TITAN 575 Owner's Guide and Maintenance Schedule

HydraMaster
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Mukilteo, Washington 98275

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Introduction

This Owner's Guide provides you with important Contact Information, Warnings and Precautions, Specifications, Operating Instructions and Maintenance Logs. In the back inside cover of this guide, you will also find a CD that contains the digital Owner's Manual.

HOW TO USE THESE RESOURCES

The Owner's Guide is to be used for quick reference only and is not intended to be a comprehensive source of information. Refer to the Owner's Manual when more detailed information is needed.

The Machine Maintenance Log is located in the Owner's Guide. It is wise to keep this Guide in a visible location near the truckmount so that the log stays up to date. **Please note that you must keep maintenance records up to date and that you may be required to furnish maintenance records to HydraMaster before any warranty is honored.**

The digital Owner's Manual contains information on everything from cleaning to truckmount operation and maintenance. It also contains detailed machine parts lists as well as troubleshooting guides. You should become familiar with the material in the Owner's Manual as it contains information that is essential for safe operation and increased truckmount reliability.

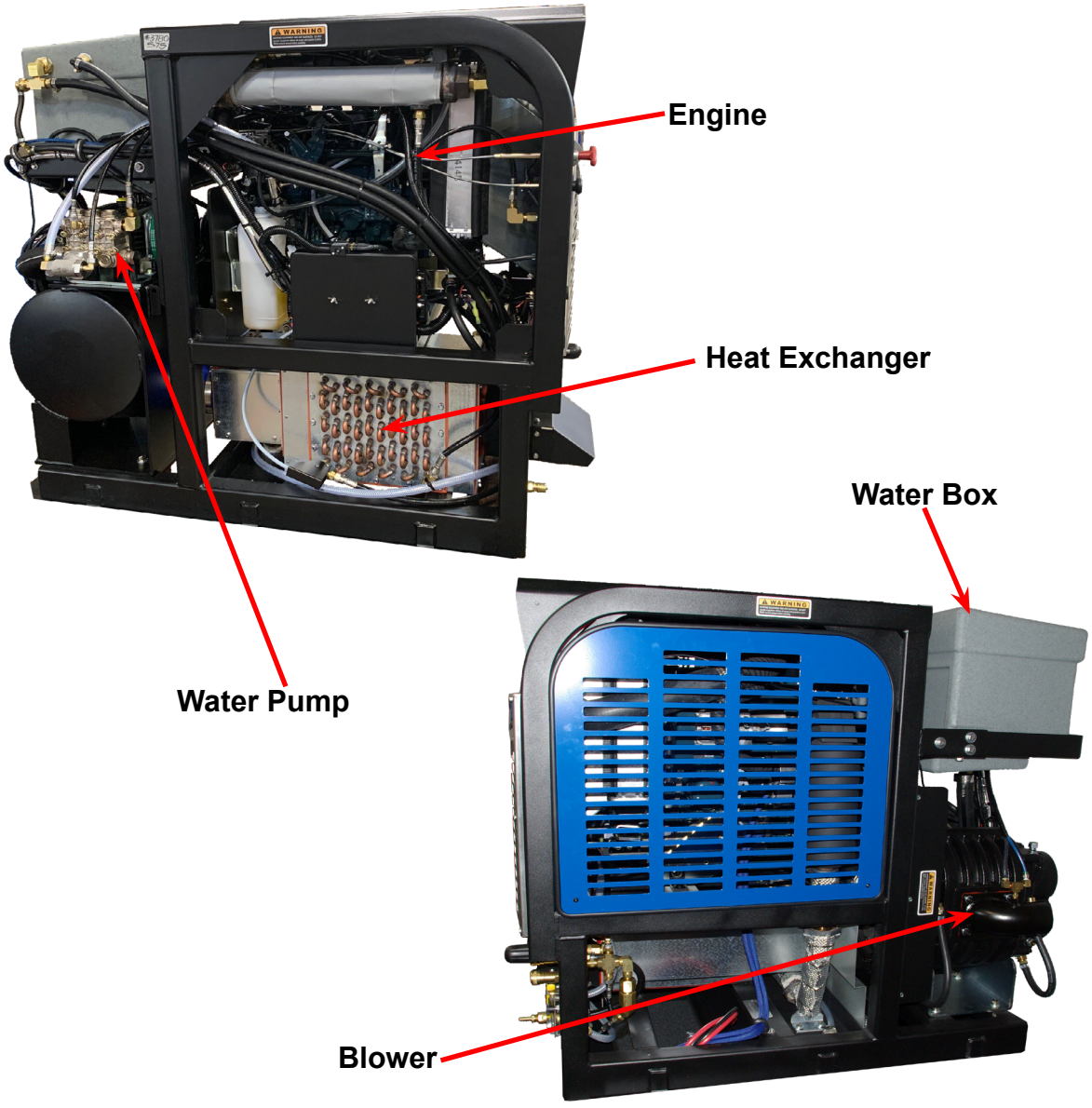
This Owner's Guide contains the following sections:

- Contact Information
- Warnings, Cautions and Notices
- Responsibilities
- System Concept
- Machine Specifications
- Optional Equipment
- Spare Parts
- High Altitude Operation
- Local Water Precautions
- **Operating Instructions**
- **Maintenance Logs**

SYSTEM CONCEPT

This is how the Titan 575 works:

1. Incoming water enters the water box and is pressurized by the high pressure water pump. The water is heated by engine coolant in the tube and shell heat exchanger and then by the engine and blower exhaust in the cross flow heat exchanger.
2. Cleaning solution is then injected into the pressurized water stream and the heated solution is delivered to the cleaning tool.
3. The solution is recovered by the vacuum generated by the vacuum pump and is collected in the recovery tank for proper disposal.



CONTACT INFORMATION

If you have any questions regarding the operation, maintenance or repair of this machine, please contact your local distributor.

To find a local distributor, please visit our website at
http://hydramaster.com/HowToBuy/DealerLocator.aspx

If your question cannot be resolved by your distributor or by the information within this guidel, you may contact HydraMaster direct using the following phone numbers.

HOURS	TELEPHONE NUMBERS	E-MAIL ADDRESSES
Monday-Friday 7:00 a.m. to 5:00 p.m. Pacific Time	**Technical Support** (800) 426-1301 FAX : (800) 426-4225	**Technical Support** techsupport@hydramaster.com
	Customer Service/Parts (800) 426-1301 FAX : (800) 426-4225	**Customer Service/Parts** parts@hydramaster.com

When calling your distributor, be sure to reference the serial number and date of purchase.

FOR YOUR REFERENCE:

Serial No. _____

Date of Purchase: _____

Purchased From (Distributor): _____

WARNINGS, CAUTIONS AND NOTICES

⚠WARNING

HydraMaster uses this WARNING symbol throughout the this Owner's Guide to warn of possible injury or death.

CAUTION

This CAUTION symbol is used to warn of possible equipment damage.

NOTICE

This NOTICE symbol indicates that federal or state regulatory laws may apply, and also emphasizes supplemental information.

Warnings and Cautions specific to the Titan 575 include the following:

⚠WARNING

During the operation of the truckmount many components are in motion. Never touch any part of the truckmount that is in motion. Serious injury may result.

⚠WARNING

During the operation of the truckmount many surfaces will become extremely hot. Never touch hot surfaces. Serious injury may result.

⚠WARNING

The operation of this truckmount can produce noise levels exceeding 85 decibels to a distance of 10 ft. The Occupational Safety and Health Administration (OSHA) recommends the use of hearing protective equipment if a person is exposed to an average of 85 decibels over an 8-hour period. Check with local and state agencies concerning hearing conservation rules.

⚠WARNING

During the operation of the truckmount carbon monoxide and other toxic fumes are produced. Position the vehicle so that any fumes produced will be directed away from inhabited areas and any points of building entry (doors, windows, air conditioning units, fans, etc.). Do not occupy the vehicle while the truckmount is in operation. Serious injury may result.

⚠WARNING

During the operation of the truckmount, chemicals known to the State of California to cause cancer, birth defects and other reproductive harm are produced by the engine exhaust.

⚠WARNING

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

Transporting a vented fuel container that presently contains, or has ever contained in the past, a flammable liquid is strictly forbidden by HydraMaster and by federal and state regulations. Doing so will increase the risk of fire and explosion. Serious injury or death may result.

⚠WARNING

Never smoke in or around the truckmount. Doing so will increase the risk of fire and explosion. Serious injury or death may result.

⚠WARNING

During the operation of the truckmount the exhaust system will become extremely hot. Keep all flammable materials away from the truckmount exhaust system. Failure to do so will increase the risk of fire and explosion. Serious property damage may result.

CAUTION

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

CAUTION

Never perform cleaning operations when the truckmount engine is running at the IDLE throttle position. Failure to do so will increase the risk of serious component or engine damage.

CAUTION

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

CAUTION

Never use concentrated acids or solvents (including d-limonene) in the truckmount water system or chemical system. Use of these products will cause serious component damage.

CAUTION

Never operate the truckmount with a water hardness reading measuring 3.0 grains per gallon or higher. Using reading than 3.0 grains per gallon will cause scale to build up inside the truckmount water system. Scale build up causes serious component damage. Test all water prior to use and use water softening equipment if necessary.

CAUTION

Never allow water to freeze inside the truckmount. Serious component damage will occur. Perform all freeze guarding procedures outlined in the digital Owner's Manual.

CAUTION

Many vehicles have critical components mounted directly below the floor that can easily be damaged. Before drilling holes in the floor of the vehicle inspect the underside of the vehicle for critical components. Failure to do so may result in damage to the vehicle.

CAUTION

Use of the vacuum recovery system when stripping or otherwise removing wax from floors is specifically excluded as an approved use of the truckmount. Failure to follow this exclusion may lead to component failure and will invalidate your warranty.

CAUTION

Use of the vacuum recovery system for "dry cleaning", without corresponding solution application (i.e. duct cleaning), is specifically excluded as an approved use of the truckmount. Failure to follow this exclusion may lead to component failure and will invalidate your warranty.

CAUTION

If concentrated acids or solvents are used to pre-treat surfaces before power washing, do not recover them through the vacuum system. Failure to follow this exclusion may lead to component failure and will invalidate your warranty.

RESPONSIBILITIES

Purchaser's Responsibilities

- Prior to purchasing a van, ensure that the payload is suitable for all of the equipment that will be installed and transported. This includes and is not limited to: the truckmount, recovery tanks, fresh water tanks and any other on-board water, hose reels, hoses, cleaning tools, chemicals and drying equipment. Payload capacity information is available through the auto dealer, the manufacturer's web site, and is also located on the door pillar of the driver's side door.
- Purchase a heavy duty Group 24 (550 CCA or better) battery for this truckmount. This is normally available from the installation dealer.
- Prior to dropping your van off at the distributor for the truckmount to be installed, have a spray-on bed liner applied to the floor such as Rhino Lining® or Line-X®.

NOTICE

Plywood and carpet are not recommended.

- Prior to operating the truckmount, read the Owner's Manual in its entirety and familiarize yourself with the information contained here. Special attention should be paid to all ***Warnings and Cautions***.
- The distributor is responsible for the correct installation of the truckmount. The distributor is also responsible to train you in the correct and proper operation and maintenance of the truckmount.

NOTICE

Any modification of the truckmount may void the warranty.

Distributor's Responsibility

Acceptance of Shipment

Before accepting the truckmount, check the following:

1. The truckmount should be free from any damage during shipping. Do not sign the delivery receipt until you have closely inspected the truckmount and noted any damage on the delivery receipt. Hidden damage may be present even if the box looks okay. It is recommended that the box be opened before you sign for the shipment.
2. Check the packing list and verify that all items are accounted for.

Installation Responsibilities

- Ensure proper payload capacity. It is the distributor's responsibility to verify that the equipment package does not exceed the vehicle capacity.
- Ensure installation of a safe fuel tap system and through-floor fittings as provided by HydraMaster.
- Ensure proper placement of the truckmount, recovery tank, fresh water tank, and accessories in the vehicle, and check that they are secured with bolts and back up plates. The distributor should verify that the owner is in agreement with the layout.
- Ensure proper connection of the fuel lines.
- Ensure proper connection and installation of the battery. Verify that the battery is in accordance with HydraMaster's recommendation.
- Check the pump, vacuum blower and engine oil levels prior to starting the truckmount.
- Start and run the truckmount and check that all systems function properly.
- Test all hoses, wands and other accessories for correct operation.
- Ensure timely return of the document package.

