R45 AIR

TruckMount Operation and Service Manual

Congratulations on the purchase of your TruckMount machine. This manual is an instructional guide for operating, servicing, and troubleshooting your equipment. Verify you have read and understood all safety and warning restrictions found here. Read this manual completely before operating, starting, or installing this unit.

Following proper operation and service maintenance are necessary to ensure optimal performance of this unit. When properly maintained, your TruckMount will continue to work for years to come.

The instructions outlined in this manual are written to help ensure that operation and service are performed properly and safely. Because service levels vary due to the skill of the mechanic, ensure that prior to attempting any maintenance or repair, you are familiar with the equipment and have all the proper tools to complete the task. Please call an ATMI service or customer care representative at 866-390-2376 for help with maintenance, repair, warranty and parts related questions.

THIS UNIT MUST BE INSTALLED BY AN AUTHORIZED DEALER IN ACCORDANCE WITH THE PRESCRIBED INSTALLATION PROCEDURES.

Information in this document is subject to change without notice and does not represent a commitment on the part of ATMI.

To quickly jump to the section you are looking for, select the title of the section you would like to view in the Table of Contents and you will automatically be taken to that section.

Aero Tech MFG Inc. (“ATMI”)
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84054 U.S.A.
MANUAL-R45LIQUID
Rev. MARCH 2026

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SECTION ONE: GENERAL INFORMATION

HOW TO ORDER PARTS

Ordering Parts

Parts may be ordered from authorized dealers. When placing an order for parts, the machine model and serial number are required.

If you are ordering warranty parts, please contact your authorized ATMI service center dealer to determine which parts you need, to schedule an appointment, and provide information in regard to your concern. The Service Center will inspect the TruckMount for any defects and contact ATMI for verification of the warranty, if necessary. Proof of proper maintenance may be required before any warranty service is provided. Find your local Service Center by calling 866-390-2376. Please have the following information ready:

- Equipment Model
- Date of Purchase
- Hours on the Unit
- Unit Serial Number
- Description of Malfunction

The model and serial number of your unit is located on the front left side of the frame as shown here.

SERIAL NUMBER

You must read and understand this manual prior to installing, operating, maintaining, and servicing this TruckMount machine.

SAFETY, WARNINGS, & CAUTIONS

The following warnings are included on your R45 unit. These labels point out important WARNINGS which must be followed at ALL times. Failure to follow these warnings could result in injury, fatality, or property damage. Please be meticulous when following these instructions. DO NOT remove any of the warning decals.

⚠WARNING

ATMI uses this WARNING symbol throughout this manual to warn users about the possibility of physical injury or fatality. Please read these warnings thoroughly before operating the machine.

CAUTION

ATMI uses this CAUTION symbol to warn of the possibility of damage to the machine or personal property.

⚠WARNING

An engine produces toxic exhaust gas, DO NOT operate in a confined area. Exhaust fumes contain carbon monoxide which is an odorless and deadly poison that can cause severe injury or fatality. Position the unit so exhaust will be directed away from job site. DO NOT operate equipment where exhaust may enter a building through open doors, windows, or other air intake.

WARNING: Breathing engine exhaust exposes you to chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

- Always start and operate the engine in a well-ventilated area.
- If in an enclosed area, vent the exhaust to the outside.
- DO NOT modify or tamper with the exhaust system.
- DO NOT idle the engine except as necessary.

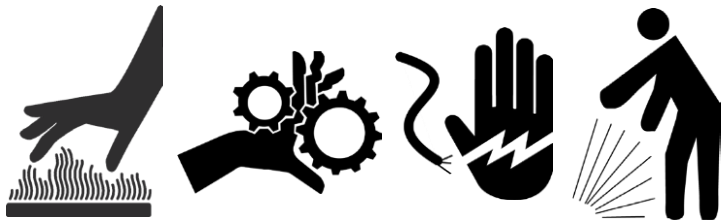
For more information go to www.P65Warnings.ca.gov

NOTE: Any unit entering the State of California must properly display Proposition 65 warning labels. This label has been included with the other warning labels and must be installed in a clearly visible location. If you are in California and do not see this label installed or need a replacement, contact ATMI immediately at 866-390-2376.

Gasoline is extremely flammable and its vapors can explode if ignited. Store gasoline only in approved containers, in well-ventilated, unoccupied buildings and away from sparks or flames. Never carry gasoline or any flammable materials inside the vehicle. Fumes could accumulate inside of the vehicle and ignite, causing an explosion. 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 fatality may result.

⚠WARNING

Read this manual before operating, starting, or installing this unit. Failure to adhere to instructions can result in severe personal injury or could be fatal or cause damage to the machine or other property.



⚠WARNING

Hot Surfaces. DO NOT operate equipment without all covers and guards in place. During the operation of the TruckMount many surfaces will become extremely hot. Never touch hot surfaces, serious injury may result. Engine, vacuum pump and heat exchanger components, and hoses and fittings 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. DO NOT touch any part of the exhaust system while the system is running, or for at least 20 minutes after the unit is shut off. Severe burns could result.

Rotating Equipment. DO NOT operate equipment without all covers and guards in place. DO NOT touch these areas while the unit is running, severe injury could result. DO NOT place hands, feet, hair, clothing or any body parts near rotating or moving parts. Rotating machinery can cause severe injury or fatality.

Electrical Shock. Electrical shock could cause severe burns or injury. DO NOT touch electrical wires or components while the engine is running. Disconnect the battery before servicing this unit to prevent accidental starting.

Water Pressure. Water under high pressure at a high temperature can cause burns. Shut down machine, allow to cool down and relieve system of all pressure before removing valves, caps, plugs, fitting, filters, and bolts.

Failure to follow these guidelines can cause severe injury or fatality.

CAUTION

1. NEVER leave the vehicle engine running while the unit is in operation.
2. Never operate the TruckMount when the vehicle is tilted more than 10 degrees in any direction. Doing so will result in improper lubrication of internal components and will increase the risk of serious component or engine damage.
3. 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 the battery at all times. Remove all jewelry prior to servicing batteries. Keep batteries out of the reach of children.
   Prior to servicing or replacing your battery, disconnect the negative (–) ground cable and 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.
4. DO NOT smoke around the vehicle to prevent possible ignition and/or explosion. Gas fumes could accumulate and ignite. Battery gasses are extremely flammable.
5. NEVER cut or splice any of the vehicle fuel lines during fuel line installation. This could result in fuel leaks and potentially dangerous conditions. Use only the provided fuel hose for fuel lines. When going through the vehicle floor with fuel lines, always utilize bulkhead adapters. This will prevent fuel leaks and ensure that hoses are not punctured by vehicle vibration abrasion.
6. Be cautious when drilling holes through the van floor. Many vans have critical components mounted directly below the van floor that can be easily damaged by a misplaced drill bit. 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.

7. All high-pressure hoses must be rated to a minimum of 250° F (121° C) and 3,000 PSI. Severe injuries may result from improper hoses.
8. Vehicle doors must be open while the unit is in operation.
9. Never perform cleaning operations or extraction 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.
10. 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.
11. Never operate the TruckMount with a water hardness reading measuring 3.0 grains per gallon (GPG)or higher. Using water that reads more than 3.0 GPG will cause scale to buildup 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. See the Water Requirements section for more details.
12. Never allow water to freeze (32° F and 0° C) inside the TruckMount. Failure to apply preventative measures towards freezing can result in system failure, serious component damage, and loss of warranty on affected parts. Perform all freeze guarding procedures outlined in this manual. See the Freeze Protection section for more details. Water freezes at 32° F and 0° C.
13. DO NOT EXCEED THE VEHICLE'S PAYLOAD CAPACITY. The vehicle's payload capacity is the amount of weight the vehicle can carry including the weight of all occupants, equipment, solutions, etc. The vehicle payload capacity can be found on the Tire and Loading Information label and the Certification/Tire label found on the driver's door of your van. DO NOT load the vehicle any heavier than the Gross Vehicle Weight Rating (GVWR), or either the maximum front or rear Gross Axle Weight Rating (GAWR). This can cause systems to break and change the way the vehicle handles. Overloading can also reduce stopping performance, damage the tires, and shorten the life of the vehicle.
    Steps for determining correct load limits:
    a. Locate the statement "The combined weight of occupants and cargo should never exceed XX kg or XX lbs." on your vehicle's label.
    b. GVWR: Determine the combined weight of the occupants, equipment, etc. that will be in the vehicle.
    c. Curb Weight: Subtract the combined weight of the driver and passengers from XX kg or XX lbs.
    d. Payload Capacity: The result equals the available amount of cargo and equipment load capacity. Example: If the GVWR for a vehicle is 9,600 lbs. and the vehicle has a base curb weight of 6,400 lbs., this leaves a payload capacity of 3,200 lbs. (GVWR - Curb Weight = Payload Capacity).
    e. Determine the combined weight of equipment and cargo being loaded on the vehicle. That weight may not safely exceed the payload capacity calculated in step D.
15. Always keep your vehicle clean and orderly. Tools and accessories must be securely stowed while driving the Vehicle to prevent injuries or damage.
16. Ensure that you have received proper training and are familiar with the start-up and shut-down procedures prior to operation.
17. DO NOT alter or modify your TruckMount in any way. Use only replacement parts authorized by ATMI. Modifications or use of unapproved parts could create a hazard and will void your warranty. This includes the use of any open-ended hoses.
18. It is recommended by ATMI, and many government agencies, that a fire extinguisher rated for A, B, and C type fires is installed into any commercial vehicle.

SYSTEM SPECIFICATIONS

Engine – Kohler ECH749, 26.5 HP 2 CYL, EFI	Engine Speed	3,200 RPM (High Speed/No Load ~1,200 RPM (Idle/No Load)
	Oil Type Oil Filter	20W50 High Zinc ***Only*** NAPA GOLD 1394
	Est. Capacity	Approx. 2 U.S. quarts when changing oil and filter* *before operating, check oil level to ensure proper levels
	Fuel Consumption	1.0 - 1.2 GPH
Chemical Tank	Capacity	6 US Gallons
Waste Tank - Polyethelyne	Gross Capacity	100 US Gallons
	Capacity At Shutoff	86 US Gallons
Waste Tank – Stainless Steel	Gross Capacity	130 US Gallons
	Capacity At Shutoff	110 US Gallons
Blower/Vacuum Pump	MD Pneumatics - Tuthill Vacuum Relief Setting	4005 Tri-Lobe 13” Hg
	Gates 3/3VP475 PREDATOR POWER-BAND BELT* * Refer to manufacturer’s recommendations for re-tensioned belts	4-6 lbs. @ ¼” Deflection
	Oil Type	ISO 150 Synthetic Oil Part#: MD ONE 16444-MD1-Q
	Est. Capacity	Approx. 32 oz. (1 qt)
Vacuum Hose Reel Aluminum, slide away technology	Capacity	250 ft of 2” vacuum hose
Solution Hose Reel - Live	Capacity	250 ft of ¼” solution hose
Garden Hose Reel - Live	Capacity	150 ft of 5/8” Industrial garden hose

Solution Pump	General Pump Maximum PSI Maximum Volume	Model # PEHT2010S 1,500 PSI 4.0 GPM
	Oil Type	BP ENERGOL HLP 220 Mobil DTE Oil BB Total CORTIS 220
	Est. Capacity	Approx. 25 oz.
	Gates AX38 TRIPOWER BELT* * Refer to manufacturer's recommendations for re-tensioned belts	10-14 lbs. @ 3/16" Deflection
APO Pump – 12 VDC	Impeller - Stainless Steel	Up to 5 GPM
Console Weight		837 lbs. (dry)
Frame Dimensions		See Figure 1
Standard Equipment - HOSES	Solution Hose	¼" High Temperature Hose, 250F, 3,000 PSI
	Vacuum Hose	2" Industrial Vacuum Hose 1-½" Wand Whip Line
Battery	Type - Code	Group 24 Minimum 750 CCA

ATMI Limited Warranty
R45 Series

Aero Tech Manufacturing Inc (ATMI) warrants each new console and new accessories against defects in material or workmanship under normal use and service. ATMI's obligation under this warranty shall be to furnish parts and labor for the repair or replacement of the product found to be defective in material or workmanship during the warranty period. Warranty coverage shall begin on the date of installation. Labor is covered at ATMI's approved labor rate. The warranty registration form must be completed and submitted within 10 days of the installation. The warranty coverage period is as follows:

Component	Parts	Labor
Frame	**7 Years**	**7 Years**
Blower Cradle	**7 Years**	**7 Years**
Silencer Cradle	**7 Years**	**7 Years**
Covers	**5 Years**	**5 Years**
Fresh/Waste Water Tanks	**5 Years**	**5 Years**
Hose Reel	**5 Years**	**5 Years**
Hose Reel Drive System	**5 Years**	**5 Years**
Heat Exchangers	**5 Years**	**5 Years**
LED Display & PDM	**5 Years**	**5 Years**
Solution Pump**	**2 Years**	**2 Years**
Vacuum Blower**	**2 Years**	**2 Years**
Engine**	**3 Years**	**3 Years**
Miscellaneous	**2 Years**	**2 Years**

Notes:
***Miscellaneous components consist of the water pressure regulator, solution pump clutch, wetted fittings, belts, hoses, and external engine bearings**

****As provided by the original manufacturer**

Items not covered by warranty: normal wear items such as disposable filters, lubricants/oils, and coated finishes.

The warranty shall not apply to repairs resulting from equipment modification, improperly installed or used, damaged by the use of harsh chemicals, damaged due to hard water scaling or exposure to freezing temperature conditions.

All warranty repairs must be pre-authorized by an ATMI representative prior to any repair work. ATMI will replace the item and pay ground shipping costs. ATMI will request that the defective part is returned to ATMI for inspection and final warranty determination. Parts that are not returned will not be covered under warranty. Any product that is returned to ATMI shall be packaged in a manner sufficient to prevent damage in shipment.

The above warranties are in lieu of all other warranties, expressed or implied, oral or written, statutory or otherwise, including any implied warranty of merchantability or fitness for a particular purpose. ATMI shall not be held responsible for the specific application to which the machine is applied, including but not limited to compatibility with other equipment.

