HOG PACK HT500

OPERATIONS MANUAL

HOG™
TECHNOLOGIES

We would like to extend to you our “Thank You” for choosing a Hog Technologies Product!

Please take the time to read this operations manual before attempting to operate your Waterblasting system. This manual is an important aid in the operation and maintenance of your new equipment. The information is intended as a guide and cannot cover every question you may have about your equipment and every operating situation. We encourage you to contact Hog Technologies for any additional information you might need. We provide first class support to our customers for all of the equipment we sell. Additionally, we maintain a well stocked inventory of parts and accessories in addition to technical staff with the experience to satisfy all of your support questions. Please contact us for all of your support issues and questions toll-free at (877) 964-7312 and on-line at www.hogtechnologies.com or www.stripehogsupport.com.

Gasoline is Highly Flammable Warning on Engine

Safety

High pressure, waterblasting equipment can cause serious injury or even death if it is not operated or maintained properly. Your manual has been written to include a number of safety instructions to assure the safe operation and maintenance of your equipment. These instructions are in the form of a General Safety Section as well as individual **DANGER, WARNING and CAUTION** statements. There are also **CAUTION, WARNING AND DANGER LABELS** located on some components. You should read these warnings carefully and make sure you understand the nature of the hazard and the precautions and recommended procedures required to ensure your safety.

Major Component Operation Manuals

The suppliers of some of the major components such as the engine and hydraulic pump, provide their own owner’s manuals which have been included with your equipment. You should read the information in this manual and the manuals of other suppliers completely and have a thorough understanding of all component systems and their proper operation before operating your equipment.

REMEMBER - IT IS YOUR RESPONSIBILITY TO ENSURE THAT YOUR EQUIPMENT IS SAFE FOR YOU AND YOUR CREW. ALWAYS EXERCISE GOOD COMMON SENSE WHEN INSTALLING OR REPAIRING EQUIPMENT AND WHILE OPERATING WATERBLASTING EQUIPMENT.

Warranty

The Hog Technologies Limited Warranty Statement is included with this manual. It has been written to be clearly stated and easily understood. If you have any questions after reading the warranty, please contact the Customer Service Department.

Hog Technologies, engine manufacturers, and the suppliers of major components maintain their own manufacturer’s warranty and service facilities. Hog Technologies automatically validates your warranty at the time of purchase and does not require a warranty registration card. However, the manufacturers of some major components require a completed warranty registration card to validate their warranty. It is important that you properly complete any warranty registration cards included with your equipment and mail them back to the manufacturer to register your ownership. This should be done within 15 days of the date of purchase and before the unit is put into service.

IMPORTANT:

The terms and conditions of the Hog Technologies Limited Warranty are outlined in the warranty statement included with this manual. The manufacturer will automatically honor the warranty to the original purchaser for 15 days from the date of purchase. However, during that 15 day period, owners must comply with the steps outlined in the warranty statement to validate their warranty.

All manufacturers are required by the US Government to notify first time owners in the event any defect is discovered "which creates a substantial risk of personal injury to the public." ***It is essential that we have your warranty registration card complete with your name and mailing address in our files so that we can comply with the law if it should become necessary.***

Hog Technologies Customer Service will assist you in filling in the serials numbers and other data required on your registration card if you experience difficulty. Your Warranty Registration Card will be added to our permanent files.

Product Changes

Hog Technologies is committed to the continuous improvement of our products. As a result, some of the equipment described in this manual or pictured in the catalog may change or no longer be available.

All information, illustrations, and specifications contained in this manual are based on the latest product information available at the time of publication. Hog Technologies reserves the right to make changes at anytime, without notice, in colors, materials, equipment, specifications, and models.

If you have questions about the equipment on your Stripe Hog, please contact the Customer Service Department.

Service

All warranty repairs must be authorized by Hog Technologies Should a problem develop that is related to faulty workmanship or materials, as stated in the Limited Warranty, you should contact our Customer Service Department to arrange for assistance and prior approval for the necessary repair. ***It is the owner's responsibility to contact Customer Service for prior authorization for warranty service.***

WARNING

INCORRECT USE OF HIGH PRESSURE WATERBLASTING EQUIPMENT MAY CAUSE SERIOUS INJURY OR EVEN DEATH.

DO NOT USE THIS EQUIPMENT WITHOUT PROPER SUPERVISION AND TRAINING.

ALL OPERATING AND MAINTENANCE PERSONNEL MUST BE THOROUGHLY TRAINED IN SAFE OPERATION, INSTALLATION AND MAINTENANCE OF THIS EQUIPMENT, AND PROVIDED WITH ADEQUATE SUPERVISION.

BEFORE ATTEMPTING TO CONNECT, OPERATE, OR REPAIR THIS EQUIPMENT, THOROUGHLY READ THESE INSTRUCTIONS AND ANY SAFETY WARNING OR INSTRUCTION PAMPHLETS INCLUDED WITH YOUR SHIPMENT.

FOR ANY QUESTIONS CONCERNING SAFE OPERATIONS AND MAINTENANCE PROCEDURES, CONTACT YOUR HOG TECHNOLOGIES REPRESENTATIVE PRIOR TO USE.

(772) 223-7393 OR (877) 964-7312
HOG TECHNOLOGIES
WWW.HOGTECHNOLOGIES.COM

This manual has been written to include a number of safety instructions to assure the safe assembly, operation and maintenance of your Hog Technologies Equipment. These instructions are in the form of **DANGER, WARNING, and CAUTION** statements. The following definitions apply:

CAUTION

HAZARDS OR UNSAFE PRACTICES WHICH COULD RESULT IN MINOR PERSONAL INJURY OR PRODUCT AND PROPERTY DAMAGE.

WARNING

HAZARDS OR UNSAFE PRACTICES WHICH COULD RESULT IN SEVERE PERSONAL INJURY OR DEATH.

DANGER

MMEDIATE HAZARDS WHICH WILL RESULT IN SEVERE PERSONAL INJURY OR DEATH.

All instructions given in this book are as seen from the rear looking forward. Common industry terminology is used throughout the manual.

IMPORTANT NOTE: Your Waterblasting equipment uses internal combustion engines and flammable fuel. Every precaution has been taken by Hog Technologies to reduce the risks associated with possible injury and damage from fire or explosion, but your own precaution and good maintenance procedures are necessary to ensure the safe operation of your equipment.

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1.1 General Safety

Use Safety Training

Only trained personnel should be allowed to setup, operate, or maintain this equipment. Water blast operators should be made aware that the water jet nozzles can cause serious bodily injury. Training supervisors should demonstrate the powerful potential damage of the nozzles by showing new trainees the effect of water jets cutting a piece of 2 x 4 wood.

Check Water Supply

Use only clean water in any ultra high pressure system. ***DO NOT*** *accept water drawn from retention ponds, canals or other non-potable sources.*

Work Area Safety

Remember, safety is first! Only set up to work in areas properly protected from traffic and other hazards. Always barricade the work area and post signs warning personnel of the hazards associated with high pressure waterblasting operations.

Outfit all operators with proper safety apparel. Steel toed, non-skid boots, hard hats with safety shields or safety glasses, gloves, ear protection, etc.

Most ultra high pressure waterblasting operations generate noise levels above 90 db. Hearing protection is required in accordance with OSHA standards.

Use Only Products Intended for High Pressure Waterblasting Use

Know the pressure ratings of all equipment being used and never exceed any operating pressure higher than the rating of the weakest component. This system is designed to work with pressures up to but not exceeding 40,000 PSI (2,758 Bar).

Never Alter a Hog Technologies Product

Do not alter any product without written consent from the manufacturer. Any alterations could have serious consequences including bodily harm or death.

Always Read Instructions

Read and follow all the manufacturer's instructions prior to using any Hog Technologies product. Contact Hog Technologies should any questions arise.

Inspect Equipment

Inspect the condition of all components prior to use. Do not use any item that is in questionable condition. Use only components which are marked with the recommended operating pressure. Never exceed the operating pressure of the weakest component in the system.

Check Connections

Check the condition of the connection threads prior to connecting any fittings or hoses. Use an Anti-seize compound on all fittings and hoses to prevent "galling," as galling will destroy the threads and essentially the fittings and/or hose ends.

Tighten Connections

Properly tighten all high pressure connections. Usually, snug plus a 15% tightening will properly seal connections.

Purge System

Before attaching accessories to the high pressure hoses, engage pump at low speed to purge the system. Any dirt or debris in the system can clog nozzle orifice's and cause system pressure to spike excessively causing damage to components.

Test System

With the Waterblasting tools properly attached and equipped with proper high cohesive nozzles, operate the pump at low pressure to check for nozzle accuracy and leaks on spray bar, spray head, spray bar or nozzles. Should any repairs or adjustments be necessary, disengage the pump and shutdown all engines to relieve all pressure before making any required repairs or adjustments.

Set System Pressure

With system operating properly, set your pressure according to methods described by pump manufacturers instructions. Refer to the pump operating manual for specifications and instructions.

Use the Minimum Pressure Required

Do not exceed the operating pressure of the system's lowest pressure-rated component. All equipment pressure rating and warning tags should be left intact.

Be Prepared

If the equipment malfunctions or a malfunction is suspected, immediately stop all blasting activity,

relieve the pressure and shutdown all engines in the system before attempting any repair. Always follow manufacturer's repair instructions.

NOTICE:
Use Only Thoroughly Trained Personnel to Perform Maintenance or Repairs.

Low Pressure Test
Following repairs, operate the system at low pressure for a test. Bring equipment up to operating pressure slowly.

Freezing Conditions
System hoses and spray head assemblies should be drained of all water or filled with an anti-freeze solution. Refer to pump manufacturer's procedures for maintaining equipment in freezing climates. If you do decide to operate at freezing temperatures or even temperatures below 60 degrees Fahrenheit, you will need to run the Hog Pack hydraulic system at IDLE speed only until the hydraulic oil temperature rises above 60 degrees Fahrenheit.

Prior to starting operations, the operation of all equipment components must be checked carefully to ensure they are not frozen, have not been damaged by frozen water and are operating properly.

Store Components Properly
Protect all components from damage when not in use. Secure for travel.

1.2 Blasting and Personal Safety
Safety First – ALWAYS!
Whenever the pressure pump is engaged for setting pressure or operations, always be sure work area is clear of people, hands, feet, etc., before engaging the high pressure switch on the Waterblasting tool.

WARNING

INJURIES FROM ULTRA HIGH PRESSURE WATERBLASTING CAN BE VERY SERIOUS AND CAN RESULT IN A FATALITY. ALWAYS MAKE SURE ALL PERSONNEL ARE A SAFE DISTANCE FROM THE WORK AREA AND THE OPERATOR HAS A FIRM GRIP ON THE TOOL BEFORE THE PRESSURE PUMP IS ENGAGED. NEVER PUT HANDS, FEET OR ANY PART OF YOUR BODY IN OR NEAR THE HIGH PRESSURE STREAM.

Equip All Personnel with Proper Safety Gear
Handheld waterblasting equipment can be extremely dangerous if proper precautions are not observed. Operators handling the waterblasting devices must be extremely carefully and wear protective gear designed for waterblasting. Remember that high pressure can instantly cause severe injury or death if any part of the body is contacted by the high pressure stream. Waterblasting tool operators must be equipped with the following; heavy duty, steel toed, non-skid knee high boots, a heavy duty, protective rain suit, gloves, hard hat with safety shield or goggles and ear protection.

Support team operators should be equipped with a minimum of steel towed, non-skid safety boots, heavy duty work clothes, gloves, hard hat, safety glasses or goggles and ear protection.

WARNING

MOST HIGH PRESSURE WATERBLASTING OPERATIONS PRODUCE NOISE LEVELS THAT EXCEED 90 DB WHICH CAN CAUSE PERMANENT HEARING LOSS.

ALL OPERATORS AND SUPPORT PERSONNEL MUST WEAR EAR PROTECTION IN ACCORDANCE WITH OSHA STANDARDS AND PROVISION SHOULD BE MADE FOR REGULAR INSPECTION AND MAINTENANCE.

ALL PERSONNEL EXPOSED TO 90 DB OR GREATER NOISE LEVELS SHOULD RECEIVE INSTRUCTION IN THE CORRECT USE OF EAR PROTECTION SO THAT THEIR NOISE EXPOSURE LIES WITHIN THE LIMITS SPECIFIED BY OSHA. NEVER ALLOW ANYONE NEAR THE WORK AREA WITHOUT PROPER EAR PROTECTION.

REMEMBER: ULTRA HIGH PRESSURE BLASTING CAN CAUSE DEBRIS TO BE PROJECTED UNEXPECTEDLY IN AND AROUND THE WORK AREA THAT CAN CAUSE SEVERE INJURY. MAKE SURE ALL PERSONNEL STAY WELL CLEAR OF THE BLASTING AREA AND USE HARD HATS, EYE AND EAR PROTECTION.

OSHA's Permissible Noise Exposure	
90 dB	8.0 hours
92 dB	6.0 hours
95 dB	4.0 hours
97 dB	3.0 hours
100 dB	2.0 hours
102 dB	1.5 hours
105 dB	1.0 hours
110 dB	30 minutes
115 dB	15 minutes

Use Safety Devices
Always use a safety shroud and a safety whip hose with handheld control guns for operator protection against a burst occurring in the high pressure hose connected the gun. Use of a hand grip and shoulder stock on hand held guns will provide greater operator comfort and control.

Check Blasting Head
Check the blasting Head for smooth and proper operation before each shift. Do not use equipment that has not been checked thoroughly.

Check Control Components
Check all switches, gun safety release levers and control panel devices to ensure each is working properly before beginning operations. Do not use equipment if any device is malfunctioning.

Always Use Two Operators.
For safety purposes, at least two operators should always be present during waterblasting operations with one tool and three operators present when operating two tools. The primary operator handling the waterblasting tool must have direct control of the water pressure. The secondary operator (assistant), should observe operations from a safe distance (at least 12 feet (366 cm) and be able to shutdown system pressure from a secondary control to quickly relive pressure in case of an emergency.