Training

The distributor should provide a thorough review of the Owner's Manual with the purchaser along with instruction and familiarization in:

1. How all the truckmount's systems function.
2. All safety precautions and their importance.
3. How to correctly start and shut down the truckmount.
4. How to correctly clean with the truckmount.
5. Where and how often to check and change component oil levels.
6. Freezing damage and how to avoid it. This includes explaining proper freeze guarding procedures.
7. How to do basic troubleshooting of the truckmount.
8. Hard water damage and how to avoid it. This includes how to determine if hard water exists in your area and the installation and use of water softening systems.
9. The truckmount's warranty and warranty procedures.

MACHINE SPECIFICATIONS

Frame Dimensions	26.0" W x 45" D x 39" H	
Weight	900 lbs	
Engine - WG 972 Kubota	Oil Type	5W-30 Synthetic
	Capacity	3.2 quarts when changing oil and filter
	Engine rpm	High - 3,000 rpm
		Idle - 1,500 rpm
	Fuel Consumption	1.6 gph
Ignition	Keyless	
Vacuum Blower - Tuthill 4007 Competitor (Dual Splash Lubrication)	Max. Vac.	12” Hg
	Oil Type	PneuLube or other ISO 100 rating
	Gear End Capacity	Approx. 5.8 oz.
	Drive End Capacity	Approx. 4.7 oz.
	Blower rpm	3,000 rpm
Water Pump- General Pump	Oil Type	15W-40
	Capacity	14 oz.
	Pump Rate	4.0 gpm
	Pump rpm	1,700 rpm
Operating Pressure	0 - 1,200 psi (heated)	0 - 2,000 (no heat) *
Chemical System	Last Step Chemical Injection	

* Pressure washing option

TITAN 575

Heating System	Cross Flow Heat Exchanger	Copper Tube and Shell Heat Exchanger
Standard Equipment	High Pressure Solution Hose	1/4" High Temperature Lined/Vinyl Cover - 100 ft.
	Vacuum Hose	2" Vacuum Hose - 100 ft.
		1-1/2" Wand Whip Line - 10 ft.
	Recovery Hose	10 ft
	Water Box	Rotomolded 7 gallon capacity
Available Equipment	Recovery Tank	70 gallon Universal Tank
	Cleaning Wand/Tool	Evolution Wand
	Garden Hose	
	Chemical Jug	5 gallon
	Battery Box	
	Van Decal	
	Van Installation Kit	
	Owner's Manual (on CD) Owner's Guide (printed)	

NOTICE

The Titan 575 comes standard with an exhaust deflector to which a hose cannot connect. HydraMaster strongly recommends you purchase the Exhaust Thru Floor Kit which directs the hot air outside of the van, away from the machine. This kit is highly recommended for vans with barn doors.

SPARE PARTS

The following table is a list of available Titan 575 spares that distributors may purchase to have on hand for repairs and maintenance.

Part No	Description	Qty
000-010-128	Belt, 9330HD Pump Drive	1
000-010-131	Belt, 3vx450 Eng. Drive	3
000-025-003	Cable, Choke, With Detent	1
000-025-020	Cable, Throttle	1
000-049-023	Filter, Garden Hose Screen	1
000-049-063	Filter, Air	1
000-049-152	Filter, Recovery Tank Basket	1
000-049-153	Filter, Flat URT	1
000-049-256	Filter, Oil - Kubota	1
000-049-257	Filter, Fuel	1
000-052-051	Quick Connect, 440 Female	2
000-052-052	Quick Connect, 660 Male	1
000-056-011	Fuse, 30 Amp Circuit	2
000-074-007	Gauge, Pressure	1
000-074-125	Controller, Temperature	1
000-078-521	Kit, Valve, 4.0 gpm General	1
000-078-522	Kit, Seal, 4.0 gpm General	1
000-087-006	HydraMaster-recommended Lubricant Blower Spray - part number is for 1 can	1 ea
000-149-039	Sender, Temperature	1
000-149-566	Sensor, RTD 6" 90 Degree	1
000-157-022	Switch, Relay	2
000-157-040	Switch, 12V DC, On/Off	2
000-157-152	Switch, Ignition, 3-Way	1
000-169-0171	Valve, 3-Way (Chemical)	1
000-169-022	Valve, 1 1/2" Full Port	1
000-169-160	Valve, 2-Way (Chemical)	1
000-169-213	Valve, 1/4" NPT 3-Way (Heat Selector)	1
000-169-224	Valve, Mechanical 145 Degrees F	1

HIGH ALTITUDE OPERATION

Elevation plays a key role in how the truckmount will operate. Operation at high altitude above 5,000 ft may require a high-altitude carburetor jet. Use of this jet at high altitude will improve power, reduce fuel consumption and help reduce excessive carbon build-up in the exhaust and heat exchanger systems.

Contact the local Kubota dealer or HydraMaster to obtain the proper jet size. Find your local Kubota dealer at http://www.kubotaengine.com/us-engine

LOCAL WATER PRECAUTIONS

The quality of water varies greatly. Many areas have an excess of minerals in the water which results in what is commonly called “hard water.” These minerals tend to adhere to the insides of heater coils and other parts of the machines causing damage and a loss of cleaning effectiveness. This influences the reliability and efficiency of equipment in direct proportion to the level of hardness.

Hard Water Advisory

HydraMaster recognizes that any hard water deposits which might occur within the water system of our truckmounts is a serious problem. The precision technology of truckmount heat exchanger systems is intolerant of any foreign material. Hard water deposits will ultimately decrease the performance of the system and are expected to seriously lower the reliability of the machine.

To validate a machine’s warranty, HydraMaster requires that all machines operating in designated “Hard Water Areas” (3.0 grains or more per gallon) be fitted with a water softening system, or a properly installed magnetic-type descaler must be used and maintained. Periodic descaling or acid-rinsing alone is not adequate in these areas. HydraMaster does not recommend any particular type or brand; however, the relative effectiveness of some types of magnetic descalers or softeners may require additional periodic use of descaling agents.

HydraMaster also recommends, in the strongest possible terms, that machines in all areas be fitted with a water softening system for improved operation and reliability.

CAUTION

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

Hard Water Area Map

The hard water map, shown in Figure 1, defines hard water areas in the continental United States which compromise fluid related components such as hoses, fittings, heaters, pumps, valves and water-cooled engines. For other countries, hard water area maps can be obtained from geological societies.

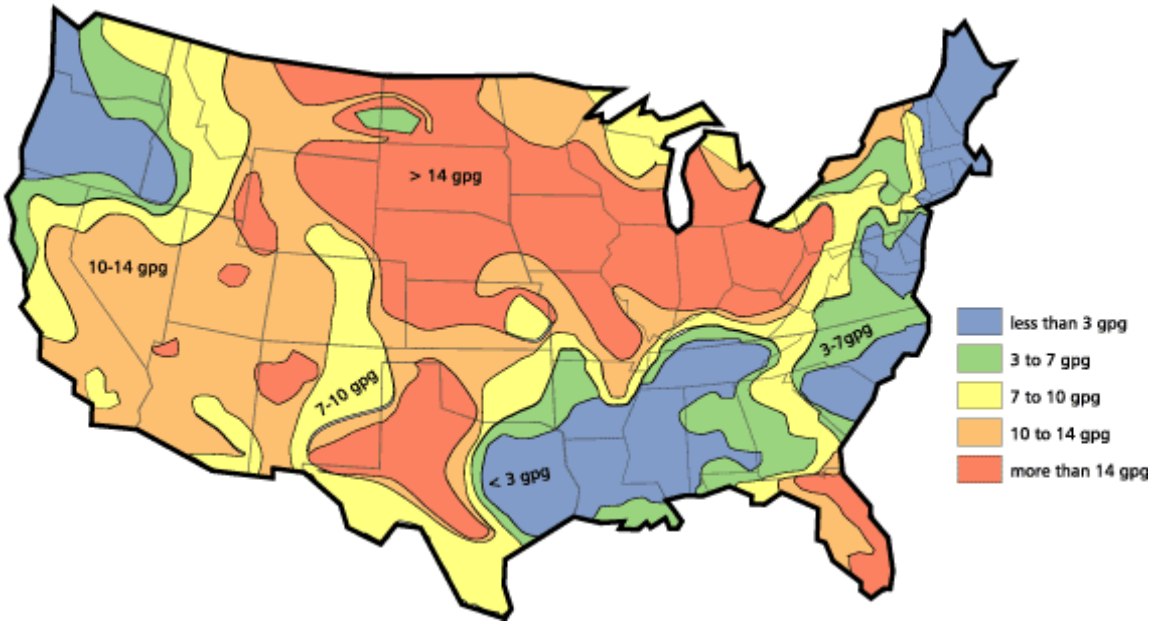


Figure 1. Hard Water Map of Mainland United States

NOTICE

The map shown in Figure 1 is provided for general reference only. Water hardness in your geographical location should be confirmed by testing.

Water Softener

Cleaning efficiency and equipment life is increased, chemical use decreased, and the appearance of cleaned carpets enhanced when water softeners are incorporated in hard water areas. HydraMaster strongly urges the use of water softener units with the Titan 575 in areas exceeding 3.0 grains per gallon.

Failure to use a water softener in these areas will invalidate the machine's warranty. Referring to the hard water area map shown Figure 1-1, determine the quality of water in your area and take immediate action if the water hardness exceeds 3.0 grains per gallon.

The relatively low cost of a water softener service is more than made up for by an increased life of machine parts, reduced chemical costs and continued cleaning efficiency. The water softener will also increase the effectiveness of the cleaning chemicals, therefore less chemical will be needed.

Contact a water softener distributor in your area for information on the rental of a simple water treatment unit to carry in your truck. Be sure to charge the water softener in accordance with the capability of the softener.

For example: If the softener will treat 900 gallons of water and the machine uses an average of 30 gallons/hour, for an average of 5 hours a day, this equals 150 gallons per day. In 6 days the machine would use 900 gallons of water. Therefore, the softener would need to be charged every 6 working days for maximum softening.

Waste Water Disposal Advisory

There are laws in most communities prohibiting the dumping of recovered “gray” water from carpet cleaning in any place but a sanitary treatment system.

The cleaning rinse water, recovered into your unit’s vacuum tank, contains materials such as detergents, and must be safely processed before entering streams, rivers and reservoirs.

In most cases, an acceptable method of waste water disposal is to discharge into a municipal sewage treatment system after first filtering out solid material such as carpet fiber. Access to the sanitary system can be obtained through a toilet, laundry drain, RV dump, etc. Permission should first be obtained from any concerned party or agency.

One disposal method which usually complies with the law is to accumulate the waste water and haul it to an appropriate dump site. Another solution to the disposal problem is to equip your Titan 575 with an Automatic Waste Water Disposal System (AWDS). These systems are designed to remove waste water from the extractor’s recovery system and actively pump the water through hoses to a suitable disposal drain.

HydraMaster makes an AWDS System which can be ordered with new equipment or installed later.

When properly configured, the systems will continuously monitor the level of waste water and pump it out simultaneously with the cleaning operation. The hidden benefit of this process is that the technician does not have to stop his/her cleaning to empty the recovery tank.

NOTICE

IN ACCORDANCE WITH EPA, STATE AND LOCAL LAWS, DO NOT DISPOSE OF WASTE WATER INTO GUTTERS, STORM DRAINS, STREAMS, RESERVOIRS, ETC.

The penalties for non-compliance can be serious. Always check local laws and regulations to be sure you are in compliance.

Operating Instructions

This section describes how to operate the Titan 575, starting with a description of the dash assembly (see Figure 4-1).

