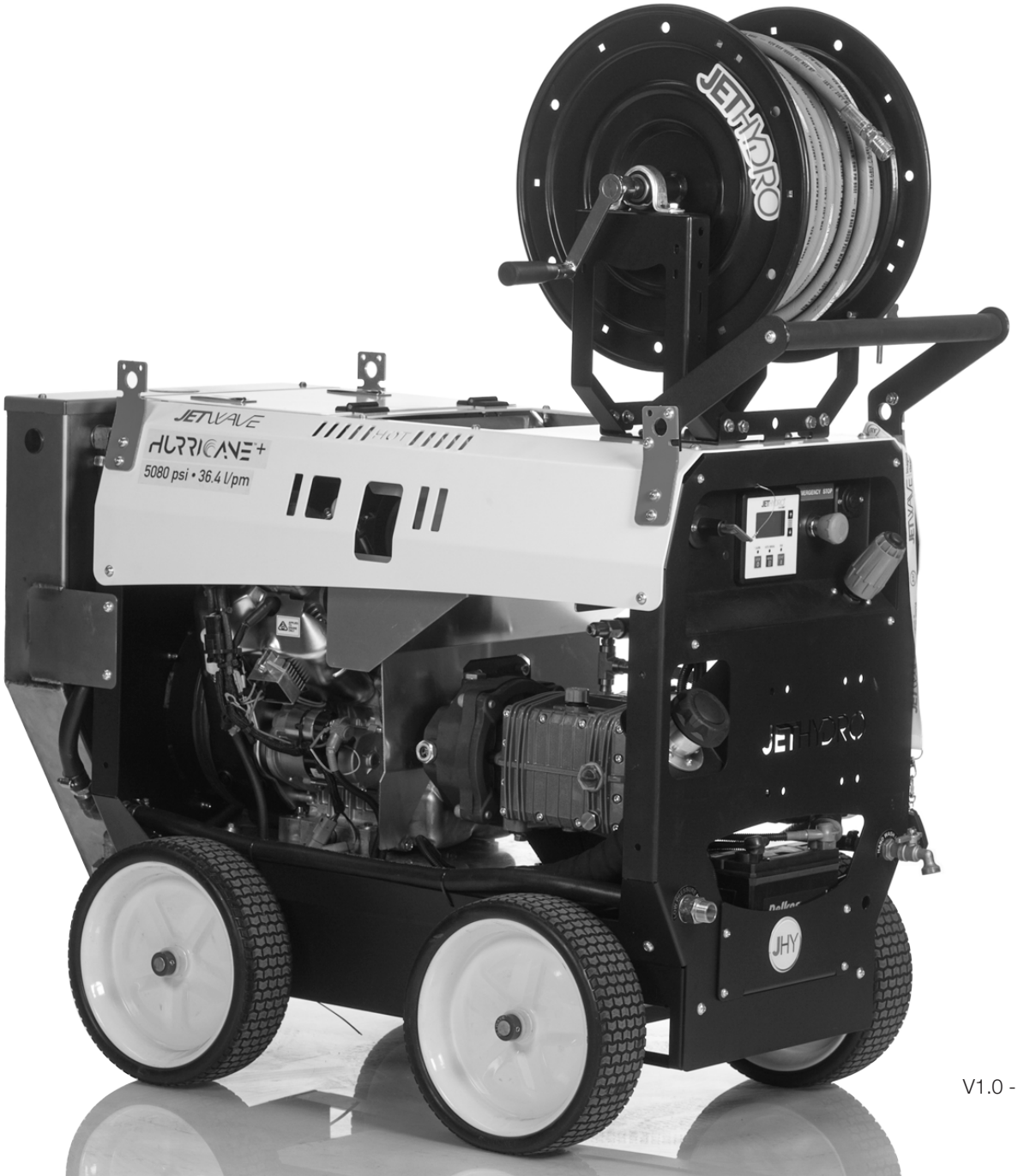
JETHYDRO®

Cutting through Innovation

HURRICANE™+

WATER JETTING/DRAIN CLEANING MACHINE



V1.0 - 2019

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Safety Symbols
In this operator's manual and on the product, safety symbols and signal words are used to communicate important safety information. This section is provided to improve understanding of these signal words and symbols.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

⚠ DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.
⚠ WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.
⚠ CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
NOTICE indicates information that relates to the protection NOTICE of property.



This symbol means read the operator's manual carefully before using the equipment to reduce the risk of injury. The operator's manual contains important information on the safe and proper operation of the equipment.



This symbol means always wear safety glasses with side shields or goggles when handling or using this equipment to reduce the risk of eye injury.



This symbol indicates the risk of high pressure water directed at body parts, causing skin puncture and injection injuries.



This symbol indicates the risk of the jetter hose whipping, and causing striking or injection injuries.



This symbol indicates the risk of breathing carbon monoxide and causing nausea, fainting or death.



This symbol indicates the risk of fire and explosion from gasoline or other sources causing burns and other injury.

General Safety Rules

⚠ WARNING

Read and understand all instructions. Failure to follow all instructions listed below may result in electric shock, fire, and/or serious injury.

SAVE THESE INSTRUCTIONS!

Work Area Safety

- Keep work area clean and well lit. Cluttered benches and dark areas invite accidents.
- Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases, or dust. Power tools create sparks which may ignite the dust or fumes.
- Keep bystanders, children, and visitors away while operating a power tool. Distractions can cause you to lose control.

Electrical Safety

- Avoid body contact with grounded surfaces such as pipes, radiators, ranges and refrigerators. There is an increased risk of electrical shock if your body is grounded.

Personal Safety

- Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a tool while you are tired or under the influence of drugs, alcohol, or medication. A moment of inattention while operating power tools may result in serious personal injury.
- Dress properly. Do not wear loose clothing or jewelry.
- Contain long hair. Keep your hair, clothing and gloves away from moving parts. Loose clothes, jewelry, or long hair can be caught in moving parts.
- Do not overreach. Keep proper footing and balance at all times. This enables better control of the tool in unexpected situations.
- Use safety equipment. Always wear eye protection.
- Dust mask, non-skid safety shoes, hard hat, or hearing protection must be used for appropriate conditions will reduce personal injuries.

Tool use And Care

- Do not force the tool. Use the correct tool for your application. The correct tool will do the job better and safer at the rate for which it is designed.
- Do not use the power tool if the switch does not turn it ON and OFF. Any power tool that cannot be controlled with the switch is dangerous and must be repaired.
- Store idle tools out of the reach of children and other untrained persons. Tools are dangerous in the hands of untrained users.
- Maintain tools with care. Keep cutting tools sharp and

clean. Properly maintained tools with sharp cutting edges are less likely to bind and are easier to control.

- Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the tool's operation. If damaged, have the tool serviced before using. Many accidents are caused by poorly maintained tools.

Use only accessories that are recommended by the manufacturer for your model. Accessories that may be suitable for one tool, may become hazardous when used on another tool.

Service

- Tool service must be performed only by qualified repair personnel. Service or maintenance performed by unqualified personnel could result in a risk of injury.
- When servicing a tool, use only identical replacement parts. Follow instructions in the Maintenance section of this manual. Use of unauthorized parts or failure to follow Maintenance Instructions may create a risk of electrical shock or injury.

WATER JETTER SAFETY

⚠ WARNING

This section contains important safety information that is specific to this tool.

Read these precautions carefully before using this drain Cleaning Machine to re duce the risk of electrical shock or other serious injury.

SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE!

Keep this manual with machine for use by the operator.