Brace Yourself and Be Prepared
Operators of handheld tools should always be braced and maintain firm, solid footing at all times before beginning any testing, pressure testing the system or blasting. Be ready, the force from the blasting head can exceed 50 lbs, moving the operator backwards or off balance, causing loss of control and/or the blast to cross the path of people or equipment. Always make sure other members of the crew are a safe distance from the operator before blasting operations begin to ensure there is no chance for them to come in contact with the high pressure stream if the operator loses control.

If waterblasting in a man lift, on scaffolding or above ground level, always use a fall protection device such as safety belts, harnesses, and fall nets. Never operate handheld waterblasting equipment while standing on slippery surfaces.

Start at Low Pressure
Always start blasting with the system at low pressure, slowly increasing to operating pressure. Engage and disengage Ultra High Pressure switch at least two times at operating pressure to check operation of tool high pressure switch before starting blasting operations.

Check Your Hog Pack Dumping Pressure
When setting pressure ALWAYS ensure that the system pressure drops to less than 100 PSI (7 Bar) immediately when the high pressure switch is turned OFF. If this does not relieve system pressure immediately to below 100 PSI when turned off, do not use the equipment until repairs are made to the dump valve (pressure relief valve).

Know Your Surroundings
Know your surroundings well – i.e. - hoses, people, walls, moving vehicles, live lanes of traffic, etc.

Never Blast When the Tool is Stopped
Always make sure High Pressure switch or trigger is OFF ***BEFORE*** motion is stopped. Damage to the surface will occur if blasting continues when high pressure is supplied to a waterblasting tool that is not moving.

Stop the Pump Before Passing the Tool
Never pass a waterblasting gun or any other handheld waterblasting tool to another operator without first disengaging the high pressure pump and water flow to the gun. Passing off handheld waterblasting tools is extremely dangerous due to the possibility of accidental trigger activation.

High Cohesive Nozzle Flow Chart					
FLOW - GPM @ Pressure Indicated					
Orifice Dia./ins	20KPSI (1379 Bar)	26KPSI (1723 Bar)	30KPSI (2068 Bar)	36KPSI (2482 Bar)	40KPSI (2758 Bar)
0.005	0.08	0.09	0.09	0.10	0.11
0.006	0.11	0.12	0.13	0.15	0.15
0.007	0.15	0.17	0.18	0.20	0.21
0.008	0.19	0.22	0.24	0.26	0.28
0.009	0.25	0.28	0.30	0.33	0.35
0.010	0.30	0.35	0.37	0.41	0.43
0.011	0.37	0.42	0.45	0.49	0.52
0.012	0.44	0.50	0.54	0.59	0.62
0.013	0.51	0.59	0.63	0.69	0.73
0.014	0.60	0.68	0.73	0.80	0.84
0.015	0.68	0.78	0.84	0.92	0.97

1.3 Blasting Tool Nozzle Safety

Check Flow Rating

Nozzles combined flow rating must be compatible with the pump discharge and pressure rating. Refer to your nozzle flow rating chart in this section.

Check Pressure Rating

Use only nozzles with a manufacturer's pressure rating of at least the pump's operating pressure or a burst rating of no less than 60,000 PSI (4,137 Bar.)

Check Orifices

Prior to installation, make sure the nozzles have no clogged orifices. Also, check to ensure nozzles are sharp and not excessively worn.

Check Connections

Be sure to never force a nozzle into the blasting head. Clean threads to ensure nozzle is not cross-threading. Use an ample amount of anti-seize on threads only, never on the seat of the nozzle. Inspect the seat area on nozzle to ensure a tight seal. If it is damaged, do not use.

Connect Nozzle

Insert the nozzle into blasting head finger tight. Using a 3/8" socket or box end wrench, tighten the nozzle about 15% more. In some situations, it may be necessary to tighten additionally. Be certain the nozzle seat in the blasting head is in good condition. If it is damaged, replace with a new blasting head.

Clogged Nozzles

If a nozzle appears clogged, immediately disengage pump. Remove any clogged nozzles and replace with new nozzles. Any particles of the smallest size will clog nozzles. Clogged nozzles can create excessive pressure in pump.

Remove Nozzle from Service if:

A) Nozzle is split or damaged.

B) Nozzle is clogged.

C) Nozzle water spray is fanned out.

D) Nozzle's ability to hold pressure is suspect.

E) Nozzle's hex head is worn excessively from blasting.

F) Nozzle threads are damaged.

1.4 Hose Safety

Ultra high pressure hoses are tough, but not invincible. They require proper care and handling to achieve the normal service life of 300 - 600 hours. If the hoses are abused, the service life will be much shorter.

Stretched or abused hose can fail prematurely and unexpectedly, which could cause injury to personnel. Hoses that have been exposed to excessive stretching or kinks should be removed from service and discarded.

Check Pressure Rating

Only Use high pressure hoses with an operating pressure rating of 36,000 - 40,000 PSI (2,482-2,758 bar.)

Check Burst Rating

Do not use a high pressure hose that does not have a listed burst rating or with a burst rating of less than 60,000 (4,137 Bar) PSI the operating pressure.

Take Proper Care of Your Hose

A) Protect the hose from contact with sharp objects, abrasive surfaces and foot or wheel traffic.

B) Never subject ultra high pressure hose to a tight radius, less than 30" (.7 m) or pull on a coiled hose. Always make sure the hoses is straight with no coils before pulling on the hose to deploy it.

C) Never pull hard on an ultra high pressure hose or expose the hose to heavy loads like dragging equipment or deploying long lengths of hose. This can stretch the hose and weaken it. Never pull more than 25 feet of hose by a coupler or fitting. Always move long lengths of hose by the hose itself to keep the strain off the fittings.

D) When using a tractor or a hog tool, always operate the equipment well within the maximum distance to avoid straining or damaging hoses.

Check Pressure Rating

Only Use high pressure hoses with an operating pressure rating of 36,000 - 40,000 PSI (2,482-2,758 bar.)

Check Burst Rating

Do not use a high pressure hose that does not have a listed burst rating of less than 60,000 PSI (4,137 Bar.)

Retire Hose from Service if:

A) Cover is damaged and reinforcing wires are exposed to rust and corrosion.

B) Cover is loose, has blisters or bulges.

C) Hose has been crushed or kinked.

D) End fitting shows evidence of damage, slippage or leakage.

E) Hose has been exposed to pressures of 2 times the operating pressure.

F) Hose has been stressed or stretched.

Check Dump Valve Water Hoses

Any hose used for flowing dumped water away from the Hog Pack or back to the pump, clean water tank or an auxiliary tank must have a large enough diameter and PSI strength so that potentially dangerous release pressure is allowed full flow and release pressure is contained safely. Keep hose in good condition.

1.5 High Pressure Fitting Safety

Fitting Ratings

Use high pressure fittings with a rating of 60,000 PSI (4,137 Bar.)

Check Fittings

Do not use fittings that have been cross threaded or have damaged threads.

Fitting Connections

Use anti-seize compound on ***all*** hose and fitting connections to prevent galling. Do NOT use anti-seize on the seating area of any connections.

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HT500 Systems

HT500 Hog Pack

2.1 Hydraulic Power System

Overview

The HT500 is a wheel mounted, portable hydraulic system designed to provide hydraulic oil pressure to the rotating blasting heads and 12-volt DC power to the control switches on Hog Technologies Tools. It also provides the hydraulic power that activates the onboard ultra high pressure (UHP) water control valves. A gasoline engine and fuel system provides the power for the hydraulic pump and the 12-volt DC electrical system. High pressure water and vacuum, if required, are supplied by separate units connected to the power pack and/or the hog tool. The engine, fuel tank and all hydraulic components, including the hydraulic oil tank and high pressure control valves are mounted on the unit making it completely portable.

The operation and maintenance requirements for the engine is unique to the manufacturer. Each engine manufacturer provides an owners information manual with their product. It is important that you read the manual carefully and become familiar with the proper care and operation of the engine.

Warranty registration forms are included with the information manuals. All requested information on these forms should be filled out completely and submitted to the dealer or manufacturer as soon as possible.

The HT500 hydraulic power system is designed to be used with the HT1000 Ground Hog walk behind unit, the HT100 Hand Hog blasting guns, or the HT1100 Hog Waller. With a weight of 600 lbs (272 kg) and compact size, it can be transported to the job site in a pickup truck or small trailer.

Lifting the Hog Pack

The Hog Pack is designed to be lifted with a three point harness and lifting equipment capable of lifting at least 1000 lbs. Before lifting the unit, make sure all hoses and electrical cables are removed.

HT500 Lifting Points

There are three designated lifting points located on the each side of the horizontal portions of the rear handle, next to the unit chassis and the forward handle. Only lift by attaching cables or lifting straps to these points. Their locations are marked in the photo on this page. The front and rear handles can be also used to secure the unit to the truck or trailer for transport.

2.2 Engine

The hydraulic and DC charging systems are powered by the onboard engine. Engine power is transferred to the hydraulic pump by a direct coupler and the pump is always activated whenever the engine is operating. Hydraulic and high pressure components of the waterblasting system are manually controlled by trigger activated switches on the blasting guns and Hog Waller or lever activated switches on the Ground Hog unit that are connected to the Hog Pack 12-volt DC electrical system.

The engine control panel, mounted on the front of the unit, controls the starting, running and stopping of the engine. A fuse in the panel protects the ignition and starting circuits from an overload. Other fuses near the battery protect the circuits for the control switches and oil cooling fan. Most engines are equipped with an hour gauge in the panel that allows the operator to monitor engine run time. A throttle lever and governor control engine speed.

Always check the oil levels and all systems before starting the engine.

To start the engine:
Make sure that all hydraulic hoses, high pressure water hoses and electrical harness are properly connected and that all trigger switches and levers on the waterblasting equipment are in the OFF position.

Turn the STOP/ON/START Key switch to ON and, for cold starting, pull out the choke lever. Set the throttle lever to 1/3 throttle.

NOTICE:
The choke is not used when starting warm engines.

The cooling fan for the hydraulic oil cooler will automatically run when the ignition Key switch is turned to the ON position.

Turn the engine Key switch to the START position and hold it there until the engine starts. If the engine fails to start within 5 seconds, release the Key switch, and wait at least 10 seconds before operating the starter again. Using the electric starter for more than 5 seconds at a time will overheat the starter motor and can damage it. When the engine starts, release the Key switch, allowing it to return to the ON position.

Warm the engine at low speed for 2 or 3 minutes. Gradually push the choke knob to the open position as the engine warms up.

Set the engine throttle to maximum RPM before beginning waterblasting operations.

Once the engine RPM is set, full power is available to the hydraulic system. Refer to the operation section of this manual for more information on using the HT500 in waterblasting operations.

To stop the engine:
Turn the waterblasting systems OFF.

Move the throttle to allow the engine to operate at idle speed for at least 5 minutes to allow internal temperatures and hydraulic oil to cool.

Turn the Key switch to OFF.

IMPORTANT:
The engine control panel is unique to the engine installed on your unit and may operate differently than explained above.

An owner's manual for the engine has been supplied with this manual. Please refer to it for specific information on the operation and maintenance of the engine on your unit.

⚠ WARNING ⚠

DO NOT INHALE EXHAUST FUMES! EXHAUST CONTAINS CARBON MONOXIDE THAT IS COLORLESS AND ODORLESS. CARBON MONOXIDE IS A DANGEROUS GAS THAT IS POTENTIALLY LETHAL. NEVER OPERATE THE HOG PACK INSIDE A BUILDING OR ENCLOSED AREAS.

Honda Engine Control Panel

In-line Fuel Filter

Typical Gasoline Engine Warning Label Located on the Engine

2.3 Engine Fuel System

The HT500 is equipped with a fuel tank mounted above the hydraulic tank, just aft of the engine, that supplies fuel to the carburetor by gravity. The fuel tank is equipped with a vented fuel cap and a fuel withdrawal line with an in-line fuel filter. The threaded fuel cap is opened by turning it counter clockwise.

The fuel filter is located in the fuel supply line below the engine. It is important to monitor the condition of the fuel filter and change it as recommended by the engine manufacturer. Always make sure the engine is cool and completely drain the fuel tank or turn the fuel valve at the tank OFF, if your unit is equipped with this valve, before changing the fuel filter. Make sure to follow the engine manufacturers recommendations and procedures for servicing the fuel system.

Improper fuel storage techniques, limited equipment usage, etc. can cause the fuel to become contaminated. Occasionally, it may become necessary to drain accumulating water and/or contaminated fuel from the bottom of the fuel tank.

NOTICE:
Refer to the maintenance section of this manual and the engine owner's manual for additional information on the fuel system and the proper fuel to use with your engine.

WARNING

AVOID SERIOUS INJURY OR DEATH FROM FIRE OR EXPLOSION RESULTING FROM LEAKING FUEL, INSPECT SYSTEM FOR LEAKS BEFORE EACH SHIFT. AFTER THE FUEL FILTER HAS BEEN CHANGED, PRIME THE FUEL SYSTEM AND CHECK ALL FITTINGS FOR LEAKS BEFORE AND AFTER STARTING THE ENGINE.

Fuel Tank Refueling

Never begin waterblasting operations with a low fuel condition. The fuel tank should be full at the beginning of each shift. You should also make sure to check for fuel leaks. Leaking fuel is a fire hazard and will increase fuel consumption. This can cause a fire or increase fuel consumption enough to cause the Hog Pack to run out of fuel prematurely and unexpectedly.

WARNING

LEAKING FUEL IS DANGEROUS AND CAN CAUSE A FIRE AND/OR EXPLOSION. FUEL IS VERY FLAMMABLE AND THE VAPORS CAN EXPLODE. ALWAYS ALLOW THE ENGINE TO COOL BEFORE FUELING AND BE CAREFUL WHEN FILLING THE FUEL TANK. NO SMOKING. NEVER FILL THE TANK WHILE THE ENGINE IS RUNNING. DO NOT FILL THE TANK NEAR OPEN FLAMES OR WHILE THE ENGINE IS HOT.

Fuel is very flammable and vapors can explode. Always allow the engine to cool before fueling and be careful not to overfill the fuel tank. Always use extreme caution while refueling.

Static electricity is generated by flowing fuel and can create a spark that can cause a fire or explosion. It is critical that the fill nozzle be in constant contact with the fuel fill opening while fueling to reduce the possibility of a static spark.

