

Mytana Mfg. Co., Inc.
Operation Manual
for MV80, MS80 Jetters

Read and understand the instructions in this book before operating this jetting equipment (Mytana Models MV80 and MS80). If you have any additional questions before beginning operation, please call MyTana Mfg. Co. Inc. at 1-800-328-8170.

Fuel is highly flammable. Use extreme caution when filling either fuel tank. **DO NOT SMOKE.** Do not fill fuel tank while machine is running. Do not fill near open flame. Always fill in an open, well-ventilated area. Use of diesel fuel in the gas tank may damage the engine. In case of fuel spill use a cloth to clean up the spilled fuel and move the machine to another area until all vapors have cleared.

Always stop the engine before leaving machine and prior to any repairs or maintenance.

If machine fails to run properly, shut down and contact the proper authorized service personnel only for repairs.

DO NOT touch engine during operation, the muffler and other parts of the engine get hot and can cause severe burns.

DO NOT operate the machine with the air cleaner cover removed, this can cause a fire.

Always wear rubber-soled shoes to reduce risk of electric shock during operation.

Always keep people clear of machine and area being cleaned during operation as water under high pressure may cause severe injury. Keep all labels, decals, warnings, cautions, and instructions with machine. For new decals or labels contact Mytana Mfg. Co., Inc.

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OPERATING INSTRUCTIONS FOR Mytana Mfg. Co. Inc. MV & MS JETTERS

Read this manual before operating water jets.

This manual contains vital information that must be followed in order to ensure safe use and operation of the MV/MS series of jetters. All persons operating this equipment are required to read and understand this manual before start up. Unsafe operation of these machines may cause bodily injury and damage to other equipment. Before operating, carefully review all warnings and cautions contained within these instructions.

Any alteration to equipment without prior written approval from Mytana Mfg. Co., Inc. will nullify any warranty or liability extended to the purchaser by Valley Industries. For approval or assistance contact

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SAFETY INSTRUCTIONS

Carefully read and follow all warnings and cautions to allow safe operation of this equipment.

- WARNING!** Hazards or unsafe practices that could result in severe personal injury or death.
- CAUTION!!** Hazards or unsafe practices that could result in minor personal injury product or property damage.
- WARNING!** You must have training in the operation of this machine before using it. Read and understand the instructions in this book.
- WARNING!** Fuel is highly flammable. Use extreme caution when filling gas tank. **DO NOT** smoke. **DO NOT** fill gas tank while machine is running. **DO NOT** fill tank near open flame. Always fill tank in an open, well ventilated area.
- WARNING!** In case of fuel spill use a cloth to clean up the spilled fuel and move the machine to another areas until all vapors have cleared.
- WARNING!** Always stop the engine before leaving machine and prior to any repairs or maintenance.
- WARNING!** If machine fails to run properly, shut down and contact authorized service personnel for repairs.
- WARNING!** Do not touch engine during operation, the muffler and other parts of the engine get hot and can cause severe burns.
- WARNING!** Do not operate the machine with the air cleaner cover removed, this can cause a fire.
- WARNING!** Always wear rubber-soled shoes to reduce the risk of electric shock during operation.
- CAUTION!!** Always keep people clear of machine and the area being cleaned during operation, as water under high pressure may cause severe injury.
- WARNING!** Keep all labels, decals, warnings, cautions, and instructions with machine. For new decals or labels contact Mytana Mfg. Co., Inc.
- CAUTION!!** Use of diesel fuel in the gas tank may damage the engine.

INTRODUCTION

Your hydro-jetting machine is designed to give you years of trouble-free, profitable service. However, no machine is better than its operator. We therefore suggest you read these instructions through carefully before using your machine on a job. This will enable you to operate the jetting machine more efficiently and more profitably. Failure to follow instructions may cause injury to operator or damage to equipment.

This instruction book covers the operation of Models MV80 & MS80. The operation of all the jets is similar. Read the entire instruction book through carefully, paying particular attention to the warnings for your machine.

If, after reading the entire manual, you have further questions, please call 1-800-328-8170 and ask for our customer service department.

HOW JETTERS WORK

High pressure water jet cleaning is the combination of high pressure water (measure in psi) and sufficient flow (measured in GPM) to remove debris in sewer and drain-pipes.

