

P00148 Electric Jetter

Model	PSI	GPM	
P00148	1500	2	

Thank you

Thank you for selecting our products. Our personnel have proudly made every effort to ensure that your new pressure washer is of the quality you expect. But things do occasionally go wrong. This is why every pressure washer is covered by a limited warranty. Among other things, this warranty provides for the replacement of parts found to be defective during the operation of your new pressure washer. Please note that the owner/operator has certain obligations under the terms of the warranty. Be sure to read this manual for directions on proper installation, start-up, use, and storage of your pressure washer.

Your new pressure washer was tested after production for proper pressure and flow. Please note that this process will sometimes leave a water residue in the pump. The dealer you have purchased your new machine from should review with you the proper installation, start-up, use, and storage. Most 'big' problems occur when shortcuts are taken in one of these processes. If a problem occurs that you need some assistance with, please feel free to contact us at the listing below:

Warranty Service Center 520 Brooks Road lowa Falls, IA 50126 1.800.648.6007

Please make note of Model Identification
Model #
Code #
Serial #
Always have this information when calling
Warranty Service Center.

Be familiar with the model plate located on your machine. Have the model and code number with you when you call for service. (Located on motor).



This product can expose you to chemicals, including lead, Chromium, Nickel, DEHP, DINP, and carbon monoxide which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

The products we sell are not intended for use in potable water systems and are only for industrial non-drinking water applications.

Statement of Warranty

The manufacturer of this product agrees to repair or replace designated parts that prove defective within the warranty period listed in the chart below. Specific limitations and exclusions apply. This warranty covers defects in material and workmanship and not failure due to normal wear, depreciation, abuse, accidental damage, negligence, improper use, maintenance or storage. To make claim under the terms of the warranty, all parts said to be defective must be returned to a designated Warranty Service Center for warranty inspection. The judgments and decisions of the factory-authorized personnel concerning the validity of warranty claims are final.

Many components are covered by warranties given by their respective manufacturers. These warranties pass through to the end user. As a factory authorized and trained warranty service center the factory will honor the terms of all component warranties and satisfy claims of the appropriate warranty provisions.

Normal wear items include but are not limited to: hoses, nozzles, filter, valves, seals and are not covered by this warranty.

This warranty is in lieu of all other warranties, express or implied, including without limitation any warranties of merchantability or fitness for a particular purpose and all such warranties are hereby disclaimed and excluded by the Manufacturer. The Manufacturer's warranty obligation is limited to repair and replacement of defective products as provided herein and the Manufacturer shall not be liable for any further loss, damages or expenses, including damages from shipping, accident, abuse, acts of God, misuse or neglect. Neither is damage from repairs using parts not purchased from the Manufacturer or alterations performed by non-factory authorized personnel. Failure to install and operate equipment according to the guidelines put forth in the instruction manual shall void warranty.

Manufacturer	Warranty Period and Details
AR Pump	2 year
	1 year on Pump/Motor units
	1 year axial
Cat Pump	5 year on 2SF and 4SF models
	2 year on 5DX models
Ceneral Pump	1 year axial 5 year on pumps
	1
	Lifetime on brass manifold against freezing
	1 year on Pump/Motor units
	1 year on the aluminum manifold
	1 year axial
Udor Pumps	5 year
	1 year axial
Briggs and Stratton	1 year on standard engines
	2 year on Intek and Vanguard products
Hatz Diesel Engines	1 year
Honda Engines	3 year on GX series Engines effective 1/1/09
	2 year on GC products for personal use
	90 days on GC products in commercial use
Robin Engines	2 year
Baldor Electric Motors	1 year from date of purchase
Leeson Electric Motors	1 year from date of purchase
Burners	1 Year from date of purchase
Hot Water Coils	Lifetimeof the machine
Machine Frame	1 year from date of purchase
Accessories: Includes tips, guns, wands, hoses, injectors, unloaders, gauges, switches, thermostats, sandblasters, flat surface cleaners, hose reels, turbo nozzles, drain nozzles, brushes, foamers, GFCI units, thermal relief, filters, tanks, etc.	90 days



The following warnings must be followed, Failure to follow these warnings could result in serious personal injury or death!