Filling the Fuel Tank

- Make sure all switches are in the "OFF" position and that the Hog Pack is outside in a well ventilated area.
- Estimate how much fuel is needed and avoid overfilling the fuel tank.
- Remove the cap.
- Put the nozzle in the fuel opening and make sure it stays in contact with the fuel fill opening.

WARNING

STATIC ELECTRICITY GENERATED BY FLOWING FUEL CAN CAUSE A FIRE OR EXPLOSION. TO PREVENT STATIC SPARKS WHEN FILLING THE TANK, MAKE SURE THE NOZZLE IS ALWAYS IN CONTACT WITH THE FUEL FILL OPENING.

- Fill the tank slightly less than the capacity to avoid spilling fuel out of the fuel fill and to allow for expansion.

NOTICE:
When the fuel tank is full, fuel will come out through the fill and could spill on the engine and Hog Pack components. Monitor the tank and fuel fill fitting closely while fueling to prevent fuel from spilling.

- Remove the nozzle.
- Make sure the fuel cap gasket is in place and in good condition. Install the cap on the fuel fill and tighten hand tight.

WARNING

SPILLED FUEL CAN CAUSE A FIRE OR AN EXPLOSION. MAKE SURE YOU DO NOT SPILL ANY FUEL. IF A SMALL AMOUNT OF FUEL IS SPILLED, USE A CLOTH TO REMOVE THE FUEL AND PROPERLY DISPOSE OF THE CONTAMINATED CLOTH.

2.4 12-Volt DC Electrical System

The HT500 is equipped with a 12-volt DC electrical system, alternator and an onboard battery that provides electrical current for starting and operating the engine. It also provides 12-volt current for the hydraulic oil cooler fan and the trigger switches and solenoids that control the high pressure water and hydraulic motors on the Waterblasting tools. The alternator recharges the battery whenever the engine is operating. The wires are color coded to assist in troubleshooting electrical problems.

12-Volt Cooling Fan

The 12-volt system is a standard small industrial engine system. One battery is standard equipment and is located in a battery tray just behind the engine. The battery is accessed by removing the stainless steel access panel on the right side of the unit as shown in the picture in this section.

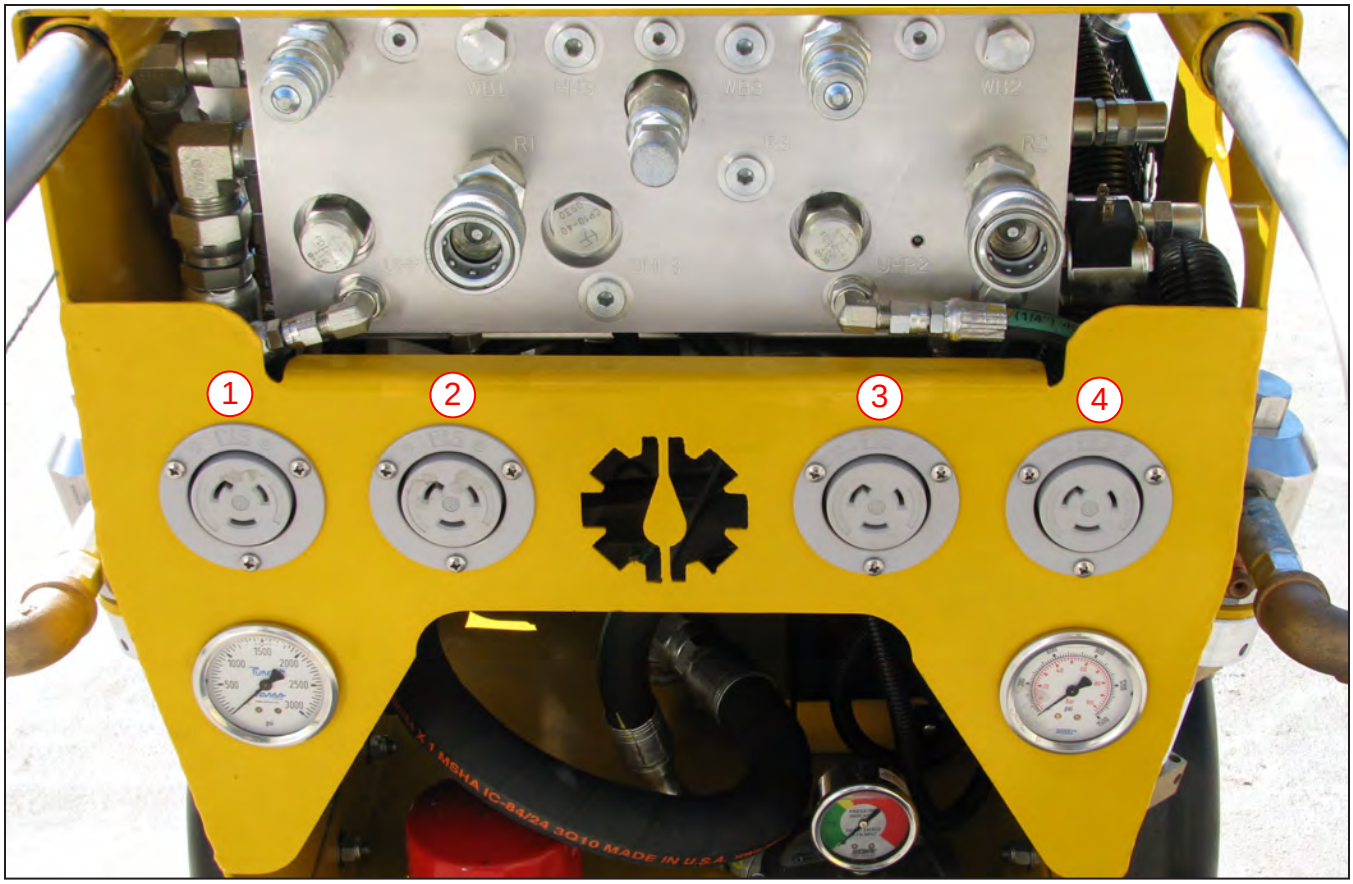
12-volt power is distributed to the waterblasting controls and oil cooling fan through individual circuits that are protected by in-line fuses near the battery. Other fuses, located in the engine control panel, protect the engine control circuits and starter. The waterblasting tools are controlled by switches in the triggers and control levers on the Waterblasting tools that are connected to the Hog Pack by special wire harnesses.

Stainless Steel Battery Access Panel

The DC electrical system on your equipment is designed for a wet cell, industrial engine starting battery. Do not attempt to use gel cell, absorbed wet mat or other non wet cell batteries. The engine charging system is not designed to recharge these batteries which could cause unusually short battery life, engine starting problems and damage to the charging system. Always consult Hog Technologies or the engine manufacturer before changing the type of batteries in your HT500.

Refer to the engine owner's manual for more information on battery specifications and the engine electrical system on your HT500. Contact Hog Technologies Customer Service if you need assistance correcting a problem with the electrical system.

12-Volt Battery and In-line Fuses



1. Harness Plug 1 (Port Group 1)

2. Harness Plug 2 (Port Group 2)

3. Harness Plug 3 (wired in reserve)

4. Harness Plug 4 (Master Port Group)

Hog Tool Wire Harness Connections

There are four female wire harness connection plugs in the panel on the rear of the Hog Pack. The first two plugs, from left to right, are used to connect the wire harnesses from the Hog Tool control switches to the Hog Pack control circuits. Plug three is wired in reserve and is not used. The forth plug is used by an optional wire harness that connects the Hog Pack control circuits to the UHP pressure control on a Hog Technologies Stripe Hog truck or skid mounted unit. The plug locations are identified in the picture in this section and perform the following functions:

1. Harness plug 1 connects the Hog Tool to the mode valve control circuit for Manifold Port Group 1. The circuit is protected by an in-line fuse near the battery. When this harness is connected, the control trigger or lever on the Hog Tool will open or close the electrically activated valve for Manifold Port Group 1 which turns the hydraulic oil flow and high pressure water to the Hog Tool connected to Port Group 1 ON and OFF.

2. Harness plug 2 connects the Hog Tool to the valve control circuit for Manifold Port Group 2. The circuit is protected by an in-line fuse near the battery. When this harness is connected, the control trigger or lever on the Hog Tool will open or close the electrically activated mode valve for Manifold Port Group 2 which turns the hydraulic oil flow and high pressure water to the Hog Tool connected to Port Group 2 ON and OFF.

3. Harness plug 3 is for Manifold Port Group 3. It is wired in reserve because Manifold Port Group 3 is not used on Power Pack.

4. Harness plug 4 connects the Power Pack to the high pressure valve (Dump Valve) control circuit on a Hog Technologies Stripe Hog truck or skid unit UHP pump system. The circuit is protected by a fuse or circuit breaker located in the truck or skid mounted electrical system. When this optional harness is connected, the UHP pump Dump Valve on the truck or skid unit will be controlled by the Hog Tools connected to the Hog Pack. The circuit senses when

the Hog Tools connected to the Hog Pack are shutdown and opens the Dump Valve on the truck or skid unit, which immediately drops the UHP pump pressure to near 0. For example; if only one Hog Tool is connected to the Hog Pack the Dump Valve will immediately open and drop the pressure to near 0 whenever that tool is shutdown. When the tool is reactivated, the Dump Valve closes and full pressure returns. If two Hog Tools are connected to the Hog Pack and operating simultaneously, the Dump valve will immediately open and drop the pressure when both tools are shutdown. If one tool is shutdown while the other tool continues waterblasting, the Dump Valve will remain closed and the UHP pump will continue to provide maximum pressure to the tool still in operation. If both tools are shutdown and one tool is reactivated, the Dump Valve will close and immediately provide full pressure to the activated tool.

Optional Master Control Circuit

The Master Port Group on the manifold provides the operator with the option to connect the Hog Pack control circuits to a hydraulically activated valve (Dump Valve) at the UHP pump. Because of the variety of UHP pumps and valve systems that could be used to provide high pressure water to the Hog Pack, this circuit is not wired at the factory.

The circuit is typically wired to sense when all Hog Tools connected to the Hog Pack are shutdown. The circuit opens an electrically activated solenoid valve which sends pressurized hydraulic oil to the UHP pump Dump Valve and immediately drop the pressure to near 0. When waterblasting operations resume, the circuit closes the Dump Valve and high pressure is immediately provided to the Hog Pack and active tools.

NOTICE:

The optional Master Port Group wiring harness, hydraulic hose connections and pressure adjustments are unique to the truck or skid mounted system supplying high pressure water to the Hog Pack. Therefore, the harness is sold in a kit that includes the wire harness and other components required to connect the Master Port Group on your Hog Pack to the specific Hog Technologies Stripe Hog truck or skid mounted unit. The kits are available from Hog Technologies by contacting Hog Technologies Customer Service or on the web at www.stripehogsupport.com.

2.5 Hydraulic System

General

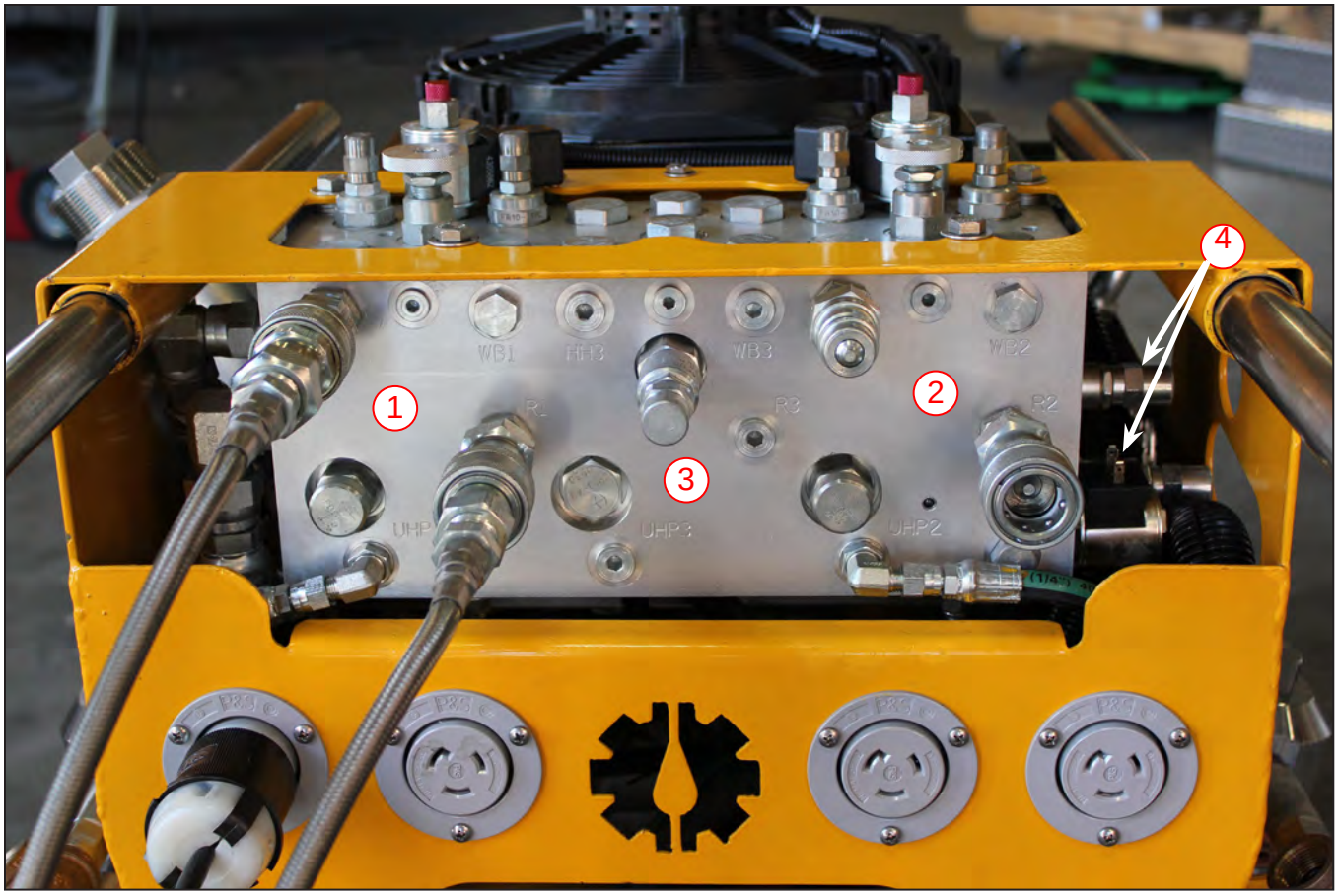
The hydraulic system is driven by the onboard engine. It is equipped with a pump that is directly coupled to the engine, a large reservoir/cooling tank and an oil filter. An oil cooler with a 12-volt fan cools the hydraulic oil during operation. Electric solenoid valves, activated by switches in the waterblasting tools, direct hydraulic pressure to the rotating blasting heads and to by-mode valves on each side of the Hog Pack that control the high pressure water to the Hog Tools. Hydraulic oil level and temperature is monitored by a sight gauge and thermometer on the side of the hydraulic oil reservoir. Oil is added by removing the orange oil fill cap near the filter pressure gauge.