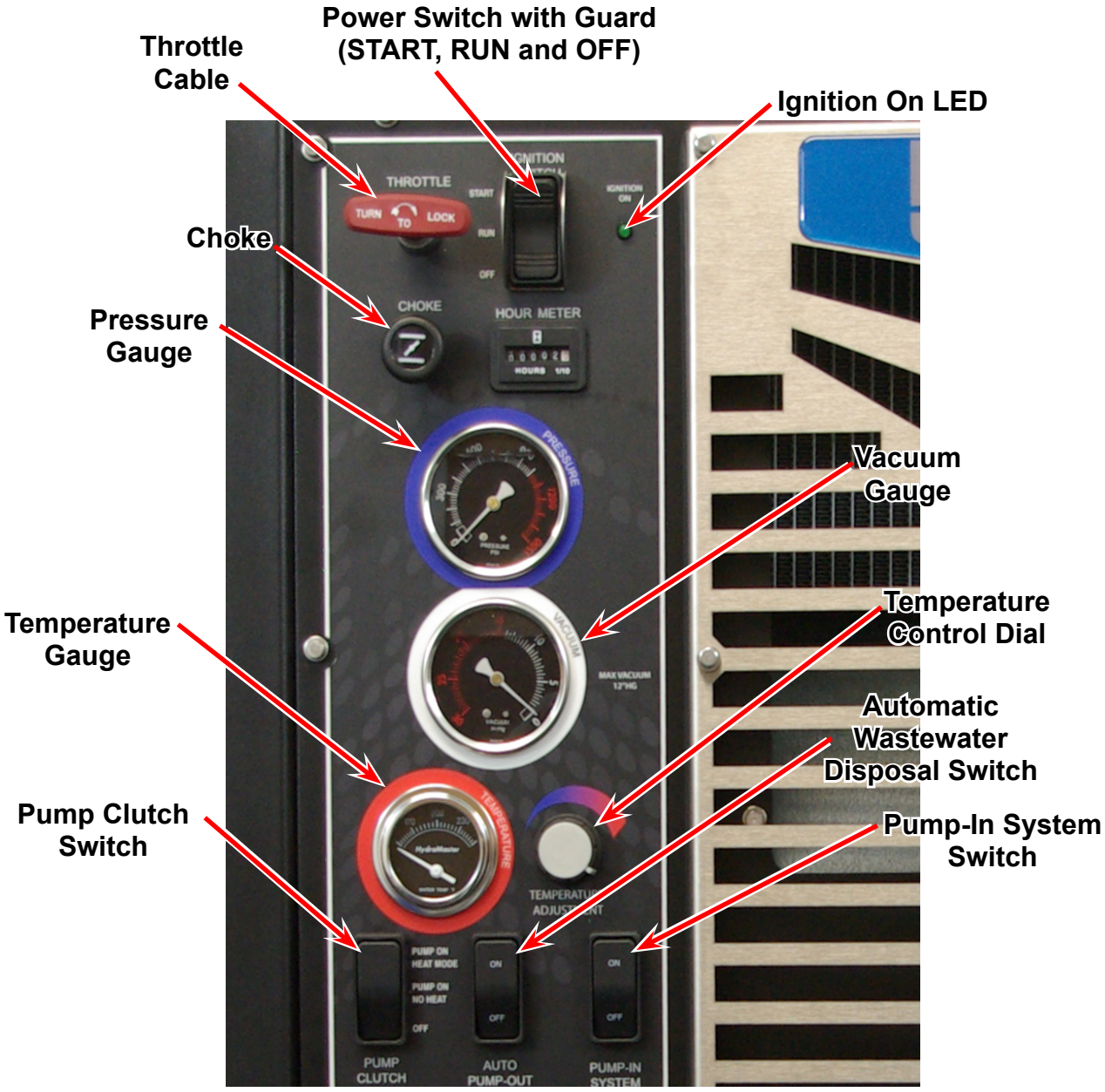


Figure 1. Titan 575 Upper Dash Assembly

The front dash assembly controls the:

- System's power on/off and engine speed
- Pump clutch
- Automatic Wastewater Disposal System (AWDS) if included in the configuration
- Pump-In system if included in the configuration

The front dash assembly also includes the solution temperature control dial; the temperature, vacuum and pressure gauges; the hour meter; and an ignition ON LED indicator. A switch guard surrounding the power switch helps prevent unintended power starts and stops.

The lower dash assembly controls the:

- Water pressure
- Chemical metering
- Water box drain
- Heat selection for carpet cleaning (HOT) or upholstery cleaning (WARM) - see Figure 4-2

Heat Selector Valve (WARM and HOT)

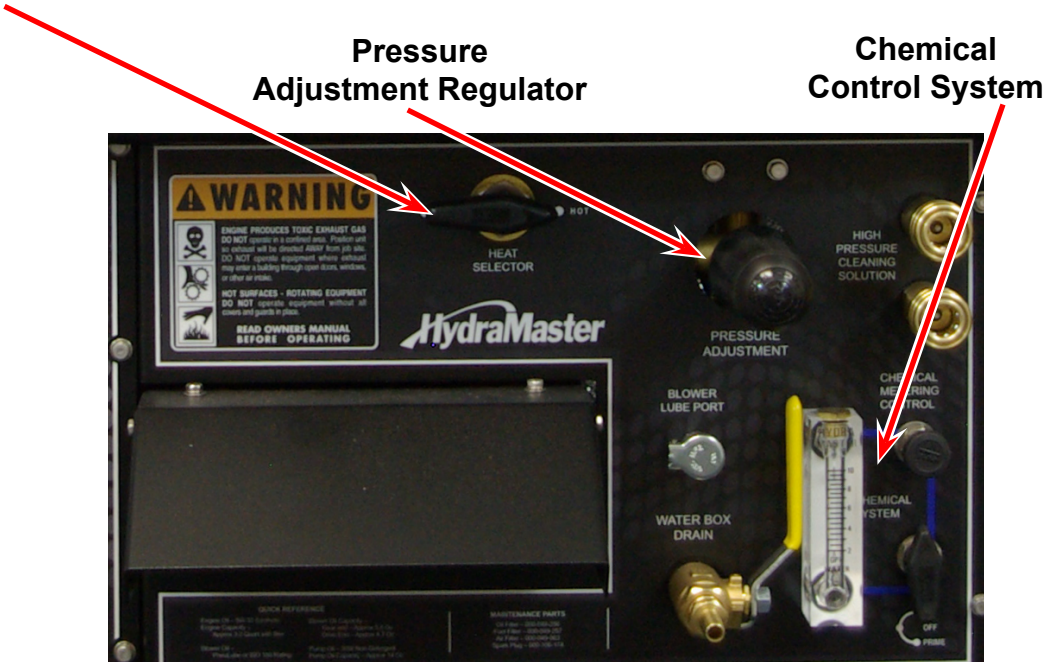


Figure 2. Titan 575 Lower Dash Assembly

The lower dash assembly also houses the blower lube port and the two high pressure cleaning solution port where the wand/tools connect to the Titan 575.

CAUTION

To ensure proper operation of the exhaust diverter system, the Titan 575 must have a minimum of 5” Hg vacuum. If the vacuum level is lower than 5” Hg, the exhaust diverter will remain in “Divert” mode.

NOTICE

Photographs and illustrations included in this document can represent optional equipment as well as standard equipment.

SETTING THE TEMPERATURE

Depending upon the type of cleaning jobs you need to do, there will be times where you will not need the maximum heat and vacuum available. There are a few different ways you can optimize the Titan 575 to the size of the job.

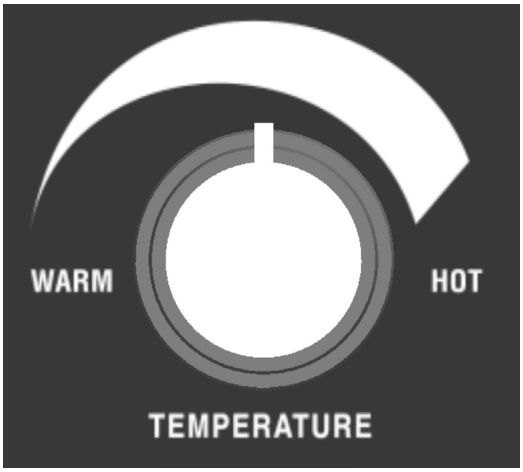


Figure 3. Temperature Control Dial

The different scenarios can be defined as follows:

1. Maximum – Dual wands or rotary machine usage. This means that all available power is required.
   a. Set the Heat Selector valve to “HOT” - see Figure 4-2.
   b. Rotate the temperature control dial to “HOT” - see Figure 4-3.

2. Reduced Heat – Single wand with short hose runs to the job site.
   a. Set the Heat Selector valve to “WARM”.
   b. Rotate the temperature control dial to “WARM”.

CAUTION

Never perform cleaning operations when the truckmount engine is running at the IDLE throttle position. To do so will increase the risk of serious component or engine damage.

START-UP PROCEDURE

1. Perform all daily periodic maintenance as specified in this Owner's Manual.
2. Connect a garden hose to supply water to the truckmount. If the pump-in feature is used on your system, push the "PUMP-IN" switch to the "ON" position.
3. Connect the cleaning wand or tool to the length of hose required to perform the cleaning job.
4. Start the truckmount with:
   a. The throttle cable in the "IDLE" position.
   b. Pull the choke cable out if the engine is cold.
   c. The "PUMP CLUTCH" switch in the "OFF" position.
5. After the engine starts, allow the truckmount to run in "IDLE" for 2 - 3 minutes to warm up. Gradually push on the choke as the engine warms up.

CAUTION

Never clean when the Titan 575 is in the "IDLE" mode. Failure to follow this caution may result in serious component or engine damage.

6. Pull the throttle cable all the way out and lock into place.
7. Press the "PUMP CLUTCH" switch to the "PUMP ON HEAT MODE" position for carpet cleaning or upholstery cleaning; for high pressure washing, press "PUMP ON NO HEAT"
8. Set the "HEAT SELECTOR" valve to the desired position.
   a. Set to the "WARM" position for upholstery cleaning.
   b. Set to the "HOT" position for carpet cleaning.
9. If the Automatic Pump-Out is included in your system's configuration, press the "AUTO PUMP-OUT" switch to the "ON" position.

SETTING THE PRESSURE (FOR OPTIONAL HIGH PRESSURE WASHING KIT)

CAUTION

Lower the pressure below 1,200 psi prior to moving the "WATER PRESSURE SELECTOR" valve to "CARPET CLEANING" mode. Failure to do so may result in serious component or engine damage.

Set the cleaning pressure to the desired level as follows.

1. Carpet Cleaning: 300 to 400 psi: Position the "WATER PRESSURE SELECTOR" valve to "CARPET CLEANING" mode (if equipped). The system is designed to shut off above 1,200 psi to protect the heat exchanger system.
2. Hard Surface Cleaning: 1,200 psi or as indicated on tool. Position the "WATER PRESSURE SELECTOR" to "CARPET CLEANING" mode (if equipped). The system is designed to shut off above 1,200 psi to protect the heat exchanger system.
3. Pressure Washer Cleaning (if equipped): 2,000 psi or as indicated on tool. Position the "WATER PRESSURE SELECTOR" to "PRESSURE WASHING" mode (if equipped).

CAUTION

Do NOT apply a vacuum load while using the Titan 575 in "PRESSURE WASHING" mode. Doing so may cause the machine to overheat.

4. Turn the "CHEMICAL SYSTEM" switch to the "PRIME" position to purge any air from the system (see Figure 4-4).
   a. With the truckmount running at full throttle, block off the vacuum intake to the recovery tank. The vacuum gauge should read 12" Hg. This will assist in priming the chemical system.
   b. Allow the chemical to flow through the chemical meter at full flow for 30 seconds.
   c. Turn the "CHEMICAL SYSTEM" switch to "ON." The restriction can now be removed from the vacuum inlet.
   d. While spraying solution from the cleaning tool, adjust the chemical flow by turning the "CHEMICAL METERING CONTROL" knob.
5. Begin cleaning.

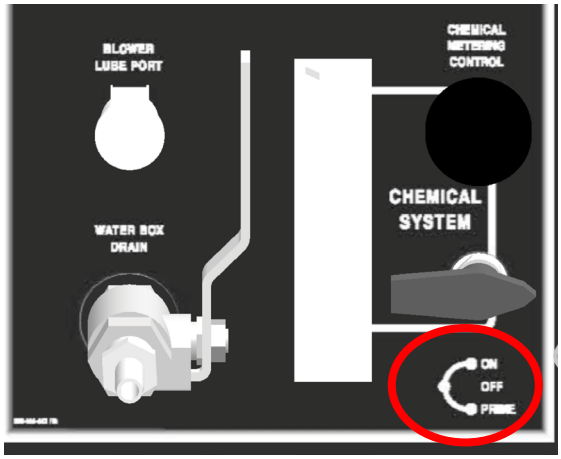


Figure 4. Location of Chemical System Switches

SHUT-DOWN PROCEDURE

1. Flush clean water through the chemical system for 10 seconds. Turn the “CHEMICAL SELECTION VALVE” to “OFF.”
2. Cool the truckmount down by turning the “PUMP CLUTCH” switch to “PUMP ON - NO HEAT”. Spray the cleaning wand into the vacuum hose for 3-5 minutes. The chemical should now be flushed from the truckmount, hoses and cleaning tool.
3. Remove the vacuum hose.
4. Lubricate the blower to prevent it from rusting internally.
   a. Allow the unit to run for a few minutes with the vacuum hose disconnected in order to remove moisture from the blower.
   b. Cap off the inlet(s) to the vacuum tank.
   c. Spray a HydraMaster-recommended spray lubricant into the “BLOWER LUBE PORT” for about 5 to 10 seconds while the unit is running (see Figure 4-5).

