



VORTEX 8000Q Mobile Cleaning Unit

The Worlds Most Powerful Cleaning Machine



Service and Operation Manual

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

Congratulations on your purchase of the **VORTEX MOBILE CLEANING UNIT**. This instruction/parts manual is a guide for operating and servicing your **BLUELINE VORTEX 8000Q®** mobile cleaning unit.

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

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

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

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

VIN:

This service and operations manual is written specifically for **BLUELINE VORTEX 8000Q®** mobile cleaning unit manufactured by:

BLUELINE EQUIPMENT LLC
2604 Liberator Drive
Prescott, AZ 86301 USA

The information contained in this document is subject to change without notice and does not represent a commitment on the part of **BLUELINE EQUIPMENT LLC**.

All rights reserved. Copyright 2006 by **BLUELINE EQUIPMENT LLC**. No part of this work may be used or reproduced in any form or means without the express written consent and permission of **BLUELINE EQUIPMENT LLC**.

Published by **BLUELINE EQUIPMENT LLC**.
First printing: April 2008
Printed in USA



VORTEX 8000Q® MANUAL
PART# 49-036

Revision 1
September, 2008

LIMITED WARRANTY

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

Vacuum Pump (Through manufacturer or local dealer)	_____	18 months
Water Pump	_____	1 year
Oil Pump	_____	1 year
Waste Pump	_____	1 year
Engine Heat Exchanger	_____	1 year
Wands (Excluding shut off valve and orifices)	_____	1 year
Waste and Water Tanks	_____	1 year
Pressure Regulator	_____	1 year
All Other Components	_____	1 year

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

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

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

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

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

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

Table of Contents

SECTION ONE: GENERAL INFORMATION	1
1. SAFETY	2
<i>Safety, Specifications, Chemical, Water Requirements</i>	
2. RECEIVING YOUR MOBILE CLEANING UNIT	6
<i>Dealer Responsibility, Acceptance of Shipment, Equipment Listing, Optional Equipment</i>	
SECTION TWO: SYSTEMS/OPERATION	8
3. SYSTEMS	11
<i>Water Pumping System, Heat Transfer System, Vacuum System, Chemical System</i>	
4. OPERATION	15
<i>Equipment setup, Instrumentation, Starting Your Unit, Priming the Chemical Pump, Waste Pump, Operation, Cleaning, Upholstery Cleaning, Stair Tool Cleaning, Flood Restoration, Shut Down and Daily Maintenance, Freeze Protection.</i>	
SECTION THREE: MAINTENANCE and SERVICE	24
MAINTENANCE CHART	26
5. MAINTENANCE	29
6. GENERAL SERVICE ADJUSTMENTS	32
7. TROUBLESHOOTING	35
SECTION FOUR: PARTS and ACCESSORIES	43
9. ILLUSTRATED PARTS LISTINGS	44
10. ACCESSORIES	75
SECTION FIVE: SERVICE BULLITENS	84

SECTION 1: **GENERAL INFORMATION**

1. SAFETY

Safety	2
Specifications	5
Chemical requirements	6
Water requirements	6

2. RECEIVING YOUR TRUCK MOUNT UNIT

Dealer responsibility	6
Acceptance of shipment	6
Equipment listing	7
Optional equipment	7

SECTION 1

1. SAFETY

WARNING For Your Safety!

The following **WARNING** labels are on your VORTEX 8000Q mobile cleaning unit. These labels point out important **Warnings and Cautions**, which must be followed at **all** times. Failure to follow warnings could result in personal injury, fatality, to yourself and/or others or property damage. Please follow these instructions carefully!

DO NOT remove these decals.

! PTO MAINTENANCE WARNING!	
<p>Periodic PTO MAINTENANCE is required by the owner/operator to ensure proper, safe and trouble free operation.</p> <p>1) Daily: Check all air, hydraulic and working mechanisms before operating PTO. (PERFORM MAINTENANCE as required !)</p> <p>2) Monthly: Inspect for possible leaks and tighten all air, hydraulic and mounting hardware, if necessary. Torque all bolts, nuts, etc. to Chelsea specifications. Insure that splines are properly lubricated, if applicable. (PERFORM MAINTENANCE as required !)</p> <p>Parker-Chelsea Products Division will not be responsible for any damage due to the overloading of this auxiliary power product; failure to perform preventative maintenance; damage due to abuse, misapplication or misuse; or improper operation of this power take-off and ancillary equipment.</p> <p>Warranty: Failure to comply entirely with the provisions set forth in the provided Owner's Manual will result in voiding ALL WARRANTY consideration.</p>	<p>NOTICE!</p> <p>Due to the normal and sometimes severe torsional vibrations that power take-off units experience, operators should follow a set maintenance schedule for inspections.</p> <p>Failure to service loose bolts or power take-off leaks could result in potential auxiliary power take-off or transmission damage!</p>
<p>CHELSEA <small>Parker</small></p>	<p>CHELSEA <small>Parker</small></p>
	<p>379085 11/02</p>

<p>IMPORTANT! This vehicle is equipped with a POWER TAKE-OFF. -READ OWNERS MANUAL LOCATED IN THE GLOVE BOX. -SEE SUN VISOR FOR OPERATING INSTRUCTIONS.</p> <p>CHELSEA <small>Parker</small></p> <p>11-01</p>	<p>LOCATE NEAR P.T.O. CONTROL</p> <p>PLACE THIS PART OF LABEL ON SUN VISOR</p> <p>379085-2</p> <p>POWER TAKE OFF OPERATION POWER SHIFTED P.T.O.'S</p> <p>I. MANUALLY SHIFTED TRANS.</p> <p>1) ENGAGE P.T.O. WITH ENGINE AT IDLE SPEED.</p> <p>II. AUTOMATIC TRANSMISSION</p> <p>1) ENGAGE P.T.O. WITH ENGINE AT IDLE SPEED.</p> <p>WARNING: DURING EXTREMELY COLD WEATHER 230, 231, 236, 242, 243, 244, 250, 251, 270, 271, 277, 278, 800, 852, 869 AND 885 SERIES POWER TAKE OFFS MAY MOMENTARILY TRANSMIT POWER EVEN THOUGH IT IS DISENGAGED! CONSULT YOUR OWNERS MANUAL FOR FURTHER EXPLANATION.</p> <p>11-01</p>
---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

<p>! WARNING</p> <p>DO NOT ENGAGE PTO SWITCH ABOVE IDLE RPM DO NOT OPERATE VEHICLE WITH PTO SWITCH ENGAGED</p>

! WARNING	
ROTATING SHAFTS ARE DANGEROUS	
<p>YOU CAN SNAG CLOTHES, SKIN, HAIR, HANDS, ETC THIS CAN CAUSE SERIOUS INJURY OR DEATH.</p> <p>- EXPOSED ROTATING SHAFTS MUST BE GUARDED.</p> <p>- DO NOT WORK ON OR NEAR AN EXPOSED SHAFT WHEN ENGINE IS RUNNING.</p> <p>- SHUT OFF ENGINE BEFORE WORKING ON POWER TAKE-OFF OR DRIVEN EQUIPMENT.</p> <p>DO NOT PAINT OVER THIS LABEL !</p>	 <p>READ P.T.O. OWNERS MANUAL FOR MORE SAFETY INFORMATION</p> <p>379274 6/93</p>
! WARNING	

<p>CAUTION HOT</p>

 **WARNING!**

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

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

2. Operate this mobile cleaning only in a well-ventilated area.

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

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

4. NEVER operate this unit without belt and safety guards. High speed moving parts, such as belts and pulleys, should be avoided while the unit is running. Severe injury, fatality or damage may result.

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

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

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

8. Water under high pressure at high

temperature can cause burns, severe personal injury, or fatality. Shut down unit, allow to cool down and relieve system of all pressure before removing caps, valves, plugs, fittings, filters or hardware.

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

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

10. DO NOT exceed your vehicles weight limit. GVW (Isuzu NPR) 14,250 lbs. This will prevent unsafe or hazardous driving conditions.

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

12. All high-pressure hoses must be rated at 3000 PSI and have a heat rating of 250° F. Thermoplastic hoses do not meet this criteria, and should never be used. Severe burns, damage to property or fatality could result if hoses do not meet these requirements.

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

14. This unit produces high pressure and high temperatures. Improper use could result in serious injury or fatality.

SECTION 1

15. **DO NOT** modify this unit in any manner. Any modification could result in serious injury or fatality, and will void your warranty.

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

SPECIFICATIONS

Truck	Isuzu NPR HD
Allowable Truck Gross Weight	14,250 lbs.
	*Refer to owners' manual for allowable axle load ratings.
Engine Speed	700-1700 rpm (Manual Control Cleaning Mode) 600-700 rpm (Idle)
Water Pump RPM	1400 rpm
Vacuum Pump RPM	3000 max rpm @ 900 cfm
Water Flow Rate	6.5 GPM (maximum) Optional 4.5 GPM
Water Pump Pressure	1750 PSI (maximum) Optional 2750 PSI
Vacuum Relief Valve	17 in. HG
Waste Tank Capacity	210 Gallons at shutoff

TANKS

Fresh Water	220 Gallons.
Waste Recovery	220 Gallons

JET SIZING

BLUELINE recommends that the total floor tool tip size does not exceed .12". Using larger jet sizes on your **VORTEX 8000Q®** unit may reduce cleaning temperatures.

Example: Four-jet wand uses four 95015 jets. (95 deg. Spray angle w/015 orifice)
 $.015 \times 4 = .06$

When using two wands while cleaning with this unit, **BLUELINE** recommends that the tip size in each tool does not exceed a total of .18".

Example: Four-jet wand uses four 9501 jets. (95 deg. Spray angle w/01 orifice)
 $.01 \times 4 = .04$ $.04 \times 2 \text{ tools} = .08$

Upholstery tool jet size: 80015 Stair tool jet size: 9502

Spray lance jet size: 3.5 GPM maximum

SECTION 1

FUEL REQUIREMENTS

Use ultra low sulfur diesel fuel (15ppm) ONLY. Refer to vehicle owners' manual for use of additives and bio-diesel recommendations.

ENGINE OIL REQUIREMENTS

Refer to vehicle owners' manual for recommended oil type and maintenance schedules.

CHEMICAL REQUIREMENTS

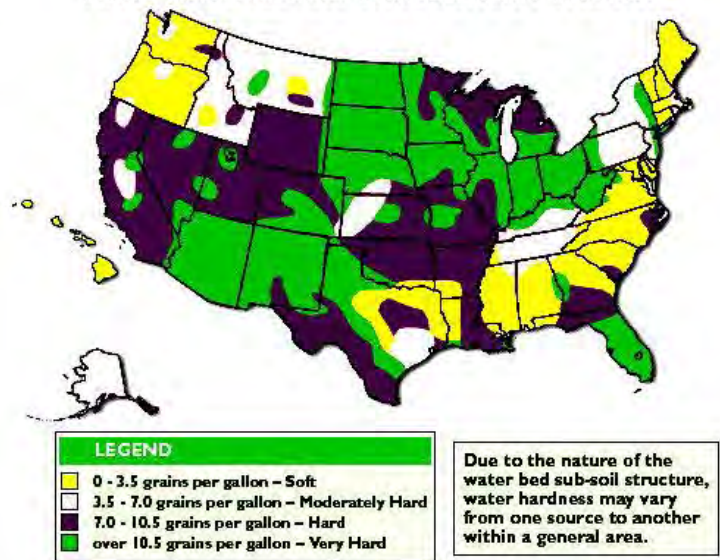
The **BLUELINE VORTEX 8000Q®** mobile truck cleaning unit's unique last step chemical injection system can be used with a wide variety of water diluted chemical compounds, either acidic or alkaline, depending on the work to be performed. We recommend using only the highest quality chemistry.

WATER REQUIREMENTS

Because hard water deposits will damage the plumbing and heat exchange systems on this unit, **BLUELINE** recommends that a high quality water softener be used in areas where the water hardness exceeds 3-1/2 grains. If a water softener is used, it must have a flow capacity of at least five (5) GPM or greater, without any hose constrictions.

The use of a water softening system will reduce maintenance and reduce down time caused by hard water scaling. It will also enhance the performance of cleaning chemicals, which will result in greater efficiency in lower concentrations.

HARD WATER LEVELS THROUGHOUT THE U.S.



2. RECEIVING YOUR TRUCK CLEANING UNIT

DEALER RESPONSIBILITY

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

ACCEPTANCE OF SHIPMENT

Your **VORTEX 8000Q®** mobile truck cleaning unit was thoroughly tested, checked and inspected in its entirety prior to leaving our manufacturing facility. **When receiving your mobile cleaning unit, please make the following acceptance check:**

1. The unit should not show any signs of damage. If there is damage, notify your dealer immediately.
2. Carefully check your equipment and packing list. The standard **BLUELINE VORTEX 8000Q®** unit

should arrive with the following items as well as any optional accessories:

EQUIPMENT LISTING

- A. Operation and Service manual
- B. Hose reel
- C. 400 ft. 2" vacuum hose
- D. 220 Gallon fresh water tank
- E. 220 Gallon waste tank
- F. Pre-Filter box with stainless steel strainer.
- G. Waste tank filters.
- H. 2 Chemical solution reels.
- I. 400 ft. of 1/4 in. high pressure solution hose with quick connects
- J. 2 vacuum hose adaptors
- K. 50 ft. water supply hose with quick connect
- L. Vortex marketing materials package.

OPTIONAL EQUIPMENT

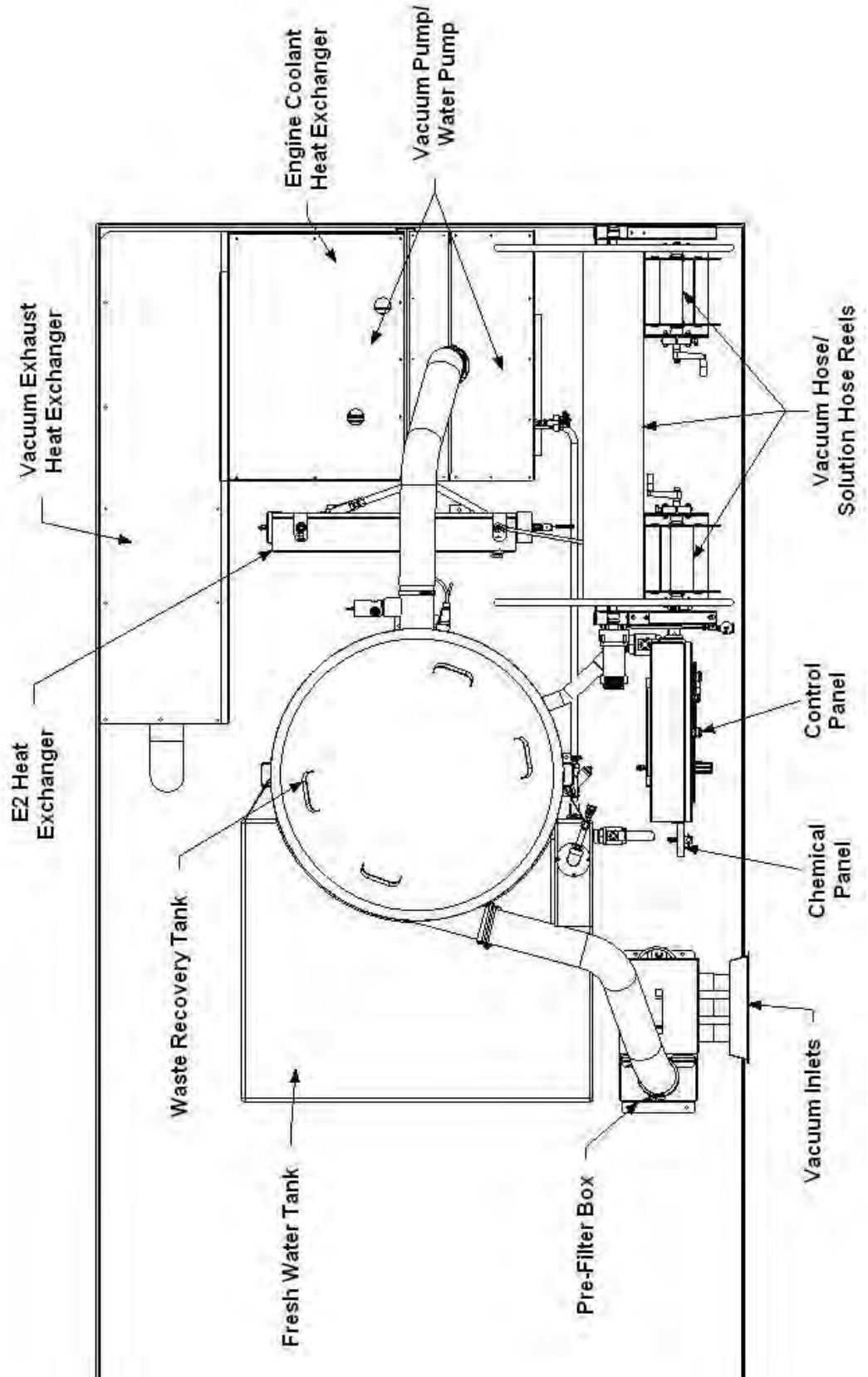
SECTION 2: **SYSTEMS/OPERATION**

3 SYSTEMS/OPERATION

Mobile Truck Unit Layout	9
Battery	10
Fire extinguisher	10
Water pumping system	11
Heat transfer system	11
Vacuum system	13
Chemical pumping system	14

4. OPERATION

Preparation	15
Starting the unit	19
Priming the chemical pump	20
Automatic waste pump	21
Operation	21
Automatic Diverter System	21
Cleaning	21
Upholstery cleaning	22
Stair tool cleaning	22
Flood restoration/extraction	22
Shut down and daily maintenance	22
Freeze protection	23



SECTION 2

BATTERY CONNECTION

WARNING!

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

Refer to vehicle owners' manual for specific instructions on the maintenance, removal or replacement of vehicles batteries.

Before disconnecting batteries, ensure that all the mobile cleaning units' 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 other explosive vapors are present.

FIRE EXTINGUISHER

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

3. SYSTEMS

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

This portion of the manual divides the unit up into systems and describes how each system works. Prior to proceeding into the operations and maintenance sections of this manual it is recommended that you acquire a basic understanding of how the unit functions.

WATER PUMPING SYSTEM

See figure 2-1. Water flows from the fresh water tank, through a wye strainer to the water pump where it is pressurized. The pressurized water is pumped to the pressure regulator, which maintains the desired pressure setting. The pump discharge manifold is equipped with a nitrogen charged accumulator, which helps reduce pressure fluctuations.

Water flows from the pressure regulator through the engine coolant heat exchanger, through the vacuum exhaust heat exchanger and then through the upper xentherm heat exchanger.

Water then flows through the metering valve located on the control panel. At this point, the chemical injection takes place.

The hot solution mixture of water and chemicals then flows to the cleaning tool.

HEAT TRANSFER SYSTEM

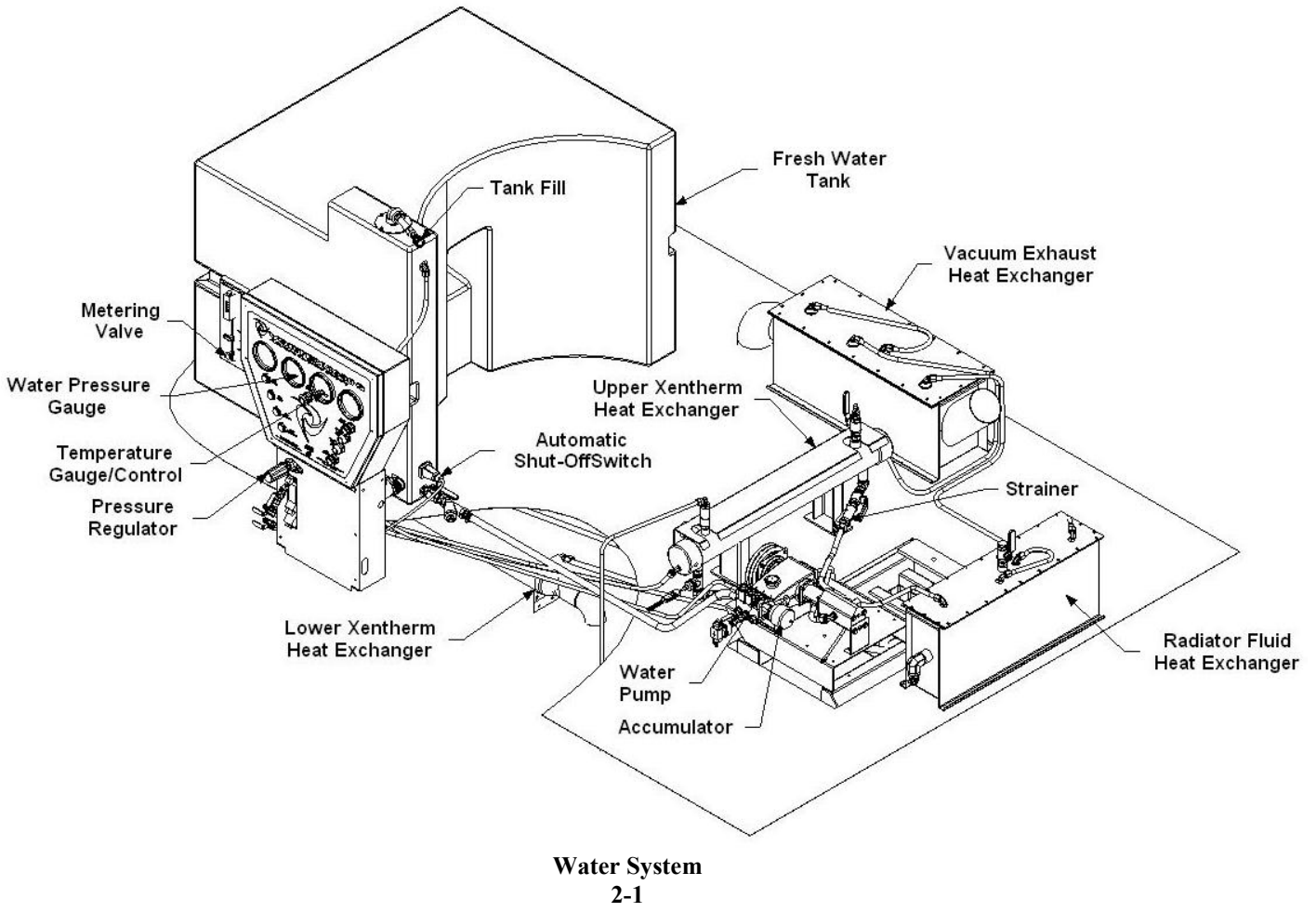
See figure 2-1 Water is heated through a multi-stage heat exchange system that utilizes engine coolant, vacuum exhaust and engine exhaust. Stage one utilizes hot engine coolant, where the temperature is maintained at or near 195°F by the engine thermostat. The engine coolant flows through the engine heat exchanger heating the pressurized water supplied by the water pump.

Water then flows through the vacuum exhaust heat exchanger and into the upper xentherm heat exchanger. Where oil heated by the engine exhaust in the lower xentherm heat exchanger is circulated in a closed loop system, heating the water to the desired temperature, set with the oil temperature control located on the control panel.

This unit is equipped with an automatic diverter valve system located behind the engine muffler. This system incorporates an electronic rotary solenoid with an exhaust diverter valve. When the water temperature reaches the desired setting, the solenoid automatically positions the diverter valve into the direct exhaust mode.

The low water level switch located on the water tank will automatically shut off the water pump clutch, disengaging the water pump when the fresh water supply is low. A water tank empty indicator light, located on the control panel, will then be illuminated.

SECTION 2



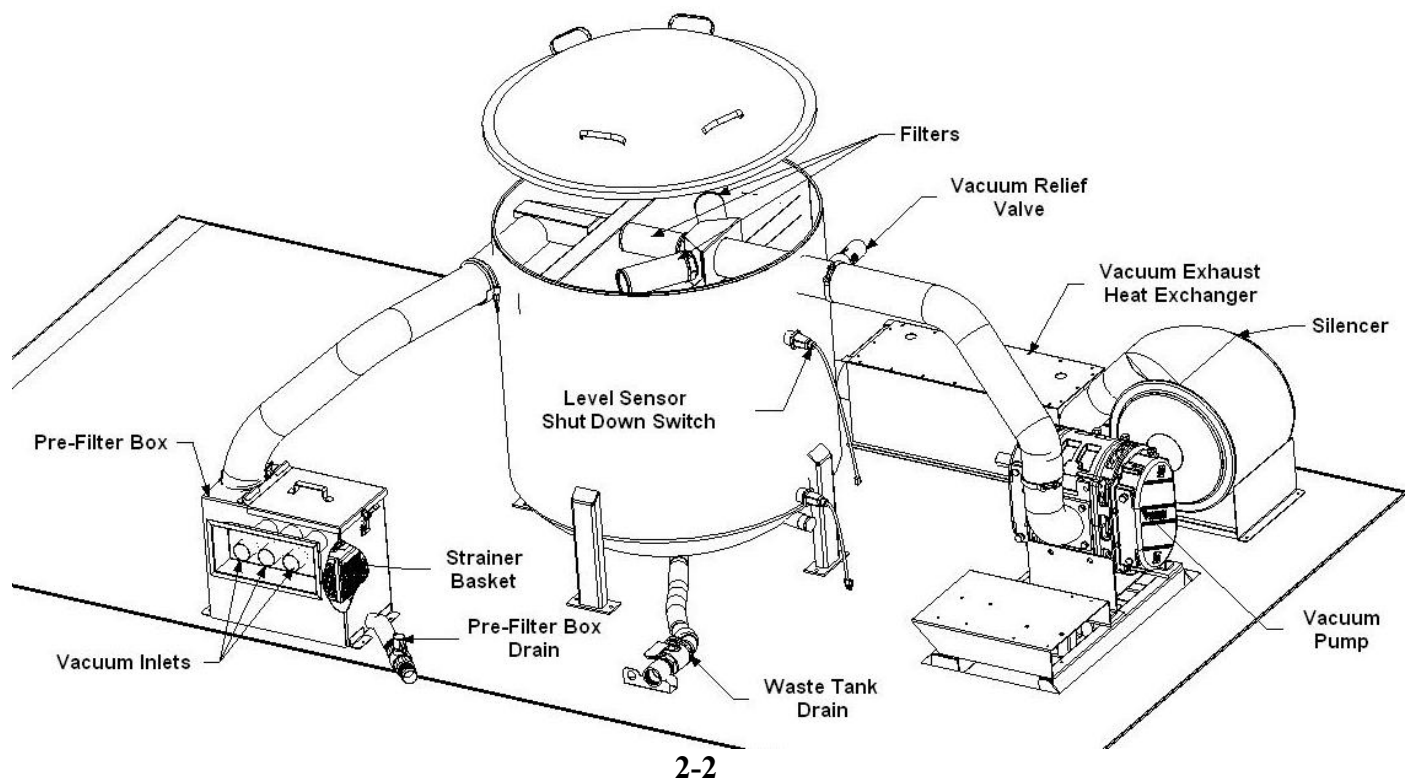
VACUUM SYSTEM

See figure 2-2. The vacuum flow is initiated by the vacuum pump, or blower. An air and water mixture is drawn into the vacuum inlet on the side of the truck. The mixture flows through a strainer basket in the pre-filter box, and then into the waste tank. The air exits the waste tank through a 100 mesh filtration system, into the vacuum pump. A vacuum pump relief valve is installed for vacuum protection.

The air is discharged from the vacuum pump through a spiral silencer, then through a vacuum exhaust heat exchanger.

A level shut off sensor is located near the top of the waste tank and will shut down the PTO (power take off) unit before the tank is at full capacity. A waste tank full indicator light, located on the control panel, will then be illuminated. This protects the vacuum pump from water damage.

Note: Waste tank level shut off sensor **will not** shut the unit off due to high levels of foam. The use of a quality defoamer is recommended.



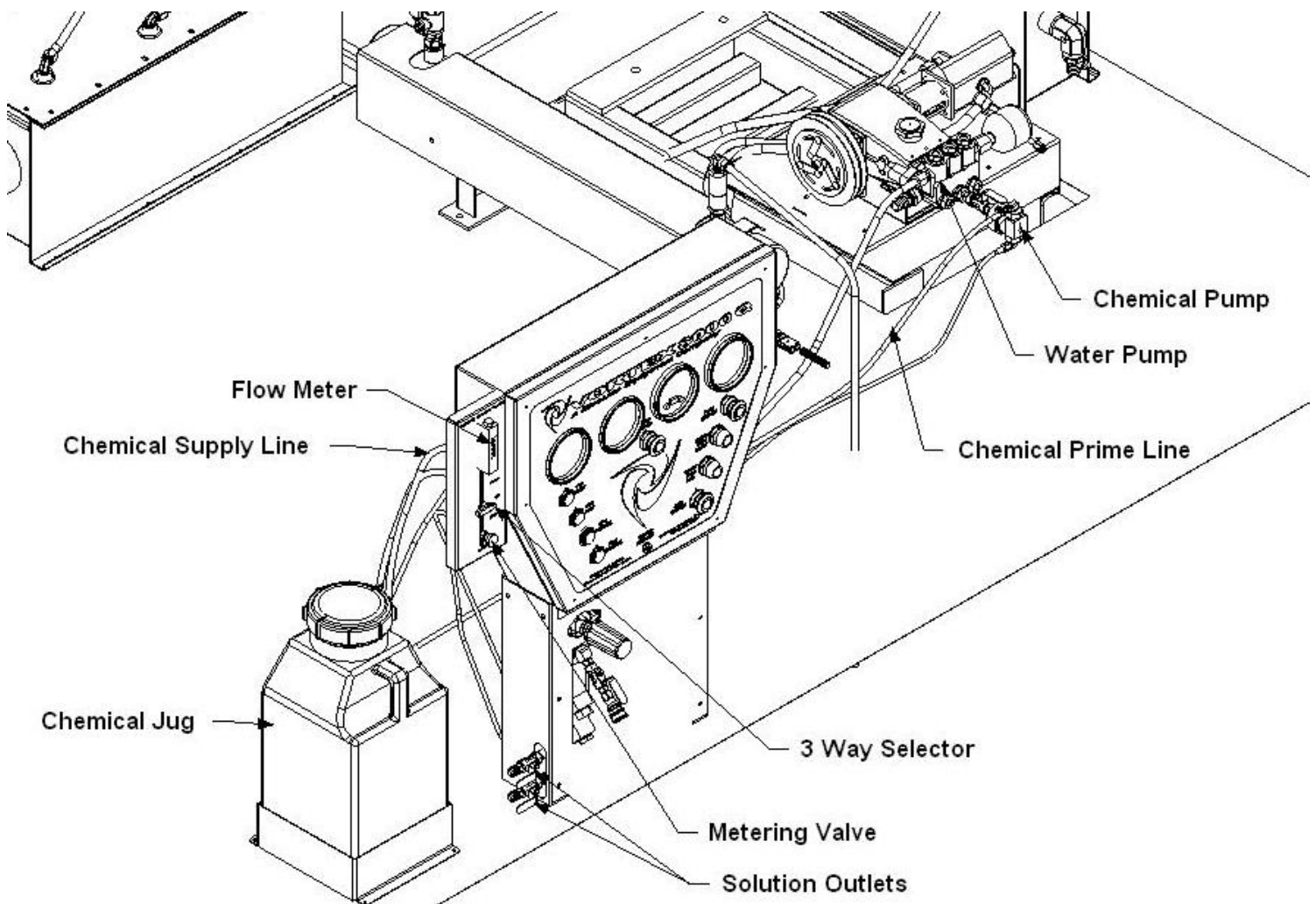
SECTION 2

CHEMICAL PUMPING SYSTEM

See figure 2-3. The chemicals are drawn from the chemical jug through a strainer into the flow meter. The flow meter indicates the rate of chemical flow.

The chemicals then flow into the stainless steel pulsation chemical pump. The chemical pump injects the chemicals to the three way selector valve located on the front panel. This valve may be used to turn the chemical flow to **PRIME**, **OFF**, or **METER**.

The chemicals then flow through the chemical metering valve to the solution outlet. This valve controls the rate of chemical flowing into the cleaning solution, which is indicated by the flow meter.



