

WAZER PRO

User Manual

Original Instructions - V1.4

WAZER Pro Water Jet Cutter

(WAZER G2 Pro 50Hz)

&

(WAZER G2 Pro 60Hz)

© WAZER, Inc.
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CE Declaration of Conformity

We, WAZER Inc., hereby declares that product described in this manual are manufactured and delivered in accordance with following directive:

Machinery Directive 95/16/EC
Electromagnetic Compatibility Directive 2014/30/EU
Low Voltage Directive 2014/35/EU
Restriction of Hazardous Substances Directive 2011/65/EU

and following EN and IEC standards:

EN 1829-1:2021 - High Pressure Water Jet Machines
EN 1829-2:2008 - Hoses, Hose Lines and Connectors
EN 60204-1: 2018 - Safety of Machinery - Electrical Equipment of Machines
EN 12100:2010 - Safety of Machinery - General Principles for Design
EN 61000-6-3:2020 - EMC- Generic standards - Emission standards;
EN 61000-6-1:2019 - EMC- Generic standards - Immunity standard;
EN 61000-3-11: 2017 - EMC - Limitation of Voltage Changes;
EN 61000-3-12:2011 - EMC - Limits for Harmonic Currents;



Declaration of Non-Inclusion

We, WAZER Inc., hereby declares that, to the best of WAZER's knowledge, products and components described in this manual do not contain the chemical substances prohibited by the EU Restriction of Hazardous Substance directive (EU Directive 2011/65/EU), at the time of shipment from the factory.

This declaration is in conformity with the applicable requirements of 6 substances restrictions in EU Directive 2011/65/EU (RoHS recast)

These two declarations are only valid, if the setup of the WAZER Water Jet Cutter is carried out according to the instructions delivered with the machine. If the equipment is modified without the consent of the undersigned, this declaration becomes invalid.

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Introduction

Congratulations! You have one of the Waterjet cutters tailored for small workshops. This User Manual will help you get started.

Welcome to the WAZER Pro User Manual. Your safety, and the safety of others, is very important. Please read this entire document before setting up or using your new WAZER Pro. The warnings and instructions contained in this manual are for your safety. Failure to follow safety warnings and instructions could result in serious injury or death.

This User Manual must always be kept with WAZER Pro and should remain with WAZER Pro if it is transferred or sold.

This manual contains information that is subject to change. We will work to continually improve the product and update this User Manual. Images are provided for reference and may be slightly different from your product. For the most up-to-date version of this User Manual, as well as other product documentation, notices, and knowledge articles please see our online Resources at support.wazer.com. If you have any questions or concerns, contact our Customer Support.

This Manual Includes:

- **Safety**
WAZER Pro is a powerful system; please read, understand, and follow these safety guidelines to avoid damages or injuries.
- **About WAZER Pro**
You will learn about the operating principles of WAZER Pro and familiarize yourself with its components. It may be tempting to skip this section, but understanding these concepts will be helpful every time you use WAZER Pro.
- **Setting Up WAZER Pro**
Walk through the process of setting up your WAZER Pro. It is important to follow the instructions very carefully to ensure the successful operation of your WAZER Pro.
- **Cutting with WAZER Pro**
Learn how to operate your WAZER Pro and walk through the process to complete your first cut.

The following sections will be available in the full version online. We highly recommend downloading the full manual and read through it.

- WAM / Creating Cut Files
- Maintenance
- Disassembly and Decommission



WAZER Customer Support is here to help.

If you need help with Maintenance and Troubleshooting, please get in touch with the WAZER Customer Support Team. Visit support.wazer.com or email us at support@wazer.com.

Important Safety Information

Read and Understand User Manual Before Use

 **WARNING:** Read all safety warnings, instructions, illustrations and specifications provided with this power tool. Failure to follow all instructions listed below may result in electric shock, fire, serious injury, property damages, serious injuries, or death. Always read this entire manual before operating WAZER Pro.

The employer or owner is responsible for compliance with all applicable federal, state and local regulations/codes.

 Always keep this manual in a safe, accessible location near WAZER Pro during operation and maintenance. Save all warnings and instructions for future reference.

Signal Words

Throughout this document, the product labels, and in other collateral materials, you will come across various signal words. Some of these signal words alert you to safety hazards. These are important to the safety of WAZER Pro users. Others are there to make sure your machine or environment does not suffer any damage. Be sure to familiarize yourself and all other users of the machine with these signal words. Make sure to refer back to this section as needed.

 **SAFETY ALERT SYMBOL** 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 serious injury or death. This safety alert symbol precedes any safety message about risk of personal injury.

It may also have one of the following signal words:

 **DANGER** **DANGER** Indicates a hazardous situation that, if not avoided, will result in death or serious injury.

 **WARNING** **WARNING** Indicates a hazardous situation that, if not avoided, could result in death or serious injury.

 **CAUTION** **CAUTION** Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

 **NOTICE** **NOTICE** Indicates a hazardous situation that, if not avoided, could result in property damage.

Safety Symbols

In addition to the signal words listed above, WAZER Pro has various product safety signs and safety labels placed in visible locations. These labels are critical to your safety. You and other users must familiarize yourself with their meaning. Ignoring these labels may result in equipment or property damage as well as physical injury or death.

These product safety signs and labels should be periodically inspected and cleaned as necessary to maintain good legibility. If they are no longer legible, the product safety Labels should be replaced. For product safety labels that are lost or damaged, contact WAZER customer support for replacement labels and installation procedure.

The following symbols may be included on the on-product labels or in this User Manual:



General Warning Sign



Warning: Electricity



Warning: Heavy Weight, team lift required



Warning: Heavy Weight; Use Proper Lift Techniques



Warning: Entanglement Danger



Warning: Hot Surface



Warning: Sever Danger



Refer to Instruction Manual



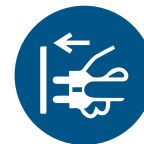
Wear Eye Protection



Keep Out of Reach of Children



Do Not Open Covers When Machine is in Operation



Connect Main Plug to Electrical Outlet



No Unauthorized Repair Allowed



Suffocation Danger, Do not play



Do not touch



No Children Allowed



Do Not Open Pump Cover



Do not Connect Main Plug to Electric Outlet



Do Not Disconnect Water Lines

Product Safety Label Locations



Upon unboxing, you will be greeted with WAZER Pro in a state like this. Keep in mind all the warning label locations, as they will display important safety-related messages for anyone who is operating, maintaining and repairing this machine.



This label warns you of the operation, maintenance, and repair hazards of the WAZER Pro. It also contains the Machine Serial Number and Manufacturing date

This label points out the proper jacking points of the WAZER Pro. It also warns you the heavy weight of the WAZER Pro. Lift from other places may damage your WAZER Pro

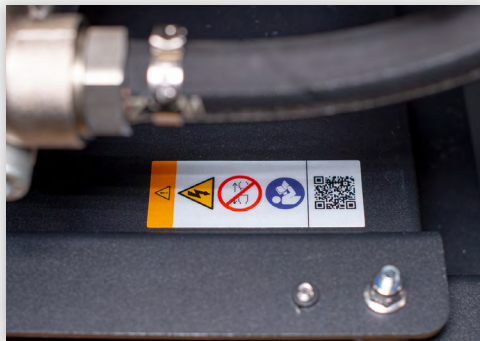
Reference Note 1



This label warns you of the electrical residual hazards inside the WAZER Pro AC Boxes and warnings against opening them.



This label warns you of the existence of the high temperature hazard near its proximity.



This label warns you the Danger of disconnecting High Pressure Hose incorrectly.



This label warns you entanglement damage exist with revolving pulleys. Keep the Belt Guard in place during WAZER Pro operation.



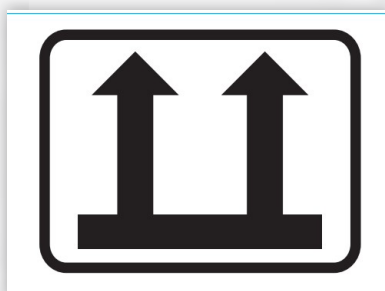
This label warns you of the suffocation danger when dealing with plastic bags. Keep this bag away from children.



This label warns you not to operate the high-pressure hose line under pressure exceeding the maximum working pressure



This label warns you of the heavy weight of the WAZER packages and instructs you to use the proper lifting technique when moving them.



This label instructs you to the correct orientation that the WAZER packages need to be maintained in at all times.



This label warns you that the WAZER contents inside may contain carcinogenic materials according to the state of California. For more information, visit the listed website. It also listed all the environmental labels WAZER complies to.

Peel-able Labels

You may peel them off after the installation process of your WAZER Pro is completed.



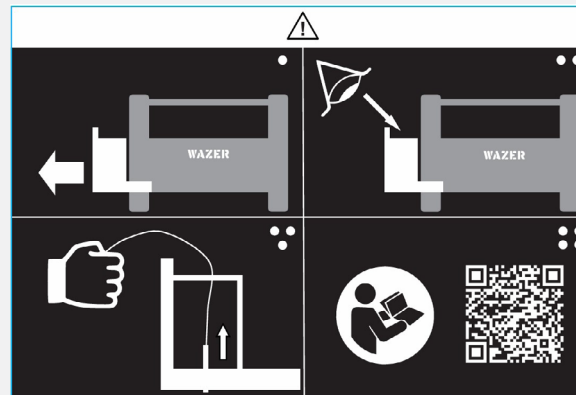
This label warns you of the heavy weight of the WAZER Pro and instructs you to use the proper jacking and transport technique when moving it. You may peel it off after installation.



This label instructs you to not plug the power into the machine prior to the completion of all previous steps. You may peel it off after acknowledging our terms of service and installation.



This label instructs you to fill the WAZER Pro tank to the correct level before attempt to turn it on. It also instructs you to prime the high pressure system before attempt a cut. You may peel it off after installation.



This label reminds you to remove the Abrasive Drop Tube Long Term Storage Insert from the Abrasive Hopper before operating the machine.

General Power Tool Safety Warning

⚠WARNING Read all safety warnings, instructions, illustrations and specifications provided with this water jet cutter. Failure to follow all instructions listed below may result in electric shock, fire and/or serious injury.

Save all warnings and instructions for future reference.

Work area safety

- Keep work area clean and well lit. Cluttered or dark areas invite accidents.
- Set up and operate the water jet cutter where the floor surface and surrounding area are water resistant and slip resistant. Water is likely to spill during routine use, set up and maintenance of water jet cutters. Wet floor surfaces may increase the risk of slip and fall which can result in serious personal injury.
- Water jet cutters must be operated only by persons familiar with their operation and manufacturer's instructions. Operation of water jet cutters by persons unfamiliar with their operation and manufacturer's instructions can result in electric shock, fire and/or serious injury.
- Keep children and bystanders away from the water jet cutter while it is operating, and do not allow unsupervised children and bystanders to interact with the water jet cutter at any time. Other people in the work area may cause distractions, and persons unfamiliar with the operation of the water jet cutter may change its setup, which may increase the risk of electric shock, fire and/or serious injury.

Electrical safety

- Before using the water jet cutter, test all Ground Fault Circuit Interrupter (GFCI), Portable Residual Current Device (PRCD), or Residual Current Circuit Breaker with Over Current Protection (RCBO) provided to ensure they are operating correctly. A properly operating GFCI/PRCD/RCBO reduces the risk of electrical shock.
- Do not use the water jet cutter with extension cords. The GFCI/PRCD/RCBO on the machine power cord will not prevent electrical shock from the extension cords.
- Water jet cutter plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with earthed (grounded) water jet cutters. Unmodified plugs and matching outlets will reduce risk of electric shock.
- Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the water jet cutter. Keep cord away from heat, oil, sharp edges or moving parts. Damaged or entangled cords increase the risk of electric shock.
- While operating the water jet cutter, avoid body contact with earthed or grounded surfaces such as pipes, radiators, ranges and refrigerators. There is an increased risk of electric shock if your body is earthed or grounded.
- Before every operation of a water jet cutter, make sure that the water connections and water piping and joints are leak-free. Water leaks may increase the risk of electric shock.
- Because the electronics will be operating around water, both power cables have integrated GFCI/PRCD/RCBO protection. Do not attempt to use any cables that are not GFCI/PRCD/RCBO protected.
- DO NOT attempt to use any other Power Supply other than the one included by WAZER
- The replacement of the Power Cables and Power Supply shall only be carried out by the manufacturer or approved service organization.

Personal safety

- Stay alert, watch what you are doing and use common sense when operating a water jet cutter. Do not use water jet cutter while you are tired or under the influence of drugs, alcohol or medication. A moment of inattention while operating Water jet may result in serious personal injury.
- Use personal protective equipment. Always wear eye protection. Protective equipment such as safety glasses, non-skid safety shoes, waterproof gloves and hearing protection will reduce personal injuries.

- Dress properly. Do not wear loose clothing or jewelry. Keep your hair, clothing and gloves away from moving parts. Loose clothes, jewelry or long hair can be caught in moving parts.
- Be careful removing cut materials from the water jet cutter. Cutting with a water jet cutter creates sharp edges. Improper handling of cut materials may result in cuts and abrasions.
- Do not let familiarity gained from frequent use of water jet cutters allow you to become complacent and ignore water jet cutter safety principles. NEVER expose yourself to the water jet stream. A careless action can cause severe injury within a fraction of a second.

Water jet cutter use and care

- Prevent idle water jet cutters from being used by children and do not allow persons unfamiliar with the water jet cutter or these instructions to operate the water jet cutter. Water jet cutters can be dangerous in the hands of untrained users.
- Maintain water jet cutters. Check for misalignment or binding of moving parts, breakage of parts, water leaks, clogged waste water drains and any other condition that may affect the water jet cutter's operation. If damaged, have the water jet cutter repaired before use. A poorly maintained water jet cutter may result in a risk of shock, fire and/or serious injury.
- Disconnect the plug(s) from the power source and the water supply before performing any maintenance. Such preventive safety measures reduce the risk of starting the water jet cutter accidentally.
- Use the water jet cutter in accordance with these instructions, taking into account the working conditions and the work to be performed. Use of the water jet cutter for operations different from those intended could result in a hazardous situation.

Service

- Have your water jet cutter serviced by a qualified repair person using only identical replacement parts. This will ensure that the safety of the water jet cutter is maintained.

Safety instructions for water jet cutters

- **⚠WARNING** Never expose yourself to the water jet stream since it may cause severe injury and water jet injuries are prone to infection. Proper use and care of this water jet cutter are essential to safe operation. Severe infections can lead to serious medical problems and cause death.
- Do not attempt to modify or defeat the safety interlock system for any reason. This could result in exposure to the water jet stream.
- Never allow the water jet cutter to operate without constant supervision of the cutting process. If the machine malfunctions, immediately follow the manufacturer's instructions for shut down.
- Never operate a water jet cutter without proper drainage for the waste water system. Before use inspect the drainage to ensure proper water flow is not blocked. While in operation water jet cutters create a continuous flow of waste water which can quickly flood surrounding areas if not drained away, flooding may increase the risk of personal injury and electric shock, and may cause water damage to property.
- Never operate a water jet cutter with broken or kinked high-pressure hose lines. Always ensure the positioning of the hose line is unlikely to cause people to trip, or the kink, loop and tensile force to be excessive during operation

- Never cut any unknown or toxic materials and properly dispose of waste products. Always refer to the Safety Data Sheet (SDS) from the material manufacturer to determine if it is safe to return water contaminated by cut material to the water system. Follow local regulations to properly dispose of all waste products including water, spent abrasive and cut material debris.
- Keep the interior of the water jet cutter, clean and free of debris. Clean the cutting head and abrasive supply hose. A build-up of cutting and engraving residue and debris is dangerous and may increase the risk of improper performance or an environmental hazard such as clogging, overflowing, and jamming.

WAZER Safety Precautions

⚠WARNING In addition to the “General Power Tool Safety Warnings” in the previous section we have outlined a set of WAZER specific safety precautions. In general, this entire User Manual is filled with important safety information – please read it carefully and ensure that anyone that uses WAZER Pro has read this User Manual as well. Before setting up and using WAZER Pro, read and follow all instructions and safety messages. ALWAYS be aware of and comply with all federal, state, and local safety regulations, industry standards, and internal company safety guidelines.

Environment and Machine Location

- WAZER Pro operators should ensure anyone within 10 feet of the Machine follows the proper safety precautions.
- WAZER Pro should be installed in an area that allows the machine to be monitored while cutting.