Blower Lube Port

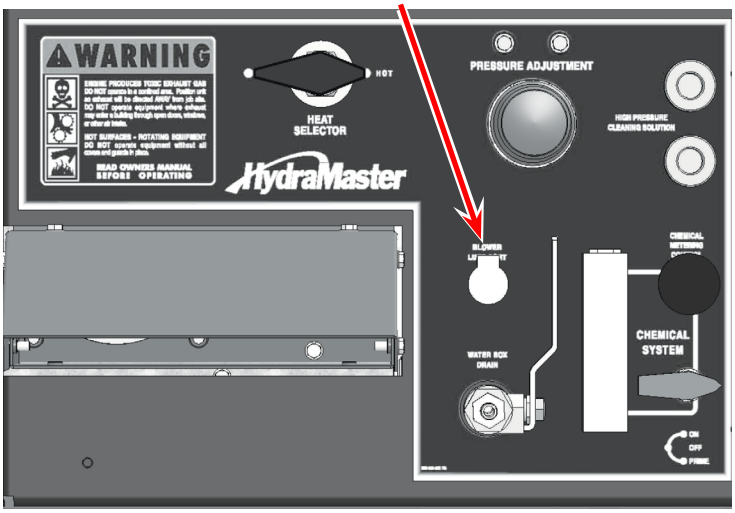


Figure 5. Location of Blower Lube Port

   d. Allow machine to run additional 2 to 5 minutes under load to flush off lubricant.
   e. Uncap the inlet(s) and run the unit for another minute to allow the blower to cool down.

5. If freeze guarding is necessary, perform the procedure at this time. See the Freeze Guarding section of this Owner's Manual (see page 5-19).
6. Push the throttle cable to the "IDLE" position.
7. Turn the ignition switch to "OFF."
8. Drain the water box using the valve.
9. Drain the vacuum tank in an appropriate location.

NOTICE

In accordance with EPA, state and local laws, do not dispose of water into gutters, storm drains, streams, or reservoirs.

10. Perform daily maintenance as specified in Section 5 of this Owner's Manual.

Machine Maintenance

To avoid costly repairs and downtime, it is imperative to develop and practice good maintenance procedures. All maintenance must be performed by qualified service personnel.

This section covers:

- Operational Maintenance
- Overall Machine Maintenance
- Engine Maintenance
- High Pressure Pump Maintenance
- Vacuum System Maintenance
- Descaling Procedure (Required)
- Freeze Guarding

This section also includes a maintenance schedule and maintenance logs which must be correctly and completely filled out. An Interval Hours Maintenance Chart is on page 47 and page 48.

The manufacturer may request to inspect the logs before a warranty claim is honored.

NOTICE

Record the date and machine hours on the maintenance log provided for your convenience in the Owner's Guide. Records of maintenance must be kept and copies may be required to be furnished to HydraMaster before the warranty is honored. It is recommended that you affix a copy of the log on the vehicle door near your unit for convenience and to serve as a maintenance reminder.

NOTICE

Please feel free to photocopy any of the logs on the following pages should you need more copies.

OPERATIONAL MAINTENANCE

Daily Maintenance

- Check the engine oil level. Add oil if needed.
- Check the high pressure pump oil. Add oil if needed.
- Check the oil level in the blower. Add oil if needed.
- Check coolant overflow bottle level. Add coolant if needed.
- Inspect and clean the recovery tank filters.
- Inspect and clean the garden hose screen.
- Inspect the truckmount for water and oil leaks, loose electrical connections, etc. and repair as needed.
- Lubricate the blower with a HydraMaster-recommended lubricant.

Weekly Maintenance

- Inspect the recovery tank filters for tears, holes, etc. Repair or replace as needed.
- Inspect the sacrificial anode assembly in the tank and repair or replace as needed.
- Inspect the vacuum relief valve. Clean and lubricate as necessary.
- Clean the recovery tank thoroughly with pressure washer.
- Check the pump belt, blower belt drives, and fan belt for wear and proper tension. Adjust as needed.
- Check all the hoses and wiring for wear and chafing. Secure as needed.
- Flush the water and chemical systems with solution of equal parts white vinegar and water.
- Check all the nuts and bolts. Tighten as needed.
- One time change of the high pressure pump oil after 50 hours of operation. (Every 500 hours thereafter.)
- One time change of the engine oil and oil filter after 25 hours of operation.
- Change the engine oil every 100 hours. (Every 50 hours if operating in high ambient temperatures.) Change oil filter every oil change.

Monthly Maintenance

- Check the engine air filter. Clean or replace as necessary.
- Check the water level in battery. Fill as needed.
- Check engine fan belt.
- Clean the battery terminals as needed.
- Change the blower oil after first 100 hours of use.

Quarterly Maintenance

- Check the fuel lines. Repair or replace as needed.
- Clean and gap the spark plugs to 0.028”. Replace if excessive carbon buildup is visible.
- Change the high pressure pump oil.
- Check fuel filter. Replace as necessary.

500 Hours

- Change the blower oil.
- Change fuel filter.
- Change coolant.
- Replace blower drive belts.
- Replace the sacrificial anodes in the tank.

1,000 Hours

- Replace spark plugs.
- Change air filter.
- Check the engine valve clearance (intake and exhaust 0.006” to 0.0075”).
- Check carburetor. Clean or replace as necessary.
- Replace engine fan belt.

NOTICE

Refer to the Interval in Hours Maintenance chart in the Owner’s Guide for more information.

OVERALL MACHINE MAINTENANCE

Maintenance, troubleshooting and repair are much easier tasks to accomplish on a clean truckmount. Regular cleaning of the truckmount offers the user an opportunity to visually inspect all facets of the truckmount and spot potential problems before they occur. In addition to the operational maintenance the following “housekeeping” duties should be performed.

After each job

- Check the recovery tank and the recovery tank filters. Empty and clean as necessary.

Daily

- Wipe the truckmount down thoroughly with a damp cloth.
- Wipe down the vacuum and high pressure hoses as needed.
- Inspect and clean the vacuum slot on the cleaning wand.
- Check the wand head for sharp edges that could tear carpet. File down as needed.
- Clean the wand to maintain original appearance.
- Visually inspect the hoses for abrasions, cuts, etc. Repair or replace as needed.

Weekly

- Empty the chemical container. Wash out thoroughly to remove any chemical buildup.
- Inspect the chemical feed line strainer and use solution of equal parts white vinegar and water to remove any chemical buildup.
- Thoroughly clean the wand and inspect for clogged jets, debris in vacuum slot and leaking fittings at valve.
- Thoroughly clean the vacuum and high pressure hoses including quick releases and cuffs.

ENGINE MAINTENANCE

Engine Oil Level Check

The engine oil level should be checked daily. It is recommended that the oil be checked just before the engine is started for the first time for that day. The oil level should be between the 'Add' and the 'Full' marks on the dipstick.

CAUTION

Do not operate the engine with the oil level below the bottom of the 'Add' mark on the dipstick, or above the top of the 'Full' mark.

Adding Engine Oil

It is normal to add some oil in the period of time between oil changes. The amount will vary with the severity of operation. When adding or replacing engine oil, be sure the oil meets or exceeds the recommended specification.

Changing Engine Oil and Filter

The engine oil and filter must be changed every 100 hours or every 3 months whichever occurs first. The oil and filter should be changed more often if the engine is operating in dusty or extremely dirty areas, or during periods of high ambient temperature.

Engine Oil Quality

To achieve proper engine performance and durability, it is important that you use only engine lubricating oils of the correct quality in your engine. Proper quality oils also provide maximum efficiency for crankcase ventilation systems, which reduces pollution.

CAUTION

Use only engine oils displaying the American Petroleum Institute (API) "starburst" certification mark 'FOR GASOLINE ENGINES' on the container.

Engine Oil Recommendation

While multi-viscosity oils are generally recommended, SAE 5W-30 synthetic is specifically recommended year round for your Titan 575 engine.

Oil Filter

Kubota engines use Kubota oil filters. An equivalent or better oil filter must be used when servicing the engine.

To replace the filter, use a proper filter wrench to remove the filter.

Clean the filter mounting base and lightly coat the gasket surface of the new filter with engine oil. Hand tighten the filter until the gasket contacts the base, then tighten another ½ turn. Fill the engine with the correct amount of oil, run the engine and check for oil leaks at the drain plug and oil filter gasket.

Spark Plugs

Always use the recommended spark plugs for your engine. Hotter or colder plugs, or similar plugs that are not exact equivalents to the recommended plugs, can cause permanent engine damage, reduce the engines useful life, and cause many other problems such as hard starting, spark knock and run-on. Installing new spark plugs regularly is one of the best ways to keep your engine at peak performance.

Cooling System

Coolant Level

Check the coolant level in the coolant overflow reservoir daily. Generally a good time to do this is just prior to starting the engine for the first time each day.

Maintain the coolant level in the radiator at ¾ " below the filler neck seat of the radiator when the coolant is cold. When the coolant level is checked, inspect the condition of the radiator caps rubber seal. Make sure it is clean and free of any dirt particles which would keep it from seating on the filler neck seat. Rinse off with clean water if necessary. Also make sure that the filler neck seat is free of any dirt particles.

⚠WARNING

Never remove the radiator cap under any condition while the engine is operating. Failure to follow these instructions could result in damage to the cooling system, engine, or cause personal injury. DO NOT add coolant to any engine that has overheated until the engine cools.

The engine manufacture requires the cooling system to be filled with a 50/50 mixture of glycol-based antifreeze. Distilled water is recommended in hard water areas.

CAUTION

Always maintain a 50% solution of phosphate-free/low-silicate antifreeze at all times for adequate heat dissipation, lubrication and protection from freezing. Major brands are typically low phosphate or phosphate free, and will be labeled accordingly on the container. It is recommended that you consult the technical data sheet for the brand of coolant you are using to determine if it meets the low phosphate requirement. Failure to use a 50% solution of phosphate-free/low-silicate antifreeze may result in corrosion of the cooling system.

Bleeding Air from Cooling System

It is necessary to remove all of the air from the engine to prevent overheating. If the coolant has been drained for any reason, it will be necessary to follow the bleed procedure.

When the engine is cold, remove the radiator cap. Fill the radiator until it is to the top of the filler neck. Start the engine and run in the low rpm position, pump clutch off, and no vacuum load. Allow the engine coolant to heat up and open the thermostat several times. As all the air is removed from the system, the level of the radiator should lower below the internal tubes. This process should take approximately 5 - 10 minutes. Top off the coolant and install the cap. In the event you experience a coolant shutdown due to overheat, allow the machine to cool down and repeat this procedure.

Radiator

Inspect the exterior of the radiator for obstructions. Remove all debris with a soft brush or cloth. Use care to avoid damaging the core fins.

Fuel Filter

The fuel filter is located between the fuel pump and the fuel tank underneath the vehicle.

HIGH PRESSURE PUMP MAINTENANCE

Daily

Check the oil level and the condition of the oil. The oil level should be up to the center of the sight glass on the side or rear of the pump or between the “MIN” and “MAX” lines on the dipstick. The dipstick may be found by removing the oil cap.

Periodically

Change the oil after the initial 50 hours of operation and every 500 hours after that. It may be necessary to replace the pump seals and check valves at 500 hours if the truckmount has been running in high ambient temperatures.

Refer to the Pump Servicing Section in the following page for more information.

CAUTION

If the oil becomes discolored or contaminated one of the oil seals may be damaged. Do not operate the pump if the crankcase oil has become contaminated. Do not rotate the drive shaft without oil in the crankcase reservoir.