2-3

5. OPERATION

PREPARATION

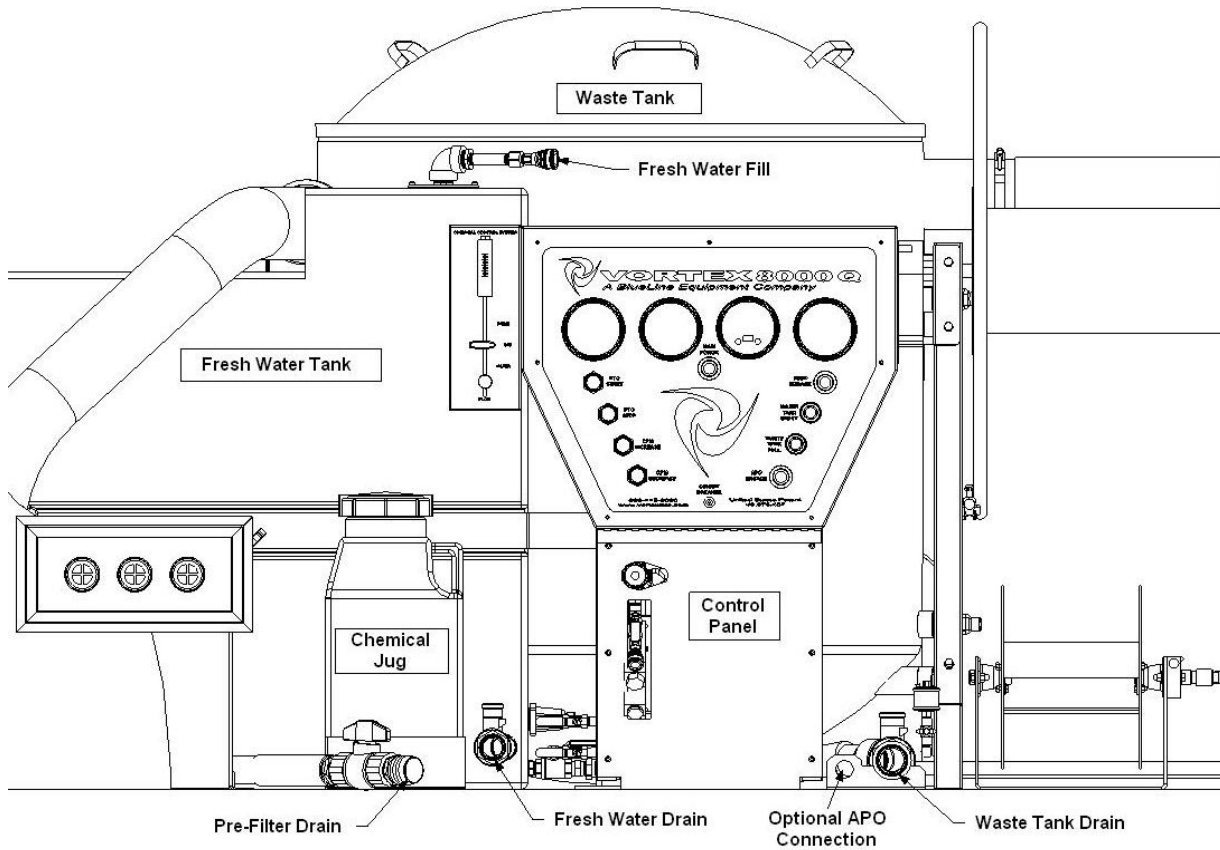
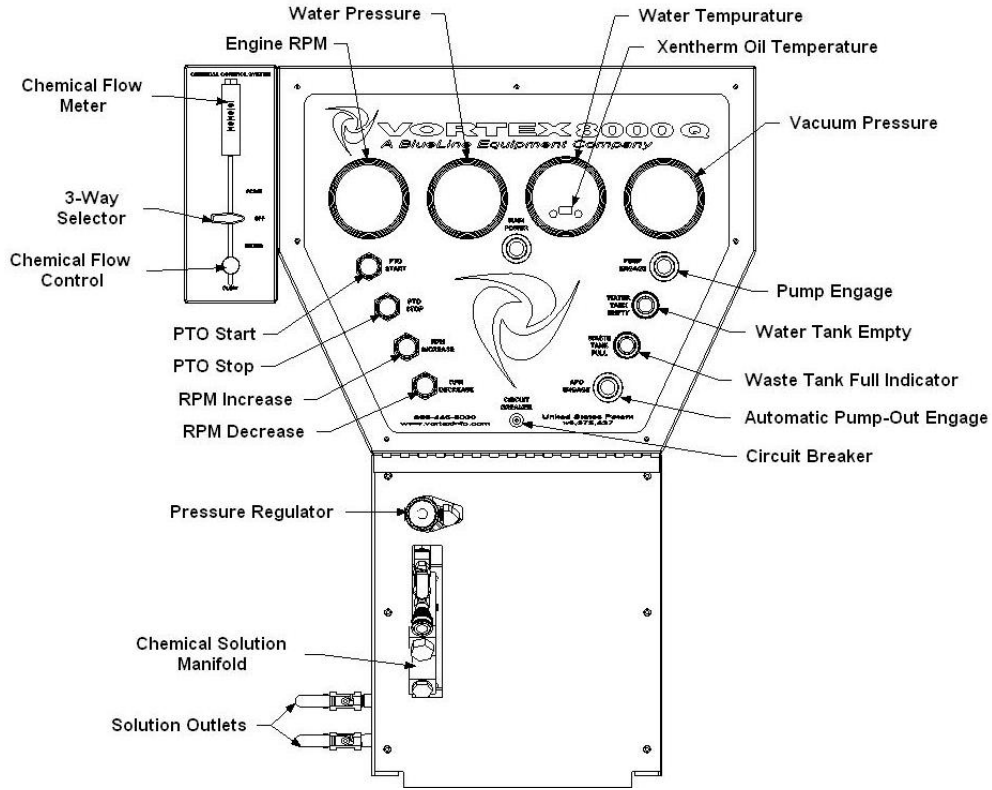
This section of the operator's manual explains how to prepare, start, operate, shut down and maintain your **BLUELINE VORTEX 8000Q®** mobile cleaning unit. The **VORTEX 8000Q®** unit is easy to operate, however only trained operators should proceed.

WARNING!

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

Water under high pressure at high temperature can cause burns, severe personal injury, or fatality

SECTION 2

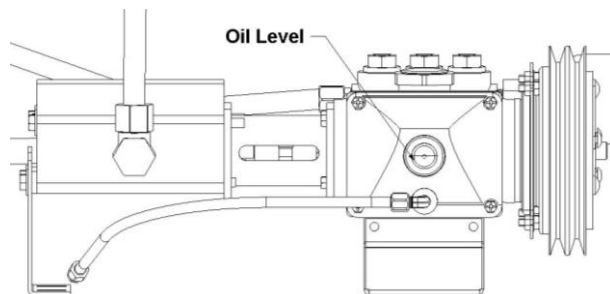


ENSURE THERE IS ADEQUATE FUEL

Check the fuel tank to ensure there is adequate fuel to complete the job and transport the vehicle. This unit consumes approximately 2 gallons of diesel fuel per hour, when operating the engine in the proper RPM range.

CHECK WATER PUMP OIL LEVEL

Check the water pump oil **daily** prior to starting the mobile cleaning unit. With the truck on a level surface check the sight gauge on the water pump. Oil level should be in the center of the gauge. If the oil is below the center red dot, add oil and check for leaks. **DO NOT overfill or damage may occur to the pump.**
(CAT Pump Crankcase Oil, Part # 13-000)



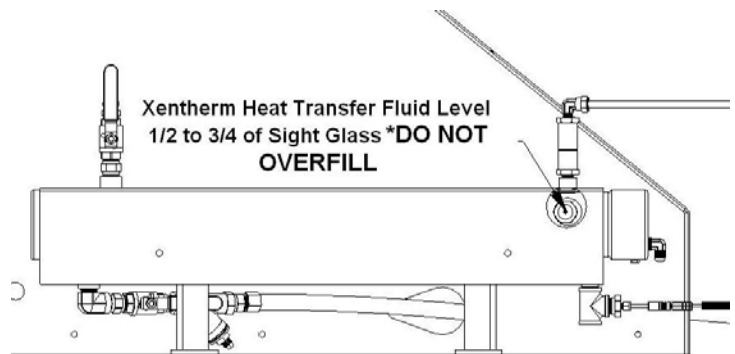
Water Pump Oil Level

CHECK HEAT TRANSFER OIL LEVEL

With the mobile cleaning unit parked on level ground with the unit off, and the heat exchanger temperature between 60° to 90° F. **NOTE: (Failure to follow the preceding will result in an inaccurate reading.)** Check the oil level on the upper xentherm heat exchanger sight glass. Normal oil level should be 1/2 to 3/4 of the sight glass. Add heat transfer oil as needed. **Do not overfill.**
NOTE: This is a closed loop system, any loss of fluid indicates a problem within the system, and must be repaired prior to any further use.

! WARNING

Do not overfill heat transfer fluid. The heat transfer fluid will expand as it heats up. Failure to follow these procedures could result in injury and or fatality and damage to property.



Upper Xentherm Fluid Level

PRE-FILTER BOX AND WASTE TANK

Clean or replace strainer basket located in the pre-filter box. Inspect and clean or replace filters located inside the waste recovery tank. This will help to prevent damage to the system vacuum pump.

NOTE: To remove the vacuum inlet filters, grip the plastic hexagon section of the filters. Gripping the filters by the screen will collapse or destroy the filters. Replace the filters after cleaning until hand tight.

TRUCK ENGINE OIL/RADIATOR

Check the engine oil and anti-freeze levels. Refer to vehicle owner's manual for recommended fluid levels and maintenance schedule.

FRESH WATER TANK

Connect the water supply hose to the water inlet quick connector on the top of the fresh water tank. Connect the hose to the faucet. Turn the water supply faucet on. Fill the tank

SECTION 2

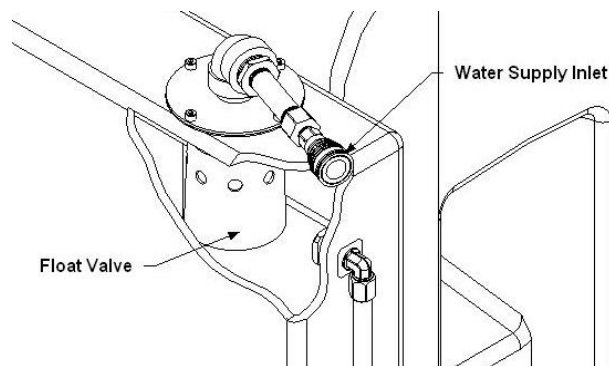
to desired water level. Periodically check the operation of the water shut-off float valve located in the fresh water tank. Repair or replace as needed.

NOTE: Prior to connecting your water inlet hose to any supply faucet, flush out the faucet until the water is free of any debris. Also, flush out any debris from your water inlet hose.

NOTE: Never use a waste pump outlet hose as a water inlet hose. Use only clean hoses for water supply.

WARNING!

Always check local, state and federal laws prior to connecting fresh water hose to the water supply. Some localities require the installation and use of a back flow restrictor.



TOOLS AND EQUIPMENT

Inspect all tools and equipment. Clean repair and or replace as needed.

AT THE JOB LOCATION

REMOVE TOOLS FROM THE VEHICLE

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

WATER SUPPLY

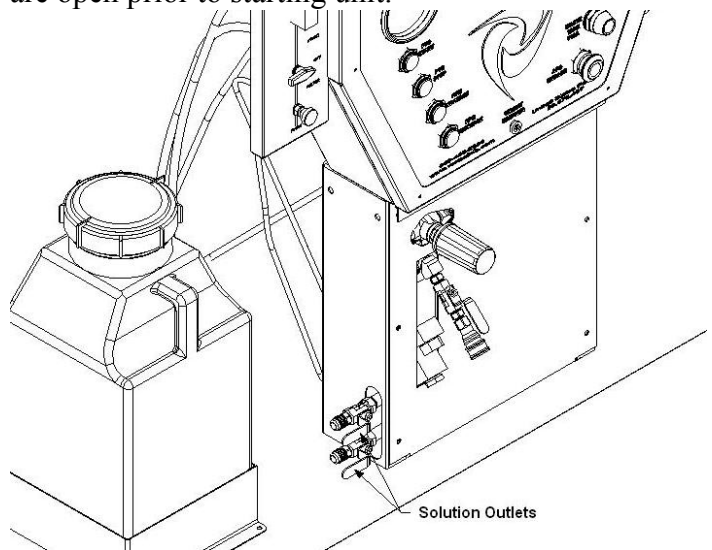
Ensure there is adequate water in the fresh water tank to complete the job.

WARNING!

Water under high pressure at high temperature can cause burns, severe personal injury, or fatality

HIGH PRESSURE HOSE

Before starting the unit, connect the cleaning tool(s) to the opposite end of the high pressure hose(s). Two valves located on the chemical solution manifold allow operation of one or two high pressure hoses. Verify that valve(s) are open prior to starting unit.



VACUUM HOSE

Connect the vacuum hose(s) to the vacuum inlet connection(s) on the side of the box truck. Connect the opposite end of the vacuum hose(s) to the cleaning tool(s).

JET SIZING

BLUELINE recommends that the total floor tool size does not exceed “.12”. Using larger jet sizes on your **VORTEX mobile cleaning unit** may reduce cleaning temperatures.

Example: Four-jet wand uses four 95015 jets.
(95 deg. Spray angle w/015 orifice)
 $.015 \times 4 = .06$

When using two wands while cleaning with this unit, **BLUELINE** recommends that the tip size in each tool does not exceed a total of “.18”.

Example: Four jet wand uses four 9501 jets.
(95 deg. Spray angle w/01 orifice)
 $.01 \times 4 = .04 \times 2 \text{ tools} = .08$
Upholstery tool jet size: 80015.
Stair tool jet size: 9502

STARTING THE UNIT**! WARNING!**

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

1. With the truck running at idle (approximately 700 RPM) pull the main power switch to energize the control panel.
2. Push the —**ENGAGE PTO**” switch. in, to engage the PTO. The blower pulley will start turning. Allow approximately 30 seconds for the mobile cleaning unit to stabilize at idle speed.

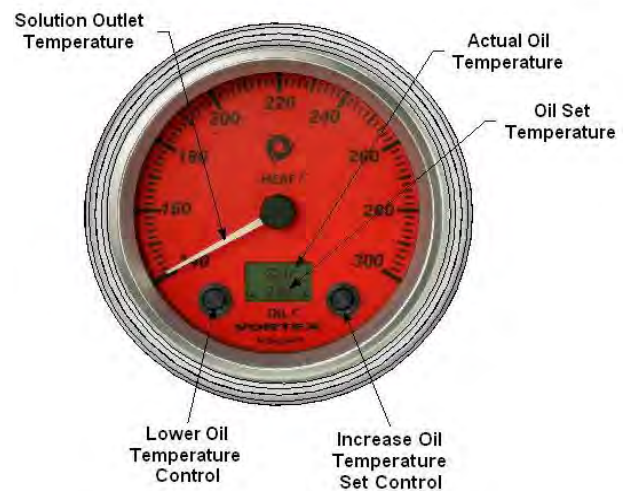
NOTE: Engage PTO with engine at idle speed.

3. Set the oil temperature gauge to the desired cleaning temperature. Press and hold the high temperature control button, located on the lower right of the temperature gauge. Temperature will change rapidly. To set temperature at 1° increments, press and release button until desired temperature is reached. **NOTE: The upper limit of oil temperature is 320°F.**

Repeat this operation to lower the oil temperature using the button located on the lower left of the temperature gauge. **NOTE: The lower limit of the oil temperature is 150°F.**

The lower digital display on the gauge shows the oil set temperature. The upper digital display is the actual oil temperature.

There is a 5 second delay after releasing either high or low temperature set button, before the set point is stored. System will function normally after the set point is stored.



The thermostatic control is designed to maintain the solution temperature automatically.

4. To engage the water and oil pump, pull out the —**ENGAGE PUMP**” switch. Allow approximately 30 seconds for the engine to

SECTION 2

once again stabilize its idle speed. The water pump will circulate water through the pressure regulator, the engine coolant heat exchanger, the vacuum exhaust heat exchanger and back into the fresh water tank. The oil pump will circulate the heat transfer fluid between the upper and lower xenotherm heat exchangers.

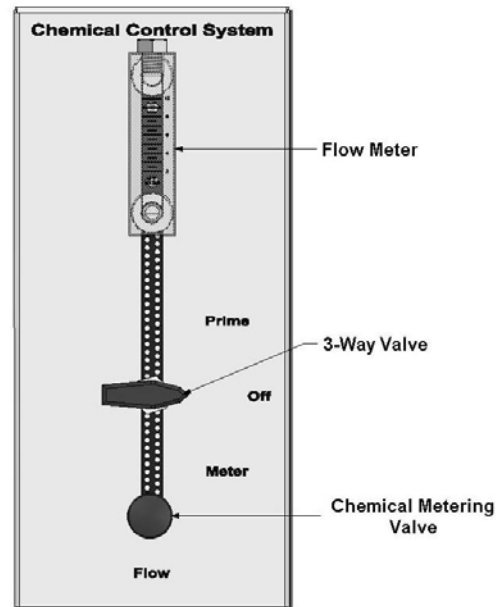
NOTE: If the unit fails to build water pressure after 15 seconds, turn off pump switch and ensure you have adequate water supply. DO NOT RUN PUMP DRY. If there is adequate water supply and all valves are open, see loss of water pump pressure in the —Trouble Shooting” section of your manual.

NOTE: Do not engage water pump if the engine is running at a high RPM. Damage to the water pump clutch may occur.

NOTE: BLUELINE recommends that the chemical pump be primed whenever the water pump is on. This eliminates possible pressure fluctuations and water pump pulsations related with running the chemical pump dry. Pressure regulator must be set below 1000 psi for chemical system to operate. Pressures higher than 1000 psi may damage pump diaphragm.

Allow adequate time for the water temperature to warm up before cleaning.

PRIMING THE CHEMICAL PUMP



1. Insert the chemical prime tube and the chemical inlet tube into the chemical jug.

NOTE: When inserting the chemical tube into the chemical jug, ensure that it stays fully submerged, as the chemical pump will not function if air is allowed to enter the inlet line. **DO NOT** operate the chemical pump without the inlet strainer properly installed.

2. Turn the 3-way chemical selector valve located on the control panel to the **PRIME** position. The chemical will then flow from the chemical jug through the chemical prime tube. If the pump does not prime, then:

Place the chemical prime tube into the vacuum hose and seal off the vacuum hose. The vacuum will quickly draw chemical from the chemical jug. After the flow begins, turn the chemical selector valve to **OFF** position, insert the chemical prime tube back into the jug, and turn the chemical selector valve back to the **PRIME** position and continue the procedure.

Once chemical flow with no air bubbles has been achieved, turn the chemical selector valve from **PRIME** to **METER**. With the cleaning tool open, check the flow meter and adjust the chemical metering valve until the desired rate of chemical flow is achieved.

Pressure regulator must be set below 1000 psi for chemical system to operate. Pressures higher than 1000 psi may damage pump diaphragm.

AUTOMATIC WASTE PUMP

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

2. Pull the **APO** (Automatic Pump Out) switch located on the front of the control panel to activate. The waste pump will now operate automatically throughout the cleaning period.

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

NEVER use a waste pump hose as a water inlet hose.

WARNING!

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

OPERATION

After you have completed the previous steps, proceed with the cleaning operation. Depress the **RPM INCREASE** switch until the engine speed reaches 1700 RPM for cleaning.

NOTE: Do not engage water pump if the engine is running at a high RPM. Damage to the water pump clutch may occur.

A float shut-off switch is located inside of the waste tank. It will automatically shut down the PTO unit if the tank reaches its full capacity. If this occurs, empty the waste tank before continuing.

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

AUTOMATIC DIVERTER SYSTEM

Your **VORTEX 8000Q®** mobile cleaning unit is equipped with an automatic diverter control system. When the water reaches the desired temperature setting set by the oil thermostat on the front control panel, the diverter solenoid will automatically position the diverter valve into the muffler position. When the water temperature drops slightly below the desired temperature, the diverter solenoid will automatically position the diverter valve into the heat exchange position.

When doing flood extraction, the **ENGAGE PUMP** switch should be in the **OFF** position. This will signal the diverter solenoid to position the diverter valve in the muffler position.

CLEANING

While cleaning, observe the following guidelines:

1. Before cleaning, ensure that the wand nozzles are functioning properly.

- A. Hold the wand approximately one foot above the surface to be cleaned and open the wand valve. A full even spray should emit from the cleaning nozzles.

SECTION 2

- B. If the nozzles are not showing a full even spray pattern, adjust, clean, or replace the nozzles, if required.

2. Usually, chemical solution is applied during the push stroke of the wand during cleaning, and extraction is done on the pull stroke. For heavily soiled carpets, the wand may be used in a scrubbing action, with chemical solution applied in both push and pull strokes, provided that the final stroke is a pull stroke with no chemical injection.

UPHOLSTERY CLEANING

1. Upholstery tools have a lower flow rate and smaller orifices. Set the **temperature control** to the desired setting. To maintain proper cleaning temperatures, make certain that the unit has been fully heated up prior to cleaning.

2. Always clean upholstery with a pressure setting below 300 PSI, by adjusting the pressure regulator on the unit.

STAIR TOOL CLEANING

1. Set the **temperature control** to the desired setting. To maintain proper cleaning temperatures, make certain that the unit has been fully heated up prior to cleaning.

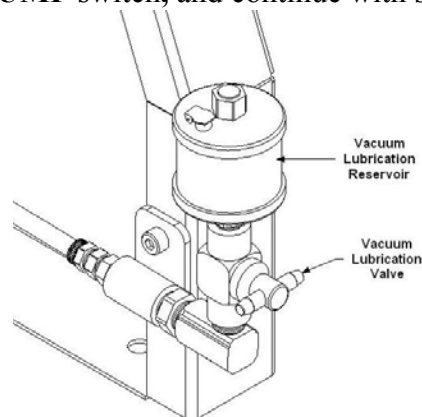
FLOOD RESTORATION/EXTRACTION

1. Depress the **RPM INCREASE** switch until the engine speed reaches 1700 RPM. Make certain that the **ENGAGE PUMP** switch is in the **OFF** position. Proceed into the extraction process.

SHUT DOWN AND DAILY MAINTENANCE

1. Flush out the chemical system with fresh water to remove any chemical residue.
2. Remove as much moisture from the vacuum hoses as possible. This will prevent spillage of wastewater in your vehicle when returning hoses.
3. Disconnect the vacuum hoses from the pre-filter box inlets.
4. Depress the **RPM DECREASE** switch until the engine speed returns to idle.
5. Turn the temperature control down to 150 deg. F.
6. Allow the unit to run for at least **2 minutes** or until the water temperature is at or below 180 deg. F. This will also help to remove any excess moisture from the vacuum pump.

NOTE: If shutting down for the day: Plug the vacuum inlets on the inlet panel and pull out the **ENGAGE PUMP** switch on the control panel. Spray WD-40 (or equivalent) into the **blower lubrication reservoir** until the reservoir is approximately half full. Open the blower **lubrication valve** located on the front left of the vacuum hose reel. This will lubricate the vacuum pump. Next, disengage the **PUMP** switch, and continue with step 4.



7. Disengage **PUMP** and **PTO** switches.

8. Activate the valves on all cleaning tools. This will relieve any remaining pressure. Disconnect the cleaning tools and solution hoses and return them to the vehicle.

9. Drain the waste tank, disposing of wastewater in a suitable and proper location.

 **WARNING!**

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

10. Remove the strainer basket from the pre-filter box. Clean out any debris and re-install.

NOTE: Damage may occur to the vacuum pump if strainer basket is damaged or improperly installed.

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


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

NOTE: To remove the vacuum inlet filters, grip the plastic hexagon section of the filters. Gripping the filters by the screen will collapse or destroy the filters. Replace the filters after cleaning until hand tight.

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

12. At the end of the work day, rinse out the pre-filter box and the waste tank with fresh water. A deodorizer may be added to prevent bacterial growth.

13. Clean the vehicle interior, unit, tools, hoses etc., as needed. Inspect **ALL** equipment and accessories for any damage, leaks, wear, etc.

 **WARNING**
Water under high pressure at high temperature can cause burns, severe personal injury, or fatality

FREEZE PROTECTION

 **CAUTION!**

If the unit is exposed to freezing weather conditions, the water inside of the unit may freeze, resulting in SERIOUS DAMAGE to the unit. Always park the unit in a heated building when not in use. If a heated building is not available, drain all water from the mobile cleaning unit.

While in operation, avoid long periods of shut down as the unit generates heat while running. Keep the unit running just prior to leaving for the next job.

SECTION 3: **SERVICE & MAINTENANCE**

6. MAINTENANCE

Maintenance Chart	26
Xentherm Fluid Replacement	27
Engine	29
Vacuum Pump	29
Vacuum Inlet Filters	30
Water Pump	30
Water Tank	30
Strainer Basket	30
Drive Belts, Pulleys and Hubs	31
Heat Transfer System	31
Chemical Pump, Chemical Metering System	31
Accumulator	32
Pressure Regulator	32
Vacuum Hoses	32
Battery	32
High Pressure Solution Hoses	32

7. GENERAL SERVICE ADJUSTMENTS

Vacuum Relief Valve	32
Vacuum Pump Drive Belts	33
Water Pump Drive Belt	33
Float Valve	33
Chemical Pump	33
Pressure Regulator	34
Adding/Draining Engine Coolant	34

8. TROUBLESHOOTING

PTO (Power Take Off)	36
Chemical System	37
Vacuum/Blower	38
Water Pump	39
Automatic Pump-Out	40
Digital Temperature Control	41
Exhaust Diverter Valve	42

SECTION 3

MAINTENANCE CHART		
Engine	Daily	Check engine oil level.** Fill to proper level.
Engine Coolant	Daily	Check coolant level in overflow bottle. Fill to proper level.
Vacuum Pump	Daily	Spray WD-40 (or Equivalent) into the lubrication valve for 5 seconds.
Water Pump	Daily	Check water pump oil level.*** Fill to proper level.
Vacuum Inlet Filters	Daily*	Inspect filters, clean and or replace if required.
Pre-Filter Box Strainer Basket	Daily	Empty and clean stainless steel basket.
Vacuum Hoses	Daily	Rinse with fresh water.
Waste Pump-Out (Optional)	Daily*	Inspect and remove any debris or sediment. Rinse with fresh water.
Engine	Weekly	Check air cleaner for damaged, dirty, or loose parts.
Engine	Weekly	Inspect air intake and cooling areas. Clean if required.
Vacuum Pump	Weekly*	Check vacuum pump oil level. Fill to proper level. Do not overfill.
Vacuum Inlet Filters	Weekly	Remove filters and clean.
Water Box	Weekly*	Inspect and clean filter. Replace if damaged.
Battery	Weekly*	Check fluid level. Fill with distilled water only. Do not overfill.
Wye-Strainers	Weekly*	Clean and remove any debris.****
Engine	Monthly	Inspect drive belts for wear. Replace as needed.
High Pressure Solution Hoses	25 Hours	Inspect for wear, damage, or impending rupture. Replace if damaged.
Drive Line	50 Hours	Lubricate drive line..
Pressure Regulator	100 Hours	Lubricate o-rings. Use only o-ring lubricant part # 13-003.
Battery	100 Hours	Clean battery terminals.
Engine	200 Hours	Clean engine air filter.
Xentherm	500 Hours	Replace xentherm heat transfer fluid.
Water Pump	500 Hours	Change crankcase oil.***
Pulleys and Hubs	500 Hours	Check pulley and hub set screws for proper torque.*****
Vacuum Pump	500 Hours	Drain, flush, and replace oil.*****
Chemical Pump	1000 Hours	Change diaphragm and check valves. Inspect disk.
Check Valve	1000 Hours	Check Teflon seat for abnormal wear or debris. Replace as needed.
Accumulator	2000 Hours	Replace if needed.*

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

*Or as often as required.

***Change water pump crankcase 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**.

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

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

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

Xentherm Fluid Replacement Procedure

WARNING: DO NOT ATTEMPT TO DRAIN THE XENTHERM FLUID IF THE SYSTEM IS ABOVE 110F, SERIOUS BODILY INJURY COULD RESULT

- 1) Open the purge valve located on the top of the 3/4" ball valve that is located on the top of the upper Xentherm heat exchanger. (See Figure 1)
- 2) Slowly open the 3/4" ball valve, to relieve any air and gas pressure.
- 3) When all air and gas pressure has been evacuated, remove the purge valve-3/4" ball valve assembly as one unit by removing the hex fitting that is threaded into the upper Xentherm heat exchanger.
- 4) Using a suitable container (3 gallon or more), remove the drain plug from the lower Xentherm heat exchanger. Allow all oil to drain before proceeding. Re-install the drain plug using High Temperature sealant P/N 13-001 or equivalent.
- 5) Remove the vent plug from the lower Xentherm heat exchanger.

Slowly begin filling the the lower system through the UPPER Xentherm heat exchanger through the threaded port where the purge valve-3/4" ball valve assembly was removed in step 3, until the fluid level reaches the vent port on the LOWER Xentherm heat exchanger.

NOTE: It will take approximately one to one and one half (1 to 1 1/2) gallon(s) to fill the lower Xentherm heat exchanger.

- 7) Re-install the vent plug in the LOWER Xentherm heat exchanger using High Temperature sealant P/N 13-001 or equivalent.
 - 8) Continue to fill the system from the UPPER Xentherm heat exchanger until the sight glass is 1/2 to 3/4 full. (See Figure 2) Re-install the purge valve-3/4" ball valve assembly.
 - 9) NOTE: DO NOT HEAT THE FLUID Ensure that the Digital Temperature Control is adjusted to 50F or less, engage the PTO and then engage the water pump. Run the unit at idle for 3 minutes, turn off the water pump and shut down the unit; check the fluid level and fill as necessary.
 - 10) Re-install the purge valve-3/4" ball valve assembly using High Temperature sealant P/N 13-001 or equivalent.
-

SECTION 3

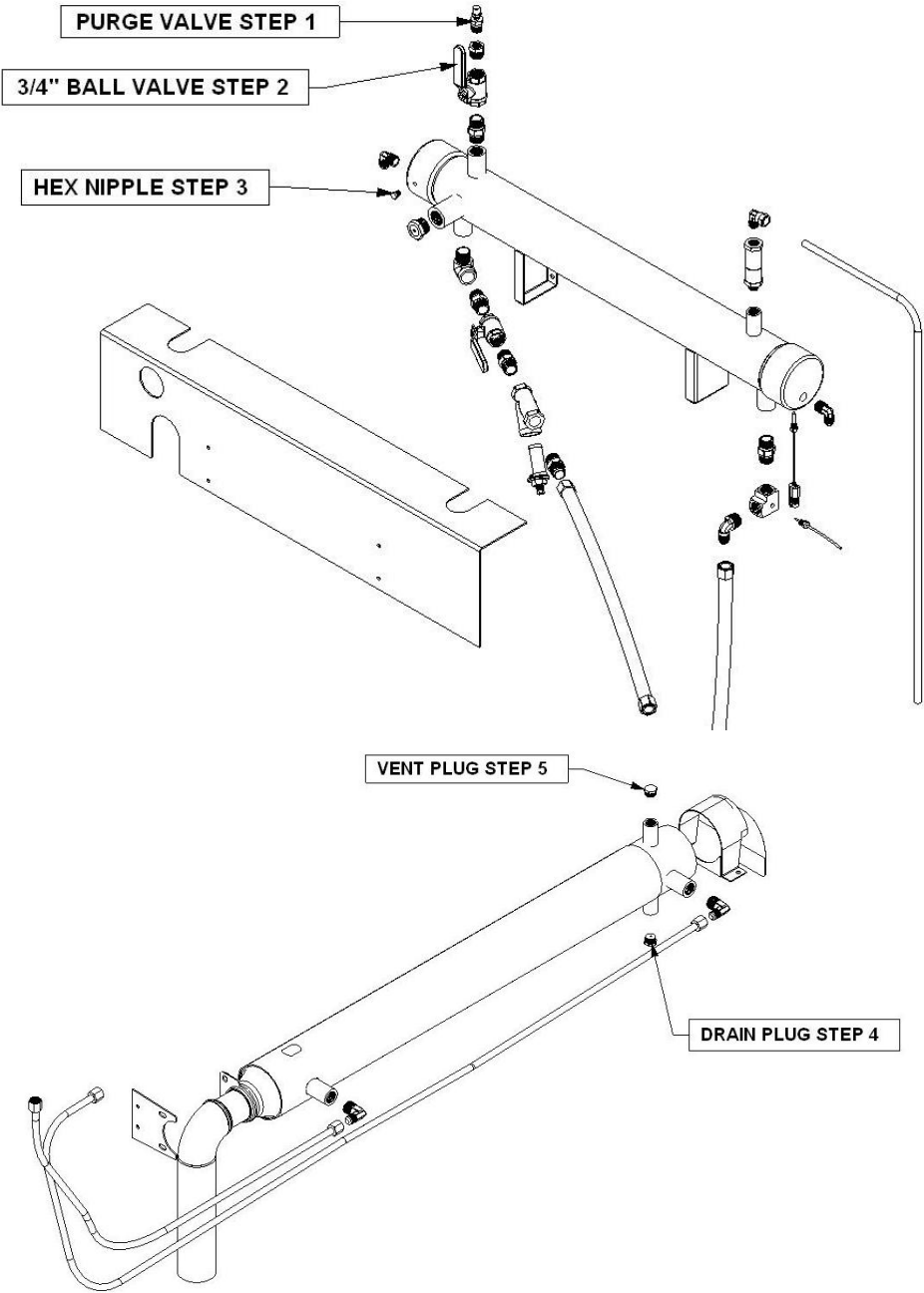
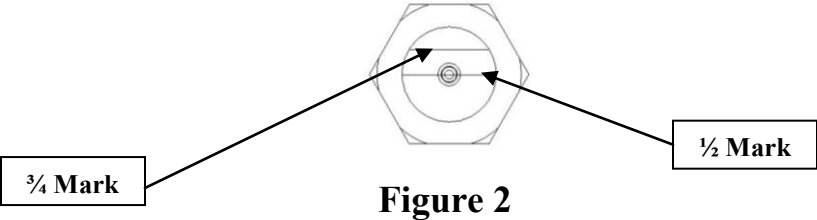


Figure 1



6. MAINTENANCE

This section of the operator's manual contains the service and maintenance information for the **VORTEX 8000Q®** mobile cleaning unit. A planned preventative maintenance program will ensure that your **BLUELINE VORTEX 8000Q®** has optimum performance, long operating life, and a minimum amount of down time.

! WARNING!

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

ENGINE

Refer to the owner's manual for specific instructions.

1. Check the engine and transmission oil levels daily. Ensure that the proper oil level is maintained. **NEVER** overfill. Check transmission and PTO (power take off) hoses and lines for leaks. During the first 50 hours of operation, check the mounting hardware on the PTO and the PTO drive line to ensure it is securely tightened (see **drive belts and pulleys** for hub torque specifications). After 50 hours of use, periodic inspection of the PTO oil lines and mounting hardware should be performed. Maintenance of the PTO should be performed at the same intervals as the transmission. **Refer to vehicle owner's manual for recommended oil types and regular maintenance schedule.**

2. Check the engine antifreeze coolant daily. Inspect hoses and pipes daily for leaks. **Refer to owner's manual if coolant levels are low for recommended fluids and fluid levels.**

NOTE: Additional engine service information can be obtained from the vehicle owners'

manual. If service or repair is required, contact an authorized service center.

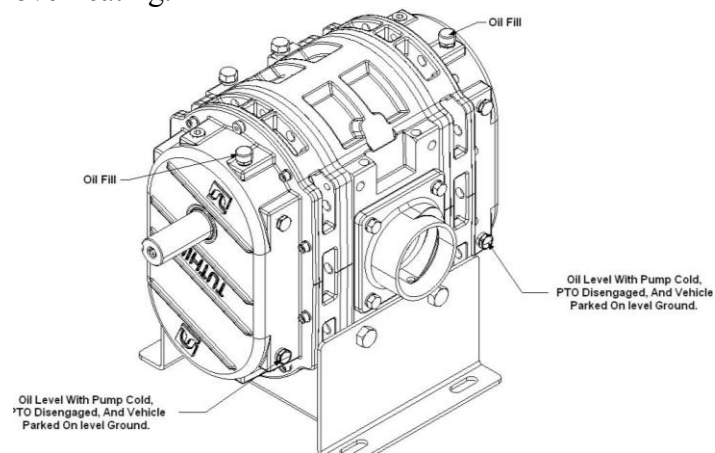
VACUUM PUMP

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

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

NOTE: **PNUELUBE** (Part # 13-017) is the only oil that **BLUELINE** puts in the vacuum pump at the factory. Adding petroleum oil to synthetic oil is **NOT** recommended.

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



2. A lubrication valve has been provided on the front of the hose reel, to prevent rust from building up inside of the vacuum pump. Plug the vacuum inlets on the inlet panel and pull out the **ENGAGE PUMP** switch on the control panel. Spray **WD-40**

SECTION 3

(or equivalent) into the **blower lubrication reservoir** until the reservoir is approximately half full. Open the blower **lubrication valve** located on the front left of the vacuum hose reel. This will lubricate the vacuum pump. Next, disengage the **PUMP** switch.

3. Drain, flush and replace the oil every **500 hours** or yearly, whichever comes first.

VACUUM INLET FILTERS

1. The vacuum inlet filters in the waste tank should be inspected **daily**. Remove and clean filters if there is any lint or debris present. The filters will last for a long period of time if this is done.

