



**CRACK-VAC 2**  
**Operator/Parts Manual – 26627N**  
**Revision 0**

Fill in appropriate fields that apply to this machine

Machine S/N: \_\_\_\_\_

Engine S/N: \_\_\_\_\_

Blower S/N: \_\_\_\_\_

Compressor Engine S/N: \_\_\_\_\_

Compressor S/N: \_\_\_\_\_





**CRACK-VAC 2**  
**P/N 60800N**



**CRACK-VAC 2 with COMPRESSOR**  
**P/N 60900N**

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## Chapter 1 Introduction

### 1.0 About This Manual

This manual is supplied with each new Crafcro Crack-Vac 2. The manual assists your machine operators in the proper use of the Crack-Vac and provides information about the machine's mechanical functions for trouble-free operation.

Your Crafcro Crack-Vac 2 is specially made to give excellent service and save maintenance expense. However, as with all specially engineered equipment, you get best results at minimum cost if you:

Operate your machine as instructed in this manual.

Maintain your machine regularly as stated in this manual.

### 1.1 How to use this manual:

This manual is formatted to start each new chapter on the right page. There may be a blank page on the left page if the previous chapter ends on the right page.

If you are viewing this in a digital format (PDF) the following features are available:

1. The Table of Contents, List of Tables, and List of Figures are all hyperlinks, when left mouse clicked on section, table, or figure you will be sent to that page.
2. The blue highlighted text throughout the manual is a hyperlink, when left mouse clicked you will be sent to that page, table, or figure.
3. The panel to the left in the PDF is a bookmarks panel, if you left mouse click on any section/heading in the bookmarks panel you will be sent to that page.

## Chapter 2 Safety

### 2.0 Safety Precautions

For more in-depth safety information, please see Safety Manual (P/N 26221) which comes with the machine. Or contact your nearest authorized CrafcO Distributor at [crafcO.com/Distributors](http://crafcO.com/Distributors).

### 2.1 General Safety

- CrafcO, Inc. assumes no liability for an accident or injury incurred through improper use of the machine.
- Read this manual thoroughly before operating the machine.
- Obey all CAUTION and WARNING signs posted on the machine.
- Make sure an operator fully knows how to operate the machine before using the machine.

### 2.2 Personal Safety

- Eye and ear protection devices along with a dust mask are required when operating the machine.
- Wear long pants, work gloves and heavy leather boots or shoes.
- When cleaning cracks and joints near moving traffic, always move in a direction away from traffic to protect the operator.
- Never allow fatigued operators to run the machine. Due to the nature of running this machine, the crew leader should rotate operators as they see fit according to their performance.
- Keep hands, feet, and clothing away from all moving parts.

## Chapter 2 Safety

### 2.3 Equipment or Operational Safety


- Do not operate the machine in buildings or work areas that do not have sufficient airflow.
- Always keep a correctly maintained fire extinguisher near the machine and know how to use it.
- Check equipment before every use.
- Do not operate the equipment when fatigued or under the influence of alcohol or drugs.
- Do not modify the equipment.
- Know how to operate the equipment, fully read the manual.
- Refer to the Rotary Air Blower manual for operating procedures and safety precautions.
- Do not start the blower until you are sure oil is at the proper level in the gear housing.
- Blower heat can cause burns if touched. Blower casing and associated piping or accessories may become hot enough to cause major skin burns on contact.
- The Chamber-Absorption Silencer will be hot to the touch. Do not touch hot surfaces.
- Check the compressor oil level and condition. Do not add or change oil while the system is running.
- The compressor operates anytime the engine is running. Avoid contact with the compressor, hoses, oil cooler, or engine during operation. These items can become hot enough to cause major skin burns on contact.
- Avoid the entrance of water into any part of the machine.
- Shut down engine prior to refilling fuel tank.
- Keep hands, feet and clothing away from all moving parts.
- Replace any hoses or belts which show signs of wear, fraying, or splitting. Assure all fittings and joints are tight and no leaks are present.
- Use only approved hoses and replacement parts.
- Tighten all bolts and screws every 100 hours of machine operation.
- Never attempt to make repairs to the equipment when the engine is running.
- Never operate the Crack-Vac without belt guards in place.
- Never transport the Crack-Vac with the engine running.
- Never exceed maximum recommended engine RPM.
- Never leave Crack-Vac unattended while engine is running.
- Never stand on any part of the machine.
- When cleaning cracks and joints near moving traffic, always move in a direction away from traffic to protect the operator.

## Chapter 2 Safety

### 2.4 California Proposition 65


The state of California currently maintains a list of chemicals that can cause cancer, birth defects or other reproductive harm. Your Crafcro, Inc. equipment comes with the following warnings

#### 2.4.1 All Crafcro Inc. Equipment

 **WARNING:** Cancer and Reproductive Harm - [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

26471N

#### 2.4.2 All Crafcro Inc. Equipment using a gasoline engine

 **WARNING:** Breathing engine exhaust exposes you to chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

- Always start and operate the engine in a well-ventilated area.
- If in an enclosed area, vent the exhaust to the outside.
- Do not modify or tamper with the exhaust system.
- Do not idle the engine except as necessary.

For more information go to [www.P65warnings.ca.gov/diesel](http://www.P65warnings.ca.gov/diesel).








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## Chapter 2 Safety

### 2.5 Safety Symbols and Notices






Important safety symbols and notices are marked on the machine and in this manual. Failure to comply could result in equipment damage, operational malfunction, serious injury, or death. Please read and comply with all symbols and notices. The table below includes the most commonly used symbols and notices.

**Table 2-1 Safety Symbols and Notices**

Symbol	Item	Remarks
<b>WARNING</b>	Warning	Refers to possible bodily injury or death.
<b>CAUTION</b>	Caution	Refers to possible equipment damage or operational malfunction.
	Severe Burn Hazard	Hot surfaces can cause severe burns.
	Protective Shoes	Wear hard-soled work shoes.
	Protective Gloves	Wear heat resistant gloves.
	Protective Face or Eye Wear	Wear face shield or safety glasses.
	Hearing Protection	Wear ear plugs or earmuffs.
	Dust Mask	Wear a dust mask when appropriate.
	Body Crush Hazard	Do not stand between trailer and hitch when hooking a trailer mounted Crack-Vac to a truck.

**Chapter 2 Safety**

**Table 2-2 Safety Symbols and Notices (continued)**

Symbol	Item	Remark
	Crush Hazard	Keep feet and legs clear.
	Pinch Hazard	Keep hands and feet clear.
	Exhaust Hazard	Avoid breathing engine exhaust.
	High Pressure Fluid Hazard	Do not use hands to search for leaks, use cardboard instead.
	Read Manual	Read and understand operator and safety manuals before operating machine.

## Chapter 3 Warranty Information

### 3.0 Limited Warranty

Crafco, Inc. (Manufacturer), or one of its affiliated distributors, will replace for the original purchaser free of charge any parts found upon examination by the Manufacturer, to be defective in material or workmanship. This warranty is for a period **two years** from the invoice date, but excludes engine or components, tires, and battery as these items are subject to warranties issued by their manufacturers.

Crafco, Inc. shall not be liable for parts that have been damaged by accident, alteration, abuse, improper lubrication/maintenance, normal wear, or other cause beyond our control.

The warranty provided herein extends only to the repair and/or replacement of those components on the equipment covered above and does not cover labor costs. The warranty does not extend to incidental or consequential damages incurred as a result of any defect covered by this warranty.

All transportation and labor costs incurred by the purchaser in submitting or repairing covered components must be borne by the purchaser. Crafco, Inc. specifically disavows any other representation, warranty, or liability related to the condition or use of the product.

#### CAUTION

Use of replacement parts other than genuine Crafco parts may impair the safety or reliability of your equipment and nullifies any warranty.



## Chapter 3 Warranty Information

### 3.1 Warranty Claim Instructions

Crafco, Inc. warrants parts and machinery purchased through Crafco or one of its affiliated distributors for two years from the invoice date. Wear items are not covered under the Crafco, Inc. limited warranty. A wear item is defined as but not limited to: material pumps, sealing tips, tires, etc.

If parts fail to function within two years of invoice date, a return authorization number (RA) must be obtained. If the part was purchased through Crafco, Inc., please contact Crafco returns department at [Returns@Crafco.com](mailto>Returns@Crafco.com) for an RA number or if purchased through a Crafco distributor please contact your distributor.

Note: if the part has a serial number associated with it, for example; a machine or electric hose or wand, this must be furnished when requesting the RA number. The customer will be emailed or faxed an RA form with all instructions to return the item to Crafco, Inc. See example. If the part is found to be within the two-year warranty period and has not been abused or modified, a credit will be issued to the customer's account or credit card. The customer may request the part be replaced instead of a credit, if desired.

Note: All engine warranties are covered through the engine manufacturer. If you need information for a distributor in your area, please contact us and we will direct you to the closest engine distributor.

All parts returned are tested and evaluated. If the part has been modified in any way without prior consent from a Crafco, Inc. representative, warranty is void.

Please follow the instructions stated below when calling in a Warranty Claim. Failure to follow these procedures may be cause to void the warranty.

Call your local Crafco Distributor. If you do not know who your local distributor is, call a Crafco Customer Service Representative, (Toll Free 1-800-528-8242) for name, location and telephone number.

On contacting the distributor, be prepared to identify the serial number, model number, engine number, engine manufacturer, and the date of purchase if available.

Should the cause of the malfunction be a defective part, the Distributor will advise you of the procedure to follow for a replacement.

The warranty is valid only for parts, which have been supplied or recommended by Crafco, Inc.

If you have any additional questions regarding warranty repairs and parts, please do not hesitate to call toll free 1-800-528-8242.

For Warranty:

Crafco, Inc.  
25527 South Arizona Avenue, Chandler, AZ  
85248

Phone: (480) 655-8333 or (800) 528-8242

Fax: (480) 655-1712

For all other inquires:

Crafco, Inc.

6165 W Detroit St,  
Chandler, AZ 85226

Phone: (602) 276-0406 or (800) 528-8242

Fax: (480) 961-0513

[CustomerService@crafco.com](mailto:CustomerService@crafco.com)

## Chapter 4 Machine Specifications

### 4.0 Machine Specifications

**Table 4-1 Machine Specifications**

Specification	P/N 60800N NON-COMPRESSOR UNIT	P/N 60900N COMPRESSOR UNIT
Holding Tank Capacity	100 Gallons	
Tank Construction	Heavy Duty Steel	
Tank Opening Size	16" Full Opening	
Engine (Blower) – Kohler Gasoline	Model - Command PRO CH-752 4-Cycle, OHV, Cast Iron Cylinder Liners, Aluminum Block 27 HP @ 3600 RPM	
Blower	Model 4007 Positive Displacement Rotary Air Blower 437 CFM @ 3600 RPM, 16" HG	
Blower Discharge Silencer	Multi-Chambered containing a high frequency absorption device to reduce excessive noise energy.	
Engine (Air Compressor) – Kohler Gasoline	N/A	Model – Command PRO CH-620, 4-Cycle, OHV, Cast Iron Cylinder Liners, Aluminum Block, 19 HP @ 3600 RPM
Air Compressor – VMAC	N/A	Model P190006, 32.3 CFM @ 100 PSI, 5000 RPM
Prefilter	Cyclonic Separator	
Primary Filter	Pleated Spun Bonded Polyester Filter Element MERV 14 Rating 133.0 ft <sup>2</sup> (12.36 m <sup>2</sup> ) Filter Area	
Secondary Filter	HEPA Panel Filter, 500 CFM, 10.0" (254mm) L x 18.0" (457mm) W x 5.91" (150mm) D 49.62 ft <sup>2</sup> (4.61 m <sup>2</sup> ) Filter Area	
Fuel Tank Capacity (Gasoline)	20 Gallons (75.7 Liters)	
Hydraulic Tank Capacity	1.5 Quart (1.42 Liter)	
Hydraulic Pump	12V DC Hydraulic Power System	
Shipping Weight	2060 lbs. (934 kg)	2360 lbs. (1070 kg.)

## Chapter 5 Operating Instructions

### 5.0 Operating Instructions

Air quality, workers' safety, and the safety of the motoring public are most important in today's road maintenance operations. The CRAFCO CRACK-VAC 2 was designed to thoroughly clean pavement cracks while maintaining a dust free environment. With a HEPA filter system that contains particulate matter down to .3 microns, The Crack-Vac 2 complies with the strict PM 2.5 air quality standards and OSHA standards for Respirable Crystalline Silica exposure in effect today. This new concept in crack sealing preparation limits worker exposure to dust and improves visibility problems that dust can cause for motoring traffic. The Crack-Vac is the future of crack cleaning operations.

CRAFCO Inc. and its Distributors assume no liability for accident or injury incurred through improper use of this machine.

DO NOT operate machine without reading operator's manual and being thoroughly familiar with controls.

**Note:** DO NOT attempt to operate the machine without using these and all other instructions.


### 5.1 Preparing the Machine for Start Up

**Table 5-1 Preparing the Machine for Start Up**

Step	Action
1	All toggle switches and keys should be turned to the "OFF" position before doing any work on the equipment. This will help prevent injuries.
2	Check engine crankcase oil. Add oil if low. Refer to Engine Operators Manual.
3	Fill engine gas tank with clean, fresh, unleaded gasoline. See "Fuel Recommendations" in Engine Operators Manual.
4	Check engine cooling air intake and external surfaces of engine. Clean if dirty or obstructed.
5	Check that the air cleaner components and all shrouds, equipment covers, and guards are in place and securely fastened.
6	Check hydraulic fluid level in the hydraulic reservoir at 70°F. Use dexron III transmission fluid. Add fluid as necessary. See <a href="#">Figure 5-1 Hydraulic Pump and Reservoir</a>
7	Check positive displacement rotary air blower fluid level. At ambient temperature the oil should be at about the middle of the sight gauge. (Refer to the Blower Manual). See <a href="#">Figure 5-2 Rotary Blower Fluid Level</a>
8	Check rotary screw compressor oil level. At ambient temperature the oil should be between add and max arrows. (Compressor model only, use only VMAC compressor oil). See <a href="#">Figure 5-3 Compressor Fluid Level</a>
9	Check to make sure that all the suction hoses are free from debris, kinks, or holes.
10	Check to make sure the pleat spun bond polyester cartridge filter is clean, in place, and properly sealed. See <a href="#">Figure 5-4 Filter Housing Cutaway</a>
11	Check to make sure the filter housing is free of debris and clean. Make sure the access lid is closed and properly secured. See <a href="#">Figure 5-4 Filter Housing Cutaway</a>

**Chapter 5 Operating Instructions**

**Table 5-2 Preparing the Machine for Start Up (continued)**

12	Check to make sure the HEPA panel filter is in place and in good condition. Replace if necessary.
13	Dump all debris from the storage tank. This will allow the air to flow properly through the system. See <a href="#">Table 5-15 Emptying the Debris Storage Tank</a>
14	Check to make sure the cyclone separator debris bucket is empty and attached to the cyclone separator. Make sure the support cage is inserted inside of the debris bucket. For more information, see <a href="#">Table 5-8 Cyclonic Separator</a>
15	Check the pivot boom assembly to be sure the boom swivels properly.
16	Check the 16" pressure manhole access door to be sure it is properly locked in place on the storage holding tank.
<b>WARNING</b>	
	<p>The safe operation of this machine is the operator's responsibility.</p> <p>Use extreme care when operating this machine; safety is the result of being careful and paying attention to details</p> <p>Always put on protective clothing; long pants, gloves, hard soled shoes, safety glasses, dust mask, and ear protection.</p> <p>Do not operate the machine without belt guards and covers in place.</p> <p>Tighten all bolts, nuts, and screws every 100 hours.</p>

