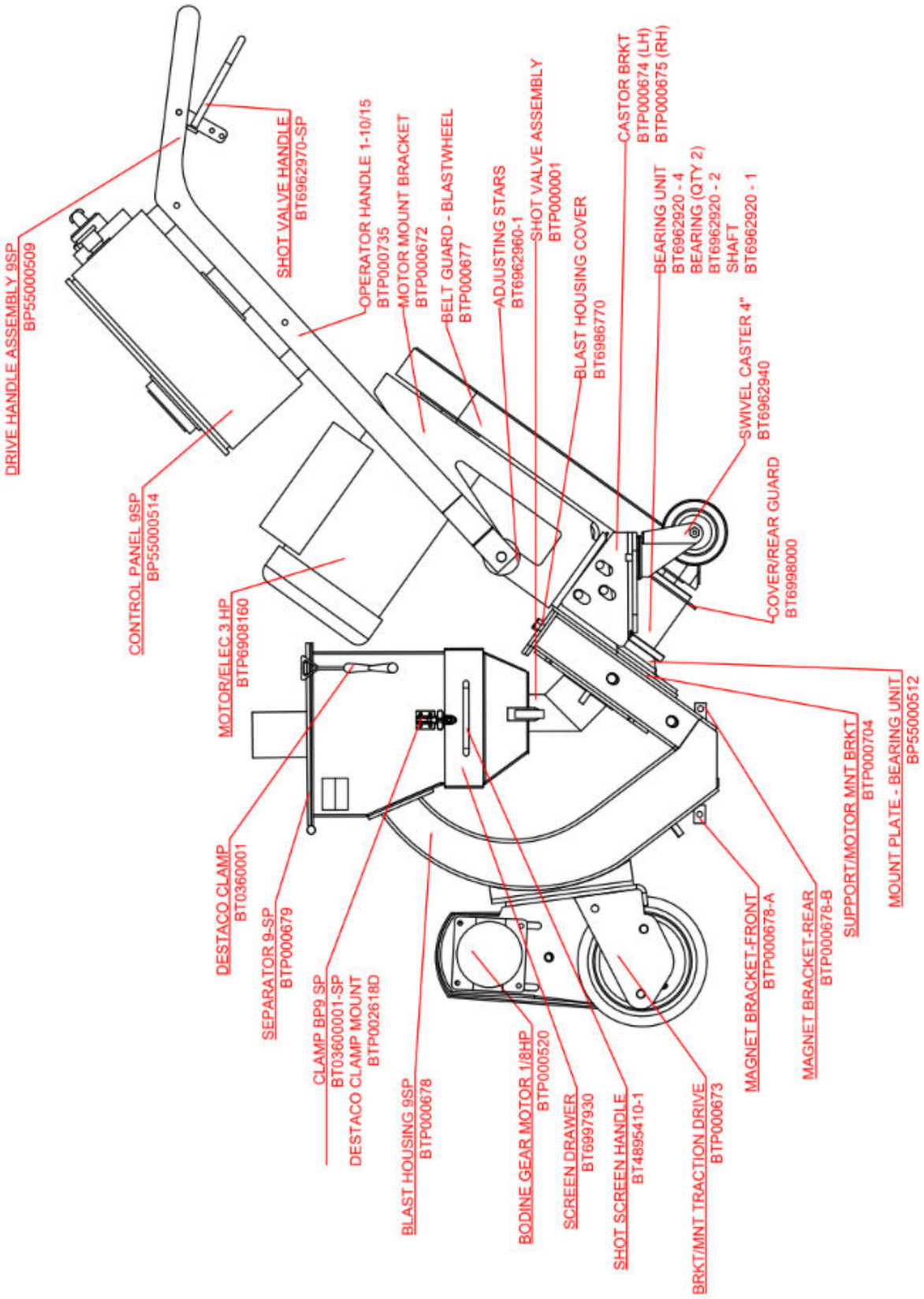
Fault Diagnostics

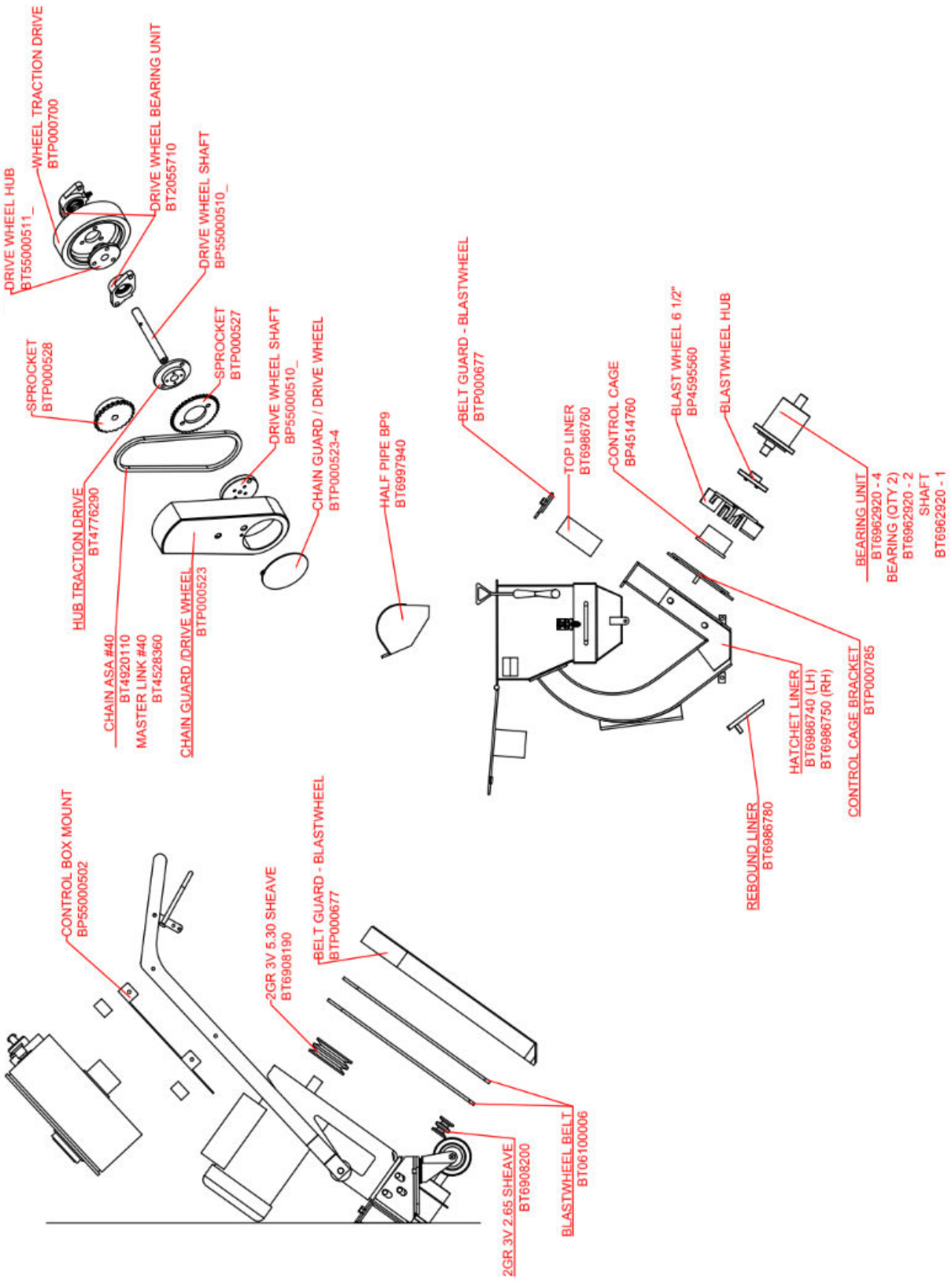
Problem	Solution
The shot blasting machine will not operate.	First, make sure the machine is being supplied power & that this power is within proper parameters. Second, verify that the shot blasting machine & dust collector are turned on. Third, with shot blasting machine as well as dust collector turned off & all power sources disconnected, open panel door on shot blasting machine & check the status of the Control Power Overload in each control panel. Make sure that the overload device is in the on position.
Breaker is tripping when shot blasting machine & dust collector are turned to the ON position.	The shot blasting machine & dust collector should be powered by separate breakers. Find electric outlets with separate breaker switches & use accordingly. Check circuit breaker sizes.
The shot blasting machine is vibrating excessively.	Check blast wheel immediately. Excessive vibration is usually caused by the blast wheel being out of balance due to it being worn or by blades being broken or chipped. Install new blast wheel kit. Failure to install new wheel kit in this instance could lead to serious damage to machine.
	If blast wheel doesn’t seem to have any problems, check ventilation system. A ventilation system that requires maintenance may cause the shot blasting machine to shake excessively.
The shot blasting machine is creating excessive noise.	This problem is most likely caused by an improper alignment of the blast wheel & control cage. Check alignment of blast wheel & control cage immediately & verify that there is adequate clearance between the blast wheel & the control cage.

