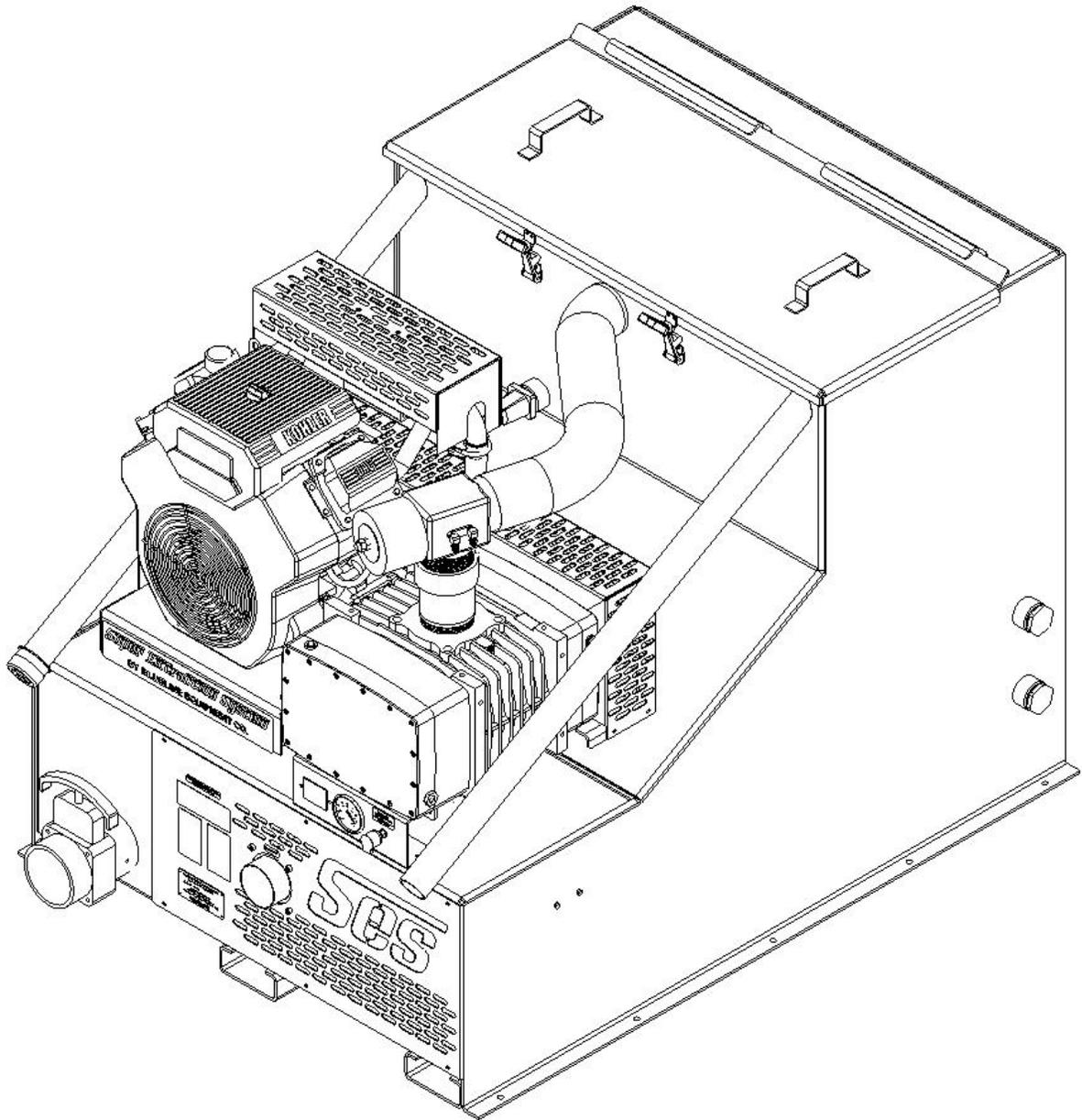


# SUPER EXTRACTION SYSTEM



## Service and Operation Manual

**BLUELINE Equipment Co. LLC**  
2604 Liberator Dr., Prescott, AZ 86301 1-928-445-3030

**Congratulations** on your purchase of the *Super Extraction System*® truck mount unit. This instruction/parts manual is a guide for operating and servicing your **BLUELINE** unit.

Proper operation and service are necessary to ensure the outstanding performance of this unit. When properly maintained, your truck mount extraction unit will have a long and trouble free life.

The following service methods outlined in this manual are detailed in a manner that operation and servicing may be performed properly and safely. Because service levels vary due to the skill of the mechanic, tools and parts availability, ensure that prior to attempting any repair, you are familiar with this equipment and have the proper tools. Any questions regarding the operation, service, or repair of this unit should be directed to your nearest **BLUELINE** dealer.

The headings **WARNING** and **CAUTION** are utilized to warn you that steps must be taken to prevent personal injury or damage to the equipment. Please make sure that you have read and understand these instructions entirely before proceeding with the operation of this unit.

**THIS UNIT MUST BE INSTALLED BY THE DEALER THAT YOU PURCHASED IT FROM IN ACCORDANCE WITH THE BLUELINE INSTALLATION PROCEDURES.**

PLEASE ENSURE THAT THE WARRANTY CARD IS FILLED OUT BY THE INSTALLATION SERVICE CENTER THAT INSTALLED THIS UNIT AND IS RETURNED TO **BLUELINE** EQUIPMENT LLC.

Record your units serial number here for future reference or if you should need to contact the factory in the future for any reason.

S/N:

This service and operations manual is written specifically for *Super Extraction System*® truck mount extraction units manufactured by:

**BLUELINE EQUIPMENT LLC**

2604 Liberator Drive

Prescott, AZ 86301 USA

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**BLUELINE**  
*Super Extraction*  
*System*® **MANUAL**  
**PART# 49-022**

December, 2005

# **LIMITED WARRANTY**

**BLUELINE** warrants your machine to be free of defects in material and workmanship. This warranty shall extend to the designated parts for the specific period of time listed from the date of delivery to the user. If **BLUELINE** receives notice of any defects during the warranty period, **BLUELINE** will either, at its option, repair or replace products that prove to be defective. Any transportation, related service labor, normal maintenance and diagnostic calls are not included.

Gasoline Engine (Through manufacturer or local dealer) \_\_\_\_\_ 1 year  
Vacuum Pump (Through manufacturer or local dealer) \_\_\_\_\_ 18 months  
Waste Tank \_\_\_\_\_ 1 year  
Battery (pro-rated) \_\_\_\_\_ 1 year  
All Other Components \_\_\_\_\_ 1 year

This warranty shall not apply to defects caused by improper installation or operation, inadequate maintenance by the customer, unauthorized modification or misuse, improper repair, freezing or damage due to hard water scaling.

Electrical components, disposable filters, belts, hoses, fittings, o-rings and other service maintenance items are not under warranty. Components supplied by **BLUELINE**, but provided by other manufacturers, will only be warranted to the extent that they are warranted to **BLUELINE**.

To receive warranty service, products must be returned to a **BLUELINE** designated service facility. The customer shall prepay shipping charges for products returned to **BLUELINE** for warranty evaluation and **BLUELINE** shall pay for the return of products to the customer.

**BLUELINE** makes no other warranty, expressed or implied, with respect to this product. **BLUELINE** disclaims the implied warranties of merchantability and fitness for a particular purpose. Any implied warranty of merchantability or fitness is limited to the specific duration of this limited warranty.

This warranty gives the customer specific legal rights, and you may also have other rights that may vary from state to state, or province to province.

The remedies provided herein are the customer's sole and exclusive remedies. In no event shall **BLUELINE** be liable for any direct, indirect, special, incidental, or consequential damages, whether based on contract, tort, or any other legal theory.

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# **SECTION 1:** **GENERAL INFORMATION**

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## **2. RECEIVING YOUR TRUCK MOUNT UNIT**

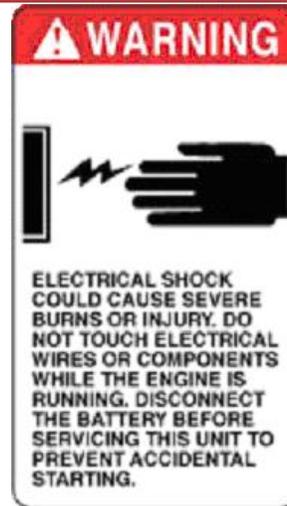
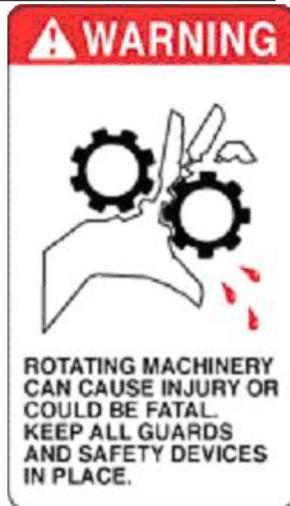
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# 1. SAFETY

## **WARNING For Your Safety!**

The following **WARNING** labels are on your **BLUELINE Super Extraction System®** console. These labels point out important **WARNINGS and CAUTIONS**, which must be followed at **all** times. Failure to follow warnings could result in personal injury, fatality, to yourself and/or others or property damage. Please follow these instructions carefully!

**DO NOT remove these decals.**



### **WARNING!**

#### **1. Read the operator's manual before starting this unit.**

Failure to adhere to instructions could result in severe personal injury or could be fatal.

#### **2. Operate this unit and equipment only in a well ventilated area.**

Exhaust fumes contain carbon monoxide, which is an odorless and deadly poison that can cause severe injury or death. **DO NOT** run this unit in an enclosed area. **DO NOT** operate this unit where the exhaust may enter a building doorway, window, vent or other opening.

#### **3. Gasoline is extremely flammable and its vapors can explode if ignited.**

Store gasoline only in approved containers, in well ventilated, unoccupied buildings and away from sparks or flames. Never carry gasoline or any flammable materials in the vehicle. Fumes could accumulate inside of the vehicle and ignite, causing an explosion.

4. This unit must be operated with the vehicle doors open in order to ensure adequate ventilation to the engine.

5. **DO NOT** operate unit if gasoline is spilled. Do not turn ignition switch until the gasoline has been cleaned up. Never use gasoline for cleaning purposes.

6. **DO NOT** place hands, feet, hair, clothing or any body parts near rotating or moving parts. Rotating machinery can cause severe injury or death.

7. **NEVER** operate this unit without belt and safety guards. High speed moving

parts, such as belts and pulleys, should be avoided while the unit is running. Severe injury, fatality or damage may result.

8. **NEVER** service this unit while it is running. High speed mechanical parts as well as high temperature components may result in injury or severed limbs.

9. Engine components will be extremely hot from operation. To prevent severe burns, **DO NOT** touch these areas while the unit is running or shortly after the unit is shut off.

10. **DO NOT** touch any part of the exhaust system while the system is running or for 20 minutes after the unit is shut off. Severe burns could result.

11. **NEVER** leave the vehicle engine running while the unit is in operation.

12. **Battery acid contains sulfuric acid.** To prevent acid burns, avoid contact with skin, eyes and clothing. Batteries also produce explosive hydrogen gases while charging. To prevent fire or explosion, charge batteries only in a well ventilated area. Keep sparks, open flames, as well as other sources of ignition away from battery at all times. Remove all jewelry prior to servicing batteries. Keep batteries out of the reach of children.

**Before disconnecting** the negative (-) ground cable, ensure that all switches are in the off position. If on, a spark could occur at the ground connection terminal which could cause an explosion if hydrogen gas or gasoline vapors are present. **ALWAYS** disconnect the negative (-) terminal first.

13. **DO NOT** smoke around the machine. Gas fumes could accumulate and ignite. Battery gases are extremely flammable. This will prevent possible explosions.

14. **DO NOT** damage the vehicle in any way during the installation. When routing fuel lines **DO NOT** configure the hose in any locations where the hose or vehicle could be damaged. Avoid contact with moving parts, areas of high temperature, brake lines, fuel lines, catalytic converters, exhaust pipes, mufflers or sharp objects.

15. **NEVER** cut or splice any of the vehicle fuel lines during fuel line installation. This will result in fuel leaks and potentially dangerous conditions. Use only the provided fuel hose for fuel lines. When going through the vehicle floor with fuel lines, always utilize bulkhead adaptors. This will prevent fuel leaks and ensure that hoses are not punctured by vehicle vibration abrasion.

16. **DO NOT** exceed your vehicles weight limit. The console with waste tank and accessories weighs approximately 625 pounds. Make certain that the vehicle has the correct axle rating. This will prevent unsafe or hazardous driving conditions.

17. High back seats are required for all vehicles that units are to be installed for head and neck protection. Metal partitions between the seats and equipment are strongly recommended.

18. Always keep your vehicle clean and orderly. Wands, tools and accessories must be securely stowed while driving the vehicle.

19. Ensure that you have received proper training from the distributor that you purchased the unit from prior to operation.

22. **DO NOT** modify this unit in any manner. Any modification could result in serious injury or fatality.

25. California Proposition 65  
**WARNING:** Engine exhaust from this product contains chemicals known by the State of California to cause cancer, birth defects, or other reproductive harm.

**SPECIFICATIONS**

Engine Speed	3000 rpm (High Speed No Load) 1400 rpm (Idle No Load)
Vacuum Pump RPM	3000 rpm
Vacuum Relief Valve	13 in. HG
Waste Tank Capacity	120 Gallons at shutoff
Console Weight (with waste tank & accessories)	625 lbs.

**TORQUE VALUES**

Engine Hub	720 inch/lbs. 60 ft/lbs.
Vacuum Pump Hub	192 inch/lbs. 16 ft/lbs.

## INSTALLATION REQUIREMENTS

Prior to beginning the installation, read the ENTIRE “Installation” section of this manual. Since the **BLUELINE Super Extraction System**® truck mount unit weighs (with accessories) approximately 625 lbs., please adhere to the following recommendations prior to installing the unit.

1. The unit should **NOT** be installed in any motor vehicle of less than ½ ton capacity.

### **CAUTION!**

**The console and waste tank with accessories must NOT exceed the vehicles axle weight limit.**

2. If mounting the unit in a trailer, ensure that the trailer is rated for the total weight of the **unit and trailer**. Electric or hydraulic brakes must be provided, and strict compliance with all State and Federal laws must be maintained.

3. If mounting in a trailer, the **BLUELINE Super Extraction System**® console must be positioned so that it balances properly with respect to the trailer axle. Ten percent (10%) of the units total overall weight (w/o accessories or water) should be on the tongue.

4. The vehicle tires must have a load rating in excess of the combined unit and vehicle weight.

5. **BLUELINE** does not recommend using any type of flooring materials that absorb water. This condition will result in rust and corrosion of the vehicle floor.

6. Insulation under rubber mats should be removed prior to installation of the unit.

## FUEL REQUIREMENTS

Use **unleaded fuel ONLY**. **NEVER** use any gasoline additives. Use only fresh, clean unleaded gasoline intended for normal automotive use. **DO NOT** use high-octane gasoline with this unit.

## ENGINE OIL REQUIREMENTS

The engine is shipped with Castrol Syntec Blend® SAE 10W-30 motor oil. We recommend that you use high quality synthetic oil that meets at least API (American Petroleum Institute) service class SG, SH, SJ or higher.

**NOTE:** the use of less than service class SG, SH or SJ oil or extending oil change intervals longer than recommended can cause engine damage.

← USE 10W-30 API SG,SH,SJ OR HIGHER →						
°F	-22	-4	14	32	59	104
°C	-30	-20	-10	0	15	40
TEMPERATURE RANGE EXPECTED BEFORE NEXT OIL CHANGE						

## **2. RECEIVING YOUR TRUCK MOUNT UNIT**

### **DEALER RESPONSIBILITY**

THE **BLUELINE** DEALER THAT YOU PURCHASED THIS TRUCK MOUNT CLEANING UNIT FROM IS RESPONSIBLE FOR THE PROPER INSTALLATION OF THIS MACHINE. THE DEALER IS ALSO RESPONSIBLE FOR THE PROPER INITIAL TRAINING OF YOUR OPERATORS AND MAINTENANCE PERSONNEL.

