



SLX 47

Operations and Service Manual



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MACHINE DATA LOG / OVERVIEW

MODEL _____
DATE OF PURCHASE _____
SERIAL NUMBER _____
COMPANY NAME _____

YOUR DEALER
NAME: _____
ADDRESS: _____
PHONE NUMBER: _____

Welcome...and congratulations on the purchase of your Cleanco Truckmount. This instruction manual is a guide for operating and servicing your unit. **Read this manual completely before installing or operating this unit.** This unit offers you personal convenience. All of your instrumentation and controls have been positioned to give you easy access for operation and daily maintenance.

Proper operation and service are essential to the efficient functioning of this unit. When maintained correctly, this unit will have a long, trouble-free life.

The service methods described in this manual are explained in such a manner that serving may be performed accurately and safely. Proper service varies with the choice of procedure, the skill of the mechanic, and the tools or parts available. Before attempting any repair, make certain that you are thoroughly familiar with this equipment and are equipped with the proper tools. Any questions pertaining to operation or servicing this unit should be directed to your nearest dealer.

THIS UNIT MUST BE INSTALLED BY THE DEALER FROM WHOM YOU PURCHASED IT IN ACCORDANCE WITH THE PRESCRIBED INSTALLATION PROCEDURES.

MAKE CERTAIN THAT THE WARRANTY FORM IS FILLED OUT AT THE TIME OF INSTALLATION AND RETURNED TO: ESTEAM MANUFACUTRING OR;

BY REGISTERING YOUR WARRANTY ONLINE AT:

<https://esteam.com/warranty-enrollment/>

IMPORTANT SAFETY INSTRUCTIONS

When using this machine, basic precautions must always be followed, including the following:

READ ALL INSTRUCTIONS BEFORE USING THIS MACHINE



These symbols mean WARNING or CAUTION. Failure to follow warnings and cautions could result in fatality, personal injury to yourself and/or others, or property damage. Follow these instructions carefully.

Read the operator's manual before installing or starting this unit. Failure to adhere to instructions could result in severe personal injury or could be fatal.

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 fatality. **DO NOT** run this unit in an enclosed area. **DO NOT** operate this unit where the exhaust may enter any building doorway, window, vent, or opening of any type.

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

DO NOT store any type of flammable material in the vehicle.

DO NOT operate engine if gasoline is spilled. Avoid creating any ignition until the gasoline has been cleaned up. Never use gasoline as a cleaning agent.

DO NOT place hands, feet, hair, or clothing near rotating or moving parts. Avoid any contact with moving parts! Rotating machinery can cause injury or fatality.

Never operate this unit without belt guards or hoods. The high-speed moving parts, such as belts and pulleys, should be avoided while this unit is running. Severe injury, damage or fatality may result.

DO NOT service this unit while it is running. The high-speed mechanical parts as well as high temperature components may result in severe injury or severed limbs.

Never touch electrical wires or components while the engine is running. They can be sources of electrical shock.

Before servicing this unit, allow it to "cool down." This will prevent burns from occurring.

Water under high pressure at high temperature can cause burns, severe personal injury or fatality. Shut down machine, allow to cool down, and relieve system of all pressure before removing valves, caps, plugs, fittings, filters, and bolts.

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

Always wear hearing protection when unit is running. Always comply with local noise ordinance when operating units.

Dangerous Acid, Explosive Gases! Batteries contain sulfuric acid. To prevent acid burns, avoid contact with skin, eyes and clothing. 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 batteries.

Before disconnecting the negative (-) ground cable, make sure all switches are OFF. If ON, a spark will occur at the ground cable terminal which could cause an explosion if hydrogen gas or gasoline vapors are present. When disconnecting the battery, **ALWAYS** disconnect the negative (-) terminal **FIRST**.

DO NOT smoke around the unit. Gas fumes may accumulate and be ignited. The battery is also extremely flammable. This will prevent possible explosions.

DO NOT damage the vehicle in any manner during installation. When routing fuel lines **DO NOT** place the hose in any location where damage may occur to the hose or vehicle. Avoid any contact with moving parts, areas of high temperature, brake lines, fuel lines, muffler, catalytic converter, or sharp objects.

DO NOT exceed your vehicle's payload capacity. Check with the vehicle manufacturer for the gross Vehicle weight Rating (GVWR) GVWR is the maximum allowable combined weight of the vehicle, including all passengers, fuels, tools, and cargo.

DO NOT operate this unit without the water supply attachment turned on. The water pump and other vital components may be seriously damaged if this unit is permitted to operate dry without water.

DO NOT operate this unit without the filter installed in the waste tank.

Keep your vehicle work area clean. Wands, stair tools, and other accessories must be securely fastened before driving the vehicle.

All high-pressure hoses must be rated for 3000 PSI at 250° F. Thermoplastic hoses do not meet these specifications and should not be used. Severe burns and injury may result if the hoses do not meet these requirements.

Make certain that you receive complete training by the distributor from whom you purchased this unit.

This unit uses high pressure and temperature. Improper or irresponsible use may result in serious injury.

Do not modify this unit in any manner. Us only replacement parts authorized by Cleanco. Modifications or use of unapproved parts could create a hazard can cause severe personal injury or fatality, and will void your warranty.

Failure to apply preventive measures towards freezing can result in system failure and loss of warranty on affected parts. Water freezes at 32° F or 0° C.

TECHNICAL SPECIFICATIONS

ITEM	DIMENSION/CAPACITY
Engine speed	2850 rpm (high speed) Water Pump ON/No Load
Water pump rpm	1625 rpm
Vacuum pump rpm	2850 rpm
Water flow rate	4 GPM (maximum)
Water pump pressure	2000 PSI (maximum)
Vacuum relief valve	13" Hg
Waste tank capacity	90 gallons
Console weight (with waste tank)	1650 lbs.
Pump Belt size	AX28
Blower Belt size	BX37

JET SIZING:

Recommended **floor tool** tip sizing should not exceed a total of ".045". Using larger jet sizes on your cleaning unit may reduce cleaning temperatures.

Example: **Dual-jet wand uses two 11001.5 jets** (110° spray angle w/ 01.5 orifice).
 015 x 2 = 03
 Three-jet wand uses three 11001 jets (110° spray w/1.0 orifice).
 Quad-jet wand uses four 9501 jets (95° spray angle w/ 1.0 orifice)
 01 x 4 = 04

Upholstery tool jet size: **80015**
Stair tool jet size: **9502 or two 9501.5**

RECEIVING YOUR TRUCKMOUNTED UNIT

DEALER RESPONSIBILITIES

The Esteam / Cleanco authorized dealer that you purchased this unit from is responsible for:

1. Correctly installing and properly securing equipment with proper hardware and underside mounting plates.
2. Checking the components and oil levels prior to starting the unit.
3. Check that all components are operating at the factory specifications.
4. Checking all hoses and accessories for correct operation.
5. Checking all tools / wands for correct operation.
6. Training you in the operation, maintenance and safety precautions of your unit.

It is the purchaser's responsibility to become familiar with the entire Owner's Manual, most of all Warnings, Cautions, and Notices.

ACCEPTANCE OF SHIPMENT

Your SLX 47 truckmount 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 deliverer immediately.
2. Carefully check your equipment. The SLX 47 should arrive with the following items as well as any optional accessories you may have ordered:

EQUIPMENT LIST

- Cleanco SLX Console
- Recovery tank with auto shut-off
- Recovery tank vacuum hoses
- Installation mounting plates and hardware
- Hose clamps for vacuum, water and fuel hoses
- 150 ft. of high pressure solution hose
- 150 ft of 2" vacuum hoses
- 10ft x 1.5" Lead vacuum hose
- TM Carpet Wand
- Chemical Jug
- Battery Box

NOTE: The SLX 47 requires a fresh water tank or mini water box. It cannot be direct fed by means of a garden hose water supply.

FUEL HOOK-UP KITS BY VEHICLE

- Dodge Promaster 2015 + 604-86392100
- Ford transit 2015 + 604-86400740
- Chevy (GM) 2003 + 604-790537

INSTALLATION REQUIRMENTS

Prior to starting installation, read the ENTIRE Installation section of this manual. Since the SLX 47 truckmount weighs over 1000 lbs., adhere to the following recommendations prior to installing the unit.

The unit should not be installed in any vehicle rated less than $\frac{3}{4}$ -ton capacity.

DO NOT exceed the vehicles payload capacity, check with vehicle manufacturer for Gross Vehicle Weight Rating (GVWR).

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/ Provincial and Federal laws must be maintained.

If mounting in a trailer, the SLX 47 console must be positioned so that it balances properly with respect to the trailer axle. Ten percent (10%) of the unit's overall weight (w/o accessories or water) should be on the tongue. This unit has an air-cooled engine, and adequate ventilation must be provided to prevent overheating.

Cleanco does not recommend using any type of flooring materials that absorb water. This will result in rust and corrosion of the vehicle floor. Insulation under rubber mats should be removed prior to installation of the unit.

WARNING

This unit must be bolted to the floor of the vehicle by an authorized CLEANCO DISTRIBUTOR

LIFTING THE UNIT INTO THE VEHICLE

Because the SXL 47 console weighs over 1000 lbs., a forklift is necessary to place the unit into the vehicle. Place the forks under the unit, using two "C" clamps; secure the console to the forks.

POSITIONING THE UNIT INTO THE VEHICLE

Vehicle vary in size and openings. All owners have different preferences on where in the vehicle they want their units positioned. Cleanco highly recommends a side door installation for the SLX 47. We do not recommend a rear door installation.

FASTENING DOWN THE UNIT AND WASTE TANK

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

The console and waste tank have pre-drilled mounting holes. Drill 10 holes for mounting of console and 4 holes for mounting waste tank. The console and waste tank can be used as a template for drilling holes.

Using the provided mounting hardware kit:

Insert the $\frac{3}{8}$ " x 3" GR2 hex head bolts with flat washers through the console and waste tank mounting holes. Place the mounting plates onto the bolts and secure with the $\frac{3}{8}$ " flanged nut. Tighten until the console and waste tank are firmly attached to the vehicle floor.

BATTERY CONNECTION

Battery Requirement for SLX 47: 650 cranking amps

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

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.

Attach the black negative (-) battery cable from the ground on the console to the negative (-) terminal on the battery and tighten down the nut.

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.

FUEL REQUIREMENTS

Use unleaded fuel ONLY. Use only fresh, clean unleaded gasoline with a minimum octane rating of 87. **Do Not** use high-octane gasoline. Gasoline with up to, not exceeding 10% ethanol is acceptable.

NOTE: using other gasoline / alcohol blends including E20 and E85 will cause damage to engine components and will void warranty.

NEVER cut or slice any of the vehicle fuel lines during fuel line installation. This will result in fuel leaks and potentially dangerous conditions. Use only approved 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.

ENGINE REQUIREMENTS

Use high quality oil of at least API (American Petroleum Institute) service class SG or higher. **Do not use additives.** High quality 30W oil is recommended. It is never recommended to extend oil change intervals past 200 hours.

Engine Oil Capacity		3.4 L
		3.59 US qts

FUEL KIT, FORD TRANSIT 2015 + 604-86400740

24 April 2020

IS# 867

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THIS KIT IS DESIGNED TO BE USED ON A 2015-2019 FORD TRANSIT 350 VAN WITH A MIDSHP OEM FUEL TANK AND CARBERATED GENERATOR OR SMALL ENGINE. PRIOR TO BEGINNING ANY WORK, CONFIRM THAT THIS IS THE CORRECT VEHICLE AND APPLICATION.

The attached instruction sheets are written with the assumption that the entire installation would be completed without running the engine or moving the vehicle. The installation instructions were also written with the assumption that the installation would be completed the same day that it was started. If either of these assumptions is incorrect, the installer must follow these additional instructions.

If the 1/4" generator draw cap on the OEM sending unit has been removed and, if necessary, the 1 1/8" x 5/16" x 1 1/8" "T" connection is installed into the vehicle's fill hose, the installer must properly seal both items until the supply and, if necessary, the return hoses are connected directly to the generator. Seal the 1/4" OD supply port on the OEM sending unit with the OEM 1/4" generator draw cap. Seal the 5/16" return tube on the TFI "T" properly; no fuel may leak out until installation can be completed.

Caution: If the supply and when the return ports are left unsealed, fuel may leak out of these connections. Fuel leaking on the vehicle chassis and onto the ground could create a fire hazard and requires a hazardous material cleanup.

Caution: If the supply and return ports are left unsealed, the check engine light on the vehicle may illuminate. Many vehicles have the enhanced evaporative leak detection program activated. When the vehicle's engine is off, a leak detection test may occur. If a leak in the fuel system is detected, the check engine light will illuminate.

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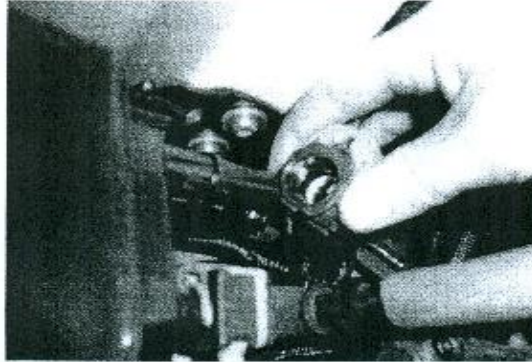
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1. Remove the hose clamp from the fill tube on the fill neck side.



2. Remove the purge line going from the tank to the canister.



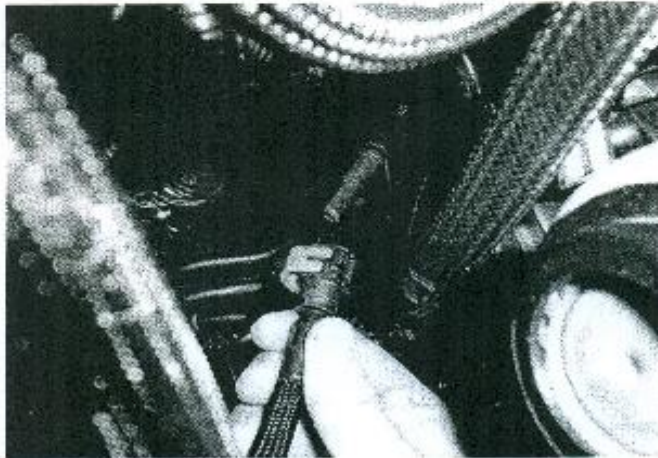
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3. Disconnect the fuel line located in front of the tank on the driver side.