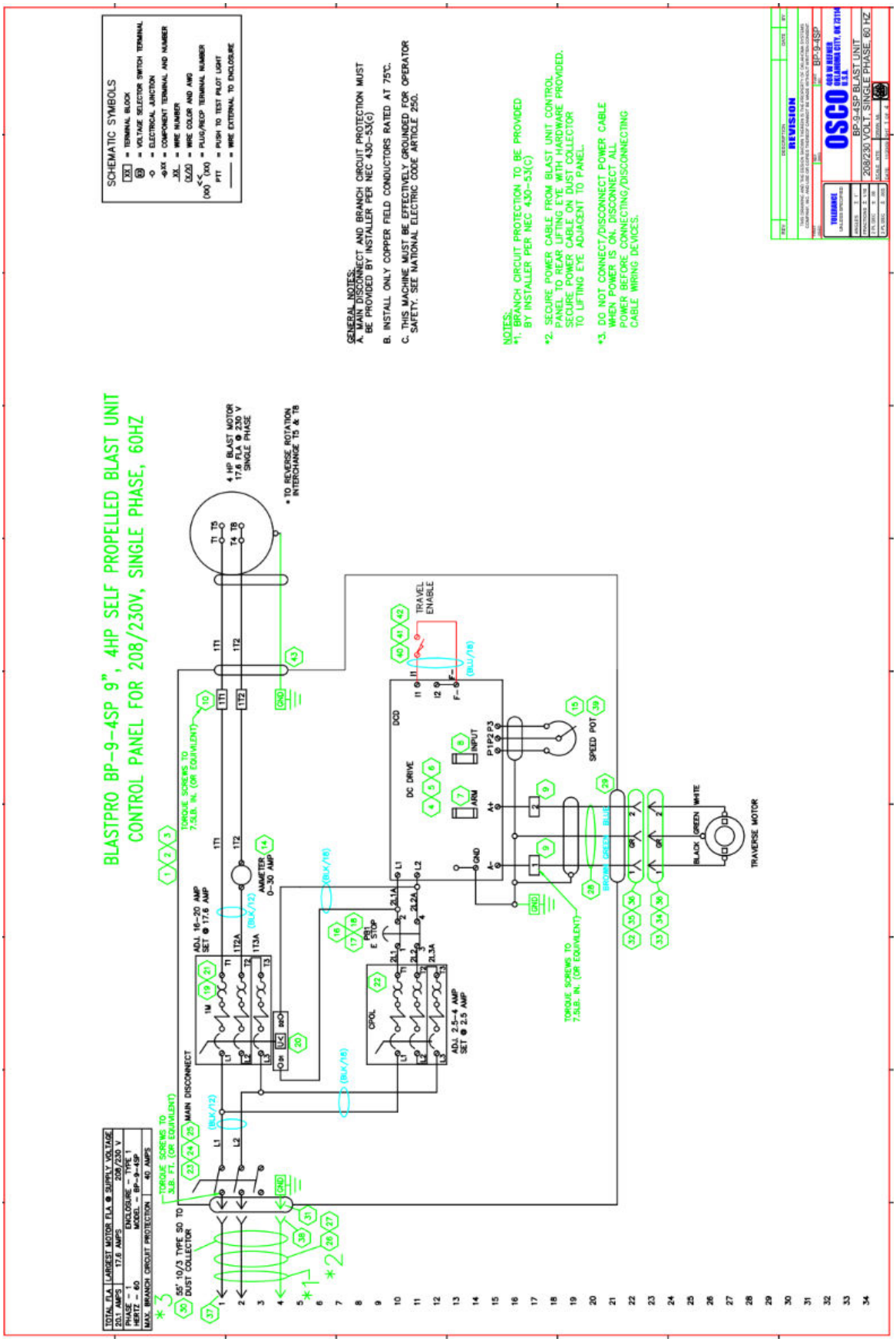
	If blast wheel & control cage are aligned probably but excessive noise persists, it could be that other rotating parts are coming into contact with each other. Check bearing units, belts, sheaves, motor mounting, wheel housing, & any other associated parts to be sure that they are aligned & safely secured.
The shot blasting machine is taking longer to shot blast than before.	It could be one of several problems. First, check to see how shot is being fed to the wheel. It is important to make sure that enough shot is getting to the wheel. Second, make sure storage hopper has enough shot within it. Third, verify that shot is not contaminated. Shot should be fairly clean & ventilation system should be working properly. Fourth, check shot feed & shot control valve. Obstructions in the shot feed or shot valve can slow down shot blasting. Fifth, check wheel impeller & control cage. Excessive wear may warrant replacing wheel kit. Sixth, investigate drive belt & make sure it has proper tension, correct alignment, & is not worn out. Seventh, look to see if blast pattern is still consistent. If it is not, make sure that the blast wheel is sitting properly in the wheel hub. & finally, eighth, check the wheel. Make sure that the shot valve is working properly.
The shot blasting machine is creating excessive wear on liners & blast housing.	Adjust control cage so that the “hot spot” is centered in work area rather than on liners or housing.
The shot blasting machine is dropping an excessive amount of steel shot.	Verify “hot spot” is centered properly & adjust control cage as necessary. Verify seals do not have excessive wear, feed spout is aligned properly, & shot valve is closing when shot lever is released. Verify dust collector has adequate suction.
The shot blasting machine will not move forward.	Make certain that the drive pin has been installed. Check wiring plugs & replace any faulty components
The shot blasting machine is difficult to push or gets stuck in areas.	Verify that the seals are positioned properly & that they are not too close to the floor. Raise height of seals. Pull up on steering handle to clear small obstructions on the work surface. Use extreme caution when doing so as this maneuver may cause shot to shoot out of the machine & into the work area.
The shot blasting machine is not blasting properly.	Slow machine down so that a deeper profile is created.