### **ACCEPTANCE OF SHIPMENT**

Your **BLUELINE Super Extraction System**® truck mount unit was thoroughly tested, checked and inspected in its entirety prior to leaving our manufacturing facility. **When receiving your unit, please make the following acceptance check:**

1. The unit should not show any signs of damage. If there is damage, notify the common carrier immediately.
2. Carefully check your equipment and packing list. The standard **BLUELINE Super Extraction System**® truck mount unit should arrive with the following items as well as any optional accessories:

### **EQUIPMENT LISTING**

- A. **BLUELINE Super Extraction System**® console.
- B. Operation and Service manual
- C. Installation mounting plates and bolt down kit
- D. Hose clamps for vacuum and fuel hoses
- E. Waste tank with shutoff switch
- F. Waste tank filter and stainless steel strainer baskets.

- G. 100 ft. of 2 in. vacuum hose
- H. 1 vacuum hose connector

### **OPTIONAL EQUIPMENT**

- A. Additional lengths of vacuum hose  
Part # 18-003
- B. Additional vacuum hose connectors  
Part # 21-003
- C. Automatic waste pump kit  
Part # 68-003
- D. KIT, FUEL HOOKUP CHEVY 97 & NWR. FI  
Part # 69-003FI
- E. KIT, FUEL HOOKUP CHEVY/DODGE FI  
Part # 69-004FI
- F. KIT, FUEL HOOKUP FORD FI  
Part # 69-005 FI
- G. KIT, FUEL HOOKUP 2003 CHEVY FI  
Part #69-018FI
- H. KIT, 2004 TF ADAPTER CHEVY  
Part # 69-032
- I. KIT, 2004 TF FUEL INJ. CHEVY  
Part # 69-033
- J. ADAPTOR, 2004 FORD FUEL  
Part # 69-041
- K. ADAPTOR, 2004 FUEL INJ. FORD  
Part #69-047

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### **3. INSTALLATION**

#### **! WARNING!!!**

This unit must be bolted to the floor of the vehicle by an authorized **BLUELINE DISTRIBUTOR**.

#### **LIFTING THE UNIT INTO THE VEHICLE**

The **BLUELINE SUPER EXTRACTION SYSTEM®** weighs approximately 625 lbs., a forklift is necessary to place the unit into the vehicle. Make **CERTAIN** that the forks are spread to the maximum width of the unit.

#### **POSITIONING THE UNIT INTO THE VEHICLE**

Vehicles vary in size and openings. Owners have different preferences on where in the vehicle they want their units positioned. **BLUELINE** strongly recommends a side door installation for the **SUPER EXTRACTION SYSTEM®**. We **DO NOT** recommend a rear door installation.

1. Ensure that enough space is provided to assure adequate engine ventilation as well as room for service and maintenance.
2. The complete unit and accessories **MUST NOT** exceed the vehicle's axle weight limit.
3. **NEVER** position the console closer than 12 inches from the bottom rear of the driver and passenger seats.

### **FASTENING DOWN THE UNIT AND WASTE TANK**

#### **! CAUTION!!!**

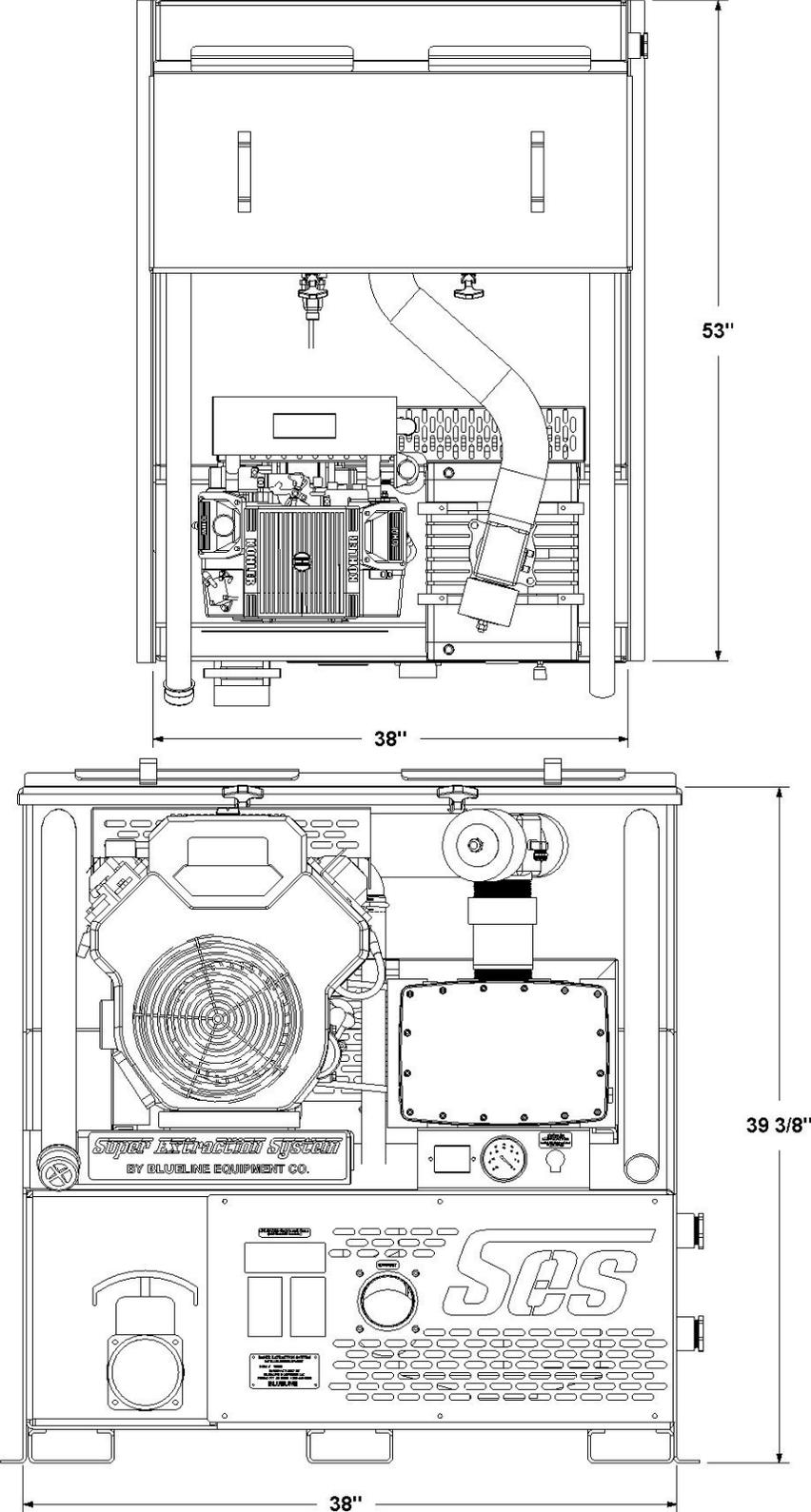
Prior to drilling any holes in the vehicle floor, ensure that while drilling, you will not damage the fuel tank, fuel lines, or any other vital components, which could affect the safety and or operation of the vehicle.

A. The waste tank mounting holes will serve as a template. Drill ten (10) 13/32 in. diameter holes for the waste tank.

B. Using the provided mounting hardware kit:

1. Insert ten (10) 3/8-16 x 2 ½ in. hex head cap screws with flat washers through the waste tank mounting holes.
2. Install the provided mounting plates underneath the vehicle floor.
3. Screw the provided 3/8-16 hex head lock nuts on to the mounting bolts and tighten until the waste tank is firmly attached to the vehicle floor.

# DIMENSIONAL DIAGRAM



## INSTALLATION OF FUEL LINES



**READ THESE INSTRUCTIONS IN THEIR ENTIRETY PRIOR TO PROCEEDING.**



**The Vehicle fuel lines should NOT be spliced under ANY circumstances. Severe injury or fatality could result.**

**DO NOT** damage the vehicle in any way during the installation. When routing fuel lines **DO NOT** configure the hoses in any location where the hoses or vehicle could be damaged. Avoid contact with moving parts, areas of high temperature, brake lines, fuel lines, catalytic converters, exhaust pipes, mufflers or sharp objects.

## TRAILER FUEL TANK AND FUEL LINE INSTALLATION

The following are recommendations for trailer installations:

- A. Strict compliance with all federal and state laws must be maintained.
- B. Use only fuel tanks that are manufactured specifically for gasoline, have proper vented filling caps, and outlet connections that are the same size as the inlet and return connections on the unit.
- C. **DO NOT** install fuel tanks inside any type of enclosed trailer or vehicle.



**NEVER** carry gasoline or flammable materials in an enclosed trailer or vehicle.  
**NEVER** store any type of flammable material in an enclosed trailer or vehicle.

D. Always mount fuel tanks where they will be protected from any vehicle collision.

E. When installing fuel lines from the fuel tank to the unit, use the proper size fuel line.

## BATTERY CONNECTION



**Explosive gases, Dangerous gases! Batteries contain sulfuric acid. To prevent acid burns, avoid contact with skin, eyes and clothing. Batteries also produce explosive hydrogen gases while charging. To prevent fire or explosion, charge batteries only in a well ventilated area. Keep sparks, open flames, as well as any other sources of ignition away from batteries at all times. Remove all jewelry prior to servicing batteries. Keep batteries out of the reach of children.**

**Before disconnecting the negative (-) ground cable, ensure that all switches are in the OFF position. If ON, a spark could occur at the ground connection terminal, which could cause an explosion if hydrogen gas or gasoline vapors are present. ALWAYS disconnect the negative (-) terminal first.**

- A. Attach the red positive (+) battery cable from the starter solenoid on the console to the positive (+) terminal on the battery and tighten down the nut.
- B. Attach the black negative (-) battery cable from the ground on the console to the negative (-) terminal on the battery and tighten down the nut.

## FIRE EXTINGUISHER

**BLUELINE**, and many government agencies, recommend that a fire extinguisher rated for A, B, and C type fires be installed into any commercial vehicle.

# **SECTION 3:** **OPERATION**

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## 4. SYSTEMS

**NOTE: Read and understand this section of the manual entirely before proceeding.**

Prior to proceeding into the operations and maintenance sections of this manual it is recommended that you acquire a basic understanding of how the unit functions.

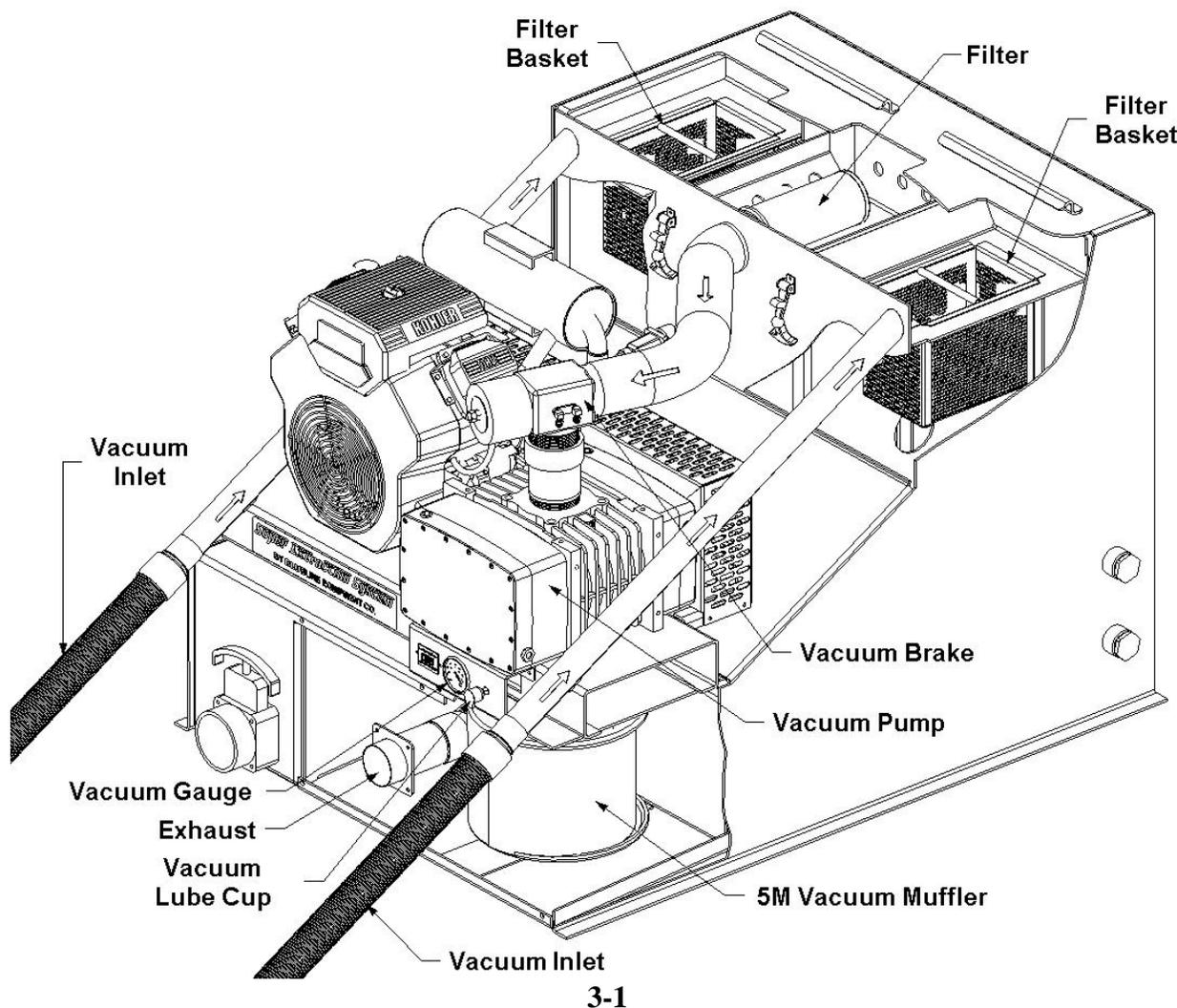
### VACUUM SYSTEM

See figures 3-1 and 5-2. The vacuum flow is initiated by the vacuum pump, or blower. An air and water mixture is drawn into the vacuum inlet

on the front of the console. The mixture flows through a strainer basket in the waste tank. The air exits the waste tank through a 100 mesh filtration system, into the vacuum pump. A vacuum pump relief valve is installed for vacuum pump protection.

The air is discharged from the vacuum pump through a spiral silencer.

A level shut off sensor is located on the front of the waste tank and will shut down the unit before the tank is at full capacity. This protects the vacuum pump from water damage. **Note:** Waste tank level shut off will not shut the unit off due to high levels of foam.