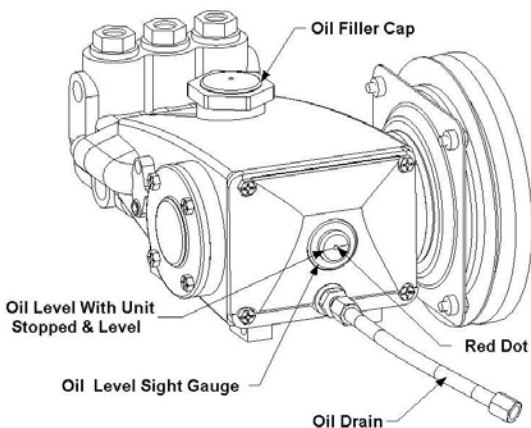
CAUTION!

When removing the vacuum inlet filters, grip the plastic hexagon section of the filters. Grasping filters by the screen will damage or destroy the filters.

WATER PUMP

Refer to the provided Water Pump Operation Manual for specific instructions.

1. Check the crankcase oil level **daily** to ensure the proper level. If the level has dropped, check for the source of leakage and repair.

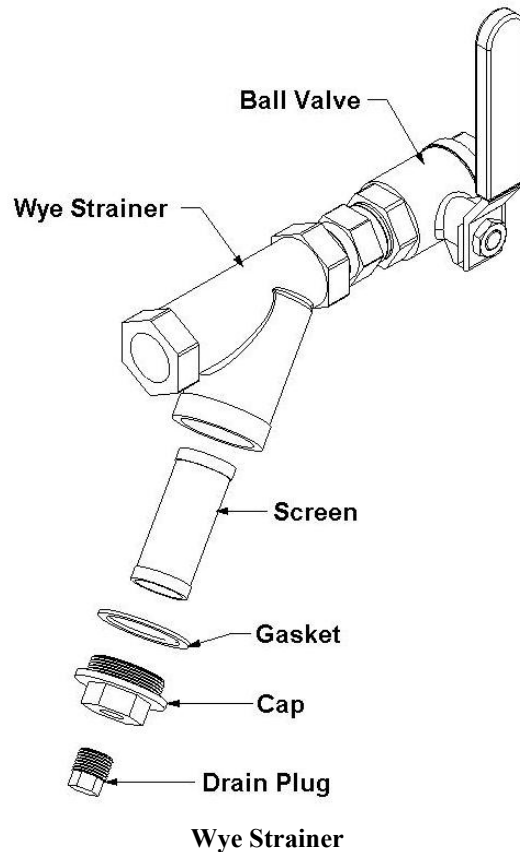


2. After **50 hours** operation, change the crankcase oil with CAT Pump Crankcase Oil, (Part # 13-000). Change the crankcase oil every **500 hours** thereafter.

WATER TANK

A wye strainer is located between the water tank and water pump it should be inspected and cleaned on a **weekly** basis. Replace, if damaged.

NOTE: Prior to removing strainer, close ball valve located behind the wye strainer. After cleaning or replacing filter open ball valve. Failure to do so could result in **damage to the water pump**



PRE-FILTER BOX STRAINER BASKET

The strainer basket located in the pre-filter box should be emptied and cleaned on a **daily** basis.

DRIVE BELTS, PULLEYS & HUBS

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

CAUTION!

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

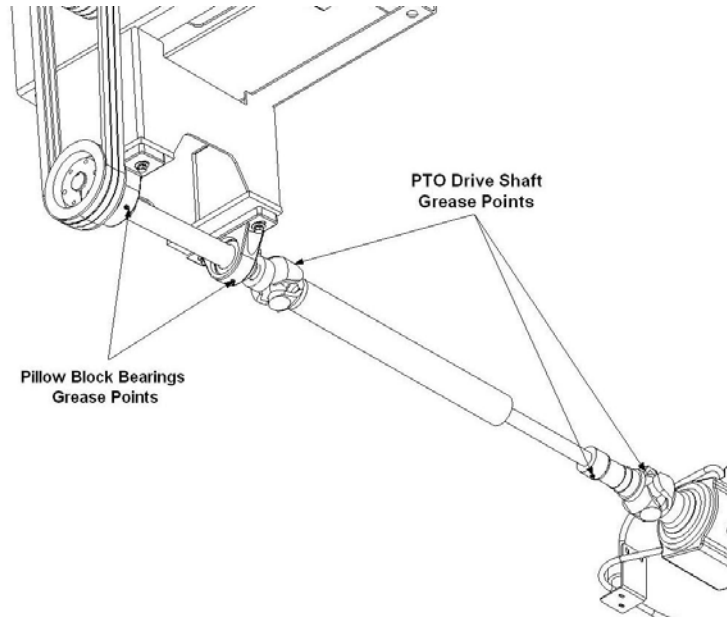
TORQUE VALUES		
Component	Inch/lbs	Foot/lbs
Vacuum Pump Hub #38-044	108	9
PTO Shaft Hub #38-042	180	15

The **VORTEX 8000Q®** mobile cleaning unit features an adjustable belt tensioning system. Belts and pulleys should be cleaned and inspected after the first 25 hours for wear and pulley alignment and regularly after that. If wear or glazing is discovered, replacement is recommended.

Grease PTO drive shaft u-joints and bearings every 50 hours of operation. Use Penzoil™ ULTRA EPI tacky lithium or Penzoil™ SPL2 grease. Part # 13-031

WARNING!

Failure to lubricate the drive system will result in drive system failure.



HEAT TRANSFER SYSTEM

Proper maintenance of the truck engine (regular tune-ups and use of proper fuels) will help prevent excessive carbon build up.

If excessive carbon build up is occurring, inspect and clean exhaust diverter valve to ensure proper operation.

Maintain proper engine coolant levels. Refer to vehicle owner's manual for recommended fluid types and levels.

Replace heat transfer fluid every **500 hours** of operation. Failure to do so will result in reduced heating capacity, and will eventually coat the insides of the upper and lower xentherm heat exchangers with a lacquer like substance. This will reduce efficiency and result in irreparable damage to the xentherm heat exchangers.

CHEMICAL PUMP

The chemical pump should be rebuilt every **1000 hours**. This involves changing the diaphragm, check valves, and inspecting the disk.

SECTION 3

ACCUMULATOR

Sealed 250 pound nitrogen accumulator. Change every 2000 hours or as needed.

PRESSURE REGULATOR

Lubricate the o-rings in the pressure regulator every **100 hours**.

Use only o-ring lubricant (Part # 13-003).

VACUUM HOSES

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

BATTERY

WARNING!

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

Refer to vehicle owners' manual for specific instructions on the maintenance, removal or replacement of vehicles' batteries.

Before disconnecting batteries, ensure that all the mobile cleaning units' 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 other explosive vapors are present.

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

HIGH PRESSURE SOLUTION HOSES

Inspect your high-pressure solution hoses for wear after the first **100 hours**. Thereafter, inspect every **25 hours**. If the hoses show any signs of damage or impending rupture, replace the hoses.

WARNING!

NEVER attempt to repair high-pressure solution hoses. Repairing high-pressure solution hoses may result in severe burns and serious injury, damage to property or fatality.

All high-pressure solution hoses must be rated for **3000 PSI** at **250 deg. F**. Thermoplastic hoses do not meet this requirement and should not be used. Severe burns and serious injury, damage to property or fatality may result if the hoses do not meet these requirements.

7. GENERAL SERVICE ADJUSTMENTS

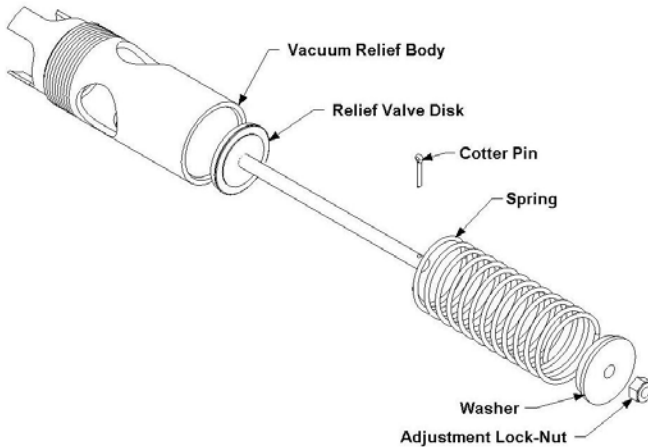
WARNING!

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

VACUUM RELIEF VALVE

With the unit running at full RPM, block off the airflow at the vacuum inlet ports and read the vacuum gauge. If adjustment is required, disengage the PTO (power take off) unit, and adjust the tension with the locking nut on the vacuum relief valve. Reengage the PTO unit and read the vacuum

gauge. Repeat this process until the vacuum relief valve opens at 15" to 17" Hg.



VACUUM PUMP DRIVE BELTS

The **VORTEX 8000Q®** mobile truck unit is equipped with an adjustable belt tensioning system. Check belts for proper tension (approximately 1/2" deflection) and wear. Adjust or replace as needed.

Proper alignment of vacuum pump pulley, belt tensioner pulley and PTO drive pulley should be checked and adjusted in the first 25 hours of operation, and whenever belts are removed or replaced.

Place a straight edge between vacuum pump pulley and belt tensioner pulley, and ensure full contact of straight edge on both the right and left side of each pulley. Repeat procedure on the PTO and belt tensioner pulley. Adjust vacuum pump and or PTO drive as needed and ensure all bolts are properly tightened.

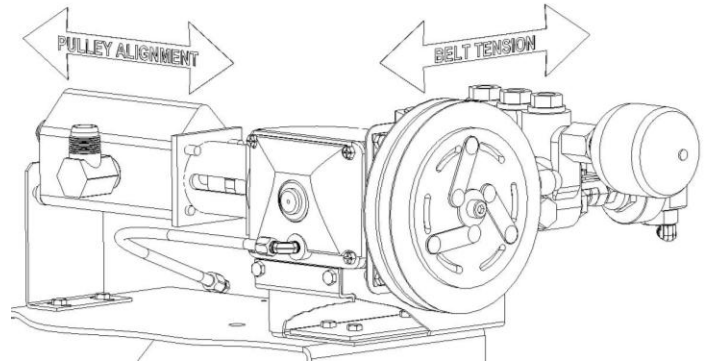
WATER PUMP DRIVE BELT

To tighten the water pump belt:

1. Loosen the bolts, which hold the water pump and oil pump to the frame base.

2. Adjust the position of the belt tensioning adjusting bolt until the proper belt tension is achieved. (1/2" deflection in the center of the belts, half way between the pulleys).

3. While checking the pulley alignment, tighten the nuts that hold the water pump and oil pump to the base.



FLOAT VALVE (WATER TANK)

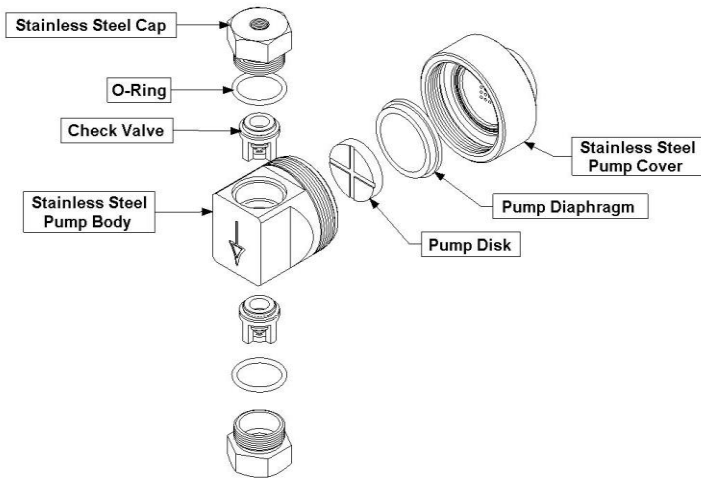
If the water tank is overflowing, remove and check the float valve for damage, or debris.

CHEMICAL PUMP

The **VORTEX 8000Q®** mobile cleaning unit features a stainless steel chemical pump and metering system. The chemical pump requires only the replacement of the diaphragm and check valves. To replace the diaphragm, unscrew the cover from the body. When replacing the diaphragm, lube the outer edges of the diaphragm with o-ring lubricant (Part #13-003) and reassemble.

To replace the check valves, remove the check valve caps, replace the check valves and reassemble using new o-rings. **DO NOT** attempt to reuse o-rings after the check valves have been removed.

SECTION 3



PRESSURE REGULATOR

The pressure regulator holds water pressure at a preset point and bypasses this water back to the water box.

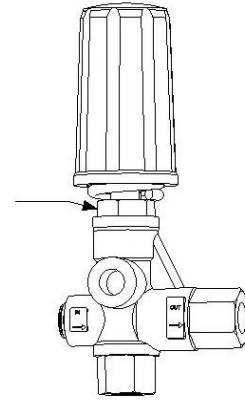
To adjust:

1. With the unit running, close the cleaning tool valve. Check the pressure gauge. Open the tool valve. Set the pressure regulator so that the pressure gauge reads 350 PSI with the tool valve open.

With the tool valve open, there should be a normal drop of approximately 100-PSI, in pressure. **If the drop is greater than 100 PSI, it may be necessary to lubricate the pressure regulator o-rings.**

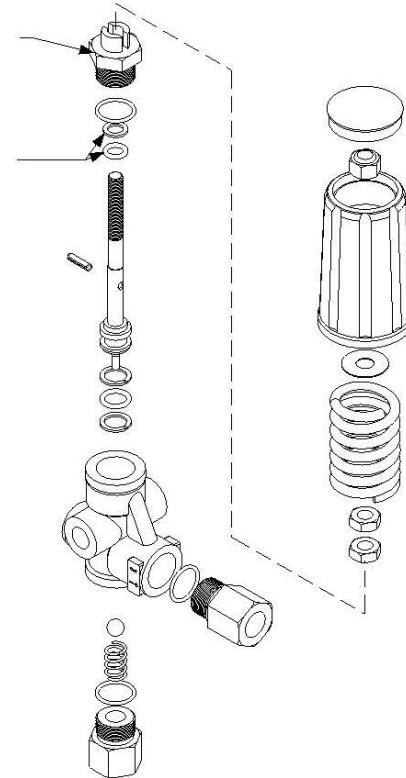
2. To adjust the pressure regulator, turn the adjusting knob (while observing the pressure gauge on the control panel) until you reach the desired pressure.

Loosen Nut and Remove Entire Valve Stem Assembly From Valve Body To Service Seals.



Loosen This Nut To Remove Valve Stem Body.

Lubricate Both Seal & O-Ring Every 100 Hours Of Service. Use Super Lube PN# 13-003



ADDING/DRAINING ENGINE COOLANT

Refer to vehicle owners' manual for recommended engine coolant types and temperature ranges.

8. TROUBLESHOOTING

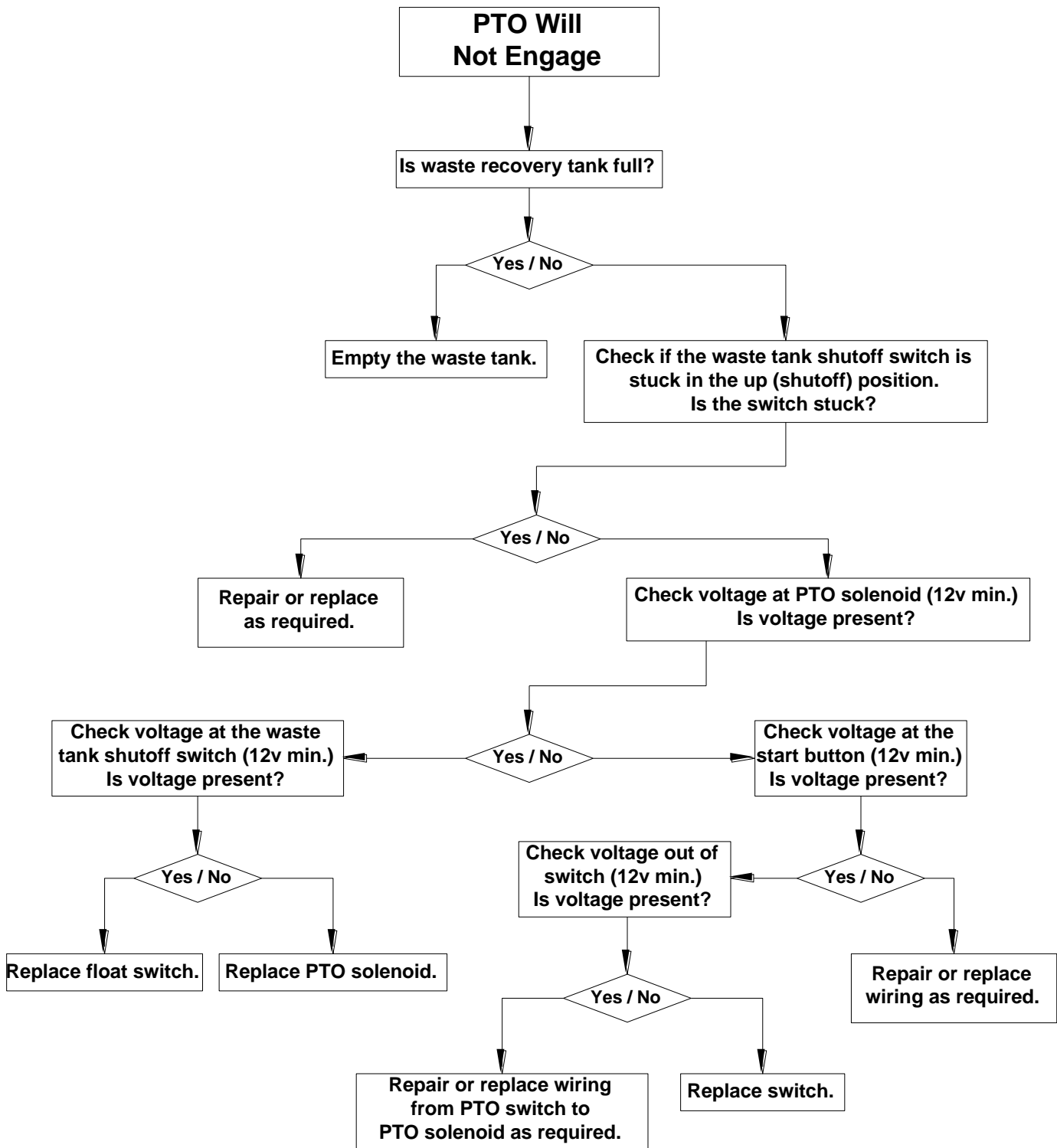


DO NOT attempt to service this unit while it is running. High-speed parts as well as high temperature components may result in severe injury, severed limbs or fatality.

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

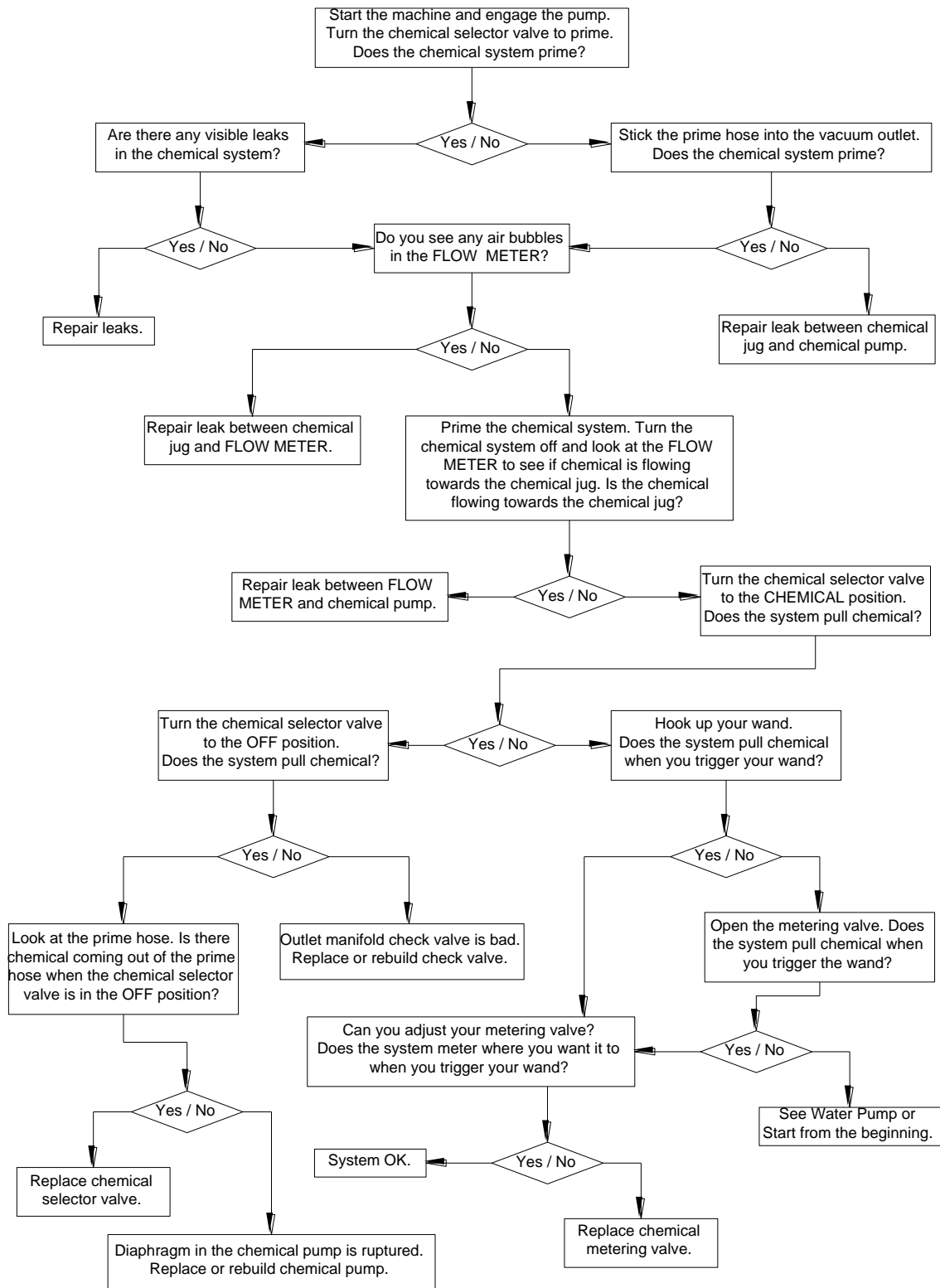
Accurate troubleshooting is based on a thorough and complete understanding of the **WATER, CHEMICAL, VACCUM, HEAT TRANSFER, SAFETY** and **WIRING** systems featured in this unit.

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



Chemical System

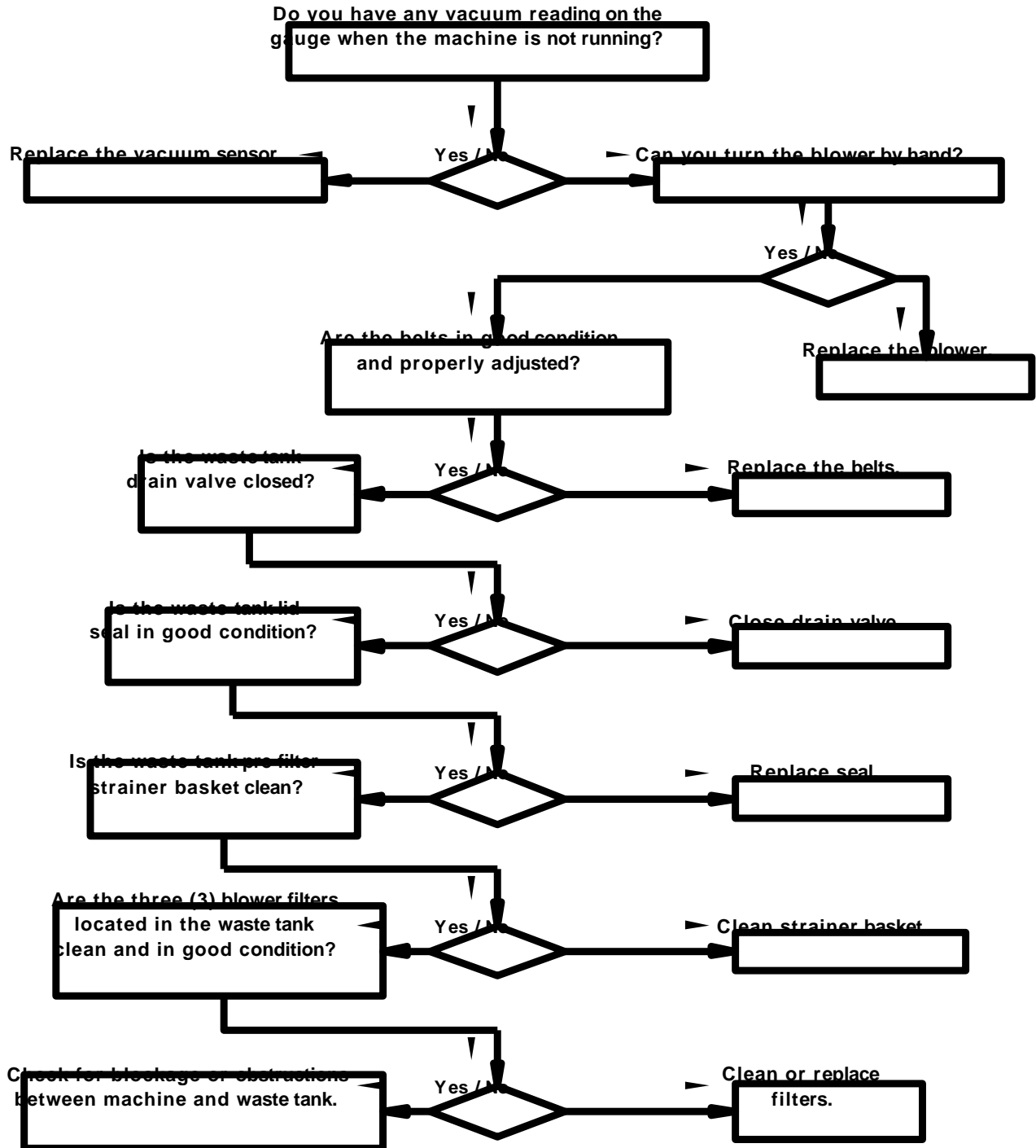
Note: Use a jug with fresh water to diagnose the chemical system.
 Note: If the chemical system works with just fresh water your problem is with your chemicals and not the system.
 Note: Make sure the water pump system is working properly before you proceed.



Vacuum/Blower

Note: Make sure the blower has oil, the waste tank is empty and the waste tank filters are clean and not damaged.

Note: Any time you have a blower vacuum problem, we are actually looking for an air volume problem.

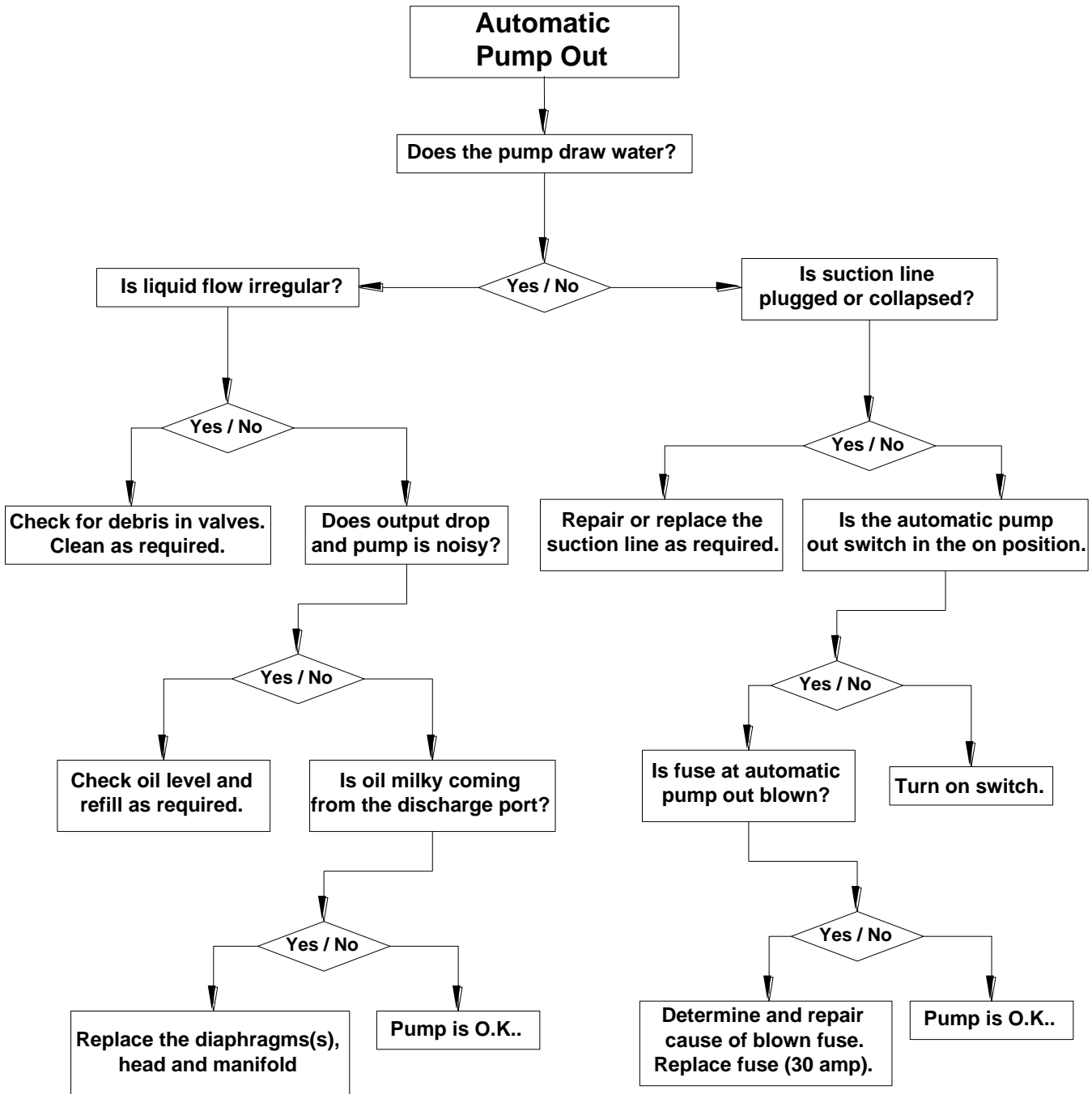


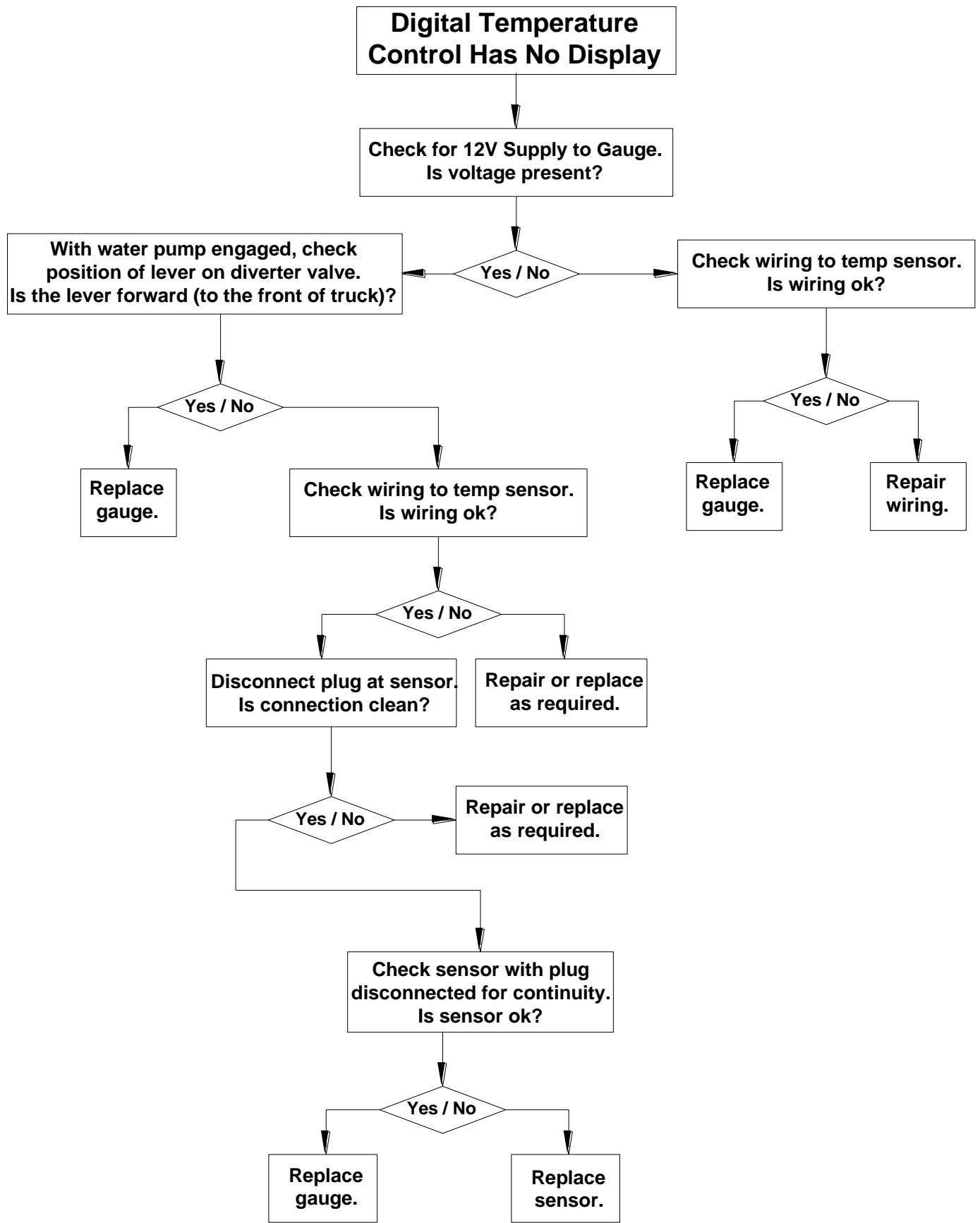
Water Pump

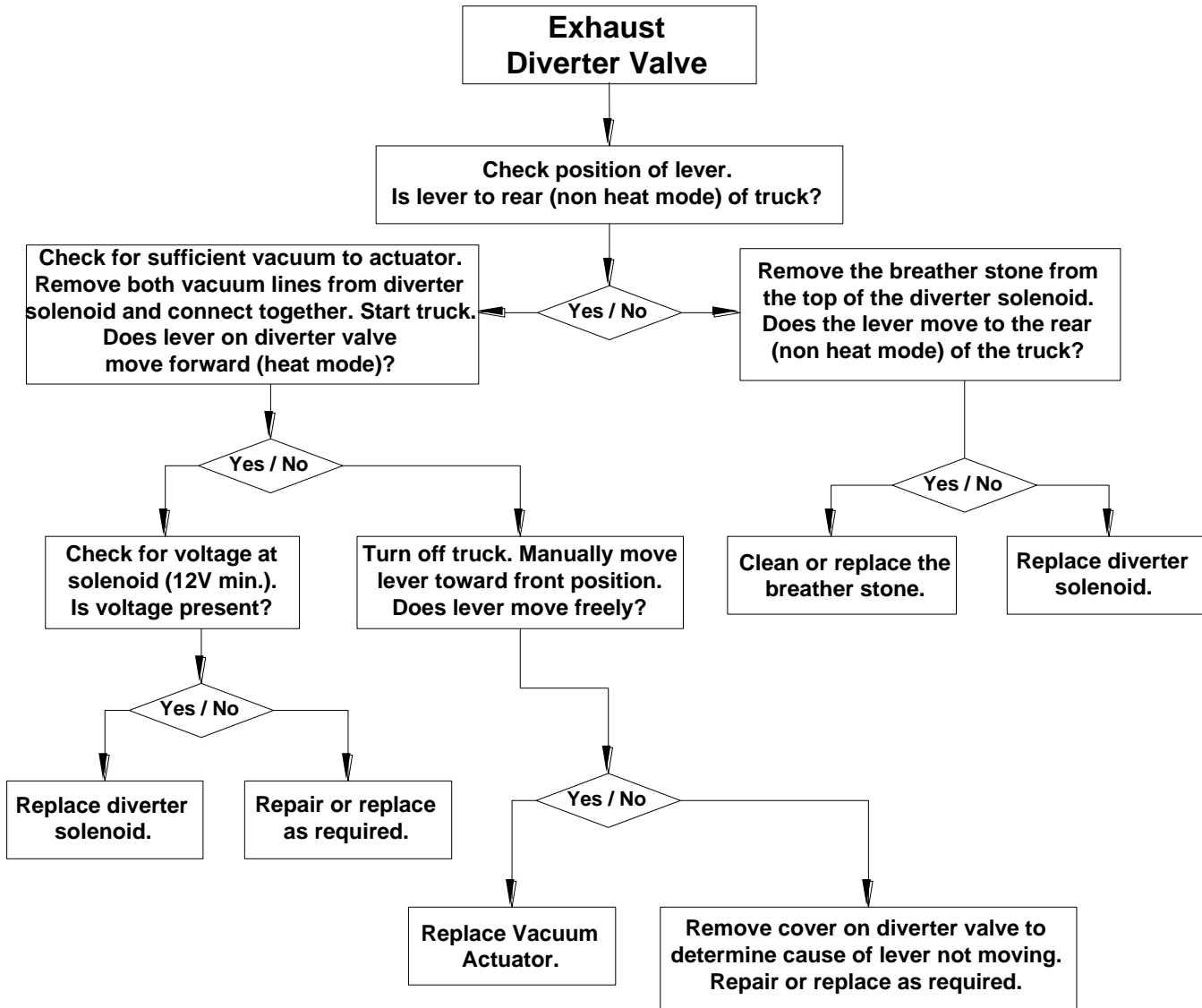
Note: Ensure that the fresh water tank is full, the water pump has oil and that the wye strainer is clean before proceeding.

