



# JETTER SAFETY

Employee Name \_\_\_\_\_

Date \_\_\_\_\_

Company Name \_\_\_\_\_

Date \_\_\_\_\_



# Safety Guidelines for Operating High Pressure Jetter Equipment



It's imperative that all operators read the safety and operating instructions before using any HotJet USA product. Drain and sewer cleaning can be dangerous if proper procedures are not followed and appropriate safety gear is not utilized. Read the engine owner's manual for instruction and safety precautions on engine operation.

## **DANGER**

*Improper use of this equipment can cause extreme physical harm, severe burns, and potentially life threatening injuries.*

**This safety guidelines must be reviewed and signed by all operators prior to running any high pressure jetter equipment.**

**FOR SAFE OPERATION, A MINIMUM OF TWO OPERATORS IS HIGHLY RECOMMENDED!**

Sewer jetting is a serious business that can result in serious injury or death when proper safety precautions are not followed. Awareness of common jetting hazards, knowing how to protect oneself from them, and learning and practicing the proper safety procedures can greatly reduce the chances of disaster striking at unexpected moments.

### **PERSONAL PROTECTION**

Proper dress is also important when performing high-pressure water jetting. Coveralls should be worn. A heavy duty raincoat should also be worn to keep technicians dry and to help provide a barrier in the event there is contact with debris flying from the pipe.

Safety goggles should always be worn to protect the eyes from a high pressure jet of water. Water pressure above 2,000 PSI requires a full face shield, and at 4,000 PSI the water jet can literally tear an eyeball from its socket.

Heavy duty, waterproof gloves (insulated, if running hot water) are needed to protect the hands. Rubber boots with metatarsal guards are highly recommended. Hard hats are necessary in environments where falling objects are a potential hazard.

### **HAZARDOUS BACTERIA AND MATERIALS**

Drains and sewer can carry bacteria and other infectious micro-organisms or materials which can cause death or severe illness. Avoid exposing eyes, nose, mouth, ears, hands and cuts and abrasions to waste water or other potentially infectious materials during drain and sewer cleaning operations. To further help protect against exposure to infectious materials, wash hands, arms and other areas of the body, as needed, with hot, soapy water and, if necessary, flush mucous membranes with water. Also, disinfect potentially contaminated equipment by washing such surfaces with a hot soapy wash using a strong detergent.

## **GASOLINE IS EXTREMELY FLAMMABLE AND IS EXPLOSIVE UNDER CERTAIN CONDITIONS**

- Refuel in a well ventilated area with the engine stopped. Do not smoke or allow flames or sparks in the area where the engine is refueled or where gasoline is stored.
- Do not overfill the fuel tank (there should be no fuel in the filler neck). After refueling, make sure the tank cap is closed properly and securely.

## **CARBON MONOXIDE DANGERS**

Carbon monoxide exhaust and/or gasoline fumes from this equipment can create a hazardous atmosphere in confined spaces (which may include, but are not limited to, manholes and septic tanks), closed garages or other areas which may not be properly ventilated. In particular, excess gasoline fumes can create an explosion hazard. Such hazardous atmospheres can cause death or severe injury. Do not operate this equipment in any confined space or area with inadequate ventilation. Operate this equipment only when located outdoors or in an open, well ventilated area.

## **HOT WATER PRECAUTIONS**

With the hot water on, it is highly recommended not to turn the water thermostat above 120° degrees... to prevent possible burn/scalding type injury.

## **COMMON JETTING HAZARDS**

When water is pressurized to 4,000 PSI, it becomes a potentially deadly force that can easily result in serious injury when the water jet comes into contact with skin or eyes. The impact of a high pressure nozzle, leaky hose or being hit by contaminated waste can cause potentially life threatening injuries. When jetting is performed in confined spaces other OSHA rules for confined space entry and personal protective equipment must be followed.