Usage

- WAZER Pro can cause serious injuries from the high pressure water jet or trapped pressure in hoses. It should be accessible only to those that have read this User Manual and are capable of understanding the risks associated with this tool. Ensure the WAZER Pro location will never result in an untrained individual using the machine.
- If WAZER Pro is intended to be used by multiple people, put an orientation and training program in place at the facility to ensure correct usage.
- Do not setup, operate, or perform maintenance on the machine under the influence of illicit drugs, alcohol, or over-the-counter and prescription drugs that can impair one's ability to operate heavy machinery safely.
- All operators of WAZER Pro must be aware of the Power Switch, On/Off Valve, and water shutoff locations.
- Do not use WAZER Pro or its components in any manner or for any other purpose other than as specifically instructed in this User Manual.
- Do not modify WAZER Pro or its components.
- Never leave WAZER Pro unattended while in operation.
- All operators of WAZER Pro must follow the safety precautions outlined in the Safety Data Sheet of WAZER approved Abrasive.
- Use of non-WAZER approved Abrasive may result in equipment or property damage as well as personal injury.
- All operators must follow the safety precautions outlined in the Safety Data Sheets for the materials cut on WAZER Pro.
- Always follow the correct startup, operating, and shutdown procedures outlined in this User Manual.

Setup

- Always use proper lifting techniques when lifting heavy components to avoid injury or strain.
- Always make sure the machine is secured using the Wall Mount Bracket.
- Ensure WAZER Pro is plugged into a properly grounded pronged receptacle. Refer to a licensed and qualified electrician and your local national, state, and local codes if you have any questions. Never modify the plug.
- Receptacles are included with your unit but should be installed ***only* by a licensed electrician**. Failure to do so may result in electrocution and serious injury.
- Only operate WAZER Pro on designated power supply. This may be 230V/60Hz or 230v/50Hz depending on which model you purchased. Never attempt to operate it using converters or adapters. Always keep your work area clean.

Operation

- Never operate WAZER Pro with components out of place or missing. This includes and is not limited to the Cut Bed, Nozzle Cover, Nozzle, Door Window, safety guards, safety sensors and interlock systems.
- Never override any safety sensors or systems in WAZER Pro.
- Never touch components inside the Enclosure if WAZER is operating. This includes, but is not limited to, the Cut Bed, Nozzle, the Material you are cutting, moving parts, hydraulic and electrical parts
- Stay clear of all high-pressure components during operation.
- Never reach under, over, or into WAZER Pro during operation.
- Never place hands under the Cutting Head of the machine. This includes while the machine is in the turned off state.
- Risk of injury due to accidental starting, keep children away from WAZER while it is running
- Never leave the machine unattended in the paused or any state of being on. If you must leave the vicinity of the machine be sure to perform the appropriate shutdown procedure for your machine prior to leaving the area.

Shutdown

- Always disconnect WAZER Pro from power and shut off the water supply when leaving WAZER Pro unattended.

Maintenance

- Follow all maintenance procedures and schedules presented in the online User Manual. Failure to maintain WAZER Pro could result in damage to the machine, a degradation of cut quality, or create safety risks to you and your environment.
- Do not engage in any maintenance while WAZER Pro is connected to power and water supply. Always purge trapped pressure, disconnect WAZER Pro from all power sources and water sources before interacting with any electronics. Residual pressure in hoses can cause serious injuries.
- Do not perform unauthorized maintenance on WAZER Pro or its components. All maintenance must follow instructions in authorized sources of information including this User Manual, WAZER support site, and content provided by WAZER Customer Support.

Leaks

- Before and after a Cut, always inspect the surrounding area of WAZER Pro for leaks.
- In the event that a leak is observed, turn off the power going to WAZER Pro, wipe it down, and **LET IT DRY OVERNIGHT** before seeing if anything was damaged and is still working. Water doesn't damage electronics, it's the combination of water with running electricity that does; letting them air dry ensures the next turn on won't destroy something.
- Never attempt to identify the location of a leak when the machine is under operation or in powered state. Always purge trapped pressure and shut off water supply first.

Disassembly and Decommission:

- Never discard WAZER Pro in the trash. WAZER Pro is a tool that contains electric and electronic components, proper disposal is required.
- Never skip steps when decommissioning WAZER Pro. Follow every step to safely decommission WAZER Pro. Decommissioning steps can be found in online user manual.
- Never prepare WAZER Pro for shipping with unapproved packaging or shipping method. Always connect with WAZER customer service before shipping WAZER Pro.
- Always abide to national/federal/local law and regulation for process of decommissioning WAZER Pro.

Injuries

High pressure jet or trapped pressure in hoses can cause serious injuries. In the event of any waterjet injury the Waterjet Technology Association recommends:

- Seek medical attention immediately. Do NOT delay!
- Inform the doctor of the injury.
- Tell the physician what type of waterjet project was being performed at the time of the accident and the source of the water and the materials involved.

Inform the physician of the following information:

- This patient may be suffering from a waterjet injury.
- Evaluation and management should parallel that of a gunshot injury.
- The external manifestations of the injury cannot be used to predict the extent of internal damage.
- Initial management should include stabilization and a thorough neurovascular examination.
- X-Rays can be used to assess subcutaneous air and foreign bodies distant from the site of injury.
- Injuries to the extremities can involve extensive nerve, muscle, vessel damage, as well as cause a distal compartment syndrome.
- Injuries to the torso can involve internal organ damage. Surgical consultation should be obtained.
- Aggressive irrigation and debridement is recommended.
- Surgical decompression and exploration may also be necessary.
- Angiographic studies are recommended pre-operatively if arterial injury is suspected.
- Bandages with a hygroscopic solution (MgSO₄) and hyperbaric oxygen treatment have been used as adjunctive therapy to decrease pain, edema, and subcutaneous emphysema.
- Unusual infections with uncommon organisms in immunodeficient patients have been seen; the source of the water is important in deciding on initial, empiric antibiotic treatment, and broad-spectrum intravenous antibiotics should be administered.
- Cultures should be obtained.

For your convenience, we have also included a set of wallet sized laminated medical alert cards at the front of this printed user manual. This card contains the above injury treatment information per the Waterjet Technology Association's recommendation. We recommend users of the machine to carry this card.. Additional copies of this card can be attained by contacting WAZER Customer Support.

⚠CAUTION Bacteria can build up in the standing water of the Tank. Any injuries or cuts, even minor ones, should be treated with caution. If you have open wounds avoid contact with the water or wear gloves that do not expose you to the Tank water.

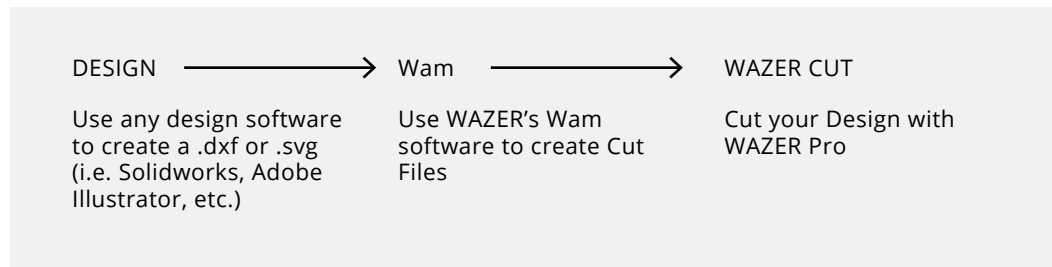
WAZER Pro

A basic understanding of WAZER Pro's work flow and design will make it easier to follow the rest of this User Manual.

WAZER Pro is an entirely new waterjet cutting system; please review this section even if you are familiar with other waterjet systems.

- WAZER Pro Workflow
- Main Components
- How it Works
- Systems Dissection
- Specifications

WAZER Pro Workflow



WAZER Pro Components

WAZER Pro has two main sections:

- **The Main Unit section**, which contains the Cut Bed and Control Panel.
- **The Pump section**, which pressurizes water and provides the energy for cutting.



How it works

WAZER Pro combines high-pressure waterjet technology with several electro-mechanical systems to bring you an all-in-one cutting solution.

The Pump section pressurizes water that is then routed to Main Unit section and expelled through a small orifice, where it accelerates to a very high velocity. At this point the WAZER Pro introduces Abrasive to the Jet to create a slurry of water and abrasive. This high-pressure stream of abrasive slurry performs the cutting in a waterjet system. By controlling where this stream is ejected, WAZER Pro allows you to cut your design with digital precision.

A Tank below the cut bed catches the slurry after it does its cutting work. A collection system allows WAZER Pro to separate the slurry back into water and Used Abrasive. The water is expelled out of WAZER Pro, while the used abrasive is separately collected inside of the machine for later removal.

An on-board Control Box runs the logic behind WAZER Pro. This Control Box is connected to all the input and output components of WAZER, allowing the machine to operate all the individual systems in harmony. Additionally, it allows the user to interact with WAZER Pro through an onboard Control Panel.

NOTICE The nature of the water jet stream allows for very accurate cutting in thinner materials and the kerf shape is still acceptable for most users up to 1" (25mm) thickness. Beyond that the WAZER Pro may still be capable of cutting the material but it is important to remember that cut accuracy will decrease as the material thickness is increased. Moreover, attempts to engrave or surface etching material with WAZER Pro will result in damage of machine. Engraving and Etching are strictly prohibited.



WAZER Pro Systems Dissection

WAZER Pro can be broken into seven systems based on the primary functions they serve:

1. **⚠ High-Pressure** – This system pressurizes water for cutting, mixes the water and abrasive, and ejects the mixture toward the material. Stay clear of all high-pressure components during operation. They are clearly identified on the illustrations in the following pages. All operators are required to be familiar with these components and their location.
2. **Abrasive System** – This system stores the abrasive and controls its flow to the high velocity Jet.
3. **Enclosure** – This contains the water, Used Abrasive, and Material you are cutting within WAZER Pro.
4. **Low Pressure** – This system separates tank water and used abrasive, collects the used abrasive from the tank and drains water out of WAZER.
5. **Gantry** – This system controls the motion of the Nozzle.
6. **Control System** – This includes the electrical components that control and distribute signals throughout WAZER.
7. **Cut Bed** – This is where you fasten your material.