4. Disconnect the vent line coming from the fill neck.



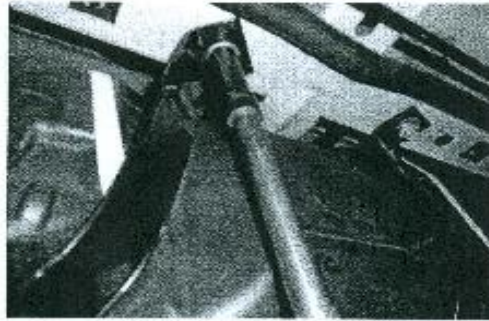
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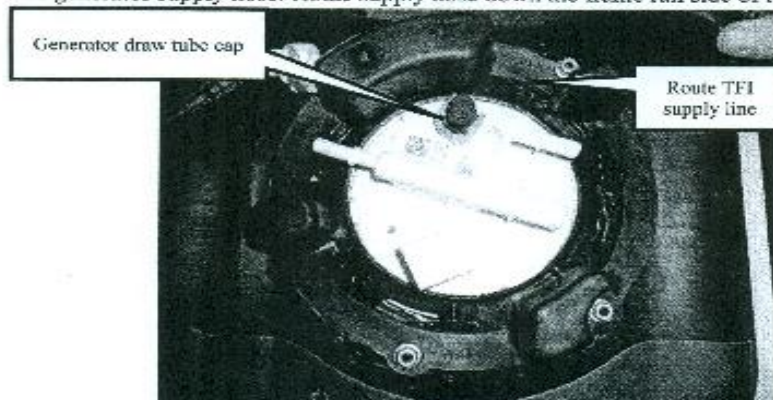
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5. Move a jack or transmission lift into position to support the tank.
6. Using a 13mm socket remove the six tank strap bolts and remove straps.



7. Lower the tank about four inches to allow access to the sending unit electrical on top of the tank. Disconnect the sending unit wire harness connector.
8. Lower tank to gain access to the top of the sending unit. Locate the OEM generator draw tube on the top of the sending unit. Remove the Generator Draw tube cap and connect the TFI generator supply hose. Route supply hose down the frame rail side of tank.



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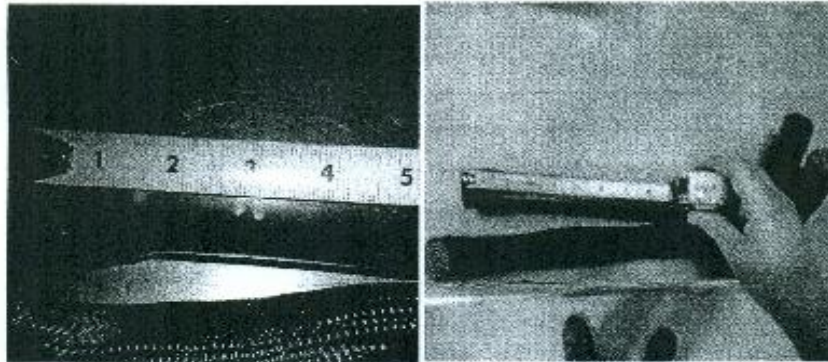
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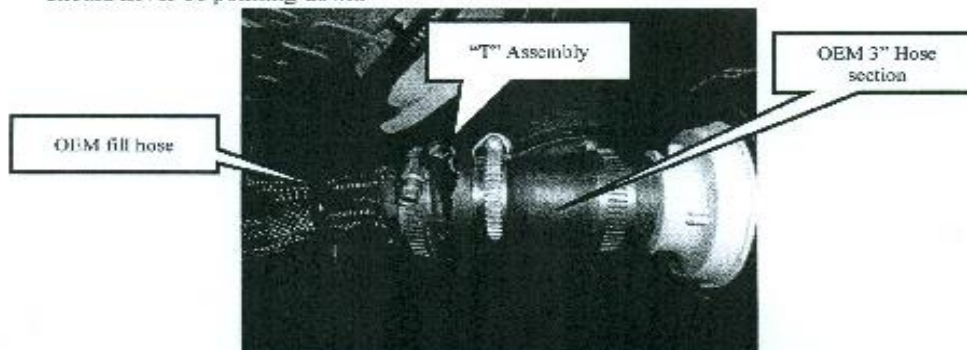
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Caution: If the generator set requires a fuel return line proceed to step 9.
If a return line is not required proceed to step 12.

9. If a return line is required for your generator set, remove the OEM fill hose from the tank. Mark the hose 3" from the flared end. Cut on the mark.



10. Install the "T" assembly and the 3" piece of flared hose previously cut onto the OEM fill hose. Secure "T" using the two supplied gear clamps and the two OEM gear clamps. Reinstall the FN assembly on to the vehicle. Be sure that the 5/16 nipple coming off the "T" is pointing in an upwards direction and towards the rear of the vehicle. The "T" should never be pointing down.



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11. Use the 5/16" hose clamp supplied to connect the 10 foot long unlabeled return hose section to the 5/16" nipple on the "T".
12. Determine where to route the 5/16" I.D. "Generator Supply" hose, and in some applications, the 5/16" I.D. "return" hose. Be sure to route hoses away from any heat source. If the hose(s) must route through a metal compartment, use the provided hose grommet. Using a hole saw, drill a 1 1/4" diameter hole through the panel for the grommet insertion. Route the supply hose and in some applications, the return hose, through the grommet and to the generator set. Note that the supply hose is labeled near its open end.
13. Move the sleeve to the point where the hose passes through the floor or to protect in any other location where the hose may come in contact with a sharp edge, zip tie sleeve in place.
14. Use the provided nylon ties to secure the supply hose, and in some applications, the return hose, away from any hot or sharp object.

Note: There must be at least 6 gallons of fuel in the vehicle's fuel tank before you can test the generator. Refer to the generator operation instructions for startup procedures.

15. Install the provided CARB Executive Order information label on the front door post of the vehicle. Confirm that the label is in a location that won't be damaged when the door closes. A good location is just above or below the OEM recommended tire pressure label.

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Trouble Shooting Guide

**Generator Not Running*

-- **Less than 6 gallons of fuel is in the vehicle's gas tank.**

-- Fuel hose kinked or plugged

Tools Required

*13mm deep socket & ratchet

*7mm socket

*3/4" socket

*6" extension

*Large hose cutter

* 0-50 in-lbs. torque wrench

* 1/4" open end wrench

FUEL KIT, CHEVY (GM) 2003 + 604-790537

January 9, 2019

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THIS KIT IS DESIGNED TO BE USED ON A 2003-2019 GM G-VAN WITH A 31.0 GALLON MIDSHIP FRONT FILL PLASTIC FUEL TANK AND NO LEFT HAND SLIDING DOOR. THIS KIT IS DESIGNED FOR USE WITH A CARBURETED GENERATOR OR A SMALL CARBURATED/EFI ENGINE WITH OR WITHOUT A RETURN PORT. PRIOR TO BEGINNING ANY WORK, CONFIRM THAT THIS IS THE CORRECT VEHICLE AND APPLICATION. NOTE: THE PICTURES TAKEN IN THIS INSTRUCTION SHEET ARE FROM A 2004, 2005, AND 2007 GM G-VAN WITH A MIDSHIP FRONT FILL PLASTIC FUEL TANK.

The attached instruction sheets are written with the assumption that the entire installation would be completed without running the engine or moving the vehicle. The installation instructions were also written with the assumption that the installation would be completed the same day that it was started. If either of these assumptions is incorrect, the installer must follow these additional instructions.

If the transfer tube is installed into the vehicle's fuel fill tube, the installer must properly seal the supply and return tubes on the transfer tube until the supply and return hoses are connected directly to the generator. Use the 5/16" flex fuel caps to seal both the supply and return ports on the transfer tube.

Caution: If the transfer tube is installed into the vehicle's fuel fill tube, and the supply and return ports are left unsealed, fuel may leak out of these connections. Fuel leaking on the vehicle chassis and onto the ground could create a fire hazard and a hazardous material cleanup.

Caution: If the transfer tube is installed into the vehicle's fuel fill tube, and the supply and return ports are left unsealed, the check engine light on the vehicle may illuminate. Many vehicles have the enhanced evaporative leak detection program activated. When the vehicle's engine is operating, or is in the off position, a leak detection test may occur. If a leak in the fuel system is detected, the check engine light will illuminate.

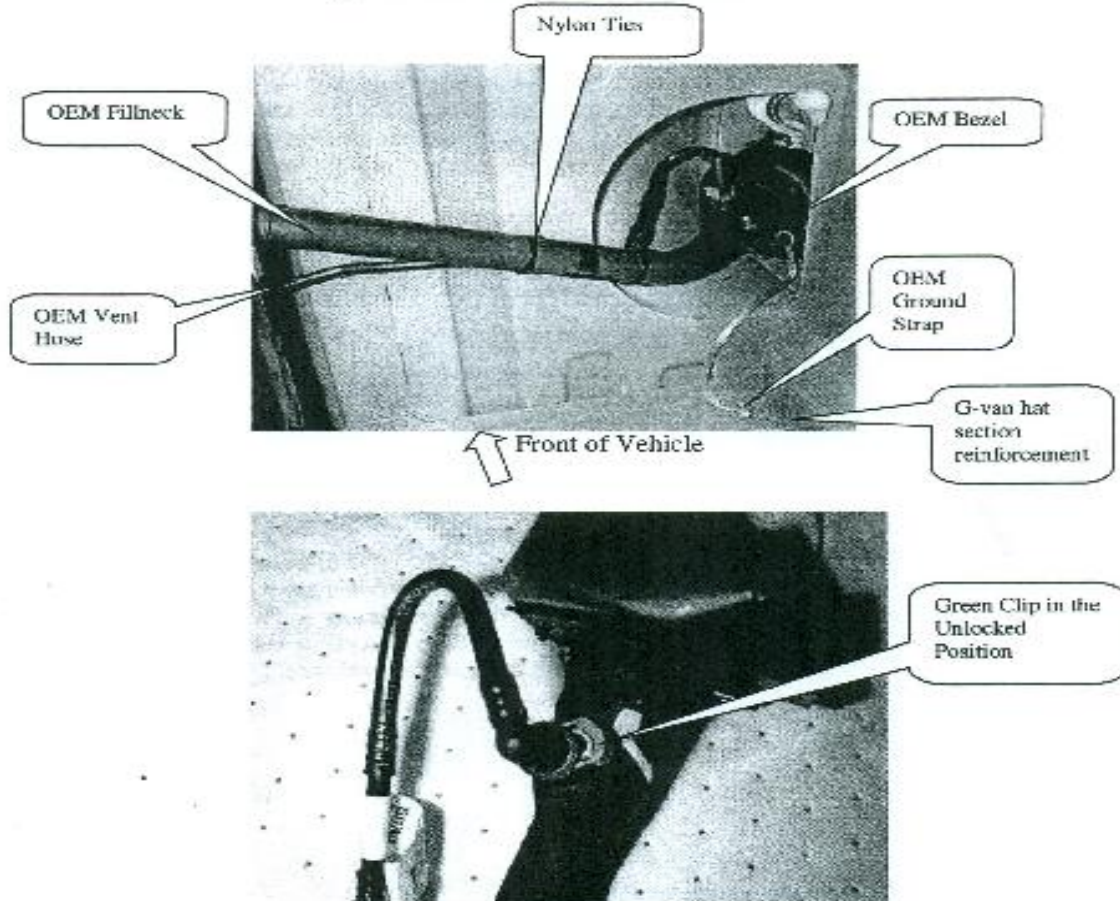
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1. It will be necessary to remove the bezel and the ground strap in order to have enough room to complete the installation. For **2003-2005 models**, use a 7mm socket, and for **2006-2019 models**, use a 10mm socket to remove the OEM hex sheet metal screws that secures the fillneck ground strap to the G-van floor hat section reinforcement. Remove the vent from the fillneck by cutting the nylon ties loose, then unlock the green locking device. It should not come out of the fitting. Pull the fitting from the fillneck.



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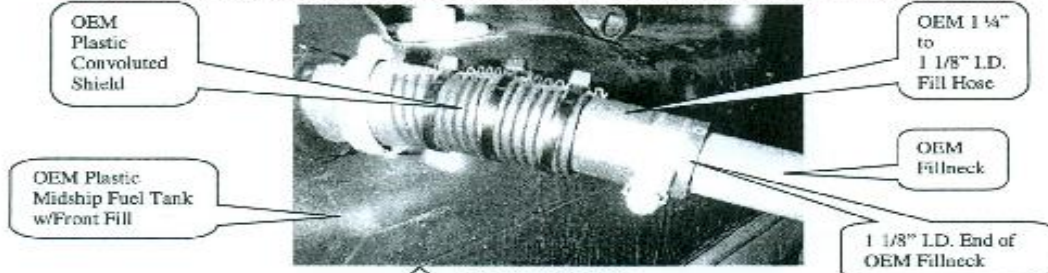
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- For 2003-2005 models, use a 5/16" socket and on 2006-2019 models, use an 8mm socket to loosen the hose clamp that screws the fill hose to the fill tube on the OEM plastic fuel tank. Remove the OEM fillneck and the OEM 1 1/4" to 1 1/8" I.D. fill hose connected to the fuel tank.



- Remove the plastic shield by cutting the nylon ties to expose the 1 1/4" to 1 1/8" I.D. fill hose.



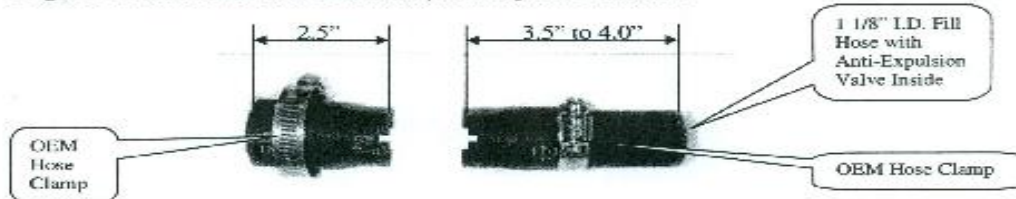
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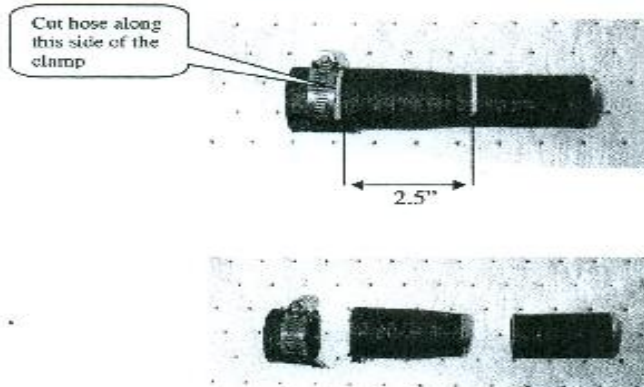
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4. **For 2003-2005 models:** Measure the OEM 1/4" to 1/8" I.D. hose from the edge that attaches to the fuel tank out to 2.5". Using a yellow paint marker, make a plus sign at the 2.5" location and cut the OEM 1/4" to 1/8" I.D. fill hose square. The 2.5" long piece will connect between the OEM upper fillneck and the TFI transfer tube. Discard the 3.5" to 4.0" long hose. Save both of the OEM clamps as they will be reused.



For 2006-2019 models: Cut the OEM 1/4" to 1/8" I.D. hose along the edge of the attached hose clamp. Measure from the end that was just cut out to 2.5". Using a marker, make a plus sign at the 2.5" location and cut the OEM 1/4" to 1/8" I.D. fill hose square. The 2.5" long piece will connect between the OEM upper fillneck and the TFI transfer tube. Discard the two pieces left from the OEM fill hose. Save both of the OEM clamps as they will be reused.



