PowerClean INDUSTRIES

Powerful Cleaning Solutions

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Owners Manual

Genesis NXT 56 & 59, LP & HP

Multi Surface Cleaning Systems

Please read the entire manual completely prior to installing or starting your equipment. ***Pay close attention to the unit Advisories and Cautions located on pages 13 & 14***. If you do not completely understand the functionality and maintenance of your equipment, contact your dealer or PowerClean Industries directly.
All warranty paperwork must be completed and returned to PowerClean Industries within 10 days.

Your questions or comments are welcome and encouraged.

PowerClean INDUSTRIES

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CONGRATULATIONS and Thank You!

You have purchased an industry leader in Slide in Truckmounted Multi Surface Cleaning Systems. PowerClean Industries and our Dealers are committed to ensuring your satisfaction for years to come with the purchase of your new Multi Surface Cleaning System.

PowerClean Industries has forged a reputation for reliability, ease of operation, hi-level performance, simplicity of maintenance and the highest manufacturing standards in our industry today.

Over 35 years of experience and a true commitment to quality and innovation truly put PowerClean Industries in a class of their own. On going research, development, computer-aided design, and implementation of the latest technology are all part of our continued commitment to the cleaning industry.

Welcome to our family AND Thank you for trusting us to provide you with the equipment you need to earn your living!

From Our Team Members at PowerClean Industries.

MANUAL INDEX

GENERAL INFORMATION

The Genesis NXT mobile cleaning plant has been engineered for the professional cleaner who demands a high performance, multi surface. Mobile cleaning plant. Dependable performance is the guiding principal in the design and construction of the Genesis NXT. Although all PowerClean truckmounts are designed with simplicity in mind, they perform many functions simultaneously to deliver the power and performance you need.

- Engine has to run at the desired, continuous RPM.
- High-pressure water pump provides steady pressure at the proper flow for cleaning.
- Vacuum blower provides a constant desired amount of vacuum to deliver soiled water to the recovery tank.
- Cleaning solution has to be delivered to the water at the right concentration.
- Heating system must deliver and maintain proper heat.
- The vacuum recovery tank stores soiled water for proper disposal.

As you can see, there is more to the equipment than just starting the unit and cleaning. Regular care and maintenance must be practiced in order for all of the components to function properly and simultaneously.

This manual contains operation instructions as well as information required for proper maintenance, and repair of this unit. To assist with proper diagnostics and problems, we have also included a general troubleshooting guide for your convenience.

MACHINE SPECIFICATIONS GENESIS NXT 56 & 59

DIMENSIONS	• 44”W x 45” H x 52” L (Including Waste Tank)
HIGH PRESSURE PUMP	• 2000 psi / 3000 psi Cat 3CP / 5CP, Triplex plunger pump
VACUUM BLOWER	• Genesis 56 – Roots RAI 56 Rotary blower or • Genesis 59 – Roots RAI 59 Rotary blower
CHEMICAL SYSTEM	• Injection siphon
INSTRUMENT PANEL	• Ignition switch • Throttle Control • Tachometer • GPH Meter • Rocker switch Pump • Rocker switch APO • Rocker Switch Accessory • Thermostat • Water temperature gauge • Water pressure adjustment • Water pressure gauge • Vacuum gauge • Hour meter • Engine oil drain • Pump oil drain • Blower oil drains • Blower oil lube port

RECOVERY TANK	• **Standard 90 gallon stainless steel**
CLEANING WAND	• **Stainless steel wand** • **Quad Jet S bend** • **Splash guards** • **Insulated handle sleeve** • **Adjustable handle**
STANDARD EQUIPMENT	• **Main power unit** • **Vacuum recovery tank** • **100ft, 2” Vacuum hose (2-50’ sections with barbs)** • **100ft, ¼” Solution hose (2-50’ sections with quick connects)** • **PowerClean Quad jet carpet wand** • **Chemical jug** • **Battery box and accessories (Battery not included)** • **Operation manual** • **Service record manual** • **System status lights**
OPTIONAL EQUIPMENT	• **Auto Pump-Out (if equipped)** • **Fuel Tap Kit (if ordered)** • **Fresh Water Tanks (if ordered)** • **Hose Reels (if ordered)** • **Shelving units**

LOCAL WATER CONDITIONS

The quality of water varies greatly throughout North America. This can influence the reliability and efficiency of your equipment. Many areas have an excess of minerals in the water, which results in what is known as hard water. These minerals adhere to the inside of the heat exchanger's and other major components causing damage and loss of cleaning effectiveness.

Cleaning effectiveness and equipment life is increased when water softeners are used in hard water areas***. The low cost of a water softener is more than made up for the increased life, reliability and overall cleaning efficiently.***

WASTE WATER DISPOSAL

There are laws that prohibit the dumping of soiled water from carpet cleaning equipment in any place but a sanitary treatment system.

The water recovered into your unit's recovery tank contains materials such as detergents and soil. These materials must be processed properly before they are safe to re-enter our streams, rivers and reservoirs.

AS PER FEDERAL, STATE AND LOCAL LAWS DO NOT DISPOSE OF WASTEWATER INTO STORM DRAINS, GUTTERS, STREAMS, and RESERIVORS ETC.

Contact your local Evinronmental Protection Agency for specific instructions on proper wastewater disposal.

CLEANING SOLUTIONS AND CLEANING

Your Genesis NXT Mobile Cleaning Plant has been designed with the latest technology to produce the highest quality cleaning results possible. However it is only one of the many tools of the carpet cleaning trade, and can produce only as good as the person operating it. There are no short cuts to quality. It takes time, knowledge, and the proper use of quality cleaning products.

PowerClean Industries recommends that you follow the label directions on all PowerClean cleaning solutions, to obtain quality results and safety. The improper use of cleaning solutions in your Truckmount can cause serious damage to the internal components of the unit. (PowerClean Industries does not recommend running products through your unit such as solvents, or grease removers with high concentrations of solvents).

Only approved PowerClean Industries products are recommended. Use of other cleaning agents can damage internal components and void your warranty.

If you wish to use products other than PowerClean Industries products, Please consult your dealer prior to using products other than PowerClean Industries.

OPERATING INSTRUCTIONS

NOTE: Before operating the unit, make sure you are in a well-ventilated area. **Exhaust fumes from the cleaning unit contain carbon monoxide and are hazardous to your health and your client's health.**

DO NOT OPERATE THE UNIT NEAR ANY BUILDING DOORWAYS, WINDOWS, OR OPENINGS OF ANY KIND. The unit must be run in an open, well-ventilated area.

1. Check to make sure you have enough fuel for the job.

2. Check to make sure you have an adequate amount of fresh water in your fresh water tank to complete the entire job. If not, fill the fresh water tank prior to starting the job or hook up the garden hose to the front of the unit prior to starting.

3. Check your chemical jug to ensure that you have enough concentrated solution to finish the job. If not, mix and fill the chemical jug with the desired solution.

4. Connect all hoses required. When connecting the cleaning hoses, start from the farthest point to be cleaned and work your way back towards the unit. This will ensure that you have the appropriate length required.

5. Once at the unit, connect the high pressure hose to the appropriate water "out" quick disconnect on the front panel. Then repeat the same process with the vacuum hose and connect it to the vacuum port on the waste tank.

START UP

(Always check the fluids prior to starting the unit)

1. Make sure your vehicle is in a well-ventilated area and away from windows, doors and entryways.

2. Check your water supply to make sure you have adequate water to the unit. Remember, NEVER RUN THE MACHINE WITHOUT ADEQUATE WATER SUPPLY. DAMAGE MAY OCCUR TO THE SYSTEM IF RUN WITHOUT ADEQUATE WATER.

3. Check the chemical supply for adequate solution.

4. Turn the ignition to the start position. The engine will start. Immediately, and the R.P.M. will increase for a few seconds then decrease to the idle position. (The increased engine speed upon start-up energizes the ignition and charging system and is pre programmed into the engine control module) Allow the engine to warm up for approximately 5 minutes prior to “throttling up” the unit. To increase the throttle, turn the throttle knob clockwise. To decrease the throttle, turn the knob counter clockwise. You will notice the engine RPM increasing or decreasing depending on how you turn the throttle.

- For upholstery cleaning, it is not necessary to run the unit at a higher R.P.M. The most common speed for upholstery cleaning is 1600-1900 R.P.M. or lower if desired.

- For Carpet cleaning using a single wand, the engine speed should be set between 2000 and 2700 R.P.M. Depending on the heat level required for the job. The higher the R.P.M., the more heat is produced.

- For dual wand cleaning or pressure washing, the unit should be run between 2800 and 3150; again, this depends on the level of heat required for cleaning.

5. Once you have the engine at your desired RPM, turn the water pump switch “on”. This engages the pump clutch allowing the pump to pressurize the system for cleaning. Check the pressure setting on the pressure gauge. Standard carpet cleaning pressures should be between 300 – 500 psi. Upholstery cleaning pressures should be between 100 and 200 psi.

6. Check the thermostat for the desired cleaning water temperature. Most cleaners run their unit from 180-220 degrees depending on the type of surface being cleaned. You do not need to run the unit at “full” throttle to get the desire heat from the unit. For example; to run at 200 degrees, you only need to run the engine at 2400 RPM, therefore it is not necessary to run at to full throttle. Every professional cleaner has a unique engine speed that best suits his or her needs. Remember, the higher the R.P.M., the more heat the unit generates.

7. Connect the vacuum and solution hoses to the machine and the cleaning wand.

8. You are now ready for cleaning.

NOTE: The machine will automatically shut down when the recovery tank reaches full capacity due to the high level float switch located inside the recovery tank. When this occurs, empty the recovery tank at the approved disposal site. To save time on emptying the recovery tank, PowerClean Industries recommends that you have an Automatic Pump Out in your recovery tank. Consult your authorized dealer for more details.

SHUT DOWN

1. Lay the vacuum hose out prior to shutting the unit down. This allows all of the moisture to be removed from the vacuum hose and prevents any spillage of soiled water in your vehicle when storing the hoses.
2. Slowly turn the throttle knob down until the unit is at a low idle.
3. Turn the temperature thermostat to the lowest setting and turn the chemical-metering knob off.
4. Flush the system prior to shutting it down. Run the unit with the thermostat set to the lowest position and key the wand. This will allow the unit to cool down within a short period of time. This is a very important procedure that will prevent the water from over heating if the unit shut off hot.
5. Turn the high-pressure pump switch to the “OFF” position.
6. Disconnect both the high-pressure hose and the vacuum hose.
7. While the unit is running at a low idle, wrap up all of the hoses. This will allow the unit to “COOL” while you are wrapping up the hoses.
8. Place the carpet wand and any tools that were on the job site into the van.
9. Shut the unit down by turning the ignition key to the “OFF” position.
10. Remove the lift out lint basket located inside the recovery tank,
11. Clean and replace the lint basket back into the recovery tank.
12. Drain the recovery tank at an approved disposal site.

FREEZE GUARD PROCEDURE
(If equipped)

1. Drain the fresh water and recovery tanks completely. Any water left

Inside the tank and hoses will freeze. To prevent any damage, make sure ALL water is drained.

2. Remove the chemical jug and store in a heated area.
(If you have an in line transfer pump, it will be necessary to purchase the freeze guard system from your local dealer.)

3. Close the ball valve, which leads from the fresh tank to the transfer pump, and open the ball valve, which leads from the inlet side of the transfer pump to the antifreeze.

4. Attach the fill/bleeder hose to the front high pressure quick disconnect on the unit.

5. Turn the ignition key to the “ON” position, this will engage the transfer pump and allow it to feed antifreeze to the unit.

6. Once the transfer pump has primed itself with antifreeze, you may start the unit with the pump clutch switch “OFF”.

7. Take the fill/bleeder hose and insert the open end into the antifreeze jug. This will allow the unit to recycle the antifreeze.

(Contd)

8. Insert the chemical feed hose into the antifreeze jug and open the GPH meter two complete turns. This will allow the antifreeze to Circulate through the chemical feed system.

9. Turn the pump clutch switch to the on position. You will notice water flowing into the jug at first.

10. Once you see that the GPH meter is full of antifreeze, and the fill/bleeder hose is sending antifreeze through, the freeze guard is finished.

UNIT ADVISORIES / CAUTIONS

PLEASE READ CAREFULLY.

WARNING

LEVEL OPERATION:

During operation, the van must be parked on a level surface. Failure to insure correct leveling may prevent proper internal lubrication of the engine, vacuum blower, and high-pressure pump.