All statements, technical information and recommendations relating to any product furnished by ATMI is believed to be reliable, but does not constitute a guarantee or warranty. ATMI shall not be liable to the end user(s) or any other party for lost profits, diminution of goodwill or any other special or consequential damages whatsoever with respect to any claim. No waiver, alteration, addition, or modification of the foregoing warranties shall be valid unless made in writing and signed by an authorized agent of ATMI.

ATMI reserves the right to change its warranty policy without notice.

How Do I Receive Service If There Is a Concern?

To obtain the benefits of the TruckMount warranty available to you, please contact your authorized ATMI service center dealer (each, a "Service Center") to schedule an appointment and provide information in regard to your concern. The Service Center will inspect the TruckMount for any defects and contact ATMI for verification of the warranty, if necessary. Proof of proper maintenance may be required before any warranty service is provided. Find your local Service Center by calling 866-390-2376.

What ATMI Will Do:

During the Warranty Period, if a defect in materials or workmanship in any TruckMount is identified by a Service Center, such Service Center may (i) repair or replace the defective part at no cost to you; or (ii) repair or replace the defective part and return such defective part to ATMI offices in North Salt Lake City, Utah and invoice you for any replacement part. If upon inspection of the applicable part by ATMI in North Salt Lake City, Utah, it is determined that the applicable part is defective, then ATMI shall credit customer the cost of the replacement part. If upon inspection of the applicable part by ATMI it is determined that there is no defect or the defect resulted from misuse, a Prohibited Use (defined below), Exclusion (defined below) or otherwise not within the scope of this warranty, you shall pay the applicable invoice for the replacement part and reimburse ATMI for any and all applicable shipping costs.

What This Warranty Does Not Cover:

The following are some examples of what this warranty does not cover (each, an "Exclusion"). For the purpose of clarity, the following list is not comprehensive:

A. Defects due to misuse, alteration, negligence, accident, and improper maintenance, storage or repair of the TruckMount.

B. Defects arising from the use of a TruckMount in a manner that is not in compliance with the instructions and specifications provided by ATMI for its use.

C. Normal wear maintenance items such as air and oil filters, lubricants, spark plugs, and any additional tune up parts.

D. Paint and labeling are not covered under warranty.

E. TruckMount modification or damage by the use of improper solutions/chemicals, hard water scaling, or exposure to freezing* temperature conditions.

NOTE: Supporting service/maintenance documentation may be required.

Use of Parts Not Approved by ATMI Will Void All Warranties.

To avoid confusion between TruckMount owners and ATMI, here are some more specific examples of actions with respect to certain parts that would void the warranty (each, a "Prohibited Use"). For the purpose of clarity, this is not an exclusive list; any action of misuse will void the warranty.

BLOWER

- Failure to maintain proper oil levels, or to use the correct oil as recommended.
- Failure to maintain safeguard systems such as the waste tank filter screen, vacuum safety relief valve and waste tank automatic shut-off system.
- Allowing liquid or foam to pass through blower.

HIGH PRESSURE WATER PUMP

- Failure to maintain proper oil level and oil changes as recommended.
- Failure to protect pump[s] against freezing*.
- Failure to use water softener in Hard Water Areas (defined below).
- Use of cleaning solutions as may be prohibited by ATMI.

WASTE TANK

- Failure to properly maintain filters and to clean tank as recommended by manufacturer.
- Failure to maintain vacuum relief valve in tank.
- Failure to use proper solutions.

SOLUTION SYSTEM

- Failure to use proper solutions.
- Failure to operate the machine with proper filters.
- Failure to protect against freezing*.

HEAT EXCHANGE SYSTEM

- Over-pressurization of the system (recommended maximum working pressure -1,500 psi).
- Failure to protect against freezing*.

HARD WATER DEPOSITS

- Failure to use or maintain a water softening system with machines operating in designated “Hard Water Areas” (3.0 or more grains per gallon/60 parts per million).

*FREEZING TEMPERATURES (32°F/0°C).

Additional notes:
Transportation of hazardous waste or contaminated equipment is subject to various laws and regulations. In returning any TruckMount, part or accessory under this limited warranty, the end user must certify in writing that the TruckMount, part or accessory, as applicable, being returned has not been used for handling, clean up, or disposal of hazardous waste or hazardous materials. If the TruckMount, part or accessory, as applicable, being returned has been used for handling, clean up, or disposal of hazardous waste or hazardous materials, then the end user must have the TruckMount, part or accessory, as applicable, decontaminated by licensed and qualified decontamination professionals and provide written certification of this decontamination signed by the decontamination professionals. Each such TruckMount, part or accessory is to be returned only to the local Service Center for Warranty service along with decontamination certification.

The above warranties are in lieu of all other warranties expressed or implied, oral or written, statutory or otherwise, including any implied warranty of merchantability or fitness for a particular purpose and you hereby acknowledge and waive all such other warranties. ATMI shall not be responsible for the specific application to which the TruckMount is applied, including but not limited to compatibility with other equipment. All statements, technical information and recommendations relating to any product furnished by ATMI is believed to be reliable but does not constitute a guarantee or warranty.

BUYER UNDERSTANDS, ACKNOWLEDGES AND AGREES THAT THE REMEDIES PROVIDED UNDER THIS LIMITED WARRANTY ARE THE SOLE AND EXCLUSIVE REMEDIES AVAILABLE TO THE BUYER. ATMI WILL NOT BE LIABLE FOR ANY OTHER OR ADDITIONAL DAMAGES, INCLUDING BUT NOT LIMITED TO INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF OR IN CONNECTION WITH THE FURNISHING, PERFORMANCE, USE OF OR INABILITY TO USE THE MACHINE. ANY EXTENSIONS OF OR MODIFICATIONS MADE TO THIS WARRANTY BY A DEALER/DISTRIBUTOR OF ATMI ARE THE SOLE RESPONSIBILITY OF THE DEALER/DISTRIBUTOR.

ATMI reserves the right to change its warranty policy without notice. Questions about this

warranty or your equipment? Please reach out to ATMI at 866-390-2376.

SECTION TWO: INSTALLATION

⚠WARNING

This unit must be bolted to the floor of the vehicle by an authorized ATMI INSTALLER.

Installation Responsibilities

- Ensure proper payload capacity for your vehicle. It is the distributor's and owner's responsibility to verify that the equipment package does not exceed the vehicle's payload capacity.
- Ensure installation of an approved fuel tap system and through-floor fittings as provided by ATMI. Ensure proper connection of the fuel lines.
- Proper placement of the TruckMount, waste tank, solution tank, and accessories in the vehicle and securing them with bolts and back up plates. The distributor should have signed off that the owner is in agreement with the layout.
- Ensure proper connection and installation of the battery. Verify that the battery is in type and code.
- Check the engine, vacuum blower, and pump oil levels prior to starting the TruckMount.
- Start and operate the TruckMount and verify that all systems function properly after installation. Refer to installation checklist.
- Ensure the document package is returned to ATMI at TruckMount@ATMISupport.com within 15 days of install. Warranty will be voided without this document.

INSTALLATION REQUIREMENTS

Prior to beginning the installation, read the ENTIRE "Installation" section of this manual. Due to the weight of the TruckMount package, please adhere to the following requirements prior to installing the unit.

CAUTION

1. DO NOT exceed the vehicle's payload capacity to help prevent hazardous driving conditions. Before installing any components into the vehicle, check with the vehicle manufacturer for the Gross Vehicle Weight Rating (GVWR). GVWR is the maximum allowable combined weight of the vehicle and cargo, including all passengers, fuel, fluids and accessories.

   Example: If the GVWR for a vehicle is 9,600 lbs. and the vehicle has a base curb weight of 6,406 lbs., this leaves a payload capacity of 3,194 lbs. (GVWR - Curb Weight = Payload Capacity).
2. ATMI recommends all flooring materials do not absorb water to prevent rust and corrosion of the vehicle floor.
3. Insulation under rubber mats should be removed prior to installation of the unit.

LIFTING THE UNIT INTO THE VEHICLE

Because the console weighs 950 lbs., a forklift is necessary to place the unit into the vehicle. Position the forks under the unit from the front and make certain that the forks are spread to insert into the frame slots.

POSITIONING THE UNIT INTO THE VEHICLE

Vehicles vary in size and openings. Owners may have a different preference for where in the vehicle they want their unit positioned. strongly recommends a side door installation for the R45 Air. We do NOT recommend a rear door installation.

1. Ensure that enough space is provided to assure adequate engine ventilation as well as room for service and maintenance.
2. Operating weight of the complete installation (which includes water weight) with waste tank and ALL accessories MUST NOT exceed the vehicle's axle weight limit. Please refer to SYSTEM SPECIFICATIONS in Section One for standard unit and waste tank operating weight.

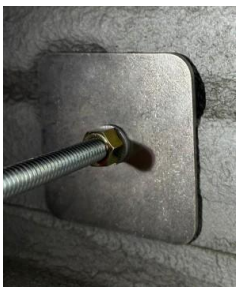
FASTENING DOWN THE UNIT AND WASTE TANK

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

- Secure the console and waste tank with mounting bolts through the provided mounting tabs.
- Using the provided mounting hardware kit: Install the provided mounting plates underneath the vehicle floor. Use the plates where space is available. Insert washers through the console and waste tank mounting holes. The two 5/16-18 x 6 in. hex head cap screws are provided if the unit is being installed into a Ford Transit. Screw the provided 3/8-16 hex head lock nuts on to the mounting bolts and tighten until the console and waste tank are firmly attached to the vehicle floor.

⚠WARNING

Do not alter or modify your unit in any way. Use only replacement parts authorized by . Modifications or use of unapproved parts could create a hazard and will void your warranty. Contact your authorized ATMI dealer for assistance.



INSTALLATION OF FUEL LINES

The Vehicle fuel lines should NOT be spliced under ANY circumstances. Severe injury or fatality

- When routing fuel lines, DO NOT configure the hoses in any location where the hoses, or vehicle could be damaged.
- All fuel lines must meet CARB TIER III and EPA PHASE 3 low permeability requirements.
- Avoid contact with moving parts, areas of high temperature, brake lines, fuel lines, catalytic converters, exhaust pipes, mufflers or sharp objects.
- Fuel pump must be mounted in a horizontal position as near as possible to the fuel supply, and not located near any heat sources.
- Excess heat from exhaust or other heat sources may cause the fuel pump to malfunction.

FUEL LINE BULKHEAD INSTALLATION

1. Inside the vehicle, select an appropriate location on the vehicle floor away from operator or maintenance traffic and away from contact with any accessories or tools while in use or transit. Make sure your location is within adequate reach of your supply of fuel hose from the fuel manifolds in the finished assembly.
2. Drill one 3/4 inch hole through the vehicle floor at the location chosen for the bulkhead connector.
3. Install the bulkhead connector by inserting the fitting and tightening the nut and lock washer on the opposite side of the vehicle floor.
4. Inside the vehicle, attach the hose fitting and connect the fuel line from the engine. Use hose clamps as needed when routing the fuel hose in a safe and clean manner.
5. Drill a hole, two hole sizes larger to pass the wiring harness connectors through near the bulkhead. Use a wire loom to prevent chaffing.

FUEL PUMP ASSEMBLY INSTALLATION

1. Remove the housing cover from the fuel pump assembly. Attach the ring terminals of the supplied fuel pump extension harness to the fuel pump. Connect the white wire to the positive (+) terminal and the black wire to the negative (-) terminal.
2. Attach the appropriate connector from the wiring harness 47-175 to the fuel return manifold.
3. Cut a slit in the grommets and slip over the wiring harnesses in an appropriate location to route back through the wall of the box.
4. Install the return fuel line onto the fuel return manifold. Use the internal clamps to secure the return line inside the housing. Route the return line through the grommet in the side of the housing. Do not trim the return line until installing the check valve.
5. Locate an appropriate location for the fuel pump assembly housing to mount underneath the vehicle that will not cause damage to the vehicle or compromise the fuel line routing or components. Use the supplied self-drilling screws to install the cover of the fuel pump housing to the vehicle.
6. Attach the main section of the fuel pump assembly to the lid using the eight supplied screws and washers. Blue Loctite is recommended to prevent vibration from loosening the screws.

NOTE: Install the fuel pump assembly close to the fuel source.

FUEL SUPPLY & RETURN LINE INSTALLATION

Refer to the transfer flow kit instructions found with the appropriate kit for your vehicle.

1. Using the fuel line from the transfer flow kit, connect the outlet fitting on the fuel return manifold to the bulkhead fitting underneath the vehicle.
2. Route both wiring harnesses through the hole, holes or slot you have drilled in the vehicle floor. Apply a grommet and or wire loom at the point of entry to avoid damage from the sharp edge of the vehicle floor.
3. Connect the check valve in line with the return line near the fuel cell with the flow arrow pointed towards the fuel supply.
4. Connect the fuel filter in line with the supply line between the fuel supply and fuel pump with the flow arrow pointed towards the fuel pump.
5. Ensure that all hose clamps are properly tightened.
6. Secure all lines tightly and carefully, avoiding contact with any sharp edges. Use industrial zip ties, protective sleeves and grommets as necessary to shield exposed fuel hoses and wiring.

NOTE: The return fuel line needs to have enough length to properly cool the fuel temperature. If needed, coil two or three feet of return line under the vehicle in a safe location.

NOTE: recommends using only OEM parts. Using non OEM parts may damage critical components. Contact for OEM replacement parts: 36-556, PUMP, FUEL; 36-097, FILTER, FUEL; 36-660, CHECK VALVE, TFS-2019

FUEL REQUIREMENTS

Use unleaded fuel ONLY. Use only fresh, clean unleaded gasoline. DO NOT use high octane gasoline. Gasoline engines should use 87 octane or higher. E85 fuel is not permitted for use in the gasoline engine. Use of any other fuel may result in your engine no longer operating in compliance with CARB or EPA emissions requirements.

CONSOLE TO WASTE TANK CONNECTIONS

1. Connect the two 3ft long 2in vacuum hoses from the pre-filter box to the waste tank inlet.
2. Connect the 4in aluminum tube to the blower inlet and waste tank inlet.

Hoses from the waste tank to the pre-filter box.

Aluminum tube to the blower inlet and waste tank inlet.

SOLUTION REQUIREMENTS

Only use approved ATMI solutions through your machine.