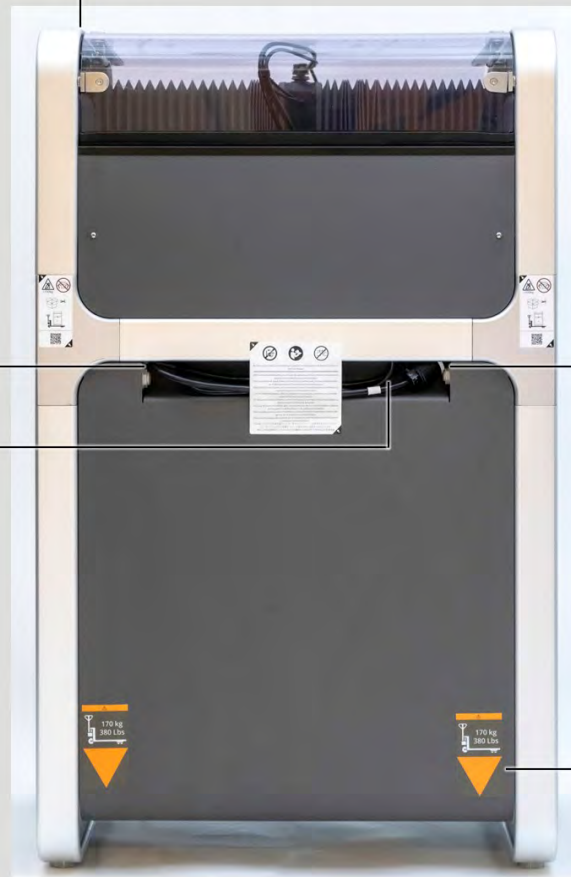
Emergency Stop

Water Drain
hose Connection

AC Power Plug

Water Input
hose Connection

Jacking Points



WAZER PRO Back

Reference Note 3

Abrasive Hopper

Hydraulic Cavity

Purge Line
Shut-off Valve

Inlet Filter Canister

⚠ Pump Section –
Water Pump Side

Tank Drain Valve

Abrasive Pick Up
Line Purge Valves

Low Pressure Venturi
Purge Valves

High Pressure Safety
Relief Valve ⚠

Low Pressure Inlet Valve

Transport Anchor Bolts



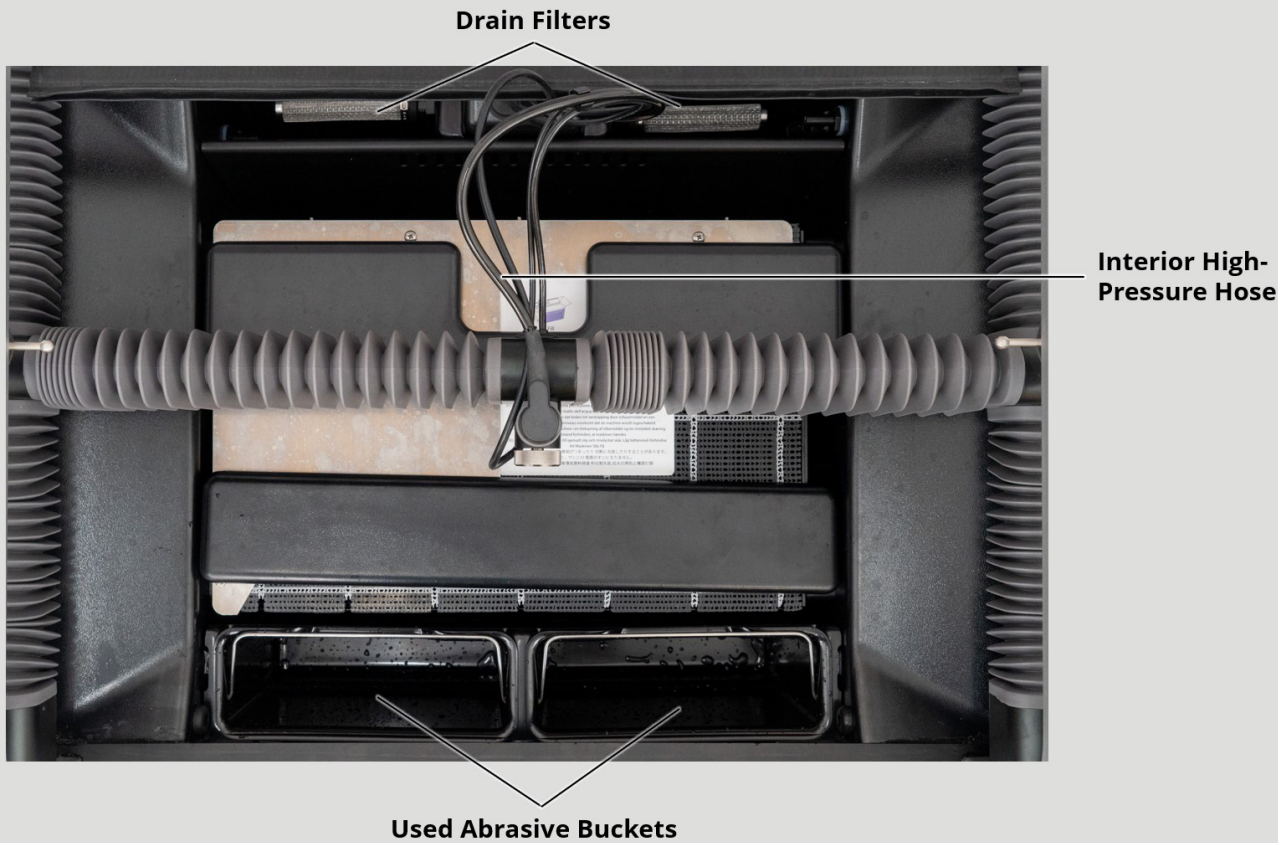
WAZER PRO Left Side

Reference Note 4

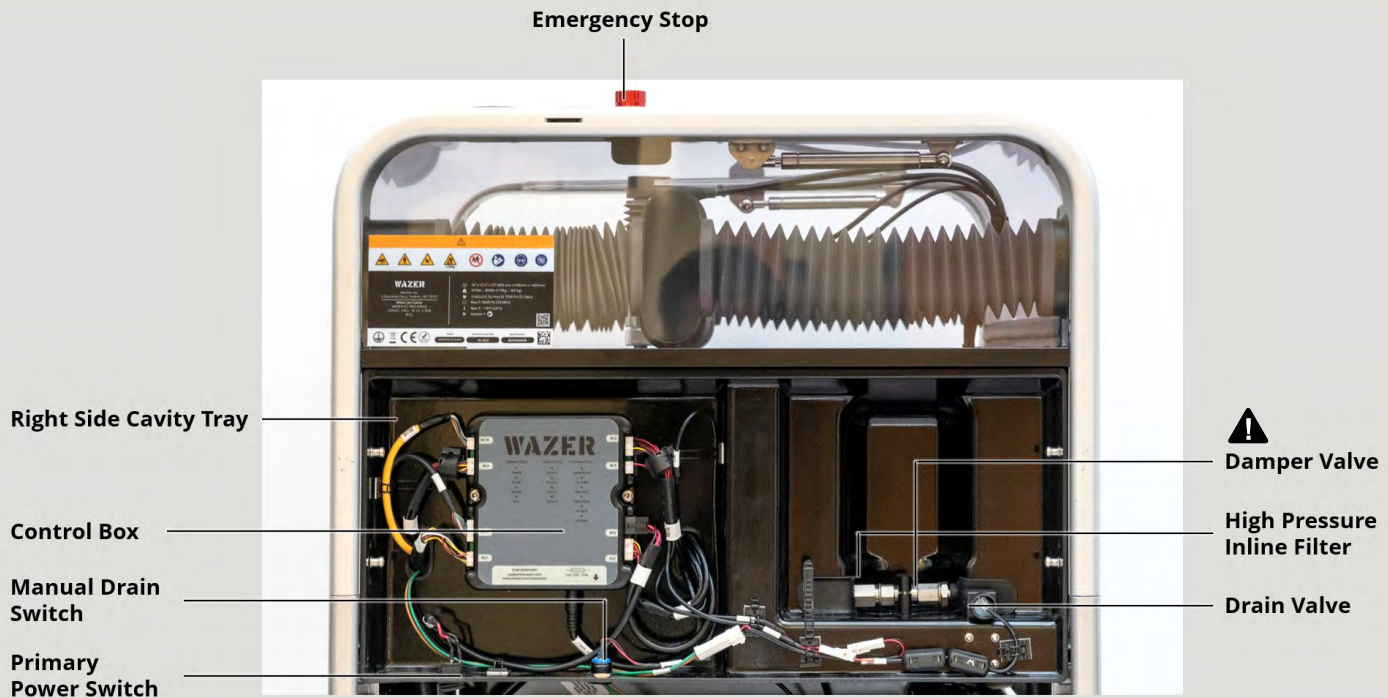


WAZER PRO Inside

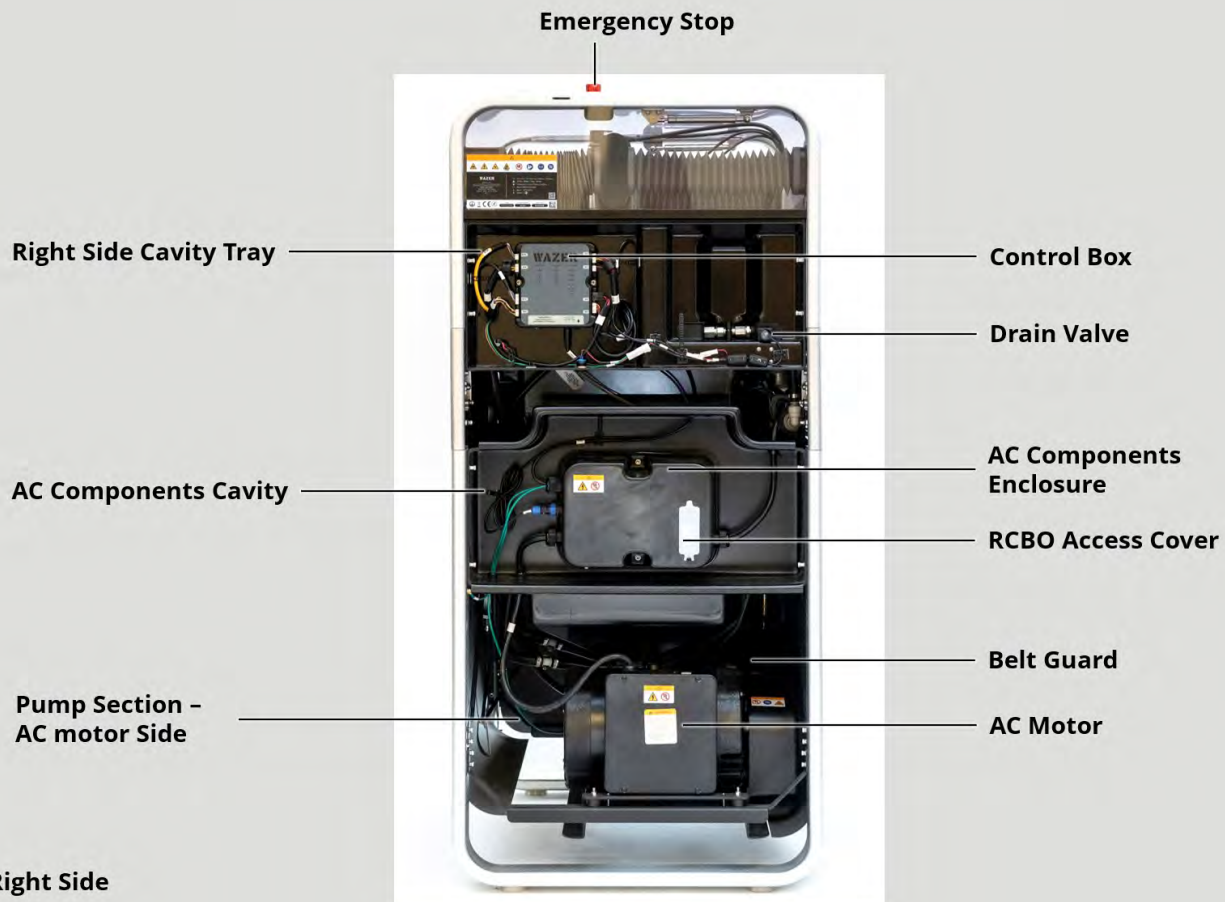
Reference Note 5



WAZER PRO Inside



Reference Note 6



WAZER PRO Right Side

Reference Note 7

WAZER Pro Specifications

Reference Note 8

Size and Weight

WAZER Pro Size	34" x 25.5" x 55" (856mm x 648mm x 1400mm)
WAZER Pro Empty Weight	380 lbs. (170 kg)
WAZER Pro Loaded Weight	780 lbs. (350 kg)

Cutting

Cutting Area	12" x 18" (305 mm x 460 mm)
Cut Bed Size	13" x 19" (330 mm x 485 mm)
Kerf (width of cut)	.044 (1.2 mm)

Water

Water Source	Tap Water
Water Draining	Standard Water Drainage
Input Water Filter	~200 mesh
Water Recirculation	Prohibited

Abrasive

Abrasive Flow Rate	0.33lbs/min (150g/min)
Abrasive Capacity	45 lbs. (20 kg.)
Abrasive Type	Garnet 80 mesh

Gantry

Maximum Linear Speed	75 IPM (1905 mm/min)
Gantry Positional Precision	0.003" (0.08 mm)

Power

WAZER G2 Pro 50Hz	230VAC; 50Hz; 16.1A; 3700W
WAZER G2 Pro 60Hz	230VAC; 60Hz; 16.1A, 3700W

Wam Software

Browser Compatibility	Chrome, Internet Explorer, Safari, Firefox
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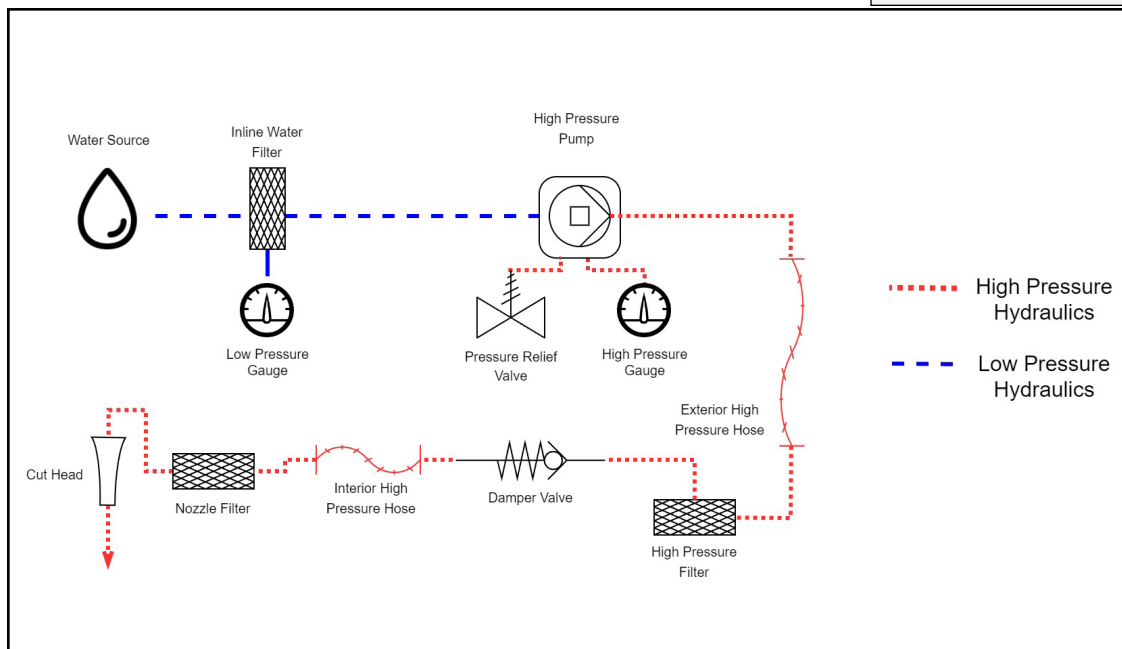
Miscellaneous

Compatible File Types	.dxf, .svg
Connectivity	SD Card
Noise Emission	74+/- 3dB
Noise Pressure Level	87+/-3dB
Storage Condition	0°C - 40°C / 32°F-104°F for prolonged storage 0°C - 70°C / 32°F-160°F for 24 hours
Maximum Working Pressure & Flow Rate	8600psi (59MPa) at 0.66 gal/min (2.5L/min)

Machine System Schematics

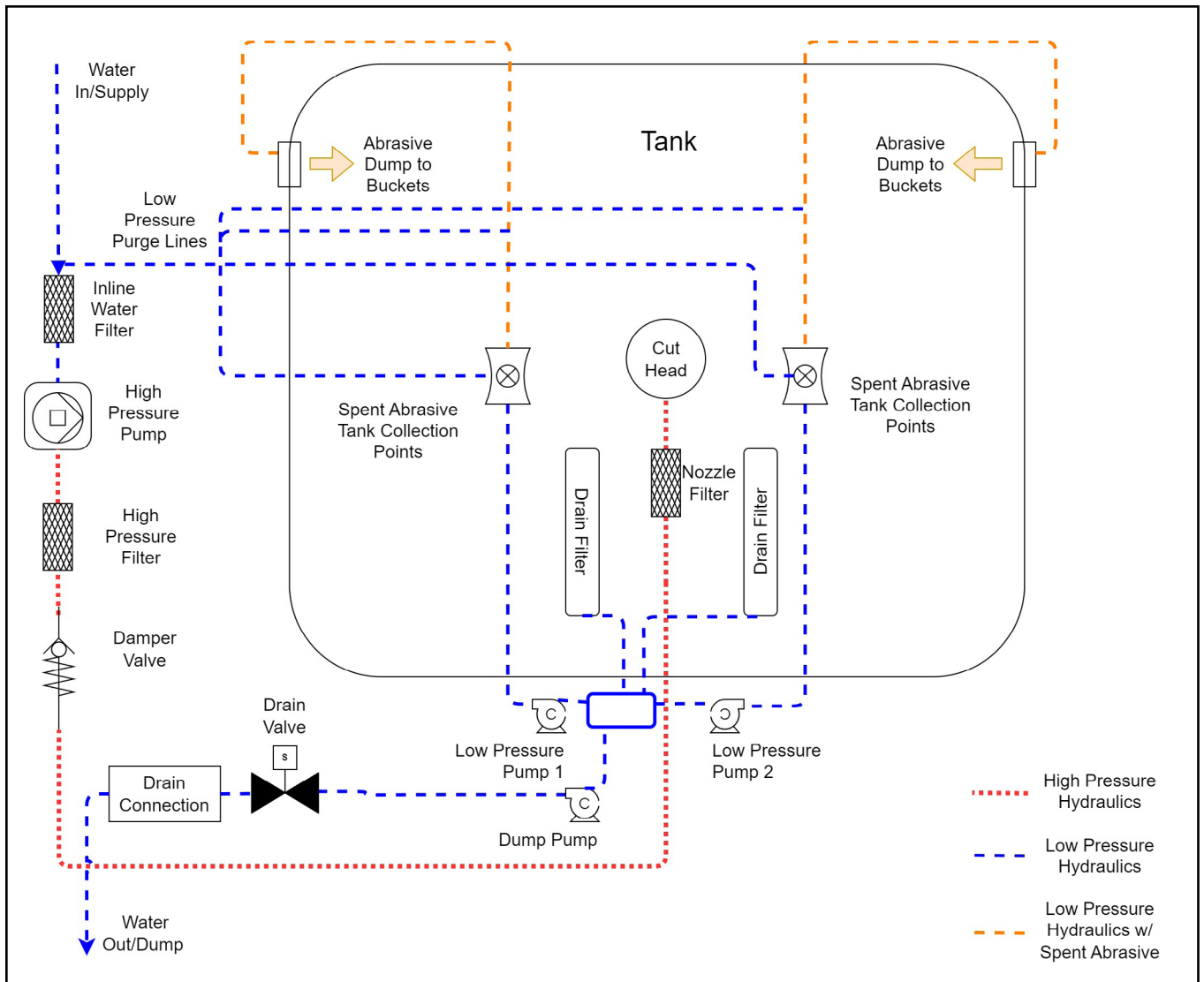
Your WAZER Pro system contains hundreds of components that interface with one another. Even though it is not necessary for you to be familiar with all of them, it is a good idea to familiarize yourself with a system level view of your machine. We have created a few system level schematics and diagrams. After you work through your first set of cuts we highly recommend coming back to these diagrams to connect the dots between the components and systems behind the work flow. Lastly, the system level breakdown could help you troubleshooting issues.

Reference Note 9



High Pressure hydraulic system Diagram

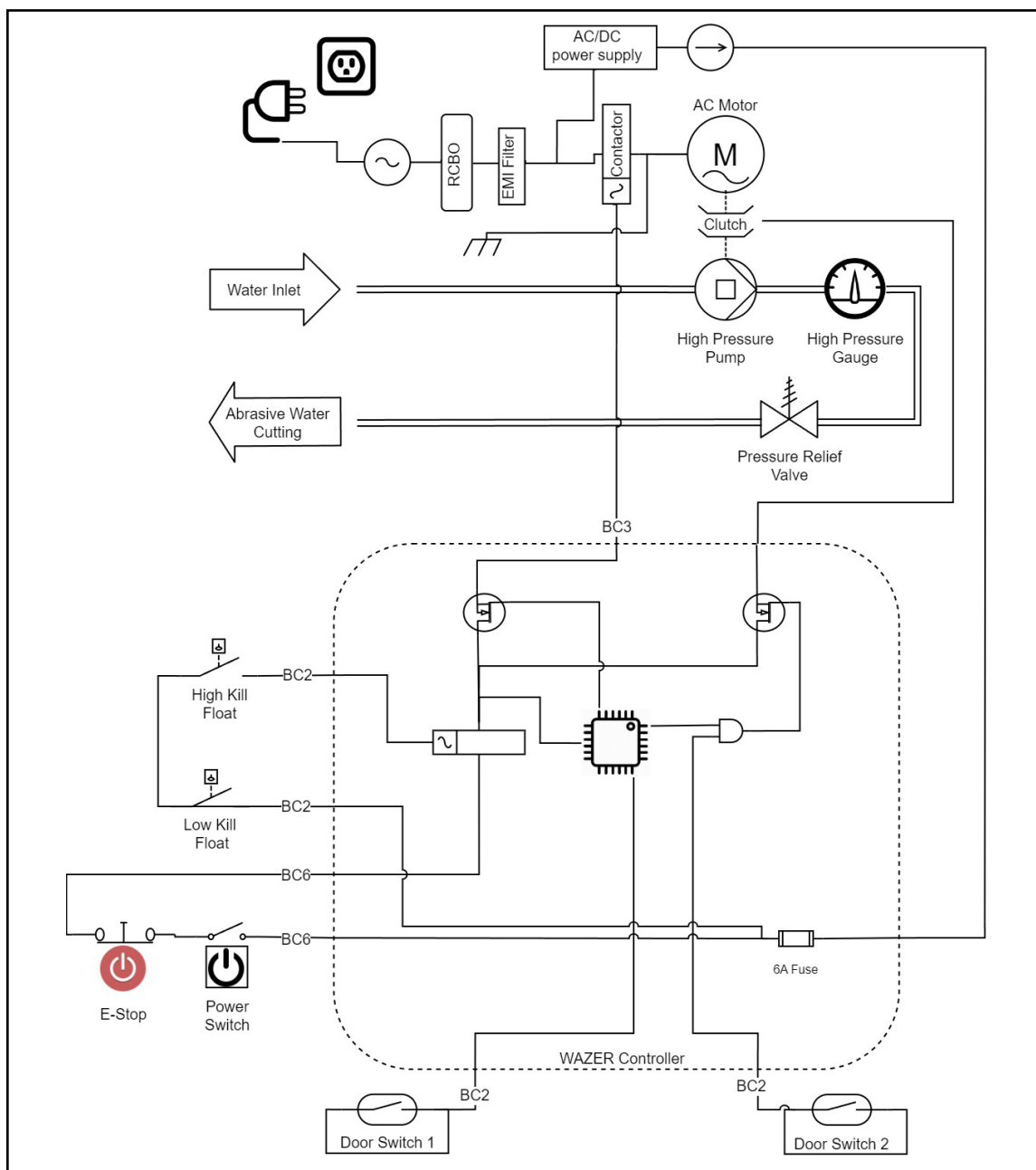
The above illustration shows the High Pressure hydraulic system components, direction of water flow and respective pressure at each stage.