WARNING

HOT SURFACES:

During operation of this unit, many surfaces become very hot! When near the van caution must be taken not to touch any hot surfaces? Serious injury will occur if proper caution is not exercised.

WARNING

NEVER OPERATE THE EQUIPMENT WITH THE COVERS REMOVED:

The covers and panels are guards against moving parts. Never operate the equipment with the covers removed. This is a serious safety hazard and serious injury can occur.

UNIT ADVISERIES / CAUTIONS

PLEASE READ CAREFULLY.

MOVING PARTS:

Never touch any part of the machine that is in operating motion. Also, caution must be used if wearing loose clothing when near machinery with moving parts. Severe bodily injury may occur. Never remove the covers while the unit is running! Serious injury can occur.

CARBON MONOXIDE:

The unit produces carbon monoxide exhaust fumes, which must be directed away from the job site.

MAINTENANCE:

It is very important that when performing your regular maintenance routines such as oil changes to use only factory approved lubricants. Improper lubricants will void your warranty on those specific components.

HIGH PRESSURE PUMP

The Genesis NXT 56 and the 59 are equipped with a state of the art Cat Triplex plunger pump. Triplex pumps are built to last, with three ceramic plungers, high-pressure valves and an oil cooled crankshaft system.

With the Triplex pump, you have the ability of performing carpet cleaning and high power washing, with the pressure outlet ranging from 30 psi to 2800 psi. If 2800 psi is exceeded, it can cause damage to the heat exchange system and drive system of the unit. All units are equipped with a high-pressure pop off (located on the exhaust heat exchanger) valve to release the pressure if it exceeds the operating specifications. This is a safety valve and by no means will it prevent the system from over pressurizing.

Your PowerClean Industries distributor will present your machine with the pressure preset to 300 –500 psi during installation. We have found this pressure range to be the optimal setting for carpet cleaning. When cleaning upholstery a simple adjustment of the unloader on the lower front panel will lower your pressure to 200 psi, which is recommended for upholstery cleaning.

When power washing you must remember that your Genesis NXT is a multi surface cleaning system. Even though your Triplex pump has a maximum rating of 3000 psi, this pump is set up for carpet cleaning and will give you a maximum rating of 2800 psi for power washing. With 2800 psi and the heat from the heat exchangers it makes power washing simple. **Never perform power washing with the engine rpm lower than full throttle**, always run the engine at full throttle when power washing.

NOTE: Pressure settings in excess of 2800 psi can cause damage to

the unit. And void your warranty. Do not exceed these parameters.

GENESIS NXT WATER FLOW SYSTEM

The water flow system on the Genesis NXT has been designed to be simple and trouble free. The incoming water flows from either the transfer pump or garden hose through the incoming water shut off solenoid. The incoming solenoid is what controls the water level inside the mix tank. As the water passes the solenoid, it flows through the dema chemical injector. It automatically picks up the predetermined quantity of cleaning solution that you set on the GPH meter.

The predetermined quantity of cleaning solution is determined by the chemical flow meter located on the front panel. Usually 2-4gph on the meter is adequate***. With this advanced chemical injector, the chemical flow is injected only when there is a demand for water in the mix tank***.

Once the water has been injected with the correct amount of chemical it then passes through the high-pressure pump, where it is pressurized. Having chemical mixed with water before it enters the pump has a few advantages over other systems. The chemical acts as a lubricant and increases the life expectancy of the pump providing it is mixed according to the directions. The pump also aids in the mixing of the chemical if is injected before the pump.

After passing through the high-pressure pump the pressure is then controlled by the unloader valve located on the front panel of the unit.

Once the water passes through the unloader, the unused portion of the water is sent through the blower exhaust pre-heater and to the mix tank. The high-pressure water is then sent to the liquid heat exchangers, which pre-heats the water.

After the pre-heated water exits the liquid heat exchangers, it is then sent to the exhaust heat exchanger for the added heat boost needed for high temperature cleaning. The exhaust heat exchanger consists of a single heat exchanger. The exhaust heat exchanger heats the water to the pre determined setting set by the thermostat on the front control panel. The water is then sent out the front of the machine for cleaning.

NOTE: The water flow plumbing system will need to be flushed regularly with descaler to prevent abnormal chemical or hard water build-up. This can be done by filling the mix tank with descaler and running or flushing the system.

Consult your authorized dealer for specific descaling instructions. Never use over the counter descalers, internal damage may occur to the unit. Use only PowerClean Industries recommended descaler.

VACUUM SYSTEM

The vacuum system of the Genesis NXT is a Roots Universal RAI 56 or 59 positive displacement rotary lobe blowers. This high performance blower provides incredible air flow and water lift making sure carpets are left as dry as possible. The blower is factory set for maximum efficiency and longevity at 13-14 h.g. ***Never exceed 15 h.g. On the vacuum gauge***. Damage may occur to the system if 15 h.g is exceeded. The performance and life of the blower greatly depends on the care and proper maintenance it receives.

The Roots blower has a very close internal tolerance between the lobes. Solid objects entering the inlet of the blower can damage the interior. To prevent this, PowerClean Industries installs dual stainless steel filter screens on the vacuum inlet inside the recovery tank. ***These stainless steel filters should be removed daily and cleaned.*** When reinstalling the filter only thread the filter on until finger tight and use a WD-40 type of lubricant on the threads for easy replacement and removal.

For further information on the Roots Vacuum Blower refer to the enclosed Roots Universal Blower manual.

ELECTRICAL SYSTEM

The Genesis NXT electrical system has been specifically designed with simplicity in mind. The Genesis NXT wiring has two harnesses, one connects the engine to the ignition switch and the other connects all other related components to the fuse panel and terminal block.

These harnesses are specifically designed with plug ends for easy removal that enable service center's easy removal and diagnostics if necessary. The fuse panel located behind the front panel fuses all components, which require power from the engine source. This will aid in the prevention of electrical problems, which could occur from loose wires, or damaged components.

NOTE: Whenever working on your unit, You must disconnect the battery power cable for safety. Failure to do so could result in damaged components or physical harm.

GENESIS NXT 56 & 59 HEAT EXCHANGE SYSTEM

The Genesis heat exchange system is custom engineered and designed to meet our exacting standards for performance. The heat transfer is quick and efficient, with no potentially damaging heat swings or peaks. All Genesis NXT heat exchangers are designed with a burst rating of 4000 psi and operating pressures up to 2800 psi. The heat exchange system consists of four heat exchangers, they are;

1. **Blower pre heater**. This heat exchanger is designed to take the chill of the water and pre heat it. (Located below the vacuum blower)

2. **Engine antifreeze heat exchangers**. These 2 heat exchangers capture unused heat generated from the engine anti-freeze. The engine anti-freeze does not come in contact with the cleaning solution in any way. (Located on the right side of the machine between the waste tank and engine)

3. Lower engine exhaust heat exchanger. The heat exchanger feature state of the art “bundle” design. It is designed to capture as much heat as possible from the engine exhaust without restricting the engine exhaust in any way.

This unique heat exchange system gets the most heat from every avenue on the Genesis NXT that produces it. Our unique design delivers the highest heat to flow ratio in the industry. The heat exchangers require little maintenance other than regular descaling, flush & bleed.

NOTE: It is very important to remember that you should never allow your unit to freeze. This will cause costly damage to the

heating system of the unit and void your warranty.

Genesis NXT 56 & 59 POWER PLANT

Each Genesis unit features the Nissan 1.5 Liter, A-15 Liquid cooled, Fuel Injected power plant. PowerClean Industries has chosen this engine because the service / track record for this engine has been proven itself to be a reliable, powerful engine. The Nissan engine is entirely liquid cooled. What this means to you is that you are assured that the engine will run at consistent temperature regardless of the temperature outside. Your cleaning temperatures will remain steady because the engine temperature is always consistent.

With regularly scheduled maintenance, Your Genesis NXT power plant will run for many years to come trouble free.

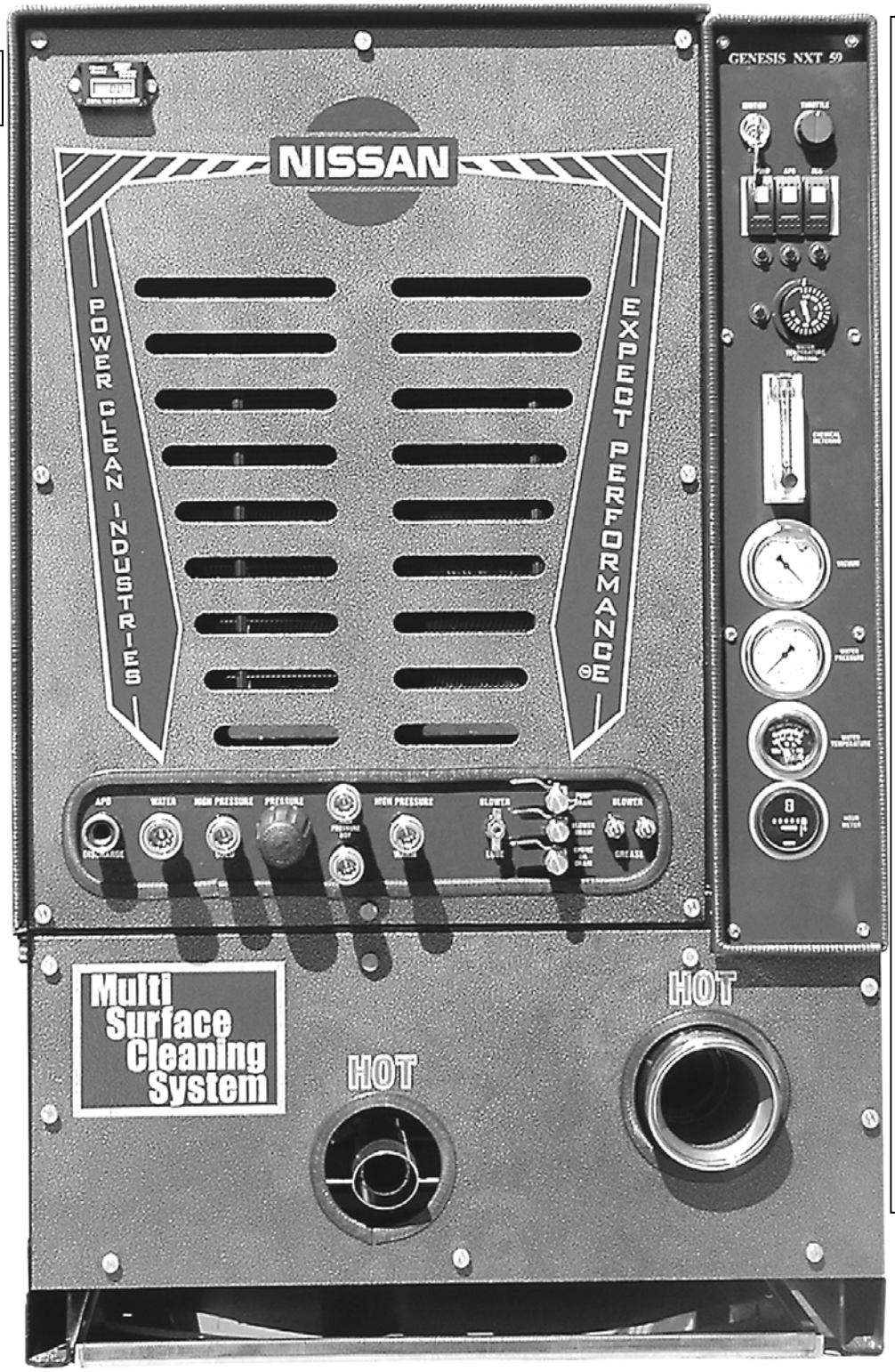
Please refer to the engine service guide provided in this manual for specific maintenance and service routines.

GENESIS NXT FRONT UPPER AND LOWER CONTROL PANELS
(See photo on next page)

The upper control panel of your Genesis puts everything at your fingertips. Complete with Vacuum gauge, Hour meter, Pressure gauge, Water temperature gauge, Thermostat, GPH meter, Ignition and other critical operating components.

The lower control panel is where your quick disconnects; Pressure regulator valve, Water inlet quick disconnect and maintenance ports are located. You will notice that we have remote oil drain ports and grease fitting located on the front panel to give you easy access to these components for fast, clean maintenance routines.