POWER REQUIREMENTS

Group 24 batteries with a minimum of 750 CCA are recommended as a Group U1 battery does not have enough capacity to power the unit if any additional powered accessories are installed. A Group 24 battery box and post battery terminals are provided in the installation kit. To use the post terminals, remove one screw from the terminal and insert the ring terminal of the battery cable. Reinstall screw through the ring terminal.

WATER REQUIREMENTS

Local Water Precautions & Hard Water Advisory

The quality of water varies greatly throughout the United States and Canada. 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. ATMI 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.

Owner is responsible for using water that is below 3.0 grains or more per gallon when operating within “Hard Water Areas.” See Figure 1 for more details. Failure to do so may void warranty and effected parts. If a water softener is used, it must have a flow capacity of at least five (5) gallons per minute (GPM) or greater, without any hose constrictions.

Water Softener

Using a Water Softener System is highly recommended by ATMI because it helps prevent build-up of minerals on the inside of your machine, lengthening the life of your TruckMount. Not only does the water softening system help prolong the life of your machine and its parts, you will have the benefits of reduced solution costs and continued cleaning efficiency with more effective solutions. Follow the recommendations of your water softener for installation and use.

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.

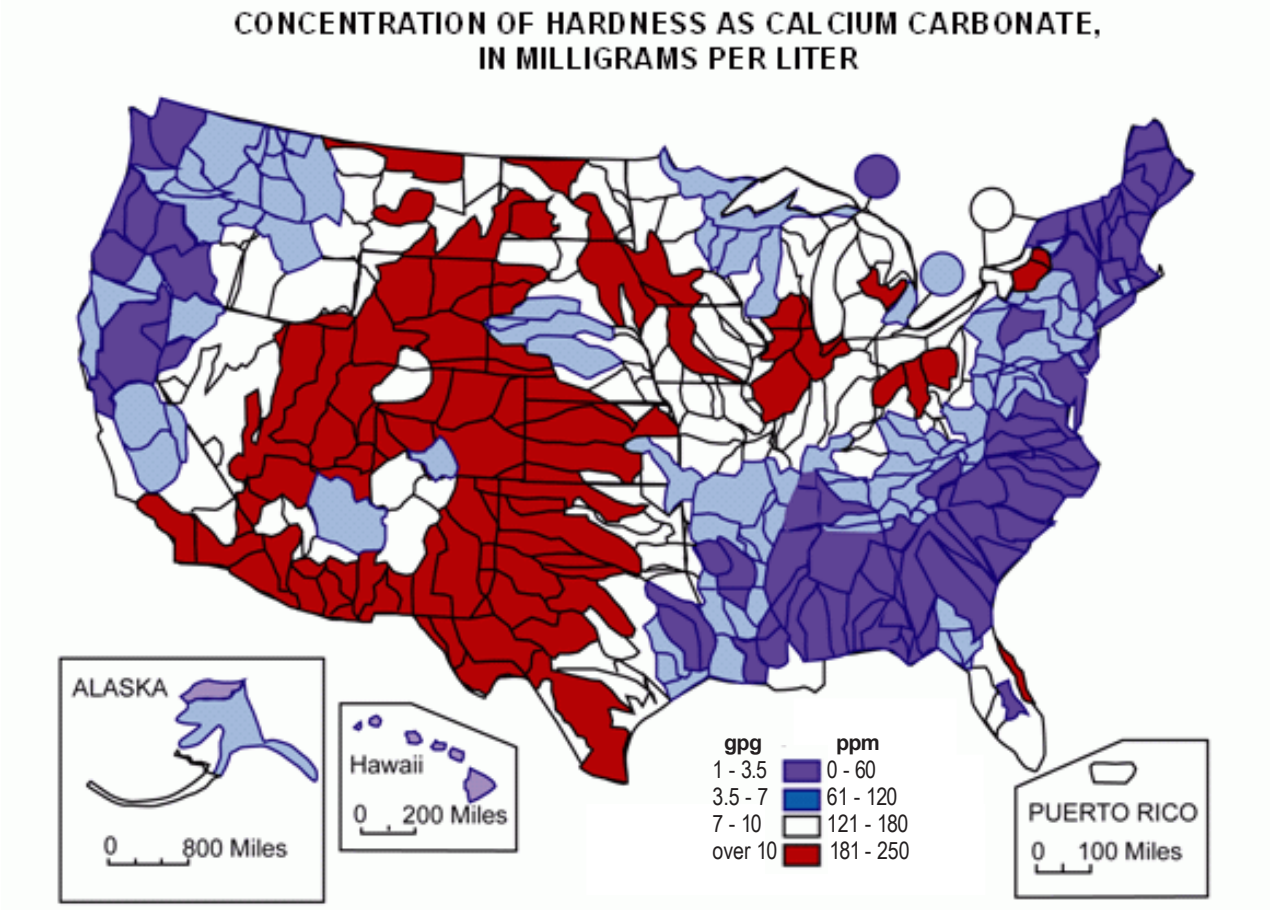


Figure 1 Water Hardness Areas. Map courtesy of USGS https://www.usgs.gov/media/images/map-water-hardness-united-states

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

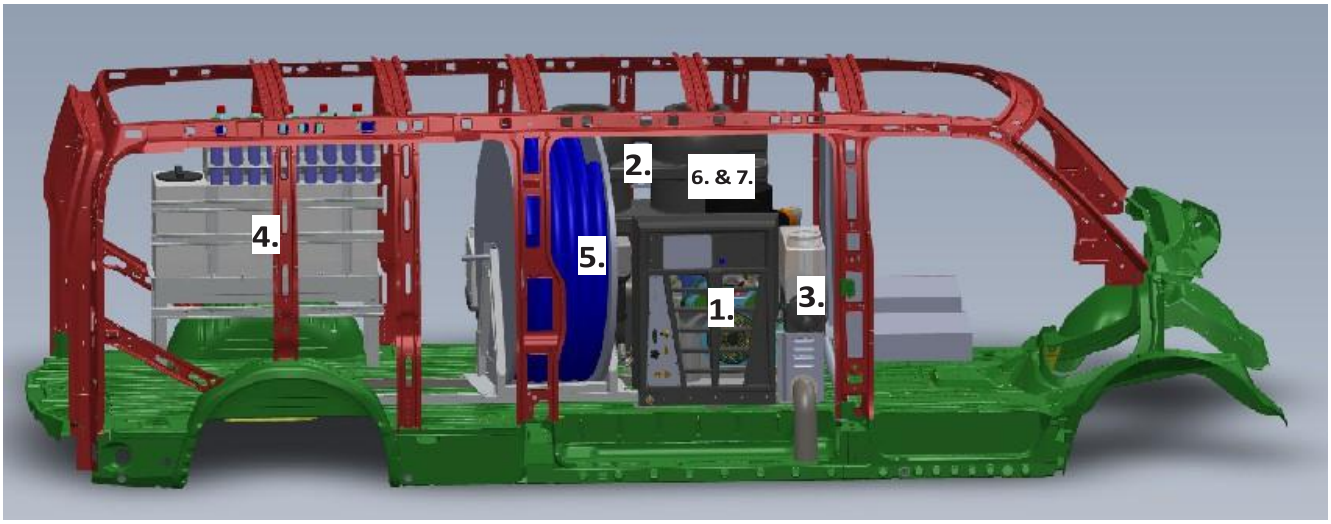
Waste Water Disposal Advisory

Always follow the safety precautions when disposing of waste material in accordance with all local, state/provincial, and national requirements. Not all products require the same disposal procedure. Generally, most products can be disposed of in a water-treated sewer line. Other products must be disposed of at a registered EPA site. Section thirteen of the Material Safety Data Sheet (MSDS) explains proper product and waste disposal procedures.

IN ACCORDANCE WITH EPA, STATE AND LOCAL LAWS, DO NOT DISPOSE OF WASTEWATER 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.

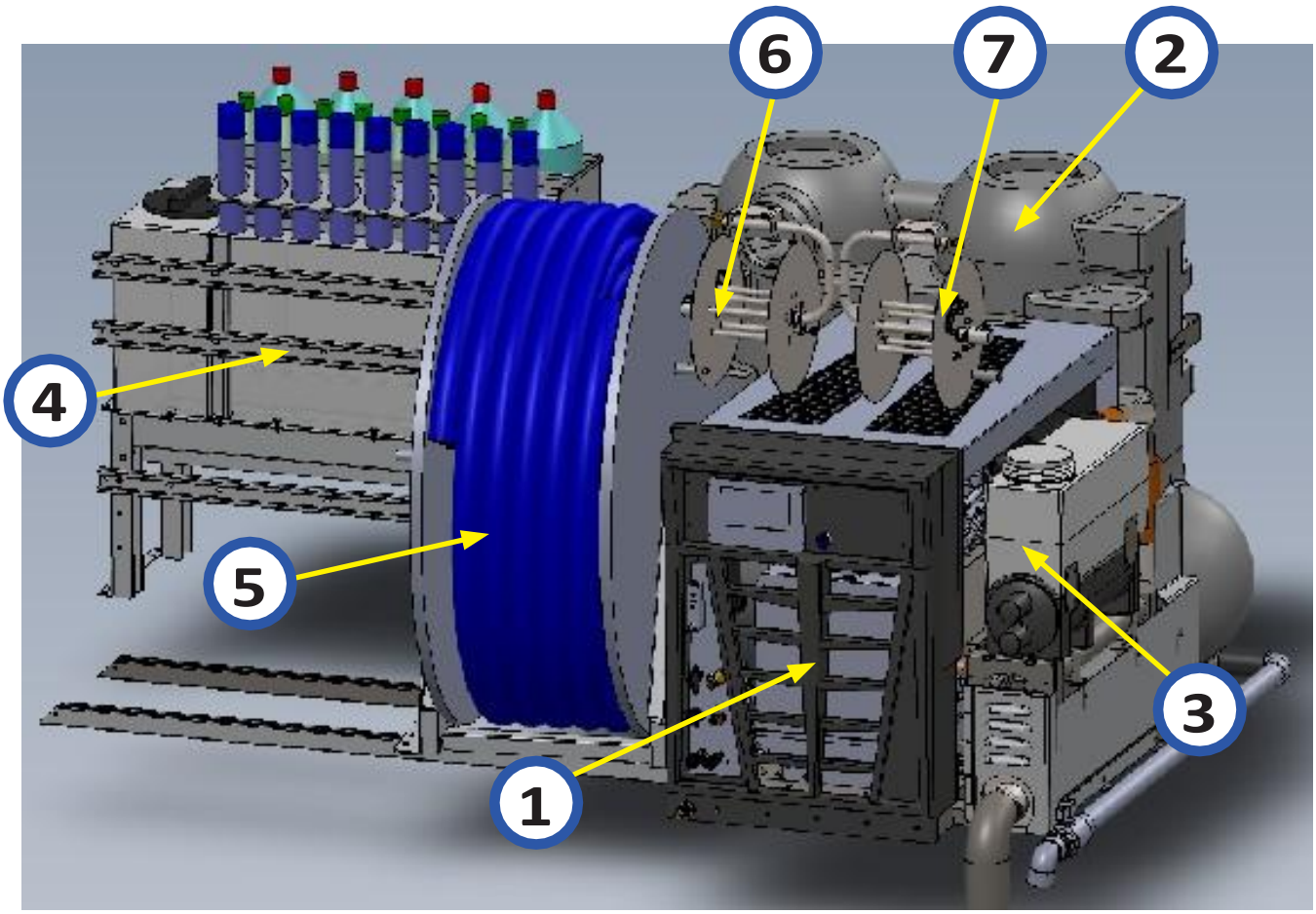
RECOMMENDED VAN LAYOUT

For more specific details on the needs and specifications for the installation of the ATMI TruckMount, view the Installation section of this manual.



Items included with the installation:

1. TruckMount Console
2. Waste Tank (positioned behind TruckMount machine)
3. Chemical Tank
4. Solution Tank
5. Electric Vacuum Hose Reel
6. Solution Hose Reel
7. Garden Hose Reel



Items included with the installation:

1. TruckMount Console
2. Waste Tank
3. Chemical Tank
4. Solution Tank
5. Electric Vacuum Hose Reel
6. Solution Hose Reel
7. Garden Hose Reel

SECTION THREE: OPERATING INSTRUCTIONS

Follow the instructions below and on the display screen to start up machine.

START-UP PROCEDURE - EXTRACTION

Perform all daily and periodic maintenance as specified in Section 4 of this manual.

1. Park the van and equipment in a well-ventilated area to avoid toxic fumes from entering the building. If this warning is not heeded, personal injury and fatality can result.
2. Check the following:
   - Check the fuel tank prior to starting each job, ensure there is adequate fuel (TruckMount will run out of fuel at ~¼ tank).
   - Check Oil Levels - Verify that oil levels are full on all components of the unit and coolant levels are correct in the reservoir and radiator before running.
   - Check filters - Inspect the vacuum inlet filter and strainer baskets in the pre-filter box and waste tank.
   - General Inspection - Verify there are no water or oil leaks, loose screws, etc.
   - Verify waste tank is empty.
3. Make sure the waste tank drain valve is closed when operating the machine.
4. Turn system switch to “ON.”

ON THE DISPLAY (buttons):

5. Push the ignition button.
6. Push the throttle button.
7. If you want to use the Automatic Pump Out (APO), push the APO button (it will turn it from off to on).
8. Connect the vacuum hose to the vacuum inlet strainer.

NOTE: The machine will automatically shut down when it reaches its full capacity due to the float switch located inside the waste tank. When this occurs, turn the System switch to “OFF” and empty the waste tank. Then, turn the unit back on and continue to extract.

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

NOTE: Read and comply with the preparation section of this manual entirely before starting the unit.

START-UP PROCEDURE - CARPET/UPHOLSTERY

Perform all daily and periodic maintenance as specified in Section 4 of this manual.

1. Park the van and equipment in a well-ventilated area to avoid toxic fumes from entering the building. If this warning is not heeded, personal injury and fatality can result.
2. Check the following:
   - Check the fuel tank prior to starting each job, ensure there is adequate fuel (TruckMount will run out of fuel at ~¼ tank).
   - Check Oil Levels - Verify that oil levels are full on all components of the unit and coolant levels are correct in the reservoir and radiator before running.
   - Check filters - Inspect the vacuum inlet filter and strainer baskets in the pre-filter box and waste tank.
   - General Inspection - Verify there are no water or oil leaks, loose screws, etc.
   - Check Your Solution Levels - Check your solution tank to make sure you have enough solution mixed to finish the job.
   - Verify waste tank is empty.
3. Make sure the waste tank drain valve is closed when operating the machine.
4. Set incoming solution valve lever to Carpet/Upholstery.
5. Connect the solution hose to the quick connect Carpet/Uph. Cleaning Solution Outlet. (see Figure 2)
6. Turn system switch to "ON."