**With the truck turned off, engage main power switch.
Push PTO start button to engage water pump.
Does the water pump clutch engage?**









SECTION 4: **PARTS & ACCESSORIES**

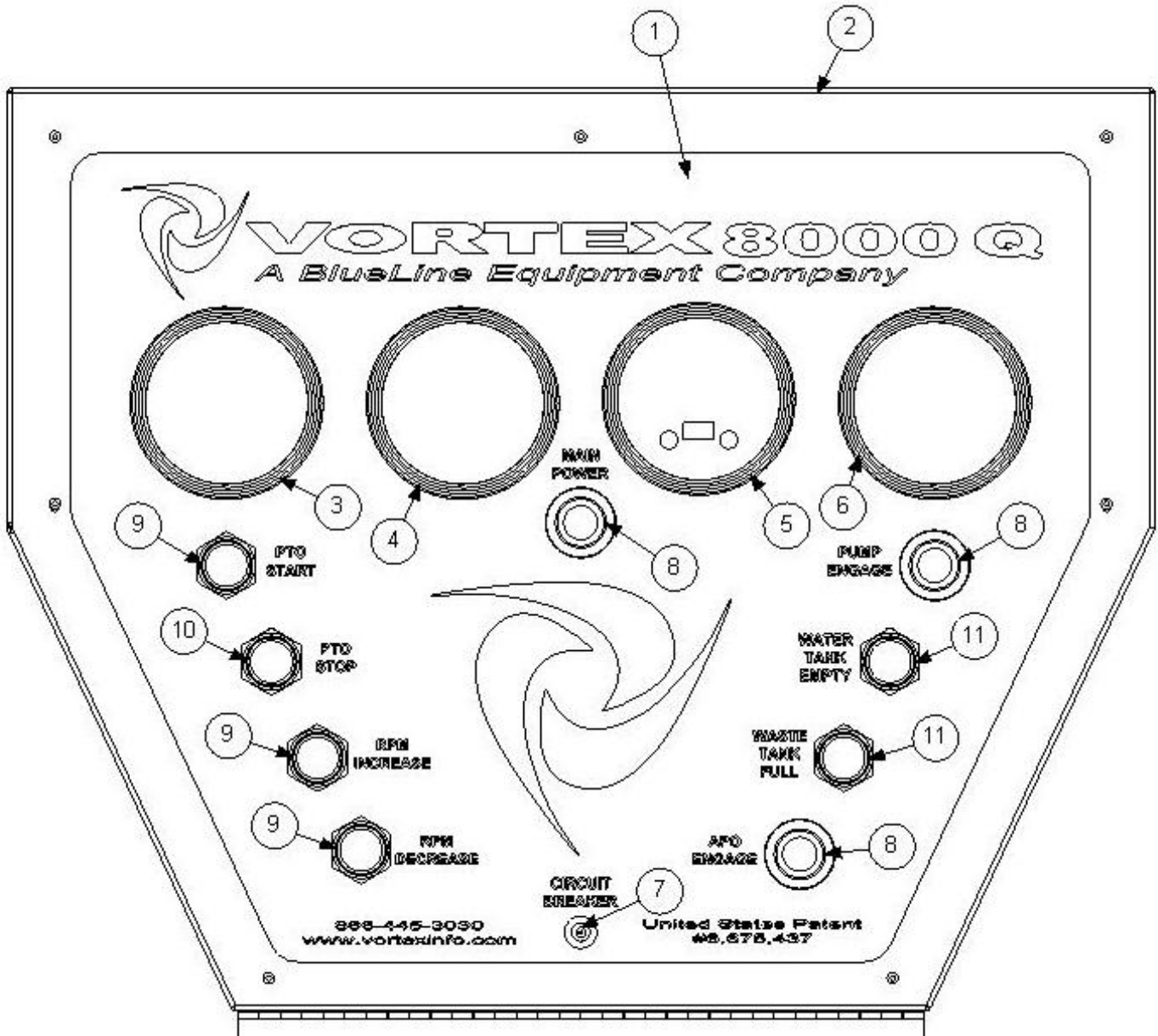
9. ILLUSTRATED PARTS LISTINGS

Control Panel	44
Water System	46
Vacuum System	54
Chemical System	60
PTO Drive	63
Diverter Valve/Exhaust	66
Decals	70
Electrical Diagrams	71
Optional Equipment	74

10. ACCESSORIES

Accessories	75
-------------	----

SECTION 4

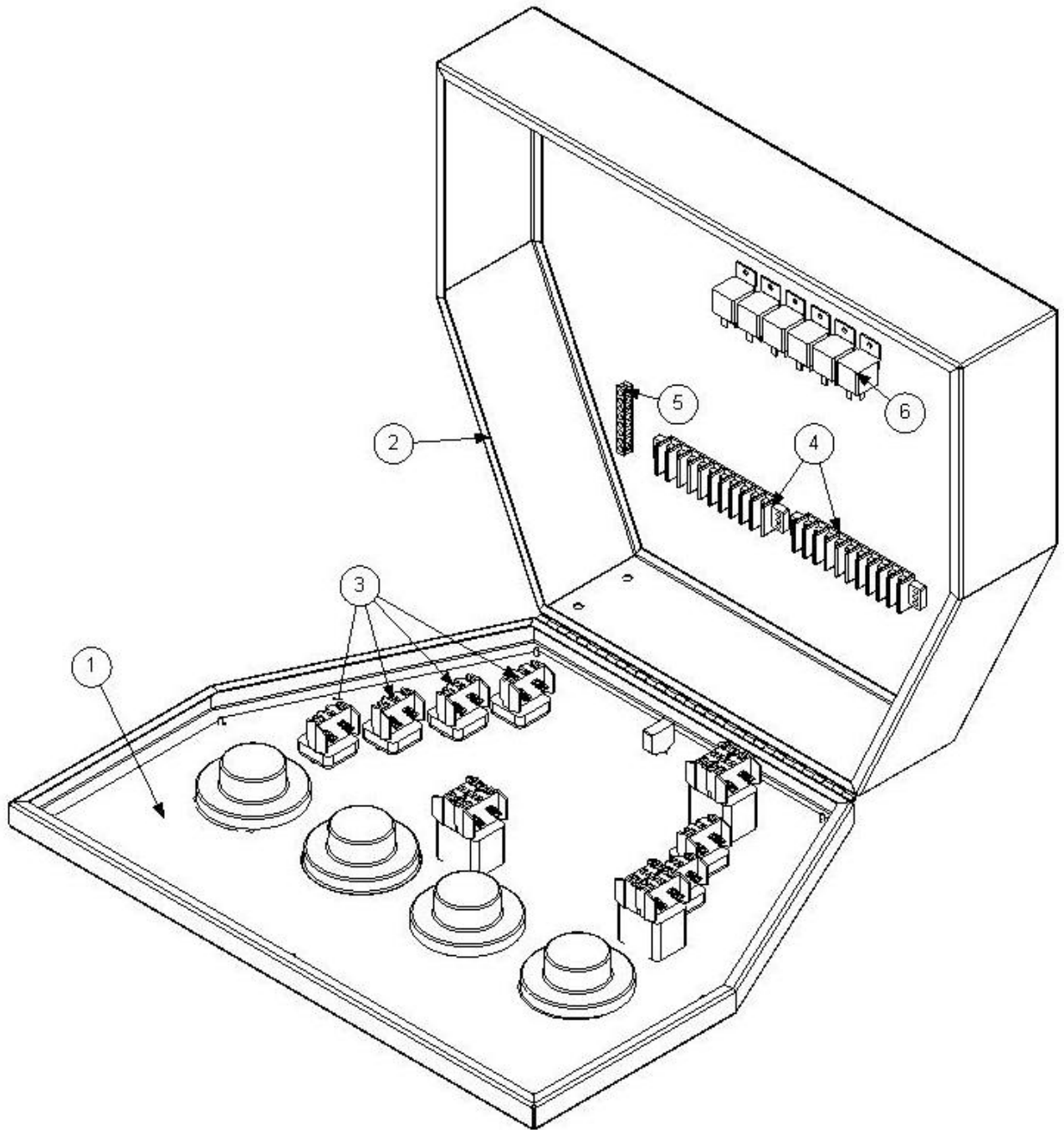


4-1

69-166 ASSY, CONTROL PANEL V8000

Item No.	Part Number	Qty	Description
1	58-303	1	PNL, INSTRUMENT CONTROL V8000
2	61-402	1	ASSY, INSTRUMENT BOX VORTEX Q
3	26-029	1	GAUGE, 4" TACH 0-4K PROG W/HR MT
4	26-031	1	GAUGE, 4" WTR PRSR 0-3000 PSI
5	26-030	1	GAUGE, 4" WATER/LED OIL 140-300
6	26-032	1	GAUGE, 4" VAC 0-30 IN/HG
7	30-007	1	BREAKER, 30 AMP
8	29-033	3	SWITCH, PUSHBUTTON GREEN
9	29-035	3	SWITCH, OPERATION GREEN
10	29-036	1	SWITCH, OPERATION RED
11	30-047	2	LIGHT, IND 12 VOLT W/RED LENS

SECTION 4



4-2

69-166 ASSY, CONTROL PANEL V8000

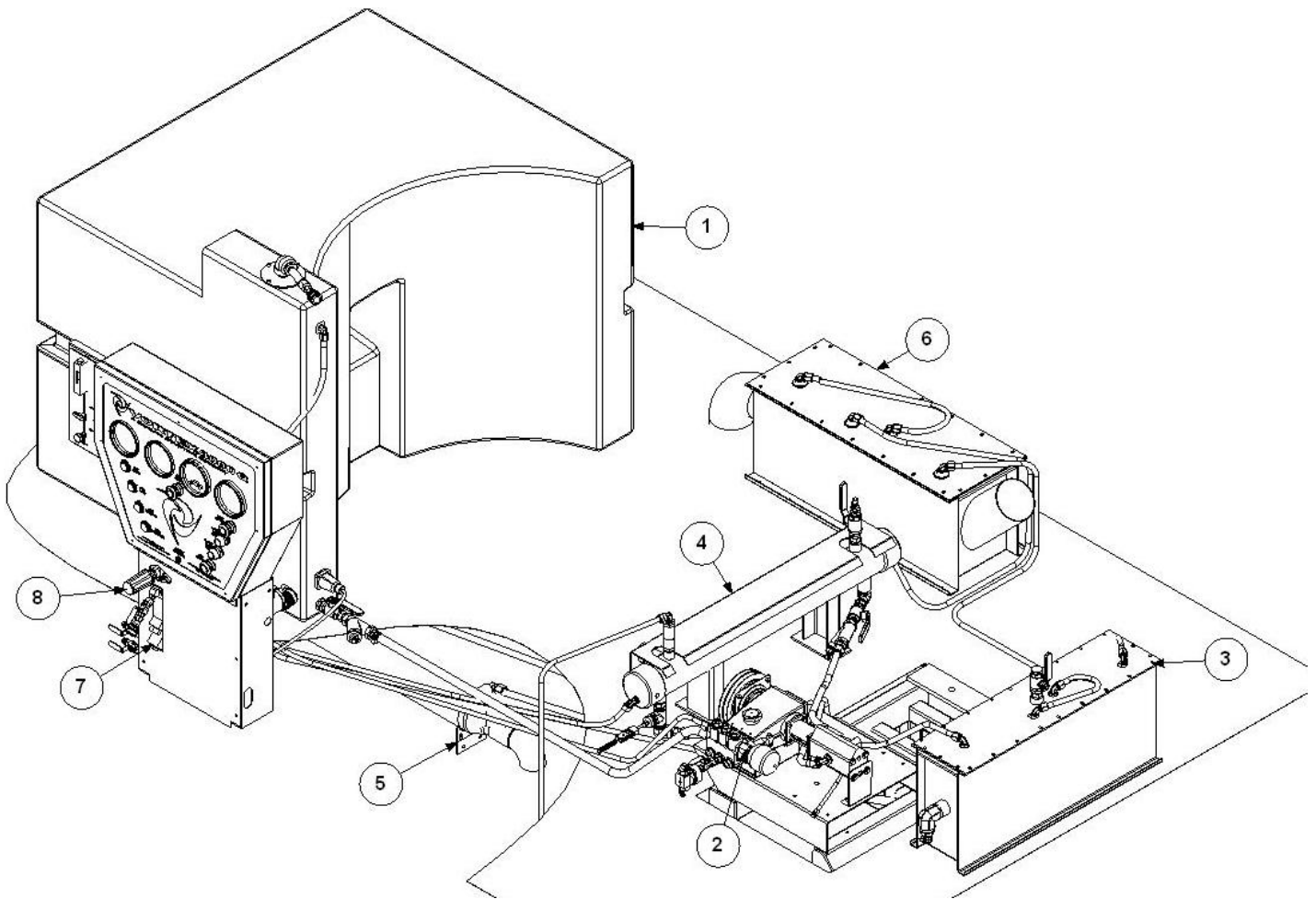
Item No.	Part Number	Qty	Description
1	58-303	1	PNL, INSTRUMENT CONTROL V8000
2	61-402	1	ASSY,INSTRUMENT BOX VORTEX Q
3	29-034	4	SWITCH, CONTACT BLOCK
4	30-027	2	BLOCK, TERMINAL 10 POSITION
5	30-029	1/2	BLOCK, GROUNDING BAR KIT
6	34-010	6	RELAY, ENG.SHUTDWN12V20/30AMP

*Not Shown

44-060

DECAL,RELAY

SECTION 4

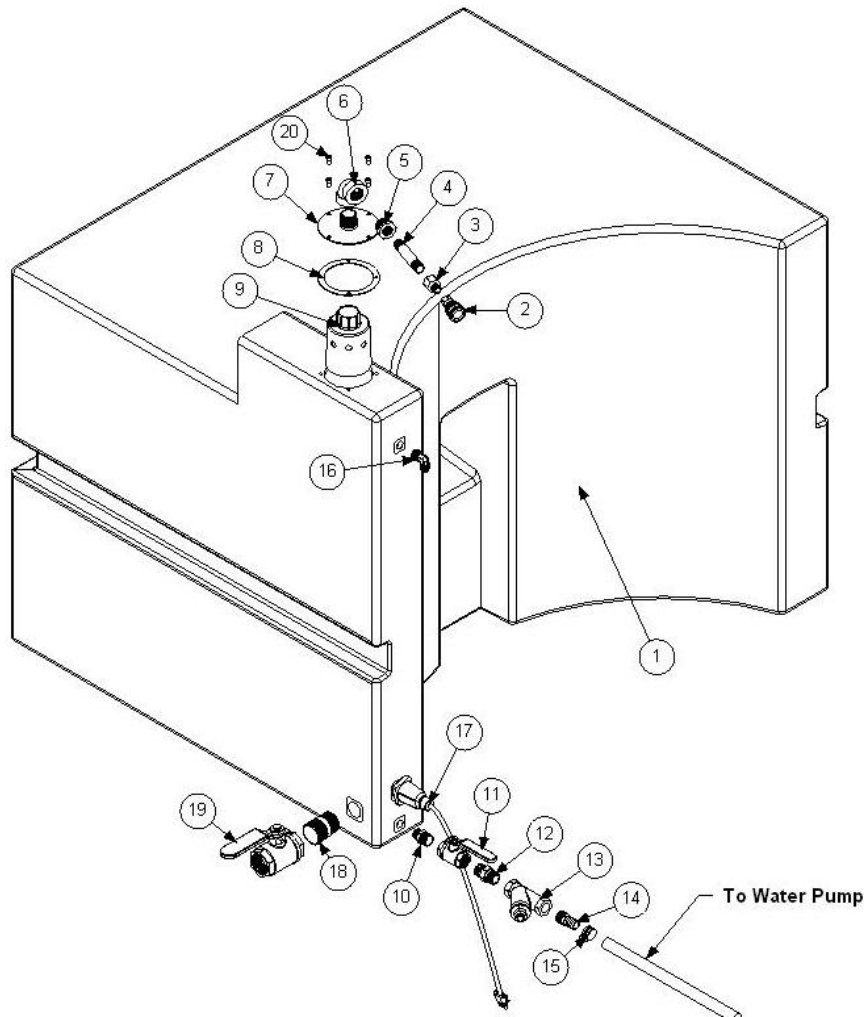


4-3

Water Transfer System

Item No.	Part Number	Qty	Description
1	69-172	1	ASSY, WTR TANK PLASTIC V8000
2	69-180	1	ASSY, WATER PUMP V8000
3	69-167	1	ASSY, ENG COOLANT V8000
4	69-169	1	ASSY, E-2 HEAT EXCH V8000
5	69-168	1	ASSY, E-3 HEAT EXCH V8000
6	69-165	1	ASSY, EXHAUST HEAT EXCH V8000
7	69-125	1	ASSY, Y-STRAINER VORTEX
8	69-126	1	ASSY, PRESSURE REGULATOR VTX

SECTION 4

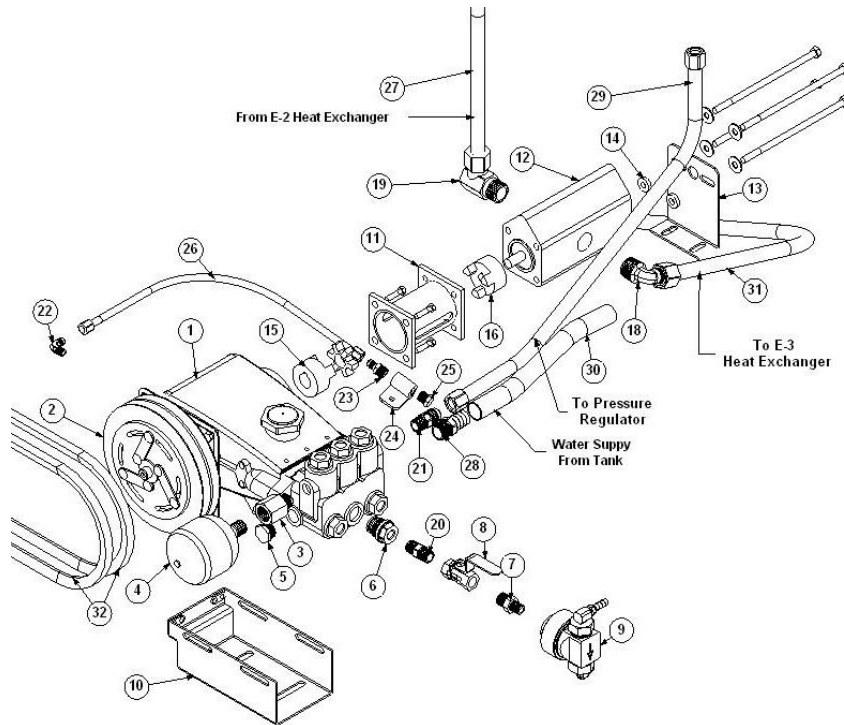


4-4

69-172 ASSY, WTR TANK PLASTIC V8000

Item No.	Part Number	Qty	Description
1	51-028	1	MOLDING, 250GAL FRSH WTR TANK
2	25-005	1	DSC, 3/8X3/8FP BR
3	21-035	1	CONN, 3/8 M X 1/2 FP
4	21-174	1	NIPPLE, 1/2"PIPE X 4" SS
5	21-259	1	BUSHING, 1M X 1/2F REDUCER
6	21-252	1	ELL, 1" FNPT SS
7	61-283	1	ASSY,COVER FLOAT FRESH WAT VRTX
8	41-048	1	GASKET, 1/16 NEOPRENE X 5"OD
9	23-058	1	VLV,1" FPT H-TEMP FLOAT HUDSON
10	21-072	1	NIP, HEX 3/4 MP 1/2 MP
11	23-051	1	VLV,3/4" SMITH-COOPER BRASS BALL
12	21-237	1	NIPPLE, 3/4 MPT X 3/4 MPT BRASS
13	23-054	1	VLV,3/4" BRASS WYE STRAINER 145T04
14	21-009	1	FTTG, BRB 3/4 PX 3/4 H BR
15	14-006	1	CLAMP, HOSE #20
16	21-015	1	ELL, 1/2 P X 1/2 T BRASS
17	69-177	1	ASSY, LEVEL SENSOR WTR TK 8000
18	21-310	1	NIPPLE, 2 1/2" SCHED 40
19	23-050	1	VLV,1-1/2" SMITH-COOPER BRASS BALL
20	10-007	4	SCREW, MACH 1/4-20 X 1/2 SOCHD SS

SECTION 4

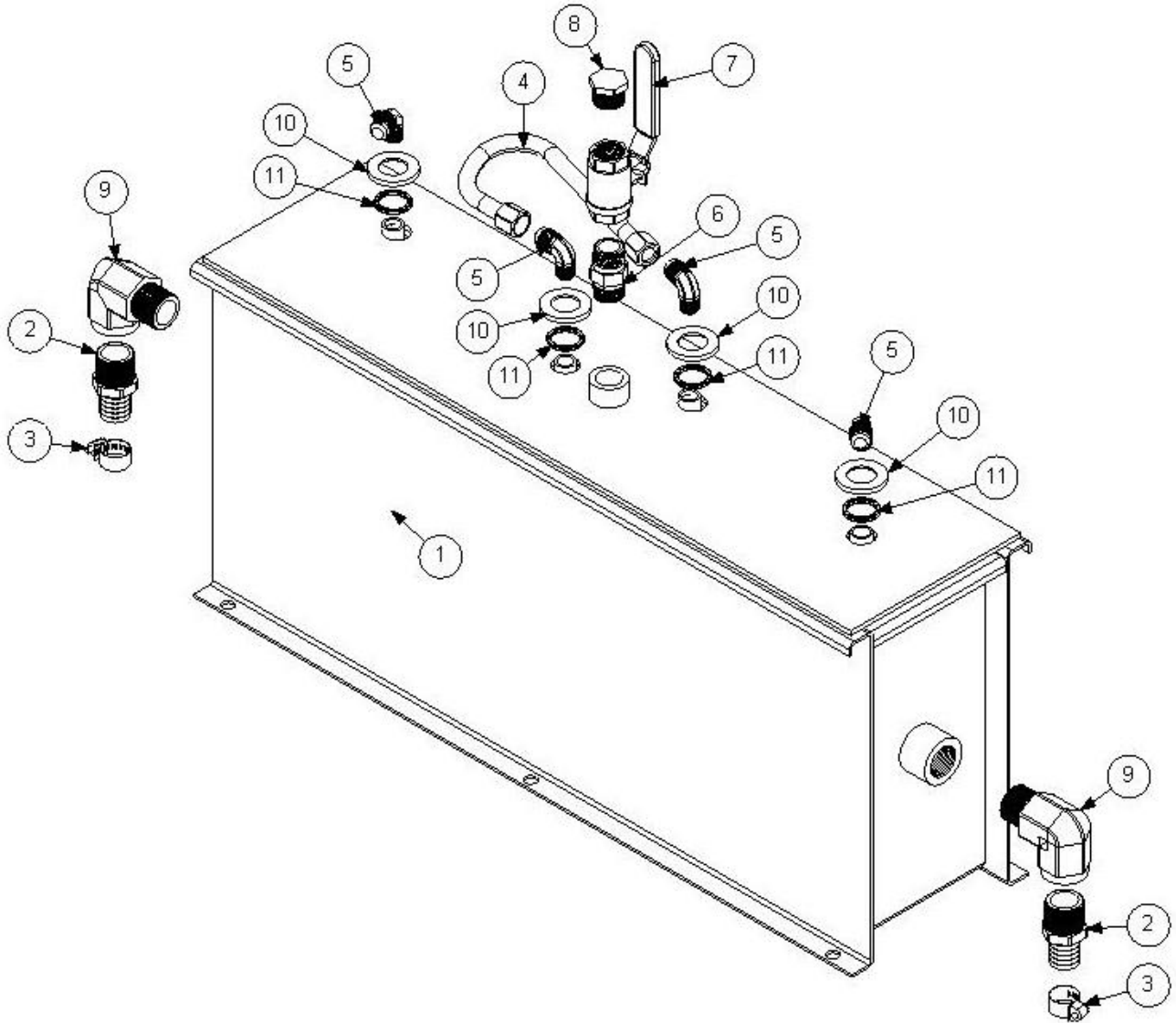


4-5

69-180 ASSY, WATER PUMP V8000

Item No.	Part Number	Qty	Description
1	46-032	1	PUMP, WTR CAT 5CP6120-3
2	35-005	1	CLUTCH, ELECT CAT 5CP 2 GROOVE
3	21-232	1	ADAPTOR, 3/8M X 1/2F SS NPT
4	46-045	1	ACCUMULATOR, CAT 6028
5	21-065	1	PLUG, 1/2 SOLID BRASS HEX HD
6	66-166	1	ADAPTOR, WATER PUMP VORTEX
7	21-231	1	NIPPLE, 1/4 X 3/8 SS NPT
8	23-053	1	VLV, 3/8" SS BALL 760T02
9	46-012	1	PUMP, CHEMICAL STAINLESS STEEL
10	59-704	1	BRKT,WTR PUMP MNT VORTEX
11	61-252	1	ASSY, OIL PUMP STANDOFF VRTX
12	46-044	1	PUMP, SPUR GEAR
13	58-188	1	BRKT,OIL PUMP SUPPORT VORTEX
14	58-213	2	PLT,PUMP MOUNT SPACER VORTEX
15	38-038	1	HUB, 20MM SHAFT COUPLING
16	38-039	1	HUB, 1/2" SHAFT COUPLING
17	38-040	1	HUB, SPIDER HYTREL L075
18	21-251	1	ELBOW, 3/4 MNPT X 1/2 FJIC
19	21-248	1	ELBOW,3-4MPT X 3-4JIC 90 DEG
20	21-053	1	NIP, 3/8 HEX SS
21	21-057	1	CONN, 3/8 P X 1/2 T BRASS
22	21-064	1	ELL, 1/4 P X 1/4 T BRASS
23	21-050	1	CONN, 1/4 P X 1/4 T BRASS
24	61-018	1	BRKT, FIN FUEL RETURN THERMAL
25	21-049	1	PLUG, 1/4 IN. BRASS
26	18-060	1	HOSE 3/16 X 21" 1/4FT BS
27	18-139	1	3/4 BRAIDED SS X 43" VORTEX
28	21-032	1	FTTG, BARB 1/2 P X 3/4 H BRASS
29	18-131	1	HOSE, 1/2T X 1/2T X 26 NO CVR
30	16-004	12	HOSE, WTR. 3/4 IN HRZ. 500FT BULK
31	18-176	1	HOSE,1/2" BRAIDED SS x 115"
32	37-057	2	BELT,AX61 MATCH

SECTION 4

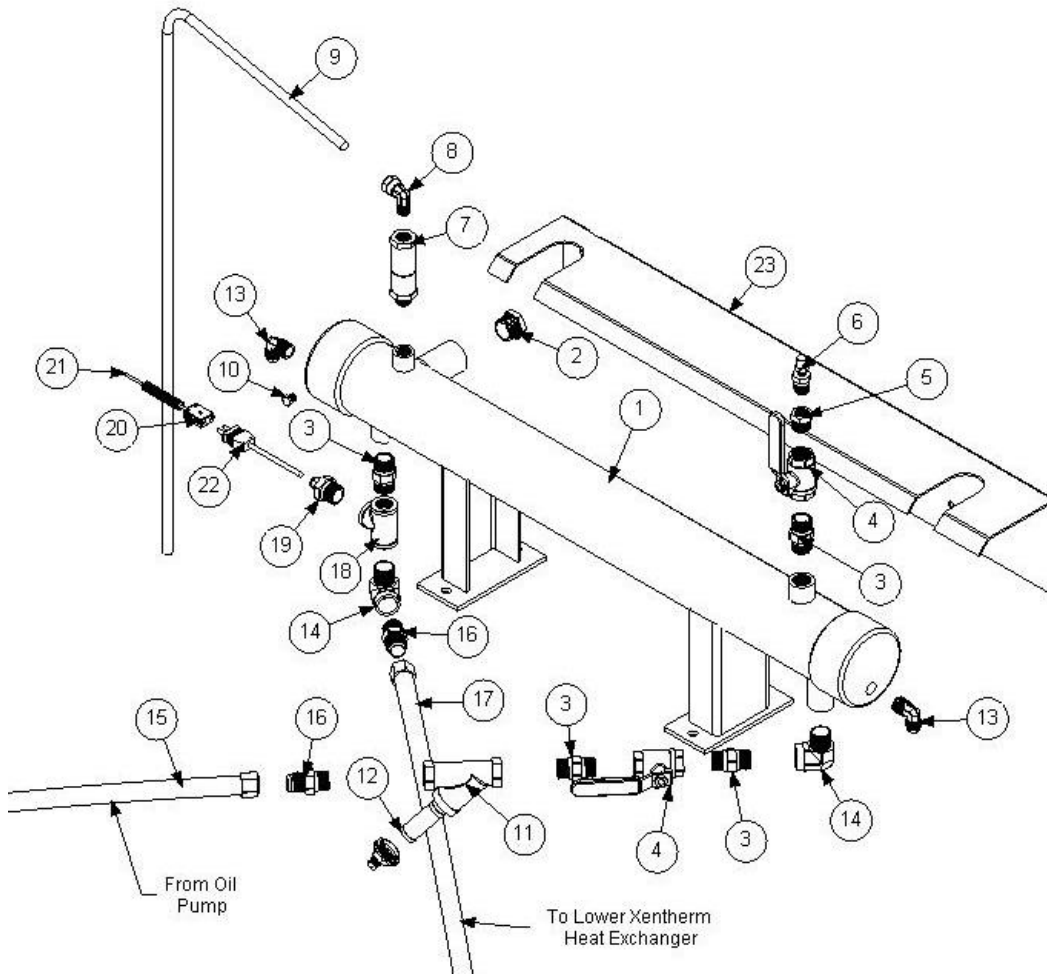


-6

69-167 ASSY, ENG COOLANT V8000

Item No.	Part Number	Qty	Description
1	61-412	1	ASSY,ENGINE COOLANT HEAT EXCH
2	21-018	2	FTTG, BRB 1PX1H BR
3	14-006	2	CLAMP, HOSE #20
4	18-034	1	HOSE, 12 X 11 12 FT X 12 FT WCVR
5	21-061	4	ELL, 3/8 P X 1/2 T BRASS
6	21-237	1	NIPPLE, 3/4 MPT X 3/4 MPT BRASS
7	23-051	1	VLV,3/4" SMITH-COOPER BRASS BALL
8	21-108	1	PLUG, 3/4 IN PVC
9	21-298	2	ELL,90 DEG 1" MP X 1" FP STL
10	66-195	4	WASHER, HEAT EXCHANGER GM BW
11	41-062	4	ORING, DOUBLE SEAL BUNA

