

V-TUF[®]



V2240X2

DIY PORTABLE PRESSURE WASHER

OPERATOR MANUAL



Please read this manual before using the V2240X2

APPLICATION

THE PORTABLE PRESSURE WASHING MACHINE is a highly specialized multifunctional machine with exceptionally reliable safety assurance, which must be inspected before it may be used to wash and clean cars, bikes and other outdoor equipment or garden patios, green houses etc.

Safety and Warning Information

AUTOMATIC ON/OFF:

The motor on this pressure washer does not run continuously. It only runs when the trigger of the spray gun is squeezed. After following the start up procedures in this manual, turn the pressure washer ON and squeeze the trigger for activation. See "Operating Instruction" section in this manual for further details.



WARNING! The electrical supply connection shall be made by a qualified person and comply with IEC 60364-1. The electric supply to this machine should include either a residual current device that will interrupt the supply if the leakage current to earth exceeds 30 mA for 30 ms or a device that will prove the earth circuit.



WARNING! The operating method to be followed in the event of accident (e.g. contact with detergents: rinse with an abundance of clean water) or breakdown to prevent unsafe situations.



WARNING! The motor of this pressure washer will NOT run unless the trigger is squeezed.

Safety Guidelines

This manual contains information that is very important to know and understand. This information is provided for SAFETY and to PREVENT EQUIPMENT PROBLEMS. To help recognize this information, observe the following symbols.



DANGER! Danger indicates an imminently hazardous situation which, if not avoided, WILL result in death or serious injury.



WARNING! Warning indicates a potentially hazardous situation which, if not avoided, COULD result in death or serious injury.



CAUTION: Caution indicates a potentially hazardous situation which, if not avoided, MAY result in minor or moderate injury.

NOTE: Information that requires special attention.

Important Safety Instructions

SAVE THESE INSTRUCTIONS



WARNING!

When the machine is used, the following precautions should always be considered:

1. Read all instructions before using the machine.
2. To reduce the risk of injury, close supervision is necessary when a machine is used near children.
3. ALWAYS disconnect power before disassembling or repairing the unit of the machine.
4. Follow all safety codes as well as the Occupational Safety and Health Act (OSHA).
5. Ensure safety devices are operating properly before using the machine. DO NOT remove or modify any part of the gun or unit of the machine.
6. Know how to stop this machine and bleed pressure quickly. Be thoroughly familiar with the controls.
7. Stay alert – watch what you are doing.
8. Do not operate the machine when fatigued or under the influence of alcohol or drugs.
9. Keep operation area clear of all persons.
10. Do not overreach or stand on unstable support. Keep good footing and balance at all times.
11. Follow the maintenance instructions specified in the manual.
12. Use cleaning agent supplied or recommend by the manufacturer.
13. Only put the machine on stable place when using, transportation, assembly, dismantling. Do not rough handling the machine when transportation.
14. In any event of accident (e.g. contact with detergents, rinse with an abundance of clean water), please always switch off the machine and pull out the plug from socket outlet, and Disconnect the connection with water.
15. The machine is not intended to be connected to the potable water mains. If necessary, please use only inlet hose-set approved by IEC 61770.

Risk of injection or severe injury. Keep clear of nozzle. Do not discharge streams at persons. This machine is to be used only by trained operators. Always remove lance from gun before cleaning debris from tip.

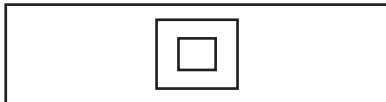
- Keep clear of nozzle. NEVER direct high pressure spray at any person, animal or self.
- Always wear safety glasses or goggles and protective clothing when operating or performing maintenance.
- Never put hand or fingers over the spray tip while operating the unit.
- Never try to stop or deflect leaks with any body part.
- Always engage the trigger safety latch in the safe position even when spraying is stopped for a moment.
- Always follow detergent manufacturer's label recommendations for proper use of detergents. Always protect eyes, skin, and respiratory system from detergent use.



WARNING! SERVICING OF A DOUBLE INSULATED MACHINE

In a double-insulated machine, two systems of insulation are provided instead of grounding. No grounding means are provided for a double-insulated machine, nor should grounding means be added to the machine. Servicing a double-insulated machine requires extreme care and knowledge of the system, and should be done only by qualified service personnel.