- Never operate the jetter with the hose end outside of the drain. Hose can whip, causing striking injuries and spray can penetrate skin and cause serious injury.
- High pressure water can inject under skin resulting in serious injury including amputation. Do not direct spray at people or animals.
- Do not operate jetter above the 5080 psi pressure rating or 60°C (inlet water temperature). This increases the risk of injury, including burns, and damage to the jetter.
- One person must control the jetting process and water flow. If the jetter hose comes out of the drain, the operator must be able to shut off the water flow to reduce the risk of the jetter hose whipping, causing striking and high pressure injection injuries.
- Always use appropriate personal protective equipment while handling and using drain cleaning equipment. Drain may contain chemicals, bacteria and other substances that may be toxic, infectious, cause burns or other issues. Appropriate personal protective equipment (PPE) includes safety glasses and gloves, and may also include equipment such as latex or rubber gloves, face shields, goggles, protective clothing, respirators, head protection, hearing protection and steel toed footwear.
- Practice good hygiene. Use hot soapy water to wash hands and other body parts exposed to drain contents after handling or using drain cleaning equipment. Do not eat or smoke while operating or handling drain cleaning equipment. This will help prevent contamination with toxic or infectious material.
- Do not spray toxic or flammable liquids. This will reduce the risk of burns, fire, explosion or other injury.
- Gasoline and its vapors are highly flammable and explosive. See engine manual for precautions to reduce the risk of burns, explosions and serious injury while handling and using gasoline.
- Engines produce carbon monoxide, a colorless, odorless poison gas. Breathing carbon monoxide can cause nausea, fainting or death. Do not start and run engine in an enclosed area, even if doors and windows are open. Only operate outside.
- Hot surfaces can cause burns and fire. Keep body parts and flammable material away from hot surfaces.
- Read and understand this manual, the engine manual and the warnings and instructions for all equipment and material being used with this tool before operating. Failure to follow all warnings and instructions may result in property damage and/or serious injury.
- Follow all applicable workplace health and safety regulations and guidelines concerning the use of this equipment.

If you have any question concerning this Jetwave® product:

– Contact your local Jetwave® distributor.

– Visit jetwave.com.au/find-a-dealer to find your local Jetwave contact point.

Description, Specifications and Standard equipment

Description

The Jetwave® Hurricane™ Engine Powered Water Jetting Machine is a portable high pressure water jetter designed to use a combination of water pressure and flow to clear grease, sludge, sediment and roots out of drains. A highly flexible and lightweight hose is propelled through the drain pipe by the reverse jets on the jetter nozzle, and when retrieved scrubs the line flushing debris away. The Hurricane™ Water Jetter equipped with an EFI gasoline engine to drive the triplex plunger pump. A 40 liter water tank with low water level shut-off allows operation with low water supply flow rates.



Figure.1 - Hurricane Water Jetting Machine

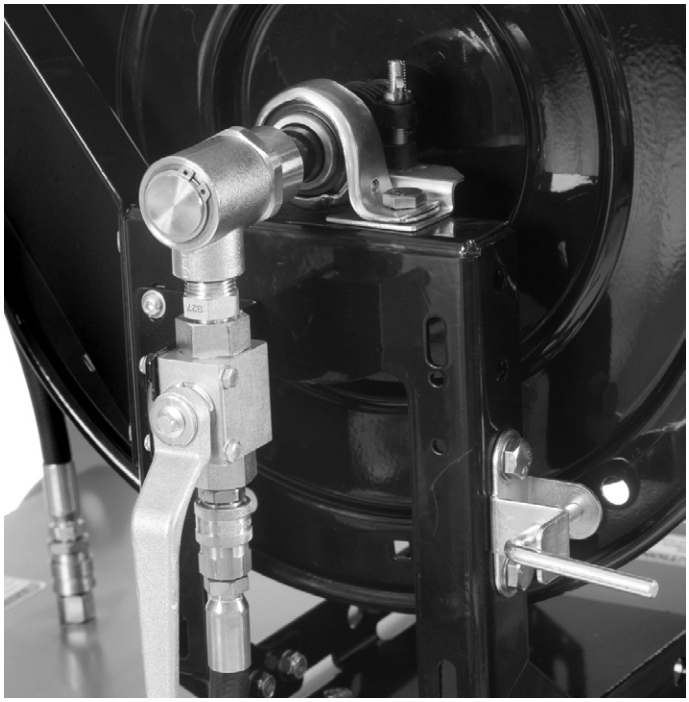


Figure.2 - Hose Reel

Standard equipment

A Jetwave Hurricane™ Water Jetter comes with:

- Primary hose reel with 60m of 3/8" jetter hose
- Remote hose reel with 60m of 1/4" jetter hose
- (Optional) 15m whip hose with nozzle
- Appropriate Jetter Nozzle Kit
- Wash down lance
- Engine Operator's Manual
- Operator's Manual

See the Jetwave® catalog for specific equipment supplied with each catalog number.



Figure.3 - Machine Serial Number

MODEL	PUMP	PRESSURE (PSI/BAR)	FLOW RATE (L/PM)	PETROL ENGINE	UNIT WEIGHT (KG)	MACHINE DIMENSIONS (mm)
Hurricane+ 5080	JW Triplex Plunger	5080 / 350	36.4	VANGUARD Briggs & Stratton 37HP EFI	245	1200(L)x550(W) x1250(H)
Hurricane 5000-27	JW Triplex Plunger	5080 / 350	27	VANGUARD Briggs & Stratton 33HP EFI	235	1200(L)x550(W) x1250(H)
Hurricane 4400-33	JW Triplex Plunger	4400 / 300	33	VANGUARD Briggs & Stratton 33HP EFI	235	1200(L)x550(W) x1250(H)

The machine serial number is located on the frame. The last 4 digits indicate the month and year of the manufacture. (01 = month, 18 = year).

NOTICE This machine is made to clean drains. If properly used it should not damage a drain that is in good condition and properly designed, constructed and maintained. If the drain is in poor condition or not properly designed, constructed or maintained, the drain cleaning process may not be effective or could cause damage to the drain. The best way to determine the condition of a drain before cleaning is through visual inspection with a camera. Improper use of this jetting machine can damage the jetter and the drain. This machine may not clear all blockages.

Machine Assembly

⚠ WARNING

To prevent serious injury during use and prevent machine damage, follow these procedures for proper assembly.

Engine Oil

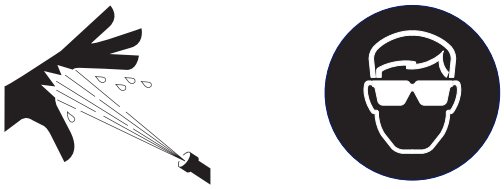
NOTICE The jetter is shipped with oil in the engine. Operating the engine with low or no oil will result in engine failure. See supplied engine operator's manual for specific information on checking oil, adding oil and oil selection.

Pump/Gearbox Oil

The jetter is shipped with oil in the pump and gearbox. Check oil level (ensure half way on sight-glasses) per Maintenance section.

Pre-Operation Inspection

⚠ WARNING



Before each use, inspect your water jetter and correct any problems to reduce the risk of serious injury from high pressure water and other causes and prevent jetter damage.

Always wear safety glasses, gloves and other appropriate protective equipment when inspecting your jetter to protect against chemicals and bacteria on the equipment

1. Make sure that the battery isolator and engine switch is in the OFF position.
2. Clean any oil, grease or dirt from the equipment, including the handles and controls. This aids inspection and helps prevent the machine or control from slipping from your grip.
3. Inspect the water jetter and accessories for the following:
   - Proper assembly and completeness.
   - Broken, worn, missing, misaligned, binding or loose parts.
   - Presence and readability of the warning labels. (See Figure 4.)
   - Any other condition which may prevent the safe and normal operation.

If any problems are found, do not use the water jetter until the problems are corrected.

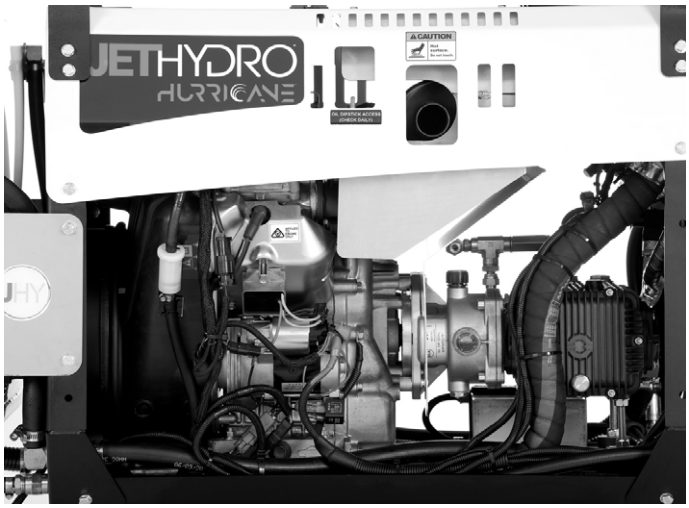
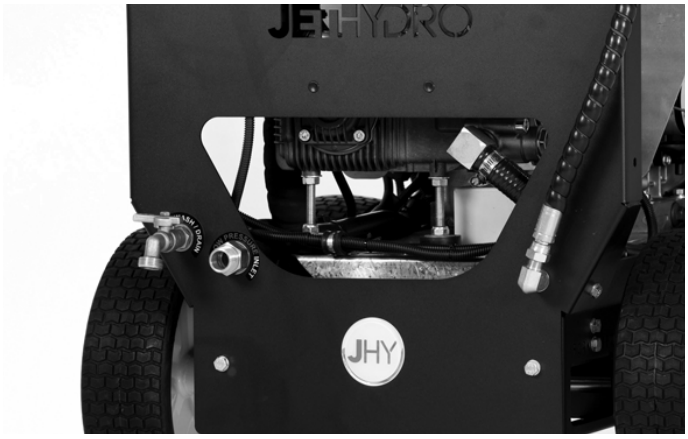


Figure.4A - Hurricane Warning Labels



Figure.4B - Hurricane Warning Labels

Clean water filter (Figure 5). Using the drain valve, drain the tank. Unscrew the brass cover from bottom of the filter and remove and clean the mesh filter. Dirt and debris can restrict the water flow to the pump and cause performance issues.