Tachometer



Control Panel

Ignition Throttle

Pump, APO, Aux Switches

Thermostat

GPH Meter

Vacuum Gauge

Water Pressure Gauge

Water Temperature

Hour Meter

Engine / Blower Exhaust

CAUTION HOT

GENESIS NXT WASTE WATER RECOVERY TANK

The recovery tank of the Genesis incorporates many unique features to protect your equipment, and save you time. The tank is made from 3/16” powder coated stainless steel and contains baffles and stress bends for strength and durability. The recovery tank holds approximately 90 gallons of soiled water. The safety and convenience features built into the tank include a high water shut-off switch, built in stainless steel lift out lint basket, sloped tank bottom, stainless steel blower inlet filters and a large drain port.

The high water shut-off switch is located on the highest point of the tank giving you full use of the tanks capacity. The high water shut-off cuts the power to the engine and shuts it down before water can enter the blower system. **(The float will not shut the system down if there is foam present; foam can enter the blower if it is present. Make sure a de-foamer is used when foaming is or may be present)** The stainless steel lint basket prolongs the blower inlet filters life by capturing larger debris before they can enter the blower inlet filter. The stainless steel blower inlet filters prevent smaller debris from entering the blower chamber, which could cause damage to the blower itself. The recovery tank has a large lift off lid, which allows easy access to all of the filters for easy maintenance. ***These filters require regular daily cleaning and maintenance.***

NOTE; To keep your recovery tank like new, regular cleaning is necessary to keep unwanted debris from adhering to the inner walls of the tank. The tank should be flushed daily or after every use.

MAINTENANCE

To avoid costly repairs and downtime, it is imperative to develop and practice good maintenance procedures. These procedures must be performed on a daily, weekly, monthly and quarterly schedule according to the maintenance booklet included in your manual.

As part of your Genesis package, you receive a PowerClean Industries maintenance booklet. This booklet provides you with a convenient format for recording the required maintenance of your Genesis NXT mobile cleaning plant.

You are required to perform all maintenance items in the maintenance schedule and record that you have done so in this booklet as part of your warranty. It is your responsibility to keep a copy of all repair orders and receipts that relate to your unit. These records of services and purchases will be required to substantiate proper maintenance to your unit and for any warranty claim.

DAILY

- Check engine oil.
- Check engine coolant level.
- Check high-pressure pump oil.
- Check vacuum blower oil.
- Clean vacuum tank lint basket. (Should be cleaned after every job)
- Clean the blower inlet filter.
- Lubricate the blower with lubricant.
- Winterize if necessary

WEEKLY

- Check engine air cleaner filter.
- Check belts for wear and tightness.
- Check high-pressure pump belt.
- Check mix tank inlet filter
- Flush chemical system with 50/50 mixture of water and vinegar.
- Inspect unit for loose wires, oil leaks, and water leaks.
- Check all gauges for functionality.
- Visually inspect the unit for loose nuts / bolts.
- Clean wand and inspect for clogged jets.
- Clean recovery tank thoroughly with high-pressure water.
- Grease Pump Belt Idler Pulley

MONTHLY

- Change engine oil.
- Check engine coolant and replenish if necessary.
- Bleed liquid heat exchangers.
- Check engine air cleaner and replace if needed.
- Grease vacuum blower bearings.

QUARTERLY SERVICE

- Change oil in high-pressure pump.
- Change oil in vacuum blower.
- Check that all nuts and bolts are tight.
- Descale unit thoroughly.

AS REQUIRED / HEAT EXCHANGER FLUSH

If your area has hard water you may see evidence of hard water deposits form in the water system, or in the quick disconnects. If scale is present, the water system should be flushed with descaler. This procedure may have to be increased to a monthly level if you notice excessive scale build up is present. For information on flushing the system, contact you're nearest PowerClean dealer.

Overall machine maintenance and appearance is very important. It represents your company's professional appearance and is how you make your living. A clean well maintained machine would give you years of reliable performance. Maintenance, troubleshooting, and repair are much easier on a clean well-maintained unit. Regular cleaning and maintenance will give you the opportunity to spot any problems normally before they occur.

It is important that you follow and record the maintenance on your unit according to the Maintenance Guide to insure complete warranty coverage.

TROUBLESHOOTING GUIDE INDEX

Section Problem / Possible cause

Number	Problem / Possible Causes	Solution
1	***There is a loss of water pressure.***	
1.1	The mix tank inlet water hose fell off or is missing. This will cause aeration and turbulence in the tank.	Check the inside of the tank to see if the hose is missing or not in place. Reinstall hose or replace.
1.2	Foreign material is blocking the pump inlet filter located inside the tank. If the filter is clogged, it will cause wide pressure fluctuations.	Inspect the filter and clean or replace if needed.

1.3	The water supply from the mix tank to the pump is kinked, cracked or loose. This will cause pressure fluctuations.	Check the Gray hose on the mix tank. Check both the mix tank and the pump fittings for tightness. Check the hose for leaks or cracks.
1.4	The float inside the mix tank is hung up or malfunctioning.	Remove the mix tank lid and inspect the float. If it is stuck, free it up. If the float is sinking and not floating, it is full of water and needs to be replaced. Check the float alignment and make sure it is securely fastened.
1.5	The water solenoid is not functioning and not allowing the water to enter the tank.	Check the wiring on the valve itself; make sure they are firmly attached. Check the fuse on the panel to make sure it is not blown. Replace the fuse if necessary.
1.6	There is foreign material in the inlet or outlet valves of the pump.	Inspect the valves and clean or replace if
1.7	The inlet solenoid is clogged with foreign material not allowing water to pass through.	Remove and inspect the inlet solenoid for obstructions and clean or replace if necessary.
1.8	The inlet solenoid in not engaging allowing water to pass through.	Check the wiring on the solenoid. Make sure the two connections are firm. Check the float wire on the inside of the mix tank. Float or solenoid may need to be replaced.
1.9	The pump seals may be worn or damaged from lack of water.	Remove the pump head and inspect the seals. Please refer to the pump manual for this operation.
1.10	The pressure regulator is malfunctioning.	Remove the regulator and disassemble. Clean and grease the unloader main piston. Inspect for wear and replace if necessary.
1.11	Quick disconnect on the front of the machine is malfunctioning.	Try installing the high-pressure line on the secondary front quick disconnects. Inspect the quick disconnect for wear

		and replace in necessary.
1.12	The pump clutch is not engaging.	Check the wire, which leads from the pump clutch, and make sure it did not come unplugged. Check the fuse on the control panel, it may be blown.
2.	***Water temperature too low***	
2.1	Depending on what type of tool you are using, you may experience lower heat levels with higher flow rates.	Check the flow rate of the tool. Are the jets worn? If so, replace them.
2.2	Engine anti freeze level low. This cause inadequate heat transfer in the liquid heat exchangers.	Check the engine antifreeze level and top off if needed. ONLY PERFORM THIS TASK WHEN THE ENGINE IS COOL SERIOUS INJURY CAN OCCUR.
2.3	Liquid heat exchangers may need to be bled. Air pockets sometimes form if the antifreeze is allowed to run below the required level.	Bleed the liquid heat exchangers by loosening the drain ports on the top of the. Leave the ports open until straight antifreeze is present.
2.4	The diverter solenoid is stuck open in divert mode.	Check the diverter and solenoid for proper operation. Make sure the diverter moves freely.
2.5	The engine rpm is too low.	Check your engine rpm, If the engine is run at a lower rpm, it will not produce the higher heat levels needed.
2.6	Thermostat is malfunctioning. This usually occurs when the system overheats.	Consult you dealer for more information on recalibrating your thermostat.
2.7	Exhaust leak in one of the fittings.	Inspect all exhaust fittings for leaks or loose clamps.

		Replace or tighten as needed.
3	***The water temperature is too high.***	
3.1	The heat exchanger solenoid is not engaging or is stuck closed.	With the ignition key in the on position and the tattletale pushed in, turn the thermostat to the lowest setting. You should hear the solenoid engage the diverter. If not, check the wiring, it may be loose. Once the diverter is cool, check the diverter to see if it is hung up. If so, free it up.
3.2	The thermostat is out of calibration.	Check the thermostat to make sure it is engaging at the appropriate temperature. Consult your dealer for specific instruction on how to perform the thermostat calibration.
3.3	Engine rpm too high for the desired cleaning task	For upholstery cleaning, set the engine to a lower rpm. The engine will not produce as many Btu's therefore the heat will also decrease.
3.4	Diverter may not be opening entirely.	Check the diverter to make sure it is disengaging or opening entirely. If not, check the linkage to see if something came loose. If so, consult your dealer for proper calibration instructions.
4	***There is pressure on the gauge, but no water coming out at the wand***	
4.1	The wand jets are clogged.	Remove the jets and clean as needed.
4.2	The quick disconnects on one or more of	Remove and clean or

	the hoses or machine are defective.	replace the quick connects as needed.
4.3	The cleaning tool has a clogged valve.	Remove the valve stem and clean or replace as
4.4	The inner lining of the hose is clogged.	Remove all internal high-pressure stainless steel braided hoses and inspect for clogs. Replace if needed.
5	**There is water coming out of the exhaust.**	
5.1	There are small amounts of condensation, which can be seen upon initial start-up.	**This is normal, no service is required.**
5.2	One of the heat exchangers is damaged from frozen water.	Determine which heat exchanger is bad and replace it.
5.3	The recovery tank is full.	Empty the tank and check for obstructions.
5.4	There is excessive foam in the recovery tank.	Apply a liquid or powdered defoamer to counter act the excessive chemical, which was left in the carpet.
6	***Engine will not start.***	
6.1	Fuel level in truck low.	Check fuel in truck and fill if necessary.
6.2	Gas line to machine clogged or has something sitting on it.	Check the gas line running on the floor, it may have something sitting on it.
6.3	Gas line hose clamp may be loose.	Check all clamps on the fuel lines; make sure they are tight. Tighten if necessary.
6.4	Blower or Pump stuck or locked up.	Loosen the belts and make sure the blower and pump are spinning freely.

6.5	Waste tank full or float stuck.	Empty the tank and check the float for obstructions. Make sure the float moves up and down freely
6.6	Battery water level low.	Check the battery, it may need to be recharged / re filled.
6.7	Engine oil low.	Check the engine oil level and add or change as needed.
6.8	Engine fuel pump not functioning or fuel filter clogged.	Check the fuel pump and make sure it functioning. If not check the fuse panel for a blown fuse. Check the wiring to make sure nothing has broken the contact to the pump. Check the filter and replace if needed.
6.9	Spark plugs fouled or dirty.	Remove the plugs and replace if needed.
6.10	Ignition has a loose wire.	Check all wires located behind the front control panel. Check for looseness and tighten where needed.
7	***Engine runs rough and keeps dying.***	
7.1	Filter on the engine is clogged.	Check the fuel filter and air filter and replace as needed.
7.2	Engine rpm too low.	Increase throttle to full rpm.
7.3	Engine spark plugs fouled or dirty.	Remove and replace if needed.

7.4	Belts too tight.	Check the blower belts. They may be too tight causing undue stress on the engine crankshaft. The belt should have ¼" of slack in the center once tightened.
7.5	Vacuum relief valve on waste tank may be stuck or too tight.	Check the vacuum, if the relief valve is stuck or set too high, it will cause the engine to run hard and therefore "wetting" the cylinders.
8	***Mix tank overflows.***	
8.1	Mix tank float may be stuck, damaged or frozen.	Check the float for obstructions and replace if needed.
8.2	Ground wire to float is loose or disconnected.	Check the wiring from the float to the dema valve. If
8.3	Low-pressure dema may be clogged.	Check the low-pressure dema and clean it. It may
8.4	Check the relay on the mix tank float wiring.	It may have been bumped or loose. Make sure it is tightly secured in the socket.
9	***Insufficient chemical***	
9.1	The float box may be full.	Remember, the system only meters chemical, as the mix tank requires it.
9.2	Red chemical injector hose from the injector may be loose or damaged.	Check both ends of the hose, one at the mix tank and other at the GPH meter. If loose or damaged, tighten or replace it.
9.3	Inadequate inlet flow to the machine.	If the inlet pressure is

		below 45 psi, the system may not meter chemical properly. Check the inlet hose and find another connection if the pressure is too low.
10	***Poor vacuum***	
10.1	Engine rpm too low.	Increase throttle to full.
10.2	Vacuum filters in waste tank full.	Remove filters in waste tank and clean or replace as needed.
10.3	Vacuum relief on waste tank open too far.	Reset relief valve to register appropriate vacuum on the gauge. NEVER EXCEED 15” ON THE VACUUM GAUGE.
10.4	Kink in hoses or clogged port on tank.	Check vacuum hoses for kinks and check port on tank for obstructions. Clean as needed.
10.5	Wand head is clogged.	Check wand head for blockage and clean as needed.
10.6	Belts worn or loose.	Check belt tension and re-tension of replace as needed.

