



SERVICE MANUAL 1-16 DB4-V2

VERSION 1.1



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1. Introduction

It is important that all persons who are working with, or maintaining this machine, read the manual carefully and understand it fully. Keep this manual near the machine, to enable it to be referred to at any time. Only authorized personnel may operate this machine.

2. Safety

Before operating the machine, the personnel must be familiar with the safety instructions given in this manual. Keep this manual near to the machine, so it can always be consulted.

Advice for Operators of Blast Cleaning Machines



In accordance with the accident prevention regulations for blast cleaning work, the operator must provide operating instructions for blast cleaning work in a form and language that is understandable.



During operation the acceptable noise level of the 1-16DB4-V2 could exceed 85dB (A). This noise level depends on the job site. When the noise level is 85 dB (A) or more, the machine operator and persons working near the machine must wear sound-insulating equipment. However, it is the contractor's responsibility to ensure the safety of their operator.



Engine exhaust gases contain poisonous carbon monoxide. Carbon monoxide is odorless and colorless and can cause injury or death if inhaled. Do not use equipment indoors without adequate ventilation. Refer to OSHA guidelines and regulations concerning maximum levels of exposure to carbon monoxide gases and other hazards associated with using internal combustion engines.

Warnings and Symbols



Symbol of operational safety:

In these operating instructions, this symbol will be shown next to all safety precautions that are to be followed to maximize safety and equipment performance. Follow these instructions and take special care in these circumstances. In addition to these instructions, the general safety precautions and accident prevention guidelines are also to be followed.



Information, instructions, and restrictions with regard to possible risks to persons, property, or equipment.



Indicates where consultation with the manufacturer is required.



Instructions relating to periodic checks.



Reference to important instructions contained in the operating instructions.

Organizational Measures



These operating instructions are to be kept with the machine, and must be within reach at all times!

In addition to these operating instructions, general and legal regulations regarding accident prevention and environmental protection must be complied with per local regulations.

Such duties may, for example, relate to the handling of hazardous substances, or the provision and wearing of personal protection equipment, as well as compliance with traffic regulations.

The operating instructions must be supplemented by other instructions, including the duty to supervise and report incident relating to particular working practices, for example work organization, work procedures, and personnel safety.

Personnel entrusted with working the machine must read and understand the operating instructions before starting work, paying specific attention to the safety information. To read these instructions after work has commenced is too late. This particularly applies to incidental activities such as setting up the equipment, carrying out maintenance work or training staff to work with the machine.

From time to time the working practices of the operators are to be checked by a supervisor, especially regarding awareness of safety and hazards.

Operators must tie back long hair and not wear loose clothing or jewelry, including rings. There is a risk of injury by items getting caught, or being drawn into moving machinery.



Use personal protective equipment if necessary or required by local regulations! Take notice of all safety and hazard notices on the machine!



All safety and hazard notices on the machine must be kept complete and legible.

If safety-critical changes occur to the machine or its working method, the machine must be shut down immediately. The cause of the fault must be established and remedied.



Changes, additions, and conversions to the machine must NOT be made without the manufacturer's permission! This applies in particular to the fitting and adjustment of safety devices.

Spare parts must comply with the technical requirements specified by the manufacturer. This is always guaranteed if Blastrac OEM parts are used.

Intervals for recurring checks and inspections specified in these operating instructions must be followed.

To perform maintenance work correctly, it is imperative to be equipped with the proper tools for the task.

The location and the operating of fire extinguishers must be made known to each work site.

Take note of the facilities for reporting and fighting fires.

Fundamental Duties

Work on the machine may only be undertaken by trained personnel.

Only trained personnel may be employed. Note the statutory minimum age. Clearly specify the responsibilities of personnel for operation, setting up, servicing and maintenance work.

Make sure that only authorized personnel operate or work on the machine.

Define responsibilities of the machine operator, with regard to traffic safety regulations, and inform him not to take instructions from third parties who may not be complying with the local safety requirements.

Personnel, who are being trained to operate equipment, may only use the machine under constant supervision of an experienced person.



General Safety Precautions

Do not allow any method of working that impairs safety.

Recognized official procedures have to be used to ensure the machine is operated in the safest and best conditions.



Only operate the machine when all safety devices, and related safety equipment, are present and operational.

Check the machine visually for any damage and defects at least once a day.

In the event of operational malfunctions, the machine must be shut down immediately and secured. This is accomplished by pushing the top of the throttle assembly down and turning the ignition switch to the off position.



Secure the work area around the machine in public areas providing a safety distance of at least 6.5 feet (2 meters) from the machine.

Faults must be immediately remedied.

Carry out the switch on and switch off, operations in accordance with the operations manual.

Before turning on the machine verify that no one can be endangered when the machine starts up.

Do not turn off the dust collector while the machine is running.



All persons in the proximity of the machine must wear ear protection, safety glasses with side shields and safety shoes. In addition, the machine operator must wear close fitting protective clothing.

Do not wear loose fitting clothing.

Do not stand to the side of the blast housing.

Do not operate this equipment on wet surfaces or in the vicinity of flammable liquids.



Engine exhaust gases contain poisonous carbon monoxide. Carbon monoxide is odorless and colorless and can cause injury or death if inhaled. Do not use equipment indoors without adequate ventilation. Refer to OSHA guidelines and regulations concerning maximum levels of exposure to carbon monoxide gases and other hazards associated with using internal combustion engines. It is highly recommended that a CO (carbon monoxide) detector be used to warn the user if levels become unsafe.

**Mechanical servicing work:**

Put the machine in the Safety Off Position as described on page 8 before carrying out any service work on the machine.

Follow any special safety instructions in sections on servicing the machine. See Section 5.

Service and maintenance intervals specified in these Operating Instructions, as well as information on the replacement of parts must be followed.

These activities may only be undertaken by qualified personnel.

The operator must be given information about maintenance and work procedures before starting the cleaning process. This includes, but is not limited to the following:

- Procedures that are related to normal operation
- Methods of tool adjustments on the machine, and its safety devices
- All "ON and OFF" functions that have to be carried out according to the operation manual
- Methods for maintenance and repair.

If the equipment is switched off in order to carry out maintenance, repair, or adjustment, it must be secured against unintended restart.

See page 8 for specific details of the Safety Off Position.

Always dispose of the contents of the dust bags or of a connected dust collector before loading the machine onto a vehicle.

Observe the local waste disposal regulations; in uncertain situations ask the next higher authority.

Do not use any aggressive cleaning materials.

Only use lint-free cleaning cloths.

Always verify that any bolted connections that were loosened during service and maintenance work are properly secure and tight.

Always verify that all belts are in good condition.

If safety devices need to be removed or dismantled during service and repair, these safety devices must be reinstalled, and inspected immediately after completion of the servicing and repair work.

Make sure that process materials and replaced parts are disposed of safely and in an environmentally friendly manner.

Make sure that all components used for replacement purposes comply with the original parts and are correctly adjusted if necessary.



Definition of the Safety Off Position

Definition: The machine is in a safe condition where it cannot be a hazard.

Putting the equipment in the Safety Off Position involves:

- Close the shot valve.
- Switch off the machine.
- Wait for all drives to stop.
- Securing against unintended restart.



3. General

Operative Range

The Blastrac 1-16DB4-V2 is a downward blasting machine with a closed abrasive circuit designed for the pre-treatment of horizontal surfaces. The impact of metallic abrasive onto the surface to be treated thoroughly removes surface contaminants, coats of paint, sealants and thin coatings.

This machine has an on board dust collector that separates the dust from the abrasive. The specially designed dust collection system ensures dust-free operation of the machine and clean air at the workspace.

Scope of Supply

Scope of supply of the machine:

- Blast cleaning machine (1-16DB4-V2)
- Operating instructions

Description of the Machine

The 1-16DB4-V2 Shot-Blast machine is powered by a 61 HP Duetz Diesel engine. The machine is capable of removing up to 1/4 inch of concrete in one pass. It is driven by a hydrostatic pump and motor system.

The 1-16DB4-V2 has a 16-inch blast pattern using a patented blast wheel design which eliminates hot spots and grooves. The blast wheel is a paddle wheel design that is pulley driven by a mechanical clutch. Shot feeds through the shot valve to the blast wheel. The shot and debris rebound to the dust separator and the dust is removed to the dust collector. Clean shot falls back into the hopper for reuse. The machine recycles shot continuously after the clutch is engaged until the machine is shut off. The auto pulse dust collector cleans the nine cartridge filters while the machine is running. This machine is capable of blasting up to 4000 square feet per hour while achieving a brush blast.

Care and Maintenance

Special care and regular maintenance of the machine are imperative for proper function and safety.

In order to prevent unnecessary downtime, it is recommended to keep original spare and wear parts in stock, as listed in the later parts of this manual.

Before each use of the machine, verify the readiness of the machine by reviewing the checklist on pages 11-12.



All persons in the proximity of the machine must wear safety glasses with lateral protection and safety shoes while the machine is in operation. The machine operator must wear close-fitting protective clothing.



4. Transportation

Unit Specifications

1-16DB4-V2	
Length	116 in
Width	60 in
Height	66 in
Weight	4500 lbs.
Blasting Width	16 in

General Transport of the Machine

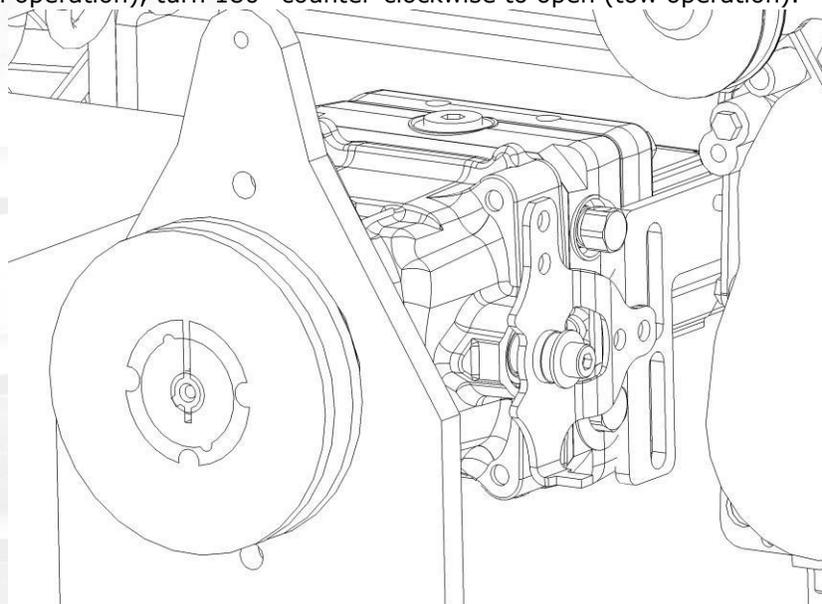


Before the machine is used for the first time, Blastrac authorized dealers offer a course to familiarize maintenance and operating personnel with all elements of the machine. Blastrac is not liable for damage caused by incorrect use of the equipment by personnel that have not trained by Blastrac.

Before the machine is transported, remove the abrasive from the machine and clean the dust out of the dust collector.

Always drive carefully and in a manner to avoid the machine shifting. Tighten the machine to the vehicle or trailer with straps or chains.

This machine is equipped with a tow valve. This valve allows fluid to pass through the hydraulic pump without the motor being started. This allows you to move the equipment without the use of the motor. If the valve is not closed, it will allow fluid to pass through the pump and not move when the engine is started. The valve is located on the side of the hydraulic pump (see picture). Turn clockwise to close (normal operation), turn 180° counter-clockwise to open (tow operation).



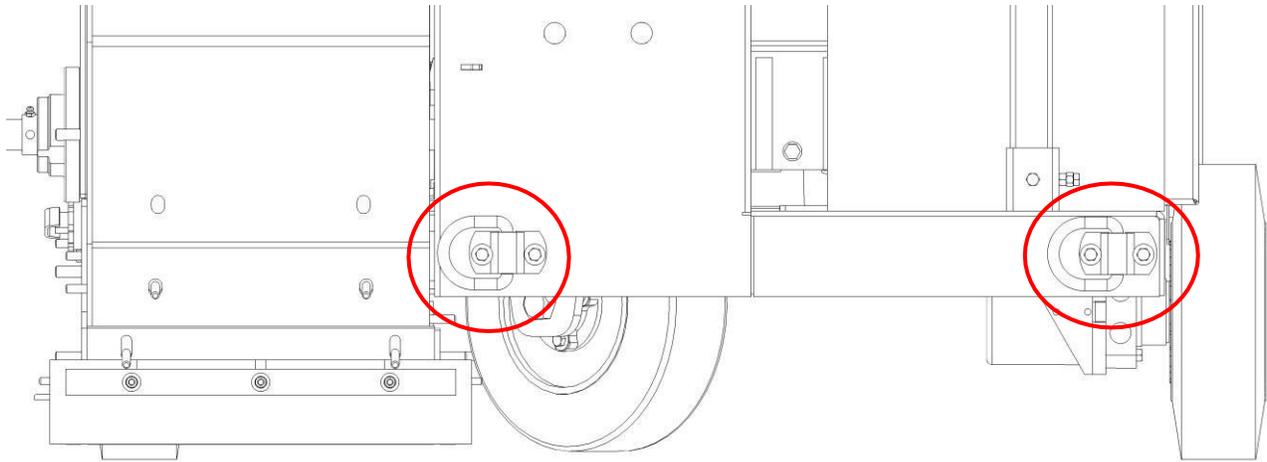
Tow Valve



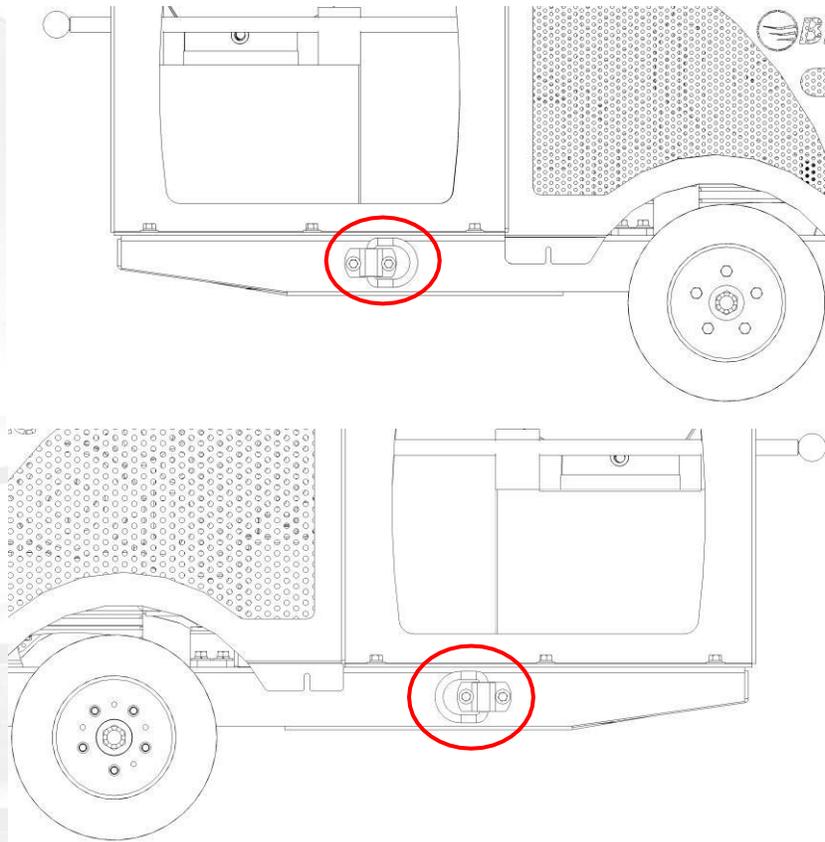
Tie-Down Locations

There are 4 tie-down locations, as show below.