Figure 2

ON THE DISPLAY (buttons):

7. Push the ignition button.
8. Push the throttle button.
9. Push the pressure pump button and select "ON" or "ON WITH HEAT."* If you select "ON WITH HEAT" - Push heat button, this will allow you to adjust the preset temperature and to adjust the heat by 10 degrees with + or - buttons.
10. Block off the vacuum inlet to the waste tank and allow TruckMount to warm up for 2-3 minutes.
11. If you want to use the Automatic Pump Out (APO), push the APO button (it will turn it from off to on).
12. Adjust Pressure Regulator to:
    - **Carpet/Upholstery 300-500 PSI**
    - **DO NOT OPERATE BELOW 300 PSI**
13. Applying Carpet Chemical - Turn Chemical Valve to ON and adjust flow rate valve to 4 GPH. Mix 12 oz (355 mL) of Repel Chemical to 1 gallon (3.79 L) of water. Do not use PowerGuard Chemical.
14. Un-cap vacuum and then connect vacuum and solution hose to your cleaning tool.
15. Connect the vacuum hose to the vacuum inlet strainer.

NOTE: The machine will automatically shut down when it reaches its full capacity due to the float switch located inside the waste tank. When this occurs, turn the System switch to "OFF" and empty the waste tank. Then, turn the unit back on and continue to clean.

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

NOTE: Read and comply with the preparation section of this manual entirely before starting the unit.

*NOTE: If the unit does not build water pressure after 5 seconds, check for adequate water supply. See "Loss of Water Pump Pressure" in the Troubleshooting section of this manual.

CHEMICAL

PRIMING & ADJUSTING THE SOLUTION FLOW

ATMI recommends that the Chemical pump be primed whenever the solution pump is on. This eliminates possible pressure fluctuations and water pump pulsations related with running the Chemical pump dry.

The Chemical prime and inlet tube and the solution inlet tube should be inserted into the Chemical Tank before starting the unit. When inserting the chemical tube into the Chemical Tank, ensure that it stays submerged in Chemical, as the Chemical pump will not function if air is allowed to enter the inlet line.

With the engine running in HIGH SPEED, water supply connected and pressure pump switch in the ON position:

1. Start with normal start-up procedures. Verify solution pump is on and Chemical tank is full.
2. Turn the 3-way Chemical selector valve located on the control panel to the PRIME position. Allow Chemical to circulate. After all air bubbles have been removed from the Chemical Flow Meter, allow it to prime for an additional 30 seconds before turning the valve to the ON position.
3. While spraying solution out of the cleaning tool, set/adjust the flow to 4 GPH with the Injection Flow Rate valve.
4. Clean as normal.
   NOTE: if the Chemical tank is run dry, repeat the steps above.

AUTOMATIC PUMP OUT (APO)

1. If your unit is equipped with an optional automatic waste pump, connect one end of the 5/8 in. or larger garden hose to the pump-out connection and the other end to an acceptable waste disposal.
2. Turn the pump-out switch located on the front console control panel to the ON position. The waste pump will now operate automatically throughout the cleaning period.

⚠WARNING

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

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

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.

START-UP PROCEDURE - HARD SURFACE

Perform all daily and periodic maintenance as specified in Section 4 of this manual.

1. Park the van and equipment in a well-ventilated area to avoid toxic fumes from entering the building. If this warning is not heeded, personal injury and fatality can result.
2. Check the following:
   - Check the fuel tank prior to starting each job, ensure there is adequate fuel (TruckMount will run out of fuel at ~¼ tank).
   - Check Oil Levels - Verify that oil levels are full on all components of the unit and coolant levels are correct in the reservoir and radiator before running.
   - Check filters - Inspect the vacuum inlet filter and strainer baskets in the pre-filter box and waste tank.
   - General Inspection - Verify there are no water or oil leaks, loose screws, etc.
   - Connect Fresh Water Supply inlet hose - Flush out any debris from the faucet and hose. The water box must be full prior to starting the TruckMount.
   - Verify waste tank is empty.
3. Make sure the waste tank drain valve is closed when operating the machine.
4. Set incoming solution valve lever to Hard Surface.
5. Connect the solution hose to the quick connect
   For hard surface cleaning, (see Figure 3)
6. Turn system switch to "ON."

Figure 3

ON THE DISPLAY (buttons):

7. Push the ignition button.
8. Push the throttle button.
9. Push the pressure pump button and select "ON" or "ON WITH HEAT."*
   If you select "ON WITH HEAT" - Push heat button, this will allow you to adjust the preset temperature and to adjust the heat by 10 degrees with + or - buttons.
10. If you want to use the Automatic Pump Out (APO), push the APO button (it will turn it from off to on).
11. Adjust Pressure Regulator to:
    - **Hard Surface 450-1,000 PSI**
    - **DO NOT OPERATE ABOVE 1,500 PSI**
12. Un-cap vacuum and then connect vacuum and solution hose to your cleaning tool.
13. Connect the vacuum hose to the vacuum inlet strainer.

NOTE: The machine will automatically shut down when it reaches its full capacity due to the float switch located inside the waste tank. When this occurs, turn the System switch to "OFF" and empty the waste tank. Then, turn the unit back on and continue to clean.

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

NOTE: Read and comply with the preparation section of this manual entirely before starting the unit.

*NOTE: If the unit does not build water pressure after 5 seconds, check for adequate water supply. See “Loss of Water Pump Pressure” in the Troubleshooting section of this manual.

SHUT DOWN PROCEDURE BETWEEN JOBS

1. Remove the Vacuum Hose. Disconnect hoses, quick connects, etc.
2. Push throttle button on the display which will idle the machine down.
3. Push ignition button to turn the machine off.
4. Turn System switch to “OFF.”
5. Drain the waste tank in an appropriate location if needed.

   IN ACCORDANCE WITH EPA, STATE AND LOCAL LAWS, DO NOT DISPOSE OF WASTEWATER 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.

SHUT DOWN PROCEDURE AT THE END OF THE DAY

1. Remove the Vacuum Hose. Disconnect hoses, quick connects, etc.
2. Push throttle button on the display which will idle the machine down.
3. Push ignition button to turn the machine off.
4. Turn System switch to “OFF.”

Drain the waste tank in an appropriate location.

IN ACCORDANCE WITH EPA, STATE AND LOCAL LAWS, DO NOT DISPOSE OF WASTEWATER 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.

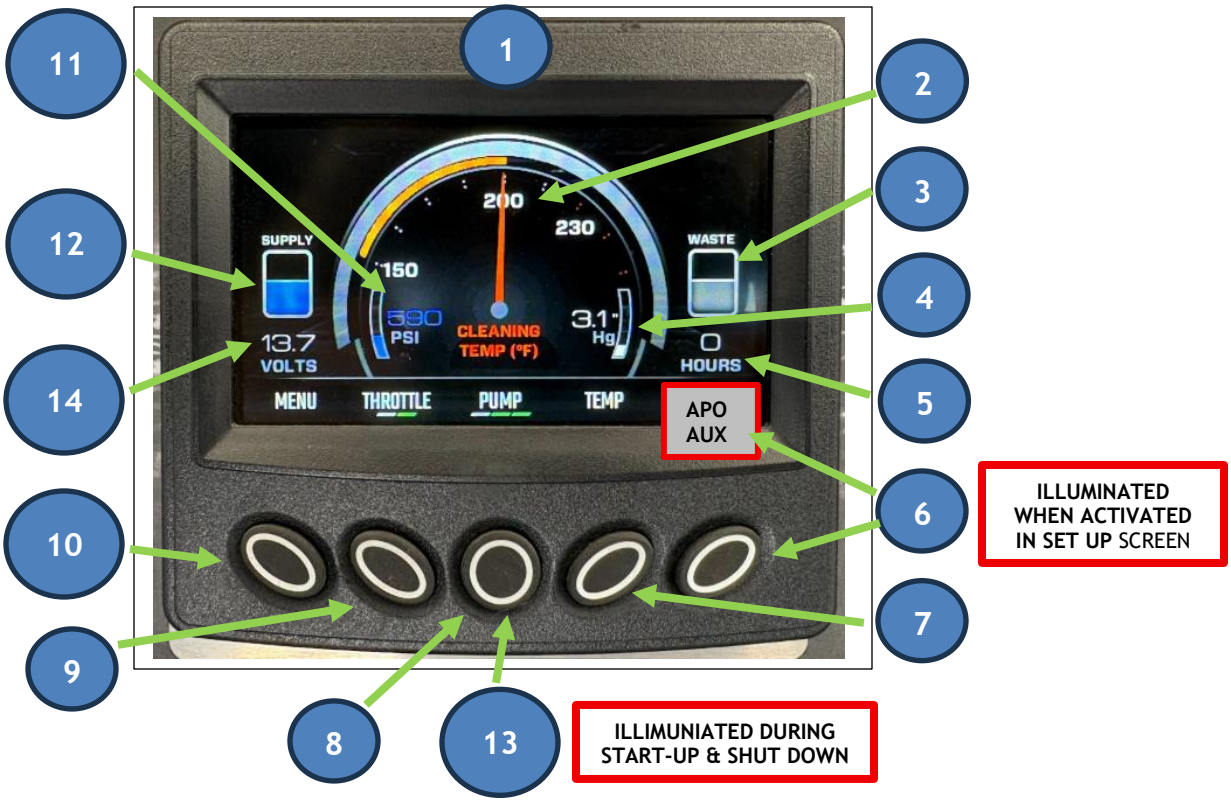
5. Turn System switch to “ON.”
6. On the display, Push Ignition button.
7. Push throttle button to increase machine up to operating speed.
8. Block off the vacuum inlet to the waste tank for 1 minute (This will aid in removing moisture inside the blower).
9. After 1 minute, spray TKX LUBRICANT for 3 seconds into the vacuum lube port. Wait for 1 minute. See Lubing the Blower in the Maintenance Section for details.
10. After 1 minute, unblock the vacuum inlets and let the machine run for an additional 1 minute.
11. Push throttle button on the display which will idle the machine down.
12. Push ignition button to turn the machine off.
13. Turn System switch to “OFF.”

Lubing the Blower 1-3-1-1
1 minute - block the vacuum
3 seconds - spray the lube
1 minute - wait
1 minute - unblock the vacuum & run the machine

INSTRUMENT PANEL CONTROLS AND GAUGES

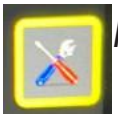
1. Digital Display
2. System Power ON/OFF Switch
3. Chemical Flow Meter
4. Chemical OFF/ON/PRIME Valve
5. Pressure Regulator
6. Chemical Injection Flow Rate
7. Blower Lube Port
8. Carpet & Upholstery Solution Outlet
9. Fresh Water Inlet

ALL-IN-ONE, STATE OF THE ART DISPLAY



Buttons will change depending on what menu item you have chosen.

1. Digital Display
2. Solution Temperature
3. Waste Tank full indicator icon
4. Blower Vacuum Gauge
5. Machine Hour Meter
6. Auto Pump Out Control and/or Auxiliary Button
7. Solution Temperature Control Button
8. Solution Pump OFF/ON/HEAT Button
9. Throttle Control
10. MENU - takes you to maintenance, setup, IO (Troubleshooting)status
11. Solution Pressure Gauge
12. Solution Tank empty indicator icon
13. Ignition ON/OFF Button
14. Battery Voltage



Maintenance Reminders:

View necessary key maintenance reminders at key intervals. Clear issues once resolved.

Auxiliary Control: Manage optional connected accessories such as compressor, interior lighting, etc.
Note: (Up to maximum 20 AMP Circuit)

SECTION FOUR: SERVICE & MAINTENANCE

Following a good preventative service and maintenance for your TruckMount machine will ensure that your TruckMount performs optimally, operates for a long life, and with 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.

NOTE: Refer to the hour meter as a guide for coordinating a maintenance schedule.

⚠WARNING Turn machine off and allow to cool before performing any maintenance.

DAILY MAINTENANCE

Inspect	Inspect the TruckMount for water and oil leaks, loose electrical connections, etc. and repair as needed.
TruckMount Machine Engine	Check engine oil level. Fill to proper level.
Blower/Vacuum Pump	Check vacuum pump sight glass oil levels on both sides. Fill to proper level. Do not overfill.
	Spray TKX lubricant into the lubrication port for 3 seconds. ***See instructions***, at the end of each day
Solution Pump	Check solution pump oil level. Fill to proper level.
Vacuum Inlet Filters	Inspect waste tank filter, clean and or replace if required.
Pre-filter Strainer Basket	Empty and clean baskets in the pre-filter box and waste tank.
Waste Tank	Inspect and rinse the waste tank
	Leave lid open to allow moisture to evaporate
Fresh Water Inlet Filter	Inspect and clean
Chemical Filter	Inspect and clean
Belts	Check all belts to ensure they are properly tensioned and there are no cracks or wear
Equipment	Verify there are no towels or debris on or around the machine and wipe down the front of the machine.
Vacuum Hoses	Rinse with fresh water. If there are odors, use Fresh-n-Free™
Waste Pump-Out (APO)	(optional equipment) Inspect and remove any debris or sediment.

HOW TO GET TO THE MAINTENANCE SCREEN

On the display visit MENU > INFO/MAINTENANCE > SERVICE INTERVAL to see your maintenance items.

NOTE: Daily maintenance items will not show on your machine's display screen.

ENGINE MAINTENANCE

NOTE: For more specifics on the Kohler engine, visit the Kohler Engine Manual by clicking the link here.

⚠WARNING Turn machine off and allow to cool before performing any maintenance.