## Chapter 5 Operating Instructions

Figure 5-1 Hydraulic Pump and Reservoir

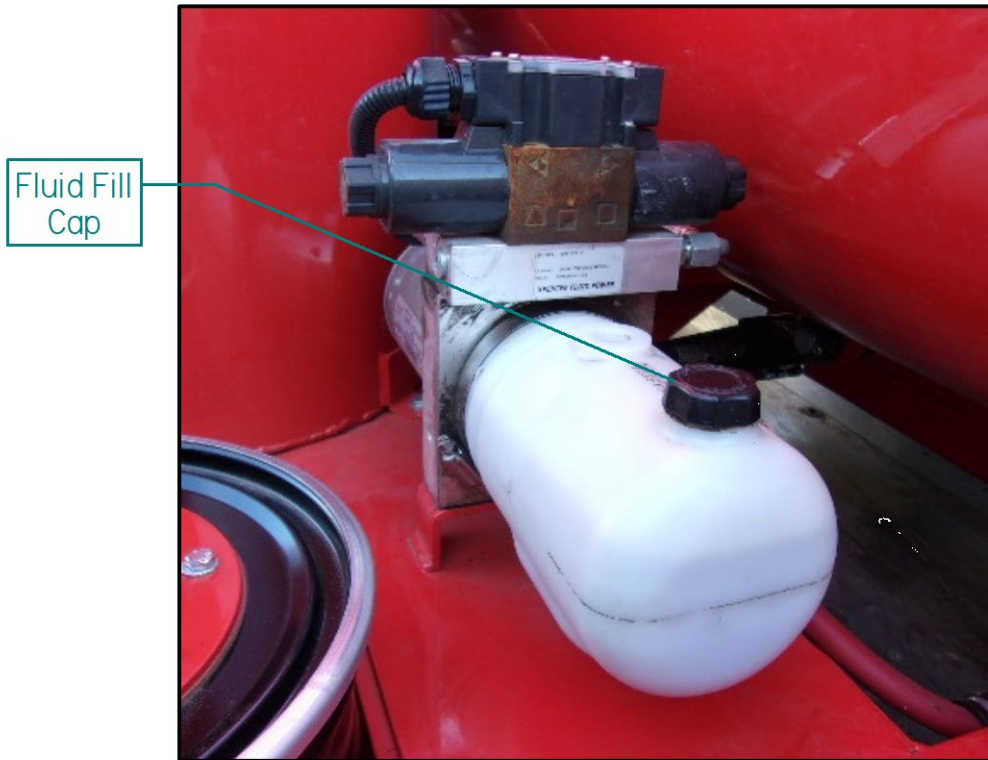


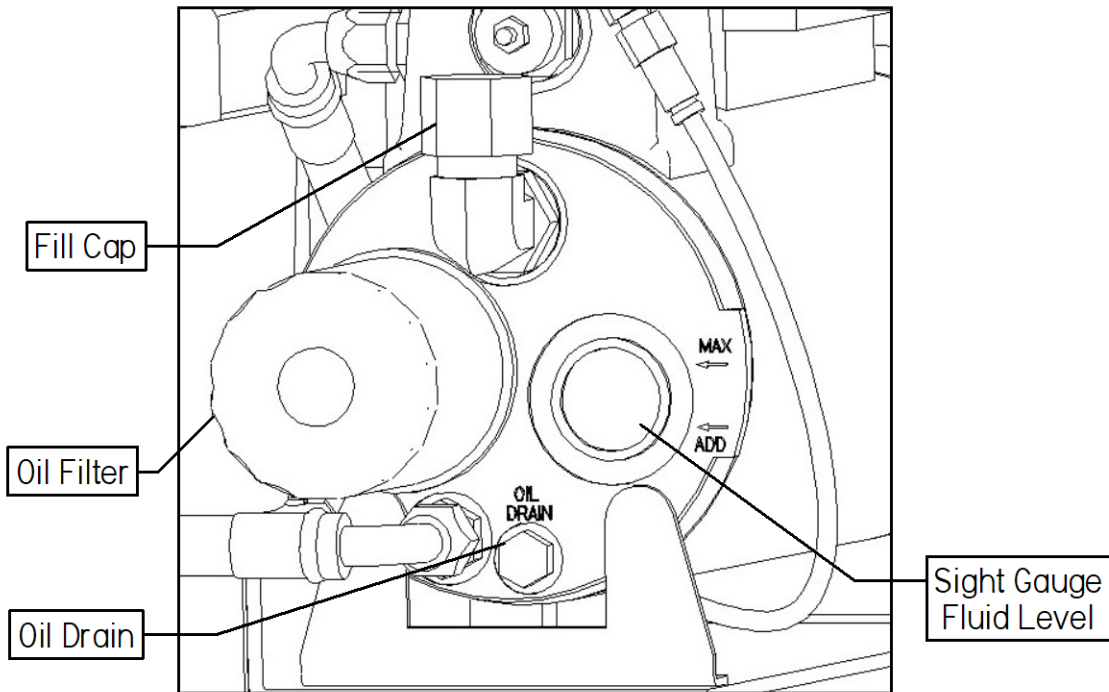
Figure 5-2 Rotary Blower Fluid Level



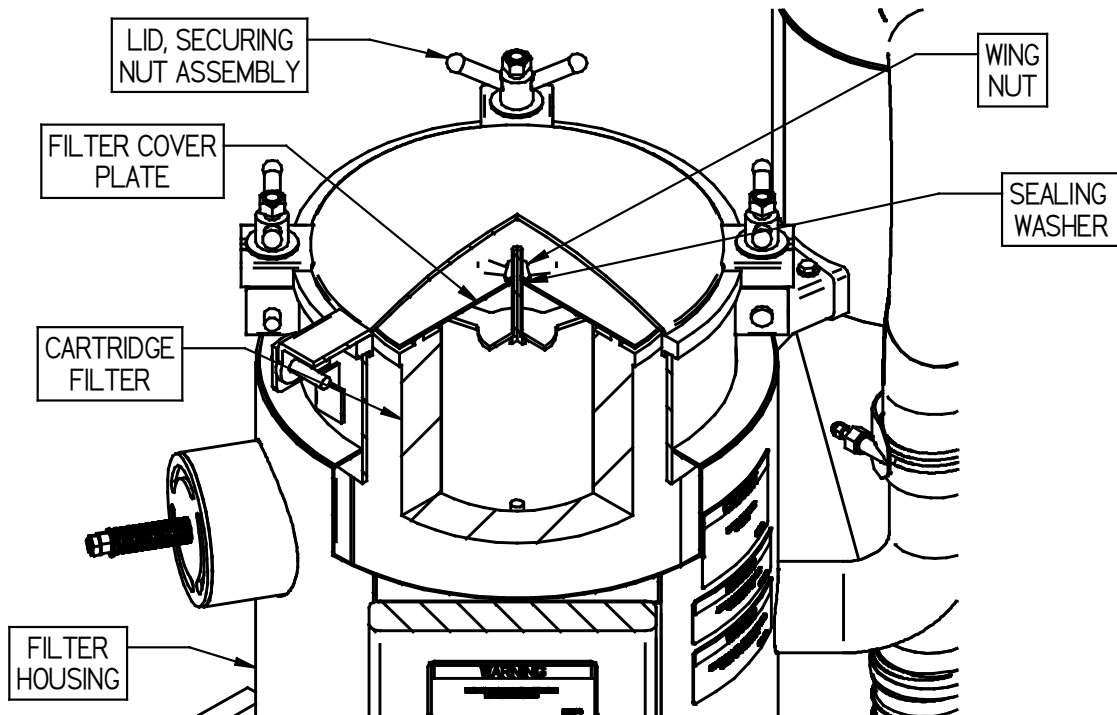


## Chapter 5 Operating Instructions

**Figure 5-3 Compressor Fluid Level**



**Figure 5-4 Filter Housing Cutaway**




## Chapter 5 Operating Instructions

### 5.2 Starting the Blower Engine

It is recommended that you read the Engine Operators Manual before starting the engine.


**Table 5-3 Blower Engine Starting Instructions**

Step	Action
1	To start engine, place the throttle control midway in the “slow” position, and place the choke control into the “on” position.
2	<p>Start the engine by activating the key switch. Release the switch as soon as the engine starts.</p> <p><b>Note:</b> Do not crank the engine continuously for more than 10 seconds at a time. If the engine does not start, allow a 60 second cool down period between starting attempts. Failure to follow these guidelines can burn out the starter motor.</p> <p><b>Note:</b> Upon start-up a metallic ticking may occur. This is caused by the hydraulic lifter leak down during storage. Run the engine for 5 minutes. The noise will normally cease in the first minute. If noise continues, run the engine at mid throttle for 20 minutes. If noise persists, take the engine to your local Kohler Service Engine Dealer.</p> <p><b>Note:</b> If the engine develops sufficient speed to disengage the starter but does not keep running (a false start), the engine rotation must be allowed to come to a complete stop before attempting to restart the engine. If the starter is engaged while the flywheel is rotating, the starter pinion and flywheel ring gear may clash, resulting in damage to the starter.</p>
	<p style="text-align: center;"><b>CAUTION</b></p> <p>If the starter does not turn the engine over, shut off starter immediately. Do not make further attempts to start the engine until the condition is corrected. Do not start using another battery. See your Kohler Engine Service Dealer for trouble analysis.</p>
3	For a Cold Engine: Gradually return the choke control to the “off” position after the engine starts and warms up. The engine/equipment may be operated during the warm-up period, but it may be necessary to leave the choke partially on until the engine warms up.
4	For a Warm Engine: Return the choke to “off” position as soon as engine starts.
5	Black smoke from the exhaust and a rough running engine usually indicate over-choking.
6	Check for unusual noise or vibration for the rotary air blower.

## Chapter 5 Operating Instructions

### 5.3 Starting the Compressor Engine

**Table 5-4 Starting the Compressor Engine**


Step	Action
1	Relieve all pressure from the system by opening the air supply valves and closing them once all pressure is relieved. Make sure the compressor enable switch is in the off position. This will aid in starting the engine with the compressor being in an “unloaded state”.
2	To start engine, place the throttle control midway in the “slow” position, and place the choke control into the “on” position.
3	<p>Start the engine by activating the key switch. Release the switch as soon as the engine starts.</p> <p><b>Note:</b> Do not crank the engine continuously for more than 10 seconds at a time. If the engine does not start, allow a 60 second cool down period between starting attempts. Failure to follow these guidelines can burn out the starter motor.</p> <p><b>Note:</b> Upon start-up a metallic ticking may occur. This is caused by the hydraulic lifter leak down during storage. Run the engine for 5 minutes. The noise will normally cease in the first minute. If noise continues, run the engine at mid throttle for 20 minutes. If noise persists, take the engine to your local Kohler Service Engine Dealer.</p> <p><b>Note:</b> If the engine develops sufficient speed to disengage the starter but does not keep running (a false start), the engine rotation must be allowed to come to a complete stop before attempting to restart the engine. If the starter is engaged while the flywheel is rotating, the starter pinion and flywheel ring gear may clash, resulting in damage to the starter.</p>
	<b>CAUTION</b>
	If the starter does not turn the engine over, shut off starter immediately. Do not make further attempts to start the engine until the condition is corrected. Do not start using another battery. See your Kohler Engine Service Dealer for trouble analysis.
4	For a Cold Engine: Gradually return the choke control to the “off” position after the engine starts and warms up. The engine/equipment may be operated during the warm-up period, but it may be necessary to leave the choke partially on until the engine warms up.
5	For a Warm Engine: Return the choke to “off” position as soon as engine starts.
6	Black smoke from the exhaust and a rough running engine usually indicate over-choking.
7	<p>Allow the engine to warm up at low idle for a few seconds.</p> <p><b>Note:</b> Upon engine starting, the compressor will only build pressure to 50 psi. Do not engage the compressor enable switch when the compressor is in low idle. Doing so will cause the engine to stall.</p>
8	Increase engine speed to full throttle.
9	Place the compressor enable switch in the on position. The compressor will build pressure to 150 psi. The system is now ready for operation.



## Chapter 5 Operating Instructions

### 5.4 Cold Weather Starting

**Table 5-5 Cold Weather Starting Hints**

Step	Action
1	Be sure to use the proper engine oil for the temperature expected. See Engine Operators Manual for recommended SAE Viscosity Grades.
2	Set speed control at part throttle position.
3	A warm battery has much more starting capacity than a cold battery.
4	Use fresh winter grade fuel.
	<b>CAUTION</b>
	Winter grade gasoline has a higher volatility to improve starting. Do not use gasoline leftover from summer.

### 5.5 Battery

A 12-volt battery is used. If the battery charge is not sufficient to crank the engine, recharge the battery. See Section 6-3 for battery charging instructions.

### 5.6 Stopping the Blower Engine

**Table 5-6 Stopping the Blower Engine**

Step	Action
1	Place the throttle control midway between the “slow” and “fast” positions.
2	Allow the engine to run a minimum of 15 seconds.
3	Stop the engine by turning off the key switch.
4	If not using the Crack-Vac for longer periods, turn off the fuel valve under the fuel tank to avoid flooding the carburetor when not in use.

### 5.7 Stopping the Compressor Engine

**Table 5-7 Stopping the Compressor Engine**

Step	Action
1	Close the supply valve and allow the system to build to full pressure.
2	Move the compressor enable switch to the off position and allow the engine to run at high speed for 5 seconds.
3	Place the throttle control midway between the “slow” and “fast” positions.
4	Allow the engine to run a minimum of 15 seconds.
5	Stop the engine by turning off the key switch.
6	Open the air supply valve and relieve air pressure from the system and then return the valve to the closed position.
7	If not using the Crack-Vac for longer periods, turn off the fuel valve under the fuel tank to avoid flooding the carburetor when not in use.

## Chapter 5 Operating Instructions

### 5.8 Compressor Operating Principles

#### 5.8.1 Air Compressor

The 32 CFM compressor uses a VMAC flooded lobe, rotary screw compressor. The oil filled compressor housing contains 2 rotors. Compression occurs when air (at normal atmospheric pressure) enters a chamber where it is trapped between meshing rotor lobes. Cooled oil is injected into the rotors during compression to lubricate the rotors and bearings, absorb the heat of compression, and seal the rotor lobes to allow for efficient compression. As the rotors rotate, the meshing lobes compress the volume of the trapped air/oil mixture before sending it down the discharge line to be cooled and separated by the Waste Heat Air Separation Package (WHASP) tank.

#### 5.8.2 Oil Separation and Cooling

The WHASP Tank is a 2-stage air/oil separator and oil cooler. The hot air/oil mixture from the compressor enters the cooler at the top of the WHASP Tank where the mixture is cooled and the majority of the oil separates from the air and settles into the reservoir tank below the cooler (first stage separation). The cooled oil then passes through a high-pressure oil filter before being returned to the compressor via the oil return line. The air stream then passes through a coalescing filter where the remaining oil is removed (second stage separation). The oil collected by the coalescing filter is returned to the compressor via the ¼" PTFE scavenge tube.

A liquid to air cooler with electric fan maintains the operating temperature which reduces the temperature of the compressed air and increases the systems durability.

#### 5.8.3 Minimum Pressure Check Valve

The WHASP Tank has a built-in minimum pressure check valve to maintain a minimum pressure of approximately 50 psi in the WHASP Tank. This ensures there is adequate compressor lubrication, cooling, and oil separation in the coalescing filter. Air will not flow out of the WHASP Tank until approximately 50 psi is reached.

#### 5.8.4 Filtration

Foreign particles entering the compressor can damage system components such as seals, bearings, rotors, as well as the inside of the housing, resulting in performance losses and reduced system life.

The system is equipped with a replaceable paper element inlet air filter, spin on high pressure oil filter and a spin on coalescing filter.

These system filters enhance performance and extend component life by reducing damage from dust and other debris. Proper maintenance is required to maintain system performance and extend the system's life.

#### 5.8.5 Automatic Overheat Shut Down

If the compressor oil temperature exceeds 284°F (140°C), the thermostatic switch will disable the engine. The cooling fan is powered by the battery and will continue to run as needed to cool the compressor oil.

When the engine is shutdown from an over-temperature state, an audible alarm will sound and an amber light on the compressor control panel will illuminate. Allow the system to cool before continuing, and/or trouble shoot the cause of the over temperature state.

## Chapter 5 Operating Instructions

### 5.9 Filtering System

This unit is equipped with a three-stage filtering system. It consists of a cyclonic separator (first stage), a main cartridge filter (second stage), and a HEPA rated after filter (third stage). These system filters enhance performance and extend the life of the rotary air blower, as well as help to protect workers from exposure to Respirable Crystalline Silica per OSHA standards.

Proper maintenance of these filter systems is required to maintain system performance and extend the system's life.




#### CAUTION

Shutdown machine prior to servicing the filters and any other components of the machine.

#### 5.9.1 Cyclonic Separator

The cyclonic separator is located at the rear of the unit and includes a debris storage bucket, and a bucket support cage. The cyclonic separator pre-filters the dust stream by spinning the larger, heavier dust particles out of the air stream, thereby increasing the run time for the main cartridge filter.

**Table 5-8 Cyclonic Separator**

Step	Action
1	Insert the bucket support cage into the debris storage bucket. A heavy-duty plastic bucket liner can be inserted into the bucket, with the support cage inserted into the plastic liner, for easier disposal of the collected dust. Secure the debris storage bucket to the cyclone with the lever lock ring. See <b>Figure 5-5 Debris Storage Bucket</b>
	<b>CAUTION</b> DO NOT operate the machine without the bucket support cage inserted inside of the debris storage bucket. Damage to the bucket will occur.
2	When beginning a vacuuming operation, check the debris storage bucket frequently to gauge the distance that can be vacuumed before the debris storage bucket will need to be emptied. The debris storage bucket will need to be emptied at approximately 3/4 to 7/8 full.
	<b>CAUTION</b> If the debris storage bucket becomes overfilled, an excessive amount of debris will remain in the air stream and will be deposited into the main filter housing, reducing the run time of the machine before the filter would have needed to be serviced.
3	To empty the debris storage bucket, shutdown the blower engine.
	<b>WARNING</b> A dust mask must be worn when emptying the debris storage bucket.
4	Disengage the lever lock ring and separate the bucket from the cyclone.
5	Using the handle of the bucket, remove the debris storage bucket from the machine. Remove the support cage from the bucket using the provided handles.

**Chapter 5 Operating Instructions**

**Table 5-9 Cyclonic Separator (continued)**

Step	Action
	<b>WARNING</b>
	The debris storage bucket weighs approximately 50 lbs. (23 kg) when full. Use caution when handling to prevent injury.
6	Dump the debris storage bucket into an appropriate receptacle where it can be disposed of at a later time. If the plastic bucket liners are being used, pull liner out of the bucket and tie off for later disposal.
7	Reinstall bucket support cage into the debris storage bucket. If using the bucket liners, place the support cage inside of a new liner and place them into the debris storage bucket.
8	Reattach the debris storage bucket to the cyclone and secure with the lever lock ring.
9	Restart the blower engine and continue vacuuming.