SECTION 4

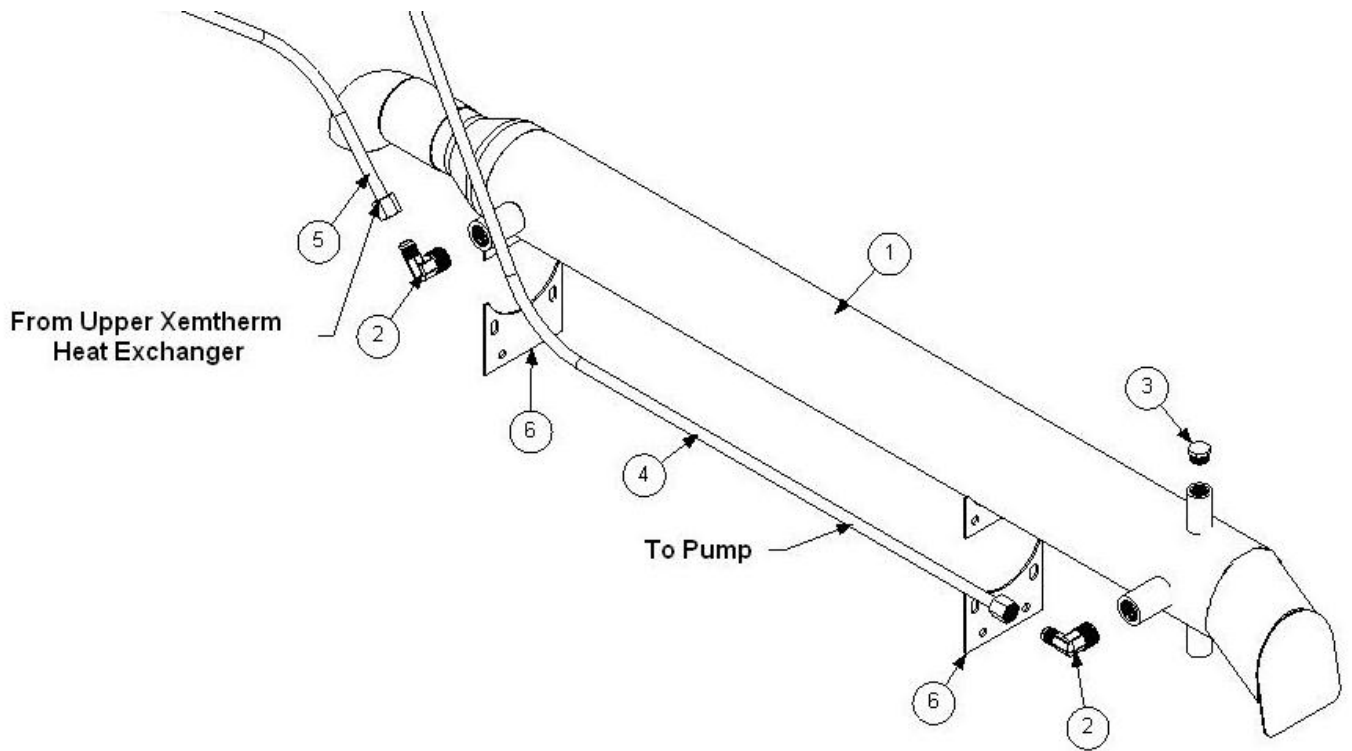


4-7

69-169 ASSY, E-2 HEAT EXCH V8000

Item No.	Part Number	Qty	Description
1	63-099	1	ASSY, E-2 H.E. V8000
2	28-004	1	SIGHT GLASS, ELECTRO SEAL 1"MPT
3	21-237	4	NIPPLE, 3/4 MPT X 3/4 MPT BRASS
4	23-051	2	VLV,3/4" SMITH-COOPER BRASS BALL
5	21-131	1	BUSHING, 3/4M X 1/2F IN BRASS
6	23-055	1	VLV, 1/2" SS MPT PURGE SS-4PM8
7	23-057	1	VLV, RELIEF 1/2" BRASS PORTS VRTX
8	21-234	1	ELL,1/2M X 1/2 TUBE 90DEG SS
9	64-037	1	TBG, E-2 PRESSURE OVRFLW V8000
10	21-215	1	PLUG, 1/8 NPT 304SS
11	23-054	1	VLV,3-4 BRASS WYE STRAINER 145T04
12	20-025	1	SCREEN, 3/4" WYE STRAINER
13	21-015	2	ELL, 1/2 P X 1/2 T BRASS
14	21-245	2	ELL, 3/4 90 DEG STREET SS
15	18-139	1	HOSE,3/4 BRAIDED SS X 43" VRTX
16	21-247	2	NIPPLE,3/4 MPT X 3/4 JIC
17	18-118	1	HOSE,1/2 BRAIDED SS X 74" VRTX
18	21-236	1	TEE, 3/4 NPT BRASS
19	21-227	1	FTTG,1/4 COMP X 3/4 MPT BORED
20	31-163	1	CONNECTOR, F TYPE K THERM CPLR
21	32-061	72	WIRE,24G THERMOCOUPLE YELLOW
22	34-017	1	THERMOCOUPLER TYPE K
23	58-336	1	PNL, HEATER COVER ISUZU Q8000

SECTION 4

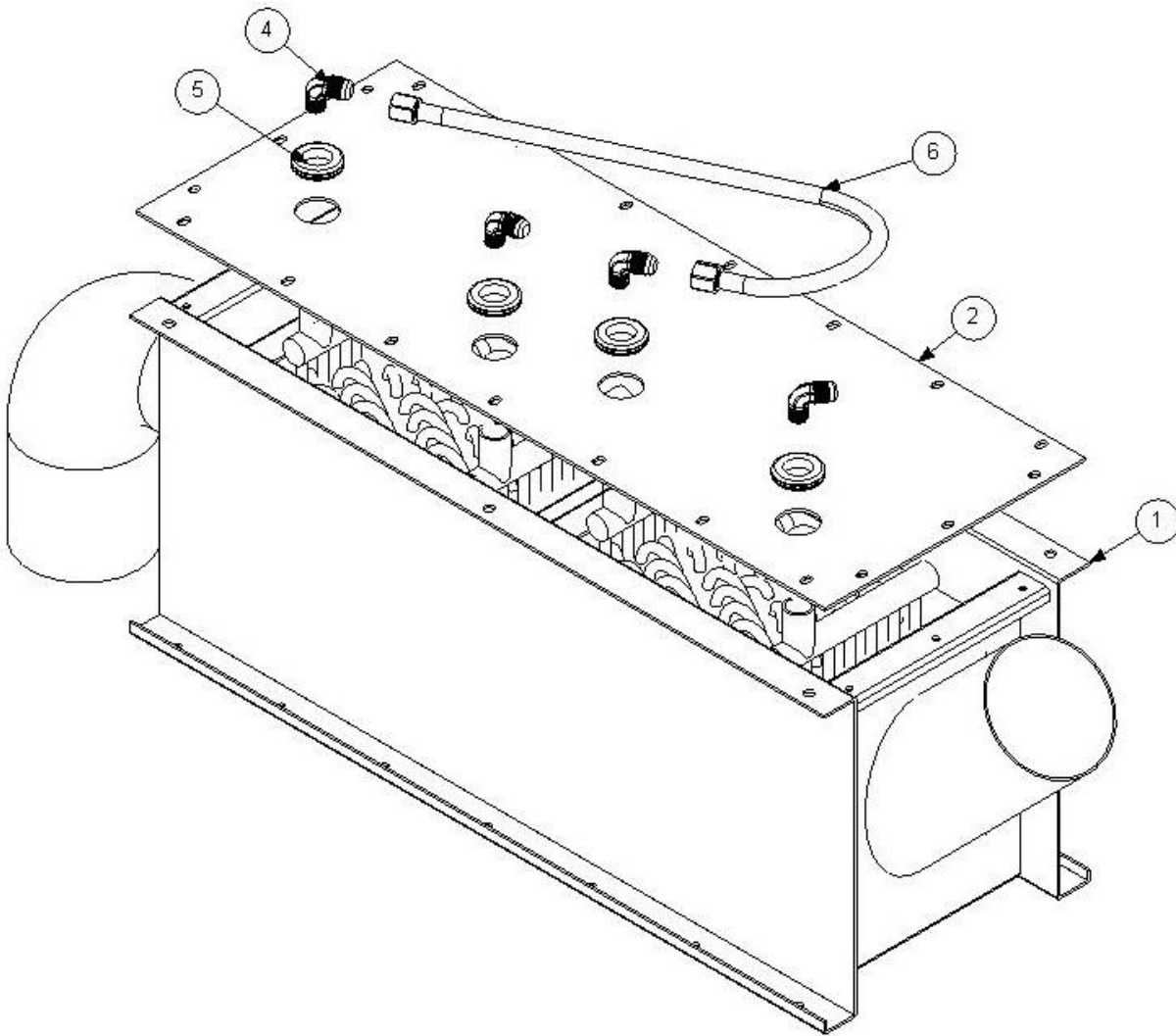


4-8

69-168 ASSY, E-3 HEAT EXCH V8000

Item No.	Part Number	Qty	Description
1	63-100	1	ASSY, E-3 HEAT EXCHANGER V8000
2	21-074	2	3/4 M NPT x 1/2 JIC
3	21-065	1	PLUG, 1/2 SOLID BRASS HEX HD
4	18-176	1	HOSE, 1/2" BRAIDED SS x 115" ZR
5	18-118	1	HOSE, 1/2 BRAIDED SS X 74" VRTX
6	58-326	2	BRKT, E-3 HEAT EXCH MOUNT V8000

SECTION 4

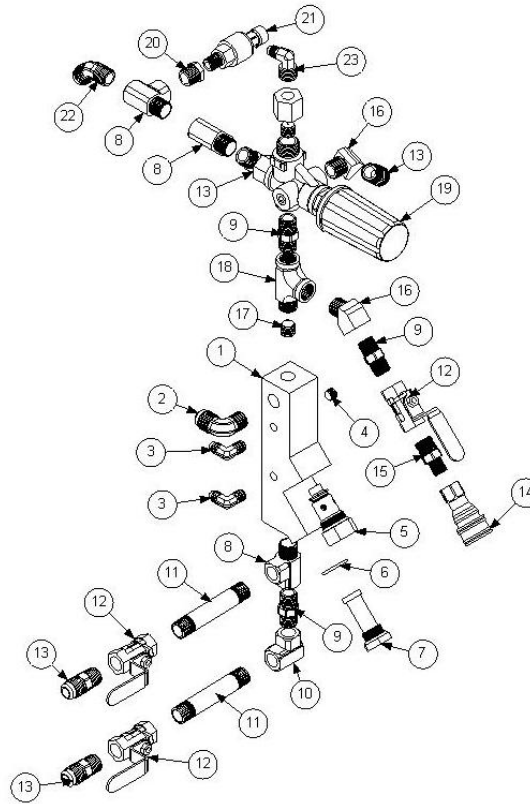


4-9

69-165 ASSY, EXHAUST HEAT EXCH V8000

Item No.	Part Number	Qty	Description
1	61-413	1	ASSY,VAC EXHAUST HEAT EXCH
2	58-331	1	PNL,SILENCER HEATTER BOX Q8000
3	63-078	2	VORTEX BLOWER EXHAUST
4	21-061	4	ELL, 3/8 P X 1/2 T BRASS
5	41-033	4	GROMMET, 1 ID X 1 3-4OD
6	18-034	1	HOSE, 1/2 X 11 1/2FT X 1/2FT W/CVR

SECTION 4



4-10

Y-STRAINER PRESSURE REGULATOR

Item No.	Part Number	Qty	Description
1	66-075	1	MANIFOLD, CHECK VALVE BW (YSTRAIN)
2	21-061	1	ELL, 3/8 P X 1/2 T BRASS
3	21-054	2	ELL, 1/8 P X 1/4 T BRASS
4	21-029	1	PLUG, 1/8 SOCKET HEAD
5	23-023	1	VLV, CHECK, CHECK VLV MANIFOLD
6	41-007	1	ORING, 7/8 ID 1-1/16 OD
7	20-018	1	SCREEN, CHECK VALVE MANIFOLD
8	21-062	3	TEE, 3/8 F X M X F BRASS
9	21-046	3	NIP, 3/8 IN. HEX BRASS
10	21-152	1	ELL, 3/8 F X 3/8 F 90 DEG
11	21-311	2	NIPPLE, .3/8" X 3-1/2" L 204 SS
12	23-053	3	VLV, 3/8" SS BALL 760T02
13	21-057	4	CONN, 3/8 P X 1/2 T BRASS
14	25-001	1	DSC, 1/4X1/4FP BR
15	21-052	1	NIP, 3/8 X 1/4 HEX BRASS
16	21-043	2	ELL, STREET 3/8 IN. 45 DEG BRASS
17	21-264	1	PLUG, 1/4 HEX PIPE
18	66-172	1	Threaded Fitting TEE, 3/8 F X M X F BRASS
19	23-021	1	REG, PRESS CAT #7670 VITON
20	21-088	1	BUSHING, 3/8 X 1/4 BRASS
21	34-020	1	SENSOR,WTR PRESS 0-3000 PSI VRTX
22	21-059	1	ELL, 3/8 P X 1/2 T 45DEG BRASS
23	21-063	1	ELL, 3/8 P X 1/4 T BRASS
24	66-179	1	PLUG, 1/4 VENT HEX PIPE VORTEX

*Repair Kit Not Shown

27-002

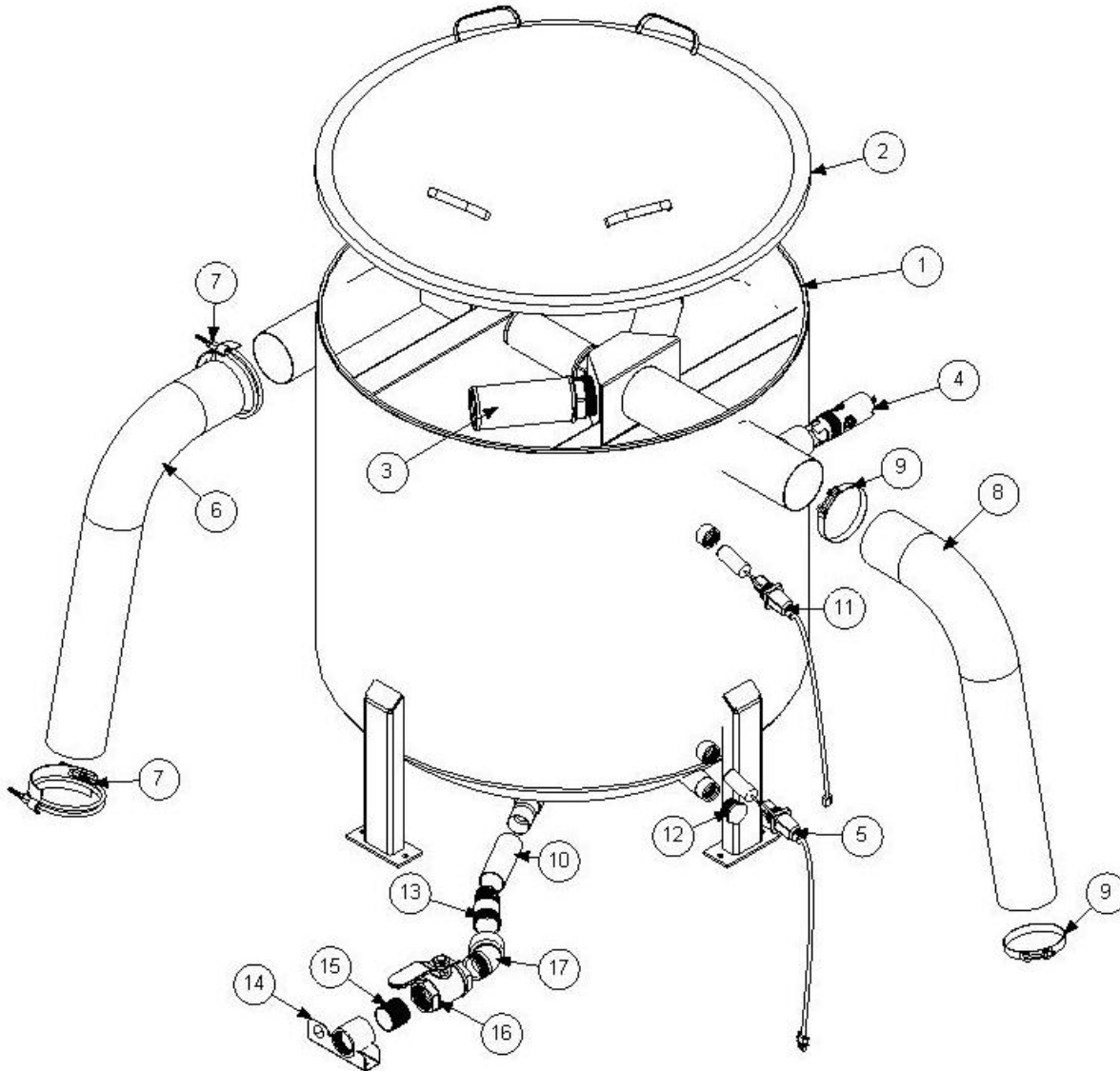
CAT, #33147 KIT, VLV REP

*Repair Kit Not Shown

27-003

CAT #33246 KIT, O-RNG REP

SECTION 4

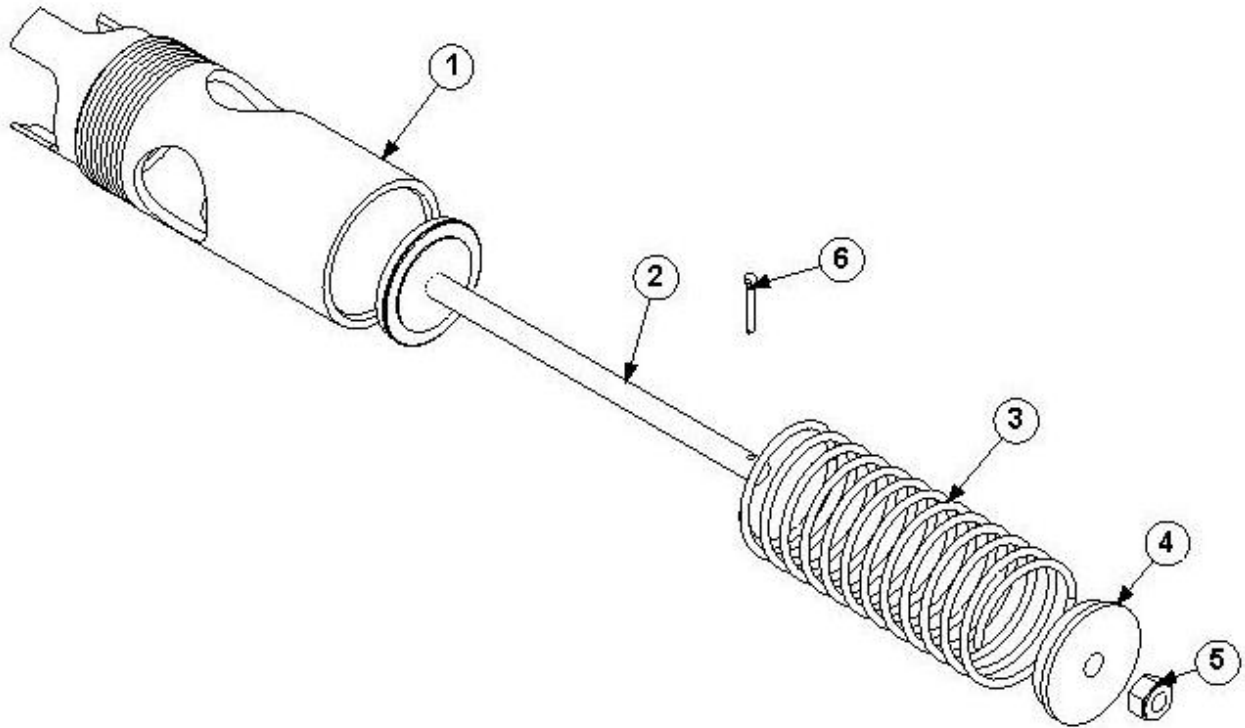


4.11

69-181 230GAL WASTE TANK VORTEX Q8000

Item No.	Part Number	Qty	Description
1	61-416	1	ASSY,230 GAL WASTE TANK Q8000
2	61-381	1	ASSY, WASTE TANK LID ZR
3	20-021	3	STRAINER, FILTER BLUEWAVE
4	69-100	1	ASSY, VAC RELIEF VALVE VORTEX
5	69-002	1	ASSY, LVL SENSOR SHTOFF WASTE PMP
6	16-060	72"	HOSE,5" KANAFLEX 180 R
7	14-034	2	CLAMP, HOSE TWIN RING 5.5 TO 5.7
8	16-070	72"	HOSE, 5" RUBBER SUCT MTL RE-IN
9	14-026	2	CLAMP,HOSE #80
10	16-009	10"	HOSE, INT VAC 2 IN.
11	69-000	1	WIRING , LEVEL SENSOR SHUTOFF
12	21-097	1	PLUG, 1-1/4 IN PVC
13	21-225	1	BARB, 2" MPT X 2" HOSE ZINC
14	61-417	1	ASSY,DRAIN VALVE BRKT Q8000
15	21-220	1	NIPPLE, 2 IN SCHD 40 CLOSED
16	23-049	1	VLV,2" SMITH-COOPER BRASS BALL
17	21-222	1	ELL, 2" 45 DEG STREET ABS
	41-059	1	GSKT, 1/4X 1 3/8X140 SLD NEOPR

SECTION 4

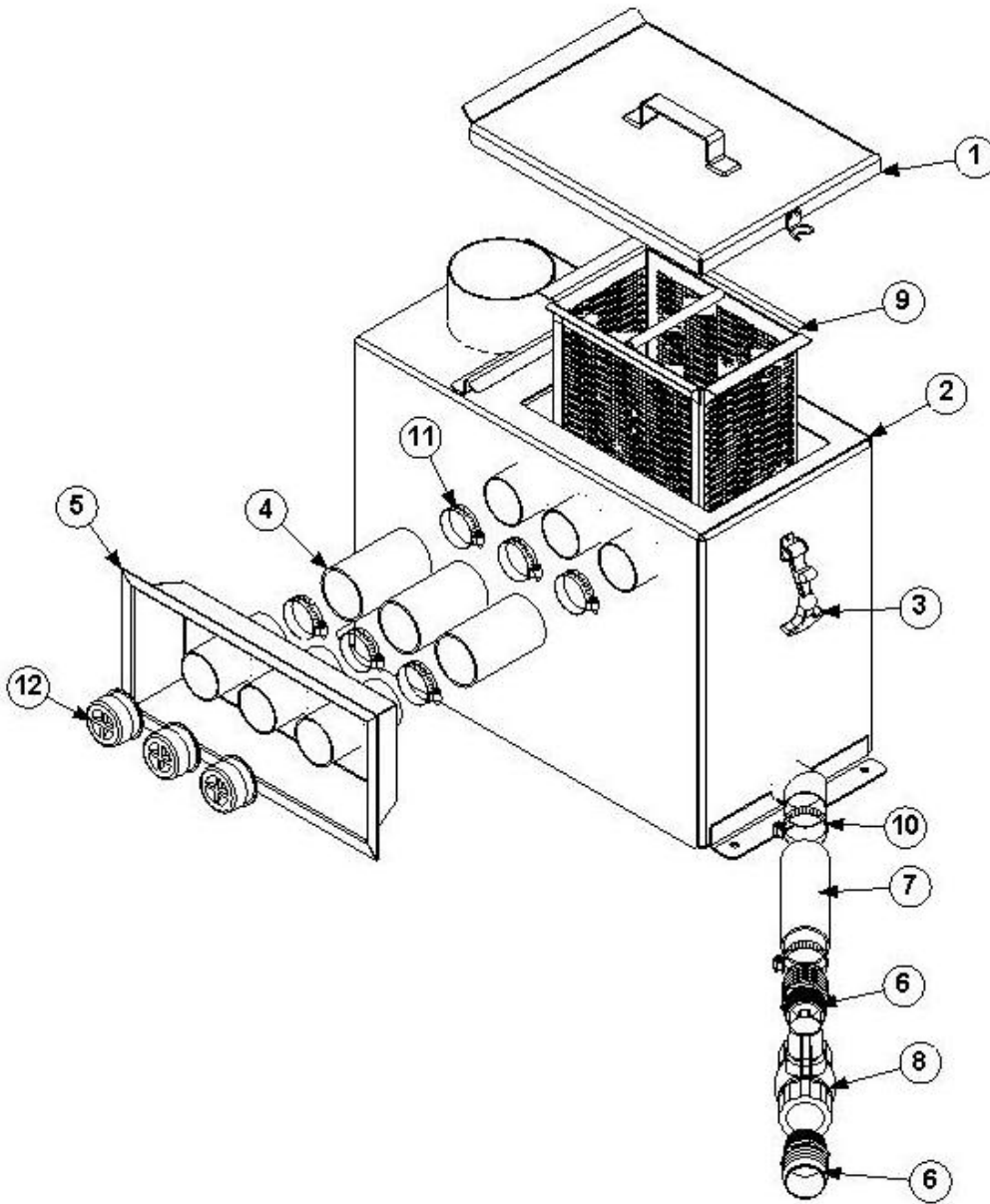


4-12

69-100 ASSY, VAC RELIEF VALVE VORTEX

Item No.	Part Number	Qty	Description
1	66-132	1	BODY, VACUUM RELIEF VORTEX
2	61-262	1	ASSY, VACUUM RELIEF DISK
3	15-016	1	SPRING, VAC RELIEF VORTEX
4	66-133	1	WASHER, RELIEF VALVE VORTEX
5	11-019	1	NUT, 3/8-16 NYLOK
6	14-032	1	PIN, COTTER 7/64 X 3/4 SS

SECTION 4



4-13

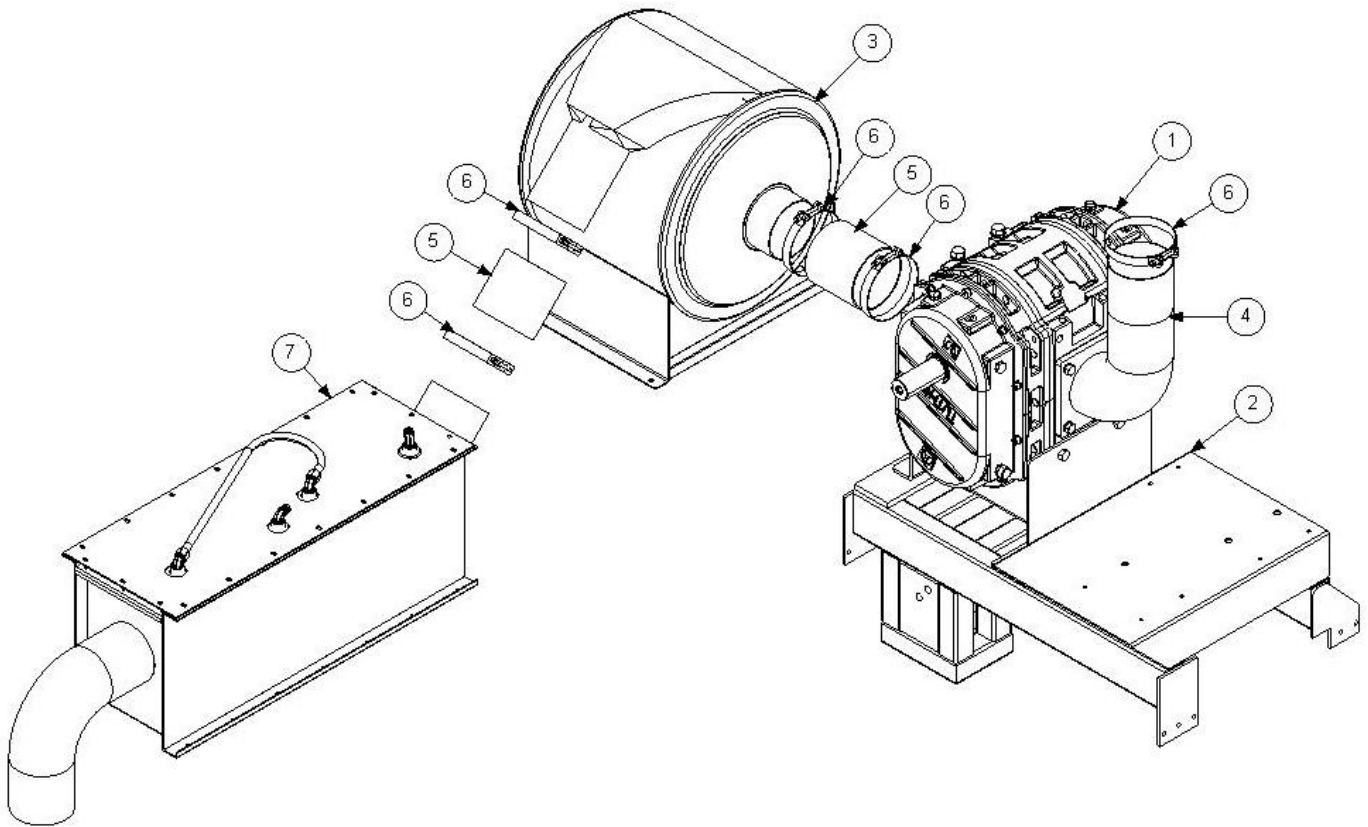
ASSY, VORTEX PRE-FILTER BOX

Item No.	Part Number	Qty	Description
1	61-273**	1	ASSY,LID PRE-FILTER BOX VORTEX
2	61-367	1	ASSY,VORTEX PRE-FILTER V-2
3	40-003	1	LATCH, PRE-FILTER BOX
4	16-010	3	HOSE, INT VAC 2-1/2 IN 50 FT BULK
5	61-285	1	ASSY, VACUUM INLET PORTS VRTX
6	21-094	2	FTTG, 1-1/2 P X 2 H DRAIN
7	16-009	1	HOSE, INT VAC 2 IN.
8	23-022	1	VLV, BALL 1-1/2 FP PVC DUMP
9	61-368	1	BASKET, STRAINER VRTX WASTE
10	14-010	2	CLAMP, HOSE #32
11	14-024	6	CLAMP, HOSE #48
12	19-013	3	CAP, WASTE TNK INLET VORTEX

*REDUCER, 2-1/2" TUBE - 2" HOSE #19-014

**1 IN SPONGE GASKET #41-018

SECTION 4

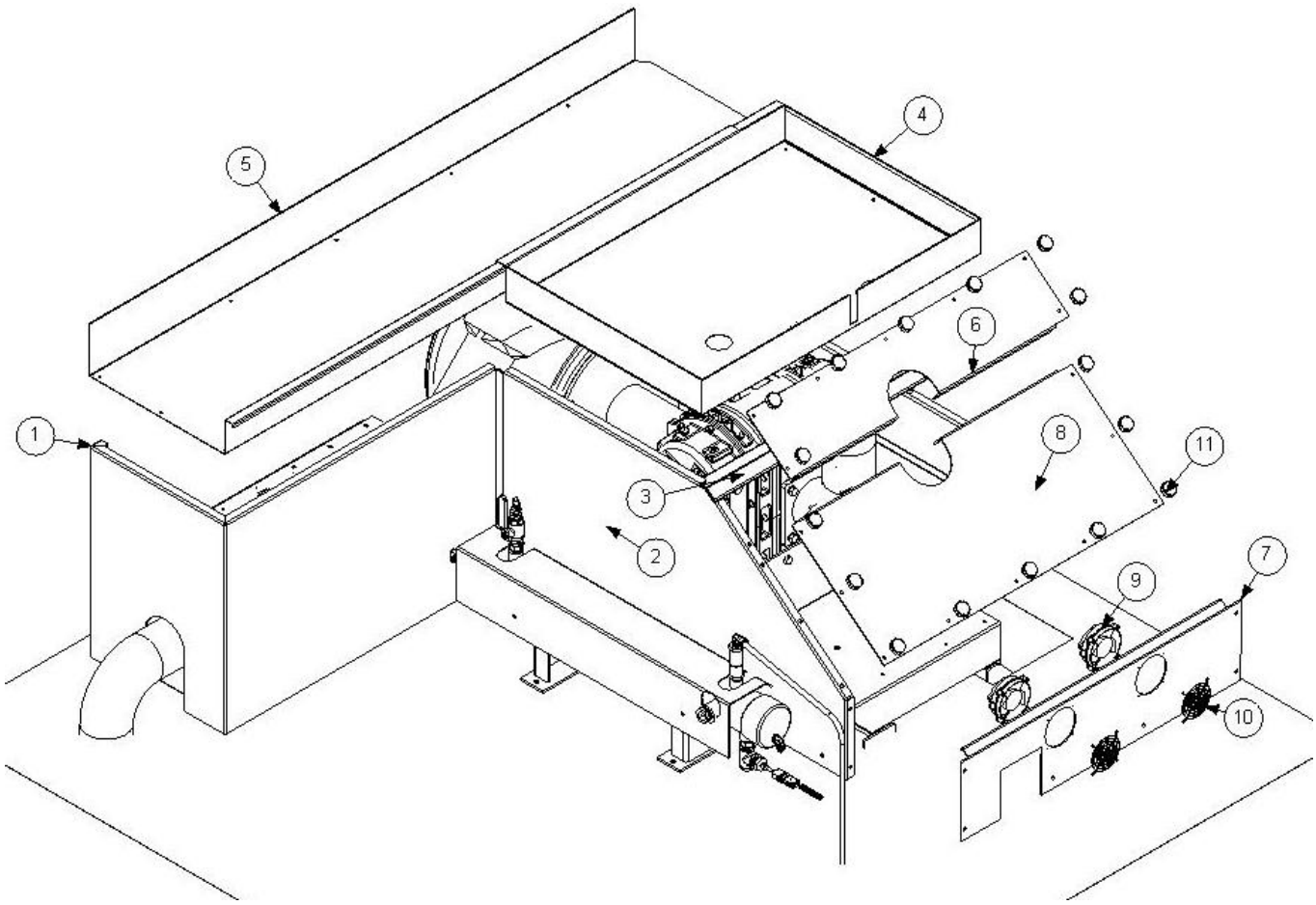


4-14

VACUUM PUMP EXHAUST

Item No.	Part Number	Qty	Description
1	46-033	1	VACUUM PUMP TI-850-46L2-4322
2	61-409	1	ASSY, BLOWER MOUNT
3	68-122	1	ASSY, MUFFLER VAC EXH V8000
4	61-418	1	ASSY, VAC PUMP INLET Q8000
5	16-061	2	HOSE, 5"ID X 12-1/2FT W/REINFORCED
6	14-026	5	CLAMP, HOSE #80
7	69-165	1	ASSY, EXHAUST HEAT EXCH V8000