⚠WARNING An engine produces toxic exhaust gas, DO NOT operate in a confined area. Position the unit so exhaust will be directed away from job site. DO NOT operate equipment where exhaust may enter a building through open doors, windows, or other air intake. Exhaust fumes contain carbon monoxide which is an odorless and deadly poison that can cause severe injury or fatality. For more information go to www.P65Warnings.ca.gov

⚠WARNING Hot Surfaces. DO NOT operate equipment without all covers and guards in place. Never touch hot surfaces. Rotating Equipment. DO NOT operate equipment without all covers and guards in place. DO NOT place hands, feet, hair, clothing or any body parts near rotating or moving parts. Electrical Shock. DO NOT touch electrical wires or components while the engine is running. Disconnect the battery before servicing this unit to prevent accidental starting. Failure to follow all of these guidelines can cause severe injury or fatality.

- **Check engine oil daily.** Ensure that the proper oil level is maintained. Never overfill.
- Change the oil after the first **50 hours of operation**. Following the first 50 hours, change the oil and filter **every 100 hours or 120 days of operation, whichever comes first.**

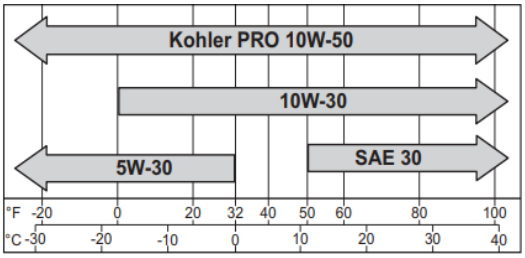
Engine Oil Capacity when changing oil and filter	~1.9 L / ~2 U.S. qt.

OIL RECOMMENDATION

The recommended oil grades from the TruckMount manufacturing are as follows:

- Valvoline VR1 Racing Motor Oil SAE 20W-50, High Zinc ONLY.

IMPORTANT: Alternative engine oils and oil filters may be used with KOHLER engines but require 100-Hour oil and 200-Hour oil filter change intervals for proper maintenance. Oil must be API (American Petroleum Institute) service class SJ or higher.



ENGINE CONTINUED...

- Check pulley, taper-lock bushing, and set screws after the **first 50 hours and again at 100 hours** of operation. Re-torque these bolts. Check pulley set screws and hub screws **every 500 hours** thereafter.
- Ensure belts are properly tensioned after checking the torque values.
- Use a clockwise rotation until tightness is achieved.

Part	50 Hours	100 Hours	150 Hours	200 Hours	250 Hours	500 Hours	1,000 Hours	2,000+ Hours
Engine								
General Maintenance								
Change the engine oil and oil filter	X (first 50 hours)	X change regularly every 100 hours or 120 days of operation, whichever comes first						
Inspect accessory drive belts for cracks, breaks, splits or glazing		X every 100 hours						
Inspect electrical system wiring for cuts, abrasions or corrosion					X every 400 hours			
Inspect all vacuum lines and fittings for cracks, breaks or hardening					X every 400 hours			
PCV Valve				Clean			Replace every 800 hours	
Check pulley, taper-lock bushing, and set screws to ensure they are tight	X (first 50 hours)	X every 100 hours			X every 250 hours	X every 500 hours		
Engine Ignition System								
Replace spark plugs. Use only OEM spark plugs. Gap the spark plugs to 0.030". Replace if excessive carbon buildup is visible.							X every 800 hours	
Check spark plug wires for cuts, abrasions or hardening							X every 800 hours	
Replace spark plug wires								as required
Fuel System Maintenance								
Inspect air cleaner				X every 200 hours or 100 hours if in dusty environment				
Replace filter element					X every 400 hours or as req. in dusty environment			
Replace fuel filter					X every 400 hours			
Leak check fuel lines					X every 400 hours			
Check air induction for leaks					X every 400 hours			
Check manifold for vacuum leaks		X			X every 400 hours			X every 2,000 hours
Drain Vaporizer oil build up			every oil change					
Check fuel hoses and clamps	X every 50 hours							
Change air filters							X every 1,000 hours	

Part	50 Hours	100 Hours	150 Hours	200 Hours	250 Hours	500 Hours	1,000 Hours	2,000+ Hours
Inspect and clean air filter element.*		X every 100 hours						
Replace in-line fuel filter on the engine - Check the fuel lines for cracking or leaking						X every 500 hours		
Engine								
Clean inlet fan screen when debris is present	X (check weekly)							

SERVICE INTERVALS

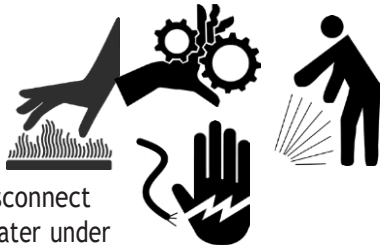
Part	50 Hours	100 Hours	150 Hours	200 Hours	250 Hours	500 Hours	1,000 Hours	2,000+ Hours
Blower/Vacuum Pump								
Change the Blower/Vacuum Pump Oil and filter	X (first 50 hours)						X change regularly every 1,000	
Check the belt for correct tension, and tension if loose. If belt is worn, replace it.	X (first 50 hours)	X every 100 hours			X every 250 hours	X every 500 hours	X every 1,000 hours	
Solution Pump								
Change the Solution Pump Oil	X (first 50 hours)						X change regularly every 1,000	
Change Pressure Pump Crankcase oil	X (first 50 hours)					X change regularly every 500		
Change the solution pump drive belt	X (first 50 hours)					X change regularly every 500		
Lubricate o-rings on the pressure regulator. Use only o-ring lubricant		X every 100 hours						
Heat Exchanger								
Descale Heat Exchanger							X every 1,000 hours	

Part	50 Hours	100 Hours	150 Hours	200 Hours	250 Hours	500 Hours	1,000 Hours	2,000+ Hours
Chemical Pump								
Re-tension all belts	X (first 25 hours)	X change regularly every 100 hours						
Change the Chemical Pump check valves							X every 1,000 hours	
Replace Solution Manifold Differential Check Valve when you rebuild the Chemical Pump							X or as needed	
Inspect packing nut on the Chemical selector metering valves and adjust as needed					X every 250 hours			
Waste Tank								
Clean and inspect Float Switches in the Waste Tank	X every 50 hours							
Re-tension all belts	X (first 25 hours)	X change regularly every 100 hours						
Inspect the vacuum relief valve. Clean and lubricate as necessary	X every 50 hours							
Check vacuum relief valve up to 14" Hg if needed. See pg. 43		X every 100 hours						
Clean and remove debris from the inlet waste tank filter	Daily							
Clean and remove debris from the blower filter in the waste tank	Weekly							
Miscellaneous Items								
Tighten bolts & nuts on all exhaust parts	X every 50 hours							
Clean battery terminals and check fluid level		X every 100 hours						
Inspect High Pressure Hoses for wear, damage, or impending rupture	X regularly inspect every 50	X (first 100 hours)						
Check fastener tightness on all components. Tighten as needed		X every 100 hours						
Check and lube inlet valve in the hard surface tank with Super Lube grease #92003 or equivalent		X every 100 hours						
Clean and remove debris from the valve strainers (solution, hard surface, Chemical tanks)		X every 100 hours						
Check the Pressure Regulator		X every 100 hours						

BLOWER/VACUUM PUMP MAINTENANCE

NOTE: Refer to the provided Blower/Vacuum Pump Operations and Service Manual for specific instructions.

⚠WARNING Turn machine off and allow to cool before performing any maintenance.



⚠WARNING Hot Surfaces. DO NOT operate equipment without all covers and guards in place. Never touch hot surfaces. Rotating Equipment. DO NOT operate equipment without all covers and guards in place. DO NOT place hands, feet, hair, clothing or any body parts near rotating or moving parts. Electrical Shock. DO NOT touch electrical wires or components while the engine is running. Disconnect the battery before servicing this unit to prevent accidental starting. Water Pressure. Water under high pressure at high temperature can cause burns. Shut down machine, allow to cool down and relieve system of all pressure before removing valves, caps, plugs, fitting, filters, and bolts. Failure to follow all of these guidelines can cause severe injury or fatality.

CAUTION DO NOT exceed 14" Hg vacuum pressure. This can cause damage to the vacuum pump.

ALTITUDE NOTICE:

NOTE: Due to temperature and altitude changes, the optimal setting for each TruckMount must be adjusted after installation.Failuretomaketheseadjustmentsmayleadtopoorunitperformanceandprematurecomponentfailure.

- Lube the Blower/Vacuum Pump **daily** to ensure there is no damage.

To lube the Blower/Vacuum Pump, follow the following steps:

1. Turn System switch to "ON."
2. On the display, Push Ignition button.
3. Push throttle button.
4. Block off the vacuum inlet to the waste tank (this will aid in removing moisture inside the blower).
5. After 1 minute, spray TKX LUBRICANT for 3 seconds into the vacuum lube port.
6. After 1 minute, unblock the vacuum inlets and let the machine run for an additional 1 minute.
7. Push throttle button on the display which will idle the machine down.
8. Push ignition button to turn the machine off.
9. Turn System switch to "OFF."
   NOTE: A suction pump is required to remove all the oil from the vacuum pump.

BLOWER/VACUUM PUMP CONTINUED...

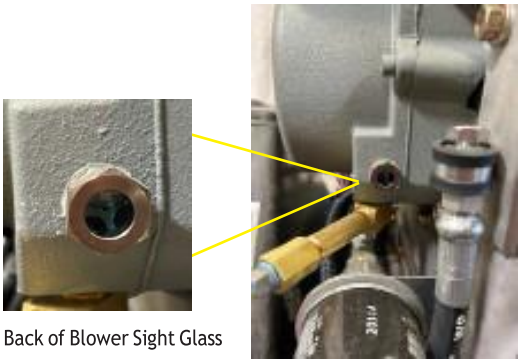
- Check the oil levels on the Blower/Vacuum Pump **daily** to ensure proper level is maintained. Too little oil will damage and ruin the bearings and gears. Too much oil will result in overheating. Verify there are no unusual sounds. (You can check the oil levels by viewing the sight glasses on the Front and Back sides of the Blower, see images below.)
- Change the oil after the first **50 hours of operation**. Following the first 50 hours, change the oil and filter **every 1,000 hours of operation**.

Blower/Vacuum Pump Oil Capacity		
Vertical Flow	Shaft End (Front)	Approx. 6.4 oz. (189 mL)
	Gear End (Back)	Approx. 8.5 oz. (251 mL)

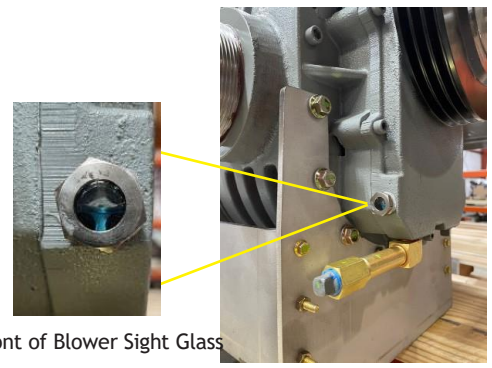
CHANGING THE BLOWER/VACUUM PUMP OIL

1. Remove one of the upper plugs to fill.
2. Place catch basin beneath the lower drain plugs.
3. Remove one of the drain plugs.**
4. Allow oil to drain completely, replace lower drain plug.
5. Slowly fill until oil has filled 75% of the sight glass.
6. Replace upper plug.
7. Repeat steps 1-6 on other side.
   Important: Do Not over fill.
8. Run machine for 5 minutes.
9. Verify oil levels are correct.

**clean magnetic plugs every oil change



Back of Blower Sight Glass



Front of Blower Sight Glass

BLOWER/VACUUM PUMP CONTINUED...

- Check Blower/Vacuum Pump belt after the **first 50 hours and again at 100 hours** of operation. Check the belt and change the belt if worn **every 500 hours** thereafter.

Belt Tensions	Deflection	New	Used
Blower/Vacuum Pump Belt: Gates 3/3VP475 Predator Powerband Belt	3/16”	10-14 lbs.	5-8 lbs.

BLOWER/VACUUM PUMP BELT REPLACEMENT

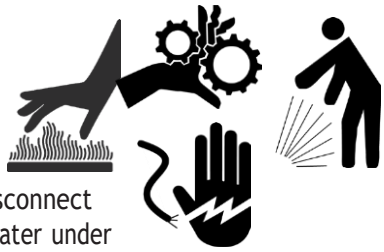
1. Remove belt guards (top and side).
2. Loosen Do Not Remove mounting bolts for blower and loosen adjusting screw.
3. Turn to loosen tension on the belt - Blower Belt Adjusting Bolt.
4. Replace belt: Gates 3/3VP475 PREDATOR POWERBAND BELT.
5. Tighten Blower Belt Adjusting Bolt until belt is tensioned correctly (3/16” deflection).
6. Tighten mounting bolts for blower/vacuum pump.
7. Replace belt guards.
8. Run machine.

NOTE: Belts need to be re-tensioned after first 50 hours of replacement.
NOTE: Confirm that the bolts in the taper-lock bushing that secures the pulley are tight.

SOLUTION PUMP MAINTENANCE

NOTE: Refer to the provided General Pump Operations and Service Manual for specific instructions.

⚠WARNING Turn machine off and allow to cool before performing any maintenance.



⚠WARNING Hot Surfaces. DO NOT operate equipment without all covers and guards in place. Never touch hot surfaces. Rotating Equipment. DO NOT operate equipment without all covers and guards in place. DO NOT place hands, feet, hair, clothing or any body parts near rotating or moving parts. Electrical Shock. DO NOT touch electrical wires or components while the engine is running. Disconnect the battery before servicing this unit to prevent accidental starting. Water Pressure. Water under high pressure at high temperature can cause burns. Shut down machine, allow to cool down and relieve system of all pressure before removing valves, caps, plugs, fitting, filters, and bolts. Failure to follow all of these guidelines can cause severe injury or fatality.

- Check the oil level and the condition of the oil **daily**. The oil level should be level to the top of the dot on the sight glass.
- Change the oil after the first **50 hours of operation**. Following the first 50 hours, change the oil and filter **every 1,000 hours of operation**.

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 section 3 for freeze guarding information.

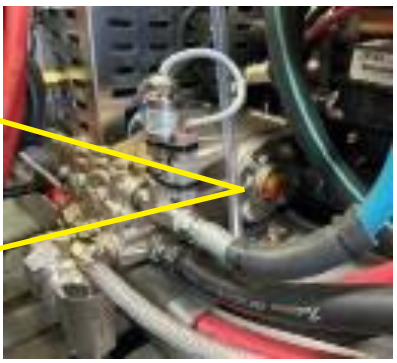
DO NOT disassemble the pump unless you are a skilled mechanic. For assistance, contact your distributor.

