CLEANCO TRUCKMOUNTS®

Cleanco Guardian

Operations and Service Manual

VERSION September, 2025

Printer In Canada

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Schematics

MACHINE DATA LOG / OVERVIEW

MODEL_____

DATE OF PURCHASE_____

SERIAL NUMBER_____

COMPANY NAME_____

YOUR DEALER

NAME:_____

ADDRESS:_____

PHONE NUMBER:_____

Welcome, and congratulations on your purchase of a Cleanco Truckmount! This instruction manual is designed to guide you through the operation and maintenance of your unit. Please read it thoroughly before installation or use. Your new unit is built for convenience, with all instruments and controls thoughtfully arranged for easy access during operation and routine 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 service 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 MANUFACTURING 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 for the engine

- Never operate the Truckmount with a portable gas container inside the vehicle. Doing 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.

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

- **Water under high pressure and at high temperature** can cause scalding, severe personal injury or fatality. Shut down the machine and allow it to cool down. Relieve the 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 the unit is running. Always comply with local noise ordinance when operating the unit.

- **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 left 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 near the unit.** Gasoline fumes can accumulate and may ignite, creating a serious fire hazard. The battery is also highly flammable. Avoiding open flames or sparks in the area helps prevent the risk of explosion.

- **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, mufflers, catalytic converters, or sharp objects.

- **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.

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

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

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

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

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

- **Failure to apply** preventive measures towards freezing can result in system failure and loss of warranty on all water components and parts. Water freezes at 32º F or 0º C

- **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 which can cause severe personal injury or fatality and will void your warranty.

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

- **All high-pressure hoses must be rated 3000 PSI at 250^0 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.

- **Do not install anything on top of the Truckmount Unit** (I.E. Hose reels). **Doing so will void all warranties**

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

TECHNICAL SPECIFICATIONS

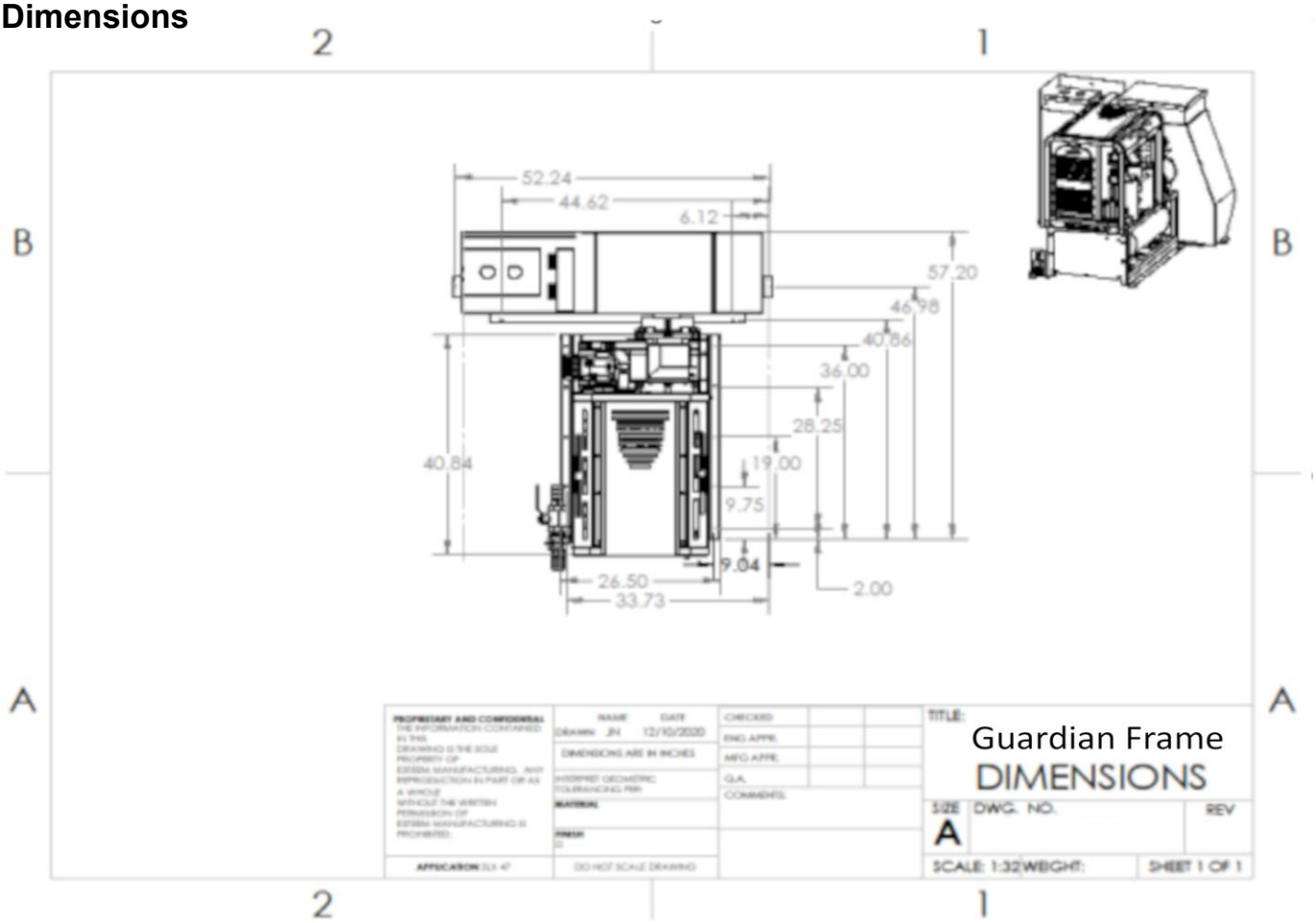
ITEM	DIMENSION/CAPACITY
Engine speed	2850 rpm (high speed) Water Pump ON/No Load
Water pump rpm	1625 rpm
Vacuum pump rpm	2850 rpm
Water flow rate	4 GPM (maximum)
Water pump pressure	2000 PSI (maximum)
Vacuum relief valve	13” Hg
Waste tank capacity	90 gallons
Console weight Pump Belt size Blower Belt size	900 lbs. AX28 BX42

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** (110º spray angle w/ 01.5 orifice).
015 x 2 = 03
A Three-jet wand uses three 11001 jets (110º spray w/1.0 orifice).
Quad-jet wand uses four 9501 jets (95º spray angle w/ 1.0 orifice)
01 x 4 = 04
Upholstery tool jet size: **80015**
Stair tool jet size: **9502 or two 9501.5**

Dimensions



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. Checking that all components are operating at the factory specifications.
4. Checking all hoses and accessories for the 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 Cleanco Guardian truckmount was thoroughly tested, checked and inspected 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 Cleanco Guardian should arrive with the following items as well as any optional accessories you may have ordered:

EQUIPMENT LIST

- Cleanco Guardian Console
- Recovery tank with auto shut off
- Recovery tank vacuum hoses
- Installation mounting plates and hardware
- Hose clamps for vacuum, water and fuel hoses
- 100 ft. of high-pressure solution hose
- 100 ft of 2" vacuum hoses
- Chemical Jug
- Battery Box

NOTE: **The Cleanco Guardian requires a freshwater tank or mini water box and a 12volt transfer pump.**

FUEL HOOK-UP KITS BY VEHICLE	Esteam's Part Number
• Dodge Promaster 2015 +	604-86392100
• Ford Transit 2015 +	604-86400740
• Chevy (GM) 2016+ (With 7T6 option installed)	604-555

INSTALLATION REQUIRMENTS

Prior to starting installation, read the ENTIRE Installation section of this manual. Since the Cleanco Guardian 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 the 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 mounted in a trailer, the Cleanco Guardian 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 a Liquid-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.

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

LIFTING THE UNIT INTO THE VEHICLE

Because the Cleanco Guardian console weighs over 775 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 regarding where in the vehicle they want their units positioned. Cleanco highly recommends a side door installation for the Cleanco Guardian. We do not recommend 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.

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.

ALWAYS install the unit into the van with the blower port DIRECTLY across from the blower port on the Recovery Tank.

BATTERY CONNECTION

Battery Requirement for The Cleanco Guardian: An automotive battery with a minimum of 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 the battery in a well-ventilated area only. Keep sparks, open flames, and any other sources of ignition away from battery at all times. Remove all jewelry prior to servicing the battery. 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 in the ON position, 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 and 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

Only 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 Guardian 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 Guardian. Although the Cleanco Guardian is designed with simplicity in mind, this truck mounted carpet cleaning plant has many functions that perform simultaneously.

- The 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.
- The Heating system must deliver and maintain proper heat.
- The vacuum recovery tank stores soiled water for proper disposal.

Cleanco Guardian SPEED SETTINGS:

- Single Wand Operation: 2400 – 2650 engine rpm
- Dual Wand Operation: 2700 – 2800 engine rpm
- Upholstery Cleaning: 2000 – 2200 engine rpm
- Hard Surface Cleaning: 2750 – 2850 engine rpm
- Power Washing: 2800 engine rpm
- Prespraying – just above idle rpm

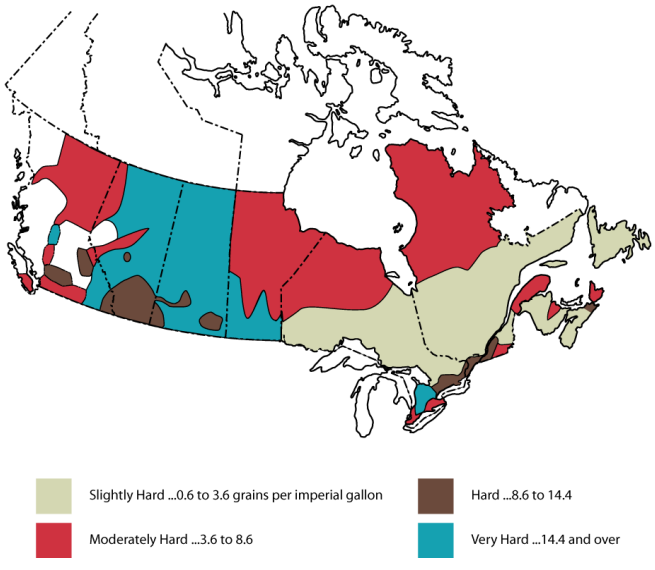
LOCAL WATER CONDITIONS

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.

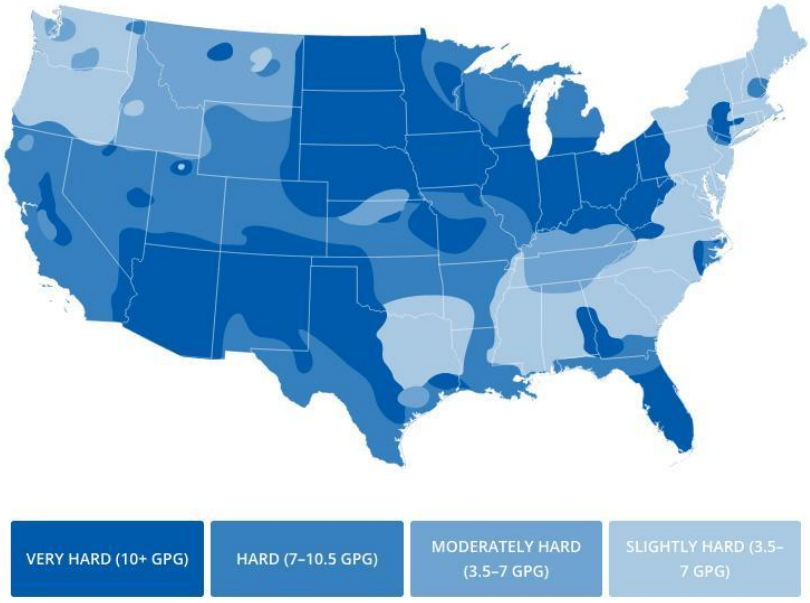
Cleaning effectiveness and equipment life is increased when water softeners are used in hard water areas. The low cost of water softeners is more than made up for by the increased life of machine parts and cleaning efficiency. Cleanco requires that all machines operating in “hard water” areas (3.0 grains 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 types 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 a 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 wastewater 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 WASTEWATER INTO STORM DRAINS, GUTTERS, STREAMS, RESERVOIRS, ETC.

CLEANING SOLUTIONS & CLEANING

Your Cleanco Guardian 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 Guardian. Also, be sure to follow directions on all cleaning solutions. The improper use of cleaning solutions in your Cleanco Guardian 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 repeat 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 wanding 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 wanding procedures.
2. Clogged vacuum blower filter.
3. Clogged lint basket filter.
4. The vacuum tank was not sealed properly.
5. Obstruction in the vacuum hose, or kink in the vacuum hose.
6. The vacuum tank drain valve partially opened.
7. Cleaning a heavily foam-saturated carpet without defoamer

OPERATING THE CLEANCO GUARDIAN IN HOT WEATHER

Cleanco recommends the following when operating the CLEANCO GUARDIAN during periods of hot weather (95º F/35º C or higher). This will ensure your unit continues to run at 100% capacity.

1. Minimum of 9”of clearance is required on both sides of the CLEANCO GUARDIAN, when installed. Ensure no other materials are stored at the sides or on top of the unit. Air flow around the 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 unit 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 freshwater tank to complete the entire job. If not, fill the freshwater 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 unit, connect the high-pressure hose to the quick connect on the lower panel for carpet cleaning
5. Do not connect vacuum hose to vacuum port at this point; this will occur after the unit is started.

START UP

1. Make sure the van is in the park position with the emergency brake on and the vehicle’s engine is off.
2. Pull the Cleanco Guardians choke all the way out. Turn the pump switch to the ON position. Press and release the POWER BUTTON and wait for 5 seconds for the fuel pump to draw gas into the engine’s carburetor bowl. This will also activate the water transfer pump and fill the water box on the back of the unit if it is low. Then turn the PUMP SWITCH to the OFF position.
3. Press the ENGINE START button and hold it for 3 to 5 seconds or until the engine engages. Immediately push the CHOKE all the way in as soon as the engine engages.
4. Allow the engine to warm up for 1 to 2 minutes before throttling up the engine by turning the THROTTLE counterclockwise.
5. Set the water pressure to the desired pressure by turning the PRESSURE REGULATOR clockwise.

6. Set the THERMOSTAT for the desired cleaning water temperature.
7. Turn The 3-WAY CHEMICAL VALVE to prime and wait until no more bubbles show in the chemical metering site gauge, then turn the 3-WAY CHEMICAL VALVE to the ON position. Turn the CHEMICAL METERING VALVE counterclockwise to open to the desired amount of chemical by squeezing the trigger on the wand to draw chemical until the float ball in the chemical meter sight reads at 2 or 3 GPH. (You will need to have the pump ON for the chemical meter chemical system to work correctly). 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.
8. Standard carpet cleaning pressures should be between 350 to 500 psi. Upholstery pressures should be a maximum of 200 psi and the throttle set at 2000 – 2200 rpm.
9. Connect the vacuum hose to the unit and the male end of the pressure hose to the carpet wand or tool being used.
10. You are now ready to start cleaning.

NOTE: 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. Turn off the pump.
2. Throttle the engine up to 2850 rpm's.
3. With the engine at 2850 rpm, Lift the lid on the spray lube port and spray Cleanco's recommended lubricate TKX for 5 seconds.
4. Set the engine RPM's down to idle and allow it to run at idle for 2 to 3 minutes.
5. 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.
6. After 2 to 3 min, turn the unit off by pressing the power button.
7. 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.
8. Remove the lid on the recovery tank over the lint basket and lift out the lint basket. Clean and replace the lint basket back into the recovery tank. Reinstall the lid and secure the lid by latching the (2) fasteners.
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 the pump switch to the off position.
2. Turn off the 3-way chemical valve to the "OFF" position.
3. Start unit and set the throttle to 2800 RPM.

WINTERIZING PROCEDURE

1. Drain the freshwater tank.

2. Empty the chemical jug of all water. Fill the chemical jug 1/3 full of windshield washer fluid rated for -30 and below.

3. Shut off the ball valve for the freshwater tank to the transfer pump.

4. Remove the lid to the water box on the back of the machine and fill the water box with windshield washer fluid rated for -30 and below.

5. Turn the 3-way valve to the prime position.

6. Open the chemical metering valve.

7. Connect the primer hose to the quick connect on the front of the machine's lower panel.

8. Start the Cleanco Guardian and allow the unit to idle.

9. Turn the pump switch to the ON position and set the pressure to 200 psi. Once antifreeze fluid starts to come out of the primer hose for the chemical system, turn the 3-way valve to the ON position. Once you see the fluid passing though the metering sight tube, turn the 3-way valve to the OFF position.

10. Allow the water to pass through the system until windshield washer fluid starts to come out of the primer hose. You may have to refill the water box during the middle of this process to ensure that you have an adequate amount of fluid to make it thought the whole system.