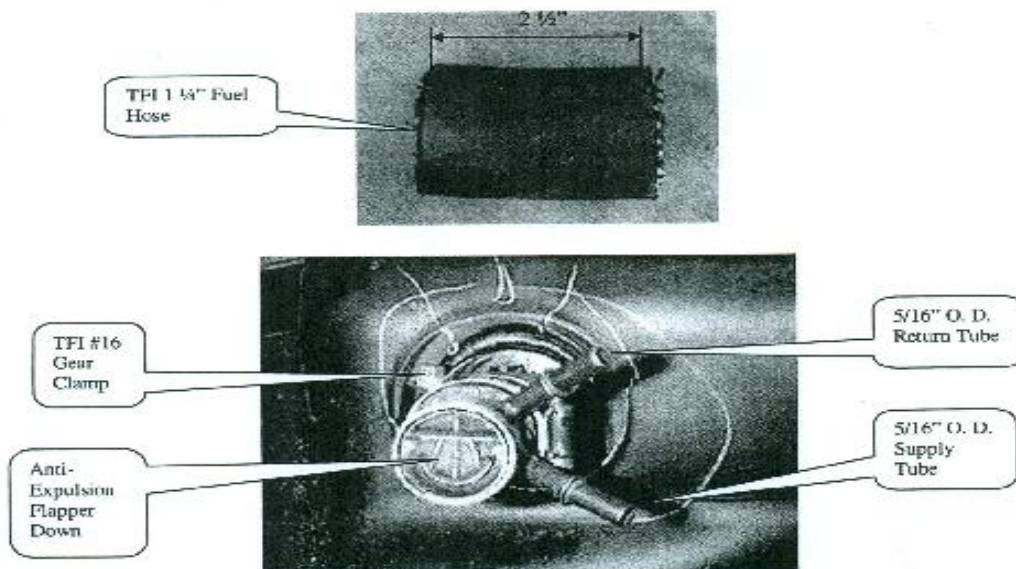
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5. Place the provided 1 1/4" I.D. x 2 1/2" long TFI fill hose onto the OEM tank fill tube. Slide the (2) TFI #16 gear clamps in place.



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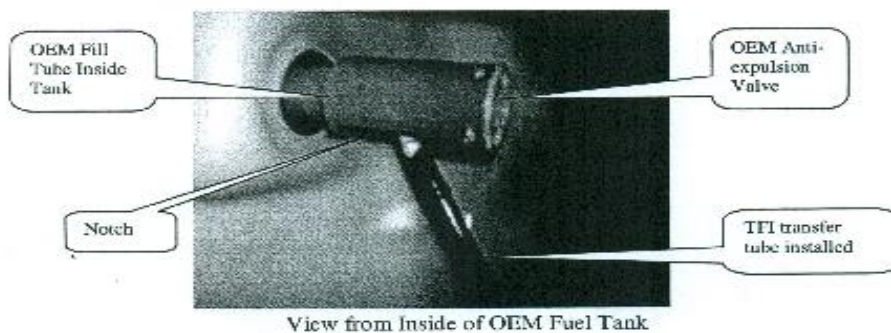
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6. Install the TFI transfer tube assembly into the open end of the TFI 1 1/4" I.D. by 2 1/2" long hose with the supply and return tubes facing to the rear of the vehicle. Secure the two hose clamps. Set the torque at 25 in-lb ± 5 in-lb.



7. The plastic draw hose on the TFI transfer tube assembly has to go down through the notch in the OEM anti-expulsion valve that is located on the inside of the OEM plastic fuel tank.

CAUTION: IF THE PLASTIC DRAW HOSE IS NOT LOCATED IN THE NOTCH, THE HOSE MAY INTERFERE WITH THE OEM SENDING UNIT FLOAT OPERATION.



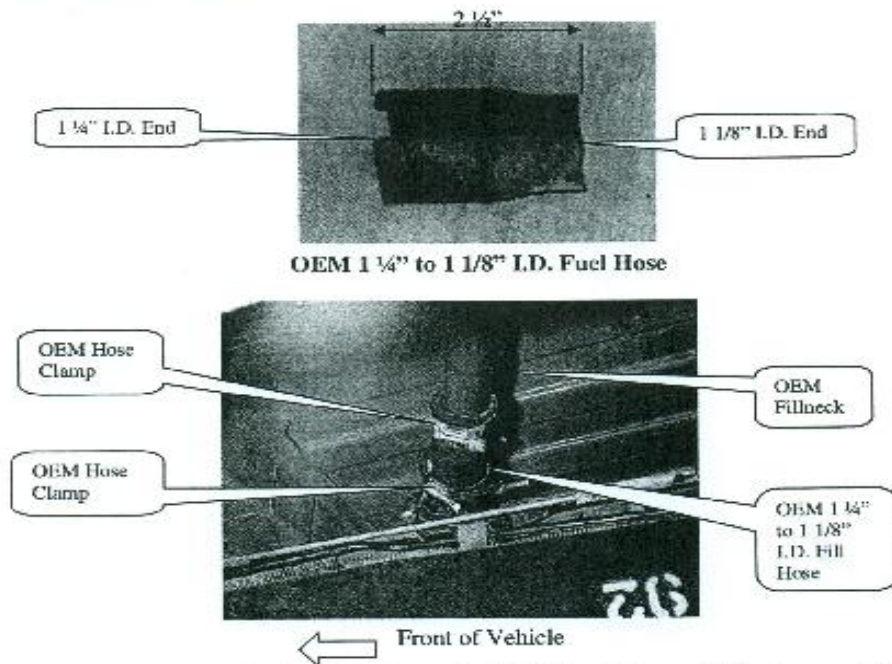
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- Place the OEM 1 1/4" to 1 1/8" I.D. x 2 1/2" long fill hose and the OEM hose clamp on the open end of the TFI transfer tube. Make sure that the anti-expulsion valve flapper faces down so that it is normally closed and will open when fuel is introduced. Set the torque of the clamp at 25 in-lb \pm 5 in-lb.



- Reinstall the OEM fillneck using the smaller OEM hose clamp. Set the torque of the clamp to 25 in-lb \pm 5 in-lb.
- Loosely place the bezel back into its previous location. Locate the fillneck to the bezel, and using a 7mm socket, secure the (3) OEM hex washer head screws. For 2003-2005 models, use a Phillips screwdriver to secure the (3) OEM pan head screws. For 2006-2019 models, use a torx driver to secure the (2) upper torx head screws. Install the bottom fastener in reverse order from what it was removed. Reconnect the vent tube to the bezel and the fuel door pocket housing to the fillneck and secure vent tube to the fillneck with a nylon tie.

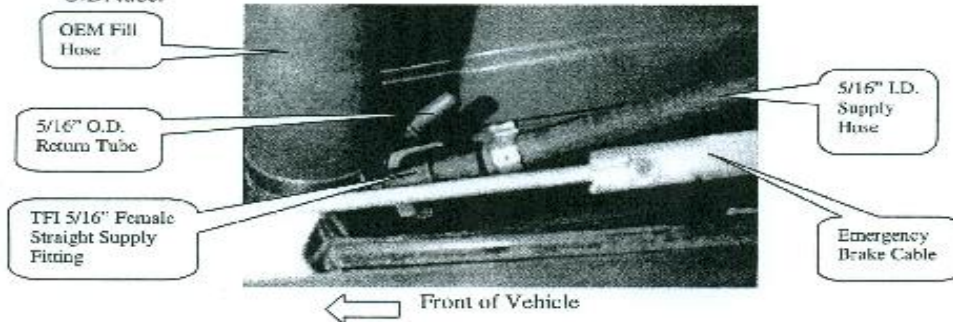
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January 9, 2019

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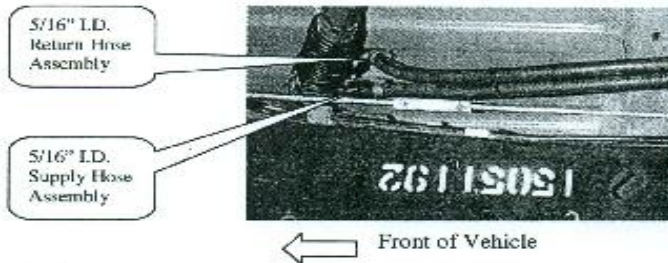
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11. Connect the 5/16" I.D. x 12'0" long supply hose to the bottom port of the TFI transfer tube. An audible click can be heard when the 5/16" female straight fitting seats over the 5/16" O.D. tube.



Note: The 5/16" supply draw tube on the TFI 1 1/4" O.D. transfer tube should be facing to the rear of the vehicle at the 4:30 o'clock position, the 5/16" return tube on the TFI transfer tube will be located at the 1:30 o'clock position.

12. If your application requires a return line, repeat the above procedure for connecting the hose to the TFI transfer tube 5/16" O.D. return port (port at 1:30 position).



13. If your application does not require a return line, connect the provided TFI 5/16" flex fuel cap to the TFI transfer tube 5/16" O.D. return port (port at 1:30 position). Confirm that the 5/16" flex fuel cap is seated over the 5/16" O.D. return port.

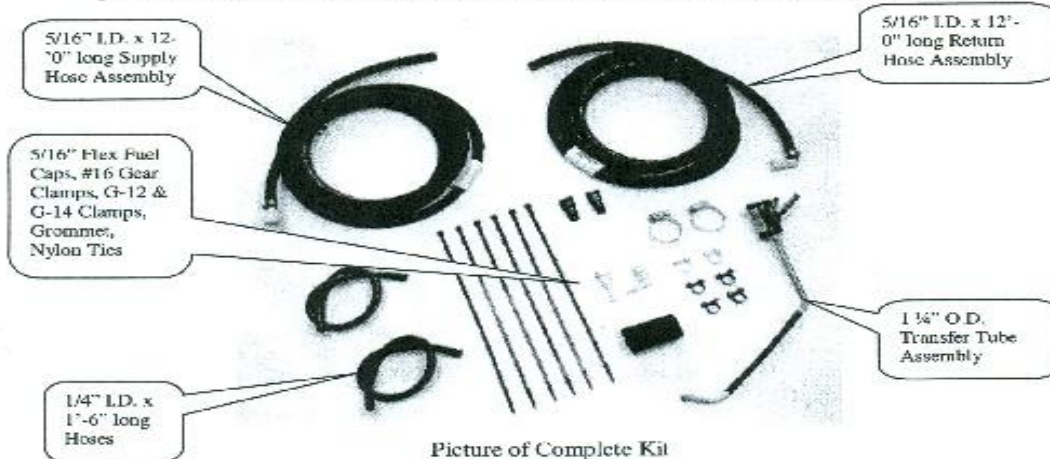
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14. Determine where to route the 5/16" I.D. "supply" hose and in some applications the 5/16" I.D. return hose. If the hose(s) must route through a metal compartment, use the provided rubber grommet. Using a hole saw, drill a 1 1/4" diameter hole through the panel for the grommet insertion. Route the supply hose, and in some applications, the return hose through the grommet and to the generator or small engine. Note that the hoses are marked "supply" and "return" near their open ends.
15. There are 5/16"-1/4" reducers and clamps in the TFI kit bag for the supply and return hoses. If necessary, use the reducers and the TFI 1/4" I.D. hose by 1'-6" long, to connect between the TFI 5/16" ID hose and the generator or small engine. If there is not enough hose for your application, use only SAEJ30R9 hose. **Do not use SAEJ30R7 or R6 hose.** Secure the 1/4" I.D. hose to the reducer and generator inlet with (2) G12 clamps. If necessary, repeat the procedure for the return hose. Tighten the gear clamps. Set the torque at 25 in-lb \pm 5 in-lb.



16. Use the provided nylon ties to secure the supply hose, and in some applications, the return hose, away from any hot or sharp object.

Note: There must be at least 8 gallons of fuel in the vehicle's fuel tank before you can test the generator. Refer to the generator operation instructions for start up procedures.

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17. Install the provided CARB Executive Order information label on the front door post of the vehicle. Confirm that the label is in a location that won't be damaged when the door closes. A good location is just above or below the OEM recommended tire pressure label.

Parts List

1. 1 ¼" O.D. transfer tube assembly
2. #16 gear clamp (2)
3. 5/16" ID x 5/16" Ford Female elbow fitting x 12'-0" long "return" hose assembly
4. 5/16" ID x 5/16" Ford Female straight fitting x 12'-0" long "supply" hose assembly
5. 11 ½" long nylon ties (6)
6. G-12 clamp (4)
7. 1 ¼" I.D. hose x 2 ½" long
8. 5/16" flex fuel cap (2)
9. 5 ½" long nylon ties (6)
10. Hose grommet
11. G-14 Clamp (2)
12. ¼" I.D. hose x 1'-6" long (2)

Trouble Shooting Guide

Generator Not Running

- Less than 8 gallons of fuel is in the vehicle's gas tank.
- Fuel hose kinked or plugged

Tools Required

7mm socket	8mm socket	10mm socket
1 ¼" Hole saw	Hose hook tool	5/16" socket
Large hose cutter	Paint marker	Phillips screwdriver
0-50 in-lb torque wrench	Tape measure	

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THIS KIT IS DESIGNED TO BE USED ON A 2014-17 DODGE RAM PROMASTER VAN WITH A MIDSHIP OEM FUEL TANK AND A CARBURATED OR DIESEL GENERATOR OR SMALL ENGINE. PRIOR TO BEGINNING ANY WORK, CONFIRM THAT THIS IS THE CORRECT VEHICLE AND APPLICATION.

The attached instruction sheets are written with the assumption that the entire installation would be completed without running the engine or moving the vehicle. The installation instructions were also written with the assumption that the installation would be completed the same day that it was started. If either of these assumptions is incorrect, the installer must follow these additional instructions.

If the 5/16" generator draw cap on the OEM sending unit has been removed and, if necessary, the 1 1/8" x 5/16" x 1 1/8" "T" connection is installed into the vehicle's fill hose, the installer must properly seal both items until the supply and, if necessary, the return hoses are connected directly to the generator. Seal the 5/16" OD supply port on the OEM sending unit with the OEM 5/16" generator draw cap. Seal the 5/16" return tube on the TFI "T" properly; no fuel may leak out until installation can be completed.



Caution: If the supply and, when required, the return ports are left unsealed, fuel may leak out of these connections. Fuel leaking on the vehicle chassis and onto the ground could create a fire hazard and a hazardous material cleanup.



Caution: If the supply and return ports are left unsealed, the check engine light on the vehicle may illuminate. Many vehicles have the enhanced evaporative leak detection program activated. When the vehicle's engine is off, a leak detection test may occur. If a leak in the fuel system is detected, the check engine light will illuminate.

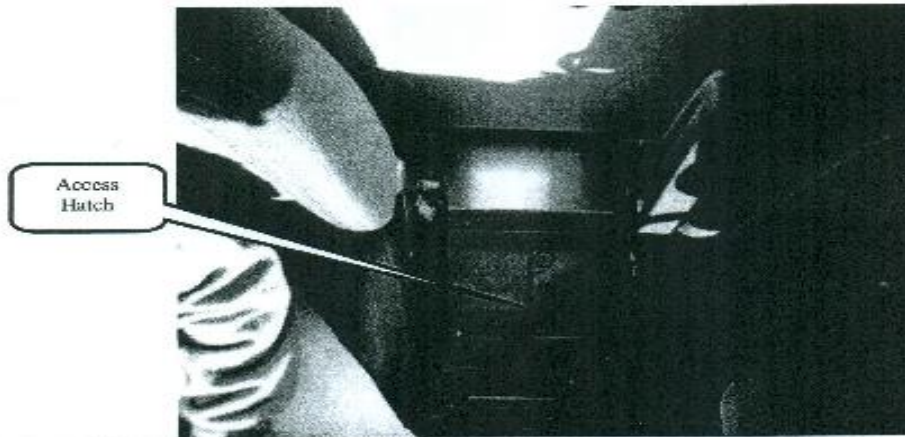
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1. Locate the sending unit access hatch between the driver and passenger seats.