Reference Note 10

Low Pressure System and Tank Overview Diagram

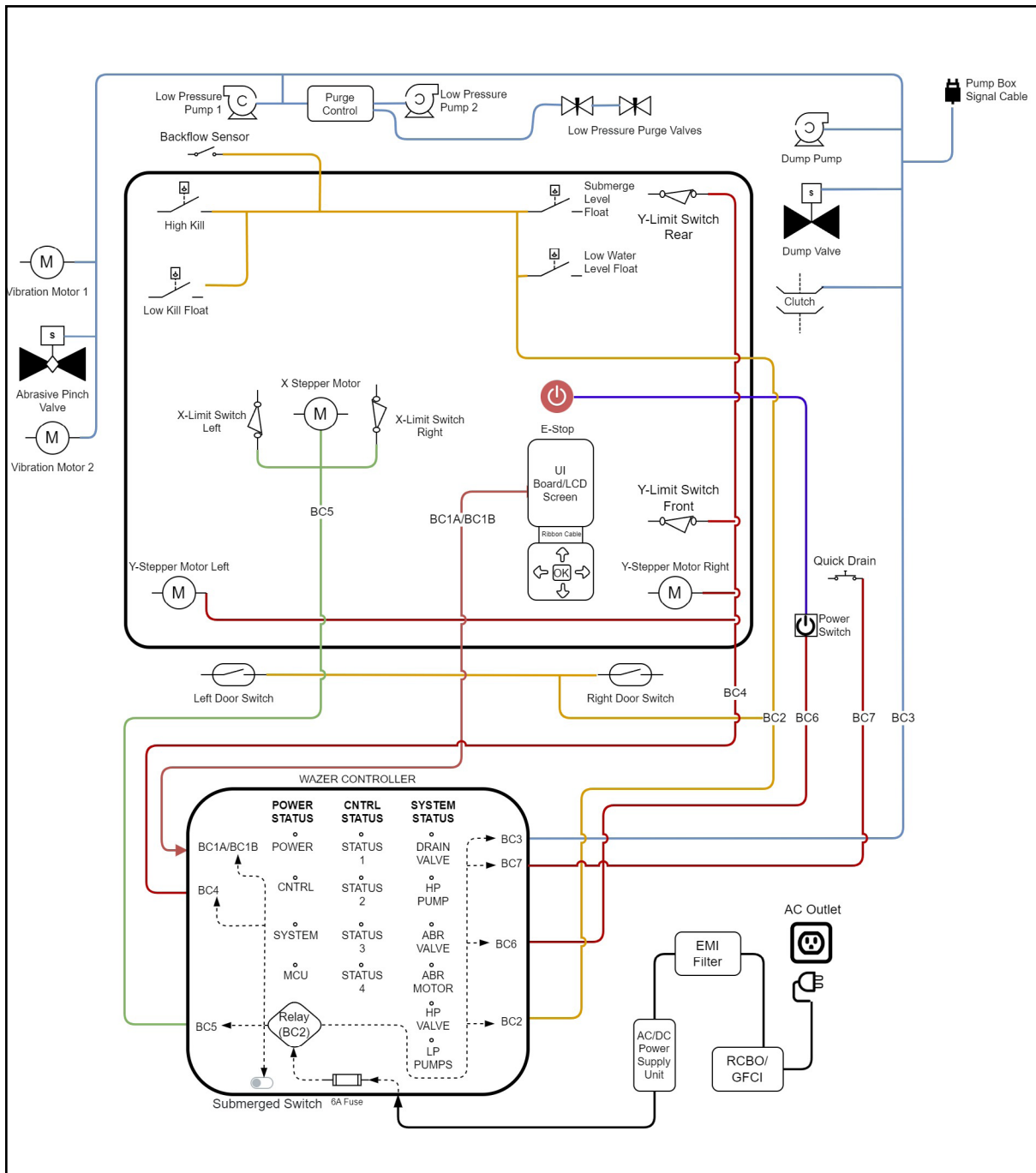
The above illustration shows the components of the Low-Pressure System and direction of water flow and used abrasive.



Reference Note 11

Safety Function Diagram

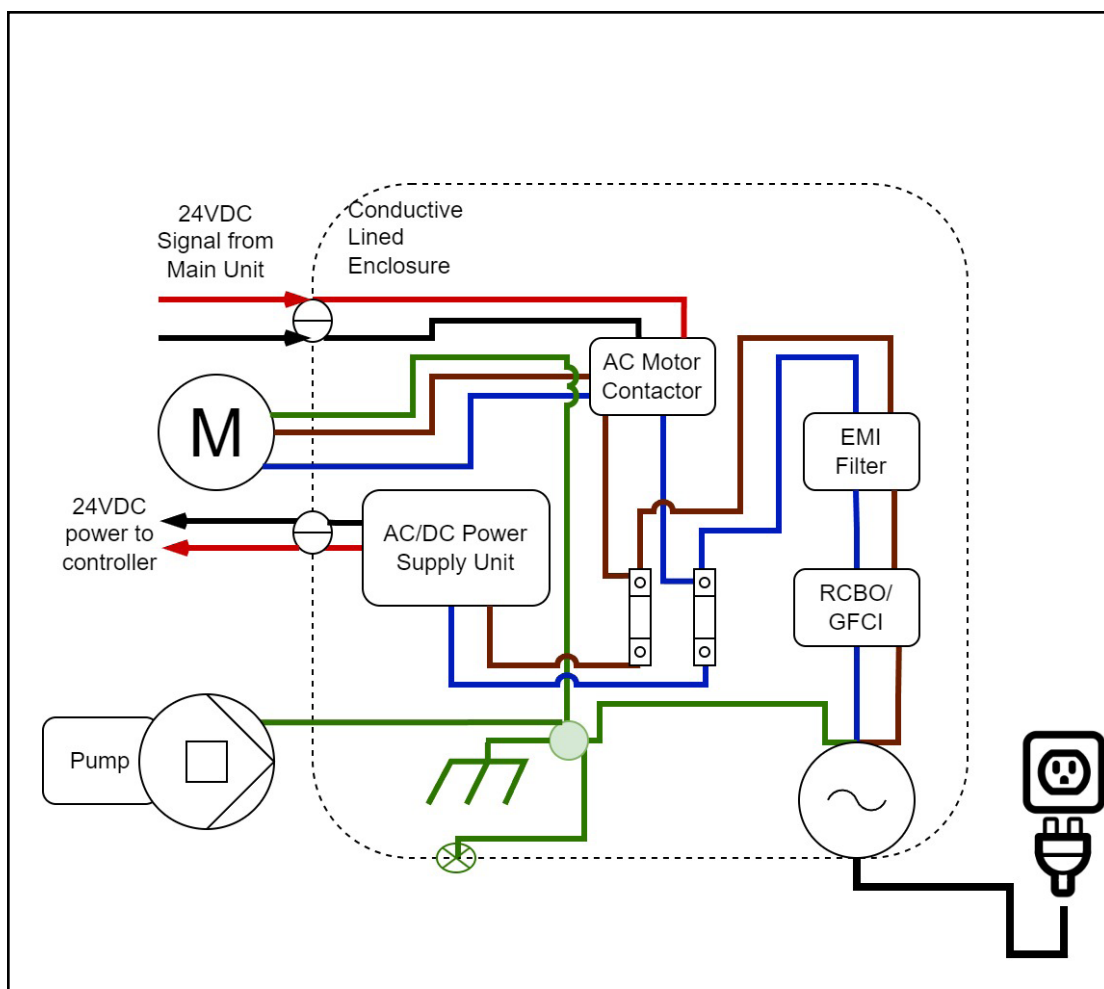
The above illustration shows a system level diagram of the safety functions that are incorporated in your WAZER. These include electrical shock protection, protection from contact with the high pressure water stream, and correct water management to protect your environment.



Reference Note 12

Main Unit Section Control System Diagram

The above illustration shows the high level system schematic of the WAZER Pro Main Unit Section control system and electro-mechanical components



Reference Note 13

Pump Section Electronics Layout Diagram

The above illustration shows the high level system schematic of the Pump Section wiring and electro-mechanical components.

Setting Up WAZER Pro

Install WAZER Pro

In this section, we will discuss the process of choosing locations for the WAZER Pro, unboxing and dismounting it safely, completing the physical installation, and connecting WAZER Pro to electricity and water. After that, you will be ready to make your first Cut.

The following procedures must be adhered to during WAZER Pro set up

- Choose a location for WAZER Pro
- Unbox and Dismount WAZER Pro
- Install WAZER Pro
 - Check the Pump Section
 - Establish two water connections
 - Establish the Power Cable connections
 - Anchor WAZER Pro to the wall

Most of these tasks have multiple steps. It is crucially important to get the installation right, or WAZER Pro will not function properly. Read carefully and don't hesitate to get in touch with WAZER support if you are still unclear after reviewing the User Manual.



To see our Videos, visit support.wazer.com/pro-set-up-videos



Choosing a Location for WAZER Pro

Location Requirements

Ensure that your installation location meets ALL the following requirements:

Note 1, Pg. 5

Electrical:

The WAZER Pro comes as two different models for the specific frequency regions. This setup guide is for both the 60hz region and 50hz versions. Power requirements are: Split-Phase 230 VAC 60hz for WAZER Pro (60Hz) and Single Phase 230 VAC 50hz for WAZER Pro (50Hz).

WAZER Pro 50Hz uses IEC 60309-2P electric plug; WAZER Pro 60Hz uses NEMA 6-20 plug.

Please follow the appropriate electrical instructions below given your model of WAZER Pro. You can verify your model by looking at the Primary Label on the right side window.

Corresponding receptacles are shipped with the machine. If you cannot locate appropriate receptacle, please have a professional electrician to connect the receptacle.

Power to WAZER Pro machines should have at least a 20A breaker wired. WAZER Pro machine draws 13-16A during stable operation.

⚠ WARNING The included receptacle can only be installed by licensed electrician. Failure to do so may result in electrocution, serious injury or death.

High load motors usually requires an "in-rush current" that will momentarily exceed the stated steady-state run currents for a fraction of a second. The time associated with this "in-rush current" is very short and almost all household and commercial AC breakers are designed to handle this safely. However, in the rare case that you run into trouble with your breaker tripping, consult an electrician to have your system checked to handle on the order of 60amps for 150 milliseconds.*

Water Supply:

- **Flow Rate: Greater than 2 gpm (7.6L/min).** Most household and commercial water plumbing meet this requirement.
- **Pressure: 30-90 psi (0.20MPa – 0.60MPa).** Most household and commercial water plumbing systems fall in this range. The higher in that range, the better for the Pump in terms of its longevity.
- **Temperature: MAX 130°F (54°C).** DO NOT use a hot water line for WAZER Pro.
- **Water Hardness: Less than 180 mg/L (10.5 gpg).** Water hardness is the biggest factor that affects the longevity of the components. We suggest you search your local water condition if this is a concern.

Water Drainage:

Make sure your drain location is no more than 30 feet (9m) from your WAZER Pro. Additionally, the drain location should be less than 4 feet (1.2m) above WAZER Pro.

Floor space:

- Sturdy and capable of holding over 1300 lbs. (600kg)
- Flat and level under load. Maximum 1.5mm of height difference across entire Cut Bed
- A clear area of 46" by 27" (1.2m by 0.7m) to allow for access.
- Does not deteriorate when exposed to water. Because under some unforeseen scenarios, water may stream out from abrasive hopper and other places.
- Please keep a 80" (2m) area above the floor footprint, to allow door window to open.
- WAZER Pro Should be placed in environment such as laboratories, household workshops and most machines shops. Heavy Industrial facility with machinery or devices that induce electromagnetic interference on adjacent devices should be avoided.

Ambient Air Temperature: 40 - 100 F / 5 - 40 C

WAZER Pro should never be operated outside of this range.

Space Around WAZER Pro: Make sure to leave at least 12" (0.4m) of free space on the right and left sides of WAZER Pro. On the left side of WAZER Pro, you will need room to refill the Abrasive Hopper. On the right side, you may need access to the Control Panel.

Wet Area: WAZER Pro operates with abrasive and water. Though WAZER Pro is enclosed, it is not a sealed system, and water and abrasive will inevitably leak on occasion. The floor surface should be water- resistant, slip proof and smooth.

Noise: WAZER Pro emits noise that would be disruptive in settings such as classrooms and offices. Make sure to place WAZER Pro in a location where the noise level of traditional shop tools like drills and saws is acceptable.

* This equipment complies with IEC 61000-3-12 provided that the short-circuit ratio R_{sc} is greater than or equal to 33.5 at the interface point between the user's supply and the public system. It is the responsibility of the installer or user of the equipment to ensure, by consultation with the distribution network operator if necessary, that the short-circuit ratio R_{sc} is greater than or equal to 33.5.

Unboxing and Dismounting

Estimated Time: 30 minutes

Requires two people

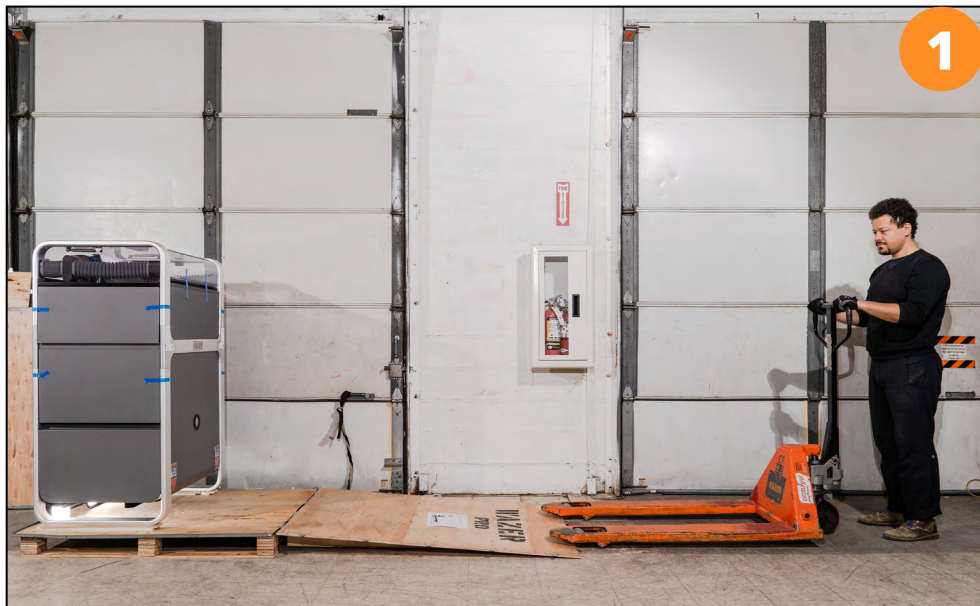


WAZER Pro arrives in a Crate. Within this crate you will find a variety of other boxes. These boxes will contain all the components needed to run WAZER Pro.

⚠CAUTION

Before attempting to uncrate WAZER, please be sure to have:

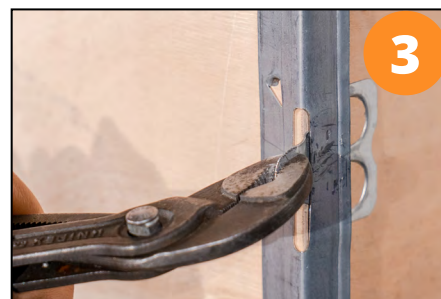
- Two people capable of lifting 60lbs (27kg) each
- T20 Torx screwdriver
- Pallet Jack (Standard size)
- Slotted Screw Driver, Pliers and hammer
- Gloves.