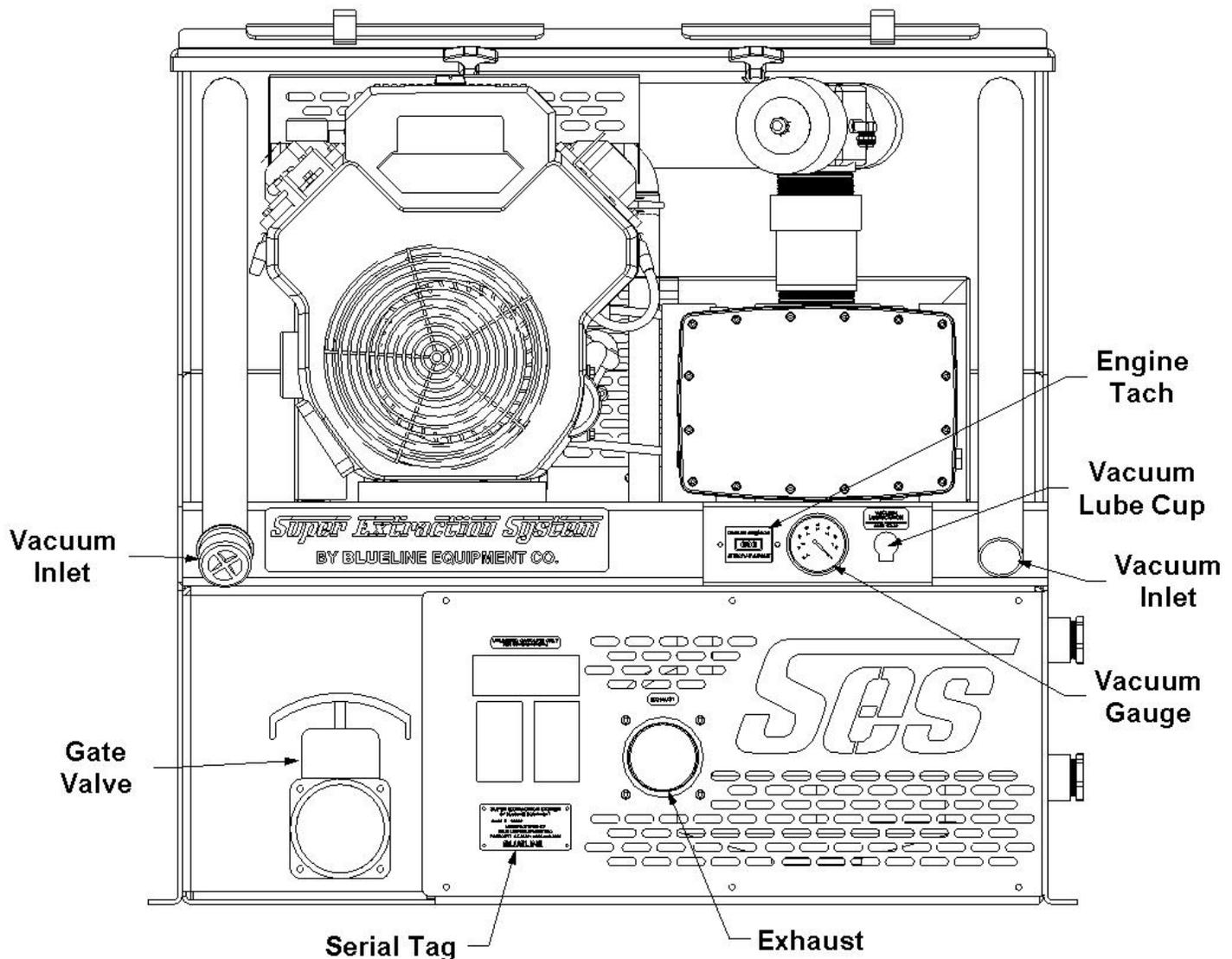
# 5. OPERATION

## WARNING!

### PREPARATION

This section of the operator's manual explains how to prepare, start, operate, shut down and maintain your **BLUELINE Super Extraction System**® truck mount unit. The **BLUELINE Super Extraction System**® unit is easy to operate. However only trained operator's should proceed.

Operate this unit and equipment only in a well ventilated area. Exhaust fumes contain carbon monoxide, which is an odorless and deadly poison that can cause severe injury or death. **DO NOT** run this unit in an enclosed area. **DO NOT** operate this unit where the exhaust may enter a building doorway, window, vent or any other opening.



## **ENSURE THERE IS ADEQUATE FUEL**

Check the fuel tank to ensure there is adequate fuel to complete the job and transport the vehicle. **This unit consumes approximately .95 US gallons of fuel per hour**, when unit is run under full load.

## **REMOVE TOOLS FROM THE VEHICLE**

Remove any tools, accessories or hoses from the vehicle that you will require.

## **VACUUM HOSE**

Connect the vacuum hose to the vacuum inlet connection at the front of the console. Connect the opposite end of the vacuum hose to the extraction tool.

## **STARTING THE UNIT**

1. Set the throttle control lever to the idle position (right).
2. Set the choke lever to the full choke position (left).
3. Turn the ignition switch to the right intermediate position. Hold the switch in this position for approximately 3 seconds, allowing the fuel pump to pump fuel.
4. Turn the ignition switch to the furthest right position. This will engage the starter and start the engine.
5. After starting the engine, return choke lever to the run position (right).
6. After the engine is running at its idle setting, set the throttle control lever to the fast position (left).

## **AUTOMATIC WASTE PUMP**

1. If your unit is equipped with an optional automatic waste pump, connect one end of the 5/8 inch or larger garden hose to the pump-out connection and the other end to an acceptable waste disposal.

2. The waste pump will now operate automatically throughout the extraction process.

**DO NOT** use an outlet hose that is smaller than 5/8 in. I.D.



**NEVER dispose of waste water in a storm drain, water way or on ground areas. Always dispose of waste in accordance with Local, State and Federal laws.**

## **EXTRACTION PROCESS**

After you have completed the previous steps, proceed with the extraction process. Place the throttle control lever to the fast speed for extraction. A float shut-off switch is located inside of the waste tank. It will automatically shut down the unit if the tank reaches its full capacity. If this occurs, empty the waste tank before continuing.

## **SHUT DOWN AND DAILY MAINTENANCE**

1. Remove as much moisture from the vacuum hoses as possible. This will prevent spillage of wastewater in your vehicle when returning hoses.
2. Disconnect the vacuum hose from the front of the console.

3. Push the throttle control lever to the slow position.
4. Allow the unit to run for at least **2 minutes**. This will help remove any moisture from the vacuum pump.

**NOTE:** If shutting down for the day: Plug the vacuum inlets, and set the throttle control to fast speed. Spray WD-40 (or equivalent) into the **blower lubrication cup**, located on the front of the console for **5 seconds**. This will lubricate the vacuum pump. Next, return the throttle control lever to the slow position, and continue step 4.

5. Turn the ignition switch to the **OFF** position.
6. Drain the waste tank, disposing of wastewater in a suitable and proper location.

### **WARNING!**

**NEVER dispose of wastewater in a storm drain, water way or on ground areas. Always dispose of waste in accordance with Local, State, and Federal laws.**

7. Remove the strainer basket from the waste tank. Clean out any debris and re-install.

**NOTE: Damage may occur to the vacuum pump.**

Replacement and maintenance of the filters will prevent rust and corrosion from entering the vacuum pump.

8. Inspect the vacuum inlet filters inside the waste tank **weekly**. Remove and clean the filters if there is any lint or debris present.

**NOTE:** To remove the vacuum inlet filter, grip the plastic hexagon section of the filter. Gripping the filter by the screen will collapse

or destroy the filter. Replace the filter after cleaning until hand tight.

**NEVER operate this unit with the filter removed, damaged or improperly installed.**

9. At the end of the work day, rinse out the waste tank with fresh water. A deodorizer may be added to prevent bacterial growth.
10. Clean the vehicle interior, unit, tools, hoses etc., as needed. Inspect **ALL** equipment and accessories for any damage, leaks, wear, etc.

### **FREEZE PROTECTION**

#### **CAUTION!**

**If the unit is exposed to freezing weather conditions, the water inside of the unit may freeze, resulting in SERIOUS DAMAGE to the unit. The following is recommended to prevent this from occurring during the cold weather season:**

1. Always park the unit in a heated building when not in use.
2. While out in operation, avoid long periods of shut down.
3. Completely drain the waste tank and leave gate valve open.

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## MAINTENANCE CHART

Engine	Daily	<b>Check engine oil level.** Fill to proper level.</b>
Vacuum Pump	Daily	<b>Spray WD-40 (or Equivalent) into the lubrication cup for 5 seconds.</b>
Vacuum Inlet Filter	Daily*	<b>Inspect filter, clean and or replace if required.</b>
Strainer Basket	Daily	<b>Empty and clean stainless steel basket.</b>
Vacuum Hoses	Daily	<b>Rinse with fresh water.</b>
Waste Pump-Out (Optional)	Daily*	<b>Inspect and remove any debris or sediment.</b>
Engine	Weekly	<b>Check air cleaner for damaged, dirty, or loose parts.</b>
Engine	Weekly	<b>Inspect air intake and cooling areas. Clean if required.</b>
Vacuum Pump	Weekly*	<b>Check vacuum pump oil level. Fill to proper level. Do not overfill.</b>
Vacuum Inlet Filter	Weekly	<b>Remove filter and clean.</b>
Battery	Weekly*	<b>Check fluid level. Fill with distilled water only. Do not overfill.</b>
Engine	Monthly	<b>Inspect drive belts for wear. Replace as needed.</b>
Engine	100 Hours	<b>Change engine oil and filter.</b>
Vacuum Pump	100 Hours	<b>Grease bearings with extreme pressure bearing grease.</b>
Battery	100 Hours	<b>Clean battery terminals.</b>
Engine	200 Hours	<b>Check spark plugs and clean if necessary.</b>
Engine	200 Hours	<b>Clean engine air filter.</b>
Engine	500 Hours	<b>Replace in-line fuel filter.***</b>
Pulleys and Hubs	500 Hours	<b>Check pulley and hub set screws for proper torque.**</b>
Engine	1000 Hours	<b>Replace spark plugs.</b>
Vacuum Pump	1000 Hours	<b>Drain, flush, and replace oil.****</b>
Engine	2000 Hours	<b>Replace air filter element.</b>

To maximize the operating life and performance, use only recommended oils, filters and greases.

\*Or as often as required.

\*\*Change engine oil and oil filter after **first 50 hours** of operation.

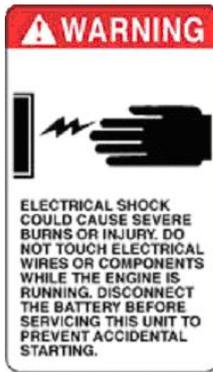
\*\*Check pulley and hub set screws after **first 50 hours** of operation, and again at **100 hours** of operation.

\*\*\*Or every **6 Months**. Whichever comes first.

\*\*\*\*Or **Yearly**. Whichever comes first.

## 6. MAINTENANCE

This section of the operator’s manual contains the service and maintenance information for the **BLUELINE Super Extraction System®**. A planned preventative maintenance program will ensure that your **BLUELINE Super Extraction System®** has optimum performance, long operating life, and a minimum amount of down time.



### **! WARNING!**

**DO NOT attempt to service this unit while it is running. High speed parts as well as high temperature components may result in severe injury, severed limbs, or fatality.**

### ENGINE

1. Check the engine oil level daily. Ensure that the proper oil level is maintained. **NEVER** overfill.
2. Change the oil after the first **50 hours** of operation, after the “break-in” period. Thereafter, change oil every **100 hours** of operation.

**USE ONLY KOHLER BRAND OIL FILTERS. USE OF ANY OTHER TYPE OF OIL FILTER WILL VOID ENGINE WARRANTY.**

**Oil Recommendation.** The engine is shipped with Castrol Syntec Blend® SAE 10W-30 synthetic motor oil. Use only high quality synthetic oil of at least API (American Petroleum Institute) service class SG, SH, SJ or higher.

USE 10W-30 API SG,SH,SJ OR HIGHER						
°F	-22	-4	14	32	59	104
°C	-30	-20	-10	0	15	40
TEMPERATURE RANGE EXPECTED BEFORE NEXT OIL CHANGE						

**NOTE:** The use of less than service class SG, SH, SJ or higher, or extending the oil change intervals longer than recommended can result in engine damage.

3. Check the spark plugs every **200 hours** and clean if necessary. Replace spark plugs every **1000 hours**. **NEVER** sandblast spark plugs. Spark plugs should be cleaned only by scraping or wire brushing.
4. Clean the engine air filter element every **200 hours**. Replace the element every **2000 hours**.

Replace the in-line fuel filter **yearly**.

**NOTE:** Additional engine service information can be obtained from the provided Kohler Operation and Maintenance manual. If service or repair is required, contact an authorized Kohler Service Center. They will require the serial number of the engine.

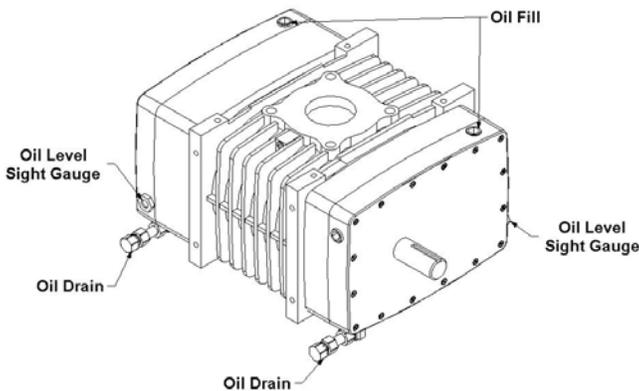
## VACUUM PUMP

**NOTE:** Refer to the provided Vacuum Pump Operation and Service Manual for specific instructions.

**Lubrication:** BLUELINE recommends that you use only AEON PD Synthetic Blower Lubricant in the gear end of the vacuum pump for all operating temperatures. AEON PD is formulated specifically for positive displacement blower service to provide maximum blower protection at any temperature. One filling of AEON PD will last a minimum of twice as long as a premium mineral oil.

**NOTE:** AEON PD (Part # 13-004) is the only oil that BLUELINE puts in the vacuum pump at the factory. Adding petroleum oil to synthetic oil is **NOT** recommended.

1. Check the oil level **weekly** to ensure the proper level. Too little oil will damage and ruin the bearings and gears. Too much oil will result in overheating.



2. A lubrication cup has been provided at the front of the console, to prevent rust from building up inside of the vacuum pump. Run the unit for at least **2 minutes** to remove any moisture from the vacuum pump. Then, spray WD-40 (or Equivalent) into the lubrication cup for **5 seconds** while the unit is running and the vacuum inlet ports are

sealed. This procedure should be done at the end of **every working day**.

3. Drain, flush and replace the oil every **1000 hours or yearly, whichever comes first**.

## VACUUM INLET FILTER

1. The vacuum inlet filter in the waste tank should be inspected **daily**, and removed and cleaned **weekly**. The filter will last for a long period of time if this is done.

2. Inspect the vacuum filter inside the waste tank. Remove and clean the filter if there is any lint or debris present.



**When removing the vacuum inlet filter(s), grip the plastic hexagon section of the filter(s). Grasping filter(s) by the screen will damage or destroy the filter(s).**

## DRIVE BELTS, PULLEYS & HUBS

1. Check pulley set screws and hub screws after the first **50 hours** of operation and again at **100 hours**. Re-torque these screws with a torque wrench. Follow the torque values on the following table. Check pulley set screws and hub screws every **500 hours** thereafter.



**Ensure that when you re-torque the screws, you use a clockwise pattern and continue until the proper torque is achieved.**

TORQUE VALUES		
Component	Inch/lbs	Foot/lbs
Engine Hub	720	60
Vacuum Pump Hub	192	16

## **STRAINER BASKETS**

The strainer baskets located in the waste tank should be emptied and cleaned on a **daily** basis.

## **VACUUM HOSES**

To ensure maximum hose life, **BLUELINE** recommends that you wash out the hoses with fresh water **daily**.

## **BATTERY**

### **WARNING!**

**Explosive gases, Dangerous acid!**  
Batteries contain sulfuric acid. To prevent acid burns, avoid contact with skin, eyes and clothing. Batteries also produce explosive hydrogen gases while charging. To prevent fire or explosion, charge batteries only in a well ventilated area. Keep sparks, open flames, as well as any other sources of ignition away from batteries at all times. Remove all jewelry prior to servicing batteries. Keep batteries out of the reach of children.

**Before disconnecting the negative (-) ground cable, ensure that all switches are in the OFF position. If ON, a spark could occur at the ground connection terminal, which could cause an explosion if hydrogen gas or gasoline vapors are present. ALWAYS disconnect the negative (-) terminal first.**

1. Check the fluid level in the battery at least **once a week**. If low, fill to the recommended level **ONLY** with distilled water. **DO NOT** overfill the battery. Early failure or poor performance will result due to loss of electrolyte.

2. Keep cables, terminals and external surfaces of the battery clean and dry. A buildup of corrosive acid or grime on the external surfaces could cause the battery to self-discharge.

3. Battery terminals should be cleaned every **100 hours** to prevent corrosion buildup. Wash the cables, terminals and external surfaces with a mild baking soda and water solution. Rinse thoroughly with fresh water. **DO NOT** allow baking soda to enter the battery cells, as this will destroy the electrolyte, resulting in battery failure.