A hydro-jet consists of an engine or motor, a pump, a water source, a hose reel, a length of hose, and various types of nozzles. Water pressure, flow, and the angle of the holes in the nozzle propel a jet hose through a sewer line. Pressure cuts through the stoppage; flow clears it away. Thus the combination of the “laser” jets--along with the “washing” effect of high rates of water flow--enables you to clean stubborn grease, sand, silt, soap and other debris that tends to harden inside a sewer line.

High-pressure jets can also clear lines clogged by ice. **NOTE:** Jetters are **NOT** effective on root blockages.

WARNINGS

Use caution when working with high-pressure water jets. High-pressure spray can seriously injure you or anyone standing nearby.

DO NOT point water spray toward anyone, including yourself.

DO NOT put your hand in front of water spray. It is strong enough to cause extremely serious injury. Wear Safety goggles and rubber gloves when machine is in use. If you suffer injury, seek medical attention immediately.

If any fluid penetrates your skin, **GET EMERGENCY MEDICAL CARE AT ONCE.** **DO NOT** treat the injury as a simple cut. Tell the doctor exactly what fluid was injected. For treatment instructions, and have the doctor call the **NATIONAL POISON CENTER NETWORK (412) 681-6669**

IMPORTANT SAFETY WARNINGS

- Wear Safety Glasses or face shield when operating machine.
- Neutralize or remove corrosive drain cleaners from drain before starting. Exposure to these chemicals can cause injury to operator and damage to equipment.
- NEVER leave the equipment unattended once you have turned it on. If you must leave the equipment, shut it off and relieve any existing pressure on pumps & hose.
- NEVER spray flammable liquids. Spraying flammable liquids could cause fire or explosion and is a danger to personnel.
- NEVER spray toxic chemicals such as insecticide or weed killer. Such chemicals are a danger to personnel.
- NEVER let children or untrained adults operate the machine. Keep children at a safe distance when a trained adult is operating the machine.
- NEVER run acids or hard caustics (such as lye) through the pump. (Only water!)
- NEVER use chemicals or agents that are not compatible with the Buna-N and PVC (polyvinyl chloride) or neoprene covering of the hose.
- NEVER clean the machine using its own spray wand. The machine is water-protected, but not water proof. High-pressure spray could damage machine components.
- Check the labels of any substance you will spray. If the label recommends any antidote or treatment, be ready to use it. (Have MSDI information available)
- Be sure you know how to shut off the machine in an emergency situation.

GAS MACHINE WARNINGS

- **DO NOT** operate the equipment where there may be combustible materials, combustible fumes or dust. Otherwise, fire or explosion may occur.
- **DO NOT** locate or operate the equipment in small areas or near exhaust fans. If the equipment does not have adequate oxygen, carbon monoxide will build up and cause a danger to nearby personnel.
- **DO NOT** refuel while engine is running.
- **DO NOT** smoke while operating or refueling machine.

ASSEMBLY

Jets have antifreeze in the pump to protect from freezing conditions during shipment and storage. If the machine will be stored and operated in a cold climate, follow the Freeze Protection instructions on **page 11**.

SET UP

The machine is designed for use at or near the working area and under operator supervision. If the machine must be located out of sight of the operator, special controls may be required for proper machine operations and operator safety.

Locate the equipment on a solid level area with slopes for drainage. Avoid areas where water can build up. Lock machine into position.

Before using the jet, make sure there are no impurities in the incoming water supply. Turn on the water source for at least 15 seconds to remove any possible debris in the water before connecting hose to machine.

After reading entire manual, hook hose to reel then when unit is running. This will clean the new hose and then the nozzle can be hooked on and the python pressurized.

The inlet screen located inside the filter should be cleaned before each use. To clean the inlet screen, unscrew cap underneath the filter, remove the screen and rinse thoroughly with water. Replace screen.

Connect one end of a garden hose to the water faucet (water supply not to exceed 100 PSI) and the other end to the water inlet of the jet machine. Use heavy duty 3/4" hose of no more than 50 ft. in length. If the unit is run with an inadequate water supply, pump damage will occur. Inadequate water supply causes cavitation in the pump. **NOTE:** Lack of water supply can lead to damage to pump seals, causing loss of pressure and will void the warranty to the pump.