Never allow children or untrained personnel to operate machinery.



Electrical equipment can cause shock and sparks.

Do not bypass or remove the grounding prong in any electrical plug. Keep electrical plugs, connections and cords out of water and moisture. Refer to instructions prior to equipment operation. Disconnect from power source before servicing. Inspect and repair damaged or exposed electrical components prior to use. Never splice electrical cords on pressure washers. Be sure the electrical service is ade-

quately sized for the equipment.



Exhaust gases contain harmful gases.
Use only in well ventilated areas or vent the exhaust to the outside.





High Temperature Water.

Wear protective clothing and face shield.

Do not direct water stream toward self or others.

All hoses should be secured in the lines to be cleaned at least 5 feet.

High pressure water can cause death or serious injury.



High pressure fluid can create a high pressure stream or ruptured vessel. Wear safety face shield.

Relieve pressure before servicing.

Do not modify/repair/rework vessel or change safety relief or pressure setting.

Do not direct stream toward self or others.

Pressurized fluid streams and ruptured pressure vessels can cause death or serious injury.



Kerosene, Fuel Oil or Gasoline will burn when ignited.

Wear face shield and protective clothing.

Do not expose fuel to flames, sparks or other sources of ignition.

Use in well ventilated area or vent to outside area.

Fire can cause death or serious injury.

Initial setup and operation of your new jetter/pressure washer

Inspection for freight damage

When you receive your pressure washer, be sure you check for concealed freight damage. Any damage should be noted with the delivering carrier. If you have any questions related to freight, call the 800 number listed on the inside front cover of the manual.

Inspection of oil levels

Check all oil levels in the pump or engine, if applicable. Failure to check all levels will result in equipment damage. Most pumps are shipped with oil from the factory and the crankcase is sealed. You may have to remove a shipping plug and install a dipstick in the pump.

Water supply

Your water supply must provide water to the equipment that exceeds the Gallon Per Minute (GPM) rate of your machine. You can check your GPM by using a five-gallon bucket and a timer. If your machine is five GPM or less and the bucket fills in less than a minute you have adequate supply. Some systems are affected by washing machines, livestock watering systems, and flushing of toilets. Be sure the supply is still adequate when these operations are taking place. The water temperature cannot exceed 145 degrees Fahrenheit. Pressure should not exceed 60 PSI. **Failure to secure adequate water supply will result in pump damage. Do not run pump**

dry!

Your water supply should not contain particles larger than 80 microns. Although there are small filters installed on pressure washers that filter the water, they can only filter poor quality water for a short period of time before clogging. This will result in damage to the machine. Therefore, you should insure no sand or scale particles are present in the water supply.

Supply hose

Water quality

Hook a garden hose from the hydrant to the machine. When doing this, be sure to check the inlet water filter or screen. This hose should be at least 5/8" diameter with a length at least 15 feet. This 15' length helps isolate the water supply from pulsations from the pump. Many states require a vacuum break or backflow preventor be installed at the hydrant, before the garden hose, to insure the water source cannot be contaminated. Be sure to check local and state regulations upon installation.

Purge air

Turn on the water supply and open the trigger gun. This will purge all the air from the system. Look for water leaks and stop any leak found. Leaks can cause erratic pump behavior.

Electrical Supply

A circuit dedicated only to the pressure washer is recommended. This circuit should be installed by a licensed electrician and checked to supply adequate voltage *Under Load*. Sometimes the distance from the panel is to long, the wire size is to small or the voltage is initially to low, this will cause the GFCI or thermal to trip. If the GFCI trips or the thermal overload on the motor trips consult factory. Plug your cord into the receptacle. **DO NOT USE AN EXTENSION CORD!**

Pump

Prior to turning on the power switches check the oil level in the pump.