2. Open the hatch by turning latches in the corners as shown.



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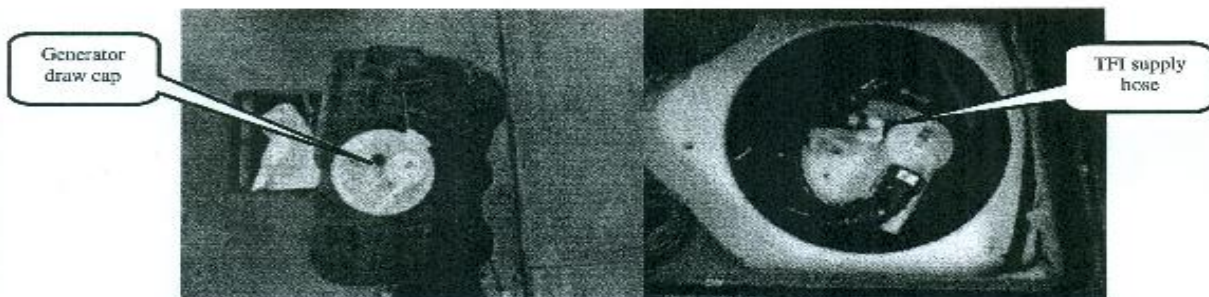
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3. Once the hatch is removed you will need to remove the black cover plate to gain access to the top of the OEM sending unit.



4. Locate the hose assembly from the TFI kit labeled "Pump Supply". Route the end with the straight plastic fitting down the back of the tank so that it hangs down under the vehicle. This end will be connected to the pump inlet later on. Locate the OEM generator draw cap. Remove cap and connect the 90° fitting on the TFI "Pump Supply" hose to port as shown below.



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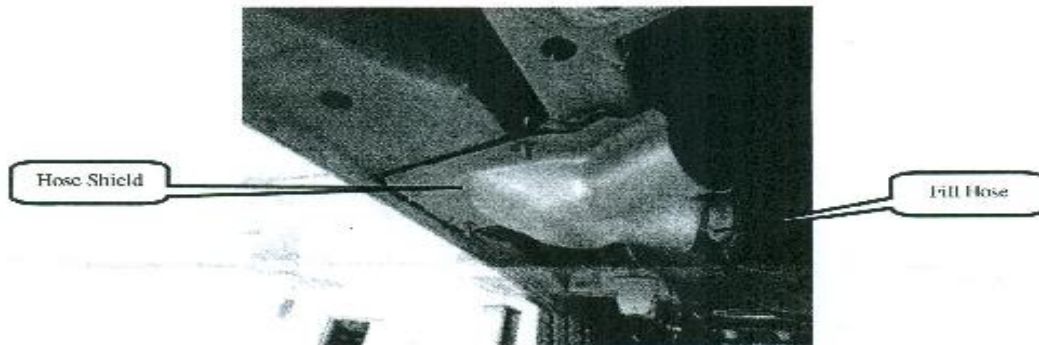
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5. If your application requires a return then follow steps 6-12.

If your application does not require a return then skip to step 13.

Return Tee Installation:

6. To install the "T" you will need to gain access to the fill hose assembly by removing the hose shield shown below.



7. To remove the shield you will need to remove the four retainer clips that hold the shield in place. Use a small screw driver to rotate the clips counter clockwise to remove them.



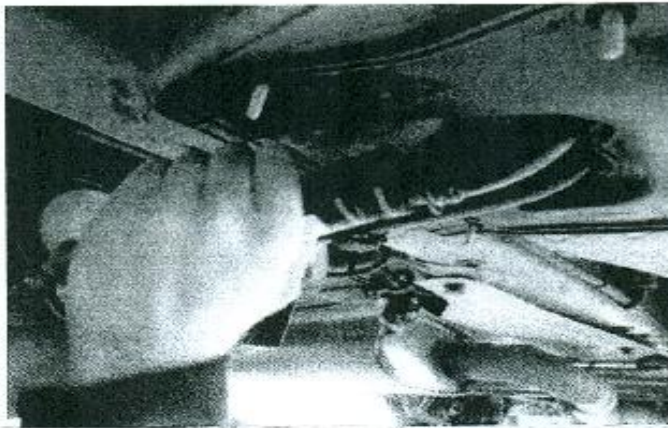
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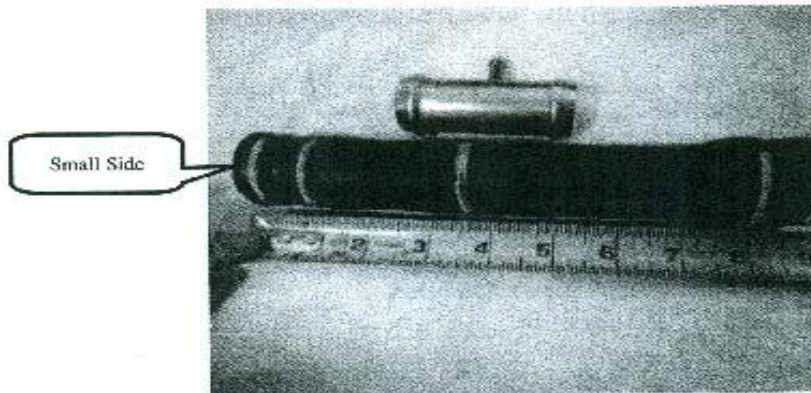
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8. Once the shield is removed, loosen the 2 clamps on the fill hose that runs between the steel fill neck and tank. Remove the hose.



9. Mark the hose 3.5 inches from the small side and cut. Add the "T" into the fill hose using the two hose clamps supplied in the TFI kit.



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10. Reinstall the fill hose and "T" assembly into the vehicle using the OEM hose clamps removed previously. Be sure that the 5/16 nipple coming off the "T" is pointing in a upward direction and towards the rear of the vehicle. The "T" should never be pointing down.
11. Use the 5/16 hose clamp supplied to connect the 10 foot long unlabeled hose section to the 5/16" nipple on the "T".
12. Reinstall the Fill neck shield.
13. Determine where to route the 5/16" I.D. "Supply" hose, **and in some applications, the 5/16" ID "return" hose**. Be sure to route hoses away from any heat source. If the hose(s) must route through a metal compartment, use the provided hose grommet. Using a hole saw, drill a 1 1/4" diameter hole through the panel for the grommet insertion. Route the supply hose **and in some applications, the return hose**, through the grommet and to the generator set. Note that the supply hose is labeled near its open end.
14. Move the sleeving to the point where the hose passes through the floor or to protect in any other location where the hose may come in contact with a sharp edge. Zip tie sleeving in place
15. Use the provided nylon ties to secure the supply hose, **and in some applications, the return hose**, away from any hot or sharp object.
Note: There must be at least 6 gallons of fuel in the vehicle's fuel tank before you can test the generator. Refer to the generator operation instructions for startup procedures.
16. Install the provided CARB Executive Order information label on the front door post of the vehicle. Confirm that the label is in a location that won't be damaged when the door closes. A good location is just above or below the OEM recommended tire pressure label.

Trouble Shooting Guide

Generator Not Running

- **Less than 6 gallons of fuel is in the vehicle's gas tank.**
- Fuel hose kinked or plugged

Tools Required

7mm socket	Large hose cutter
6mm socket	0-50 in-lbs torque wrench
Diagonal cutters	

GENERAL INFORMATION

The Cleanco SLX 47 Truckmount has been designed for the professional cleaner who demands a high performance-cleaning unit. Dependable performance is the guiding principal in the design and construction of the Cleanco SLX 47. Although the Cleanco SLX 47 is designed with simplicity in mind, this truckmounted carpet cleaning plant has many functions that perform simultaneously.

- Engine has to run at a continuous RPM.
- High Pressure water pump provides steady pressure at the proper flow for cleaning.
- Vacuum Blower has to pull air and soiled water back from the site.
- Cleaning solution has to be injected into the water flow at the right concentration.
- Heating system must deliver and maintain proper heat.
- The vacuum recovery tank stores soiled water for proper disposal.

This manual contains operation instructions as well as information required for proper maintenance, adjustments, and repair of this unit. To assist with proper diagnosis of a problem, a general troubleshooting has been included for your convenience.

LOCAL WATER CONDITIONS

The quality of water varies greatly throughout North America. This can influence the reliability and efficiency of your equipment. Many areas have an excess of minerals in the water, which results in what is known as hard water. These minerals tend to adhere to the inside of heat exchangers and other parts of the machines causing damage and loss of cleaning effectiveness.

Cleaning effectiveness and equipment life is increased when water softeners are used in hard water areas. The low cost of water softeners is more than made up for by the increased life of machine parts and cleaning efficiency.

WASTE WATER DISPOSAL

There are laws throughout North America that prohibit the dumping of soiled water from carpet cleaning equipment in any place but a sanitary treatment system.

The water recovered into your unit's recovery tank contains materials such as detergent residue and many different soil contaminants removed from the carpet you have cleaned. These materials must be processed before they are safe to re-enter our streams, rivers and reservoirs.

AS PER FEDERAL, STATE AND LOCAL LAWS, DO NOT DISPOSE OF WASTE WATER INTO STORM DRAINS, GUTTERS, STREAMS, RESERVOIRS, ETC.

CLEANING SOLUTIONS & CLEANING

Your Cleanco SLX 47 has been designed with the latest technology to produce the highest quality cleaning results possible. However, it is only one of many tools of the carpet cleaning trade, and can produce only as good as the person operating it. There are no short cuts to quality. It takes time, cleaning knowledge, and the proper use of quality cleaning solutions.

Cleanco recommends Esteam Cleaning Systems brand name for use in your Cleanco SLX 47. Also, be sure to follow directions of all cleaning solutions, to obtain quality results and for safety. The improper use of cleaning solutions in your Cleanco SLX 47 can cause serious damage to the plumbing system, high-pressure pump, and heat exchangers. (Cleanco

does not recommend running products through your unit such as solvents, or grease removers with a high concentration of solvents).

CLEANING WAND PROCEDURE

To have a quality cleaning result, correct wand movement is of the utmost importance. Failure to take time and extra care can result in an unhappy client.

Always move the cleaning wand in a smooth forward and backward motion. Apply slight pressure on the forward stroke while injecting cleaning solution onto the carpet. Then on the backstroke towards yourself again apply slight pressure on the wand and inject and vacuum cleaning solution. Continue this method over-lapping each forward and backstroke, for about a three to four foot square area. Once the three square foot area has been completed, return back over the same area-utilizing vacuum only. Moving across then clean and vacuum the next three to four square feet and again repeating the extra vacuum pass. A good rule to remember is for every one wet pass, two dry (vacuum) passes are required. Failure to adopt good wand procedures can result in streaking, over wetting, browning and longer drying times. Over wetting not only leaves a bad impression with your client but may also require an extra trip back to correct annoying problems such as browning. There are several things that could cause over wetting:

1. Not enough vacuum strokes, or incorrect wand procedures.
2. Clogged vacuum blower filter.
3. Clogged lint basket filter.
4. Vacuum tank not sealed properly.
5. Obstruction in the vacuum hose, or kink in the vacuum hose.
6. Vacuum tank drain valve partially open.
7. Cleaning a heavily foam-saturated carpet without defoamer.

OPERATING INSTRUCTIONS

NOTE: Before operating the unit, make sure you are in a well-ventilated area. Exhaust fumes from the vehicle contain carbon monoxide and are hazardous to your health and your client's health. **Do not operate the unit or the vehicle near any building doorways, windows, or openings of any kind.**

1. Check your fuel gauge to ensure you have enough fuel for the job.
2. Check to make sure you have an adequate amount of fresh water in your fresh water tank to complete the entire job. If not, fill fresh water tank prior to starting the job.
3. Check your chemical jug to ensure that you have enough concentrated solution for the required job. If not, mix and fill the chemical jug with the desired cleaning solution.
4. Lay out all hoses required. When connecting hoses start from the furthest point to be cleaned and work back towards the unit. This will ensure that you have the proper length required. Once at the Cleanco SLX47 unit, connect the high-pressure hose to the Red for carpet cleaning or Yellow quick disconnect for upholstery cleaning on the front panel.
5. Do not connect vacuum hose to vacuum port at this point; this will occur after unit is started.

START UP

1. Make sure the van is in the park position and the emergency brake is set, and turn off vehicle engine.
2. Pull the engine choke out, turn the key switch to the start position and hold until the engine starts. Immediately push the choke cable in and let the engine idle until warmed up (do not start the unit with the throttle out at full speed, always start the unit and let it warm up at idle speed). Once warmed up throttle the engine up to the desired speed.
3. Turn on the high-pressure pump switch to the "ON" position and set the water pressure to the desired pressure.
4. Check the thermostat for the desired cleaning water temperature. Most cleaners run their unit from 180- 210 degrees depending on the type of surface being cleaned. You do not need to run the unit at "full" throttle to get the desired heat from the unit. For example; to run at 200 degrees, you only need to run the engine at 2400-2600 RPM.
5. With the cleaning tool attached, adjust the chemical metering system by turning the chemical metering knob counter clockwise until the float ball in the chemical meter sits at 2 or 3 GPH. (you will need to have water flow through the

machine (tool keyed “on” for it to meter chemical properly). Please note, water pressure and volume will change the chemical metering slightly. It is important to set the chemical metering with the specific tool being used.

6. Standard carpet cleaning pressures should be between 350 to 500 psi. Upholstery pressures should be between a minimum of 200 psi and throttle set at 2000 RPM.
7. Connect the vacuum hose to the unit and the male end of the pressure hose to the carpet wand or tool being used.
8. You are now ready to start cleaning.

NOTE: Unit will shut-down if water temperature at heat exchanger exceeds 260° F. This is a safety shut-off to protect the unit from over heating. The machine will automatically shut down when it reaches full capacity due to the high-level float switch located inside the wastewater recovery tank. When this occurs, empty the recovery tank at an approved disposal site and flush. To save time on emptying recovery tanks Cleanco recommends that you have THE Cleanco TM External Pump Out (APO) installed on your recovery tank. Please note – Foam can and will damage your machine over time. A proper defoamer should be on hand at all times.

SHUT DOWN

1. Throttle the engine down to a low idle.
2. Lay vacuum hoses out in order for all moisture to be removed from hoses. This prevents spillage of any soiled water in your vehicle when storing hoses.
3. Turn the water temperature thermostat to its lowest setting and run the unit for 3 minutes, this will allow cool water to run through the unit.
4. Turn the high-pressure pump switch to the “OFF” position.
5. Disconnect all vacuum and high-pressure hose and place them in the van. Also, place the carpet wand and any tools that were on the job site into the van.
6. With the engine at low idle and no hoses connected depress the blower lube valve button and hold for 4 seconds.
7. Turn the unit off.
8. Remove the lift out lint basket located in the recovery tank, clean, and replace the lint basket back into the recovery tank.
9. Always drain the recovery tank at an approved disposal site.