## **7. GENERAL SERVICE ADJUSTMENTS**

### **WARNING!**

**DO NOT attempt to service this unit while it is running. High speed parts as well as high temperature components may result in severe injury, severed limbs, or fatality.**

### **ENGINE SPEED**

1. To adjust the engine RPM, refer to the Kohler Engine Operation and Service Manual for specific instructions.

### **WARNING!**

**DO NOT attempt to adjust without a tachometer and NEVER adjust the engine above 2800 RPM.**

### **VACUUM RELIEF VALVE**

With the unit running at full RPM, block off the airflow at the vacuum inlet ports and read the vacuum gauge. If adjustment is required, shut the unit down and adjust the locking nut tension on the vacuum relief valve. Re-start the unit and read the vacuum gauge. Repeat this process until the vacuum relief valve opens at 13" Hg.

### **VACUUM PUMP DRIVE BELTS**

The **BLUELINE SUPER EXTRACTION SYSTEM®** is equipped with an adjustable belt tensioning system. To adjust belts, loosen nuts on engine mounting plate and adjust belt tension by turning the tensioning bolt located on the left side of engine mounting plate. Retighten engine bolts after proper belt tension is achieved (approximately 1/2" deflection). Periodically check the belts and pulleys condition. Repair and or replace as needed.

## **8. TROUBLESHOOTING**

### **WARNING!**

**DO NOT attempt to service this unit while it is running. High-speed parts as well as high temperature components may result in severe injury, severed limbs or fatality.**

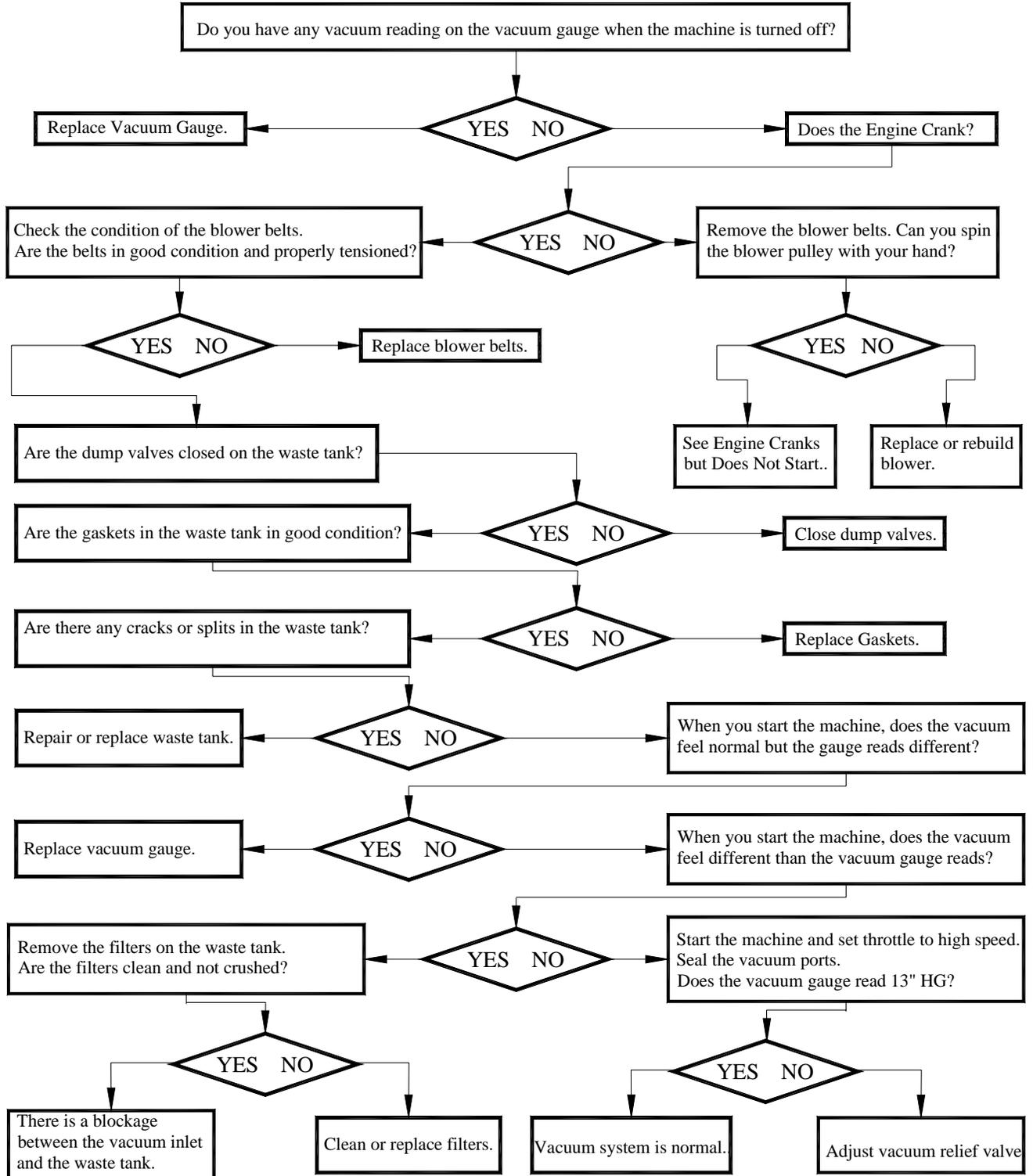
This section of the operator's manual describes how to look for and repair malfunctions, which may occur.

Accurate troubleshooting is based on a thorough and complete understanding of the **VACUUM, SAFETY** and **WIRING** systems featured in this unit.

If there are malfunctions occurring on this unit which you do not understand, refer back to the **OPERATION** section of this manual and review **SYSTEM** or **TROUBLESHOOTING**

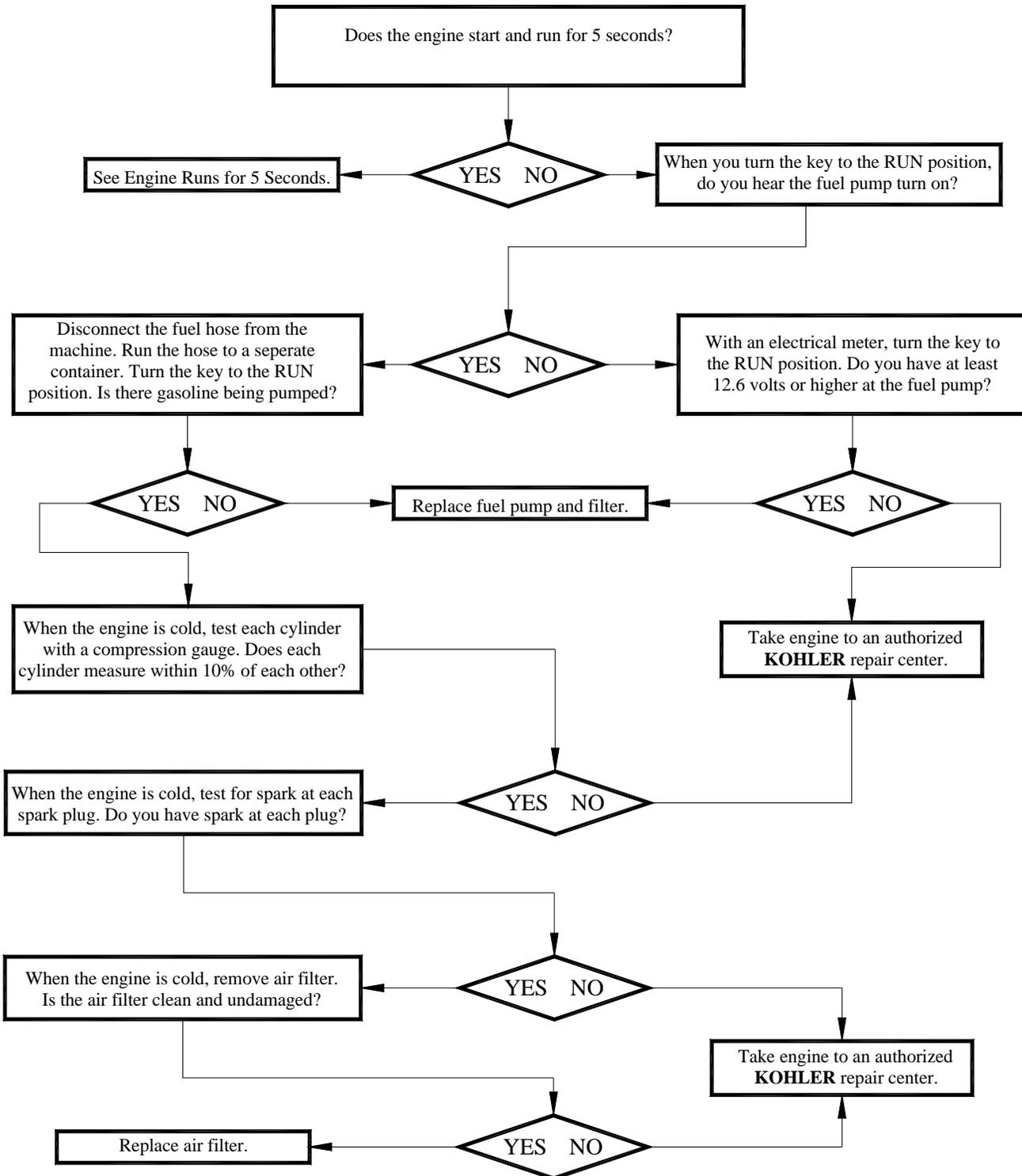
# Blower/Vacuum

Note: Make sure the blower has oil, the waste tank is empty and their filters are clean.  
 Note: Anytime you have a Blower/Vacuum problem, you are actually looking for an air volume problem.



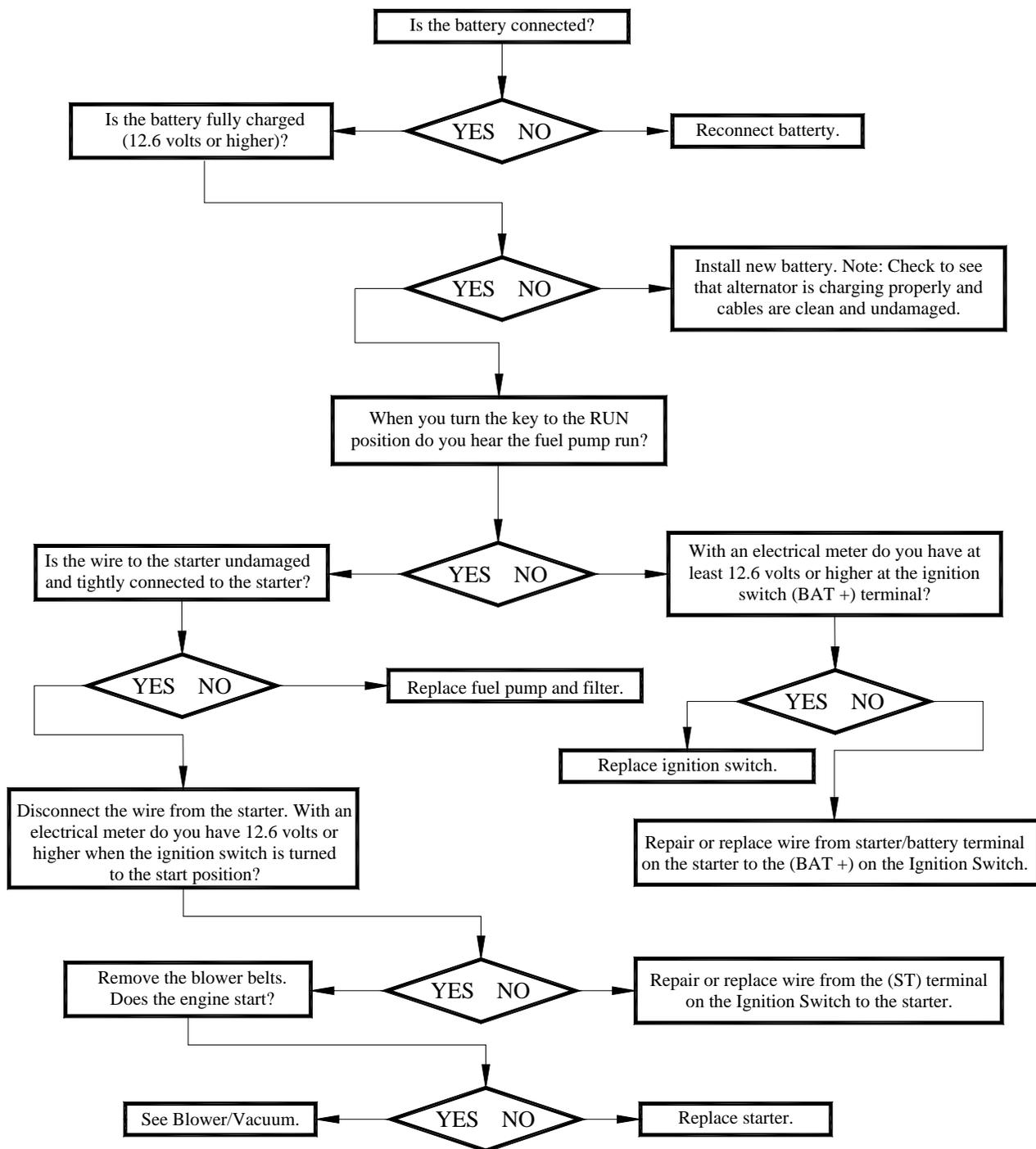
# Engine Will Not Start

Note: Make sure the engine has oil, waste tank is empty, and you have at least a half tank of gasoline.



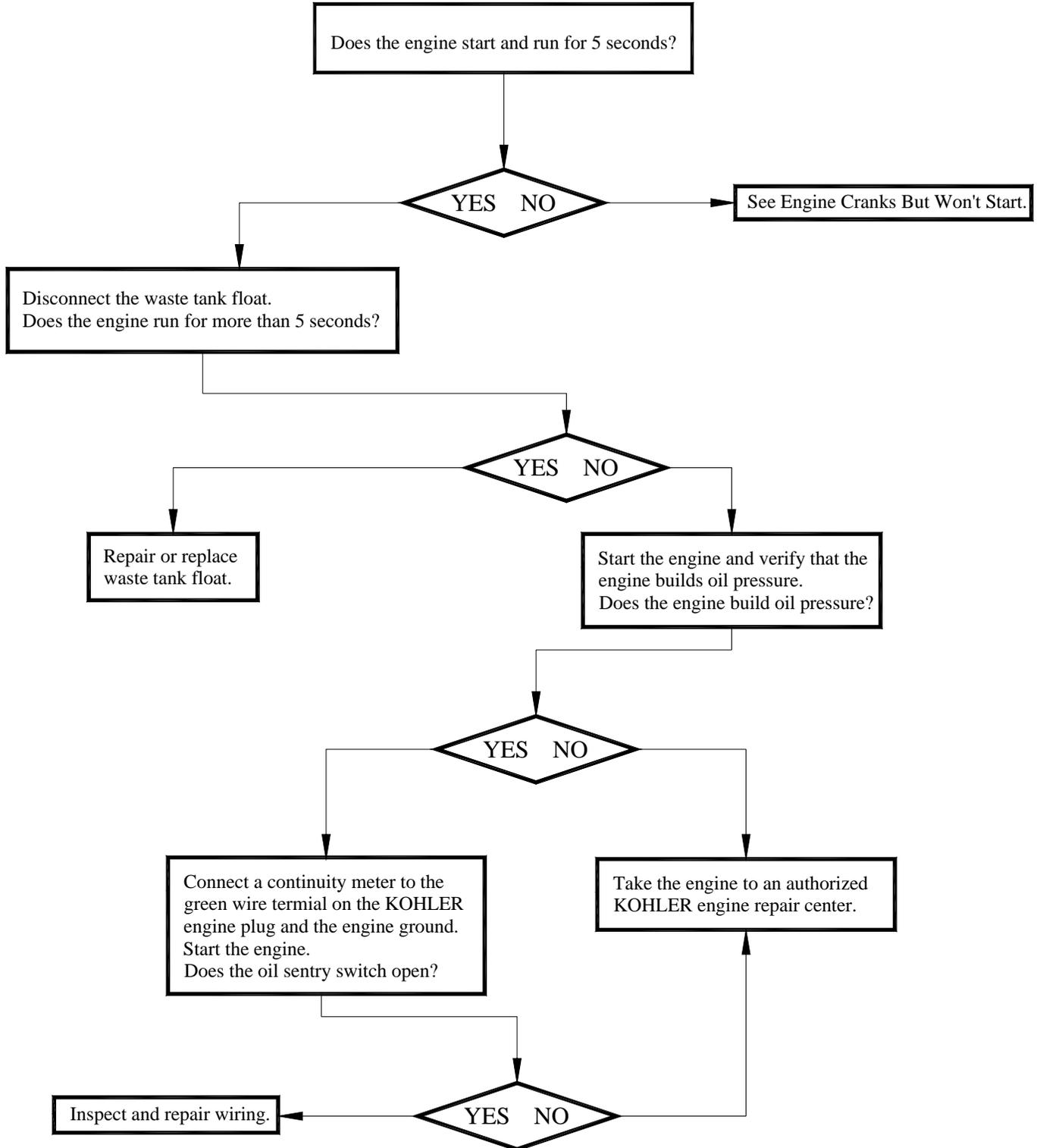
# Engine Does Not Crank

Note: Make sure the engine has oil, waste tank is empty, and you have at least a half tank of gasoline.