# WARNING!

## OPERATING WITH HIGH TEMPERATURE WATER MAY CAUSE SEVERE BURN INJURIES OR DEATH!



TEMPERATURE	TIME TO PRODUCE SERIOUS BURN
120° F	More than 5 minutes
125° F	1.5 to 2 minutes
130° F	About 30 seconds
135° F	About 10 seconds
140° F	About 5 seconds
145° F	Less than 5 seconds
150° F	About 1.5 seconds
155° F	About 1 second

Source: Rheem Manufacturing Co. • PO BOX 244020, Montgomery, AL 36124

WATER TEMPERATURE °F (°C)	TIME FOR 1 <sup>ST</sup> DEGREE BURN (Less Severe Burns)	TIME FOR PERMANENT BURNS 2 <sup>ND</sup> & 3 <sup>RD</sup> DEGREE (Most Severe Burns)
104-110 (43.3)	(normal shower temperature)	
116 (46.7)	(pain threshold)	
122 (50)	35 minutes	45 minutes
131 (55)	1 minute	5 minutes
140 (60)	5 seconds	25 seconds
149 (65)	1 second	2 seconds
154 (67.8)	instantaneous	1 second

U.S. Government Memorandum, C.P.S.C., Peter L. Armstrong, Sept. 15, 1978

# WARNING



**TO PREVENT POTENTIAL SCALDING  
DO NOT OPERATE WITH HEAT SET  
ABOVE 120°**

**PARA EVITAR POTENCIALES ESCALDAS  
NO OPERE CON EL CALEFACTOR  
SUPERIOR A 120°**

# CUIDADO

# OPERATOR AGREEMENT

As the operator I understand the potential and intent for the use and limits of the high pressure jetting equipment and the high temperature of water generated by this equipment. (If a hot water unit was ordered). I have received and read the complete set of instructional and safety literature and shall use extreme care in the operation of the equipment.

## I UNDERSTAND THE PRECAUTIONS FOR SAFE OPERATION OF THIS HIGH PRESSURE EQUIPMENT AND AGREE TO THE FOLLOWING:

- **DO NOT EVER PUT HAND OVER NOZZLE(S) WHEN UNDER PRESSURE!**
- **DO NOT EVER ENTER A GREASE TRAP WITHOUT HYDROGEN SULFIDE AND METHANE GAS LEVEL INDICATOR**
- UNDER NO CIRCUMSTANCES SHOULD I OR ANYONE OPERATE THIS JETTING EQUIPMENT WITHOUT PROPER TRAINING.
- **WHEN OPERATING JETTER, NEVER TURN THE PRESSURE VALVE THAT FEEDS THE HOSE OR HOSE REELS TO THE ON POSITION UNLESS THE HOSE IS PROPERLY INSERTED A MINIMUM OF 2' - 3' INTO THE PIPE OR SEWER LINE OR A TRIGGER GUN IS CONNECTED TO THE PRESSURE HOSE.**
- OPERATORS NEED TO FAMILIARIZE THEMSELVES WITH THE HIGH PRESSURE VALVING, SO THAT THEY HAVE A COMPLETE UNDERSTANDING OF THE ON AND OFF POSITION(S) OF THE HOSE REELS.

### SAFETY FIRST

## POTENTIAL HAZARD!

If ANY NOZZLE is being used in pipes larger than the recommended diameter, a rigid stinger with a minimum length of 1.5 times the diameter of the pipe I.D. should be installed between the tool inlet and the hose end. Otherwise the tool can turn around inside the line (as shown here) and come back toward the operator, causing serious injury or death.

ASK US ABOUT OUR LINE UP OF STINGERS AND HOW WE CAN HELP YOU SELECT THE RIGHT ONE FOR YOUR APPLICATION.