The hydraulic oil system is equipped with a filter that protects the system from debris. A Pressure gauge on top of the hydraulic filter canister alerts the operator when the filter is dirty and requires changing. The filter should be changed when the gauge needle moves into the yellow zone. Other gauges on the rear panel monitor pressure in the hydraulic system.

The Hog Pack hydraulic system is designed to power the hydraulic motors that rotate the spray bars and UHP (Ultra High Pressure) valves for two Hog Technologies tools working simultaneously up to 100 feet away from the unit. Special by-mode valves, one for each Hog Tool, allow individual operators to turn the High Pressure water ON and OFF using the trigger or levers on the tool. The valves are designed so that maximum pressure is maintained on an operating tool when water pressure is turned OFF on the other tool, while two Hog Tools are being used simultaneously.

The distance Hog Tools can operate from the Hog Pack varies and is dependent on the Hog Tool models being used, required head rotation speed, operating height above the Hog Pack, type of material being removed and other variables. Some tools will operate more than 100 feet from the Hog Pack, while other tools may not operate satisfactory when used over 50 or 75 feet from the unit.

Hog Technologies Customer Service can assist you with more specific information regarding typical maximum operating distance for the Hog Tools you intend to use, your operating circumstances and the material being removed.



1. Port Group 1

2. Port Group 2

3. Part Group 3 (not used)

4. Master Port Group

Hydraulic Manifold, Valves and Hose Connections

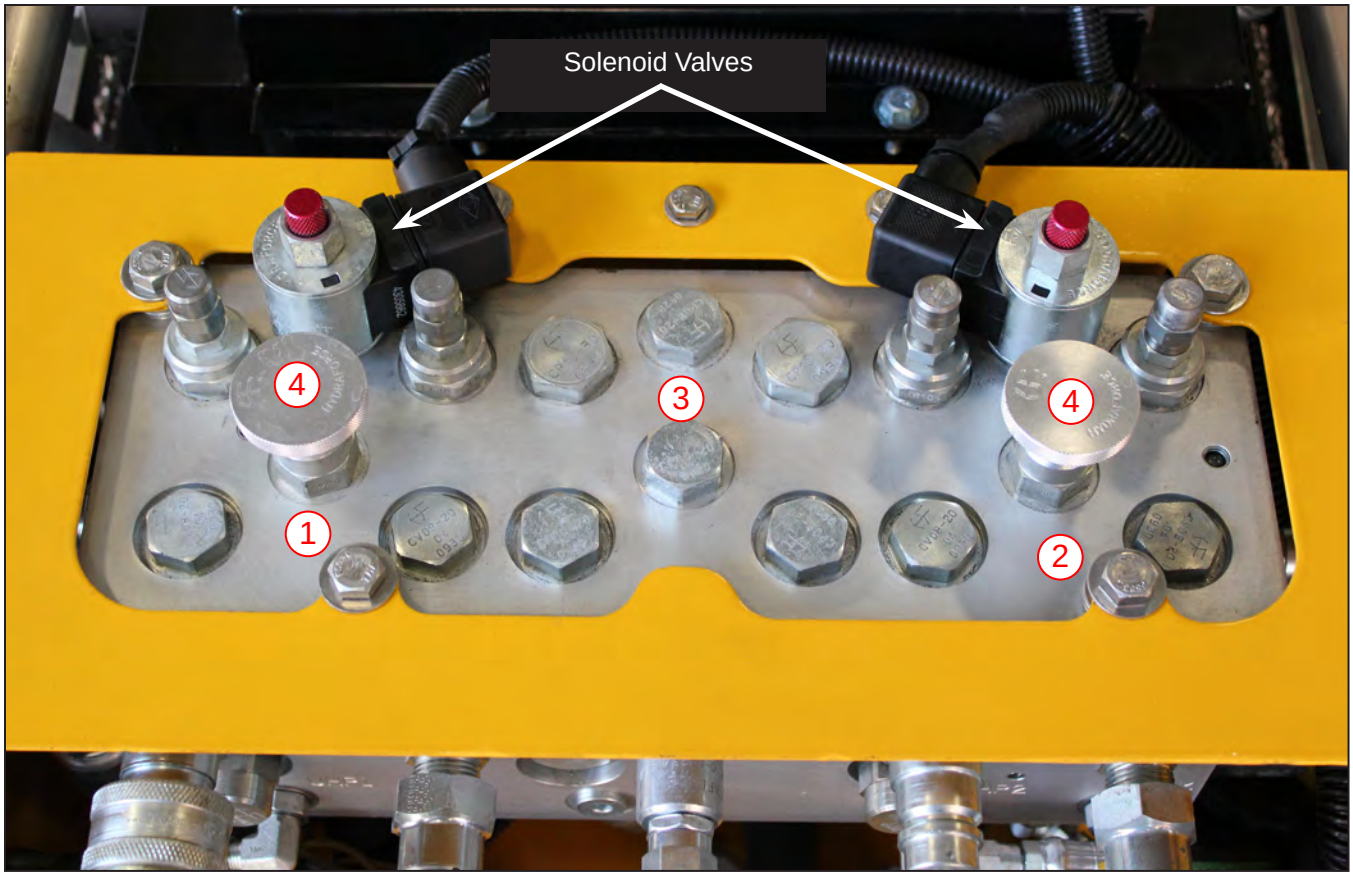
The Hydraulic manifold is equipped with three, individual sets of high pressure oil ports and control valves that provide hydraulic oil pressure from the manifold to the hoses and hydraulic motors that rotate the Hog Tool spray bars or spray heads. The ports also provide hydraulic oil pressure to the hydraulically activated by-modes valves that turn the high pressure water to the Hog Tools ON and OFF.

The manifold is a universal design that is used on the Hog Pack and on other Hog Technologies units with more horsepower and larger hydraulic pumps. The larger units can use all three oil Port Groups. However, the Hog Pack, because of its compact size, only has enough horsepower and hydraulic pump capacity to use two sets of oil ports, Port Group 1 and Port Group 2. Therefore, Port Group 3 is plugged and not used.

Each Port Group is numbered and equipped with one electrically activated solenoid valve that controls the hydraulic oil flow to the supply and return hose quick connectors and high pressure water by-mode valve for the Hog Tool connected to that Port Group. There is also a hand operated valve that is used to regulate the oil flow and RPM for the Hog Tool spray head whenever oil flow is activated by the solenoid valve. The Port Groups are completely isolated from one another, providing each operator with positive, absolute control of the Hog Tool.

Port Groups and Needle Valves

Each numbered Port Group is equipped with two needle valves, one on each side of the mode valve, that are used to adjust the oil pressure to the by-mode valves and the hydraulic motors that rotate the spray bars or spray heads on the hog tools. The needle valves that set the pressure for the by-mode valve ports are factory set to 500 psi, the operating pressure required to activate the by-mode valves. They should not require further adjustment unless the needle valves require service or cleaning. The needle valves that set the pressure for the ports that supply the Hog Tool

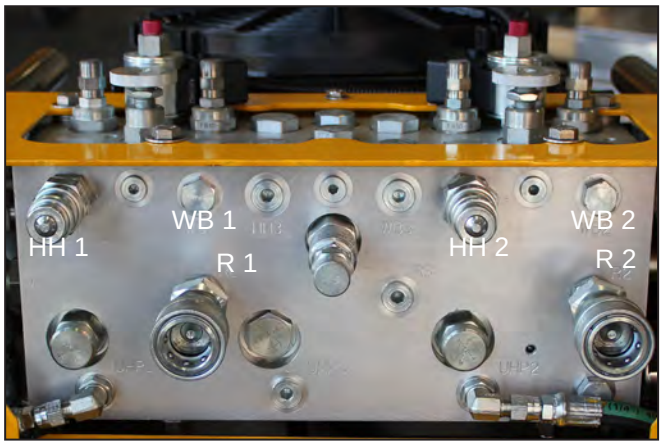


1. Port Group 1
2. Port Group 2
3. Part Group 3 (not used)
4. Port Group Hand Operated Control Valves

hydraulic motors are factory set to limit the pressure and maximum RPM of the Hog Tool spray bar or spray head connected to the Port Group.

In addition to the needle valves, each Port Group is equipped with two supply ports that are labeled with a letter code and number that corresponds to the Port Group number. Hydraulic hose are connected to the ports via special quick connect fittings.

The port labeled HH (#) is used to supply hydraulic oil to Hand Hogs or Hog Wallers. The spray head speed, 0 to maximum speed as pre-set by the needle valve, is regulated by the adjustable control valve on the manifold. The maximum pressure is preset at the factory to limit the Hand Hog spray head rotation speed to 4000 RPM maximum.
The port labeled WB (#) is used to supply hydraulic oil to Ground Hog walk behind (WB) units. The spray bar speed, 0 to the maximum speed as pre-set by the needle valve, is regulated by the adjustable control valve on the Port Group, or another adjustable control valve on the Ground Hog.



Labeled Hydraulic Hose Connection Ports
Hose Quick Connection Fittings

CAUTION

CONNECTING THE GROUND HOG (WALK BEHIND) TO THE PORTS LABELED HH WILL CAUSE SEVERE DAMAGE TO THE MANIFOLD AND/OR GROUND HOG. NEVER CONNECT THE GROUND HOG TO THE HH PORTS.

The maximum pressure is preset at the factory to limit the Hand Hog spray bar rotation speed to 3000 RPM maximum.

Hydraulic oil is returned to the each Port Group by the return hose attached to the quick connect fitting at port R1, for tools attached to Port Group 1 or R2, for tools attached to Port Group 2.

NOTICE:
Each Hog Tool has a maximum spray head or spray bar RPM that is unique to the tool. Refer to the tool operating manual or contact Hog Technologies Customer Service for the maximum RPM for the Hog Tools you intend to use.

Solenoid Valve Operation

A 12-volt DC solenoid activated valve called is located on each Port Group. The valve solenoid circuits are energized by the onboard battery and protected by in-line fuses located near the battery. Switches activated by the trigger or control levers on the Hog Tools control the valves. Heavy duty wire harnesses with quick connect plugs connect the Hog Tool switches to the Hog Pack solenoid valves.

When the trigger or lever on the Hog Tool activates (opens) the valve, pressurized hydraulic oil is supplied to the by-mode valve, which turns ON the high pressure water supply, and to the hydraulic motor on the Hog Tool that rotates the spray bar or spray head. When the trigger or lever is released, the valve closes, stopping the flow of high pressure hydraulic oil to the Hog Tool hydraulic motor and to the by-mode valve, which turns OFF the high pressure water flow.

Each Port Group valve is equipped with a knob on the top of the solenoid that manually opens the valve for testing purposes and for adjusting the needle valves to set maximum pressure to the by-mode valve or Hog Tool hydraulic motor. The manual position is intended to be used only for testing and adjustment purposes.
To the solenoid and open valve manually, rotate the knob until it clicks into the position. When testing or adjustments are complete, rotate the knob until it clicks into the normal operating position. The knob must be returned to the normal operating position before waterblasting operations begin.

Solenoid Bypass Knobs

DANGER

OPERATING THE HOG PACK WITH THE SOLENOID VALVE IN THE POSITION IS EXTREMELY DANGEROUS.

THE OPERATOR CANNOT TURN OFF THE HIGH PRESSURE WATER SUPPLY OR HYDRAULIC PRESSURE TO THE SPRAY HEAD MOTOR IF THE MODE VALVE IS IN MODE. IN SOME SITUATIONS, THIS COULD CAUSE THE OPERATOR TO LOSE CONTROL OF THE HOG TOOL AND ALLOW THE HIGH PRESSURE WATER STREAM TO CONTACT THE OPERATOR'S BODY OR THE BODY OF OTHER PERSON, RESULTING IN SERIOUS INJURY OR DEATH.

ADDITIONALLY, AN OUT OF CONTROL ULTRA HIGH PRESSURE TOOL CAN WHIP AROUND AND CAUSE SEVERE DAMAGE TO EQUIPMENT AND INJURY OR DEATH TO PERSONNEL HIT BY THE TOOL.

NEVER OPERATE THE HOG PACK AND HOG TOOL WITH HIGH PRESSURE WATER SUPPLIED WHEN THE MODE VALVES ARE IN MODE OR NOT OPERATING PROPERLY.

IF A MODE VALVE IS NOT OPERATING PROPERLY, SHUTDOWN WATERBLASTING OPERATIONS IMMEDIATELY, STOP ALL ENGINES AND PUMPS. THEN FIND AND CORRECT THE PROBLEM BEFORE RESUMING OPERATIONS.

Setting the Needle Valves

The needle valves on the Port Groups are preset at the factory and should not require adjustment unless the system needs to be disassemble for service or cleaning. You should contact Hog Technologies Customer Service for assistance and proper adjustment procedures if the needle valves on your Hog Pack require adjustment.

By-Mode valves

There are two by-mode valves, one for each manifold Port Group and Hog Tool, located on each side of the Hog Pack. The valves are hydraulically activated by the Port Group valves on the manifold and turn the high pressure water supply to the Hog Tool ON and OFF. By-mode valves are designed to stop the high pressure flow of water to the Hog Tool when the trigger or control handle on the tool is released. By-mode valves can be set to bypass all pressure when using one tool, or to maintain a specified pressure in the UHP supply system when waterblasting is stopped, thus enabling two Hog Tools to operate simultaneously.