11. Once windshield washer fluid starts to come out of the primer hose, remove the primer hose from the quick connect and reattach it to the other quick connect on the lower panel.

12. Once both quick connects have had windshield washer fluid exit through them, turn the pump switch to the OFF position and shut down the unit.

13. Finally, empty the recovery tank as per local laws in a sanitary disposal site.

Note: **Remove all hoses from the transfer water pump or pass windshield washer fluid through the pump to winterize. Place all hoses and tools in a warm storage area to avoid freezing and damaging**

HIGH PRESSURE PUMP

The Cleanco Guardian is 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 to perform carpet cleaning and power washing. 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 Cleanco Guardian 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 lower front panel will lower your pressure to 200 psi, which is recommended for upholstery cleaning and lowering the engine speed to just above idle.

When power washing, you must remember that your unit is set up for carpet cleaning. Even though your Cat pump has a maximum rating of 2500 psi, this pump is set up for carpet cleaning and will give you a maximum of 2000 psi for power washing. With 2000 psi and the high heat from the Cleanco heat exchangers, it makes power washing simple. The Cleanco Guardian does NOT pressure wash as the volume of water is too low for pressure washing.

VACUUM SYSTEM

The vacuum system is a Tuthill Trilobe 4007 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 recovery tank. The stainless-steel filters should be removed daily or after every job and cleaned. When reinstalling the filter, Apply a small amount of synthetic lube or anti-seize to the threads in the recovery tank. Only thread the filter on till they are finger tight. The lint basket should be removed and cleaned after every job. If the 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 Guardian’s electrical system has been specifically designed with simplicity in mind. There are multiple wiring harnesses 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.

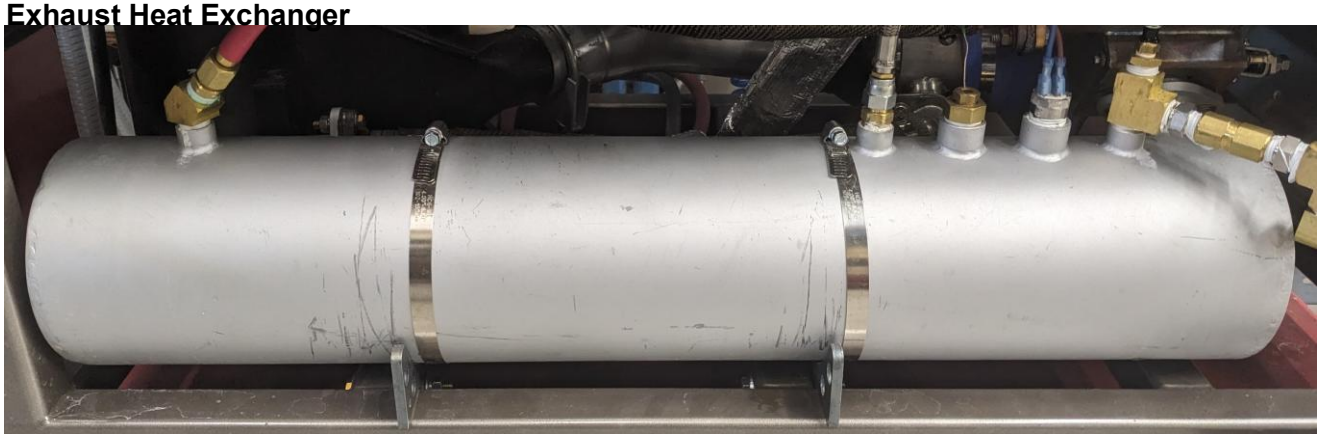
NOTE: Whenever working on the wiring system, the unit’s battery should be disconnected for safety.

CLEANCO GUARDIAN HEAT EXCHANGERS

The Cleanco Guardian “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 Guardian Liquid heat exchanger is designed to withstand pressures of up to 9000 psi, and operating pressures of up to 3000 psi. This unit which pre-heats the incoming water also cools the engine through the heat transfer exchanger. The pre-heated water then passes through the ceramic-coated exhaust heat exchanger boosting the water temperature to a consistent high temperature. This can be controlled by the temperature control valve on the front panel. The temperature control valve on the front panel controls when the exhaust diverter box goes into by-pass mode or when it allows the exhaust to pass through the exhaust heat exchanger. Both of These exchangers require little maintenance other than an occasional coil flush to remove hard water residues and scale.

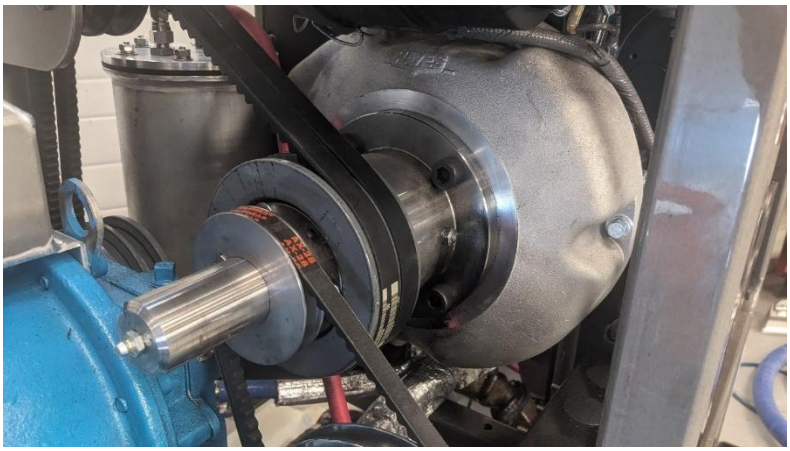
Liquid Heat Exchanger

Exhaust Heat Exchanger



CLEANCO GUARDIAN REAR BEARING SUPPORT

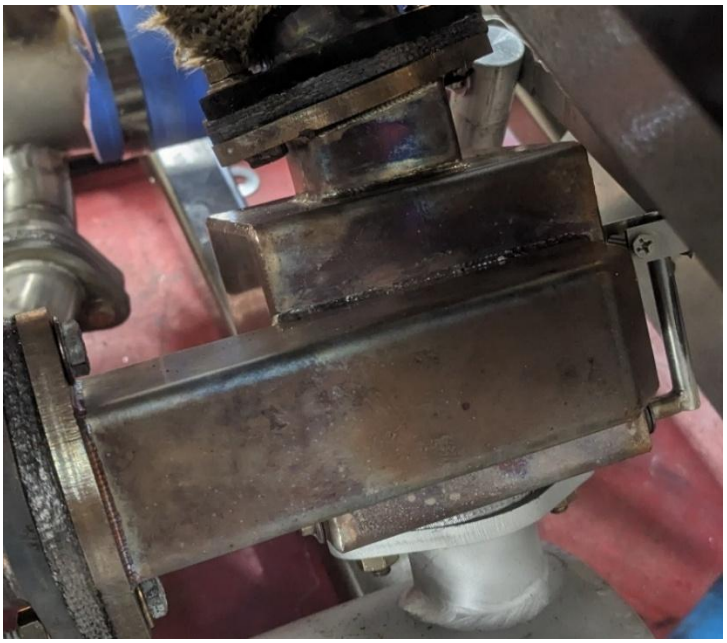
The Hayes style engine rear bearing support is a precision engineered and balanced system that transfers power from the unit's engine to the vacuum and pressure system, which drives the vacuum and high-pressure pump. This unique system eliminates any side torque generated from the vacuum blower and pump. 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.



CLEANCO GUARDIAN EXHAUST DIVERTER BOX & ACTUATOR

The Cleanco Guardian is equipped with an exhaust diverter box which sole purpose is to divert the exiting exhaust gases from the engine either into the exhaust heat exchanger where it is used to increase the temperature of the water, or to divert the exhaust gases to exit the unit. The diverter box that Cleanco has custom made is an all-stainless-steel construction designed for longevity and low maintenance. The diverter box is controlled by an electrical actuator which is controlled by the thermostat on the front panel of the unit. When the temperature of the water exceeds the setting of the thermostat, an electrical connection is made to the actuator to lower the actuator arm which lowers the internal flap in the diverter box to block the exhaust from accessing the exhaust heat exchanger. While in bypass mode, you may hear a light rattling noise coming from the diverter box. This rattling noise is normal and was designed this way. This noise is created by the exhaust hitting the internal flap and being redirected up and out of the box to be immediately exited from the Cleanco Guardian. The noise is a result of the flap touching the sides of the box, which in turn ensures that no carbon build up can exist in the area of the flap to prevent it from ever getting stuck due to carbon build up. Once the temperature has dropped below the set temperature on the thermostat, the actuator will raise the arm and flap in the box to allow the exhaust gases to continue heating up the water in the exhaust heat exchanger.

Exhaust Diverter Box



Electrical Actuator

CLEANCO GUARDIAN UPPER FRONT PANEL

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

POWER BUTTON: This Switch provides the unit and components power.

ENGINE START BUTTON: This starts the engine when the power switch has been engaged.

BLOWER LUBE PORT: The blower lube port 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.

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

THROTLE CONTROL: The engine throttle control knob. Turn counterclockwise 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 and engages the water transfer pump.

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

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.

WATER TEMPRATURE GAUGE: Reads the temperature of the water in the exhaust heat exchanger

THERMOSTAT: Controls the temperature of the water by controlling the actuator connected to the exhaust diverter box.

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

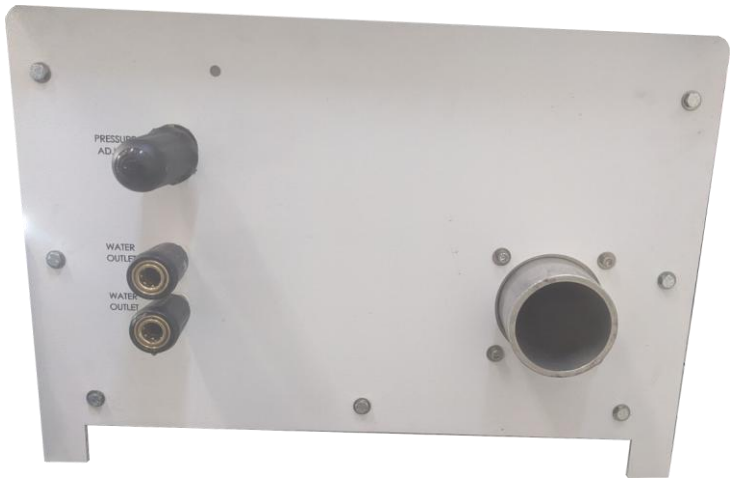
CHEMICAL 3-WAY VALVE: Allows you to turn on and off the chemical system and also to prime the chemical system

CLEANCO GUARDIAN LOWER FRONT PANEL

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 counterclockwise to decrease the pressure. This valve must be maintained in accordance with the maintenance table in this manual.

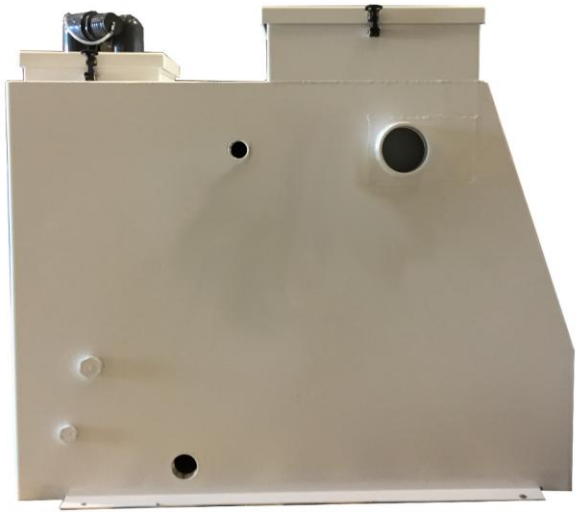
SOLUTION OUTLETS: The pressure outlets are where you connect your solution hose. The CLEANCO GUARDIAN has 2 outlets for 2 separate solution hoses.

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 serve injury or fatality. DO NOT run this unit in an enclosed area or with vehicle doors are closed. DO NOT operate this unit where the exhaust may enter any building doorway, window, vent, or opening of any type. The Exhaust and gases exiting this port are extremely hot and should not be stood in front of or have anything placed in front of while the machine is operating. DO NOT touch the exhaust port while the unit is running or afterwards until the unit has had time to cool.



RECOVERY TANK

The recovery tank of the Cleanco Guardian incorporates many unique features to protect your equipment and save you time. The tank is made from 3/16^{ths} powdered coated marine aluminum and contains several baffles to ensure 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 tank's 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 blower's life by reducing stress caused by 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 SCHEDUL FOR THE CLEANCO GUARDIAN

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

WEEKLY

- Blower Speed. (actual reading)
- Vacuum Gauge. (actual reading)
- Check the engines RPM with unit running at high speed, the unit should be at 2850 RPM max speed with no pump on
- Clean wand and inspect for clogged jets.
- Clean recovery tank thoroughly with high-pressure water.
- Hour Meter. (actual reading)
- Temperature Gauge. (actual reading)
- Check the blower belts. (adjust if necessary)
- Check the high-pressure pump belt. (adjust if necessary)
- Clean incoming 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 the battery fluid level and battery terminals.
- Check all fastener tightness on all components. Tighten as needed.

QUARTERLY

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

CLEANCO GUARDIAN SERVICE INTERVAL CHART

SERVICE INTERVALS - EVERY 30 HOURS

Belt Tensioner	Adjust belt tensioner.

SERVICE INTERVALS - EVERY 50 HOURS

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

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, flush and replace oil.
Engine	Replace spark plugs. Use only OEM spark plugs.
Engine	Replace the 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.
No power at the Cleanco Guardian's Power switch.	Test for power at the Alternator positive post. If there is power at the post, Check the 15amp fuse between the power switch and the alternator positive post.
Defective Starter Motor.	Test the starter motor. Replace if required.
No power at the Cleanco Guardian's Engine start switch.	Turn the Power switch on and test for power to the Engine start button. If there is power, replace the engine start button.
Vacuum blower seized.	Refer to the vacuum blower manufactures service and repair manual.

STARTER TURNS OVER BUT ENGINE WILL NOT START

PROBABLE CAUSE	SOLUTION
The recovery 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.

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.

EXCEESIVE 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 freshwater tank.	Fill freshwater 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.

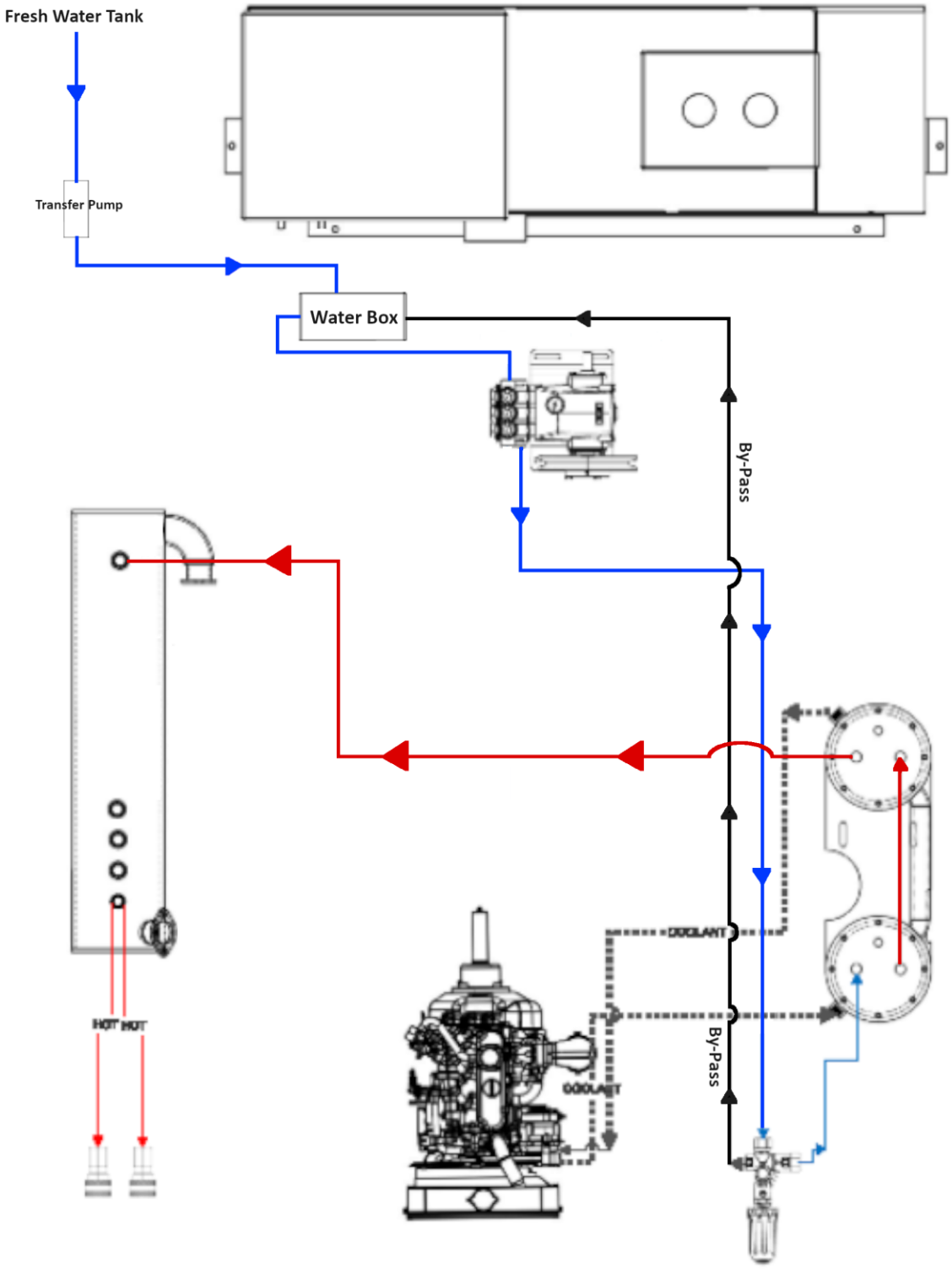
LOSS OF TEMPERATURE

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.