**Figure 5-5 Debris Storage Bucket**



**5.9.2 Main Cartridge Filter**




The main cartridge filter, and filter housing are vital components in this vacuuming system. A clogged air filter can seriously affect the efficiency of the rotary air blower and cause over-heating and excessive oil usage. This filter protects the rotary air blower from foreign debris and dust. To increase the life of the blower, the filter and housing must be cleaned daily or more often if conditions warrant it.

**Table 5-10 Main Cartridge Filter**

Step	Action
	<b>CAUTION</b>
	Filtration efficiency and pressure drop performance are very dependent on cleaning the filter element.


## Chapter 5 Operating Instructions

**Table 5-11 Main Cartridge Filter (continued)**

Step	Action
1	To remove and clean the filter, loosen the 4 securing nuts on the lid of the filter housing and rotate the nut assembly out of the way and open the lid. See <b>Figure 5-4 Filter Housing Cutaway</b>
2	Remove the wing nut and sealing washer that hold the filter cover in place and remove the cover.
	<b>WARNING</b>
	A dust mask must be worn when servicing the cartridge filter.
3	Remove the cartridge filter from the housing and inspect for damage.
	<b>CAUTION</b>
	If the filter is showing signs of damage; torn or missing seals, holes or tears in the filter media, bent or damaged end caps and or protective steel mesh, then the filter must be replaced. Operating the machine with a damaged filter will damage the blower and void the warranty.
4	Vacuum or gently shake the cartridge filter to remove excess dust. The filter can also be rolled back and forth on a flat, smooth clean surface to remove excess dust. Care should be taken to not damage the filter. If a vacuum is to be used, use a standard shop vacuum cleaner with an attachment that has brushes on the end to prevent damaging the filter media.
	<b>CAUTION</b>
	DO NOT bang or beat the filter on the ground or against any other object. Doing so will damage the filter.
5	Using compressed air (30 psi max), blow through the pleats on the filter element from the inside out to prevent blinding the media. <b>Note:</b> This step can be skipped if there is a concern about blowing dust into the air or regulations prevent it, however, cleaning won't be as effective.
6	Wash the filter element gently with water using a standard garden hose (40 psi max). Start by washing from the inside out, then washing the outside.
7	Blow excess water off using compressed air (30 psi maximum), both inside and out.
8	Dry the filter in a warm dry area for a minimum of 12 hours before returning the filter to system use. A longer dry time may be necessary depending on temperature and humidity. <b>Note:</b> It is suggested that a second filter be purchased if there is not enough time to allow the filter to dry before operating the vacuum again.
	<b>CAUTION</b>
	Protect cartridge filter from dirt and/or contaminants during the drying process.

## Chapter 5 Operating Instructions

**Table 5-12 Main Cartridge Filter (continued)**

Step	Action
9	To clean the filter housing; the best way to clean the filter housing is to use a shop-vacuum cleaner to vacuum any collected debris from the bottom of the housing. A second way to clean the housing is to remove the 2" drain plug located at the bottom of the housing and wash the debris out with a garden hose. Allow the housing to dry and replace the plug before operating the vacuum again.
	<b>CAUTION</b>
	There is approximately a 3" space between the bottom of the filter housing and the bottom of the cartridge filter. DO NOT allow debris to build up above the bottom of the cartridge filter.
10	Return the cartridge filter to the filter housing and replace the filter cover plate and secure with the sealing washer and wing nut. Tighten the wing nut so that both of the filters seals are compressed approximately 1/4" each or as needed to ensure that a proper seal is made.


### 5.9.3 HEPA after Filter

A HEPA rated filter is installed on this machine to help protect workers from exposure to crystalline silica dust and to help satisfy OSHA standards for crystalline silica dust exposure. Care should be taken to ensure that the filter will last for the longest possible amount of time. The HEPA filter panel is not serviceable and must be replaced when it has reached the end of its useful life. To get the maximum amount of use from the HEPA Filter;

- The Cyclone Collection Bucket must not be allowed to fill past 7/8 full. Dump the bucket regularly to keep from overflowing.
- Inspect and clean the Main Cartridge Filter and housing daily. A damaged or improperly sealed main cartridge filter will allow larger sized particles and a larger amount of debris to go by and collect in the HEPA filter, reducing the service life of the HEPA filter

A vacuum relief valve is located in the plumbing, between the HEPA filter and the blower. The relief valve protects the filter housing if a blockage should develop in the system. If suction is lost at the wand, and the relief valve is opening during operation, this may be an indication that the HEPA filter needs to be replaced.


**Table 5-13 HEPA Filter Access**

Step	Action
	<b>WARNING</b>
	A dust mask must be worn when servicing the HEPA filter.
1	To remove the HEPA filter from the filter housing; unlatch and open the filter housing door. Refer to <b>Figure 5-6 HEPA Filter &amp; Housing</b> <b>Note:</b> there is a safety catch lever on the latch assembly to prevent accidental opening.

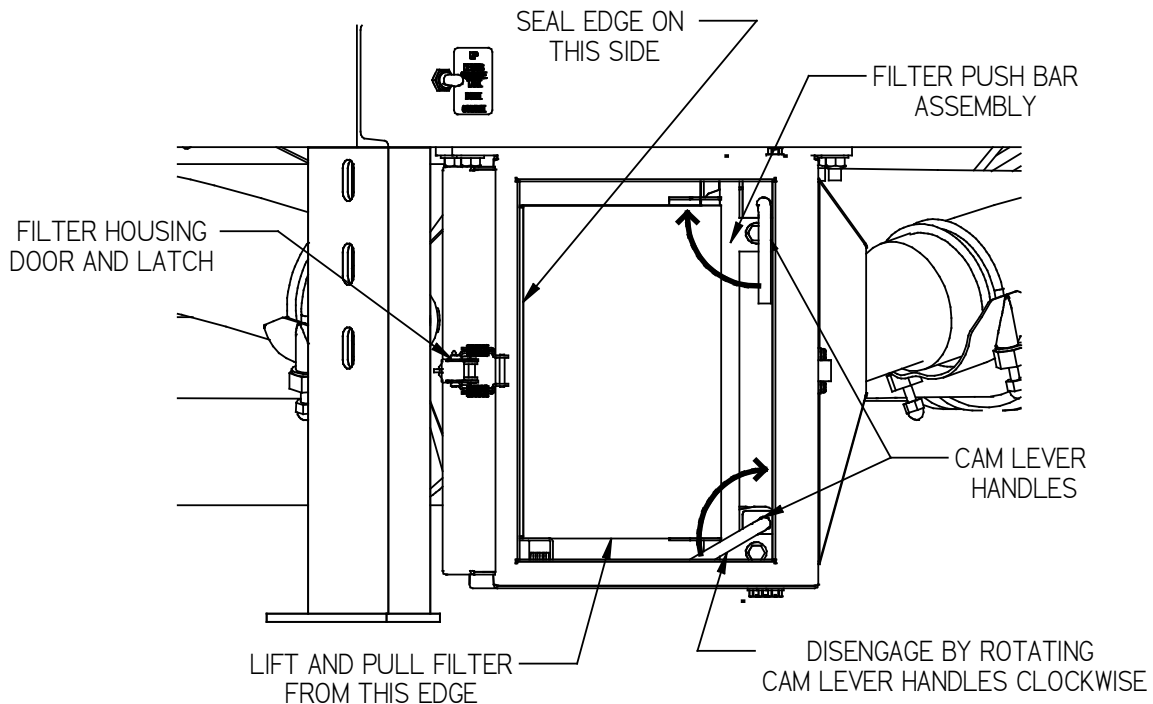


**Chapter 5 Operating Instructions**

**Table 5-14 HEPA Filter Access (continued)**

Step	Action
2	Rotate the cam lever handles counterclockwise to disengage the filter push bar assembly. This will relieve pressure on the filter seal.
3	Reach beneath the HEPA panel filter and lift and wiggle the filter from side to side to make sure the filter push bar assembly has retracted and relieved pressure on the filter seal.
4	Once pressure on the seal has been released, the filter can be pulled outward to remove the filter from the housing. Make sure the upper cam lever is rotated completely upward to prevent it blocking the filter from being removed. <b>Note:</b> make sure the filter seal has disengaged from the sealing lip to prevent damaging the filter seal when pulling filter outward.
5	To insert the filter; make sure the filter push bar assembly is in the rearward position. Place the leading edge of the filter on the support brackets and push the filter into the housing until it hits the stop brackets. <b>Note:</b> it may be necessary to slightly lift the trailing edge of the filter to allow it to go all the way into the filter housing.
	<b>CAUTION</b>
	Make sure the filter seal is in the correct orientation to create a proper seal.
6	Rotate the cam lever handles counterclockwise to push the filter forward and compress the filter seal on the sealing lip of the filter housing.
7	Close the filter housing door and engage the latch.

**Figure 5-6 HEPA Filter & Housing**




**Chapter 5 Operating Instructions**

**5.10 Debris Storage Tank**

The debris storage tank has a 100-gallon capacity. The tank should be cleaned out daily or before every use to insure proper air flow through the system.

**Table 5-15 Emptying the Debris Storage Tank**

Step	Action
1	Unlatch the LG 16" manhole cover on the storage tank. Unlatch the 3 cam levers that do not have the safety catch wire first. Unlatch the cam lever with the safety wire catch. The safety catch wire will keep the door from opening too quickly. Move the safety wire catch out of the way and the door will open. See <a href="#">Figure 5-7 Debris Storage Tank Door</a>
2	When the door is unlatched, raise the storage tank by using the toggle switch located in the side frame at the front of the machine. Lifting the toggle switch will raise the tank to the up position. See <a href="#">Figure 5-8 Debris Storage Tank Switch</a>
3	Once the dirt, rocks, and other debris have exited the tank, use the toggle switch to lower the tank back to the down position.
	<p style="text-align: center;"><b>WARNING</b></p> <p>Use caution not to pinch any part of the body when lowering the storage tank. Do not allow bystanders near the machine when lowering the storage tank.</p> <p><b>Note:</b> There is a restricting plug in the return side of the hydraulic line. This plug is a safety device that prevents the tank from lowering too quickly.</p>
4	When the tank is back in the lowered position, push the door close and latch the cam lever with the safety ring first, followed by the remaining three.

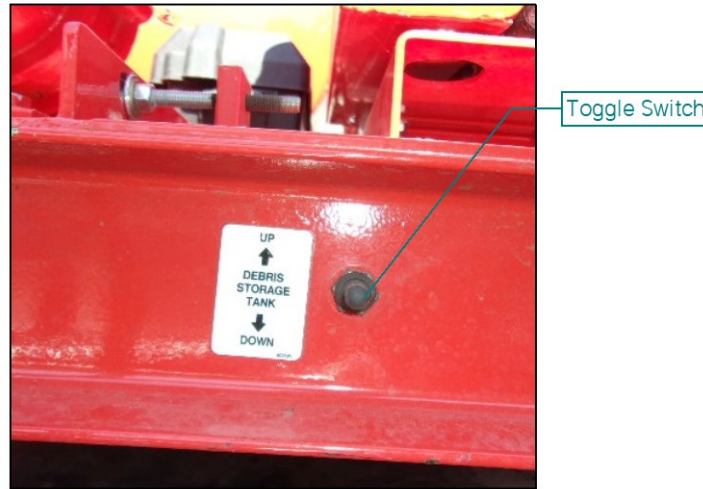
**Figure 5-7 Debris Storage Tank Door**





**Chapter 5 Operating Instructions**

**Figure 5-8 Debris Storage Tank Switch**



**5.11 EZ Glide Vacuum Wand**

The vacuum wand has a suction port and utilizes 3 compressed air nozzles for cleaning the debris from cracks. Care and use of the wand should be taken to ensure that it operates at peak efficiency.

**Table 5-16 Vacuum Wand Operation**

Step	Action
1	Inspect the wand for worn, broken or missing parts, repair or replace if necessary. Seal brushes should be making contact with the asphalt surface to keep debris or dust from being blown outside of the vacuum head. Height adjustment can be made by removing spacer washers from the swivel caster wheels. See <a href="#">Figure 5-9 Wand Wheel Spacers</a> <b>Note:</b> Do not discard washers as they may be needed again at a later time.
2	The front brush on the wand can be adjusted to an up or down position. If cracks are being routed, the brush can be moved to the up position to allow debris to go under the brush and be vacuumed, as opposed to the brush pushing the debris. In all other instances, the brush should be in the lowered position. See <a href="#">Figure 5-10 Wand Routed Crack Brush Location</a>
3	Attach the 25-foot lightweight vacuum hose to the overhead boom and secure the cam lock. Attach the 25-foot air hose (if equipped) to the overhead boom. <b>Note:</b> The boom extension can be extended for additional hose support.
4	Route the vacuum hose through the support rings on the wand and attach the hose to the suction port with the supplied clamp. Attach the 25-foot air hose (if equipped) to the wand end.
5	When beginning the cleaning operation, if a compressor is being used, turn the air supply valve to the on position to help loosen debris in the crack. Try to keep the center nozzle over the crack for best cleaning performance.
	<b>WARNING</b> Do not lift the vacuum head off the ground when the air valve is in the on position. This may blow debris back at the operator and may cause an injury.

## Chapter 5 Operating Instructions

Figure 5-9 Wand Wheel Spacers

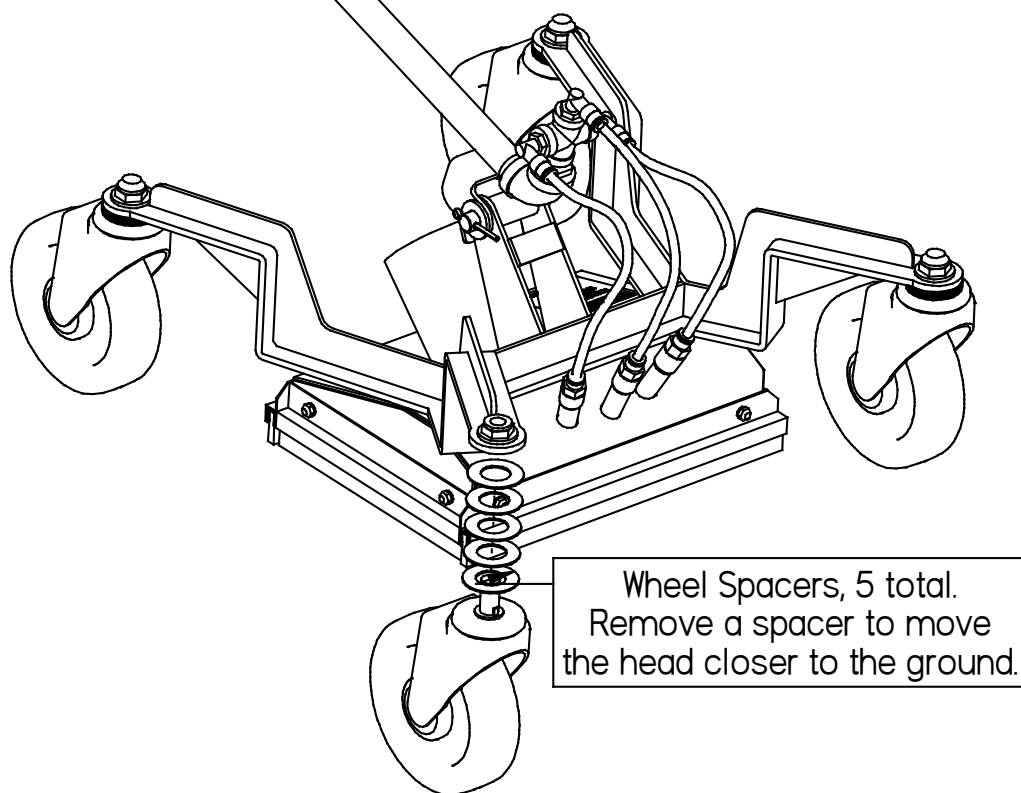
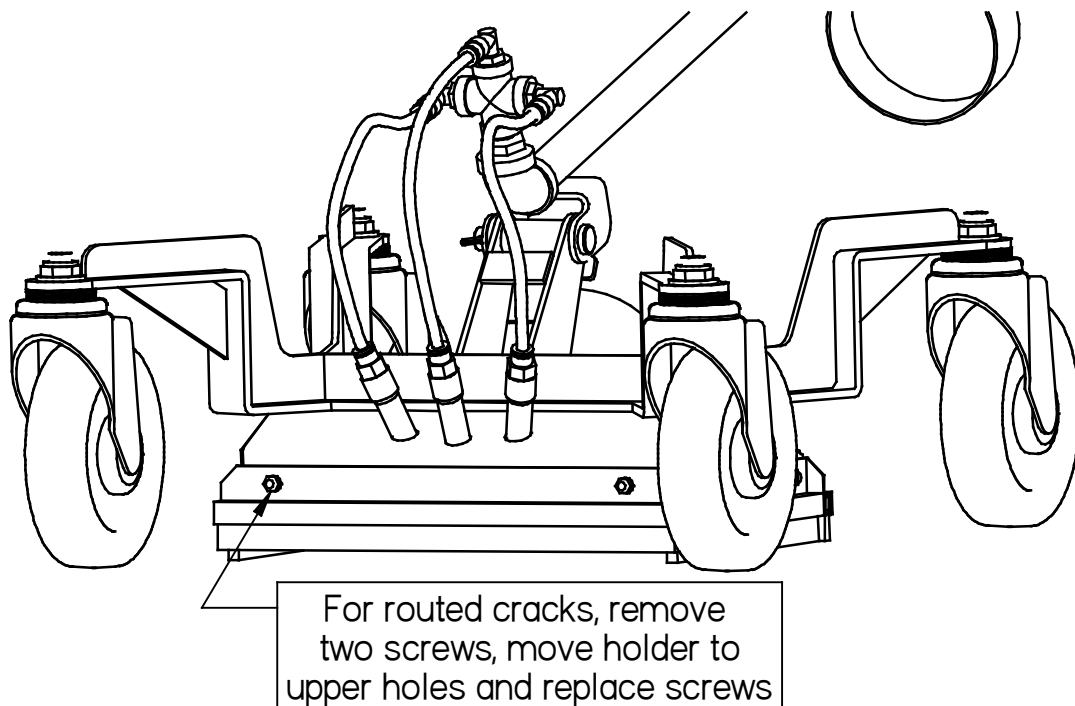