WAZER PRO will be arriving in a tall crate. One of the side crate panel will be used as a ramp to dismount the WAZER Pro. The first step of unpacking is to make sure you have at least 15 feet (4.5m) of free space, and align the pallet with the ramp piece facing the open space.



WAZER Pro and its accessories will arrive in a tall crate weighing more than 550lbs (250kg)



Use a pair of pliers or prying tool to pry open the metal tabs

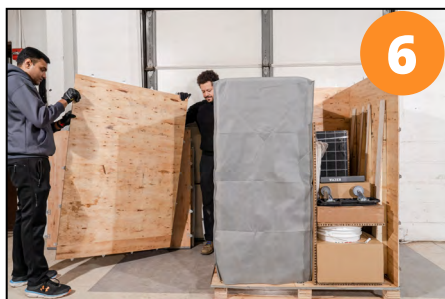
NOTICE The metal tabs are very sharp and can cause serious slash wounds. Gloves are recommended in this step



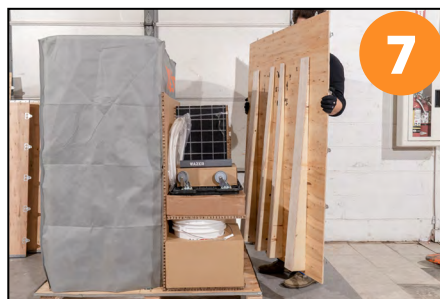
Use a hammer to knock the top panels off from the metal tabs



Put on gloves and work as a team to remove the top panel



Remove the side panels one by one



Remove the ramp piece last. It is the heaviest piece



Remove and keep account of the accessories



Clean the space in front of the WAZER Pro for next step

NOTICE



Use a T20 Torx screw driver to remove the screws holding WAZER Pro



There are 4 screws holding one clamp, and 4 clamps holding WAZER Pro.



Rotate the Ramp panel so the supports are facing outside



The bent tabs should connect the ramp and bottom base strongly



Slowly rotate the Ramp panel onto the ground



Bring in the pallet jack, push it onto the ramp. Have another person ready to help



While one person carefully push the pallet jack under the WAZER Pro, the other person helps and ensure pallet jack stays on the pallet



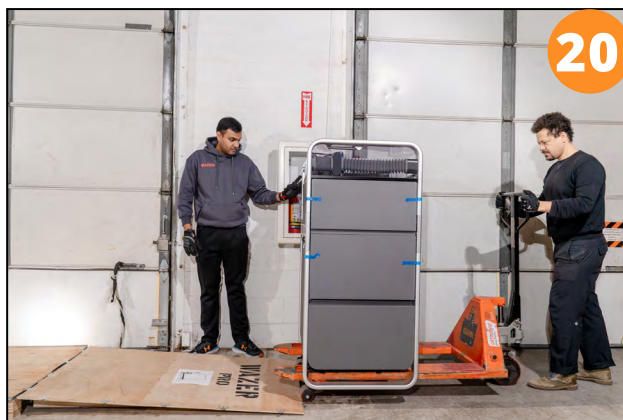
While one person is jacking up the WAZER Pro, the other person keeps the machine stable



Ensure the pallet jack forks support the bottom ridge evenly, jack the machine all the way up



Pull the pallet jack and move WAZER Pro off the pallet. It is vital to have the other person keeping the machine stable in this step



Your WAZER Pro is safely dismantled. Use the pallet jack to transport your WAZER Pro to the selected installation location

⚠WARNING

It is vital to have one person operating the pallet jack and at least one other person stabilizing the WAZER Pro during the dismantling process. Conducting dismantling with only one person, or using incorrect lifting/dismantling methods may result in machine falling, toppling and can lead to damages, serious injury or death.

Setting Up WAZER Pro | SECTION 4



Install WAZER Pro

Estimated Time: 120 minutes
Requires two people.



- Check Pump Section
- Establish two water connections
- Install On/Off Valve
- Establish - Power cable connections
- Anchor WAZER to the wall

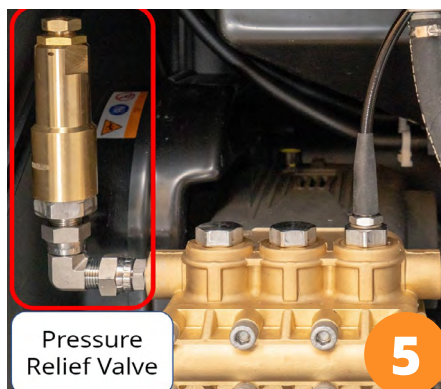
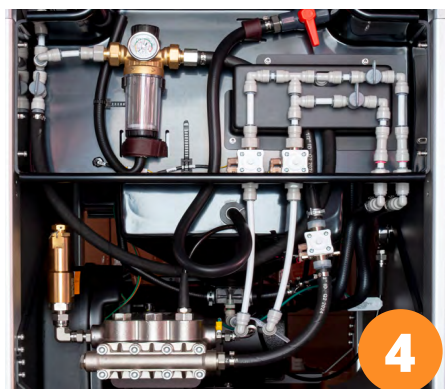
Check Pump Section

Note 4 Pg.17

1. Remove the top two captive screws using included Philips Screw Driver.
2. Lay flat the Bottom Machine Panel
3. Check if there is a yellow Oil Vent Cap on the water pump.
4. Check if all High Pressure and Low Pressure Hoses are firmly attached to their fittings
5. Check the temper proof seals on Pressure Relief Valve.
6. Put the Bottom Machine Panel back.

NOTICE Running the unit with the red Oil Cap or with little oil will damage the Pump, and this damage WILL NOT be covered under warranty.

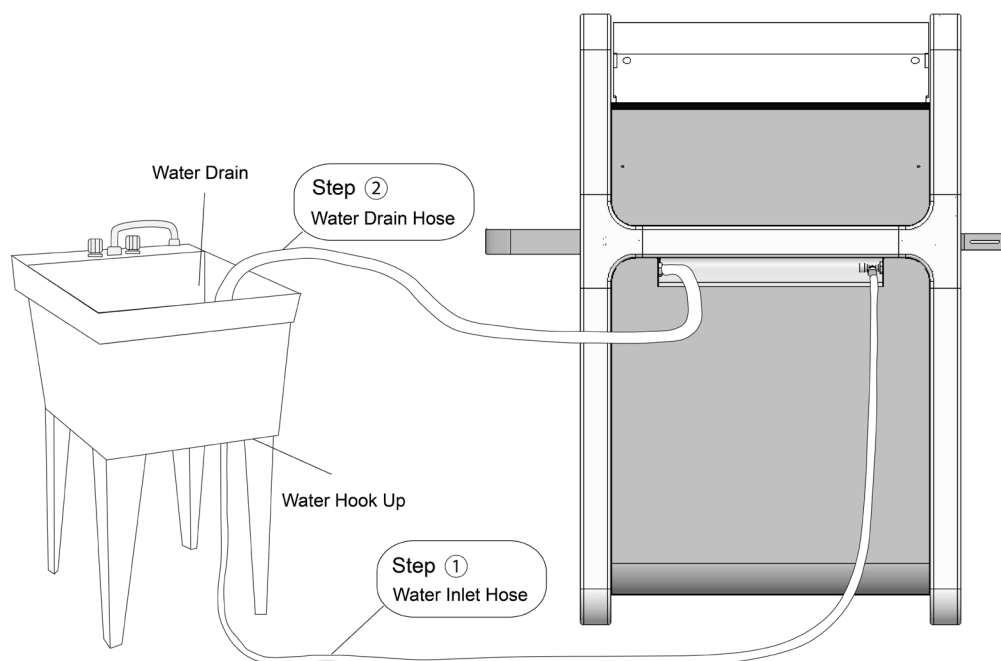
⚠WARNING NEVER remove the panels and work on the machine while the WAZER Pro is connected to power, during operation or possesses residual pressure. Ensure the power plug is not connected during this step.
If the High-Pressure Hose outer layer has been damaged down to the outer wire layer, the High-Pressure Hose shall be withdrawn from use. Contact WAZER Support



Water Connections

Note 3 Pg.17

WAZER Pro needs to be plumbed into your water lines.



Installation has 2 steps:

- **Hose 1: Water Inlet Hose** (3/8" diameter White Hose)
- **Hose 2: Water Drain Hose** (1/2" diameter White Hose)

Each hose is critical for operation. The Water Inlet Hose provides water for cutting. The Water Drain Hose disposes water. There are also several connections that cover other essential functions.

Keep the WAZER Pro away from the wall for 2 feet (0.5m) during this step

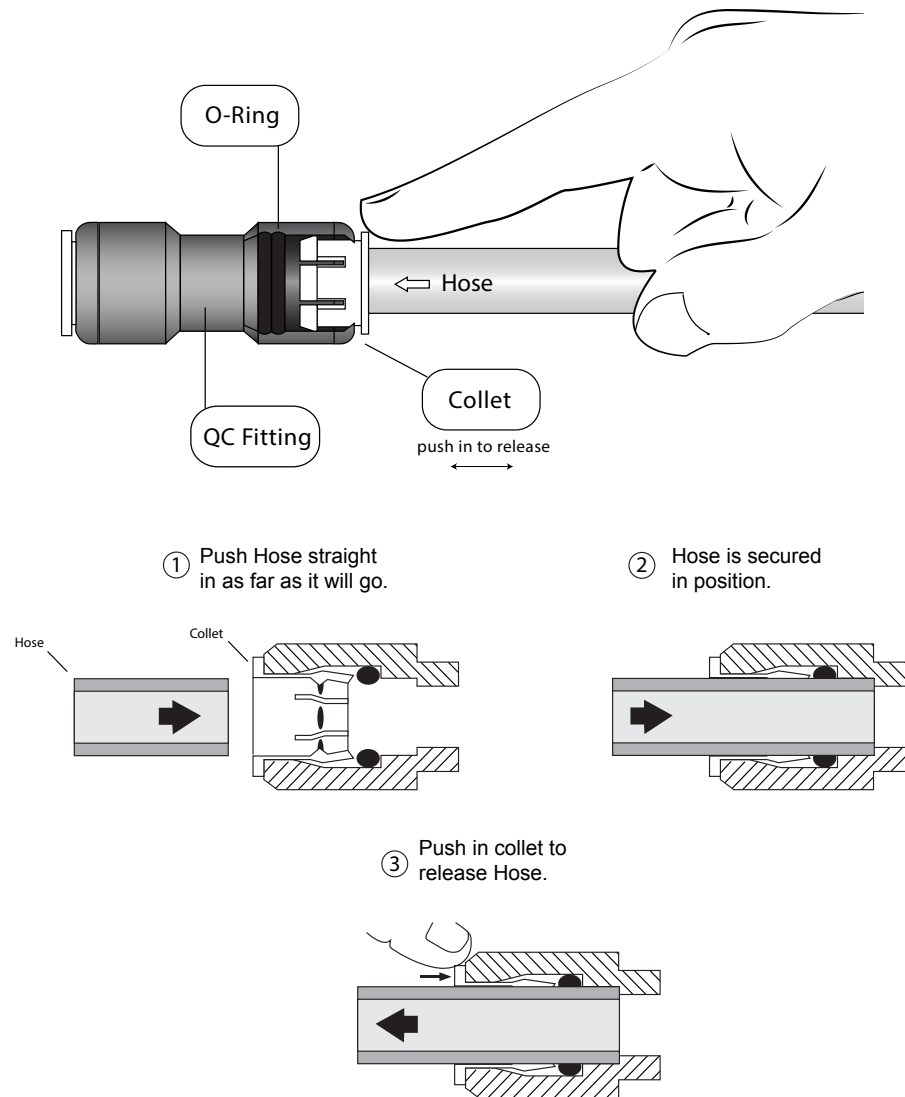
NOTICE If you are uncomfortable with this part of the setup, have a professional plumber complete this part of the installation for you.

NOTICE WAZER Pro should never be configured to have its drain water recirculate into its Water Inlet Hose. This will destroy the Pump and void your warranty.

Quick Connect System

NOTICE Make sure to fully seat the hose into the John-Guest Style fittings. You will feel a level of resistance (the seal) that you need to push past until the hose is fully seated in the connection. A total of about 1" (25mm) of hose should be inserted into the fitting.

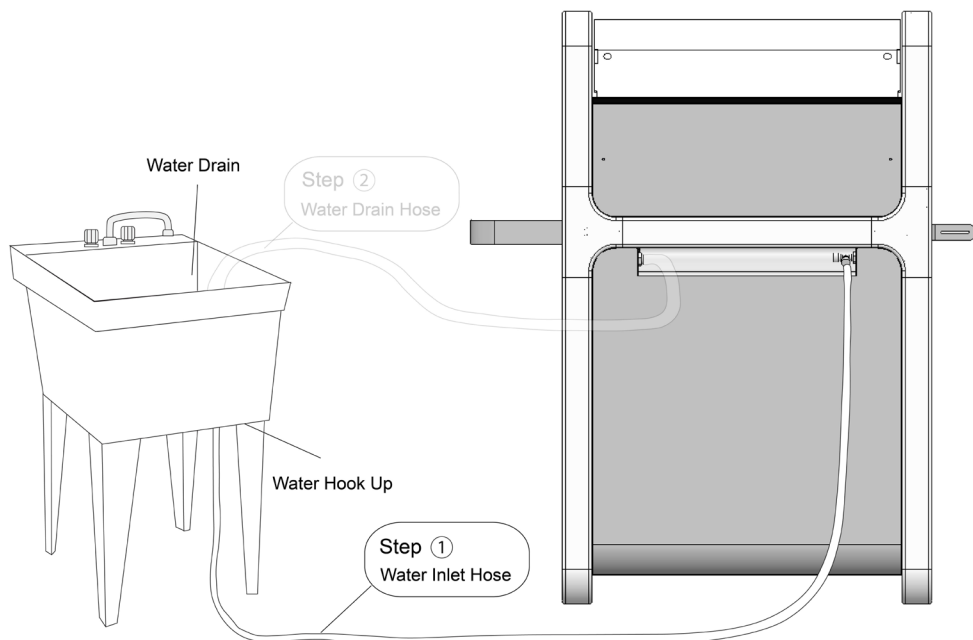
Mark a line 1" (25mm) away from the end of the hose will help you seat the hose more easily.



Hose 1: Install the Water Inlet Hose and Sprayer

Note 3 Pg.17

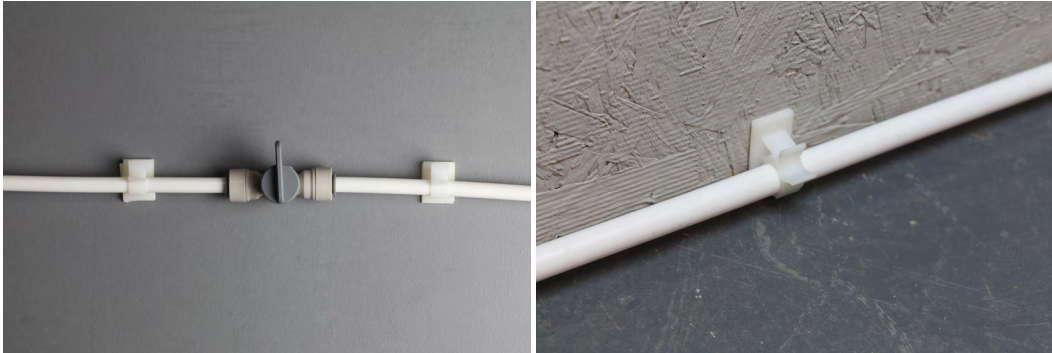
The Water Inlet Hose needs to be connected to your water source at one end and to the water input Push-to-connect fitting at the other end.



1. **Find the Water Inlet Hose and Tee Connector:** In your Accessory Kit, you will find a Water Inlet Hose (3/8" diameter White Hose) and the Tee Connector with three ports
2. Connect the Input Check valve, Pressure Reducer and Sprayer hose to the Tee connector, then push the whole assembly into the water input at the back of the WAZER Pro.



3. Route Water Inlet Hose: *Here are some routing examples that may be helpful:*



4. Connect Water Inlet Hose to water supply:

You will either use:

- the Garden Hose Water Inlet Adapter, or
- the Sink Adapter.



GARDEN HOSE ADAPTER



SINK ADAPTER

Option 1: Sink Adapter (Recommended)

In the Plumbing Kit you will find the two Sink Adapters, one is 1/4" NPT type TEE connector, the other is a 1/4" BSPP type. Those Tee connectors are compatible with most under sink fittings

To install:

1. **NOTICE** Turn off the water supply valve.
2. Unscrew the existing sink connector from the water supply.
3. Screw the Sink Adapter into the water supply.
4. **NOTICE** Reinstall the faucet supply into the threaded side of the Sink Adapter.
5. Do NOT cut the end of the Water Inlet Hose to size yet!