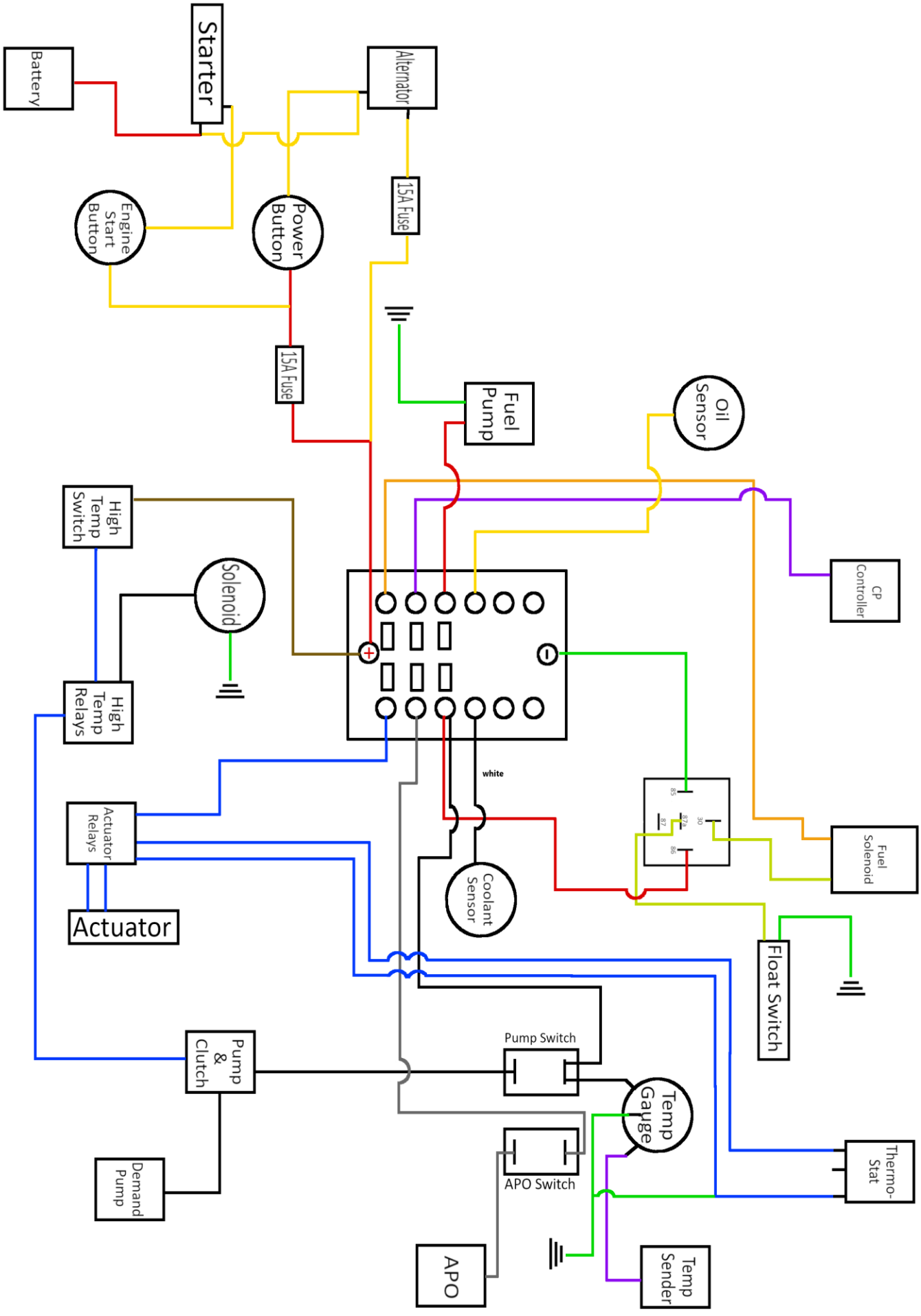
HEAT EXCHANGER LEAKING

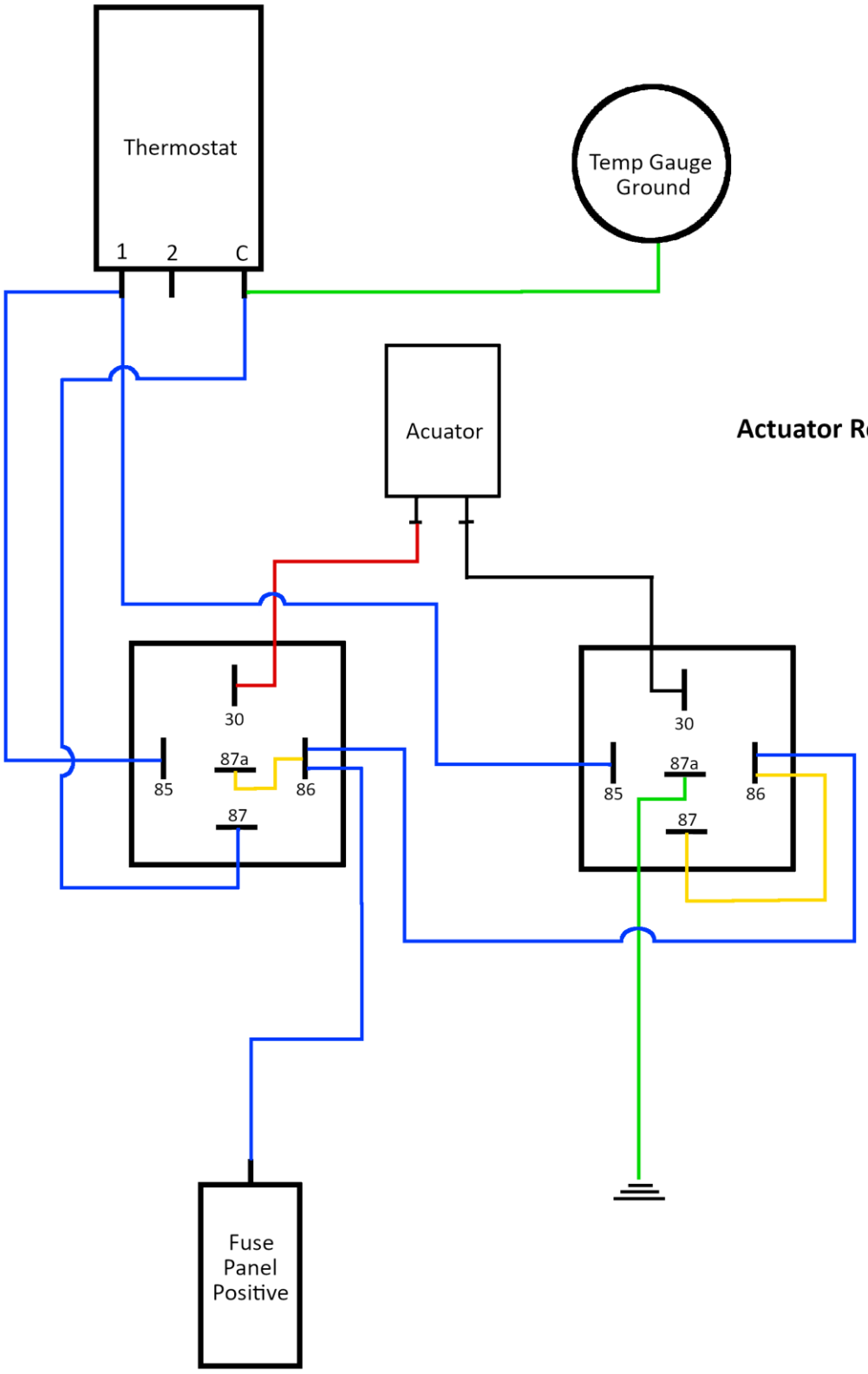
PROBABLE CAUSE	SOLUTION
Water dripping from exhaust port due to condensation build-up.	The heat exchange will produce water condensation discharge at times during normal operation. Do not confuse this with a leak.
Heat Exchange is damaged from frozen water.	Inspect for damage and leaks. Pressure check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