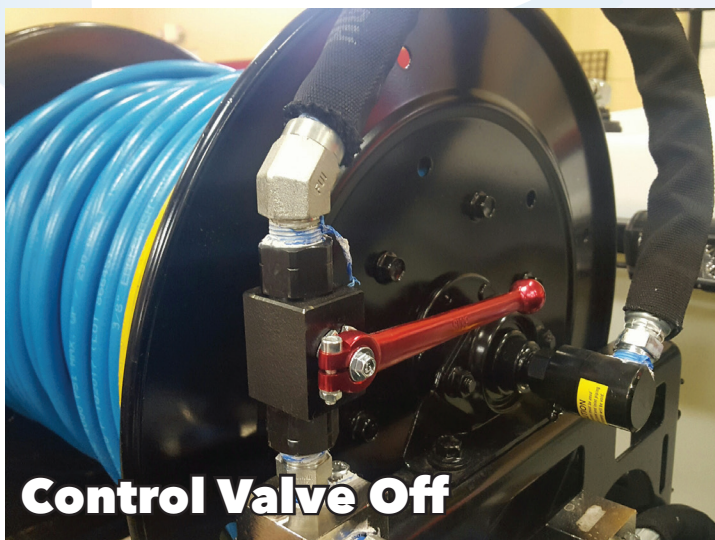


## ← CORRECT

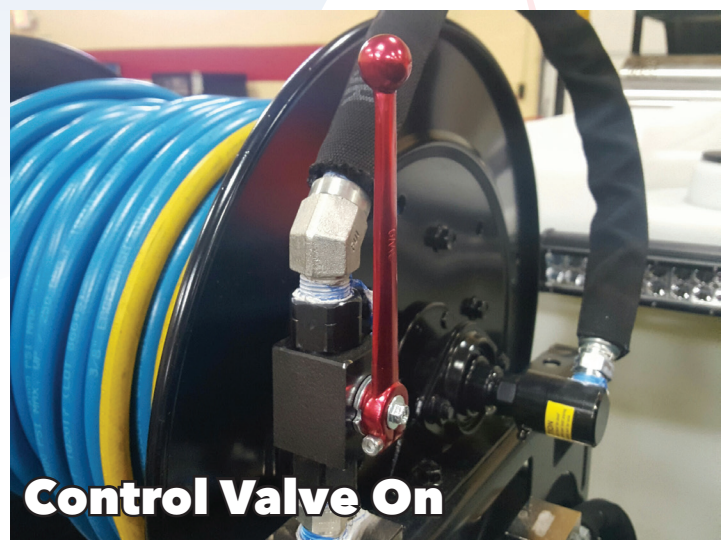
A rigid Stinger should be installed between the tool inlet and the hose end in pipes larger than 4" (102 mm) in diameter. This prevents the tool from turning around inside of the pipe and coming back toward the operator.



- ALWAYS USE A LEADER HOSE AND/OR SAFETY MARKED HOSE MARKED 6' FROM END, SO THAT THE OPERATOR CAN VIEW WHEN THE HOSE IS RETURNING FROM CLEANING THE SEWER LINE/PIPE.
- TO KEEP THE NOZZLE FROM TURNING AROUND BACK ON ITSELF AND POTENTIALLY EXITING THE PIPE AT THE OPERATOR, CREATING A VERY DANGEROUS SITUATION, **NEVER OPERATE NOZZLES/TOOLS IN A PIPE OR OPENING WITH A DIAMETER LARGE ENOUGH TO ALLOW THE TOOL TO TURN AROUND.** A SOLID STEEL NIPPLE SHOULD BE INSTALLED BETWEEN THE JETTER HOSE AND NOZZLE TOOL. THE NIPPLE LENGTH TO BE DETERMINED BY THE DIAMETER OF THE DRAIN / SEWER PIPE THAT YOU ARE CLEANING. (THE LENGTH OF THE TOOL/ NOZZLE INCLUDING THE END FITTING ON THE HOSE SHOULD BE GREATER THEN THE INSIDE DIAMETER OF THE PIPE TO BE CLEANED TO PREVENT THE TOOL/ NOZZLE FROM TURING AROUND. IF NOT A RIGID PIPE SHOULD BE INSTALLED BETWEEN THE HOSE END AND THE TOOL/NOZZLE).
- **ALL JETTING NOZZLES MUST BE THREADED ON AND TIGHTENED SECURELY. USE OF QUICK COUPLERS CAN CREATE A HAZARDOUS SITUATION.**
- **EYE, FACE AND HAND PROTECTION IS MANDATORY WHEN OPERATING THIS PIECE OF EQUIPMENT.** OTHER PERSONAL PROTECTIVE EQUIPMENT (PPE) MAY BE REQUIRED DEPENDING UPON APPLICATIONS.
- **UPON COMPLETION OF CLEANING THE LINE, DEPRESSURIZE THE HOSE BEFORE WITHDRAWING THE HOSE FROM THE PIPE OR SEWER LINE.** RELIEVE PRESSURE BY SHUTTING OFF THE VALVE THAT FEEDS THE HOSE REEL AND THEN OPEN THE PRESSURE BYPASS VALVE. ALWAYS TURN OFF THE HOSE REEL VALVE OR SHUT-OFF ENGINE BEFORE REMOVING THE TOOL FROM THE LINE AND RELIEVE ANY BACK PRESSURE ON HOSE WHEN FINISHED CLEANING.
- ALWAYS TURN OFF THE HOSE REEL VALVE OR SHUT-OFF ENGINE BEFORE REMOVING THE TOOL FROM THE LINE AND RELIEVE ANY BACK PRESSURE ON HOSE WHEN FINISHED CLEANING. THE BACK PRESSURE IS BEST RELIEVED BY OPENING THE EASY START VALVE. **WARNING: PORTIONS OF THE SYSTEM CAN STILL BE UNDER PRESSURE EVEN IF THE UNIT IS NOT OPERATING.**



