

*Electric & Gas Jetters*



*Hose, Nozzles, Parts, Repair*

## ***Electric Powered Jetter***

### ***User Manual***

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## ***Electric Powered Jetter***

### **Introduction and Safety**

Thank you for choosing **DRAIN INVADER** for your equipment purchase. We recommend that you become familiar with the contents of this manual before using your new Jetter. In this manual we will review basic operation, safety, and maintenance. However, we can not anticipate every possible circumstance that may involve potential hazard. The instructions and warnings therefore are not all inclusive, but are guidelines for proper and safe use and care of your jetting equipment. *Ultimately, the operator of this equipment must always be sure that the use and operation of this equipment is safe for themselves and those around them.*

- Improper use of high pressure water jetting equipment can cause serious injury! **Always wear eye protection and suitable gloves, along with protective clothing and footwear.**
- Do Not allow untrained or unauthorized personnel to operate Jetting equipment
- Never point a nozzle or high pressure water jet at any person, or put your hands or fingers over a water jet while the machine is running!
- Never make unauthorized adjustments or modifications to your Jetter
- Never exceed the factory ratings for pressure, flow, or temperature.
- Never replace parts or hoses with anything that is not rated for the full pressure & flow capacity of the machine. We suggest using factory parts or exact replacement parts.
- Never feed the unit with hot water
- Never run the unit with a damaged Jetting Hose or damaged power-cord
- When working in larger-diameter pipe be sure that the hose/nozzle cannot turn around and come back to the operator. A nozzle extension pipe should be used for work in larger drains.



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## Safety Precautions


⚠ A hazard that could result in death, serious injury, or substantial property damage.

⚠


NOTE: is used to notify people of important installation, operation, or maintenance information.

	<b>⚠ WARNING</b>
	<p><b>Explosive Fuel</b></p> <p>burns.</p> <p>Do not tank while</p>
<p>Gasoline is extremely flammable and its vapors can explode if ignited. Store gasoline only in approved containers, in well ventilated, unoccupied buildings, away from sparks or flames. Spilled fuel could ignite if it comes in contact with hot parts or sparks from ignition. Never use gasoline as a cleaning agent.</p>	


	<b>⚠ WARNING</b>
	<p>or death.</p> <p>exhaust fumes.</p>
<p>Engine exhaust gases contain poisonous carbon monoxide. Carbon monoxide is odorless, colorless, and can cause death if inhaled.</p>	


	<b>⚠ WARNING</b>
	<p>death.</p> <p>plus lead(s)</p>
<p>Before working on engine or equipment, disable engine as follows: 1) Disconnect spark plug lead(s). 2) Disconnect negative (⊖) battery cable from battery.</p>	



	<b>⚠ WARNING</b>
	<p>Fluids can</p> <p>and cause</p> <p>death.</p> <p>Do not work</p> <p>without proper</p> <p>equipment.</p>
<p>Fluid puncture injuries are highly toxic and hazardous. If an injury occurs, seek immediate medical attention.</p>	

	<b>⚠ WARNING</b>
	<p>severe injury.</p> <p>operation.</p>
<p>Keep hands, feet, hair, and clothing away from all moving parts to prevent injury. Never operate engine with covers, shrouds, or guards removed.</p>	

	<b>⚠ WARNING</b>
	<p>burns.</p> <p>after stopping.</p>
<p>Never operate engine with heat shields or guards removed.</p>	

	<b>⚠ CAUTION</b>
	<p><b>Electrical Shock</b></p> <p>can cause injury.</p>

California Proposition 65 Warning
<p>Engine exhaust from this product contains chemicals known to State of California to cause cancer, birth defects, or other reproductive harm.</p>

California Proposition 65 Warning
<p>This product contains chemicals known to State of California to cause cancer, birth defects, or other reproductive harm.</p>



## ***Electric Powered Jetter***

### **Specifications**

MODEL	GPM	PRESSURE	MOTOR	HOSE	NOZZLE SIZE
DRAIN INVADRRER-HD DRAIN INVADER-X	1.7 1.5	1700 MAX 2300 MAX	Induction Induction	3/16" STAINLESS 3/16" STAINLESS	1/8" NPT 1/8" NPT

### **Initial Set-Up**

When your new Jetter arrives a few minor things have to be done prior to use. In preparation for shipping, the Hose-Reel and Cart-Handle (if equipped) may have been removed. Also, the jetter may contain anti-freeze solution to keep the pump and piping from freezing during transportation.