WATER FLOW DIAGRAM



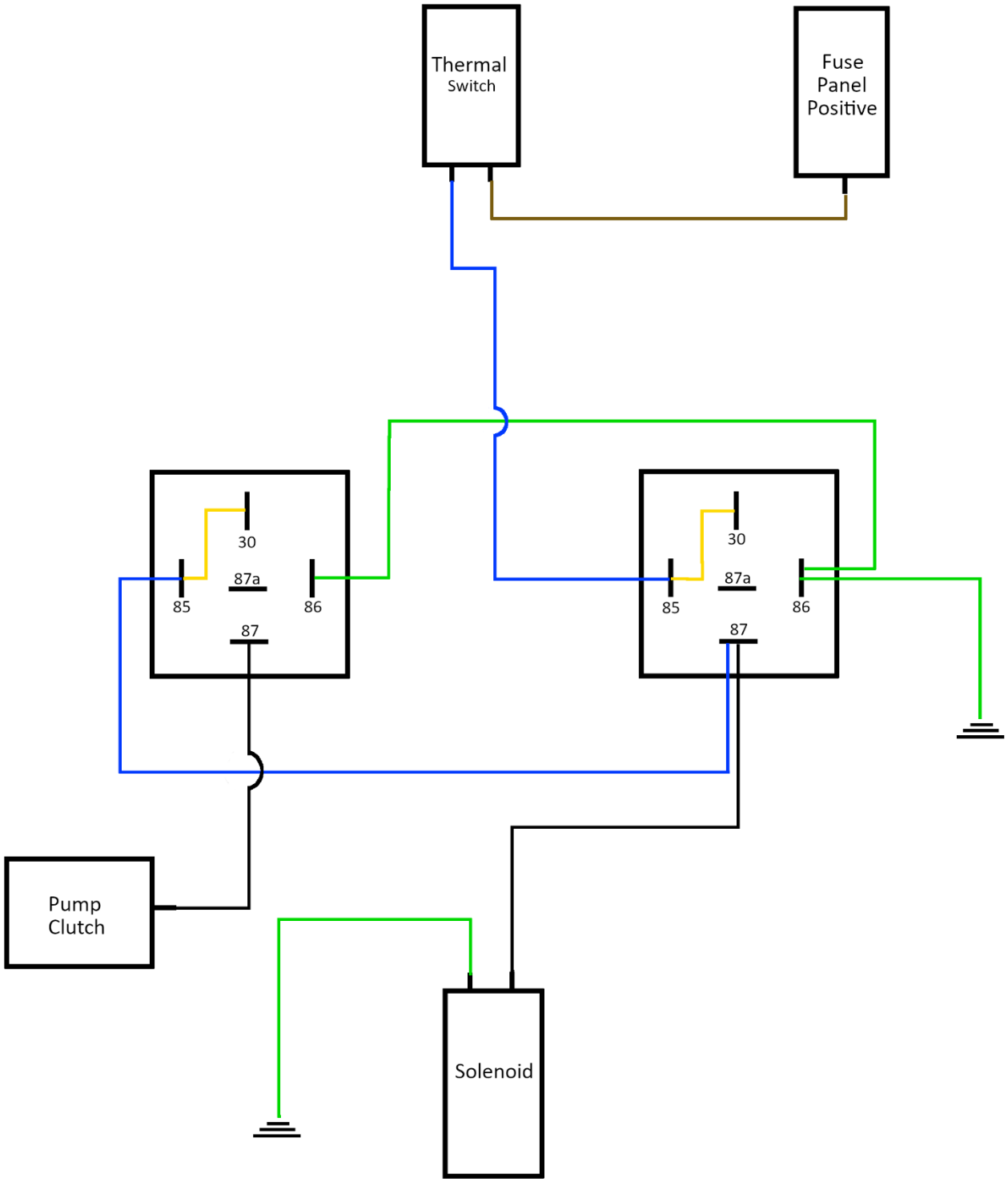
CLEANCO GUARDIAN WIRING DIAGRAM





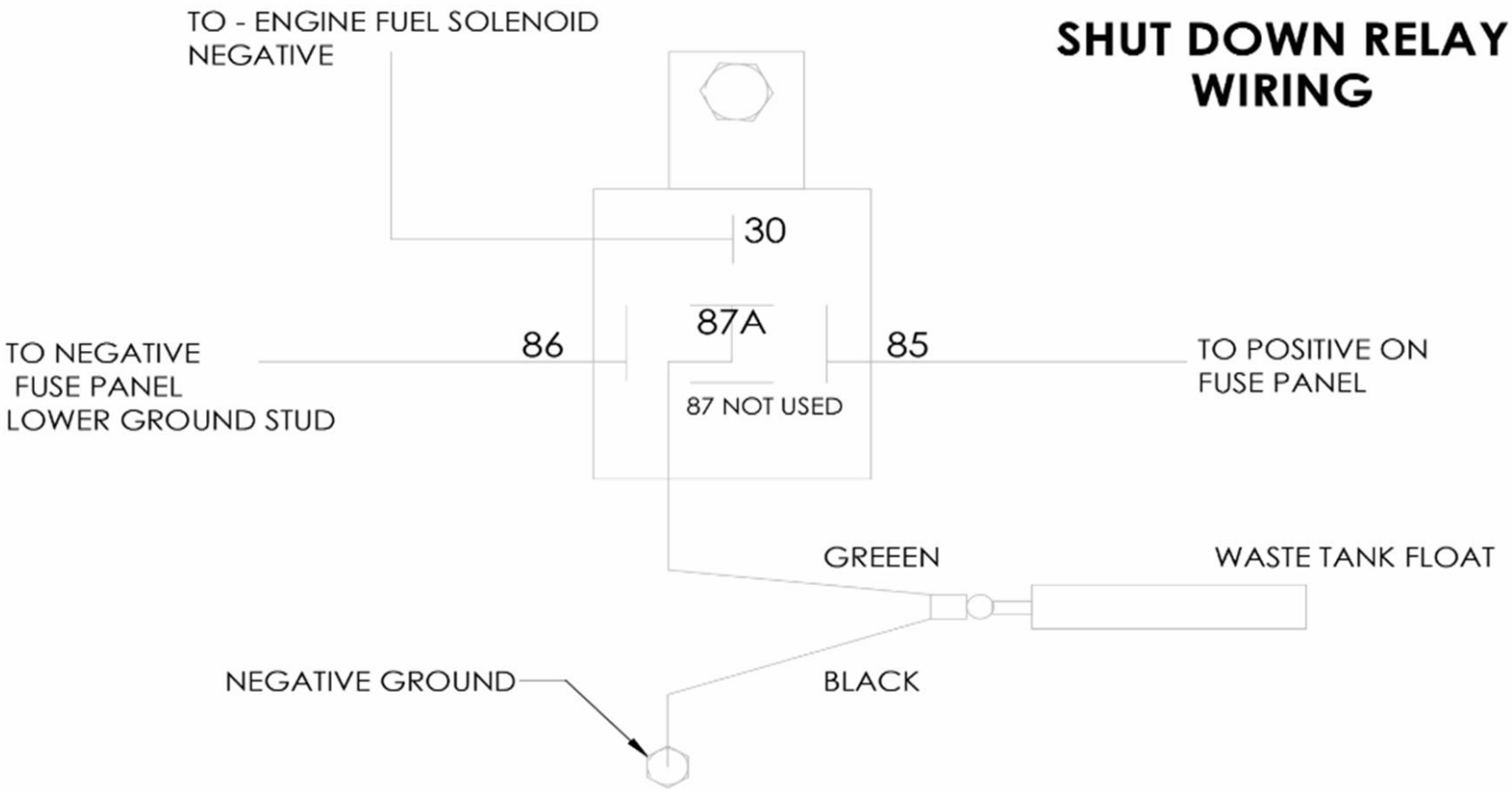
March 27, 2025

High Temp Relief



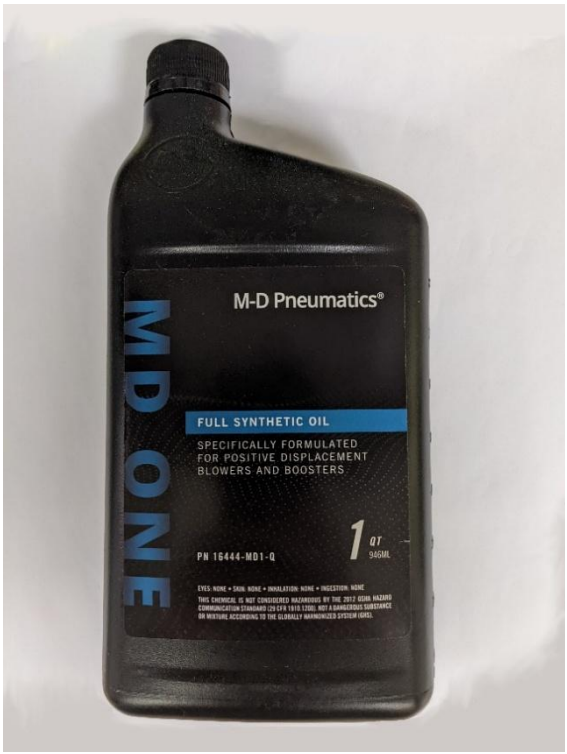
March 27th, 2025

SHUT DOWN RELAY WIRING



Fluids for the CLEANCO GUARDIAN Maintenance

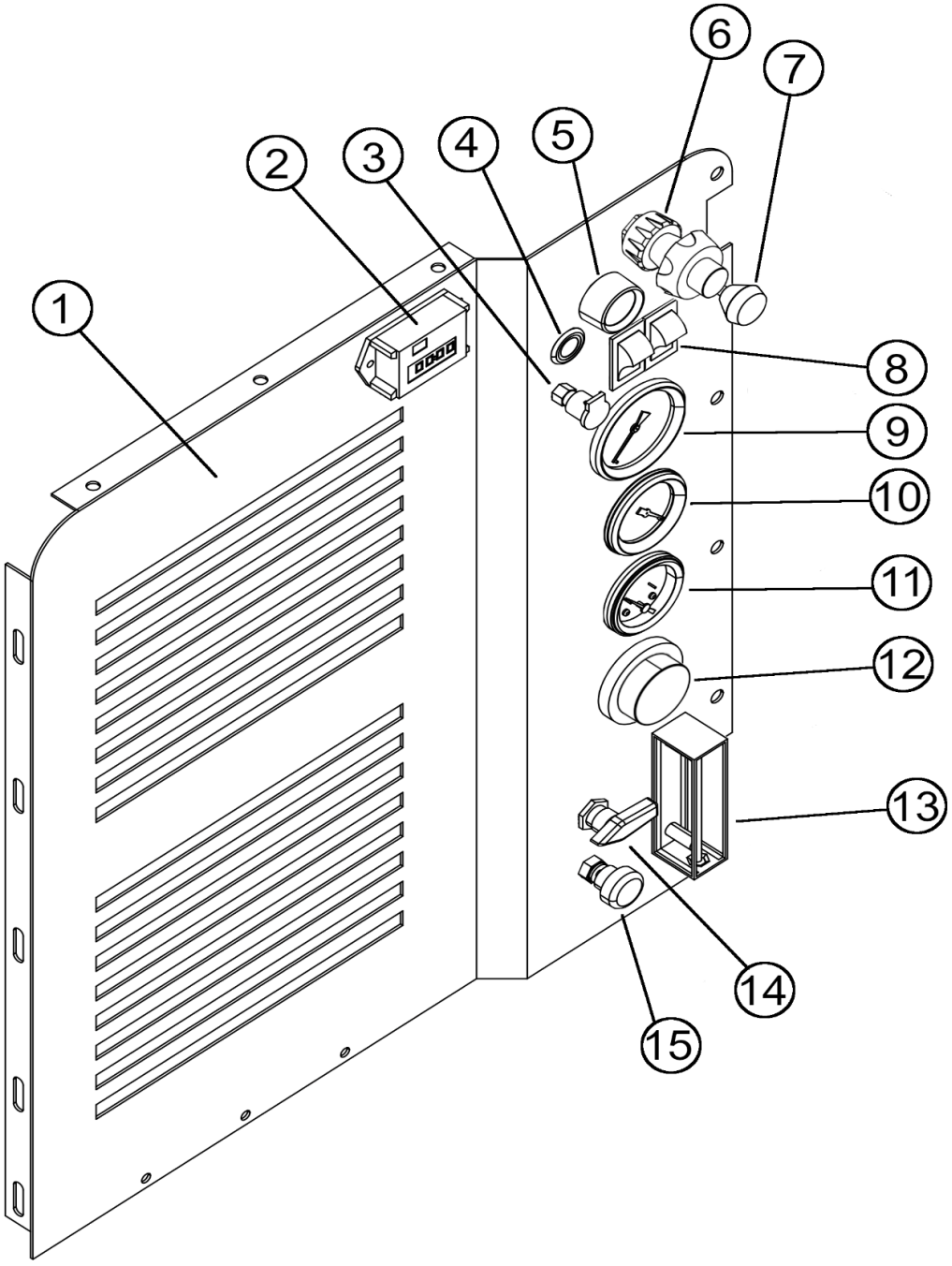
Cat Pump Oil 706-015



706-035 MD One Tuthill Blower Oil

707-005 SKF LGMT3/0.4 Grease

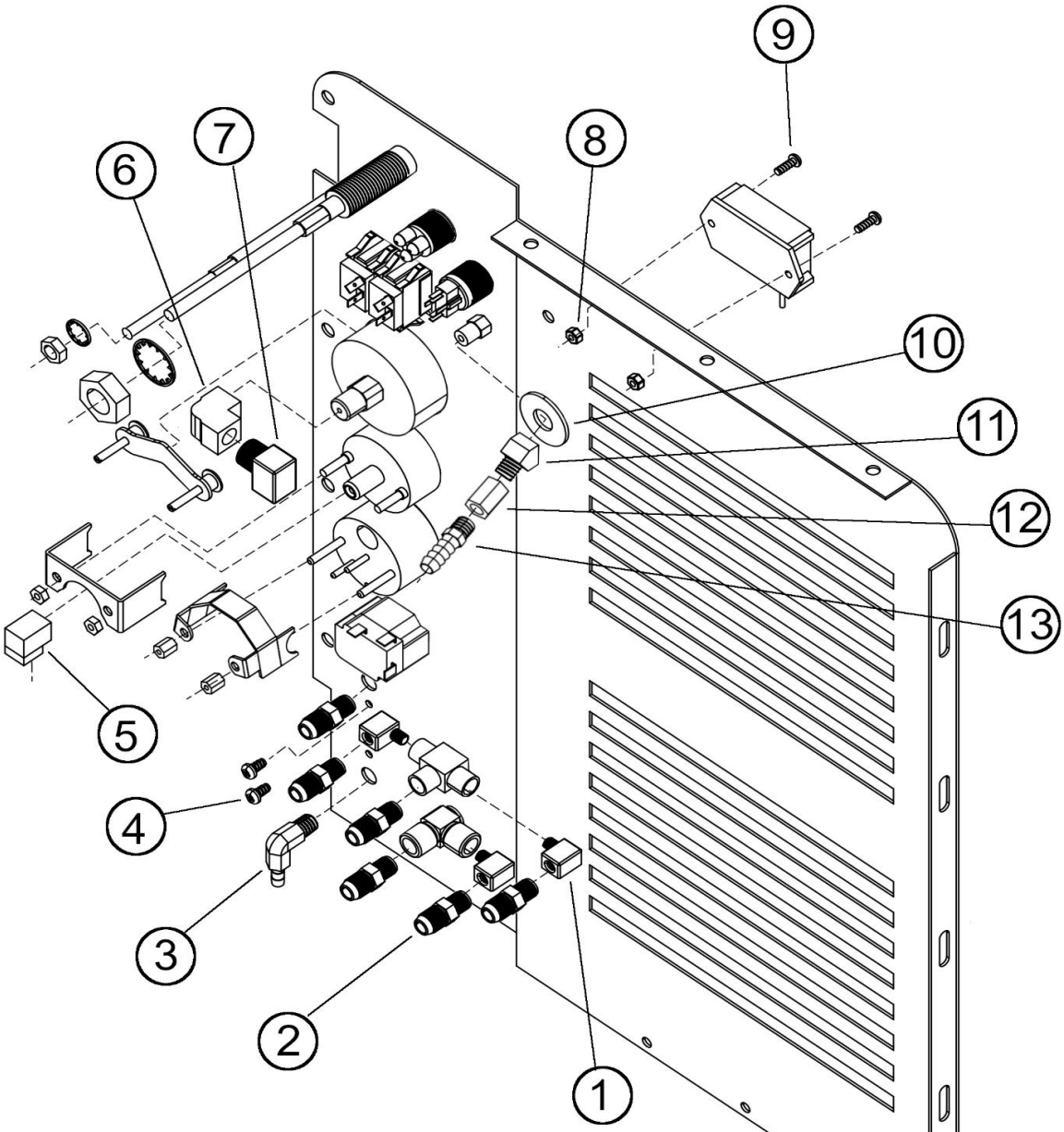
Front Panel



Front Panel

REF.	Part No.	Discription	Note
1	845-442	UPPER OUTER FRONT PANEL GUARDIAN	
2	360-214	DIGITAL TACH/HOUR METER	
3	551-075	VAC LUBE PORT	
4	305-355	SWITCH, POWER (LATCHING)	
5	305-350	SWITCH, ENGINE START (NON LATCHIN)	
6	352-095	THROTTLE CABLE, KUBOTA	
7	352-100	CHOKE CABLE, KUBOTA	
8	305-085	SWITCH, ROCKER - WHITE 2 POLE	
9	360-145	GUAGE, 2000 PSI CLEANCO	
10	360-131	GUAGE, VAC - CLEANCO	
11	360-207	TEMP GAUGE, CLEANCO	
12	360-218	THERMOSTAT, ADJUSTABLE 0-248F	
13	360-005	CHEMICAL FLOW METER, GPH (1 - 5)	
14	551-010	VALVE, 3 - WAY 1/8 NPT	
15	551-012	VALVE, CHEMICAL METERING	

Front Panel (BackSide)



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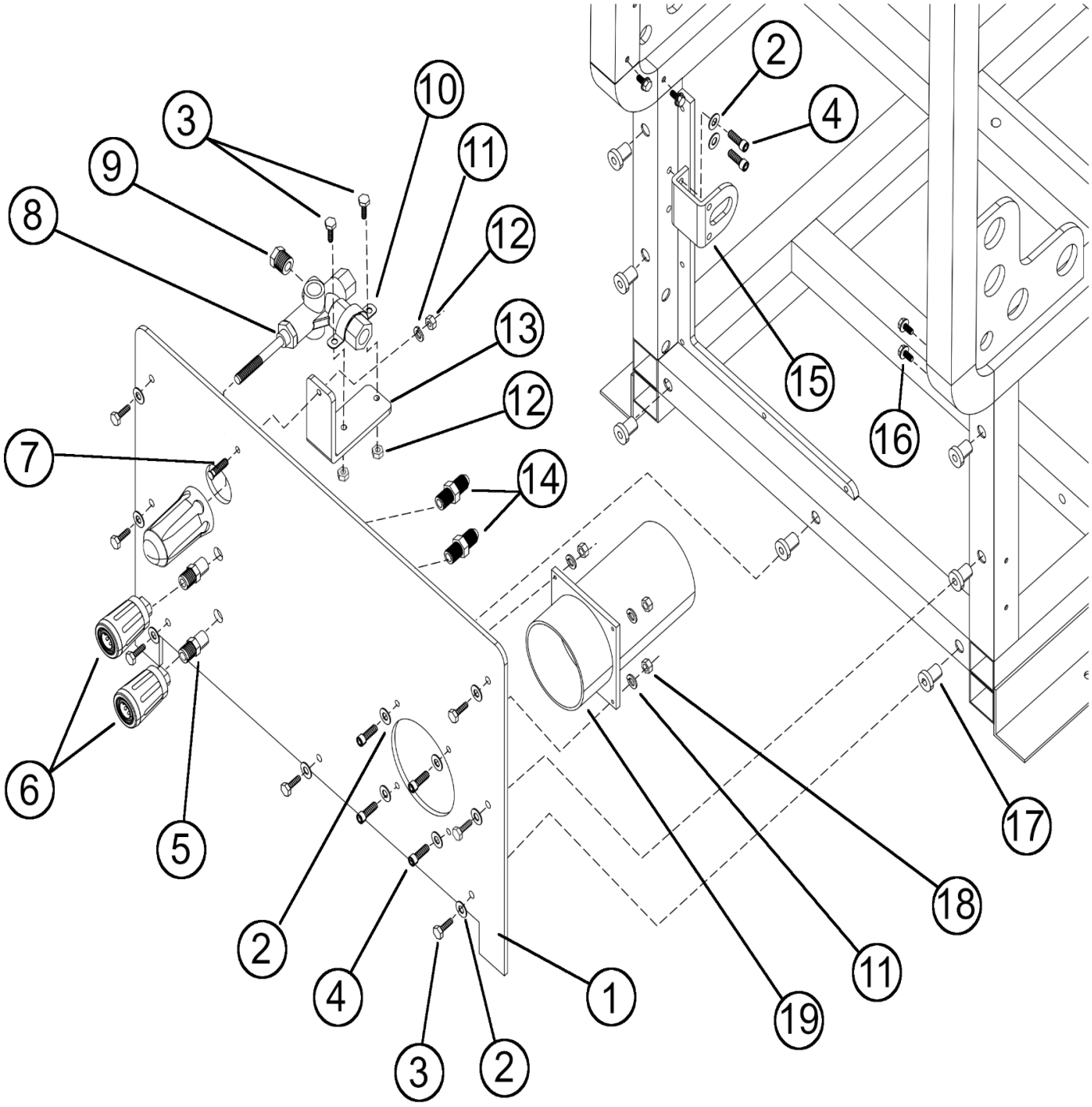
Front Panel (BackSide)

REF.	Part No.	Discription	Note
1	555-202	ELBOW 90, 1/8" STREET EXTRUDED	
2	555-058	CONNECTOR, JIC 3/8 X 1/8 NPT	
3	555-320	HOSE BARB 90, 1/4 BARB X 1/8 MPT	
4	410-203	MS, 10-32 X 3/8 PANPHIL SS	
5	555-200	ELBOW 90, 1/8" FPT. EXTRUDED	
6	555-206	ELBOW 90, 1/4" FPT. EXTRUDED	
7	555-208	ELBOW 90, 1/4" STREET EXTRUDED	
8	400-125	LOCKNUT, 8 X 32 NYLON S.S.	
9	410-130	MS, 8-32 X 1/2 PAN PHIL SS	
10	415-166	FW, 5/8 SS AN	
11	555-180	ELBOW 45, 1/8" STREET EXTRUDED	
12	555-130	COUPLING, 1/8"	
13	555-350	HOSE BARB, 1/4 BARB x 1/8 MPT	