Figure 5-10 Wand Routed Crack Brush Location



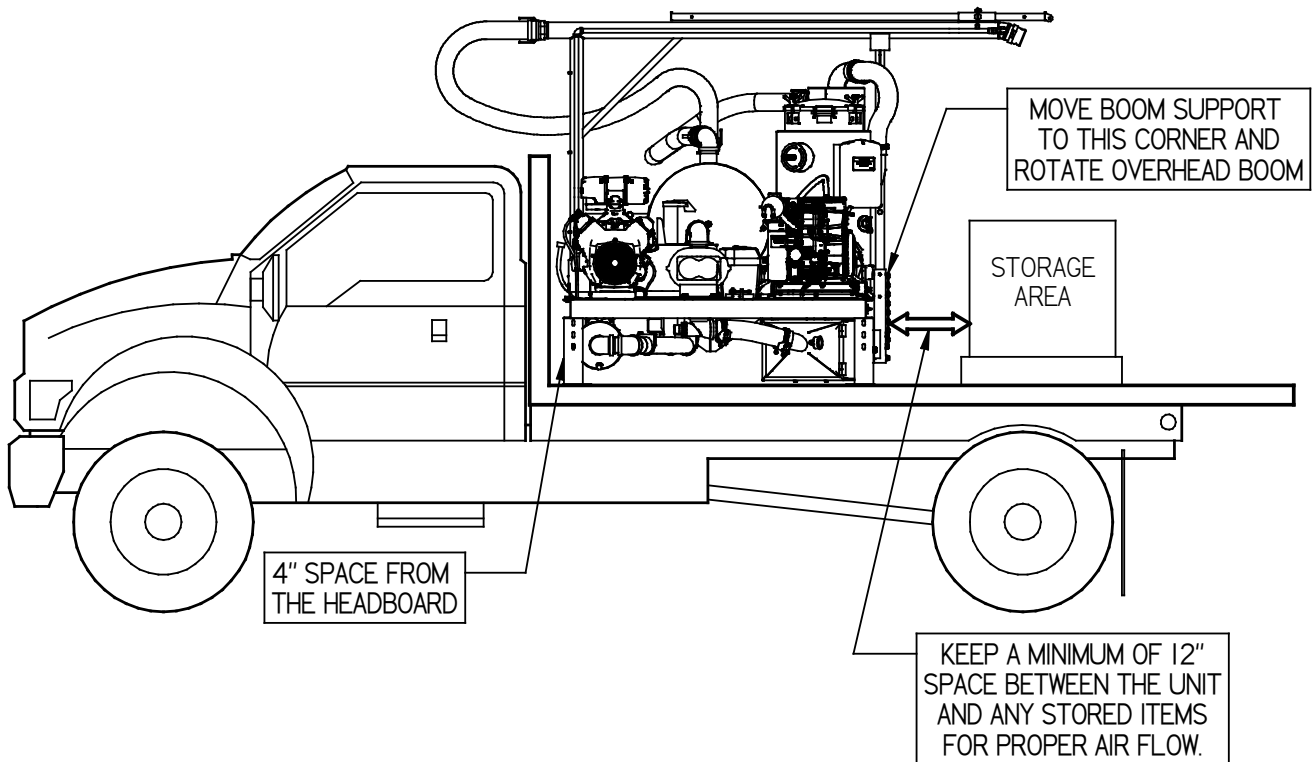
**Chapter 5 Operating Instructions**

**5.12 Mounting CrackVac on a Truck or Trailer**

**Table 5-17 Mounting CrackVac on a Truck or Trailer**

Step	Action
1	The CrackVac was designed to be mounted on the bed of a truck or on a trailer. The truck or trailer should be of a proper size to carry the loaded weight and size of the machine plus any additional items to be carried.
2	When mounting the CrackVac on the bed of a truck, the machine should be mounted horizontally to the truck cab with the boom located on the passenger side of the bed. Leave a minimum 4" space between the CrackVac and the headboard of the bed. See <b>Figure 5-11 Truck Mounted Unit</b>
3	The hose boom and boom support will need to be turned and moved to keep the boom within the outside edges of the truck when in the stored/travel position. To move the boom support, remove the three bolts and move the support to the opposite corner of the frame and reinstall the bolts. See <b>Figure 5-11 Truck Mounted Unit</b> <b>Note:</b> The machine is shipped with the boom in the correct orientation for trailer mounting.
4	Mount the machine using four ½" grade 5 (12mm grade 10.9) bolts to secure the machine in place.
5	A trailer can be order from Crafcoc that was specifically designed to carry the CrackVac. Part number 60350

**Figure 5-11 Truck Mounted Unit**



**Chapter 6 Maintenance Instructions**

**6.0 Maintenance Instructions**

This chapter contains all normal maintenance instructions to properly maintain your machine.

**6.1 Engine Oil Recommendations**

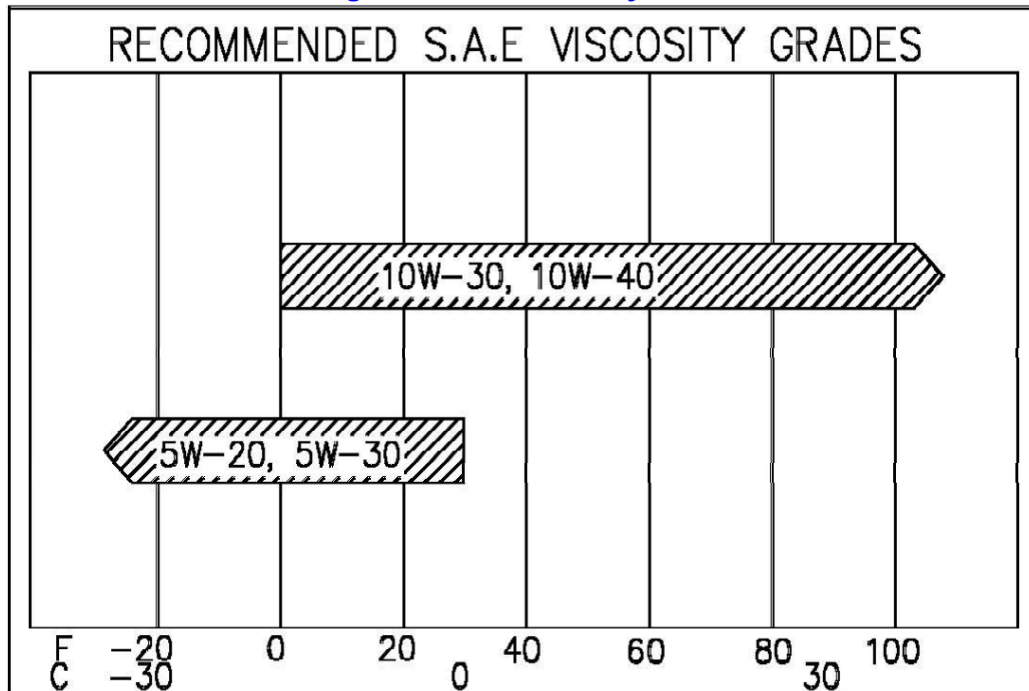
Using the proper type and weight of oil in the crankcase is extremely important. Failure to use the correct oil, or using dirty oil, causes premature engine wear and failure. Check engine oil daily. Change oil after every 100 hours of operation. Change oil filter every 200 hours. Use Crafcoc part number 31330. Refer to engine owner's manual for more information.

**6.1.1 Oil Type**

Use high quality detergent oil of API (American Petroleum Institute) service class SG or SH. Select the viscosity based on the air temperature at the time of operation as shown in **Figure 6-1 Oil Viscosity Chart**

**Note:** Using oil other than service class SG or SH or extending oil change intervals longer than recommended can cause engine damage. Refer to the Maintenance instructions in the engine owner's manual for detailed oil check, oil change, and oil filter change procedures and intervals.

**Figure 6-1 Oil Viscosity Chart**



## Chapter 6 Maintenance Instructions

### 6.2 Fuel Recommendations

#### WARNING

##### Explosive Fuel!

Gasoline is extremely flammable, and its vapors can explode if ignited. Store gasoline only in approved containers, in well ventilated, unoccupied buildings away from sparks or flames. Do not fill the fuel tank while the engine is hot or running since spilled fuel could ignite if it comes in contact with hot parts or sparks from ignition. Do not start the engine near spilled fuel. Never use gasoline as a cleaning agent.

#### 6.2.1 General Recommendations

Purchase gasoline in small quantities and store in clean, approved containers. A container with a capacity of 5 gallons or less with a pouring spout is recommended. Such a container is easier to handle and helps eliminate spillage during refueling.

To minimize gum deposits in your fuel system and to ensure easy starting, do not use gasoline left over from the previous season.

Do not add oil to the gasoline.

Do not over-fill the fuel tank. Leave room for the fuel to expand.

#### 6.2.2 Fuel Type

For best results use only clean, fresh, unleaded gasoline with a pump sticker octane rating of 87 or higher. In countries using the Research method, it should be 90 octane minimum.

Unleaded gasoline is recommended as it leaves less combustion chamber deposits. Leaded gasoline may be used in areas where unleaded is not available and exhaust emissions are not regulated. Be aware, however, that the cylinder heads may require more frequent service.

#### 6.2.3 Gasoline/Alcohol Blends

Gasoline (up to 10% ethyl alcohol, 90% unleaded gasoline by volume) is approved as a fuel for Kohler engines. Other gasoline/alcohol blends are not approved.

#### 6.2.4 Gasoline/Ether Blends

Methyl Tertiary Butyl Ether (MTBE) and unleaded gasoline blends (up to maximum of 15% MTBE by volume) are approved as a fuel for Kohler engines. Other gasoline/ether blends are not approved.

## Chapter 6 Maintenance Instructions

### 6.3 Evaporative Emission Control System

No regular maintenance of the evaporative control system is required. The evaporative control system should be inspected regularly for loose, worn or damaged components. If the fuel tank, fuel cap, fuel lines, fuel line fittings, clamps, purge line or carbon canister are showing signs of wear, have been damaged or are leaking, the damaged component must be replaced.

Do not operate this equipment with damaged, leaking or malfunctioning emissions components

Do not modify, remove, or bypass any evaporative emission control system component.

Use only certified components when replacing an evaporative emission control system component.

### 6.4 Battery

Check charge condition. Keep battery connections tight and clean. Check the fluid level in battery regularly if it is not a sealed type.

#### 6.4.1 Battery Recharging (compressor battery)

When recharging, do not use a battery charger rated for more than 8 AMP's. If the battery has fallen below 10.5 volts, a charger made specifically for charging AGM batteries is required. Do not overcharge the battery.

### WARNING

#### Explosive Gas!

Batteries produce explosive hydrogen gas while being charged. To prevent a fire or explosion, charge batteries only in well ventilated areas. Keep sparks, open flames, and other sources of ignition away from the battery at all times. Keep batteries out of the reach of children. Remove all jewelry when servicing battery.

## Chapter 6 Maintenance Instructions


### 6.5 Periodic Maintenance

Follow a regular schedule of inspection and servicing, based on operating hours. Keep an accurate logbook of maintenance, servicing, and operating time. Use the factory recommended Periodic Maintenance Schedule (based on favorable operating conditions) to serve as a guide to get long and efficient engine life. [Table 6-1 Maintenance Schedule](#)

For severe duty, extreme temperature, etc., service more frequently. Neglecting routine maintenance can result in engine failure or permanent damage.

For any abnormalities in operation, unusual noises from the engine or accessories, loss of power, overheating, etc., contact your nearest Kohler Service Center.

Periodically inspect the in-line fuel filter and replace when dirty using CrafcO part number 31331

	<b>WARNING</b>
	Inhalation of exhaust gases can result in serious personal injury or death. DO NOT use the air cleaner or exhaust elbow as a supporting step. Damage of these and connecting parts might cause an exhaust leak.

<b>WARNING</b>
<b>Accidental Starts!</b> Before servicing the engine or equipment on the machine, always disconnect the spark plug leads to prevent the engine from starting accidentally. Ground the leads to prevent sparks that could cause fires.

## Chapter 6 Maintenance Instructions

### 6.6 Maintenance Schedule

These required maintenance procedures should be performed at the recommended intervals. They should also be included as part of any seasonal tune-up.

**Table 6-1 Maintenance Schedule**

Location	Procedure	8	40	500	1000
Engine/s	Check oil level	x			
	Check air cleaner for dirty, loose or damaged parts*	x			
	Check air intake and cooling areas, clean as necessary*	x			
Other Engine Maintenance	Refer to the manufacture's operating and maintenance instructions of the engine.				
Blower	Check oil level	x			
	Change oil**				x
	Grease end bearings		x		
Blower V-belts	Check for wear, damage, and tension		x		
Hydraulic Power Pack	Check oil level	x			
	Change oil				x
Main Vacuum Filter	Clean*	x			
	Replace as needed or annually				
HEPA Filter	Check	x			
	Replace as needed or annually				
Compressor	Check oil level	x			
	Change oil and oil filter*			x	x
	Replace blowdown muffler				x
	Replace relief valve				x
	Replace coalescing filter*				x
	Inspect air intake filter*	x			
	Replace air intake filter*			x	x
Hose Support Boom	Grease pivot tube		x		

\*Perform these maintenance procedures more frequently under extremely dusty, dirty conditions.

\*\*Change after the first 100 hours



## Chapter 6 Maintenance Instructions

### 6.7 Service Instructions

**Table 6-2 Service Instructions**

Step	Action
1	Do a general inspection of the machine at least once a week.
2	Replace all worn or damaged parts
3	Make necessary adjustments and tighten all loose nuts, bolts, or screws.
4	Watch for leaks. Tighten fittings or repair as necessary.
5	Clean the external surfaces of the machine at regular intervals.

### 6.8 General Maintenance Parts

**Table 6-3 General Maintenance Parts**

Recommended Quantity	Description	Part Number
1	Engine Oil Filter (27HP and 19Hp)	31330
1	Engine Fuel Filter (27HP and 19HP)	31331
1	Primary Air Cleaner (27HP)	31344
1	Secondary Air Cleaner (27HP)	31345
1	Air Cleaner (19HP)	44387
1	Foam Precleaner (19HP)	31333
1	Vacuum Air Filter (Main Cartridge Filter)	60113
1	HEPA Filter Panel	60992N
3	V-belt (Blower)	60862N
1	Serpentine Belt (Compressor)	60389N
As Needed	5 Gallon Plastic Pail Liner (25 Count)	60957N
1	Exhaust Muffler (Blow Down Muffler, Compressor)	60993N
1	Safety Relief Valve (Compressor)	60994N
1	500 Hour Service Kit (Compressor)*	60995N
1	1000 Hour Service Kit (Compressor)**	60996N
2	Brush Seal, Side (Vacuum Wand)	60595N
2	Brush Seal, Front/Back (Vacuum Wand)	60592N
3	High Pressure Spray Nozzle (Vacuum Wand)	60596N
4	5" Swivel Caster (Vacuum Wand)	60897N

\*Includes 1 Gallon (4 liter) VMAC compressor oil, oil filter, air filter.

\*\* Includes 1 Gallon (4 Liter) VMAC compressor oil, oil filter, air filter, coalescing filter.

## Chapter 6 Maintenance Instructions

### 6.9 Rotary Air Blower

A good maintenance program will add years of service to your blower

#### 6.9.1 Bearing Lubrication

Lubricate the drive end bearings every 40 hours of operation. Use NLGI #2 petroleum-based grease with high temperature resistance and good mechanical stability. Use a pressure gun to force new grease into each bearing until traces of clean grease come out of the relief fittings.

#### CAUTION

Do not inject grease too fast to avoid blowing out the drive shaft seal.

#### 6.9.2 Oil service

Check and maintain oil level and add oil as necessary. Drain and refill oil after the first 100 hours of operation and thereafter every 1000 hours, or more frequently depending on the type of oil and operating temperature.

Oil capacity for the blower is 0.045 gallon (0.17 liters).

#### 6.9.3 V-Belts

Re-tension belts after the first 8 hours of operation and check tension every 40 hours thereafter. To check tension, place a straight edge across the belt span. Using a belt tension checker, push the belt down midway between the pulleys and measure the deflection. Recommended deflection is ¼ inch with a 6lb force applied.