**Control Valve Off**



**Control Valve On**



- THE BACK PRESSURE IS BEST RELIEVED BY OPENING THE EASY START VALVE.
- NEVER USE DAMAGED OR WEAKENED HOSE.
- OPERATOR MUST POSITION THEMSELVES OUT OF THE POSSIBLE PATH OF AN OUT OF CONTROL NOZZLE/CLEANING TOOL AND ANY DEBRIS THAT THEY COULD COME INTO CONTACT WITH.
- UNDER NO CIRCUMSTANCES AIM THE SPRAY OR GUN AT ANY PERSON OR ANY PART OF THE BODY. FLUIDS UNDER PRESSURE WILL PENETRATE THE HUMAN SKIN AND CAN CAUSE SEVERE INJURY. IF ANY INJURY OCCURS, SEEK IMMEDIATE MEDICAL CARE FROM A DOCTOR! DO NOT TREAT AS A SIMPLE CUT! BE READY TO TELL YOUR DOCTOR OR HOSPITAL EMERGENCY ROOM DOCTOR EXACTLY WHAT HAPPENED.
- UNDER NO CIRCUMSTANCES ALTER EQUIPMENT IN ANY MANNER. IF REPAIRS ARE NECESSARY, USE ONLY GENUINE FACTORY REPAIR PARTS.
- UNDER NO CIRCUMSTANCES SPRAY FLAMMABLE MATERIALS.



- WHEN USING A JETTER SYSTEM NEVER EXCEED THE MAXIMUM OPERATION PRESSURE OF THE LOWEST RATED ACCESSORY ITEM WITHIN THE SPRAY SYSTEM.
- UNDER NO CIRCUMSTANCES LEAVE EQUIPMENT UNDER PRESSURE, UNATTENDED, EVEN FOR ONLY A FEW MINUTES.
- WHEN JETTING ALWAYS BE AWARE OF YOUR SURROUNDINGS AND POTENTIAL OVER-SPRAY. THE SPRAY OF THE WATER CAN THROW OBJECTS THAT CAN CAUSE POTENTIAL DAMAGE AND OR INJURE OTHERS WITHIN YOUR WORKING AREA.
- ONLY USE KEROSENE OR DIESEL AS BURNER FLUID. USE OF GASOLINE AS BURNER FLUID CAN CAUSE A HUGE EXPLOSION.
- IF USING HOT WATER, YOU MUST TAKE EXTRA PRECAUTIONS WHILE OPERATING EQUIPMENT (USE OF INSULATED GLOVES, ETC.). HOT WATER CAN CAUSE SEVERE BURNS, THEREFORE WE RECOMMEND SETTING THE THERMOSTAT AT NO MORE THAN 120°.



# WARNING!

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



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

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



## **DANGER** READ AND UNDERSTAND THE FOLLOWING:

## HOSE BASICS

1. NEVER EXCEED THE MAXIMUM WORKING **PRESSURE**.
2. NEVER EXCEED THE MAXIMUM WORKING **TEMPERATURE**.
3. NEVER APPLY PRESSURE TO A **DAMAGED** HOSE.
4. HIGH PRESSURE HOSES ARE DESIGNED TO USE SPECIFIC **FITTINGS** AND **TOOLING**. NEVER
- USE A DIFFERENT BRAND OF FITTINGS OR TOOLING. FAILURE TO DO SO CAN CAUSE DEATH, PERSONAL INJURY AND/OR PROPERTY DAMAGE.
5. A **KINKED, CRUSHED, OR BLISTERED** HOSE WILL EVENTUALLY FAIL - DO NOT RISK INJURY. IMMEDIATELY REPAIR OR REMOVE HOSE FROM SERVICE.
6. FOLLOW THE PUMP/ EQUIPMENT MANUFACTURER'S **INSTRUCTIONS** FOR PRESSURIZED HOSE TESTING.