Dear Valued Customer / Distributor,

We have designed a checklist, which will aid in the training and familiarization of the Genesis NXT Mobile Cleaning plant.

Please thoroughly review this list and have your customer and your installer initial each individual line as they are reviewed.

Please make two copies, one for your file and one for your customer. Send the original signed copies along with your warranty contract back to PowerClean Industries.

If you have any questions while reviewing the information and warranty contract, Please give us a call.

Please note your warranty will not be valid unless the checklist and warranty contract are signed and returned.

Your cooperation is greatly appreciated.

Remit to: PowerClean Industries
Attention Warranty Department
8901 W 192nd Street Suite E
Mokena, Il 60448

15 Hour Check-Up

All PowerClean Industries machines require a 15-hour check-up. This check-up is of the utmost importance to the reliability of your machine. The 15-hour check-up is designed to find potential problems before they occur. It is not uncommon for belts to loosen up during the initial 15 hours as the machine breaks in. The engine may go through a slight amount of coolant or oil as may the blower or pump.

For this reason you must have your machine serviced by your authorized dealer after the initial 15 hours. A 15-hour check-up form is provided in this manual for you to bring to your dealer so they can properly service the unit and answer any questions you may have.

The checklist must be filled out completely and returned to PowerClean Industries in a timely manner to ensure safe and proper operations.

Failure to return your completed 15-hour checklist within 30 days of your installation will void your warranty.

Once PowerClean Industries has received your completed checklist, we will ship you a PowerClean Industries adjustable baseball cap as a thank you.

Mail your completed checklist to: **PowerClean Industries**
Attn: Warranty Department
8901 W 192nd Street Suite E
Mokena, Il 60448

February 5, 2004

RE: Maintenance Fluids Service Bulletin 02/05/2004

Attention: Maintenance Supervisor

Subject: Fluids

It has been brought to our attention that some of our customers have been using improper fluids in their machines. You cannot use bearing grease in the blower bearings, 10W-30 or gear oil in the blower gear case or straight anti-freeze in the engine. These types of fluids are not approved and will void the warranty.

At PowerClean Industries, we strive to provide our customers with the highest quality service possible. Recently it has also been brought to our attention that some of our customers are not aware of the importance of the maintenance routine schedule and the proper type of fluids that need to be used in the equipment. These fluid types are clearly outlined in the manual.

It is highly recommended that you purchase the appropriate fluids and filters from your authorized PowerClean Industries dealer to create the appropriate track record should any claims arise.

Blower Oil: Roots Synthetic, Part Number, Root-106-004 $15.99 Quart
Blower Oil: Roots Synthetic 5 Gallon Pail, Part Number Root-106-006 $249.00
Cat pump Oil, Part number, CAT6100, $8.99 Quart
Engine Anti-Freeze, Part Number, AT6-Proline green, $7.89 per gallon

If you have any questions regarding the proper fluid types or schedule of maintenance routines, Please review your manual for the specific guidelines or contact your dealer for more information**.**

Best regards,

Ryan Anderson
Service Manager
Top-Gun Supply / PowerClean Industries

February 5, 2004

Re: Genesis NXT Fuel Tap Installation Service Bulletin 02/05/2004F

Attention: Installers

Subject: Fuel tap installation

The fuel tap for the Genesis NXT needs to be performed in a manner that allows the machines return fuel line to directly enter the fuel tap itself.

By recommendation from both Zenith and Nissan, the engine manufacturers, an additional tap fitting needs to be installed to allow the unused fuel from the fuel injection system to flow in a manner that allows the fuel to flow freely back into the fuel tank.

A brass "T" cannot be not used at the point of the fuel tap. This may cause heat build-up, cavitation and backpressure in the fuel system potentially damaging the fuel injection.

We have designed new fuel taps to accommodate the Genesis NXT system. If you have any units on order, please find out what type of vehicle they are being installed in so we can make sure you order the appropriate fuel tap.

This does not affect the fuel tap installation procedures for the Freedom XT or the Victory XT units.

2004 Chevy van fuel tap installation

We have also found that on 2004 Chevy vans that a fuel tap will not work. It affects the fuel-sending unit in the tank and can cause fuel pump failure. The fuel tank needs to be dropped and a fuel tap needs to be performed on the top of the tank by drilling a hole and installing the proper parts. We do have an installation scheduled shortly for the 2004 Chevy and once it is finished, we will provide you with specific installation instructions and part numbers.

If you do know of a customer that is interested in the 2004 Chevy, Please make sure they are aware that Chevy does have as an option for and auxiliary fuel tap they can order.

Best regards,

Ryan Anderson
Service Manager
Top-Gun Supply / PowerClean Industries

Important Warranty enrollment forms

Enclosed are the Genesis NXT extend-a-care warranty agreement papers. Please review the warranty agreement and return the original agreement signed to PowerClean Industries within 10 days of taking delivery of your equipment.

Pay special attention to the serial number requirements on your warranty enrollment papers. PowerClean utilizes the engine serial number when serializing our equipment. Although we do record serial numbers at our plant, we want to ensure that you have received the equipment that we have on file for you.

Your warranty will not be in effect until PowerClean receives all of the information required to activate your warranty.

Here is a list of the items that need to be returned to PowerClean Industries in a timely manner.

- **Warranty Enrollment Form, complete with all of the requested information and signed by the company owner.**
- **Installers Certificate, signed by the installer**
- **Training certificate signed by the customer and initialed by the dealer.**
- **Copies of the installation and training sheets with the customer and dealers initial.**

- *15 hour check-up forms signed and completed at or around the 15 hour break in period.*

Genesis Extend – A – Care Warranty Agreement

PowerClean Industries guarantees each new Genesis cleaning system purchased from an authorized PowerClean Industries dealer with the extend-a-care warranty coverage as described in this warranty agreement. This comprehensive warranty is divided into Four distinct categories: 90 day limited warranty coverage, 12 month standard warranty coverage, 24 month extended warranty coverage, and 60 month extended warranty coverage. See below for specific warranty details.

PowerClean Industries Inc. components, machines and accessories are all individually checked and operationally tested prior to equipment check or customer pickup to ensure proper working order. However special operating conditions such as temperature or altitudes may require special installation or adjustments to protect the warranty. The warranty enrollment form attached must be completed and signed by the customer and by Power Clean Industries authorized representative in order to activate the warranty

PowerClean Industries warranty covers products of their manufacture to be free from defects in material and workmanship if properly installed, maintained, and operated under normal conditions with trained operators. This warranty shall extend for periods listed below based on the original date of installation.

Machinery, Equipment and Accessories furnished by Power Clean Industries but manufactured by third parties are not warranted by Power Clean Industries. Refer to the original manufacturer's warranty on these items; copies of all original third party manufacturers' warranties are attached.

PowerClean Industries warranty obligation extends only to the repair or replacement of parts or assemblies, upon examination by PowerClean Industries, or the original equipment manufacturer, to be found defective. To be considered for warranty adjustment, customer must properly notify PowerClean Industries of the problem and ship items within 20 days after the discovery of the defect, freight prepaid by customer. A return authorization number will be provided to the customer by Power Clean Industries when the customer notifies it. PowerClean will agree to act promptly concerning the evaluation of said part and if determined to be eligible for warranty adjustment will either repair or replace the part at PowerClean Industries discretion and return the part freight collect. This extended warranty shall cover the replacement parts or accessories, but shall not cover the labor cost or installation of the machinery, equipment, parts or accessories, which labor costs shall be paid by the customer at the time of installation of the replacement machinery, equipment, parts or accessories.

90 DAY LIMITED WARRANTY COVERAGE

PowerClean warrants all components to be free from defects in material or workmanship for 90 days. In the event a defect occurs within 90 days of receipt by the customer, Powerclean will repair or replace them. All warranty claims must be filed in our main office and approved before any service is performed. PowerClean Industries is not responsible for any work performed on, equipment furnished thereto, or repairs effected upon any of its products by other than PowerClean Industries personnel or authorized dealer with our prior written consent.

The following items are limited to 90-day coverage:

- All drive belts
- Brass fittings, rubber and synthetic rubber parts, quick disconnects, thermostats, o-rings, diaphragms, valve kits, gaskets, seals, grommets, screens, light bulbs, molding, Gauges, and electrical connectors.
- Vacuum and Solution hoses.

12 MONTH STANDARD WARRANTY COVERAGE

In addition to the 90-day limited warranty coverage PowerClean warrants all machinery, equipment or accessories specifically excluding the excluded items listed in the paragraph to be free from defects in material or workmanship for a period of 12 months from the date of receipt by the customer. In the event a defect occurs within 12 months of receipt of the customer, PowerClean will, if satisfied on its examination that the failure was due to defective material or workmanship, replace the item. If PowerClean Industries deems the part to be damaged due to lack of maintenance or freezing, PowerClean Industries will not cover claims of this sort. System parts, which become inoperative after expiration of the 90 day limited warranty, are excluded from the 12 month limited warranty.

- Cleaning wand.
- Wiring harness.
- Exhaust Diverter and Diverter Solenoid.

24-MONTH STANDARD WARRANTY COVERAGE

In addition to the 90-day limited warranty coverage PowerClean warrants all machinery, equipment or accessories specifically excluding the excluded items listed in the paragraph to be free from defects in material or workmanship for a period of 24 months from the date of receipt by the customer. In the event a defect occurs within 24 months of receipt of the customer, PowerClean will, if satisfied on its examination that the failure was due to defective material or workmanship, replace the item. If PowerClean Industries deems the part to be damaged due to lack of maintenance or freezing, PowerClean Industries will not cover claims of this sort. System parts, which become inoperative after expiration of the 90 day limited warranty, are excluded from the 24 month limited warranty.

- All PowerClean industries heat exchangers

60 MONTH EXTENDED WARRANTY

In addition to the 12-month standard and 24-month warranty coverage, PowerClean Industries warrants specified systems and components of the Genesis free from defects in material and workmanship for a period of 60 months. In the event a defect occurs in one of these specified systems or components within 60 months of receipt by the customer, PowerClean Industries will, if satisfied on examination that the failure is due to defective material or workmanship, repair or replace the item. This extended warranty shall cover the cost of replacement parts or accessories, but shall not cover the labor cost of installation of the machinery, equipment or accessories, which labor costs shall be paid by the customer at the time of installation of the replacement parts or accessories.

Beginning with the 13^{th} month and extending through the 60^{th} months of this extended warranty coverage, each repair or replacement is subject to a $50.00 deductible charge.

60 month extended warranty covers only:

- Equipment frame
- Vacuum recovery tank
- Vacuum recovery tank lid

REPLACEMENT PARTS

Replacement parts will be genuine PowerClean or original manufacturer parts, or parts of similar kind and quality and may include new or Powerclean Industries remanufactured parts at Powerclean Industries sole discretion.

All replacement parts are warranted to be free from defects in material and workmanship from the date of the original unit purchase for the balance of the original warranty period**.**

LIMITATIONS AND EXCLUSIONS

The standard or extended warranty coverage shall not apply to any product which has failed as a result of freezing, improper maintenance, unauthorized repairs, alteration, abuse, neglect or operation of equipment in a manner not recommended by Powerclean Industries. The customer agrees to complete all maintenance terms in the maintenance section of the maintenance record booklet provided by Power Clean Industries. The warranty excludes failures caused by scale, or hard water build-up, or improper use of chemicals. The warranty excludes normal wear and tear items that are considered standard wear parts. This warranty excludes damage caused by the failure of non-covered parts even if covered parts are damaged as a result. Liability of this warranty is limited to the replacement or repair using new or remanufactured parts at the sole discretion of PowerClean Industries. This warranty liability is limited to genuine PowerClean Industries system components and does not extend to any parts or labor cost related to the vehicle. **This warranty excludes any and all labor charges, rental equipment used while warranty repairs are being performed, downtime, lodging, and business losses of any nature resulting from equipment failure. Also excluded are travel expenses for personnel of Power Clean Industries in connection with these items.**

System parts, which become inoperative due to ordinary wear and tear after expiration of the 90 day limited warranty, are excluded from the 24-month and 60-month extended warranty.

This warranty does not cover the failure of any cosmetic item or finishes such as labeling, silk screening, decals or paint.

