




# SLX 47

## Operations and Service Manual



**VERSION March, 2024**

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## MACHINE DATA LOG / OVERVIEW

<b>MODEL</b> _____
<b>DATE OF PURCHASE</b> _____
<b>SERIAL NUMBER</b> _____
<b>COMPANY NAME</b> _____

<b>YOUR DEALER</b>
<b>NAME:</b> _____
<b>ADDRESS:</b> _____
<b>PHONE NUMBER:</b> _____

**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 your 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.



Never operate the Truckmount with a portable gas container inside the vehicle. Do so will increase the risk of fire and explosion. Serious injury or death may result.



**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.

## **WARNING:**

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

## **WARNING:**

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.

## **WARNING:**

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

## **WARNING:**

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

## **WARNING:**

**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.

## **WARNING:**

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

## **WARNING:**

**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.

## **WARNING:**

**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

## **WARNING:**

**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.

## **CAUTION:**

**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.

## **CAUTION:**

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

## **WARNING:**

Never operate the Truckmount when the vehicle is tilted more than 10 degrees in any direction. Doing so will result in improper lubrication of the internal components and will increase the risk of serious component or engine damage.

## **CAUTION:**

Never operate the Truckmount with vehicle doors closed. Doing so results in extremely high temperatures inside the vehicle and will lead to serious component or engine damage.

## **CAUTION:**

Never use concentrated solvents or acids in the Truckmount water system or chemical system, as this will cause serious component damage.

## **CAUTION:**

Never operate the Truckmount with a water hardness reading measuring 3.0 grains per gallon or higher. Using reading of more than 3.0 grains per gallon will cause scale to build up inside the Truckmount water system. Scale builds up causes serious component damage. Water softening equipment is highly recommended.

## **CAUTION:**

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.

## **CAUTION:**

**Do not modify this unit in any manner. Use 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.

## **WARNING:**

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

**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.

## **CAUTION:**

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



# 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	930 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.

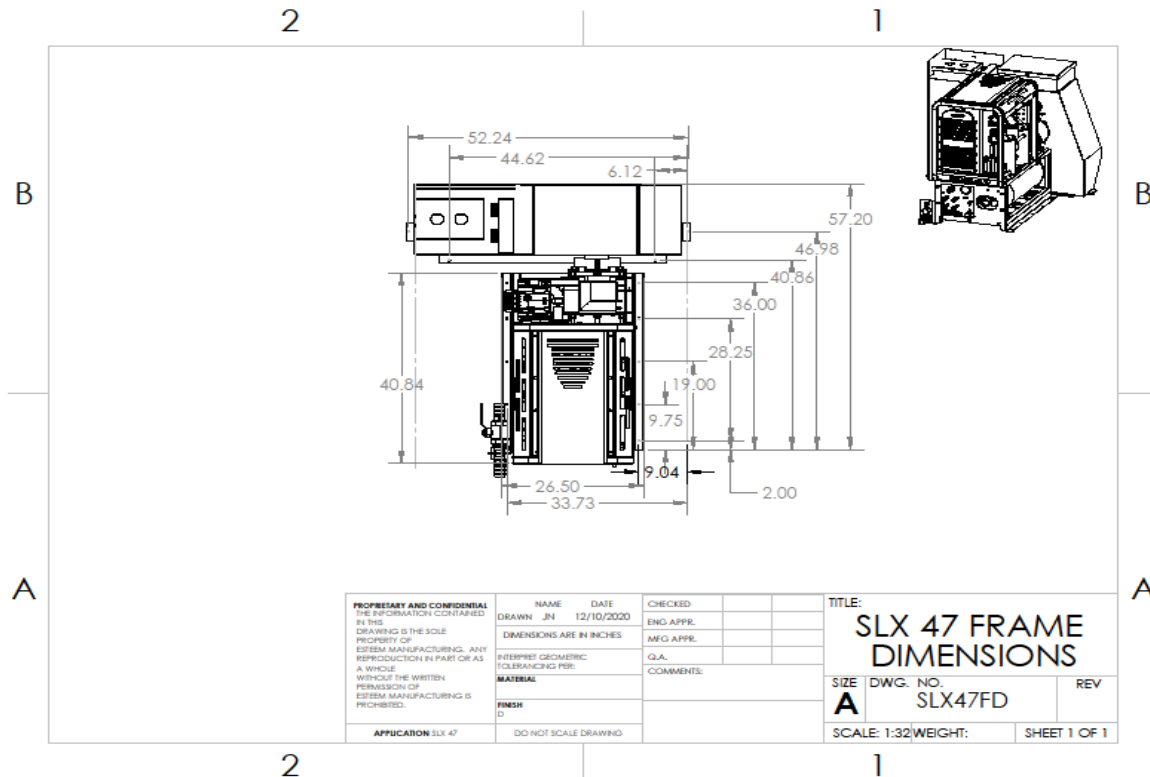
- Example:**     **Dual-jet wand uses two 11001.5 jets** (110° spray angle w/ 01.5 orifice).  
                   **015 x 2 = 03**  
                   **Three-jet wand uses three 11001 jets** (110° spray w/1.0 orifice).  
                   **Quad-jet wand uses four 9501 jets** (95° spray angle w/ 1.0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

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 ¾-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 SLX 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**

Vehicles 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 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 3/8" flanged nut. Tighten until the console and waste tank are firmly attached to the vehicle floor.

## CAUTION:

### 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.

## CAUTION:

### 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

## 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 principle in the design and construction of the Cleanco SLX 47. Although the Cleanco SLX 47 is designed with simplicity in mind, this truck mounted 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.

### SLX 47 SPEED SETTINGS:

- Single Wand Operation: 2400 – 2600 engine rpm
- Dual Wand Operation: 2700 – 2800 engine rpm
- Upholstery Cleaning: 2000 – 2200 engine rpm
- Hard Surface Cleaning: 2600 – 2850 engine rpm
- Power Washing: 2800 engine rpm
- Prespraying – just above idle rpm

## LOCAL WATER CONDITIONS

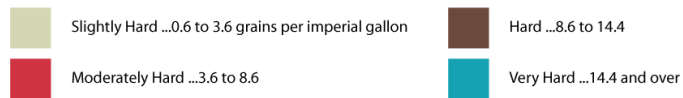
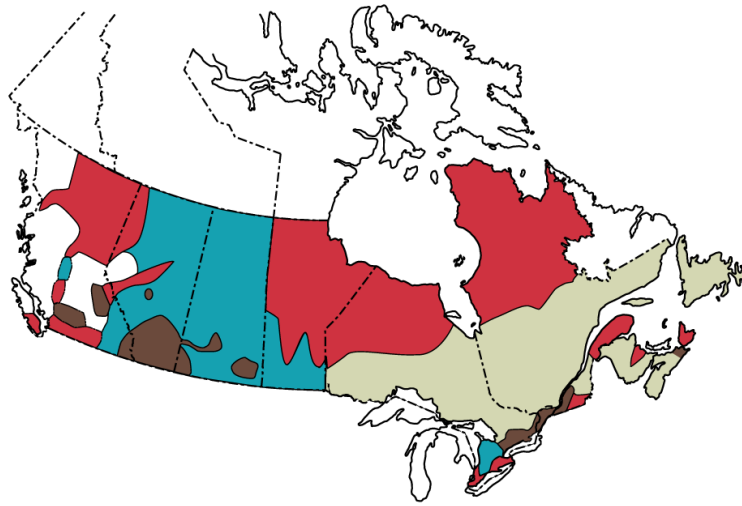
The quality of water varies greatly throughout North America. This can influence the reliability and efficiency of your equipment. Many areas have an excess of minerals in the water, which results in what is known as hard water. These minerals tend to adhere to the inside of heat exchangers and other 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. Cleanco requires that all machines operating in “hard water” areas (3.0 grains or more per gallon) be fitted with a water softening system. Periodic descaling or acid rinsing alone is not adequate in these areas. Cleanco does not recommend any particular type or brand; however, the relative effectiveness of some type of softeners may require additional periodic use of descaling agents.

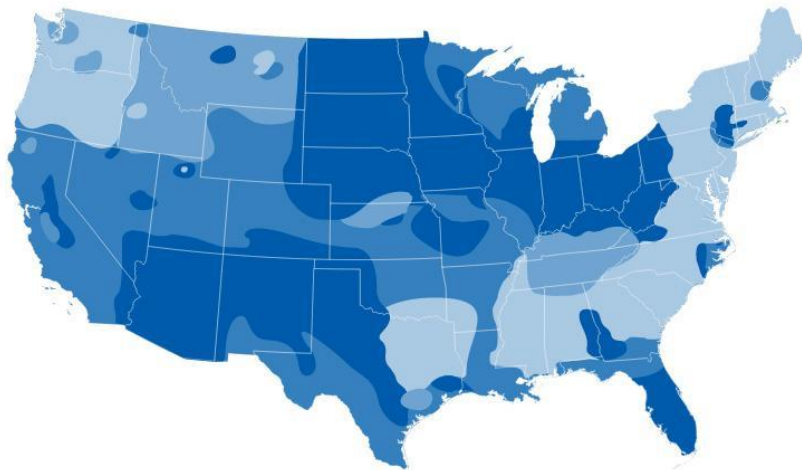


Failure to take appropriate measures to prevent scale build up can result in system failure and loss of warranty on affected parts.

### HARD WATER MAP OF CANADA



### HARD WATER MAP OF UNITED STATES



## **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.

In most cases, an acceptable method of waste water disposal is to discharge into a municipal sewage treatment system after filtering out solid material such as carpet fibers. Access to the sanitary system can be obtained through a toilet, RV dump site, etc. Always obtain permission to use these locations prior to dumping the waste tank.

**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 THE SLX 47 IN HOT WEATHER

Cleanco recommends the following when operating the SLX 47 during periods of hot weather (95 ° or higher). This will ensure your SLX 47 continues to run at 100% capacity.

1. Minimum 9" of clearance is required on both sides of the SLX 47, when installed. Ensure no other materials are stored at the sides or on top of the SLX 47. Airflow around the SLX 47 unit is critical for cooling the engine and other components.
2. For vans with side barn doors open the doors as wide as possible
3. When possible keep the rear doors open while the SLX 47 is running, this provides cross ventilation and will substantially reduce the temperature inside the van.

## 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 for 3 seconds or 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. Turn 3-way chemical prime valve to prime, wait until no more bubbles show in the chemical metering site gauge, then turn 3-way valve to on position. Turn chemical metering valve counterclockwise to open to desired amount of chemical, squeeze trigger on wand to draw chemical.
6. 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.
7. 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 – 2200 rpm.
8. Connect the vacuum hose to the unit and the male end of the pressure hose to the carpet wand or tool being used.
9. 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 overheating.** 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 engine up to 2850
2. With the engine at 2850 rpm depress the blower lube valve button and hold for 4 seconds
3. Turn engine rpm down to 2000-2100 rpm and run for 2 to 3 minutes.
4. Decrease pump pressure to 300 psi
5. Turn the water temperature thermostat to 70F -120F and run the unit for 3 minutes, this will allow cool water to run through the unit.
6. 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.
7. Turn the high-pressure pump switch to the "OFF" position.
8. Turn unit off
9. 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.
10. Remove the lift out lint basket located in the recovery tank, clean, and replace the lint basket back into the recovery tank.
11. 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 Thermostat to 220+ degrees.
2. Turn off Chemical Meter.
3. Start unit and set throttle at 2850 PRM
4. Turn pump switch on.
5. Set pump pressure at 400 PSI.

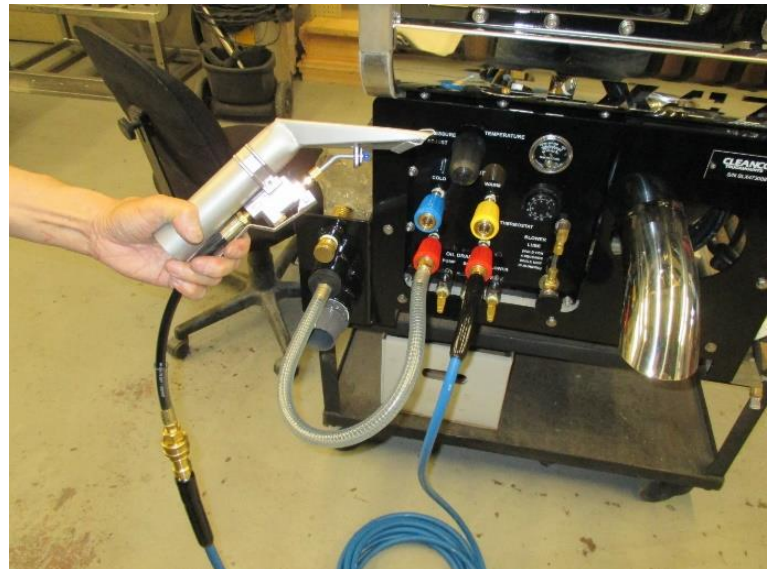
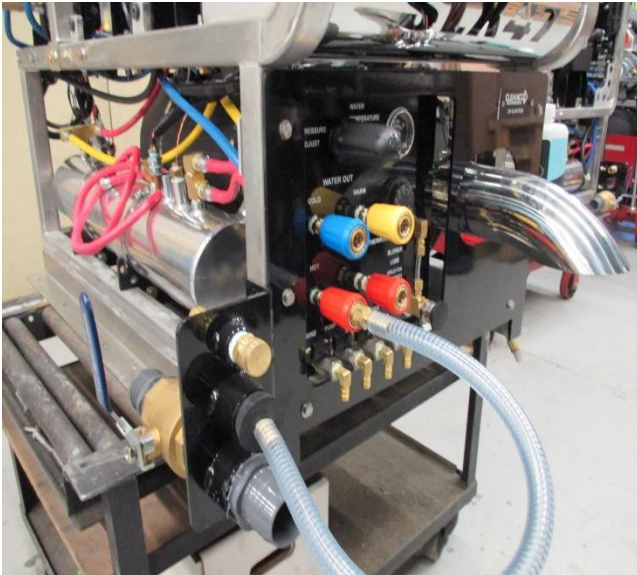
Remember, it is very important to make sure you have an adequate water supply to the machine. Failure to allow the machine to cool while performing water extraction will cause excessive heat and damage to the system and void your warranty.

**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 the unit and store in warm place.
3. Shut off ball valve for the freshwater tank to inlet water manifold.
4. Connect the Freeze Guard Hose Assembly to either one of the Panels red quick-connects.
5. Open the Chemical Flow Meter about 2 – 3 turns.
6. Turn the Thermostat knob to the off position.
7. If your unit has last step injection equipped, turn the 3-way valve to the ON setting.
8. Start the unit on low idle.
9. Place the other end of the Freeze guard Assembly to the vacuum port making sure that the rubber stopper forms a snug fit.
10. Place the pump switch to the ON position.
11. Allow the pump to run for no more than 15 to 20 seconds to get the water in the system to start moving, then turn the pump switch to the OFF position.
12. Observe the fluid being drawn through the Freeze Guard Hose until there is no steady stream of water.
13. 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.
14. 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 tool 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.
15. 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.

Cleanco requires that all machines operating in "hard water" areas (3.0 grains or more per gallon) be fitted with a water softening system. Periodic descaling or acid rinsing alone is not adequate in these areas. Cleanco does not recommend any particular type or brand; however, the relative effectiveness of some type of softeners may require additional periodic use of descaling agents.

## 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 just above idle. 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 Tuthill Trilobe 4007 (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 Tuthill Trilobe blower, refer to the enclosed Tuthill 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 9000 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.