Inspect the belts regularly for signs of cracking or fraying. Replace the belts if they are showing signs of wear. If one belt is showing signs of wear, replace all the belts together.

#### CAUTION

Over tightening the belts will cause shortened belt life and bearing failure of the blower and/or engine. Do not use belt dressing on the V-belts. Keep sheaves and V-belts free of oil and grease.

#### 6.9.4 Storing Procedures

If the machine is to remain inactive for extended periods of time, the unit should be stored in a dry place. Protect the blower from corrosion; spray the interior of the blower (lobes, housing, and end plates) with a rust preventative such as WD-40 to keep the blower from freezing up do to rust. If possible, cap off the openings from air and moisture.

Remove tension from the drive belts.

When putting the machine back into service; spray the interior with penetrating oil and rotate the drive shaft by hand to make sure the lobes will turn freely.

Re-tension the belts to the recommended tension. See section [6.9.3](#)

## Chapter 6 Maintenance Instructions

### 6.10 Hydraulic System

Check hydraulic fluid level weekly. Change hydraulic fluid every 1000 hours of operation. Do not return to the system any fluid which has leaked out. Use clean containers, hoses, and funnels when filling the reservoir. Make sure that the filler/breather cap on the reservoir is properly fastened. Make certain the fluid used in the system is of a type recommended by the manufactures of the system components. Use Dexron III transmission fluid in the power pack.

#### CAUTION

Do not use a solid plug or a fill cap without a filler/breather element or damage will be caused to pump and/or reservoir.

### 6.11 Suction and Exhaust Hoses

Be sure hoses are free of debris for efficient blower operation and damage to blower. Inspect all hoses for damage, make sure no hose is crushed, kinked, or has holes. Replace any damaged hoses.

#### CAUTION

Any blockages of the hoses prevent the vacuum from operating correctly.

### 6.12 EZ Glide Wand Assembly

Inspect the EZ Glide wand for damage or wear. Verify that the wheels spin and turn freely, replace all four if one or more show signs of excessive wear or damage. Inspect the sealing brushes for wear or damage, replace as necessary. Inspect the air nozzles for wear or damage, replace as necessary.

### 6.13 Compressor

To ensure proper performance and long service life, a proper maintenance schedule should be adhered to.

#### 6.13.1 Compressor Engine


For compressor engine service, see sections 6.0 through 6.4. Refer to engine owner's manual for more information.

## Chapter 6 Maintenance Instructions

### 6.13.2 Compressor Oil

Inspect and maintain compressor oil level daily, add oil as needed. Use only VMAC compressor oil. Check oil level at ambient temperature and with no pressure in the system. Change compressor oil and filter every 500 hours of operation. Reference [Figure 5-3 Compressor Fluid Level](#)

**Table 6-4 Changing Compressor Oil**

Step	Action
	<b>WARNING</b>
	Relieve all pressure from system before starting an oil change.
1	Clean the area around the filter and the drain plug to prevent contamination. Reference <a href="#">Figure 5-3 Compressor Fluid Level</a>
2	Remove the oil drain plug and drain the oil into a container with a minimum capacity of 1 gallon (4 liters).
3	Inspect the Viton O-ring on the plug for damage, hardness or defects and replace if necessary. Install and tighten the oil drain plug.
4	Remove the oil filter. Ensure the threaded nipple did not unscrew with the oil filter. If the nipple came out with the filter, remove it from the filter carefully to prevent damaging the threads.
5	To reinstall the nipple, thoroughly clean the threads and apply Loctite 242 (blue) to the end with the short threads and replace it in the tank.
6	Clean the gasket sealing surface on the front of the tank and inspect it for damage. The surface must be free of old gasket and smooth to ensure a good seal.
7	Apply a thin coat of compressor oil to the rubber gasket on the oil filter. Spin the filter onto the threaded nipple until the gasket contacts the sealing surface on the tank, then tighten the filter an additional $\frac{3}{4}$ to 1 turn to seat the gasket
8	Remove the fill cap and fill with compressor oil until it reaches the "MAX" mark, approximately 1 gallon (4 liters) of oil. Replace the fill cap.
9	Start the engine and check for oil leaks. Allow the system to build to pressure and then shut down the system following the procedure in <a href="#">Table 5-7</a> . Relieve all pressure from the system.
10	Allow the system to sit for 5 minutes, check the oil level through the sight glass. The level must be between the "MIN" and "MAX" level indicators.

### 6.13.3 Blowdown Muffler.

The blowdown muffler is a regular service item and must be replaced every 1000 hours of operation. Visually inspect the blowdown muffler for evidence of corrosion or loss of functionality. Ensure the muffler allows the blowdown to depressurize the system. Reference [Table 6-5 Testing the Blowdown Muffler](#)

## Chapter 6 Maintenance Instructions

**Table 6-5 Testing the Blowdown Muffler**

Step	Action
1	Turn the system on and allow it to reach full pressure.
2	Slow engine speed to idle and turn the ignition key to "OFF"
3	Listen for the pressurized air to blowdown through the muffler on the WHASP tank. Blowdown should be completed in approximately 20 seconds.
4	If the muffler is showing signs of blockage, replace the muffler.

### 6.13.4 Pressure Relief Valve

The pressure relief valve is a regular service item and must be replaced every 1000 hours of operation. Inspect the pressure relief valve for signs of corrosion or loss of functionality. Reference [Table 6-6 Testing the Pressure Relief Valve](#)

**Table 6-6 Testing the Pressure Relief Valve**

Step	Action
1	Visually inspect the valve and ensure it is not corroded and that the vent holes are not plugged.
2	Turn the system on and allow it to reach full system pressure.
3	Ensure that air does not leak out of the valve. Air leaking from the pressure relief valve when system pressure is at or below 150 psi indicates that the spring in the valve is worn and the valve must be replaced.

### 6.13.5 Coalescing Filter

The coalescing filter is a regular service item and must be replaced every 1000 hours of operation. Reference [Table 6-7 Replacing the Coalescing Filter](#)

**Table 6-7 Replacing the Coalescing Filter**

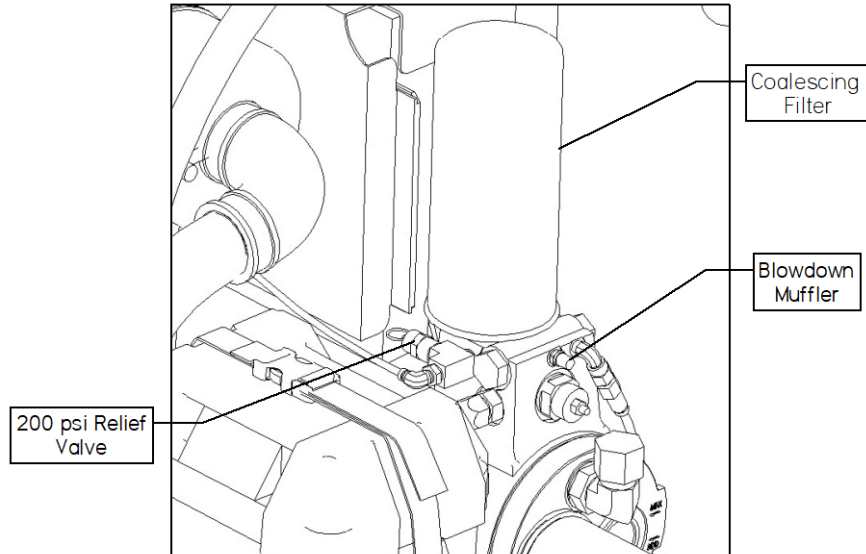
Step	Action
1	Clean the WHASP tank around the coalescing filter to prevent contamination.
2	Remove the coalescing filter by turning it counterclockwise.
3	Clean the gasket sealing surface and inspect it for damage. The surface must be free of old gasket material and smooth to ensure a good seal.
4	Apply a thin coat of compressor oil to the rubber gasket on the new coalescing filter.
5	Spin the new filter onto the threaded nipple until the gasket contacts the sealing surface on the tank, then tighten the filter an additional $\frac{3}{4}$ to 1 turn to seat the gasket.
6	Start the engine and check for oil leaks. Allow the system to build pressure and shutdown the system. Relieve all pressure from the system.

**Chapter 6 Maintenance Instructions**

**Table 6-8 Replacing the Coalescing Filter (continued)**

Step	Action
7	Allow the System to sit for 5 minutes, check the oil level through the sight glass. The level must be between the “MIN” and “MAX” level indicators.

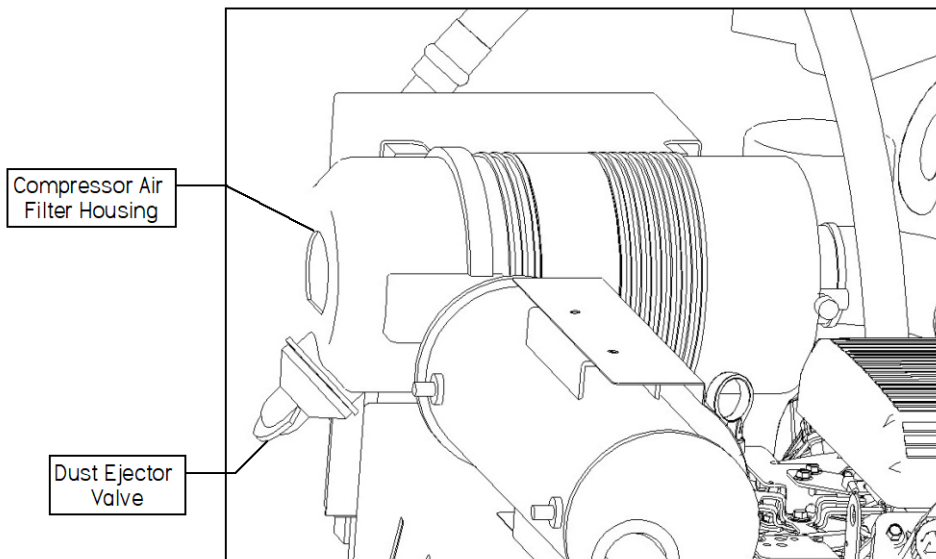
**Figure 6-2 Blowdown Muffler, Relief Valve, Coalescing Filter**



**6.13.6 Air Intake Filter**

Inspect the air intake filter regularly. Replace the filter if it is damaged or showing signs of wear. Replace the filter every 500 hours of operation. Inspect the dust ejector valve for damage, replace if necessary. Reference **Figure 6-3 Compressor Air Filter Housing**

**Figure 6-3 Compressor Air Filter Housing**



**Chapter 6 Maintenance Instructions**

**6.13.7 Compressor Drive Belt**


Check the drive belt for signs of cracks, glazing, missing or damaged ribs. If the drive belt is damaged, install a new belt. Reference **Figure 6-4 Replacing Compressor Drive Belt**

Inspect both pulleys and the idler for damage. If any component shows signs of cracks, chipping, impact damage or any other signs of damage, replace the component.

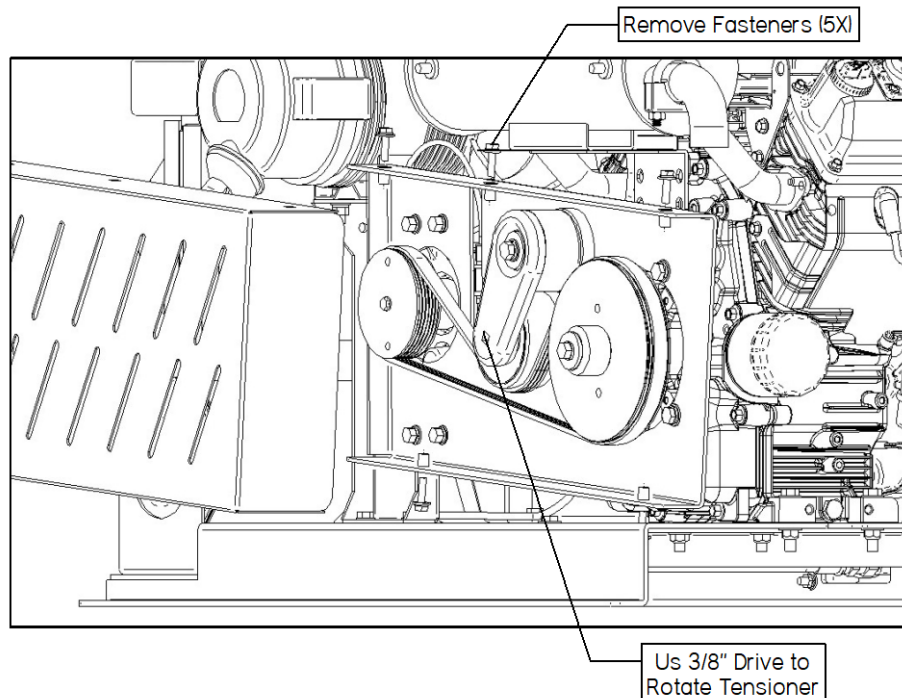
If the damage indicates possible misalignment, check the pulley alignment. If the pulleys are not properly aligned, check all fasteners for proper torque and that there are no loose or worn components.

**Note:** An automatic belt tensioner is being used; no manual tensioning of the belt is needed. Replace the tensioner if it is showing signs of wear or damage.

**Table 6-9 Replacing the Compressor Drive Belt**

Step	Action
	<b>WARNING</b>
	Disconnect the battery cable to prevent accidental startups.
1	Remove the 5 fasteners from the belt guard and remove the belt guard.
2	Use a 3/8" drive to rotate the tensioner to remove tension from the belt and remove the belt.
3	Replace the drive belt with a new one, centering the belt over the pulleys.
4	Reinstall the belt guard and attach the battery cable.

**Figure 6-4 Replacing Compressor Drive Belt**



## Chapter 7 How to use a Multimeter

### 7.0 How to use a Multimeter

The Crack-Vac 2 uses 12-volt direct current (DC) to power the engine, hydraulic pump motor, and compressor system. The DC power is from a 12-volt battery.

#### CAUTION

12-volt DC power has little danger of electrical shock. Care must still be taken when dealing with DC power systems because it is capable of producing large amounts of current.

### 7.1 Checking DC Voltage with a Multimeter

Connect the probes to the meter.

Set the range to a position that includes 12-volts or higher.

Touch the red probe to the positive side of accessory and black probe to ground. If the item you are checking has a ground wire attached then use that ground or you can use the grounding stud on the battery tray assembly.

### 7.2 Checking Resistance (Ohms)

Connect probes to the meter

**Note:** When checking Ohms, the circuit cannot be completed. This means one end of the wire will need to be disconnected.

### 7.3 Checking Wire Continuity

Set the meter to “Audible Continuity”.

Now touch the probe to each end of the wire in question. The meter will read “0” on the screen and make an audible beep if the wire has continuity from end to end



**Chapter 7 How to use a Multimeter**

**Figure 7-1 Standard Multimeter**



**Figure 7-2 Clamp-On Amp Meter/Multimeter**



## Chapter 8 Troubleshooting

### 8.0 Troubleshooting

Use the guides in [Table 8-1](#) to help you troubleshoot the problems you may encounter with the Crack-Vac 2. Also see the Engine Operators Manual for further troubleshooting.