The Genesis has many parts, which must either be replaced or checked for wear on a regular basis such as the replacement of filters and lubricants. The system also requires

regular maintenance and service; these are not covered by the warranty and damage resulting from failure to maintain a scheduled maintenance part is not covered**.**

The forgoing warranty is in lieu of and excludes all other warranties and conditions expressed or implied whether under Common Law, Statue, or Otherwise, and every form of liability for loss or damage, directly, or consequential, or for any accident resulting from any cause not expressly covered by this warranty is expressly excluded. No person, agent representative, or dealer is authorized to give any warranties on behalf of PowerClean Industries or to assume for PowerClean Industries any other liability in connection with any PowerClean Industries product.

RETURN GUIDELINES

Defective items must be replaced through a local Powerclean Industries distributor. Prior to returning warranted defective items, the customer must obtain a Material Return Authorization Number from Power Clean Industries. Replacement parts will be sent via regular ground service to the distributor freight collect. **The defective part must be returned F.O.B. factory within 20 days including a letter providing the system serial number**, **date of purchase, material return authorization number, and customer name.** If applicable, credit will be issued after the item has been evaluated by PowerClean Industries; Failure to comply with return policy will void the warranty on the item.

CREDIT POLICY

All customers purchasing parts through a PowerClean Industry distributor must arrange credit directly with that distributor.

OUTSIDE SOURCE WARRANTY REPAIRS

At the sole discretion of PowerClean Industries, warranty repairs may be performed at an outside source. **An estimate must be submitted and approved in writing by PowerClean Industries prior to work being performed. Failure to do so will result in disapproval of reimbursement and cancellation of warranty.**

TRANFERABILITY

This warranty is non-transferable. If the unit is sold to another party, this warranty is not included.

CUSTOMER OBLIGATIONS

It is your responsibility to keep a copy of all receipts for service, repairs and maintenance. These records are to also include receipts for lubricants, oil and filter changes, as well as other services and repairs performed on your unit.

Note: A maintenance booklet covering maintenance records is supplied. You are required to complete all maintenance items in the maintenance section of your Genesis maintenance record booklet.

In order to maintain the warranty coverage, the operation, maintenance, and care of your new Genesis must adhere to the instructions and requirements listed in the owner's manual. By signing the warranty enrollment form, you agree to perform all actions described in this paragraph.

Your responsibility includes, but is not limited to, cleaning, lubrication, seasonal maintenance, replacement of worn parts, and regular maintenance.

Failure to provide the completed maintenance record booklet, one year after the purchase of your Genesis NXT, or upon request, will void the extended warranty and once voided the warranty cannot be reinstated. Your completed maintenance booklet is to be sent to

Power Clean Industries
8901 W 192nd Street Suite E
Mokena, Il 60448
Attention Warranty Department.

WARRANTY ENROLLMENT FORM

To activate this warranty on your new Genesis truckmount, we must receive this completed form within 10 days of your purchase. Upon receipt, you will be included on our PowerClean Industries truckmount owner's list, which entitles you to Owners manual updates, technical bulletins, and other important information from the factory. This warranty is subject to the terms, limitations and conditions of the PowerClean Industries truckmount warranty plan in effect at the time of your purchase. Please read your warranty terms in full before signing this form. By returning this form to Power Clean Industries, you indicate acceptance of the warranty terms as specified in your warranty agreement.

I_____ have read this entire warranty agreement and hereby understand all of the conditions, limitations and exclusions.

_____ Signature	_____ Title
_____ Company name	_____ Date
_____ Witness	_____ Distributor
_____ Truckmount model	_____ Serial number
_____ Company address	_____ City, State, Zip
_____ Company phone number	_____ Company fax number

Approved By:

PowerClean Industries, Inc.

BY: _____

DATE:_____

Installers Checklist

Installation & Training Checklist

15-Hour Check-Up forms

To be completed and returned to PowerClean Industries

Installer's Certificate

(Must be completed and sent to PowerClean Ind.)

Installer Name: _____ Installation Date: _____

Initials	I Certify That:
	The unit has been securely mounted in the vehicle using the **proper case hardened bolts and mounting plates under the vehicle.**
	The customer has been given the Owner's Manual, and all applicable warnings and cautions were reviewed with them prior to their signing the Warranty Acceptance.
	The unit was fully operational and tested upon delivery to the customer.
	I have been trained in the proper installation procedure for this truckmount.
	All fuel system alterations or installations are completed, tested and comply with the truck manufacturers recommendations.
	The customer has received _____ hours of instruction in the operation and maintenance of the unit. Training was provided by _____.

Additional Notes:

_____

Distributor:

_____

Installers Signature: _____ Date:_____

Phone Number: _____

Training Certificate

(To be completed by the Supplier)

Customer Name: _____

Training in the following has been completed:

Initials	I certify That:
	The customer is familiar with the complete start-up and shutdown procedures of the unit.
	The customer has read the Owner's Manual, and all questions regarding its contents have been answered to the customer's satisfaction.
	The customer has been instructed in the daily maintenance procedures for the unit, including filter cleaning, fluid level checking and component checking.
	The standard cleaning procedures for this unit has been demonstrated to the customer.
	The customer is familiar with the automatic shutdown features on this unit.
	The customer is familiar with the controls affecting engine speed, water pressure, water temperature, and chemical feed.
	The customer has operated the unit completely for a period of _____ hours during training.

Additional Notes: _____

_____

_____

Distributor: _____

Customer's Signature: _____ Date:_____

INSTALLATION AND TRAINING

(Please have the Customer and Installer initial)

These forms must be returned with your warranty acceptance papers within the stated time period.

Engine Filters and Maintenance	**Installer**	**Customer**
Check engine oil; explain the importance of checking this daily and adding when necessary. Never over fill oil level.		
Show the location of the oil filter, drain, dip stick and fill. Show how to change oil and filter. (Oil every 50 hours, Filter every 100 hours)		
Show the location of the fuel filter and how to change.		
Show the location of the air filter and how to inspect and replace.		
Show the location of the engine anti-freeze and how to fill.		
Check all bolts and wiring for tightness, Explain the importance of doing this on a regular basis.		
Show spark plugs and how to replace them every 200 hours.		
Show how to check engine belts for tightness and wear.		
Show the engine spark plug wires and distributor cap.		

Pump Maintenance	**Installer**	**Customer**
Check pump oil level, show how to check, fill and replace.		
Check the pump belts and explain the importance of proper belt tensioning.		
Show how to tension the pump belt.		
Explain the water flow and how it works.		
Explain the chemical mix tank and how it works. (Remember, the chemical only meters when the mix tank is filling)		
Explain that lack of water through the system will cause possible pump seal and other damage.		
Remove the lid on the mix tank and explain the importance of keeping the inlet filter clean. Show the customer how to remove it for proper maintenance.		
Show the customer how to clean the mix tank inlet dema filter. Explain the importance of keeping this filter clean		

Blower Maintenance	Installer	Customer
Explain the importance of checking the blower oil regularly. Show how to check and fill the blower levels when needed.		
Show how to grease the blower fittings with the proper grease.		
Check the blower belt tension and explain how to properly tension or replace the belts if needed. Express the importance of never over tightening the belts.		
Show how to use the blower lube port and stress the importance of using this daily.		
Stress the importance of never running the blower over the factory setting of 15 on the gauge.		
Review the manufacturer supplied blower manual.		

Liquid Heat Exchanger Maintenance	Installer	Customer
Explain the functionality of the liquid heat exchanger.		
Show the customer the top “bleeder” valve and express the importance of periodically “bleeding” the liquid heat exchangers.		
Check and show the customer how to tighten the fittings on the top of the heat exchangers. Both the water and anti-freeze portion need to be reviewed.		

Exhaust Heat Exchanger	Installer	Customer
Review the importance of periodically descaling the unit when needed.		
Show the customer how to tighten the exhaust hose clamps if needed. Express the importance of not over tightening the clamps and how it could cause a pinch in the hose.		
Express the importance of not allowing the unit to freeze and the damage that can occur if this should happen.		

Blower Exhaust Pre-Heater (If equipped)	Installer	Customer
Explain the functionality of the blower exhaust pre-heater and how it functions.		

Control Panel	Installer	Customer
Explain each gauge individually.		
Explain the water temp gauge and how it shuts the unit down if the water temp exceeds the factory set limits.		
Stress the importance of how to use the throttle control knob. Make sure the customer understands to use the screw mechanism on the throttle and how not to use the center button. (Freedom and Victory units only)		
Explain all switches on the control panel and the proper functions.		
Show the service smart maintenance port and the proper procedures for draining fluids.		

Waste Water Tank Maintenance	Installer	Customer
Review the waste tank blower inlet filters and show how to remove them and clean on a daily basis.		
Remove the tank lift out lint basket and express the importance of cleaning this daily.		
Review the tank float switch. Explain the functionality of how it works. Explain to the customer that the float can only sense water; if foam is present it will not shut the machine down. Proper PCI defoamer may be needed.		
Review the tank seal and how to replace it if it becomes damaged.		
Explain the importance of daily cleaning, how it should be thoroughly washed out after every use.		
Review the tank dump valve and how to use it.		

Maintenance Auto Pump-Out	Installer	Customer
Show how to remove the unit and clean when needed.		
Explain the importance of keeping the ½" gate valve on the outside of the waste tank clean.		

CAUTIONS	Installer	Customer
Never run the equipment without an adequate water supply.		
Never let the pressure exceed 400 psi when cleaning carpet.		
Never attempt to start the equipment if there are gas odors.		
Never attempt to start the unit if there is a leaky gas fitting.		
Never attempt to start the unit if there is an obvious noise or problem with any part of the unit.		
Never operate the equipment above the factory pre-set, recommended cleaning pressures.		
Never operate the equipment unless all of the fluids have been checked and filled if necessary.		
Always run the machine in a well-ventilated area; Never attempt to run the unit indoors.		
Never try to repair the equipment with the battery terminals connected.		
Never run the unit with the doors closed. Cross ventilation is extremely important for your health and the cooling of the equipment.		
Do not attempt to make repairs to the equipment unless you have an approval from your PowerClean Industries Service Manager.		

Starting Procedures	Installer	Customer
Review the manual starting procedures.		
Make sure the customer understands that fluid levels need to be checked before attempting to start the unit.		
Make sure the water supply is hooked up prior to starting the unit.		

Shut-Down Procedures	Installer	Customer
Review the manual shutdown procedures.		
Make sure the engine is at idle before the ignition is shut off.		

Service Support and Warranty	Installer	Customer
Review the warranty papers. Make sure the customer completely understands the proper warranty policies and procedures prior to signing the paperwork.		
Go over the spare parts list.		

Recommended Spare Parts list

Engine:	Pump:
Oil Filters	Cat Pump Oil
Air Filters	Valve Kit
Fuel Filters	Seal Kit
Thermostat and Gasket	Pump Belt
Engine Belts	
Spark Plugs	Blower:
Engine Oil	Blower Oil
Spark Plug Wires	Blower Grease
	Blower Grease Gun
Waste Tank:	
Tank Inlet Filters	Belts:
Lint Basket	Pump Belt
Float Assembly	Blower Belts
	Engine Belts
Other:	
3000 psi Pop-Off Valve	
Hose Set for Entire System	
Unloader	
Wand Valve Repair Kit	
Wand Jets	
Hose Cuff's	
Blower Lubricant	
Fuses	
Mix Tank Filter	

15 Hour Check-Up Procedures

Pre Start-Up Check Up	Installer	Customer
Check engine anti freeze level and make sure liquid heat exchangers are bled and topped off.		
Check engine oil.		
Check Cat pump oil.		
Check blower oil.		
Check pump belt for proper tension / alignment.		
Check the waste tank lint basket. Explain the importance of keeping it clean and the impact it may have on the blower if not maintained.		
Check blower inlet filters.		
Check all hoses for leaks.		
Check Engine mounting nuts and bolts for tightness.		
Check Blower bolts for tightness.		
Check Pump bolts for tightness.		
Check the throttle cable assembly; make sure it is tight.		
Check the choke cable assembly; make sure it is tight.		
Check the belt tension for proper tension. Adjust if necessary.		
Check all wiring for tightness and secure if needed.		
Check the fuel tap for any leaks or damage.		
Check the diverter linkage for proper alignment. (If equipped)		
Check the diverter bolts and nuts for proper tightness.		
Check the mix tank filters (make sure they are clean) and explain the importance of keeping them clean.		