Maximum temperature from the water source should not exceed 140° F. Using water hotter than 140°F can cause damage to the pump-seals and void the warranty. If jet is being used to clear ice blockages, see instructions on **page 9**.

HOSE SELECTION GUIDE

Select the proper hose diameter for the line to be cleaned. When using new hose, run water through it to clean it out before attaching the nozzle. See other, **page 4**.

Hose Size (ID)	Pipe Size	Typical Applications
3/8" or 1/2"	4" to 12"	Waste/septic lines, at long lengths.
1/4"	2" to 4"	Kitchen sinks, laundry drains, and clean-outs.
1/8"	1-1/2" to 2"	Small lines, bathroom sinks and tight bends.

*Inside diameter

When selecting hose size, consider that pressure is lost as the water travels down the length of the hose. As the length increases, the pressure decreases. In addition, the smaller the diameter of the hose, the greater of loss of pressure per foot will be. As an example, at 2 GPM a 1/4" hose will lose 180 lbs. of pressure over 100 ft. of hose, yet a 3/8" hose will only lose 25 lbs. of pressure over the same length at the same flow rate. At 4 GPM, a 3/8" hose will lose 90 lbs. of pressure over a 100 ft. length. The gauge reflects pressure from the pump only, not pressure at the end of the hose. It is important to select the largest possible hose size in order to have as much pressure as possible at the end of the hose. Hoses of the same diameter may be

coupled together but it is not recommended for use in lines small than 8" diameter. The length solid metal of the combined hose connectors and coupling, can get caught in bends in the line.

It is not advisable to have two different hose sized coupled in a drain line. There is a tremendous loss of pressure when combined, aside from the difficulty of getting around bends. The 3/8" and 1/4" hoses may be attached to the fitting in the core of the hose reel using the swivel at one end of the hose. The 3/8" hose may also be attached directly to the accessory outlet by using a twist-connect. The 1/4" and 1/8" hoses may be connected directly to the accessory outlet if an adapter fitting is used between the hose and quick connect. Adapters may be ordered separately.

PRE-OPERATION CHECK LIST

- Be sure you understand all safety precautions and have been trained to use the machine.
- Wear goggles or a face shield to protect your eyes from spray and from any product of the spray.
- Wear protective gloves, rubber boots, and other protective clothing as required.
- Be sure you understand all safety precautions for the detergent or chemical use.
- Check the labels of any substance you will spray. If the label recommends any antidote or treatment, be ready to use it. (Poison Center Phone #412-681-6669)
- Check that all lines and hoses are clear.
- Check that the machine is connected to an adequate water supply and that the water supply is on.
- Check that traffic has not made the hose weak, worn, or damaged. Check the hose for pinching or kinking. Replace any damaged hose.
- Tighten all fluid connections securely.
- Check oil level of pump gear reducer. See maintenance schedule for oil type.
- Check gasoline and oil level of engine. See enclosed manufacturers manual for engine and oil types.
- Be sure that you are operating connecting to a 110V, 20 amp service for electric motor machine.

OPERATION

- Be sure you have read and understand the warnings listed above. Failure to follow instructions can cause serious injury and damage to equipment. Be familiar with all pre-operation checklists.
- Check all hoses for wear and damage. Tighten all connections securely.
- Check oil level of pump and gear reducer. On gas jets, check engine fuel and oil levels.

To begin, turn the water faucet on fully and purge air from system. Insert the end of the jet hose 3 to 4 ft into the drain line. Then turn the valve on.

!!Warning!!

NEVER POINT THE END OF THE JET HOSE AT A PERSON WHILE OPERATING

GAS ENGINE START UP

1. Make sure that the ball valve is turned on and water is flowing through pump & hose.
2. Turn fuel valve to the open position.

3. Move choke lever to the closed position.
4. **NOTE:** Do not use choke if engine is warm or ambient air temperature is high.
5. Move the throttle lever to the mid-point position.
6. Turn the engine switch to the on position.
7. Pull the starter grip lightly until resistance is felt, then pull briskly.
8. **NOTE:** Do not pull starter cord on electric start machine. Simply turn the ignition key, however, manual start can be used if need be.
9. As the engine warms up, gradually move the choke lever to the open position.
10. Position the throttle to the desired engine speed.