**Table 8-1 Trouble Shooting Guide Vacuum System**

Problem	Possible Cause	Remedy
Engine will not start or stalls.	No Spark	<ul style="list-style-type: none"> <li>• Check electric system for defective wires, switches, etc. See Engine Operators Manual.</li> </ul>
	Inadequate supply of fuel to carburetor.	<ul style="list-style-type: none"> <li>• Check fuel valve and lines, fuel filter and fuel pump. See Engine Operators Manual.</li> </ul>
	Relief valve not functioning properly.	<ul style="list-style-type: none"> <li>• Use a vacuum gauge to test tension on the relief valve spring. The relief valve should open at 6" HG. Adjust as necessary.</li> <li>• Valve stuck in closed position, determine cause and repair or replace.</li> </ul>
	Engine air intake restricted.	<ul style="list-style-type: none"> <li>• Replace air filters.</li> </ul>
Engine doesn't spin properly when cranking.	Starter problems.	<ul style="list-style-type: none"> <li>• Repair or replace starter. See Engine Operators Manual.</li> </ul>
	Low battery.	<ul style="list-style-type: none"> <li>• Charge or replace battery.</li> </ul>
	Restriction from rotary blower.	<ul style="list-style-type: none"> <li>• Check for clogged hoses and/or plumbing, check for kinked hoses and remove any restrictions.</li> <li>• Check for dirty air filters. Clean or replace as needed.</li> <li>• Check blower lobes for corrosion or restrictions. Rust can form on blower lobes causing them to turn less freely. Use penetrating oil or rust preventive oil on lobes to keep them spinning freely.</li> </ul>
Engine misfire or loss of power.	Dirty carburetor.	<ul style="list-style-type: none"> <li>• Clean/Service Carburetor. See Engine Operators Manual.</li> </ul>
	Defective fuel pump.	<ul style="list-style-type: none"> <li>• Replace fuel pump. See Engine Operators Manual.</li> </ul>
Loss of suction at the Vacuum Wand.	Kinked or plugged hose.	<ul style="list-style-type: none"> <li>• Clear blockage or replace hose.</li> </ul>
	Dirty air filters.	<ul style="list-style-type: none"> <li>• Clean or replace air filters.</li> </ul>

## Chapter 8 Troubleshooting

**Table 8-2 Trouble Shooting Guide Compressor System**

<b>Problem</b>	<b>Possible Cause</b>	<b>Remedy</b>
Engine will not start.	Inadequate supply of fuel to carburetor.	<ul style="list-style-type: none"> <li>• Check fuel valve and lines, fuel filter and fuel pump. See Engine Operators Manual.</li> </ul>
	Starting with pressure in the compressor	<ul style="list-style-type: none"> <li>• Relieve pressure.</li> <li>• Check blowdown function.</li> </ul>
	Compressor temperature too high.	<ul style="list-style-type: none"> <li>• Allow compressor to cool</li> <li>• Diagnose and repair.</li> </ul>
	No Spark	<ul style="list-style-type: none"> <li>• Check electric system for defective wires, switches, etc. See Engine Operators Manual.</li> </ul>
	Battery discharged.	Charge or replace battery. See <a href="#">Battery Recharging (compressor battery)</a>
	Starter problems.	<ul style="list-style-type: none"> <li>• Repair or replace starter. See Engine Operators Manual.</li> </ul>
	Engine air intake restricted.	<ul style="list-style-type: none"> <li>• Replace filters.</li> </ul>
Engine Stalls	Compressor pressure set too high.	<ul style="list-style-type: none"> <li>• Lower compressor air pressure to 150 psi.</li> </ul>
	Operating at too high of an elevation.	<ul style="list-style-type: none"> <li>• Install high altitude carburetor kit. See Engine Operators Manual.</li> </ul>
	Engine stalls when lowering throttle speed.	<ul style="list-style-type: none"> <li>• Compressor enable switch left in on position. Switch to off before lowering speed.</li> </ul>
	Low engine oil.	<ul style="list-style-type: none"> <li>• Add oil.</li> </ul>
	Engine air intake restricted.	<ul style="list-style-type: none"> <li>• Replace filters.</li> </ul>
Excessive oil in the air	Clogged scavenge tube or fitting.	<ul style="list-style-type: none"> <li>• Clean or replace.</li> </ul>
	Coalescing separator failure.	<ul style="list-style-type: none"> <li>• Replace coalescing filter.</li> </ul>
	Compressor oil overfilled.	<ul style="list-style-type: none"> <li>• Reduce oil level. Check oil level with equipment on level ground.</li> </ul>
	Operating angle more than 15° from horizontal.	Reduce operating angle.
	Incorrect startup/shutdown procedures.	Observe startup/shut down procedures. See <a href="#">5.3 Starting the Compressor Engine</a>

## Chapter 8 Troubleshooting

**Table 8-3 Trouble Shooting Guide Compressor System (continued)**

<b>Problem</b>	<b>Possible Cause</b>	<b>Remedy</b>
Compressor overheats.	Low compressor oil.	• Add oil. Check oil level with equipment on level ground.
	Wrong compressor oil used.	• Flush and replace with VMAC compressor oil.
	Plugged compressor oil filter.	• Replace oil filter.
	WHASP Cooling fan not functioning.	• Repair or replace. • Make sure there is adequate air flow for the cooler.
	High ambient temperatures.	• Reduce duty cycle.
	Oil temperature-switch failure.	• Replace if defective.
	Restricted oil lines.	• Check for kinked or pinched lines.
Blowdown does not function.	Scavenge tube frozen, plugged or obstructed.	• Clean or replace tube.
	Blowdown muffler plugged or obstructed.	• Replace muffler.
	Blowdown valve failure.	• Replace blowdown valve assembly.
Oil comes out of the blowdown muffler.	Operating angle more than 15° from horizontal.	• Reduce operating angle.
	Compressor oil overfilled.	• Reduce oil level. Check oil level with equipment on level ground.
	Faulty blowdown shuttle valve.	• Replace blowdown shuttle valve.
	Blowdown valve failure.	• Replace blowdown valve assembly.
Pressure relief valve venting below 200 psi.	Defective pressure relief valve.	• Replace pressure relief valve.
Compressor will not build to set pressure.	Air supply valve in on position.	• Close air supply valve
	Plugged or dirty compressor air filter.	• Replace air filter.
	Drive belt slipping	• Check belt, tensioner, and pulleys. Replace defective components.
	Pressure relief valve leaking.	• Replace pressure relief valve.

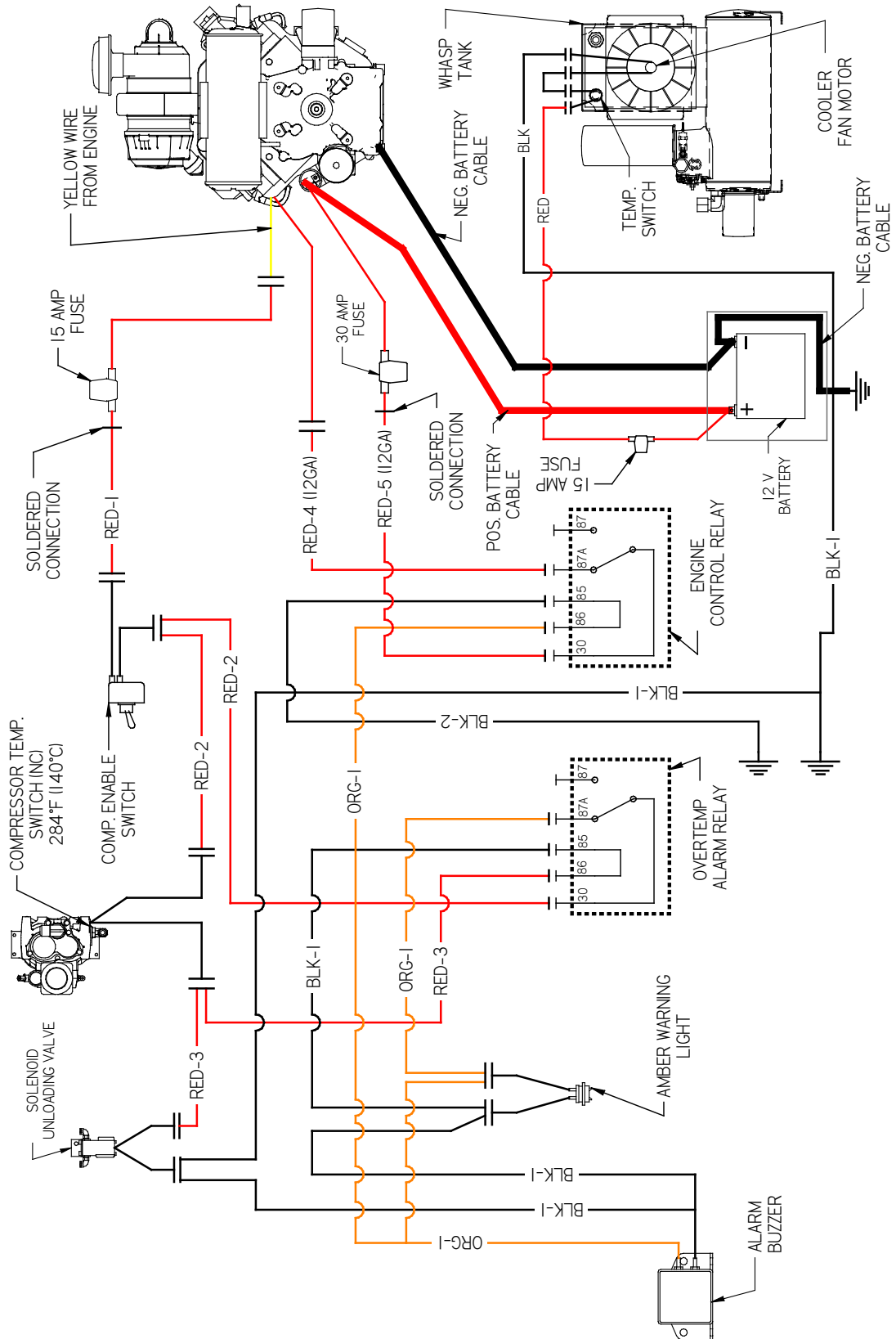
## Chapter 8 Troubleshooting

**Table 8-4 Trouble Shooting Guide Hydraulics**

<b>Problem</b>	<b>Possible Cause</b>	<b>Remedy</b>
Debris storage tank won't rise when activating switch.	Low hydraulic fluid.	• Fill to proper level.
	Low Battery.	• Charge or replace battery.
	Faulty toggle switch.	• Replace toggle switch
	Blown fuse.	• Replace fuse.
	Faulty solenoid.	• Replace solenoid.
	Faulty coil.	• Replace Coil.
	Plugged or faulty valve stem.	• Clean or replace.
Cylinder function is "spongy" or moves with a "jerking" motion.	Air in the system.	• Bleed air from the system. Make sure the reservoir has a proper level of oil.

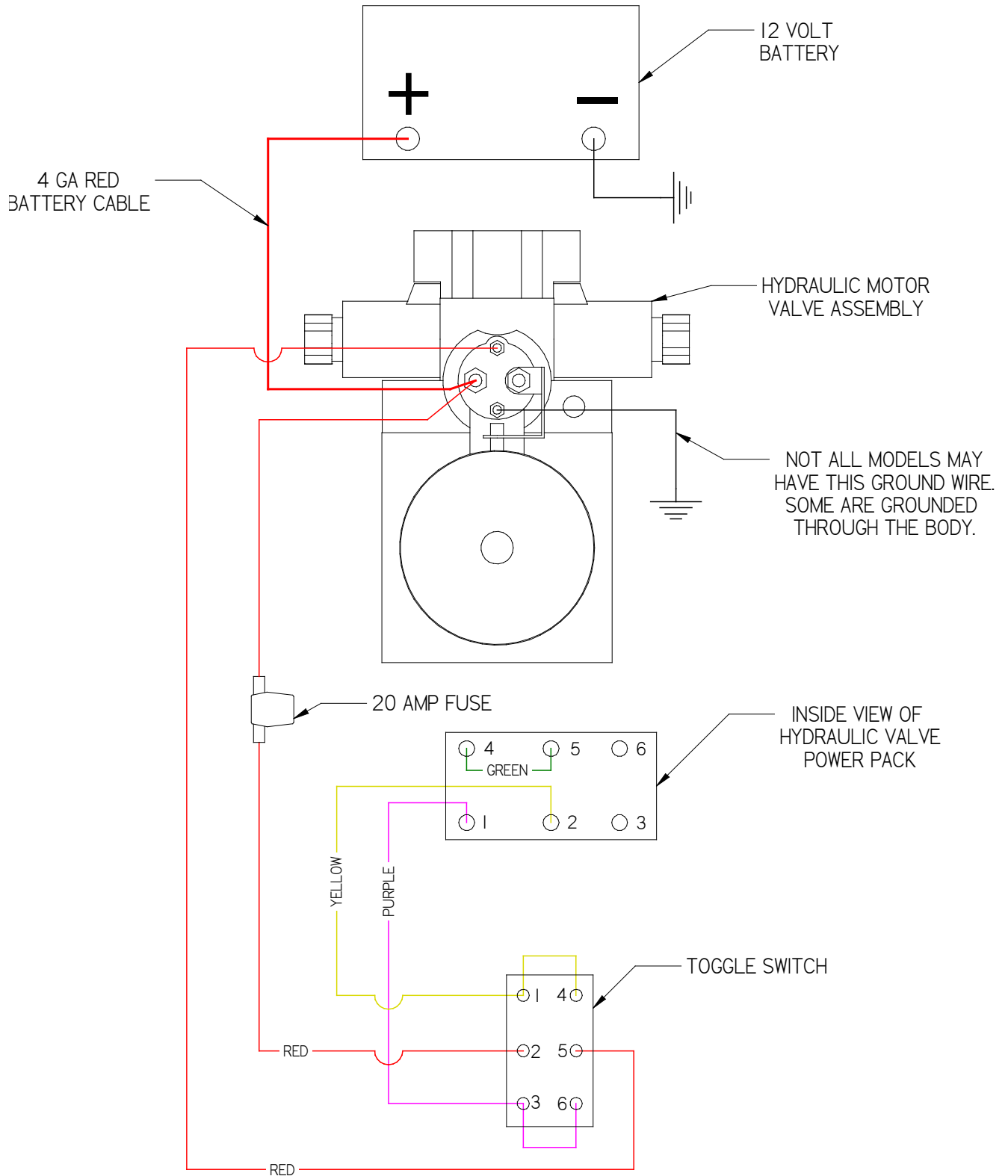
**Chapter 8 Troubleshooting**

**Figure 8-1 Compressor Wiring Schematic**



**Chapter 8 Troubleshooting**

**Figure 8-2 Hydraulic Power Pack Wiring Schematic**



## Chapter 9 Illustrated Parts List

### 9.0 Illustrated Parts List

The Illustrated Parts List (IPL) is designed to help technical service or maintenance personnel correctly identify orderable replacement parts

### 9.1 About the Illustrated Parts List

The figure and table titles reference the part number (PN) to which they apply. The P/Ns for each of the Crack-Vac 2 machine models are as follows:

- Crack-Vac 2 P/N 60800N
- Crack-Vac 2 w/Compressor P/N 60900N

Illustrations are designed to show general shape and size of a part and the relationship that part has to other parts. Actual size and shape of parts or components may differ or vary from the actual part or component.

### 9.2 Ordering CrafcO Parts

Crafco distributors and CrafcO Pavement Preservation Supply Centers are strategically located throughout the United States. Parts can be ordered from your local CrafcO distributor or directly from CrafcO, Inc. if a distributor is not available in your area.

When ordering parts, give the following information:

- Part Number
- Machine Model
- Serial Number

Write, call, or Fax CrafcO, Inc. at the following:

Crafco, Inc. Headquarters

6165 W Detroit St.

Chandler, AZ 85226

Phone: (602) 276-0406

Toll Free: (800) 528-8242

Fax: (480) 961-0513

Visit our website at [www.crafco.com](http://www.crafco.com)

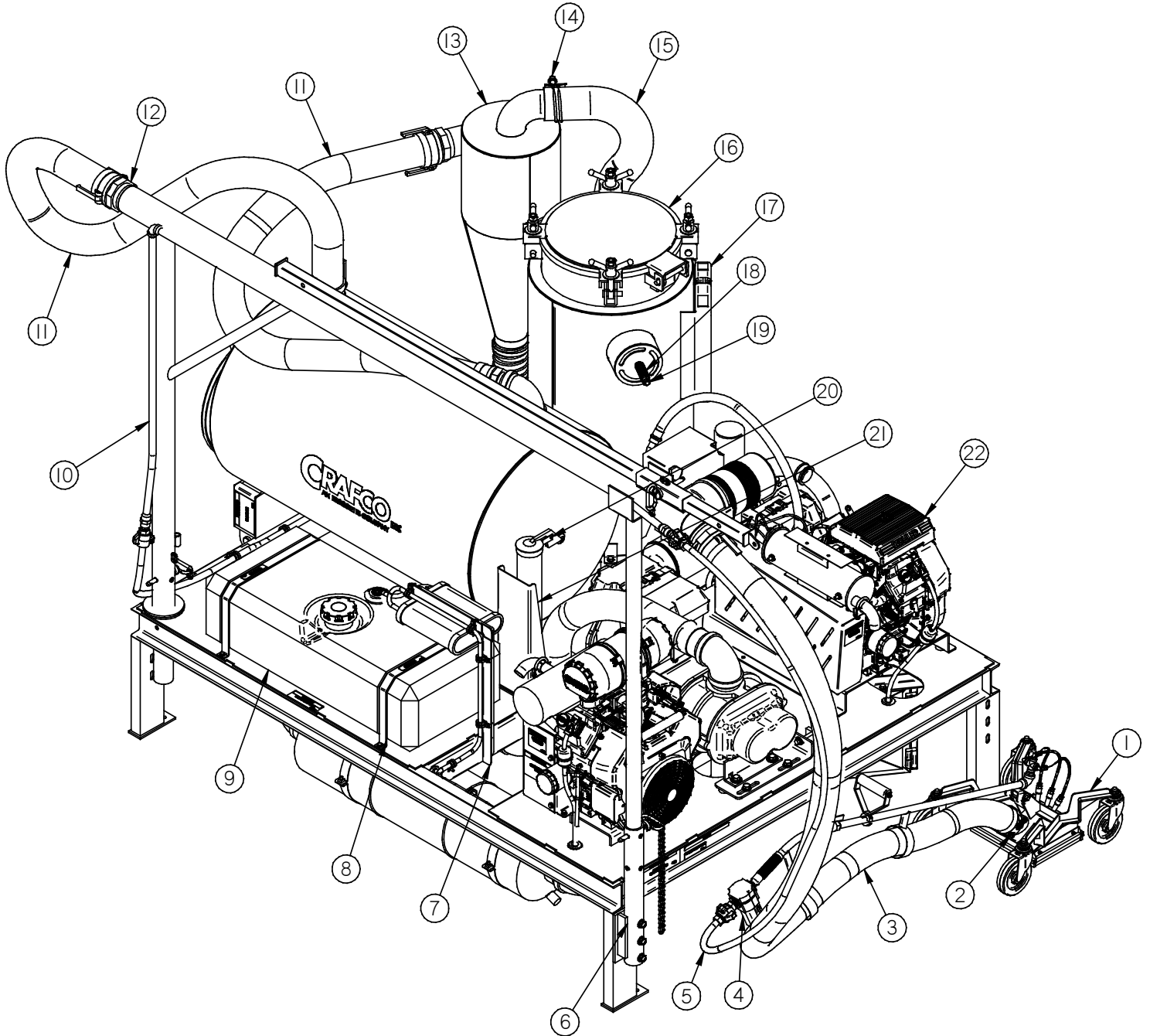


## Chapter 9 Illustrated Parts List

### 9.3 Crack-Vac Parts List

Crack-Vac 2 and Crack-Vac 2 with compressor parts are identical with the exception of the compressor system.