Replacement parts for a double-insulated machine must be identical to the original parts. A double-insulated machine is marked with the words "Double Insulation" or "Double Insulated." Machine may also be marked with symbol shown.



WARNING! Do not use pressure that exceeds the operating pressure of any of the parts (hoses, fittings, etc.) in the pressurized system. Ensure all equipments and accessories are rated to withstand the maximum working pressure of the unit.



WARNING! *Explosion hazard.* Never spray flammable liquids or use pressure washer in areas containing combustible dust, liquids or vapors. Never operate the machine in a closed building or in or near an explosive environment.



WARNING! *Do not spray electrical apparatus and wiring.*

- Never disconnect the high pressure discharge hose from the machine while the system is

pressurized. To depressurize machine, turn power and water supply off, then press gun trigger 2~3 times.

- Never permanently engage the trigger mechanism on the gun.
- Never operate the machine without all components properly connected to the machine (handle, gun/wand assembly, nozzle, etc.).



WARNING! Equipment damage.

- ALWAYS turn water supply "ON" before turning pressure washer "ON." Running pump dry causes serious damage.
- Do not operate the pressure washer with the inlet water screen removed. Keep screen clear of debris and sediment.
- NEVER operate pressure washer with broken or missing parts. Check equipment regularly and repair or replace worn or damaged parts immediately.
- Use only the nozzle supplied with this machine.
- Never leave the wand unattended while the machine is running.
- Never attempt to alter factory settings. Altering factory settings could damage the unit and will void the warranty.
- Always hold gun and wand firmly when starting and operating the machine.
- NEVER allow the unit to run with the trigger released (off) for more than one (1) minute. Resulting heat buildup will damage pump.
- Pressure washer is not supposed to pump hot water. NEVER connect it to a hot water supply as it will significantly reduce the life of the pump.
- NEVER store the pressure washer outdoors or where it could freeze. The pump will be seriously damaged.
- Release trigger when changing from high to low pressure modes. Failure to do so could result in damage.
- Be aware of the recoil caused by the water jet when the machine is switched on.

CAUTION: Keep hose away from sharp objects. Bursting hoses may cause injury. Examine hose regularly and replace it if damaged.

Do not attempt to mend a damaged hose.

EXTENSION CORDS

The use of an extension cord is not recommended. Use only extension cords intended for outdoor use.

These are identified by the mark "Acceptable for use with outdoor machines; store indoors while not in use." Use only extension cords having an electrical rating equal to or more than the rating of the machine.

Do not use damaged extension cords.

Examine extension cord before using and replace it if damaged. Do not abuse extension cord. Do not pull on the cord to disconnect. Keep cord away from heat and sharp edges.

Always disconnect cord from receptacle before disconnecting machine from extension cord.



DANGER! Failure to follow these instructions can result in serious injury, including death.



WARNING! To reduce the risk of electrocution, keep all connections dry and off the ground. Do not touch plug with wet hands.



Machines shall not be used by children. Children should be supervised to ensure that they do not play with the machine. This machine is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge.



WARNING! This machine has been designed for use with the cleaning agent supplied or recommended by the manufacturer. The use of other cleaning agents or chemicals may adversely affect the safety of the machine.



WARNING! High pressure jets can be dangerous if subject to misuse. The jet must not be directed at persons, live electrical equipment or the machine itself.



WARNING! Recommend the operator to wear ear protectors.



WARNING! Do not use the machine within range of persons unless they wear protective clothing.



WARNING! Do not direct the jet against yourself or others in order to clean clothes or foot-wear.



WARNING! Risk of explosion-Do not spray flammable liquids.



WARNING! High pressure cleaners shall not be used by children or untrained personnel.



WARNING! High pressure hoses, fittings and couplings are important for the safety of the machine. Use only hoses, fittings and couplings recommended by the manufacturer.



WARNING! To ensure machine safety, use only original spare parts from the manufacturer or approved by the manufacturer.



WARNING! Water that has flown through backflow preventers is considered to be non-potable.



WARNING! The machine shall be disconnected from its power source by removing the plug from the socket-outlet during cleaning or maintenance and when replacing the machine to another function.