# Engine Runs for 5 Seconds

Note: Make sure the engine has oil, waste tank is empty, and you have at least a half tank of gasoline.



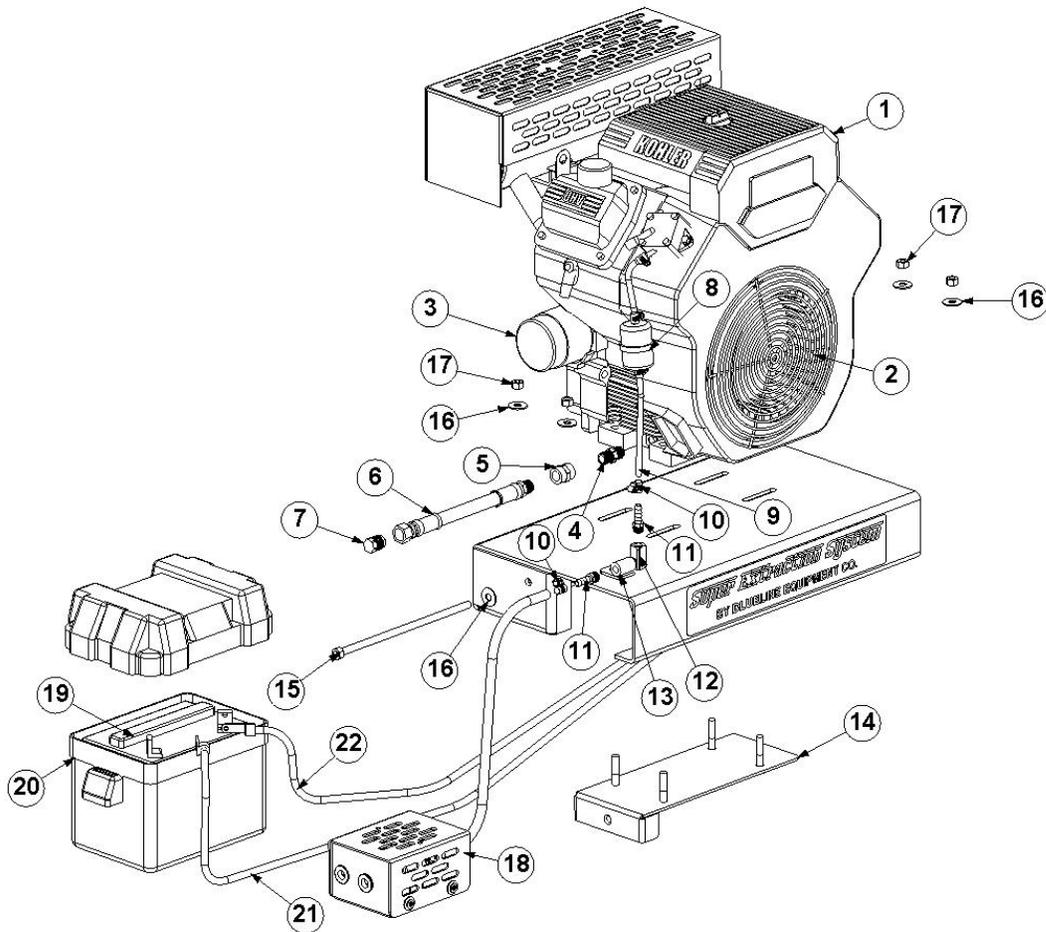
# **SECTION 5:** **SERVICE & MAINTENANCE**

## **9. ILLUSTRATED PARTS LISTINGS**

Engine	28
Vacuum-Exhaust System	29
Waste Tank	32
Decals	33
Electrical Diagrams	34

## **10. ACCESSORIES**

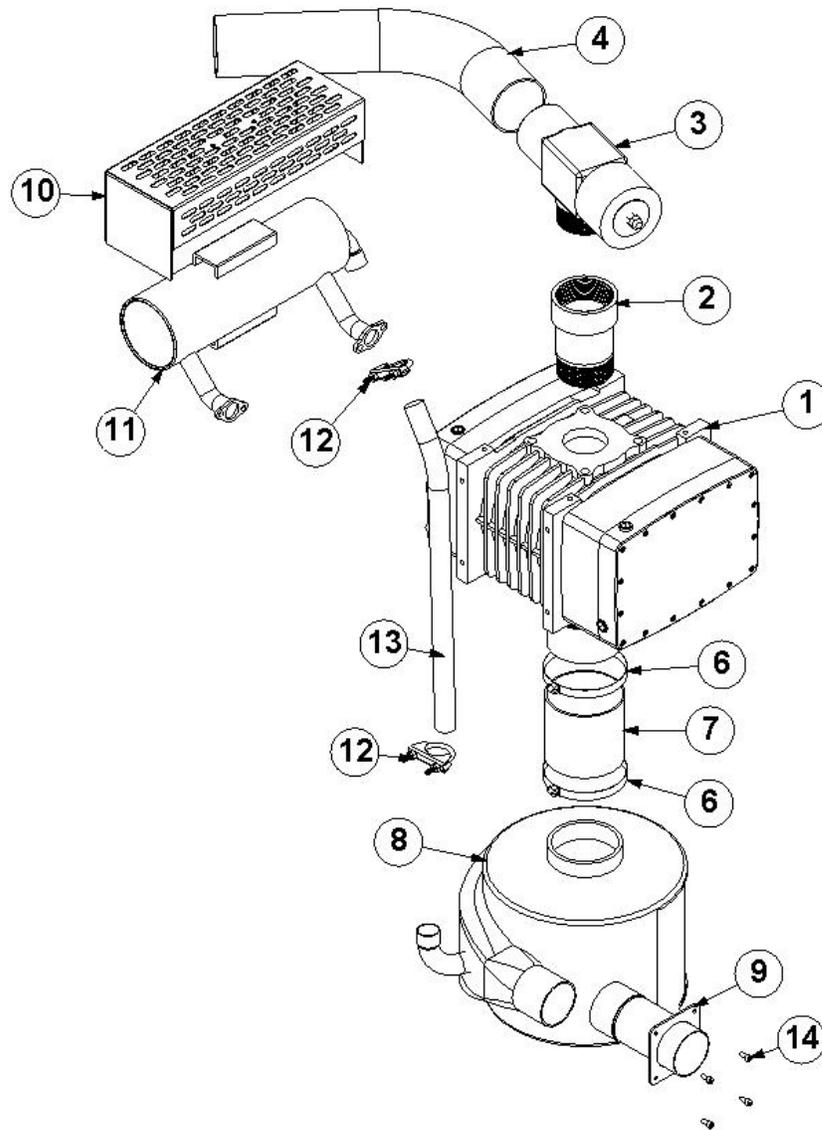
Accessories	35
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5-1

### ENGINE INSTALLATION

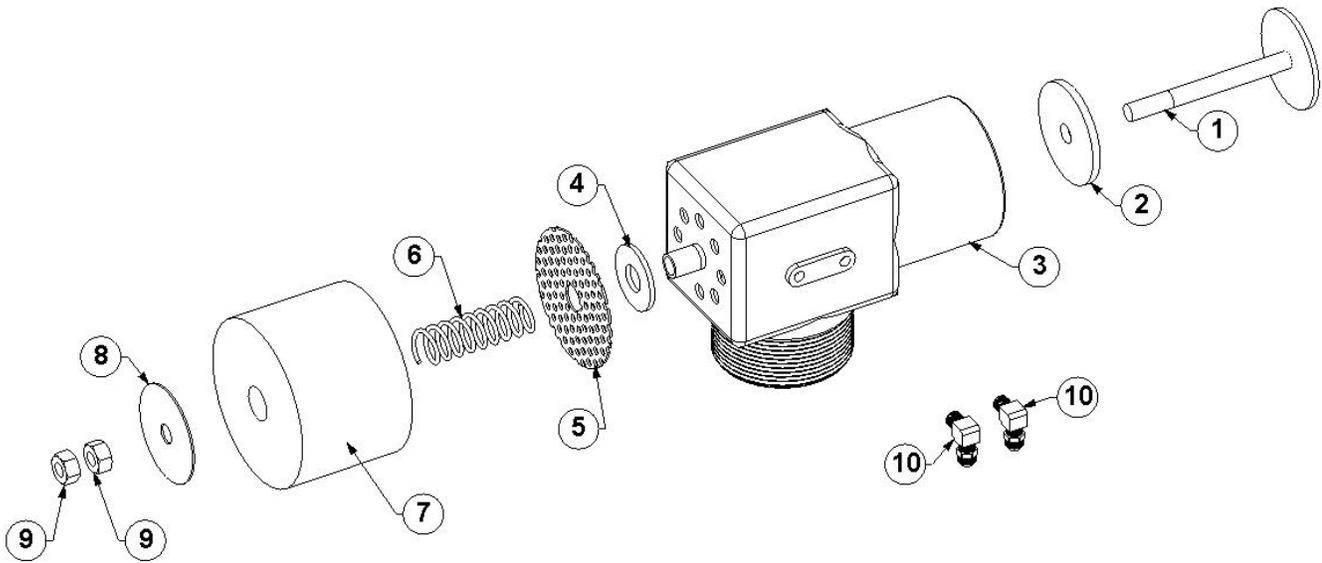
Item No.	Part Number	Qty	Description
1	45-012	1	ENGINE, KOHLER 25HP
2	36-025	1	GUARD, FLYWL KOHLER#4731402-S
3	36-019	1	FILTER, OIL KOHLER#1205001
4	21-046	1	NIP, 3/8 IN. HEX BRASS
5	21-073	1	COUPLING, 3/8 STD BRASS
6	18-004	1	HOSE, HP 3/8 X 10 IN. OIL DRAIN KOH
7	21-027	1	PLUG, 1/2 T BRASS
8	36-097	1	FILTER, FUEL KUBOTA
9	16-034	1	HOSE, FUEL 1/4" 30R7
10	14-007	5	CLAMP, HOSE # 4
11	21-006	2	FTTG, BRB 1/4PX5/16H BR
12	21-039	1	ELL, 1/4 IN LG STREET BRASS
13	61-018	1	BRKT, FIN FUEL RETURN THERMAL
14	61-176	1	ASSY, ENGINE ADJUSTMENT PLATE
15	61-123	1	BOLT, PUMP ADJUSTMENT BW
16	12-013	5	WASHER, FLAT 3/8 SAE
17	11-006	4	NUT, 3/8-16 ZINC
18	68-030	1	ASSY,FUEL PUMP HOUSING
19	35-004	1	BATTERY, 12 VOLT LAWN & GARDEN
20	40-004	1	BOX, BATTERY HOLDER
21	47-002	1	ASSY, BATTERY CABLE BLK THERMAL
22	47-001	1	ASSY, BATTERY CABLE RED THERMAL



5-2

### VACUUM-EXHAUST SYSTEM

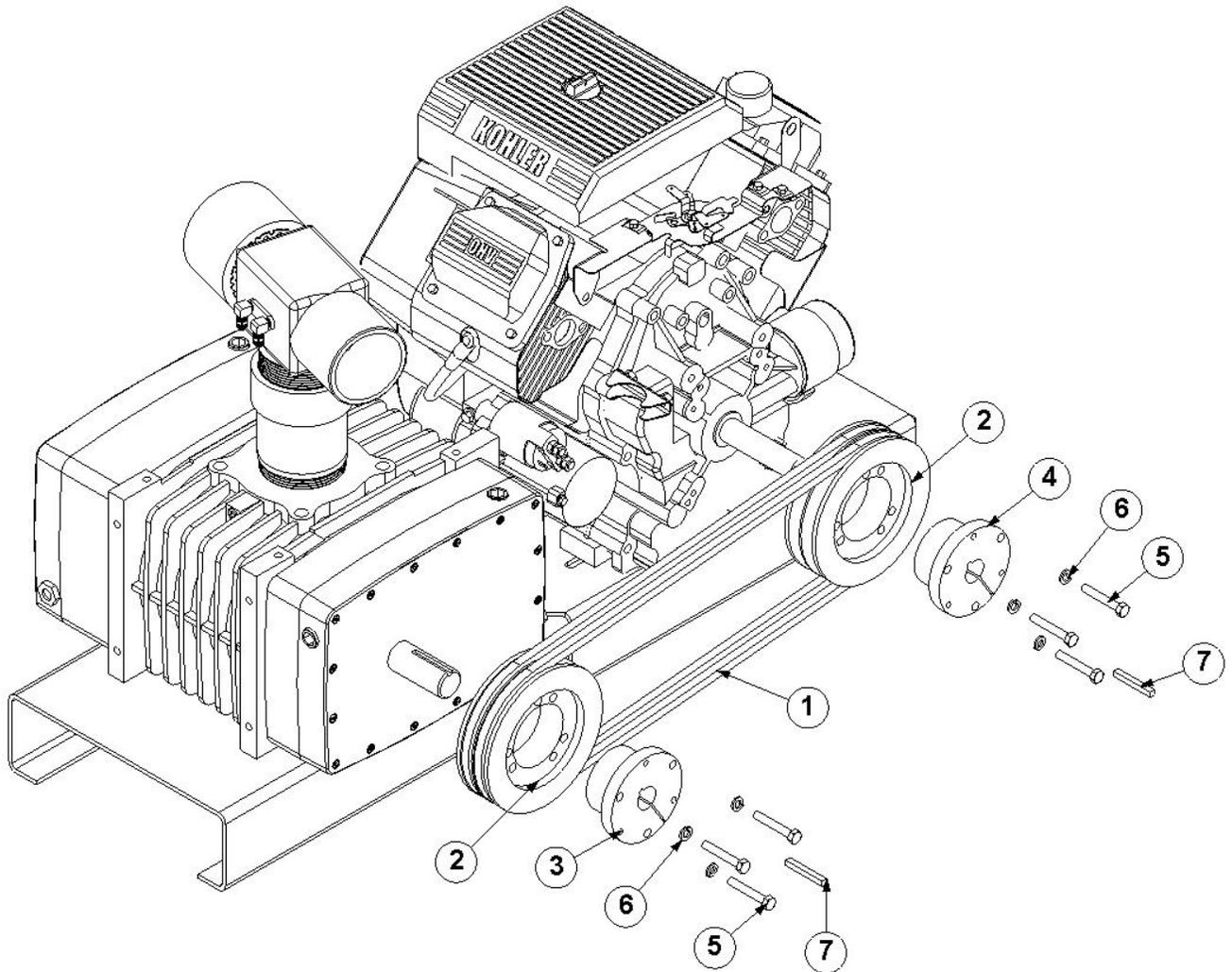
Item No.	Part Number	Qty	Description
1	46-030	1	VACUUM PUMP TI-408 HOR(LH)
2	61-187	1	ASSY, ADAPTOR VAC STAN PIPE SES
3	69-040	1	ASSY, VAC BRAKE 5M
4	16-014	24	HOSE, INT VAC 3-1/2 IN 50 FT BULK
5	64-002	1	NIP, HALF BLOWER OUTLET
6	14-008	2	CLAMP, HOSE #72
7	16-013	4.5	HOSE, INT VAC 3-1/4 IN 12-1/2 FTBLK
8	63-059	1	MUFFLER, VACUUM SES 3.5
9	63-057	1	TUBE, MUFFLER EXHAUST SES
10	61-188	1	ASSY, GUARD MUFFLER SES
11	63-060	1	MUFFLER, ENGINE EXHAUST SES
12	14-001	2	CLAMP, MUFFLER 1-1/4 IN..
13	55-050	1	TBG, FLEX 1-1/4ID X 1-3/8OD SS
14	10-007	4	SCREW, MACH 1/4-20 X 1/2 SOCHD SS