SECTION 4

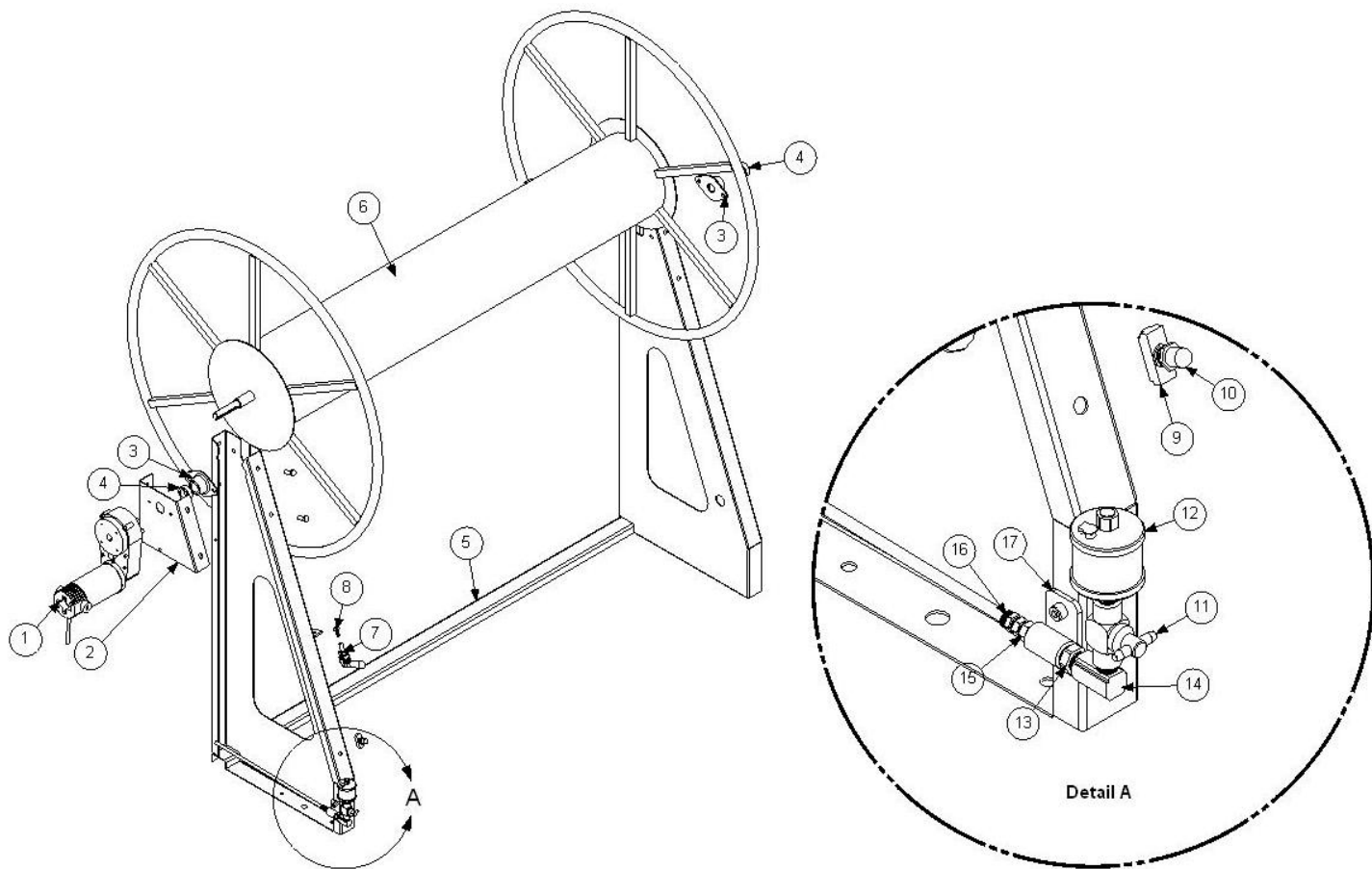


4-15

SHEET METAL VORTEX 8000Q

Item No.	Part Number	Qty	Description
1	58-340	1	PNL,SILENCER COVER Q8000
2	60-257	1	PNL, RIGHT BLOWER CVR Q8000
3	61-414	1	ASSY,BLOWER COVER TOP HOLDER
4	61-424	1	ASSY, COVER BLOWER Q8000
5	58-339	1	PNL,RUG SHELF 72 INCH Q8000
6	58-333	1	PNL, BLOWER COVER LID SML Q8000
7	60-260	1	PNL,FRONT BLOWER CVR Q8000
8	58-332	1	PNL, BLOWER COVER LID LRG Q8000
9	35-009	2	FAN, 4 INCH CABINET
10	36-315	2	GUARD, 4 INCH FAN V8000
11	11-007	16	NUT, THUMB 1/4-20 FKWR. HEAD KNOB

SECTION 4

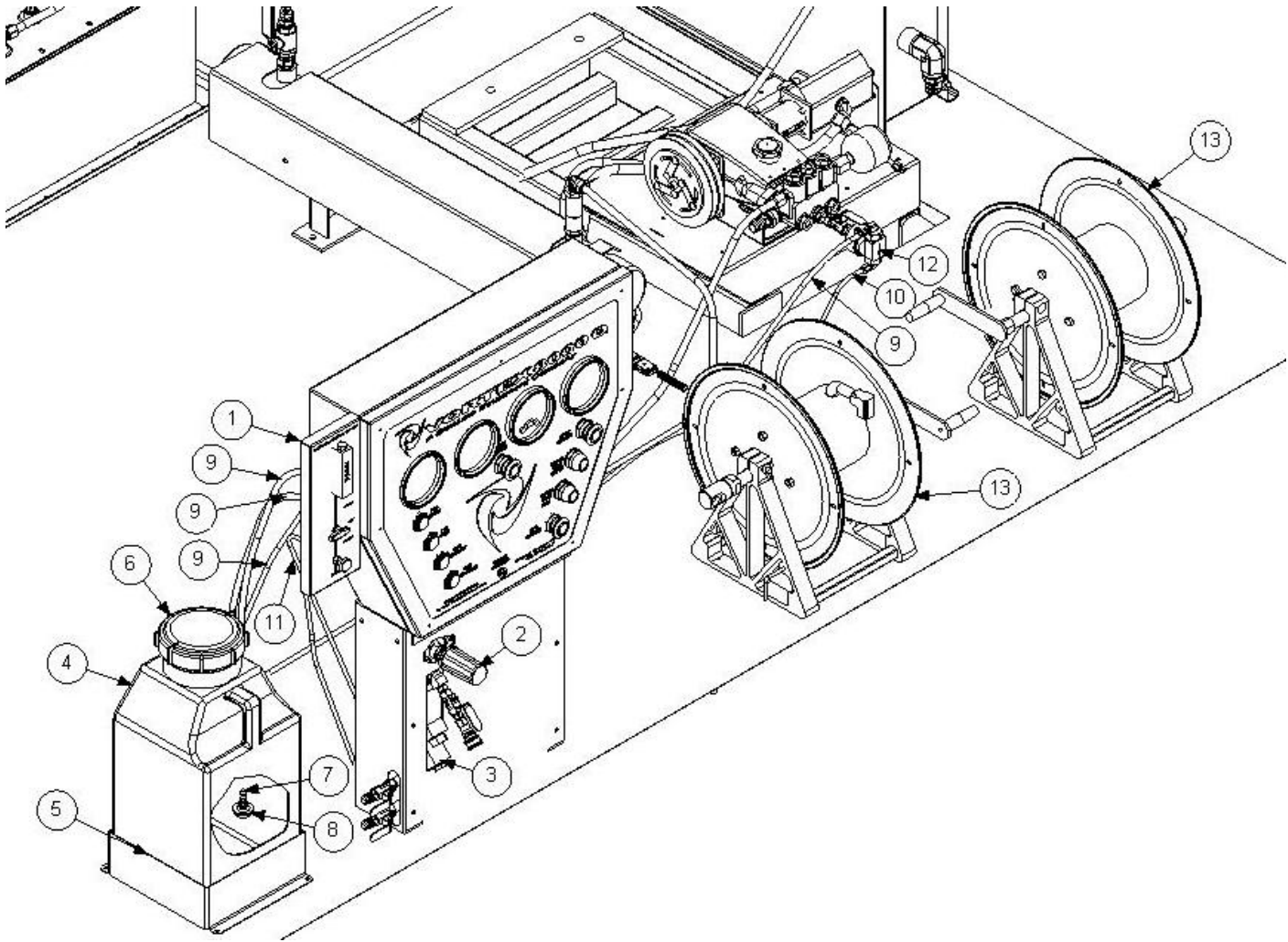


4-16

69-176 ASSY, HOSE REEL V8000

Item No.	Part Number	Qty	Description
1	45-017	1	MOTOR, VORTEX HOSE REEL
2	59-801	1	PNL,GEAR MOTOR MOUNT VORTEX
3	39-003	2	FLANGE, BEARING SOL HOSE REEL
4	39-002	2	COLLAR, 1 IN SHFT SOL HOSE REEL
5	61-401	1	ASSY, 53" SS BASE VORTEX
6	61-400	1	ASSY, 53" SS REEL VORTEX
7	40-016	1	CLAMP, PUSH/PULL
8	15-020	1	BUMPER, 5/16-18 POLYURETHANE
9	29-037	1	SWITCH, PUSH BUTTON SELECTA
10	29-038	1	SWITCH, BOOT PUSH BUTTON
11	23-001	1	VLV, BALL 1/4FP BS
12	28-006	1	RESERVOIR,OIL 1 3/8 OZ 1/8 NPT
13	21-026	1	NIP, 1/4 HEX BR
14	21-039	1	ELL, 1/4 IN LG STREET BRASS
15	21-076	1	BUSHING, 1/4 M X 1/8 F BRASS
16	21-028	1	CONN, 1/8 P X 1/4 POLY
17	61-018	1	BRKT, FIN FUEL RETURN THERMAL
18	10-021	1	SCREW, MACH 1/4-20 X 3/4 SOCHD SS

SECTION 4

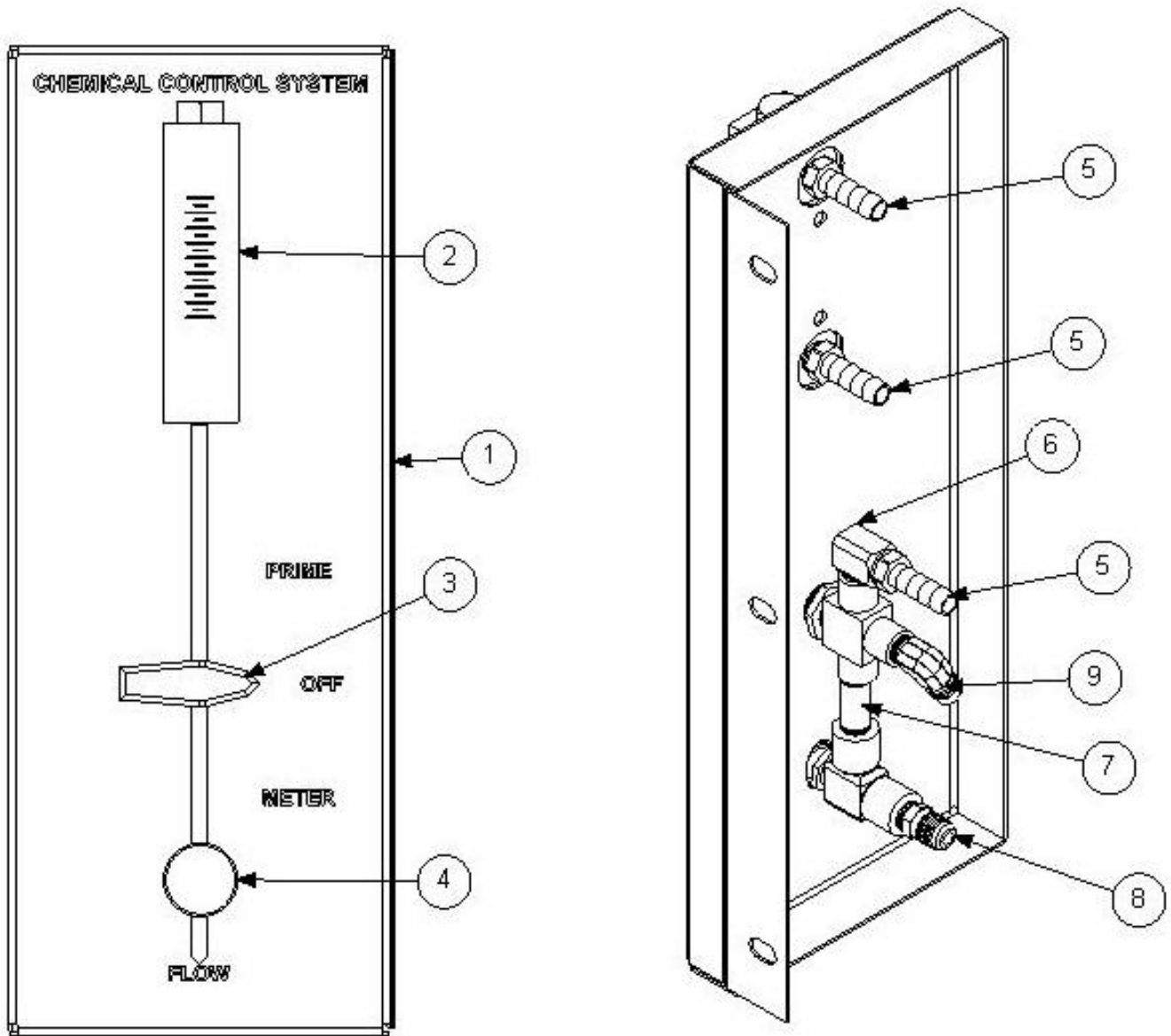


4-17

CHEMICAL SYSTEM

Item No.	Part Number	Qty	Description
1	69-178	1	ASSY, CHEMICAL PANEL V8000
2	69-126	1	Vortex Pressure Regulator
3	69-125	1	ASSY, Y-STRAINER VORTEX
4	51-013	1	MOLDING LARGE MOUTH JUG
5	68-014	1	ASSY, SINGLE 5 GAL JUG HOLDER
6	21-025	1	CAP, 5 IN. WATER BOX/TANK BLACK
7	21-007	1	FTTG,BRB 1/8 PX 5/16 H BR
8	20-002	1	STRAINER, SUCTION END 1/8FP
9	16-017	3	TUBING, IMPOLENE 250FT.
10	18-179	1	HOSE,3/16 X 1/4T X 88
11	18-180	1	HOSE,3/16 X 1/4T X 32
12	46-012	1	PUMP, CHEMICAL STAINLESS STEEL
13	68-097	2	ASSY, 8IN STAINLESS HOSE REEL

SECTION 4

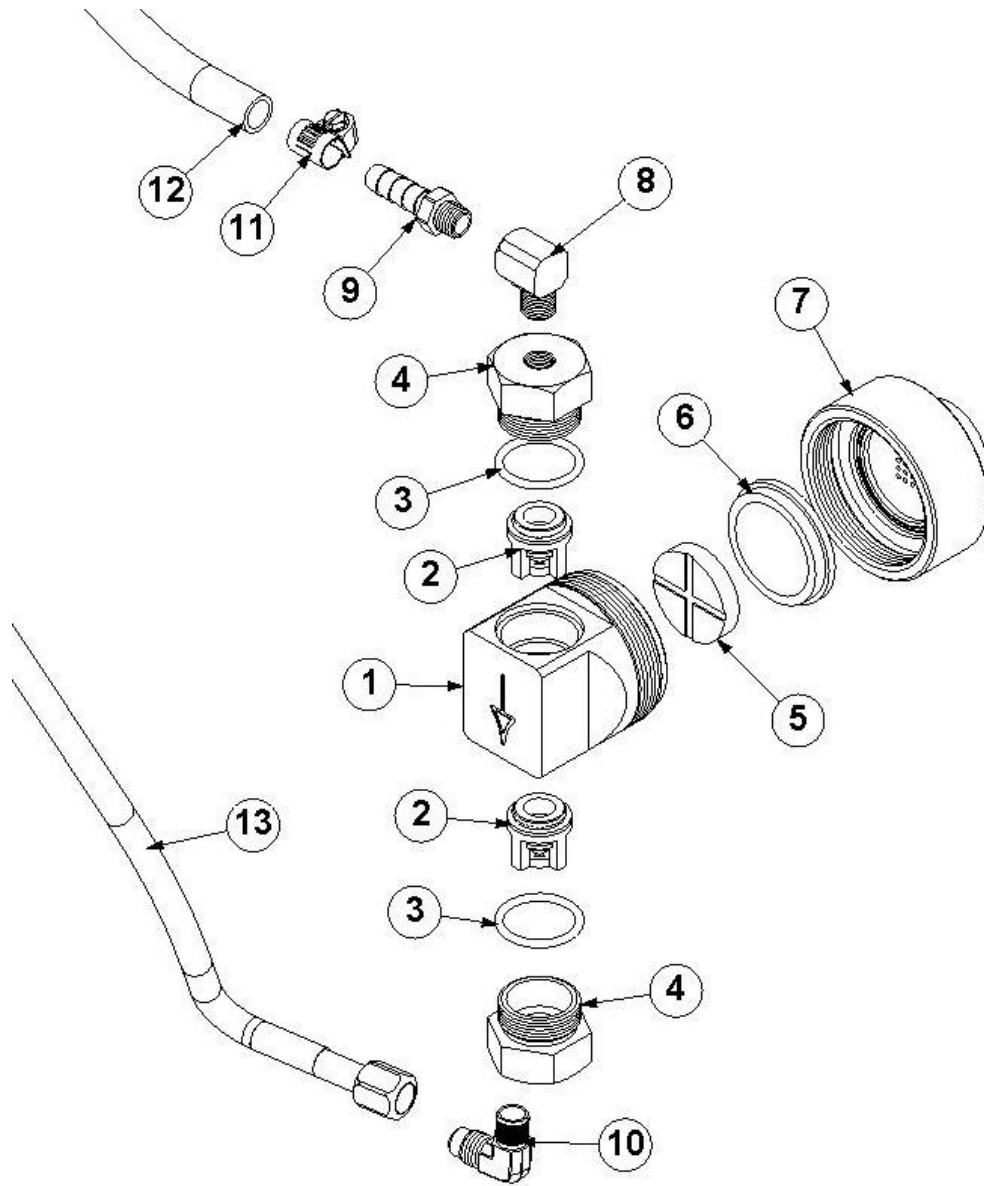


4-18

69-178 ASSY, CHEMICAL PANEL V8000

Item No.	Part Number	Qty	Description
1	58-319	1	PNL,CHEMICAL SINGLE VORTEX
2	26-003	1	FLOWMETER, 1/8P
3	23-027	1	VLV, 3-WAY BALL 1/8 FP SS
4	23-028	1	VLV, MET 1/8FP (CHEM) RT ANG SS
5	21-007	3	FTTG,BRB 1/8 PX 5/16 H BR
6	21-038	1	ELL, STREET 1/8 IN. BRASS
7	21-255	1	NIPPLE, 1-/NPT X 1-1/2 SS
8	21-256	1	CONNECTOR,1/8NPT X 1/4T HEX SS
9	21-066	1	ELL, 1/8 P X 1/4 T SS

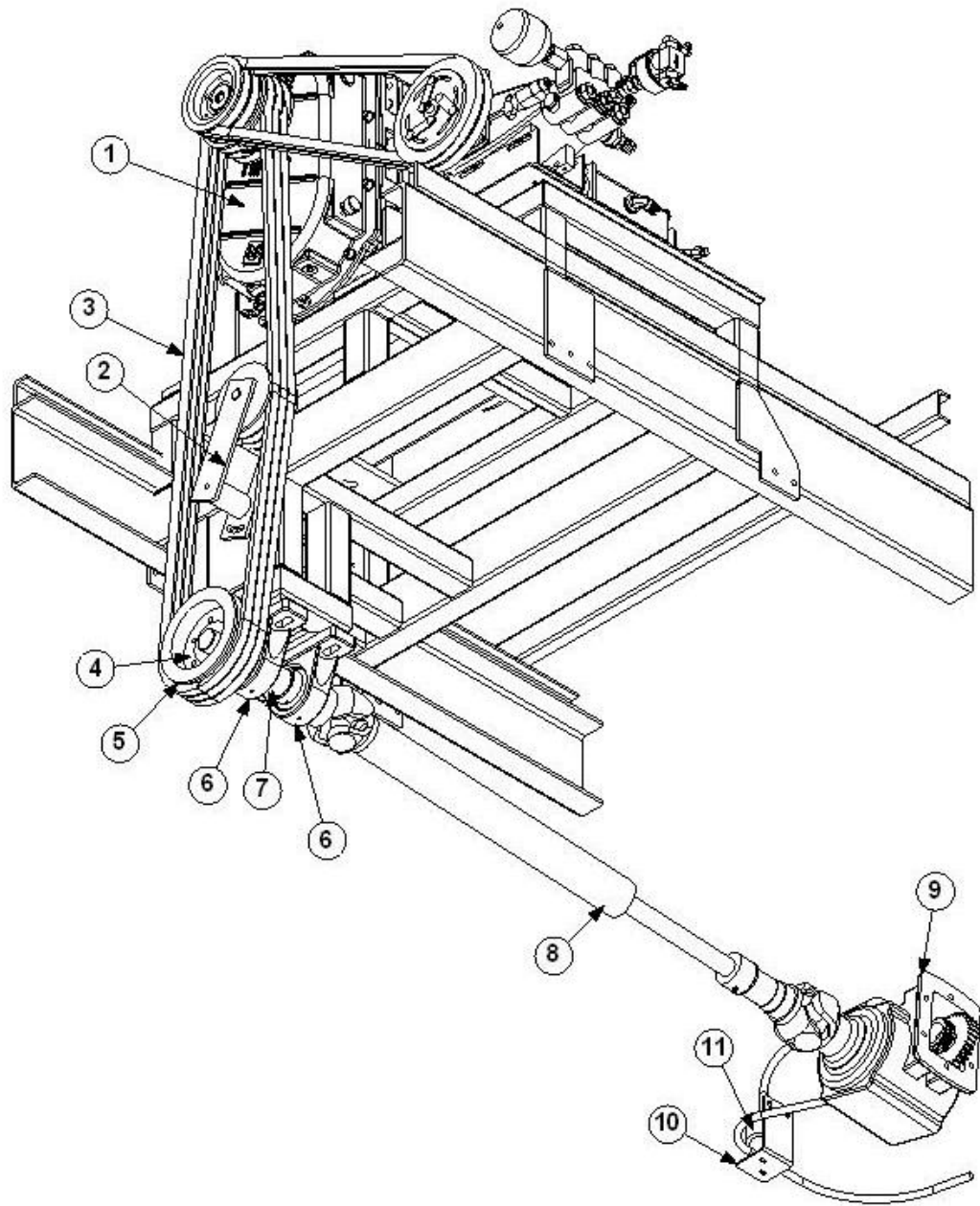
SECTION 4



4-19

CHEMICAL PUMP

Item No.	Part Number	Qty	Description
1	66-008	1	BODY, CHEMICAL PUMP STAINLESS
2	36-004	2	VLV, CHECK HYPRO
3	41-007	2	ORING, 7/8 ID 1-1/16 OD
4	66-006	2	CAP, CHECK VALVE CHEM PUMP SS
5	36-003	1	DISC, CHEM PUMP
6	36-000	1	DIAPHRAGM, CHEMICAL PUMP
7	66-007	1	COVER, CHEMICAL PUMP STAINLESS
8	21-038	1	ELL, STREET 1/8 IN. BRASS
9	21-007	1	FTTG,BRB 1/8 PX 5/16 H BR
10	21-066	1	ELL, 1/8 P X 1/4 T SS
11	14-007	1	CLAMP, HOSE # 4
12	16-017	45"	HOSE, BRAIDED 5/16 IN. 300FT BULK
13		1	HOSE, 3/16 X 1/4F X 1/4F

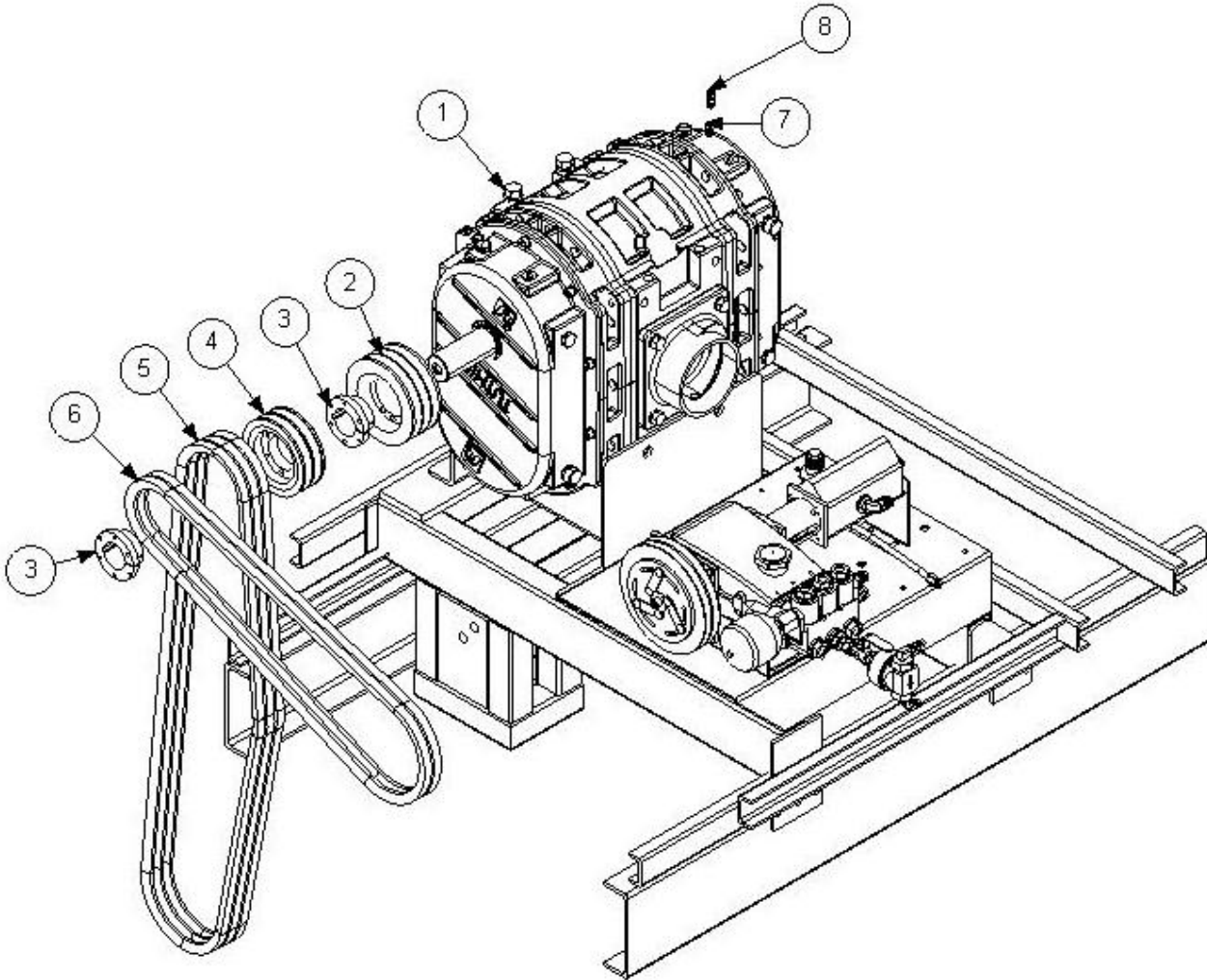


4-20

PTO-DRIVE SHAFT ASSEMBLY

Item No.	Part Number	Qty	Description
1	46-033	1	VACUUM PUMP TI-850-46L2-4322
2	69-099	1	ASSY, BELT TENSIONER VORTEX
3	37-056	1	BELT, 5VX930
4	38-042	1	HUB, SK 1-1/2
5	38-041	1	PULLEY, 5V6.3 SK 3G
6	39-023	2	BEARING, PILLOW 1-7/16 IN
7	66-192	1	SHAFT, BLOWER DRIVE ZERO RES
8	39-028	1	SHAFT, DRIVE LINE 10.5 ZERO RES
9	45-015	1	PTO, AISIN TRANSMISSION A45043L
10	58-216	1	BRKT, SOLENOID HYDRAULIC VRTX
11	23-060	1	VLV, SOLENOID PTO VORTEX

SECTION 4

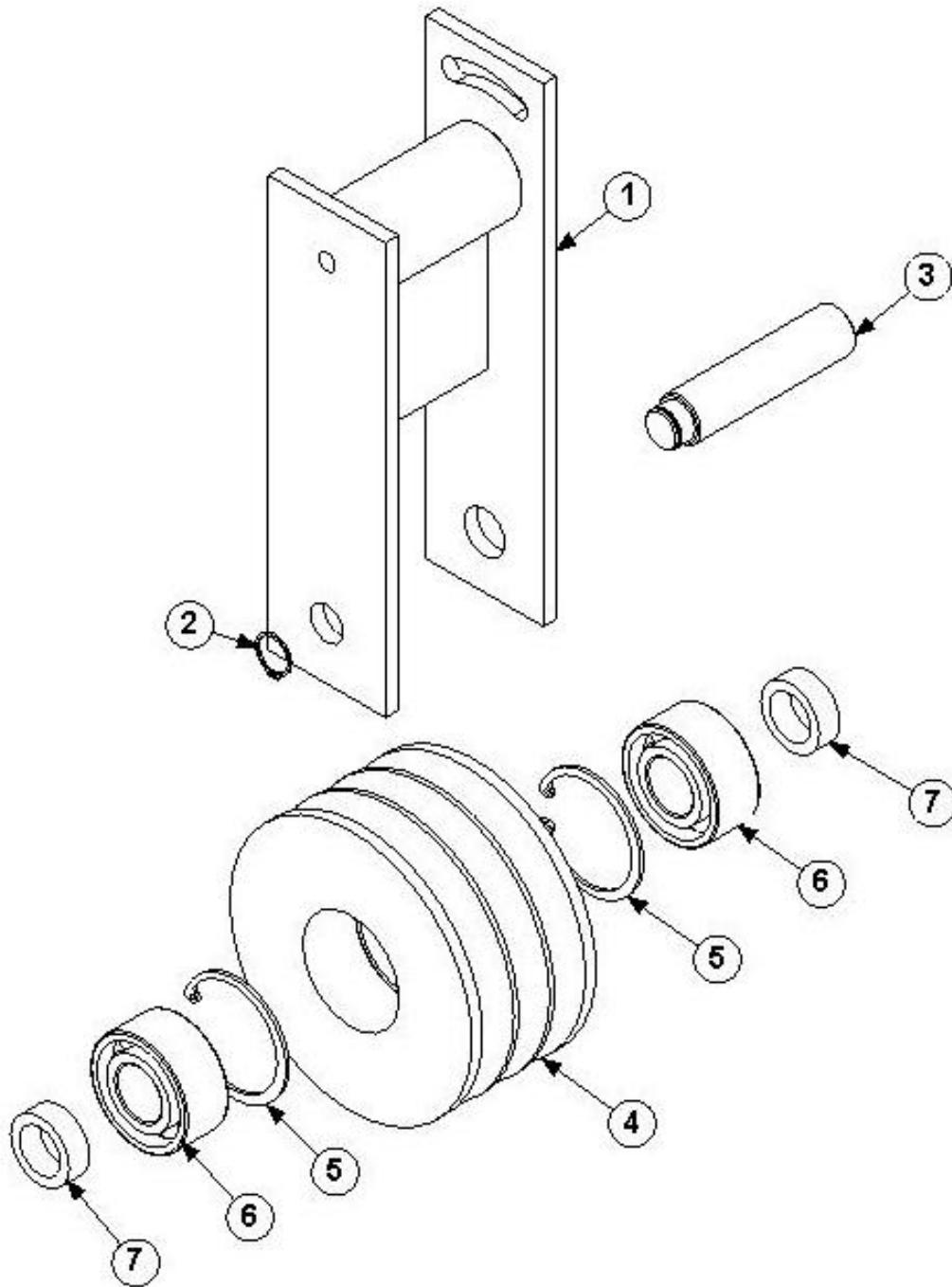


4-21

VACUUM PUMP

Item No.	Part Number	Qty	Description
1	46-033	1	VACUUM PUMP TI-850-46L2-4322
2	38-043	1	PULLEY, 5V5.5 SDS 3G
3	38-044	2	HUB, SDS 1-3/4
4	38-045	1	PULLEY, 2B50 SDS
5	37-056	3	BELT, 5VX930
6	37-057	2	BELT, AX61
7	21-076	1	BUSHING, 1/4 M X 1/8 F BRASS
8	21-028	1	CONN, 1/8 P X 1/4 POLY

SECTION 4

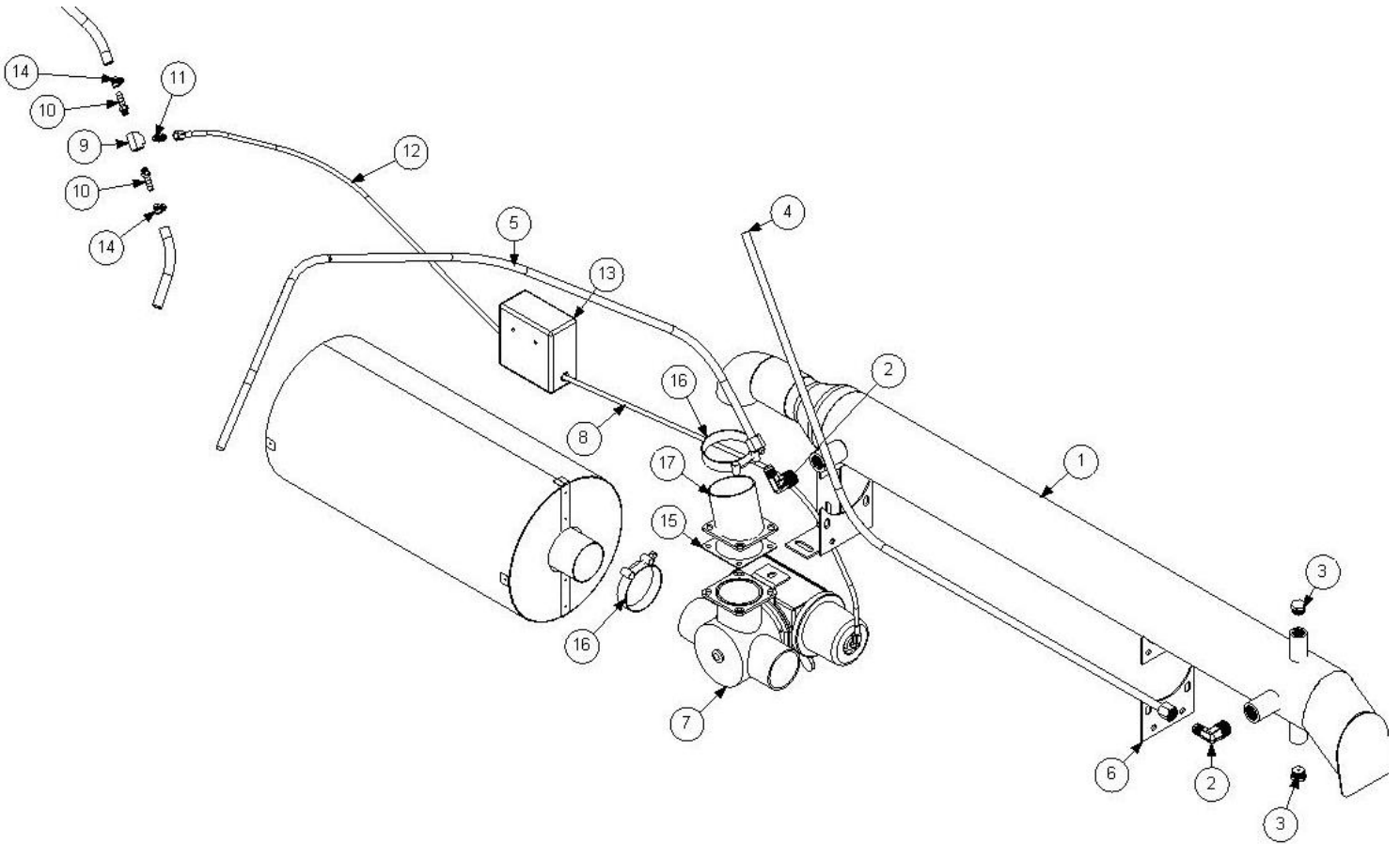


4-22

69-099 ASSY, BELT TENSIONER VORTEX

Item No.	Part Number	Qty	Description
1	61-260	1	ASSY,BELT TENSIONER BRACKET
2	15-021	1	SNAP RING, 5/8" SHAFT RETAINER
3	66-151	1	SHAFT, BELT TENSIONER VORTEX
4	66-153	1	PULLEY, TENSIONER VORTEX
5	15-022	2	SNAP RING, 1-7/8" INTERNAL
6	39-024	2	BEARING, 20MM X 47MM X .8125
7	66-150	2	LOCK RING, BELT TENSIONER VRTX