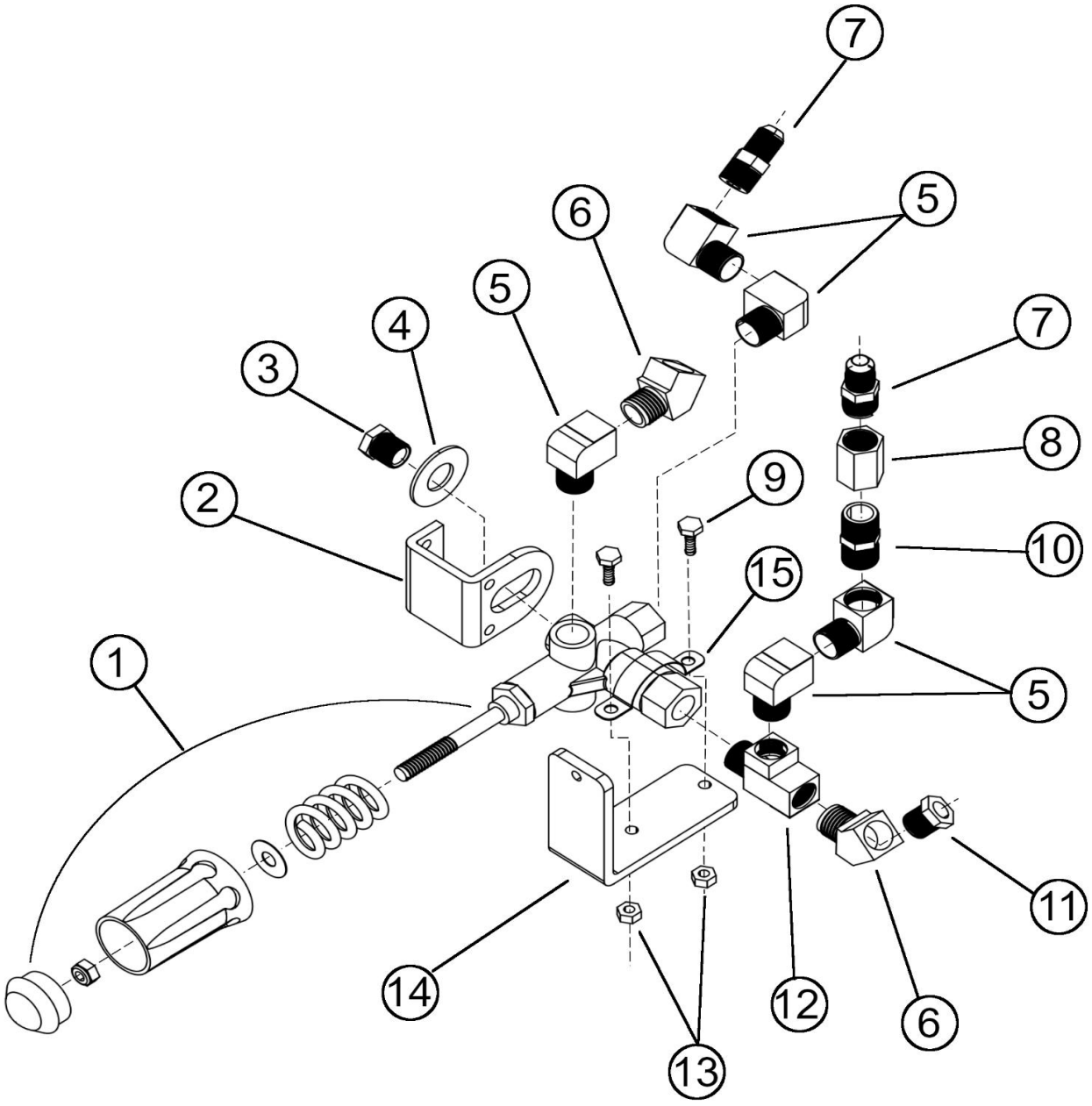
Bottom Panel



Bottom Panel

REF.	Part No.	Discription	Note
1	845-412	LOWER OUTER FRONT PANEL GUARDIAN	
2	415-125	FW, 1/4 SS	
3	405-620	BOLT, 1/4X3/4 SS(HEX HD)	
4	410-410	CS, 1/4-20 X 3/4 SOC S/S	
5	555-271	HEX NIPPLE, 1/4 SS	
6	580-006	Q.C. 1/4" FEM (CLOSED) INS. SLEEVE (BLK)	
7	405-600	CLINCH STUD, 1/4 X 1 S.S.	
8	530-105	PULSAR UNLOADER - CP, CL, E1200	
9	555-454	PLUG, 3/8 MPT HEX HEAD	
10	425-137	CLAMP, TUBE 1"	
11	415-025	LW, 1/4 SS	
12	400-010	HEX NUT, 1/4 x 20 ZINC	
13	465-651	BRKT, UNLOADER SUPPORT	
14	555-059	CONNECTOR, JIC 3/8 X 1/4 NPT	
15	465-656	BRKT, UNLOADER GUARDIAN	
16	410-254	SCREW SS 1/4 - 20 X1/2 THREAD CUTTING	
17	400-250	WELL NUT, 1/4 X 20 NEOPRENE	
18	400-005	HEX NUT, 1/4 x 20 SS	
19	850-140	EXHAUST PLATE & TUBE, FM/GUARDIAN	

Pressure Regulator



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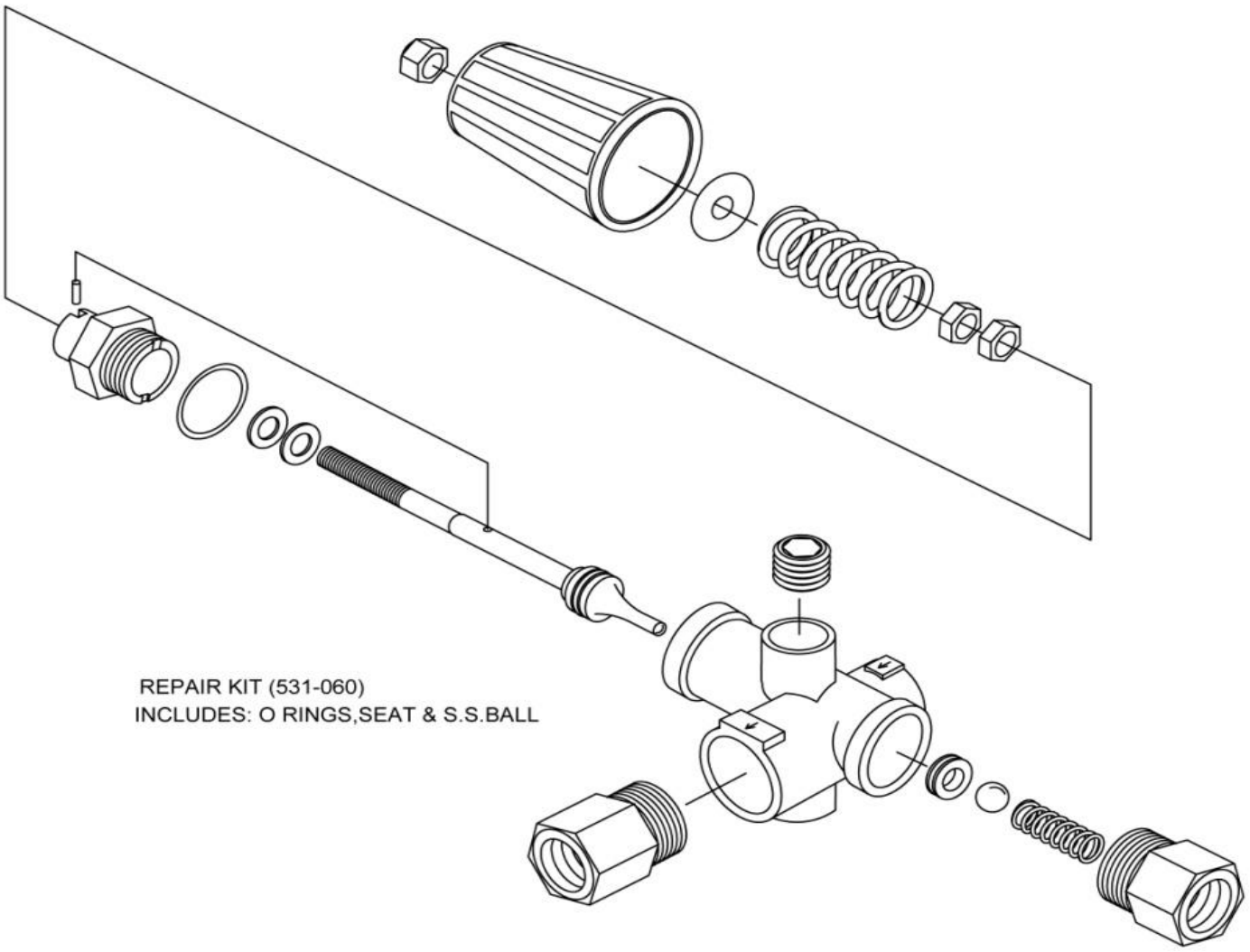
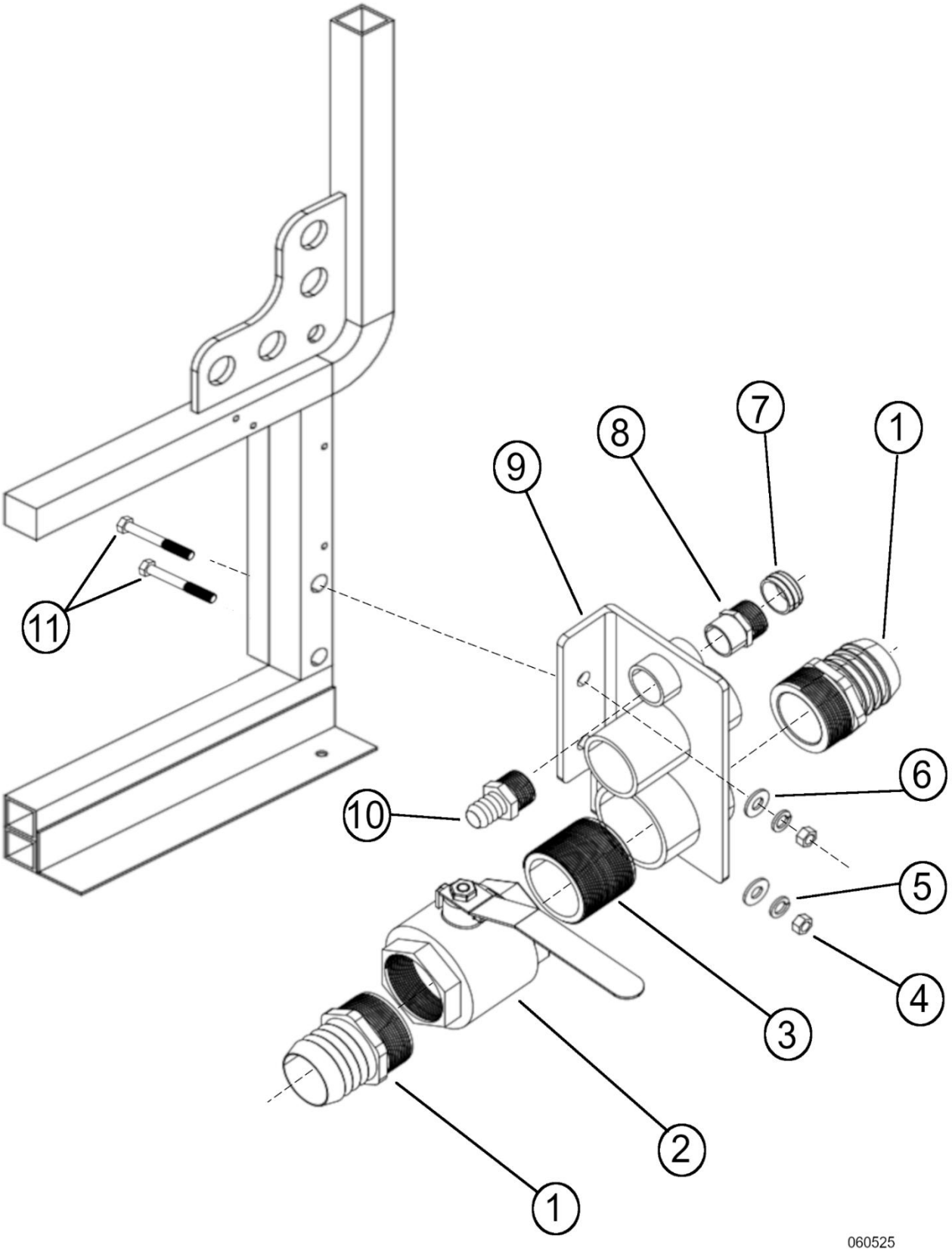
Pressure Regulator

REF.	Part No.	Discription	Note
1	530-105	PULSAR UNLOADER - CP, CL, E1200	
2	465-656	BRKT, UNLOADER GUARDIAN	
3	555-454	PLUG, 3/8 MPT HEX HEAD	
4	415-165	FW, 5/8 SS	
5	555-214	ELBOW 90, 3/8" STREET EXTRUDED	
6	555-186	ELBOW 45, 3/8" STREET EXTRUDED	
7	555-060	CONNECTOR, JIC 3/8 X 3/8 NPT	
8	555-134	COUPLING, 3/8	
9	405-620	BOLT, 1/4X3/4 SS(HEX HD)	
10	555-274	HEX NIPPLE, 3/8" X 1 1/2" LONG	
11	555-024	BUSHING, 3/8 M x 1/4 F	
12	555-642	TEE, 3/8" STREET EXTRUDED	
13	400-010	HEX NUT, 1/4 x 20 ZINC	
14	465-651	BRKT, UNLOADER SUPPORT	
15	425-137	CLAMP, TUBE 1"	

Pressure Regulator



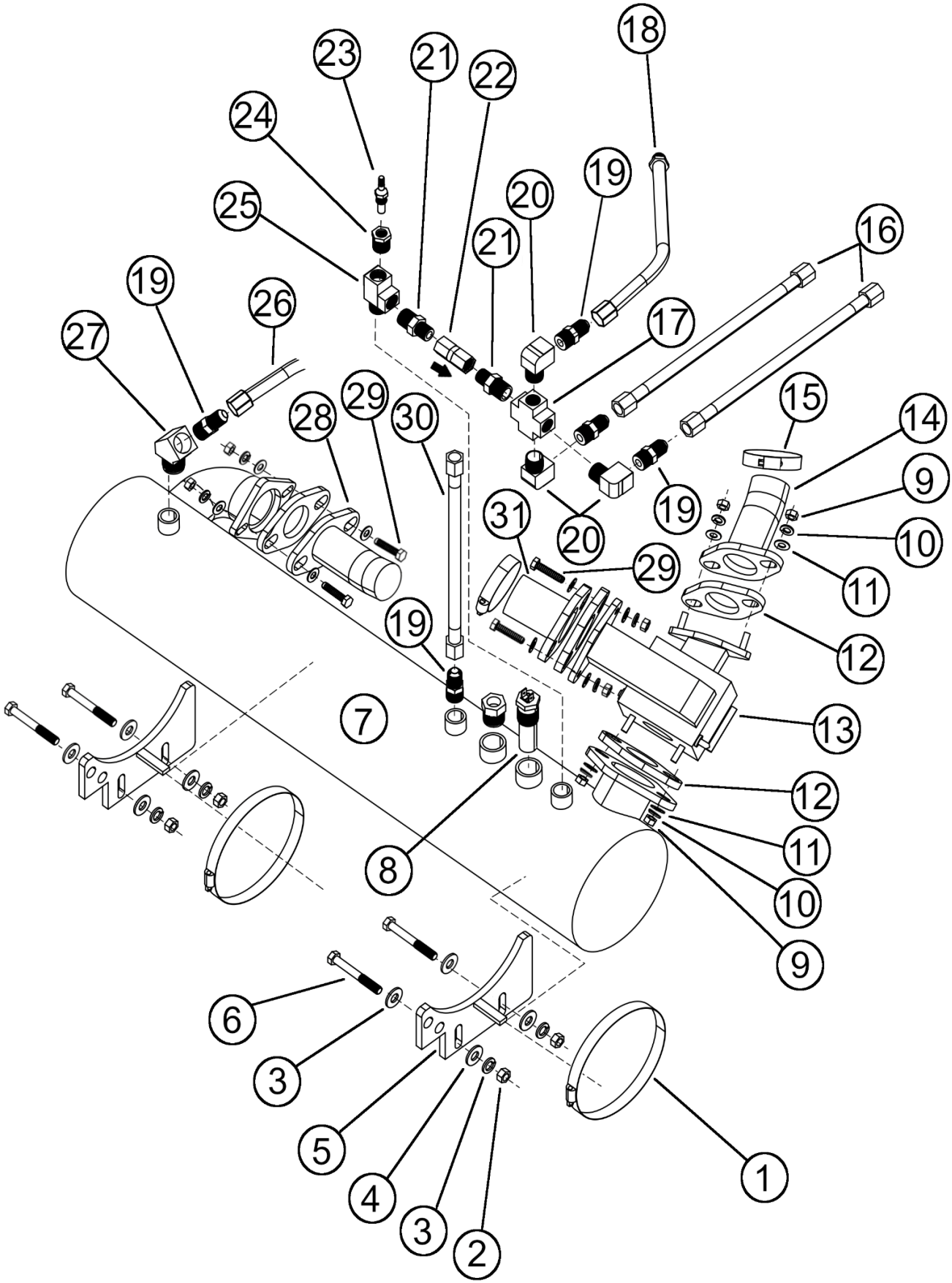
Wing Bracket



Wing Bracket

REF.	Part No.	Discription	Note
1	590-420	PVC HOSE BARB, 2"HB X 2"MPT	
2	545-040	BALL VALVE, 2" BRASS - FEM. PIPE	
3	590-240	PVC CLOSE NIPPLE, 2"	
4	400-045	HEX NUT, 5/16 ZINC	
5	415-040	LW, 5/16 ZINC	
6	415-200	FW, 5/16 ZINC	
7	555-052	CAP, KNURL C/W WASHER	
8	555-402	HOSE BARB,3/4 BARB X 3/4 MPT	
9	845-450	VACUUM/DRAIN PORT BRACKET	
10	555-402	HOSE BARB,3/4 BARB X 3/4 MPT	
11	405-220	BOLT, 5/16 X 2 1/2 GR8 ZINC	