SOLUTION PUMP CONTINUED...

Solution Pump Oil Capacity	25 oz. approx

CHANGING THE SOLUTION PUMP OIL

1. Remove yellow fill cap.
2. Remove drain hose from holder.
3. Remove end cap and drain oil into catch basin.
4. Replace cap and drain hose to holder.
5. Fill until oil hits the red dot in the sight glass.



Belt Tensions	Deflection	New	Used
Solution Pump Belt: Gates AX38 Tripower Belt	3/16”	4-6 lbs.	3-4 lbs.

SOLUTION PUMP DRIVE BELT REPLACEMENT

⚠WARNING Turn machine off and allow to cool before performing any maintenance. Disconnect battery.

1. Remove belt guards (top and side).
2. Remove Blower/Vacuum Pump belt as stated above prior to starting to remove the solution pump belt.
3. Loosen Do Not Remove mounting bolts for solution pump and loosen adjusting screw.
4. Turn to loosen tension on the belt - Solution Pump Belt Adjusting Bolt.
5. Replace belt: Gates AX38 TRIPOWER BELT.
6. Tighten Solution Pump Belt Adjusting Bolt until belt is tensioned correctly (3/16” deflection).
7. Tighten mounting bolts for solution pump.
8. Replace belt guards.
9. Run machine.

NOTE: Belts need to be re-tensioned after first 50 hours of replacement.
NOTE: Confirm that the bolts in the taperlock bushing that secures the pulley/hub are tight

CHEMICAL METERING SYSTEM

⚠WARNING Turn machine off and allow to cool before performing any maintenance.

Check and inspect the packing nut on the Chemical selector and metering valves **every 250 hours**. Keeping the valve packing properly adjusted will prevent leaks and add to the overall life of the valves.

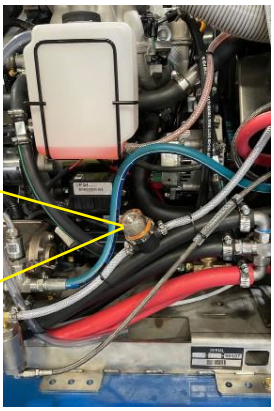
When turning the knob, there should be some resistance. If not, slightly tighten the packing nut. DO NOT over tighten. Keeping the packing properly adjusted will eliminate possible leaks and will add to the overall life of the valves.

INLINE STRAINER - SOLUTION PUMP

Water heading to the pressure pump from the solution/hard surface tank passes through an inline strainer that contains a stainless steel mesh screen. The inline strainer captures incoming debris and will restrict water flow when clogged. Inspect and clean at least once a month or as needed. Hard water deposits can build and reduce water flow.

INLINE STRAINER - CHEMICAL PUMP

Water heading to the Chemical pump from the Chemical tank passes through an inline strainer that contains a stainless steel mesh screen. The inline strainer captures incoming debris and will restrict water flow when clogged. Inspect and clean at least once a month or as needed. Hard water deposits can build and reduce water flow.



PRE-FILTER STRAINER BASKET

⚠WARNING Turn machine off and allow to cool before performing any maintenance.

The pre-filter strainer basket should be removed, inspected and cleaned **daily**. (May require cleaning after each job or as needed.) To remove the basket, turn the lid 90 degrees.

PRESSURE REGULATOR

⚠WARNING Turn machine off and allow to cool before performing any maintenance.

The pressure regulator holds water pressure at a preset point and bypasses the excess water.

To adjust:

With the unit running and with the cleaning tool valve closed, the display pressure gauge will read the actual pressure it is set at while you are adjusting the valve. Adjust PSI to the following for each cleaning type:

- **Carpet/Upholstery 300-500 PSI**
- **Hard Surface 450-1,000 PSI**
- **DO NOT OPERATE ABOVE 1,500 PSI OR BELOW 300 PSI**

⚠WARNING

DO NOT loosen the adjusting handle all the way (counterclockwise) or remove it while the unit is running.

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

Only use lithium type grease to lubricate o-ring.

If you do not, the stem may become seized due to inadequate lubrication. If this occurs:

1. Shut down the unit.
2. Apply grease via zerk fitting.

If the issue persists, follow the following steps:

1. Shut down the machine.
2. Relieve all pressure from the water system.
3. Loosen the valve nut and remove the valve stem with long nose pliers.
4. Clean and lubricate stem.
5. Reassemble pressure regulator.

WASTE TANK FILTER

⚠WARNING Turn machine off and allow to cool before performing any maintenance.

The waste tank filter should be removed, inspected and cleaned daily. Filter will be replaced as needed. When replacing the filters, ensure that it is installed correctly.

VACUUM RELIEF SYSTEM - WASTE TANK

While the unit is running and the vacuum hoses are disconnected from the vacuum inlets, the vacuum value on the display screen should read 0-5" Hg (inches of Mercury). If the gauge shows a reading greater than 5" Hg, check the filter in the waste tank and the strainer baskets in both the waste tank and pre-filter box for debris. With vacuum ports sealed, and machine running at high speed, the vacuum gauge should read 11 to 14" Hg. This is preset by the factory for the maximum safe operation. Depending on elevation, this may need to be reset at time of installation.

To protect the blower/vacuum pump from overloading and damaging itself, a vacuum relief system is installed on the waste tank. When the waste tank inlet is completely sealed off, a maximum of 14" Hg will be attained.

To adjust the Vacuum Relief Valve on the waste tank, first check the level shown on the display monitor.

1. Turn the two nuts opposite directions so the inside nut turns freely. (Two brass knurled nuts are located on the side of the blower filter inlet box located on the outside of the waste tank - see figure to the right.)
2. Increase the vacuum of the system by turning the nut clockwise (tightening).
3. Decrease the vacuum of the system by turning the nut counter-clockwise (loosening).
4. Once the tank is set to the proper level, turn the two nuts toward each other to lock them down.
5. Always verify the final setting before locking adjusting nut.

DO NOT exceed 14"Hg vacuum pressure. This can cause damage to the vacuum pump. If the vacuum pressure is higher than 14.5"Hg, it will force the machine into idle mode. The display will indicate the warning. Follow the adjusting vacuum relief valve steps in the maintenance section.

BATTERY

⚠WARNING Turn machine off and allow to cool before performing any maintenance.

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.

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.

Attach the red positive (+) battery cable from the starter solenoid on the console to the positive (+) terminal on the battery and tighten down the nut.

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

- If you do not have a maintenance free sealed battery, check the fluid level in the battery at least once a week. If low, fill to the recommended level ONLY with distilled water. DO NOT overfill the battery. Early failure or poor performance will result due to loss of electrolyte.
- 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.
- Battery terminals should be cleaned every 100 hours to prevent corrosion buildup. Wash the cables, terminals and external surfaces with a mild baking soda and water solution. Rinse thoroughly with fresh water. DO NOT allow baking soda to enter the battery cells, as this will destroy the electrolyte, resulting in battery failure.

⚠WARNING DO NOT touch electrical wires or components while the engine is running. Disconnect the battery before servicing this unit to prevent accidental starting. Failure to follow all of these guidelines can cause severe injury or fatality.

POWER REQUIREMENTS

Group 24 batteries with minimum of 750 CCA are recommended, as a Group U1 battery does not have enough capacity to power the unit if any additional powered accessories are installed. A Group 24 battery box and post battery terminals are provided in the installation kit. To use the post terminals, remove one screw from the terminal and insert the ring terminal of the battery cable. Reinstall screw through the ring terminal.

VACUUM HOSES

⚠WARNING Turn machine off and allow to cool before performing any maintenance.

⚠WARNING Water under high pressure at a high temperature can cause burns. Shut down machine, allow to cool down and relieve system of all pressure before removing valves, caps, plugs, fitting, filters, and bolts. Failure to follow all of these guidelines can cause severe injury or fatality.

To ensure maximum hose life, ATMI recommends that you rinse out the hoses with fresh water **daily**. ATMI recommends using Fresh-n-Free™ Anti-Allergen & Deodorizer to deodorize wands and hoses as well as other parts of the system.

HIGH PRESSURE SOLUTION HOSES

⚠WARNING Turn machine off and allow to cool before performing any maintenance.

NEVER attempt to repair high-pressure solution hoses. Repairing high-pressure solution hoses may result in severe burns and serious injury.

Inspect your high-pressure solution hoses for wear after the **first 100 hours**. Thereafter, inspect **every 50 hours**. If the hoses show any signs of damage or impending rupture, replace the hoses.

All high-pressure solution hoses must be rated for a minimum of 250° F/121° C. and 3,000 PSI and be a 1/4" High Temperature Hose. Thermoplastic hoses do not meet this requirement and should not be used. Severe burns and injury may result if the hoses do not meet these requirements.

ELECTRICAL PANEL ACCESS

⚠WARNING Turn machine off and allow to cool before performing any maintenance.

⚠WARNING DO NOT touch electrical wires or components while the engine is running. Disconnect the battery before servicing this unit to prevent accidental starting. Failure to follow all of these guidelines can cause severe injury or fatality.

Display Panel

If there is an electrical issue that requires a component to be replaced, remove the five screws. If you are not qualified to perform this work, please see an apptoved ATMI Service Center.

FREEZE PROTECTION

NOTE: In temperatures below 32˚F/0˚C, unit will freeze and precautions need to be made to prevent unit from freezing. No part of the machine will be warrantied if there is damage due to freezing.

If the unit is exposed to freezing weather conditions, the water inside of the unit may freeze, resulting in SERIOUS DAMAGE to the unit. The following is recommended to prevent this from occurring during the cold weather season:

1. Always park the unit in a heated building when not in use.
2. If a heated building is not available, winterize the unit with the appropriate anti-freeze. Must be RV antifreeze that is glycol-based. Do not use ALCOHOL-BASED RV antifreeze.
3. If the unit has auxiliary water tanks, it must be stored in a heated building or follow the freeze protection steps below.

FREEZE PROTECTION:

1. Drain all fluids from 4 tanks (Solution, Hard Surface, Chemical, & Waste tanks)
    - For Chemical and Hard Surface tanks, you will need to use your vacuum pump to pull out solution in tank.
2. Pour anti-freeze directly into Solution (10 gallons), Hard Surface (3 gallons), & Chemical tanks (3 gallons).
3. Start with normal startup procedures and run antifreeze through each system (carpet/upholstery, hard surface, Chemical). See Start-up Procedures for Carpet/Upholstery.
4. Connect solution line(s) and tool(s). Open tool valve(s) until anti-freeze begins to flow from the tool. Disconnect and store the hoses and tools once they have been filled with anti-freeze. Make sure that the tool will drain into an approved container.
5. Follow regular shut down procedures. See Shutdown Procedures.

Always follow the safety precautions to follow when disposing of waste material in accordance with all local, state/provincial, and national requirements. IN ACCORDANCE WITH EPA, STATE AND LOCAL LAWS, DO NOT DISPOSE OF WASTEWATER 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.

REMOVING ANTI-FREEZE FROM THE UNIT:

1. Connect the solution hoses to the unit, with a tool attached to the opposite end. Start the unit. Turn the water pump on. Open the tool valve and ensure that the anti-freeze goes into an approved container. Allow the anti-freeze to flow into the container until all anti-freeze has been drained.
2. Fill the solution tank with fresh water and repeat step 1.
3. Connect the water inlet hose to the unit and turn the water supply on. Connect all tools and solution hoses that were winterized to the solution outlet connection.
4. Open all tool valves and drain the anti-freeze into an approved container until the water runs clear and all of the anti-freeze is purged from the hoses and tools.
5. Turn the chemical valve to the ON (chemical) position and open attached tools solution valves. This will allow water to flow to the other side of the system.
6. After all of the anti-freeze has been removed, the unit is ready to operate.

The anti-freeze in your approved storage container will eventually become diluted with water. When the anti-freeze level drops below 40% of the total mixture, properly dispose of it and start over with fresh anti-freeze.

DESCALING YOUR UNIT

1. Drain Solution Tank and Hard Surface Tank.
2. Add descaler (follow directions for the descaler you use) directly into the solution tank and other tanks.
3. Set incoming solution valve lever to Carpet/Upholstery or Hard Surface.
4. Connect the solution hose to the quick connect to run descaler through the system.
5. Turn system switch to "ON."

ON THE DISPLAY (buttons):

6. Push the ignition button.
7. Push the throttle button.
8. Push the pressure pump button and select "ON."
9. Run the unit for 10 minutes in carpet/upholstery mode then turn the valve to hard surface and run for an additional 10 minutes.
10. Once you have run the machine, drain both tanks and dispose of in proper manner.
11. Fill both tanks with an alkaline to neutralize the system. Run for 10 minutes in carpet/upholstery mode then turn valve to hard surface and run for an additional 10 minutes.
12. Turn the solution pump switch to the OFF position and turn the ignition switch to the OFF position to turn off your unit.
13. Drain both tanks and dispose of waste in the proper manner.

    Always follow the safety precautions to follow when disposing of waste material in accordance with all local, state/provincial, and national requirements. IN ACCORDANCE WITH EPA, STATE AND LOCAL LAWS, DO NOT DISPOSE OF WASTEWATER 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.

ATMI 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.

Owner is responsible for using water that is below 3.0 grains or more per gallon when operating within "Hard Water Areas". Failure to do so may void warranty and affected parts. If a water softener is used, it must have a flow capacity of at least five (5) GPM or greater, without any hose constrictions.

SECTION FIVE: TROUBLESHOOTING

⚠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.

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 TruckMount systems and unit. If there are malfunctions which you do not understand, reach out to ATMI to find a qualified service professional near you.

This is not a conclusive list. If you have technical issues not listed here, please call ATMI at 866-390-2376.

To view all warnings and precautions visit the Safety, Cautions, & Warnings section of this manual.

⚠WARNING DO NOT alter or modify your TruckMount in any way. Use only replacement parts authorized by ATMI. Modifications or use of unapproved parts could create a hazard and will void your warranty. Contact ATMI for assistance.

⚠WARNING

Hot Surfaces. DO NOT operate equipment without all covers and guards in place. During the operation of the TruckMount many surfaces will become extremely hot. Never touch hot surfaces, serious injury may result. Engine, vacuum pump and heat exchanger components, hoses and fittings 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. DO NOT touch any part of the exhaust system while the system is running, or for at least 20 minutes after the unit is shut off. Severe burns could result.