The shot is contaminated.	Increase the speed of the shot blasting machine. This will reduce shot flow to the wheel. Also, check fan rotation, exhaust hose & connections, & air control gate to be sure that enough air flow is being delivered by the exhaust fan.
The shot blasting machine or dust collector is emitting concrete dust.	Verify there are no holes in the duct hose leading from the shot blasting machine to the dust collector. Verify filters in the dust collector are properly installed & are clean. If necessary, replace filters in dust collector.
Fan motor overload trips.	Attach an end cap into open port. Also, check electrical system.

Schematics






BLASTPRO BP-9-4SP 9", 4HP SELF PROPELLED BLAST UNIT
CONTROL PANEL FOR 208/230V, SINGLE PHASE, 60HZ
SCHEMATIC SYMBOLS
GENERAL NOTES:
A. MAIN DISCONNECT AND BRANCH CIRCUIT PROTECTION MUST BE PROVIDED BY INSTALLER PER NEC 430-53(c)
B. INSTALL ONLY COPPER FIELD CONDUCTORS RATED AT 75°C.
C. THIS MACHINE MUST BE EFFECTIVELY GROUNDED FOR OPERATOR SAFETY. SEE NATIONAL ELECTRIC CODE ARTICLE 250.
NOTES:
*1. BRANCH CIRCUIT PROTECTION TO BE PROVIDED BY INSTALLER PER NEC 430-53(c)
*2. SECURE POWER CABLE FROM BLAST UNIT CONTROL PANEL TO REAR LIFTING EYE WITH HARDWARE PROVIDED. SECURE POWER CABLE ON DUST COLLECTOR TO LIFTING EYE ADJACENT TO PANEL.
*3. DO NOT CONNECT/DISCONNECT POWER CABLE WHEN POWER IS ON. DISCONNECT ALL POWER BEFORE CONNECTING/DISCONNECTING CABLE WIRING DEVICES.
REVISION
OSCO
BP-9-4SP BLAST UNIT
208/230 VOLT, SINGLE PHASE, 60 HZ
4 HP BLAST MOTOR 17.6 FLA @ 230 V SINGLE PHASE
TO REVERSE ROTATION INTERCHANGE T5 & T8
MAIN DISCONNECT
ADJ. 16-20 AMP SET @ 17.6 AMP
ADJ. 2.5-4 AMP SET @ 2.5 AMP
AMMETER 0-30 AMP
DC DRIVE
SPEED POT
TRAVEL ENABLE
TRAVERSE MOTOR
55' 10/3 TYPE SO TO DUST COLLECTOR
TOTAL FLA 20.1 AMPS
LARGEST MOTOR FLA @ SUPPLY VOLTAGE 17.6 AMPS 208/230 V
PHASE - 1
HERTZ - 60
ENCLOSURE - TYPE 1
MODEL - BP-9-4SP
MAX. BRANCH CIRCUIT PROTECTION 40 AMPS