DE-FLOODING OPERATIONS

De-flooding operations involve removal of water from carpet and flooring. This differs from normal cleaning operations in that no water or solution is required. A Cleanco TM External Pump Out is recommended for all de-flooding operations due to the large amount of water removal often required.

1. Turn down Thermostat to 70 degrees to activate solenoid.
2. Turn off Chemical Meter.
3. Start unit and set throttle at 2850 PRM
4. Turn pump switch on.
5. Set pump pressure at 300 PSI.

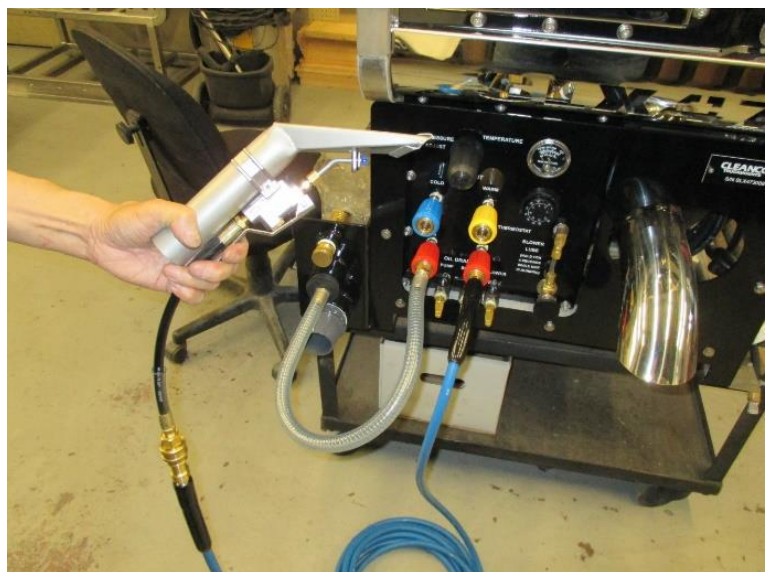
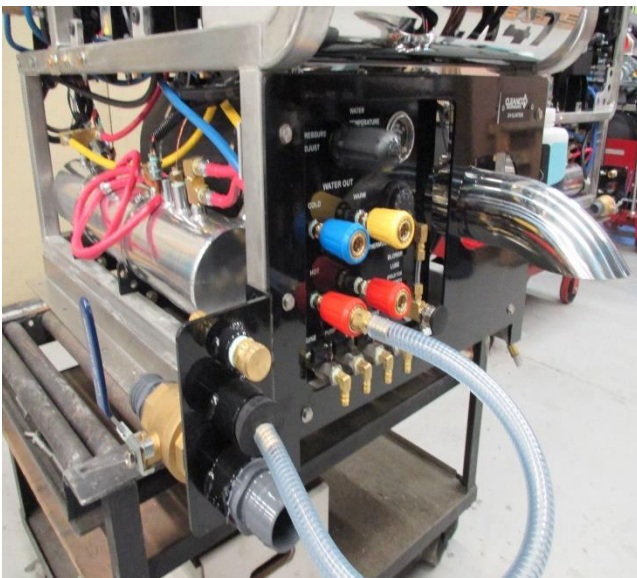
Remember, it is very important to make sure you have an adequate water supply to the machine. Failure to allow the machine to cool while performing water extraction will cause excessive heat and damage to the system and void your warranty.

If water temperature temperatures exceed 260° F the unit will shut-down, this is a built in safety feature. The unit will require to cool down for 15 to 20 minutes before it will start again.

FREEZE GUARD PROCEDURE

Note: The purpose behind this method is to evacuate the system of water and solution instead of filling all the water carrying cavities with antifreeze. This method will remove 95% or more thus even if it freezes there will be no damage.

1. Drain fresh water tank.
2. Remove chemical jug from unit and store in warm place.
3. Remove quick connect from fresh water tank to the Cat pump.
4. Connect the Freeze Guard Hose Assembly to either one of the Red Panel quick connects and the other end into the vacuum inlet on the wing panel.
5. Start the unit on low idle and turn on the pump clutch switch.
6. Open the Chemical Flow Meter about 2 – 3 turns.
7. Turn the Thermostat knob to the off position.
8. Observe the fluid being drawn through the Freeze Guard Hose, when this is completed and your Chemical Flow Meter is empty, turn off Chemical Flow Meter.
9. Disconnect the Freeze Guard Hose and insert into the next Red quick connect and follow the same procedure until no visible fluid is achieved. Repeat the process for the Yellow and Blue quick connects.
10. With the unit evacuated, now is the time to evacuate the solution hoses and tools. Connect the Freeze Guard Hose to either Red quick connect and the solution hose to the other Red quick connect. Attach the toll or wand to the end of the solution hose. With the valve depressed to open the circuit all solution will be drawn into the recovery tank. Do this procedure for all on board tools.
11. Finally empty recovery tank as per local laws in a sanitary disposal site.



WATER FLOW SYSTEM

The SLX 47 water flow system has been designed to be simple and trouble free. The incoming water flows from the fresh water tank through the incoming water filter, then through the chemical injector. As the water passes through the chemical injector, it automatically picks up the predetermined quantity of cleaning solution.

The predetermined quantity of cleaning solution is determined by the chemical flow meter located on the front panel. With this advanced chemical injector, the chemical flow is injected only when there is a demand for water.

Once the water has been injected with the correct amount of chemical, it then passes through the high-pressure pump, where it is pressurized. The pressure is then controlled by the pressure regulator, which is fully adjustable from the front panel.

After the water flow exits the pressure regulator, it then passes through the coolant pre-heat heat exchanger where the water is pre-heated; the pre-heated water then passes through the ceramic-coated exhaust heat exchanger for additional heat. The water temperature is determined by the adjustable temperature control knob on the front panel and engine speed. The higher the engine speed, the higher the water temperature.

The water then exits the exhaust heat exchanger and continues through the plumbing system to the high pressure quick connects located on the front panel.

NOTE: The water flow plumbing system may need to be flushed with de-scaler periodically to prevent abnormal chemical or hard water build-up. This can be done by removing the clear hose from the chemical jug and inserting it into a 1-gallon container of descaler. Then open the chemical flow meter to the setting of 10. With the unit running spray, the wand until the 1 gallon of descaler is empty. Then repeat the process with 1 gallon of water to flush the descaler out of the lines. Once completed, turn the chemical meter in the off position and run the unit for an additional 5 minutes to ensure that all of the descaler is rinsed out of the unit.

If you are in an area with extreme hard water, it is suggested to use Coil Cleaner and flush entire water system on a regular basis. For information on how to use Coil Cleaner, contact your nearest Cleanco distributor.

HIGH PRESSURE PUMP

The SLX 47 are equipped with a state of the art Cat plunger pump, which includes Hot and Dry seals. Cat pumps are built to last, with three ceramic plungers, stainless steel valves and oil-cooled crankshaft system.

With the Cat pump, you have the ability of performing carpet cleaning and power washing WITH HEAT. With pressure output ranging from 30 psi to 2000 psi. If 2000 psi is exceeded, this can cause damage to the packings and retaining seals in the pump, and the heat exchangers.

Your Cleanco Distributor will preset your SLX 47 unit's pump at a pressure rating between 300 psi and 500 psi during installation. Cleanco has found this pressure range to be the optimal setting for carpet cleaning. When cleaning upholstery a simple adjustment of the pressure regulator on the front panel will lower your pressure to 200 psi, which is recommended for upholstery cleaning and lowering the engine speed to 2000 PRM. Use either of the Red quick connects which is HOT, Yellow is WARM and Blue is COLD.

When power washing you must remember that, your SLX 47 is set up for carpet cleaning. Even though your Triplex pump has maximum rating of 2500 psi, this pump is set up for carpet cleaning will give you maximum 2000 psi for power washing. With 2000 psi and the high heat from the Cleanco heat exchangers, it makes power washing simple.

VACUUM SYSTEM

The vacuum system is a Roots Whispair Universal DSL 47 (SLX47) positive displacement rotary lobe blower. This high performance blower provides incredible airflow and water lift making sure carpets are left as dry as possible. The blower is factory set for maximum efficiency and longevity. The performance and life of the blower greatly depends on the care and proper maintenance it receives.

Due to the close tolerances of the internal lobes and the housing of the blower, solid objects entering the inlet of the blower can damage the interior.

To prevent this, Cleanco installs stainless steel filter screens on the vacuum inlet inside the vacuum recovery tank. The stainless steel filters should be removed daily or after every job and cleaned. When reinstalling the filter only thread filter on until finger tight. The lint basket should be removed and cleaned after every job. If lint basket is not clean, it will affect the performance of your machine. The vacuum relief valve needs to be checked bi-weekly to ensure proper functionality.

The blower is factory set for maximum efficiency and longevity at 13"Hg. Never exceed 15"Hg on the gauge. Damage may occur to the system if 15"Hg is exceeded.

For further information on the Roots Vacuum Blower, refer to the enclosed Roots Universal Blower Manual.

ELECTRICAL SYSTEM

The Cleanco Compact electrical system has been specifically designed with simplicity in mind. There are multiple wiring harness that connect all operations of the unit. This harness is complete with specially designed plug ends, which enable service centers easy fuse panel access and service if necessary. All wiring is coated to protect against corrosion from moisture or water spillage.

NOTE: Whenever working on wiring system power side of units battery should be disconnected for safety.

SLX 47 HEAT EXCHANGERS

The Cleanco SLX 47 "MAXI HEAT" heat exchangers are custom built by Cleanco to meet our exacting standards for performance. The heat transfer is quick and efficient, with no potentially damaging heat swings or peaks. The Cleanco SLX 47 pre-heat, heat exchangers are designed with a burst rating pressure of 6000 psi, and operating pressures up to 3000 psi., which pre-heats the incoming water while cooling the engine through the heat exchanger. The pre-heated water then passes through the ceramic-coated exhaust heat exchanger boosting the water temperature to a consistent high temperature, which can be controlled by the temperature control valve on the front panel. The exchangers require little maintenance other than an occasional coil flush to remove hard water residues and scale.

SLX 47 REAR BEARING SUPPORT

The Hayes style engine rear bearing support is a precision engineered and balanced system that transfers power from the unit's engine to the vacuum and pressure system, which drives the vacuum and high-pressure pump. This unique system eliminates any side torque generated from the vacuum blower and pump. An outer casing with a large bearing protects the engine shaft and engine bearing. The Hayes system is designed to withstand extremes of heat and friction without breaking down. The Hayes system has two grease zerk fittings one at the front of the shaft and one at the top of the bearing. These two bearings require greasing every 250 hours of operation. The recommended grease to be used to grease the bearings is SKF LGMT 3/0.4 bearing grease.



SLX 47 UPPER FRONT PANEL

HOUR / TACHOMETER METER: Reads the operating time of the unit when the unit is turned off and the engine speed when the engine is running.

IGNITION SWITCH: The engine ignition switch provides ignition to start the engine when the key is inserted and turned.

CHOKE CONTROL: The engine choke control knob pull to open the choke for engine ignition.

THROTTLE CONTROL: The engine throttle control knob. Turn counter-clockwise to open the throttle (faster speed), clockwise to close the throttle (slower speed). For emergency slow-down, depress the center button and push the throttle control in.

PUMP SWITCH: The pump switch turns the pressure pump ON and OFF.

APO SWITCH: Is a pre-wired switch for the optional Cleanco TM External Pump Out). Part number 237-040.

AUXILIARY SWITCH: Is a pre-wired switch used to turn an auxiliary item on or off, if an optional item, such as a lighting kit has been installed.

WATER PRESSURE GAUGE: This gauge registers the amount of pressure in the water system.

VACUUM GAUGE: This gauge indicates, in inches of mercury, how much vacuum the system is producing.

CHEMICAL METER: Allows you to see and adjust the amount of chemical being injected into the cleaning solution.

OIL VIEW LINES: Indicates levels of oil in the vacuum blower and water pump. They are "indicators only". Vehicle must be on a level surface.



SLX 47 LOWER FRONT PANEL

TEMPERATURE GAUGE: This gauge measures the temperature of the cleaning solution as it exits the machine, and acts as a safety shut-down if the water temperature exceeds 260 degrees.

SOLUTION TEMPERATURE CONTROL DIAL: This thermostat allows operator to control temperature by adjusting the valve from hot to cold.

PRESSURE CONTROL REGULATOR: The pressure regulator sets the pressure of the cleaning solution system. This spring-loaded valve can be adjusted up or down setting the pressure of the unit by turning the knob clockwise to increase pressure or turning it counter-clockwise to decrease the pressure. This valve must be maintained in accordance with the maintenance table in this manual.

SOLUTION OUTLETS: The pressure outlets are where you connect your solution hose. The SLX 47 has 4 outlets, 2 RED (hot) outlets for 2 separate solution hoses, or 1 YELLOW (warm) for upholstery cleaning, or 1 BLUE (cold) for power washing.

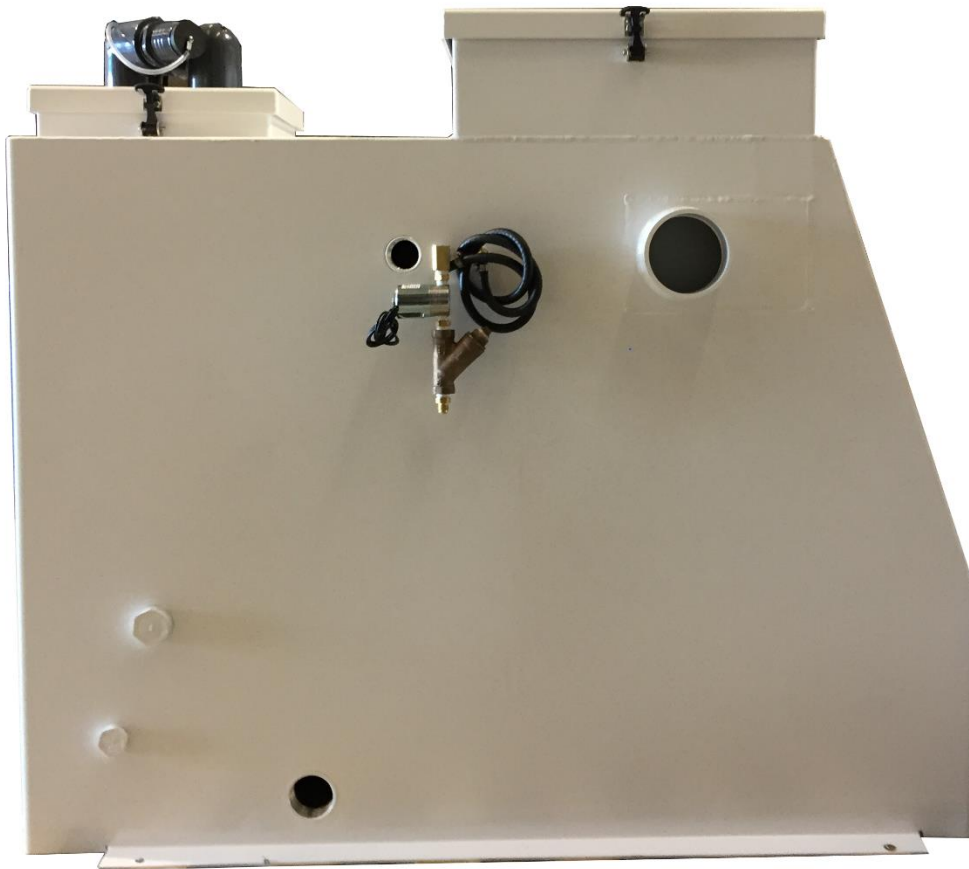
BLOWER LUBE VALVE: The blower lube valve is used to deliver lubrication to the vacuum blower; this prevents rust from building up inside the vacuum blower. At the end of each job depress the blower lube button and hold for 4 seconds while the unit is running.