WARNING! Do not use the machine if a supply cord or important parts of the machine are damaged, e.g. safety devices, high pressure hoses, trigger gun.



WARNING! If an extension cord is used, the plug and socket must be of watertight construction.



WARNING! Inadequate extension cords can be dangerous. If an extension cord is used, it shall be suitable for outdoor use, and the connection has to be kept dry and off the ground. It is recommended that this is accomplished by means of a cord reel which keeps the socket at least 60mm above the ground.



WARNING! In order to avoid a hazard due to inadvertent resetting of the thermal cut-out, this appliance must not be supplied through an external switching device, such as a timer, or connected to a circuit that is regularly switched on and off by the utility.



WARNING! Machine not suitable for connection to the potable water mains.



WARNING! The machine is intended to be used at a temperature above 0 degree. (Only for machine with power cord of H05VV-F).



WARNING! To ensure the machine safety, please only use original spare parts (including nozzle) from the manufacturer or approved by the manufacturer. Do not use the machine before you changed them if they are damaged.



WARNING! Be care of the danger of the kickback force on the spray assembly when opening the trigger gun and grasp the gun with hands firmly.



WARNING! When the machine is moving and installing, the machine must be in flat. When moving the machine, pulling the handle to move it.



WARNING! Connect to the water supply.

The machines are not suitable for connection to potable water mains. Connect the machine to the water supply. (It can be a water container). Make sure the inlet water pressure keeps between 0.01MPa and 0.4MPa. The inlet pipe should at least 5 M long. Do not use the pipe if the pipe is damaged. If you want connect this machine to portable water mains, you must install a backflow preventer in the water pipe to prevent dirty water flow back to the drinking water system. The backflow preventer shall comply with EN 60335-2-79 ANNEX AA.