Option 2: Garden Hose Adapter

To install:

1. This Garden Hose Adapter will thread into a garden hose or sink faucet.
2. Install the Garden Hose Adapter. If your tap does not have a garden hose thread, use the orange adapter.



3. **DO NOT** cut the end of the Water Inlet Hose to size yet.
4. **DO NOT** turn on the water supply valve yet!

If this location has separate hot and cold water supply lines, install using the cold supply line. NEVER use hot water. Hot water will damage WAZER.

If you do not have a faucet that equip with Garden Hose Thread, there is one attachment you may use in junction with the Garden Hose Adapter. The orange adapter is a faucet clamp and is equipped with Garden Hose Threads at the bottom side. Refer to the diagrams below to install the orange adapter.

NOTICE

This is not a permanent attachment, please update to Option 1 soon.



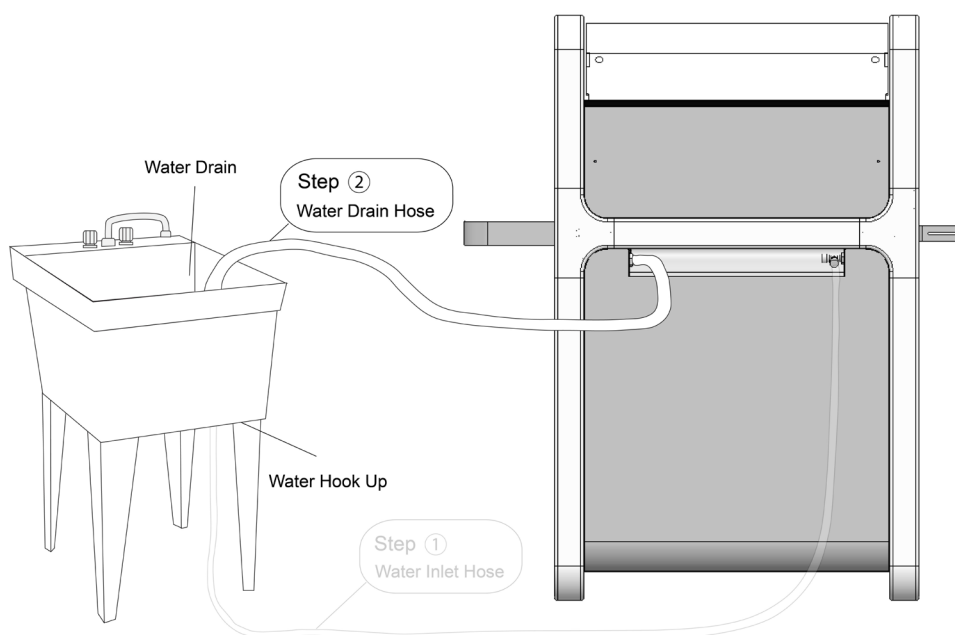
Hose 2: Install the Water Drain Hose

WAZER Pro Outputs a significant amount of water during cutting. The Water Drain Hose must be connected to your drain before operation.

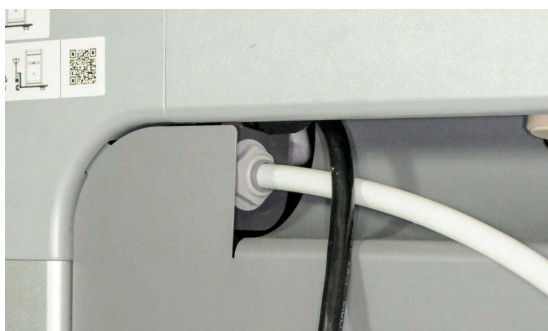
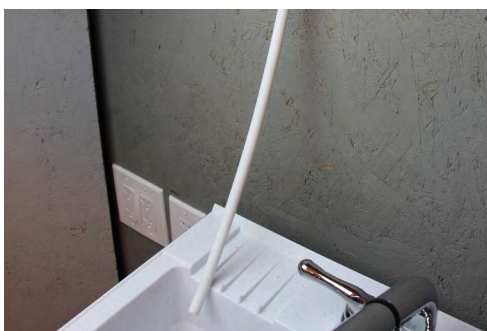
1. Connect the Water Drain Hose to WAZER Pro

In your Accessory Kit, you will find a Water Drain Hose (1/2" diameter White Hose). Connect this hose to the Water Drain Hose Connection located in the back-right corner of WAZER Pro.

NOTICE Make sure the drain is no more than 4 feet (1.2m) above WAZER Pro. Note that WAZER Pro outputs a significant amount of water while cutting. An unsecured hose can quickly spill large amounts of water. Tip: Draw a line 1" (25mm) away from the hose end will help you seat the hose more easily



NOTICE Make sure you are draining waste water appropriately. The water drained from WAZER Pro is partially filtered. There will likely be some Used Abrasive and Material in the drained water.



Finalize water connections

- Install the On/Off Valve
- Perform a Leak Test

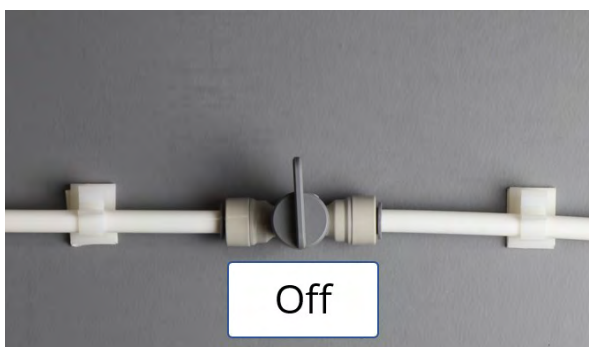
1. Install the Inlet Water Filter and On/Off Valve

Once you have completed the three hose connections, install of the Water Filter and On/Off Valve needs to be done.

NOTICE It is important to shut the Water Inlet Hose off whenever WAZER Pro is left idle; not doing this could lead to a massive water leak or damage to the unit.

2. Perform a Leak Test

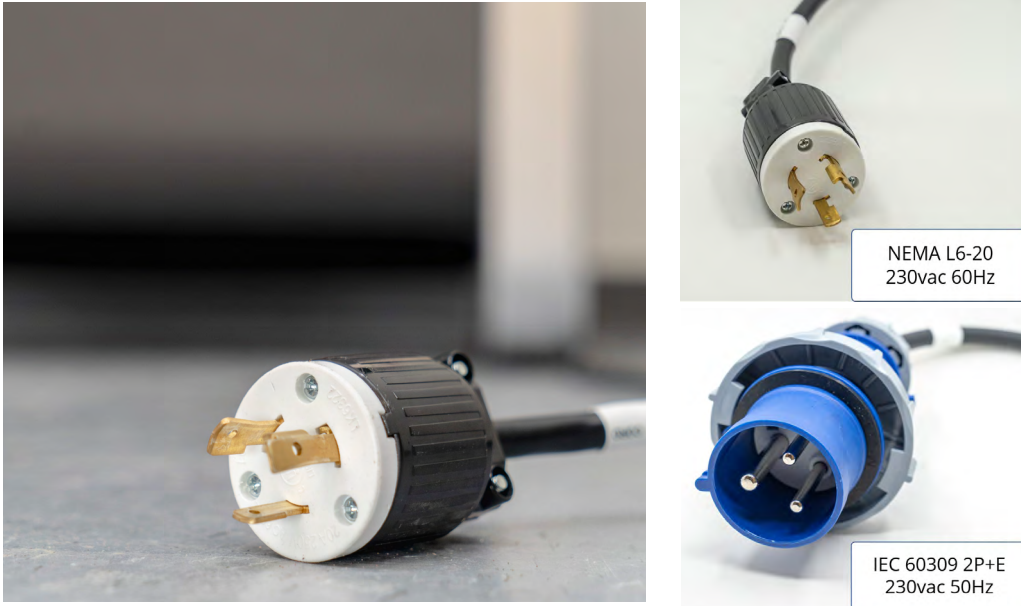
- Inspect all water connections. Make sure every connection is well-seated and matches the descriptions in this User Manual.
- Turn on the water supply to the Water Inlet Hose, and turn on the On/Off Valve
- Inspect every point in the connection for leaks.
- Leave the water supply on for a few minutes and recheck the connections for any slow drips.
- Shut the On/Off Valve before continuing on to the next section.



Power Cables

There are one electrical connections you need to make with WAZER Pro:

Note 7 Pg.19



1. Connect the WAZER Pro Power Cable

- If you have the correct receptacle in your facility, you may simply plug the power cable into the receptacle. Both the NEMA 6-20 (60Hz) and IEC 60309 (50Hz) Plugs have twist-lock.
- Flip the lever down on the RCBO/GFCI to engage the breaker. At this point, the machine will not switch on. A yellow LED indicating "Power" will light up on the controller.
- Test the RCBO function by pressing "test" button once. There will be a slight "Pop" sound.
- Close the rubber cover back on. We recommended to check this safety function every time WAZER Pro is turned on.

NOTICE The plug must be plugged into a matching outlet that is properly installed and grounded in accordance with all local codes and ordinances.

If power cable is damaged or worn, stop installation or operation IMMEDIATELY. Contact WAZER support to have it replaced.

Make sure switch is in "off" position before plugging in.

*Please double check to make sure the local power supply fit the model you have purchased, before you plug WAZER Pro in.



2. Check and Connect the WAZER Pro Power Cable Receptacle.

We understand not all facility or workshop have the plug-matching receptacles, or the existing receptacles are not providing the required AC power setting. Some Electrical work may be necessary before your WAZER Pro can be installed. Make sure Single Phase 230VAC, 50Hz is supplied to WAZER Pro (50Hz); Split-Phase 230-240VAC 60Hz is supplied to WAZER Pro (60Hz).

We include the corresponding receptacle to the plug type of the WAZER Pro you purchased. Contact a licensed electrician to test your AC power system, and install the receptacle to the place you want.

- NEMA L6-20 Receptacle is for Split Phase 230vac 60Hz WAZER Pro Plug. This Plug is 20A rated.
- IEC 60309, SERIES II, 2P + E Receptacle is for Single Phase 230vac 50Hz WAZER Pro Plug. This Plug is 32A rated.

⚠WARNING The receptacle installation is a very technical task and **can only performed by licensed electricians**. Do not attempt to install the receptacle yourself, or have unlicensed personnel perform the task. Incorrectly connected receptacle may destroy your WAZER Pro, cause property damage, bodily injury or even death.



Install the Tool Tray and anchor WAZER Pro to the Wall

Now it is a good time to install the Tool Tray comes with the machine

To install Tool Tray

- Grab the Tool Tray and 2 screws from the box.
- Align the two holes to the set screws on the Cast Knuckles on the Machine, then fasten the two screws.



Position WAZER Pro into its final location.

⚠WARNING

Make sure the water hoses and Power Cables are neatly routed behind the unit. When WAZER Pro is filled with water it will weigh approximately 730 lbs (330kg). To ensure the safety of the WAZER Pro and its users, WAZER requires you to anchor the machine to a wall or solid structure with the provided bracket and hardware.

To anchor WAZER:

1. Install the Wall Mount Bracket using the provided hardware. The bracket is installed on the back-left side of WAZER with a 4 mm Allen key.
2. Move WAZER Pro into position and use the included hardware to anchor the Wall Mount onto the wall. Wall anchors for both drywall and concrete are provided.
3. Use the 4 mm allen key to remove the 4 bolts holding the Pump Base Plate to the Side Rails. Running WAZER Pro with transport bolt attached will result in loud noise and vibration to the whole machine.

Note 4 Pg.17



Cutting With WAZER Pro



Learn the process of cutting with WAZER Pro by completing the Welcome Cut.

Cutting with WAZER Pro requires a specific procedure that must be followed. You will find a checklist at the end of this chapter that you can post prominently as a reminder.

The following procedures must be followed to cut with WAZER Pro:

- Preparation
- Startup
- Cutting
- Finishing
- Shutdown
- Maintenance Between Cuts

User expectations:

- It takes a few cuts and a few hours of running and experiencing the behavior of the machine in order to be able to operate it confidently. Performing the welcome cut, then starting off with a few simple custom designs is highly recommended.
- If you have any doubts or uncertainties:
 - Contact WAZER customer support for assistance

Note 4 Pg.17



⚠ WARNING

Wear Proper Personal Protective Equipment

Eye protection is required whenever using WAZER Pro. Non-slip footwear is also recommended.



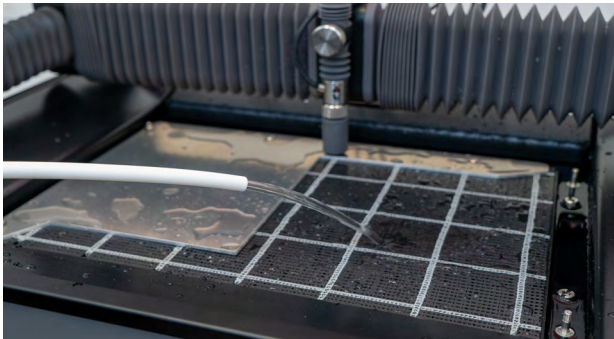
NOTICE Open On/Off Valves

Open the water input On/Off Valve and the Purge Feed Shutoff Valve. Forgetting to turn on water input valve could lead to damage to the Pump and to a Failed Cut. Forgetting to turn on Purge Feed valve may cause low pressure system to clog. Make sure you know how to turn the water off in case of an emergency.

Preparation

Refer to System Dissection in Section 3 to familiarize yourself with all the components of WAZER Pro. We will be referencing these parts by name throughout the remainder of this section.

Checklist: Before You Cut



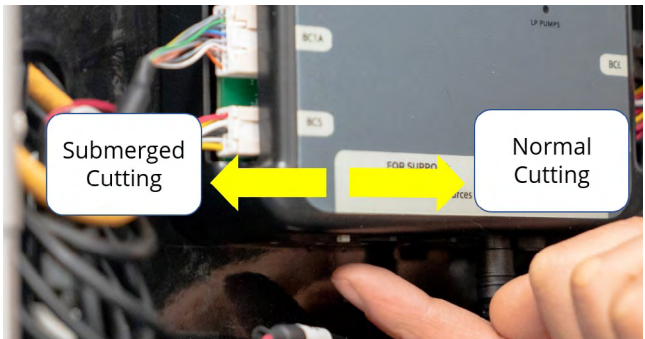
NOTICE Fill the Tank and Check for Leaks
Do NOT run WAZER Pro with a low water level in the Tank. The water in the Tank is critical to protect tank Bottom from the Jet. Ensure the Tank is filled to the top level of the Cut Bed. It takes approximately 40 gallons (160L) of water to reach this level. Inspect the area around WAZER Pro and hoses for leaks. If there is a leak, please turn everything off, wipe it clean and LET IT DRY completely before checking for damages.



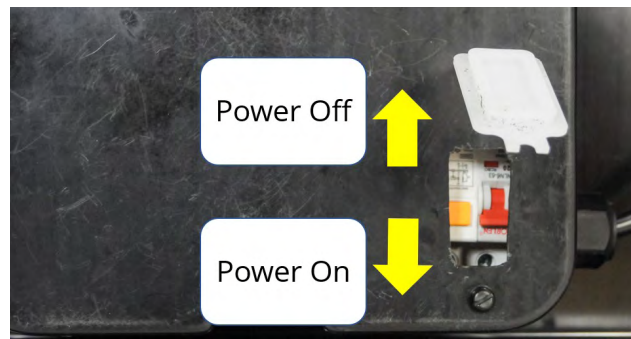
Level the Cut Bed
You may notice that the Cut Bed and water level are not parallel. This may occur if the machine is not level on the surface it is placed OR if the Cut Bed is not level. If your machine is not level you may have water management errors in the future. If your cut bed is not level, make sure it is levelled across the cut piece on the cut bed.



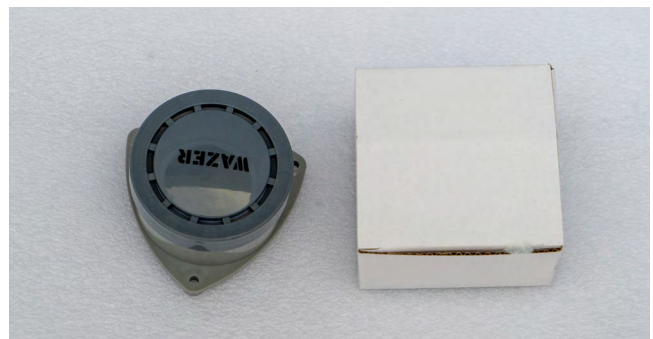
NOTICE Secure the Water Drain Hose
Ensure the Water Drain Hose is correctly positioned, secured and free of obstruction.