Notes:_____
_____
_____
_____
_____

Start-Up / Running Machine Check Up	Installer	Customer
Check for exhaust leaks.		
Check for oil leaks.		
Check the thermostat functionality. Make sure the thermostat controls the temperature in accordance with the water temperature gauge. (+ - 10 degrees)		
Check all gauges for proper functionality.		
Check all hoses and fittings for leaks.		
Check the chemical metering system for proper metering.		
Check the unit for unauthorized components that could void the warranty or make the unit operate improperly.		
Test the APO for proper functionality. (If equipped)		
Check float in waste tank for proper shut down. Explain to the customer that the float cannot sense foam if present.		
Check the vacuum relief valve to be sure that it is free of debris and functioning properly. Explain the importance of keeping this valve clean and lubricated.		
Vacuum should be set between 12-15”.		
Make sure that the customer understands that the vehicle doors need to be open at all times while running the equipment.		

Important Customer / Dealer Information

Name of Equipment Owner:_____

Name Of Company:_____

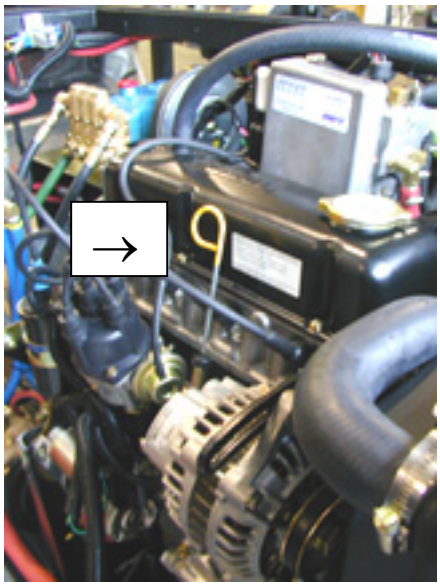
Phone Number:_____

In Service date: / / Date of 15-Hour Check-Up: / /

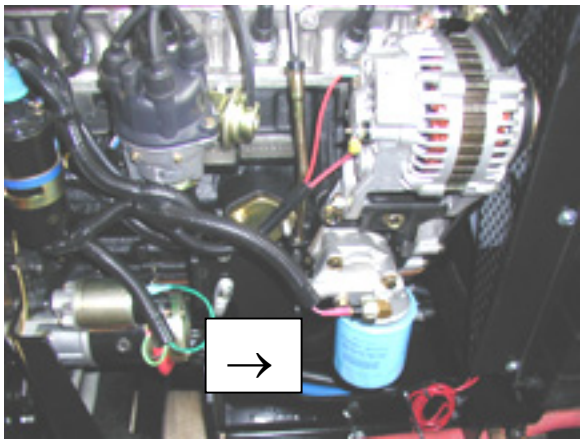
Distributor Purchased From:_____

Engine Serial Number:_____

To be completed and returned to PowerClean Industries.
8901 W 192nd Street Suite E Mokena, Il 60448



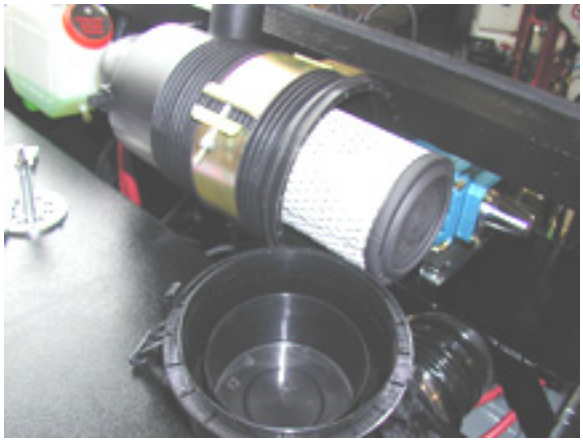
Engine Oil
The engine oil needs to be checked on a daily basis. Centered in the photo is the yellow engine dipstick. Using a clean rag, slowly remove the dipstick and wipe it clean. Then slowly remove it again to check the engine oil level. The engine oil fill cap is located on the top of the engine towards the radiator. You can see it in the top right hand corner of this photo.



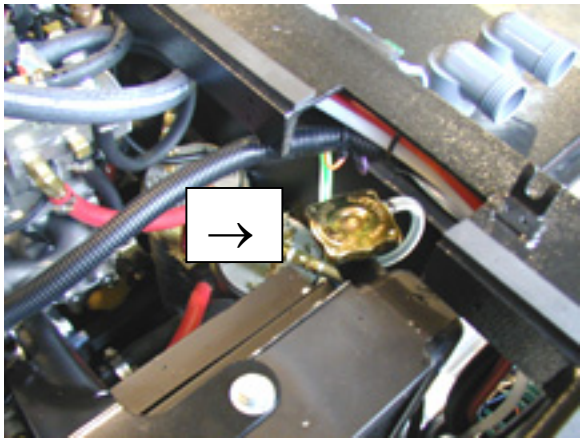
Engine Oil Filter
The engine oil filter is located on the left side of the machine and is blue in color. When changing the oil filter, it is a good idea to have a clean rag placed under it to prevent any oil from spilling onto the machine. Do not use any oil filter that is not a genuine Nissan replacement oil filter.
.

Engine Air Filter
The engine air filter is located on the backside right hand corner of the machine. To check the filter, undo the 2 clips that hold the rear cap in place. It is important to remember to inspect the filter on a regular basis and replace it when needed.

Helpful Hints



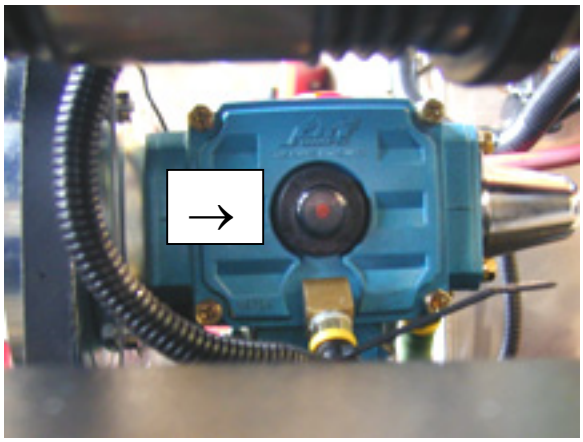
Engine Air Filter Removed
We have removed the air filter end cap to show you the internal air filter. The filter element will be snug when trying to remove it. A slight twist while pulling it out will free it up. Make sure that when you replace the filter to firmly push it back into a position that it seats properly.



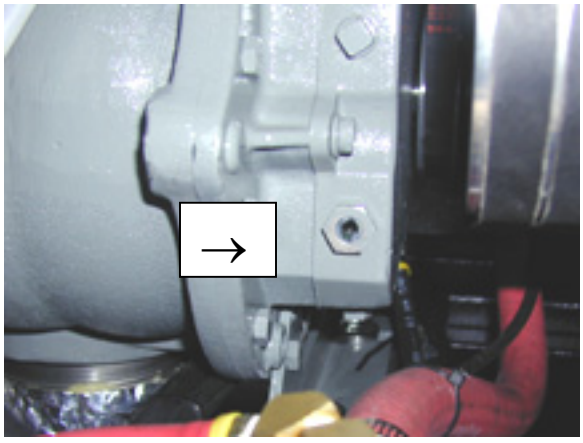
Engine Radiator
As part of your daily maintenance routine, you will need to check the engine anti-freeze fluid level. Make sure this procedure is performed when the engine is cool. ***Do not by any means try to open the radiator cap while the machine is hot! Serious injury can occur.***

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

Helpful Hints

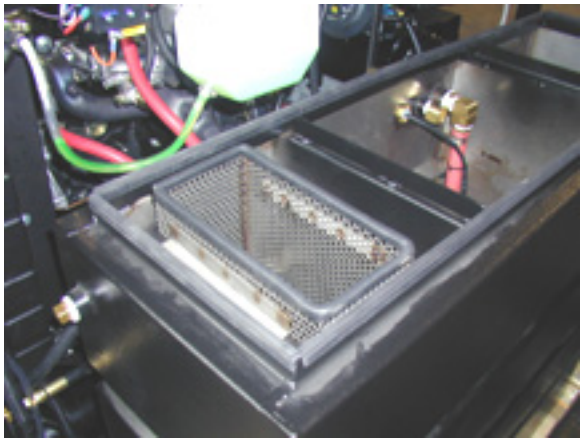


Cat Pump Oil
The Cat pump oil can be checked by viewing the window located on the back of the pump. The oil level should be within the red dot in the center of the window. You may want to use a small flashlight; it will make it easier to see. The Cat pump oil should be genuine Cat pump oil. Do not attempt to use a different type oil in the pump.



Blower Oil
Your blower oil needs to be checked on a regular basis. You will notice a small window on **each side** of the blower *(only one shown for sample).* These are the blower oil level windows. Make sure the blower oil remains in the center of the windows. To fill the blower oil, please review your Roots blower manual for specific instructions.

Helpful Hints



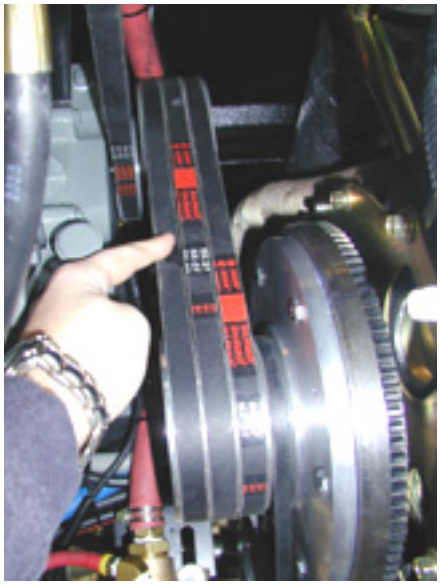
Waste Tank Filter Basket
By removing the lid of the waste tank, you will notice a large lift out basket. This basket catches most of the large debris that will enter the waste tank and prevents them from settling in the bottom of the tank. Make sure you clean this filter after every job.

.

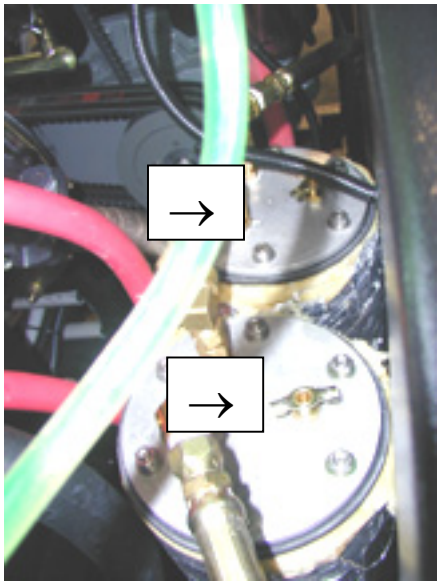
Blower Inlet Filters
On the inside rear of the waste rank, there are two filters. These filters prevent any particles from entering the blower of the machine. It is very important to remove these on a daily basis and clean them from the inside out. Before you replace the filters, spray a lubricant on the threads, it will make is easier to remove them the next time**.**

PowerClean INDUSTRIES

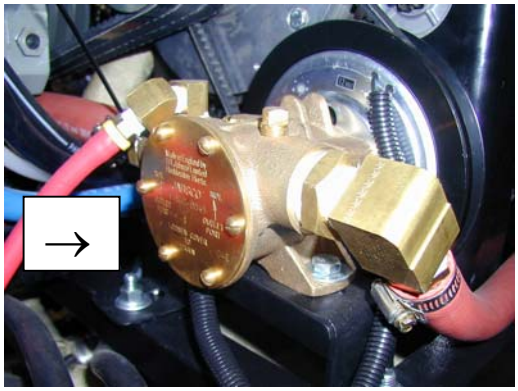
Helpful Hints



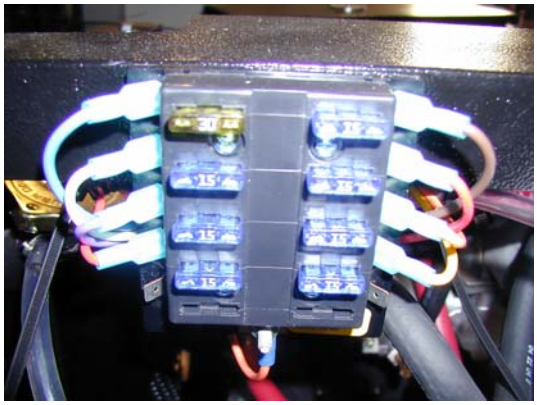
Blower Belt Tension
It is very important to check the tension of the blower belts on a regular basis. The rule of thumb is that you should be able to push the center of the belts down approximately ¼" for proper tension Do not over tighten them or you could cause damage to the blower.