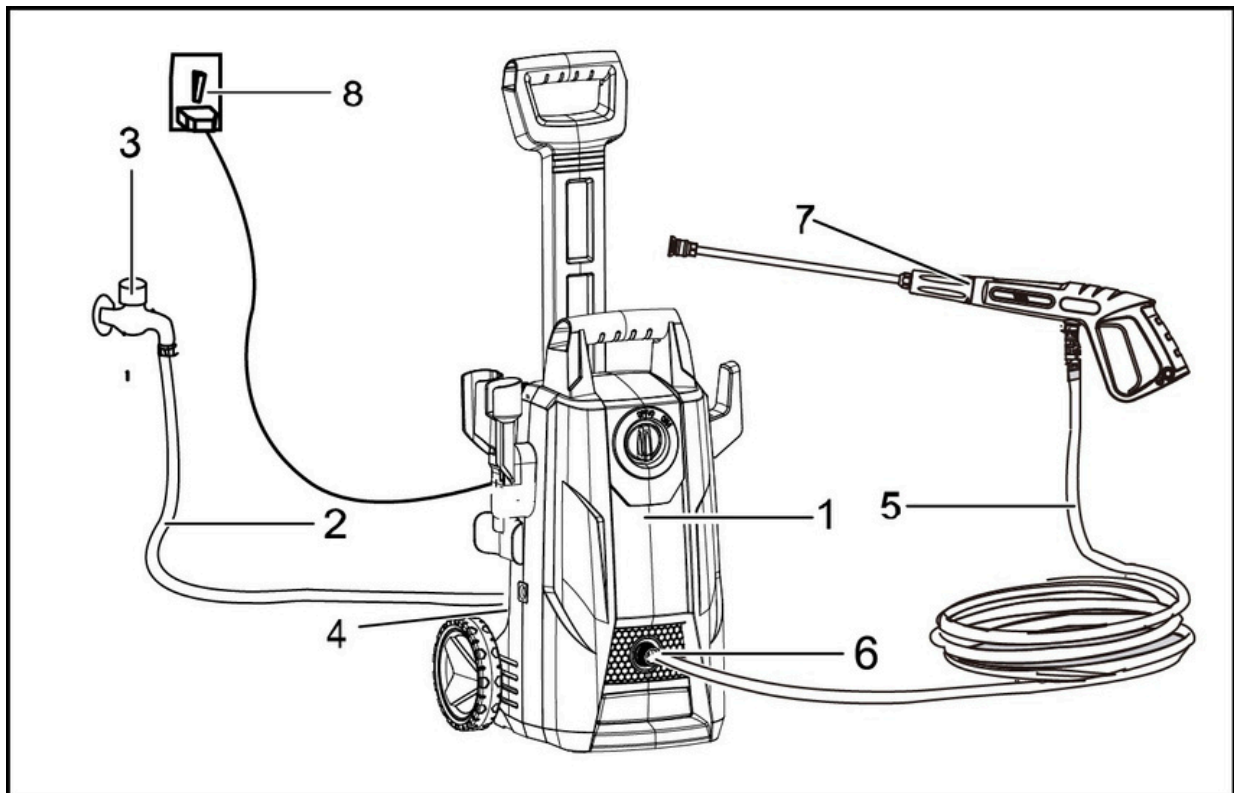


WARNING! Disconnect from the electrical power supply before carrying out user maintenance. If the mains cable is damaged it must be replaced by the manufacturer, or its service agent or similarly qualified person to avoid a hazard.

CONNECTION

1. Attach the high pressure hose to the pressure water outlet of the machine.
2. Attach the spray handle to the high pressure hose. Prior to operating the machine please ensure that the high pressure hose has been completely uncoiled. Whilst the machine is in operation the hose **MUST** not loop.
3. Mount the nozzle or any other equipment you want to use.
4. Connect the machine to the water and power supplies.

INSTALLATION, ELECTRICAL AND WATER CONNECTIONS



1. PRESSURE CLEANER
2. WATER SUPPLY HOSE
3. WATER CONNECTION
4. WATER INLET
5. HIGH PRESSURE TUBE
6. WATER OUTLET
7. SPRAY GUN
8. POWER SUPPLY

* NO. 2, 3, 8 ARE NOT INCLUDED

PRE-OPERATION

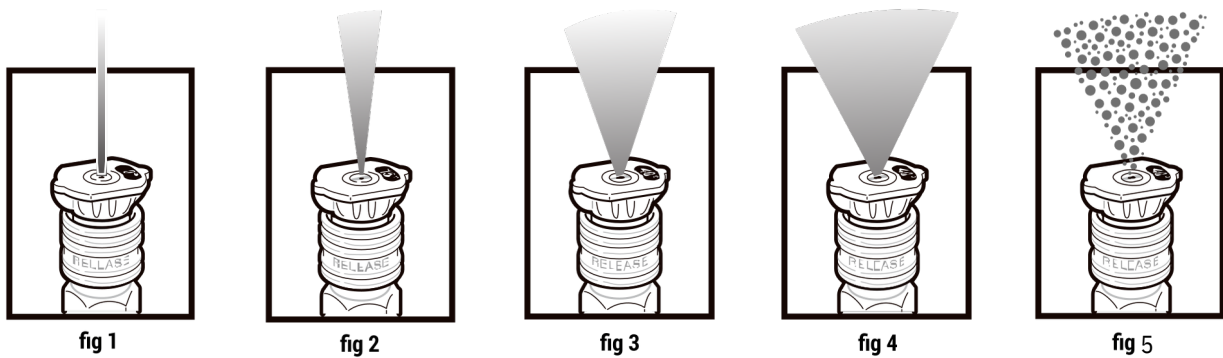
SELECTING THE RIGHT NOZZLE FOR THE JOB

The Pressure Washer comes furnished with four spray nozzles. Each nozzle is color coded and delivers a specific spray pattern and pressure for a particular cleaning job. The size of the nozzle determines the size of the fan spray and the pressure out of the nozzle.