OIL DRAINS PORTS: This unit has 4 oil drain ports to make it easy for draining engine oil, blower oil, and pump oil for regular maintenance serving.

EXHAUST OUTLET: This is where the engine and blower exhaust from the unit. Exhaust fumes contain carbon monoxide, which is an odorless deadly poison that can cause severe injury or fatality. DO NOT run this unit in an enclosed area or with vehicle doors closed. DO NOT operate this unit where the exhaust may enter any building doorway, window, vent, or opening of any type.

RECOVERY TANK

The recovery tank of the Cleanco SLX 47 incorporates many unique features to protect your equipment, and save you time. The tank is made from 3/16ths powdered coated marine aluminum and contains several baffles to insure strength and durability. The recovery tank holds 90 U.S. gallons of soiled water solution, giving you longer cleaning intervals between dumping. The safety and convenience features built into the recovery tank include a high water shut-off switch, a built-in lint basket, sloped tank bottom and stainless steel blower protection filters. The high water shut-off is located at the highest point in the recovery tank, giving you full usage of the tanks capacity. The high water shut-off cuts the power to the engine fuel solenoid when the tank is full, protecting the vacuum blower from damage. The lint basket prolongs the life of the air filtration system, and makes draining soiled water easier with less clogging and debris. The stainless steel blower protection filters guard against any small debris entering into the blower chamber, which could damage the blower itself. The inline vacuum breaker adds years to the vacuum blowers life by reducing stress caused plugged filters and limited air intake. The recovery tank also has two access lids for easy access to the lint basket and the stainless steel blower protection filters. These filters require regular cleaning on a daily basis as a minimum.



MAINTENANCE SLX 47

To avoid costly repairs and downtime, it is imperative to develop and practice good maintenance procedures. These procedures must be performed on a daily, weekly, monthly, quarterly and bi-annual schedule.

DAILY

- Check engine oil level. (2) Fill to proper level.
- Check high-pressure pump oil level. (3) fill to proper level
- Check vacuum blower oil level. Fill to proper level. Do not overfill. (1)
- Ensure to press blower lube button for 3 second at the end of each job with unit running.
- Clean vacuum tank lint basket. **(Should be cleaned after every job)**
- Inspect and clean stainless steel blower filters, replace if required (1).
- Rinse out vacuum hoses with fresh water.
- If your unit has an APO inspect and remove any debris or sediment. (1)
- Winterize system if necessary.

WEEKLY

- Blower Speed. (actual reading)
- Vacuum Gauge. (actual reading)
- Check engine RPM with unit running at high speed, setting 2850 RPM max speed
- Clean wand and inspect for clogged jets.
- Clean recovery tank thoroughly with high-pressure water.
- Hour Meter. (actual reading)
- Temperature Gauge. (actual reading)
- Check blower belts. (adjust if necessary)
- Check high-pressure pump belt. (adjust if necessary)
- Clean in-coming water filter.
- Flush chemical system with 50/50 mixture of vinegar and water.
- Check for leaks around the entire unit, check wires and hoses for wear.
- Inspect and clean float switches in waste tank

MONTHLY

- Check engine air cleaner for damaged, dirty, or loose parts.
- Inspect drive belts for wear. Replace as needed.
- Check battery fluid level and battery terminals. (1)
- Check all fastener tightness on all components. Tighten as needed.

QUARTERLY

- Flush entire water flow system. (coil flush if necessary)
- Clean and remove any debris from pressure regulator. (1, 4)
- Grease Hayes bearing support.

(1) Or as often as required

(2) Change engine oil and filter after **first 50 hours** of operation and then **every 200 hours**.

(3) Change Cat Pump oil after **first 50 hours** of operation.

Inspect after **first week** of operation, and remove any debris present. Inspect again after **2 to 4 weeks**

SLX 47 SERVICE INTERVAL CHART

SERVICE INTERVALS - EVERY 30 HOURS

Belt Tensioner	Adjust belt tensioner
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SERVICE INTERVALS - EVERY 50 HOURS

High Pressure Hoses	Inspect hoses for wear, damage. Replace if damaged.
Engine	Change engine oil after first 50 hours of operation.
High Pressure Cat Pump	Change pump oil after first 50 hours or operation.

SERVICE INTERVALS - EVERY 100 HOURS

Belts	Re-Tension all belts
Battery	Clean Battery Terminals
Vacuum Relief Valve	Check and adjust vacuum relief valve up to 13"Hg. Lube the relief valve shaft.
Pressure Regulator	Lubricate o-rings. Use only o-ring lubricant.
Engine	Check spark plugs. Use only OEM spark plugs.

SERVICE INTERVALS - EVERY 200 HOURS

Engine	Change oil and oil filter.
Engine	Check engine air filter.
Exhaust	Check engine exhaust for leaks, tighten fittings as needed.

SERVICE INTERVALS - EVERY 250 HOURS

Hays Bearing Support	Grease fittings. (zerk fitting).
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SERVIE INTERVALS - EVERY 500 HOURS

Pressure Pump Cat Pump	Change pump oil.
Engine	Replace in-line fuel filter
Pulley and hubs	Check all pulleys and hubs for proper tightness.
Unit	Thoroughly inspect the units mounting bolts on engine, pump and blower.

SERVICE INTERVALS - EVERY 1000 HOURS

Vacuum Blower	Drain, and flush and replace oil.
Engine	Replace spark plugs,. Use only OEM spark plugs.
Engine	Replace air filter.
Engine	Valve adjustment .0057 - 0073 in.
Belts	Replace all belts.

TROUBLE SHOOTING

ENGINE WILL NOT START (DOES NOT TURN OVER)

PROBABLE CAUSE	SOLUTION
Loose or corroded battery connections.	Clean, tighten or replace battery terminals.
Dead Battery	Recharge or replace battery.
Defective ignition switch	Test ignition switch for power going into the switch. If there is power going in, but none coming out, replace switch.
Defective Starter Motor.	Test the starter motor. Replace if required.
Vacuum blower seized.	Refer to the vacuum blower manufactures service and repair manual

STARTER TURNS OVER BUT ENGINE WILL NOT START

PROBABLE CAUSE	SOLUTION
Recovery waste tank is full.	Empty recovery waste tank.
Lose or broken wires leading to recovery waste tank float switch.	Repair or replace broken electrical connections.
Defective recovery waste tank float switch.	Replace if necessary.
Defective fuel pump.	Replace fuel pump.
Engine is malfunctioning.	Refer to Kubota engine Operation and Maintenance Manual.

ENGINE STOPS RUNNING DURING NORMAL OPERATION

PROBABLE CAUSE	SOLUTION
Recovery waste tank is full.	empty recovery waste tank.
Recovery waste tank float switch defective.	Replace if necessary.
Engine is out of gasoline.	check the fuel tank level
Defective fuel pump.	Replace fuel pump.
No ignition in the engine or the engine is malfunctioning.	Refer to the Kubota Engine Operation and Maintenance Manual.

**** If water temperature exceeds 260° F the unit will shut-down, this is a safety feature of the unit****

VACUUM BLOWER TROUBLE SHOOTING

LOSS OF VACUUM (while cleaning, engine RPM is normal but vacuum is lower than expected)

PROBABLE CAUSE	SOLUTION
Vacuum hoses are damaged or kinked causing a suction leak.	Inspect hoses, repair or replace.
Waste tank gasket not sealing or not positioned correctly.	Inspect lid gaskets, repair seal or replace gaskets. Re-position lids.
Vacuum gauge is giving an incorrect reading.	Check vacuum tubing between from the vacuum gauge, replace if necessary.
Vacuum hoses are plugged.	Unplug vacuum hoses.
Recovery waste tank filters or lint basket is plugged.	Clean or replace filters, or lint basket.
Recovery waste tank ball valve drain is damaged or left open, causing a vacuum leak.	Drain the recovery waste tank. Close the ball valve drain valve. Replace valve if necessary.
Loose or worn vacuum blower drive belts.	Tighten belts, or replace belts if necessary.
Vacuum Relief valve requires adjustment.	Re-adjust vacuum relief valve, do not exceed 13"Hg
Blower exhaust heat exchanger is plugged.	Remove and clean.
Vacuum blower is worn out.	Replace the vacuum blower.

EXCESSIVE VACUUM (while cleaning, engine RPM is normal but vacuum is higher than expected)

PROBABLE CAUSE	SOLUTION
Vacuum blower relief valve needs adjustment.	Re-adjust vacuum relief valve. Do not exceed 13" Hg.
Improper throttle adjustment.	Adjust throttle to set desired vacuum pressure.

LOSS OF SOLUTION PRESSURE (cleaning tool open, solution gauge reads low)

PROBABLE CAUSE	SOLUTION
Water supply is low or empty fresh water tank.	Fill fresh water tank.
Debris clogging incoming water lines or water inlet disconnect.	Clean or replace as needed.
Solution high pressure pump is drawing in air from supply line.	Check incoming water supply line from tank to high pressure pump, ensure there are no holes , tighten all clamps or loose fittings.
Defective high pressure gauge.	Replace gauge.
Pressure regulator o-rings are dry or worn.	Check o-rings, lubricate or replace as needed.
Spray nozzle in cleaning tool worn, defective or wrong size.	Replace or change nozzle.
Pump belt loose or broken.	Re-tension or replace if needed.

LOSS OF SOLUTION VOLUME AT TOOL (pressure gauge reads normal)

PROBABLE CAUSE	SOLUTION
Plugged jet or screen in cleaning tool	Unplug or replace jet or screen.
Defective quick disconnect on one or more high pressure hoses.	Replace defective quick disconnect on hose.
Air leak in chemical supply line.	Check for air leaks. Replace faulty parts.
Cleaning tool valve is malfunctioning.	Repair or replace valve.

PRESSURE PUMP DOES NOT ENGAGE

PROBABLE CAUSE	SOLUTION
Pressure pump has not been activated.	Turn pressure pump to on.
Defective electrical connection in the console wiring or defective switch.	Check electrical switch, electrical connections, and wiring. Repair any defective connections, If there is power going to the switch but not going out, replace the switch.
Defective pressure pump clutch.	If there is power in the switch, but no power at the clutch, replace the defective wire. If there is power at the clutch, replace the defective switch.

LOSS OF CHEMICAL AT CLEANING TOOL

PROBABLE CAUSE	SOLUTION
The strainer check valve at the end of the chemical inlet hose is clogged.	Unclog the strainer. If damaged replace.
The chemical jug is low or empty	Refill chemical jug.
Suction leak on chemical hose.	Check flow meter hoses for leaks. Check hose from chemical jug to flow meter. Replace if needed.

HEAT EXCHANGER / TEMPERATURE RELATED TROUBLE SHOOTING

EXCESSIVE HEATING

PROBABLE CAUSE	SOLUTION
Flow restriction caused by hard water scaling.	Descale unit, or replace damaged plumbing components as necessary. Install water softener.
Not enough water flowing during normal operation.	Check jet size in cleaning tool. Replace if necessary.
Clogged Jet or screen.	Replace jet or screen.

LOSS OF TEMPERATURE

PROBABLE CAUSE	SOLUTION
No vacuum hose is connected.	Connect vacuum hose to vacuum port.
Engine RPM is too low.	Reset engine RPM.
Defective temperature gauge.	Replace temperature gauge and sensor.

HEAT EXCHANGER LEAKING

PROBABLE CAUSE	SOLUTION
Water dripping from exhaust port due to condensation build-up.	The heat exchange will produce water condensation discharge at times during normal operation. Do not confuse this with a leak.
Heat Exchange is damaged from frozen water.	Inspect for damage and leaks. Pressure check heat exchanger after removing it from unit(maximum test pressure - 2000psi). Replacement may be required.



UPPER FRONT CONTROL PANEL



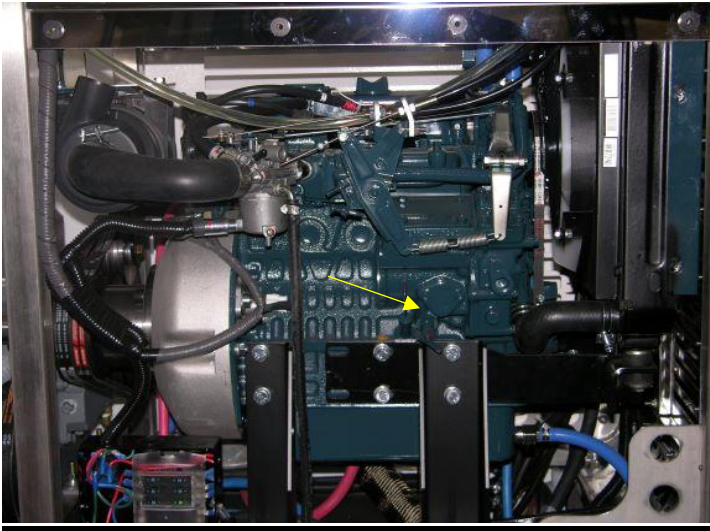
- Throttle Cable
- Tach / Hour Meter
- Choke Cable
- Ignition Key
- Pump, Apo, Acc, Switches
- Water Pressure Gauge
- Vacuum Gauge
- Chemical Flo Meter
- Oil Site Lines, Pump & Blower



LOWER FRONT PANEL

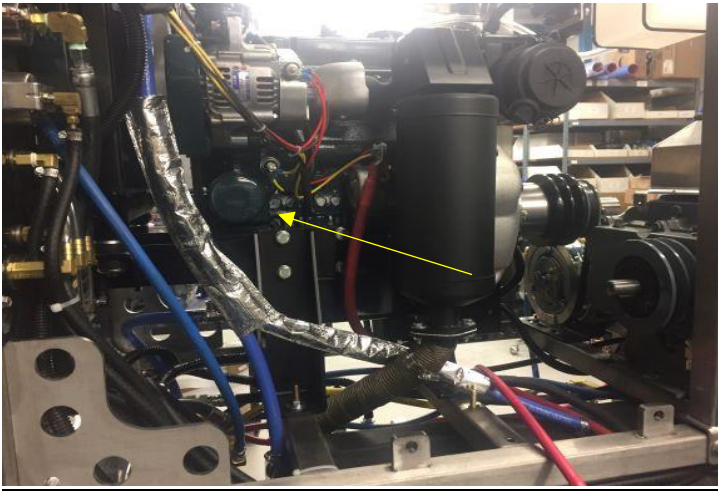


- Water Pressure Adjustment
- Water Temperature Gauge
- Water Temperature Control
- Color Coded Quick Connect Outlets
- Blower Easy Lube Control
- Front Mounted Oil Drains
- Engine & Blower Exhaust Port



Engine Oil

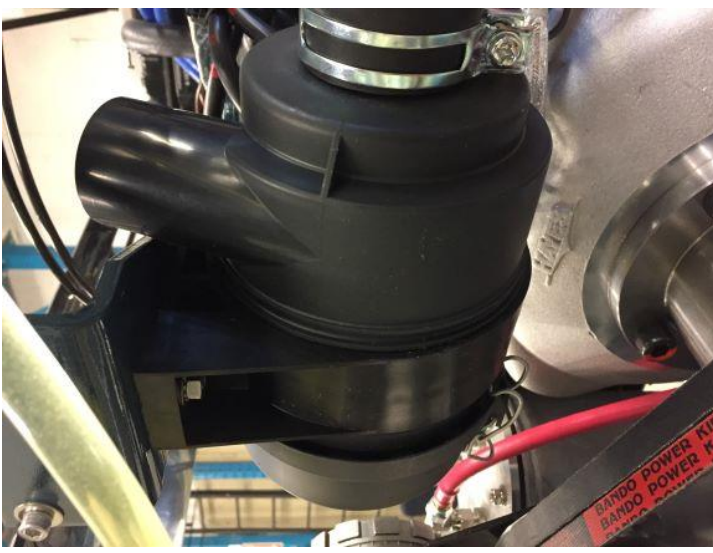
The engine oil needs to be checked on a daily basis. Arrowed in the photo is the engine dipstick. Using a clean rag, slowly remove the dipstick and wipe it clean. Then slowly remove it again to check the engine oil level. The engine oil fill cap is located on the top of the engine towards the radiator.