A WARNING

In drain jetting applications, the hose must be inserted into the drain line at least five feet before starting water flow. Be sure machine is not powered on before hose is inserted into the drain.

Federal and State Regulations

Many areas are governed by state and federal regulations that protect the environment and water quality. In operating this equipment you are also to act responsibly. Be sure to check with the local, state and federal authorities on compliance issues.

During operation

The pressure was set at the factory during the testing procedure; no adjustments to the machine should be required for operation. **During operation, do not leave the machine running for more than two minutes without the trigger gun being pulled.** Although your machine has a by-pass valve on it and may have a thermal relief system, this pressure build-up can cause extensive pump damage. If machine will not be discharging water for more than two minutes, shut the machine off.

Accessory operation

WARNING

Use extreme caution when attaching devices to the discharge of this equipment. Allow only trained individuals to operate this machinery. The attachments must be rated to operate within the pressure range of the equipment or injury could occur. Only use attachments designed, rated, and sized for the equipment by the manufacturer.

Hose and reels

The discharge hoses and fittings should be inspected before every use. Also inspect the connections made on the hose reels. Refer to accessories listing and exploded views included for specifications and replacement parts.

Hose sizing

For pressure wash applications, the ideal hose to deliver adequate water flow and pressure at distances up to 300 feet is a 3/8" ID hose with a minimum burst pressure rating no less than four times the operating pressure of the equipment. For drain jetting and sewer cleaning, a hose should be selected for the adequate pressure range and length needed. The diameter of the hose should be chosen from the chart below for the application requirements.

<u>Hose size</u>	<u>Pipe size</u>	Typical application
3/8" or 5/16"	4" to 8" lines	Floor drains, septic lines, and long runs
1/4"	2" to 4" lines	Kitchen, laundry drains, and clean-outs
1/8"	1" to 2" lines	Tight bends, bathroom and trap lines

Hose size considerations

- -Remember, when selecting a hose, the smaller diameter and longer the hose, the greater the pressure and flow loss will be.
- -Do not couple hoses together for drain jetting. The long couplings will get caught in bends in the drain lines.
- -When drain jetting, always attach a shut-off valve, trigger gun, or foot valve directly to the hose to be inserted in the drain. This ensures safe shut-off of the water flow at the user's discretion.

WARNING

In drain jetting applications, the hose must be inserted into the drain line at least five feet before starting water flow. Be sure machine is not powered on before hose is inserted into the drain. Be sure machine is shut down before removing the hose from the drain. Always be sure hose is marked at the point five feet from the nozzle to identify nozzle position.

Drain and trap hoses

Drain and trap hoses listed in the accessory sheet are fitted with a twist-fast coupler. Your drain jetting equipment is shipped with an assortment of twist-fast couplers to make the necessary connections for the drain hose to be installed either on the existing hose, by removing the drain nozzle, or by installing it directly to the foot valve included on some models.

Nozzles

The nozzle, or tip, of the machine is used to restrict the discharge water flow to achieve the rated operating pressure of the equipment. Only use a properly sized nozzle for your equipment. The nozzle should be inspected before every use for obstructions and nozzle wear. New nozzles can be selected from the accessory sheet enclosed in the Operator's Manual folder pocket.

Shut-down procedure

Shut-down

- 1. Turn off the power switch on the pressure washer.
- 2. Relieve pressure on line by pulling trigger gun.
- 3. Shut off water supply and disconnect garden hose.
- 4. Be sure to check for water leaks or oil leaks that should be repaired before the next operation.

Storage

5. If you are going to store the machine for extended periods of time in cold climates be sure to anti-freeze the equipment. A 50% anti-freeze solution may be drawn in through the inlet of the pump using a short remnant of garden hose. This fluid should be run through the pump. When the fluid is discharged from the pump discharge your machine is winterized. **Do not allow machine to freeze.**

Pump

The pump oil should be changed after the first 50 hours of operation. Then change every year after that for average use. Oil should be changed more frequently for extensive use or use in dusty areas or areas with high moisture.