**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, 1 YELLOW (warm) for upholstery cleaning, and 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 3/16<sup>th</sup>s 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)
- Check engine radiator coolant. Fill to proper level. (Check only when engine is cool)
- 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)

<b>PROBABLE CAUSE</b>	<b>SOLUTION</b>
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)

<b>PROBABLE CAUSE</b>	<b>SOLUTION</b>
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)

<b>PROBABLE CAUSE</b>	<b>SOLUTION</b>
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

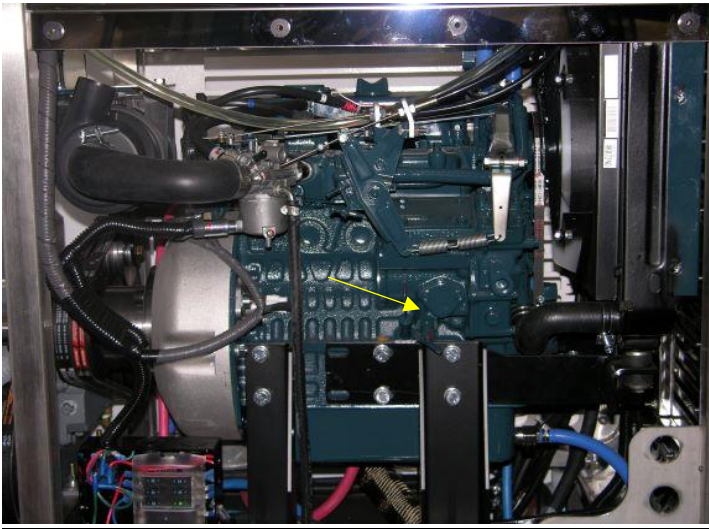
PROBABLE CAUSE	SOLUTION
Flow restriction caused by hard water scaling.	Descale unit, or replace damaged plumbing components as necessary. Install water softener.
Not enough water flowing during normal operation.	Check jet size in cleaning tool. Replace if necessary.
Clogged Jet or screen.	Replace jet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

## LOSS OF TEMPERATURE

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

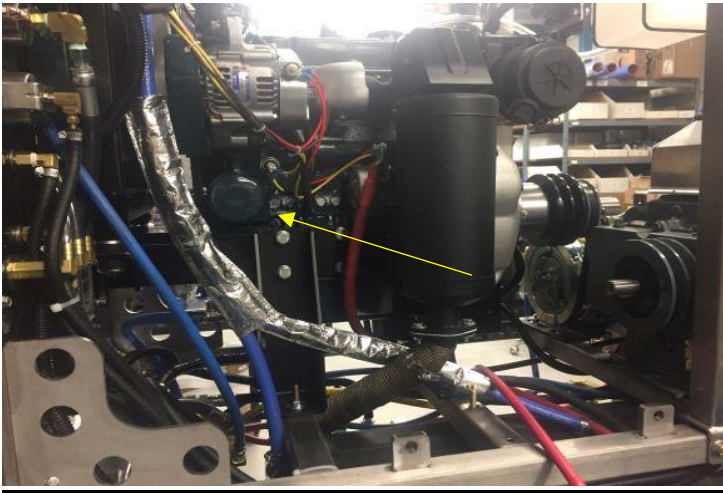
## HEAT EXCHANGER LEAKING

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.



### Engine Oil

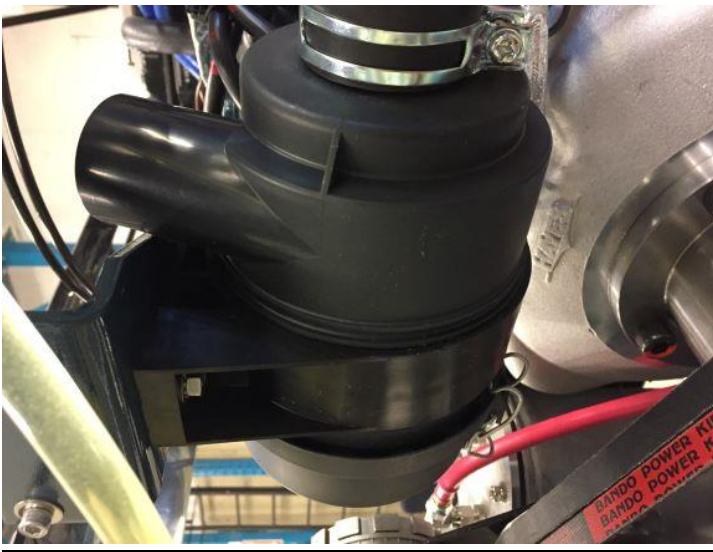
The engine oil needs to be checked on a daily basis. Arrowed in the photo is the engine dipstick. Using a clean rag, slowly remove the dipstick and wipe it clean. Then slowly remove it again to check the engine oil level. The engine oil fill cap is located on the top of the engine towards the radiator.



### **Engine Oil Filter**

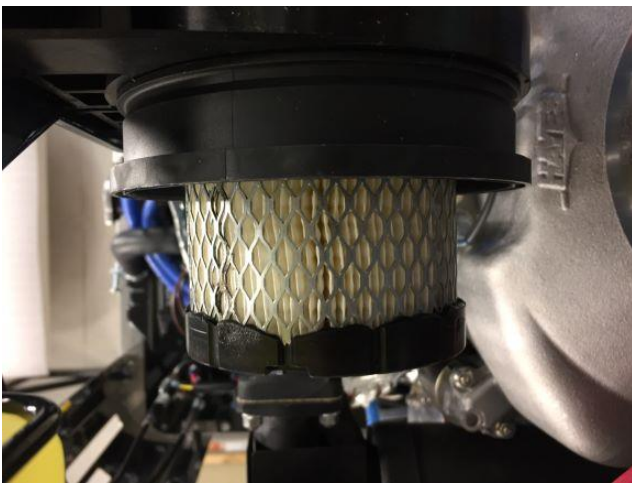
The engine oil filter is located on the right-hand side of the machine. When changing the oil filter, it is a good idea to have a clean rag placed under it to prevent any oil from spilling onto the machine.

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

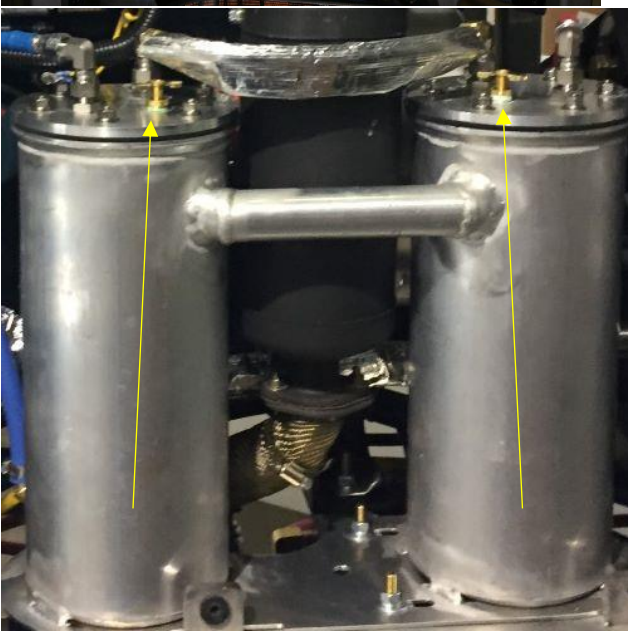
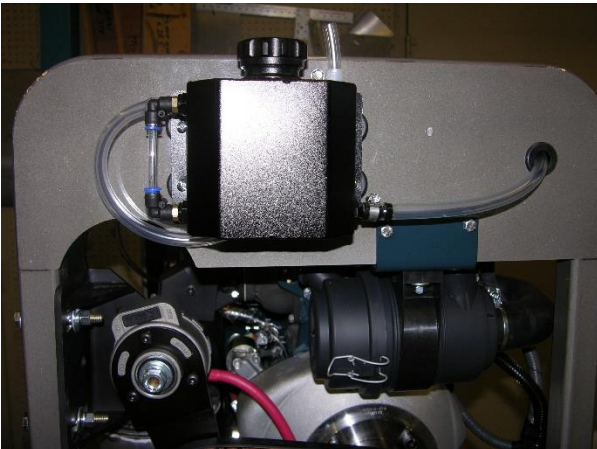


### Engine Radiator

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.***

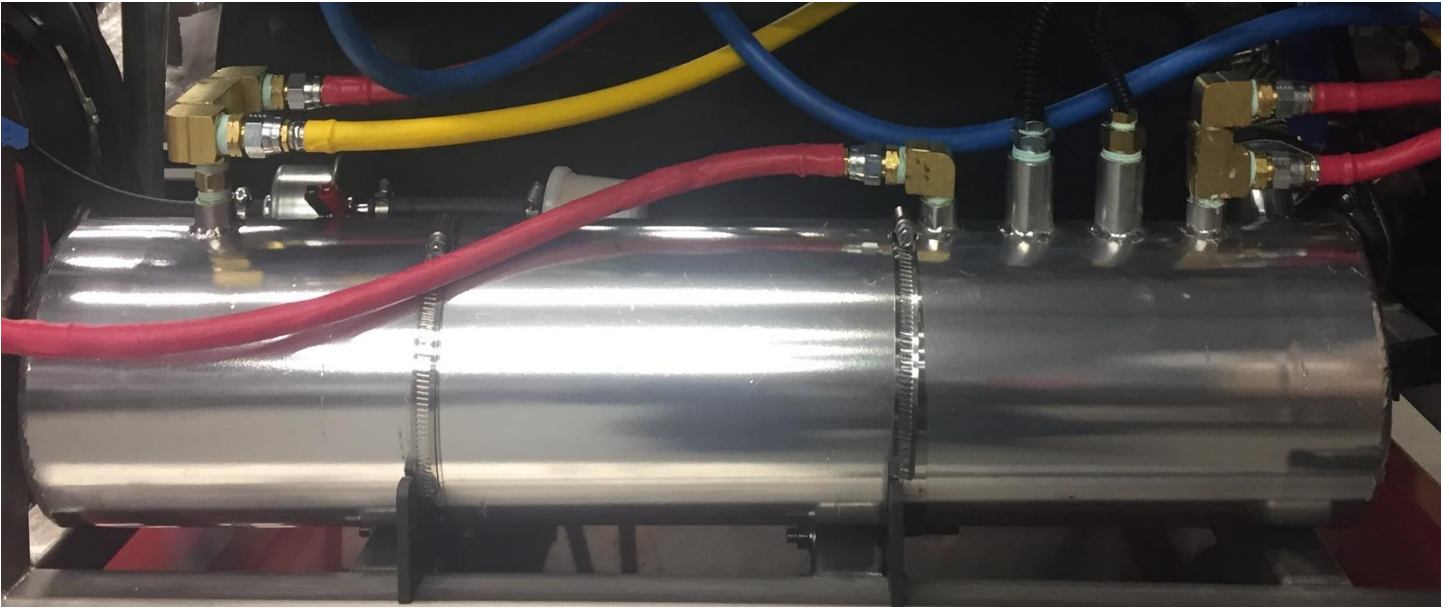
Remove the radiator cap and visually inspect the fluid level. The level should be up to the inside top of the radiator. Do not use the radiator overflow jug as a gauge to check the level of the fluid in the radiator. The overflow jug is used to catch the unused fluid when the engine is hot.

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

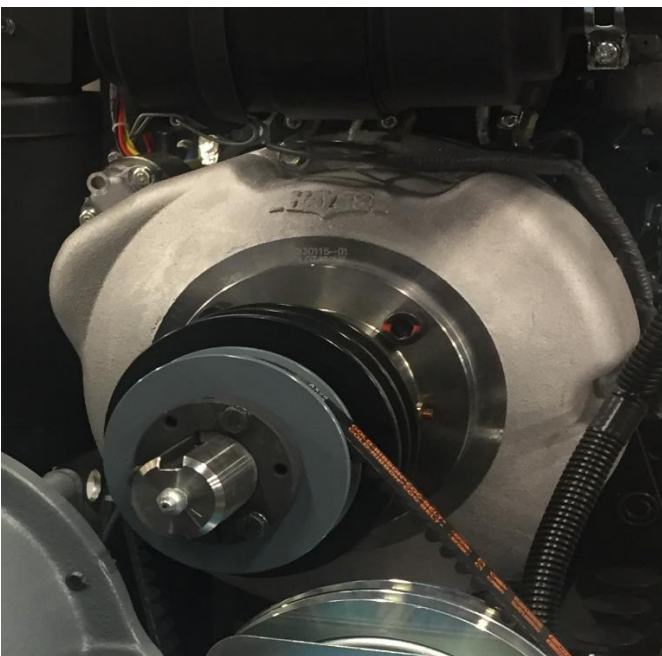


### Liquid Heat Exchangers

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.



**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





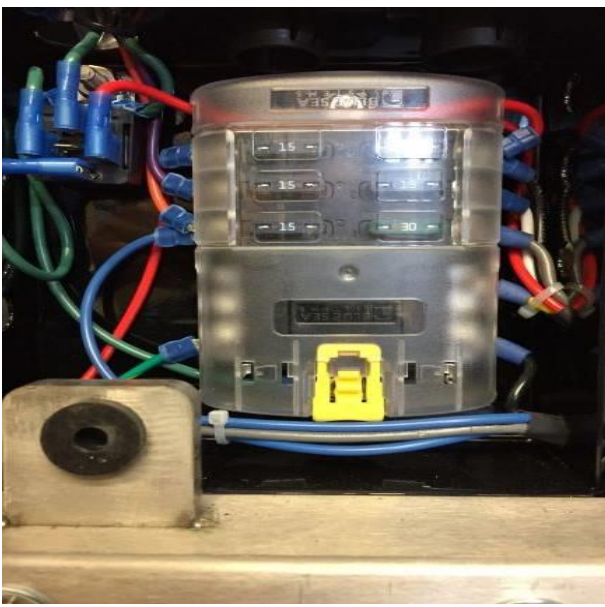
### **Waste Tank Blower Inlet Filters**

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.



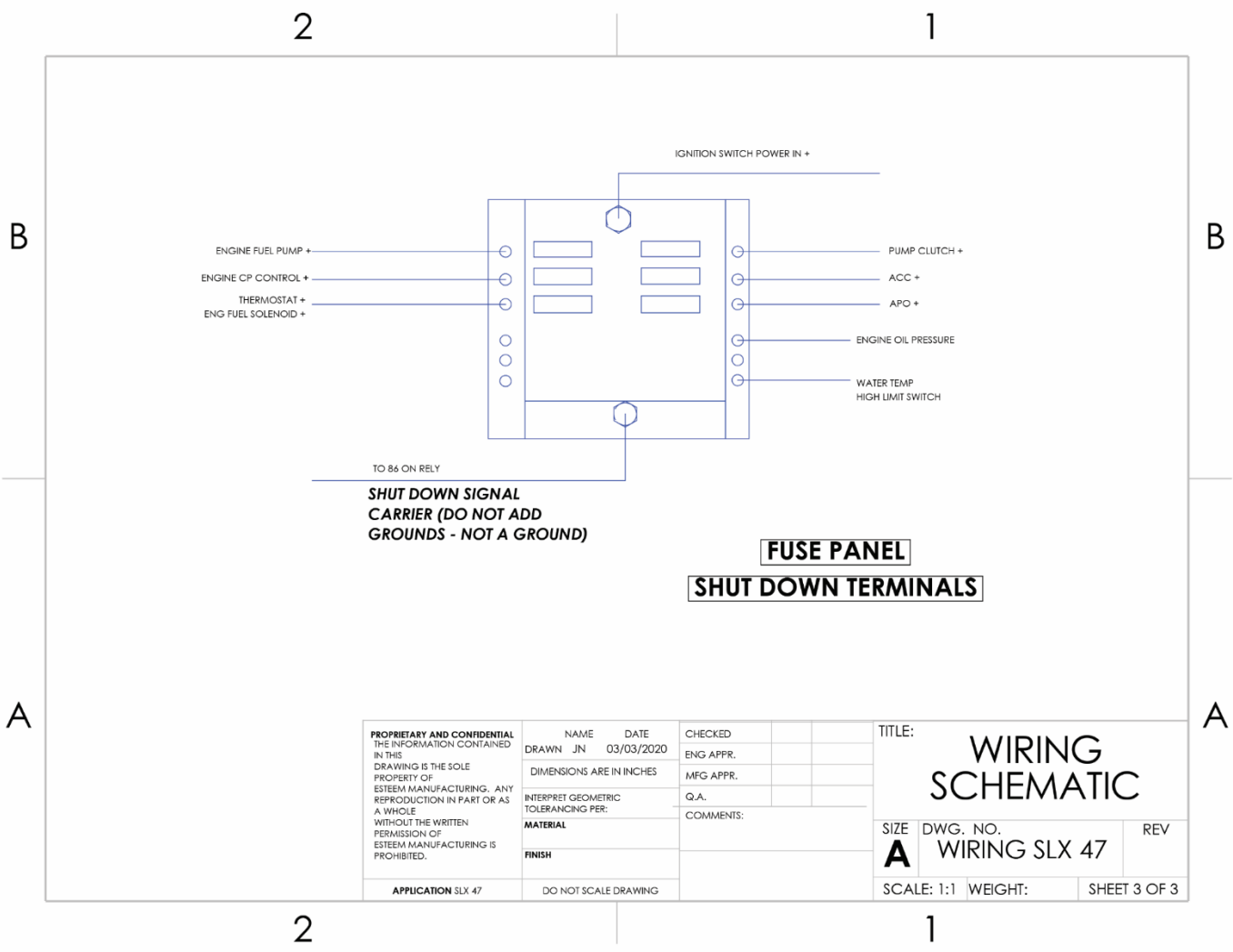
### **Waste Tank Lint Basket**

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.