4. Inspect the jetter nozzle orifices for any damage or blockage. Blockages can be cleaned with a nozzle cleaning tool. Use care not to enlarge nozzle orifices while cleaning. Damaged nozzles or nozzles with enlarged orifices can decrease jetter performance and should be replaced.

5. Inspect the hoses, connectors and fittings for wear and damage. If there are any kinks, cracks, breaks or wear through the outer jacket of the hose or other damage, do not use the hose. Damaged hoses can burst or leak high pressure water and cause serious injury. Replacement hoses and fitting should be rated at or higher than the jetter pressure rating.

6. Inspect and maintain the engine per the engine operator's manual.

7. Check engine fuel level (Figure 4A). If needed, add unleaded gasoline. See engine operator's manual for requirements. Use caution when handling gasoline. Work in a well ventilated area. Never fill the tank while unit is running, do not overfill tank and do not spill fuel. Make sure tank cap is securely closed.

8. Check the oil level(s) in the pump and gear box through the sight glass and add oil if needed (see Maintenance Instructions section). Inspect Engine as directed in the engine operator's manual.

Machine and Work Area Set-up

⚠ WARNING



Always wear safety glasses, gloves and other appropriate protective equipment when setting up your jetter to protect against chemicals and bacteria on the equipment. Rubber soled, non-slip shoes can help prevent slipping on wet surfaces.

Engines produce carbon monoxide, a colorless, odorless poison gas. Breathing carbon monoxide can cause nausea, fainting or death. Do not start and run engine in an enclosed area, even if doors and windows are open. Only operate outside.

Set-up the jetter and work area according to these procedures to reduce the risk of injury from high pressure water, chemical burns, infections, carbon monoxide and other causes, and prevent jetter damage.

1. Check work area for:
   - Adequate lighting.
   - Flammable liquids, vapors or dust that may ignite. If present, do not work in area until sources have been identified and corrected. The machine is not explosion proof and can cause sparks.
   - Clear, level, stable dry place for machine and operator.
   - If needed, remove the water from the work area. Wood or other coverings may need to be put down.
   - Jetter location that is in a well ventilated outdoor area. Do not place the jetter indoors, even with doors and windows open. Jetter can be located remotely from the point of use.
   - Suitable water supply. Clear path to transport the jetter to the set up location.
2. Inspect the drain to be cleaned. If possible, determine the access point(s) to the drain, the size(s) and length(s) of the drain, distance to tanks or mainlines, the nature of the blockage, presence of drain cleaning chemicals or other chemicals, etc. If chemicals are present in the drain, it is important to understand the specific safety measures required to work around those chemicals. Contact the chemical manufacturer for required information.
   If needed, remove fixture (water closet, etc.) to allow access to the drain. Do not feed the hose through a fixture. This could damage the hose and the fixture.
3. Determine the correct equipment for the application. See the Specifications section for information on the jetter. Drain cleaners and jetters for other applications can be found by consulting the Jetwave® Catalog, on line at www.jetwave.com.au
4. Make sure all equipment has been properly inspected
5. Evaluate the work area and determine if any barriers are needed to keep bystanders away. Bystanders can distract the operator. If working near traffic, erect cones, signs or other barriers to alert drivers.

6. If needed, place protective covers in the work area. The drain cleaning process can be messy.
7. Take the jetter to the well-ventilated outdoor work area along the clear path. See Transportation Section. Be aware of possible slip hazards. Wear appropriate footwear to help prevent slips.

Water Supply

Run a hose from the water source to the jetter water inlet. Use the largest diameter, shortest length hose possible. A 3/4" I.D. Inlet hose is the minimum recommended size. An appropriate backflow prevention device should be used to comply with all local codes and ordinances.

Dirt and debris in the water supply can cause excess pump wear, clog the jetter filter, nozzles and reduce performance.

Do not use water from ponds, lakes or other sources that may be contaminated.

Fill the jetter water tank prior to starting the jetter.

The tank is equipped with a:

- Low water level shut-off to prevent pump damage from insufficient water. This will shut OFF the engine when the tank water level falls below a predetermined level.
- Float valve to shut-off inlet water when the tank is full, preventing water spillage through the tank vent.

By removing two screws, the top of the tank can be removed for inspection or tank cleaning (Figure 6).

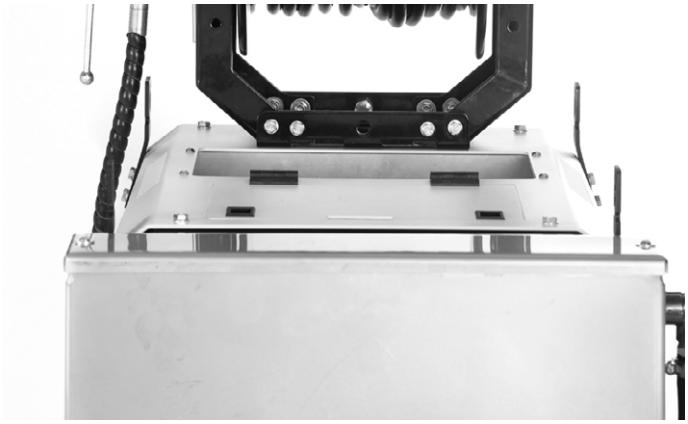


Figure.6 - Water Tank Lid

Warm water can be used for improved cleaning. Do not use water hotter than 60°C this can cause pump and/ or float valve damage. When using warm water, use appropriate personal protective equipment to reduce the risk of burns.

When using in cold weather, use precautions to prevent water from freezing in the pump. This can damage the pump.

Drain Preparation

If working through a manhole, storm grate or other large access, use pipe and fittings to create a guide for the jetter hose from the drain opening to operation point. This will prevent the jetter hose from whipping around in the access and protect the hose from damage (Figure7).



Figure.7 - Extending the Drain Opening to the Operation Point

Hose Set-Up

Use care when routing jetter hoses. Routing hoses over rough surfaces, sharp edges, crossing hoses, etc. can damage the hose jacket. Keeping the jetter hose on the reel(s) will help to minimize hose damage.

The Hurricane is equipped with two hose reels, a primary reel mounted to the jetter frame and the remote reel which has a separate base. Typically the primary reel is equipped with larger hose suitable for jetting larger diameter drains or supplying water to the remote reel. The remote reel is typically equipped with smaller hose used for jetting smaller diameter drains.

1. Select a jetter hose size appropriate for the drain being cleaned. See Jetter Hose Selection Chart.
2. Locate the desired hose reel (primary or remote) for jetting within 1 meter of the drain opening. Do not allow excessive amounts of hose outside of the drain to prevent hose damage. If the hose reel cannot be placed within 1 meter of the drain opening, extend the drain opening back to the hose reel with similar sized pipe and fittings (Figure 7).

1. Water Control Valve. Choose the valve to be used to control water flow.
   If using a foot valve to control water flow, route a hose from the jetter pump to the IN fitting on the foot valve. Connect the hose on OUT fitting of the foot valve to the hose reel to be used. Connect so that the foot valve hose feeds into the ball valve on the hose reel. (See Figure 8.)