5-3

**69-040 ASSY, VAC BRAKE 5M**

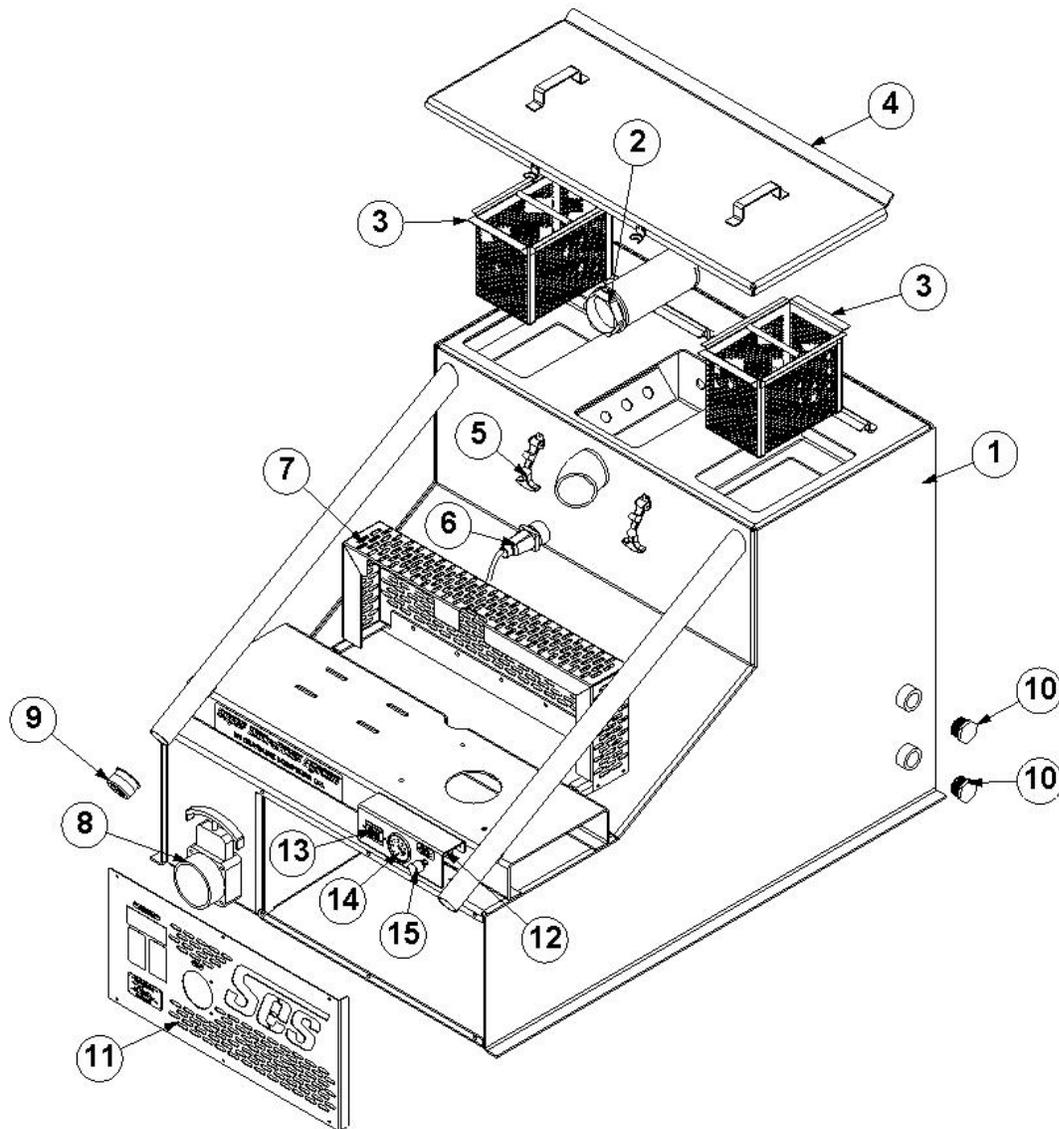
Item No.	Part Number	Qty	Description
1	61-035	1	STEM, VACUUM RELIEF VLV 4L,5M
2	41-009	1	DIAPHRAGM, VAC RELIEF VLV 4L, 5M
3	66-001	1	VAC BRAKE, MACHINED 4L
4	58-106	1	SPACER, .125 X .688 X 1.625
5	58-108	1	SCREEN, SILENCER THERMAL
6	15-002	1	SPRING, VAC RELIEF VALVE
7	50-000	1	SILENCER, VAC BRAKE FOAM
8	58-077	1	WASHER,VAC SILENCER
9	11-012	2	NUT, 7/16-14 ZINC
10	21-011	2	ELL, 1/8 P X 1/4 POLY BR



5-4

**IDLER PULLEY ASSEMBLY**

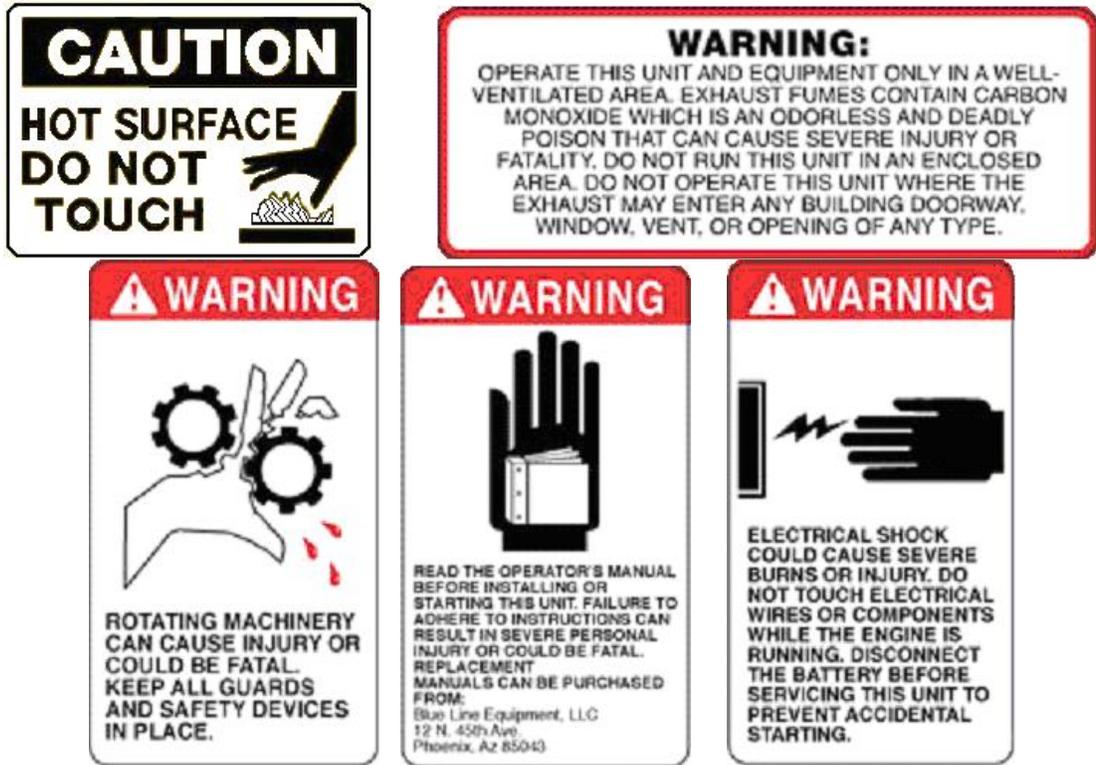
1	37-041	2	BELT, 5VX550
2	38-027	2	PULLEY, 5V630SK 2G
3	38-032	1	HUB, SK 1-1/4
4	38-034	1	HUB, 1-7/16 4JTU56
5		6	5/16-18 HEX BOLT
6		6	5/16 LOCK WASHER
7	64-005	2	KEYSTOCK, 1/4 SQUARE X 2 IN
1	37-041	2	BELT, 5VX550



5-5

**WASTE TANK SUPER EXTRACTION SYSTEM®**

Item No.	Part Number	Qty	Description
1	61-174	1	ASSY, WASTE TANK SES
2	20-021	1	STRAINER, FILTER BLUEWAVE
3	61-002	2	BASKET, STRAINER WASTE TANK
4	61-177	1	ASSY, LID WASTE TANK SES
5	40-003	2	LATCH, PRE-FILTER BOX
6	69-000	1	WIRING , LEVEL SENSOR SHUTOFF
7	61-175	1	ASSY, BELT GUARD SES
8	23-036	1	VALVE, 3" STAINLESS PADDLE
9	19-009	1	CAP, WASTE TANK INLET
10	21-097	2	PLUG, 1-1/4 IN PVC
11	58-137	1	PNL, FRONT SUPER EXTRACTION
12	58-140	1	PNL, GAUGE MOUNT SES
13	26-012	1	GAUGE, TINY TACH
14	26-004	1	GUAGE, VAC 30in.HG DUALSCALE
15	28-000	1	CUP, OILFILL 1/8P



44-000 DECAL SHEET, WARNING & CONTROLS

**EXHAUST**

**UNLEADED GASOLINE ONLY  
(SEE OWNERS MANUAL)**

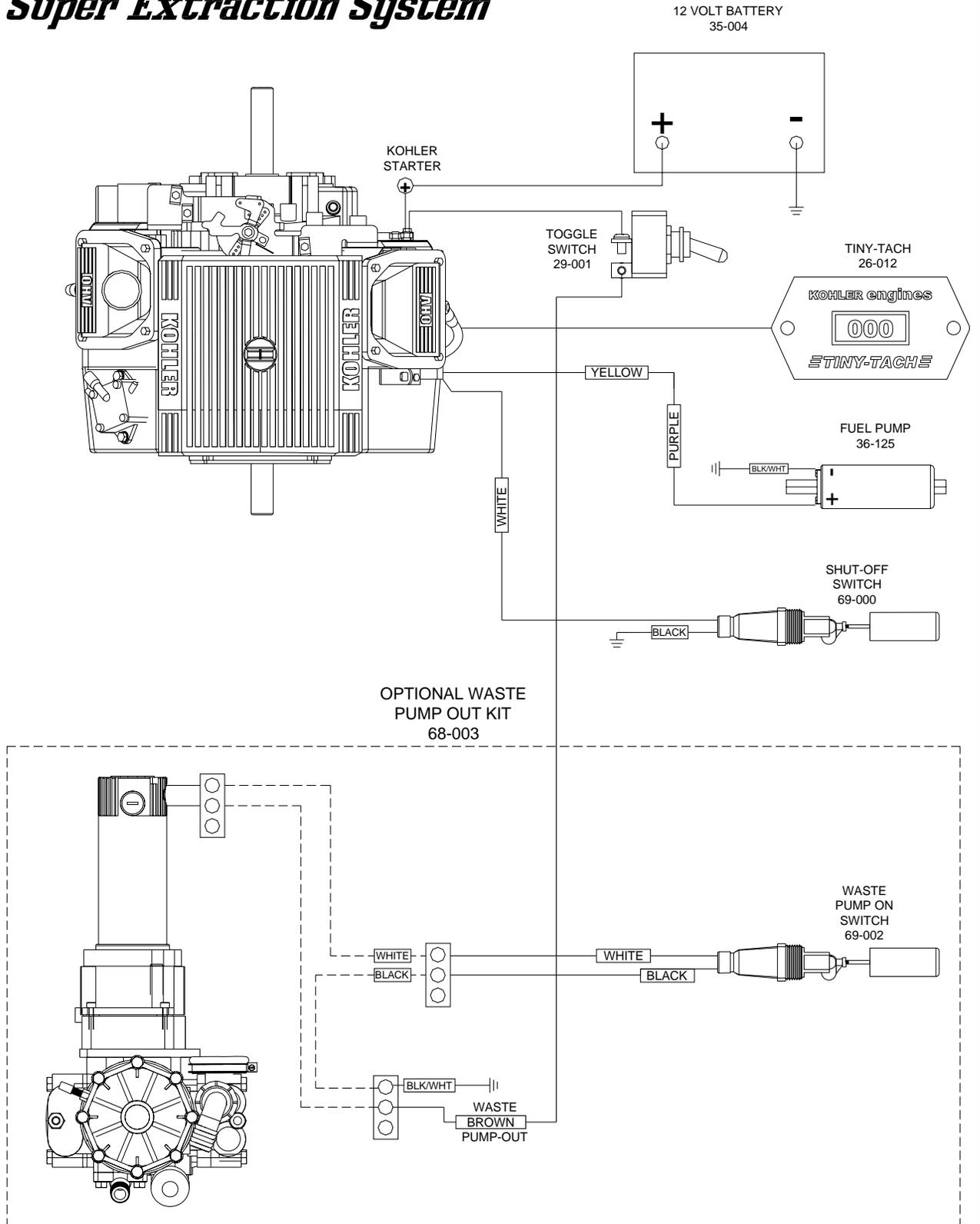
***Super Extraction System***  
**BY BLUELINE EQUIPMENT CO.**