Figure 9-1 Right, Front, ISO View



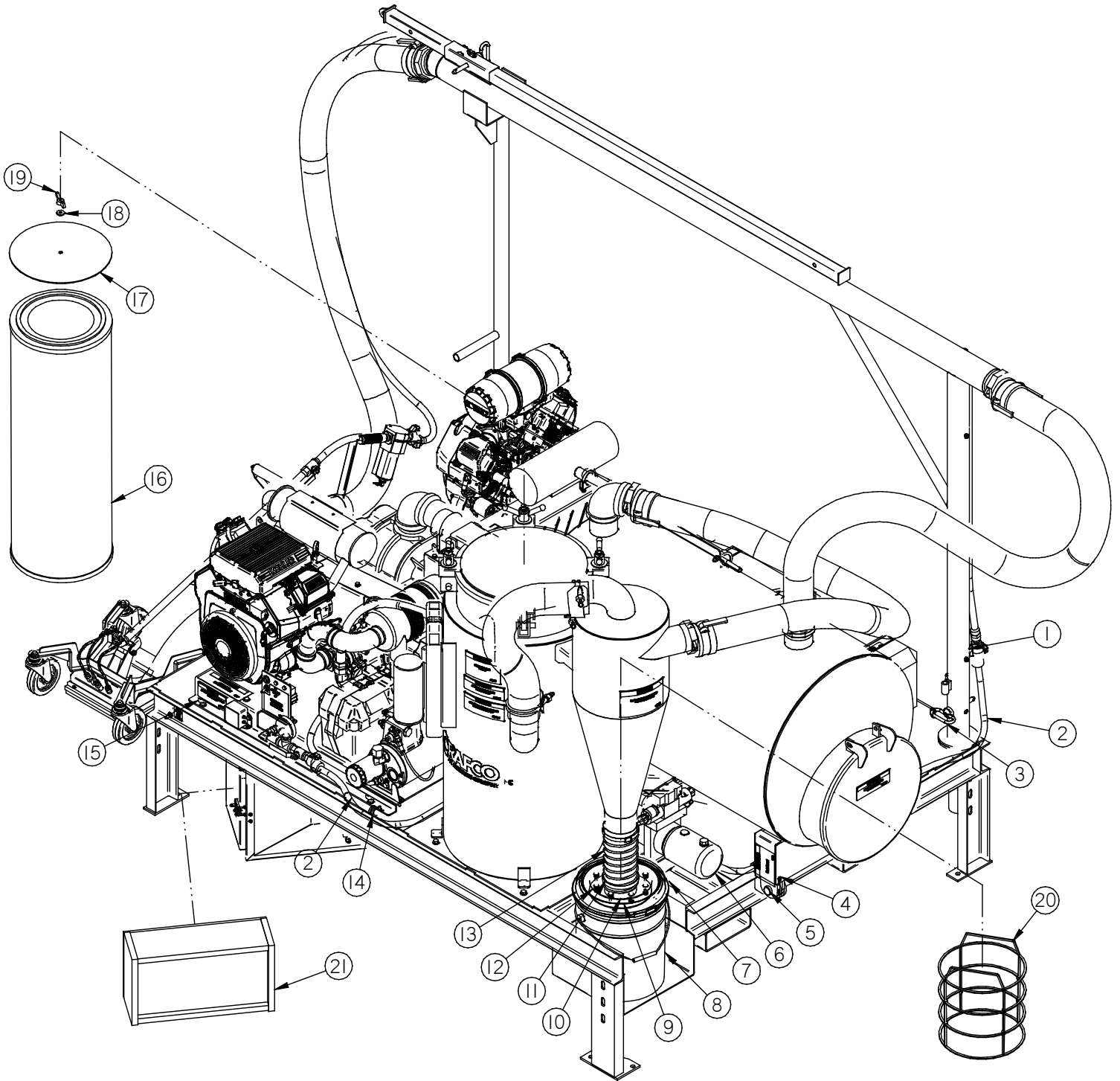
## Chapter 9 Illustrated Parts List

**Table 9-1 Right, Front ISO View Parts List**

FIG.	ITEM	PART NO.	DESCRIPTION	QTY.
Figure 9-1	1	60880N	EZ Glide CrackVac Wand	1
	2	60953N	Clamp, Bolt Style 3" Hose	1
	3	60555	25' Light Weight Vacuum Hose	1
	4	60952N	Compressed Air Water Separator	1
	5	60298	25' Air Hose with Fittings	1
	6	60910N	Boom Support Mounting Arm	1
	7	60094N	Bracket, Carbon Canister Mount Assembly	1
	8	60392N	Gas Tank Strap, CrackVac	2
	9	60950N	Gas Tank Kit, Dual Valve CrackVac	1
	10	60855N	Vacuum Boom Pivot Assembly	1
	11	60915N	Vacuum Hose Assembly 88"	2
	12	60159	Cam & Groove Adapter, Male X Female	7
	13	60840N	Cyclone Filter Assembly	1
	14	60921N	Clamp, 3-1/2" SDBC	2
	15	60920N	Hose, 3-1/2" I.D. Cyclone Outlet	1
	16	60820N	Filter Housing Assembly	1
	17	25289	Record Box	1
	18	60913N	Relief Valve Spring	1
	19	60245	Inside Relief Plate Assembly	1
	20	60824N	3" Weather Exhaust Cap	1
	21	60091N	Heat Shield, Blower Exhaust	1
	22	60802N	Compressor Assembly	1

## Chapter 9 Illustrated Parts List

Figure 9-2 Left, Rear ISO View



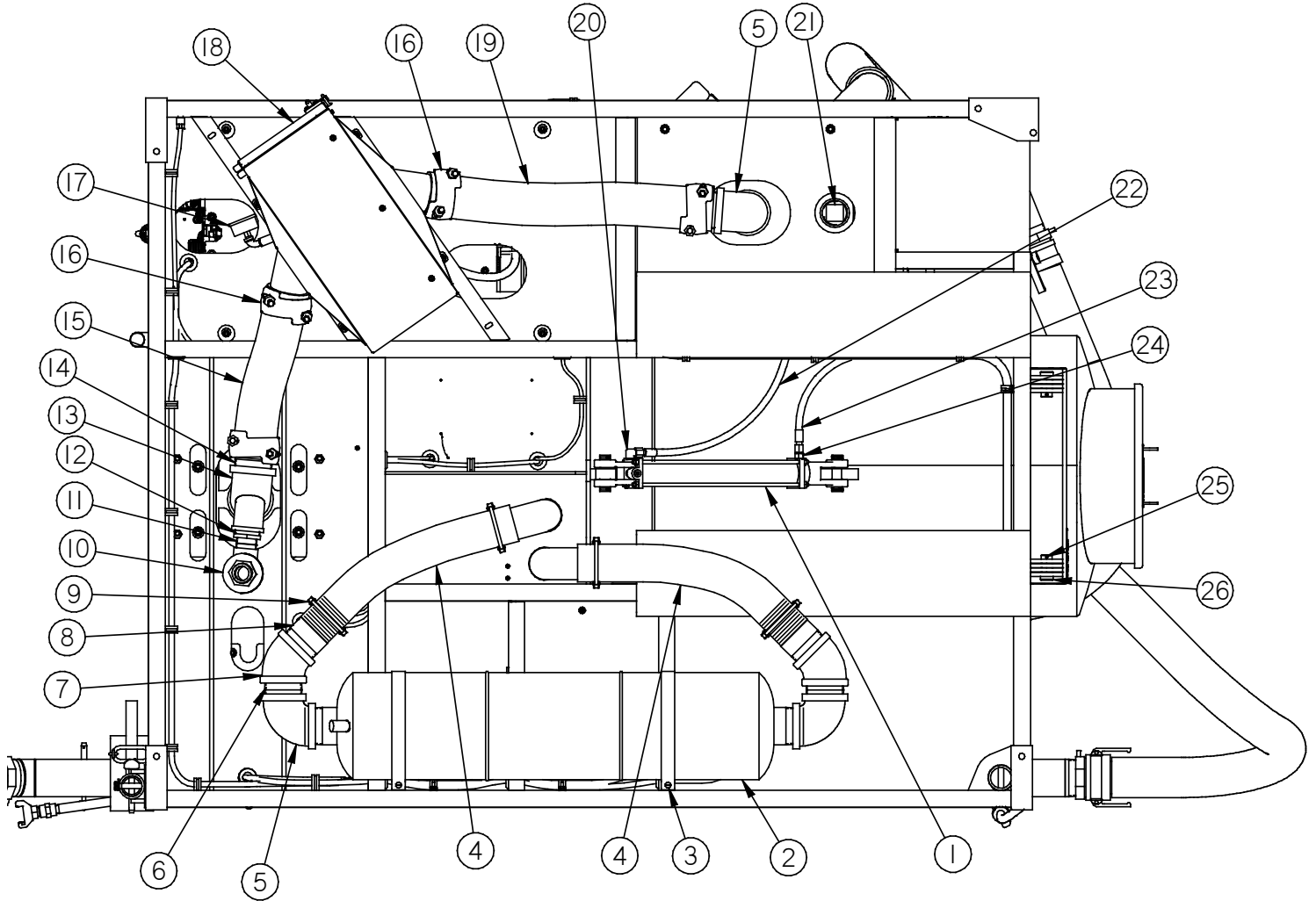
## Chapter 9 Illustrated Parts List

Table 9-2 Left, Rear ISO View Parts List

FIG.	ITEM	PART NO.	DESCRIPTION	QTY.
Figure 9-2	1	32022	1/4"-28 Grease Insert Fitting	3
	2	60379N	12' Air Hose with Fittings	1
	3	60878N	Loop Grip Clevis Pin	3
	4	60586N	Cotter Pin, 3/16" X 2"	2
	5	60908N	Clevis Pin, 1" Diameter X 2" Length	2
	6	60931N	Hydraulic Power Pack Assembly with Wire Harness	1
		60117	Hydraulic Power Pack Assembly, no Wire Harness	1
	7	60359N	Lever Lock Ring, 5 Gallon Pail	1
	8	60357N	5 Gallon Black Steel Pail	1
	9	60360N	Modified 5 Gallon Pail Lid	1
	10	60374N	Bucket, Hose Attachment Assembly	1
	11	26092	Clamp, Size 64 Gear	2
	12	60373N	Gasket, Cyclone Filter	1
	13	60918N	Flex Hose, 4" Cyclone to Bucket	1
	14	32018	Covered Clamp 1"	24
	15	60854N	Vibration Damping Mount	4
	16	60113	Filter Element	1
	17	60834N	Plate, Filter Cover	1
	18	60844N	Washer, Sealing 3/8"	1
	19	60845N	Wing Nut, Steel 3/8-16	1
	20	60835N	Support Cage, 5 Gallon Steel Pail	1
21	60992N	HEPA Panel Filter	1	
NA	60957N	5 Gallon Pail Liner, 25 Count	1	

## Chapter 9 Illustrated Parts List

Figure 9-3 Bottom View



## Chapter 9 Illustrated Parts List

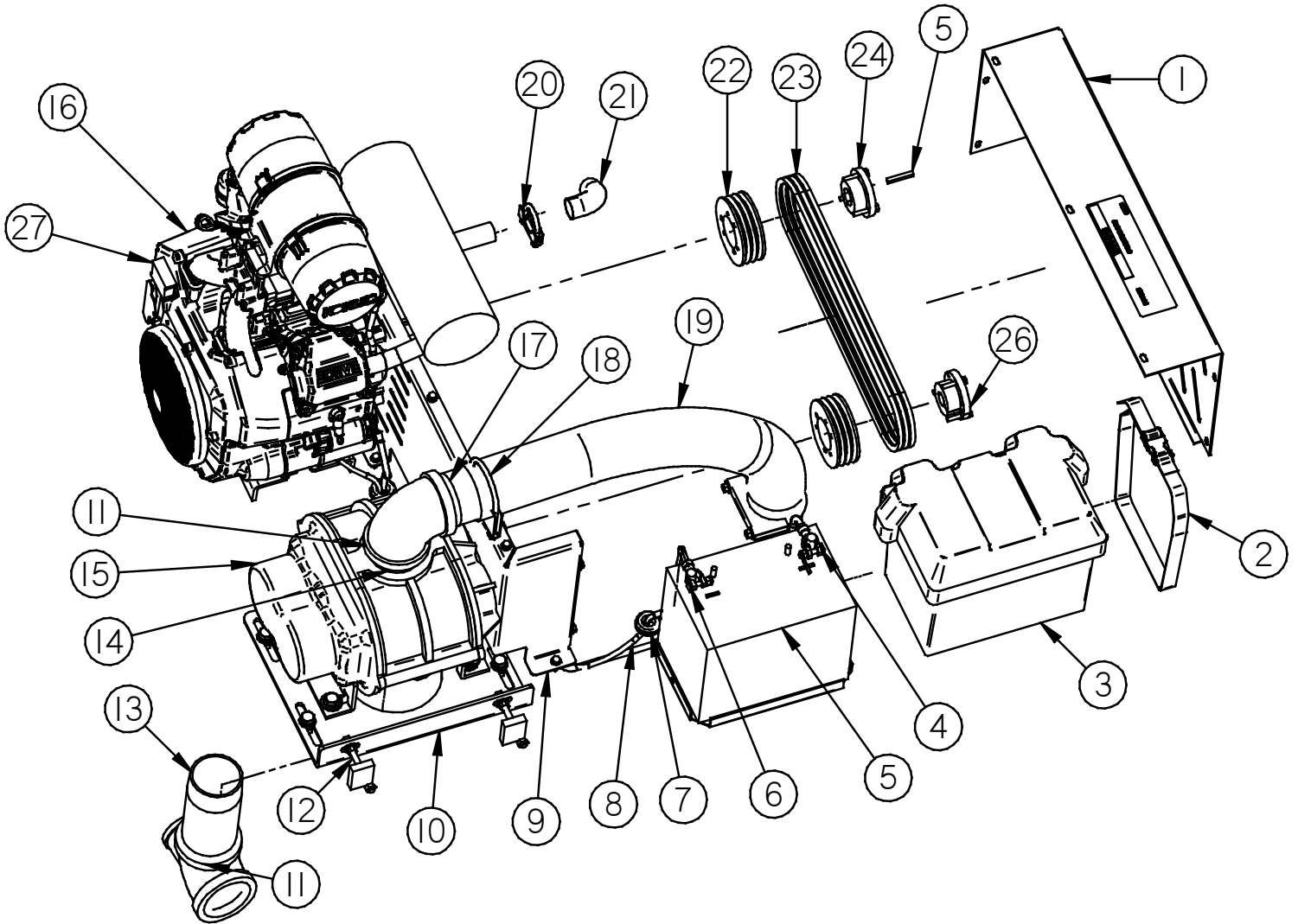
**Table 9-3 Bottom View Parts List**

FIG.	ITEM	PART NO.	DESCRIPTION	QTY.
Figure 9-3	1	60118	Hydraulic Cylinder	1
	2	60116	Chamber Absorption Silencer	1
	3	91708	Mounting Ring Clamp	2
	4	60924N	3" Exhaust Hose	2
	5	28215	3" 90° Pipe Elbow	5
	6	28010	3" Closed Nipple	4
	7	28200	3" 45° Thread Elbow	2
	8	91344	Nipple/Hose Combo King Fitting	3
	9	25952	3-1/2" U-Bolt Muffler Clamp	6
	10	60990N	Vacuum Relief Valve	1
	11	28007	1-1/2" Close Nipple	1
	12	28360	2" x 1-1/2" Reducing Bushing	1
	13	28259	3" x 2" x 3" Pipe Tee	1
	14	60839N	3" x 4" Long TOE Nipple	2
	15	60997N	Hose, Blower to HEPA Filter	1
	16	60921N	Clamp, 3-1/2" SDBC	6
	17	60991N	Vacuum Gauge, -30" to 0" HG	1
	18	60960N	HEPA Filter Housing Assembly	1
	19	60998N	Hose, HEPA Filter to Cartridge Filter	1
	20	29872	Fitting, 90° Male 06MJ x 06MP	1
	21	28288	2" Pipe Plug	1
	22	29614	Hydraulic Hose Assembly	1
	23	29637N	Hydraulic Hose Assembly	1
	24	29834	JIC Adapter, 6MJ x 6MP Straight	1
	25	60586N	Cotter Pin, 3/16" x 2" Length	2
	26	60908N	Clevis Pin, 1" Diameter x 2" Length	2