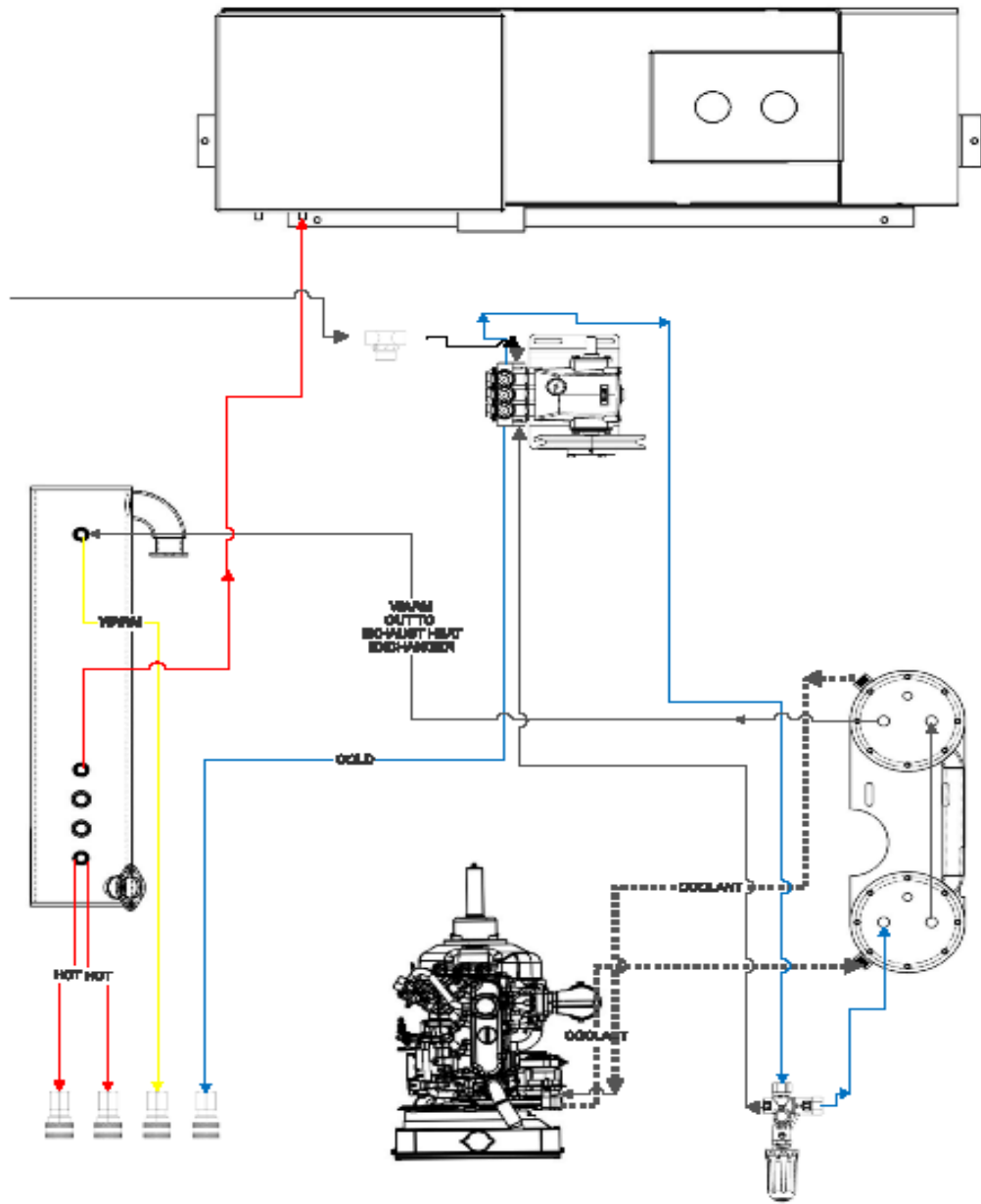


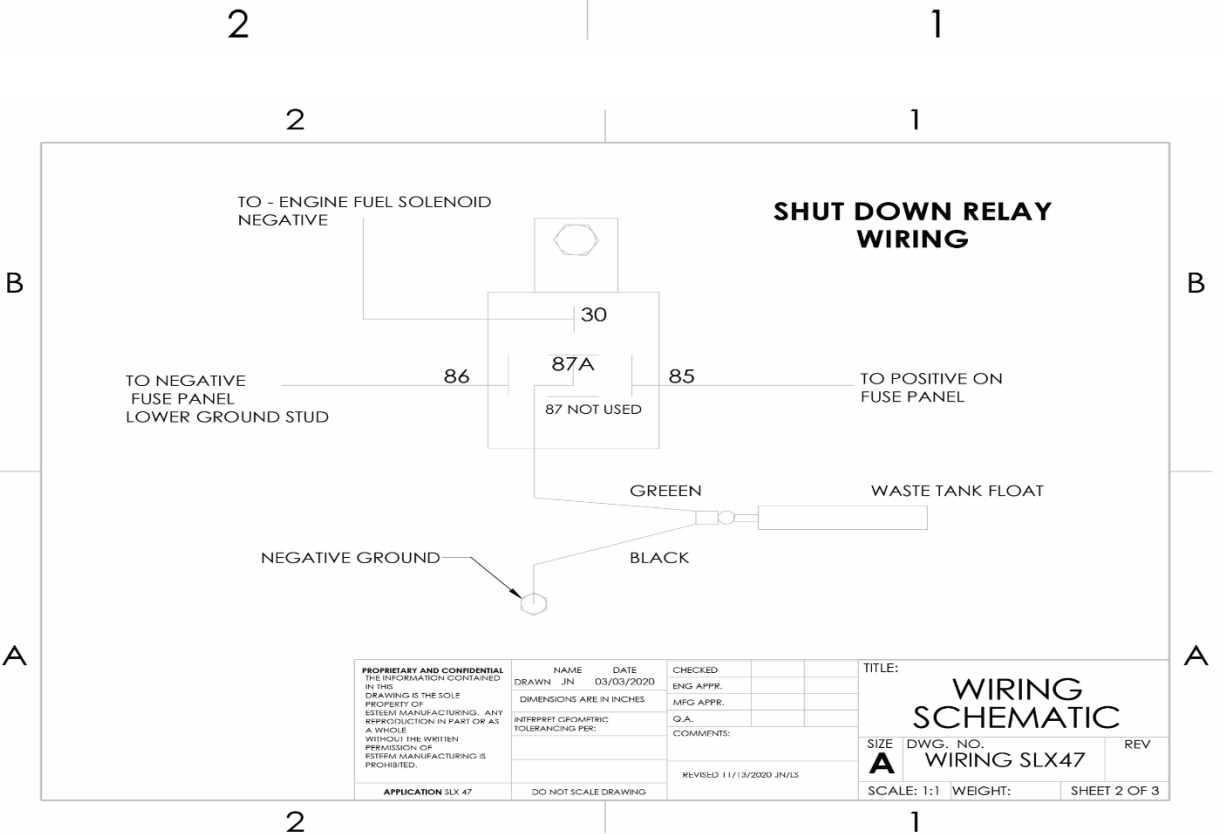
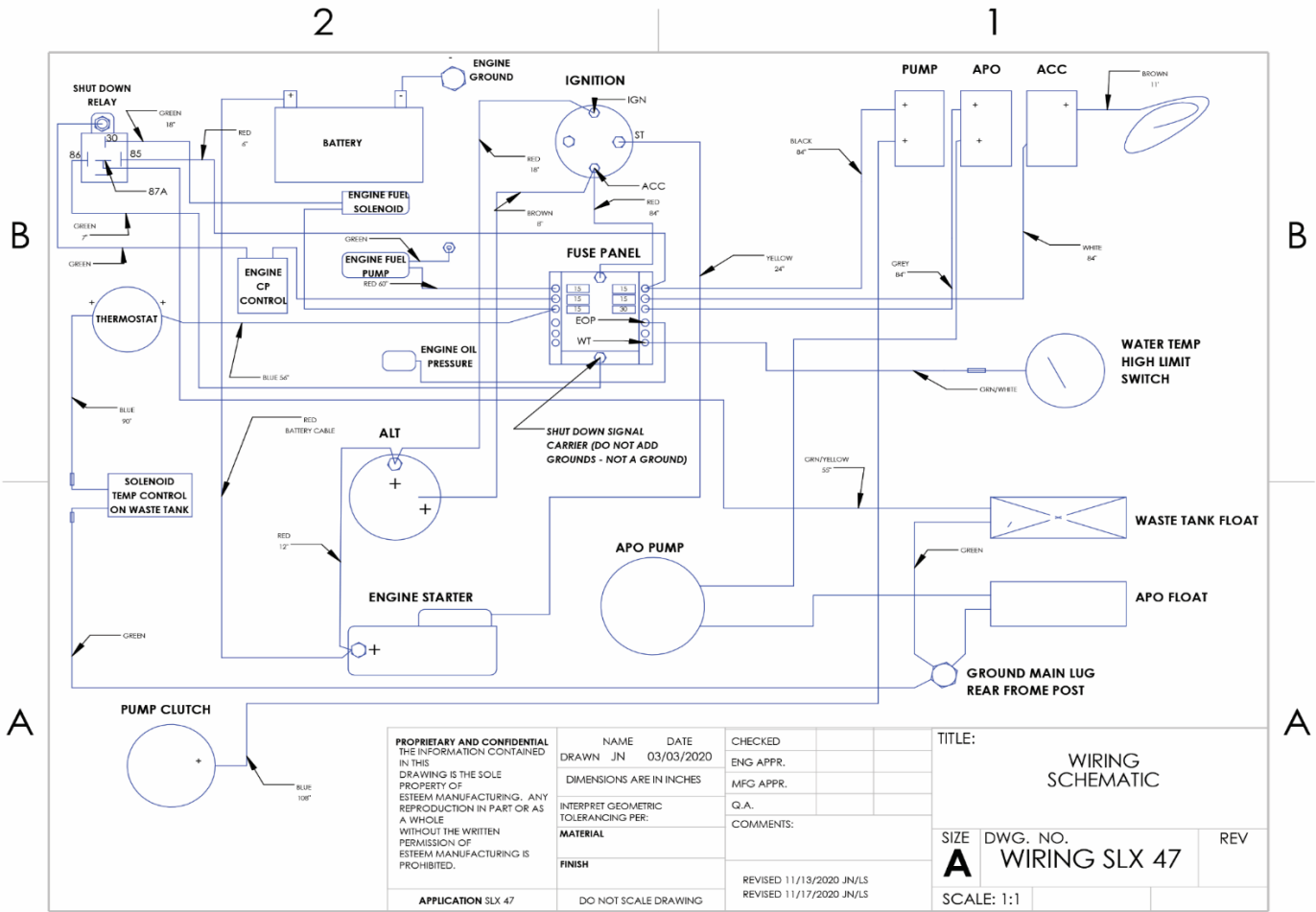
**SHUT DOWN SIGNAL  
CARRIER (DO NOT ADD  
GROUNDS - NOT A GROUND)**

**FUSE PANEL  
SHUT DOWN TERMINALS**

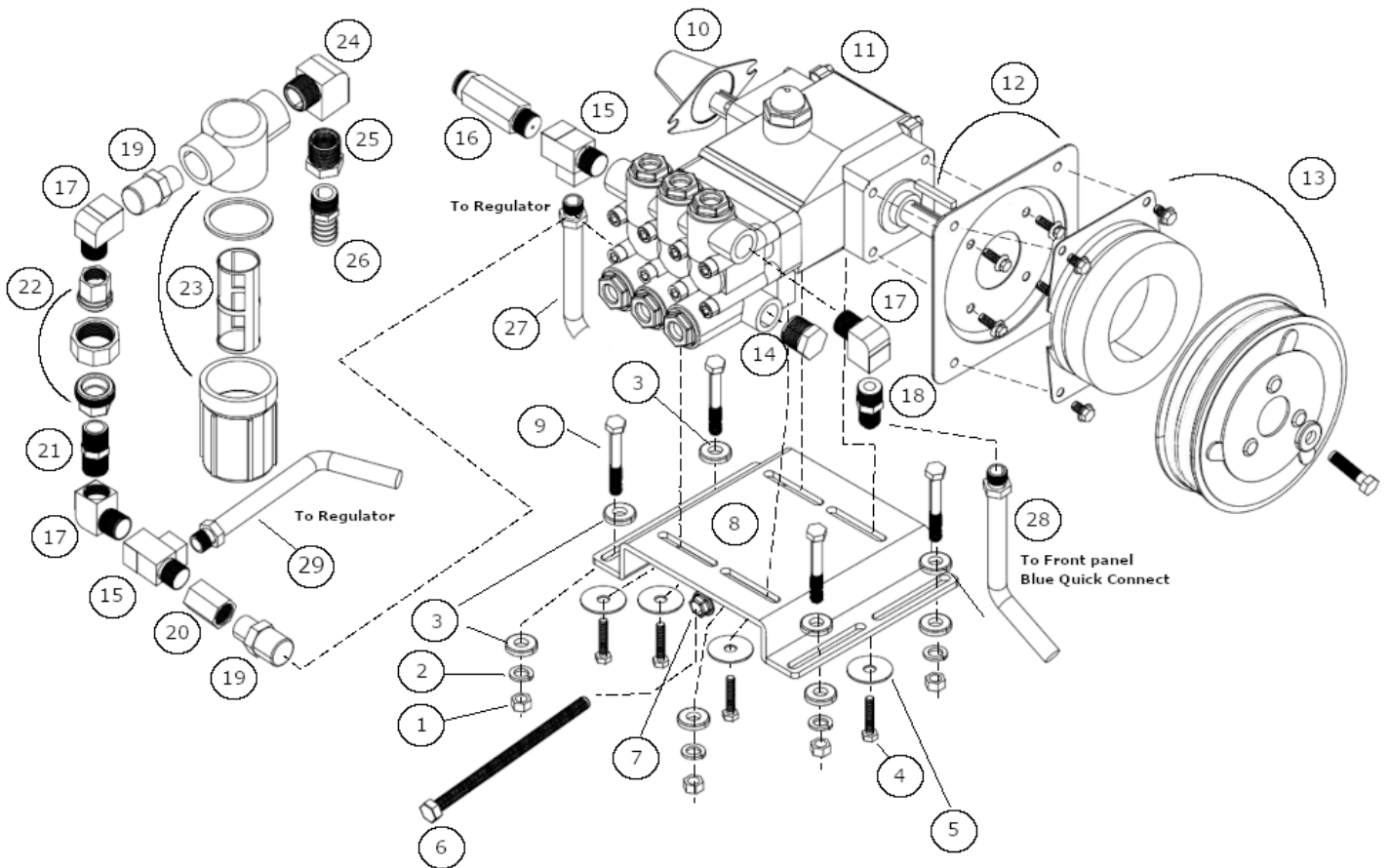
<b>PROPRIETARY AND CONFIDENTIAL:</b> THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF ESTEEM MANUFACTURING. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF ESTEEM MANUFACTURING IS PROHIBITED.	NAME	DATE	CHECKED		TITLE: <h2 style="text-align: center;">WIRING SCHEMATIC</h2>	
	DRAWN	JN	03/03/2020	ENG APPR.		
	DIMENSIONS ARE IN INCHES			MFG APPR.		
	INTERPRET GEOMETRIC TOLERANCING PER:			Q.A.		
	<b>MATERIAL</b>		COMMENTS:			
	<b>FINISH</b>					
<b>APPLICATION</b> SLX 47	DO NOT SCALE DRAWING					
			SIZE	DWG. NO.	REV	
			<b>A</b>	WIRING SLX 47		
			SCALE: 1:1	WEIGHT:	SHEET 3 OF 3	