SECTION 4

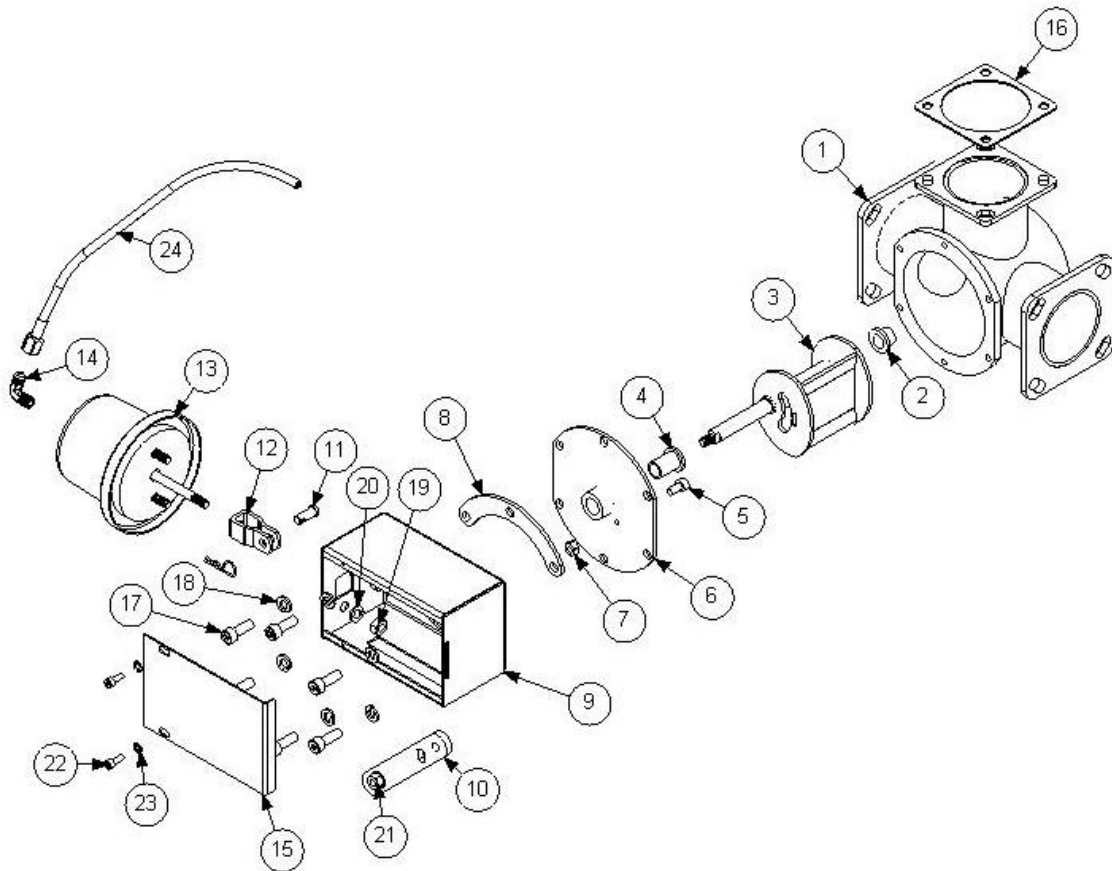


4-23

Exhaust Diverter Valve Assembly

Item No.	Part Number	Qty	Description
1	63-100	1	ASSY, E-3 HEAT EXCHANGER V8000
2	21-074	2	3/4 M NPT x 1/2 JIC
3	21-065	2	PLUG, 1/2 SOLID BRASS HEX HD
4	18-176	1	HOSE, 1/2" BRAIDED SS x 115" ZR
5	18-118	1	HOSE, 1/2 BRAIDED SS X 74" VRTX
6	58-326	2	BRKT, E-3 HEAT EXCH MOUNT V8000
7	69-101	1	ASSY, DIVERTER VALVE VORTEX
8	18-123	1	HOSE, 3/16 X 20 X 1/4T NO COVER
9	21-240	1	TEE, 1/8 NPTF BRASS
10	21-007	2	FTTG, BRB 1/8 PX 5/16 H BR
11	21-001	1	CONN, 1/8 P X 1/4 T BR
12	18-166	1	HOSE, 3/16 X 115" 1/4FTBS ZREZ
13	30-030	1	BOX, UTILITY 2.37 X 4.6
14	14-011	2	CLAMP, HOSE FUEL #6
15	41-043	1	GASKET, EXHAUST BY-PASS VALVE
16	14-036	2	CLAMP, HOSE 2-3/4 TO 3-5/8 HD SS
17	61-408	1	ASSY, EXST FLANGE ADAPTOR Q8000OR VRTX

SECTION 4

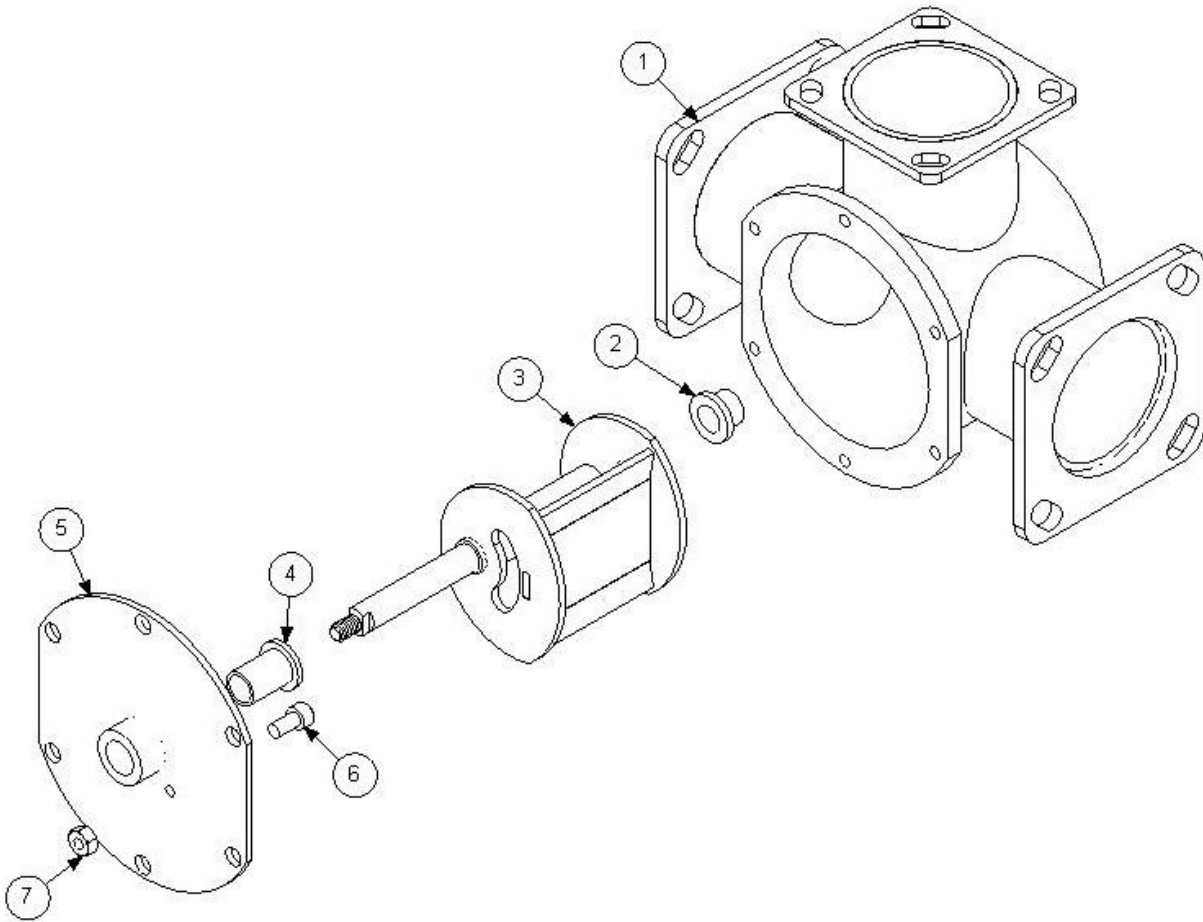


4-24

69-154 ASSY, DIVERTER VALVE

Item No.	Part Number	Qty	Description
1	61-376	1	ASSY,DIVERTER BODY ZEROREZ
2	66-160	1	BUSHING, DIVERTER BODY VORTEX
3	61-278	1	ASSY,DIVERTER VALVE VORTEX
4	66-159	1	BUSHING,CVR DIVERTER VORTEX
5	10-007	1	SCREW, MACH 1/4-20 X 1/2 SOCHD SS
6	66-158	1	COVER,DIVERTER HOUSING VORTEX
7	11-001	1	NUT, 1/4-20 SS
8	58-305	1	SPACER, DIVERTER VALVE V8000
9	59-809	1	PNL,DIVERTER BOX VORTEX
10	58-202	1	PLT, LEVER DIVERTER VORTEX
11	15-024	1	PIN, 5/16 X 3/4 CLEVIS
12	15-026	1	CLEVIS,DIVERTER VLV VORTEX
13	36-233	1	VACUUM POD, NISSAN UD
14	21-064	1	ELL, 1/4 P X 1/4 T BRASS
15	58-218	1	CVR, DIVERTOR BOX VORTEX
16	41-043	1	GASKET,EXHAUST BY-PASS VALVE
17	10-117	6	SCREW,5/16-18 X 7/8 SS SHCS
18	12-030	6	WASHER, 5/16 NORD LOCK
19	11-036	2	NUT, M8 X 1.25 HEX JAM
20	12-033	2	WASHER, LOCK M8 SS
21	11-049	1	NUT, 5/16-18 SS KLOCK
22	10-078	2	SCREW, 10-32 X 1/2 SHCS ZINC
23	12-026	2	LKWSR, #10 INT EXT
24	18-123	1	HOSE,3/16 X 20 X 1/4T NO COVER

SECTION 4

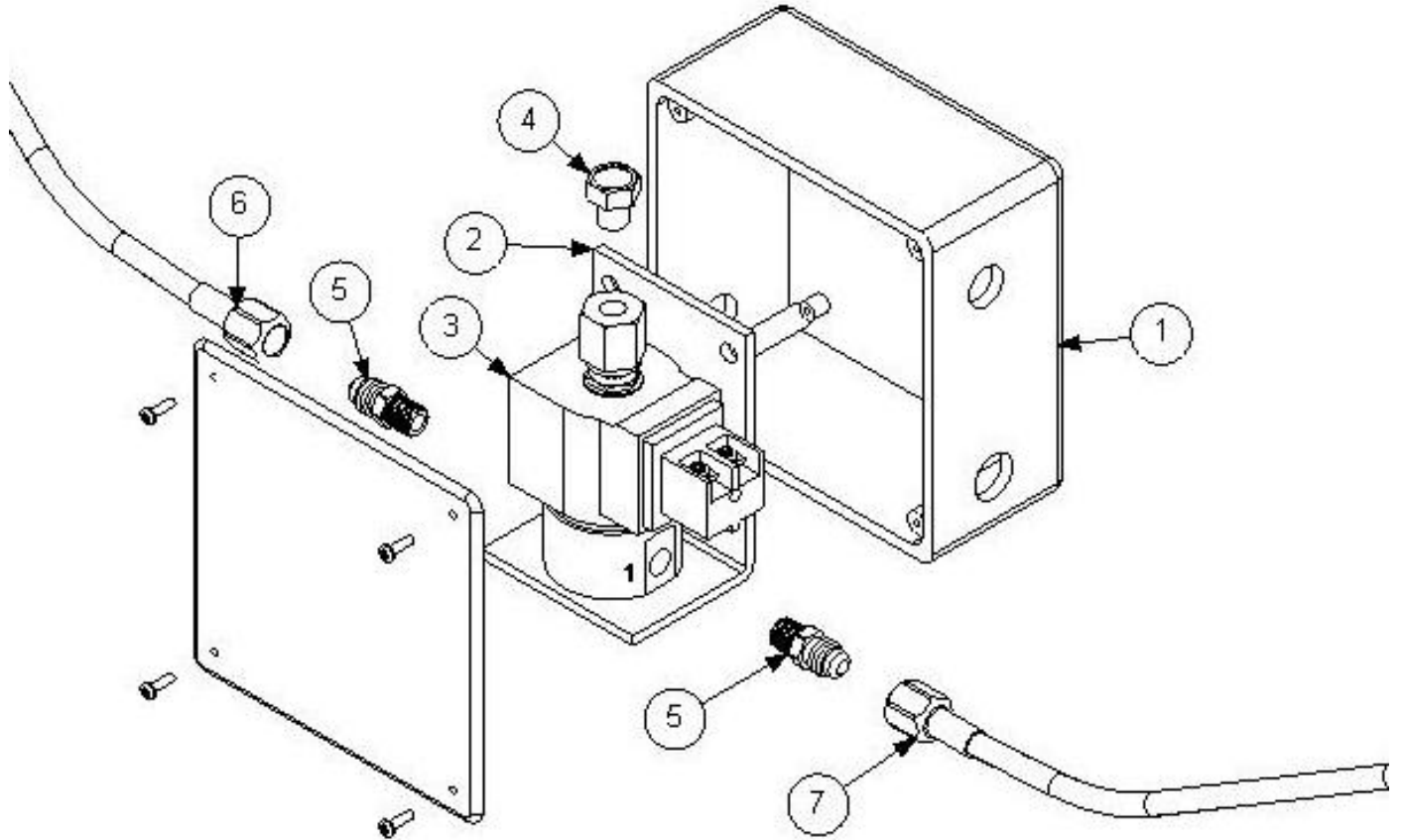


4-25

68-117 ASSY, DIVERTER VALVE VORTEX

Item No.	Part Number	Qty	Description
1	61-406	1	ASSY,DIVERTER BODY VORTEX Q8000
2	66-160	1	BUSHING, DIVERTER BODY VORTEX
3	61-278	1	ASSY,DIVERTER VALVE VORTEX
4	66-159	1	BUSHING,CVR DIVERTER VORTEX
5	66-158	1	COVER,DIVERTER HOUSING VORTEX
6	10-007	1	SCREW, MACH 1/4-20 X 1/2 SOCHD SS
7	11-001	1	NUT, 1/4-20 SS

SECTION 4



4-26

69-160 ASSY, DIVERTER SOLENOID ZERO R

Item No.	Part Number	Qty	Description
1	30-030	1	BOX, UTILITY 2.37 X 4.6
2	58-198	1	BRKT, EXHAUST SOLENOID
3	23-048	1	VLV, SOLENOID EXHAUST VORTEX
4	20-024	1	BREATHER STONE, 1/8 NPT SS VRTX
5	21-001	2	CONN, 1/8 P X 1/4 T BR
6	18-123	1	HOSE, 3/16 X 20 X 1/4T NO COVER
7	18-166	1	HOSE, 3/16 X 115" 1/4FTBS ZREZ

! PTO MAINTENANCE WARNING!

Periodic **PTO MAINTENANCE** is required by the owner/operator to ensure proper, safe and trouble free operation.

- Daily:** Check all air, hydraulic and working mechanisms before operating PTO. (PERFORM MAINTENANCE as required !)
- Monthly:** Inspect for possible leaks and tighten all air, hydraulic and mounting hardware, if necessary. Torque all bolts, nuts, etc. to Chelsea specifications. Insure that splines are properly lubricated, if applicable. (PERFORM MAINTENANCE as required !)

Parker-Chelsea Products Division will not be responsible for any damage due to the overloading of this auxiliary power product; failure to perform preventative maintenance; damage due to abuse, misapplication or misuse; or improper operation of this power take-off and ancillary equipment.

Warranty: Failure to comply entirely with the provisions set forth in the provided Owner's Manual will result in voiding **ALL WARRANTY** consideration.

CHELSEA®
Parker

CHELSEA®
Parker

379915 11/02

LOCATE NEAR P.T.O. CONTROL

PLACE THIS PART OF LABEL ON SUN VISOR

379086-2

**POWER TAKE OFF OPERATION
POWER SHIFTED P.T.O.'S**

I. MANUALLY SHIFTED TRANS.
1) ENGAGE P.T.O. WITH ENGINE AT IDLE SPEED.

II. AUTOMATIC TRANSMISSION
1) ENGAGE P.T.O. WITH ENGINE AT IDLE SPEED.

WARNING:
DURING EXTREMELY COLD WEATHER 230, 231, 236, 242, 243, 244, 250, 251, 270, 271, 277, 278, 800, 852, 859 AND 885 SERIES POWER TAKE OFFS MAY MOMENTARILY TRANSMIT POWER EVEN THOUGH IT IS DISENGAGED! CONSULT YOUR OWNERS MANUAL FOR FURTHER EXPLANATION.

IMPORTANT
This vehicle is equipped with a **POWER TAKE-OFF**
-READ OWNERS MANUAL LOCATED IN THE GLOVE BOX.
-SEE SUN VISOR FOR OPERATING INSTRUCTIONS.

CHELSEA®
Parker

11-01

! WARNING

ROTATING SHAFTS ARE DANGEROUS

YOU CAN SNAG CLOTHES, SKIN, HAIR, HANDS, ETC THIS CAN CAUSE SERIOUS INJURY OR DEATH.

- EXPOSED ROTATING SHAFTS MUST BE GUARDED.
- DO NOT WORK ON OR NEAR AN EXPOSED SHAFT WHEN ENGINE IS RUNNING.
- SHUT OFF ENGINE BEFORE WORKING ON POWER TAKE-OFF OR DRIVEN EQUIPMENT.

DO NOT PAINT OVER THIS LABEL !

READ P.T.O. OWNERS MANUAL FOR MORE SAFETY INFORMATION

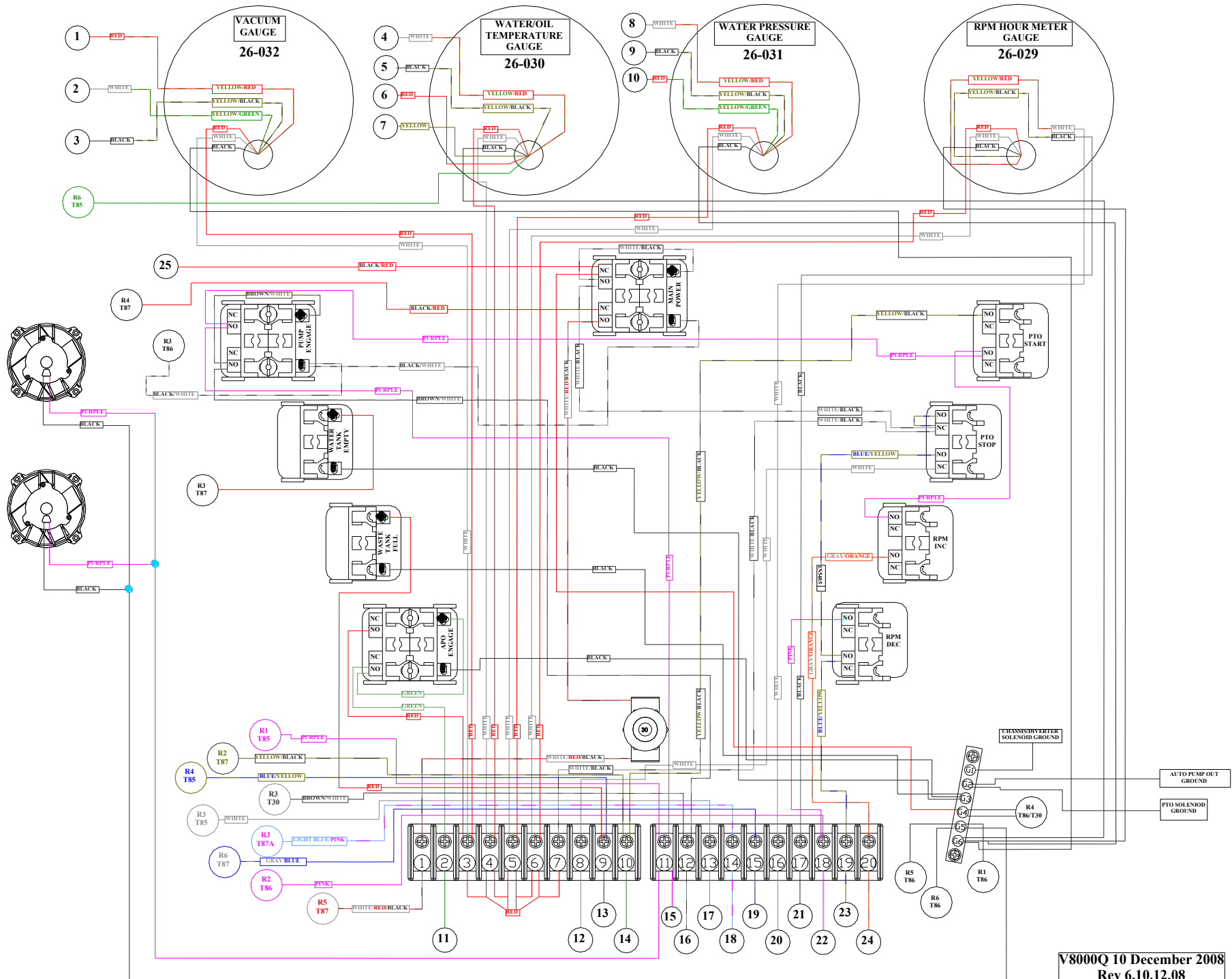
379274 6/93



! WARNING

**CAUTION
HOT**

V8000Q WIRING LEGEND		
1	RED	Vacuum Sensor (Yellow/Red)
2	WHITE	Vacuum Sensor (Yellow/Green)
3	BLACK	Vacuum Sensor (Yellow/Black)
4	WHITE	Water Temp Sensor (Yellow/Red)
5	BLACK	Water Temp Sensor (Yellow/Black)
6	RED	Thermocouple "K" Terminal
7	YELLOW	Thermocouple "+" Terminal
8	WHITE	Water Press Sensor (Yellow/Red)
9	BLACK	Water Press Sensor (Yellow/Black)
10	RED	Water Press Sensor (Yellow/Green)
11	GREEN	Pump-Out Float Switch (COM)
12	WHITE	Waste Tank Float Switch (COM)
13	BLACK	Waste Tank Float Switch (NO)
14	GREEN	Waste Tank Float Switch (NC)
15	PURPLE	PTO Solenoid
16	BRN/WHT	Water Tank Float Switch (COM)
17	WHITE	Water Tank Float Switch (NC)
18	LT BLU/PNK	Water Pump Clutch Power
19	GRAY/BLUE	Diverter Solenoid Power
20	WHT/BLK	Tach Sensor
21	BLACK	Tach Sensor
22	PINK	H 105 PIN "C"
23	BLUE/YEL	H 105 PIN "D"
24	GRAY/ORG	H 105 PIN "H"
25	BLACK/RED	H 104 PIN "E"
26	GREEN/YEL	H 105 PIN "B"
27	BLACK/RED	H 105 PIN "A"



**RELAY 1
PTO SOLENOID**

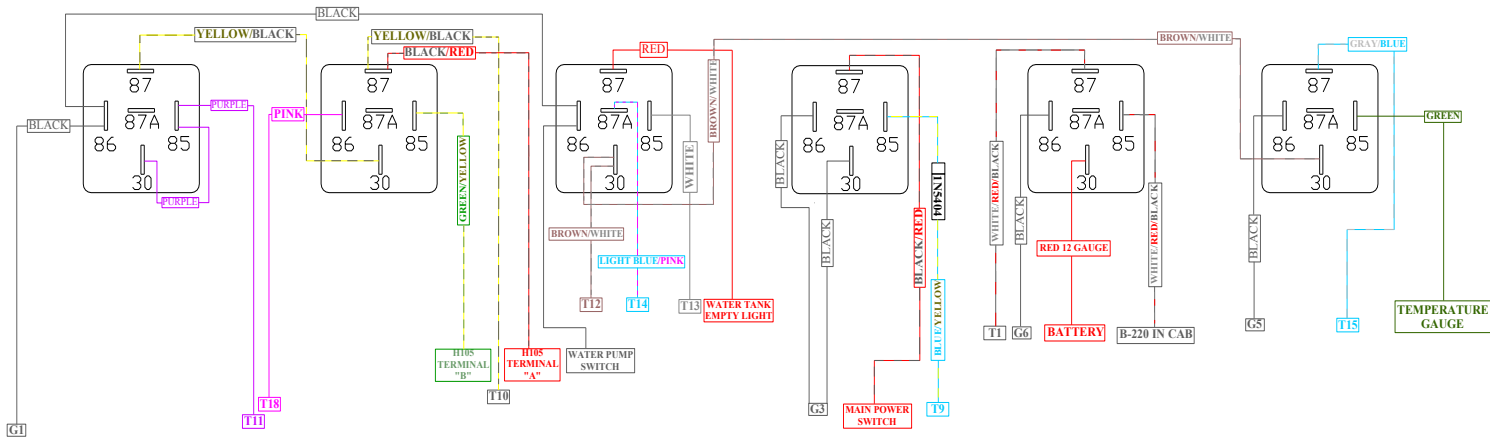
**RELAY 2
RPM CONTROL**

**RELAY 3
WATER PUMP
SOLENOID**

**RELAY 4
WASTE TANK
SHUT OFF
SWITCH**

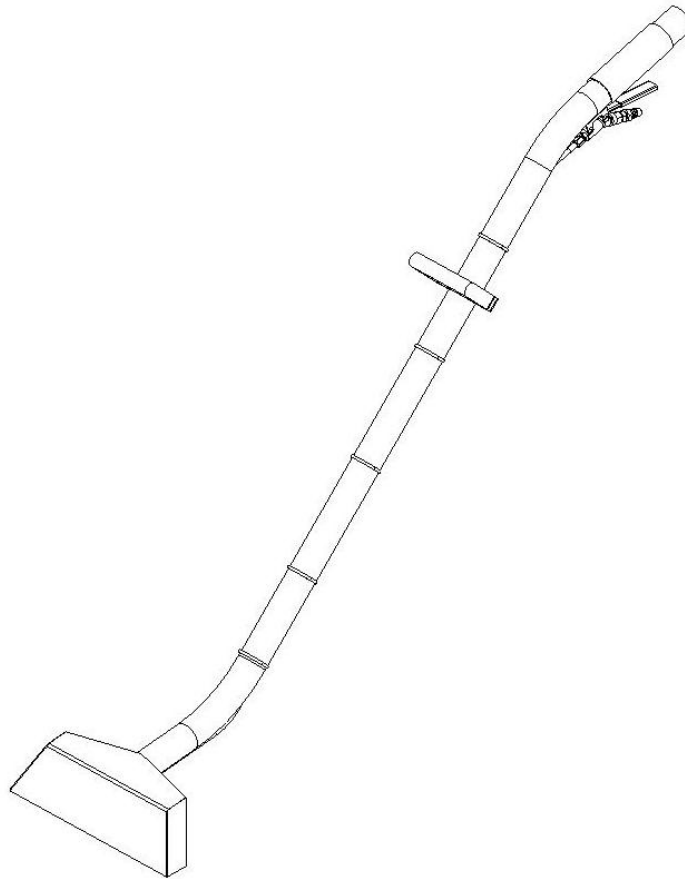
**RELAY 5
MAIN POWER**

**RELAY 6
DIVERTER
SOLENOID**



**V8000Q Relay Wiring
24 July 2008 Rev 3**

SECTION 4

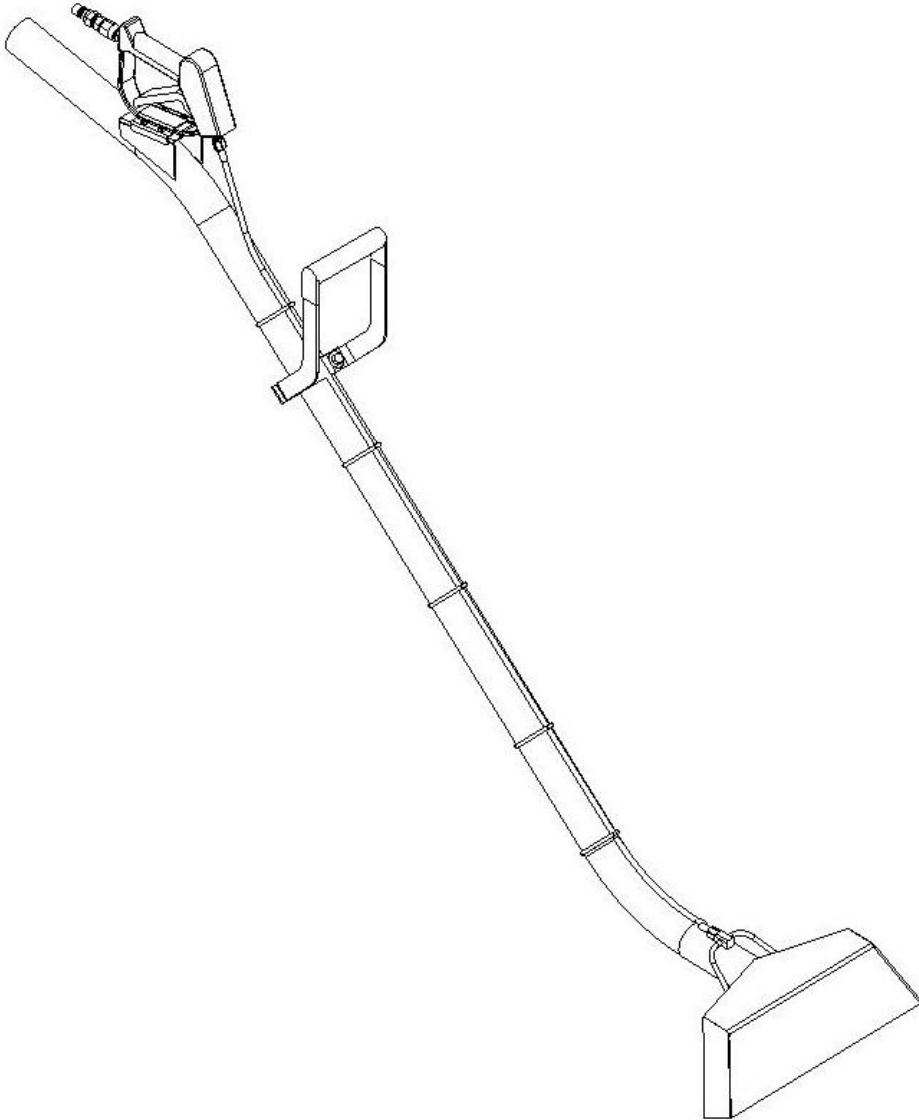


67-001 WAND, LOW PROFILE 2 IN.