Figure.8 - Standard Remote Reel

1. If not using the foot valve, use the ball valve on the reel being used to control water flow. Route a hose from the jetter pump into the ball valve on the hose reel. Make sure quick connect fittings are secure.
2. Position the reel for accessibility. You must be able to control the jetter hose and the water control valve.
3. Mark the jetter hose near the end to indicate when the nozzle is getting close to the drain opening when withdrawn. This will help prevent the nozzle from coming out of the drain and whipping around. The distance depends on the configuration of the drain, but should be at least 4'/1.2 m
4. Select a nozzle and attach. Use nozzles specifically sized for the jetter being used. Using incorrect nozzles can cause poor performance (low operating pressure or low flow) or may damage the jetter with excessively high pressures. Make sure the nozzle orifices are clear and open. See Jetter Nozzle Selection Chart.

   Many nozzles attach to the hose with a quick connect. To attach, pull the collar back, fully insert the male end of the quick connect mounted on the nozzle and release the collar (See Figure 9). Confirm that the connection is secure. This will reduce the risk that the nozzle is lost during use.



Figure.9 - Nozzle Quick Connect Operation

Only use nozzles for the pipe sizes they are rated for. Using a nozzle designed for smaller pipe sizes in larger diameter pipe increases the risk of the nozzle changing direction in the drain, exiting at the user and causing serious injury.

If using the Reverse Root Cutting nozzle for drains larger than 6"/150 mm and up to 10"/250 mm, an extension must be used to reduce the risk of the nozzle changing direction in the drain, exiting at the user and causing serious injury. For drains 6"/150 mm and smaller, no extension is needed. If needed, firmly hand tighten the extension to the nozzle – do not over tighten. See Figure 10.

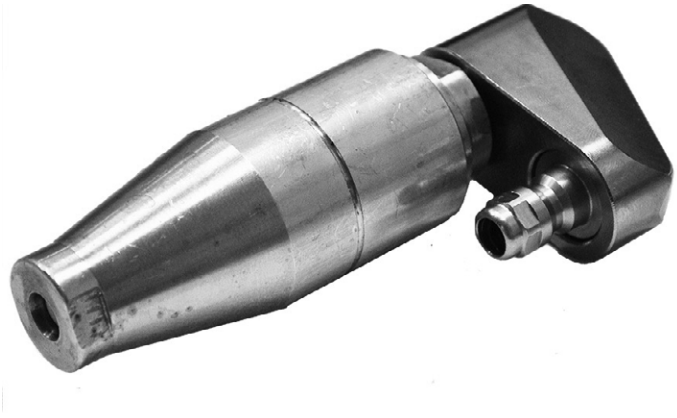
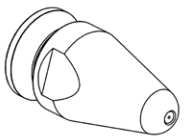
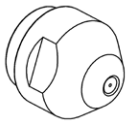
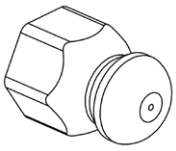
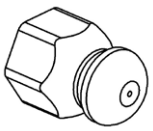
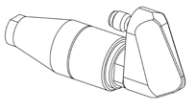


Figure.10 - Reverse Root Cutting Nozzle and Extension Pictured Separately

Jetter Hose Selection Chart

Applications	Pipe Size	Suggested Hose (ID)
Kitchen sinks, laundry tubs and stacks, clean-outs, and vents.	2” – 3”	1/8” Whip hose (optional equipment)
Shower and floor drains, lateral lines, and grease traps.	3” – 4”	1/8” or 3/16” Whip hose (optional equipment) or 1/4” Remote Reel
Sewer and storm water lines	4” – 6”	1/4” Remote Reel or 3/8” Primary Reel
Lateral and main lines.	6” – 10”	3/8” Primary Reel

Jetter Nozzle Selection Chart

Penetrating Nozzle (Red Cowl): Uses three jet thrusters in reverse plus one jet pointed forward to penetrate solid grease, sludge or sediment blockages. The forward jet blasts a small hole in the blockage for the nozzle to follow. It is also very effective when jetting ice blockages. Attaches to hose with quick connect, includes cowl protection. For 3” to 6” drain sizes.	
Negotiator Nozzle (Blue Cowl): Use this nozzle to help negotiate more difficult bends or gully traps as it is of a short construction. This nozzle has three reverse jet thrusts and one forward. Attaches to hose with quick connect, includes cowl protection. For 3” to 6” drain sizes.	
Large Drain Nozzle: hard fixed end within the standard kit for work on smaller diameter pipes (3” to 4”) with tighter radiuses/bends. This nozzle is smaller in size and eliminates the quick connect to allow easier negotiation around bends in the line. It has three rear jets with one facing forward for a range of applications. Nozzle includes a 1/4” BSPT thread to connect directly to hose thread.	
Small Drain Nozzle: supplied with optional equipment flexible leader for smaller diameter pipes (2” to 4”). This nozzle is exceptionally small and short and has three rear jets with one facing forward for a range of more domestic applications e.g. internal drains/pipes etc. Nozzle includes a 1/8” BSPT thread to connect directly to hose thread as supplied standard.	
Reverse Root Cutting Nozzle: Use to clear roots and other type of blockages. Uses a rear facing oscillating jet for more complete drain cleaning. Attaches to hose with quick connect. For drain sizes 4” to 10”, as noted here. **WARNING If using the Reverse Root Cutting nozzle for drains larger than 6”/150 mm and up to 10”/250 mm, an extension must be used to reduce the risk of the nozzle changing direction in the drain, exiting at the user and causing serious injury.**	

If using nozzles that are not equipped with a quick connect, the female quick connect must be removed from the end of the hose and the nozzle securely threaded on. Stock hoses and nozzles use BSPT threads. Make sure that the threads match and that sealant is used to prevent leaks.

Operating Instructions

⚠ CAUTION



Always wear eye protection to protect your eyes against dirt and other foreign objects. Always wear appropriate personal protective equipment for the work environment.

Never operate the jetter with the hose end out side of the drain. Hose can whip, causing striking injuries and spray can penetrate skin and cause serious injury.

High pressure fluid can inject under skin resulting in serious injury, including amputation. do not direct spray at people or animals. do not operate jetter above pressure rating or 60°C (inlet water temperature). This increases the risk of injury, including burns, and damage to the jetter. one person must control the jetting process and water flow. If the jetter hose comes out of the drain, the operator must be able to shut off the water flow to reduce the risk of the jetter hose whipping, causing striking and high pressure injection injuries.

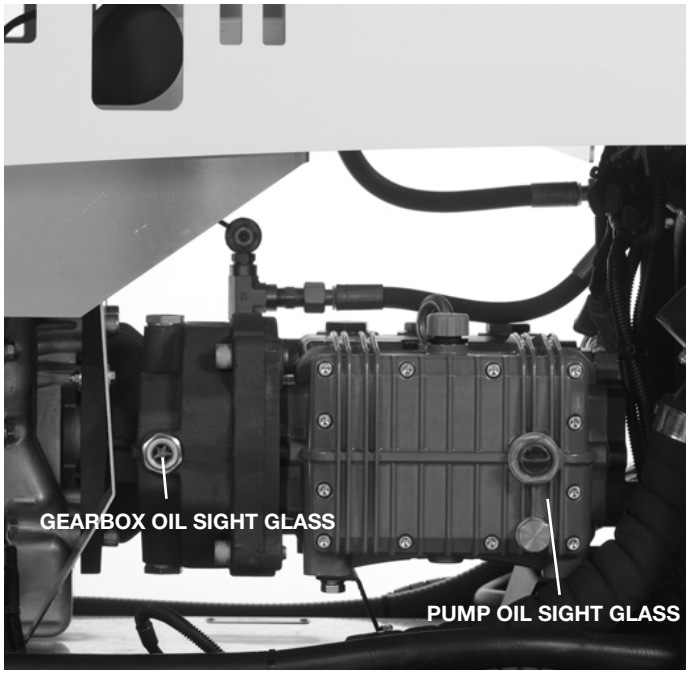
Always use appropriate personal protective equipment while handling and using drain cleaning equipment. drain may contain chemicals, bacteria and other substances that may be toxic, infectious, cause burns or other issues. Appropriate personal protective equipment always includes safety glasses and gloves, and may also include equipment such as latex or rubber gloves, face shields, goggles, protective clothing, respirators, and steel toed footwear.