Front Tie-Downs



Side Tie-Downs





5. Operation

Preparation for Operation

Check the surface to be treated for loose parts (stones, screws, etc.). The surface must be swept, if necessary. Make sure that the machine can travel over all inequalities on the surface. Small inequalities like weld seams or floor joints are no barriers for the machine.



Whenever the machine is not used for blast cleaning, the abrasive valve must always be closed!

Before start up, make sure that all existing protective housings are mounted and properly tightened.



All persons in the proximity of the machine must wear safety glasses with side shields, as well as safety shoes. The operator must wear close-fitting protective clothing!



Regular inspection is important in order to avoid unplanned downtime.

Carry out the following checks before any start-up. A printable checklist is provided in the back of this manual for your convenience.

- Check whether all machine parts are assembled safely and correctly.
- Verify that all bolted connections are secure and tight.
- Check the abrasive storage hopper and the blast wheel parts for foreign materials and remove them.
- Check the blast wheel blades, liners and fastening screws for damage and wear. *Important Note: The blades should be changed before they wear past the vanes on the blast drum.*
- Check the brush seals for wear.
- Check the pinch bar for clearance and uneven wear.
- Verify for proper gap between the pinch bar and the blades. See page 25 on adjustment instructions.
- Check the Blast Wheel bearings set screws and grease.
- Check the shot valve for leaks.
- Make sure the filters are not clogged or torn.
- Check the wheels/tires for damage.
- Check the engine oil and change when dirty.



- Check the air cleaner and change when dirty.
 - Check the hydraulic fluid and change when dirty.
 - Check the Blast Seals for excessive wear.
 - Check the Blower Bearings set screws and grease.
 - Check the chain tension in the steering assembly.
 - Check the condition and tension of the belts.
 - Check the bearing in the idler assembly.
 - Make sure the dust bags are empty.
- Important Note: Please comply with the local waste treatment regulations considering the removed material.*
- Check the dust collector latches and ensure they firmly secure the door.
 - Check the separator parts for wear and defects. Remove foreign bodies and dust deposits in order to prevent the separator from being blocked.
 - Check the level of abrasive in the storage hopper. Refill if necessary.

Any items on this list that are not found to be in order must be repaired or replaced.



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Operator Awareness

The 1-16DB4-V2 machine is designed to blast a concrete surface and reclaim all shot and dust. The machine can very easily destroy the concrete surface if not operated properly! The absence of operator awareness will create down time and can prove to be very costly.

- When the shot valve is open, the machine is throwing shot! Therefore, you must be sure the shot valve is closed prior to starting as well as any time the machine comes to a stop.
- The speed of travel controls the level of removal. You should run a test pattern to be sure you are not gouging the floor.
- Due to variances in concrete, it is necessary to check the pattern every ten feet as the concrete or coated surface may be softer in different areas.
- The maintenance check list on page 12-13 is provided for blasting efficiency. This list should be completed after each day of blasting.
- If the dust bags get too full, you will lose all of your suction. This will result in loss of all shot from the hopper.



- The gap between the blades and the pinch bar is very important. If your gap exceeds 3/16 inch, you will begin to trail shot and eventually empty the shot hopper.
- The shot blast machine is equipped with blast seals. These seals provide a seal for the suction required. They contain shot that would otherwise be thrown from the machine. If the seals are worn out, you will lose your seal and shot could escape from the worn areas.

Before start-up, the operating personnel must be familiar with the safety regulations given in this manual.

Engine Startup



Engine exhaust gases contain poisonous carbon monoxide. Carbon monoxide is odorless and colorless and can cause injury or death if inhaled. Do not use equipment indoors without adequate ventilation. Refer to OSHA guidelines and regulations concerning maximum levels of exposure to carbon monoxide gases and other hazards associated with using internal combustion engines. It is highly recommended that a CO (carbon monoxide) detector be used to warn the user if levels become unsafe.



All persons in the proximity of the machine must wear safety glasses with lateral protection as well as safety shoes. The operator is obliged to wear close-fitting protective clothing.



GAUGES:

VOLTS- shows the voltage being supplied from the charging system.

FUEL LEVEL- show the amount of diesel in the fuel tank.

ENGINE RPM- shows the current revolution per minute of the engine.

OIL PRESSURE- shows engine oil pressure in pounds per square inch.

ENGINE HOURS- shows engine operating hours.

ENGINE TEMP- shows the current engine temperature of engine.

WARNING LIGHTS:

CHARGE FAILURE- lights when alternator is not charging.

PREHEAT- lights when glow plugs are in use.

LOW OIL PRESS- lights when oil pressure becomes too low to safely run.

HIGH TEMP- lights when temperature of engine becomes excessive.

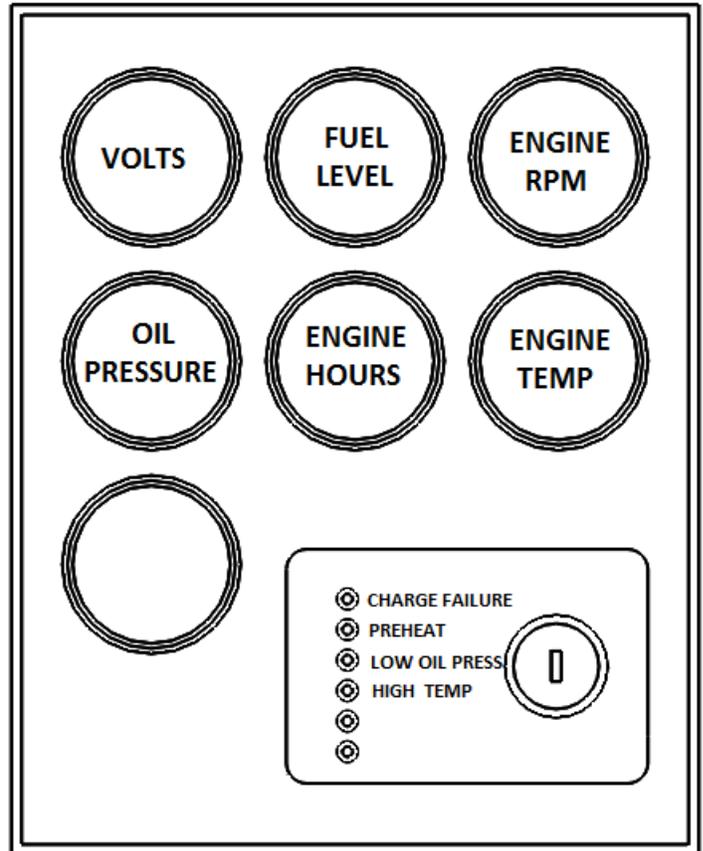


Figure 1



Before starting the engine, make sure the clutch is in the disengaged position. Failure to do so will result in damage to the clutch.

“Cold” Startup Procedure:

- 1) Turn the ignition switch to the run position and wait for the glow plug light to turn off.
- 2) After glow plug light turns off, turn the key all the way to start.
Note: You must turn ignition past the ignition interlock for the starter to engage.
- 3) Release key after engine turns over.
- 4) Place throttle to full/open position and operate as normal.

“Hot” Startup Procedure:

- 1) Turn ignition to start position.
Note: Due to the engine being at operating temperatures you do not have to wait for the Glow plugs to warm the engine block.
- 2) Release key after engine turns over.
- 3) Place throttle to full/open position and operate as normal.

“Dry” Startup Procedure:

This procedure shall be followed if the fuel system has been run dry (out of fuel).

- 1) The engine must be primed using the priming plunger.

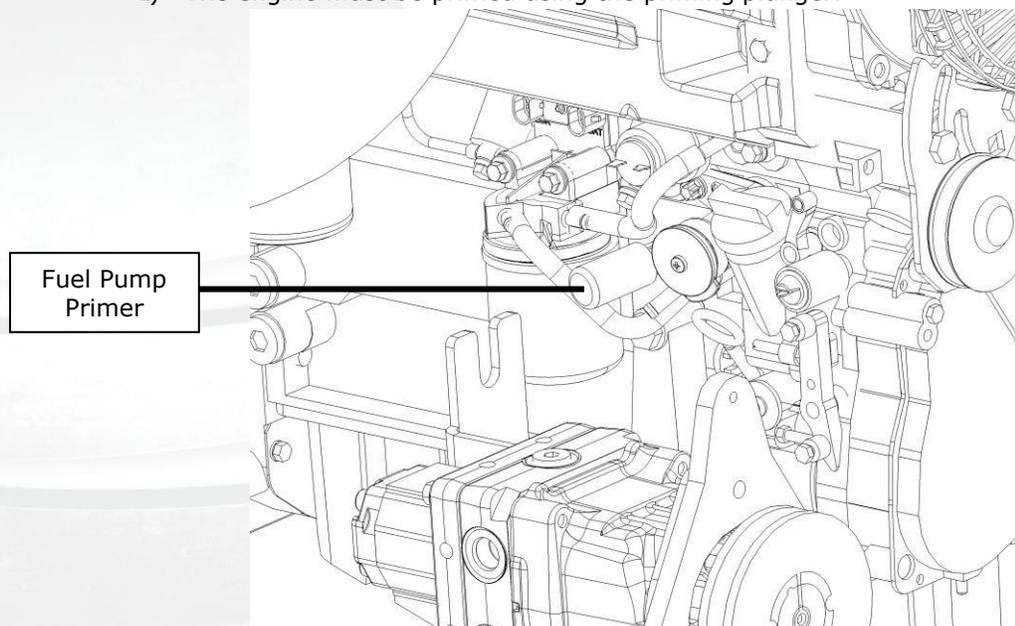


Figure 2

- 2) After priming the engine, follow the “Cold” startup procedure.



Operation Adjustments

The 1-16DB4-V2 is equipped with a few fine tune adjustments to make blasting easier.

1. **Front End Lift:** This is used primarily for loading and unloading the machine. This feature may also be used to adjust your seals while operating the machine, opposed to stopping the machine and doing it manually.
2. **Silencer Box:** This is used to adjust the amount of vacuum pulled through the blast housing. It can be used to fine tune air flow to the specific application.
3. **Pinch Bar:** The pinch bar clearance must be checked before each operation. For best blasting results, adjust the pinch bar 1/8-inch clearance for all applications.
4. **Dampener Plates:** This feature allows you to adjust the blast pattern if needing a thinner blast width such as in line stripe removal or other special applications.



After Adjusting the pinch bar to blade gap, always spin the blast wheel to verify clearance on all blades.



Operation Sequence

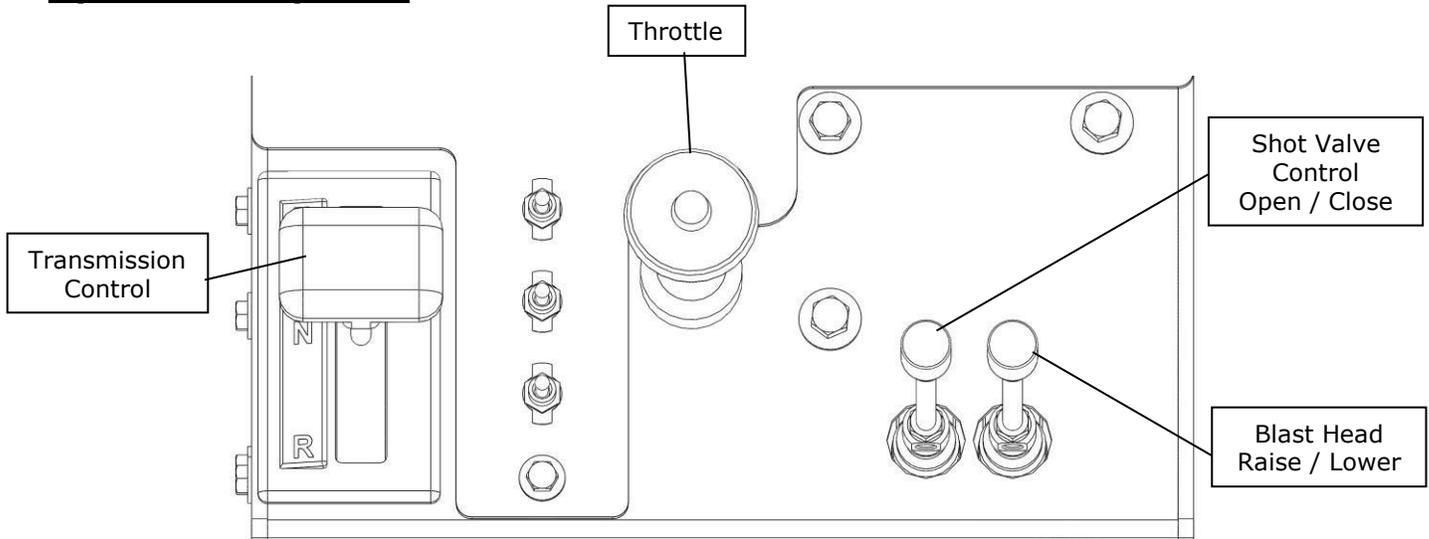


Figure 3

Refer to Figure 3 for the location of switches and controls identified in this procedure.

1. Complete the Operation/Maintenance Checklist (pages 12-13).
2. Place the transmission control lever in the neutral (center) position.
3. Follow the startup procedures in on page 16, as appropriate.
4. Pull the throttle to the wide open position.
5. Push the transmission lever forward for forward motion and backward for reverse motion.