Engine Oil Filter

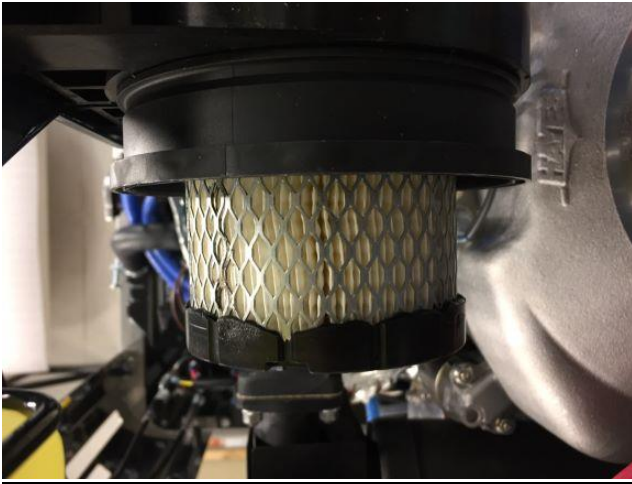
The engine oil filter is located on the right hand side of the machine. When changing the oil filter, it is a good idea to have a clean rag placed under it to prevent any oil from spilling onto the machine.

Oil filter part number 560-415



Engine Air Filter

The engine air filter is located on the back left hand side of the machine. To check the filter, undo the 2 clips that hold the rear cap in place. It is important to remember to inspect the filter on a regular basis and replace it when needed.



Engine Air Filter

The internal air filter element will be snug when trying to remove it. A slight twist while pulling it out will free it up. Make sure when you replace the filter to firmly push it back into a position that it seats properly.

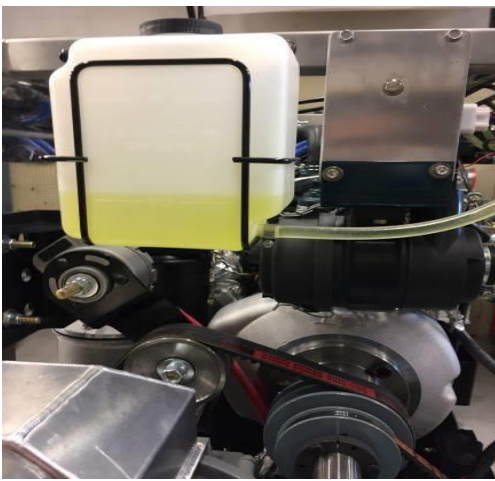
Air Filter Element part number
560-410



Engine Radiator

As part of your daily maintenance routine, you will need to check the engine antifreeze fluid level. Make sure this procedure is performed when the engine is cool. ***Do not by any means try to open the radiator cap while the machine is hot! Serious injury can occur.***

Remove the radiator cap and visually inspect the fluid level. The level should be up to the inside top of the radiator. Do not use the radiator overflow jug as a gauge to check the level of the fluid in the radiator. The overflow jug is used to catch the unused fluid when the engine is hot.

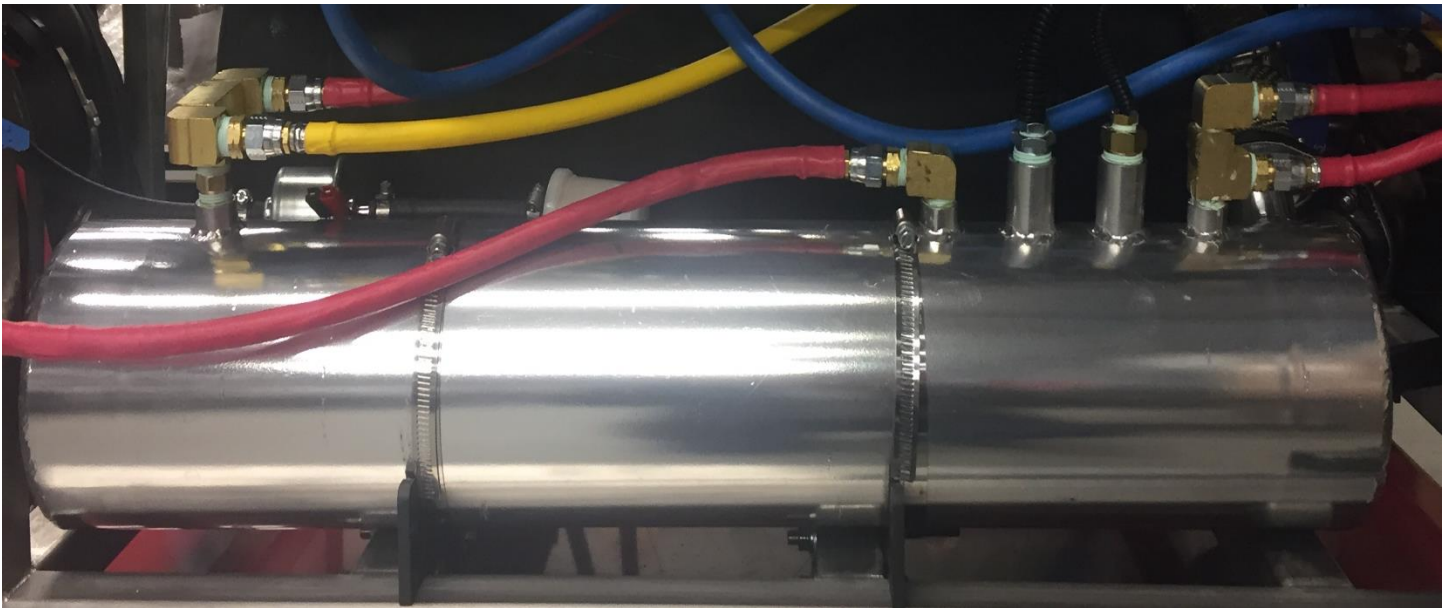




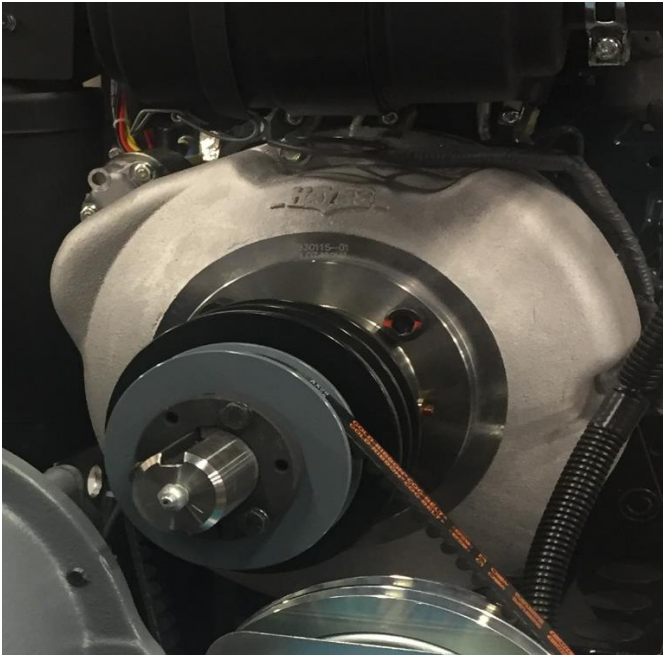
Liquid Heat Exchangers

Your machine utilizes two liquid heat exchangers in addition to the other exchangers on your machine. These heat exchangers require periodic “bleeding”. On top of both exchangers, you will notice a petcock valve. These valves are installed to allow the exchangers to bleed of any excess air that may be present. Loosen the valve and leave them open until you notice antifreeze coming out. After the procedure is performed, check the engine radiator level and add antifreeze if necessary.

NOTE: Do not by any means try to open the radiator cap while the machine is hot! Serious injury can occur.



Exhaust Heat Exchanger, is a S.S. tubular heat exchanger, which captures the hot engine exhaust to boost the pre-heat water from the coolant heat exchangers to a consistent high heat. This heat exchanger is ceramic coated to keep the heat in the exchanger and to reduce the radiant heat in the vehicle.



Hays Bearing Support Shaft

The Hays bearing support shaft takes the load off the rear bearing of the Kubota engine, giving the engine extended life. The zerk grease fitting requires greasing every 250 hours. Grease with SKF LGMT3/0.4 bearing grease. Grease part number 707-005



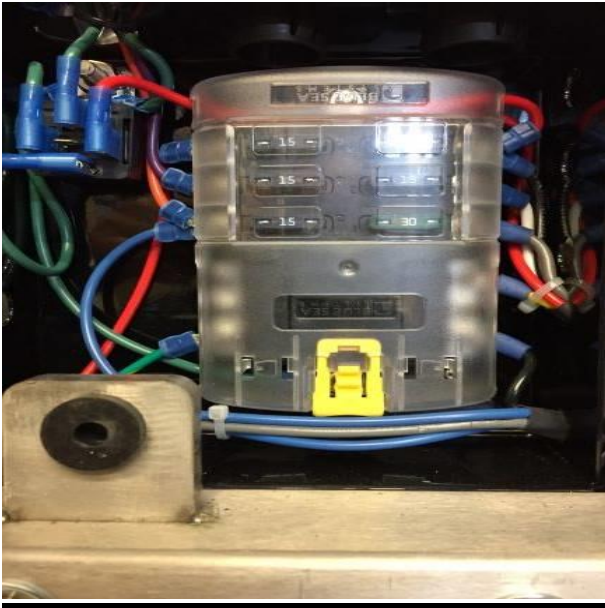
Waste Tank Blower Inlet Filters

On the inside of the waste tank are two filters. These filters prevent any particles from entering the vacuum blower. It is very important to remove and clean these filters on a weekly basis, or more if needed. Before reinstalling the filters apply some lubricant / grease on the thread of the filters and only hand tighten the filters, this makes it easier to remove them the next time. Blower Filters Part Number 560-205.



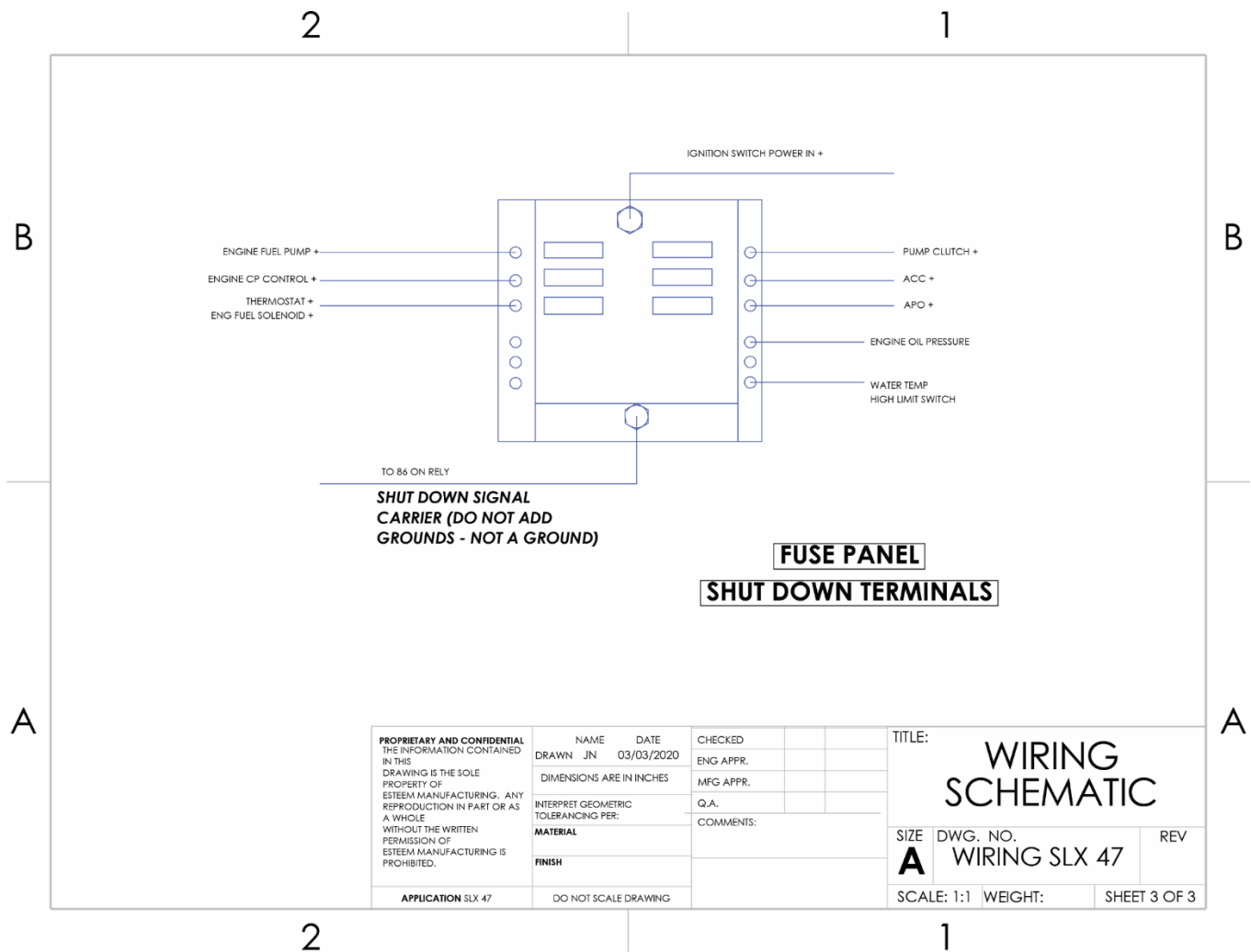
Waste Tank Lint Basket

The lint basket catches the heavier debris such as carpet fibers as the soiled water enters the waste tank. The lint basket requires emptying after every job. If not emptied after every job this will affect the performance of your machine and can cause damage to several components. Lint Basket Part Number 560-370.