When two Hog Tools are in operation, high pressure water is supplied by the by-mode valve and controlled by the trigger or lever on each tool. Each by-mode valve is pre-set to provide a specified water volume and pressure to the tool. The valve will dump excess water through a bypass line if the supply water volume exceeds the pre-set amount. Therefore, when two tools are operating and one operator stops blasting, the by-mode valve for his tool stops the water flow to the tool. The valve diverts the excess water to the bypass hose, preventing a pressure rise in the UHP supply system while maintaining the pre-set pressure for the other tool still in operation. If both operators stop blasting, the by-mode valve for each tool stops the water flow to the tool and diverts excess water to the bypass hoses to maintain the preset UHP supply pressure in the system. The UHP pump remains under load and the preset maximum blasting pressure is immediately available when blasting resumes.

Special nozzles called mushrooms installed in the bypass dispenser tube fitting on the by-mode valves are calibrated to match the required water flow of the Hog Tool activated by the by-mode valve. For example; if two Hog Tools are operating and equipped with spray heads that are nozzled to require 3 gallons per minute (GPM) during operation, the mushroom in each by-mode bypass dispenser tube fitting must be calibrated at 3 GPM to allow the same flow rate through the bypass hose when the tool is shut off. This will allow the operating pressure in the high pressure water system to remain constant when blasting operations for one or both tools is stopped.

By-Mode Valve

To install the mushroom, remove the dispenser tube on the by-mode valve and remove the nozzle. Place the proper sized mushroom on the back side of the nozzle, then reinstall the nozzle and dispenser tube. Hog Technologies provides a selection of mushrooms with different sized orifices to accommodate wide range of flow requirements. Contact Hog Technologies Customer Service for more information regarding mushrooms and flow charts.

The by-mode valves are an important safety feature that must be operating properly whenever waterblasting operations are underway. If either valve begins to malfunction, stop blasting operations immediately, shut down all pumps and engines, then find and correct the problem before resuming operations.

WARNING

A BYPASS MUSHROOM WITH A FLOW RATING LESS THAN THE HOG TOOL SPRAY HEAD CAN CAUSE SUDDEN EXCESSIVE PRESSURE IN THE UHP WATER SYSTEM WHEN THE TOOL IS STOPPED. THIS CAN CAUSE A BURST DISC TO BLOW ON THE HIGH PRESSURE PUMP; SEVERE DAMAGE TO HOG TOOLS AND THE HT500; OR CAUSE A HOSE TO BURST, CAUSING SEVERE INJURY TO OPERATORS OR OTHER PERSONNEL. ALWAYS MAKE SURE THE GPM FLOW OF THE MUSHROOM IN THE BYPASS DISPENSER TUBE FITTING MATCHES THE FLOW RATE REQUIRED FOR THE HOG TOOL SPRAY HEAD. NEVER CHANGE HOG TOOLS OR SPRAY HEAD NOZZLE SIZES WITHOUT CHANGING THE BYPASS NOZZLE TO MATCH THE FLOW OF THE SPRAY HEAD.

You should not stop blasting with both units for more than a couple of minutes without releasing UHP pressure at the pump bypass valve (Dump Valve) or by reducing UHP pump engine RPM to idle.

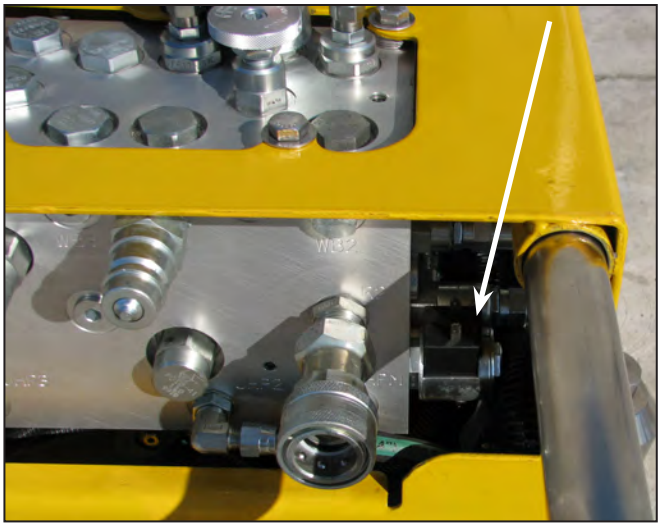
NOTICE:
If UHP water is being supplied by a Hog Technologies Stripe Hog truck or skid unit and your Hog Pack Master Valve Port Group is connected to that unit, the Dump Valve will open and high pressure water will stop automatically when all waterblasting operations stop at the Hog Pack. Refer to the next section for more information on the Master Valve Port Group.

Master Valve Port Group

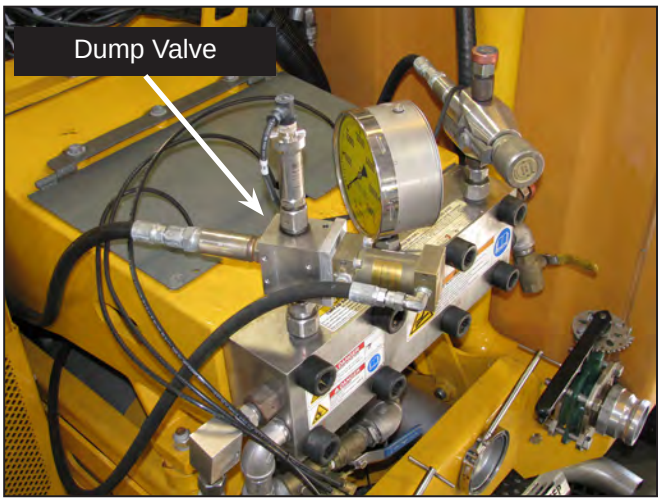
The Master Valve Port Group on the manifold provides the operator with the option to connect the Hog Pack control circuits and hydraulic system to a hydraulically activated bypass valve (Dump Valve) at the UHP pump. Because of the variety of UHP pumps and valve systems that could be used to provide high pressure water to the Hog Pack, this circuit is not wired or plumbed with hydraulic hose fittings at the factory.

The Master Valve Port Group is located on the right side of the manifold. A 12-volt, solenoid activated, mode valve controls the flow of hydraulic oil to UHP pump Dump Valve, tuning the valve ON and OFF. The Master Port Group is equipped with two needle valves that are used to adjust the oil pressure supplied to the Dump Valve. The needle valves will need to be set to the pressure specifications for the Dump Valve the system is activating.
Two labeled hydraulic oil ports, one for the pressure hose and one for the return hose provide the hydraulic oil that activates the Dump Valve. Hydraulic hoses are connected to the ports via special quick connect fittings.

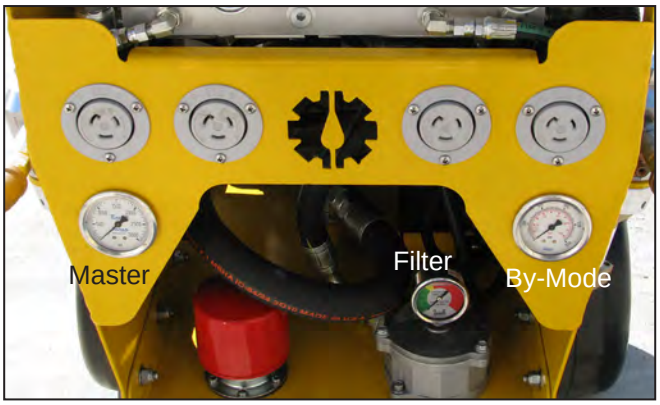
The Master Valve Port circuit is typically wired to sense when all Hog Tools connected to the Hog Pack are shutdown. The circuit opens the valve which sends pressurized hydraulic oil to the UHP pump Dump Valve and immediately drops the high water pressure supplied to the Hog Pack to near 0. When waterblasting operations resume, the circuit closes the Dump Valve and high pressure is immediately provided to the Hog Pack and active tools.



Master Valve Port Group and Solenoid



Typical Hog Technologies Stripe Hog Truck UHP Pump and Dump Valve



Manifold Pressure Gauges & Hydraulic Oil Filter Gauge

NOTICE:
The optional Master Port Group wiring harness, hydraulic hose connections and pressure adjustments are unique to the truck or skid mounted system supplying high pressure water to the Hog Pack. Therefore, the harness is sold in a kit that includes the wire harness and other components required to connect the Master Port Group on your Hog Pack to the specific Hog Technologies Stripe Hog truck or skid mounted unit. The kits are available from Hog Technologies by contacting Hog Technologies Customer Service or on the web at www.stripehogsupport.com.

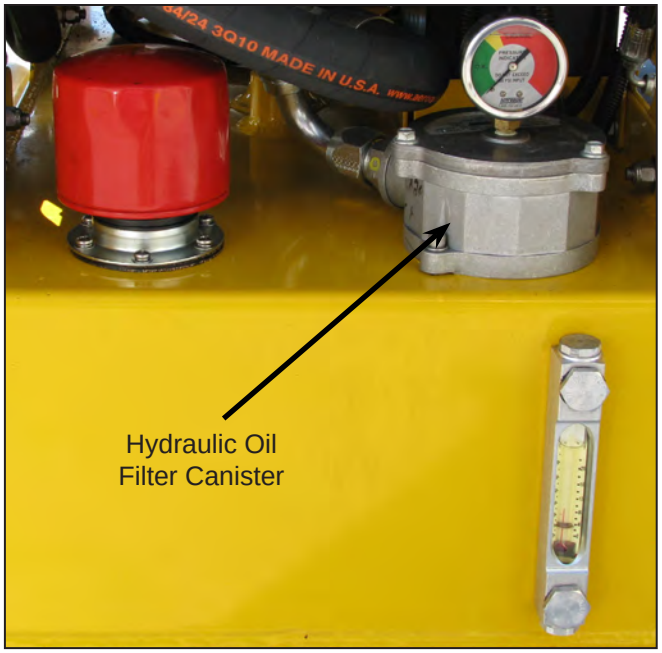
Pressure Gauges

The pressure supplied to the hydraulic manifold and the by-mode valves is monitored by two gauges located in a panel on the rear of the Hog Pack, below the harness plugs. The gauge on the left side of the panel monitors the master pressure to the hydraulic manifold and the gauge on the right side of the panel monitors hydraulic pressure to the by-mode valves when they are activated. The pressure is preset at the factory for the Power Pack purchased and/or the Hog Tools ordered with your unit, therefore, the pressure readings on the gauges when the unit was new should be considered normal. If the readings deviate from the normal range or if you have any questions regarding the pressure readings for the hydraulic system on your Hog Pack, please contact Hog Technologies Customer Service.

Another gauge that monitors the pressure in the hydraulic oil filter is located on top of the filter canister just below the manifold gauge panel. This gauge monitors the resistance of hydraulic oil flowing through the filter, allowing the operator to monitor the condition of the filter element. The needle on the gauge should always be in the green zone when the unit is operating. IF the needle moves to the yellow zone, the filter is dirty and requires changing as soon as possible. Never operate the Hog Pack when the needle is in the red zone. The red zone indicates the filter is too dirty for the hydraulic system to operate properly and damage to system could result.

Hydraulic Oil Cooler

The hydraulic oil cooler is on top of the Hog Pack, above the fuel tank. The fan is activated whenever the engine ignition key is in the ON position. The fan draws a significant amount of current and will quickly drain the battery if the ignition key is left on. You should make sure the key is turned OFF whenever the engine is not running.



Hydraulic Oil Filter Pressure Gauge, Oil Fill Cap
Oil Level Sight Glass & Thermometer

Hog Pack and Hydraulic Oil Cooler

Oil coolers loose efficiency if they become dirty. It is important to inspect the cooler at least once a week and clean it as necessary. If the cooler is not cleaned regularly, debris can buildup to the point where the cooler becomes ineffective, causing the oil and components to overheat. This can result in extreme damage to the hydraulic pump and other components.

It is a good idea to check and clean the cooling fins on the air cooled motor at the same time the oil cooler is inspected. Built up debris on the motor cooling fins will reduce their ability to transfer heat, causing the engine to overheat.

2.6 Hydraulic, UHP Hoses & Electrical Cables

General

The condition of the hoses is critical to the proper operation of the Hog Tools. It is important that they be stored and handled properly to ensure they are not damaged or kinked during deployment and storage. It is also important that they are routed such that tight bends and kinks are completely avoided and that the hoses and electrical cables are properly protected to reduce chaffing.

The hydraulic and UHP pressure hoses are under extremely high pressure that can cause severe injury or death to someone near a damaged hose. The high pressure hoses and electrical cables that run from the Hog Pack to the Hog Tool should always be protected by a webbing style anti-chaffing material. The anti-chaffing material helps prevent wear and damage to hoses and electrical cables. Anti-chaffing also can reduce damage or injury if a hose or fitting were to burst.

Protection from damage caused by traffic in the work area should be considered during the deployment of the hoses and electrical cables. It is recommended that hoses and cables routed in or near traffic areas be marked with cones and signs warning of high pressure. This is particularly important for the hoses and electrical cables run between the UHP pump and the Hog Pack.

When storing hoses they should be neatly coiled. Store the hoses in a safe location to keep them clean and to reduce the possibility for damage and deterioration. Covering exposed fittings with tape or plastic covers designed for this purpose will keep them clean and reduce the possibility for dirt to enter the fittings and hoses.

Hydraulic Hoses

Hydraulic hoses with the proper disconnect fittings for the Hog Tool and Hog Pack are supplied with the Hog Tool. The hose pressure rating, diameter and fittings are selected to provide maximum safety and performance for the Hog Tool when it is connected to the Hog Pack. If replacement hoses are required, you should only use hoses from Hog Technologies or hoses with the same specifications as the originals.

Hydraulic Hoses and Electrical Control Harness

When connecting hydraulic hoses, always make sure the quick connect fittings are clean before making the connection. Dirty connectors are a major cause of hydraulic motor failure and valve problems.

UHP Hoses

Waterblasting systems operate at ultra high pressures of up to 40,000 PSI (2,758 Bar). Therefore, it is critical that the operator and maintenance personnel inspect the high pressure hoses, fittings, nozzles and other components frequently. A visual inspection of the high pressure system should be conducted each day before operating the unit. Any hose or component that is questionable or shows any sign of deterioration, wear or leakage should be replaced immediately and before operating any waterblasting equipment. A more thorough inspection of all high pressure pumps and components should be conducted at each routine service interval.