The pump should never be run dry. Running the pump dry will cause premature wear on the seals, packing and plungers. Running the pump dry for a prolonged period of time may cause damage that cannot be repaired and voids warranty.

Do not run the pump with frozen water in the manifold. If there is a risk of freezing, freeze guard the truckmount. See the Freeze Guarding section of this Onwer’s Guide.

Servicing Valves on the High Pressure Pump

Removing a Valve

1. Remove the valve cap and extract the valve assembly (see Figure 1).

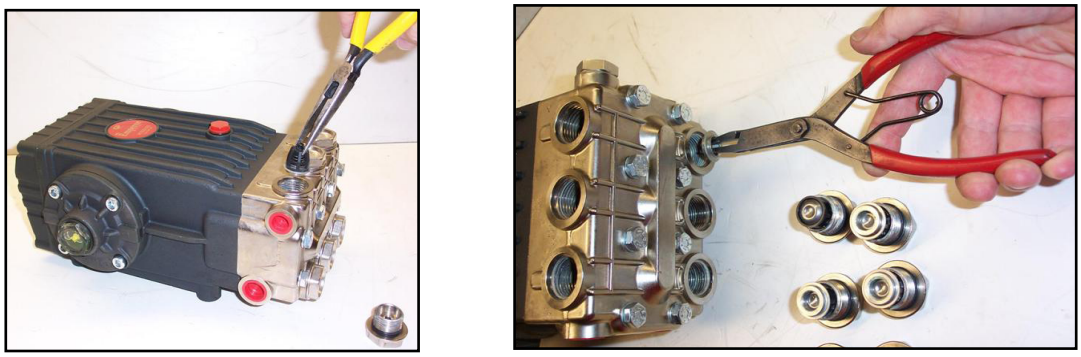


Figure 1. Remove Valve Cap and Valve Assembly

2. Remove the valve assembly (retainer, spring, valve plate, valve seat) from the valve cavity.
3. Remove the O-ring and support from the valve cavity.
4. Examine the O-ring and replace if there is any evidence of cuts, abrasion, or distortion.
5. Inspect the manifold for wear or damage (see Figure 2).
6. Inspect the old valves for wear or damage. Only one valve kit is necessary to repair all the valves in the pump. (The kit includes new supports, O-rings, valve seat, valve poppet, spring and retainer; all are pre-assembled.)

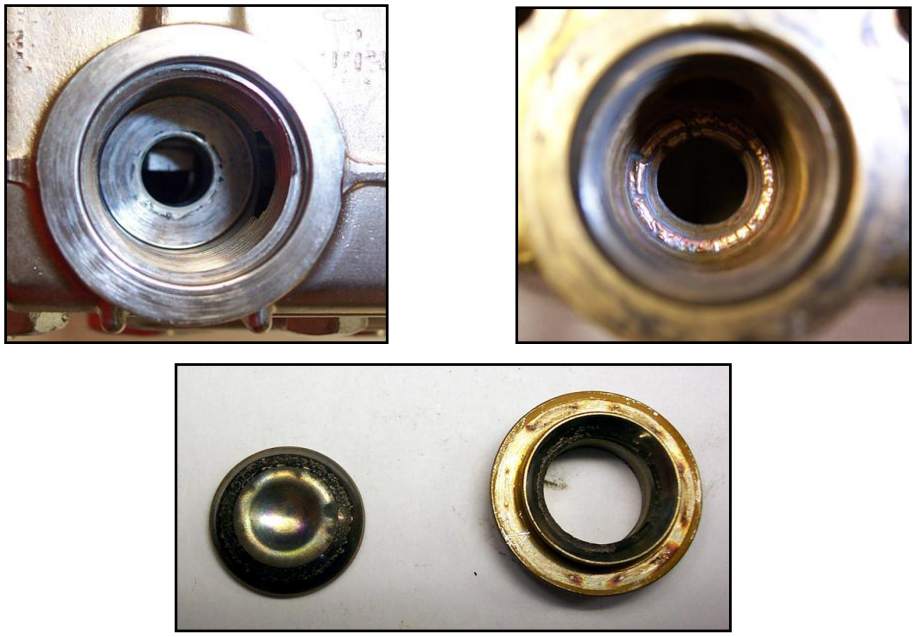


Figure 2. Inspect Manifold and Old Valves

7. Replace the center inlet check valve with a modified check valve (Figure 5).

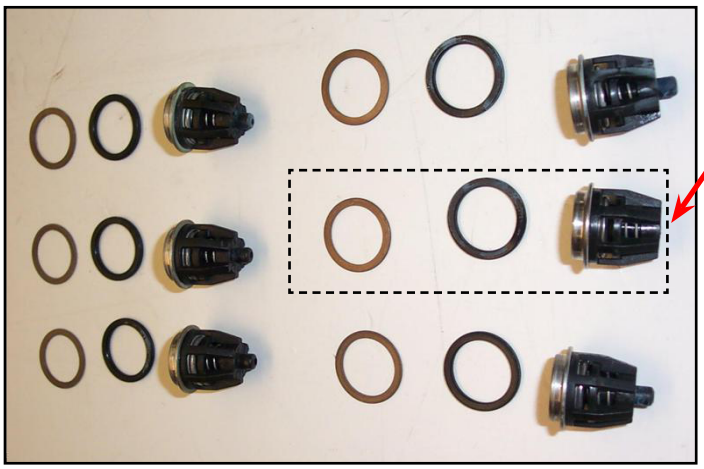


Figure 5. Replace Center Inlet Check Valve With Modified Check Valve

8. Apply O-ring grease to O-rings and install valves (Figure 3).
9. Replace valve cap and torque to 95 ft. lbs (see Figure 4).
10. Remove the fasteners retaining the manifold
11. Separate manifold from crankcase (see Figure 7).

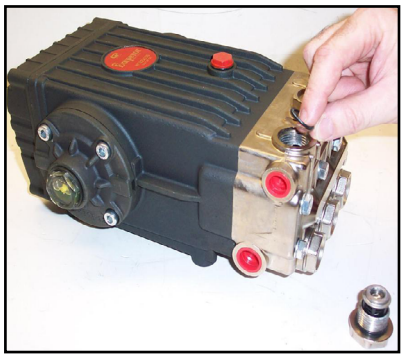


Figure 3. Apply Grease and Install Valves

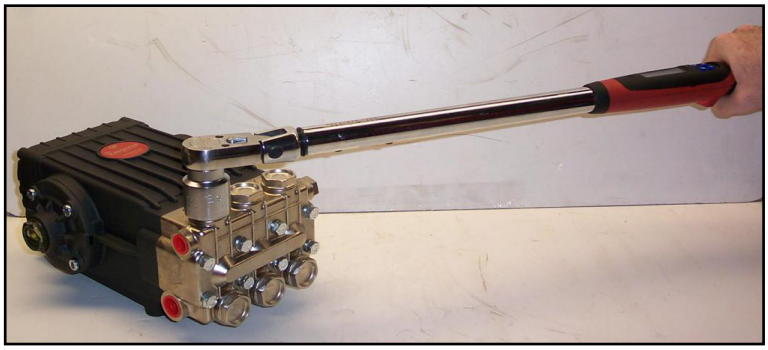


Figure 4. Replace Valve Cap and Torque to 95 ft. lbs.

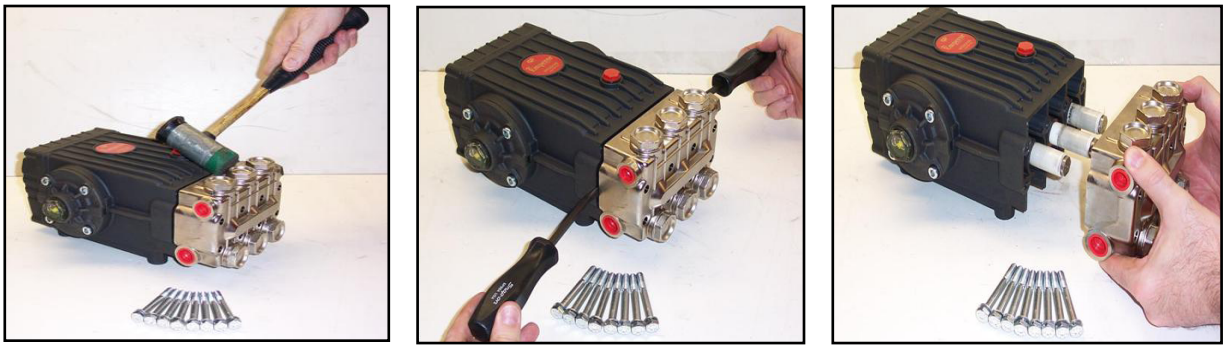


Figure 7. Separate Manifold from Crankcase

NOTICE

It may be necessary to rotate crankshaft or tap manifold with rawhide or plastic mallet to loosen.

CAUTION

When sliding manifold from crankcase, use caution not to damage ceramic plungers.

12. The seal assemblies may come off with the manifold (see Figure 8)

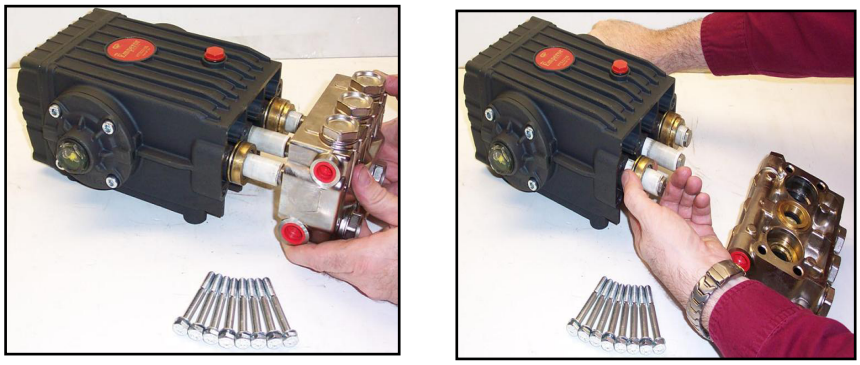


Figure 8. Seal Assemblies May Come Off with Manifold

13. Examine the ceramic plungers. The surface should be smooth and free from scoring, pitting or cracks (see Figure 6); if not, replace.
14. Loosen the stainless steel plunger bolt.

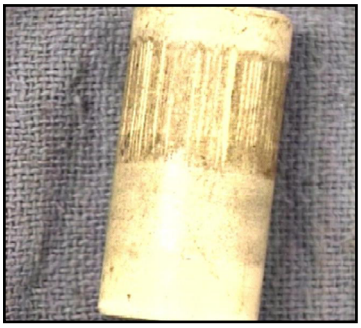


Figure 6. Examine Ceramic Plungers

15. Remove the stainless steel plunger bolt and ceramic plunger from the plunger guide (see Figure 9).
16. If the slinger washer is removed, be certain it is re-installed or replaced.
17. Separate plunger bolt from ceramic plunger (see Figure 9).

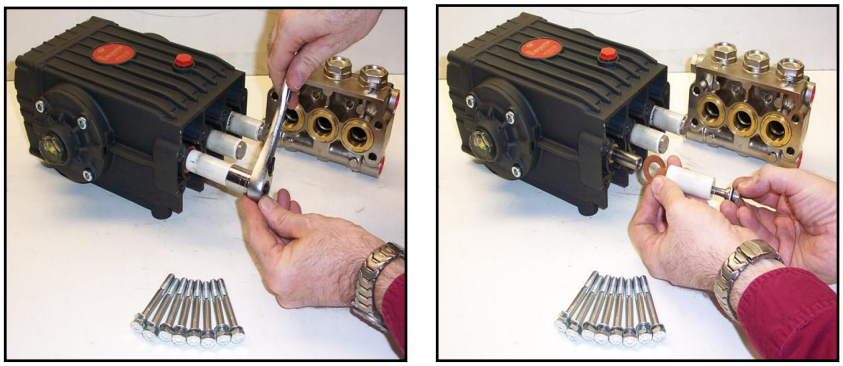


Figure 9. Remove Stainless Steel Plunger Bolt and Ceramic Plunger

18. Install new Teflon® back-up ring and O-ring on the plunger bolt. Apply a film of O-ring grease on the outside of the O-ring (see Figure 10).
19. Apply removable anaerobic thread sealant (Loctite® 542) to the threads of the plunger bolt, carefully pressing the plunger bolt into ceramic plunger (see Figure 10).
20. Slide new ceramic plunger over the plunger guide (see Figure 10).