Electrical Shock. Electrical shock could cause severe burns or injury. DO NOT touch electrical wires or components while the engine is running. Disconnect the battery before servicing this unit to prevent accidental starting.

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.

Rotating Equipment. DO NOT operate equipment without all covers and guards in place. DO NOT touch these areas while the unit is running, severe injury could result. DO NOT place hands, feet, hair, clothing or any body parts near rotating or moving parts. Rotating machinery can cause severe injury or fatality.

ENGINE TROUBLESHOOTING

ENGINE WILL NOT START (STARTER DOES NOT TURN OVER)

PROBABLE CAUSE	SOLUTION
Main circuit breaker on the control panel has been tripped.	After inspecting the unit to determine the cause of the tripped breaker, push the button on the circuit breaker. (If it trips again, you have an electrical short in the system.)
Loose or corroded battery connections.	Clean, tighten or replace the battery terminals.
Dead battery.	Recharge or replace battery.
Fuel Pump Time Out.	Turn system switch to “OFF” then turn back “ON.”
Defective (PDM) display screen circuit.	Test ignition output from the PDM to the display.
Defective starter motor.	Test the starter motor. Replace if necessary.
Vacuum pump seized.	Refer to the vacuum pump manufacturer service and repair manual.

STARTER TURNS OVER BUT ENGINE WILL NOT START

PROBABLE CAUSE	SOLUTION
Fuel tank is out of fuel.	Check the fuel tank for correct level (above ~¼ tank).
Waste Tank is full and safety float switch is tripped.	Empty the waste tank.
Loose or broken wires leading to the waste tank float switch.	Repair or replace any broken electrical connections.
Defective float switch inside waste tank.	Check switch for proper operation. Replace if necessary.
Defective fuel pump.	Replace the fuel pump.
Loose or broken wires leading to the fuel pump.	Repair or replace any broken electrical connections.
Fuel filter is obstructed/clogged.	Replace fuel filter.
Engine is malfunctioning.	Refer to the engine owner’s manual.

ENGINE STOPS RUNNING DURING NORMAL OPERATION

PROBABLE CAUSE	SOLUTION
Fuel tank is out of fuel.	Check the fuel tank for correct level (above ~1/4tank).
Waste tank is full and safety float switch is tripped	Empty waste tank.
Defective float switch inside waste tank.	Check switch for proper operation. Replace if necessary.
Main circuit breaker on the control panel has been tripped.	After inspecting the unit to determine the cause of the tripped breaker, push the button on the circuit breaker. (If it trips again, you have an electrical short in the system.)
Defective fuel pump.	Replace fuel pump.
Possible engine issues.	Refer to the engine owner’s manual.

BLOWER/VACUUM PUMP TROUBLESHOOTING

LOSS OF VACUUM (WHILE CLEANING, ENGINE RPM IS NORMAL BUT VACUUM IS LOWER THAN EXPECTED)

PROBABLE CAUSE	SOLUTION
Waste tank filter or strainer basket is plugged.	Clean or replace filter. Clean strainer basket.
Waste tank drain valve is damaged or left open, causing a vacuum leak.	Drain the waste tank. Close drain valve, if open. Replace valve if defective.
Vacuum transmitter is giving an improper reading.	Examine the mechanical and electrical connections to the vacuum transmitter, replace if necessary.
Vacuum hose(s) damaged, causing a suction leak.	Inspect hose(s). Repair or replace.
Waste tank gaskets not sealing properly, not positioned properly.	Inspect the gasket. Repair seal or replace re-position lid(s).
Plugged vacuum hose or vacuum plumbing between vacuum inlet and strainer basket.	Unplug vacuum hose or inlet plumbing.
Vacuum relief valve requires adjustment or is faulty.	Re-adjust the vacuum relief valve, or replace if necessary.
Loose vacuum pump drive belts.	Tighten the drive belts.
Blower/Vacuum pump is worn out.	Replace the Blower/vacuum pump.

EXCESSIVE VACUUM WARNING

PROBABLE CAUSE	SOLUTION
Machine is idling and is displaying excessive vacuum on the display.	Adjust vacuum relief valve to 14” Hg. Follow the Adjust Vacuum Relief Valve steps in the maintenance section.

HIGH PRESSURE SOLUTION PUMP TROUBLESHOOTING

LOSS OF SOLUTION PRESSURE (CLEANING TOOL OPEN, SOLUTION GAUGE READS LOW)

PROBABLE CAUSE	SOLUTION
Solution supply is turned off or low.	Turn the solution supply on or up. Check for kinks in the solution supply hose.
Solution pump inlet supply line is plugged or drawing air.	Examine filter solution screen. Remove accumulated debris and replace if required. Check for suction leaks and loose clamps or fittings. Tighten any loose fittings or clamps. Replace any ruptured hose(s).
Pressure regulator o-rings are dry and/or worn. See instructions on regulator.	Check o-rings. Lubricate and/or replace as needed, using o-ring lubricant.
Pressure regulator is dirty, stuck open, or improperly adjusted. See instructions on regulator.	Clean or repair regulator. Adjust to working pressure. Lubricate o-rings, using o-ring lubricant.
Low pump volume. (Measure the amount of water being returned to the water box from the pressure regulator.)	Examine the check valves, plunger cups, and cylinder head on the solution pump. Repair, whenever required (refer to the solution pump service manual)
Defective water pressure transmitter.	Replace transmitter.
Orifice (spray nozzle) in the cleaning tool is worn, defective or wrong size.	Replace Nozzle or change nozzle size.
Carpet/Upholstery Solution Out Orifice restricted/clogged.	Clean or replace.
Solution Outlet Check Valve is restricted/clogged.	Clean or replace.
Solution Outlet Quick Connect restricted/clogged.	Clean or replace.
Debris clogging water lines or water inlet disconnected.	Clean or replace as needed.
Belts loose or broken.	Re-tension or replace as needed.
Loss of pump prime.	Manually prime solution pump.

LOSS OF SOLUTION VOLUME AT TOOL (PSI ON THE DISPLAY READS CORRECT)

PROBABLE CAUSE	SOLUTION
Plugged orifice and/or screen in the cleaning tool.	Unplug or replace orifice and/or screen.
Internal block between the inlet pressure regulator and the solution outlet manifold, or the solution screen is clogged.	Inspect all lines, remove accumulated debris which is blocking flow. Replace any defective hoses. Remove, inspect, and clean the solution screen. De-scale unit and install a water softener, if necessary.
Outlet check valve is plugged.	Examine the check valve, remove any debris.
Defective quick-connect on one or more of the high pressure hoses.	Replace defective quick-connects(s) on high pressure hoses(s).
Cleaning tool valve is malfunctioning.	Repair or replace valve.
Hose inner lining is constricted.	Remove restriction or replace hose.
Air leak in chemical supply line, priming valve or metering valve.	Check for air leaks. Replace faulty parts.

SOLUTION PUMP CLUTCH DOES NOT ENGAGE

PROBABLE CAUSE	SOLUTION
Defective electrical connection in the console wiring or defective switch.	Examine switch, electrical connections, and wiring. Repair any defective connections. If there is power going to the switch but not going out, replace the defective switch.
Solution pump clutch has not been activated.	Press solution pump switch to “ON.”
Defective solution pump clutch.	Check the solution pump electrical circuit.
Loose or broken solution pump belts.	Tighten or replace belts.
Pressure Transmitter can be faulty or disconnected.	Check the Pressure Transmitter circuit for continuity and or sensor malfunction.

CHEMICAL INJECTION SYSTEM TROUBLESHOOTING

CHEMICAL FLOW ISSUES

PROBABLE CAUSE	SOLUTION
Chemical valve in the “OFF” position.	Turn the Chemical valve to the “ON” position.
Chemical pump is improperly primed.	Refer to Chemical pump priming instructions.
Suction leak in the inlet line leading into the Chemical pump.	Inspect inlet lines and flow meter for air leaks or damage.
Chemical valve in the prime position.	Turn the Chemical valve to the “OFF” or “ON” position.
External or Internal leak in Chemical piping.	Tighten or replace fittings. Re-apply thread sealant and/or tighten hose clamps where required.
Clog in the system.	Check strainer, check valve(s), piping. Remove any debris and replace any parts if necessary.
Chemical flow valve is defective.	Replace valve.
Chemical prime/”ON”/”OFF” valve is defective.	Replace valve(s).

HEAT EXCHANGER/TEMPERATURE RELATED TROUBLESHOOTING

EXCESSIVE HEATING

PROBABLE CAUSE	SOLUTION
Flow restriction caused by hard water scaling.	Descale unit. Repair or replace damaged plumbing components as necessary. Install a water softener.
Not enough water flowing during normal operation.	Check jet size of tool. Do not let cleaning tool sit for long periods with unit running. Trigger tool more often.
Diverter valve not functioning properly.	Check operation of diverter valve with unit in operation. Piston behind cylinder will move towards the rear of the unit when heating and towards the front when cooling.
Temperature Transmitter can be corroded with hard scale build up on the probe.	Inspect Temperature Transmitter probe for corrosion, clean if corroded or replace.

LOSS OF TEMPERATURE

PROBABLE CAUSE	SOLUTION
No vacuum hose is connected.	Connect vacuum hose to vacuum inlet port.
Temperature relief valve on water box is stuck open.	Clean temperature relief valve and test. Replace if necessary.
Diverter valve not functioning properly.	Check the operation of diverter valve (see table above).
Temperature Transmitter can be corroded with hard scale build up on the probe.	Inspect Temperature Transmitter probe for corrosion, clean if corroded or replace.

HEAT EXCHANGER LEAKING

PROBABLE CAUSE	SOLUTION
Water is dripping from the exhaust port due to condensation build-up.	NOTE: The heat exchanger may produce water condensation discharge at times during normal operation. Do not confuse this with a leak.
Heat exchanger is damaged from frozen water.	Inspect heat exchanger for leaks. Visually inspect for damage. Pressure check after removing the unit (maximum test pressure – 1,500 PSI).

AUTOMATIC PUMP OUT (APO) OR WASTE PUMP (IF INSTALLED) TROUBLESHOOTING

APO NOT OPERATING NORMALLY

PROBABLE CAUSE	SOLUTION
Defective APO float switch.	Replace float switch.
Inspect APO impeller for debris or damage.	Clean or replace if necessary.
Weak battery.	Charge or replace battery if needed. Check charging station.
Pump-out circuit breaker on control panel has been tripped.	After inspecting waste pump to determine the cause of the tripped circuit breaker, press the reset button.
Loose wiring on the APO or the battery.	Check wiring.

DISPLAY TROUBLESHOOTING

DISPLAY NOT TURNING ON

If the display is not turning on, check the circuit breaker to see if it has been tripped. If it has, push it back in. If the display has any other issues and/or continues to not operate normally, contact a ATMI service or customer care representative at 866-390-2376.

KOHLER ENGINE TROUBLESHOOTING CODES

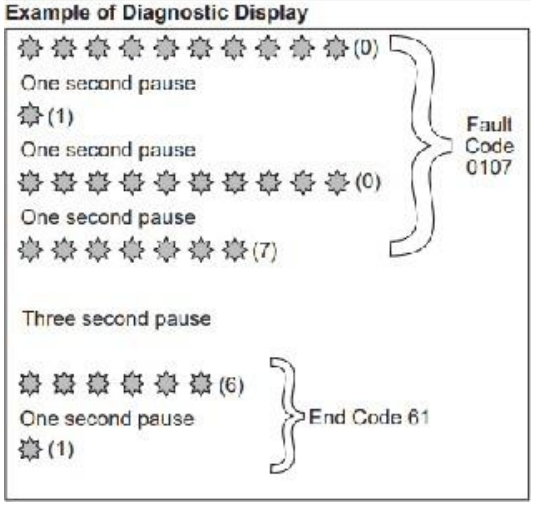
If your machine displays an engine code, record the code and call a ATMI representative for assistance at 866-390-2376. For complete diagnostic codes, refer to the Kohler Engine Manual here.