Filters

Water filters, hoses, and fittings should be checked prior to every operation for cleanliness, leaks, and needed repair or replacement.

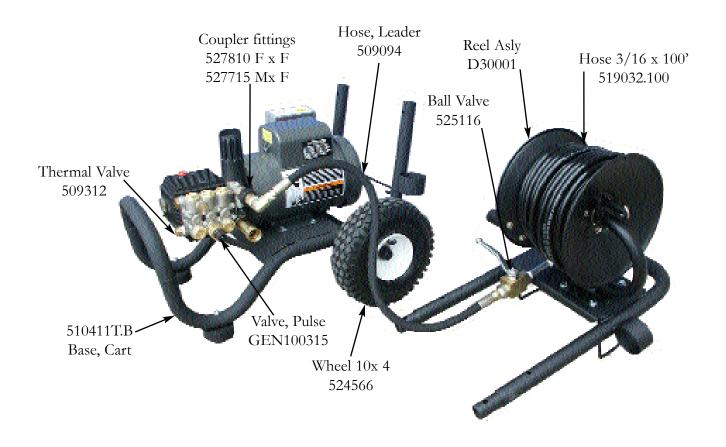
Troubleshooting

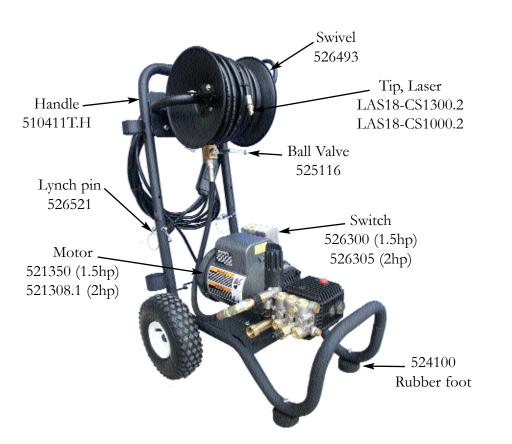
Despite the complexity of your jetter, a number of common complaints stem from relatively simple problems. With guidance, the user can identify and remedy many common problems.

Always disconnect the power supply before attempting to service any equipment.

Common problems and solutions

Malfunction Unit runs but no water discharges	Cause -Water supply not turned on -Plugged nozzle on discharge -Shut off valve is malfunctioning	Remedy -Turn on water supply -Remove, clean, or replace nozzle -Remove, repair, or replace valve
Low nozzle pressure	-Plugged spray nozzle -Inlet screen is plugged -Insufficient water supply -Unloader valve stuck open -Plugged inlet or discharge hose -Use of additional lengths of hose	-Remove and clean or replace nozzle -Remove and clean or replace filter -Secure adequate water supply -Disassemble and clean, repair, or replace -Flush or replace hoses -Reduce discharge hose length
Surging pressure or drop in pressure	-Partially plugged spray nozzle -Worn nozzle -Soap (low pressure tip installed) -Restricted or leaking inlet hose, filter -Cavitation (inadequate water supply) -Worn pump packings -Fouled inlet or discharge valves -Broken valve spring -Worn or restricted unloader valve	-Remove and clean or replace nozzle -Remove and replace nozzle -Remove and install one of the nozzles -Check inlet hose, filter; clean or replace -Secure adequate water supply -Inspect and replace worn packings -Inspect and clean or replace valves -Inspect and replace valve spring -Inspect, repair, or replace unloader
Pressure at pump but low dis- charge pressure	-Restricted discharger	-Check for discharge obstructions in injector, gun, hose, valve, wand, and unloader.
Chemical injector not working properly	-Soap nozzle (low pressure tip) not installed -Injector valve not turned on -Discharge hose too long -Clogged injector pick up hose -Clogged injector	-Install nozzle with large hole -Turn on injector by turning fitting on injector -Reduce hose length or reposition injector to within 40' of trigger gun -Remove, clean, and replace -Disassemble, clean, and reassemble
Water leaks from pump manifold	-Worn plungers or packings	-Inspect and replace
Unloader does not bypass	-All valves fouled -Unloader valve seat fouled	-Inspect, clean or replace -Inspect, clean or replace Unloader assly.
Unloader cycles when gun is shut off	-Leak in trigger or discharge line	-Inspect, repair or replace leaking fittings
Water in crankcase	-High humidity or direct water spray -Worn seals	-Reduce oil change intervals -Replace seals