**While unpacking the unit, inspect closely for any shipping-damage and report any damage or missing items to us immediately.**

Install the handle/hose reel assembly with the included hardware, hand tighten, and then connect the short jumper-hose on the reel's inlet to the discharge of the pump. No sealer or teflon tape is needed for this connection.

**When you start your jetter for the first time (or after storage) we highly recommend running the jetter per the instructions to follow !**

**Use a loose 1½" - 2" diameter pipe in your yard to practice the jetting process. Set the machine at least 10 feet away from the pipe.**



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### **3 standard Jetting-Nozzles are included:**

- “**Penetrator Nozzle**” is the hex-head nozzle with 3 rear-jets (orifices) and 1-forward jet. Use this nozzle for clog busting and general cleaning. The rear jets are at a sharp 20 degree angle for thrust. For better cleaning of the pipe wall a 35-degree angle or rotating head is preferred...
- “**Flusher Nozzle**” is the round nozzle with 3 rear-jets but no forward-jet. The rear jets are at a 35 degree angle for better cleaning of the pipe-wall. Use this nozzle for maintenance of pipelines and/or as a follow up to the Penetrator for better cleaning of the pipe wall.
- “**Knucklehead Nozzle**” (aka Drop-Head) has a "knuckled" leader to help the nozzle and hose make its way through P-traps and other curves in the pipeline. This nozzle has 3 rear-jets for thrust and flushing

### **Optional Nozzle you may have added:**

- “**Grease Hog Spinner Nozzle**” (aka Rotator) has 2 rear jets on a rotating collar. While this nozzle cleans the entire pipe wall with its rotating action, some performance is lost to lubrication of the rotating assembly. Use this nozzle as a final pass cleaning, or polishing of the pipe.

**We highly suggest you become familiar and skilled with your Jetter and each of the nozzles before ever using it in a customer's pipe. See the steps in the operation portion of this manual for more instructions and features.**

**Use a loose 1½" - 2" diameter pipe in your yard to practice the jetting process. Set the machine at least 10 feet away from the pipe.**



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## ***Electric Powered Jetter***

### **Jetter Operating Instructions**

- 1) **Familiarize yourself with the jetter's Water-System:** Start with connecting your garden-hose to the **Garden-Hose Fitting** on the inlet of the **High-Pressure Pump**. Next in line is a ball-valve with a long lever we call the **Flow-Control Valve** which is used to start and stop flow to the **Jetting-Nozzle** on the end of the **Jetting-Hose**. **NOTE:** There is also a Quick-Coupler near the Flow-Control Valve which is used to couple up the Jetting-Hose/Reel or optional foot control or pressure-wash hose (if supplied). *Do not couple-up a Foot-Control or Pressure-Wash hose or gun/wand at this time.* If equipped, take notice of the **Unloader/Regulator-Valve** with black-colored knob which works as a pressure-regulator, allowing you to lower the PSI and amp-load if desired.
- 2) Unwind the electric-cord as needed and plug the GFI-Plug into a suitable 110-volt wall-outlet (minimum 15-amp service). **Avoid using extension-cords which can** (a) cause unnecessary increase in amp-draw / trip the breaker at the building's electrical-panel, and/or (b) allow the GFI-plug to get wet which will cause the GFI to trip out and kill the jetter's motor.
- 3) **When you start your jetter for the first time (or after storage) we recommend running the jetter briefly with no nozzle** (thus no load on the pump/motor). **Hold the jetting hose firmly near its end, aiming it so the water will discharge away from you and away from others.**
- 4) Turn on your Garden-Hose water, and then open the *Flow-Control Valve* to allow water to flow through the jetter. Next, turn the jetter's motor on (via the switch on the motor-box) then let it run and pump out water with no load for 1-2 minutes. **NOTE: if the motor does not start; push the reset button on the GFI-plug.** **This process provides the pump and valves a short break-in and lubrication period before full-load use.**

Next, close the *Flow Control Valve* and turn the motor off, then connect a Jetting-Nozzle to the Jet-Hose. See page 5 for more info on the Nozzle types. Jetting Nozzles have several "thrusting" water-jets which spray back toward the hose to pull the nozzle into the pipe...