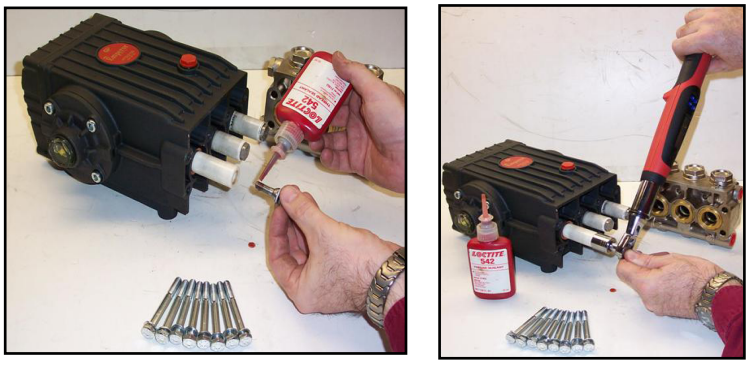


Figure 10. Install O-ring, Apply Sealant and Slide Plunger over Plunger Guide

21. Torque plunger to 14.5 ft. lbs.

Extracting Seals

With manifold removed from crankcase:

1. Insert proper extractor collet through main seal retainer (see Figure 11).
2. Tighten collet and extract retainers and seals.

NOTICE

The Teflon seals of the HT series will be damaged during disassembly so new ones with have to be installed.

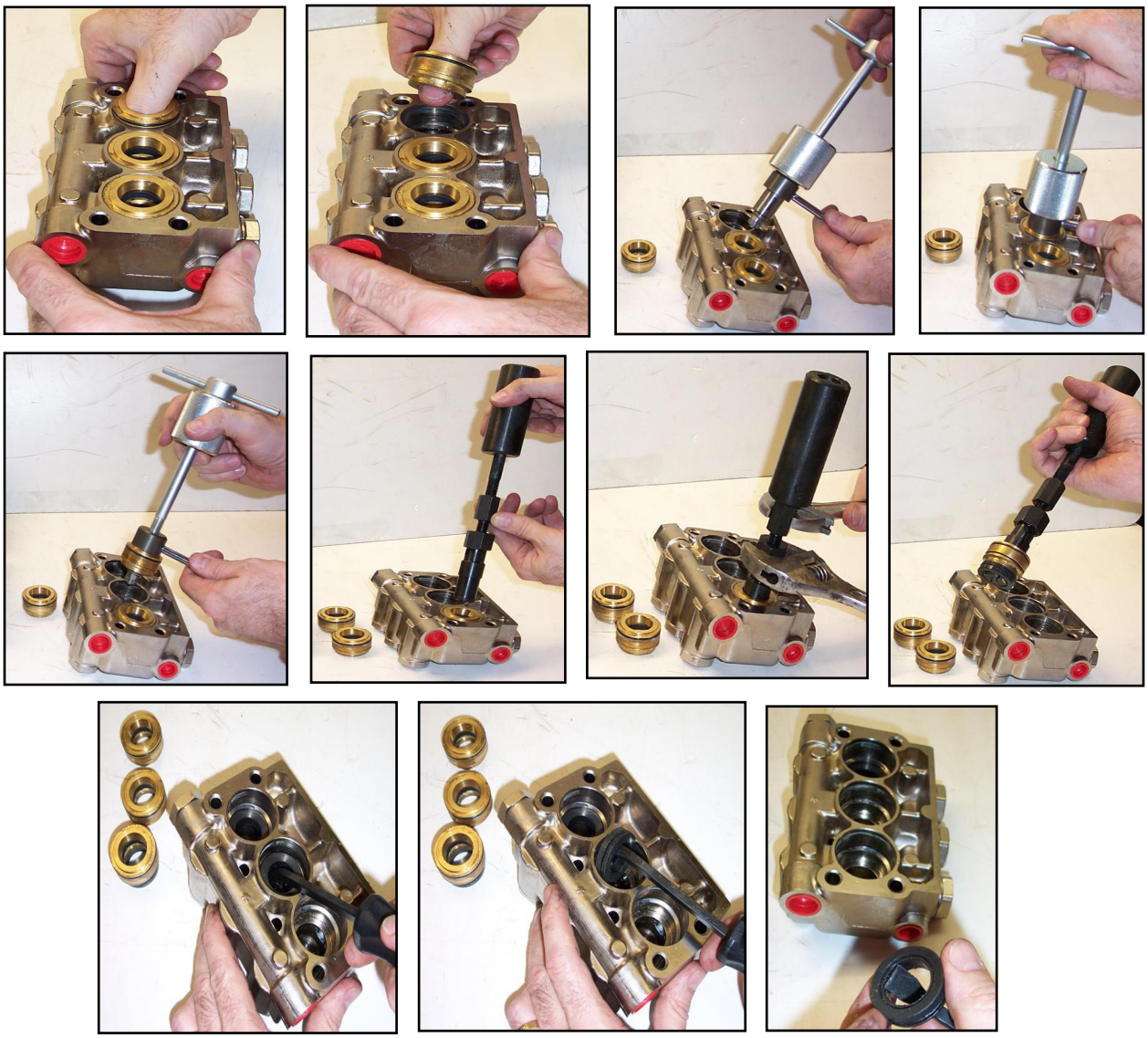


Figure 11. Extract Retainers and Seals

Replacing the Seal Assemblies

Only one seal kit is necessary to repair all the seals in the pump (see Figure 13). Use an insertion tool for seal installation

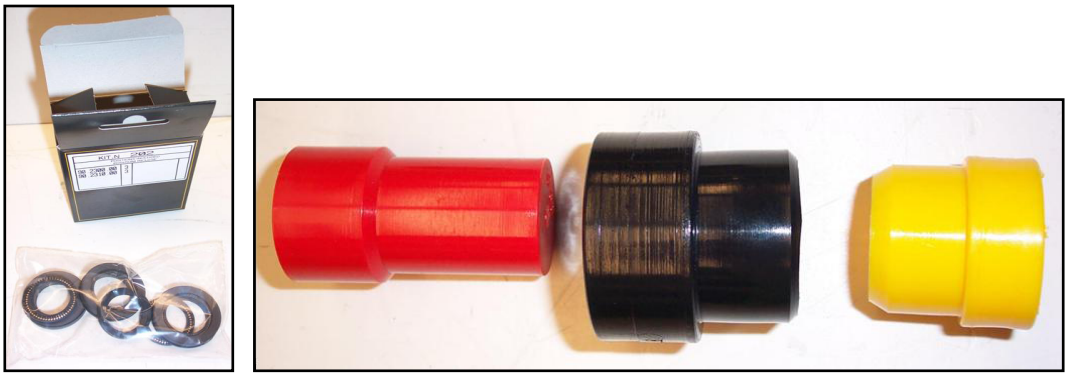


Figure 13. Seal Kit and Insertion Tool for Seal Installation

To install a seal assembly:

1. Apply a film of O-ring grease on the O-ring on the outside of the new high pressure seal.
2. Insert the high pressure seal into the cavity with the “U” shape down.
3. Press high pressure seal into place.
4. Apply a film of grease on the O-ring on the brass retainer (see Figure 12).

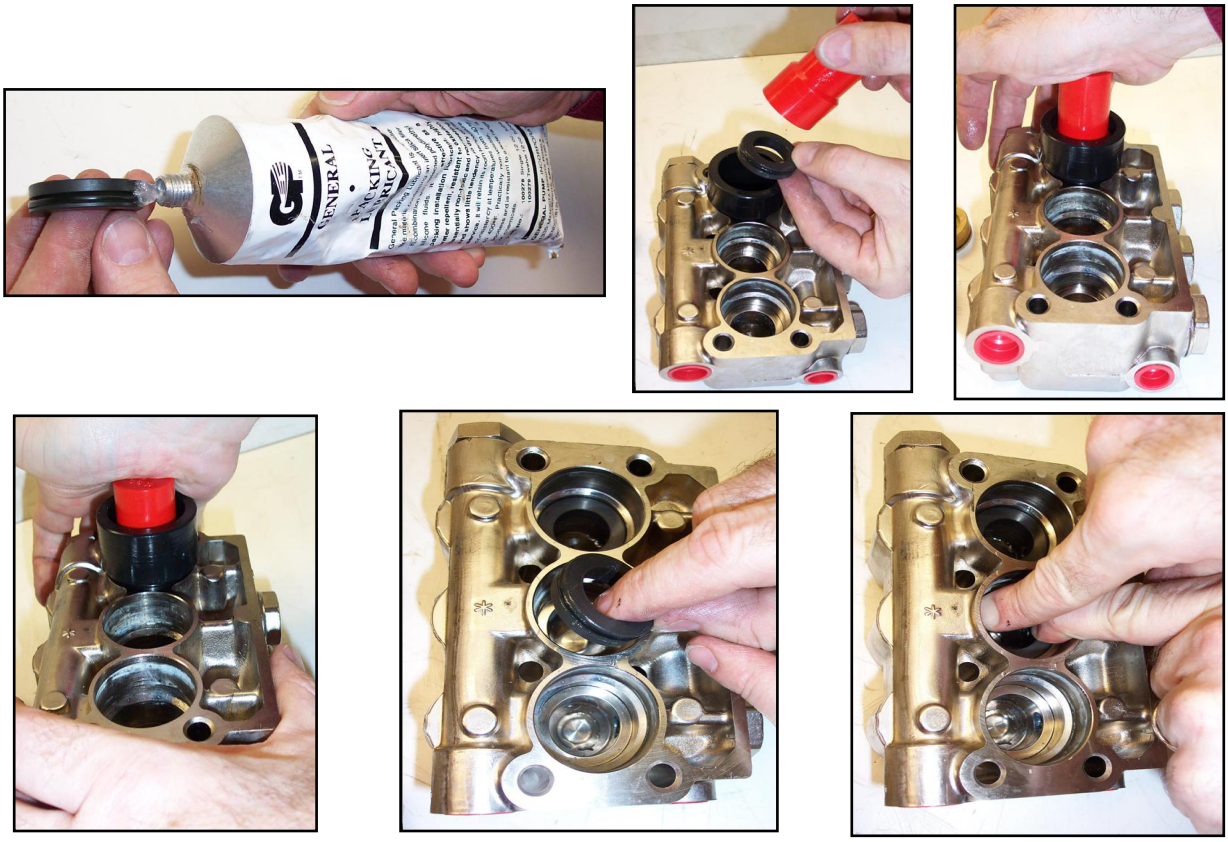


Figure 12. Install Seal Assembly Using O-Ring Grease

To install the intermediate retainers and the low pressure seals:

1. Insert the brass intermediate retainer into the cavity.
2. Press the new low pressure seal into the brass low pressure seal retainer and install a new O-ring on the outside (see Figure 14).