Check the condition of threads prior to connecting any fittings or hoses. Use an anti-seize compound on all fitting and hose threads to prevent "galling." Galling is the term for thread damage that occurs from heat build up in the threads of stainless steel fittings as they are tightened. Galling will destroy the threads and lockup the fittings before they are tight, destroying the fittings and/or hose ends rendering them unusable. Be careful not to get anti-seize on the seating area of any fitting. When connecting UHP hoses, always make sure

the quick connect fittings are clean before make the connection. Dirty connectors are a major cause of clogged or damaged nozzles .

Always test the system following repairs or at the start of each shift by operating the system at low pressure first. Then slowly bring the equipment up to operating pressure while carefully monitoring the replaced components.

WARNING

REFER TO THE GENERAL SAFETY SECTION OF THIS MANUAL FOR A LIST OF PRECAUTIONS TO BE OBSERVED WHEN OPERATING OR SERVICING ULTRA HIGH PRESSURE EQUIPMENT. USE ONLY THOROUGHLY TRAINED PERSONNEL TO PERFORM MAINTENANCE OR REPAIRS ON THE HIGH PRESSURE SYSTEM.

Take care of Your Hoses. Protect the hoses from contact with sharp objects, abrasive surfaces and foot or wheel traffic. Add additional anti-chaffing material to protect hoses when necessary. Never operate the high pressure system with a hose that is questionable.

When replacing damaged or worn hoses, check the burst rating marked on the hose. Do not use a high pressure hose that does not have a listed burst rating or with a burst rating of less than 60,000 PSI (4,137 Bar). To ensure you are using the correct hoses, we recommend that you only use hoses purchased from Hog Technologies.

Retire a UHP Hose from Service if:

A) Cover is damaged and reinforcing wires are exposed to rust and corrosion;

B) Cover is loose, has blisters or bulges;

C) Hose has been crushed or kinked;

D) End fitting shows evidence of damage, slippage or leakage;

E) Hose has been exposed to pressures of 2 times the operating pressure.

F) Hose has been kinked, stressed or stretched.

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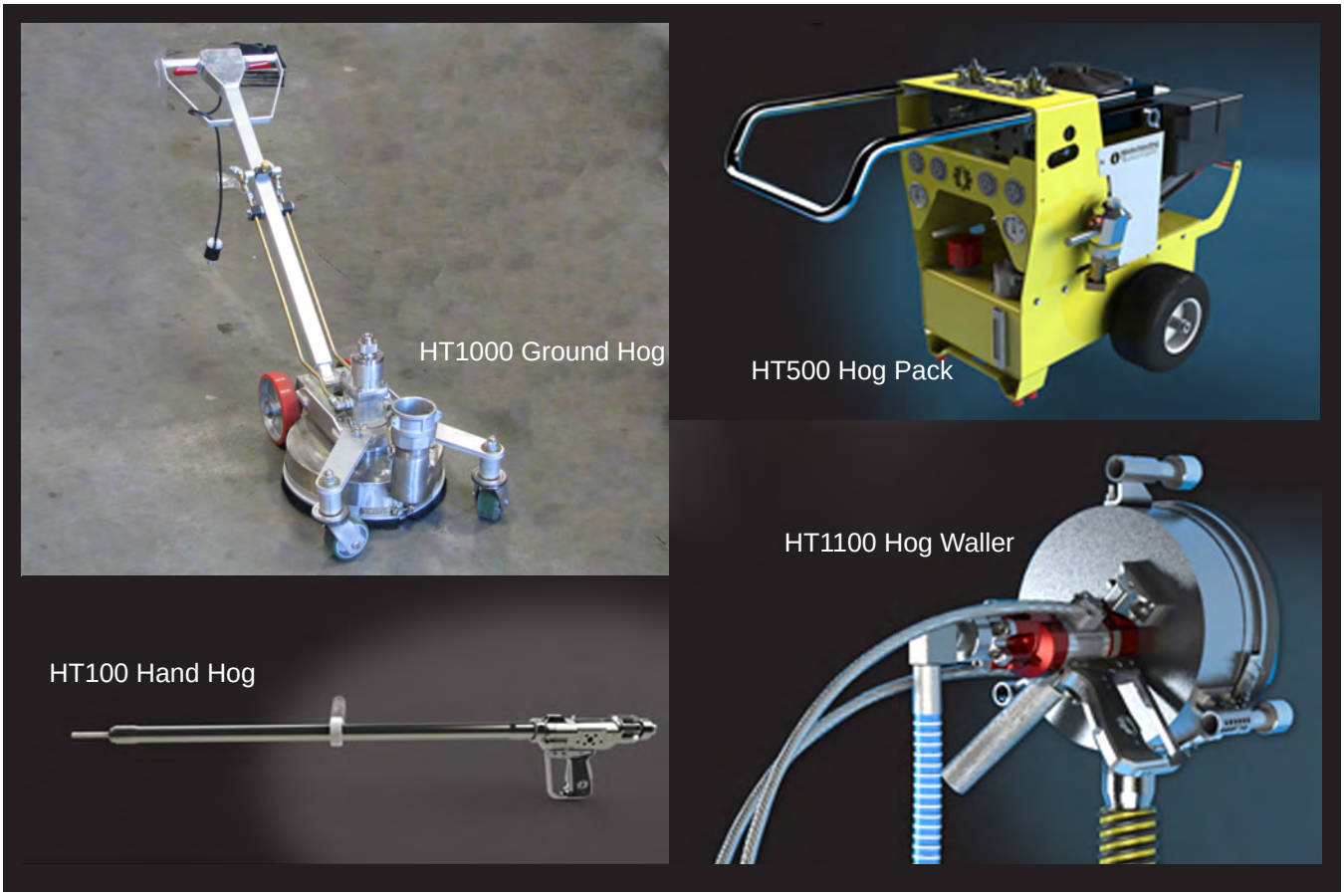
Hog Technologies Tools



4.1 Hog Tools (Optional)

Hog Technologies builds a variety of useful tools called Hog Tools that are designed to be used with your HT500 Hog Pack. The most common tools are the HT1000 Ground Hog, the HT100 Hand Hog and the HT1100 Hog Waller. These tools require hydraulic power, 12-volt DC electrical power and a high pressure water. The Ground Hog and Hog Waller also require vacuum.

This section provides a brief overview of how these tools. An operating manual that ships with each Hog Tool provides more detailed information on their operation, safety and maintenance. Handheld, ultra high pressure waterblasting tools can be extremely dangerous if they are not used properly and all safety precautions followed. You should read the operating manual for each tool and completely understand the operation, maintenance and all safety precautions before operating the tool.

⚠ WARNING ⚠

INJURIES FROM ULTRA HIGH PRESSURE WATERBLASTING CAN BE VERY SERIOUS AND RESULT IN FATAL INJURIES. PROPER OPERATION OF HIGH PRESSURE WATERBLASTING TOOLS IS ESSENTIAL, PARTICULARLY WITH HANDHELD UNITS BECAUSE THE OPERATOR IS CLOSE TO THE BLAST HEAD.

THE FOLLOW PRECAUTIONS APPLY:

- **ALWAYS THE FOLLOW SAFETY GUIDELINES LISTED IN THE HOG TOOL OPERATION MANUALS.**
- **MAKE SURE ALL SUPPORT PERSONNEL ARE A SAFE DISTANCE FROM THE WORK AREA BEFORE THE PRESSURE PUMP IS ENGAGED.**
- **MAKE SURE THAT THE OPERATOR HAS READ THE MANUAL FOR THE TOOL AND HAS BEEN TRAINED IN THE PROPER USE OF HANDHELD WATERBLASTING EQUIPMENT.**
- **MAKE SURE THE OPERATOR AND ALL PERSONNEL ARE EQUIPPED WITH REQUIRED SAFETY EQUIPMENT INCLUDING HARD HATS, GLOVES, EYE AND EAR PROTECTION, ETC.**
- **NEVER PUT HANDS, FEET OR ANY PART OF YOUR BODY IN OR NEAR THE HIGH PRESSURE STREAM.**
- **NEVER ALLOW AN INEXPERIENCED PERSON TO OPERATE A HANDHELD, HIGH PRESSURE WATERBLASTING TOOL WITHOUT PROPER TRAINING.**

4.2 Hog Tool Waterblast Systems

Hog Technologies provides many different truck and skid mounted UHP systems that are designed to provide UHP water and vacuum for the operation Hog Tools.

Some Strip Hog trucks and skid units can provide UHP water, Hydraulic power, 12-DC Power and vacuum to Hog Tools. Other Waterblasting systems provide only UHP water and require the HT500 Hog Pack to provide the hydraulic and 12-volt DC electrical power. The support system required is unique to the Hog Tools you will be using and the materials being removed.

Hog Technologies manufactures a variety of specialized UHP pump and power systems custom built for specialized operations. Contact Hog Technologies for more information on available truck and skid mounted waterblasting systems.

4.3 HT100 Hand Hog Blasting Guns

The Hand Hog blasting guns require UHP water, hydraulic power to rotate the blasting head and 12-volt DC electrical power. They do not require vacuum. A skid mounted UHP pump connected to the HT500 Hog Pack will provide the support systems necessary to operate the blasting guns.

When the systems are properly connected and activated, all functions of the Hand Hog blasting guns are controlled by the trigger on the gun.

4.4 HT1000 Ground Hog and HT1100

The HT1100 Hog Waller and HT1000 Ground Hog are equipped with vacuum blasting heads that are designed to be attached directly to a truck or skid mounted vacuum system. They also require UHP water, hydraulic power to rotate the blasting head, and 12-volt DC electrical power which will be provided by a truck or skid unit or by an HT500 Hog Pack. Because of the vacuum debris recovery required for these tools, the support equipment for tools with vacuum is more involved than equipment required for the HT100 Blasting Guns.

When properly connected to support systems, Hog Tools with vacuum recovery will continuously move debris from the blasting head to the vacuum debris tank on the power system. The UHP water and spray head rotation is controlled by the trigger or control levers on the Hog Tools.

Contact Hog Technologies for more information regarding UHP power systems that include vacuum debris recovery systems.

Hog Pack

5.1 Equipment Setup

1. Position the truck or skid mounted UHP pump as close to the Hog Pack as possible. Place the unit so the vacuum and UHP pressure hoses can be routed to minimize vacuum loss or tight bends in the hoses. Consideration should also be given to routing the hoses so they can be protected from vehicle and foot traffic.
2. Position the Hog Pack as close to the work area as possible. Make sure the location is level and protected from vehicle and foot traffic or other activities that could cause damage to the unit.
3. Layout the high pressure water hoses, hydraulic hoses and electrical cable from the UHP power system to the Hog Pack. Make sure the UHP and hydraulic hose connectors are clean, coat the threads with anti-seize and connect them to the fittings on the pump and Hog Pack By-Mode Valves. Then connect the Master Valve electrical cable and hydraulic hoses, if used.
4. Layout the high pressure water hoses, hydraulic hoses and electrical cables from the Hog Pack to the Hog Tools.
5. Make sure the hydraulic hose connectors are clean, coat the threads with anti-seize and connect them to the fittings on the Hog Tool. Then connect the quick connectors to the proper ports on the Hog Pack manifold.
6. Make sure the UHP hose connectors are clean and properly connect them to the By-Mode Valves. Make sure to use anti-seize on the threads. Then connect the hose to the swivel seal connection on the Hog Tool and hand tighten. Be sure to check the swivel seal before making the connection and replace the seal if necessary.
7. Connect the electric control cables to the tool and proper plug on the Hog Pack.
8. Connect the proper sized bypass hoses to the bypass fittings on the By-Mode Valves to channel bypass water a safe distance away from the Hog Pack when the flow of high pressure water is stopped at the Hog Tool. Make sure to coat the threads with anti-seize.
9. Inspect all hose fittings and electrical connections. Make sure they are tight and properly connected. When the inspection is completed the equipment is ready for operation.

5.2 Emergency Shutdown

HT500 Emergency Shutdown

1. IN ADDITION TO THE HOG TOOL OPERATORS, A SUPPORT PERSON SHOULD BE MONITORING THE OPERATION OF THE HOG PACK AND UHP SUPPORT SYSTEMS WHENEVER WATERBLASTING OPERATIONS ARE UNDERWAY. THE SUPPORT PERSON SHOULD ALWAYS BE IN POSITION TO IMMEDIATELY PERFORM THE FOLLOWING EMERGENCY OPERATIONS.
2. IMMEDIATELY SHUTDOWN THE HT500 ENGINE. THIS WILL INSTANTLY SUSPEND OPERATIONS OF THE ENTIRE SYSTEM FROM THE HOG PACK TO THE HOG TOOLS.
3. SHUTDOWN THE ENGINE ON THE UHP POWER SYSTEM. THIS WILL INSTANTLY SUSPEND HIGH PRESSURE SENT FROM THE UHP PUMP TO THE HOG PACK. IT WILL ALSO SHUTDOWN THE VACUUM SYSTEM, IF CONNECTED. ALL WATERBLASTING SYSTEMS ARE NOW SHUTDOWN.
4. WHEN THE SITUATION PERMITS, RETURN ALL SWITCHES TO THE OFF POSITION AND RESET THE THROTTLES ON THE HOG PACK AND UHP SYSTEM ENGINE CONTROLS TO IDLE.

5.3 HT500 Hog Pack Routine Start Up/Shutdown

Before operating the system, check the fluid levels in all components. A thorough understanding of the component systems and their operation is essential to the proper operation the Hog Tool and Hog Pack. This manual, the manuals for the Hog Tools and the associated manufacturers' information is provided to enhance your knowledge of the Hog Pack. Make sure you have read them carefully and fully understand the operation of the units.

You should walk around the UHP power unit and the Hog Pack and visually inspect the high pressure hoses, hydraulic hoses, vacuum hoses, and all waterblasting system components for obvious signs of leaks, wear and deterioration. Do not operate the unit until all questionable components are repaired or replaced.

CAUTION

THE BLASTING SURFACE WILL BE DAMAGED IMMEDIATELY IF HIGH PRESSURE BLASTING IS ACTIVATED WITHOUT THE HOG TOOL MOVING. ALWAYS MAKE SURE THE HOG TOOL IS MOVING BEFORE SUPPLYING HIGH PRESSURE TO THE SPRAY HEAD OR SPRAY BAR.