HIGH PRESSURE CHEMICAL INJECTOR

The stainless steel construction makes this nozzle suitable for various soaps, sanitizers, fungicides and chemical cleaning solutions. Nozzle barrel propels a concentrated spray pattern up to 25-35 feet. Stainless steel construction provides high strength and chemical resistance. Adjustment knob at nozzle body allows for convenient chemical metering. 30' of chemical hose and a check valve which prevents reversal of solution back to the chemical container are standard features. Weighted strainer filters unwanted debris from entering the chemical stream.



CAT 7314	#4 HIGH PRESSURE INJECTOR	Use with 1000 PSI@2.0-2.2 GPM	\$124.60
		Use with 3000 PSI@4.0-4.5 GPM	
CAT 7315	#5 HIGH PRESSURE INJECTOR	Use with 1500 PSI@3.0-3.5 GPM	\$124.60
CAT 7316	#6 HIGH PRESSURE INJECTOR	Use with 2000 PSI@4.0-4.5 GPM	\$124.60

JETTER ACCESSORIES

TRAP HOSES	Š
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519039	1/8" x 25' TRAP HOSE 3000# MAX	\$55.00
519040	3/16" x 25' TRAP HOSE 4000# MAX	\$75.00
519041	3/16" x 50' TRAP HOSE 4000# MAX	\$135.00

REPLACEMENT HOSES FOR JETTERS

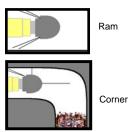
519033	3/16" x 100' HOSE 3000# MAX	\$240.00
519033.1	3/16" x 200' HOSE 3000# MAX	\$475.00
509083.5H	5/16" x 100' HOSE 4000# MAX	\$245.00
509083.4	5/16" x 200' HOSE 4000# MAX	\$570.00

REPLACEMENT HOSES FOR TRAILER JETTERS

1/2" x 200' HOSE 3000# MAX	\$1675.00
1/2" x 300' HOSE 3000# MAX	\$2475.00
1/2" x 400' HOSE 3000# MAX	\$3325.00
1/2" X 500' HOSE 3000# MAX	\$4150.00
	1/2" x 300' HOSE 3000# MAX 1/2" x 400' HOSE 3000# MAX

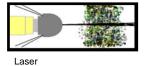
DRAIN NOZZLES FOR JETTERS

RAM18-MODEL	1/8" F RAM NOZZLE	\$40.00
RAM14-MODEL	1/4" F RAM NOZZLE	\$45.00
LAS18-MODEL	1/8" F LASER NOZZLE	\$40.00
LAS14-MODEL	1/4" F LASER NOZZLE	\$45.00
COR18-MODEL	1/8" F CORNER NOZZLE	\$40.00
COR14-MODEL	1/4" F CORNER NOZZLE	\$45.00
REV18-MODEL	1/8" F REVOLVING NOZZLE	\$136.75
REV14-MODEL	1/4" F REVOLVING NOZZLE	\$205.13



DRAIN NOZZLES FOR TRAILER JETTERS

RAM38-MODEL	3/8" F RAM NOZZLE	\$4	55.00
LAS38-MODEL	3/8" F LASER NOZZLE	\$:	55.00
COR38-MODEL	3/8" F CORNER NOZZLE	\$4	55.00
REV38-MODEL	3/8" F REVOLVING NOZZLE	\$	250.00



nn Revolving

200DS3	PORTABLE REEL 3/8" x 200' 3000#/CART/SHUTOFF	\$1400.00
200DS4	PORTABLE REEL 3/8" x 200' 4000#/CART/SHUTOFF	\$1400.00