Follow operating instructions to reduce the risk of injury from whipping hoses, high pressure liquid injection, carbon monoxide and other causes.

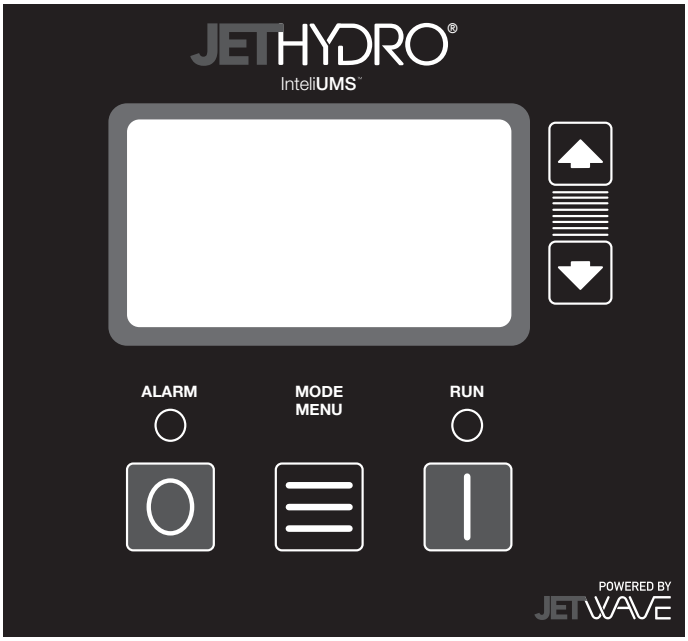
1. Make sure that machine and work area is properly set up and that the work area is free of bystanders and other distractions. If the jetter is located remotely from the point of use, another person should be located at the jetter.
2. Insert the hose with nozzle attached into the drain at least 1m (3ft) so that the end of the hose will not come out of the drain and whip around when the machine is started.
3. Turn the battery isolator switch ON and confirm the Emergency stop button is in the out position (rotate button clockwise) (Figure 11).
4. Confirm that the water supply is turned on and the water tank is full. Never start the engine without the water supply turned ON. This can damage the pump.
5. Grip the hose near the pipe opening. Open the selected water control valve (ball or foot valve). Following the starting instructions supplied in the InteliUMS manual, start the engine. Set the throttle to the full open position. Confirm that water flows freely through the nozzle. Close water control valve. When the water control valve is closed and the jetter is running, the unloader valve will recirculate water back to the tank. Allow the engine to warm up.



Figure.11



InteliUMS Operating Instructions





STOP BUTTON Works in MAN mode only. Press this button to initiate the stop sequence of the engine. Repeated pressing or holding the button for more than 2seconds will cancel current phase of stop sequence (e.g cooling) and next phase will continue.



MENU BUTTON Use this button (short press) to switch over measurement screens. This button (long press) is also used for switching over display pages. See information below for more details.

(Note: For MENU button three press durations are distinguished)

- Short press: a sequence of press and release of button no longer than 1 second.
- Long press: a sequence of press and release of button no longer than 1 second and shorter than 5 seconds.
- Fault reset press: press and hold the button longer than 5 seconds Fault resent is performed immediately when 5 second duration is reached.

Menu button works also as function modifier for situation where it is necessary to use combination of two simultaneously pressed buttons. Press and hold MENU button and subsequently press additional button. See detailed description below.



START BUTTON Press this button in MAN mode to initiate the start sequence of the engine. Works in any measurement screen only. (Note: In Adjustment (Setpoints) screens this button is used for setpoint adjusting)



UP BUTTON In MAN mode and in measurement screens. Use this button in Adjustment or History screens to move cursor up or to increase value of selected setpoint.



DOWN BUTTON In MAN mode and in measurement screens. Use this button in Adjustment or History screens to move cursor up or to increase value of selected setpoint.



ALARM LED



RUNNING LED

Init Screen

This is a first screen after controller's start which is dedicated for information provided by customers such as contact numbers, service technician contact and customer message for end users of engine. Configuration of this screen is only done by Lite Edit PC tool.

Firmware Screen

This screen contains information about controller's type, controller manufacturer, uploaded firmware, version of firmware, used application and branch. There is also information about currently configured electronic engine unit, respectively about ESF file. Details for recognition of configured electronic engine are in chapter ECU controlled engine support.

Note: To see firmware information use panel buttons: press and hold MENU and press STOP. This procedure activates the panel LEDs test as well. The screen disappears itself after approx. 5 seconds.

IMPORTANT: If Firmware screen is invoked when engine is running it leads to engine stop sequence initiating. This is because STOP button is evaluated under any circumstances.

Languages screen

InteliDrive WP controller offers configurable language support. On this screen is possible to switch between languages configured in controller. Second way, how to change language, is by binary input Lang Selection.

Note: To switch to Language screen go to Firmware screen (MENU + STOP) and then press MENU button again. Select desired language by UP/DOWN buttons and press START button to confirm selection.

How to select the engine mode?

Use ☰ + ▲ or ☰ + ▼ to select requested engine operation mode (OFF – MAN – AUT)

How to view measured data?

Perform ☰ button long press (hold between 1 to 5 s) repeatedly until the MEASUREMENT menu is selected.

Use ☰ button short press (hold no longer than 1 s) to select the screen with requested data.

How to view and edit setpoints?

Perform ☰ button long press (hold between 1 to 5 s) repeatedly until the ADJUSTMENT menu is selected.

Use ▲ or ▼ to select requested set points group.

Press | to confirm.

Use ▲ or ▼ to select requested set point.

Set points marked "*" are password protected.

Press | to edit.

Use ▲ or ▼ to modify the set point. When ▲ or ▼ is pressed for 2 seconds, auto repeat function is activated.

Press | to confirm or ☰ to leave without change.

Press ☰ to leave selected setpoints group.

How to change the display contrast?

Hold ☰ and then press O to activate Firmware screen.

Within 5 seconds use ☰ + ▲ or ☰ + ▼ to adjust the display contrast to your choosing.

How to check software revision?

Hold ☰ and then press O to activate Firmware screen. On the display you can see (for 5 seconds) InteliDrive WP Firmware screen containing:

- Controller name (see Basic setting group) Firmware version ID-WP -x.x.x.x
- ESF: version of ESF file, if ECU is configured
- SW version: the first is the firmware version number the second is configuration table number Application: WP
- Branch: ID-WP

Note: Only in MEASUREMENT screen. 5.6.4

How to change language?

Hold ☰ and then press O to activate Firmware screen. Within 5 seconds press ☰ to switch to Languages selection screen.

Use ▲ or ▼ to select desired language and press | to confirm selection. Press ☰ twice to leave the user interface screen.

How to find active alarms?

Active alarm list is the last screen in the MEASUREMENT menu.

Select MEASUREMENT menu. Use ☰ button short press (hold no longer than 1 second) repeatedly until Alarm List screen is displayed. You will see the list of all active alarms with the number of alarms at the top right corner.

Three state alarms are introduced:

Example	Description
*Wrn Water temp	Active not accepted alarm
Wrn water temp	Active accepted alarm
*Wrn Water temp	Inactive not accepted alarm
	Inactive accepted alarm

Press and hold more than 5 seconds ☰ to accept all alarms. Non-active alarms immediately disappear from the list.

Active alarm list appears on the screen when a new alarm comes up and Main MEASUREMENT screen is active.

Note: Alarm list does not activate when you are reviewing the values or setpoints.

How to list History records?

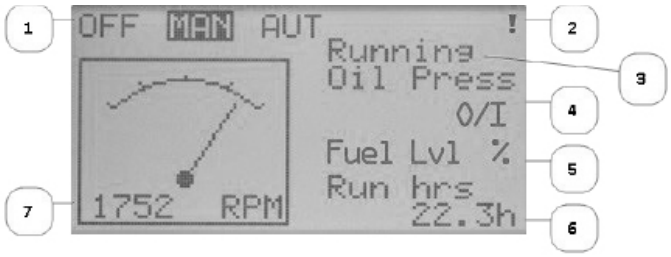
Perform ☰ MENU button long press (hold between 1 to 5 second) repeatedly until the HISTORY menu is selected.

Use ▲ or ▼ to select requested History line – see Reason, Date and Time.

Press ☰ (no longer than 1s) to scroll line to right - to see recorded values.