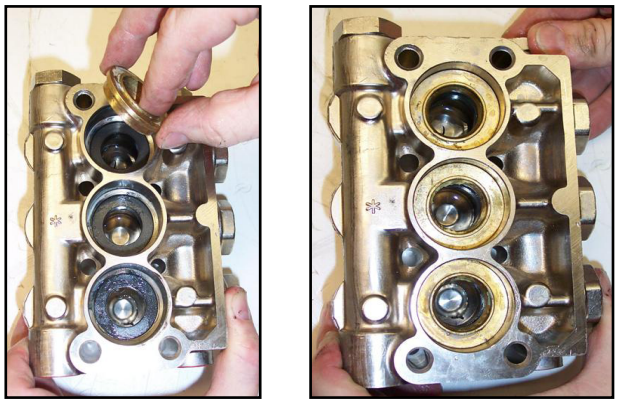


Figure 14. Install Retainers into Cavities

3. Press the low pressure seal assembly into the cavity (see Figure 15).

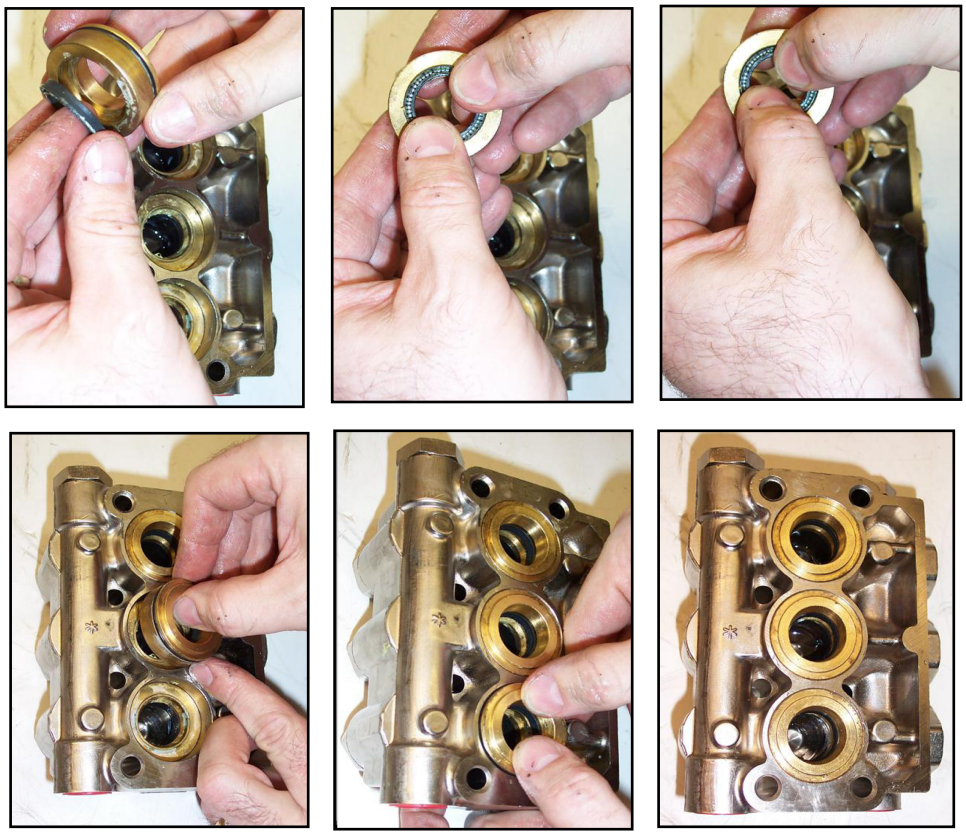


Figure 15. Press Low Pressure Seal Assembly into Cavity

Re-Installing Manifold

1. Position the outer plungers at the same position (see Figure 16).
2. Re-install manifold and torque the fasteners in an “X” pattern to 50% of specification and then retorque to 100% specification (see Figure 17 and Figure 18).

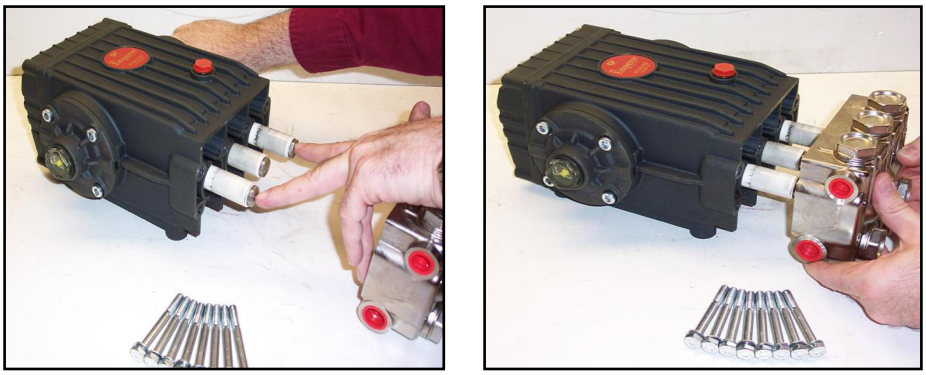


Figure 16. Re-install Manifold and Torque Fasteners

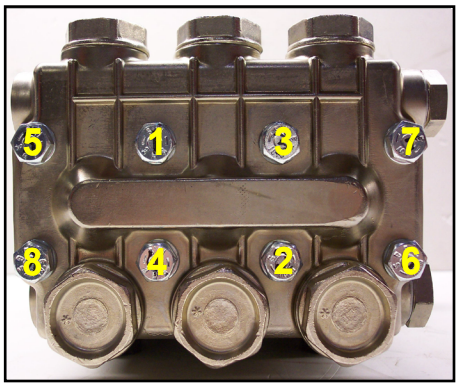


Figure 17. Torque Sequence in “X” Pattern

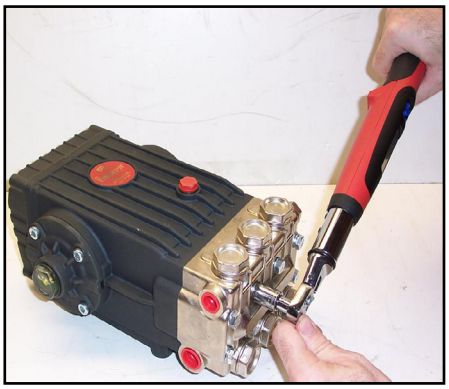


Figure 18. Torque Bolts to 22 ft. lbs

VACUUM SYSTEM MAINTENANCE

The vacuum pump in this machine is commonly referred to as a “rotary positive displacement blower” or “blower” for short. The performance and life of the truckmount is greatly dependent on the care and proper maintenance it receives. The manual for the blower has been included. Review the manual for a better understanding of this piece of machinery.

CAUTION

To protect the blower from overloading and damaging itself, there is a vacuum relief system installed on the vacuum tank. When the vacuum tank inlet is completely sealed off a maximum of 12” Hg will be attained.

CAUTION

Solid objects entering the blower will cause serious damage to the internal components of the blower. Extreme caution should be used when the truckmount is being run for test purposes with the inlet to the blower open to the atmosphere.

CAUTION

Foam passing through the blower can lead to serious problems with the truckmount. It is important to keep the vacuum tank free of foam. The tank is protected from overflowing by a float kill switch; however, this switch is not activated by foam.

Daily

At the end of each day the internal components of the blower need to be lubricated. This helps to prevent rust deposits and prolongs the life of the truckmount.

To lubricate the blower:

1. Allow the unit to run for a few minutes with the vacuum hose disconnected in order to remove moisture from the blower.
2. Cap off the inlet(s) to the vacuum tank.
3. Spray a HydraMaster-recommended spray lubricant into the “BLOWER LUBE PORT” for about 5 to 10 seconds while the unit is running.
4. Uncap the inlet(s) and run the unit for another minute to allow the blower to cool down.

Periodically

Change the oil in both ends of the blower after the initial 100 hours of use. The oil is to be changed each 500 hours of use thereafter.

DESCALING PROCEDURE (REQUIRED)

Scale deposits on the interior of the heating system can cause a noticeable loss in heating performance. Deposits of this kind result from hard water. The frequency with which descaling procedures are required will vary. If the area has particularly hard water, you may have to descale often.

To descale the system, add an appropriate descaler chemical to the water box. Circulate it through the system. Let it stand. Flush and repeat as necessary. Clean all screens and strainers, and check them frequently following descaling.

NOTICE

If using TM DeScaler™ through the flow meter, make sure to run clean water through the flow meter after this procedure.

To descale using the recirculation kit (P/N 000-078-058), start with an empty water box. Fill a third of the water box with TM DeScaler™. Follow the recommendations on the TM DeScaler™ label for proportions. Verify that the float is not lying horizontal, but floats below.

Attach the recirculation fitting provided in the kit to the garden hose quick connect (see Figure 19) and this combination to the front of the truckmount.

Attach one section of the solution hose to the outgoing solution fitting on the front of the truckmount and the other end to the garden hose and recirculation fitting combination that is attached to the front of the truckmount. Additional hoses may be attached inline if descaling of hoses is needed.

Start the truckmount and allow it to run for 3 to 5 minutes. Do not leave the TM DeScaler™ solution in the system. Flush the system with clean water and turn the truckmount “OFF.”

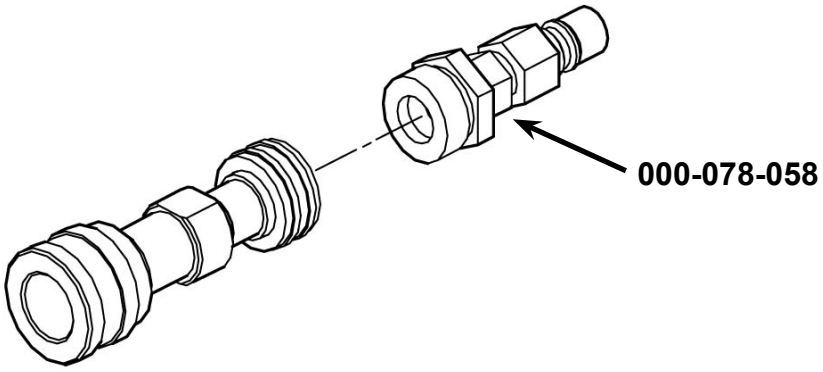


Figure 19. Recirculation Fitting

FREEZE GUARDING

To avoid permanent damage to the truckmount, it is imperative to follow the Freeze Guard Procedure whenever the possibility of freezing temperatures exists.

CAUTION

When disposing of antifreeze, follow local laws and regulations. Do not discard into storm sewers, septic systems or onto the ground.

⚠WARNING

Antifreeze is harmful or fatal if swallowed. Do not store in open or unlabeled containers. Keep out of reach of children and animals.

⚠WARNING

When draining solution from the machine, wear protective eye wear and ensure the solution temperature is cold. Failure to follow this caution can result in personal injury.

Freeze Guard Procedure

1. With the truckmount turned off and the incoming water line disconnected, open the water box drain valve on the front of the truckmount. Allow the system to fully drain. Close the water box drain valve.

NOTICE

In some extreme cold-temperature locations, you may find it necessary to disconnect the pressure gauge hose from the high pressure pump and drain the hose. Reconnect the hose to the pump before proceeding to step 2.

2. Add 2 gallons of 50/50 antifreeze and water mix to the water box.
3. Attach a recirculation fitting (see the previous page and Figure 19) to the incoming water quick connect on the front of the machine.
4. Attach a section of solution hose to the outgoing solution fitting on the front of the machine. Attach the opposite end to the recirculation fitting. (If more sections of hose are to be freeze guarded, attach those inline.)
5. Start the truckmount and allow it to run for 2 to 3 minutes. Turn the HEAT SELECTOR VALVE to “HOT” for 1 minute and then to “WARM” for 1 minute. This will distribute antifreeze solution throughout the truckmount.
6. Remove the chemical feed line from the chemical jug. Turn the SELECTOR VALVE to “PRIME.” This will vacuum the chemical remaining in the lines to the recovery tank.
7. Remove the recirculation fitting from the truckmount.
8. Loosen the fitting at the back of the pressure gauge with a wrench after the antifreeze has been added to the machine to purge the coolant out of the fitting.
9. Re-tighten the fitting.
10. Spray the antifreeze and water mix out of the truckmount and into a container to reclaim the solution. Run the solution until it stops.
11. The truckmount is now freeze guarded. Remember to flush antifreeze from the system prior to carpet cleaning. See the following procedure.

NOTICE

The reclaimed antifreeze solution may be used three times before being discarded.

NOTICE

To freeze guard the hoses and wand, perform the preceding procedure with the items to be freeze guarded attached.

CAUTION

Always check the freezing level of your reclaimed antifreeze with a glycol tester before reusing. Failure to do so may result in serious component damage.

Recovering Antifreeze for Re-Use

1. Attach all hoses and wands which have been freeze guarded to the truckmount.
2. Attach the incoming water source to the front of the truckmount.
3. Start the truckmount.
4. Spray the solution through the hoses and wands into a sealable container until all signs of antifreeze are gone.

Freeze Protection of the Pump-In System

1. Drain the fresh water tank.
2. Remove the garden hose adapter from the pump-in pump hose and position the hose so it is pointing outside the van.
3. Turn on the pump-in pump and run for 1 - 2 minutes until all the water is purged from the hose.

NOTICE

The next time the truckmount is used, it may take a few minutes before the water box begins to fill.

TITAN 575

DAILY MAINTENANCE TITAN 575
Check the engine oil level. Add oil if needed.
Check the high pressure pump oil. Add oil if needed.
Check the oil level in the blower. Add oil if needed.
Check coolant overflow bottle level. Add coolant if needed.
Inspect and clean the recovery tank filters and sacrificial anodes.
Inspect and clean the garden hose screen.
Inspect the truckmount for water and oil leaks, loose electrical connections, etc. and repair as needed.
Lubricate the blower lube port with a HydraMaster-recommended lubricant.