Pre-start Inspection Check List:

1. Inspect all hoses for chaffing and signs of wear.
2. Check fuel levels and make sure you have enough for the shift.
3. Check engine fluid levels on UHP systems and the Hog Pack. Refer to the engine and UHP system operating manuals.
4. Check the fluid level in the hydraulic system.
5. Check all waterblasting and vacuum components for oil leaks, damaged or loose bolts and parts.
6. Inspect the Hog Tool for loose components and damage.
7. Check clean water tank level and fill if necessary.
8. Walk around skid and Hog Pack. Visually check all components and look for obvious problems.

Start UP Procedure

1. Start the UHP pump system and allow it to warm up for several minutes.
2. Make sure all Hog Tool switches are in the OFF position and throttle is set to the START position.
3. Start the HT500 engine following the start up procedure in the engine manual.
4. Allow the engine to warm up at slow speed for several minutes.
5. Make sure the UHP system is operating normally and ready for waterblasting.
6. With the Hog Tools in the hands of the operators, the support person monitoring and controlling the Hog Pack and support UHP systems and all personnel clear, raise the throttle on the Hog Pack to full RPM.
7. Activate the Hog Tools and gradually raise the RPM on the UHP system engine. Monitor all systems as the pressure increases and be ready to shutdown the system if a problem occurs.
8. Check the nozzle spray pattern and the spray bar weep holes for leaks.
9. Check all High pressure hose fittings and the Hog Tool components for leaks. If leaks are found, shutdown all systems and correct the problem before waterblasting.

NOTICE:
Any leaking UHP fittings, swivel seal or nozzles must be corrected. High pressure water leaks will quickly damage fittings, seals or blasting heads if they are not addressed.

10. With the pressure set and Hog Tool nozzles working properly, Waterblasting operations can begin.

WARNING

ANY CONTACT WITH HIGH PRESSURE WATER IS VERY DANGEROUS AND CAN BE FATAL! USE EXTREME CAUTION DIRECTING THE PRESSURE STREAM WHEN HIGH PRESSURE IS ENGAGED.

Shutdown Procedure:

1. Release the trigger or control levers on the Hog Tools. UHP pressure at the Hog Tools will immediately be suspended.
2. If the Master Valve system is connected from the Hog Pack to the UHP pump system, the pressure to the Hog Pack will be reduced to near "0" when the Hog Tools are shutdown. Otherwise the support person should immediately reduce the UHP pressure and reduce the RPM on the UHP system engine.
3. Turn the throttle on the Hog Pack engine to idle speed and allow the engine to run for several minutes to cool internal components.
4. Turn the Hog Pack engine OFF and allow the engine and hydraulic components to cool.
5. When safe to do so, disconnect the hoses and cables.
6. Properly store and secure all hoses. Make sure all hose fittings are protected from dirt and damage with tape or plastic caps designed to protected the fittings.
7. Properly store and secure the Hog Pack.

5.4 Hog Pack Operating Guidelines

Hog Technologies offers a comprehensive training program that dramatically reduces the learning curve and increases productivity. If you are new to waterblasting, we highly recommend that you consider this factory training for your operators. You can also contact Hog Technologies Customer Service department for assistance in choosing spray bars and nozzles or additional information regarding the factory training program.

Do's

- **Only allow trained personnel to operate the Hog Pack and waterblasting equipment.**
- **Make sure the fuel tank is full at the beginning of each shift.**
- **Allow the engine and hydraulic components to warm up for several minutes before beginning waterblasting operations.**
- **Make sure the hydraulic oil temperature is at least 60 degrees Fahrenheit (16 degrees Celsius) before beginning waterblasting operations.**
- **Have a trained support person monitoring the Hog Pack and UHP support system at all times during waterblasting operations.**
- **Visually check all hoses, fittings and Hog Pack components for leaks or other problems frequently during waterblasting operations.**
- **Immediately stop waterblasting operations if leaks develop or any component of the Hog Pack is not operating properly.**
- **Allow engine to idle for several minutes during routine shutdown to cool internal components and hydraulic oil.**

Don’ts

- **Do not allow untrained personnel to operate the Hog Pack or waterblasting equipment.**
- **Do not operate the Hog Pack without a support person to monitor Hog Pack systems and be able to immediately shut it down in an emergency.**
- **Do not continue blasting with fittings, hoses or components that are leaking or not working properly.**
- **Do not operate the Hog Pack with the Port Group solenoid valves in bypass mode.**
- **Do not operate the Hog Pack if the Port Group solenoid valves or By-Mode UHP valves are not operating properly.**
- **Do not allow dirt and debris to build up in the engine cooling fins or hydraulic system oil cooler that will prevent proper cooling.**
- **Do not refill the fuel tank when the engine is hot.**
- **Do not allow the Hog Pack to run for extended periods at maximum RPM when the Hog Tools are shutdown.**
- **Do not allow UHP water to continue to be supplied to the Hog Pack By-Mode valves when the Hog Tools are shutdown.**

5.5 Operating in Freezing Conditions

- When using Hog Tools with vacuum blasting heads, allow the vacuum blower to operate for a couple of minutes after shutting down the high pressure water to clear waste water from hoses and dry out blower system.
- Remove the inlet and supply UHP hoses connected to the BY-Mode Valves and drain all water.
- Drain all water from UHP hoses and store properly.

CAUTION

IF YOU OPERATE AT FREEZING TEMPERATURES OR EVEN TEMPERATURES BELOW 60 DEGREES FAHRENHEIT (16^0 CELSIUS), IT WILL BE NECESSARY TO OPERATE THE HOG PACK AT IDLE SPEED ONLY UNDER LOAD, UNTIL HYDRAULIC OIL HEATS UP ABOVE 60 DEGREES FAHRENHEIT (16^0 CELSIUS).

HT500 Hog Pack

6.1 Lubrication Points & Grease Fittings

The wheels are the only grease points on the Hog Pack. There is a grease fitting on each wheel that should be greased once each month.

Refer to the Lubrication Chart in this section and the component manufacturer's operating manuals for lubrication specifications.

Wheel Grease Fitting

6.2 Engine

Engine

Proper engine maintenance is essential to the proper performance and reliability of the HT500 engine. Maintenance schedules and procedures are outlined in your engine owner's manual. They should be followed exactly.

Engine Daily Inspection:

- Fuel, oil, and cooling fins.
- Loose bolts, electrical connections.
- Trash build up.
- Air cleaner Condition.

Remove Battery Access Panel to Access Fuel Shutoff Valve or Fuel Supply Line Fitting at the Bottom of Fuel Tank

6.3 Fuel System

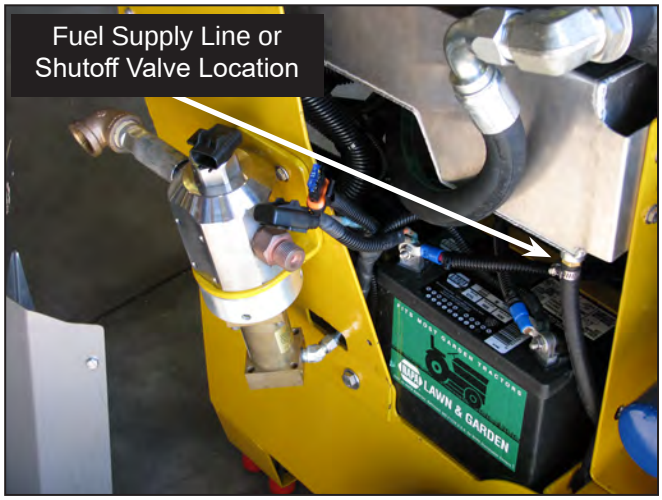
Daily:

- Inspect all connections, clamps and hoses for leakage and damage.

Periodic:

- Inspect all connections, clamps and hoses for leakage and damage or deterioration monthly. Replace as necessary.
- Inspect fuel tank mounting nuts and bolts and make sure they are tight monthly. Tighten all loose nuts and bolts as necessary.
- Replace the fuel filter as necessary or recommend by the engine manufacturer. Typically, the fuel filter is changed once or twice each year.
- The age of gasoline can affect engine performance. Chemical changes occur as the gasoline ages that can cause deposits and varnish in the fuel system as well as reduce the octane rating of the fuel. Severely degraded fuel can damage the engine, tank and lines. Therefore, if your Hog Pack is not being run enough to require at least one full tank of fresh fuel a month, a fuel stabilizer should be added to the gasoline to protect the fuel from degradation. The engine manufacturer can provide additional information on fuel degradation and fuel stabilizers recommended for your engine.

In many states, most gasoline is blended with ethanol alcohol. Ethanol is a strong solvent and can absorb water during periods of storage. You should refer to the engine operating manual for information regarding alcohol blended fuels and how it affects the operation of your engine.



Fuel Supply Fitting Location on Fuel Tank

Draining Contaminated Fuel:

If the fuel becomes contaminated or is old and deteriorated, the tank can be drained by the following procedure.

NOTICE:

Some fuel tanks are equipped with a shutoff valve at the bottom of the fuel tank. Other tanks are not equipped with a shutoff valve. Check the fuel tank installed in your Hog Pack and follow the instructions for the tank installed in your unit.

Tanks with no shutoff valve:

1. Make sure the engine is cool.
2. Clamp the fuel supply line between the fuel filter and carburetor.
3. Remove the fuel line from the engine, insert the line into an approved fuel container and release the clamp. Monitor the fuel as it drains to ensure that the container does not become overfilled.
4. Flush the tank with clean fuel if necessary. When the fuel is drained, change the filter and reconnect the supply line to the engine fuel fitting. Properly dispose of the contaminated fuel.
5. Fill the fuel tank with clean, fresh fuel and check all connections for fuel leaks.
6. Start the engine and allow it to run for several minutes. Shut the engine down and recheck the fuel system for leaks.

Tanks with a shutoff valve:

1. Make sure the engine is cool.
2. Remove the battery access cover on the left side of the Hog Pack. Turn off the fuel shutoff valve located on the bottom of the fuel tank.
3. Remove the fuel line from the engine, insert the line into an approved fuel container and turn on the fuel shutoff valve. Monitor the fuel as it drains to ensure that the container does not become overfilled.
4. Flush the tank with clean fuel if necessary. When the fuel is drained, change the filter and reconnect the supply line to the engine fuel fitting. Properly dispose of the contaminated fuel.
5. Turn off the fuel shutoff valve and fill the fuel tank with clean, fresh fuel.
6. Turn on the fuel shutoff valve and check all connections for fuel leaks.
7. Start the engine and allow it to run for several minutes. Shut the engine down and recheck the fuel system for leaks.
8. Repair any leaks found and reinstall the battery access cover.

Contact Hog Technologies Customer Service if you have any problems draining contaminated fuel from your fuel tank.

Fuel Filter in Fuel Supply Line

Changing the Fuel Filter

NOTICE:
Some fuel tanks are equipped with a shutoff valve at the bottom of the fuel tank. Other tanks are not equipped with a shutoff valve. Check the fuel tank installed in your Hog Pack and follow the instructions for the tank installed in your unit.

Tanks with no shutoff valve:

1. Follow the instructions for draining the fuel tank for tanks with no shutoff valve.
2. The fuel filter is located in the fuel supply line, below the engine. Once the fuel has been drained, gently pull on the fuel line until the filter is exposed.
3. Loosen the hose clamps and remove the old filter.
4. Install the new filter, making sure the arrow indicating the flow is pointed in the direction of the carburetor. Tighten the clamps.
5. Slide the filter and fuel in a gentle loop below the engine. Make sure the line is not kinked.
6. Reconnect the fuel supply fuel to the engine fuel fitting and fill the fuel tank.
7. Check all connections for fuel leaks.
8. Start the engine and allow it to run for several minutes. Shut the engine down and recheck the fuel system for leaks.

Tanks with a shutoff valve:

1. Remove the battery access cover on the left side of the Hog Pack. Turn off the fuel shutoff valve located on the bottom of the fuel tank.
2. The fuel filter is located in the fuel supply line, below the engine. Gently pull on the fuel line until the filter is exposed.
3. Loosen the hose clamps and remove the old filter.
4. Install the new filter, making sure the arrow indicating the flow is pointed in the direction of the carburetor. Tighten the clamps.
5. Slide the filter and fuel in a gentle loop below the engine. Make sure the line is not kinked.
6. Reconnect the fuel supply fuel to the carburetor fitting and fill the fuel tank.
7. Turn on the fuel shutoff valve and check all connections for fuel leaks.
8. Start the engine and allow it to run for several minutes. Shut the engine down and recheck the fuel system for leaks.
9. Repair any leaks found and reinstall the battery access cover.

6.4 Electrical System

Periodic Electrical System Maintenance

- At least once a year, spray all exposed electrical components behind the plug panel and in the plugs, with a protector.
- Inspect all wiring for proper support, sound insulation, and tight terminals. Check that there are no corroded terminals. Corroded terminals should be thoroughly cleaned with sandpaper or replaced, tightened securely and sprayed with a metal and electrical protector. Inspect all engine wiring.
- Check the electrolyte level in the battery monthly and add distilled water as necessary. The correct fluid level in the cells is usually approximately 1/4" inch above the plates. If fluid is needed, fill to the proper level with distilled water. Do not over fill!

NOTICE:
Some batteries are sealed and do not require or allow the inspection of the electrolyte.

Accessing the Battery

- Keep the battery top clean and dry. Dirt and water can conduct electricity from one post to the other causing the battery to discharge.
- The battery posts should be kept free of corrosion. Remove the cables and clean the posts and cable clamps with a battery post cleaner or sandpaper as required. Coating the battery posts and cable clamps with Teflon or silicone grease will protect them and reduce corrosion.
- Battery cables, both hot and ground, must be replaced when they show signs of corrosion or fraying. Deteriorated cables cause a considerable voltage loss when high currents are drawn, such as starting the engine.

DANGER

A BATTERY CAN EXPLODE IF A FLAME OR SPARK IGNITES THE HYDROGEN GAS THE BATTERY EMITS WHILE BEING CHARGED. NEVER USE AN OPEN FLAME IN THE BATTERY STORAGE AREA. AVOID STRIKING SPARKS NEAR THE BATTERY.