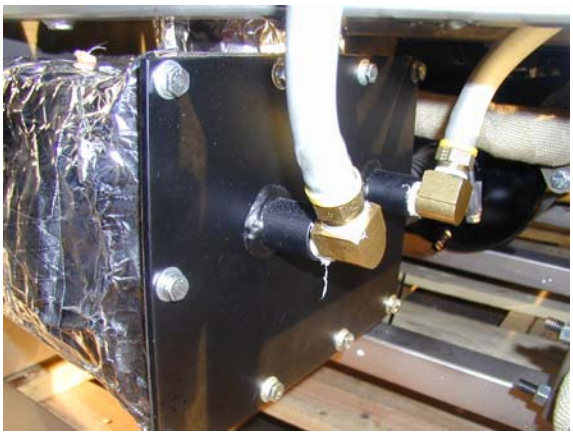
Liquid Heat Exchangers
Your machine utilizes two liquid heat exchangers in addition to the other exchangers on the machine. These heat exchangers require periodic "bleeding". On the top of both exchangers you will notice a drain valve. These valves are installed to allow the exchangers to bleed of any excess air that may be present. Loosen the valve and leave them open until you notice anti-freeze coming out. After the procedure is performed, check the engine radiator level and add anti-freeze if necessary.



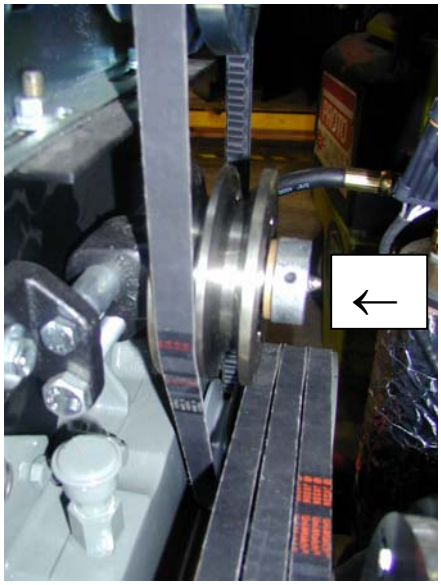
Auto Pump-Out maintenance
The backside of the APO has 6 screws. Remove the screws and the back place can easily be removed. Once removed, the impeller can be pulled out with pliers, cleaned and reinstalled. Make sure that when replacing the end cap, you tighten the screws in a star like pattern to ensure it is fastened properly.



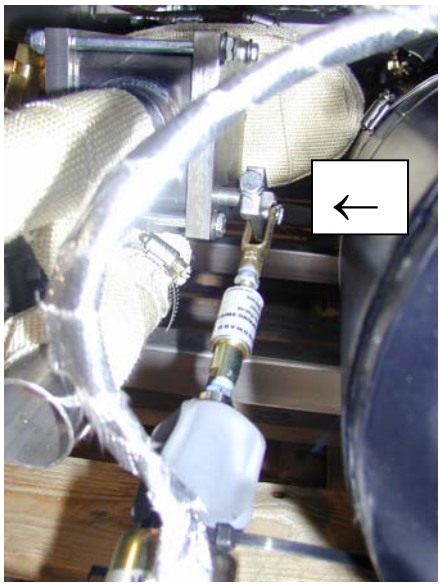
Genesis NXT Fuse Panel
You will notice a fuse panel located on the right side of the upper cross member. This fuse panel creates a fusible link between the engine and all other components on the unit. If you need to replace a fuse, make sure you use the correct amp rated fuse as a replacement. The 30-amp fuse is what controls the diverter solenoid and is the only 30-amp fuse in the panel.



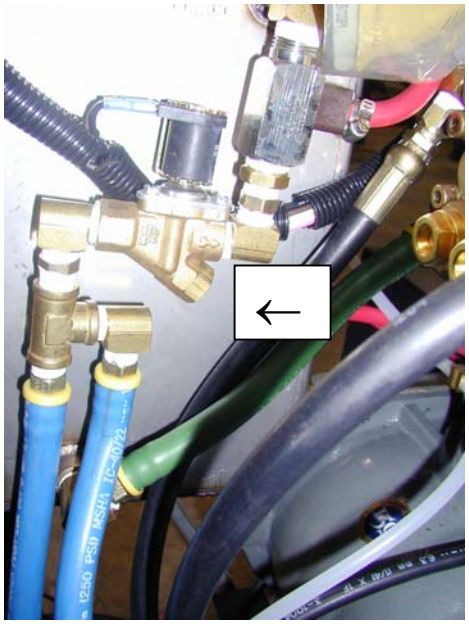
Blower Exhaust Pre-Heater
Your Genesis is equipped with a blower exhaust pre-heater. There is no maintenance involved with this part other than periodic descaling. This heat exchanger captures heat generated from the blower exhaust.



Pump Belt Tensioner
You will notice the pulley moves back and forth slightly. This is normal.
The pulley shaft has a grease fitting on the end. You will need to grease this fitting once a week to ensure proper lubrication. 1-2 pumps are all that is needed for proper lubrication. You may notice grease coming out of the pulley end, this is caused from over greasing the bearing and will not harm anything but may cause a mess. If you notice this is the case, clean up the grease with a clean dry rag to prevent it from getting on the belts.



Exhaust Diverter and Solenoid
Located behind the lower front panel, the exhaust diverter controls the cleaning water temperature. The diverter may require periodic cleaning due to carbon build-up. It is a good idea to remove and clean the diverter if you should notice heat fluctuations.



Water Box Low Pressure Dema Filter
Located on the underside of the low-pressure dema is a “Y” strainer. This filter requires weekly cleaning and could decrease chemical flow and water flow to the mix box if not cleaned regularly. Simply disconnect your water supply, unscrew the nut and remove the filter.

Water Box Low Pump Inlet Filter
Located inside the mix box, the screen prevents any debris from entering the pumping system of the machine. It is necessary to check and clean this filter daily. Should debris get lodged on the filter, it will prevent water from getting to the pump and can cause pressure fluctuations and possible pump damage if not properly maintained.

Nissan Engine Flash Codes

The Nissan A-15 utilizes a Zenith electronic fuel injection system. This system is set-up to flash shut down codes should the engine shut down. Consult your

owner's manual or authorized Nissan engine dealer for service if your system flashes a code. The codes are stored in the system to alert the operator that there was a fault code in the system to alert you of the possible problem or failure if the system shuts down.

Your system will flash a code within the amber light located on the control panel.

The system works similar to Morse code and flashed a code. Example • - ••• = a code 13. Consult your dealer for specific information.

CODE	CONDITION	CHECK ENGINE LIGHT
12	NO FAULT CONDITION EXHISTS	SIGNIFIES BEGINNING OF FLASH CODES
14	ENGINE COOLANT OVERHEATING	SERVICE COOLING SYSTEM
15	COOLANT SENSOR OPEN CIRCUIT	ON CONTINUOUS WHILE ENGINE RUNNING STORING CODE
21	PEDAL POSITION SENSOR OVER VOLTAGE	ON CONTINUOUS WHILE ENGINE RUNNING STORING CODE
22	PEDAL POSITION SENSOR UNDER VOLTAGE	ON CONTINUOUS WHILE ENGINE RUNNING STORING CODE
23	AIR TEMP SENSOR OPEN CIRCUIT	ON CONTINUOUS WHILE ENGINE RUNNING STORING CODE
24	AIR TEMP SENSOR SHORT CIRCUT	ON CONTINUOUS WHILE ENGINE RUNNING STORING CODE
33	MAP SENSOR CIRCUIT HIGH VOLTAGE	ON CONTINUOUS WHILE ENGINE RUNNING STORING CODE
34	MAP SENSOR CIRCUIT SHORT TO GROUND	ON CONTINUOUS WHILE ENGINE RUNNING STORING CODE
44	OXYGEN SENSOR LEAN CONDITION DETECTED	ON CONTINUOUS WHILE ENGINE RUNNING STORING CODE
45	OXYGEN SENSOR RICH CONDITION DETECTED	ON CONTINUOUS WHILE ENGINE RUNNING STORING CODE

SYSTEM INSTALLATION

Overview

It is strongly advised that you read this entire document prior to beginning the installation. In particular, *it is necessary to have full knowledge of the cautions and guidelines related to drilling holes, running wires and performing the fuel tap.*

PowerClean Industries recommends having your dealer perform these procedures and does not recommend end user installation. If you elect to perform these procedures on your own, you are accepting full responsibility for any and all alterations made to the truck and or fuel system of your vehicle.

SEQUENCE OF TASKS TO BE PERFORMED:

1, Locate position of equipment in vehicle.
2. Locate hole position for fuel and electrical hook-ups.
3. Run electric and fuel lines.
4. Make system connections.
5. Install accessories if needed.
6. Check system.
7. Initial start-up and evaluation.

LOCATION OF EQUIPMENT
(Main power unit, accessories)

Position the equipment in a manner that is as close to a door as possible. Pay close attention to the underside of the vehicle making sure there are no obstructions that you may drill through or damage. When installing the unit in a cube truck, you will need to position the unit as close as possible to a door to ensure proper cooling of the unit. It is very important to make sure the unit has adequate cross ventilation. In some instances, you may need to remove the waste tank from the main power unit in order to get it to fit inside the truck. This is usually done on vehicles that have sliding doors. Otherwise, the unit will fit without removing the waste tank.

If installing the unit out the side door (recommended) make sure the seats are positioned in a manner that is comfortable before setting the unit down.

It is a good idea to place all of the accessories in the truck to ensure that everything fits properly before bolting the main unit down.

WARNING

NEVER RUN THE UNIT WITH THE COVERS REMOVED OR WITH THE SIDE DOORS OF THE VEHICLE CLOSED. SERIOUS DAMAGE CAN OCCUR TO THE UNIT AND POSSIBLE INJURY TO THE USER.

HOLES
(For fuel, and power unit mounting)

Holes through the van floor are best made with a sharp drill bit that is slightly larger then the mounting bolts being used to allow easier mounting.

The main power unit has 4 mounting locations for the main power unit and 4 for the waste tank. It is very important to use all of the holes to ensure a safe and secure installation. Make sure to check the clearance between the waste tank and the seats ensuring that there is enough room to move the seats to a comfortable position. Always use the proper amount of mounting bolts for the machine.

IF THERE IS AN OBSTRUCTION ON THE UNDERSIDE, MOVE THE EQUIPMENT TO A PLACE THAT ALLOWS COMPLETE AND SECURE MOUNTING.

Mounting plates need to be used on the underside of the unit to prevent it from moving should a sudden "jar" occur*. You can order these plates through your dealer or contact PowerClean directly. PowerClean utilizes ¼" thick steel plates with multiple holes for more convenience during the installation.*

Case hardened bolts need to be used for the mounting of the main power unit and the waste tank. Make sure the bolts used are case hardened bolts.

We recommend using a good quality undercoating after the unit is mounted. Cover the bolts and plates on the underside to prevent any premature rust from appearing in the areas you drilled.

Should you come across an area where the large frame rail on the underside of the vehicle is in the way, use a long drill bit and bolt to secure the vehicle through that area. Do not bypass that bolt. These are ideal to use for an even more secure mounting. Before attempting to drill through these, thoroughly check the frame to make sure there are no hidden wires or hoses. Sometimes the manufacturers use these to conceal hoses and wires.

FUEL LINES

WARNING

CAUTION, FUEL TAPS NEED TO BE PERFORMED BY AN AUTHORIZED MECHANIC OR AUTHORIZED DEALER. FUEL VAPORS CAN IGNITE AND CAUSE SERIOUS INJURY AND EVEN DEATH. DO NOT ATTEMPT TO PERFORM THIS OPERATION. CONTACT AN AUTHORIZED DEALER OR MECHANIC FOR THIS INSTALLATION.

This is a very crucial part of the installation and needs to be performed in a manner that is safe and foolproof.

Genesis NXT Units.

The Genesis NXT is equipped with a Nissan fuel injected engine. This fuel tap requires 2 fuel lines to be run to the fuel tap. One line is for the fuel draw and the other is the unused fuel return line.

PowerClean Industries does not recommend using any other fuel tap kit other than our factory stainless steel fuel tap. **This kit can be ordered from your PowerClean Industries dealer or by contacting PowerClean directly. We manufacture these kits to meet the exacting requirements put forth by Nissan and Zenith. (The fuel injection system manufacturer**) Any other kits installed will void your warranty.

A fuel transition plate must also be used in conjunction with the fuel tap. This part provides a safe transition between the vehicle floor and prevents the sharp edges from cutting through the fuel line. Any installation requires a fuel transition plate. Genesis NXT units require 2 transition plates, one for the draw hose and the other for the return line.