INTERVAL IN HOURS TITAN 575																									
Engine oil and filter	Change engine oil and filter after first 25 hours; afterwards, change the engine oil and filter every 100 hours. (Every 50 hours if operating in high ambient temperatures or heavy use conditions.)*																								
Blower oil	Change the blower oil after first 100 hours of use. (Every 500 hours thereafter.)**																								
High pressure pump oil	Change high pressure pump oil after first 50 hours of operation. (Every 500 hours thereafter.)***																								
SERVICE	8	25	50	75	100	125	150	175	200	225	250	275	300	325	350	375	400	425	450	475	500	525	550	575	600
Vacuum Relief Valve, Clean and Lubricate	CH	C/L	C/L	C/L	C/L	C/L	C/L	C/L	C/L	C/L	C/L	C/L	C/L	C/L	C/L	C/L	C/L	C/L	C/L	C/L	C/L	C/L	C/L	C/L	C/L
Engine Oil and Filter, Oil filter PN 000-049-256, Oil 5W-30 Synthetic*	CH	R			R				R				R				R				R				R
Check for Loose Bolts and Nuts ****			CH		CH		CH		CH		CH		CH		CH		CH		CH		CH		CH		CH
Check Hoses for Loose fittings and Chafing			CH		CH		CH		CH		CH		CH		CH		CH		CH		CH		CH		CH
Pump Drive Belt, P/N 000-010-128			CH		CH		CH		CH		CH		R		CH		CH		CH		CH		CH		R
Flush Chemical System with Vinegar			F		F		F		F		F		F		F		F		F		F		F		F
Blower Drive Belts, P/N 000-010-131	CH	CH	CH		CH				CH				CH				CH				R	CH	CH		CH
SERVICE	8	25	50	75	100	125	150	175	200	225	250	275	300	325	350	375	400	425	450	475	500	525	550	575	600
Air Filter, Clean, or Replace as Needed, P/N 000-049-063					C/R				C/R				C/R				C/R				C/R				C/R
Clean Battery Terminals					C/I				C/I				C/I				C/I				C/I				C/I
Blower Oil Change, P/N 000-087-034 Pneulube**					R																R				
Engine Fan Belt					CH				CH				CH				CH				CH				CH
Fuel Lines											CH										CH				
Spark Plugs, P/N 000-106-174											C/I A										C/I A				
Fuel Filter, P/N 000-049-257													CH								R				CH
Pump Oil Change, GP Series 100 oil***			R																		R				
SERVICE	8	25	50	75	100	125	150	175	200	225	250	275	300	325	350	375	400	425	450	475	500	525	550	575	600
Change Coolant																					R				
Recovery Tank Sacrificial Anodes																					R				
Adjust Valve Clearance, Intake and Exhaust .006 in. to .0079 in.																									
Blower Heat Exchanger																									

**** Check engine and blower mounting bolts, coupler retaining bolts, exhaust fasteners, etc.

Adjust	A
Check	CH
Clean and Inspect	C/I
Clean and Lubricate	C/L
Clean or Replace	C/R
Flush	F
Replace	R

TITAN 575

DAILY MAINTENANCE TITAN 575
Check the engine oil level. Add oil if needed.
Check the high pressure pump oil. Add oil if needed.
Check the oil level in the blower. Add oil if needed.
Check coolant overflow bottle level. Add coolant if needed.
Inspect and clean the recovery tank filters and sacrificial anodes.
Inspect and clean the garden hose screen.
Inspect the truckmount for water and oil leaks, loose electrical connections, etc. and repair as needed.
Lubricate the blower lube port with a HydraMaster-recommended lubricant.

INTERVAL IN HOURS TITAN 575																									
Engine oil and filter	Change engine oil and filter after first 25 hours; afterwards, change the engine oil and filter every 100 hours. (Every 50 hours if operating in high ambient temperatures or heavy use conditions.)*																								
Blower oil	Change the blower oil after first 100 hours of use. (Every 500 hours thereafter.)**																								
High pressure pump oil	Change high pressure pump oil after first 50 hours of operation. (Every 500 hours thereafter.)***																								
SERVICE	600	625	650	675	700	725	750	775	800	825	850	875	900	925	950	975	1000	1025	1050	1075	1100	1125	1150	1175	1200
Vacuum Relief Valve, Clean and Lubricate	C/L	C/L	C/L	C/L	C/L	C/L	C/L	C/L	C/L	C/L	C/L	C/L	C/L	C/L	C/L	C/L	C/L	C/L	C/L	C/L	C/L	C/L	C/L	C/L	C/L
Engine Oil and Filter, Oil filter PN 000-049-256, Oil 5W-30 Synthetic*	R				R				R				R				R				R				R
Check for Loose Bolts and Nuts ****	CH		CH		CH		CH		CH		CH		CH		CH		CH		CH		CH		CH		CH
Check Hoses for Loose fittings and Chafing	CH		CH		CH		CH		CH		CH		CH		CH		CH		CH		CH		CH		CH
Pump Drive Belt, P/N 000-010-128	R		CH		CH		CH		CH		CH		R		CH		CH		CH		CH		CH		R
Flush Chemical System with Vinegar	F		F		F		F		F		F		F		F		F		F		F		F		F
Blower Drive Belts, P/N 000-010-131	CH				CH				CH				CH				R	CH	CH		CH				CH
SERVICE	600	625	650	675	700	725	750	775	800	825	850	875	900	925	950	975	1000	1025	1050	1075	1100	1125	1150	1175	1200
Air Filter, Clean, or Replace as Needed, P/N 000-049-063	C/R				C/R				C/R				C/R				R				C/R				C/R
Clean Battery Terminals	C/I				C/I				C/I				C/I				C/I				C/I				C/I
Blower Oil Change, P/N 000-087-034 Pneulube**																	R								
Engine Fan Belt	CH				CH				CH				CH				R				CH				CH
Fuel Lines							CH										CH								
Spark Plugs, P/N 000-106-174							C/I A										R								
Fuel Filter, P/N 000-049-257	CH												CH				R								
Pump Oil Change, GP Series 100 oil***																	R								
SERVICE	600	625	650	675	700	725	750	775	800	825	850	875	900	925	950	975	1000	1025	1050	1075	1100	1125	1150	1175	1200
Change Coolant																	F/R								
Recovery Tank Sacrificial Anodes																	R								
Adjust Valve Clearance, Intake and Exhaust .006 in. to .0079 in.																	A								
Blower Heat Exchanger																	C/I								

**** Check engine and blower mounting bolts, coupler retaining bolts, exhaust fasteners, etc.

Adjust	A
Check	CH
Clean and Inspect	C/I
Clean and Lubricate	C/L
Clean or Replace	C/R
Flush	F
Replace	R

Weekly Maintenance

	Date							
	Hour Meter Reading							
	Technician Initials							
Inspect the recovery tank filters for tears, holes, etc. Repair or replace as needed.	☐	☐	☐	☐	☐	☐	☐	☐
Inspect the vacuum relief valve. Clean and lubricate as necessary.	☐	☐	☐	☐	☐	☐	☐	☐
Clean the recovery tank thoroughly with pressure washer.	☐	☐	☐	☐	☐	☐	☐	☐
Check the oil level in the blower. Add oil if needed.	☐	☐	☐	☐	☐	☐	☐	☐
Check the pump drive belt for wear and proper tension. Tighten as needed.	☐	☐	☐	☐	☐	☐	☐	☐
Flush the water and chemical systems with solution of equal parts white vinegar and water.	☐	☐	☐	☐	☐	☐	☐	☐
Check all the nuts and bolts. Tighten as needed.	☐	☐	☐	☐	☐	☐	☐	☐
One time change of the high pressure pump oil after 50 hours of operation. (Every 500 hours thereafter.)	☐	☐	☐	☐	☐	☐	☐	☐
One time change of the engine oil after 8 hours of operation.	☐	☐	☐	☐	☐	☐	☐	☐
Change the engine oil every 50 hours. (Every 25 hours if operating in high ambient temperatures or heavy use conditions.) Change oil filter every oil change.	☐	☐	☐	☐	☐	☐	☐	☐

ATTENTION Special Maintenance

One time change of the engine oil after 8 hours of operation.	☐							
One time change of the high pressure pump oil after 50 hours of operation. (Every 500 hours thereafter.)		☐						
Change the blower oil after first 100 hours of use.			☐					

Monthly Maintenance

Check the engine air filter. Clean or replace as necessary.				☐				☐
Check the water level in battery. Fill as needed.				☐				☐
Clean the battery terminals as needed.				☐				☐
Change the blower oil after first 100 hours of use.				☐				☐

Weekly Maintenance

	Date							
	Hour Meter Reading							
	Technician Initials							
Inspect the recovery tank filters for tears, holes, etc. Repair or replace as needed.	☐	☐	☐	☐	☐	☐	☐	☐
Inspect the vacuum relief valve. Clean and lubricate as necessary.	☐	☐	☐	☐	☐	☐	☐	☐
Clean the recovery tank thoroughly with pressure washer.	☐	☐	☐	☐	☐	☐	☐	☐
Check the oil level in the blower. Add oil if needed.	☐	☐	☐	☐	☐	☐	☐	☐
Check the pump drive belt for wear and proper tension. Tighten as needed.	☐	☐	☐	☐	☐	☐	☐	☐
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Check all the nuts and bolts. Tighten as needed.	☐	☐	☐	☐	☐	☐	☐	☐
One time change of the high pressure pump oil after 50 hours of operation. (Every 500 hours thereafter.)	☐	☐	☐	☐	☐	☐	☐	☐
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	Date							
	Hour Meter Reading							
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ATTENTION Special Maintenance

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One time change of the high pressure pump oil after 50 hours of operation. (Every 500 hours thereafter.)		☐						
Change the blower oil after first 100 hours of use.			☐					

Monthly Maintenance

Check the engine air filter. Clean or replace as necessary.				☐				☐
Check the water level in battery. Fill as needed.				☐				☐
Clean the battery terminals as needed.				☐				☐
Change the blower oil after first 100 hours of use.				☐				☐

Quarterly Maintenance	
Check the fuel lines. Repair or replace as needed.	☐
Clean and gap the spark plugs to 0.030". Replace if excessive carbon buildup is visible.	☐
Change the fuel filter.	☐
Change pump drive belt.	☐
Change pump drive belt.	☐

100 Hours Maintenance		
Replace spark plugs	☐	☐

250 Hours Maintenance	
Check coupler element (rubber insert) for cracks or wear. Replace as necessary.	☐

500 Hours Maintenance	
Change the blower oil.	☐
Change the high pressure pump oil.	☐
Check the engine valve clearance (intake and exhaust 0.004" - 0.006")	☐
Change the fuel filter.	☐
Change sacrificial anodes.	☐
Check coupler element (rubber insert) for cracks or wear. Replace as necessary.	☐

1000 Hours Maintenance	
Change air filters.	☐
Check plug wires. Replace as necessary	☐
Check carburetor. Clean or replace as necessary.	☐
Clean the heat exchanger core.	☐
Replace coupler element (rubber insert) for cracks or wear.	☐

Quarterly Maintenance	
Check the fuel lines. Repair or replace as needed.	☐
Clean and gap the spark plugs to 0.030". Replace if excessive carbon buildup is visible.	☐
Change the fuel filter.	☐
Change pump drive belt.	☐
Change pump drive belt.	☐

100 Hours Maintenance		
Replace spark plugs	☐	☐

250 Hours Maintenance	
Check coupler element (rubber insert) for cracks or wear. Replace as necessary.	☐

500 Hours Maintenance	
Change the blower oil.	☐
Change the high pressure pump oil.	☐
Check the engine valve clearance (intake and exhaust 0.004" - 0.006")	☐
Change the fuel filter.	☐
Change sacrificial anodes.	☐
Check coupler element (rubber insert) for cracks or wear. Replace as necessary.	☐

1000 Hours Maintenance	
Change air filters.	☐
Check plug wires. Replace as necessary	☐
Check carburetor. Clean or replace as necessary.	☐
Clean the heat exchanger core.	☐
Replace coupler element (rubber insert) for cracks or wear.	☐