5.1: Warranty Registration Information

A copy of the warranty card on the following document, together with proof of payment, must be submitted with any service request. This warranty card must be returned to Blastpro Manufacturing, Inc., 6021 Melrose lane, Oklahoma City, OK 73127, within ten (10) days of acquiring Blastpro products in order to qualify for the one year limited warranty contained in the sales agreement. Blastpro provides as a limited warranty to original purchasers of Blastpro equipment, purchased within & situated within the United states of America, who notify Blastpro in writing through completion of the Blastpro equipment warranty card within ten (10) days of acquiring Blastpro equipment, the following limited warranty. Subject to the exclusions, limitations & conditions stated above & below, Blastpro will warrant its products against defects in materials & workmanship, provided the original purchaser uses such equipment under normal & proper use, for a period of one year or 1,000 hours, whichever occurs first, from the date of delivery to the original purchaser. During the applicable limited warranty period & subject to the exclusions, limitations & conditions contained herein, Blastpro shall, within a reasonable period of time, repair or replace, at its option, any defective components of the equipment. The limited warranty does not cover wear parts, including but not limited to, tires, magnets, seals, casters, liners, wear plates, bearings, cages, blast wheels, blades, belts, electrical wiring components & items of a similar nature. This limited warranty does not cover damage to Blastpro equipment caused by any of the following: the use of the equipment for purposes other than which the equipment was designed & intended, all external causes such as (without limitation) acts of god, accidents, dropping, collision, fire, water damage, freezing, striking other objects, misuse or otherwise using the equipment contrary to the instructions & warnings contained in the user manual; altering or modifying Blastpro equipment or accessories; exposure to environmental conditions beyond reasonable limits & the limits stated in the equipment manual; failure to properly maintain & service the equipment; damage caused by the use of any non-Blastpro parts or attachments on the equipment. To obtain repair or replacement under this limited warranty, the original purchaser must contact Blastpro at 1-877-495-6464. The original purchaser must be prepared to describe any alleged problem, as well as provide proof of purchase & proof of date of delivery & return of the equipment warranty card. Written authorization from Blastpro must be obtained prior to any Blastpro equipment being returned to Blastpro. Once Blastpro provides the original purchaser with a written authorization, then the original purchaser shall deliver the equipment as instructed by Blastpro. The original purchaser shall pay the cost of shipping & shall also bear any risk of loss during shipping. Providing the Blastpro equipment is defective & the limited warranty applies, Blastpro shall, within a reasonable period of time, repair or replace any defective components. The original purchaser shall be responsible for picking up the repaired equipment or may arrange for shipment at original purchaser's expense. Blastpro's repair or replacement of any defective parts on the equipment does not extend the term of this limited warranty, which shall expire on expiration of the period of one year from the date of original delivery, subject to the further terms of this warranty. This limited warranty is the only warranty applicable to Blastpro equipment.
Blastpro disclaims all other warranties, express or implied, including implied

Warranties of merchantability or fitness for a particular purpose, other than those warranties implied & incapable of exclusion, restriction or modification under applicable law. Any such implied warranties which may be required by law & are not disclaimed hereby, are limited to the extent allowed by law to the applicable period of this implied warranty or to the applicable time period provided by the applicable state law, whichever period is shorter. Under no circumstances shall Blastpro be liable to the original purchaser or any other person for any direct, indirect or consequential damages resulting from the use or misuse of the equipment or arising out of any breach of any warranty or for any special or consequential damages of any character, including without limitation, damages for any loss of goodwill, work stoppage or any & all other commercial damages or losses. No change to or additional warranty, no matter by whom made or when made, shall apply to any equipment sold by Blastpro.

5.1: Warranty Registration Card

To ensure the proper warranty coverage is extended to the owner of this machine, fill out the attached card completely & accurately & return to Blastpro Manufacturing, Inc. Keep the top portion of this card for your records with the following user's reference information:

Delivery date: ____

Delivering distributor Name:______________________________________

Delivering distributor Address:____________________________________

Machine serial number: ____

Machine model: ____

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Warranty Registration Card

To ensure that your Blastpro machine is covered under warranty, please fill in the following information & mail it to BlastPro Manufacturing, Inc. 6021 Melrose Lane, Oklahoma City, OK 73127, or Fax to 405-495-1331. The following boxes must be checked:

☐ Machine Manual Received ☐ Training Scheduled or Complete

Company: ____

Address: ____

Phone Number: ____

Contact Person: ____

Purchase Date: ____

Machine Model Number: ____________________________________

Delivery Date: ____

Distributer Name: ____