44-040 DECAL, SUPER EXTRACTION SYSTEM®

## ELECTRICAL DIAGRAM

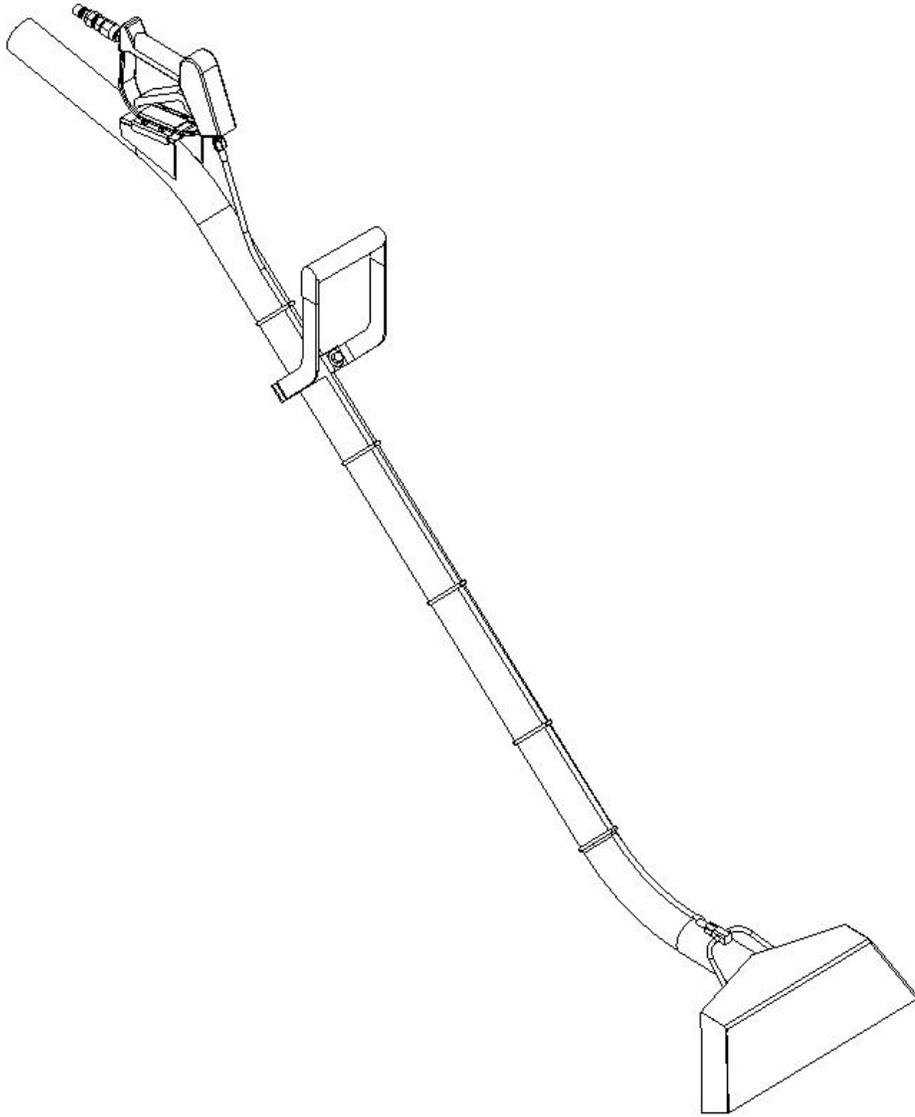
SECTION 5

***Super Extraction System***



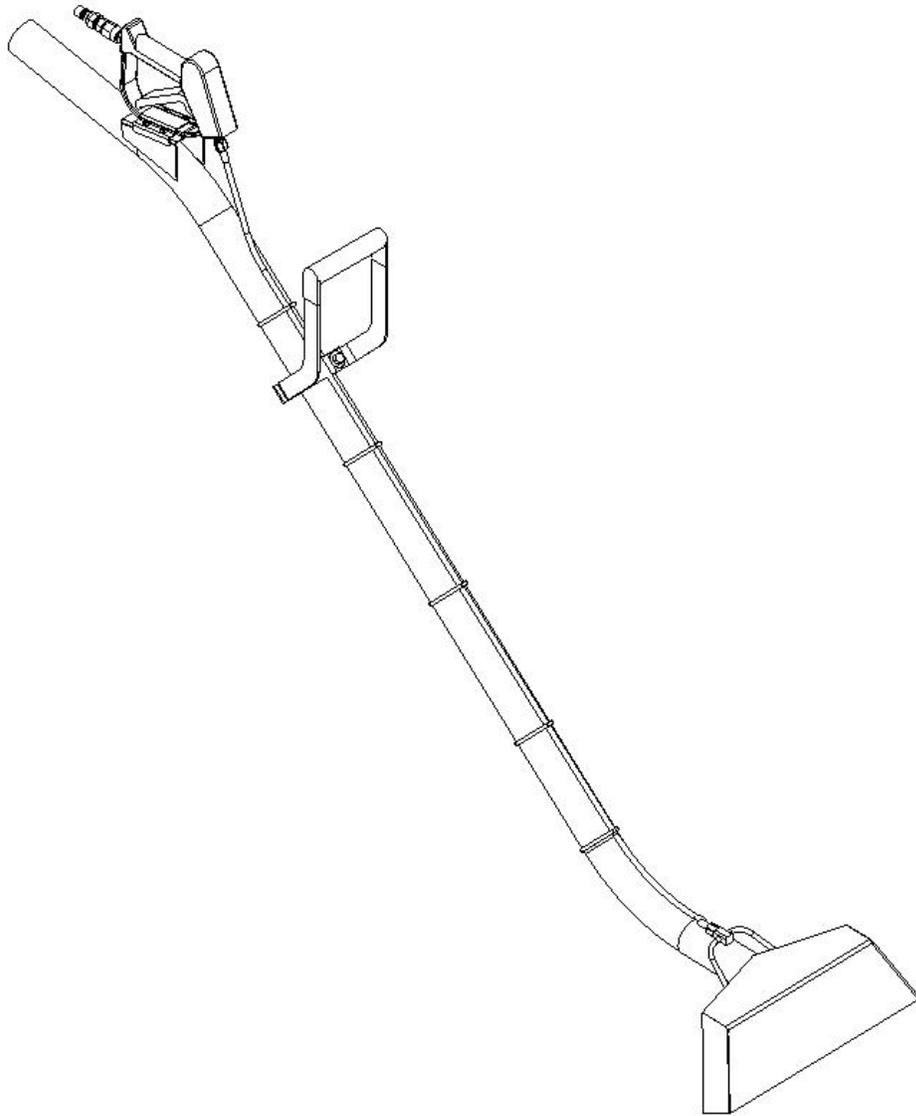
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## **10. ACCESSORIES**



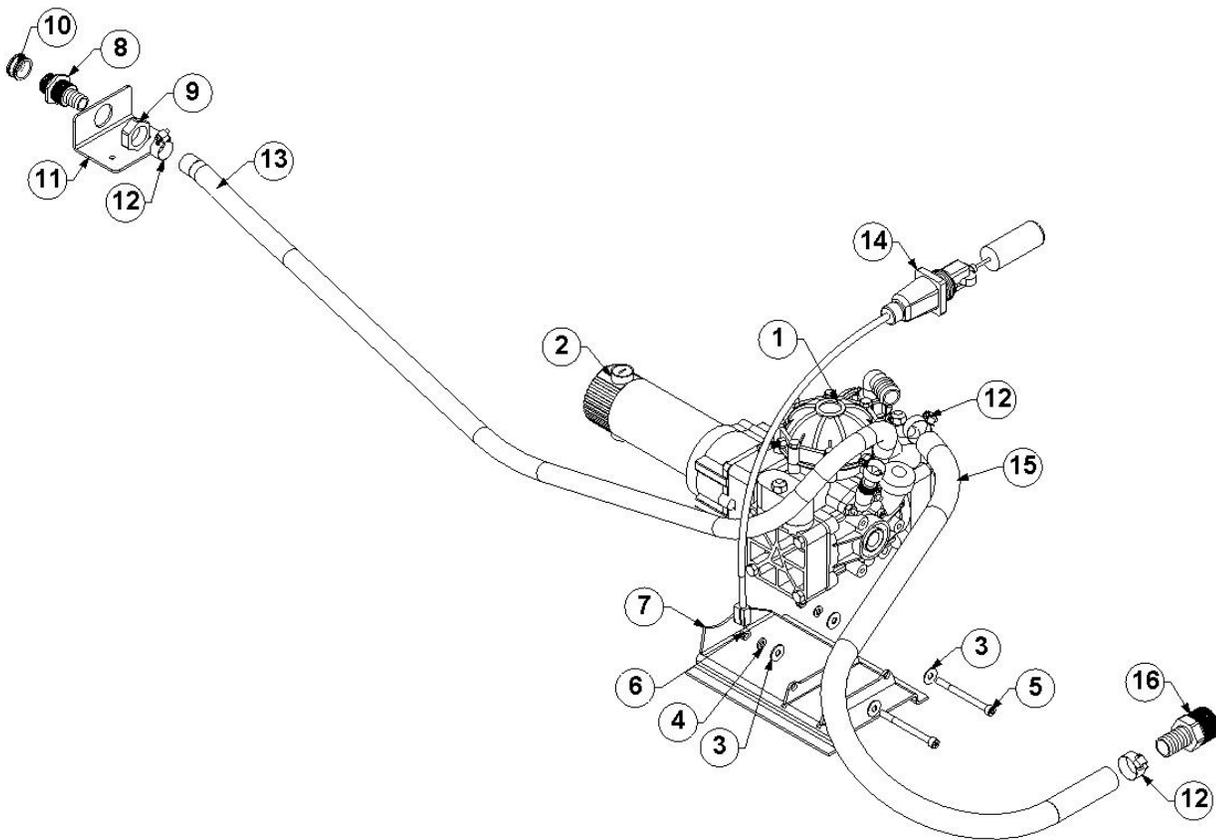
**67-003 WAND, ERGO W/PISTOL GRIP 14"**

Item No.	Part Number	Qty	Description
1	67-003	1	WAND, ERGONOMIC W /SPRAYER
2	25-000	1	DSC, 1/4M X 1/4FP BR
3	23-035	1	VLV, SPRAYER HYPRO 3381-0032
4	21-050	1	CONN, 1/4 P X 1/4 T BRASS
5	18-021	1	HOSE, 3/16 X 51 1/4FT X 1/4FT
6	24-000	4	TIP, SPRAY 95015X1/8P SST
7	40-009	1	HANDLE, ERGO WAND COATED



**WAND, ERGONOMIC 11 IN. WIDE**

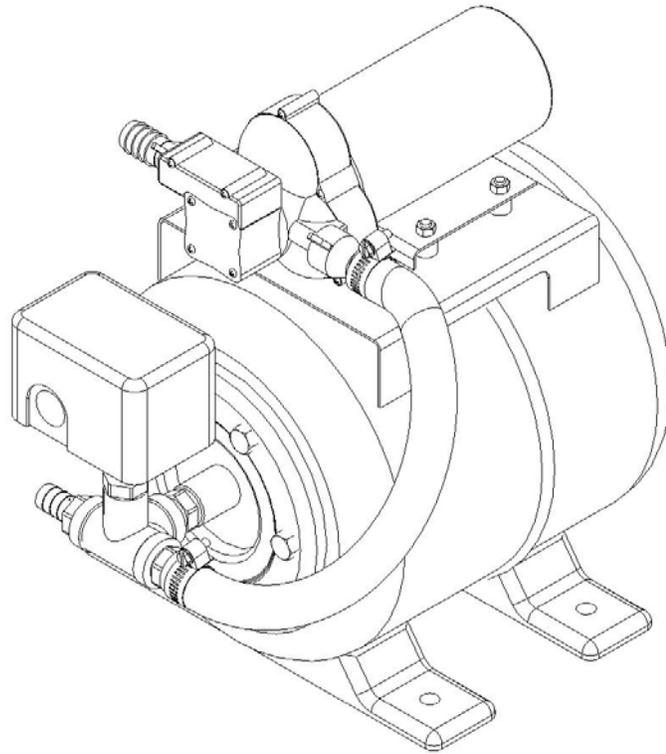
Item No.	Part Number	Qty	Description
1	67-005	1	WAND, ERGONOMIC 11 IN. WIDE
2	25-000	1	DSC, 1/4M X 1/4FP BR
3	23-035	1	VLV, SPRAYER HYPRO 3381-0032
4	21-050	1	CONN, 1/4 P X 1/4 T BRASS
5	18-021	1	HOSE, 3/16 X 51 1/4FT X 1/4FT
6	24-000	4	TIP, SPRAY 95015X1/8P SST
7	40-009	1	HANDLE, ERGO WAND COATED



5-31

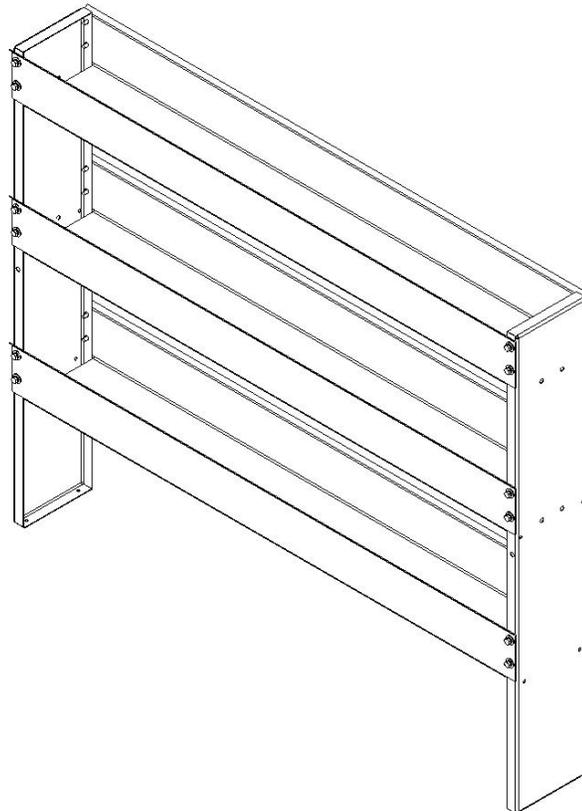
### 68-003 KIT, WASTE PUMP EXTERNAL

Item No.	Part Number	Qty	Description
1	46-016	1	PUMP, DIAPHRAGM, PUMP OUT
2	45-008	1	MOTOR, GEAR BISON PUMPOUT
3	12-017	4	WASHER, FLAT 5/16 SAE
4	12-016	2	LKWSR, 5/16 ZINC
5	10-040	2	SCREW, MACH 5/16-18 X 3-1/2 SOCHD
6	11-005	2	NUT, 5/16-18 ZINC
7	61-003	1	MOUNT, EXTERNAL PUMPOUT
8	66-022	1	ADAPTOR, HOSE WASTE PUMP
9	66-023	1	NUT, ADPTR. HOSE WASTE PUMP
10	21-071	1	CAP, GARDEN HOSE 3/4 BRASS
11	58-006	1	BRKT, HOSE CONN WASTE PUMP
12	14-006	4	CLAMP, HOSE #20
13	16-004	72"	HOSE, WTR. 3/4 IN HRZ. 500FT BULK
14	69-000	1	WIRING, LEVEL SENSOR SHUTOFF
15	16-018	24"	HOSE, WTR. 1 IN HRZ. 100FT BULK
16	21-036	1	FTTG, BRB 1-1/4 P X 1 IN. BARB