0° Nozzle – Red: This nozzle delivers a pinpoint stream of pressurized water and is extremely powerful. It covers only a small area of cleaning. This nozzle should only be directed at surfaces that can withstand high pressure such as metal or concrete. Do not use this nozzle to clean wood. (fig 1)

15° Nozzle – Yellow: This nozzle delivers a powerful 15 degree spray pattern for intense cleaning of small areas. This nozzle should only be used on areas and materials that can withstand high pressure. (fig 2)

25° Nozzle – Green: This nozzle delivers a 25 degree spray pattern for intense cleaning of larger areas. This nozzle should only be used on areas that can withstand pressure from this nozzle. (fig 3)



40° Nozzle – White: This nozzle delivers a 40 degree spray pattern and a less powerful stream of water. This nozzle can cover a wide area and should be used for most general cleaning jobs. (fig 4)

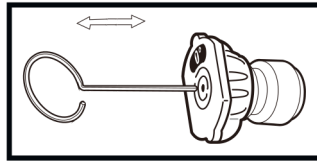
Chemical Nozzle – Black: This nozzle is used to apply special chemicals and cleaning solutions. This nozzle produces the weakest pressure stream of the five nozzles. (fig 5)

The nozzles are stored in receptacles on a panel mounted to the handle of the washer. Colors on the panel identify nozzle location and spray panel.

NOZZLE CLEANING INSTRUCTIONS

A clogged or partially clogged nozzle can cause a significant reduction of water coming out of the nozzle and cause the unit to pulsate while spraying. To clean out the nozzle:

- Turn off and unplug unit.
- Turn off water supply. Relieve any pressure trapped in the hose by squeezing trigger 2-3 times.
- Separate lance from gun.
- Rotate nozzle to the narrow stream setting. This opens up the fan blades.
- Using included tip cleaner, or an unfolded paper clip, insert wire into the nozzle hole and move back and forth until debris is dislodged.

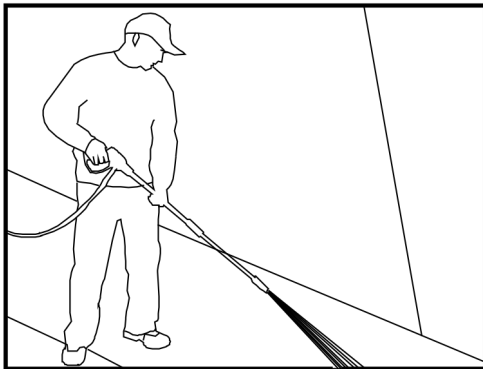


- Remove additional debris by back-flushing water through the nozzle. To do this, place end of a garden hose (with water running) to end of nozzle for 30-60 seconds.

ANGLE TO THE CLEANING SURFACE

When spraying water against a surface, maximum impact is generated when the water strikes the surface "head on." However, this type of impact tends to cause dirt particles to imbed in the surface, thereby preventing the desired cleaning action.

The optimum angle for spraying water against a cleaning surface is 45 degrees.



Spraying water against a surface at this angle provides for the most beneficial impact force combined with efficient removal of debris from the surface.

DISTANCE FROM CLEANING SURFACE

Another factor that determines the impact force of the water is the distance from the spray nozzle to the cleaning surface. The impact force of the water is increased as the nozzle is moved closer to the surface.

HOW TO AVOID DAMAGING SURFACES

Damage to cleaning surfaces occurs because the impact force of the water exceeds the durability of the surface. The impact force can be varied by controlling the three previously noted items. Never use a narrow high impact stream or a turbo/rotary nozzle on a surface that is susceptible to damage. Avoid spraying windows with a narrow high impact stream or turbo nozzle as this may cause breakage.

The surest way to avoid damaging surfaces is to follow these steps:

1. Before triggering the gun, adjust the nozzle to a wide fan pattern.
2. Place the nozzle approximately 4-5 feet from and 45 degrees to the cleaning surface, and trigger the gun.
3. Vary the fan pattern spray angle and the distance to the cleaning surface until optimum cleaning efficiency is achieved without damaging the surface.

TURBO NOZZLE (NOT INCLUDED WITH ALL MODELS)

A turbo nozzle, sometimes referred to as a rotary nozzle, is a very effective tool that can significantly reduce cleaning time. The turbo nozzle combines the power of a narrow high impact stream and the efficiency of a 25 degree fan pattern. This swirls the narrow high impact stream into a cone shape that cleans a larger area.

HOW TO AVOID DAMAGING SURFACES

Damage to cleaning surfaces occurs because the impact force of the water exceeds the durability of the surface. The impact force can be varied by controlling the three previously noted items. Never use a narrow high impact stream or a turbo/rotary nozzle on a surface that is susceptible to damage. Avoid spraying windows with a narrow high impact stream or turbo nozzle as this may cause breakage.