# WATER FLOW DIAGRAM





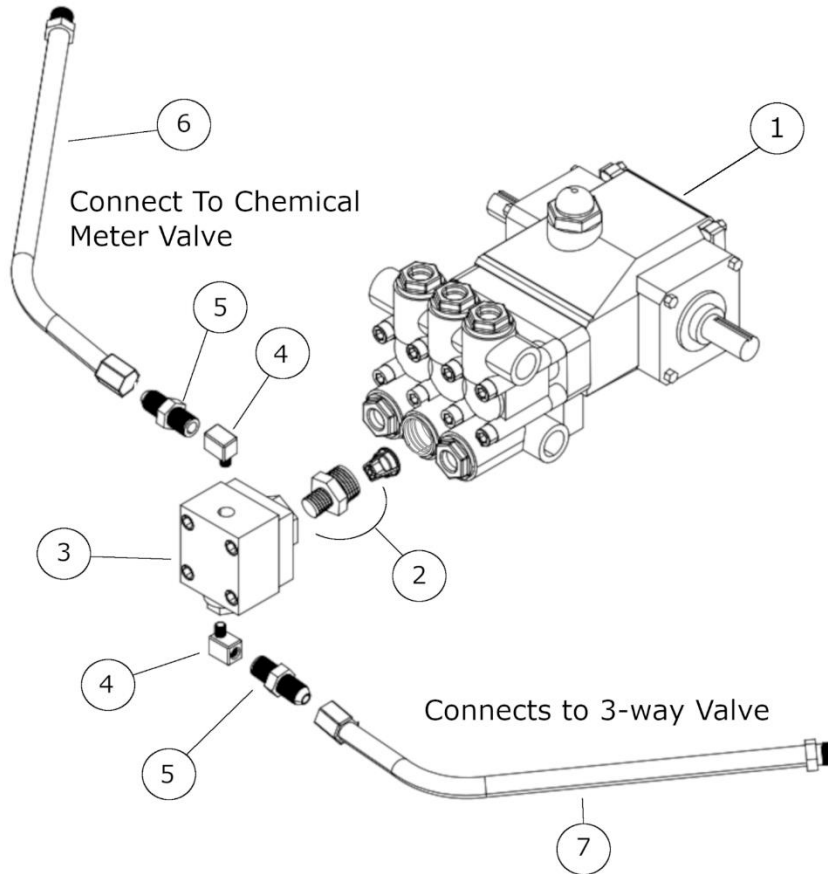
# Pump and Inlet Water Manifold Assembly



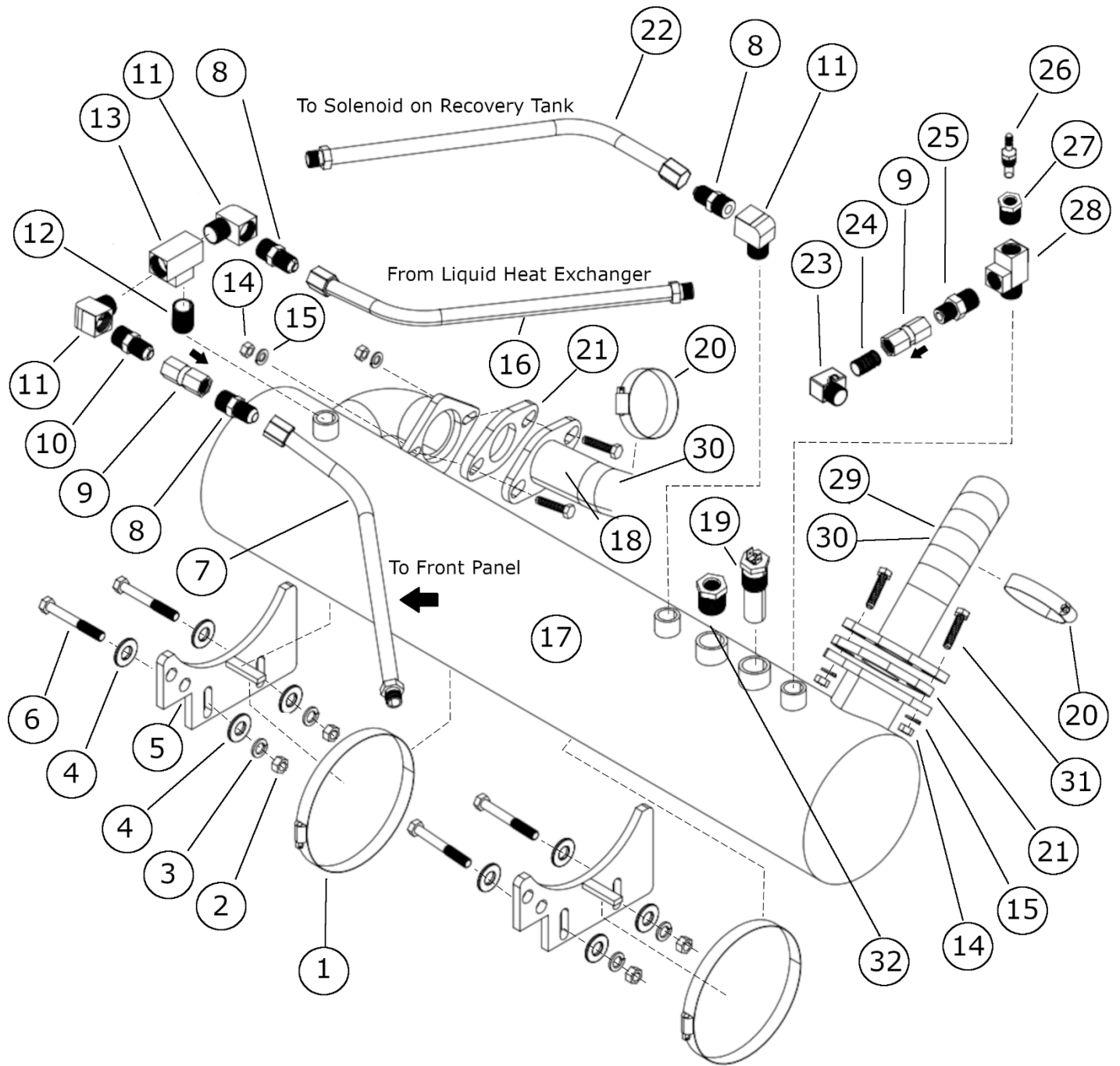
# Pump and Inlet Water Manifold Assembly

REF	PART NO.	DISCRIPTION	NOTES
1	400-045	HEX NUT, 5/16 ZINC	
2	415-040	LW, 5/16 ZINC	
3	415-200	FW, 5/16 ZINC	
4	405-430	BOLT, 6 x 30 MM ZINC	
5	415-300	FNDW, 1/4 ZINC	
6	405-176	BOLT, 3/8 X 6 ALLTHREAD ZINC	
7	400-016	NUT, 3/8 FLANGED	
8	465-685	BKRT, CAT PUMP 3CP	
9	405-220	BOLT, 5/16 X 2 1/2 GR8 ZINC	
10	516-210	SHAFT PROTECTOR	
11	516-040	CAT PUMP MODEL 3CP1120.3 HI TEMP	
12	516-230	CLUTCH MOUNTING KIT 3CP	
13	365-060	CLUTCH, CAT PUMP 16.5MM 3CP	
14	555-458	PLUG, 1/2" MPT HEX HEAD	
15	555-642	TEE, 3/8" STREET EXTRUDED	
16	551-090	VALVE, SAFETY RELIEF	
17	555-214	ELBOW 90, 3/8" STREET EXTRUDED	
18	555-060	CONNECTOR, JIC 3/8 X 3/8 NPT	
19	555-544	REDUCING NIPPLE, 1/2 MPT X 3/8 MPT	
20	555-134	COUPLING, 3/8	
21	555-274	HEX NIPPLE, 3/8" X 1 1/2" LONG	
22	555-660	UNION COUPLING, 3/8"	
23	560-113	FILTER, INLINE 1/2" (TM)	
24	555-218	ELBOW 90, 1/2" STREET EXTRUDED	
25	555-032	BUSHING, 1/2 MPT x 3/8 FPT	
26	555-390	HOSE BARB, 5/8 BARB X 3/8 MPT	
27	263-250	HOSE ASSY, UNLOADER TO PUMP (BLUE) 50"	
28	263-275	HOSE ASSY, PUMP TO PANEL COLD (BLUE) 40"	
29	263-285	PULSE HOSE, 45"	

# Chemical Pump to Water Pump



REF	PART NO.	DISCRIPTION	NOTES
1	516-040	CAT PUMP MODEL 3CP1120.3 HI TEMP	
2	516-220	ADAPTOR ASSY, CAT PUMP 3CP	
3	525-46012	CHEM PUMP SS	
4	555-202	ELBOW 90, 1/8" STREET EXTRUDED	
5	555-059	CONNECTOR, JIC 3/8 X 1/4 NPT	
6	263-295	SS HOSE ASSY - FLOW METER - 66"	
7	263-296	SS HOSE ASSY - CHEM PUMP/PANEL	



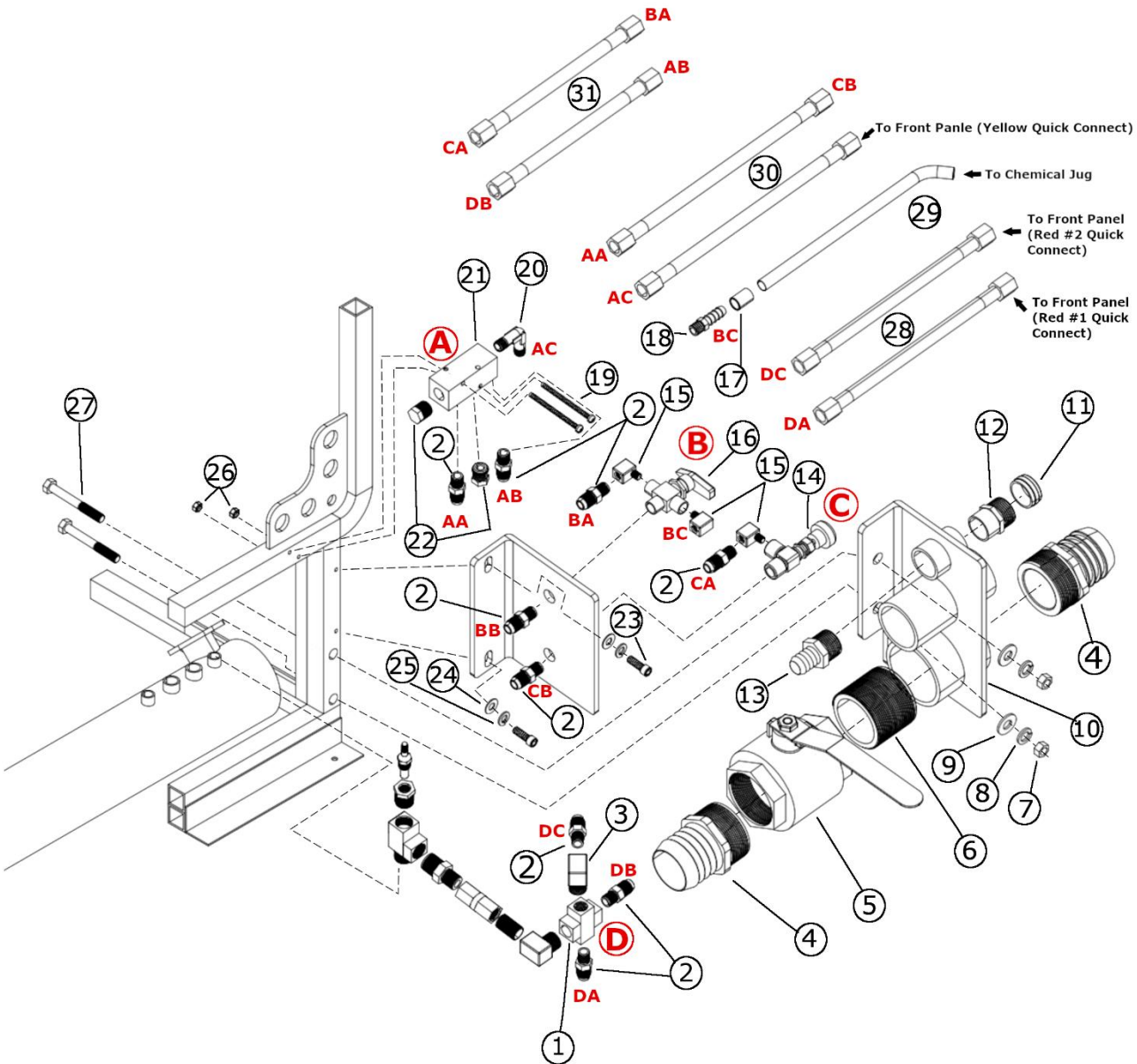
# Exhaust Heat Exchanger



# Exhaust Heat Exchanger

REF	PART NO.	DISCRIPTION	NOTES
1	425-045	CLAMP, #72 HOSE (4 3/4 ID)	
2	400-045	HEX NUT, 5/16 ZINC	
3	415-040	LW, 5/16 ZINC	
4	415-130	FW, 3/8 ZINC	
5	465-530	BRKT, EXHAUST HEAT EXCH	
6	405-220	BOLT, 5/16 X 2 1/2 GR8 ZINC	
7	263-270	HOSE ASSY, EX HE TO PANEL (YELLOW) 32"	
8	555-060	CONNECTOR, JIC 3/8 X 3/8 NPT	
9	550-035	CHECK VALVE, 1/4 FM X FM	
10	555-543	REDUCING NIPPLE, SS 3/8 MPT X 1/4 MPT	
11	555-214	ELBOW 90, 3/8" STREET EXTRUDED	
12	555-075	CLOSE NIPPLE, 3/8 SS	
13	555-640	TEE, 3/8" FPT.	
14	400-005	HEX NUT, 1/4 x 20 SS	
15	415-025	LW, 1/4 SS	
16	263-260	HOSE ASSY, LQ HE TO EX HE (RED) 31"	
17	240-575	HEAT EXCHANGER EXHAUST SLX	
18	850-120	EXHAUST HOSE ASSY 26"	
19	305-275	THERMO SWITCH 265 F	
20	425-015	CLAMP, #28 HOSE 1 5/16 x 2 1/4	
21	475-335	GASKET, EXHAUST FLANGE	
22	263-280	HOSE ASSY, EX HE TO REC TANK (RED) 51"	
23	555-208	ELBOW 90, 1/4" STREET EXTRUDED	
24	555-073	CLOSE NIPPLE, 1/4 SS	
25	555-543	REDUCING NIPPLE, SS 3/8 MPT X 1/4 MPT	
26	360-206	SENDER, TEMP CLEANCO	
27	555-022	BUSHING, 3/8 M x 1/8 F	
28	555-642	TEE, 3/8" STREET EXTRUDED	
29	850-125	EXHAUST HOSE ASSY 19.70"	
30	475-330	WRAP, TITANIUM EXHAUST	NOT SHOWN
31	405-021	BOLT, 1/4 X 1 1/4 GR8	
32	360-217	THERMOSTAT, ADJUSTABLE 0-250F	NOT SHOWN