OPERATION CONTINUED

As the engine starts, the hose will start to advance down the drain line. Pull the jet hose from the reel and guide it into the line. Allow the jet hose to enter the line a few feet and then pull the hose back one half the distance advanced. The actual cleaning of the line takes place when the hose is pulled back toward the operator. By carefully moving the hose forward and backward, you can reduce the likelihood of catching the jet hose in the line.

If the hose fails to advance or has difficulty getting around bends, rotate the hose. To do this, simply form a loop of hose near the drain opening, then rotate the loop 90° to 180° until the hose advances. If the hose still fails to advance, switch to a smaller diameter hose.

Ideally, a line should be cleaned from the lower end or down-stream side. By sending a jet hose to the top of the line and slowly rewinding the hose reel, the water pressure and flow cleans the line effectively. However, it is not always possible to clean from the down-stream (or lower) end of a line. When you work from the upstream side, it is best to clean the line several times to insure that all debris is removed. It takes approximately twice as long to properly clean against gravity flow (from the up-stream side) as cleaning with the flow (down-stream side).

VARI-PULSE

Pulsation makes the hose vibrate, helping the jet go longer distances and around tight bends easier.

SHUTDOWN INSTRUCTIONS

After drain cleaning or spray washing is completed, run clear water through the system. Always leave ball valve in open position when turning off motor. On gas machines, first reduce engine to idle, turn off engine. Then be sure to turn off fuel valve. Turn off water supply and drain as much water from the pump as possible. Remove water supply hose from inlet. If you are in cold climate, see Freeze Protection on **page 11**.

CLEANING LINES INSIDE A BUILDING

Use a long (50 to 75 ft) “jumper” hose between the jetter and the Reel that houses the hose for cleaning, when cleaning inside lines. This allows you to clean inside while leaving the gas powered machine outside. Position the hose and reel at the drain site. Connect the hose from the jetting machine to the inlet on the

Reel. Select and attach a nozzle to the hose on the Reel. Put the hose 2 to 3 ft. into the drain line. Open the ball valve on the Reel. Follow the start up procedures.

ICE BLOCKAGES

High-pressure water can be used to clear an ice blockage. A 3000 PSI gas jet can clear a 4" line at an approximate rate of one foot per minute depending on the ice blockage. Ambient air temperature will affect these times. Use a nozzle with a forward jet. **DO NOT** allow the incoming water supply to exceed 140° F or it could cause damage to the pump.

SPRAY WAND

Follow the same procedures listed previously for safety, set up, operation and maintenance. To operate the spray wand, connect the high-pressure hose and trigger to the machine by disconnecting the hose reel and connecting the spray wand hose to pump discharge.

REGULATOR PRESSURE UNLOADER

The machine is equipped with a regulating pressure unloader to prevent pressure overload in the event that the nozzle is plugged, or the ball valve or trigger is shut off. When the unit is in the by-pass mode, the pump will continue to run. However, running in by-pass mode for extended periods, more than 2 minutes, will cause damage to the pump unless you have a larger gas jet which by-pass returns to float tank.

!!Caution!!

The unit also comes with thermal overload protection. When water temperature in pump increases to 140° F, thermal relief valve will release hot water and allow cool water to enter pump from fresh water supply. This is only to protect the pump, it is not to be used as a common practice.

FREEZE PROTECTION

To protect your machine from severe damage caused by water freezing inside the components (pump, hoses & nozzles), it is important to winterize it whenever the jetter is exposed to freezing temperatures.

MAINTENANCE

Regular inspection is the key to preventing breakdowns and prolonging the life of the equipment. Follow this simple procedure religiously.

DAILY

- Check to make sure there are no leaks in discharge or inlet fitting and hose
- That water supply to the pump is adequate
- Jet nozzles are not clogged or worn
- PUMP OIL LEVEL is within operating range on dipstick or sight glass,
- That the engine FUEL LEVEL is full,
and that the ENGINE OIL LEVEL is within operating range on dipstick.

WEEKLY

Check the PRESSURE HOSE for wear and damage. Damaged hose can be repaired Mytana or at a local hydraulic hose service dealer or by your equipment dealer.