Diagnostic Fault Code Summary

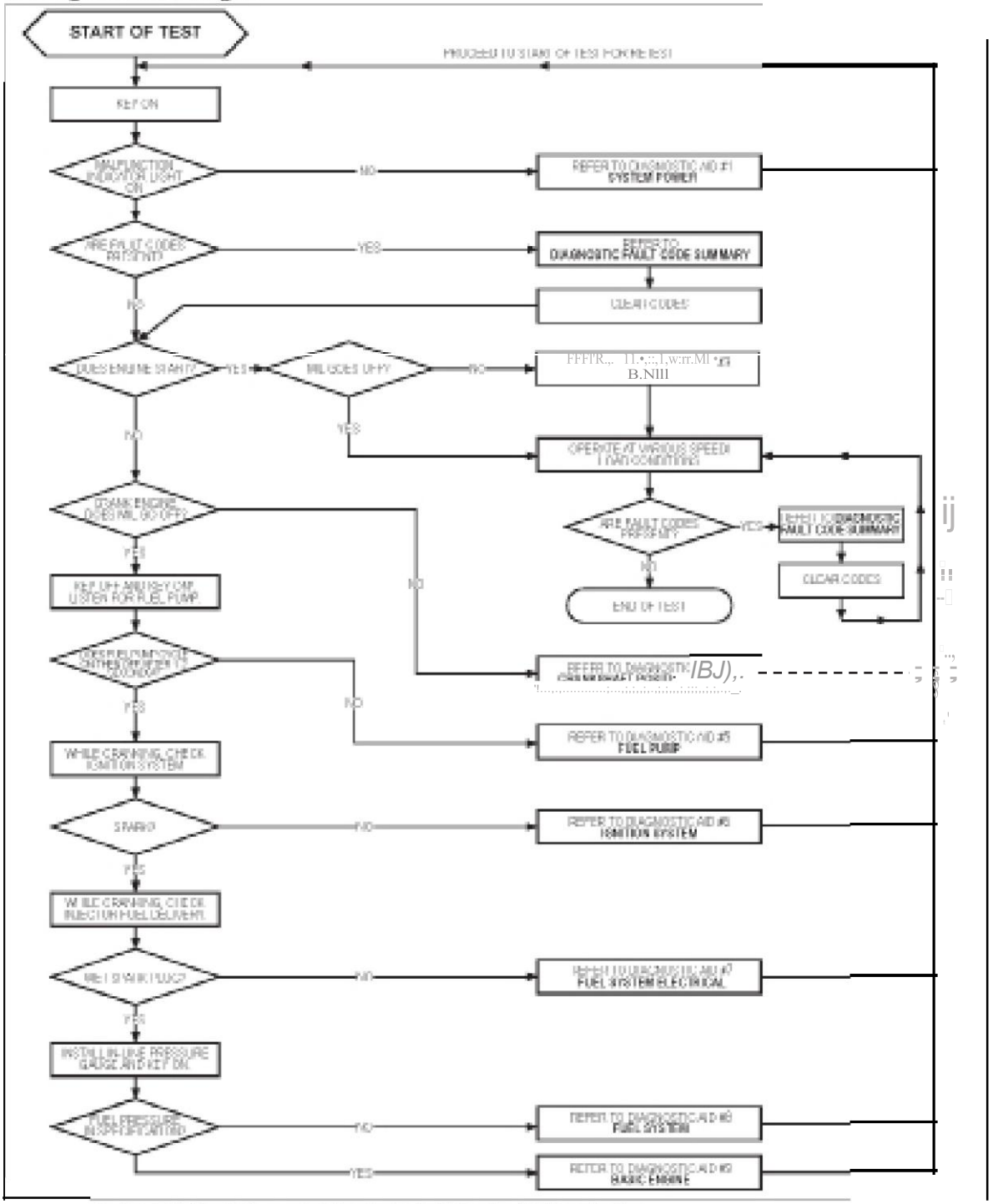
Fault Code	Connection or Failure Description
0031	Oxygen Sensor Heater Circuit Low Voltage
0032	Oxygen Sensor Heater Circuit High Voltage
0107	Manifold Absolute Pressure (MAP or TMAP) Sensor Circuit Low Voltage or Open
0108	Manifold Absolute Pressure (MAP or TMAP) Sensor Circuit High Voltage
0112	Intake Air Temperature (IAT or TMAP) Sensor Circuit Low Voltage
0113	Intake Air Temperature (IAT or TMAP) Sensor Circuit High Voltage or Open
0117	Coolant/Oil Temperature Sensor Circuit Low Voltage
0118	Coolant/Oil Temperature Sensor Circuit High Voltage or Open
0122	Throttle Position Sensor Circuit Low Voltage or Open
0123	Throttle Position Sensor Circuit High Voltage
0131	Oxygen Sensor 1 Circuit Low Voltage, or Open
0132	Oxygen Sensor 1 Circuit High Voltage
0171	Maximum Adaptation Limit Exceeded
0172	Minimum Adaptation Limit Exceeded
0174	Lean Fuel Condition at High Load (Open Loop)
0201	Injector 1 Circuit Malfunction
0202	Injector 2 Circuit Malfunction
0230	Fuel Pump Module Circuit Low Voltage or Open
0232	Fuel Pump Module Circuit High Voltage
0336	Crankshaft Position Sensor Noisy Signal
0337	Crankshaft Position Sensor No Signal
0351	Cylinder 1 Ignition Coil Malfunction
0352	Cylinder 2 Ignition Coil Malfunction
0562	System Voltage Low
0563	System Voltage High
61	End of Code Transmission

Fault Codes

Example of Diagnostic Display



EFI Diagnostic Flow Diagram



1. ,il/lerbJ ming key to OFF, wait 10 seconds before turning to ON to allow ECU to go to sleep.

□ I'l.11111 PW111 na!:;l11:c:11n l:111 h!l.-d er■ "i'il:ll■J■::n ■a IDHIIbll sh pump cycle. Fuel pump module will run for one 4-6 C!,'Cll!'« 1111 ECU',iillies u::,,;r□ IJMt .:i□

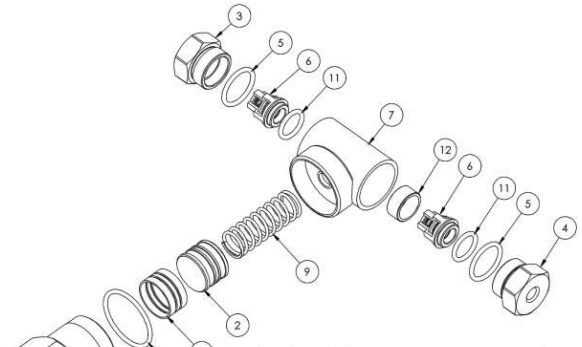
SECTION SIX: PARTS LISTING & SCHEMATICS

CHEMICAL PUMP

⚠WARNING Turn machine off and allow to cool before performing any maintenance.

The Chemical Pump should be rebuilt every 1,000 hours or as needed. This involves changing the check valves, replacing the o-rings, and inspecting the piston. DO NOT attempt to reuse o-rings after the check valves have been removed. Replace all o-rings when servicing check valves.

Picture of steps or what to do

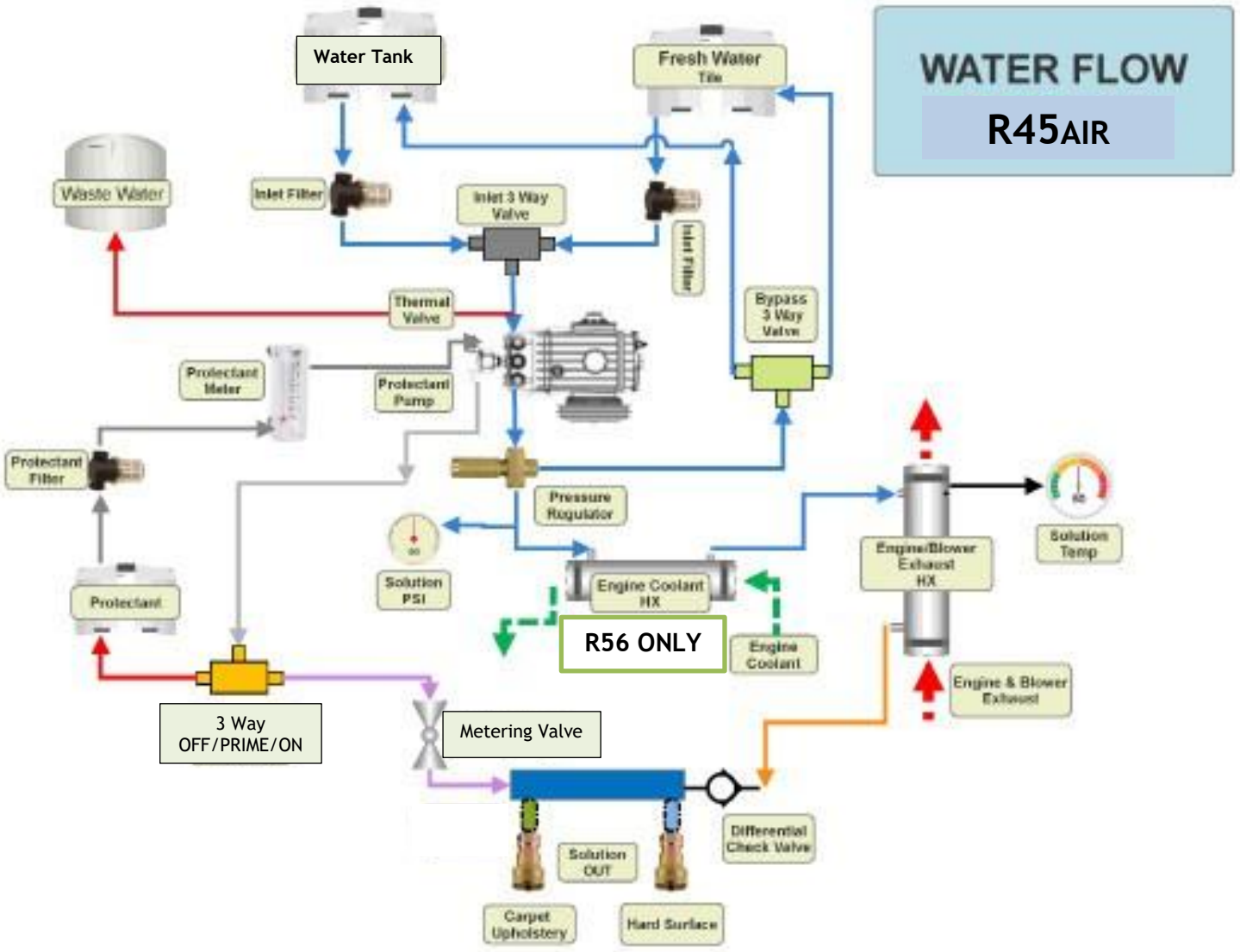


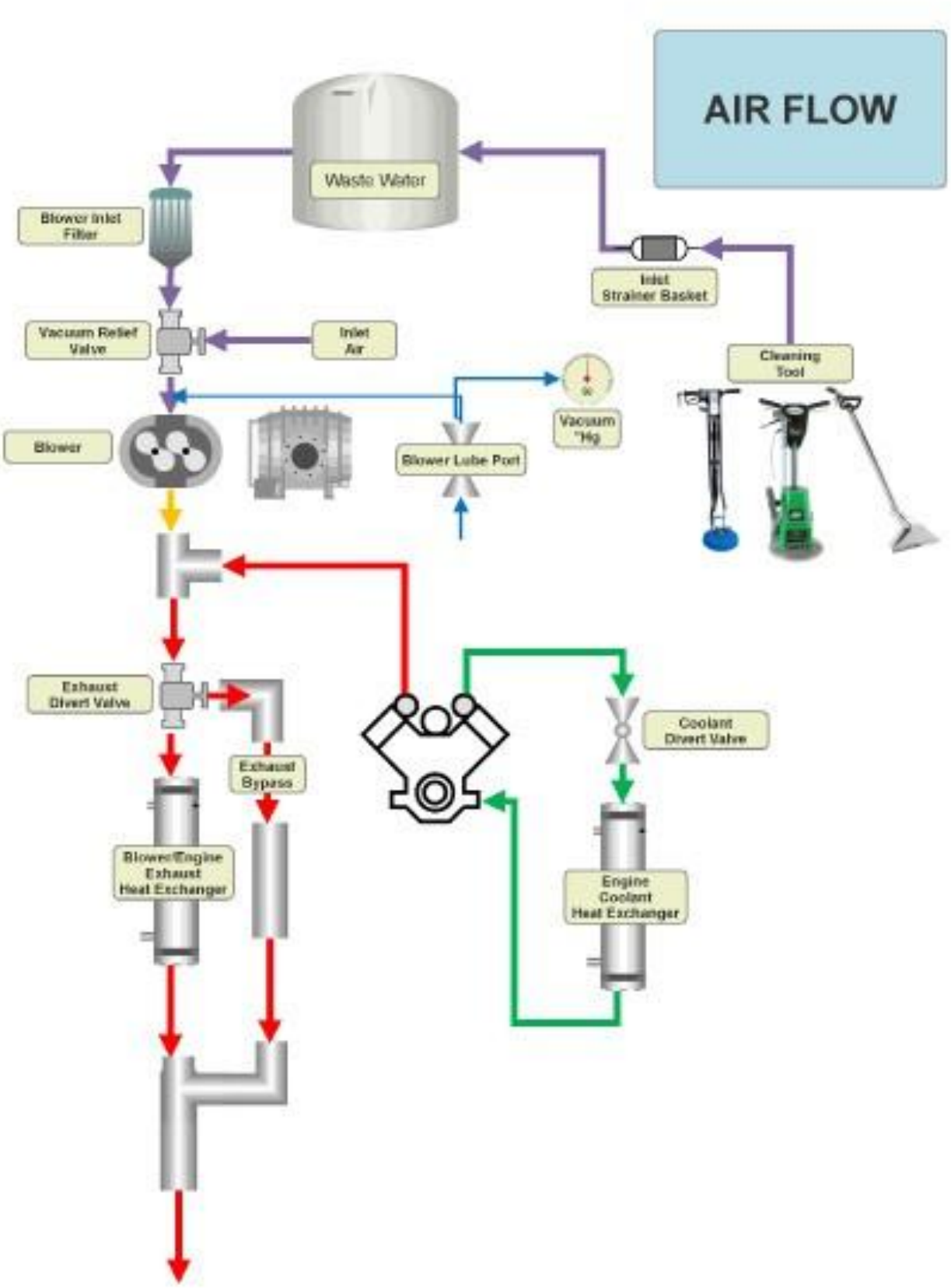
1	12	36-357	SPACER, 303SS RING
2	11	36-390	O-RING, 70 DURO GP PULSE PUMP
1	10	36-564	CYLINDER, 3K PULSE PUMP
1	9	36-565	SPRING, 3K PULSE PUMP
1	8	36-566	O-RING, BUNA -126
1	7	36-567	BODY, 3K PULSE PUMP
2	6	36-568	ASSY, VALVE 3K PULSE PUMP
2	5	36-569	O-RING, 1.051 ID X .070 CS

SOLUTION MANIFOLD DIFFERENTIAL CHECK VALVE

⚠WARNING Turn machine off and allow to cool before performing any maintenance.

If your Chemical Meter is reading less than 4 GPH, check your differential check valve for wear and replace as necessary. Replace at 1,000 hours with the Chemical pump.


WATER FLOW
R45AIR
Water Tank
Fresh Water
Waste Water
Inlet Filter
Inlet 3 Way Valve
Inlet Filter
Thermal Valve
Bypass 3 Way Valve
Prolectant Meter
Prolectant Pump
Prolectant Filter
Pressure Regulator
Solution Temp
Solution PSI
Engine/Blower Exhaust HX
Engine Coolant HX
R56 ONLY
Engine Coolant
Prolectant
Engine & Blower Exhaust
3 Way OFF/PRIME/ON
Metering Valve
Differential Check Valve
Solution OUT
Carpet Upholstery
Hard Surface


AIR FLOW
Waste Water
Blower Inlet Filter
Inlet Strainer Basket
Vacuum Relief Valve
Inlet Air
Cleaning Tool
Vacuum "Hg
Blower
Blower Lube Port
Exhaust Divert Valve
Coolant Divert Valve
Exhaust Bypass
Blower/Engine Exhaust Heat Exchanger
Engine Coolant Heat Exchanger