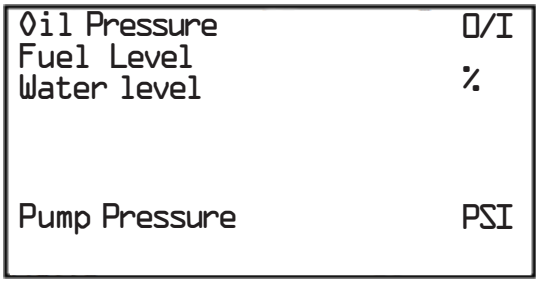
Perform ☰ button long press (hold between 1 to 5 seconds) to go back to MEASUREMENT screen.

Main measure screen



1. Operation mode of the engine
2. Indication: “L” = Access lock, “!” = active Alarm
3. Status of the engine
4. AIN1 - Oil Pressure
5. Fuel level percentage
6. Run Hrs
7. Engine RPM

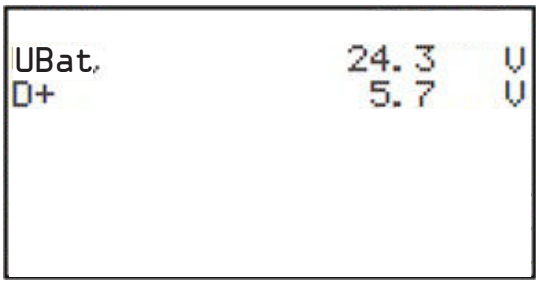
Second Measure Screen



First 8 analog inputs are displayed.

Note: Only configured analog inputs are displayed.

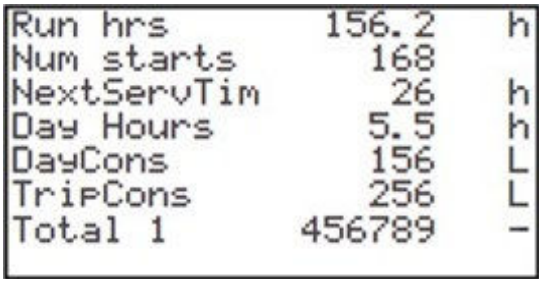
Third measure screen



Note:

UBatt = Battery Voltage D+ = Control Voltage

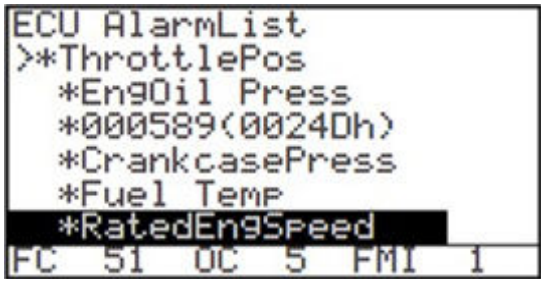
Fifth measure screen



On this screen various statistics values are displayed.

Note: Running time can be also displayed on the Main measure screen and is measured in minutes, displayed in hours. Values are stored in nonvolatile memory.

Seventh measure screen



Diagnostic messages are read from ECU and displayed in this second alarm list. For Standard J1939 engines SPN (Suspect Parameter Number), FMI (Failure Mode Identifier) and OC (Occurrence Counter) are shown together with verbal description if available.

Image above shows displaying of ECU alarms in the second alarm list. The additional information for the row selected by cursor is on the last row (SPN, OC and FMI codes).

If the verbal description of alarm is not available, the SPN (decimal and hexadecimal) is displayed.

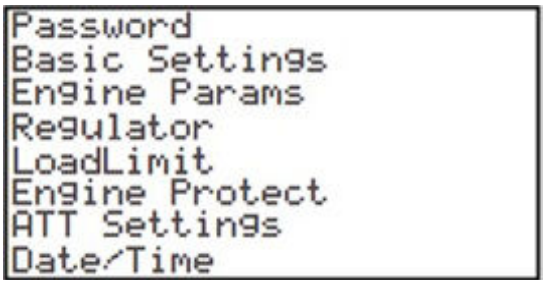
Note: For FMI = 0 and 1, WRN is displayed. For other FMI codes, FLS is displayed.

Note: Displayed only if ECU is configured.

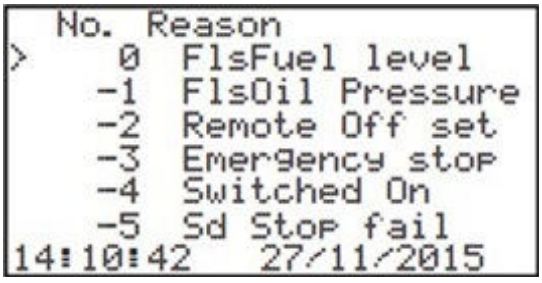
Alarm list measure screen

Alarm list displays active or inactive alarms occured on InteliDrive WP unit. InteliDrive WP controller automatically switches to the Alarm list screen when any new Alarm appears, but from Main measure screen only. See chapter Alarm management.

Setpoints screen



History screen



Modes: Prestart

The output closes prior to the engine start (Prestart) and opens when Starting RPM speed is reached. During repeated crank attempts the output is closed too.

The output could be used for pre-glow, pre-heat or prelubrication.

Idle/Nominal

The output either follows the Nominal/Idle binary input or I/O button in MAN mode or follows the engine state in AUT mode:

The output Idle/Nominal closes after the timer Idle time elapses. The Idle time counter starts to countdown when Start speed reached. The Underspeed protection is not evaluated during idle time. Start fail protection occurs if the RPM drop below 2 RPM during idle state.

Note: When LBI Nominal/Idle is configured (to a physical binary input), it has priority and the switching between the nominal and the idle speed by I/0 button is blocked.

Alarm

The output closes if:

- Any warning, cooldown or shutdown comes up or the engine malfunctions
- The output opens if
- FAULT RESET is pressed
- The output closes again if a new fault comes up.
- Any warning or shutdown comes up or the engine malfunctions

The output opens if:

- FAULT RESET is pressed or
- Max time of LBO HORN is exceeded (Horn timeout) The output closes again if a new fault comes up.

Ready

The output is closed if following conditions are fulfilled:

- Engine is not running and;
- No Shut down or Slow stop alarm is active
- Controller is not in OFF mode

Ready to load

The output is closed if engine is running and no alarm is active - it is possible to close load. The output opens when Wrn Underspeed protection is active and during cooling state.

Running

Output closes if the engine is in Running state.

Cooling

The output closes when engine is in Cooling state.

Fault Reset

One second pulse as echo for panel Fault reset button.

Chrg Altern Fail

Output closes if engine is running and D+ input not energized.

The output opens, if

- Alarm is not active and FAULT RESET is pressed

Note: Threshold level for D+ input is 80% supply voltage.

Stop failed

Output closes when the engine has to be stopped, but speed or oil pressure is detected. This protection goes active 60 s after stop command.

- The output opens, if Alarm is not active and FAULT RESET is pressed

Overspeed

Output closes if the engine over speed alarm activates. The output opens, if

- Alarm is not active and FAULT RESET is pressed

Underspeed

Output closes if the engine “Sd Underspeed” alarm activates i.e. when RPM is below the Engine params: Starting RPM limit.

The output opens, if

- Alarm is not active and FAULT RESET is pressed

Stop failed

Output closes when the engine has to be stopped, but speed or oil pressure is detected. This protection goes active 60 seconds after stop command.

The output opens, if

- Alarm is not active and FAULT RESET is pressed

Battery flat

Output closes when InteliDrive WP performs reset during start procedure (probably due to weak battery). The output opens, if

- Alarm is not active and FAULT RESET is pressed

V batt failed

Output closes when battery over/under voltage warning appears.

The output opens, if

- Alarm is not active and FAULT RESET is pressed

Common Wrn

Output closes when any warning alarm appears. The output opens, if

- No warning alarm is active and FAULT RESET is pressed

Common Sd

Output closes when any shutdown alarm appears. The output opens, if

- No Sd alarm is active and FAULT RESET is pressed

Common Cd

Output closes when any cooldown alarm appears. The output opens, if

- No Cd alarm is active and FAULT RESET is pressed

Common Fls

Output closes when any sensor fail alarm appears. The output opens, if

- No warning alarm is active and FAULT RESET is pressed

Sd Oil Press

Output closes if the oil pressure shutdown alarm activates.