509859H	HONDA L.P. CONVERSION KIT	\$492.91
509859	VANGUARD L.P. CONVERSION KIT	\$492.91

PRESSURE WASH	ATTACHMENTS

	THEODORE WHOTH HISTORIA	
509374J	PRESSURE WASH GUN	\$72.39
542040	#4 MULTI-REG TIP	\$34.94
542041	#5 MULTI-REG TIP	\$34.94
542042	#6 MULTI-REG TIP	\$34.94

NARNING!

HOSE AFTER EXPOSING WHITE BRAID REINFORCEMENT LAYER CAN CAUSE DEATH, IF YOU SEE "IT" - STOP "IT" FAILURE TO PROPERLY REPAIR OR REPLACE PERSONAL INJURY AND PROPERTY DAMAGE



DANGER

READ AND UNDERSTAND THE FOLLOWING:



- . NEVER EXCEED THE MAXIMUM WORKING PRESSURE
- 2. NEVER EXCEED THE MAXIMUM WORKING TEMPERATURE
- 3. NEVER APPLY PRESSURE TO A DAMAGED HOSE



LIKE STRANDS IN A BRIDGE CABLE, EACH REINFORCEMENT FIBER PLAYS AND EXACT ROLE IN THE ULTIMATE BURST STRENGTH OF THE HOSE. A MINOR SLICE OR NICK IN THE REINFORCEMENT CAN RESULT IN TOTAL HOSE FAILURE.

THE AGE OF THE HOSE **DOES NOT**MATTER! IT IS UNFORTUNATE, BUT EVEN HOSE USED (1) TIME CAN BE DAMAGED IN SEVERE APPLICATIONS. THESE HOSES MUST BE IMMEDIATELY REMOVED FROM SERVICE.

- 4. HIGH PRESSURE HOSES
 ARE DESIGNED TO USE
 SPECIFIC FITTINGS AND
 TOOLING. NEVER USE A
 DIFFERENT BRAND OF
 FITTINGS OR TOOLING.
 FAILURE TO DO SO CAN
 CAUSE DEATH, PERSONAL
 INJURY AND PROPERTY
 DAMAGE.
- 5. A KINKED, CRUSHED,
 OR BLISTERED HOSE
 WILL EVENTUALLY FAIL DO NOT RISK INJURY.
 IMMEDIATELY REPAIR OR
 REMOVE HOSE FROM
 SERVICE

C 2003 Guidalnes scenals from W.

SEWER CLEANING HOSE

or Sewer Cleaning Hose Repair

unplan the vehicle with a length of server cleaning hass. Occasionally this haze may be demaged in consequently, each manufacturer color codes the hose outer cover for operating pressure, and hose endes. When camage occurs, the hose may be repaired (mendad). Hose, fittings, and assembly ner lube inspection gauges, fillings and assembly tooling for assy confination. The repairer shall The deeping nozzle is corrected to the quipment from various manufacturers differ greatly and must never be interchanged. gh-pressure water is used in sawer meaning operations. sently that all these thams match the hose to be repared.

ande can cause a failure of the fices. Because of the high pressures generated in hose failure can counwhich may result in damage to property, personal highly, or death. The following instructions MARNING: Falure to properly inspect, reper or test the hose assembly before being returned to usi te followed explicitly.

VSPECTION AFTER DAMAGE HAS OCCURRED

Unreal the hose and disconnect the hose from both the storage reel and the nozzle. Very carefully inspect the hose for any of the following:

- Cover camage exposing the febric reinforcing anald;
- Any areas containing a blacer or bubble in the puter bover;
- Kinking or severe collapse of the hose (These areas shall be repaired); and

Fittings cutting into hose at the edge of connections (These areas also shall be repaired.)

Determine the total number of areas requiring repair, plus the number of mercler fillings already in

the hose. No mender shall be located within 50 feet of the hose end or another mender.