# TRAILER SAFETY

**It is recommended to retighten and check all fasteners and lug nuts on a regular basis. Trailers create a lot of vibration and fasteners can come loose.**

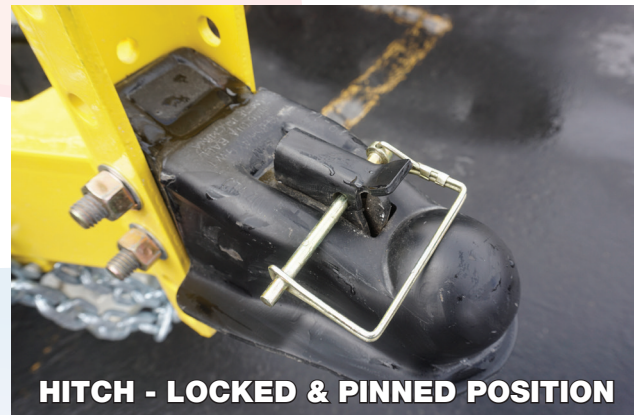
## TRAILER

**IT'S MANDATORY TO RETORQUE YOUR LUG NUTS TO 110 FT. LB. ON TRAILERS 50-100 MILES AFTER PURCHASE.**

- ☐ Check hitch chains - make sure the chains are properly attached to tow vehicle. Make sure they do NOT drag and are criss-crossed.
- ☐ Check battery charge on break away battery.
- ☐ Check tires and tire pressure.
- ☐ Be sure the jack stand is up.
- ☐ Check brakes lights, turn signal lights and running lights are operating properly.
- ☐ Towing vehicle needs to be of adequate size and hauling capacity.
- ☐ Bumper or Hitch is adequately rated and properly secured.
- ☐ Pin & Clip securing insert into receiver
- ☐ Make sure towing ball is the correct size
- ☐ Ball is tight
- ☐ Trailer brakes are working properly
- ☐ Lugs nuts are tight (Recheck on a regular basis)
- ☐ Re-check all fasteners and lug nuts periodically during use.
- ☐ BEFORE towing - perform a complete trailer walk-around - looking for any loose parts, etc.



**HITCH - RELEASED POSITION**



**HITCH - LOCKED & PINNED POSITION**

# OPERATOR AGREEMENT ACKNOWLEDGEMENT:

## Safety Guidelines for Operating High Pressure Jetter Equipment

**Environmental:** The conditions of use are beyond the control of vendor, therefore operator is responsible for the safe environmental operation of this equipment and potential cleaning discharges.

**Customer is Responsible:** For complying with local codes and regulations in the operation of this equipment.



**Keep children at a safe distance when using a JETTER SYSTEM.**

“California Prop. 65: This product may contain an extremely small amount of lead in the coating. Lead is a material known to the State of California to cause cancer or reproductive toxicity.”

Operator is in agreement that they have read this form and fully understand its contents. The undersigned operator is ultimately responsible for evaluating the hazards and safe operation of this equipment.

Company Name \_\_\_\_\_

Date \_\_\_\_\_

Print Customer Name \_\_\_\_\_

Date \_\_\_\_\_

Customer Signature \_\_\_\_\_

Date \_\_\_\_\_

Power Line Signature \_\_\_\_\_

Date \_\_\_\_\_



### WARNING

This product can expose you to chemicals, including LEAD which is known to the state of California to cause cancer or birth defects or other reproductive harm. Go to [www.p65warnings.ca.gov](http://www.p65warnings.ca.gov) for more information. The products we sell are not intended for use in potable water systems and are only for industrial non-drinking water applications.

This product can expose you to chemicals, including DINP and/or DEHP which is known to the state of California to cause cancer or birth defects or other reproductive harm. Go to [www.p65warnings.ca.gov](http://www.p65warnings.ca.gov) for more information. The products we sell are not intended for use in potable water systems and are only for industrial non-drinking water applications.