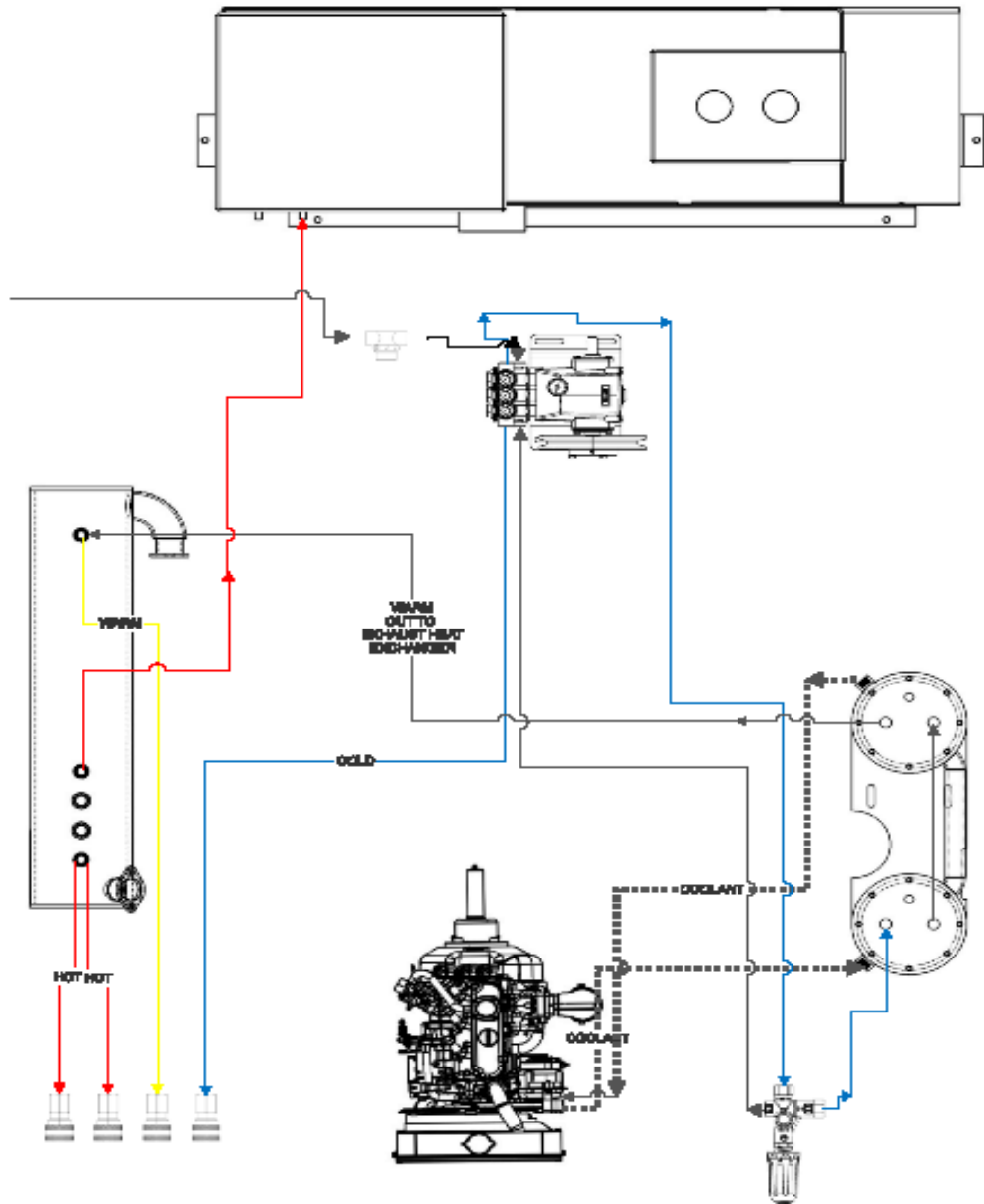
Fuse Panel

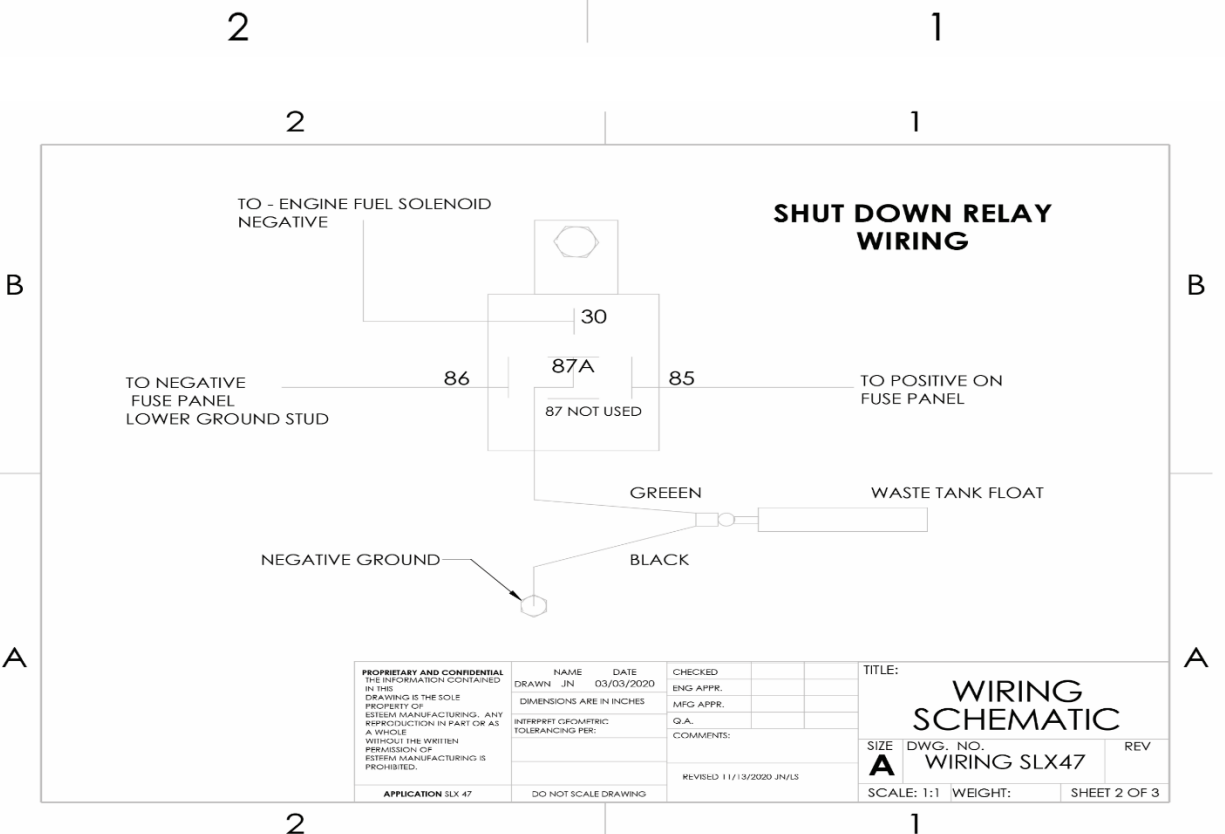
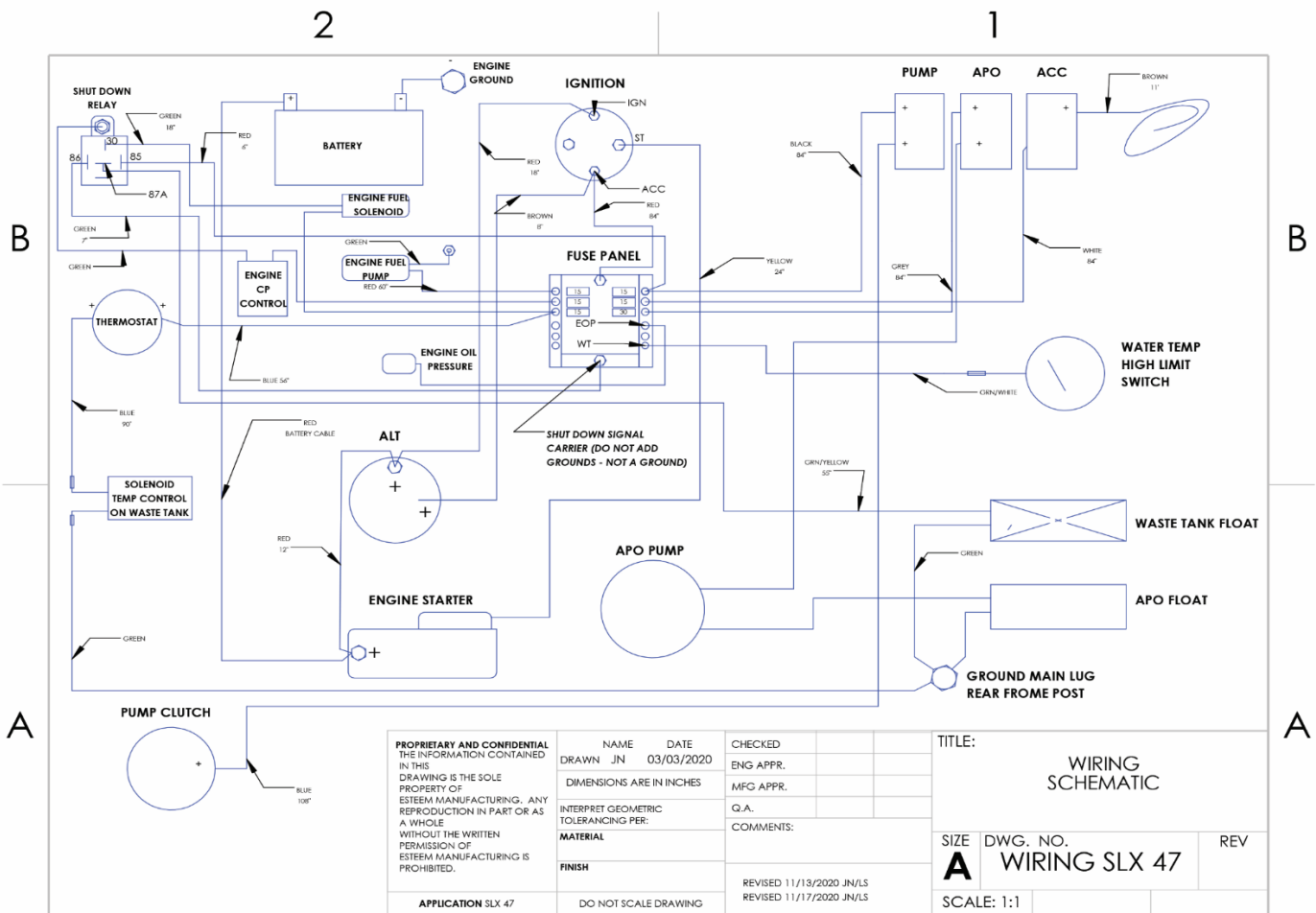
You will notice the fuse panel located on the left side of the middle cross member. This fuse panel creates a fusible link between the engine and all other components on the unit. If you need to replace a fuse, make sure you use the correct amp fuse as a replacement.



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	DRAWN	JN	03/03/2020	ENG APPR.				
	DIMENSIONS ARE IN INCHES		MFG APPR.					
	INTERPRET GEOMETRIC TOLERANCING PER:		Q.A.			SIZE	DWG. NO.	REV
	MATERIAL			COMMENTS:		A	WIRING SLX 47	
FINISH					SCALE: 1:1		WEIGHT:	SHEET 3 OF 3
APPLICATION SLX 47	DO NOT SCALE DRAWING							

WATER FLOW DIAGRAM





SLX 47 UPPER FRONT PANEL

Part Number	Description
360-216	Hour Meter / Tachometer
305-085	Pump Switch
305-085	APO Switch
305-085	ACC Switch
352-095	Throttle Cable, Kubota
352-100	Choke Cable, Kubota
360-125	Chemical Flow Meter, GPH (2-10)
360-114	Pressure Gauge
360-131	Vacuum Gauge
845-445	Side Cover Panels
845-435	Top Cover Panel
435-055	Thumb Knobs, Panels

SLX 47 LOWER FRONT PANEL

Part Number	Description
360-105	Temperature Gauge, Murphy Switch
360-117	Thermostat, Adjustable
530-105	Pulsar Unloader
545-005	Ball Valves, Mini 1/4"
580-005	Quick Connect (Blue)
580-007	Quick Connect (Yellow)
580-008	Quick Connect (Red)
850-130	Exhaust Tip

SLX 47 LIQUID HEAT EXCHANGER 240-450

Part Number	Description
485-100	Copper Coil, 3/8" x 25'
263-204	SS Hose Assy 11"
475-085	Gasket 5 3/4"
380-232	O ring, Silicone 70 Duro 1/2ID x 5/8OD
400-005	Hex Nut 1/4 x 20 SS
415-025	Loc Washer, 1/4 SS
415-125	Flat Washer, 1/4 SS
478-085	Insulation 1"
555-010	Bulkhead Union SS 3/8 x JIC
555-164	Drain Cock, 1/4 Short Handle
555-213	Elbow, SS 3/8 x JIC
555-335	Hose Barb 90, 1" Barb x 1" MPT

SLX 47 EXHAUST HEAT EXCHANGER 240-575

Part Number	Description
360-106	Thermal Well, Murphy Switch
555-060	Connector, JIC 3/8 x 3/8 NPT
555-214	Elbow 90, 3/8" x 1 1/2" street extruded
555-274	Hex Nipple 3/8" x 1 1/2" long
555-640	Tee, 3/8" FPT
555-642	Tee, 3/8" street extruded

SXL 47 BLOWER ASSY

Part Number	Description
358-122	Roots 47 DSL Whispair Blower
358-255	Exhaust Port 47 VR2
358-547	Intake Scoop 47 Slide
475-310	Gasket, 47 Intake scoop
385-210	Pulley, Kubota & Blower
385-230	Bushing, Blower SLX 47
620-405	Vac Breaker Assy
397-022	Belts, Blower BX32
390-145	Tensioner, Blower belts

SXL 47 HIGH PRESSURE PUMP ASSY

Part Number	Description
516-040	Cat Pump 3CP
465-685	Bracket, 3CP Cat Pump
516-230	Clutch Mounting Kit 3CP
516-210	Shaft Protector 3CP Cat Pump
397-038	Belt, Pump AX28
560-113	Inline Water Filter

SLX WASTE TANK 225-545

Part Number	Description	Part Number	Description
560-370	Filter Basket, Alum	560-115	Strainer Y 3/8 NPT
560-205	Filter, 2 1/2" S/S	305-105	Switch, Shut-off Rec Tank
475-100	Gasket, Channel	337-030	Solenoid SLX
445-040	Catch, Rubber	588-015	ABS Adpt 2"
498-020	Plug, Rubber #10 c/w tether		
590-025	SCD80 PVC Elbow 90 x 2" FPTxFPT		
590-420	PVC Hose Barb 2"		
475-090	Gasket, Intake 2"		
590-010	ABS Pipe 2" x 6"		