Item No.	Part Number	Qty	Description
1	67-001	1	WAND, LOW PROFILE 2 IN
2	25-000	1	DSC, 1/4M X 1/4FP BR
3	27-022*	1	VLV, WAND STAINLESS STEEL
4	21-050	1	CONN, 1/4 P X 1/4 T BRASS
5	18-021	1	HOSE, 3/16 X 51 1/4FT X 1/4FT
6	24-000	4	TIP, SPRAY 95015X1/8P SST

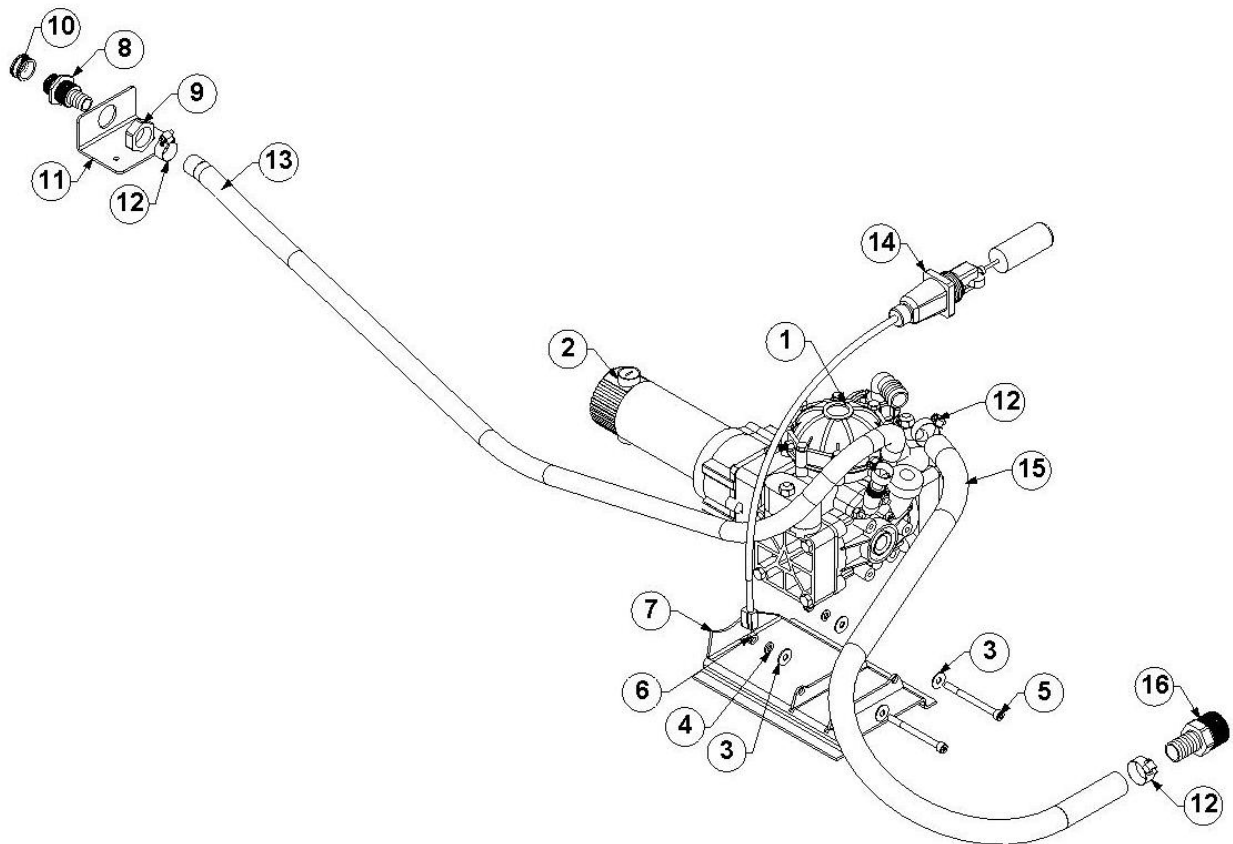
*48-020 KIT,REPAIR, STAINLESS WAND VLV

SECTION 4



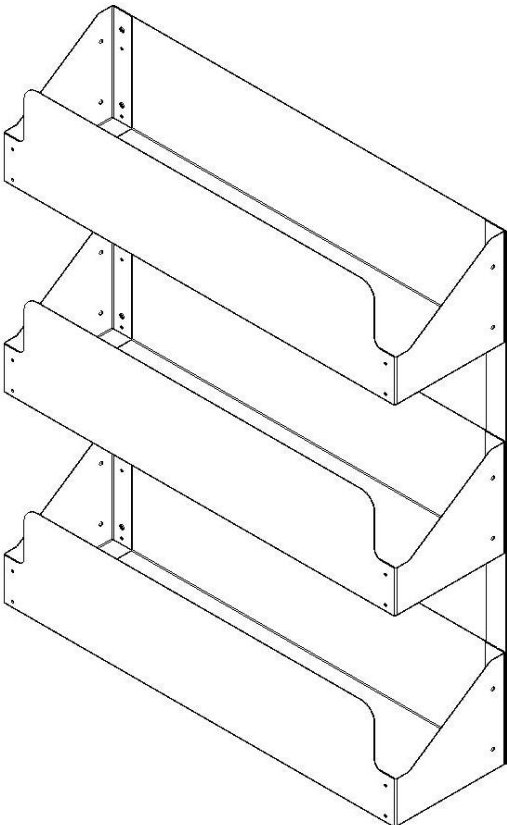
67-003 WAND, ERGONOMIC W-SPRAYER

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

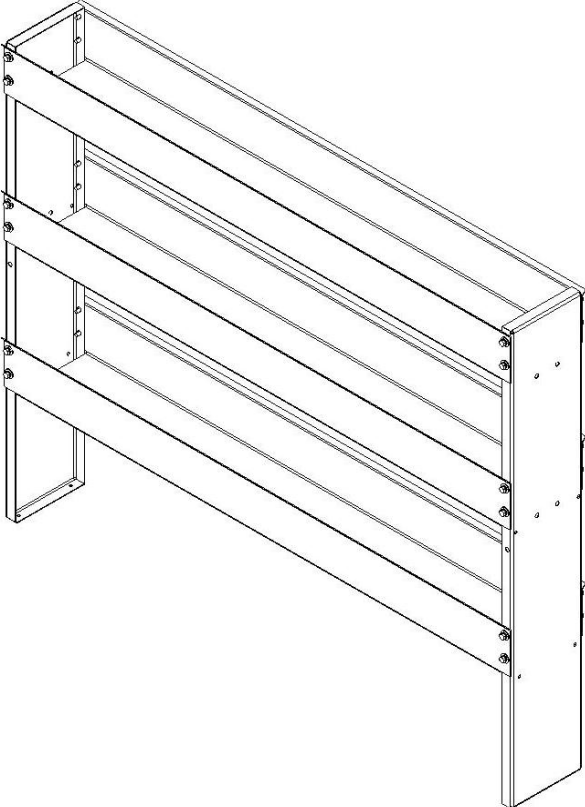
10. ACCESSORIES**68-003 KIT, WASTE PUMP EXTERNAL**

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

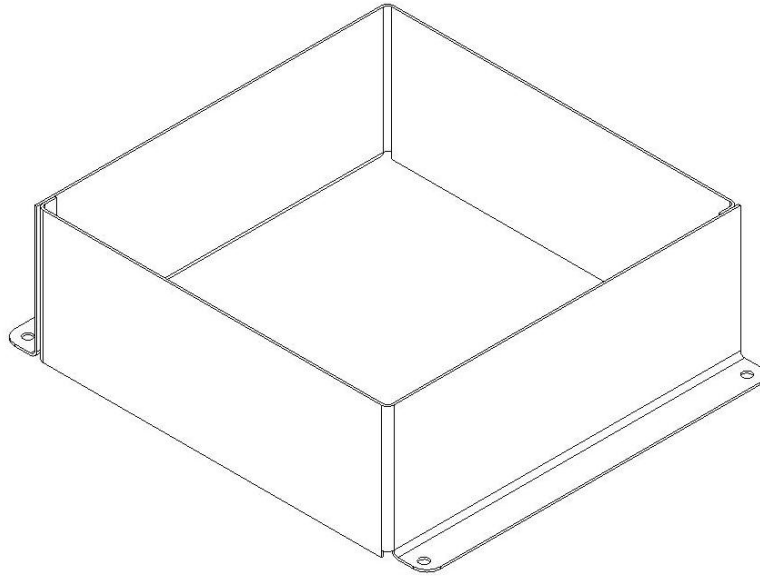
SECTION 4



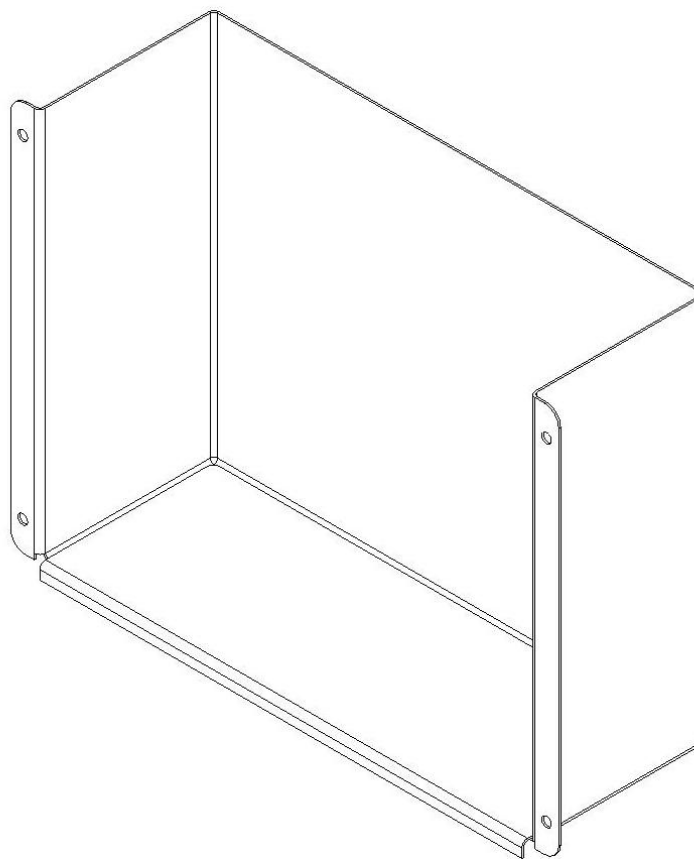
68-102 KIT, VORTEX STORAGE RACKS



68-013 ASSY, VAN STORAGE UNIT SS

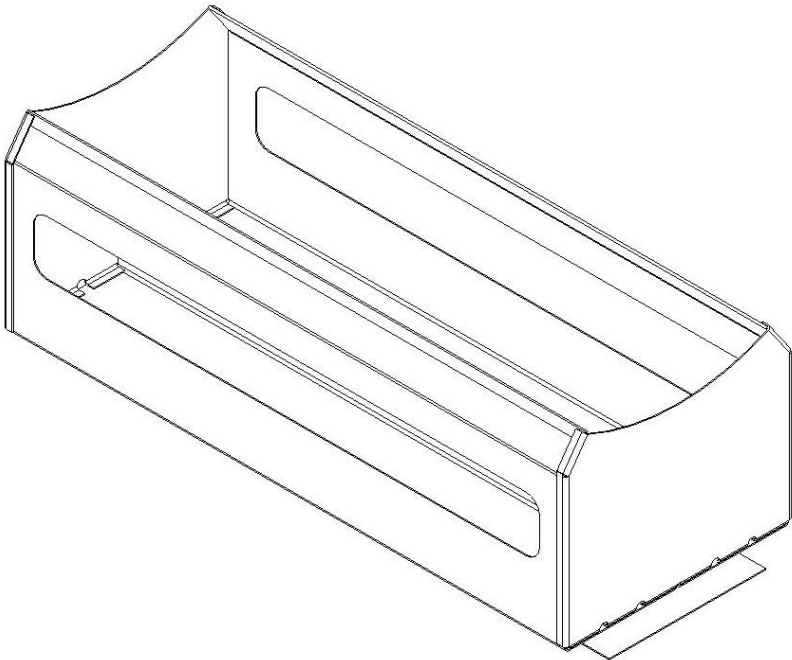


68-014 ASSY, SINGLE 5 GAL JUG HOLDER

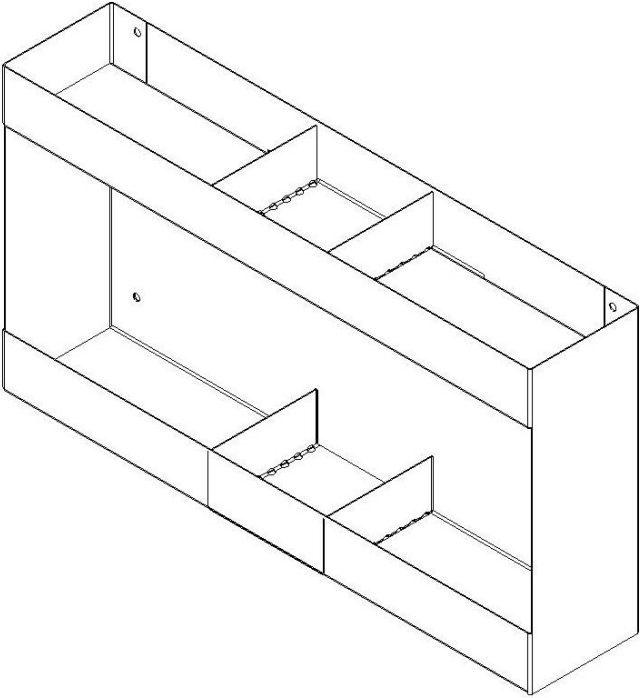


68-015 ASSY, FURN BLOCK HOLDER SS

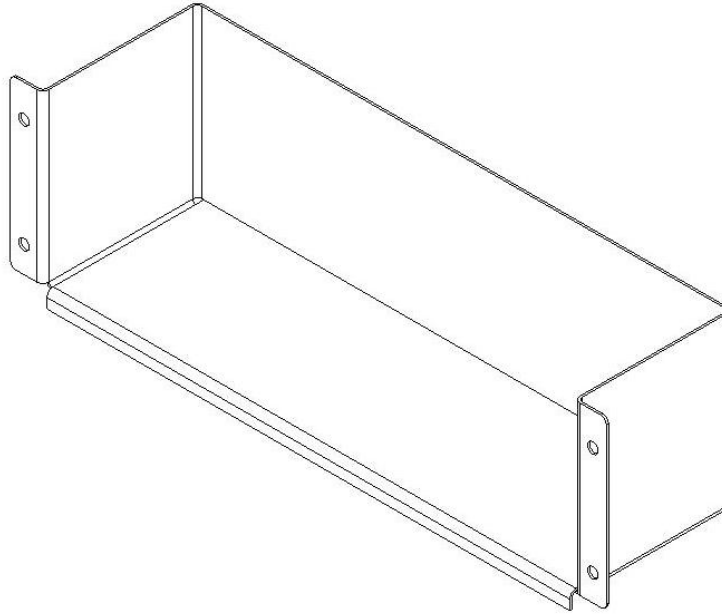
SECTION 4



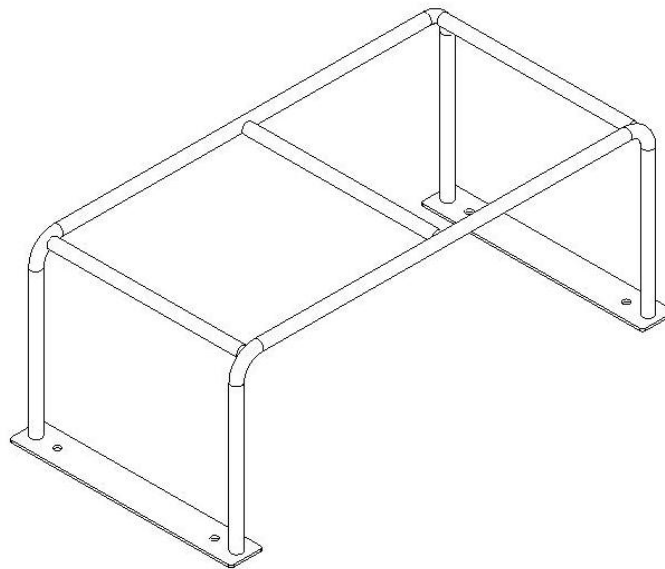
68-016 RACK, DOUBLE CHEMICAL



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

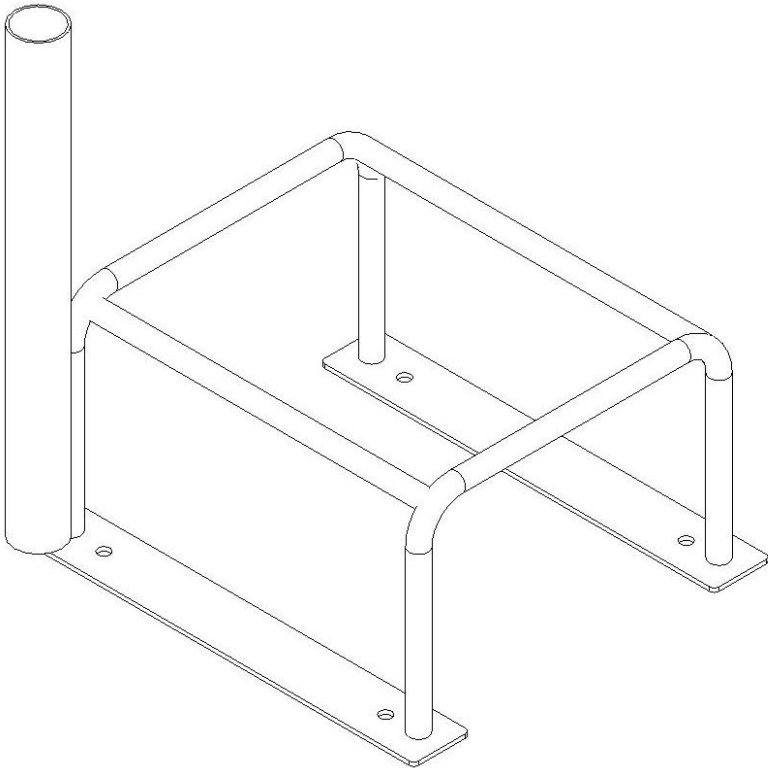


68-019 SPRAY BOTTLE HOLDER SS

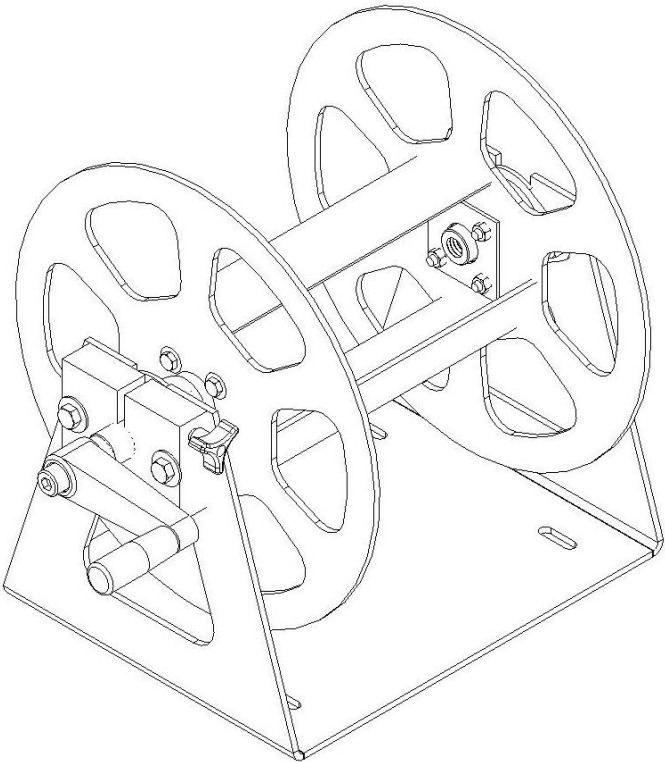


68-022 ASSY, DBL PMP UP SPRAY RK, SS

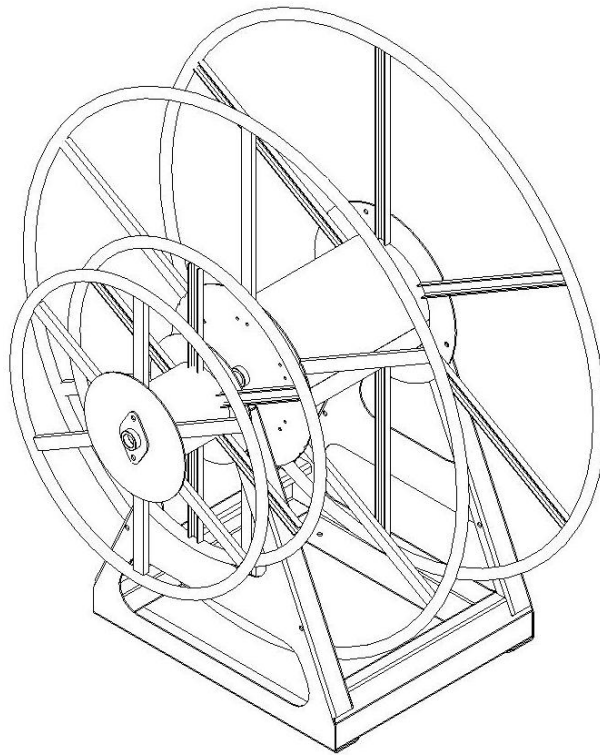
SECTION 4



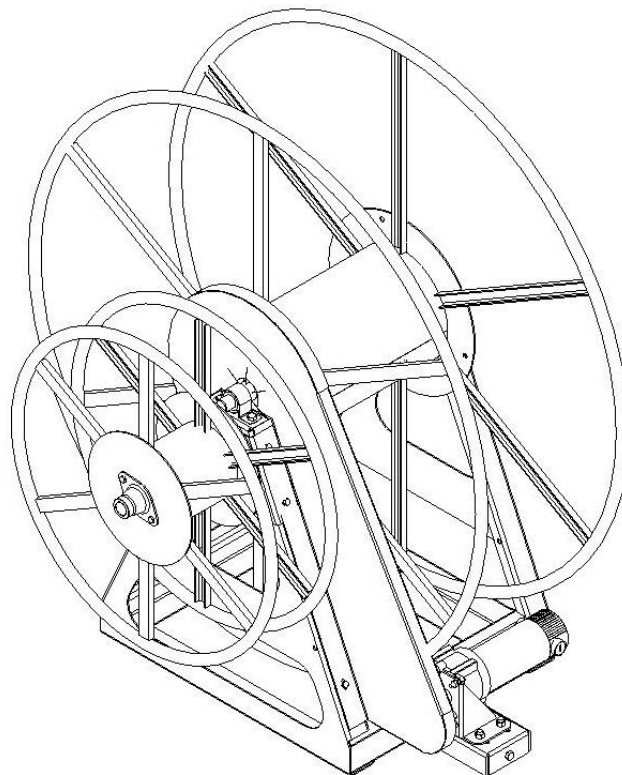
68-024 ASSY, SNG PMP UP SPRAY RK, SS



68-023 ASSY, REEL HP SOLUTION

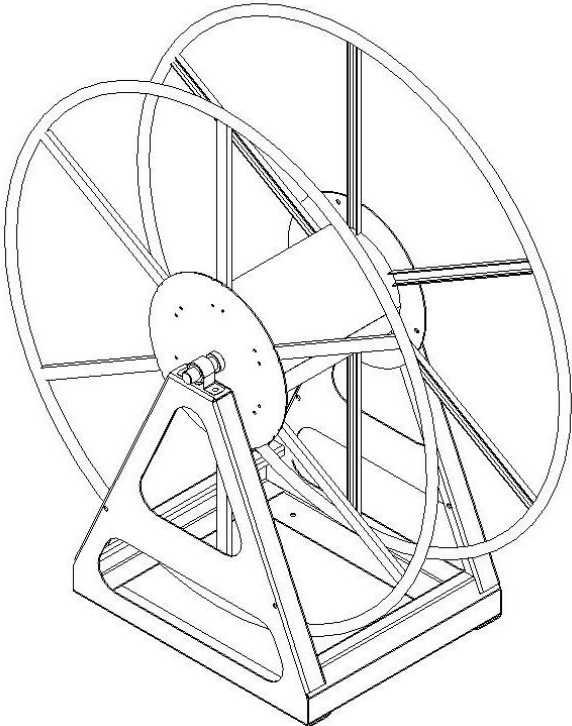


68-025 ASSY, HOSE REEL HIGH PROFILE

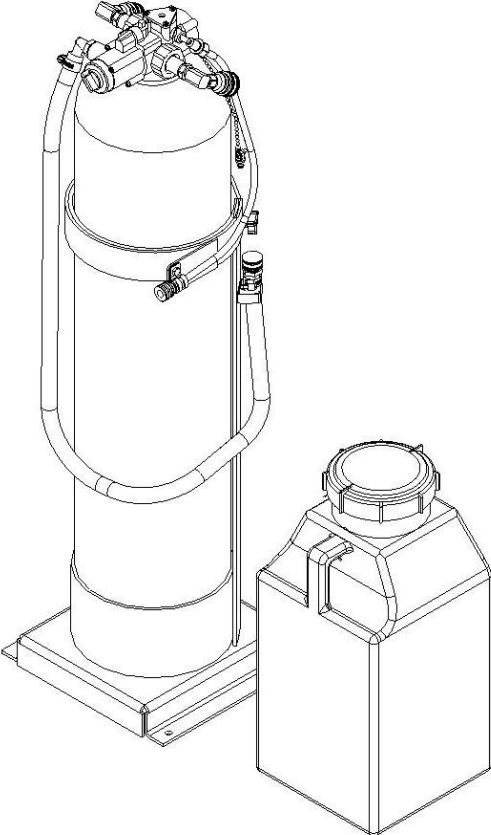


68-033 ASSY, HOSE REEL H. PROFILE W-MTR

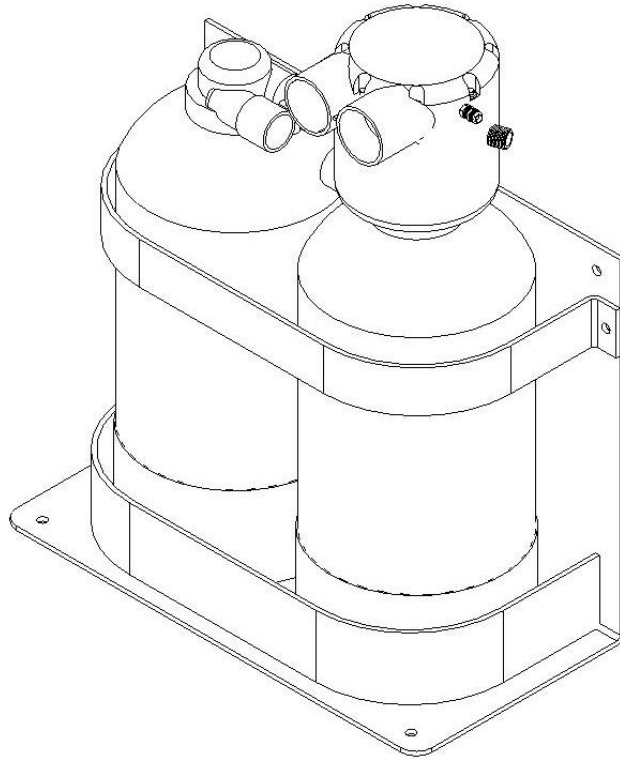
SECTION 4



68-037 ASSY, HOSE REEL VAC ONLY



68-045 ASSY, WATER SOFTENER



68-109 ASSY, KIT WATER SOFTENER VRTX

SECTION 5: **SERVICE BULLETINS**

11. SERVICE BULLETINS

Information IB07-L-002A Understanding DPF (Diesel Particulate Filter) Regeneration; Modes of Regeneration Quick Reference Guide

Issue Date: December 2007

Affected Vehicle:

- ✚ 2007 and newer Isuzu N-Series
- ✚ 2007 and newer GMC and Chevrolet W-Series
- ✚ 2007 and newer Isuzu F-Series
- ✚ 2007 and newer GMC and Chevrolet T-Series
- ✚ 2007 and newer GMC and Chevrolet C-Series Equipped with DPF (Diesel Particulate Filter)

This bulletin is being revised to further clarify DPF Regeneration Modes. Please discard Information Bulletin IB07-L-002.

Service Information:

Additional information regarding DPF Regeneration can be found in the Owner's Manual, Service manual, the driver side sun visor label or on the Emission System Operation video. For your convenience, this video may be downloaded from the following website WWW.ISUZUDIESELENGINE.COM

DPF Lamp and Switch Identification

Green DPF Lamp:



- ✚ When illuminated this lamp indicates the DPF is actively regenerating.
No action is required.

Amber/Orange DPF Lamp:

Red DPF Lamp:



(One indicator with two possible colors)

- ✚ When this lamp is Amber/Orange the DPF filter is dirty. Filter regeneration is necessary at this time.
- ✚ When driving continues without regeneration, this DPF lamp will change from Amber/Orange to RED.
- ✚ Continuing to drive the vehicle with the red lamp illuminated can cause filter damage.

Malfunction Indicator Lamp (MIL):



- ✚ This lamp indicates a possible concern with engine and/ or emissions performance.

DPF Switch



N-Series Regeneration Modes

Automatic Regeneration

- ✚ ECM monitors sensor inputs and determines DPF regeneration is necessary
- ✚ The ECM commands the green DPF lamp “ON”
- ✚ Vehicle should be driven normally

Note: If idling at a stop or in “Park” during this regeneration mode, the engine RPM will increase and the exhaust brake will activate.

- ✚ This process occurs at 180 mile intervals or sooner

Emergency Regeneration

Running Option 1

- ✚ Drive vehicle above 30mph
- ✚ ECM monitors sensor input and determines if regeneration is possible
- ✚ The ECM commands the green DPF lamp “ON”
- ✚ Vehicle should be driven normally

Note: If idling at a stop or in “Park” during this regeneration mode, the engine RPM will increase and the exhaust brake will activate.

Switched Option 2

- ✚ Set the parking brake, engine running and transmission in Park or Neutral Position
- ✚ Press DPF switch
- ✚ Green DPF lamp comes “ON”
- ✚ Engine RPM increases and exhaust brake activation for about 20 minutes
- ✚ **If this is interrupted must press DPF switch to restart the process**

SECTION 5

- ✚ ***Important: Once Emergency Switched or Selectable Regeneration Modes have been selected the Automatic and Emergency Running Modes are no longer available.***
- ✚ ***Automatic and Emergency running modes will become available after Switched or Selectable DPF regeneration is completed.***

Selectable Regeneration

- ✚ ***Note: For quickest possible regeneration, be sure the vehicle is at operating temperature before performing selectable regeneration.***

- ✚ **Engine running and in “Park” Position**
- ✚ **Parking brake is applied**
- ✚ **Press and hold the DPF switch until the amber DPF lamp turns “ON”**
- ✚ **If amber DPF lamp goes “Off”, regeneration is not necessary.**
- ✚ **If the amber DPF lamp stays on “ON”, it means that regeneration is possible**
- ✚ **Press the DPF switch again to start regeneration**
- ✚ **The green DPF lamp and then the amber DPF lamp will turn “ON” indicating that regeneration is taking place. This will take about 20 minutes.**
- ✚ **Engine RPM will increase and the exhaust brake will activate**

Caution: The following actions will interrupt the stationary type regeneration. Failure to restart and complete the regeneration cycle will result in filter clogging.

- ✚ **Applying the accelerator pedal.**
- ✚ **Shifting into gear (with Automatic Transmission)**
- ✚ **Pressing the clutch pedal (Manual Transmission)**
- ✚ **Engine speed increases.**

Limp Home Mode

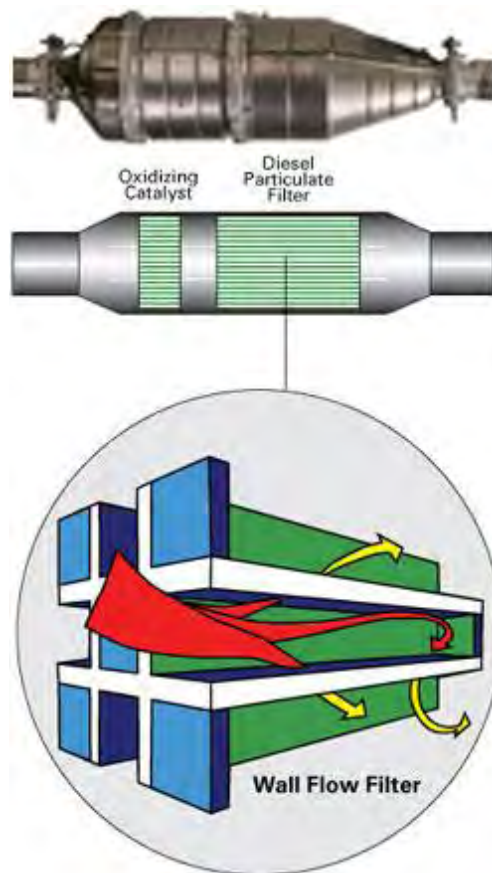
This condition should only be diagnosed and repaired by an Isuzu trained technician.

- ✚ **MIL lamp is on, vehicle speed is reduced**
- ✚ **Technician diagnosis required**
- ✚ **IDSS induced regeneration (fast or slow) based on diagnosis**
- ✚ **Slow process takes 2 hours**

Diesel Particulate Filter (DPF)

To reduce particulate matter, a Diesel Particulate Filter (DPF) captures soot and larger sulfate particles in a series of ceramic honeycomb channels. Exhaust gases are directed into a cordierite or silicon carbide molded substrate with closed ends. Gas passes through the porous material, and the particulates are trapped and accumulate on the channel walls. As is used currently, an Oxidizing Catalyst will control hydrocarbons.

- + Captures soot and sulfate particles
- + Oxidizing Catalyst controls hydrocarbons
- + Exterior engine and exhaust temperatures same as pre-2007 models during the regeneration process
- + Harmless ash is left as residue
- + Automatic or driver-initiated process



SECTION 5

2007 Bulletins

Information IB07-K-001 Aisin Automatic Transmission Service
Reminder

Issue Date: September 2007

Models:

- ✚ 2008 and prior Isuzu N-Series Commercial Models
 - ✚ 2008 and prior Chevrolet W-Series Medium Duty Tilt Cab Models
 - ✚ 2008 and prior GMC W-Series Medium Duty Tilt Cab Models
- Equipped with Aisin A445 (4-Speed) or A465 (6-Speed) Automatic transmission

This bulletin supersedes bulletin number 04-07-30-008A.

Please discard previous bulletin.

This bulletin is being issued to reiterate Isuzu's recommended service interval and procedure when servicing the Aisin A445 (4-Speed) or A465 (6-Speed) Automatic transmission.

Owner's Manual recommendation:

Service Type	A445 (4-Speed)	A465 (6-Speed)
Auto Trans. Fluid	41,600 km (26,000 mi).	48,000 km (30,000 mi).
External A/T Filter	41,600 km (26,000 mi).	48,000 km (30,000 mi).
Fluid Type	Dexron III ATF	Isuzu SCS (Slip Control System) Transmission Fluid
Fluid Part Number (1 quart bottle)	Isuzu:2-90531-815-0 GM: 97720655	Isuzu:2-90531-200-0 GM: 97779615
Fluid Part Number (5 gallon tub)	Isuzu:2-90531-816-0 GM: 97779642	Isuzu:2-90531-201-0 GM: 97779553

CAUTION: Genuine Isuzu SCS Transmission fluid and Dexron III are not compatible. Mixing or incorrect application of this fluid in the Aisin A465 transmission will result in transmission damage.

IMPORTANT: It is NOT RECOMMENDED or REQUIRED to change the internal transmission valve body filter.

After servicing the transmission, the fluid level MUST be set/ adjusted correctly. Refer to the Service Manual for the proper automatic transmission fluid adjustment procedure.

Notice: If the transmission fluid level is overfilled or underfilled, it may damage the transmission.

2007 Bulletins

Information 07-07-30-013 Aisin Automatic Transmission “Slip Control System” (SCS) New Fluid Reminder

Issue Date: May, 2007

Models:

- + 2007 Chevrolet W-Series Medium Duty Tilt Cab Models
- + 2007 GMC W-Series Medium Duty Tilt Cab Models
- + 2007 Isuzu NPR Commercial Models
with 12,000 lb GVW and 5.2L 4HK1-TC Diesel Engine (DPF Filter System)
- + 2008 Chevrolet W-Series Medium Duty Tilt Cab Models
- + 2008 GMC W-Series Medium Duty Tilt Cab Models
- + 2008 Isuzu NPR/NPR-HD/NQR/NRR Commercial Models
with 5.2L 4HK1-TC Diesel Engine

These Aisin transmissions require a specialized “Slip Control System” (SCS) fluid. This fluid was developed to work in conjunction with new clutch pack material to provide a positive shift and to reduce wear. This new Isuzu SCS Automatic Transmission Fluid will need to be used whenever an Aisin transmission with the SCS feature is serviced.

After servicing the transmission, the fluid level **MUST** be set/adjusted correctly. Refer to the Service Manual for the proper automatic transmission fluid adjustment procedure.

+ Notice: If the transmission fluid level is overfilled or underfilled, it may damage the transmission.

SECTION 5

Parts Information

For Chevrolet and GMC Models

Part Number	Description	Qty
97779615	Fluid, A/Trans Aisin SCS ATF	1 qt
97779553	Fluid, A/Trans Aisin SCS ATF	5 gal

For Isuzu Models

Part Number	Description	Qty
2-90531-200-0	Fluid, A/Trans Aisin SCS ATF	1 qt
2-90531-201-0	Fluid, A/Trans Aisin SCS ATF	5 gal

2007 Bulletins**Information 07-06-01-010 Information on Duramax
and Isuzu Diesel Engine Low Ash Oil– New Oil****Issue Date: June, 2007****Models:**

- + 2007 Chevrolet W-Series Medium Duty Tilt Cab Models**
- + 2007 GMC W-Series Medium Duty Tilt Cab Models**
- + 2007 Isuzu NPR Commercial Models**
Equipped with 5.2L 4HK1-TC Diesel Engine (DPF System)
(VIN 6 — RPO 1L5) and 12,000 lb GVW
- + 2007 and Newer Chevrolet T6500/T7500/T8500/C6500/C7500/C8500**
- + 2007 and Newer GMC T6500/T7500/T8500/C6500/C7500/C8500**
- + 2007 and Newer Isuzu FTR/FVR/FXR/HTR/HVR/HXR**
Equipped with 7.8L Diesel Engine
(DPF System) (VIN B — RPO LF8)
- + 2007 Chevrolet Express, Kodiak C4500-C5500, Silverado HD**
- + 2007 GMC Savana, Sierra HD, Top Kick C4500-C5500 Series Equipped with**
6.6L Duramax Diesel Engine (DPF System)
(VIN 6 — RPO LMM)
- + 2008 Chevrolet W-Series Medium Duty Tilt Cab Models**
- + 2008 GMC W-Series Medium Duty Tilt Cab Models**
- + 2008 Isuzu NPR/NPR-HD/NQR/NRR Commercial Models Equipped with 5.2L**
4HK1-TC Diesel Engine (VIN 6 — RPO 1L5)

Duramax and Isuzu engines are factory filled with high quality engine oil when they are built. This oil has an API service rating of CJ-4 and Low Ash intended for Diesel Particulate Filtration (DPF) systems. For these vehicles equipped with DPF systems, Isuzu recommends engine oil that supports DPF (Low Ash Oil) and API service rating of CJ-4 be used when performing scheduled maintenance or repairs.

Refer to the Owner Manual for oil viscosity recommendations.

Notice: If you do not use this recommended oil in Duramax and Isuzu vehicles fitted with DPF, both the engine and the DPF may break down and fuel economy may decrease. Therefore, be sure to use the recommended oil type.