**Chapter 9 Illustrated Parts List**

**9.4 Blower Drive Components Parts List**

**Figure 9-4 Blower Drive Components**



## Chapter 9 Illustrated Parts List

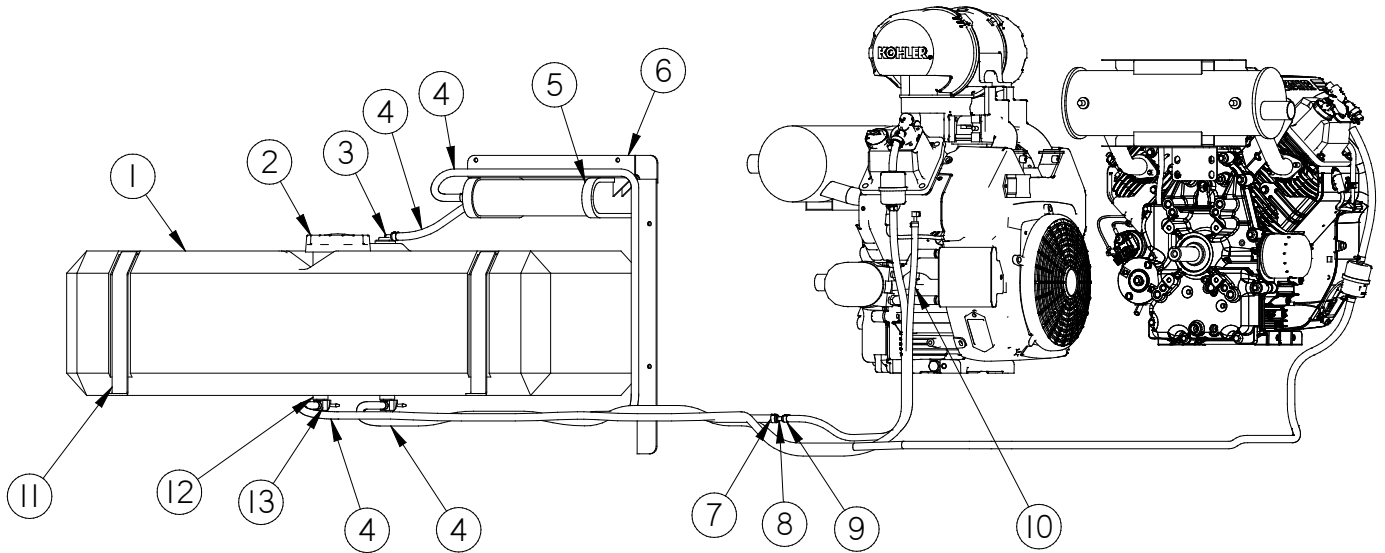
**Table 9-4 Blower Drive Components Parts List**

FIG.	ITEM	PART NO.	DESCRIPTION	QTY.
Figure 9-4	1	60860N	Belt Cover, Blower	1
	2	24037	Battery Strap with Buckle, 4'	1
	3	24002	Battery Box	1
	4	60919N	Positive Battery Cable, CrackVac	1
	5	24000	Battery, 12 Volt	1
	6	24010	Battery Cable, Black, 4GA x 15"	1
	7	44787	Grommet, 1-1/4" I.D. X 3/16" Gap	2
	8	27174	Battery Cable-Ground 36", 4GA	1
	9	60861N	Bracket, Blower Belt Guard	1
	10	60836N	Blower Slide Plate, CrackVac	1
	11	28259	3" x 2" x 3" Pipe Tee	1
	12	90858	3/8"-16 X 4" All thread Bolt	2
	13	28106	3" Pipe Nipple X 8" Length	1
	14	28010	3" Closed Nipple	1
	15	60151	Positive Displacement Rotary Air Blower	1
	16	20914	27 HP Gas Engine	1
	17	91344	Nipple/Hose Combo "King" Fitting	1
	18	25952	3-1/2" U-Bolt Clamp	2
	19	60917N	Hose, 3" I.D. Blower Silencer	1
	20	60398N	1-9/16" I.D. Clamping U-Bolt	1
	21	60849N	Elbow, 90° Exhaust	1
	22	60826N	Sheave, 3-3V4.5 QD-SDS	2
	23	60862N	V-Belt, 3VX475	3
	24	60827N	Bushing, SDS X 1-1/8" Bore	1
	25	31003	Keyway	1
	26	60823N	SDS 7/8 Bore QD Bushing	1
	27	24250	Hour/Tach Meter	1



**Chapter 9 Illustrated Parts List**

**Figure 9-5 Evaporative Emission System**



**Table 9-5 Evaporative Emission System Parts List**

FIG.	ITEM	PART NO.	DESCRIPTION	QTY.
<b>Figure 9-5</b>	1	60950N	FUEL TANK KIT	1
	2	31334	FUEL TANK CAP with TETHER	1
	3	31319N	ROV (ROLL OVER VALVE) with GROMMET KIT	1
	4	60922N	1/4" ID LOW PERM, FUEL HOSE	22 FT
	5	60914N	CARBON CANISTER	1
	6	60094N	BRACKET, CARBON CANISTER MOUNT	1
	7	60929N	1/4" HOSE CLAMP	8
	8	60925N	BARBED REDUCER, 1/4" TO 3/16" MALE	1
	9	60928N	3/16" HOSE CLAMP	2
	10	60923N	3/16" ID LOW PERM, FUEL HOSE	2 FT
	11	60392N	FUEL TANK STRAP	2
	12	31327	RUBBER GROMMET, PETCOCK VALVE	2
	13	31326	PETCOCK VALVE	2

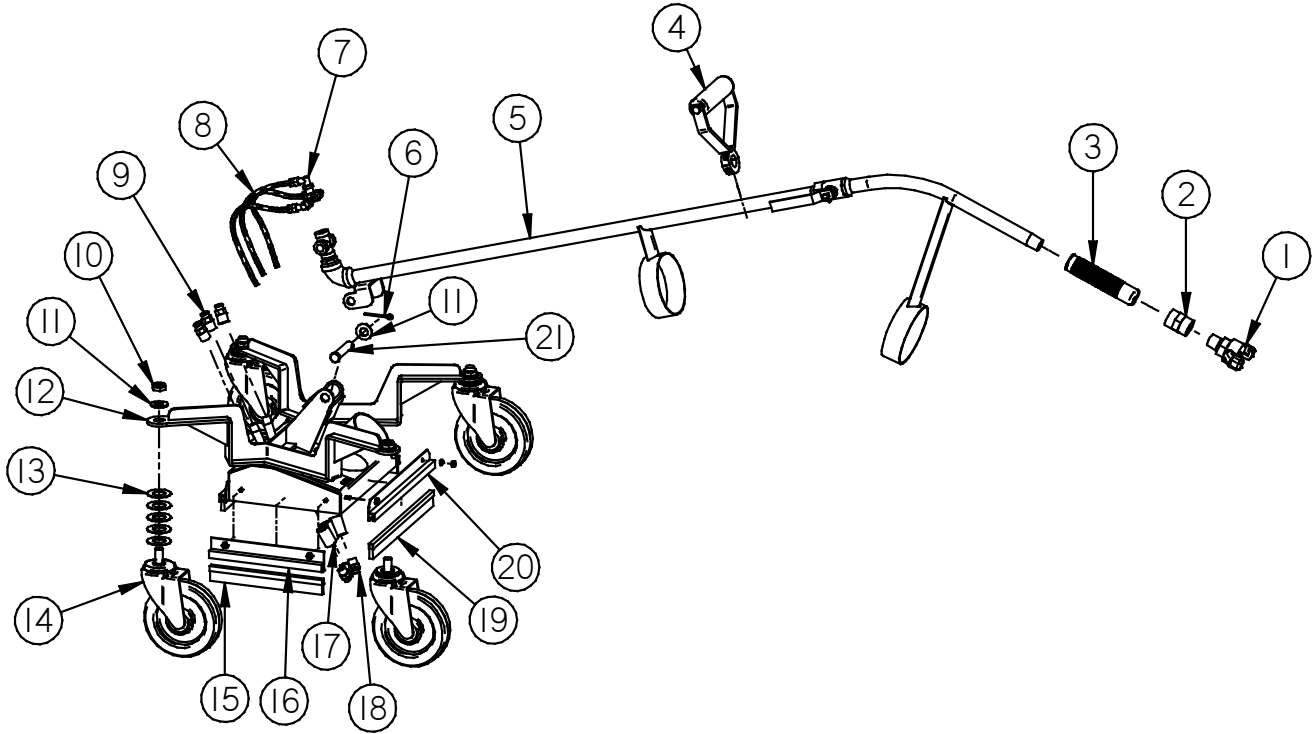
**Chapter 9 Illustrated Parts List**

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## Chapter 9 Illustrated Parts List

### 9.5 Suction Wand Assembly Parts List

Figure 9-6 Suction Wand Assembly



## Chapter 9 Illustrated Parts List

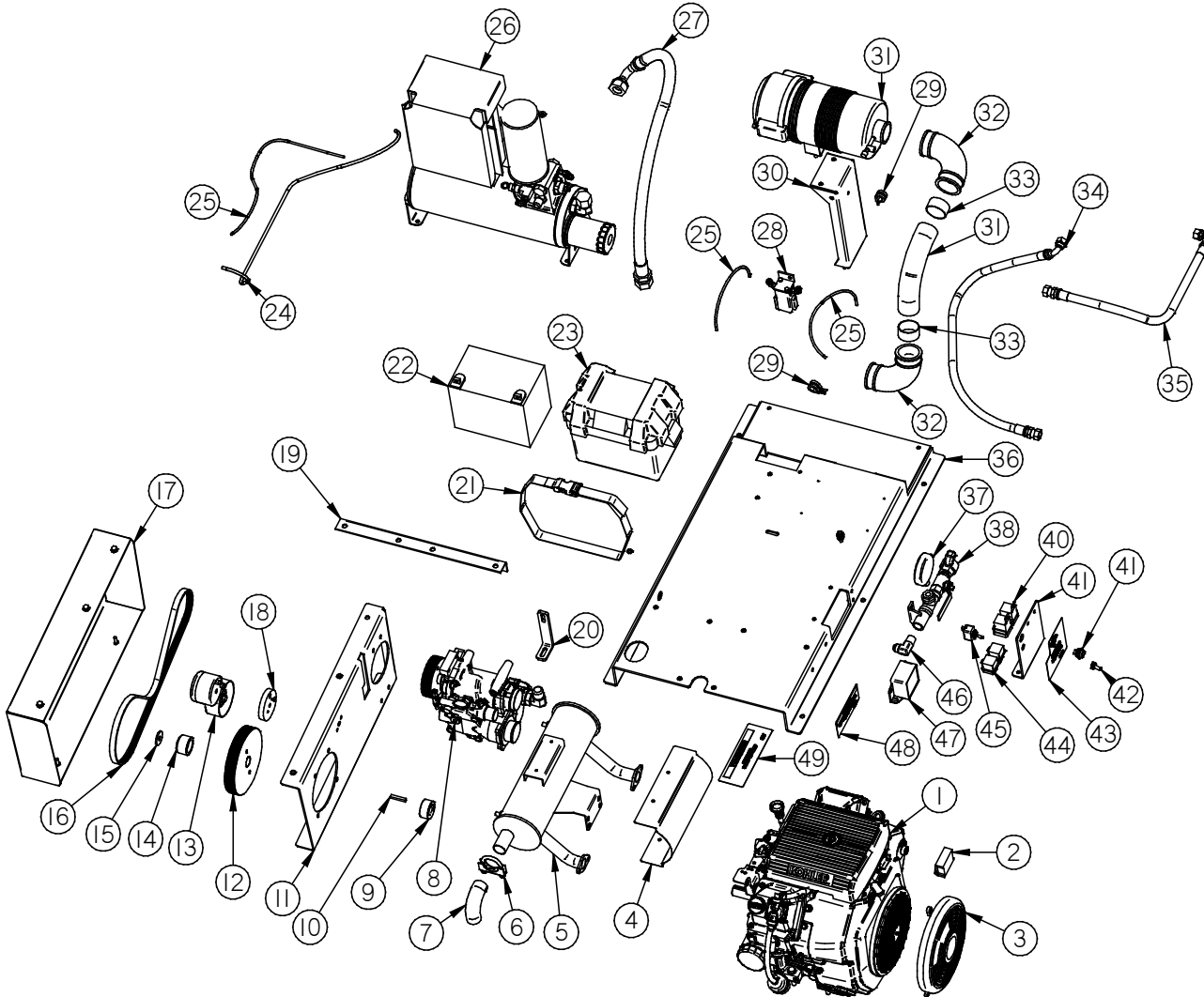
**Table 9-6 Suction Wand Assembly Parts List**

FIG.	ITEM	PART NO.	DESCRIPTION	QTY.
<b>Figure 9-6</b>	1	42643	1/2" Male Pipe Hose Fitting	1
	2	28178	1/2" Fitting Coupling	1
	3	60517	Black Vinyl Grip	1
	4	60513	Wand Handle Assembly, CrackVac	1
	5	60895N	Handle, Air Tube Assembly	1
	6	57578	1/8" X 1-1/2" Cotter Pin	1
	7	60233	1/4" 90° Plastic Tube Fitting	3
	8	60232	1/4" O.D. Plastic Tube	2.5 FT
	9	60899N	1/4" Female Quick Connect	3
	10	28534	1/2"-13 ESNA-Type Jam Nut	4
	11	28674	1/2" SAE Flat Washer	4
	12	60890N	Square Head Weld Assembly	1
	13	60896N	Wheel Spacer	20
	14	60897N	5" Swivel Caster	4
	15	60595N	Brush Seal, Side	2
	16	60593N	Brush Holder, Side	2
	17	28176	Pipe Coupling, 1/4"	3
	18	60596N	High Pressure Spray Nozzle	3
	19	60594N	Brush Seal, Front/Back	2
	20	60592N	Brush Holder, Front/Back	2
	21	60898N	Clevis Pin 1/2" X 2-1/4" Length	1

**Chapter 9 Illustrated Parts List**

**9.6 Compressor Assembly Parts List**

**Figure 9-7 Compressor Assembly (60802N)**



**Table 9-7 Compressor Assembly Parts List**

FIG.	ITEM	PART NO.	DESCRIPTION	QTY.
<b>Figure 9-7</b>	1	20958N	Engine, Kohler 19 HP Gas	1
	2	24250	Hour/Tach Meter	1
	3	60351N	Shroud, Kohler Gas Engine	1
	4	60346N	Muffler, Heat Shield	1
	5	60345N	Muffler, 19 HP Kohler Engine	1
	6	60398N	1-9/16 ID, Clamping U-Bolt	1

## Chapter 9 Illustrated Parts List

**Table 9-8 Compressor Assembly Parts List (continued)**

FIG.	ITEM	PART NO.	DESCRIPTION	QTY.
Figure 9-7	7	60849N	Elbow, 90 Degree Exhaust	1
	8	60383N	Compressor, VMAC Rotary Screw	1
	9	60585N	Spacer, Compressor Drive Pulley	1
	10	27017	Key, ¼ SQ. x 1-1/2"	1
	11	60385N	Compressor Mounting Plate, Engine	1
	12	60870N	Drive Pulley, Compressor	1
	13	60387N	Belt Tensioner, Compressor	1
	14	60598N	Retainer Collar, Compressor Drive Pulley	1
	15	60938N	Washer, Compressor Drive Pulley	1
	16	60389N	Serpentine Belt	1
	17	60386N	Belt Guard, Compressor	1
	18	60388N	Spacer, Belt Tensioner	1
	19	60395N	Support Angle	1
	20	60939N	Bracket, Compressor Support	1
	21	24037	Battery Strap with Buckle, 4ft	1
	22	37620	Battery – 12V Group U1L	1
	23	24003	Battery Box	1
	24	60097N	Tube, Teflon PTFE, 1/4" O.D. X 5 FT	1
	25	60098N	Tube, Teflon PTFE, 3/16" O.D. X 3 FT	1
	26	60384N	WHASP Tank, VMAC	1
	27	60095N	Discharge Hose, Compressor Assembly.	1
	28	60396N	Solenoid, Poppet Control	1
	29	32017	5/8" Cover Clamp	2
	30	60393N	Air Filter Mounting Bracket	1
	31	60390N	Kit, Compressor Air Intake	1
	32	60394N	2" I.D. Rubber Elbow	2
	33	60942N	Tube, Hose Support	2
	34	60399N	Hose Assembly, Compressor Outlet	1
	35	60096N	Hose, Compressor Oil Return	1
	36	60380N	Compressor Mounting Plate Assembly	1

## Chapter 9 Illustrated Parts List

**Table 9-9 Compressor Assembly Parts List (continued)**

FIG.	ITEM	PART NO.	DESCRIPTION	QTY.
<b>Figure 9-7</b>	37	29961	200 PSI. Pressure Gauge (Filled)	1
	38	60937N	Air Valve Assembly	1
	39	60932N	Relay, 12V 20/40 AMP SPDT	2
	40	60397N	Compressor Controls Mounting Plate	1
	41	60935N	Light, LED Amber Warning	1
	42	50720	Boot, Watertight - Switch	1
	43	60372N	Decal, Compressor Operation	1
	44	60933N	Sealed Connector, Relay	2
	45	60376N	Sealed Toggle Switch	1
	46	29845	Adapter, 90° 1/2" Tube X 1/2" Pipe	1
	47	60934N	Buzzer, 12V Alarm	1
	48	60371N	Decal, Compressor Alarm	1
	49	26157	Decal, Gas Exhaust Warning	1
	50	20948	Battery Cable, Positive (not shown)	1
	51	20952N	Battery Cable Ground, 12" 4GA (not shown)	1
52	20949	Battery Cable Ground, 24" 4GA (not shown)	1	







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