The output opens, if

- Alarm is not active and FAULT RESET is pressed

Wrn Oil Press

Output closes if the oil pressure warning alarm activates.

The output opens, if

- Alarm is not active and FAULT RESET is pressed

Sd Engine Temp

Output closes if the water temperature shutdown alarm activates.

The output opens, if

- Alarm is not active and FAULT RESET is pressed

Wrn Engine Temp

Output closes if the water temperature warning alarm activates.

The output opens, if

- Alarm is not active and FAULT RESET is pressed

Sd FuelLevel

Output closes if the Fuel level shutdown alarm activates.
The output opens, if

- Alarm is not active and FAULT RESET is pressed

Wrn FuelLevel

Output closes if the Fuel level warning alarm activates.

The output opens, if

- Alarm is not active and FAULT RESET is pressed

OFF mode

The output is closed, if OFF mode is selected.

MAN mode

The output is closed, if MAN mode is selected.

AUT mode

The output is closed, if AUT mode is selected.

Service Time

Output closes if the ServiceTime alarm activates. Service time is adjusted by setpoint Engine protect: NextServTime.

The output opens, if

- Alarm is not active and FAULT RESET is pressed

List of possible alarms

WRN = Machine Warning (will not shutdown)

SD = Machine Shut-Down

Events Specification	Protection Type	Description
Wrn Oil Press	WRN	Oil pressure is low.
Sd Oil Press	SD	No oil pressure.
Wrn Fuel Level	WRN	Fuel level is below 10%.
Sd Fuel Level	SD	Fuel level is below 5%.
Ubat	WRN	Battery voltage below 10.0v DC.
Battery Flat	SD	If the controller switches off during starting sequence due to bad battery condition it doesn't try to start again and activates this protection.
RPM meas fail	SD	Engine asking to read correct RPM for whatever reason RPM tp picked up.
Overspeed	SD	Engine RPM above 3600RPM.
Underspeed	SD	During starting of the engine when the RPM reached the value of Starting RPM setpoint the starter is switched off and the speed of the engine can drop under Start RPM again. Then the Underspeed protection becomes active. Protection evaluation starts 5 seconds after reaching StartingRPM.
EmergencyStop	SD	Emergency stop active.
Stop fail	SD	Engine stop failed, when not meant to.
WrnServiceTime	WRN	Machine done 50hr since last service.
ChrgAlternFail	WRN	Failure of alternator for charging the battery.
Low Water Level	SD	Water tank level low
Pump Pressure	SD	Pump pressure over 5800psi
Common Engine Fault	WRN	Fault in engine

6. If needed, turn the unloader valve while monitoring the pressure gauge on the unloader valve to adjust the pressure as desired (clockwise to increase pressure, counter-clockwise to decrease pressure). Do not exceed the machine pressure rating. Do not force the unloader valve or use wrenches or tools to turn. This will damage the unloader valve. Pressure gauge on the remote reel will read lower than unloader valve gauge, depending on hose size and length.

Hurricane+ 5060 PSI

If the jetter will not generate the rated pressure or is erratic

- Make sure the engine throttle is properly adjusted to the full open position.
- Turn unloader valve clockwise to increase pressure. Do not force.
- Inspect system for leaks. Use caution during inspection to prevent injury. If leaks are found, shut jetter OFF before fixing.
- Turn the jetter OFF. Check the inlet tank and filter and make sure that they clear of debris.
- Make sure there is adequate water flow to the jetter.
- Turn the jetter OFF. Remove the nozzle and clean the orifices with the nozzle cleaning tool.
- Run the jetter without a nozzle on the hose to remove air or debris from the system. Turn the jetter OFF before removing or attaching the nozzle.

6. Assume a proper operating position.

- Be sure you can control the ON/OFF action of a water control valve (ball valve or foot valve). Do not turn the valve ON yet. In case of emergency you must be able to turn off water flow.
- Be sure that you have good balance and do not have to overreach.
- You must be able to place one hand on the jetter hose at all times to control and support the hose.
- You must be able to reach the reel for coiling the hose.

This operating position will help to maintain control of the jetter hose. Jetting the Drain



Figure.12 - Proper Operating Position

When jetting a drain, typically the hose is fed into the drain the full distance to be cleaned and slowly pulled back. This allows the high pressure water directed at the drain walls to remove build-up.

Release the locking pin on the hose reel (Figure 2). With at least 1m (3 ft) of hose in the drain and one hand on the hose to control its movement, open the flow control valve.

The reverse jet thrusters on the nozzle will help pull the hose into the drain. Feed the hose in the as far as needs to be cleaned. If the hose stops, it has encountered some type of obstruction.

If the nozzle cannot pass through an obstruction, such as a change in direction (trap, turn, etc.) or a blockage.

- Use sharp thrusts of the hose.
- Rotate the hose a quarter to half turn to orient the set of the hose to the direction change (If the hose is rotated, once through the obstruction, turn the hose back to help prevent kinks) See Figure 13.
- Use a flexible leader or smaller diameter hose.





Once past a blockage, take the time to clean that section of drain prior to moving forward. Move several feet past the area of the obstruction and slowly pull the nozzle back through the area of the obstruction. Do this several times and then move further into the drain.

Watch the drain water level. If the water level gets too high, you may need to turn the jetter OFF and allow the water to drain prior to continuing. Jetting when the line is full of water is less effective than when the line is empty.

If the water level in the water tank falls below ¼ full, the float valve will turn the engine OFF. Generally, at this point you must allow the tank to refill before restarting the jetter. If that does not work, see troubleshooting section.

Once the nozzle is the desired distance into the drain, slowly (0.3m/minute for heavy drain accumulations) pull the nozzle back through the drain. Use one hand to control the hose and the other to wind the hose onto the reel. Watch as the nozzle gets closer to the drain opening that the nozzle does not come out of the drain while water is flowing. This could allow the hose to whip around and cause striking and high pressure fluid injuries. Always control the hose. Look for the mark on the hose near the end.

With hose still in the drain, turn OFF the engine as directed in the engine manual, and open water control valve to release the system pressure. Never leave the system pressurized. If needed, change the nozzle and continue cleaning following the above process. Several passes through a line are recommended for complete cleaning.

Draining Water from System

Draining machine will reduce the jetter weight for transportation and minimize the chance of water spillage.

To drain the tank, attach a hose to the tank drain and open valve. Once the tank is empty, disconnect the quick connect from the hose reel and allow water to drain from pump and hoses.

If using the jetter in cold weather conditions, see Machine Storage for information on freeze protecting.

Using Water Jetter Machine as a Pressure Washer

⚠ CAUTION

Wash down gun is not to be used in conjuction with remote reel wtih 1/4” hose.

This Jetwave water jetting machine can also be used as a pressure washer. Use as a pressure washer is similar to use as a jetter, and those instructions should be used in conjunction with the following.

1. Locate an appropriate work area
2. Make sure all equipment has been properly inspected
3. Attach the wash wand to the jetter hose using the quick connect coupling. Make sure the hose is securely connected to prevent it from coming off under pressure.
4. When using the jetter as a pressure wash, the wash wand acts as the water control valve. Open other valves in the system to allow water to flow
5. Connect an appropriate water supply, as discussed earlier, to the jetter. Never start the engine without the water supply turned ON. This can damage the pump.
6. Wash Wand Lock Out – the wash wand includes a lock out on the back of the trigger. Flip the lock out down to prevent the operation of the trigger when the wash wand is not in use (Figure 14).
7. With the wand pointed in a safe direction, squeeze the wash wand trigger to reduce pressure and allow the engine to be started. Following the starting instructions supplied in the engine manual, start the engine. Set the throttle to the full open position. Allow the engine to warm up. Release the trigger soon after the engine starts.



Figure.14 - Wash Wand

8. With the wand pointed in a safe direction, squeeze the wash wand trigger. If applicable; turn the unloader valve while monitoring the pressure gauge to adjust the pressure as desired. Do not exceed the machine pressure rating. Release the wash wand trigger.