Always blast in a forward direction.

6. Start the machine moving forward and slowly open the shot valve. The slower the machine travels while the shot valve is open, the deeper the profile.
7. When coming to the end of a pass, close the shot valve about five feet before stopping. This will allow you to clear the housing of shot keeping you from blasting a hole when you come to a complete stop.



The dust container of the dust collector must be emptied regularly. Comply with your local waste treatment regulations considering the removed material.



8. Only operate this machine when sitting in the operator seat.
DO NOT OPERATE THIS MACHINE WHEN STANDING IN FRONT OF IT!

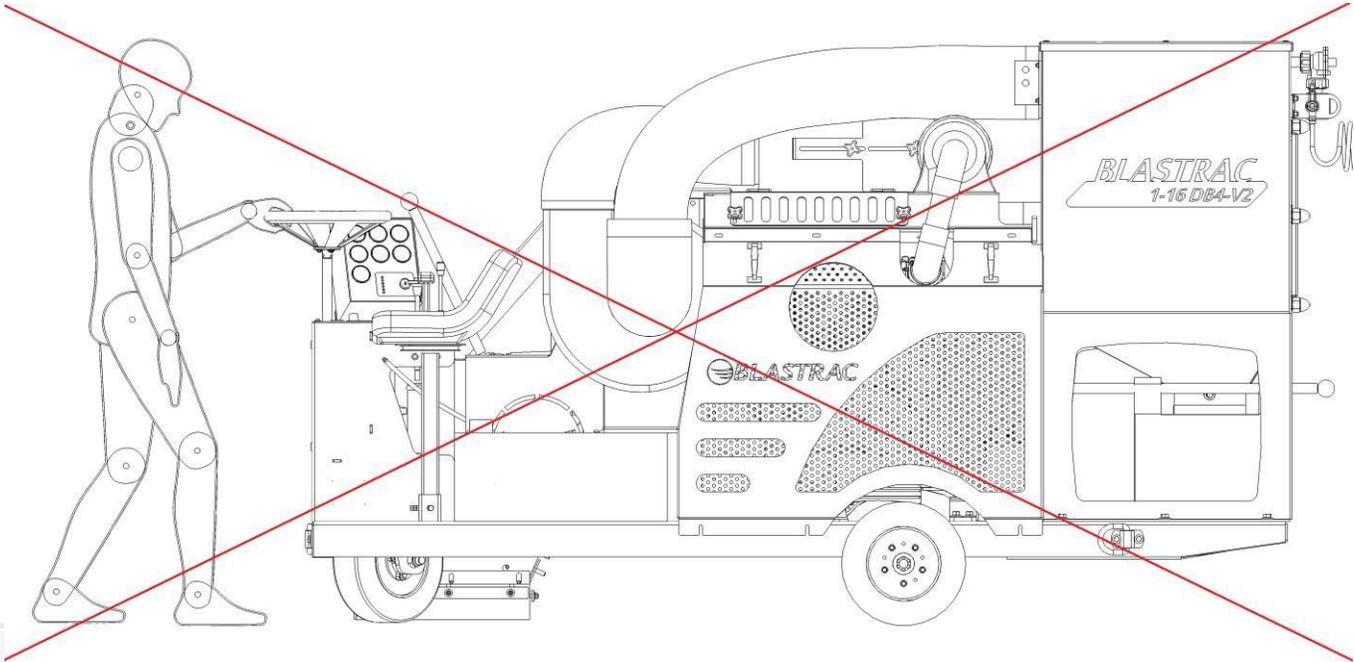


Figure 4



Dust Collector Function

This unit is equipped with an auto pulse dust collector that provides suction to separate the dust from the shot. Refer to Figure 5 for the location of items discussed in this section.

The central part of the dust collector is the filter chamber. Dust laden air enters the chamber from the blast head through the exhaust hose and into the dust collector inlet connection located on the center, front side of the dust collector. The dirty air passes through a plenum and flows through an array of nine vertically mounted, specially designed filter cartridges. Dust is captured on the surface of these filters allowing clean air to pass to the clean air portion of the dust collector where it exhausts to the open atmosphere through the silencer box.

The dust that was trapped on the external surface of the filters is periodically removed by pulsing the filters with a burst of compressed air released from the header tank by a diaphragm valve. The air is delivered via one of three blow-down tubes. This momentary pulse of air allows the dust to fall into the dust bags at the bottom of the filter chamber. Three filters are pulsed at a time, in sequence, determined by a timer board located in the control box located on the front of the dust collector, just above the inlet. This timer board is usually set to pulse a three filter bank every ten seconds. The timer board determines the time between pulses and the duration of each pulse. Venturi valves are located above each filter for maximum filter cleaning efficiency.



Dust Collector Parts

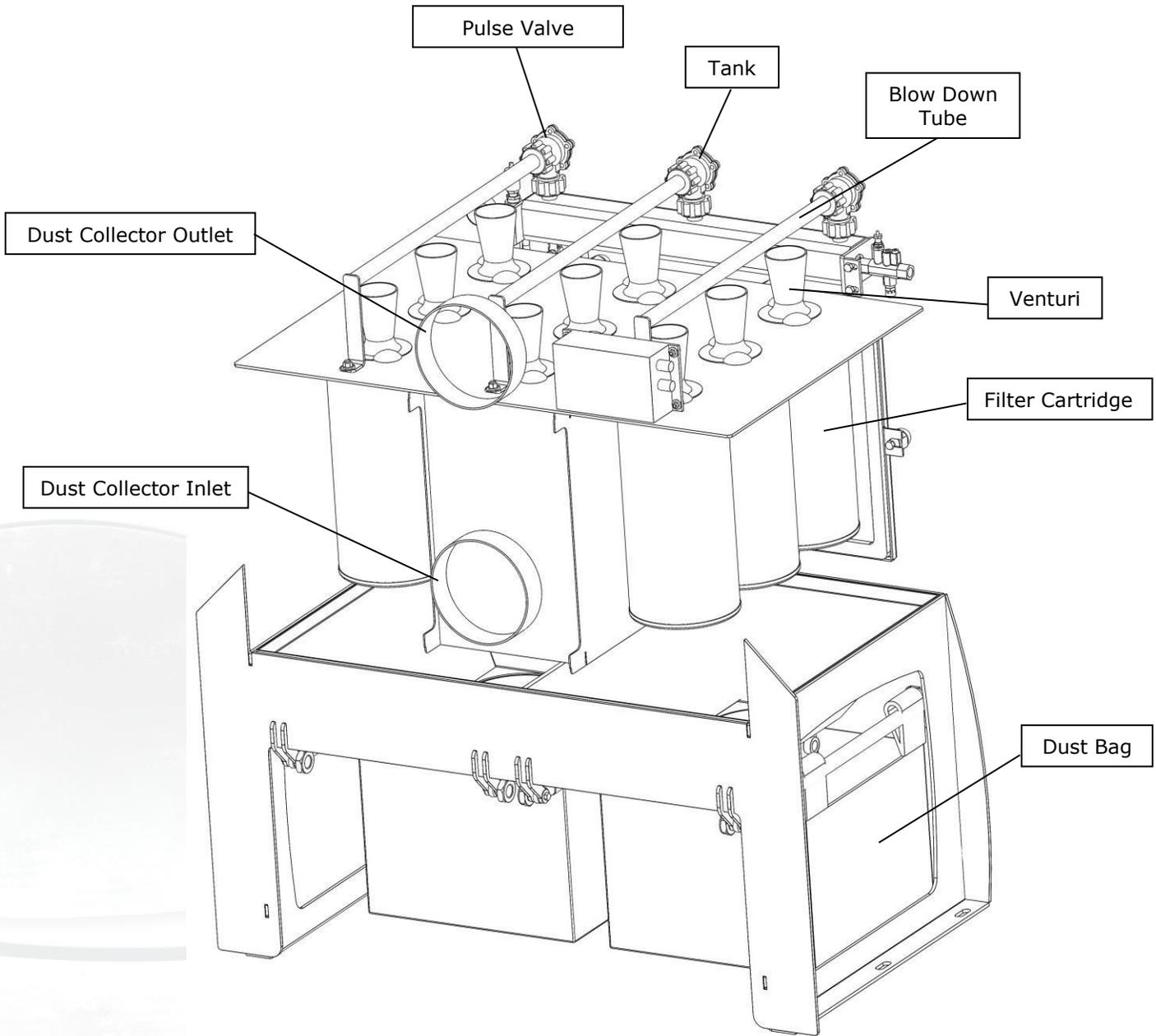


Figure 5



Shutdown Sequence

1. Ensure the shot valve is fully closed.
2. Push the throttle to the closed position.
3. Ensure the clutch is in the off position.
4. Ensure the transmission lever is in neutral position.
5. Turn the key to the off position.
6. Complete the maintenance check list.

Safety Shutdown

The machine has to be in its Safety off position before starting repair work. See page 8.



Before performing inspection or maintenance work make sure that all moving machine parts are stopped. Observe the Safety off position, page 8.

The local safety regulations are valid in all cases regarding the operation of the machine and will always supersede any instructions provided in this manual.



6. Maintenance

Blade Replacement



The key must be in the off position and all rotating parts must come to a complete halt before attempting any maintenance procedure. Ensure you are in the Safety Off Position, on page 8.

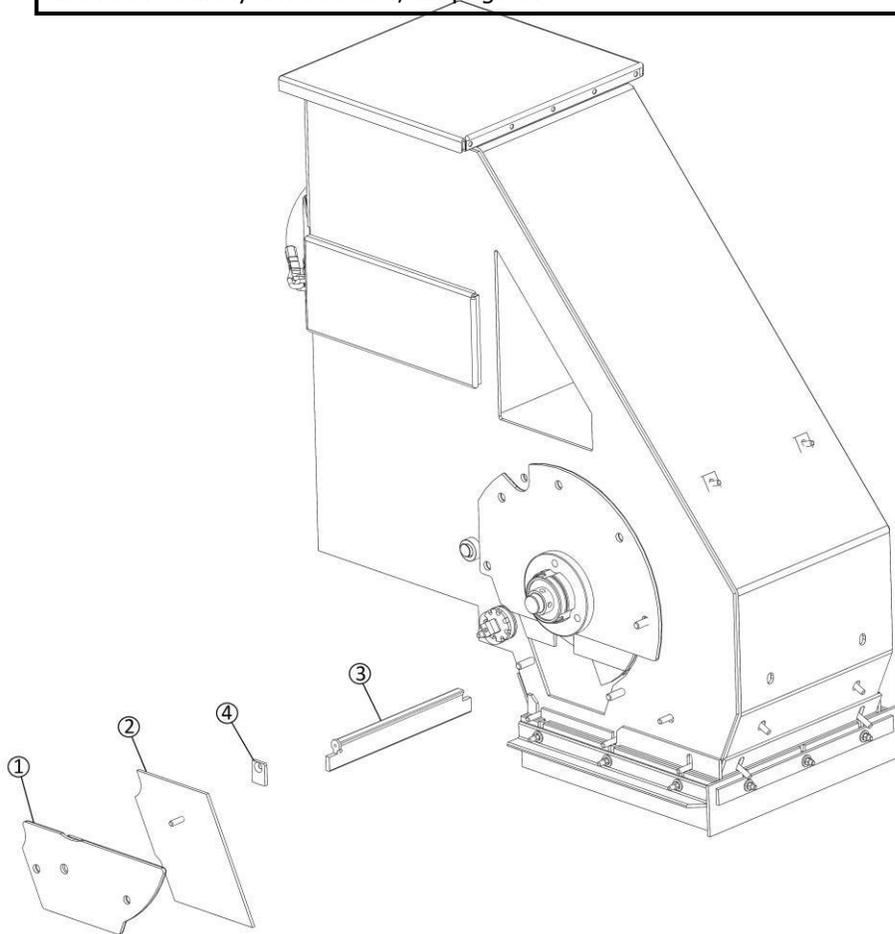


Figure 6

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	WP093716	Pinch Bar Lower O/S Back Side Liner	1
2	P000831-1	Pinch Bar Inspection Plate	1
3	WKIT1665	Dovetail Blades (4 per set)	1
4	WP123715	Blade Keepers	1



1. Remove Item #1, Pinch Bar Outside Liner.
2. Remove Item #2, Pinch Bar Inspection Plate.
3. Rotate the blast wheel to bring Item #3, Blast Wheel Blade, that is to be removed into reach.
4. Remove Item #4, Bolt and Blade keeper, at the end of the blade.
5. Blow dust and shot out of the threaded hole in the end of the blade.
6. Use a slide hammer to pull the blade out of the blast head.

Important Note: A slide hammer is provided with all machines containing a pinch bar.

7. Clean dust and shot out of the slot for the blast head for proper installation of the blades.
8. Insert the new Blades and replace Item #4.
9. Inspect the gap between the blade and pinch bar. Adjust if necessary.
10. Reinstall Item #2.
11. Reinstall Item #1.