Exhaust Heat Exchanger

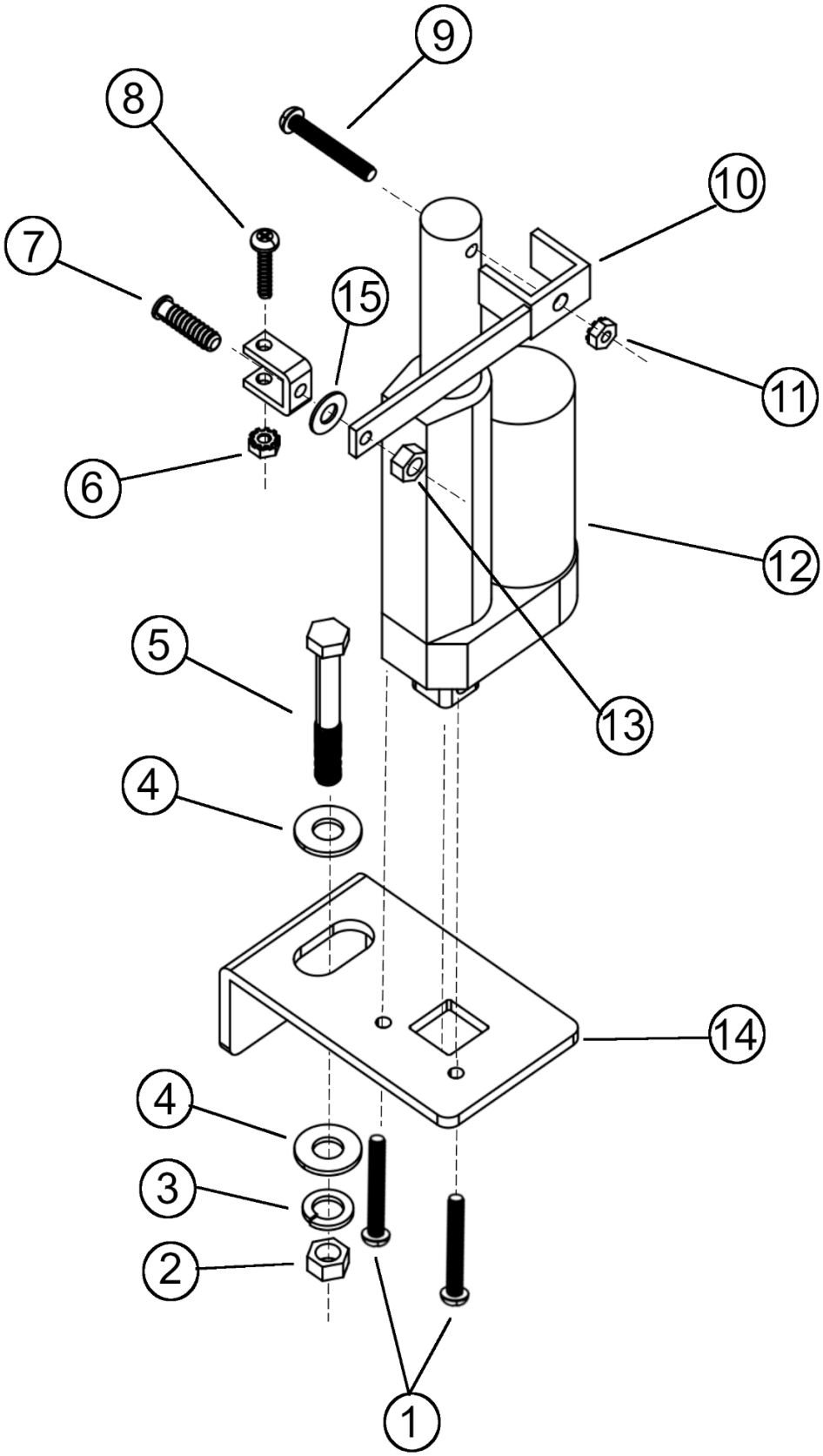


060225

Exhaust Heat Exchanger

REF.	Part No.	Discription	Note
1	425-165	CLAMP, HOSE 5"	
2	400-045	HEX NUT, 5/16 ZINC	
3	415-040	LW, 5/16 ZINC	
4	415-200	FW, 5/16 ZINC	
5	465-531	BRKT,EXHAUST HT EX GUARDIAN	
6	405-137	BOLT, 3/8 X 2 1/2 GR8	
7	490-160	SS HEAT EXCHANGER, EXHAUST (Bare)	
8	305-275	THERMO SWITCH 265 F	
9	400-005	HEX NUT, 1/4 x 20 SS	
10	415-025	LW, 1/4 SS	
11	415-125	FW, 1/4 SS	
12	475-335	GASKET, EXHAUST FLANGE	
13	845-810	EXHAUST DIVERTER BOX GUARDIAN	
14	850-118	EXHAUST HOSE ASSY 12”	
15	425-015	CLAMP, #28 HOSE 1 5/16 x 2 1/4	
16	263-203	SS HOSE ASSY - HTEXCH - 8"	
17	555-242	EXTRUDED CROSS, 3/8"	
18	263-260	HOSE ASSY, (RED) 31"	
19	555-060	CONNECTOR, JIC 3/8 X 3/8 NPT	
20	555-214	ELBOW 90, 3/8" STREET EXTRUDED	
21	555-543	REDUCING NIPPLE, SS 3/8 MPT X 1/4 MPT	
22	550-035	CHECK VALVE, 1/4 FM X FM	
23	360-206	SENDER, TEMP CLEANCO	
24	555-022	BUSHING, 3/8 M x 1/8 F	
25	555-642	TEE, 3/8" STREET EXTRUDED	
26	263-260	HOSE ASSY, LQ HE TO EX HE (RED) 31"	
27	555-186	ELBOW 45, 3/8" STREET EXTRUDED	
28	850-125	EXHAUST HOSE ASSY 19.70""	
29	405-021	BOLT, 1/4 X 1 1/4 GR8	
30	263-204	SS HOSE ASSY - HTEXCH - 11"	
31	850-120	EXHAUST HOSE ASSY 26"	

Actuator & Bracket

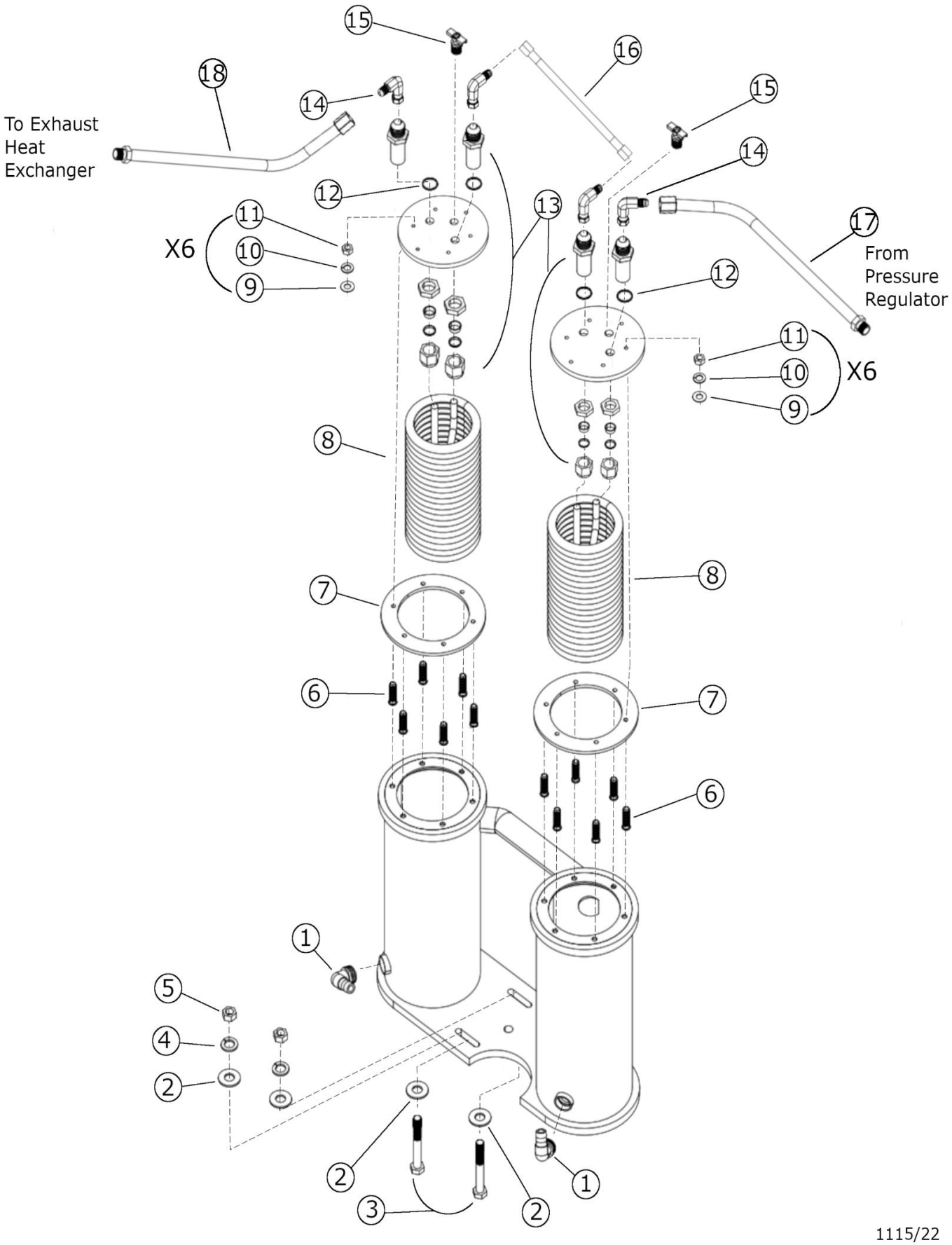


061225

Actuator & Bracket

REF.	Part No.	Discription	Note
1	410-129	MS, 8-32 X 7/8 PHILLIPS PAN HEAD SS	
2	400-045	HEX NUT, 5/16 ZINC	
3	415-040	LW, 5/16 ZINC	
4	415-200	FW, 5/16 ZINC	
5	405-220	BOLT, 5/16 X 2 1/2 GR8 ZINC	
6	400-039	NUT, 10-24 K-LOK	
7	405-610	CLINCH STUD, 1/4X3/4 SS	
8	410-165	MS, 10-24 X 1 PAN PHIL SS	
9	410-221	MS, 10-32 X 1 1/2 RH SOC ZINC	
10	305-290	ARM, ACTUATOR GUARDIAN	
11	400-043	NUT, 10-32 KEPS LOCKNUT	
12	337-035	ACTUATOR, ELECTRIC GUARDIAN	
13	400-005	HEX NUT, 1/4 x 20 SS	
14	465-640	BRACKET, ACTUATOR GUARDIAN	
15	415-125	FW, 1/4 SS	

Liquid Heat Exchanger

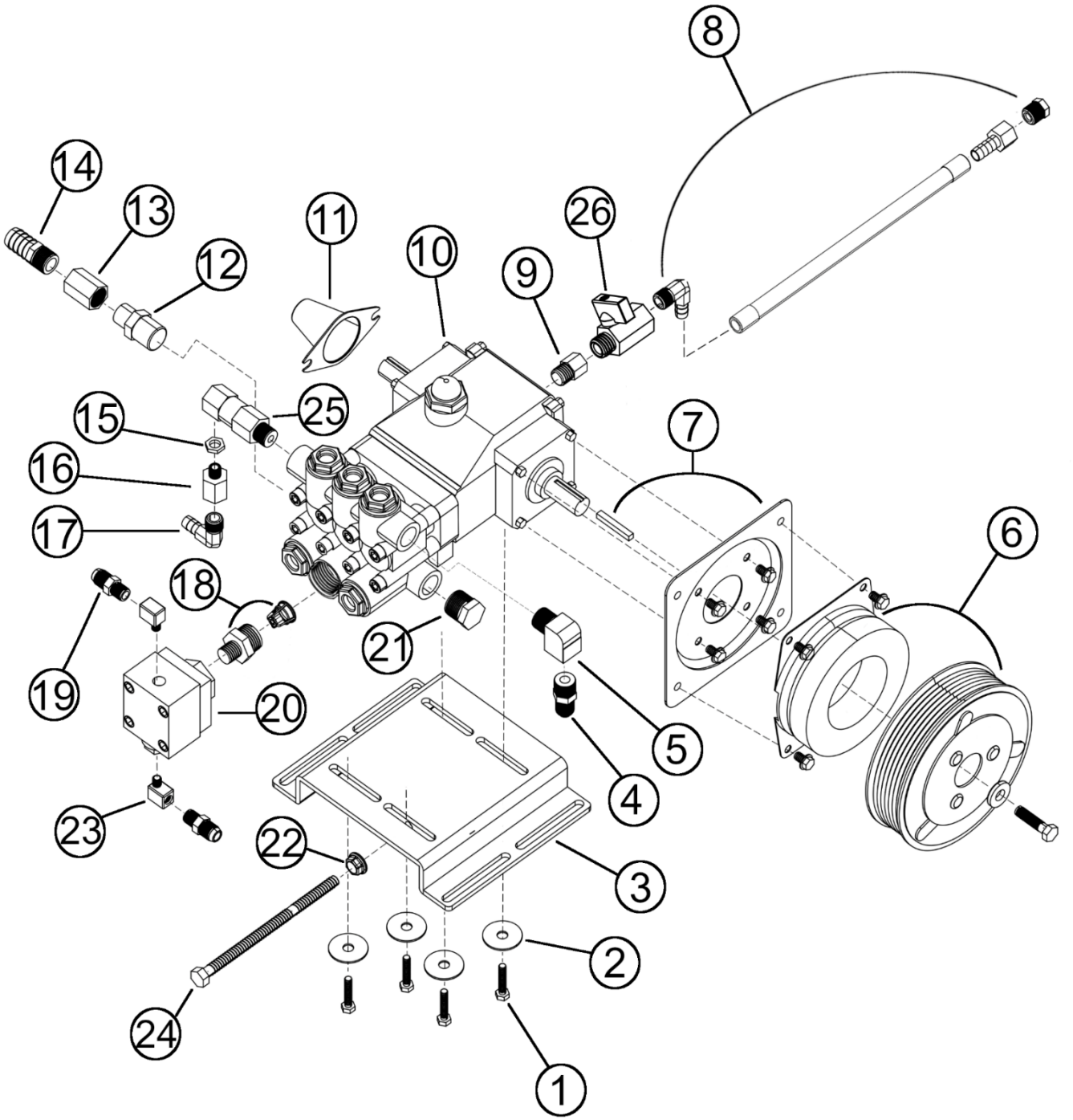


1115/22

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"	