6.5 High Pressure Blasting System

UHP System Inspection and Maintenance

Daily:

- Check for obvious loose mounting nuts and bolts.
- Check all hoses, fittings and By-Mode Valves and for leaks and proper operation daily. Repair or replace leaking or malfunctioning components before operating the system.

- Test By-Mode Valves under high pressure by turning high pressure to the Hog Tools ON & OFF several times before beginning normal waterblasting operations.

Periodic:

- By-Mode Valves should be disassembled, cleaned, inspected for wear and damage, and lubricated periodically.

NOTICE:
The service intervals for the By-Mode Valves will depend on the quality of the water and the hours used. They typically require service monthly.

By-Mode Valve

6.6 Hydraulic System Maintenance

Hydraulic Pump

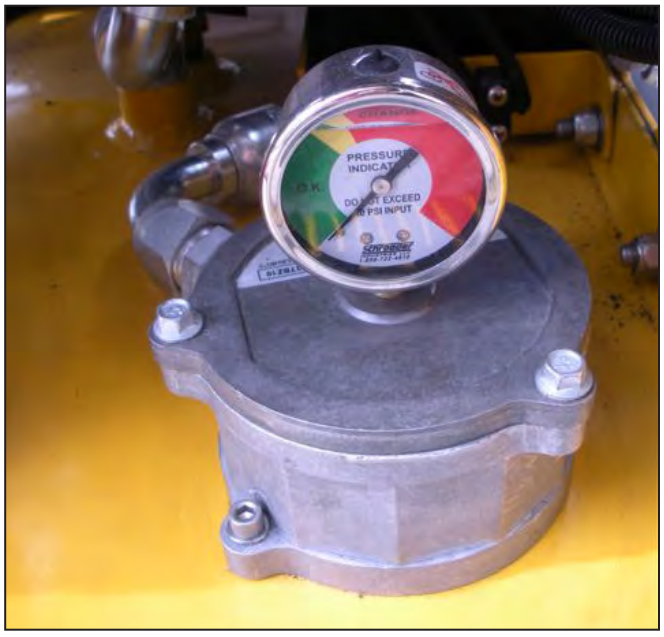
The hydraulic pump is sealed and requires no routine maintenance. The system operates at very high pressures and has specific fluid requirements. You should refer to the Lubrication Chart in this section for the hydraulic oil specifications.

Inspection and Routine Maintenance:

- Check the hydraulic oil level each day or immediately following the repair of a blown hose, leaking fitting or any hydraulic system service. Use only hydraulic oil meeting the pump manufacturer's specifications.
- Inspect all hoses, fittings, valves and seals for leaks and proper operation daily. Repair or replace leaking or malfunctioning components before operating the system.
- Check the gauge on top of the filter canister at the rear of the Hog Pack daily. The filter will need to be changed when the needle on the gauge reads in the yellow Zone. The filter element is changed by removing the top of the filter canister.
- Periodically inspect all electrical connections, paying close attention to the electrical connections on the manifold solenoid valves. Make sure the connectors are corrosion free and tight. Corroded terminals should be thoroughly cleaned or replaced, then sprayed with a metal and electrical protector. Coating the connectors with dielectric Teflon or silicone grease will protect them and reduce future corrosion.
- If the hydraulic oil becomes contaminated, the hydraulic tank can be drained by removing the large plug on the front of the tank.

Refer to the Lubrication Chart in this section for lubrication specifications.

Hydraulic Oil Filter Pressure Gauge, Filter Canister & Fill Cap



Hydraulic Filter Canister and Pressure Gauge

6.7 Lubrication Chart

LUBRICATION CHART

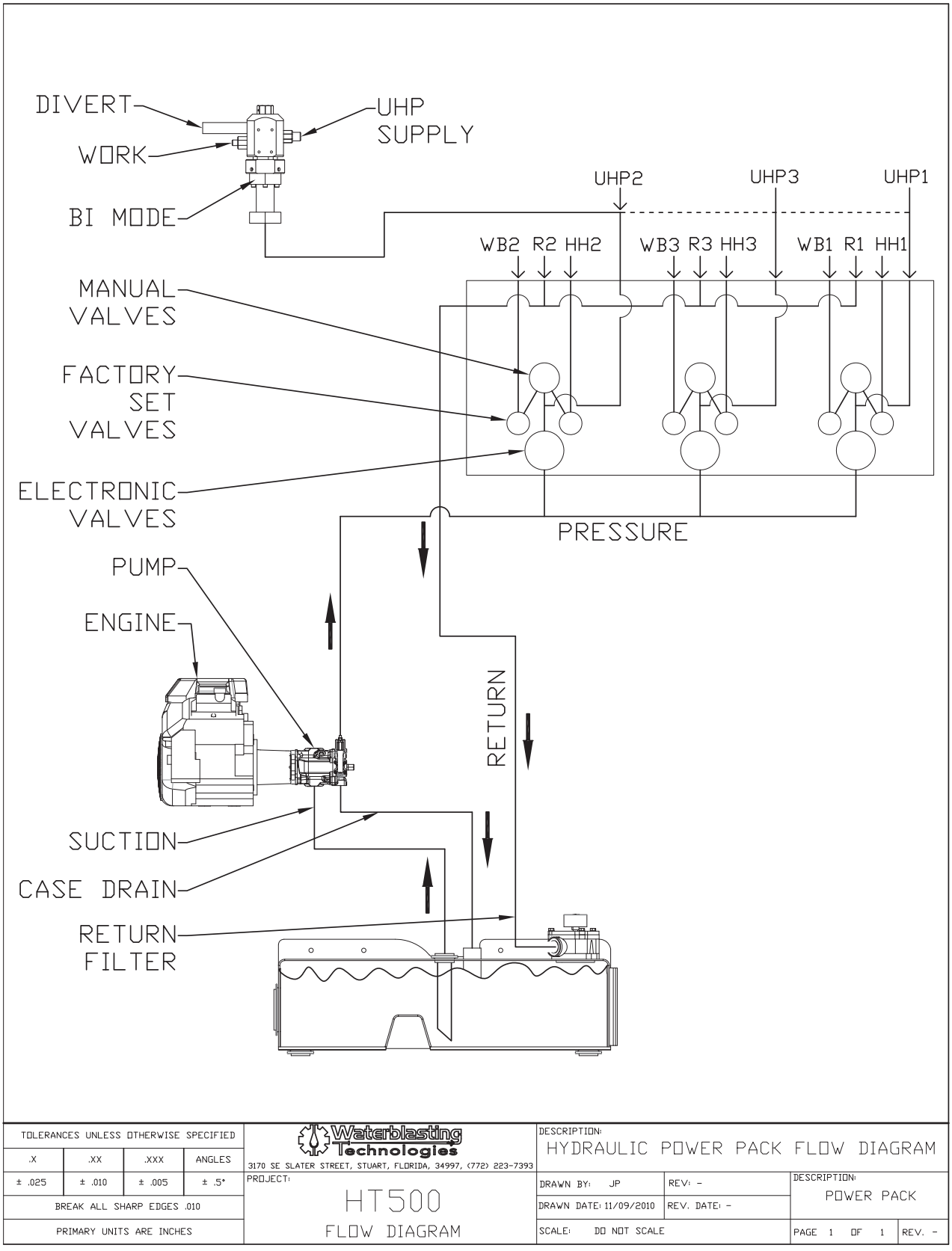
Lubrication Chart

Equipment	Component	Intervals	Lubricant Specifications
Engine	Oil and Filter	Refer to engine operating manual	Refer to engine operating manual
Hydraulic System	Hydraulic Oil Reservoir	Every 600 Hours	Napa – AW68
Unit General Grease Points	Hydraulic Ram Pivots – Door Hinges – Waste Tank Tilt Pins – ETC.	Weekly ***More Frequently if Required***	Mobil PolyRex EM Grease

This chart is a guide only and should never be used to supersede individual manufacturer's specifications. Please refer to your equipment manuals.

Components and Drawings

7.1 Hydraulic Manifold Flow Diagram



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PROBLEM

HOG PACK

Noises and Vibrations:
- Engine mounts loose - tighten engine mounts
- Loose bolts on fuel tank, hydraulic tank or other components - tighten loose bolts

WATER LEAKS

Hose fitting indicator port leaking:
- Fitting Loose - tighten fitting or replace hose and fitting

Weep holes at high pressure hose connection on Hog Tool:
- Loose swivel nut - hand tighten swivel nut
- Leaking swivel seal - remove spent seal, check shaft nipple, clean thoroughly and replace with new seal
- Cracked swivel shaft - remove shaft assembly and disassemble to inspect shaft and replace if damaged or cracked on nipple end

HIGH PRESSURE SYSTEM PROBLEMS

Low outlet pressure - in high pressure system:
- Insufficient UHP system engine RPM - raise RPM of engine
- Worn or blown nozzles - change nozzles
- Oversized nozzles - refer to chart to correct nozzle pattern
- Leaks in hoses, fittings, nozzles, by-mode valves or seals - tighten or replace, check valves for heat indicating internal bypass
- Worn or missing button seal between spray bar and shaft - replace with new button seal
- By-mode valve cartridge leaking - check cartridge, if leaking excessively, repair or replace cartridge
- Shut-off (dump valve) on UHP system pump is not working properly - repair dump valve
- Leaking swivel seal - remove spent seal, check shaft nipple, clean thoroughly and replace with new seal
- Cracked swivel shaft - remove shaft assembly and disassemble to inspect shaft and replace if damaged or cracked on nipple end

PROBLEM

HYDRAULIC SYSTEM PROBLEMS

Spray head rotation slow or stopped on Hog Tool:
- Insufficient engine RPM - raise RPM of engine
- Port Group manual pressure valve is set too low - adjust manual pressure valve
- Hydraulic oil level is low - fill hydraulic oil tank & check for leaks
- Hydraulic hose is kinked or damaged - replace kinked or damage hydraulic hose
- Port Group solenoid valve or valves are not operating properly - repair or replace valves
- Worn or missing O ring in quick connect hydraulic oil fitting - replace quick connect fitting
- Hydraulic filter is clogged - replace filter
- Hydraulic oil is too hot - make sure hydraulic oil cooler is clean and operating properly
- Manifold needle valves are dirty and flow is restricted - clean needle valves and readjust
- Low voltage to solenoid valves and they are not opening properly - correct low voltage problem
- Hydraulic pump is defective - repair or replace pump

Spray head rotation slow on Hog Tool:
- Pressure gauge on hydraulic oil filter reading in yellow or red - hydraulic filter is clogged, replace clogged filter

ELECTRICAL PROBLEMS

Nothing happens when Tool trigger is activated:
- The electrical harness is not plugged in at the tool or Hog Pack - plug in the harness
- An in-line fuse is blown near the battery - replace blown fuse
- Port Group valve solenoid is defective - replace valve solenoid
- Electrical harness is defective - replace harness

Cooling fan on hydraulic oil cooler does not come on when ignition switch is ON:
- In-line fuse is blown near battery - replace blown fuse
- Poor connection at ignition switch or fan - repair connection

Master Valve does not drop UHP pressure to Hog Pack:
- The master valve electrical harness is not plugged in at the UHP pump or Hog Pack - plug in the harness
- An fuse or circuit breaker is blown near on the UHP pump circuit - replace blown fuse or reset circuit breaker
- Master Port Group valve solenoid is defective - replace valve solenoid
- Electrical harness is defective - replace harness
- Plug on Hog Pack or UHP pump is defective - repair or replace plug

HT500 Specifications

WEIGHT	*600 lbs / 272 kg*
TIRES	*Foam Filled*
ENGINE	*Honda 20 hp / 15 kw*
HYDRAULIC PUMP	*Rex Roth*
HYDRAULIC TANK CAPACITY	*15 gal / 57 ltr*
UHP FLOW GALLONS PER MINUTE	*8 gpm / 30 ltr*
MAXIMUM UHP PRESSURE	*40,000 PSI / 2,722 bar*

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Technical Support

24 / 7 CUSTOMER SERVICE

- Hog Technologies Customer Service Department stands ready to answer your questions and provide technical assistance 24 hours a day, 7 days a week.
- Customer Service can also assist you with part orders.
- Always contact Hog Technologies Customer Service Department for assistance and cross reference specifications for parts you intend to purchase locally.

PARTS

- All replacement parts are available directly through Hog Technologies
- Get the parts you need when you need them
- Next day delivery is available in most locations.
- Same day delivery available in some areas for parts ordered before 10 AM Eastern Standard Time

CUSTOMER SERVICE HOT LINE - 772-223-7393
www.hogtechnologies.com
www.stripehogsupport.com

Hog Technologies will not be responsible for damages or loss caused by substituted parts purchased locally or from another vendor or manufacturer.

WARNING

NEVER ATTEMPT TO USE COMMONLY AVAILABLE PLUMBING PARTS, FITTINGS, AND HOSES IN HIGH PRESSURE SYSTEMS! ALL FITTINGS TO BE USED WITH HIGH PRESSURE OPERATIONS MUST BE PROPERLY DESIGNED, STAMPED, RATED AND APPROVED BY HOG TECHNOLOGIES! FAILURE TO HEED THIS WARNING MAY RESULT IN DAMAGE TO COMPONENTS AND SEVERE INJURY OR DEATH!

Stripe Hog Support Web Page

You are here Home

Mike Logout

VIDEO HELP

Global Support 24-7

Welcome to the Stripe Hog Support Center! This resource is exclusive to Stripe Hog customers. In order to view the complete menu above and website you must be logged in. If you own or operate a Stripe Hog please login or register.

REGISTER

User Name:
First Name
Last Name:
Display name:
Email Address:
REGISTER

LOG ON

User Name
Password:
Login

(0111) (772) 214-1714. This number that will find an available customer support representative 24/7.

We are excited to take your call any hour of the day. Please don't hesitate to call if we can help.

The "Ambassador Club" is added to the site • Tuesday, November 11, 2008

The Ambassador Club is a place for Hog Technologies, Stripe Hog owners and operators to communicate so we all can benefit and become stronger. As an owner/operator of the Stripe Hog you are in an elite group. Welcome!

I Home I Stripe Hog Training I Ambassador club I Marketing I Stripe Hog Store I Contacts I

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