DO NOT ATTEMPT TO RUN THE FUEL HOSE THROUGH THE FLOOR WITHOUT THIS PLATE. SERIOUS INJURY OR EXPLOSION CAN OCCUR.

FUEL

You will need to locate a safe area to install 2 fuel transition plates. We recommend installing the transition plates behind the waste tank in an area that is easily accessible and protected.

When running the fuel hoses through the vehicle and the underside, secure them to rigid surfaces that do not contain any sharp edges, moving parts and away from any hot areas or exhaust. *Failure to do so will result in degradation of the outer and inner wall of the fuel hoses. This will cause gasoline leaks and possible fire or explosion may occur.*

We recommend using neoprene coated hose clamps with self-tapping screws for a proper and safe fuel hose routing and installation.

3/8” Fuel hose is needed for the Genesis NXT. Do not attempt to use anything other than 3/8” fuel hose for this purpose. Other types of hoses are not designed for fuel and may deteriorate and cause leaks or damage to the fuel injection system.

¼” fuel hose is not acceptable and can cause backpressure in the fuel injection system. Do not install the system using anything smaller them 3/8” hose.

FUEL TAP
(On vehicle)

Fuel tap kits for virtually all vehicles are available through PowerClean Industries. Contact your local dealer for more information or call our help line at 708-388-0380

There are a few ways to tie into the fuel system of the vehicle. For older vehicles that are carbureted, a “T” installed in the fuel line works well.

Newer vehicles that are fuel injected require different methods for tapping into the fuel source. 2004 Chevy and GMC vehicles require the tank to be dropped. We recommend contacting your local mechanic to perform this type of fuel tap.

“Other” vehicles utilize either the fuel fill neck or the breather hose for the fuel tap. Consult your local dealer or PowerClean for more specific fuel tap instructions.

DO NOT ATTEMT TO USE A “T” AND FUEL PRESSURE REGULATOR IN THE NEWER VEHICLES THAT HAVE FUEL INJECTION! THIS WILL CAUSE DAMAGE TO THE MAIN POWER UNIT AND WILL VOID YOUR WARRANTY.

This is a very important step, do not skip.

WHEN THE FUEL TAP IS COMPLETE AND CONNECTED TO THE MACHINE, TAKE THE VEHICLE TO FILL THE TANK. WHILE FILLING THE TANK CHECK FOR ANY LEAKS IN THE SYSTEM. IF ANYTHING IS NOTICED, IMMEDIATELY STOP AND REPAIR THE LEAK.

ELECTRICAL

(Battery Installation)

Your Genesis NXT is shipped without a battery. You will need to locate an adequate battery for this installation. We recommend a good quality 650 cold cranking amp top post battery to use as the power source.

Locate the battery box that is included with your equipment. This box is designed to securely mount the battery to prevent it from shifting during driving. It is also designed to house the battery to prevent any items from coming in contact with the terminals and causing a short or possible fire. Failure to install the battery box will void your warranty.

We recommend installing the battery box behind the passenger seat. This seems to be the best out of the way location for this. Once the battery box is secure to the floor, place your battery inside of it and use the supplies strap to secure the lid. We do not recommend hooking the terminals to the battery until the installation is complete and you have checked all connections.

All units come complete and ready to run. You do not need to install any other wires unless you have an accessory that requires electricity. Consult your dealer for more information if you need to add other components to the power source. If you are using an in line transfer pump, you will need a 12 volt source to power that pump. Please contact your dealer for proper instructions.

ACCESSORIES

Once all of the connections and fuel tap are secure, it's time to mount and secure any accessories that are needed for the install.

Fresh Water tank - Fresh water tanks need to be mounted in the same fashion as the main power unit. These tanks carry a tremendous load. Follow the manufacturers recommended procedures for this installation At PowerClean, we recommend securing all hoses to the floor using neoprene clamps. This prevents the hoses from getting pulled on or damaged when other items are placed in the vehicle.

Vacuum / Hose Reels – These reels are also very heavy and can be prone to tipping if not mounted properly. Do not use self-tapping screws or similar when mounting the reels. Use casehardened blots with mounting plates on the underside.

CHECK SYSTEM

This is a very important aspect of the installation. When finished securing all of the above listed items, take the proper time to double check your work.

1. Carefully check fuel tap installation clamps and hoses, make sure all connections are tight with no leaks.
2. Check all fuel lines inside the vehicle. The fuel lines may not be secured near any heat sources or sharp objects inside the vehicle and on the machine.
3. Check all mounting bolts for tightness. (Now is a good time to apply undercoating)
4. Check all hoses and lines for leaks.
5. Before starting the unit, check all fluids for proper levels.
6. Check the battery terminals for tightness.
7. Before running the machine, make sure you have an adequate water supply to the unit. If you have a transfer pump, now is a good time to make sure it is functioning properly.
8. Make sure you are in a well-ventilated area.

INITIAL START-UP EVALUATION

Follow the specific guidelines outlined in the manual for start-up procedures.

Once the unit has been running and all systems checkout “ok”, check the fuel lines one last time.

HELFUL INSTALLATION PHOTOS

Calibrating a Thermostat

All PowerClean units

Steps to be followed only if water temperature is too high or low after following "other" steps to check heat levels. Make sure the water temperature gauge is functioning properly before continuing.

Tools required; small Phillips head screw driver

Step 1. Start and run the machine with a tool hooked up to the hot water outlet on the front of the machine.

Step 2. Run the machine until the water temperature gauge reaches 200 degrees.

Step 3. Turn the thermostat to the 220-degree setting.

Step 4. On the backside of the thermostat is a small sticker, which covers the thermostat calibration screw.

Step 5. Insert the screwdriver into the center of the sticker puncturing the sticker. **Be extremely cautious not to touch hot or any other electrical components**. You will know when you have found the hole, the screwdriver with insert about ¼".

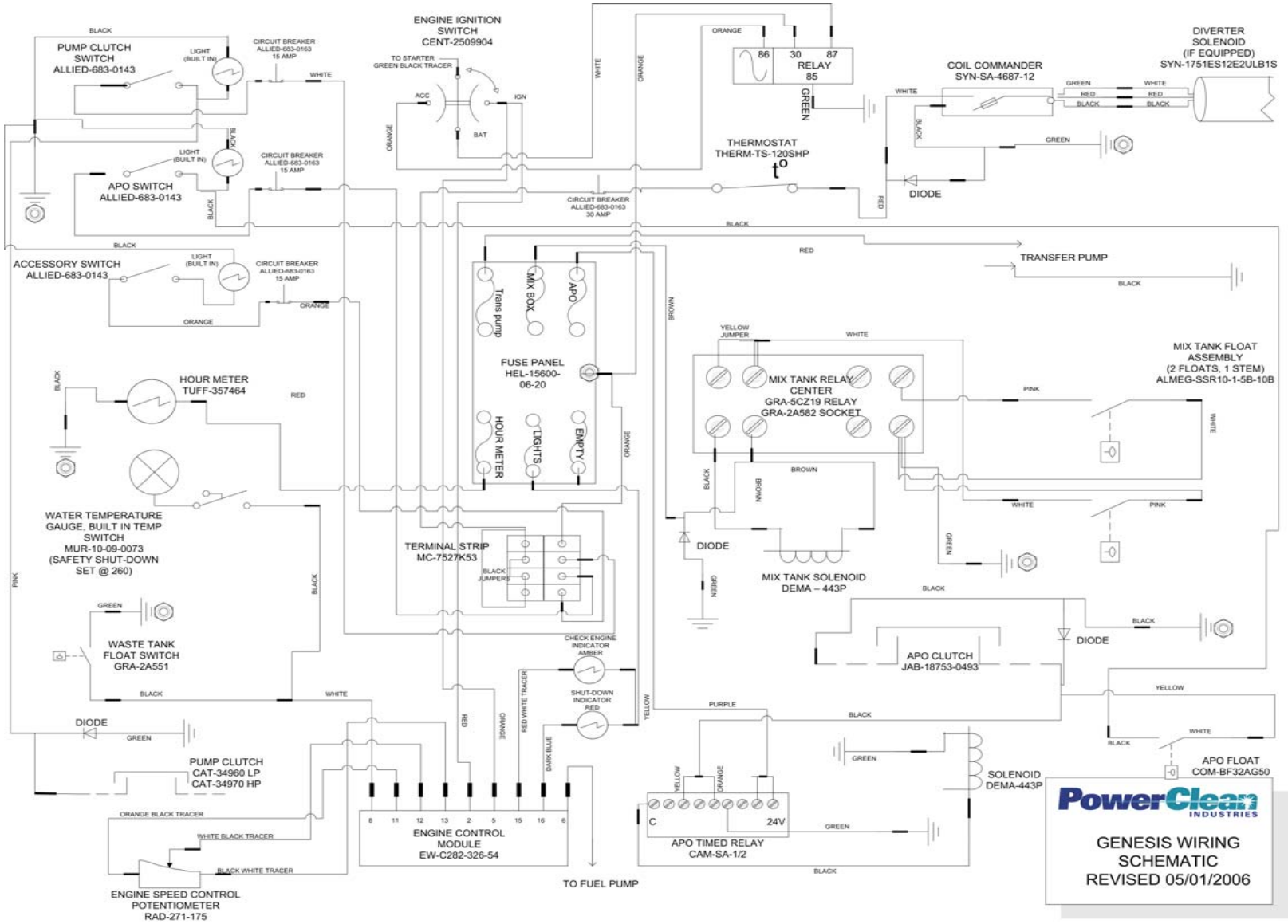
Step 6. Adjustment;

If you hear the thermostat engage **prior** to the 220-degree setting, you will need to make a minor adjustment to the setscrew. Turn it until you hear the solenoid disengage. Make sure to turn the setscrew a very small amount. Turning it too far will completely throw off the calibration. Complete this task until the water temperature gauge matches the thermostat setting.

If the temperature rises **above** 225 degrees and the diverter does not engage, you will now need to make a minor adjustment to the screw. Turn it until you hear the solenoid engage. Run the water flow until the water tem gauge reads 200 degrees. Let the temp slowly rise and adjust the screw appropriately until the thermostat engages the solenoid at 200 degrees.

When finished with the above adjustment, it is necessary to run the machine through a few normal cleaning cycles to ensure proper functionality.

If you are not completely sure about the above procedure, do not proceed. Contact your local dealer or PowerClean direct for specific instructions.


PUMP CLUTCH SWITCH ALLIED-683-0143
LIGHT (BUILT IN)
CIRCUIT BREAKER ALLIED-683-0163 15 AMP
APO SWITCH ALLIED-683-0143
ACCESSORY SWITCH ALLIED-683-0143
ENGINE IGNITION SWITCH CENT-2509904
TO STARTER GREEN BLACK TRACER
ACC
IGN
BAT
86 30 87 RELAY 85
THERMOSTAT THERM-TS-120SHP
to
CIRCUIT BREAKER ALLIED-683-0163 30 AMP
COIL COMMANDER SYN-SA-4687-12
DIVERTER SOLENOID (IF EQUIPPED) SYN-1751ES12E2ULB1S
DIODE
TRANSFER PUMP
Trans pump
MIX BOX
APO
HOUR METER
LIGHTS
EMPTY
FUSE PANEL HEL-15600-06-20
HOUR METER TUFF-357464
WATER TEMPERATURE GAUGE, BUILT IN TEMP SWITCH MUR-10-09-0073 (SAFETY SHUT-DOWN SET @ 260)
TERMINAL STRIP MC-7527K53
BLACK JUMPERS
MIX TANK RELAY CENTER GRA-5CZ19 RELAY GRA-2A582 SOCKET
MIX TANK FLOAT ASSEMBLY (2 FLOATS, 1 STEM) ALMEG-SSR10-1-5B-10B
MIX TANK SOLENOID DEMA – 443P
APO CLUTCH JAB-18753-0493
WASTE TANK FLOAT SWITCH GRA-2A551
CHECK ENGINE INDICATOR AMBER
SHUT-DOWN INDICATOR RED
PUMP CLUTCH CAT-34960 LP CAT-34970 HP
ENGINE CONTROL MODULE EW-C282-326-54
APO TIMED RELAY CAM-SA-1/2
SOLENOID DEMA-443P
APO FLOAT COM-BF32AG50
ENGINE SPEED CONTROL POTENTIOMETER RAD-271-175
TO FUEL PUMP
PowerClean INDUSTRIES
GENESIS WIRING SCHEMATIC
REVISED 05/01/2006