Pump Assembly

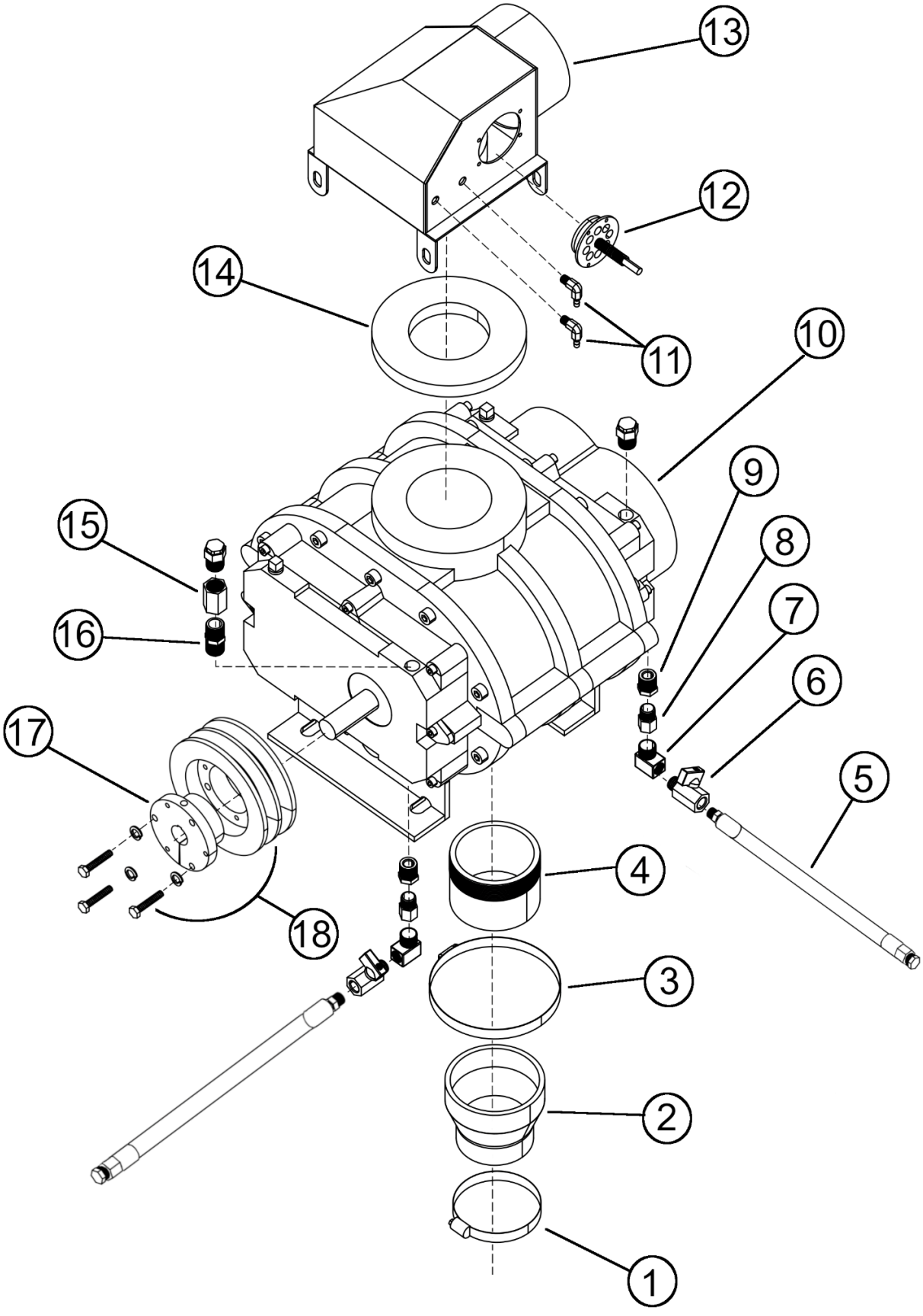


051625

Pump Assembly

REF.	Part No.	Discription	Note
1	405-430	BOLT, 6 x 30 MM ZINC	
2	415-300	FNDW, 1/4 ZINC	
3	465-685	BKRT, CAT PUMP 3CP	
4	555-060	CONNECTOR, JIC 3/8 X 3/8 NPT	
5	555-214	ELBOW 90, 3/8" STREET EXTRUDED	
6	365-060	CLUTCH, CAT PUMP 16.5MM 3CP	
7	516-230	CLUTCH MOUNTING KIT 3CP	
8	263-515	HOSE ASSY, PUMP OIL DRAIN	
9	555-002	ADPT, 1/4 M X 1/4 F	
10	516-040	CAT PUMP MODEL 3CP1120.3 HI TEMP	
11	516-210	SHAFT PROTECTOR	
12	555-544	REDUCING NIPPLE, 1/2 MPT X 3/8 MPT	
13	555-134	COUPLING, 3/8	
14	555-390	HOSE BARB, 5/8 BARB X 3/8 MPT	
15	555-406	LOCKNUT, 1/8"	
16	555-511	REDUCING ADAPTER, 1/4 FPT X 1/8 MPT SS	
17	555-320	HOSE BARB 90, 1/4 BARB X 1/8 MPT	
18	516-220	ADAPTOR ASSY, CAT PUMP 3/5CP	
19	555-058	CONNECTOR, JIC 3/8 X 1/8 NPT	
20	516-222	PULSE PUMP, CLEANCO	
21	555-458	PLUG, 1/2" MPT HEX HEAD	
22	400-016	NUT, 3/8 FLANGED	
23	555-202	ELBOW 90, 1/8" STREET EXTRUDED	
24	405-176	BOLT, 3/8 X 6 ALLTHREAD ZINC	
25	551-070	THERMAL VALVE, 3/8 NTP (140F)	
26	545-005	BALL VALVE, MINI 1/4"	

Blower Assembly

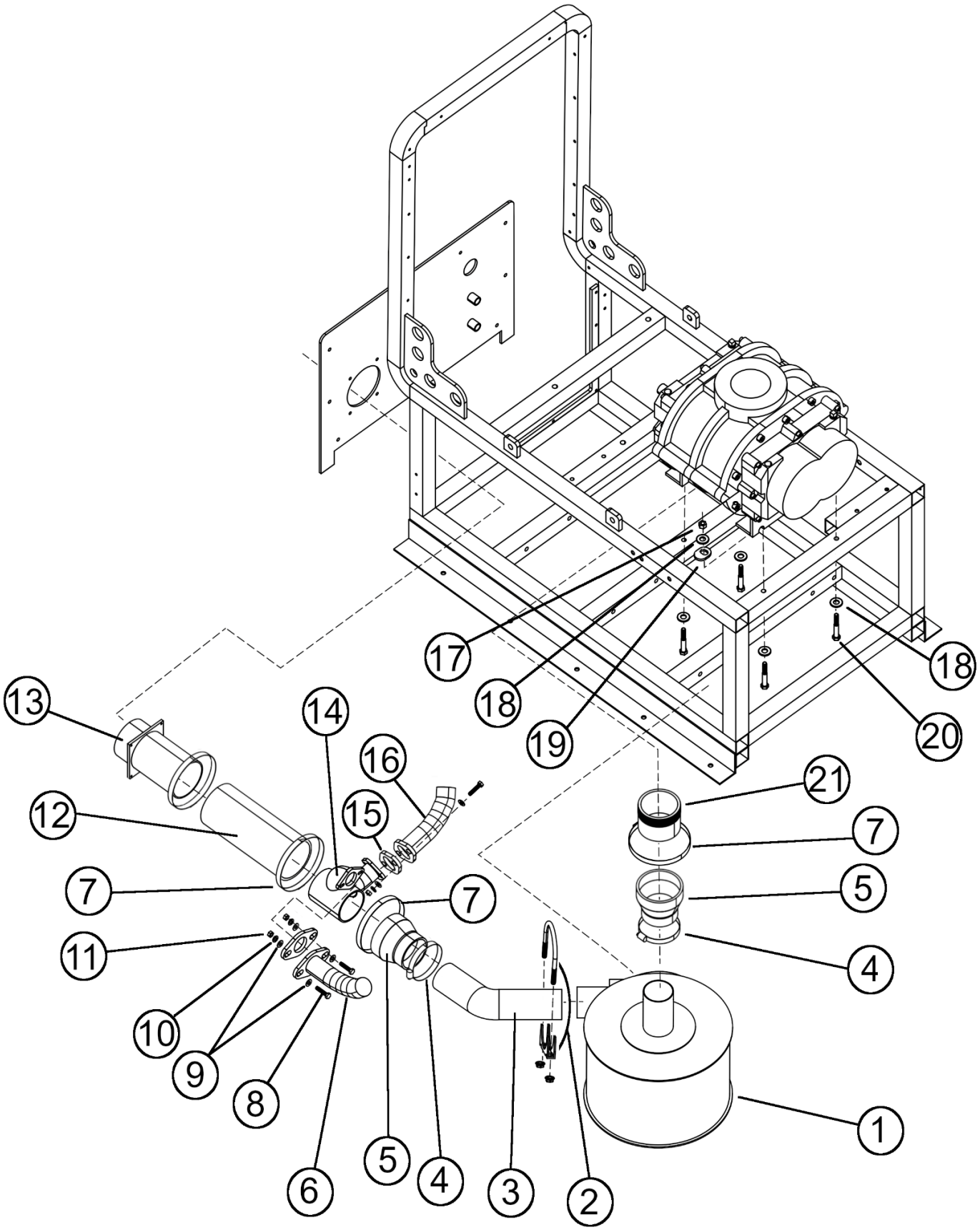


060325

Blower Assembly

REF.	Part No.	Discription	Note
1	425-030	CLAMP, #44 HOSE S/S 2 5/16 x 3 1/4	
2	572-225	SILICONE HOSE, 2 1/2 x 3 1/2	
3	425-035	CLAMP, #52 HOSE	
4	358-258	EXHAUST PORT 47 GUARDIAN	
5	263-520	HOSE ASSY, BLOWER OIL DRAIN GUARDIAN	
6	545-005	BALL VALVE, MINI 1/4"	
7	555-208	ELBOW 90, 1/4" STREET EXTRUDED	
8	555-002	ADPT, 1/4 M X 1/4 F	
9	555-024	BUSHING, 3/8 M x 1/4 F	
10	358-505	TUTHILL 47 DSL TRI-LOBE BLOWER	
11	555-320	HOSE BARB 90, 1/4 BARB X 1/8 MPT	
12	620-405	VAC BREAKER ASSY (CLEANCO)	
13	358-548	INTAKE SCOOP 47 SLIDE IN VR2 TUTHILL	
14	475-311	GASKET, 47 INTAKE SCOOP VR2 TUTHILL	
15	555-134	COUPLING, 3/8	
16	555-274	HEX NIPPLE, 3/8" X 1 1/2" LONG	
17	385-230	BUSHING, BLOWER SLX 47/GUARDIAN	
18	385-210	PULLEY, KUBOTA & BLOWER	

Silencer & Exhaust

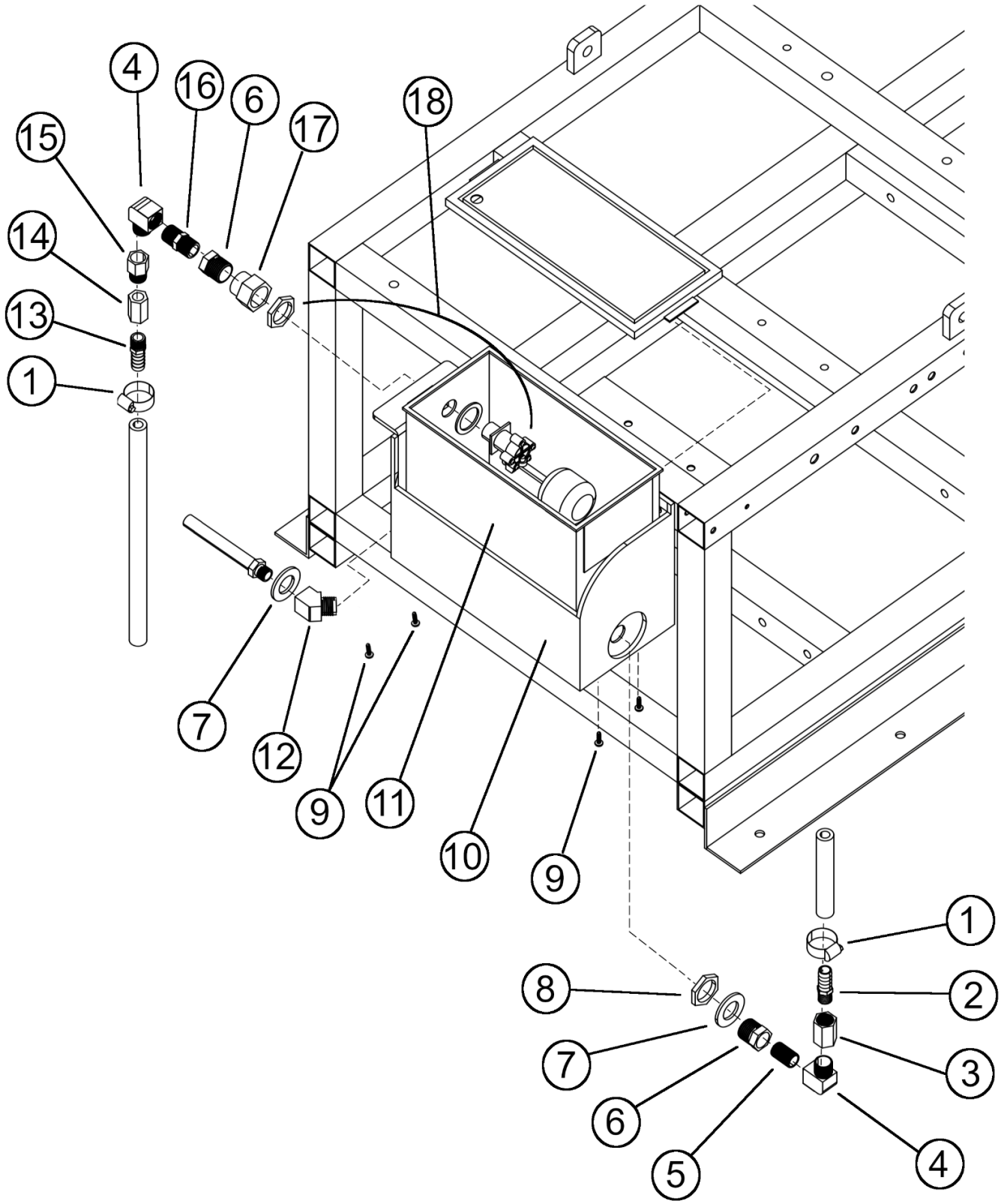


060525

Silencer & Exhaust

REF.	Part No.	Discription	Note
1	850-010	COWL SILENCER	
2	425-114	MUFFLER CLAMP 3"	
3	582-011	ELBOW, 45 X 3" PIPE FM	
4	425-030	CLAMP, #44 HOSE S/S 2 5/16 x 3 1/4	
5	572-225	SILICONE HOSE, 2 1/2 x 3 1/2	
6	850-120	EXHAUST HOSE ASSY 26"	
7	425-035	CLAMP, #52 HOSE	
8	405-021	BOLT, 1/4 X 1 1/4 GR8	
9	415-125	FW, 1/4 SS	
10	415-025	LW, 1/4 SS	
11	400-005	HEX NUT, 1/4 x 20 SS	
12	572-220	SILICONE HOSE, 3 1/2"	
13	850-140	EXHAUST PLATE & TUBE, FM/GUARDIAN	
14	850-114	EXHAUST PORT, GUARDIAN	
15	475-335	GASKET, EXHAUST FLANGE	
16	850-125	EXHAUST HOSE ASSY 19.70""	
17	400-015	NUT, 3/8 X 16 ZINC	
18	415-130	FW, 3/8 ZINC	
19	415-370	WASHER, BLOWER	
20	405-137	BOLT, 3/8 X 2 1/2 GR8	
21	358-258	EXHAUST PORT 47 FM	

Water Box

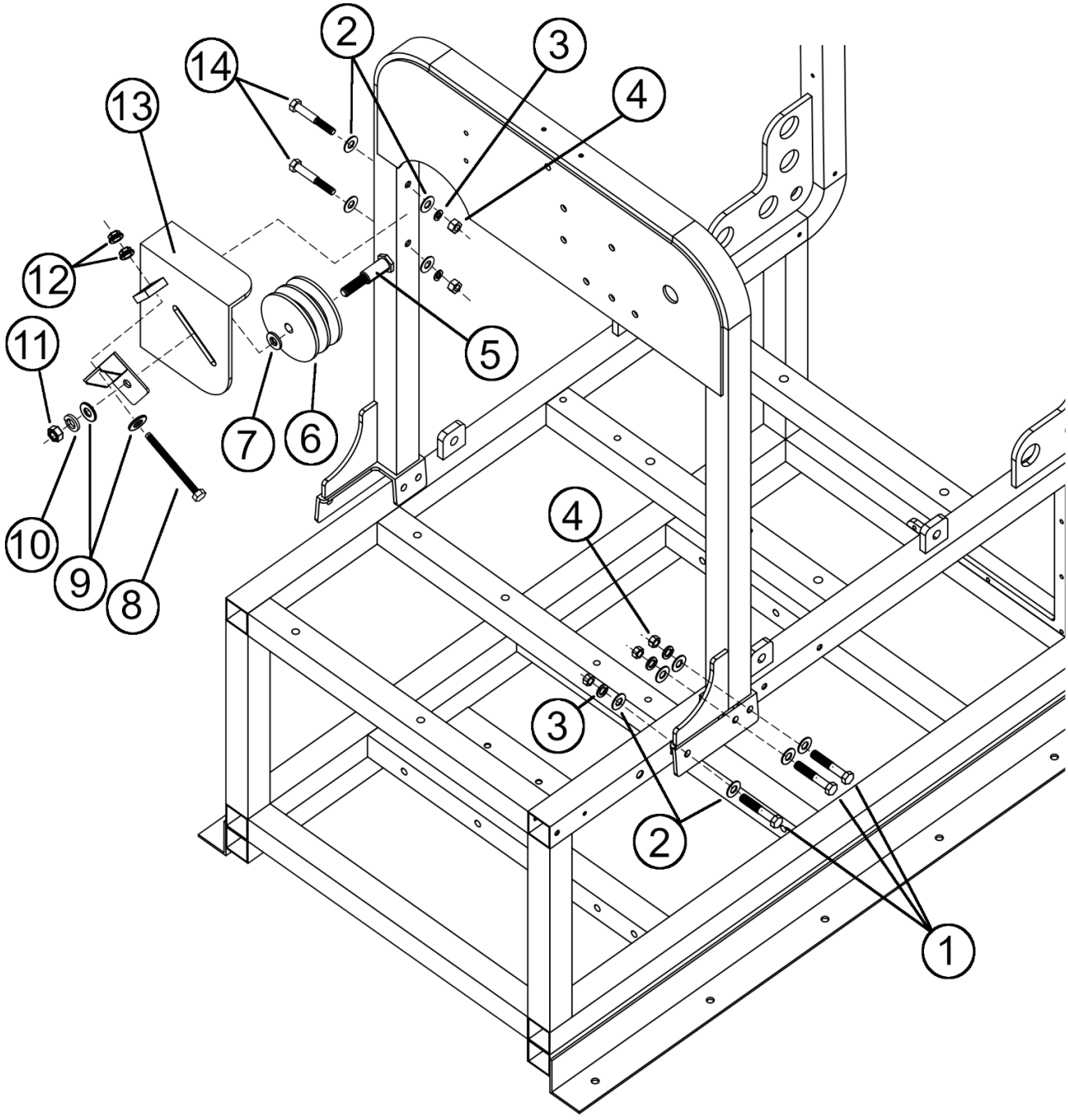


060425

Water Box

REF.	Part No.	Discription	Note
1	425-116	CLAMP, HOSE SILICONE #10	
2	555-390	HOSE BARB, 5/8 BARB X 3/8 MPT	
3	555-134	COUPLING, 3/8	
4	555-214	ELBOW 90, 3/8" STREET EXTRUDED	
5	555-074	CLOSE NIPPLE, 3/8"	
6	555-032	BUSHING, 1/2 MPT x 3/8 FPT	
7	415-185	FW, 3/4 SS 1 1/2" OD	
8	555-410	LOCKNUT, 1/2	
9	410-125	SMS, 8 X 5/8 PAN ROB.SS	
10	465-575	BRKT, WATER BOX GUARDIAN	
11	860-605	TANK-PLASTIC (FLOAT)	
12	555-186	ELBOW 45, 3/8" STREET EXTRUDED	
13	555-370	HOSE BARB, 1/2 BARB x 1/4 MPT	
14	555-132	COUPLING, 1/4"	
15	555-512	REDUCING ADPT, 3/8 FPT X 1/4 MPT	
16	555-274	HEX NIPPLE, 3/8" X 1 1/2" LONG	
17	555-516	REDUCING ADPT, 3/4MPT X 1/2 F	
18	597-065	VALVE, DIAPHRAGM - AUTO FILL	