Pressure Washer operation

1. When using as a pressure washer use both hands to grip and direct the wash wand for greater control. Never direct the wash wand at people. High pressure fluid can inject under skin resulting in serious injury. Never direct wash wand at electrical equipment or wiring to reduce the risk of electrical shock.
2. Control the flow of water with the trigger. Use care when using the pressure washer. Holding the nozzle too close to a surface can damage it. Test a small, inconspicuous area to confirm the settings work as desired.
3. Do not allow the jetter to run for extended period of time with the trigger OFF. When the trigger is OFF, water recirculates and it causes the water to heat up.
4. Once pressure washing is complete, release the trigger and turn OFF the engine as directed in the engine manual. Squeeze the trigger and ensure all water control valves are also in open position to release system pressure. Never leave the system pressurized.

Hose Reel Brake Adjustment

The reels are equipped with an adjustable brake to prevent the hose from playing off the reel under its own weight. Tightening wingnut increases the drag on the reel, loosening decreases the drag. Adjust as desired. The brake only works in one direction (to resist hose moving off reel) (Figure 15).

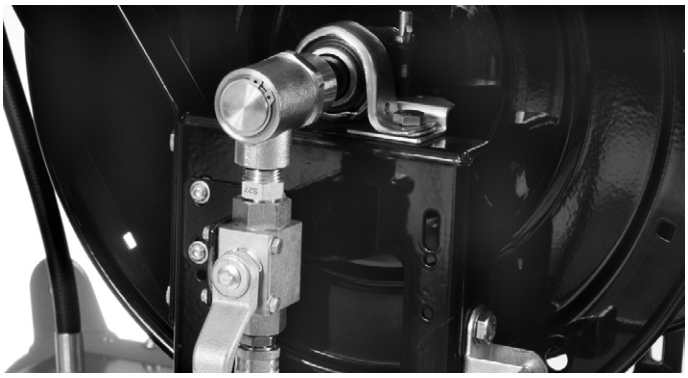


Figure.15 - Brake Adjustment

Transportation and Storage

1. Turn off the fuel valve and the battery isolation switch.
2. Drain water from Jetter as needed.
3. Coil hoses and secure equipment appropriately. All loose material must be removed. Transport remote reel separate from jetter.
4. Jetter is equipped with wheels to allow transport over smooth level surfaces.
5. Jetter weighs 235-245 kg. Use appropriate equipment and methods to load and transport. Use all four points supplied at the top corners of the frame (Figure 6) when lifting. Use rigging with current certifications per the manufacturer's instructions.

Maintenance Instructions

⚠ WARNING

Before performing any maintenance, engine switch battery isolation switch should be in OFF position and spark plug wires should be disconnected to prevent inadvertent operation. Open water control valve to release any fluid pressure in system.

Always wear safety glasses and gloves when performing any maintenance to help protect against drain chemicals and bacteria.

Cleaning

The hose should be cleaned as needed with hot, soapy water and/or disinfectants. Do not allow water to enter the engine or electrical system. Do not clean with pressure washer. Wipe the unit down with a damp cloth.

Engine

Maintain the engine as directed in the engine operator's manual supplied with the unit. An hour meter is included on the engine to monitor jetter use.

Battery

To change battery

1. Unclip strap holding battery box top on, remove top.
2. Disconnect ground (-) cable connection first, followed by positive (+) cable connection.
3. Remove battery.
4. Reverse procedure to install.

Replacement batteries should have the following specifications:

- BCI Group/Type: U1
- Size (L x W x H): 196 x 128 x 159 (mm)
- Voltage: 12
- Cold Cranking Amps (CCA): 350
- Reserve Capacity (RC): 45
- Terminal Type: Offset Lug Terminal (OLT)
- Assembly Type: C
- Max Charging Volt: 14.8

Pump Lubrication/Maintenance

Check the pump oil level prior to each use. Place the jetter on a level surface. Wipe any dirt and debris from the area of the dipstick and sight-glass. Oil level should be at the middle of the sight-glass (Figure 16). If needed, remove the dipstick and add SAE 15W-40 Mineral non-detergent oil, fill to half-way on the sight-glass. Do not overfill, reinstall dipstick.



Figure.16 - Checking Pump and Gearbox Oil Level

Change oil in pump after first 50 hours of operation and every 500 hours of operation after that. With the pump warm from operation, remove plug on bottom of pump and drain oil into suitable container. Replace plug. Fill to approximately half-way on the sight-glass with SAE 15W-40 Mineral non-detergent oil using the checking procedure. Approximately 1000 ml of oil are required to change the pump oil.

At 1000 hours of use (less in severe use conditions) the Hurricane should be taken to a Jetwave Independent Service Center for pump seal and valve service.

Gearbox Lubrication

Check the gearbox oil level prior to each use. Place the jetter on a level surface. Wipe any dirt and debris from the area of the dipstick and sight-glass (Figure 16). Oil level should be at the middle of the sight-glass. If needed, remove the dipstick and add SAE 85W-140 gear lubricant oil, fill to half-way on the sight-glass. Do not overfill, reinstall dipstick.

Change oil in gearbox every 500 hours of operation. With the gearbox warm from operation, remove plug on bottom of gearbox and drain oil into suitable container. Replace plug. Fill to half-way on the sight-glass with SAE 85W-140 gear lubricant oil. Approximately 300 ml of oil are required to change the gearbox oil.

Preparing Pump for Cold Weather Storage

If the jetter will be stored under conditions where the temperature is near or below 0°C, the jetter must be properly prepared. If water freezes in the pump, it can damage it.

After the tank is drained, remove the hose from the water inlet filter. Open all valves in the system and use compressed air to force any water out of the system. This can also be used to remove water from the hoses.

Machine Storage

Store the jetter in a well ventilated area protected from rain and snow. Keep the machine in a locked area that is out of reach of children and people unfamiliar with Jetters. This machine can cause serious injury in the hands of untrained users. See Maintenance section for information on cold weather storage. See engine operator's manual for specific information on engine storage.

Service And Repair

⚠ WARNING

Improper service or repair can make machine unsafe to operate.

The "Maintenance Instructions" will take care of most of the service needs of this machine. Any problems not addressed by this section should only be handled by an authorized Jetwave service technician.

Tool should be taken to a Jetwave Independent Service Center or returned to the factory.

For information on your nearest Jetwave Independent Service Center or any service or repair questions:

- Contact your local Jetwave distributor.
- Visit jetwavegroup.com.au/find-a-dealer/ to find your local Jetwave contact point.
- Contact Jetwave Technical Service Department at service@jetwave.com.au or call (08) 8371 3599

Disposal

Parts of the water jetter contain valuable materials and can be recycled. There are companies that specialize in recycling that may be found locally. Dispose of the components in compliance with all applicable regulations. Contact your local waste management authority for more information.

Trouble Shooting

PROBLEM	CAUSE	SOLUTION
Jetter shuts off in use.	Not enough water in the tank (low water float switch turning jetter off).	Confirm water supply is ON. Confirm water supply hose is clear and not kinked or collapsed. Confirm water level in tank.
Jetter will not adjust to full operating pressure at start-up.	Air is trapped in system. Jetter nozzle orifices are blocked.	Remove nozzle and insert jet hose in drain line. Run jetter to flush trapped air or debris. Remove nozzle. Use nozzle cleaning tool to clear nozzle orifices: push completely through each orifice to remove debris.
Jetter pressure gage oscillates from 500 to full operating pressure.	Jetter nozzle orifices are blocked. Debris or air trapped in system.	Remove nozzle. Use nozzle cleaning tool to clear nozzle orifices: push completely through each orifice to remove debris. Remove nozzle and insert jet hose in drain line. Run jetter to flush trapped air or debris.
Jetter won't start.	Not enough water in the tank. Filter is clogged.	See "Jetter shuts off in use" above. Clean inlet filter.
Pump runs extremely rough, pressure very low	Inlet restrictions and/or air leaks inlet side of pump. Stuck inlet or discharge valve.	Check hose from tank to pump for kining; confirm hose connections are tight. Worn pump cups or valves. Take jetter for pumpservice.
Low pressure	Worn nozzle. Air leak in inlet plumbing. Pump valves stuck, worn or dirty. Unloader valve improperly adjusted. Filter clogged. Worn pump packing. Abrasives in pumped fluid. Severe cavitation. Inadequate water supply.	Replace nozzle (must be properly rated for the jetter). Confirm hose connections are tight. Take jetter for pump service. Adjust Unloader Valve. Clean filter. Check more frequently. Take jetter for pump service. Change water supply or add appropriate filters. Confirm no water supply restrictions.

Maintenance Log

Hour Meter Reading	Date	Maintenance Performed	Service Agent



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