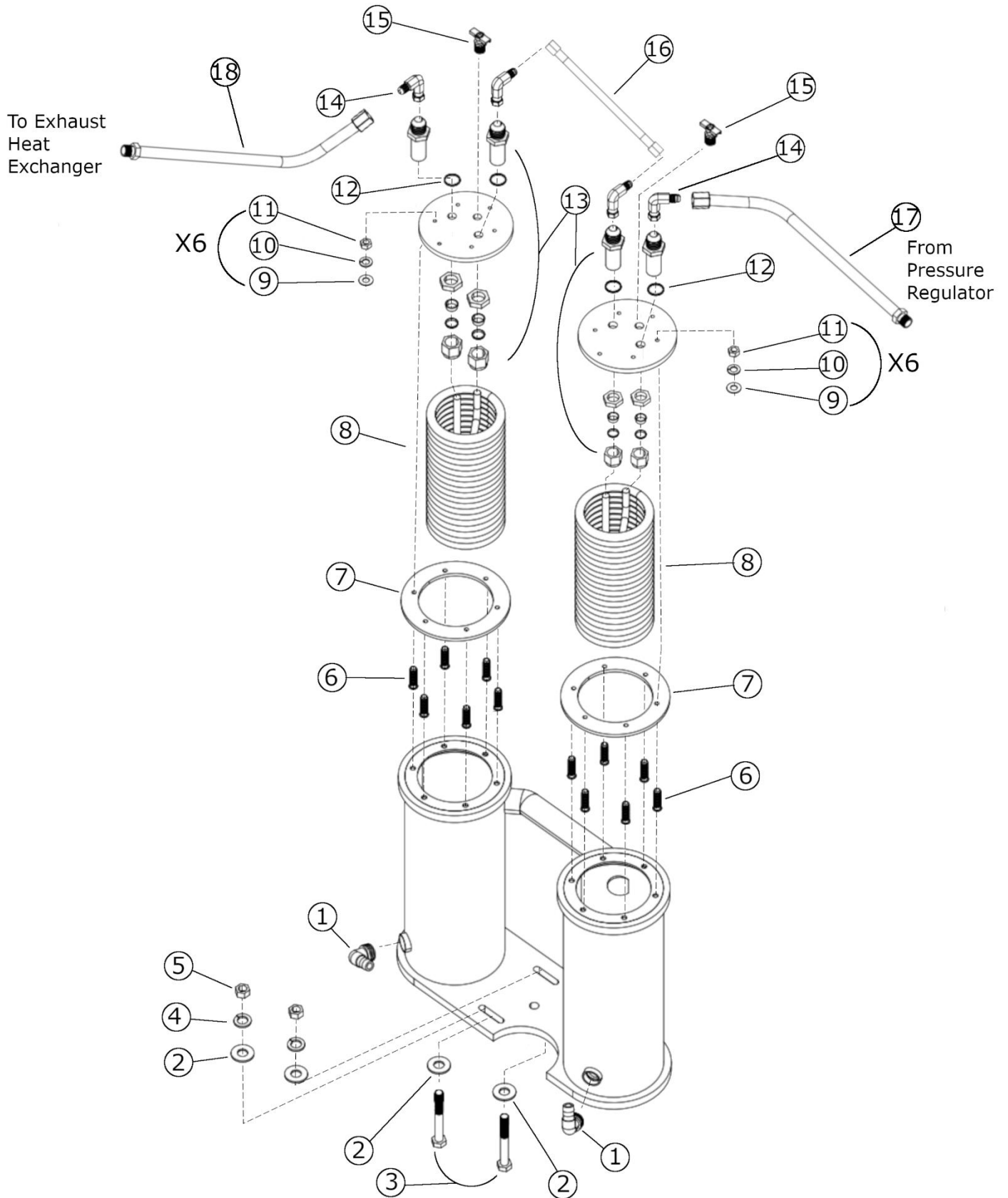
# Last Step Injection & Vacuum Port Panel



# Last Step Injection & Vacuum Port Panel

REF	PART NO.	DISCRIPTION	NOTES
1	555-922	EXTRUDED CROSS, 1/4"	
2	555-058	CONNECTOR, JIC 3/8 X 1/8 NPT	
3	555-208	ELBOW 90, 1/4" STREET EXTRUDED	
4	590-420	PVC HOSE BARB, 2"HB X 2"MPT	
5	545-040	BALL VALVE, 2" BRASS - FEM. PIPE	
6	590-240	PVC CLOSE NIPPLE, 2"	
7	400-045	HEX NUT, 5/16 ZINC	
8	415-040	LW, 5/16 ZINC	
9	415-200	FW, 5/16 ZINC	
10	845-450	VACUUM/DRAIN PORT BRACKET	
11	555-052	CAP, KNURL C/W WASHER	
12	555-146	COUPLING, M. HOSE TO 3/4 MPT	
13	555-402	HOSE BARB, 3/4 BARB X 3/4 MPT	
14	551-012	VALVE, CHEMICAL METERING	
15	555-202	ELBOW 90, 1/8" STREET EXTRUDED	
16	551-010	VALVE, 3 - WAY 1/8 NPT	
17	555-252	FERRULE, 1/4" NYLON BRAID	
18	555-350	HOSE BARB, 1/4 BARB x 1/8 MPT	
19	410-138	MS, 8-32 x 2 3/4 PAN PH SS	
20	555-061	CONNECTOR 90, JIC 3/8 X 1/4 NPT	
21	551-030	MANIFOLD, 3 PORT	
22	555-452	PLUG, 1/4 MPT HEX	
23	410-410	CS, 1/4-20 X 3/4 SOC S/S	
24	415-020	LW, 1/4 ZINC	
25	415-125	FW, 1/4 SS	
26	400-125	LOCKNUT, 8 X 32 NYLON S.S.	
27	405-220	BOLT, 5/16 X 2 1/2 GR8 ZINC	
28	263-265	HOSE ASSY, EX HE TO PANEL (RED) 10"	
29	572-100	CLEAR BRAIDED HOSE 1/4"	
30	263-204	SS HOSE ASSY - HTEXCH - 11"	
31	263-203	SS HOSE ASSY - HTEXCH - 8"	

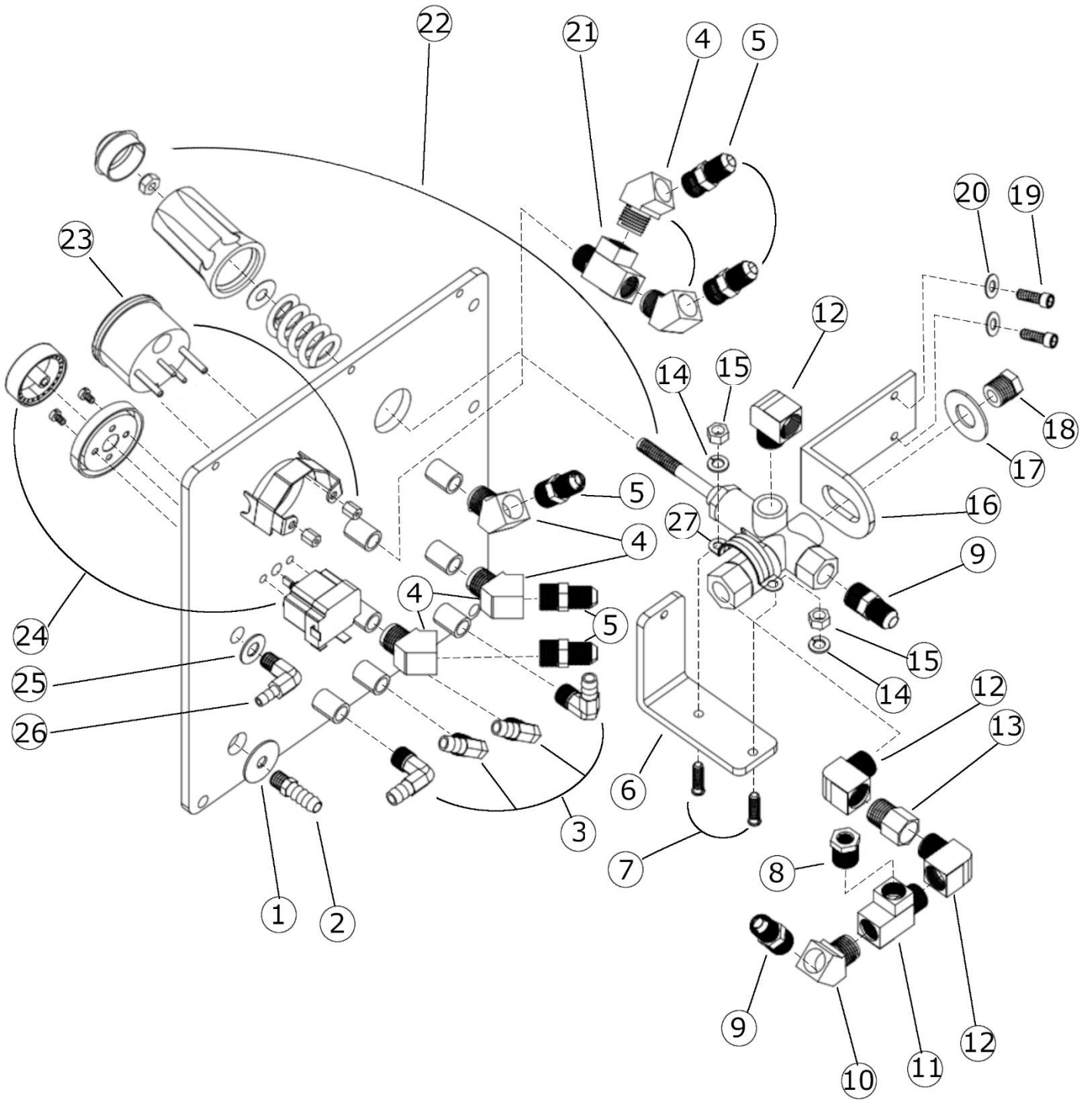
# Liquid Heat Exchanger



# Liquid Heat Exchanger

REF	PART NO.	DISCRIPTION	NOTES
1	555-326	HOSE BARB 90, 3/8 BARB x 3/8 MPT	
2	415-200	FW, 5/16 ZINC	
3	405-220	BOLT, 5/16 X 2 1/2 GR8 ZINC	
4	415-040	LW, 5/16 ZINC	
5	400-045	HEX NUT, 5/16 ZINC	
6	405-600	CLINCH STUD, 1/4 X 1 S.S.	
7	475-085	GASKET, 5 3/4" HEAT EXCH	
8	485-100	COPPER COIL, 3/8 X 25' HEAT EXCH.	
9	415-125	FW, 1/4 SS	
10	415-020	LW, 1/4 ZINC	
11	400-005	HEX NUT, 1/4 x 20 SS	
12	380-232	ORING, SILICONE 70 DURO 1/2ID X 5/8OD	
13	555-010	BULKHEAD UNION SS 3/8 X JIC	
14	555-213	ELBOW, SS 3/8 X JIC	
15	555-164	DRAIN COCK, 1/4" SHORT HANDLE	
16	263-265	HOSE ASSY, (RED) 10"	
17	263-255	HOSE ASSY, UNLOADER TO LQ HE (BLUE) 24"	
18	263-260	HOSE ASSY, LQ HE TO EX HE (RED) 31"	

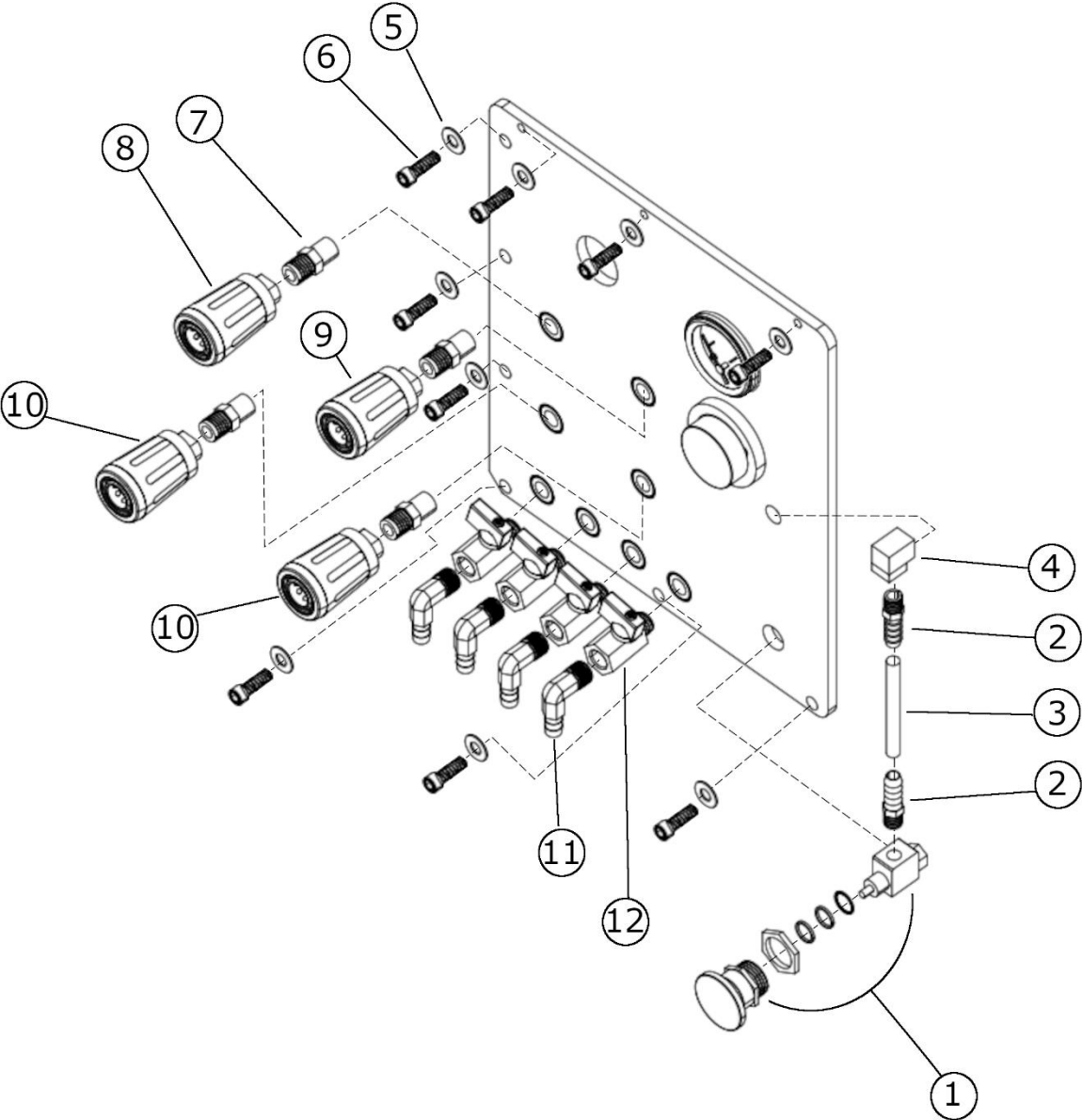
# Lower Panel (BackSide)



# Lower Panel (BackSide)

REF	PART NO.	DISCRIPTION	NOTES
1	415-300	FNDW, 1/4 ZINC	
2	555-350	HOSE BARB, 1/4 BARB x 1/8 MPT	
3	555-324	HOSE BARB 90, 3/8 BARB x 1/4 MPT	
4	555-184	ELBOW 45, STREET 1/4"	
5	555-059	CONNECTOR, JIC 3/8 X 1/4 NPT	
6	465-651	BRKT, UNLOADER SUPPORT	
7	405-600	CLINCH STUD, 1/4 X 1 S.S.	
8	555-022	BUSHING, 3/8 M x 1/8 F	
9	555-060	CONNECTOR, JIC 3/8 X 3/8 NPT	
10	555-186	ELBOW 45, 3/8" STREET EXTRUDED	
11	555-642	TEE, 3/8" STREET EXTRUDED	
12	555-214	ELBOW 90, 3/8" STREET EXTRUDED	
13	555-004	ADPT, 3/8 M X 3/8 F	
14	415-020	LW, 1/4 ZINC	
15	400-005	HEX NUT, 1/4 x 20 SS	
16	465-650	BRKT, UNLOADER SLX	
17	415-165	FW, 5/8 SS	
18	555-454	PLUG, 3/8 MPT HEX HEAD	
19	410-410	CS, 1/4-20 X 3/4 SOC S/S	
20	415-125	FW, 1/4 SS	
21	555-636	TEE, 1/4" STREET EXTRUDED	
22	530-105	PULSAR UNLOADER - CP & CL	
23	360-207	TEMP GAUGE, CLEANCO	
24	360-217	THERMOSTAT, ADJUSTABLE 0-250F	
25	415-135	FW, 3/8 SS (THIN)	
26	555-320	HOSE BARB 90, 1/4 BARB X 1/8 MPT	
27	425-140	CLAMP, TUBE 3/4"	