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### **Jetter Operating Instructions - continued:**

- 5) Insert the nozzle and hose deep into the test pipe – **at least 4 feet in** – and hold the jetting-hose securely.
- 6) **Making sure that machine and personnel are clear of the open pipe end**, open the *Flow-Control Valve* to allow water-flow through the nozzle and turn on the motor again. Check the pressure gauge (if equipped); the needle should be steady and reading high pressure...
- 7) Grip the jetting hose securely and pull it a few inches back from the pipe. Work the hose in-and-out to feel the thrust-action of the jetting-nozzle.  
**SAFETY: do not pull the nozzle out of the pipe while the jetter is running – serious injury or death can occur!** Let the hose go back into the pipe and then pull it back again several times. This is the “Ram-Rod” technique used by many technicians to break through blockages. Experiment with twisting & “looping” the hose, which can help the nozzle pull through elbows.
- 8) Close the *Flow-Control Valve*; you will see the jet-hose relax as the pump is now recirculating water instead of discharging out the jet-nozzle (or the motor will auto-kill). Open and close the valve several times to familiarize yourself with it’s effect. **IMPORTANT: Do not run the unit with the Control-Valve closed for more than two(2) minutes as the heat that is generated by the friction of recirculating can severely damage the pump.**
- 9) The jetter is equipped with constant *Pulsation* which makes the jet-hose vibrate to overcome drag in the pipe. It also helps get the jet-nozzle through elbows or hammer on blockages. Vibration of the jetting hose is normal during operation.
- 10) When finished, turn off the motor and then turn off the water supply.  
**IMPORTANT: relieve any pressure left in the system** by opening the *Flow-Control Valve* and/or squeezing the trigger (if installed) or stepping on the Foot-Control (if installed).
- 11) Again, we recommend that you become skilled with operating the jetter before ever using it in a customer’s pipe. Practice jetting pipelines on your property to gain skill.
- 12) Rewind the power-cord, the jetting-hose and then lock the reel (if equipped). Store any loose nozzles. If storing the jetter in freezing temperatures, remove the jet-nozzle (or trigger), secure the hose, and then follow the instructions on the next page to purge all water out of the system.



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### **MAINTENANCE**

- 1) Clean the water strainer/filter and check the oil every day. If the oil appears milky and is no longer clear, your pump may be in need of service.
- 2) Inspect your nozzles for clogged jets daily; clogged jets weaken nozzle thrust and cleaning power, and can cause the jetter to cycle on-and-off. Clear with an orifice cleaner.
- 3) **The Jet-Hose and nozzles wear out after time from abrasion in the pipe.**  
**SAFETY FIRST:** *Never use hose with exposed cord as it can burst under pressure! Always replace worn or kinked Jet-Hose and Nozzles.*

### **PROTECT from FREEZING TEMPERATURES**

Ice forming in the jetter's pump, plumbing, and hoses will cause damage and premature wear. If you cannot store the jetter in a location that is heated above freezing then follow these suggestions for freeze protection:

- (a) **Use RV Anti-Freeze solution (purchase locally) to purge water from the Jetter:** Using a garden-hose male-end with 2-foot section of hose (purchase locally), attach the hose section to the inlet connection of the jetter, then place the open end into the jug of anti-freeze. With the *Flow-Control Valve* open, turn on the motor and run until anti-freeze discharges from the end of the jetting hose. Turn off motor. *(Optional: purchase a winterization bottle)*
- (b) **Blow out the water using a source of compressed air:** Use a "blow-out adapter"(purchase locally) to connect a compressed-air supply to the jetter's garden-hose inlet. Turn on the air, then cycle the *Flow-Control Valve* on/off several times until all of the water is discharged from the jetter & hose.

***Thanks again for your business!***



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