Set Cut Water Level Mode
Under the controller, you will find a small switch. This is the Submerge Cut Switch. Setting it to the front will bring water level higher than cut bed during cut; moving it to the rear will lower water level to cut bed during cut.



Confirm all Electrical Connections
Ensure the Power Cable is plugged into the appropriate receptacle. Make sure that RCBO lever is on. Press the "test" button to check the RCBO function.



Install 9V Batteries and Water Sensor Alarms
Take the two Water Sensor Alarms from the Accessory Kit and install two 9V batteries (not included) into them. Place them on the ground blow WAZER Pro. The Water Sensor Alarms are NOT connected to WAZER and will NOT pause its operation. Check their function every 6 months.

Startup

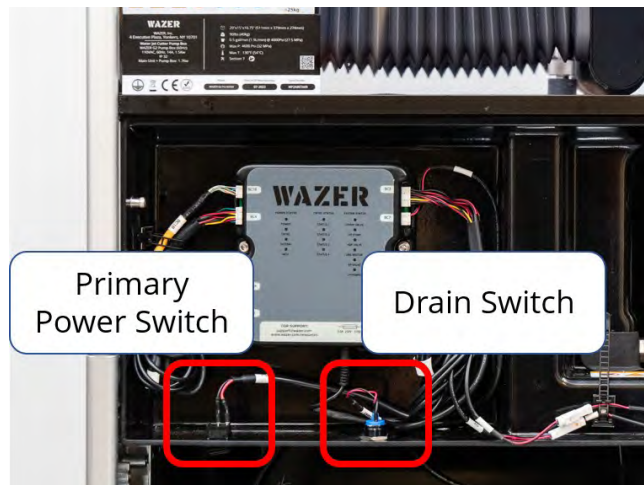


This section will guide you through the process of setting up WAZER Pro to cut the "Welcome Cut". We strongly recommend everyone to follow every single step listed in this section. Additionally, at the end of this section you will find two copies of the "Cutting with WAZER Pro Checklist". We highly suggest prominently displaying one of those pages in a highly visible location near your WAZER Pro, for all users to reference with every cut.

Insert the SD Card

Transferring Cut Files to WAZER Pro is done through an SD Card. To transfer Cut Files onto the SD Card, connect the card to your computer, and drag-and-drop the Cut Files onto the SD Card. WAZER Pro has a slot near the Control Panel that accommodates a standard sized SD Card. It is important that you insert the SD Card before turning WAZER Pro on.

An SD Card is provided with your Setup Kit. This SD Card contains several Cut Files for the Welcome Cuts for you to select from. Place it in WAZER Pro now.



Turn On WAZER Pro

There are 5 things to check before you can turn on your WAZER Pro:

- The Power Cords must be plugged into appropriate outlets.
- The RCBO/GFCI lever is pulled down.
- Correct water level must be present in the tank. Too low or high of a water level will prevent machine turn on.
- The barrel plug must be plugged into the controller, and fuse is properly inserted.
- The E-stop must be reset and in the up/disengaged position.
- The primary power switch is turned on.

If the E-Stop is engaged (in the down position), please turn it clockwise until it resets and pops up. Only use this E stop in case of an emergency and not as a primary means of switching on and off. As your primary method of turning the machine on and off, the Power Switch is located at the bottom right corner of the Main Unit. This power switch should be used. Reaching under the Right Side Cover will give you access to this Power Switch.

When WAZER Pro is turned on, the Control Panel /UI Screen will present two options:

- Select Cut File: This allows you to select a Cut File from the SD card and initiate a Cut.
- Setup & Maintenance: This allows you to choose from several setup and maintenance options that will aid in the upkeep of WAZER Pro.

This is the main menu of the WAZER Pro. The ">" symbol on the left indicates the current selectable field. The OK Button confirms a selection. Pressing the Left-Arrow key will take you back to the previous menu.

NOTICE If you remove the Right-Side Access Panel and observe the Control Box, all four of the LEDs on the left side will be on, the top and bottom lights of the middle column will be on, and the two middle LEDs of the middle column will be flashing. None of the LEDs on the right side will be on. WAZER Pro will not be making any noise at this point.

If your WAZER Pro fails to turn on, check the high and low float switch on the right side of the tank; the low switch should be submerged and the high switch should not be. Adjust the water level as needed.

Now that you have your WAZER Pro turned on we can use it to conduct the final two setup steps prior to starting your first cut. The first is priming your plumbing to ensure the lines are purged of any air pockets. The second is establishing your WAZER's water level.



Note 4 Pg.17

Priming the Plumbing

Note 5 Pg.18

Required for initial WAZER Pro setup and restart after maintenance

This procedure will ensure that both the low-pressure and the high-pressure water lines have no air in them and are fully primed with water, setting up your machine to have an error free and flawless cut. This will take you less than 5 minutes but if it is not done, you may have your cut interrupted by water leveling errors or an abrasive clog.

You may need to conduct it in the future under certain conditions:

- If the tank is drained, the low-pressure system should be re-primed.
- If the water input hose or high-pressure hose lines are disconnected, the high-pressure system should be re-primed.

To Prime the Low-Pressure System:

- Fill WAZER Pro tank to the upper surface of Cut Bed as instructed
- Open Drain Filter Cover, tap Drain Filters to let trapped air escape. You will see bubbles coming out.
- Turn WAZER Pro on.
- Remove the front tank cover.
- Select the "Setup & Maintenance" on the Control Panel.
- Select "Maintenance"> "used Abr. Collect". Let WAZER Pro operates in this mode for 3 minutes.
- During this period observe the outlets of the used abrasive collection system. You should see the water stream go from being weak and turbulent to a steady and strong stream.
- Move the left side, operate the Abrasive Pick Up Line Purge Valves one-by-one for a short while. Make sure the purge valves are closed after operating.
- Contact WAZER support if any problems or abnormal observations appear.

To Prime the High-Pressure System:

Note 7 Pg.19

- Turn WAZER Pro on.
- Move the Nozzle assembly away from the Welcome Cut Material, onto a uncovered section of Cut Bed.
- Select "Setup & Maintenance" on the Control Panel. Go to "Maintenance"> "Water Level Setup"
- Remove the Abrasive Hose End from Cutting Head. This is critical, do **NOT** omit this step!
- Raise the cutting head approximately 0.5" (13mm) above the cut bed surface.
- Make sure door is closed. Press OK. The High Pressure and Drain systems will start alternately.
- Observe carefully as the trapped air is pushed out from the Nozzle by the water stream. This can be both seen and heard as the water stream will change from a white irregular flow that makes a slight hissing sound to a clear smooth stream that should be silent.
- Leave WAZER Pro to complete the "Water Level Setup". It may take the stream to be activated multiple times to get all the air out of the system.
- During this time, you will notice the High Pressure Gauge needle slowly climbing up to the green zone.
- Wait for a few cycles, and check the high pressure gauge. The needle should stay in the green zone. This indicates High Pressure system is primed and Pump is generating pressure.
- Contact WAZER support if any problems or abnormal observations appear.
- Put the Abrasive Hose back into the Nozzle after this step.

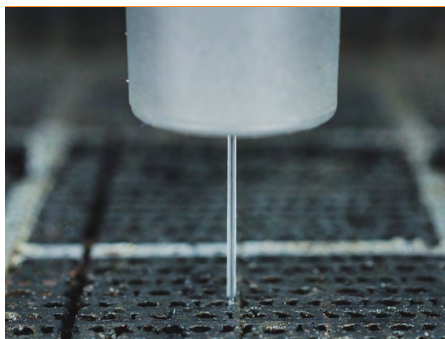
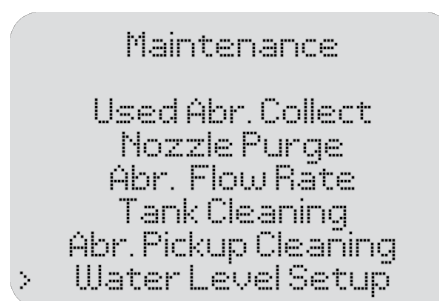
Establish Water Level

"Water Level Setup" is a useful feature in WAZER Pro. It can be used to check the status of High Pressure System; it can also be used to check the Low Pressure and Drain System; its primary purpose is to set the water in the tank to the optimum level.

It is advisable to perform this setup step whenever you have performed maintenance on the machine that may have altered the water level. It just takes a few minutes but prevents interrupting your next cut.

You can also quickly lower the water level by pressing the "Quick Drain" Button. Upon pressing this button, the Dump Pump and Drain Valve will work together to pump water out from the tank.

Position of the submerge switch does not affect the water level resulted from Water Level Setup.



Transfer Cut Files to WAZER Pro

We are finally ready to setup our first cut. To do so the next step is to transfer a Cut File to WAZER Pro. A Cut File is a type of .gcode file with some WAZER-specific commands. This file includes all the parameters required to cut your Design. Follow control panel prompts.

Select a Cut File

"Select Cut File" on the Control Panel's Main Menu brings up a file selection menu that lists all the .gcode Cut Files on the SD Card. Select the Cut File that you would like to cut.

Selecting a Cut File will not immediately start a Cut. The Control Panel will walk you through a series of prompts before cutting your file. WAZER Pro will never start cutting without your explicit consent.

Initiate a Cut

If this is your first time using a new WAZER Pro, there are several Welcome Cuts loaded on the SD Card that is provided in the Setup Kit. Running one or more of these cut files will familiarize you with basic WAZER Pro functionality before learning the Wam software. We recommend starting with the "Jig_Only.gcode" file. The final results are depicted below. The left over piece is an absolute locating jig with corner point at (20,20). "Gauge_Block" will cut out a "L" shaped block with 25mm on one side and 13mm on the other

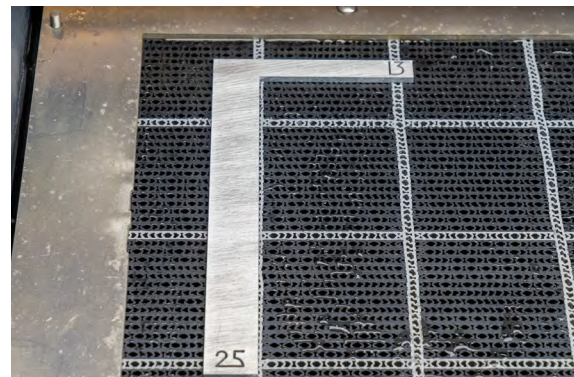
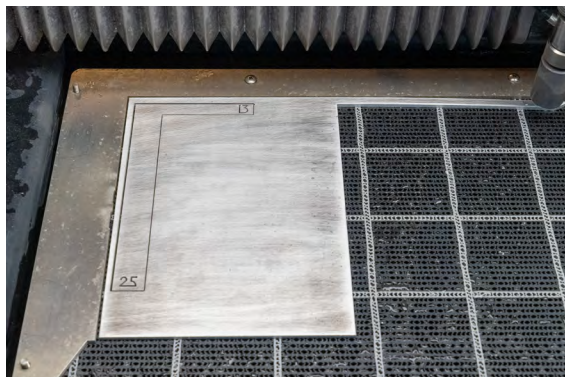
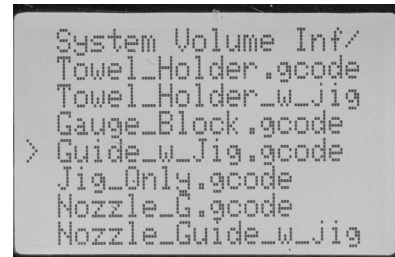
Another option is the "hanger.gcode". This cut file has three parts and can be assembled into paper towel hanger. For more information about both welcome cut, scan the QR code and visit our website for "welcome cuts."

Lift the Nozzle

After selecting a Cut File, you will be prompted to lift the Nozzle. Lift the nozzle all the way up. This is to ensure that the Nozzle does not crash into anything in its next automated action. To lift the Nozzle, loosen the Nozzle Lock Knob, lift the Nozzle by pushing it up and then tighten the Nozzle Lock Knob. Confirm this action has been performed by pressing "OK" on the Control Panel. This will initiate a homing routine. **NOTE: The Nozzle will start moving after you press "OK".**

Home WAZER Pro

Upon confirmation, WAZER Pro will automatically home the Nozzle to the top-left corner of the Cut Bed. Once completed, the Nozzle will move to the top-left corner of your Cut File's Cut Extents (the Bounding Box around the Cut). This is the visual locator you will use to reference your Material's position when placing it on the Cut Bed. WAZER Pro will also Analyze the Cut File while it is homing. This should only take a couple seconds, depending on the size of the cut file.



Load Abrasive

After homing, WAZER Pro will prompt you to check the Abrasive Level. **You must first remove the Abrasive Drop Tube Insert before carrying on. You must refill the Abrasive Hopper before running every Cut.** The WAZER Pro Abrasive Hopper will hold approximately 45lbs (20kg) of abrasive when full.

NOTICE WAZER Pro will pause after one hour of run-time to allow you to fill the Abrasive Hopper and to empty the Used Abrasive Buckets. Failing to fill the Abrasive Hopper sufficiently will result in a Failed Cut. WAZER Pro does not have a sensor to read the Abrasive Level, so it assumes that it is filled prior to the start of every Cut. If this is done correctly, WAZER Pro will pause the Cut before the Abrasive runs low, then prompt you to refill the Abrasive Hopper and continue cutting.

NOTICE Using an Abrasive that is not specified by WAZER may lead to poor quality and damage to your machine. WAZER Pro is calibrated to run with the 80 mesh alluvial garnet available for purchase at www.wazer.com. You must use the Abrasive suggested on the WAZER website.

To load Abrasive:

- Pull out the Abrasive Hopper, located on the left side of WAZER Pro.
- Remove the Drop Tube Insert if this is your first time running WAZER Pro.
- Pour the Abrasive through the two screens until the Abrasive Hopper is full. It is critical that you pour the Abrasive through the screens. If anything other than new and dry Abrasive falls into the Abrasive Hopper, it can ruin your Cut and require time-intensive maintenance.
- Fill the Abrasive Hopper until you see some Abrasive above the level of the screen on both sides. Please visually check under the abrasive hopper.
- Conduct a quick abrasive flow check by pressing the plunger on the pinch valve. Make sure the abrasive hose, abrasive rubber catcher, pinch valve and backflow sensor are in the correct order
- Close the Abrasive Hopper and confirm task completion by selecting OK on the Control Panel.



Empty the Used Abrasive Buckets

Next, you will empty the Used Abrasive from the collection system. During cutting, Abrasive is constantly being introduced into the Jet. To prevent accumulation on the bottom of the Tank, the Used Abrasive is constantly collected and routed into two Used Abrasive Buckets located at the front of WAZER Pro. **You must empty both Used Abrasive Buckets before every Cut.**

To empty the Used Abrasive Buckets:

- Remove the Front Tank Cover.
- Rotate the handles upwards and pull the Used Abrasive Buckets out of their retainers.
- Dump the Used Abrasive into a container to await final disposal.
- Re-install the buckets
- Re-install the Front Tank Cover. You will also see the front of the handles sticking out beneath the front lip of the Front Tank Cover when correctly installed.
- Confirm task completion by pressing “OK” on the Control Panel.

WAZER CUT PREP

Fill Abrasive
Hopper & Empty
Used Abrasive

When Completed
Press Ok

Not all the Used Abrasive will be collected from the Tank and there will always be some that accumulates and remains in the Tank. With that said, excess abrasive at the bottom of your tank can result in the Collection system getting clogged. Therefore we encourage running a Tank Cleaning Cycle in the following situations:- After cuts and before turning off your WAZER Pro for a few days in order to collect the excess Used Abrasive.

For your first cut you do not need to worry about this step, but going forward we highly suggest doing the Tank Cleaning Maintenance regularly.

Replacing the Used Abrasive Buckets is sometimes tricky, here are two techniques to help:

The metal handles double as a locking mechanism to hold the buckets down. Rotate the handles so that they are straight up, push the Used Abrasive Buckets all the way down, and rotate the handle forward. The hooks on the handle should engage with the Tank and keep it down while it fills.

Failing to empty the Used Abrasive Buckets between Cuts will result in clogs of your filtration system.

The amount of time and work required to unclog the system is significantly greater than emptying your Used Abrasive Buckets and performing tank cleaning cycles between cuts.

Dispose of Used Abrasive properly. The abrasive is inert, so it can be handled as a non-hazardous material and thrown away as garbage waste. However, it is your responsibility to check with your local regulations and requirements to make sure there are no restrictions around the materials you are cutting.



⚠CAUTION

Bacteria can build up in the standing water of the Tank. Any injuries or cuts, even minor ones, should be treated with caution. If you have open wounds avoid contact with the water or wear gloves that do not expose you to the Tank water.