Tensioner

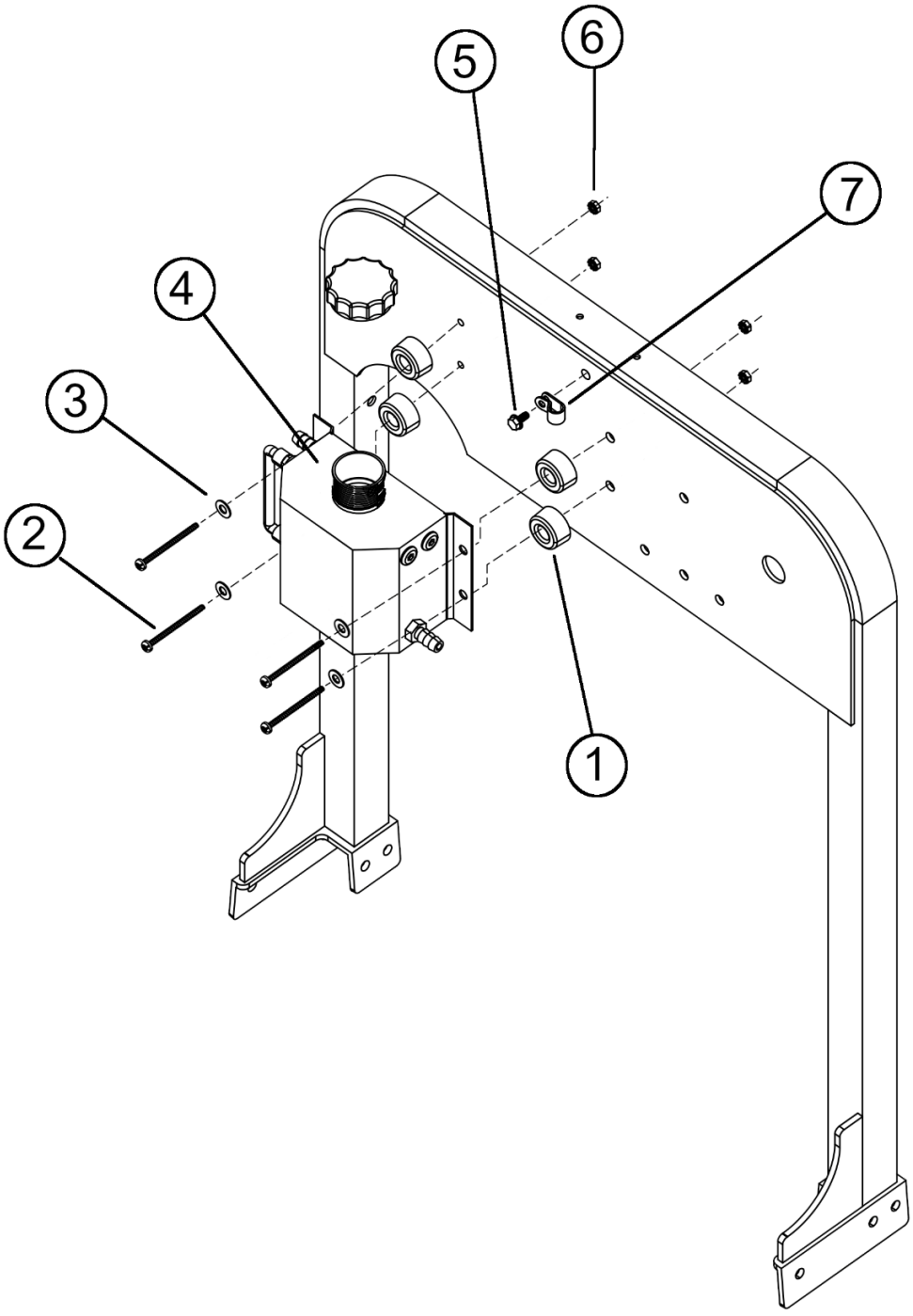


0611225

Tensioner

REF.	Part No.	Discription	Note
1	405-135	BOLT, 3/8 X 2 1/4 GR8	
2	415-200	FW, 5/16 ZINC	
3	415-040	LW, 5/16 ZINC	
4	400-045	HEX NUT, 5/16 ZINC	
5	405-525	BOLT, SHOULDER FM	
6	385-175	PULLEY,2BK36-IDLER W/BUSHING	
7	906-120	SPACER, IDLER PULLEY	
8	405-156	BOLT, 3/8 X 4 ALLTHREAD ZINC	
9	415-130	FW, 3/8 ZINC	
10	415-050	LW, 1/2 ZINC	
11	400-046	HEX NUT, 7/16 GRD 8 NF	
12	400-016	NUT, 3/8 FLANGED	
13	465-654	BRKT, MANUAL TENSIONER	
14	405-137	BOLT, 3/8 X 2 1/2 GR8	

Coolant Reservoir

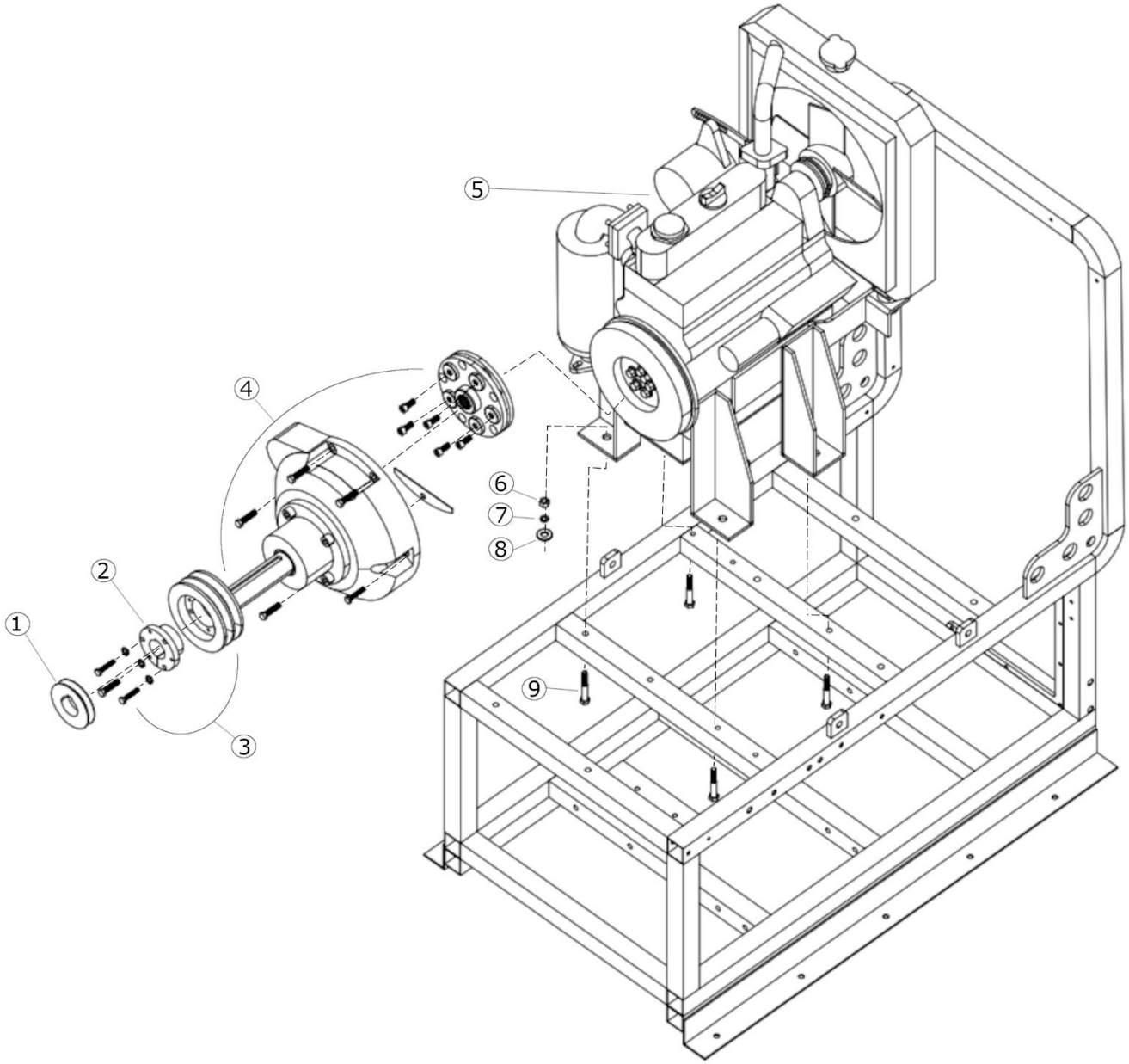


061625

Coolant Reservoir

REF.	Part No.	Discription	Note
1	498-104	FOOT RUBBER	
2	410-175	MS, 10-24 X 2 1/2 RH RB ZINC	
3	415-125	FW, 1/4 SS	
4	600-230	RESERVOIR, COOLANT SLX/GUARDIAN	
5	410-254	SCREW SS 1/4 - 20 X1/2 THREAD CUTTING	
6	400-039	NUT, 10-24 K-LOK	
7	425-100	CLAMP, 1/2 TUBE PLASTIC	

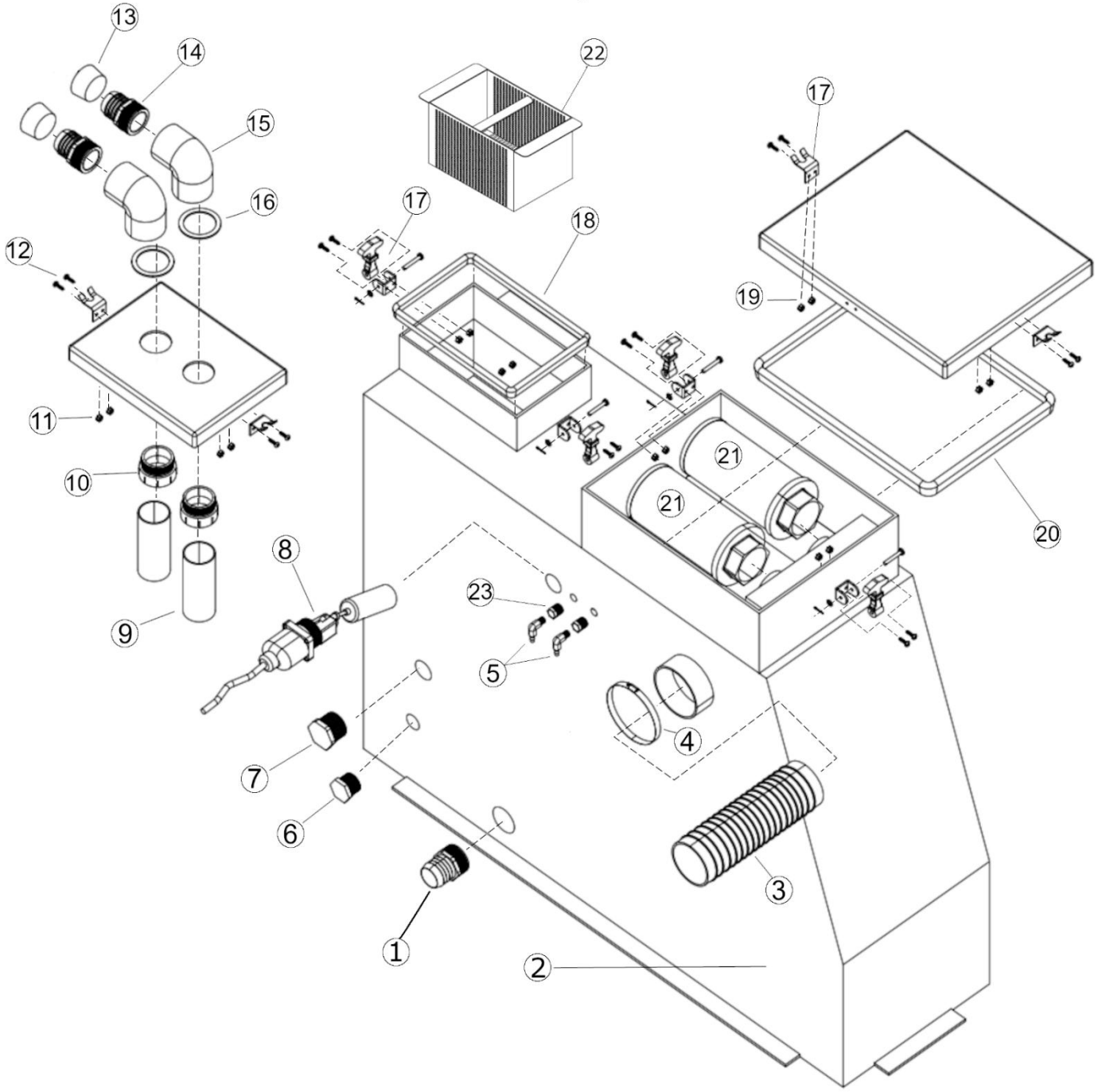
Engine & Hayes Support Shaft



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 SHOWEN

Recovery Tank



060525

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	575-038	DUCTING HOSE 4 1/2 ID	
4	425-045	CLAMP, #72 HOSE (4 3/4 ID)	
5	555-022	BUSHING, 3/8 M x 1/8 F	
6	582-210	PLUG, 1" THREADED	
7	582-212	PLUG, 1 1/4 THREADED	
8	305-105	SWITCH, SHUT OFF/ CAD & REC TANK	
9	595-010	ABS PIPE, 2"	
10	588-015	ABS ADPT 2", S X MPT	
11	400-125	LOCKNUT, 8 X 32 NYLON S.S.	
12	410-125	SMS, 8 X 5/8 PAN ROB.SS	
13	498-020	PLUG, RUBBER #10 C/W TETHER	
14	590-420	PVC HOSE BARB, 2"HB X 2"MPT	
15	590-025	SCD80 PVC ELBOW 90,2"FPTxFPT	
16	475-090	GASKET, INTAKE REC TANK 2"	
17	445-040	CATCH, RUBBER - COMPACT REC TANK	
18	475-101	GASKET, CHANNEL (LINT BASKET) CP45,47,56	
19	400-125	LOCKNUT, 8 X 32 NYLON S.S.	
20	475-103	GASKET, CHANNEL (FILTER) 45,47,56	
21	560-205	FILTER, 2 1/2" S/S	
22	560-370	FILTER BASKET, ALUMINUM, CLEANCO	
23	555-320	BARB 90, 1/4 BARB X 1/8 MPT	