Pinch Bar Removal, Installation, and Re-Positioning

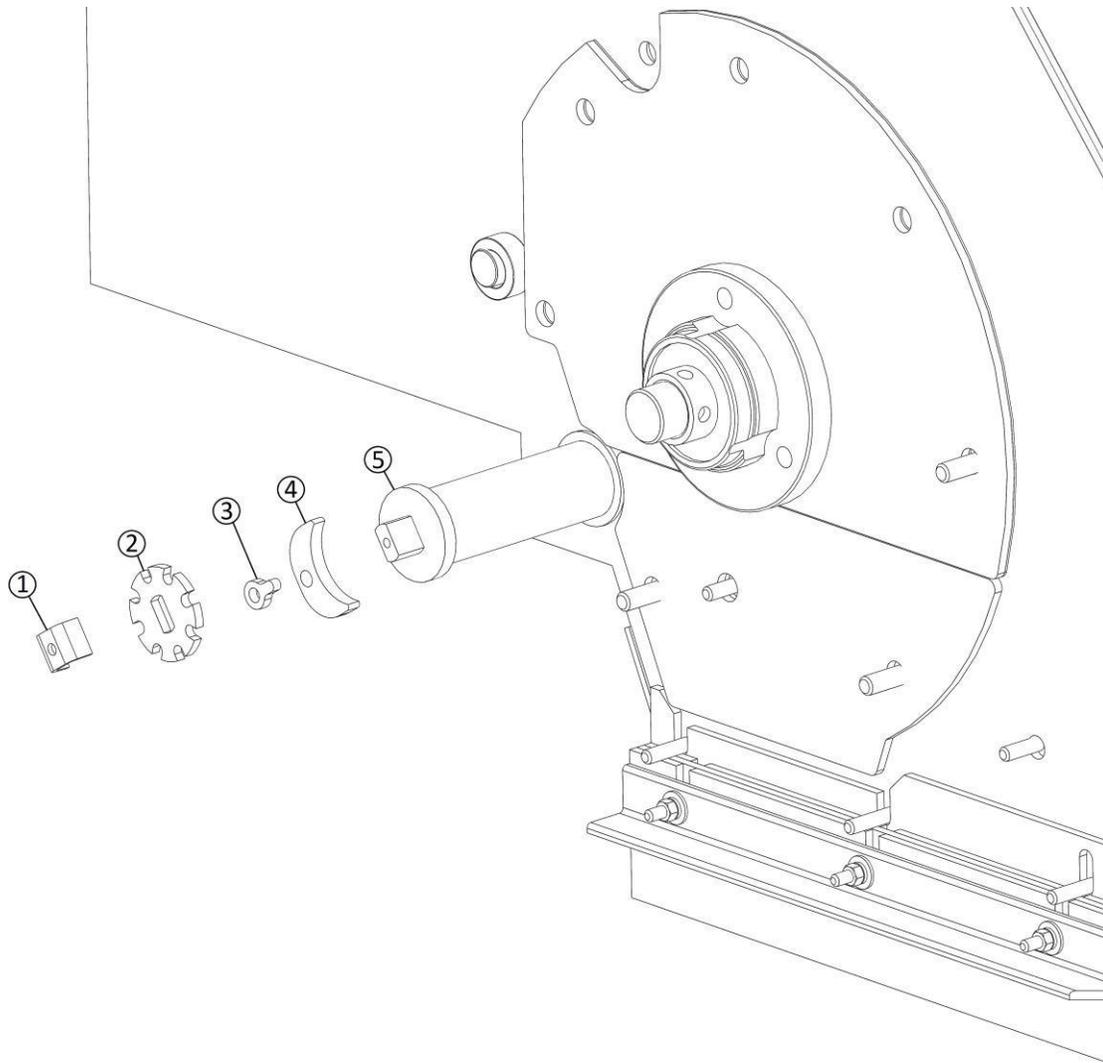


Figure 7

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	08300093	RETAINER/ PINCH BAR	1
2	08300042	INDEXER/PINCH BAR	1
3 & 4	P002712	RETAINER/OUTER PINCH BAR	1
5	WP033711	PINCH BAR	1



The key must be in the off position and all rotating parts must come to a complete halt before attempting any maintenance procedure. Ensure you are in the Safety Off Position, as described in page 8.

Pinch Bar Re-positioning: *MUST BE DONE EVERY 10 HOURS OF OPERATION.*

(See Figure 7 for item descriptions and locations)

1. Remove Item #1, Retainer/Outer Pinch Bar.
2. Rotate pinch bar, item #5, one notch. If the distance from the pinch bar to the blast wheel blades is greater than 1/8" rotate the pinch bar another notch. Continue until distance is no greater than 1/8".
3. Reinstall Item #3.

Pinch Bar Removal/Installation: (See Figure 7 for item descriptions and locations)

1. Remove Item #3, Retainer/Outer Pinch Bar.
2. Remove Item #1, Retainer/Pinch Bar Indexer.
3. Remove Item #2, Indexer/Pinch Bar.
4. Insert slide hammer into the threaded hole in the end of the pinch bar, Item #1.
5. Withdraw the pinch bar from the blast head.
6. Blow out pinch bar area with compressed air.
7. Insert new pinch bar and tap into place with hammer.
8. Reinstall Item #2.
9. Reinstall Item #1.
10. Reinstall Item #3.



Blast Wheel Removal and Installation

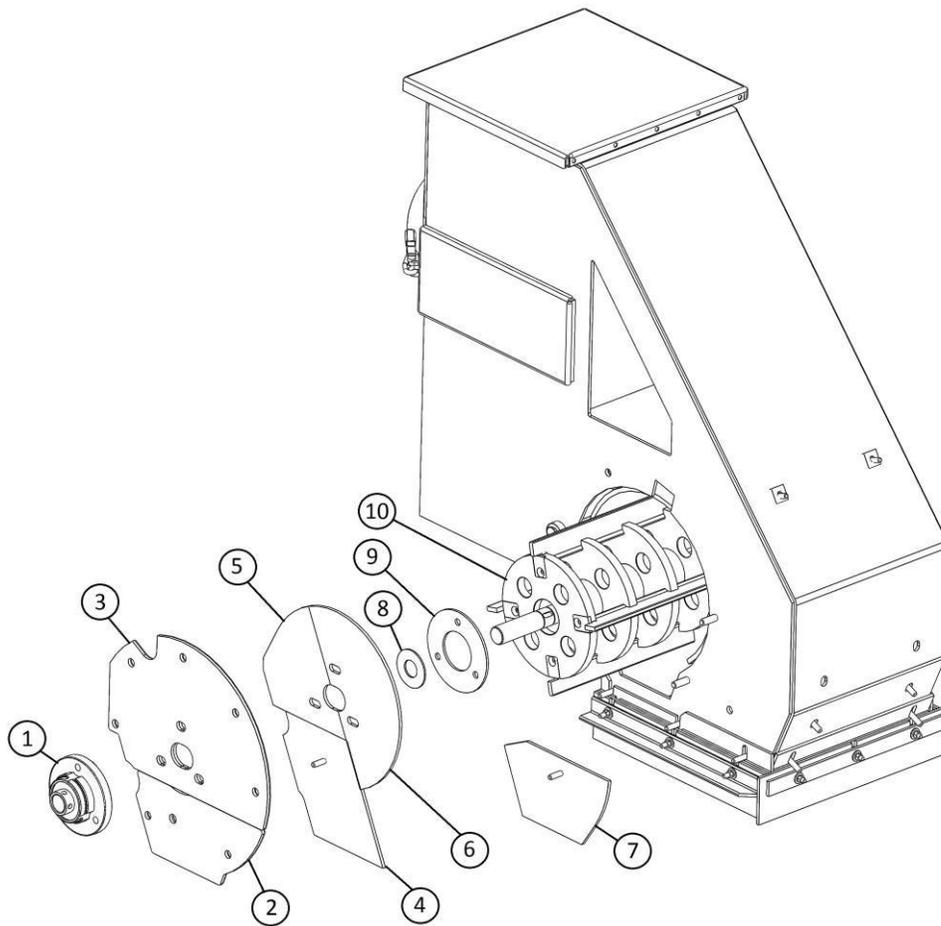


Figure 8

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	2110015	3-BOLT FLANGE BEARING	1
2	WP143706	ACCESS-PLATE/BLAST HOUSING	1
3	P000830	COVER-PLATE/BLAST HOUSING	1
4	WP093716	LINER/SIDE - REAR OUTSIDE LOWER SLL	1
5	WP053708	LINER/SIDE - REAR UPPER OUTSIDE SLL	1
6	WP053704	LINER/SIDE - FRONT INSIDE/OUTSIDE UPPER SLL	1
7	WP093707	LINER/SIDE - FRONT OUTSIDE LOWER SLL	1
8	8300171	SEAL/SHAFT – BEARING	1
9	P002823	OUTSIDE BOLT RETAINER/3-BOLT FLANGE BEARING	1
10	WP123717	BLASTWHEEL/DOVETAIL - 10" DIA.	1



1. Bearing Collar:

Remove the two hex head set screws on each of the two bearing collars.

2. Outside Blast Wheel Bearing:

- a. Remove the three nuts holding the bearing, Item #4.
- b. Pry the bearing off of the shaft.

3. Access Plate:

- a. Remove the two nuts which connect the access plate, Item #5, to the housing.
- b. Remove the nut in the center of the plate which holds the outside rear/lower side liner in place.
- c. Remove the inspection plate.
- d. Remove the lower liner, Item #7.

4. Cover Plate:

- a. Remove the five nuts which connect the cover plate, Item #6, to the housing.
- b. Remove the cover plate.

5. Side Liners:

Remove the outside side liners, Items #8 and #9. The side liners may be firmly in place and may require the use of a pry bar to be removed.

6. Blast Wheel:

- a. Slide the shaft seal, Item #11, and the bolt retainer, Item #12, off of the blast wheel shaft.
- b. Remove the blast wheel drum by pulling the drum shaft through the inside bearing.

Note: If the drum shaft is resistant to coming through the bearing, you may use a block of wood and a hammer to force it through.

7. Blast Wheel Installation:

Reverse steps 1-6 to install a new blast wheel.



Liner Removal and Stack up

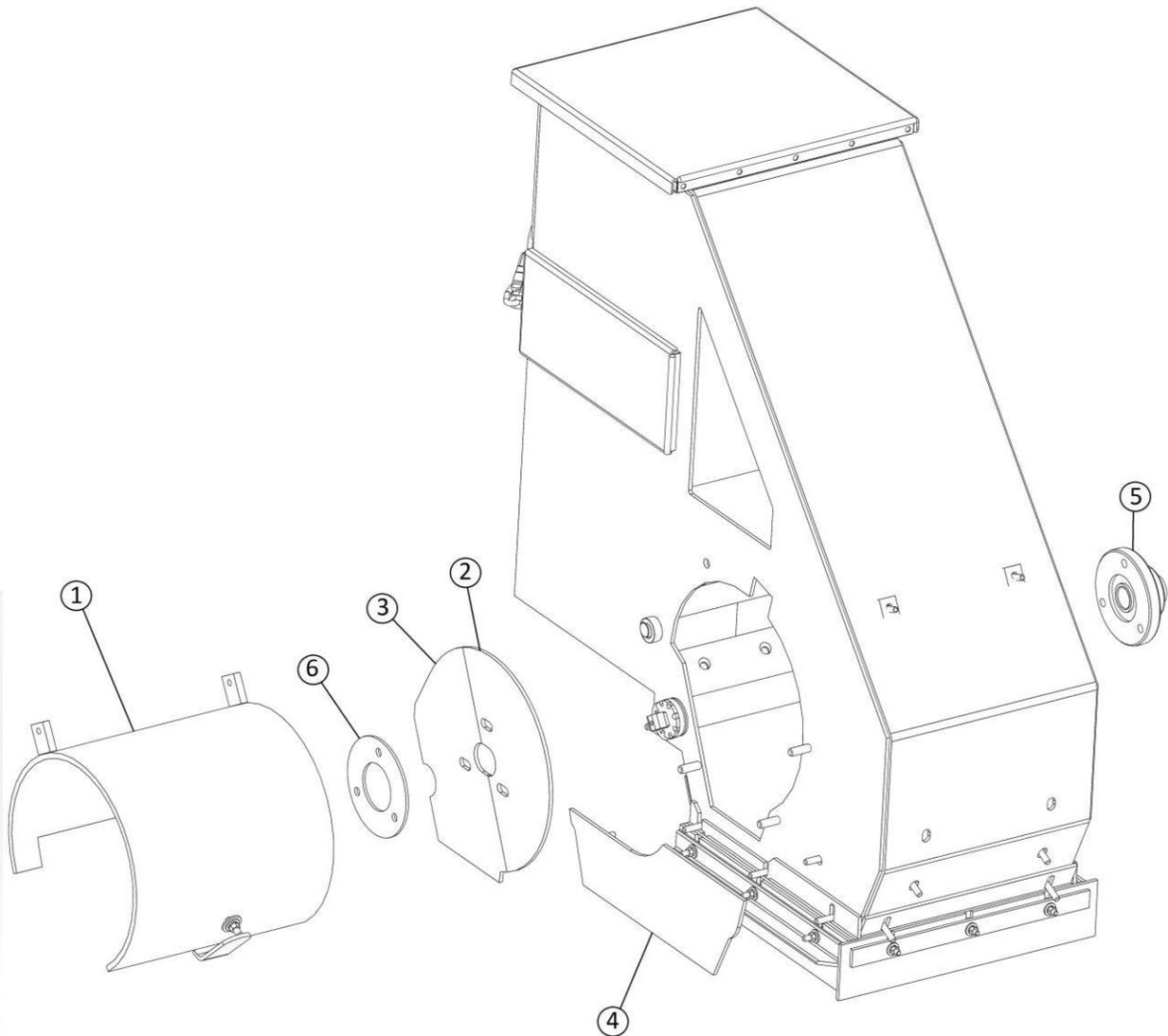


Figure 9

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	WP113715	Liner/Top Curved SLL	1
2	WP053704	Liner/Side - Front Inside/Outside Upper SLL	1
3	WP053712	Liner/Side - Rear Inside Upper SLL	1
4	WP093706	Liner/Side - Lower Inside SLL	1
5	02110015	Bearing/FLG3 1.4375" B 3-Bolt	1
6	P002823	Outside Bolt Retainer/ 3 Bolt Flange Bearing	1



Top Liner Removal:

See Figure 9 for item locations and descriptions.



Before attempting to remove the Top Liner, steps 1-8 of Blast Wheel Removal must be completed. If the Top Liner has completed more than 100 hours of blasting it will have expanded. In the event that the Top Liner has expanded too much to slide out, the best way to remove it is to cut it in half with a torch.

1. Remove the two bolts located at the top of the Top Liner, Item #1. These bolts are accessible from the outside of the housing.
2. Remove the one nut located toward the front of the Top Liner. This nut is accessible from the inside of the blast housing.
3. Slide out top liner, or cut if necessary.

Inside Liner Removal:

See Figure 9 for item locations and descriptions.



Before attempting to remove the Top Liner, steps 1-8 of Blast Wheel Removal must first be completed.

1. Remove nuts from bearing, Item #5, and remove bearing.
2. Remove the bolt retainer, Item #6.
3. Remove the inside side liners, Items #2 and #3.

Remove two nuts securing lower inside liner, Item #4, and the liner can be removed.