The surest way to avoid damaging surfaces is to follow these steps:

1. Before triggering the gun, adjust the nozzle to a wide fan pattern.
2. Place the nozzle approximately 4-5 feet from and 45 degrees to the cleaning surface, and trigger the gun.
3. Vary the fan pattern spray angle and the distance to the cleaning surface until optimum cleaning efficiency is achieved without damaging the surface.

TURBO NOZZLE (NOT INCLUDED WITH ALL MODELS)

A turbo nozzle, sometimes referred to as a rotary nozzle, is a very effective tool that can significantly reduce cleaning time. The turbo nozzle combines the power of a narrow high impact stream and the efficiency of a 25 degree fan pattern. This swirls the narrow high impact stream into a cone shape that cleans a larger area.



CAUTION: Since a turbo nozzle uses a narrow high impact stream, only use it in applications where the cleaning surface cannot be damaged by narrow high impact spray. Additionally, the turbo nozzle is NOT adjustable and cannot be used to apply detergent.

DETERGENTS

The use of detergents can dramatically reduce cleaning time and assist in the removal of difficult stains. Some detergents have been customized for pressure washer use on specific cleaning tasks. These detergents are approximately as thick as water. The use of thicker detergents, such as dish soap, will clog the chemical injection system and prevent the application of the detergent. The cleaning power of detergents comes from applying them to a surface and giving the chemicals time to break down the dirt and grime. Detergents work best when applied at low pressure. The combination of chemical action and high pressure rinsing is very effective. On vertical surfaces, apply the detergent starting at the bottom and work your way upward. This will prevent the detergent from sliding down and causing streaks. High pressure rinsing should also progress from the bottom to top. On particularly tough stains, it may be necessary to use a brush in combination with detergents and high pressure rinsing.

OPERATION

The following cleaning procedure will help you to organize your cleaning task, and ensure that you achieve the most beneficial results in the shortest amount of time. Remember to use the spraying/cleaning techniques previously listed.

1. SURFACE PREPARATION

Before starting a pressure wash cleaning job, it is important to prepare the surface that is to be cleaned. This is done by cleaning the area of furniture, and making sure that all windows and doors are closed tight. In addition, you should make sure that all plants and trees adjacent to the cleaning area are protected by a drop cloth. This will ensure that your plants won't be sprayed by the detergents.

2. INITIAL HIGH PRESSURE RINSE

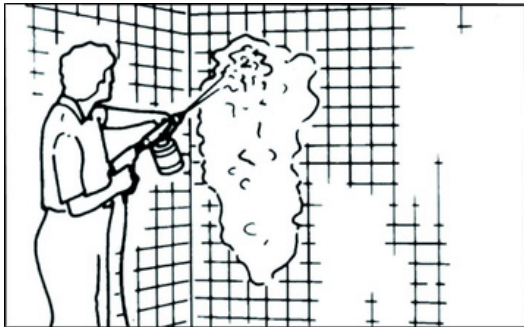
The next step is to spray the cleaning surface with water to clear off any dirt or grime that may have collected on the surface. This will allow your detergent to attack the deep down dirt that has worked its way into the cleaning surface. Before triggering the gun, adjust the nozzle to a surface. This will allow your detergent to attack the deep down dirt that has worked its way into the cleaning surface. Before triggering the gun, adjust the nozzle to a wide fan pattern and slowly adjust to the desired spray pattern. This will help you avoid applying too much concentrated spray to the surface which could cause damage.

3. DETERGENT APPLICATION

USE THE INSTRUCTIONS APPROPRIATE FOR MODEL PURCHASED

NOTE: Use only detergents formulated for pressure washes.

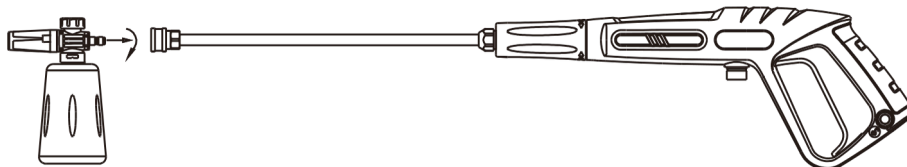
NOTE: Test detergent in an inconspicuous area before use.