Check the INLET FILTER, and the FUEL FILTER for dirt and sediment.
 Check the AIR CLEANER for dirt, clean and replace as required.

MAINTENANCE SCHEDULE

Use the following maintenance schedule at the stated intervals to maximize the life of your jetting equipment.

**SHUT OFF GAS ENGINE BEFORE ATTEMPTING ANY REPAIRS OR MAINTENANCE.
 UNPLUG ELECTRIC MACHINE BEFORE ATTEMPTING REPAIRS OR MAINTENANCE.**

FOR ALL JETS

ITEMS TO BE SERVICED	MONTHS OR HOURS OF SERVICE				
	1 st mo. or 20 hrs.	1 st mo. or 50 hrs.	Every 3 mo. or 50 hrs.	Every 6 mo. or 100 hrs.	Every yr. or 500 hrs.
Pump Crankcase Oil Change*		X			X
Gear Reduction Oil Change**		X			X
Engine Oil Change***	X			X	
Air Filter Cleaning		X	X		
Fuel Filter Change				X	
Spark Plug Change				X	

- * Use SAE 30W Non-Detergent Motor Oil to full mark on dipstick or to dot on sight glass.
- ** Use 90W Gear Oil. Fill to mark on dipstick or to dot on sight glass for gear box.
- *** Refer to engine manufacturer’s specifications for correct oil viscosity when adding engine oil.

TROUBLESHOOTING

These troubleshooting procedures cover pump malfunction, delivery problems, and charge system malfunction.

!!Warning!!

Before attempting any repairs or maintenance, make sure machine is shut off. For electric start units, disconnect battery cables. Severe injury can occur due to electrical shock.

PUMP MALFUNCTION AND PRESSURE DELIVERY PROBLEMS

Problem	Cause	Repair
Low Pressure	Worn or oversized nozzle	Replace worn nozzle Check nozzle size
	Clogged water and/or chemical inlet strainer	Clean or replace strainers
	Worn or damaged plunger seals	Replace plunger seals
	Worn or damaged inlet or discharge valve	Replace worn valve poppets or valve springs
	Dirt or foreign particles in valve assembly	Remove any dirt or particles
	Air leak in inlet plumbing or discharge	Locate air leak. Reseal connection or replace damaged port
Rough operation with loss of pressure	Restricted inlet plumbing, or air leak in inlet plumbing	Repair clogged inlet fittings. Check supply hose and ensure adequate water supply
Rough operation with loss of pressure	Damaged plunger seal or pump valve	Replace any damaged pump parts and clean out any foreign particles
	Clogged nozzles	Clean or replace nozzles
Water leakage at intake manifold or crankcase	Worn manifold seals, plungers, O-rings or condensation inside crankcase	Replace seals, sleeves, or O-rings. Change oil at regular intervals
	Inadequate water supply to pump creating a vacuum lock	Ensure adequate tap water supply; clear inlet filter

Problem	Cause	Repair
Oil leaks	Worn pistons and/or leaking crank seals, crankcase cover seal or drain plug seal	Replace seals, sleeves or O-rings
Excessive wear	Worn and loose bearings	Replace bearings. Check bearing seals, spacers, and retainers. Replace any worn parts.
Short plunger seal	Abrasive particles in fluid being pumped	Replace water and chemical strainers if damaged or missing. Install additional filter if fine abrasives are still evident.
	Operator(s) running pump without water supply	DO NOT ALLOW UNIT TO RUN WITHOUT ADEQUATE WATER SUPPLY
	Hot water in pump	Do not run in bypass for more than 5 min. Do not let water supply exceed 140° F
Irregular Spray pattern	Worn or partially clogged nozzle	Clean or replace nozzle

UNLOADER VALVE MALFUNCTION

Problem	Cause	Repair
Unloader cycles	Fitting leaking downstream	Tighten/replace fitting
	Clogged nozzle	Clean or replace
Fluid leaking from body	O-ring worn or cut	Replace part as necessary
Unloader will not turn up to pressure	Foreign particle in valve	Replace or clean
	Nozzle worn or sized incorrectly	Replace part as necessary
	Plunger or valve worn	Replace part as necessary
Extreme pressure spikes	Adjusting nut turned completely into unloader	Loosen adjusting nut
	Clogged nozzle	Clean or replace