# Lower Panel Front Side

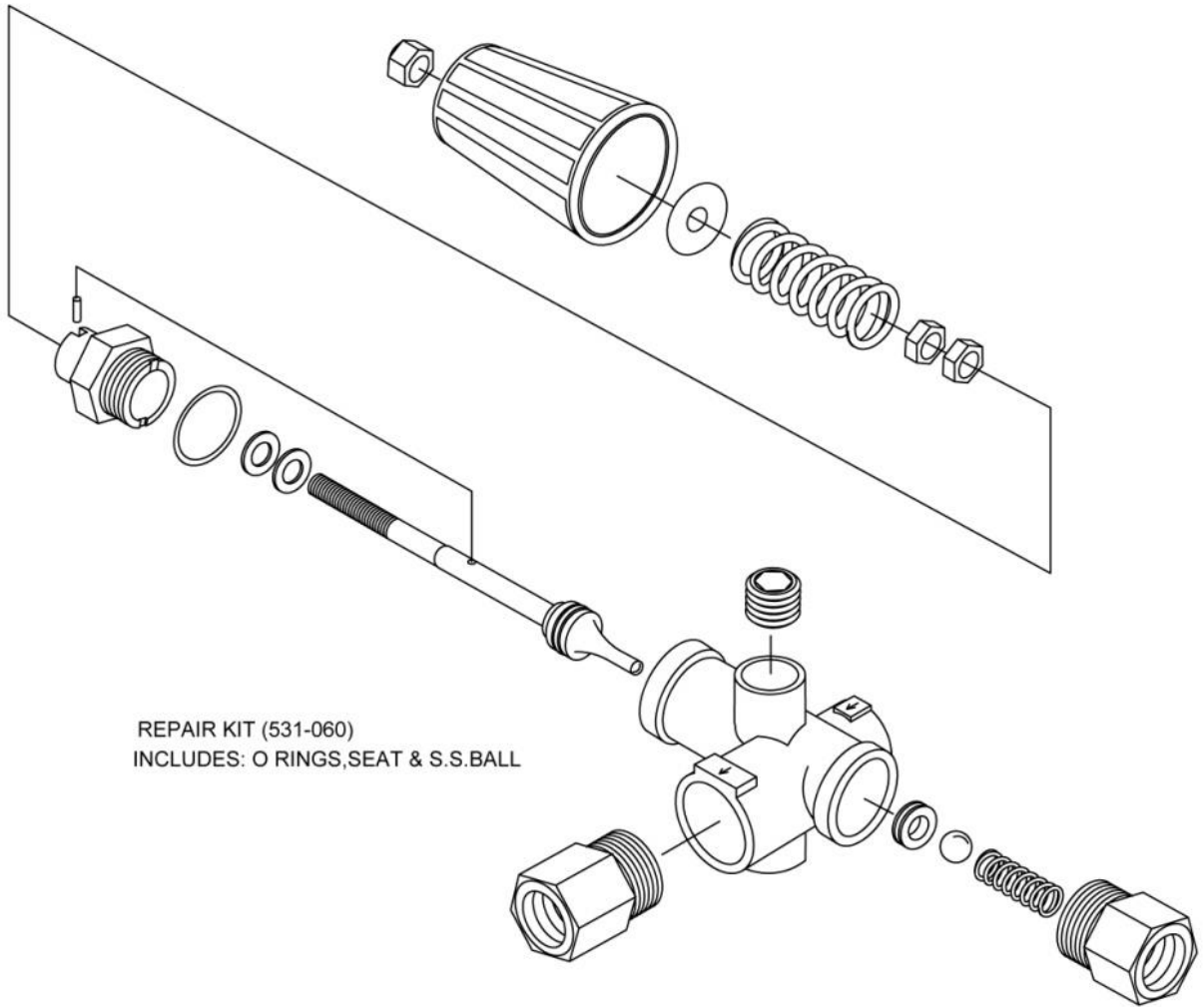




# Lower Panel Front Side

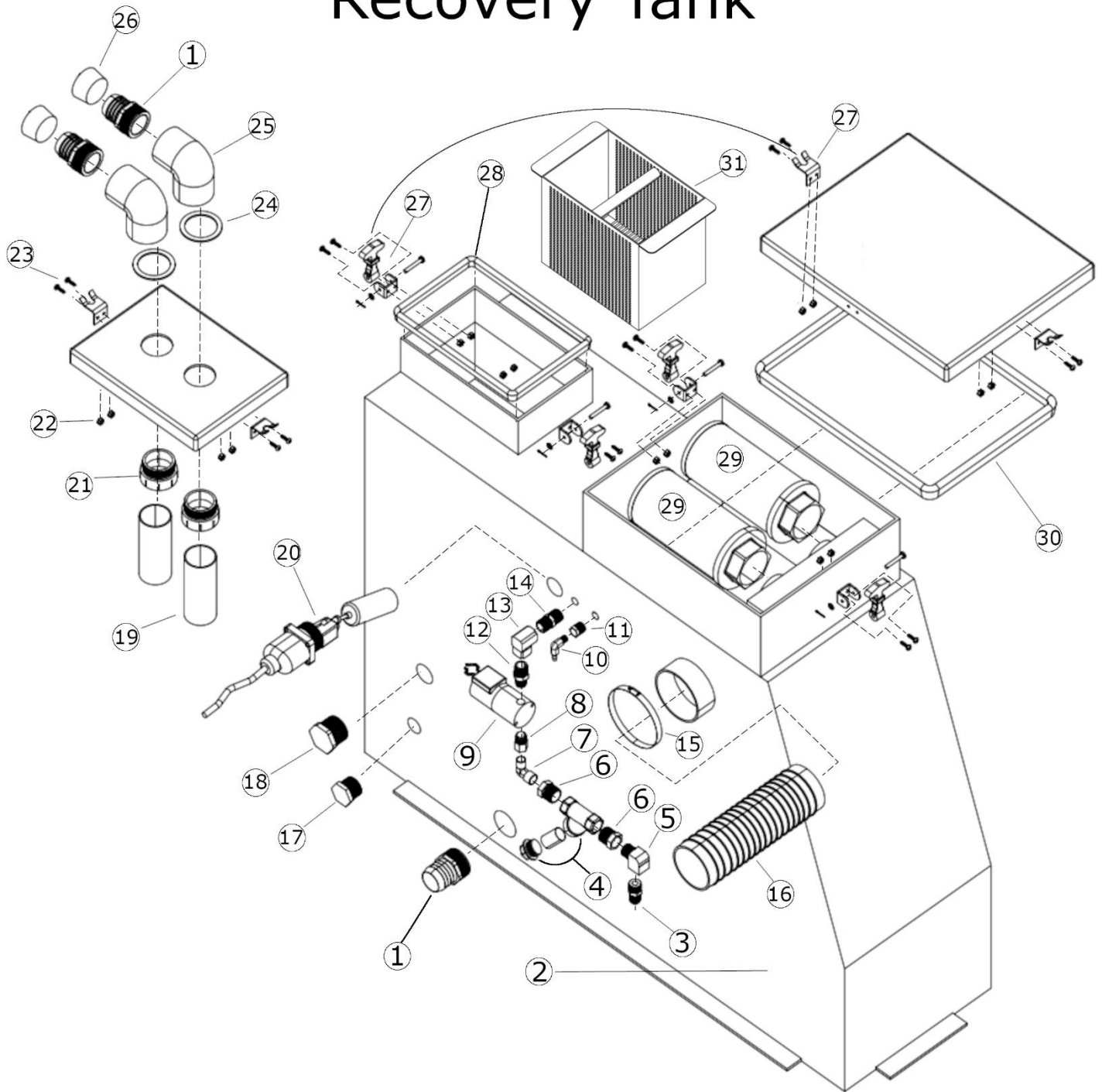
REF	PART NO.	DISCRIPTION	NOTES
1	551-080	VAC LUBE PORT SLX	
2	555-350	HOSE BARB, 1/4 BARB x 1/8 MPT	
3	480-010	PVC TUBING, 1/4" ID CLEAR 3 INCHES	
4	555-200	ELBOW 90, 1/8" FPT. EXTRUDED	
5	415-125	FW, 1/4 SS	
6	410-410	CS, 1/4-20 X 3/4 SOC S/S	
7	555-271	HEX NIPPLE, 1/4 SS	
8	580-005	Q.C. 1/4" FEM (CLOSED) INS. SLEEVE (BLU)	
9	580-007	Q.C. 1/4" FEM (CLOSED) INS. SLEEVE (YELLOW)	
10	580-008	Q.C. 1/4" FEM (CLOSED) INS. SLEEVE (RED)	
11	555-324	HOSE BARB 90, 3/8 BARB x 1/4 MPT	
12	545-005	BALL VALVE, MINI 1/4"	

# Pressure Regulator



REPAIR KIT (531-060)  
INCLUDES: O RINGS, SEAT & S.S. BALL

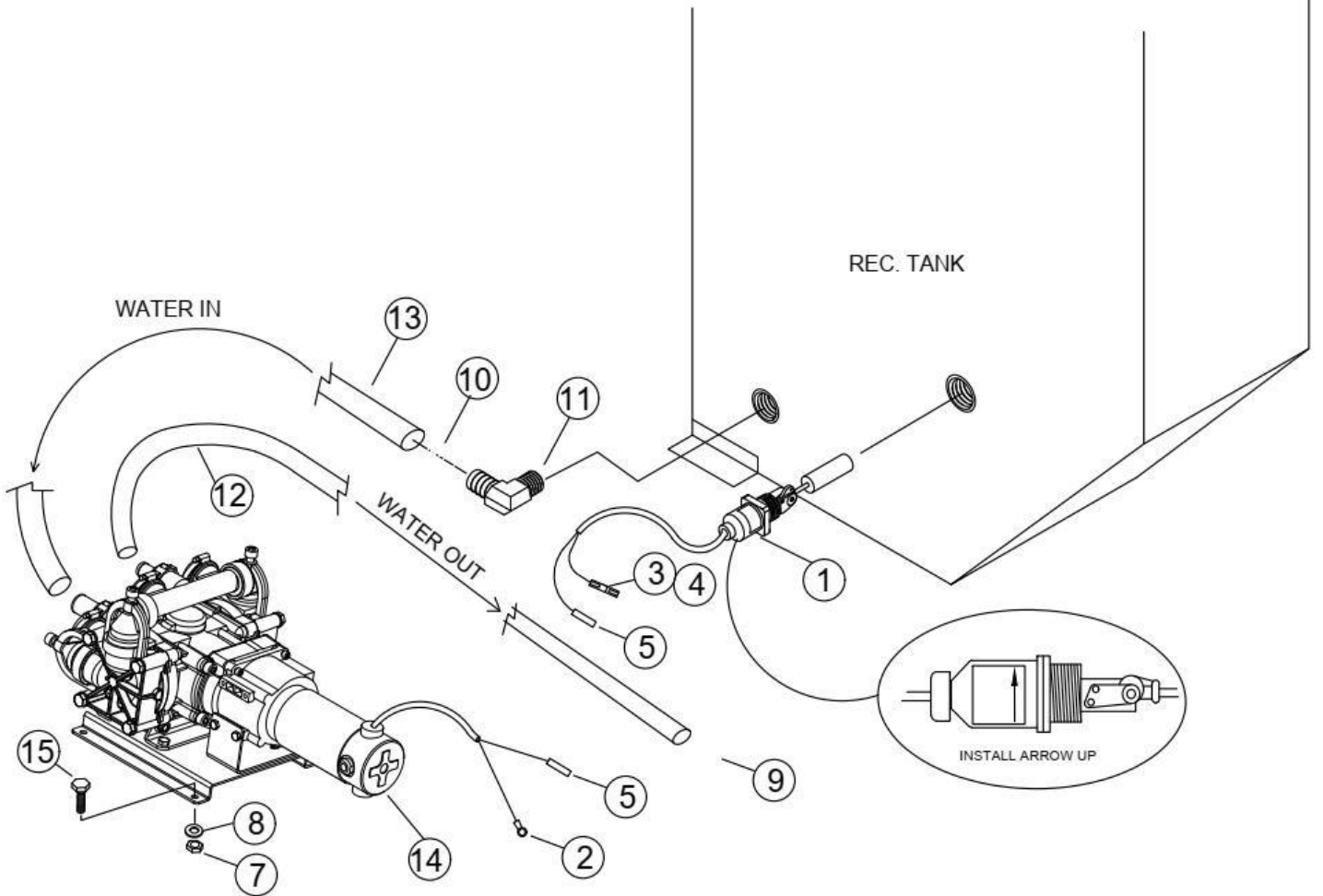
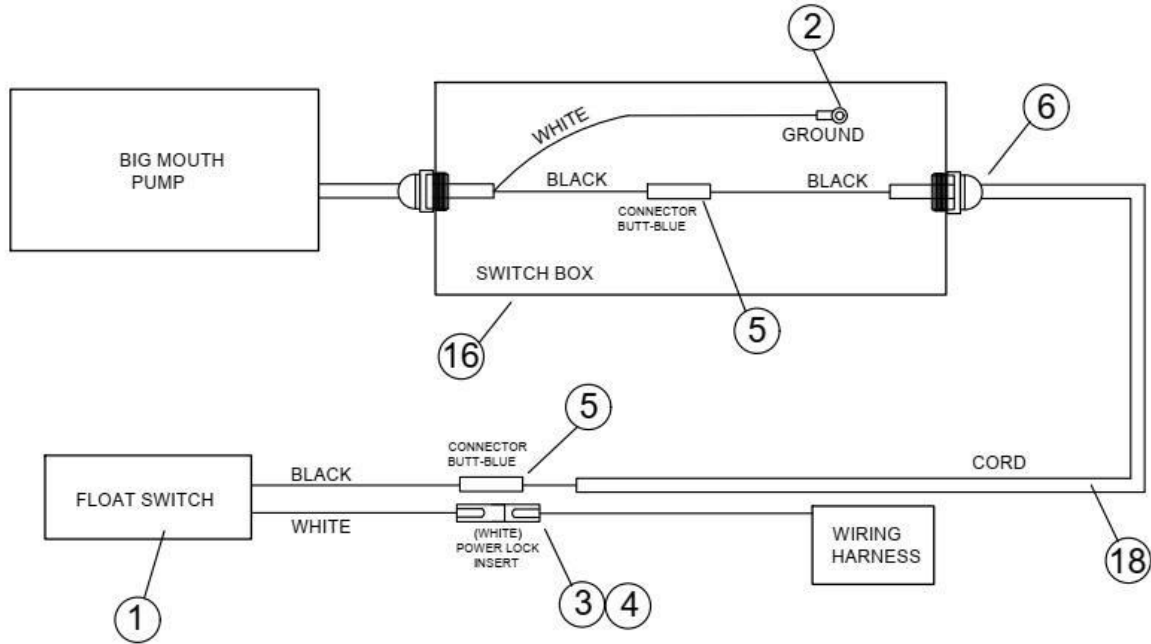
# Recovery Tank



# Recovery Tank

REF	PART NO.	DISCRIPTION	NOTES
1	590-420	PVC HOSE BARB, 2"HB X 2"MPT	
2	860-545	REC TANK, SLX BARE	
3	555-060	CONNECTOR, JIC 3/8 X 3/8 NPT	
4	560-115	STRAINER, Y 1/2 NPT	
5	555-214	ELBOW 90, 3/8" STREET EXTRUDED	
6	555-032	BUSHING, 1/2 MPT x 3/8 FPT	
7	555-252	ELBOW 90, 3/8 MPT X 3/8 MPT	
8	555-512	REDUCING ADPT, 3/8 FPT X 1/4 MPT	
9	337-030	SOLENOID, SLX	
10	555-320	HOSE BARB 90, 1/4 BARB X 1/8 MPT	
11	555-020	BUSHING, 1/4 M x 1/8 F	
12	555-542	REDUCING NIPPLE, 3/8 MPT X 1/4 MPT	
13	555-212	ELBOW 90, 3/8" FPT.	
14	555-274	HEX NIPPLE, 3/8" X 1 1/2" LONG	
15	425-045	CLAMP, #72 HOSE (4 3/4 ID)	
16	575-038	DUCTING HOSE 4 1/2 ID (12 Inches)	
17	582-210	PLUG, 1" THREADED	
18	582-212	PLUG, 1 1/4 THREADED	
19	595-010	ABS PIPE, 2"	
20	305-105	SWITCH, SHUT OFF/ CAD & REC TANK	
21	588-015	ABS ADPT 2", S X MPT	
22	400-125	LOCKNUT, 8 X 32 NYLON S.S.	
23	410-125	SMS, 8 X 5/8 PAN ROB.SS	
24	475-090	GASKET, INTAKE REC TANK 2"	
25	590-025	SCD80 PVC ELBOW 90,2"FPTxFPT	
26	498-020	PLUG, RUBBER #10 C/W TETHER	
27	445-040	CATCH, RUBBER - COMPACT REC TANK	
28	475-101	GASKET, CHANNEL (LINT BASKET)	
29	560-205	FILTER, 2 1/2" S/S	
30	475-103	GASKET, CHANNEL (FILTER)	
31	560-370	FILTER BASKET, ALUMINUM, CLEANCO	