UNITS WITH DETERGENT APPLICATOR INCLUDED

Follow manufacturer's label directions for mixing correct concentrations of detergent to water ratio through the pressure washer is approximately 5.4% (1 to 19).

1. Unscrew to top of detergent applicator and fill applicator with detergent.
2. Replace top on applicator.
3. Remove lance from gun.
4. Attach detergent applicator to gun.



5. Apply detergent so it thoroughly covers cleaning surface. Apply from bottom to top to prevent detergent from sliding down and streaking.
6. Allow detergent to remain on the surface for a few minutes. This is a good time to use a brush to lightly scrub heavily soiled areas. Never allow detergent to dry on the cleaning surface.
7. Remove detergent applicator from gun and replace with the lance, or remove applicator from end of lance.
8. Rinse detergent from surface.

NOTE: Flush detergent applicator with clear water following each use.

4. FINAL RINSE

Start final rinse at bottom an work upward. Make sure you thoroughly rinse the surface and that all detergent has been removed.

5. SHUT DOWN

1. Be sure all detergent is flushed from system.
2. Turn off motor.
3. Turn off water supply.
4. After motor and water supply are turned off, trigger gun to depressurize system.



CAUTION: NEVER turn water supply off before turning motor off. Serious damage could occur to the pump and or motor.



WARNING! NEVER disconnect high pressure discharge hose from machine while system is pressurized. To depressurize, turn motor off, turn water supply off and squeeze gun trigger 2-3 times.

5. After each use, wipe all surfaces of the pressure washer with a clean, damp cloth.

6. STORAGE

Do not store pressure washer outdoors.
Do not store pressure washer where it might freeze.

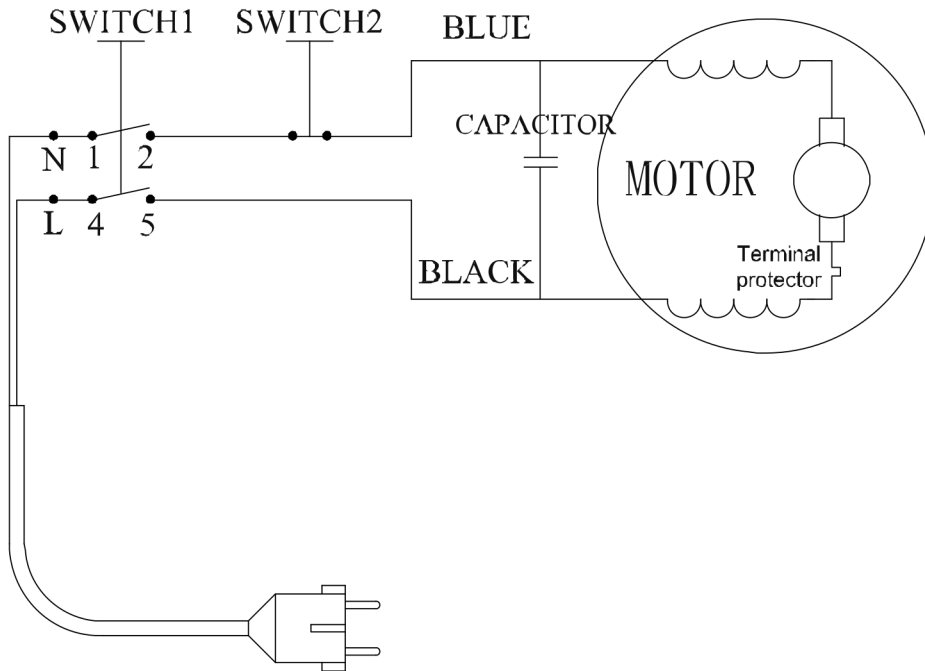
TIPS FOR EXTENDING THE LIFE OF YOUR PRESSURE WASHER

1. Never operate unit without water.
2. Pressure washer is not meant to pump hot water. Never connect to hot water supply – this will significantly reduce life of the pump.
3. Using detergent other than others brand may cause damage to pump components (o-rings, etc.).This also applies to chemicals such as bleach, dish soap, etc.
4. Never operate unit for more than one (1) minute without spraying water. Resulting heat buildup will damage pump.
5. Before adjusting nozzle's pressure (high-to-low or low-to-high) release trigger. Failure to do so will reduce life of o-rings in lance.