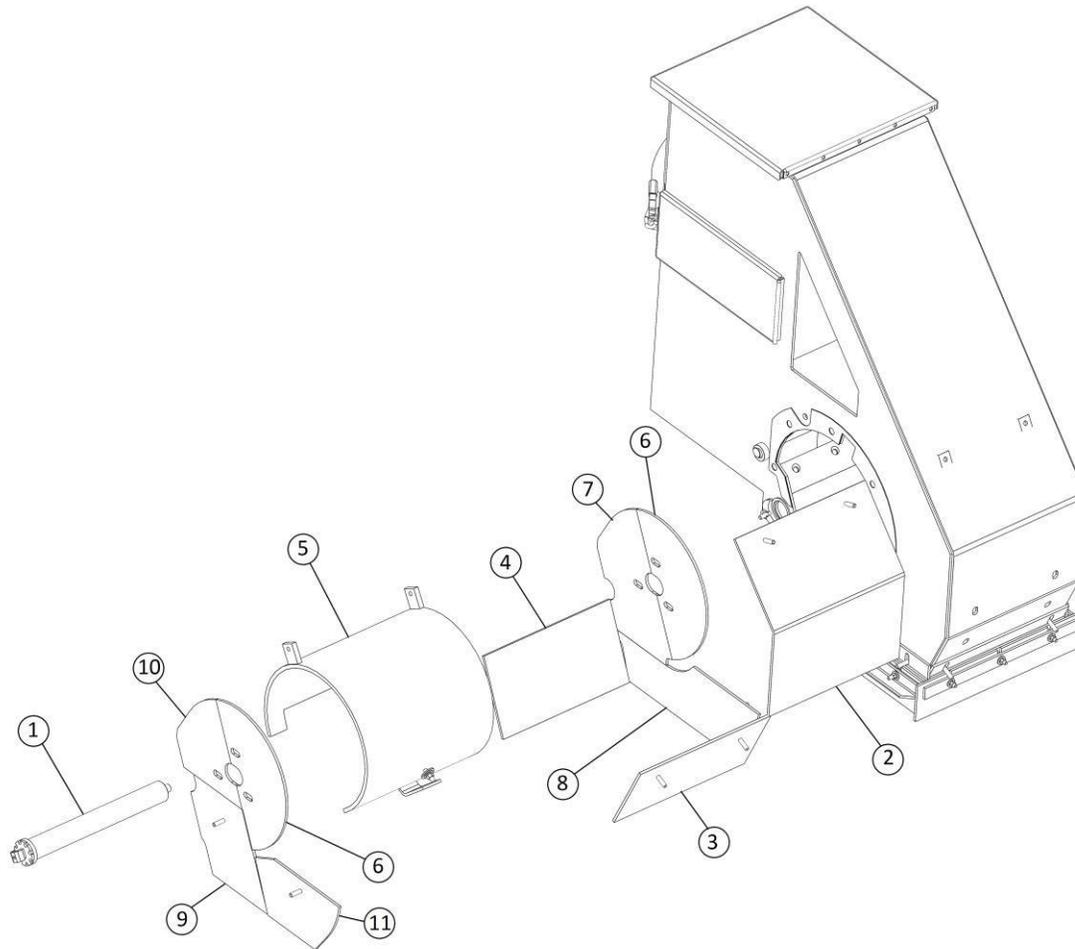


Figure 10

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	WP033711	Pinch Bar	1
2	WP043709	Liner/Upper Front SLL	1
3	WP043715	Liner/Front Lower SLL	1
4	WP103712	Liner/Back Wall SLL	1
5	WP113715	Liner/Top Curved SLL	1
6	WP053704	Liner/Side - Front Inside/Outside Upper SLL	2
7	WP053712	Liner/Side - Rear Inside Upper SLL	1
8	WP093706	Liner/Side - Lower Inside SLL	1
9	WP093716	Liner/Side - Rear Outside Lower SLL	1
10	WP053708	Liner/Side - Rear upper Outside SLL	1
11	WP093707	Liner/Side - Front Outside Lower SLL	1



Dust Collector Maintenance

The dust collector should be monitored on a regular basis. Bad or improper vacuum can lead to poor component life and premature wear on a number of vacuum related items on the equipment. Some of the more important areas to monitor, relative to the vacuum system, are:

- Filter cartridges should be kept in good condition.
- The hose connections to the blast head and the dust collector should be tight and held in place with metal clamps.
- The hose should be kept in good repair. Flattened spots, holes and wear spots should be corrected immediately. Replace hose if necessary.
- Leaks on the blower housing assembly seal and especially the dust collector access door seal should be minimized. The dust collector access door seal can be checked by feeling for air leaks around the seal and evidence of dust leaks.

Poor dust collector performance can have an adverse effect on the overall performance and efficiency of the system. Improper vacuum can cause poor abrasive cleaning which in turn increases blast wheel and liner wear. An important fact that is often ignored or misunderstood is:



The steel abrasive causes minimum wear on the internal blast components. The dust and contaminants are the principal cause of component wear. A well-maintained dust collector can minimize abrasive contamination which helps reduce operating costs and increases the overall efficiency of the shot blasting system.

Filter Cartridge Removal



Prior to attempting to change or inspect the filter cartridges, place the 1-16DB4-V2 on a level surface to prevent movement. Verify that the machine is in the Safety Off Position.

Access to the filter cartridges is gained through the door on the rear of the dust collector. To remove filter cartridges:

1. Remove rear access door from dust collector
2. Remove wing nut from the bottom of the filter cartridge
3. Slide filter cartridge down hanger rod

To replace filter cartridges, reverse steps 1-3 above.

Take care not to damage the filter cartridges during removal, installation or inspection.

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Engine Maintenance

Care and maintenance work

Regulations for working on the lubricating oil system

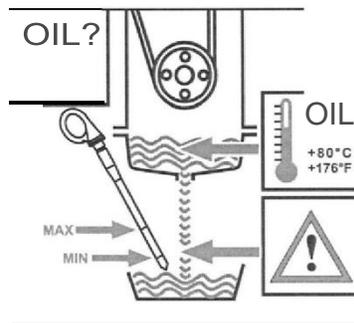
Do not work when the engine is running!
Smoking and naked lights prohibited!
Be careful of hot lubricating oil. Danger of scalding!

Pay attention to utmost cleanliness when working on the lubricating oil system. Clean the area around the components concerned carefully. Blow damp parts dry with compressed air.

Observe the safety regulations and national specifications for handling lube oils. Dispose of leaking lubricating oil and filter elements properly. Do not allow used oil to seep away into the ground.

Perform a trial run after all work. Pay attention to tightness and lubricating oil pressure and then check the engine oil level.

In case of fuels containing more than 1% sulphur, contact your corresponding DEUIZ partner.



Checking the lubricating oil level

Low lubricating oil level and overfilling lead to engine damage.

The lubricating oil level may only be checked with the engine in a horizontal position and switched off.

If the engine is warm, switch off the engine and check the lubricating oil level after 5 minutes. If the engine is cold you can check it immediately.

!A! Be careful of hot lubricating oil. Danger of scalding!

- Pull out the lubricating oil dipstick and wipe off with a lint-free, clean cloth.
- Insert the lubricating oil dipstick as far as it will go.
- Extract the lubricating oil dipstick and read off the oil level.

Lubricating oil system

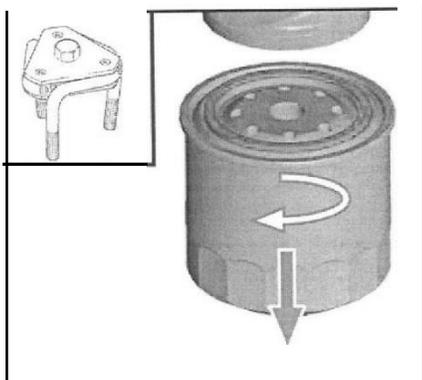
- The oil level must always be between the **MIN** and **MAX** marks! Top up to the **MAX** mark if necessary.

Changing the lubricating oil

- Warm up the engine (lubricating oil temperature > 80° C).
- Ensure that the engine or vehicle is in a level position.
- Switch off the engine.
- Place a collecting receptacle underneath the lube oil drain screw.
- Unscrew the lube oil drain screw, drain oil.
- Fit a new sealing ring to the lube oil drain screw, insert and tighten. (tightening torque 100Nm).
- Pour in lube oil.
 - Quality/viscosity data.
 - Filling volume (p. 65).
- Warm up the engine (lubricating oil temperature > 80° C).
- Ensure that the engine or vehicle is in a level position.
- Check lubricating oil level, if necessary top up.

Lubricating oil system

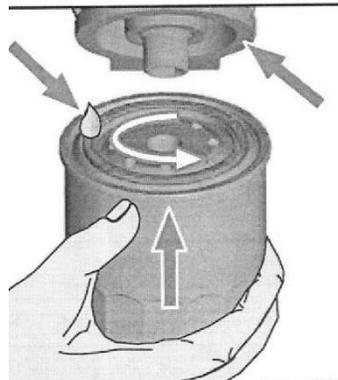
Care and maintenance work



Change lubricating oil filter

The filter cartridges should never be pre-filled. There is a danger of dirt contamination!

- Remove clamps when twist protection mounted (optional).
- Loosen and unscrew filter cartridge with tool (**order number: 170050**).
- Collect draining lubricating oil
- Clean the sealing surface of the filter support



with a lint-free, clean cloth.

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nd until the gasket is in place and then tighten with a torque of 15-17 Nm.

- Fasten clamps of the twist protection (optional).

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Care and maintenance work

Fuel system

Specifications when working on the fuel system

Engine must be switched off!
Smoking and naked lights prohibited!
No injection/high pressure pipes may be disconnected while the engine is running.
Caution when handling hot fuel!
Pay attention to utmost cleanliness when refuelling and working on the fuel system.
Clean the respective affected parts carefully. Blow damp areas dry with compressed air.

Observe the safety regulations and national specifications for handling fuels.
Dispose of leaking fuel and filter elements properly. Do not allow fuel to seep away into the ground.

After all work on the fuel system, the system should be vented, a trial run performed and the tightness checked.

It will be necessary to vent the fuel system when commissioning for the first time, after maintenance work or if the tank has been run dry.

Additional venting of the fuel system by a 5 minute trial run at idle speed or on low load is absolutely essential.

Pay attention to utmost cleanliness due to the high production accuracy of the system!
The fuel system must be light and dosed.
Make a visual inspection for leaks/damage in the system.

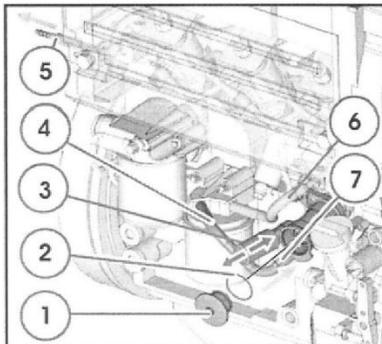
Clean and dry the engine and engine compartment thoroughly before beginning work.

Areas of the engine compartment from which dirt could be loosened must be covered with a fresh, clean foil.

Work on the fuel system may only be carried out in an absolutely clean environment. Contamination of the air such as dirt, dust, moisture etc. must be avoided.

Fuel system

Care and maintenance work



Fuel supply pump, sieve filter cartridge clean/change

- Close fuel shutoff tap (with high-level tank) (supply (7)).
- Remove connection (4) to the fuel filter.
- Catch any escaping fuel.
- Loosen screw (1).
- Remove fuel screen (screw (1), cover and fuel screen form one unit).
- Take the sealing ring (2) and clean it, renew when damaged.
- Clean cover-fuel screen with fuel, renew depending on the condition.
- Put the sealing ring (2) in position.
- Mount the cover-fuel filter with screw (1).
- Reinstall connection (4) to the fuel filter.
- Open fuel shutoff tap supply (7), start engine and run in idle or on low load.

Vent the fuel system

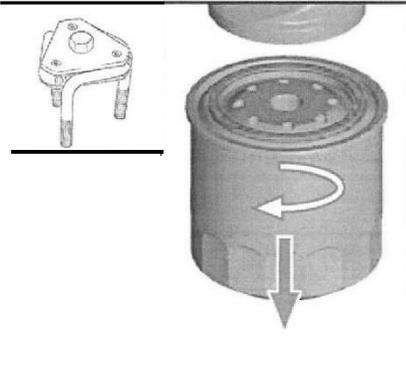
- Pump in the direction of the arrow (3) until a strong resistance is felt and pressure has built up.
- The return line (5) must be filled.
- Start the engine and run in idle or on low load. Air is pressed through the return pipe (5) to the tank.

- Check for leaks after starting the engine.

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Care and maintenance work

Fuel system



Change the fuel filter cartridge

The filter cartridge should never be pre-filled. There is a danger of dirt contamination!

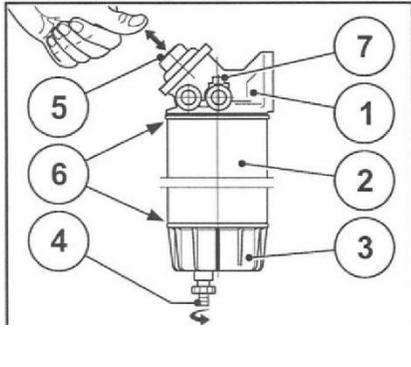
- Remove clamps when twist protection mounted (optional).
- Loosen and unscrew filter cartridge with tool (order number: 170050).
- Catch any escaping fuel.
- Clean the sealing surface of the filter support with a lint-free, clean cloth.



- Oil the gasket of the new DEUTZ original filter cartridge lightly.
- Screw on new filter by hand until the gasket is in place and then tighten with a torque of 10-12 Nm.
- Fasten clamps of the twist protection (optional).
- Vent the fuel system.

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Fuel system



Clean/change/vent the fuel pre-filter

- Fuel pre-filter holder
- 2 Fuel filter insert
- 3 Water collection vessel
- 4 Water drain tap
- 5 Fuel pump
- 6 Sealing surface
- 7 Venting screw

- Shut off the fuel supply to the engine (with high-level tank).
- Place a vessel under the drain plug.
- Open the drain tap (4) and drain off the liquid.
- Unscrew the filter insert (2) together with the water collection vessel (3).
- Empty emulsion in the water collection vessel (3) and clean the vessel.
- Mount the filter insert (2) and water collection vessel (3). Wet the sealing surfaces (6) of the filter insert (2) and the water collection vessel (3)

- with fuel.
- Assembly in clockwise direction.
- Open the fuel shutoff tap and vent the system, see venting the fuel system.
- Start engine.
- Check for leaks after starting the engine.

Change the fuel pre-filter insert

- Shut off the fuel supply to the engine (with high-level tank).
- Place a vessel under the drain plug.
- Open the drain tap (4) and drain off the liquid.
- Unscrew the filter insert (2) together with the water collection vessel (3).
- Unscrew the water collection vessel (3) from the

filter insert (2).

- The special tool can be ordered under part number **8192** (EI70).

- Clean the water collection vessel (3) and all the existing sealing surfaces (6) with a brush and diesel fuel.
- Oil the gaskets and sealing surfaces (6) of the new DEUTZ original filter insert (2) lightly or wet with diesel fuel.
- Screw the water collection vessel (3) to the filter insert (2).
- Screw a new filter insert (2) with water collection vessel (3) onto the filter carrier 1) (tightening torque 17-18Nm)
- Open the fuel supply to the engine.
- Vent the fuel system.