Locate each ereats be mended in a dear work area to being the repair

Cut cut the damaged areas of hose a distance of at least 12 notes on each side of the damaged area. Jee the culling tool recommended by the haze manufacturer. The hase must be cull dearly and square y

Discare the damaged section of hose

report both of the hose ends very carefully as follows:

CAUTION: Proper inspection of the hose is critical

- gauges, fillings, and assembly tooling. If all these trams are not the same color, the hose end(s) Determine the color of the fical inner liner. Varify that the color is the same as the respection. shall not be manded until the correct color-coded fightigs and assembly facility are colained;
- Check for any signs of entrapped water in the faoric reinforcement layer. If any water is present within the reinforcing layer, the hose ends shall not be mended;
- the tablic reinforcement from the outer cover. The entire circumference shall be inspected. If any Check for any indication of separation of the hose inner iner from the fabric remorgement of seperation of layers exist, the hose ands shall not be manded and,
- around the entre prounterence in accordance with the manufacturer's instructions. If any portion Hickness of the wall trickness shows excessive wear (se defined in the manufacturer's instructions). d. With the manufacturar's colonopated inspection gauge provided, massure the wall hose ends shall not be mended

If the hose end(s) fail to meet any of the conditions contained in sections and (above) the hose end(s) shall not be mended. On any tailed end, out off an additional four (4) to fine (5) feet of hose. The failed sector of hose is to be discarded and the inspection noted in sections ain 4 (souve), is to be represeded on the new encis). If the hase fairs to peas this second inspection, the entire hase ength shall be

Proceed with the assembly only if both ends of the hose have been inspected and successfully met the chlara of section above. discarded.

REPAIR INSTRUCTIONS

ASSEMBLY INSTRUCTIONS

Sewer dearing hose manufacturers polor bods the hose inner time, inspection gauges, fittings, and assambly tooling for easy destrictation.

assembly tooling to the specific manufacturer may result in hose burst or fitting separation, and bould NARNING: Falure to identify and match the color coding of hose inspection gauges, fittings and result in damage to property, personal runy, or death

Follow the assembly instructions provided by the specific menufacture. Do not use repair methods or equipment from any other manufacturer. TESTING: After completing the assembly operation, the entire length of hose shall be pressure bealed as follows:

- entrapped an from the assembly by filling with water and bleading off all an from the Higher of Completely remarks any a. Postion the hase so that the one end is higher than the other. the two end "ttings;
 - b. Install a value on one end which will permit the slow relief of pressure. The valve is to be compatible with the field test pressure, as specified by WASTEC standards
 - e. Comest the other and to a test pump capable of pumping water at the 1eld test pressure as appecified in WASSTED standards

Locate the hose in an area. The high pressures away from persons and property, and sland dear of the hose when presume is applied: WARNING: A fature of the hose or fillings may occur during pressure testing. involved pose a hazard that could cause property camage, injury, or death.

Pressurize the hose at the field test pressure for five (5) annual

Slovky bleed of pressure.

CAUTION: Make sure pressure is completely tied off before propositing

INSPECT THE HOSE ASSEMBLY CAREFULLY FOR ANY OF THE FOLLOWING:

- Any signs of waranteakage
- Any mavement of the hose in the mender filling; and
- a. Any distant or guides in the pover

Immediately terminate the test. I solate the damaged area(s) and rappet the instructions for repairing of If any of these conditions axist, additional damage is present. The hase is unsafe for operation.

RETURN TO SERVICE: After successful completion of the prossure best procedure, recorrect the hose to the storage and and return the mended hose to service. INSERVICE INSPECTIONS: Hoses in service should be frequently inspected and monitored during use for the following conclibrus:

- Coupling movement at the hose 1tting: d d
- Damaged cover exposing the fabric reinforcement Cever bisters or pubbles
 - Hose kniding or severe figitering; and ð,
- Mender fittings outling into base at the edge of connections

Replace the hose if any of these conditions are present.