MAJOR TECHNICAL DATA

ITEM	V2240X2
Working pressure	9MPa(90 bar)
Allowable pressure	13.5MPa(135 bar)
Working flow rate	5.5 l/min
Max. flow rate	7.1 l/min
Max. pressure water supply	0.4MPa(4 bar)
Motor Capacity	1600W
Power Supply Voltage	240V~50Hz
Max. Water Temperature	50 °C

ELECTRICAL DIAGRAM



POSSIBLE PROBLEM AND SOLUTION:

SYMPTOM	POSSIBLE CAUSE(S)	CORRECTIVE ACTION(S)
No detergent suction units with tanks	<ol style="list-style-type: none"> 1. Lance nozzle is not in low pressure 2. High pressure extension hose or high pressure too long. 3. Injector clogged on pump 	<ol style="list-style-type: none"> 1. Slide lance nozzle into low pressure position (see page 12) 2. Remove high pressure extension hose or use high pressure hose is hose shorter than 25 feet. 3. Call the dealer
No detergent suction - units with attachable applicators	Detergent applicator is clogged	<ol style="list-style-type: none"> 1. Clean applicator with warm water. 2. Replace applicator
Unit begins to smoke	Overheated, overloaded or damaged motor	Turn off unit and call the dealer

POSSIBLE PROBLEM AND SOLUTION:

SYMPTOM	POSSIBLE CAUSE(S)	CORRECTIVE ACTION(S)
P ressure washer does not start up	<ol style="list-style-type: none"> 1. Unit is pressurized 2. Plug is not well connected or electric socket is faulty. 3. Extension cord is too long or wire size too small 4. Main voltage supply is too low 5. Thermal safety switch has tripped 	<ol style="list-style-type: none"> 1. Squeeze trigger on gun 2. Check plug, socket and fuse 3. Remove extension cord 4. Check that main supply voltage age is adequate 5. Switch off unit and allow motor to c o l d o w n
Pump does not reach necessary pressure	<ol style="list-style-type: none"> 1. Water inlet filter is clogged 2. Pump is sucking air from hose connections 3. Nozzle is worn or not correct size 4. Unloader is clogged or Worn 5. Valve is clogged or worn 	<ol style="list-style-type: none"> 1. Clean water inlet filter 2. Check that connections and locking ring are properly tightened 3. Call the dealer 4. Call the dealer 5. Call the dealer
Fluctuating Pressure	<ol style="list-style-type: none"> 1. Pump is sucking in air 2. Clogged nozzle 3. Valves dirty, worn or stuck 4. Water seals worn 	<ol style="list-style-type: none"> 1. Check that hoses and connections are tight 2. Clean with tip cleaner(see page 8) 3. Call the dealer 4. Call the dealer
Motor stops suddenly	<ol style="list-style-type: none"> 1. Extension cord is too long or wire size too small 2. Thermal safety switch has tripped due to overheating 	<ol style="list-style-type: none"> 1. Remove extension cord (see page 4.) 2. Check that main supply voltage age corresponds to specifications

INSPECTION & MAINTENANCE

For safety, clean the machine every three months. Before working, make sure to inspect the filter and the nozzle, make sure there is no impurity. After working, make sure there is no water in the pump and the hose.

If the machine need to be repaired in the guarantee period, please return the machine to the shop. You need to provide the certificate of purchase in order to repair or get the substitute.

Before Packaging, The machine should be cleaned, then use closed packaging, packaging should be firm.

Storage the machine in dry.

For transportation safety. The machine should comply with ISTA.



Meaning of crossed –out wheeled dustbin:

Do not dispose of electrical appliances as unsorted municipal waste, use separate collection facilities.

Contact your local government for information regarding the collection systems available.

If electrical appliances are disposed of in landfills or dumps, hazardous substances can leak into the groundwater and get into the food chain, damaging your health and well-being.

When replacing old appliances with new ones, the retailer is legally obligated to take back your old appliance for disposals at least free of charge.

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

Children should be supervised to ensure that they do not play with the appliance

V-TUF[®]

www.V-TUF.COM