Vent the fuel pre-filter.

- Loosen the venting screw (7) slightly.
- Operate the pump until fuel emerges without

bubbles.

- Catch any escaping fuel.
- Tighten the venting screw (7).

Vent the fuel system

- Bring engine control to stop position.
- Position fuel collecting vessel below the constant-pressure valve in the crankcase/filter housing.
- Open constant-pressure valve in the crankcase/fuel stopcock in the filter housing.
- Turn over the engine with starter (max. 20 Sec.) until bubble-free fuel emerges at the constant-pressure valve in the crankcase/filter housing.
- Screw in ventilation screws (tightening torque 25-5 Nm) and constant-pressure valve.
- Bring engine control to the start position and start.
- Check for leaks after starting the engine.

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Care and maintenance work

Engine cleaning

Cleaning work

L..f&J For all cleaning **work**, make sure that no parts are damaged (e.g. bent cooler mesh). Cover electrical/electronic parts and connections to clean the engine (e.g. control units, generator, solenoid valves etc.). Do not aim the water/steam jet directly at them. Allow engine to warm up.

11.11 Only carry out cleaning work on the engine when it is not running!
Remove the engine cover and cooling air cover if available and remount after cleaning.

General

The following causes of soiling make it necessary to clean the engine:

- High dust content in the air.
- Chaff and chopped straw in the area of the engine.
- Coolant leaks
- Lubricating oil leakage
- Fuel leaks

Because of the different application conditions, cleaning depends on the degree of dirt contamination.

Cleaning with compressed air

- Blow dirt off or out. Always blow out the cooler and cooling fins from the exhaust air side to the fresh air side.

Cleaning with cold cleaner

- Spray the engine with cold cleaner and leave it for about 10 minutes to take effect.
- Spray the engine clean with a high pressure water jet.
- Warm up the engine so that the water residues evaporate.

Cleaning with a high pressure cleaner

- Clean the engine with a steam jet (maximum spray pressure 60 bar, maximum steam temperature 90 °C, distance at least 1 m).
- Warm up the engine so that the water residues evaporate.
- Always clean the cooler and cooling fins from the exhaust air side to the fresh air side.

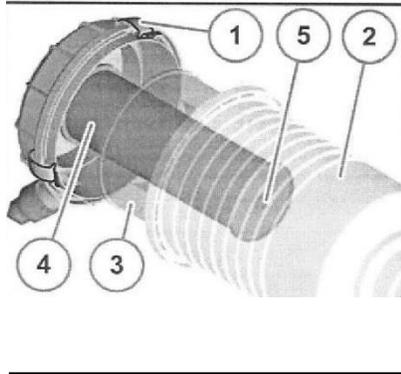
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Suction system

Regulations for working on the intake system

⚠ Do not work when the engine is running!

ⓘ Pay attention to utmost cleanliness when working on the intake system, close intake openings if necessary. Dispose of old filter elements properly.



Care and maintenance work

Renewing the safety cartridge of the dry air filter

⚠ Never clean the safety cartridge (4).

- Renew safety cartridge (4) according to the interval in the maintenance schedule
- To do this:
 - Unscrew hexagon nut (5), pull out safety cartridge (4).
 - Insert new safety cartridge, screw on hexagonal nut.
- Insert filter element (3), mount hood (2) and fix with clamping yoke (1).

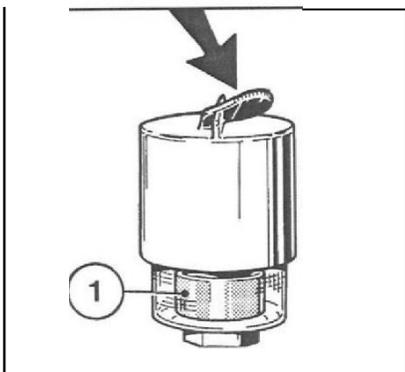
Maintaining the dry air filter

ⓘ Do not clean the filter element (3) with petrol or hot liquids!
⚠ Renew damaged filter elements.

- Maintain the filter element (3) according to the interval in the maintenance schedule
- Lift up the clamping yoke (1).
- Remove the filter hood (2) and pull out the filter element (3).
- Filter element (3):
 - blow out with dry compressed air (max. 5 bar) from the inside to the outside if soiling is only slight,
 - renew if heavily soiled.

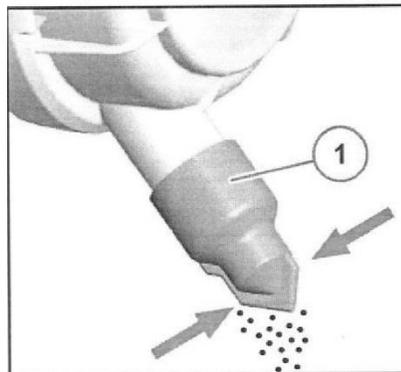
Care and maintenance work

Suction system



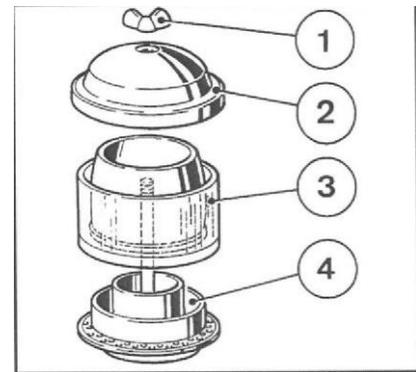
Maintenance indicators for dry air filter

- The dry air filter is maintained according to a maintenance switch or maintenance indicator.
- Maintenance is necessary when:
 - the yellow warning light of the **maintenance switch** lights up when the engine is running.
 - the red field (1) of the **maintenance indicator** is fully visible.
- After carrying out maintenance work, reset the signal by pressing the button on the maintenance indicator. The maintenance indicator is now ready for operation again.



Clean the dust discharge valve of the dry air filter

- Empty the dust discharge valve (1) by pressing together the discharge slit.
- Remove any caked dust by pressing together the upper section of the valve.
- Clean the discharge slit.



Emptying the cyclone precleaner

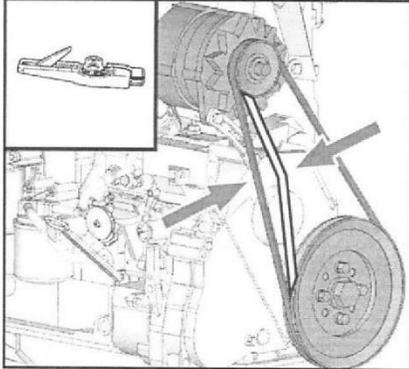
ⓘ Never fill the dust container (3) with lubricating oil!

- Loosen wing nut (1) and lift off housing cover (2).
- Remove the dust container (3) from the base (4) and empty it. Clean the container using a brush and clean diesel fuel. Then dry.
- Place the dust container (3) on the base (4) and tighten the housing cover (2) with wing nut (1).

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Belt drives

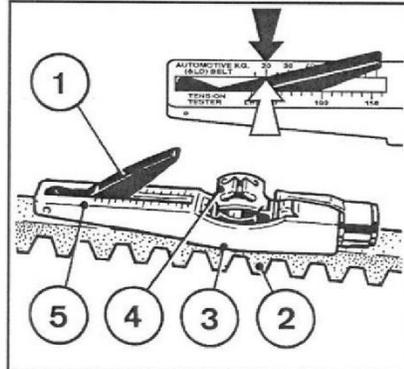
Care and maintenance work



Checking the belt drive

Only carry out work on the belt drive with the engine at a standstill!
Always change both belts in sets in case of wear on the double belts or damage to one V-belt.
After repair work: Check that all guards have been replaced and that all tools have been removed from the engine

- Check the whole belt drive visually for damage.
- Renew damaged parts.
- Remount protective devices if necessary.
- Pay attention to correct fit of new belts, check the tension after running for 15 minutes.

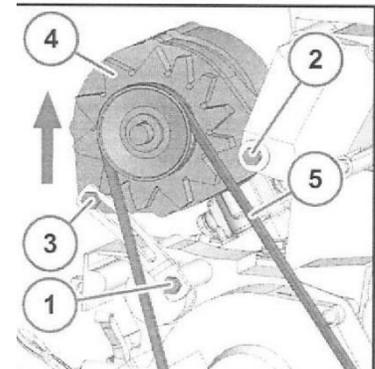


Checking the belt tension

- Lower indicator arm (1) into the measuring device.
- Place guide (3) between two belt pulleys on the V-belt (2). The stop has to be at the side.
- Press the button (4) at right angle to the V-belt (2) evenly until you hear or feel the spring snap in.
- Lift the measuring device carefully without altering the position of the indicator arm (1).
- Read the measured value at the point of intersection (arrow), scale (5) and indicator arm (1).
- If necessary, re-tension belt and measure again.

Tools

Belt tension measuring device (order number: 8115) can be obtained from your DEUTZ partner.



Tighten the generator V-belts

- Loosen the screw (1), (2) and (3) slightly.
- Push the generator (4) outwards in the direction of the arrow until you get the correct V-belt tension.
- Retighten the screw (1), (2) and (3).

Renew the V-belts

- Loosen the screw (1), (2) and (3) slightly.
- Swing the generator (4) in the opposite direction to the arrow.
- Remove the V-belt (5) and fit a new V-belt.
- Push the generator (4) outwards in the direction of the arrow until you get the correct V-belt tension.
- Retighten the screw (1), (2) and (3).



Clutch Maintenance

Lubrication

1. The PTO requires lubrication with NGLI #2 lithium based grease. During normal operation, apply one grease gun shot of grease to the release mechanism (sliding sleeve assembly) fitting every 20 hours of operation.
2. Also lubricate the main bearings (located on the clutch shaft) and lever (operating) shaft every 100 hours of operation with one grease gun shot.
3. Amount and frequency of lubrication are only a recommendation. Actual requirements will vary, due to load and operating conditions. New units should be monitored for heat and wear for a period of time, to determine actual needs.

Note: Pilot bearing is "sealed for life" and does not require lubrication.

Clutch Operation

1. Where high inertia loads must be started, engaging the clutch at idle speed may stall the engine. High inertia loads may be brought up to speed by engaging the clutch for short periods, (1 second) at intervals long enough to prevent excessive heat buildup in the friction discs. With extremely high loads, the engine may have to be operated at higher speeds while engaging the clutch.
2. Once the load in turning with the clutch fully engaged, the engine RPM may be increased.

Clutch Adjustment

This clutch uses an adjusting collar to adjust for clutch wear. If the engagement force reaches 2/3 of maximum specified torque, clutch slips, heats excessively, or operating lever fails to stay engaged, clutch adjustment is required.

1. Remove inspection cover nameplate.
2. Pull locking pin out.
3. Turn adjusting ring clockwise to increase clutch engagement force.
4. Adjust clutch engagement force until the hand lever force required to engage the clutch is within the range specified on the inspection cover nameplate.

Operating Shaft Torque lbf-ft	Hand Lever Force lb.
88/117	79/106

Check engagement force with a torque wrench using the cast hex on the lever. Or check hand lever engagement force using spring scale.



5. Release locking pin after completing adjustment
6. Replace inspection cover nameplate.

Note: New friction discs require frequent adjustments during an initial break-in period. Please recheck clutch adjustment after the first 10 hours of operation.

Clutch Adjustment Frequency

1. As clutch wears, the hand lever force required to engage clutch will decrease.
2. The need to readjust the clutch is indicated when the handle force has decreased to 2/3 of the maximum force specified on the inspection cover plate **OR** anytime clutch slippage is detected.
3. Do not adjust clutch so tight that hand lever force exceeds the maximum as indicated on the inspection cover nameplate.





Grease Points

Apply two pumps of high temperature grease, every 8 hours. Follow the instructions, listed on page 40, for lubricating the clutch.