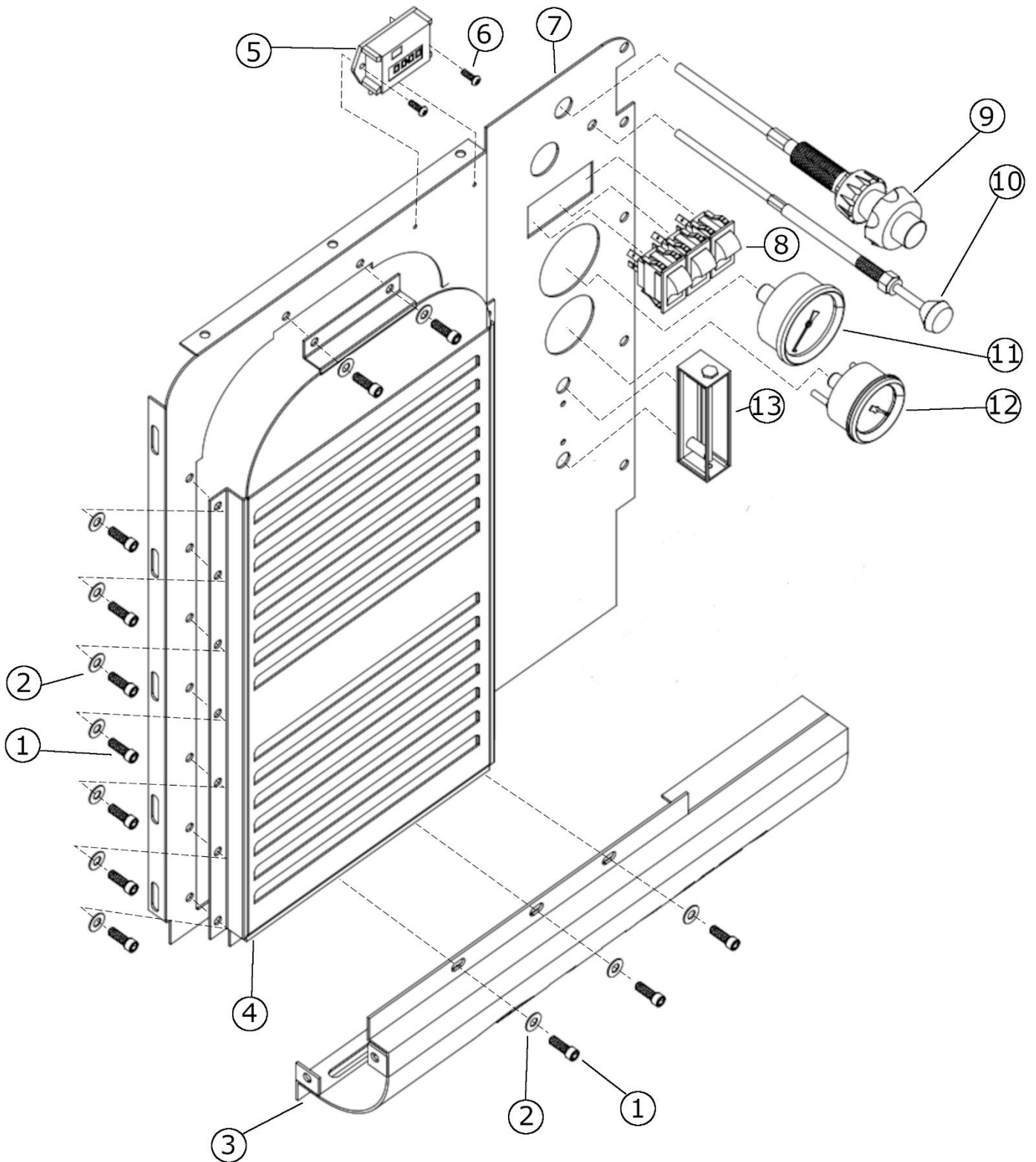
# EXTERNAL PUMP-OUT WIRING



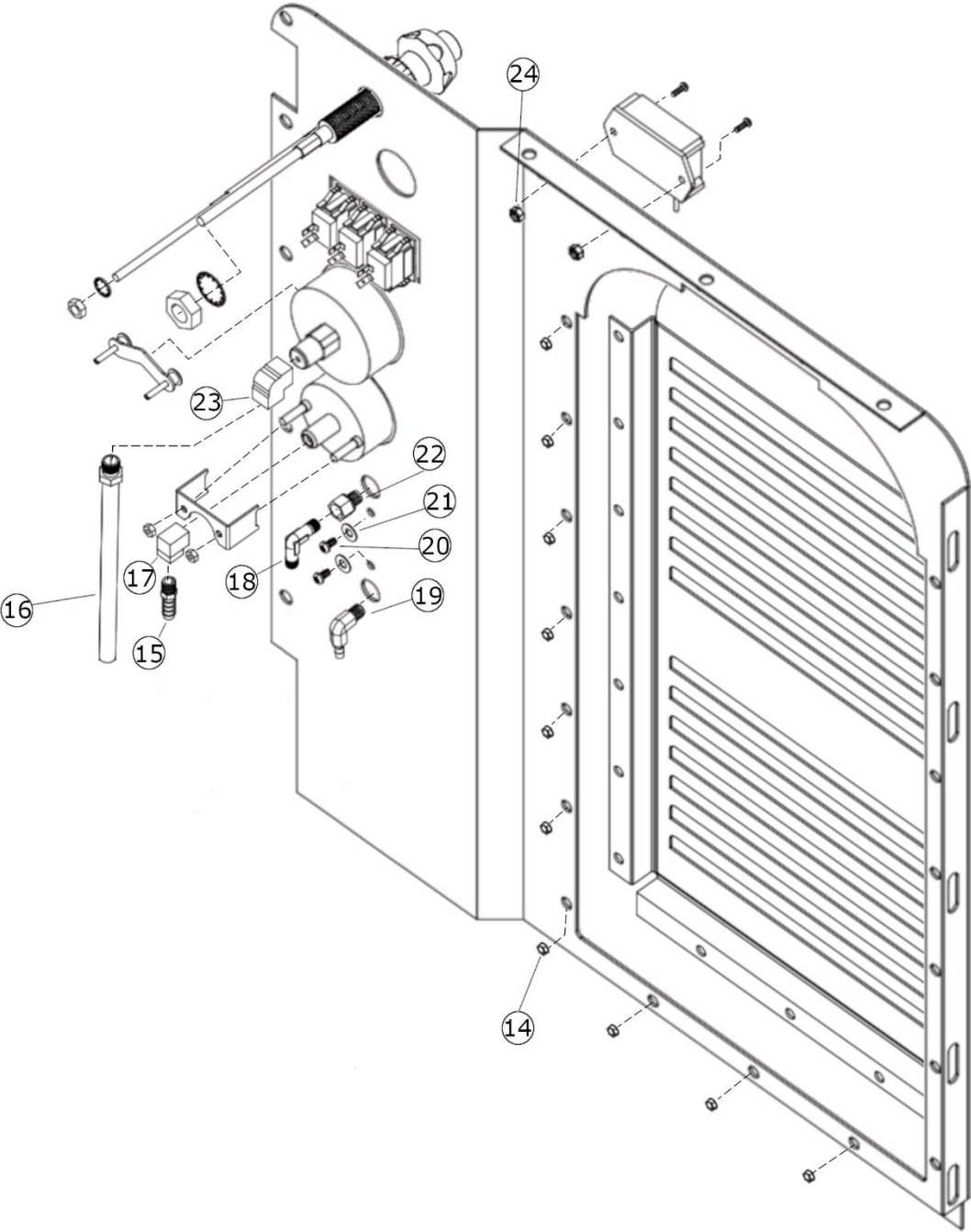
## TM EXTERNAL PUMP-OUT PARTS LIST

REF	PART NO.	DESCRIPTION	NOTES:
1	305-105	Switch, External C.A.D.	
2	325-205	Terminal Ring 1/4 Blue	
3	325-310	Power Lock Terminal - White	
4	325-320	Power Lock Insert	
5	325-005	Connector, Butt -Blue	
6	335-015	Strain Relief	
7	400-016	Nut, 3/8 Flanged	
8	415-130	FW, 3/8 Zinc	
9	425-007	Clamp, #10	
10	425-010	Clamp, #20	
11	555-335	Hose Barb 90, 1" Barb x 1" MPT	
12	572-156	Polyspring Hose 3/4"	
13	572-157	Polyspring Hose 1"	
14	520-030	Big Mouth Waste Pump	
15	405-110	Bolt, 3/8 x 1-1/4 Zinc	
16	305-940	Switch Box	
17	305-945	Switch Box Cover Blank	Not Shown
18	315-035	Cord	

# Top Panel (Front Side)



# Top Panel (Back Side)

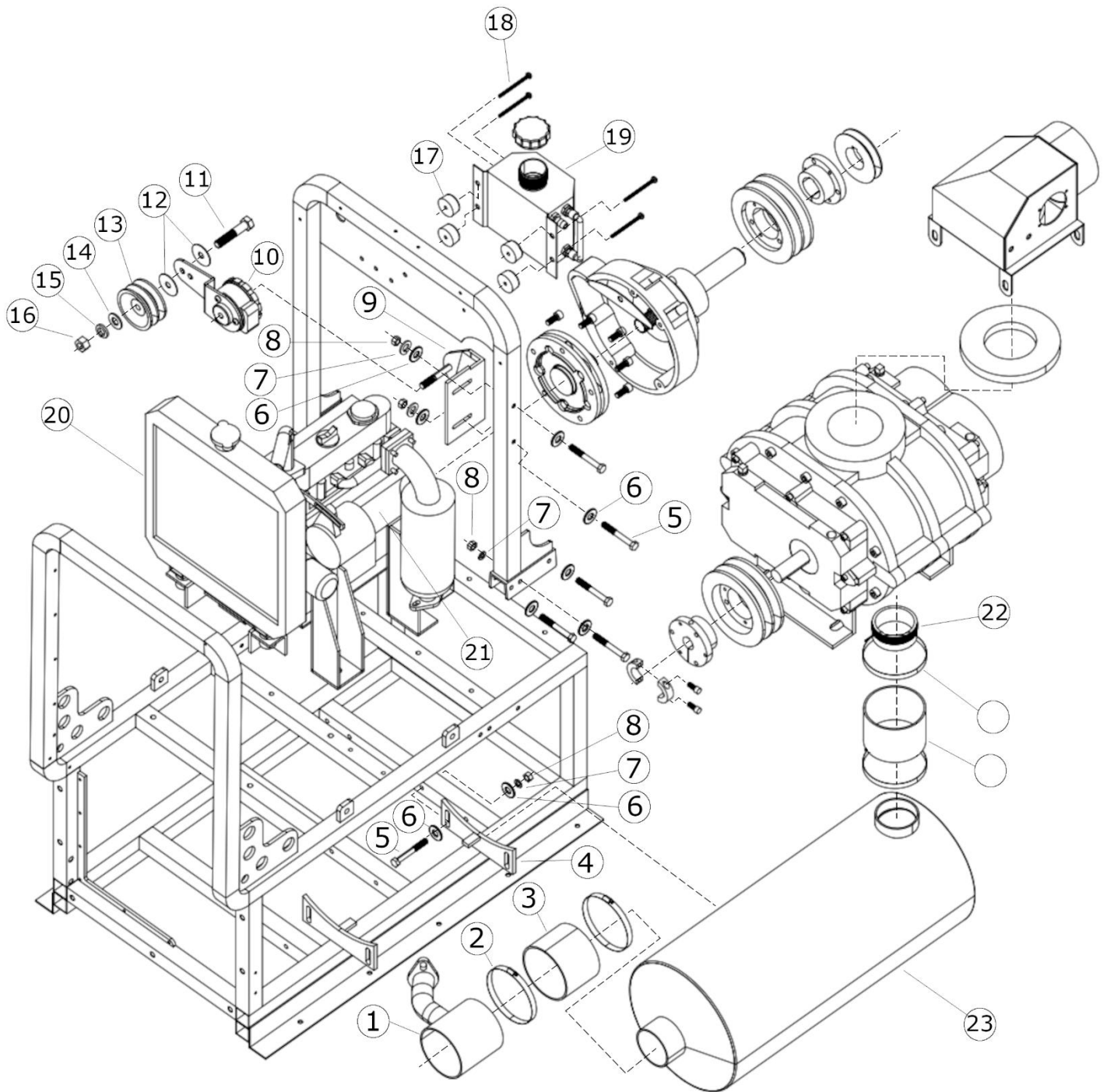




# Top Panel (Front & Back side)

REF	PART NO.	DISCRIPTION	NOTES
1	410-415	CS, 1/4 X 20 X 1/2 SS SOC	
2	415-125	FW, 1/4 SS	
3	845-420	CURVED FRONT PANEL SLX47	
4	845-405	UPPER GRILL PANEL SLX	
5	360-216	TINY TACH	
6	410-130	MS, 8-32 X 1/2 PAN PHIL SS	
7	845-435	TOP PANEL SLX	
8	305-085	SWITCH, ROCKER - WHITE	
9	352-095	THROTTLE CABLE, KUBOTA	
10	352-100	CHOKE CABLE, KUBOTA	
11	360-145	GUAGE, 2000 PSI CLEANCO	
12	360-131	GUAGE, VAC - CLEANCO	
13	360-005	CHEMICAL FLOW METER, GPH (1 - 5)	
14	400-038	NUT, 1/4 x 20 K-LOK	
15	555-350	HOSE BARB, 1/4 BARB x 1/8 MPT	
16	263-290	PULSE HOSE, 22" - SLX	
17	555-200	ELBOW 90, 1/8" FPT. EXTRUDED	
18	555-061	CONNECTOR 90, JIC 3/8 X 1/4 NPT	
19	555-320	HOSE BARB 90, 1/4 BARB X 1/8 MPT	
20	410-205	MS, 10-32 X 1/2 PANPHIL SS	
21	415-115	FW, 10 SS	
22	555-510	REDUCING ADPT, 1/4 FPT X 1/8 MPT	
23	555-206	ELBOW 90, 1/4" FPT. EXTRUDED	
24	400-125	LOCKNUT, 8 X 32 NYLON S.S.	