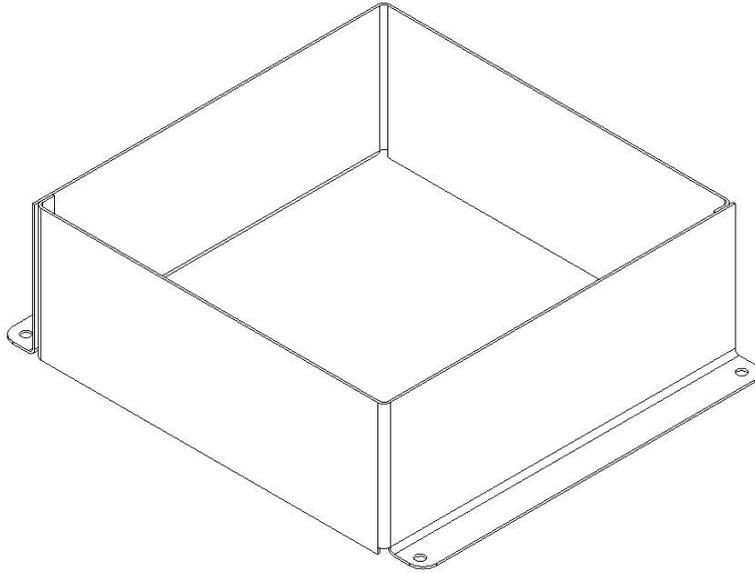
5-36

**68-002 KIT, DEMAND PUMP W/PLUMBING SS**



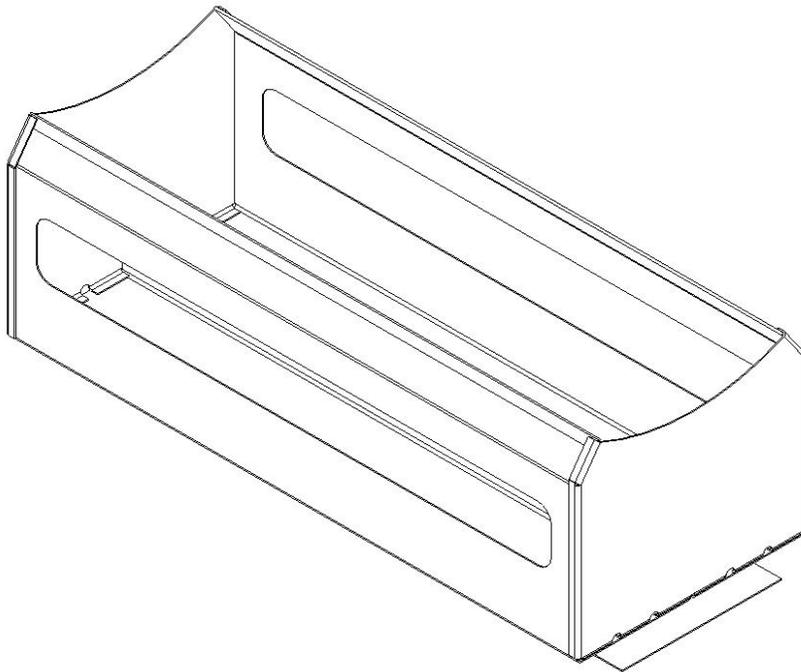
5-37

**68-013 ASSY, VAN STORAGE UNIT SS**



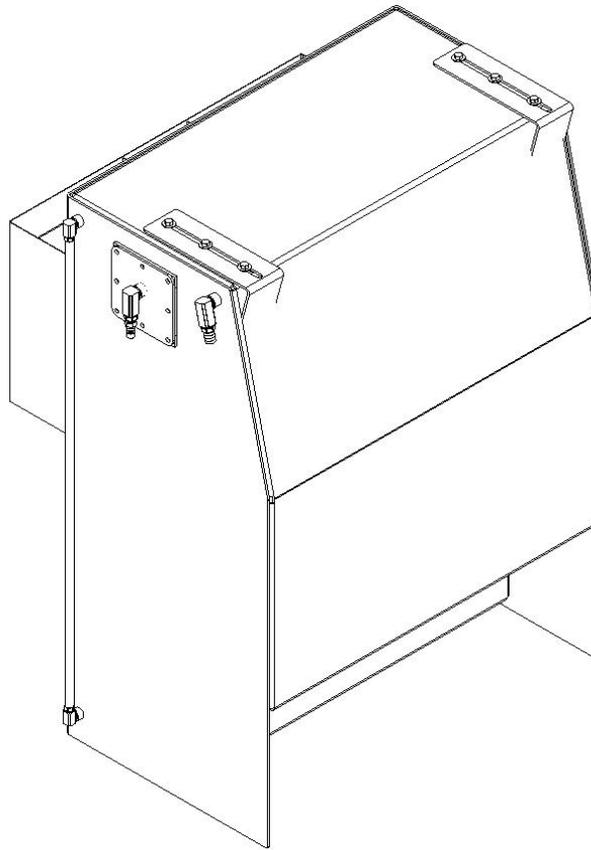
5-38

**68-014 ASSY, SINGLE 5 GAL JUG HOLDER**



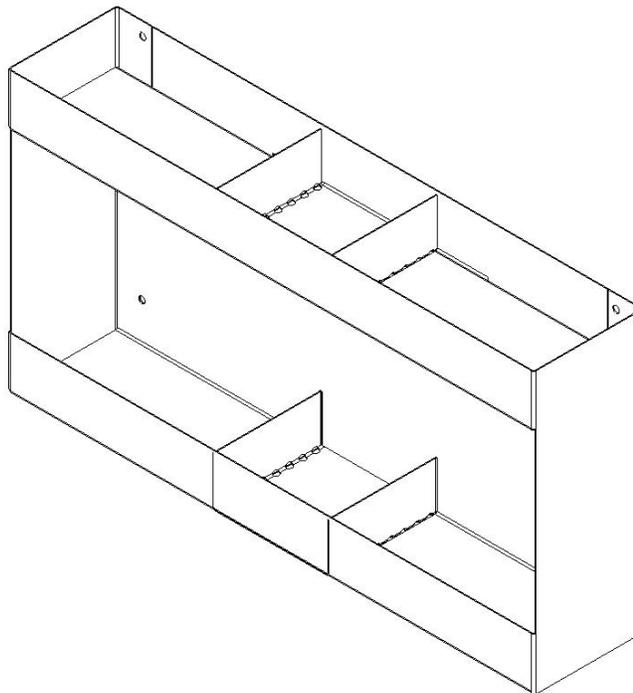
5-40

**68-016 RACK, DOUBLE CHEMICAL**



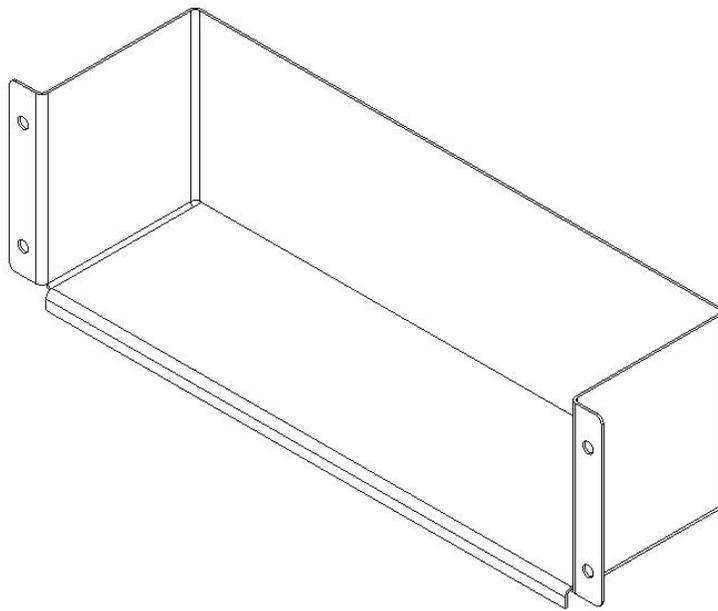
5-41

**68-017 ASSY, FIN 120 GAL WTR TNK**



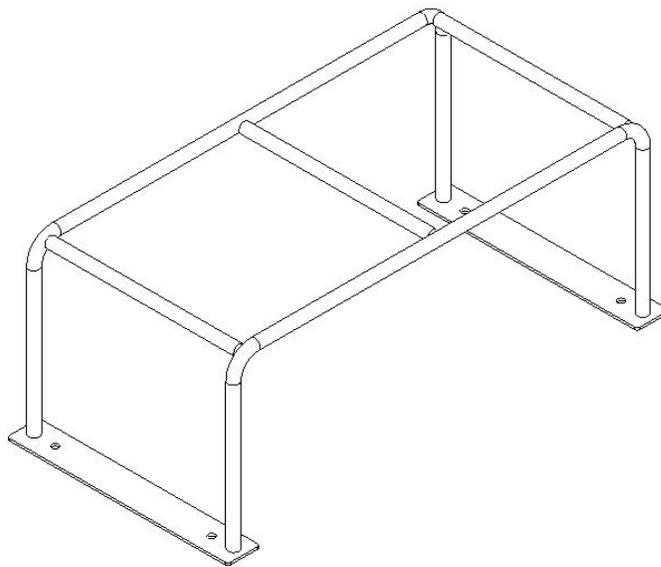
5-42

**68-018 ASSY, 10 GAL CHEM RACK S.S.**



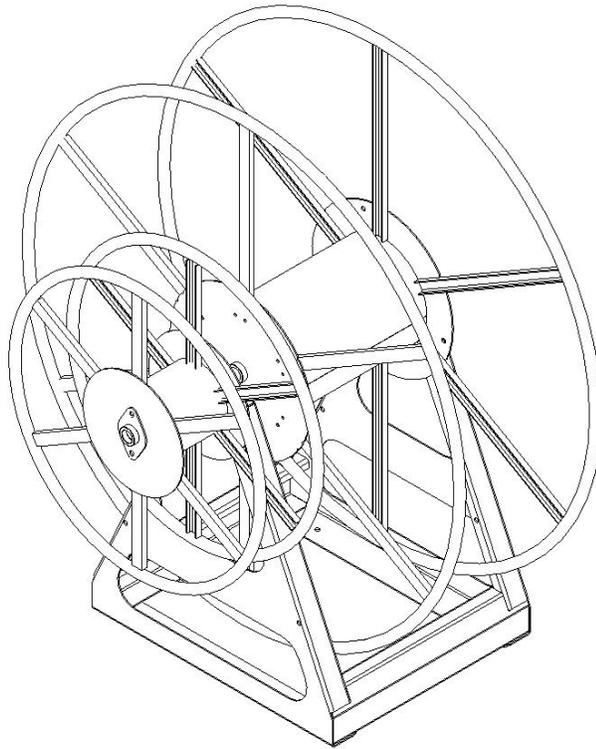
5-43

**68-019 SPRAY BOTTLE HOLDER SS**



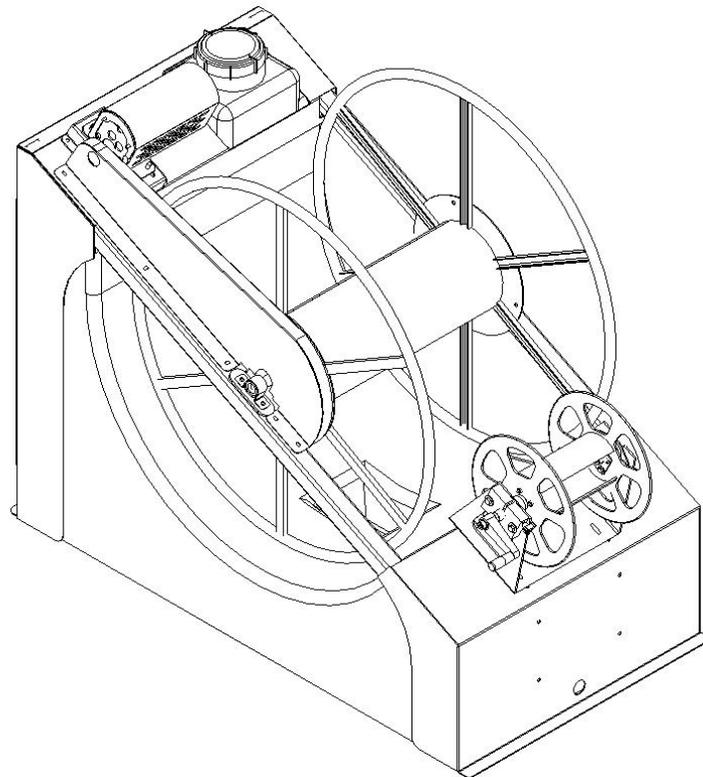
5-44

**68-022 ASSY, DBL PMP UP SPRAY RK, SS**



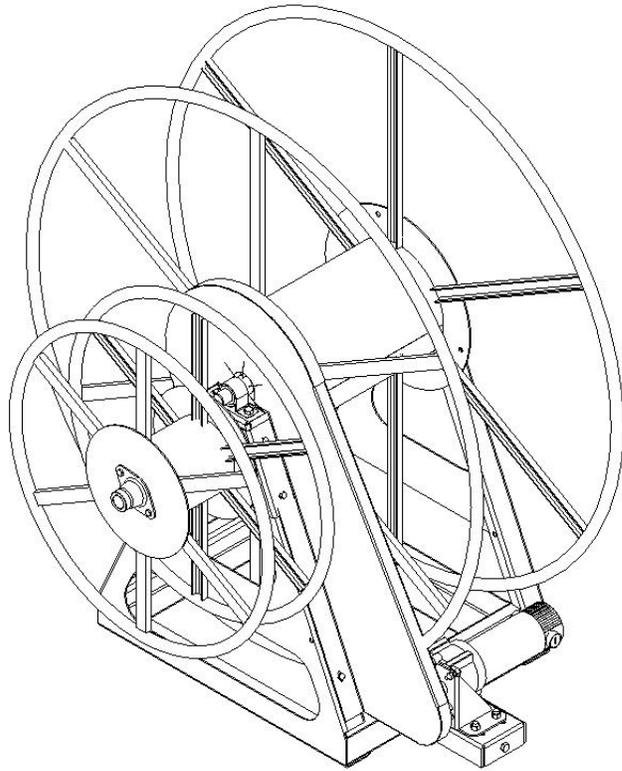
5-47

**68-025 ASSY, HOSE REEL HIGH PROFILE**



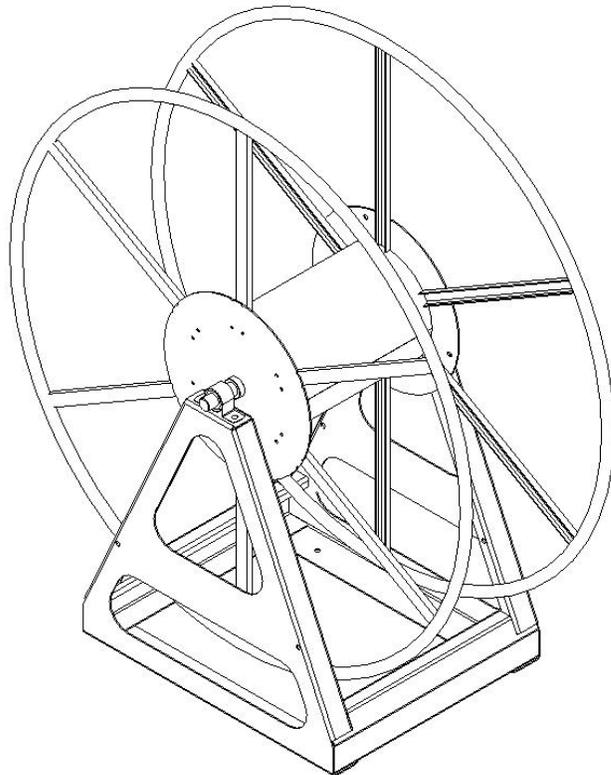
5-48

**68-032 ASSY, H-REEL MOTORIZED W-H2O TNK**

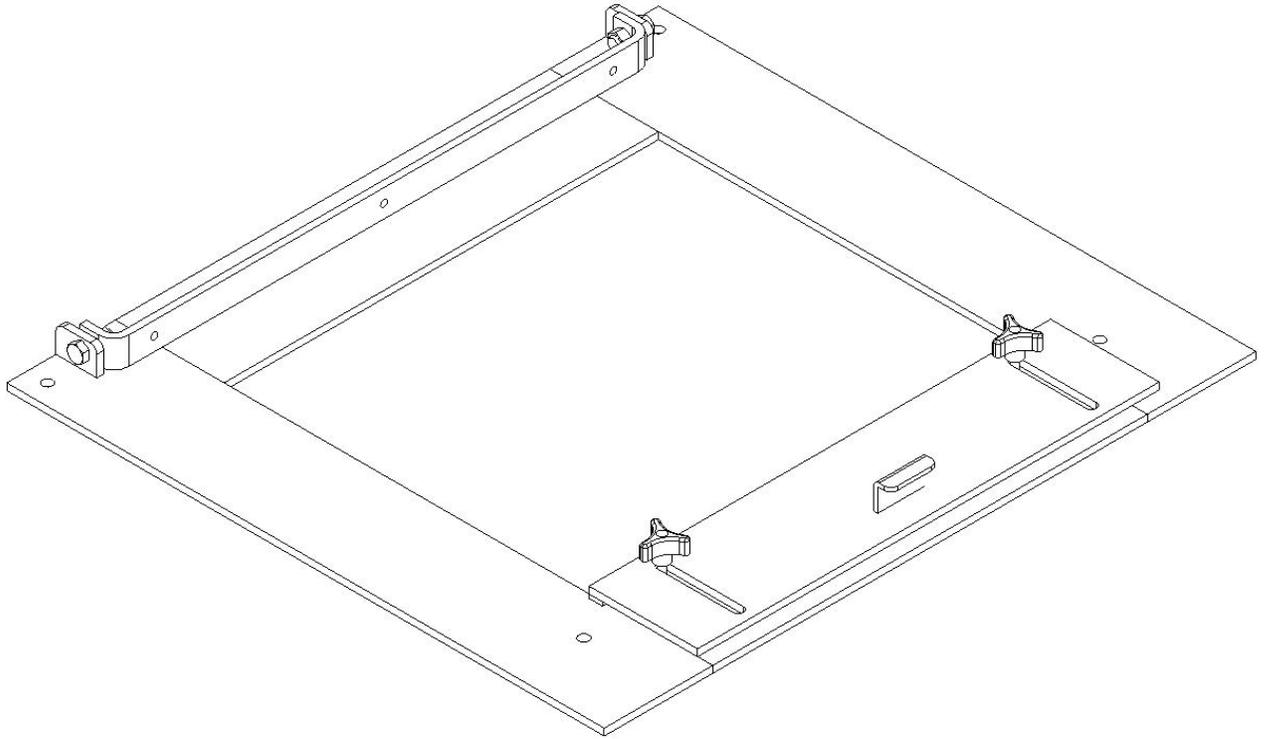


5-49

**68-033 ASSY, HOSE REEL H. PROFILE W-MTR**



**68-037 ASSY, HOSE REEL VAC ONLY**



**68-043 ASSY, HOSE REEL LAY DOWN KIT**