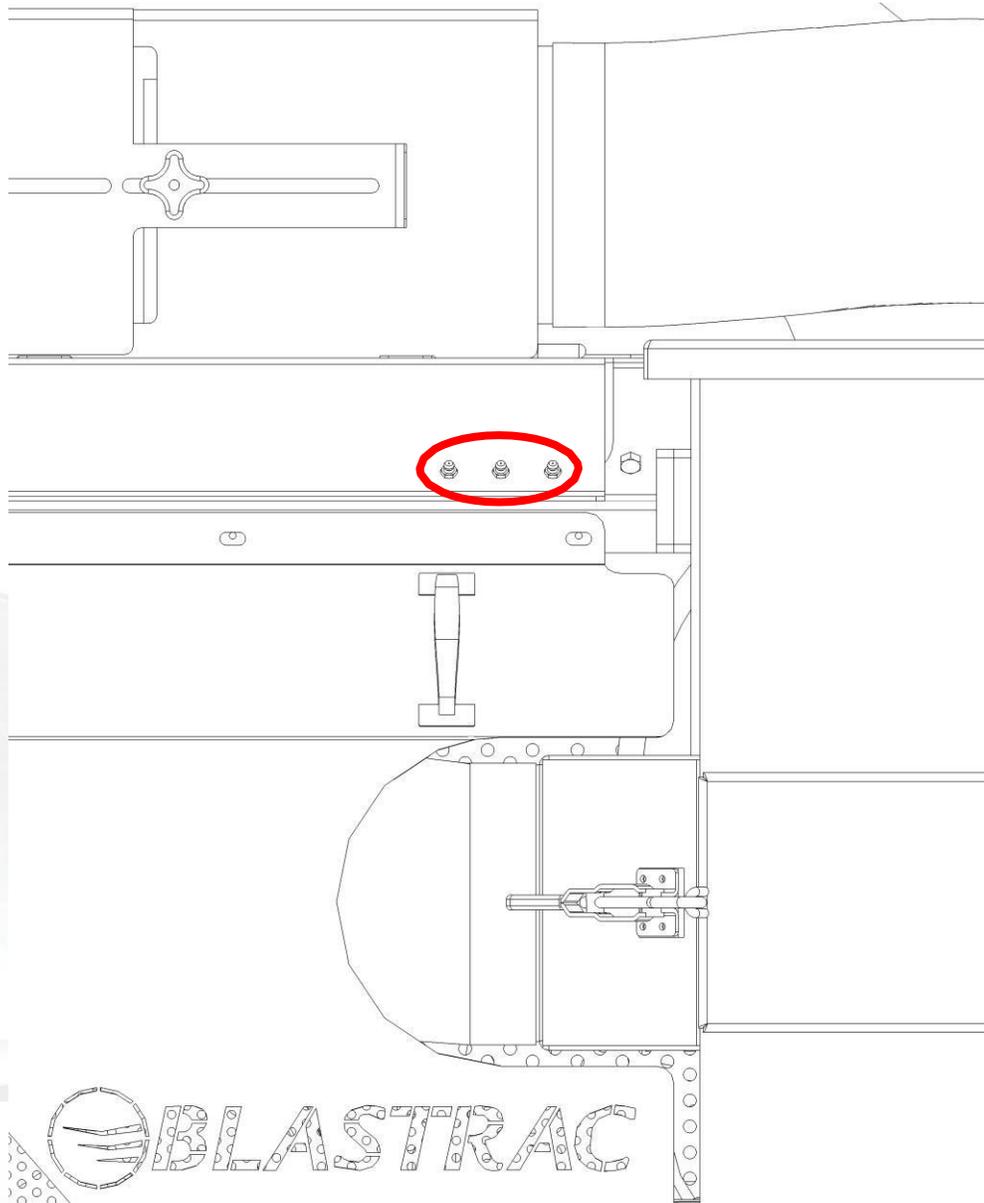


Figure 11

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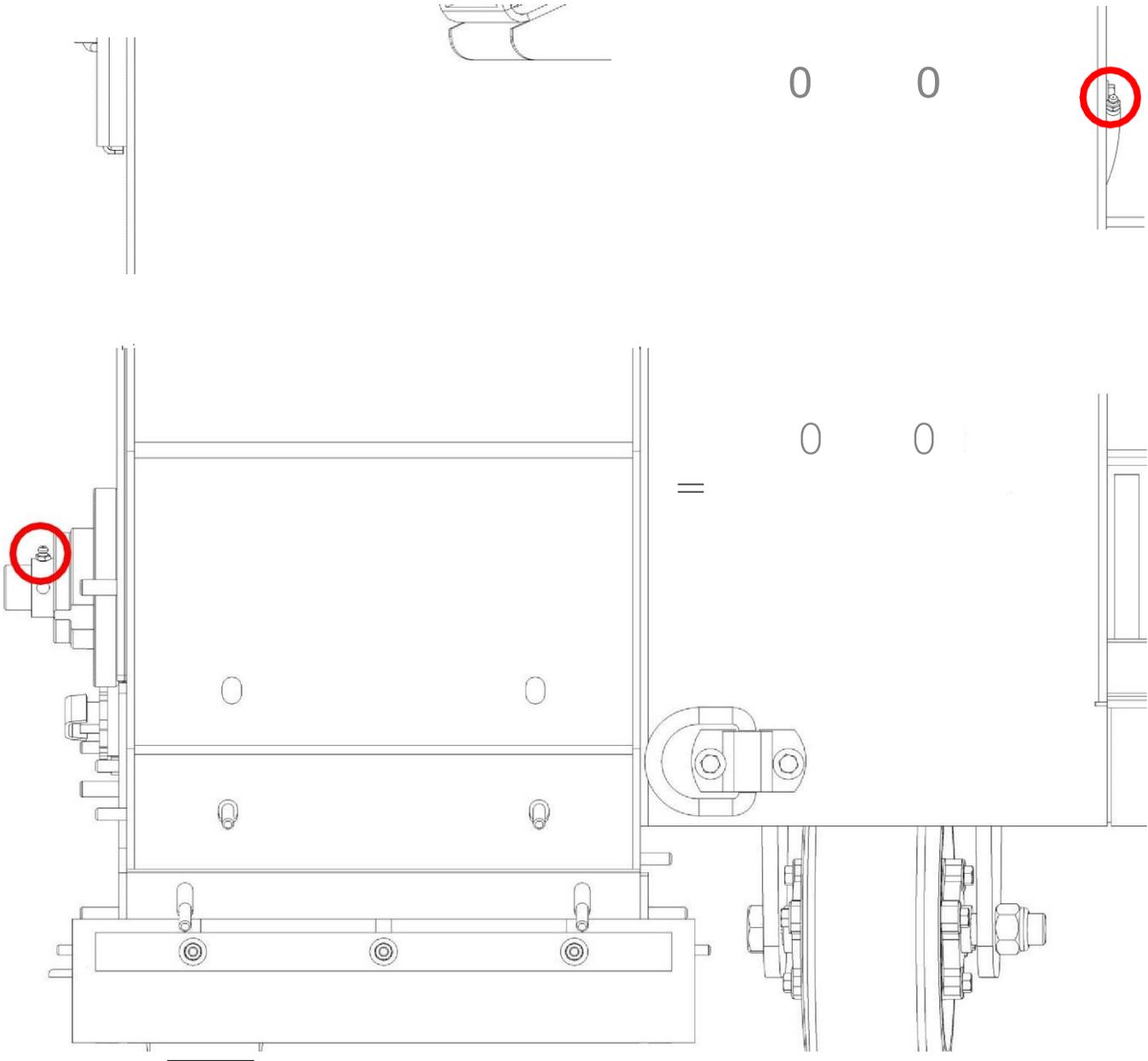
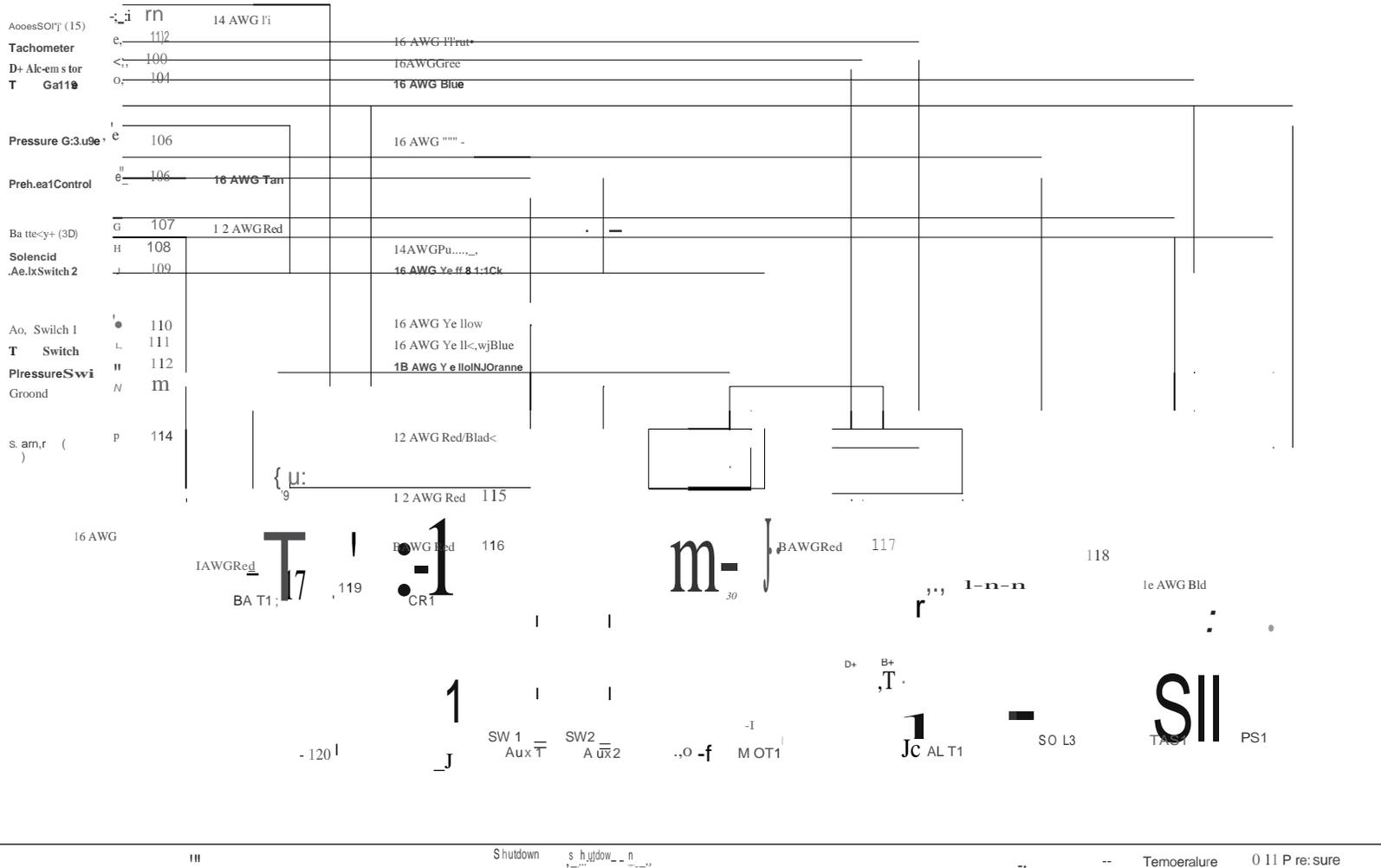


Figure 12

GI 14 Pos. Male



Note: -WK = Switch
- G = Gauge

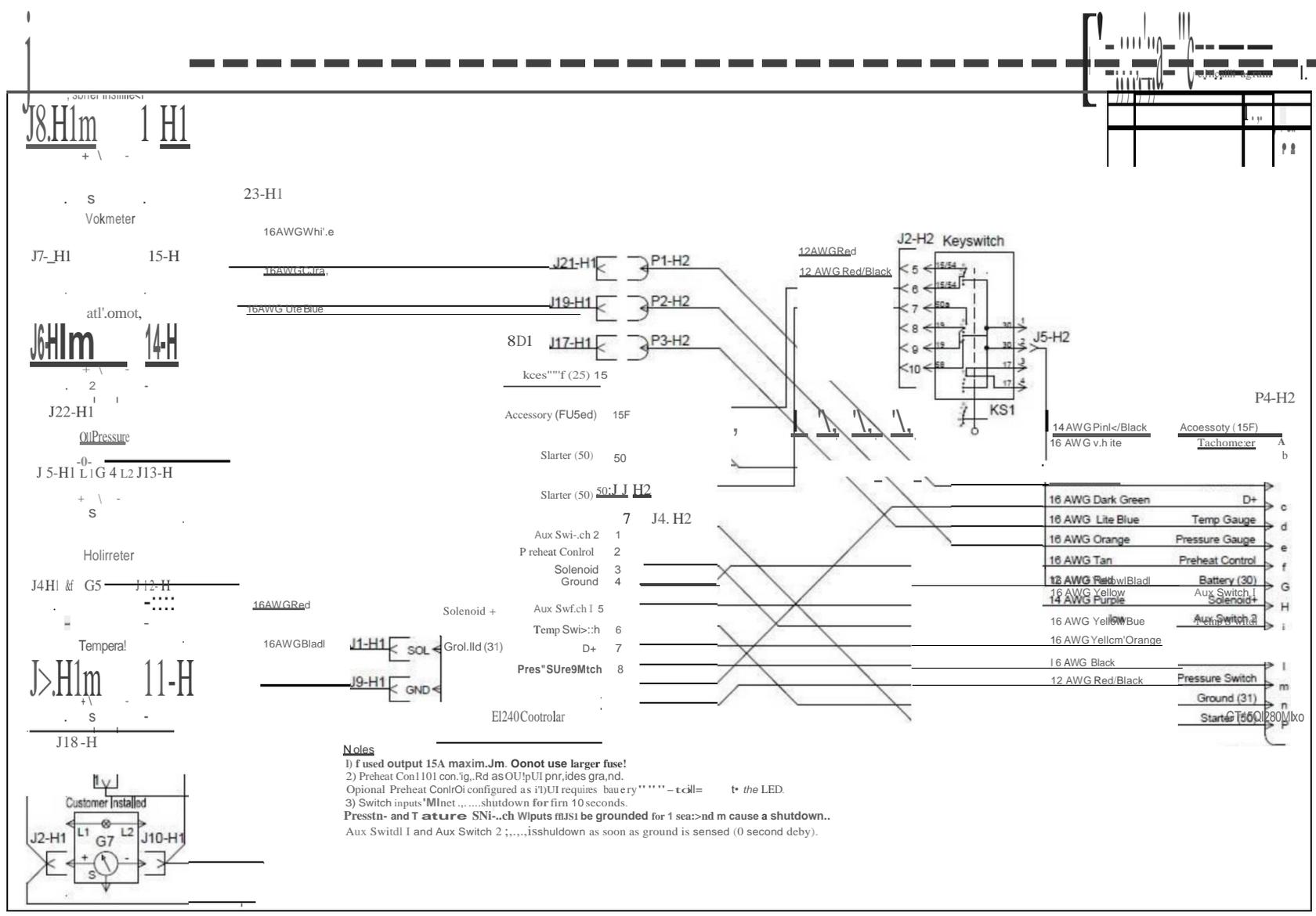
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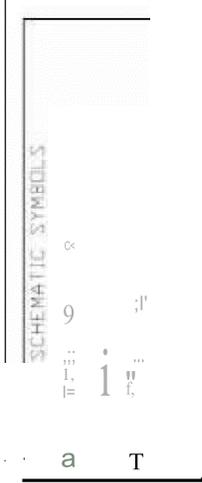
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Accessories



Battery
Starter Solenoid





Spare Parts

Wear Parts

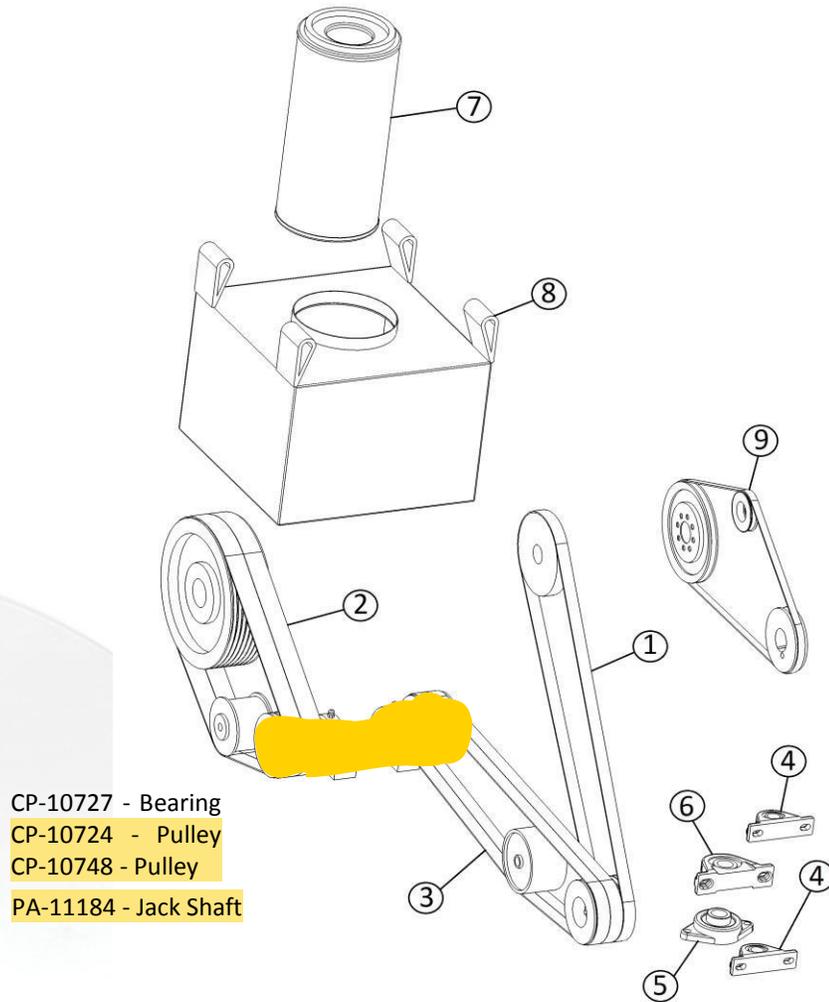


Figure 13

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	CP-10695	BELT/ 3VX710, 2 STRAND	1
2	CP-10694	BELT/3VX560, 4 STRAND	2
3	CP-10693	BELT/3VX750, 3 STRAND	2
4	2100002	BEARING/1" PILLOW BLOCK	2
5	2110004	BEARING/1 1/4" 2 BOLT FLANGE	1
6	2100004	BEARING/1 1/4" PILLOW BLOCK	1
7	493206	ELEMENT/FILTER	9
8	CP-10303	BAG/DUST CONTAINMENT	2
9	06100015	BELT/ 3VX-710 V	1