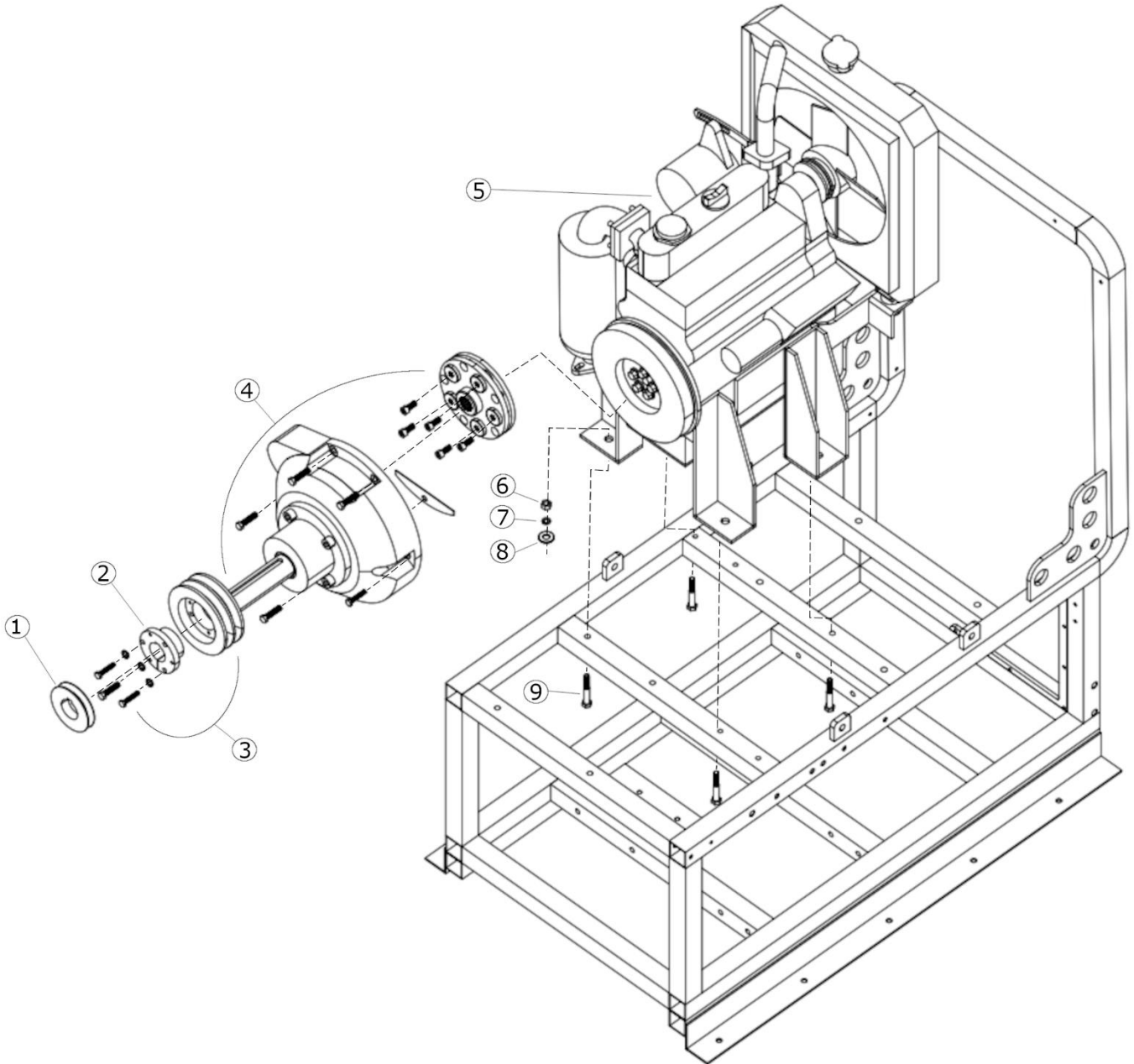
# Silencer, Tensioner & Coolant Overflow



# Silencer, Tensioner & Coolant Overflow

REF	PART NO.	DISCRIPTION	NOTES
1	850-115	EXHAUST PORT ASSY SLX47	
2	425-045	CLAMP, #72 HOSE (4 3/4 ID)	
3	572-220	SILICONE HOSE, 3 1/2" (3" LENGTH)	
4	465-525	BRKT, SILENCER SLX	
5	405-220	BOLT, 5/16 X 2 1/2 GR8 ZINC	
6	415-130	FW, 3/8 ZINC	
7	415-030	LW, 3/8 ZINC	
8	400-045	HEX NUT, 5/16 ZINC	
9	465-655	BRKT, TENSIONER SLX	
10	390-145	TENSIONER, SPRING	
11	405-316	BOLT, 1/2 X 2 1/2 GRD 8	
12	415-155	FW, 1/2 SS (1 1/4 OD)	
13	385-175	PULLEY,2BK36-IDLER W/BUSHING	
14	415-152	FW, 1/2 SAE ZINC	
15	415-050	LW, 1/2 ZINC	
16	400-050	HEX NUT, 1/2 ZINC	
17	498-104	FOOT RUBBER	
17A	400-039	NUT, 10-24 K-LOK	NOT SHOWN
18	410-175	MS, 10-24 X 2 1/2 RH RB ZINC	
19	600-230	RESERVOIR, COOLANT SLX	
20	375-101	RADIATOR, KUBOTA	
21	375-100	ENGINE, KUBOTA 32 HP GAS WG972G	
22	358-255	EXHAUST PORT 47 VR2	
23	850-040	SILENCER, 47 CRITICAL	
24	425-166	CLAMP, HOSE 12"	NOT SHOWN

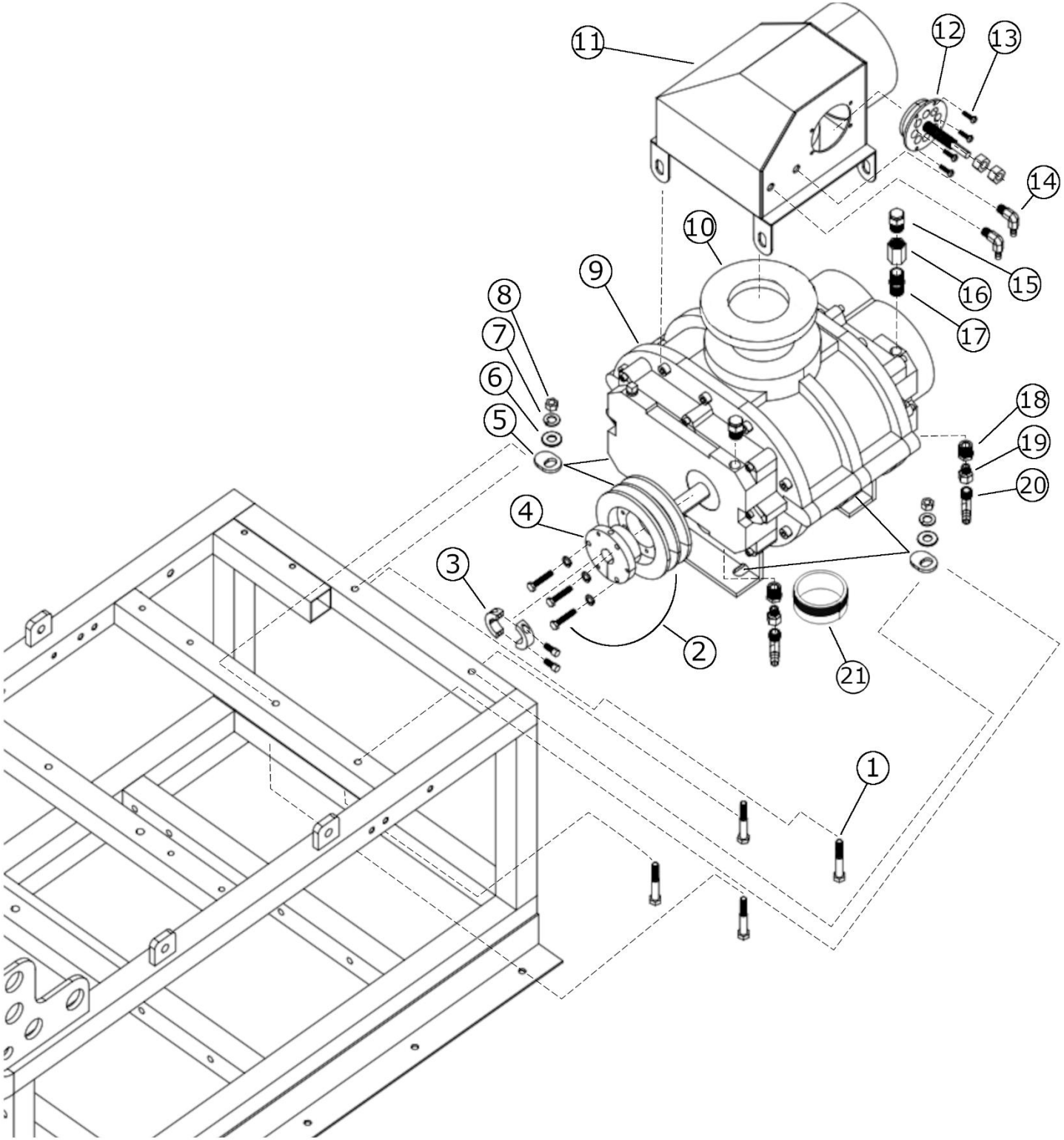
# Engine & Hayes Support Shaft



# Engine & Hayes Support Shaft

REF	PART NO.	DISCRIPTION	NOTES
1	385-108	PULLEY, PUMP KUBOTA	
2	385-215	BUSHING, KUBOTA/BLOWER	
3	385-210	PULLEY, KUBOTA & BLOWER	
4	380-300	HAYES SUPPORT SHAFT	
5	375-100	ENGINE, KUBOTA 32 HP GAS WG972G	
6	400-015	NUT, 3/8 X 16 ZINC	
7	415-030	LW, 3/8 ZINC	
8	415-130	FW, 3/8 ZINC	
9	405-137	BOLT, 3/8 X 2 1/2 GR8	
10	397-038	BELT, AX28	NOT SHOWN

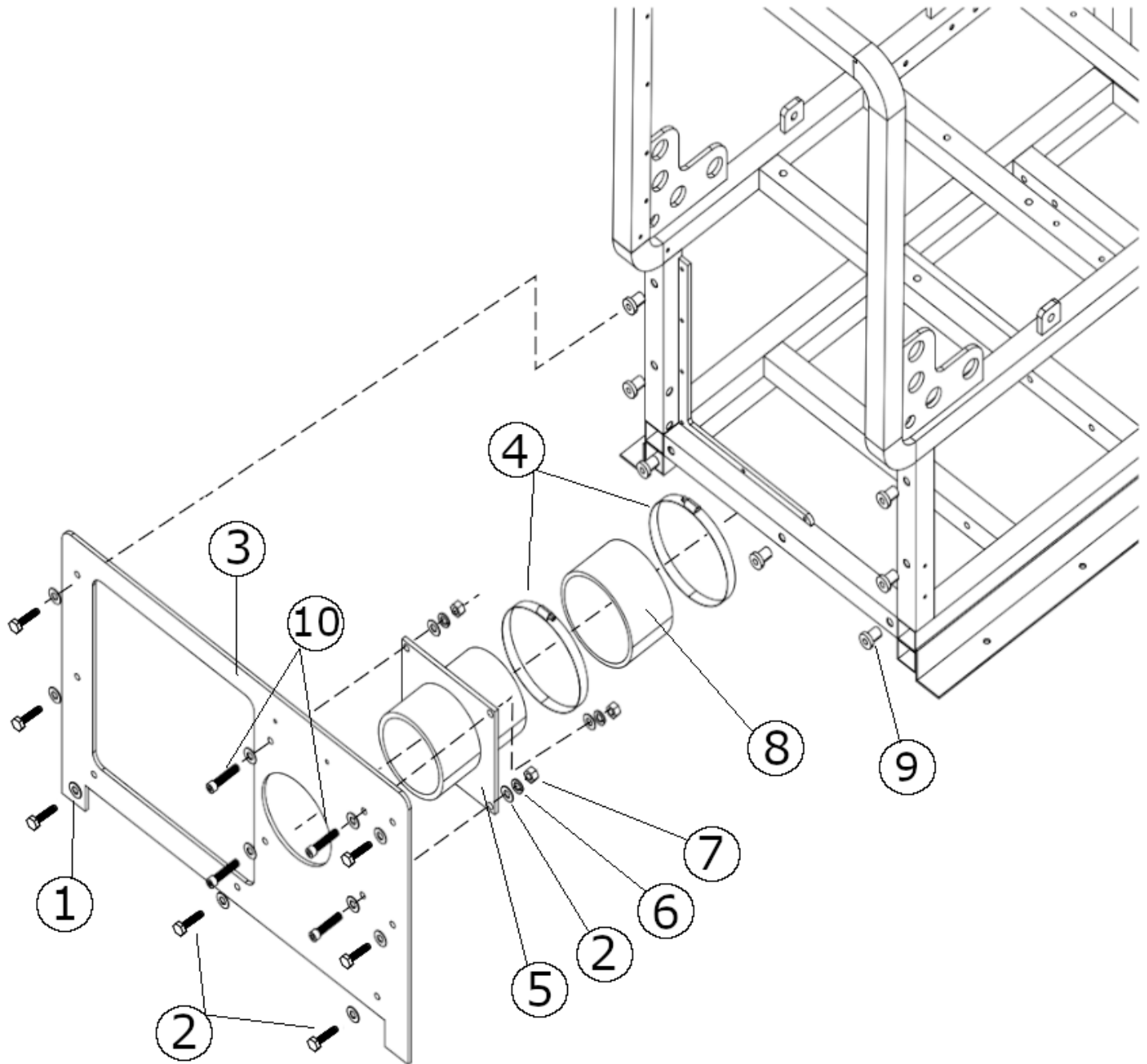
# Blower & Frame ASM



# Blower & Frame ASM

REF	PART NO.	DISCRIPTION	NOTES
1	405-137	BOLT, 3/8 X 2 1/2 GR8	
2	385-210	PULLEY, KUBOTA & BLOWER	
3	380-514	LOCKING COLLAR, 7/8	
4	385-230	BUSHING, BLOWER SLX 47	
5	415-370	WASHER, BLOWER	
6	415-130	FW, 3/8 ZINC	
7	415-030	LW, 3/8 ZINC	
8	400-015	NUT, 3/8 X 16 ZINC	
9	358-505	TUTHILL 47 DSL TRI-LOBE BLOWER	
10	475-311	GASKET, 47 INTAKE SCOOP VR2 TUTHILL	
11	358-548	INTAKE SCOOP 47 SLIDE VR2 TUTHILL	
12	620-405	VAC BREAKER ASSY (CLEANCO)	
13	410-160	MS, 10-24 X 3/4 PAN PH SS	
13A	400-130	LOCKNUT, 10 X 24 NYLON SS	NOT SHOWN
14	555-320	HOSE BARB 90, 1/4 BARB X 1/8 MPT	
15	VENT	NOT SOLD SEPARATELY. COMES WITH BLOWER	
16	555-134	COUPLING, 3/8	
17	555-274	HEX NIPPLE, 3/8" X 1 1/2" LONG	
18	555-022	BUSHING, 3/8 M x 1/8 F	
19	555-510	REDUCING ADPT, 1/4 FPT X 1/8 MPT	
20	555-324	HOSE BARB 90, 3/8 BARB x 1/4 MPT	
21	358-255	EXHAUST PORT 47 VR2	
22	397-022	BELT, BX37	NOT SHOWN

# Lower Front Panel





# Lower Front Panel

REF	PART NO.	DISCRIPTION	NOTES
1	415-125	FW, 1/4 SS	
2	405-010	BOLT, 1/4 X 1 SS	
3	845-410	LOWER OUTER FRONT PANEL SLX47	
4	425-045	CLAMP, #72 HOSE (4 3/4 ID)	
5	850-140	EXHAUST PLATE & TUBE, FM	
6	415-025	LW, 1/4 SS	
7	400-010	HEX NUT, 1/4 x 20 ZINC	
8	572-220	SILICONE HOSE, 3 1/2"	2.25" LONG
9	400-250	WELL NUT, 1/4 X 20 NEOPRENE	
10	410-420	CS, 1/4 X 20 X 1 1/4 SS SOC	

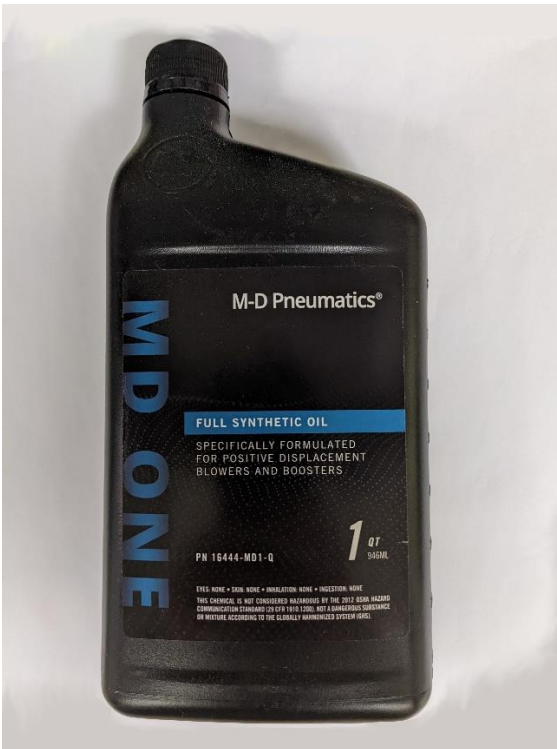
## Recommended Fluids for the SLX 47 Maintenance



Cat Pump Oil 706-015



Roots Blower Oil 706-025



706-035  
MD One Tuthill Blower Oil



706-115  
Blower Lubricant LPS-TKX (4lt)



707-005 SKF LGMT3/0.4 Grease