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Blast Head Assembly

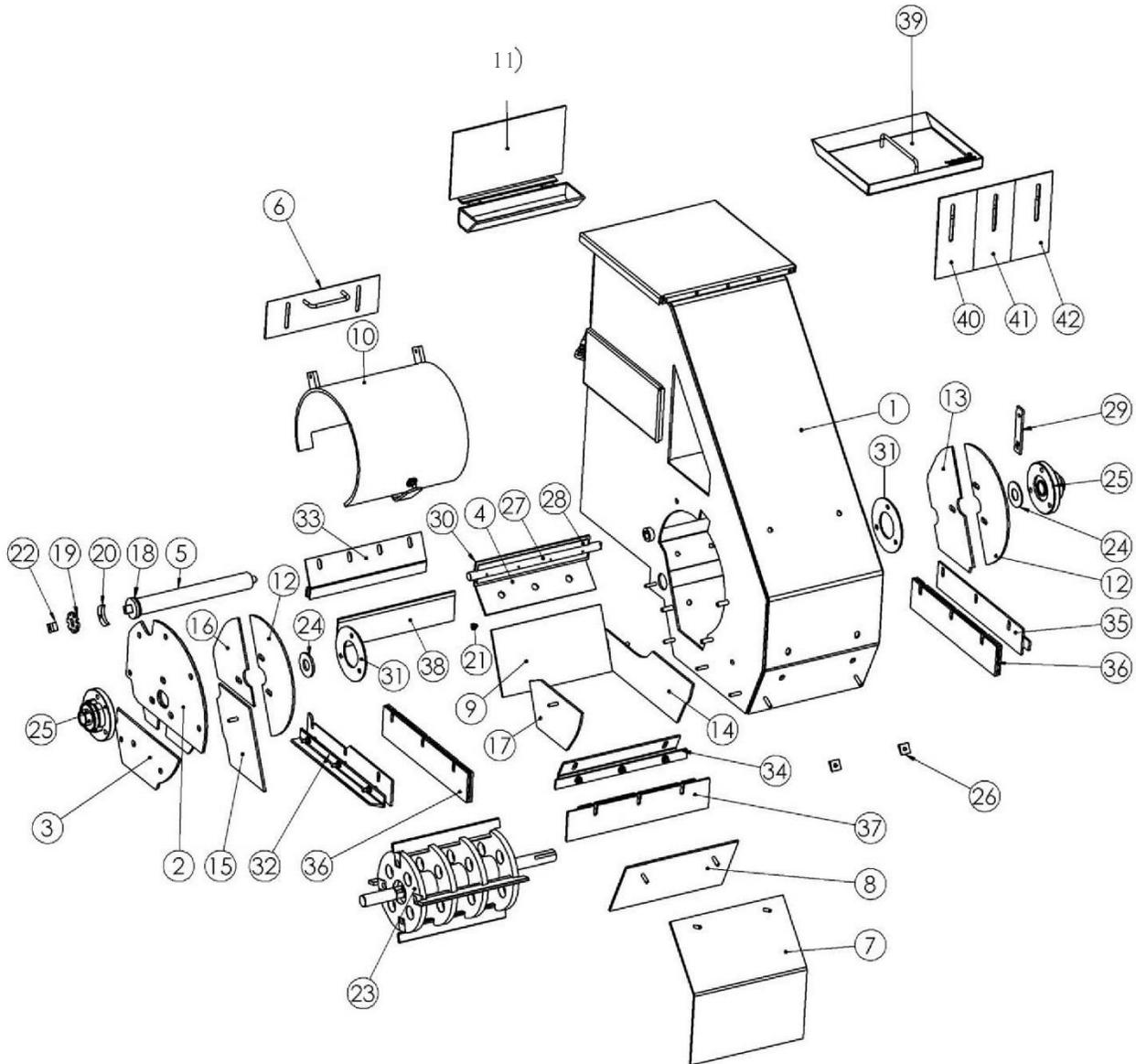


Figure 14



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	P000829-1	BLAST HOUSING	1
2	P000830	COVER PLATE	1
3	WP143706	ACCESS COVER	1
4	WP103711	LINER/PINCH BAR	1
5	WP033711	PINCH BAR	1
6	8300190	DAMPER-PLATE/SEPERATOR	1
7	WP043709	LINER/FRONT UPPER	1
8	WP043715	LINER/PINCH BAR LOWER	1
9	WP103712	LINER/PINCH BAR BACK WALL	1
10	WP113715	LINER/PINCH BAR TOP	1
11	8300133	TRAY/SHOT	1
12	WP053704	LINER/UPPER FRONT SIDE	2
13	WP053712	LINER/INSIDE BACK SIDE	1
14	WP093706	LINER/INSIDE LOWER SIDE	1
15	WP093716	LINER/LOWER OUSIDE BACK	1
16	WP053708	LINER/ UPPER OUSIDE BACK	1
17	WP093707	LINER/FRONT OUTSIDE LOWER	1
18	8300173	SEAL/PINCH BAR	1
19	8300042	STAR WHEEL/PINCH BAR	1
20	8300043	RETAINER/PINCH BAR	1
21	8300044	RETAINER/PINCH BAR	1
22	8300093	RETAINER/PINCH BAR INDEXER	1
23	WP123717	BLASTWHEEL/DOVETAIL	1
24	8300171	SEAL/SHAFT BEARING	2
25	2110015	BEARING/BLAST WHEEL	2
26	3500001	3/8" BEVEL WASHER	2
27	WP203709	SHAFT/ABRASIVE CONTROL VALVE	1
28	WP183715	RETAINER/ABRASIVE CONTROL VALVE SEAL	2
29	8300129	ARM/ABRASIVE CONTROL VALVE	1
30	WP183714	SEAL/ABRASIVE CONTROL VALVE	1
31	P002823	OUTSIDE BOLT RETAINER/3-BOLT FLANGE BEARING	2
32	WP153707	BRACKET/OUTSIDE SEAL	1
33	WP153706	BRACKET/REAR SEAL	1
34	WP153704	BRACKET/FRONT SEAL	1
35	WP153702	BRACKET/INSIDE SEAL	1
36	WP023710	SEAL/SIDE	2
37	WP023713	SEAL/FRONT	1
38	WP163712	BRUSH/DRAW	1
39	P003587	SHOT SCREEN/HOPPER	1
40	PG-10149	DAMPNER-ADJUSTABLE RIGHT PLATE, ASSEMBLY	1
41	PG-10148	DAMPNER- ADJUSTBABLE CENTER PLATE, ASSEMBLY	1
42	PG-10147	DAMPNER- ADJUSTABLE LEFT PLATE, ASSEMBLY	1
43	4835510	CLAMP/TOGGLE	1



7.Contact



Blastrac NA
13201 North Santa Fe Avenue
Oklahoma City, OK 73114
Tel: 800-256-3440
Fax: 405-478-8608
www.blastrac.com



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Product Warranty

Standard Equipment Products:

Blastrac warrants its Blastrac Standard Equipment Products against defects in quality of material and workmanship, under normal and proper use for a period of **1 Year** from the date of delivery, as noted on the returned warranty registration card, or, in the case of **Rental Fleet Machines, 180 Days** from the date of assignment to Rental Fleet. This warranty is non-transferable and is extended to machines purchased and entered into the normal service of surface preparation by a recognized professional or qualified contractor. Blastrac makes this warranty only to the buyer who purchases the products directly from Blastrac or its Authorized Distributor. This warranty does not include expendable parts such as, but not limited to, blades, blast wheels, wear plates, liners, seals, and electrical components. All purchased parts utilized in the manufacture will be honored to the original manufacturer's specified warranty.

If the buyer does not return the warranty card or register the product online at www.blastrac.com within 30 days after taking delivery of Blastrac Standard Equipment Products, the warranty period is limited to 6 months from the date of delivery noted on shipping receipt.

Hand Tool Products:

Blastrac warrants its BLASTRAC Hand Tool Products, including hand grinders and accessories, against defects in material and workmanship under normal and proper use for a period of **90 days** from the date of delivery or, in the case of Rental Fleet Machines, from the date of assignment to a Rental Fleet. Blastrac makes this warranty only to the buyer who purchases the products directly from Blastrac or its authorized distributor. This warranty does not include expendable parts such as blades.

If the buyer does not return the warranty card, or register online at www.blastrac.com within 15 days after taking delivery of Blastrac Hand Tool Products, the warranty period is limited to 30 days from the date of delivery noted on shipping receipt.

WARRANTY TERMS AND CONDITIONS:

1. Blastrac's obligation under this warranty is limited to the replacement or repair, at Blastrac's option, of products and does not include, labor, the cost of transportation, loss of operating time, or normal maintenance services.
2. This warranty does not apply to failure occurring as a result of abuse, misuse, negligence, corrosion, erosion, normal wear and tear, alterations or modifications made to products without the express written consent of Blastrac.
3. The buyer must submit all warranty claims no later than thirty (30) days after buyer becomes aware of the basis for any such claim, or should have become aware of the basis for any such claim in the exercise of reasonable diligence.

To return parts for warranty consideration, please call Blastrac Customer Service at **800-256-3440**. Your customer service representative will obtain the necessary information to complete the Blastrac Returned Merchandise Authorization (RMA) Form. Blastrac will then send the RMA form to the customer authorizing the return of the parts for warranty evaluation. The parts must be received within sixty (60) days following the RMA origination date or the warranty claim will be denied. Once the parts are received they will be evaluated for warranty.

If the customer cannot wait for the evaluation/replacement of the parts during this process, the customer must issue a new purchase order to Blastrac for the replacement parts before they can be shipped. Once the evaluation process is complete and parts are deemed a valid warranty claim, a credit will be issued against this invoice.

4. The buyer may not return Blastrac products without written authorization to do so through a Blastrac RMA.

5. Blastrac reserves the right to inspect and determine the scope of its warranty responsibilities for any returned Blastrac products.

6. Blastrac makes no warranty with respect to accessories it does not manufacture, including but not limited to, engines, motors, batteries, tires and all other parts. See component manufacture warranty.

7. Blastrac reserves the right to make product changes or improvements without prior notice and without undertaking any obligation for such changes or improvements on previously sold products.

8. The above warranty conditions can only be altered by Blastrac. Blastrac must confirm alterations in writing for each specific transaction.

9. Blastrac reserves the right to modify this warranty for used or demo products on an individual transaction basis. Blastrac will include warranty modifications on its invoices for used or demo products.

10. BLASTRAC DOES NOT AUTHORIZE ANY PERSON, REPRESENTATIVE, SERVICE OR SALES OUTLET TO MAKE ANY WARRANTY DIFFERENT FROM THIS PRODUCT WARRANTY.

11. EXCEPT FOR ITS PRODUCT REPAIR OR REPLACEMENT OBLIGATIONS DESCRIBED IN THIS PRODUCT WARRANTY, UNDER NO CIRCUMSTANCES SHALL BLASTRAC BE LIABLE TO THE BUYER, OR ANY OTHER PERSON, FOR ANY DIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF THE BLASTRAC PRODUCT, OR FOR ANY SPECIAL OR CONSEQUENTIAL DAMAGES OF ANY CHARACTER, INCLUDING WITHOUT LIMITATIONS, DAMAGES FOR ANY LOSS OF GOODWILL, WORK STOPPAGE, OR ANY AND ALL OTHER COMMERCIAL DAMAGES OR LOSSES.

12. BLASTRAC MAKES NO OTHER PRODUCT WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.



IMPORTANT!

TO THE DELIVERING DISTRIBUTOR OR END USER

To ensure the proper warranty coverage is extended to the owner of this machine, fill in the necessary information below **COMPLETELY** and **ACCURATELY** and retain for your records. **Go to www.blastrac.com and register online.** Click on the Register icon in the left column of the homepage, and fill out the product registration form with the same information that will be recorded here.

The warranty period will start upon the delivery date of the machine.

The distributor or the end user must provide the machine warranty information when the machine is delivered. Registration of the machine will extend the warranty period from the recorded delivery date entered with product registration. **Failure to comply will make any and all warranties on the equipment void after 6 months.**

OWNER/END USER'S REFERENCE INFORMATION

Delivery Date _____

Machine Model No. _____

Delivering Distributor's Name and Address

Machine Serial No. _____

Modifications _____

Signature of Delivering Distributor's Representative

Blastrac is a registered trademark of Blastrac,NA
Fold and Detach Here if Mailing

Warranty Registration

IMPORTANT! To ensure that your Blastrac® machine is covered under warranty, please provide the information recorded here by registering online at blastrac.com, or complete this page and fax to 866-485-1046, or if you prefer, detach and mail to:

Blastrac, 13201 North Santa Fe Avenue, Oklahoma City, OK 73114-9901

(Please print legibly)

Company _____

Address _____

City, State, & Zip _____

Telephone No. _____ Contact Person _____

Date of Purchase _____ Date Received _____

Machine Model No. _____ Serial No. _____

Distributor Name _____

End User Name _____

End User E-mail _____