NOTICE Confirm the Water Supply is On

Water is supplied to WAZER Pro during operation. Double-check that the On/Off Valve is on. It is critical to not overlook this step. Running WAZER Pro without the water supply turned on will damage the Pump.

If you do happen to attempt to cut a file without the water on, you will immediately notice that something is wrong. In this case, DO NOT panic. Pause WAZER Pro, turn the water supply on and start your Cut. More on how to pause WAZER Pro later.

Fasten the Material

Securely fastening the Material to the Cut Bed is critical to the accuracy of your desired Cut. If your Material moves during cutting, the results the cutting results will be poor, or fail completely.

You can use any fasteners that are about 5 mm in diameter to secure your materials to the corrugated Cut Bed. Be mindful of the Nozzle profile and the screw head size you choose to minimize Nozzle crashes and losing a Cut.

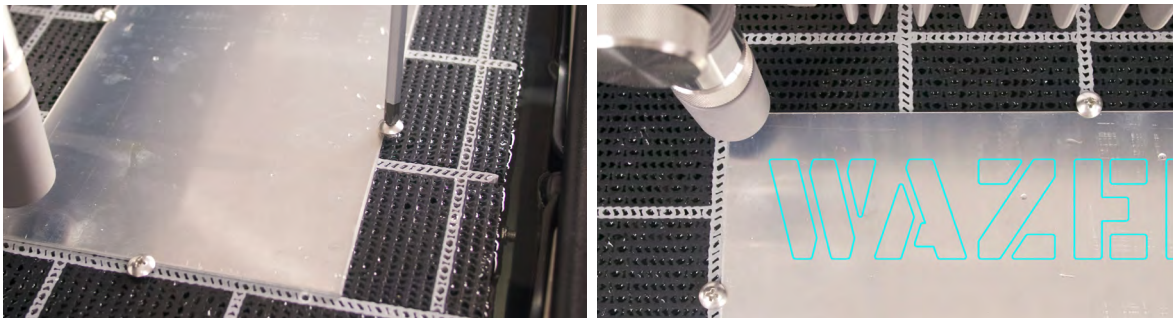
To fasten your Material

- Perform a quick check to make sure that the Material is large enough to accommodate the shape you want to cut.
- Fasten the Material with the Fastening Screws in the Spare Parts bag, confirming that it cannot slide in any direction. You can insert a screw into any of the holes in the Cut Bed. Confirm task completion by pressing "OK" on the Control Panel.
- If this is your first cut, there is already a piece of 4mm aluminum plate fastened on your cut bed. This is your "Welcome cut material". Slide it in several directions to ensure it is secured.

WAZER CUT PREP

Fasten Material
To Cut Bed

When Completed
Press Ok



Set Nozzle Height

- First, the Control Panel will prompt you to set the Nozzle Height.
- Grab the Nozzle Height Tool, which is the black cap on top of the Nozzle.
- Place the Nozzle Height Tool on top of your Material and loosen the Nozzle Lock Knob on the Nozzle.
- You may Jog the Nozzle over the Material to other points using the keypad. This will not affect the starting position for the Cut. We highly recommend you check the levelness across the cut piece at this point.
- Slide the Nozzle Height Tool up against the Nozzle Cover, and gently lower the Nozzle onto it. The flange of the Nozzle Height Tool should now be caught between the Material and the Nozzle, which is hidden under the gray Nozzle Cover. As long as the Nozzle Height Tool is between the Nozzle and the Material to be cut, you can trust that it is set properly.
- Tighten the Nozzle Lock Knob after the height is set properly. This should be tightly snug by hand to ensure that it doesn't vibrate loose while cutting. If it comes loose it will result in a jam, clog, and a failed cut.
- Pull the Nozzle Height Tool out and replace it on top of the Nozzle.
- Confirm task completion by pressing OK on the Control Panel.

```
WAZER CUT PREP
Set Nozzle Height
Jog is Enabled
X 187.45 Y -121.20
When Completed
Press Ok
```

The Nozzle should not be so tight against the Nozzle Height Tool that you find it hard slide it out. Additionally, when you pull the nozzle tool out, be sure that the material hasn't flexed away from the Cut Bed. If the Nozzle Height is set too low, it might crash and ruin your Cut and require significant maintenance. If the Nozzle height is set too high, you may notice a decrease on your Cut Quality.

NOTICE Setting the height of the Nozzle relative to the Material is critical. If the Nozzle Height is set improperly, WAZER Pro may not cut through the Material or the WAZER cutting head will come in contact with the material resulting in a jam, clog, and lost cut.

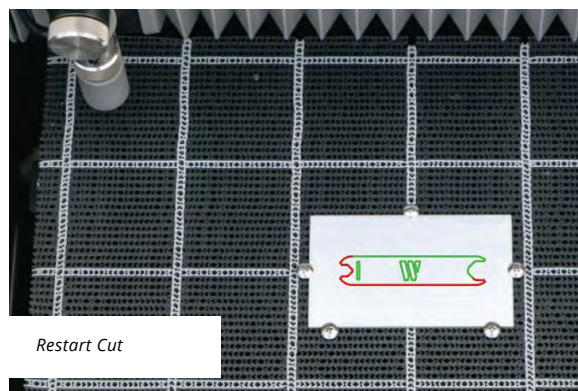
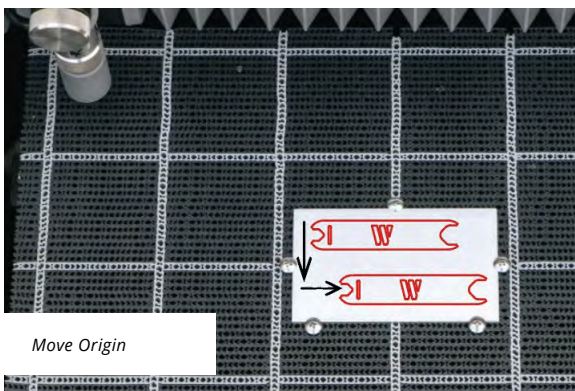
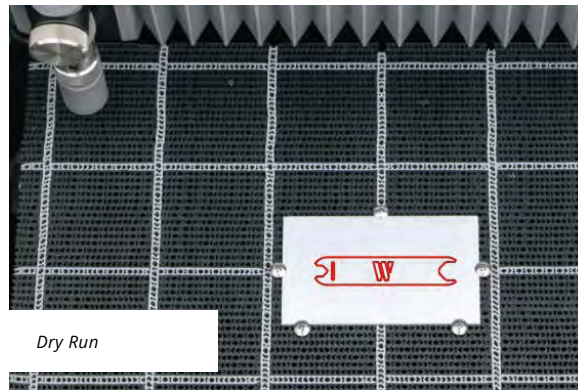
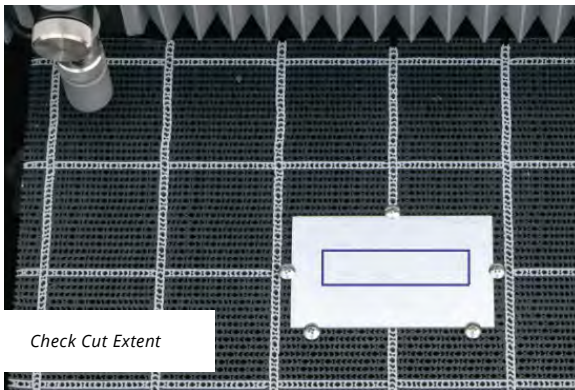


Perform a Final Check

A Cut can be costly. Take advantage of the Control Panel's preview features to ensure that you positioned the Material correctly.

We highly recommend that you use one of these features before starting a Cut:

- **Check Cut Extents:** Select this feature and the Nozzle will trace a rectangle that will designate your Cut Extents (essentially the smallest rectangle that fully encompasses your Cut). As it moves, make sure the center of the Nozzle should never cross the edge of the Material.
- **Dry Run:** Select this feature and the Nozzle will trace the path of the entire Cut File without releasing water.
- **Move origin:** Select this feature, you can move the nozzle to a new starting location by pressing the arrow keys. Each press of the button moves the gantry by 10 mm.
- **Restart Cut:** When this option is selected, the nozzle moves along the cut path in dry run mode (without water and abrasive). The user can visually see where the cut has failed and when the nozzle dry runs close to that location, the user can restart cutting by pressing start.



Start Cutting with WAZER Pro

Now that you have completed the setup, you can begin your Cut:

- **⚠ WARNING** Make sure you are wearing proper personal protective equipment.
- If the Door is open, you will be prompted to close it. Once the Door is closed you can initiate the cut by pressing Start/Stop or cancel it by pressing the OK Button.
- **NOTICE** Verify that WAZER Pro is cutting properly. Paying close attention at the start of a Cut will help prevent damage to WAZER or property. **Carefully watch the Cut:** If any unexpected behavior occurs, or if you are not sure what WAZER Pro is doing, or if you noticed the material is not cut all the way through, press Start/Stop to Pause the Cut and refer to the website support section.
 - When WAZER Pro starts, you will first see the Main Unit gantry move to its pierce location.
 - The Pump turns on and a vibration sound comes from the Abrasive Hopper.
 - WAZER Pro will then start to pierce through the Material. This may be noticed as a sudden “burst-like” experience. Used Abrasive will build up on top of your Material.
 - If you listen carefully, once the pierce is completed you will hear a distinct difference in noise where the water stream pierced material and rushing into the water tank.
 - Within a couple seconds of completing its pierce the Nozzle will begin to move slowly, cutting out your part.
 - As the cut progresses WAZER Pro will have a constant vibrating buzz while cutting along with a few ticking sounds
 - The Pump should emit a smooth hum – there should be no erratic sounds coming from the Pump or constant “ticking”. WAZER Pro will also generate noise from the Jet cutting the Material and creating turbulence in the Tank.
 - If you observe the Control Box, all four LEDs on the left side will be on, the top and bottom lights of the middle column will be on, the middle two LEDs of the middle column will be flashing. Lastly, some, if not all, of the LEDs on the right side will be on, depending on what state the WAZER is in.
- **Feed Rate Override:** this feature allows you to increase or decrease the speed of cut to compensate for changes during real-time cutting. The cut speed increases by 10% with each "up" button.



⚠ WARNING Never open the Door while WAZER Pro is running. Never leave WAZER Pro unattended, either running, pausing or stays at the main menu.

A pressure gauge for the high pressure system is located on the front panel of the WAZER Pro. It is recommended that you check this gauge periodically throughout the cut. As a reference to the colors:

- If the pressure stays in the green zone, the high pressure system is operating in good condition.
- If below the green area: You may experience partial cutting but it is safe to continue.
- If in the yellow zone during the middle of a cut, pause the machine, cancel the cut, and contact WAZER support.
- If the needle is in the red zone, pause the machine, cancel the cut, and contact WAZER support.

When the pressure exceeds 8600psi/59MPa (red zone on gauge), the pressure relief valve inside the pump will open and release the excess pressure. When this occurs a small amount of water is released. It may be noticed as sprays coming out from the bottom of the WAZER Pro. If noticed during a cut segment, pause WAZER Pro immediately. Cancel the cut, and contact WAZER customer support.

Check, Pause or Cancel the Cut

While WAZER Pro is running you can:

- **View the status of the Cut** This includes elapsed time, feed rate and completion percentage.
- **Pause the Cut** Pressing Start/Stop will pause the Cut. After a shutdown sequence, water and abrasive will stop flowing, and the Nozzle will hold its position.
- Once paused, you can either cancel the cut or continue the cut. Select the option you want and press okay to confirm your selection

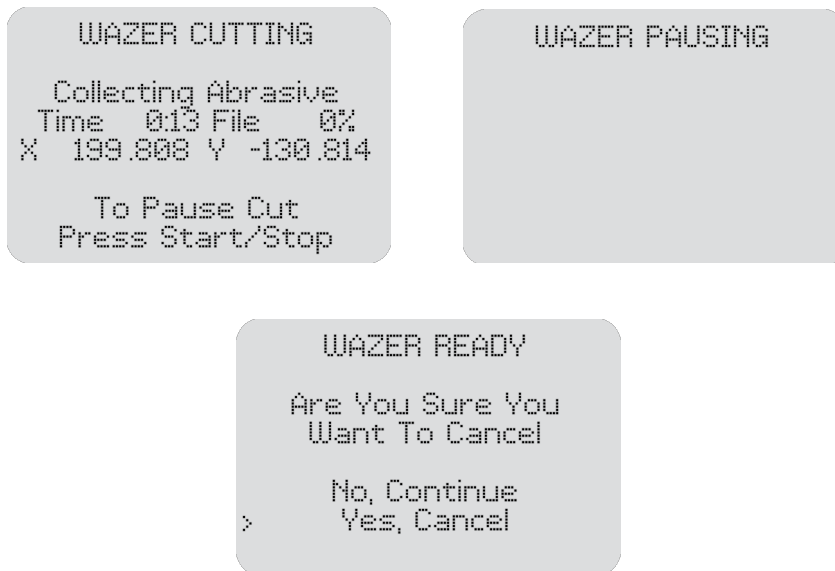
Complete the Cut

The Control Panel will indicate that the Cut is completed. It is now safe to open the Door.

⚠WARNING **DO NOT** open the Door until you have canceled the Cut and the Control Panel returns to the Main Menu. This is required so that the high pressure in the hydraulic lines can be safely released, and the gantry stops moving.

If instantaneous stop function is necessary, push down the Emergency Stop Button located near the UI Screen. This will cut power to the WAZER Pro as a whole. At this moment, there will still be pressure trapped in the hose line. Shut off water supply.

⚠CAUTION Bacteria can build up in the standing water of the Tank. Any injuries or cuts, even minor ones, should be treated with caution. If you have open wounds avoid contact with the water or wear gloves that do not expose you to the Tank water



Common Things To Be Mindful Of During Cutting

⚠ WARNING *Follow all Safety Advisories when performing a Cut:*

- ALWAYS wear eye protection.
- NEVER leave WAZER Pro unattended while in operation.
- ALWAYS know how to press the E stop to turn off WAZER Pro.
- ALWAYS know how to quickly turn off water and power to WAZER Pro.

NOTICE Pay Attention!

It is important to monitor WAZER Pro while it is cutting. Some issues may require intervention to avoid damaging WAZER Pro, Cut Material or your property.

Pop-Ups:

Pop-Ups are when a section of material pops up above the original surface of the Material. An edge may come into contact with the Nozzle, resulting in the Gantry jam and abrasive clog.

Abrasive Clogs:

Abrasive Clogs can sometimes occur, preventing Abrasive from flowing into the Nozzle. WAZER Pro will stop cutting through the Material. There will be a significant change in the sound of WAZER Pro's operation. If there is an Abrasive Clog, press Start/Stop immediately. Refer to the website support section for more information.



Leaks:

You should monitor for any abnormal drips, leaks or puddles. If you notice this, press Start/Stop immediately. Exit the cut, turn machine off and trace where the leak originates. Refer to the website support section for more information.



Expected potential drip areas on WAZER Pro:

- When opening and closing the Door.
- Water may spray through the cracks between the Door and Hoops.
- There may be occasional drips around the Side Windows.

NOTICE Solution After Leaks Detected:

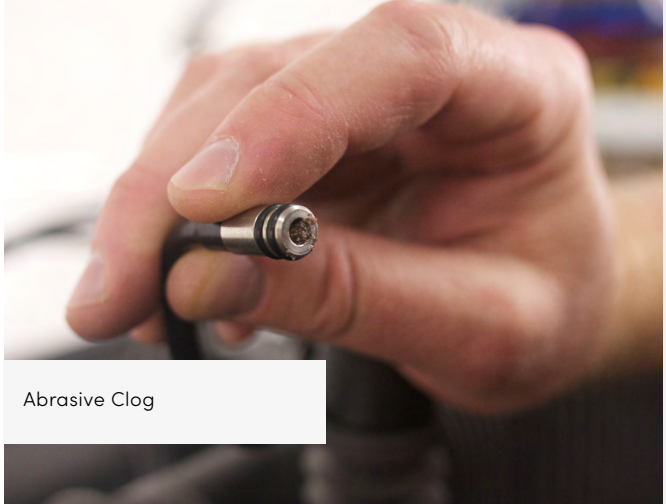
If there is a leak or things get wet that shouldn't have, turn everything off, unplug power cord if it didn't get wet, wipe the leak, and turn everything off, and LET IT DRY COMPLETELY.

Water Exiting Under the Abrasive Hopper: If you notice water leaking or spraying out of WAZER Pro from underneath the Abrasive Hopper, press Start/Stop immediately as you have just experienced a "backflow". Refer to the online maintenance instruction for more information on how to resolve this.





Popup



Abrasive Clog



Abrasive Clog Identification



Abrasive Clog Identification



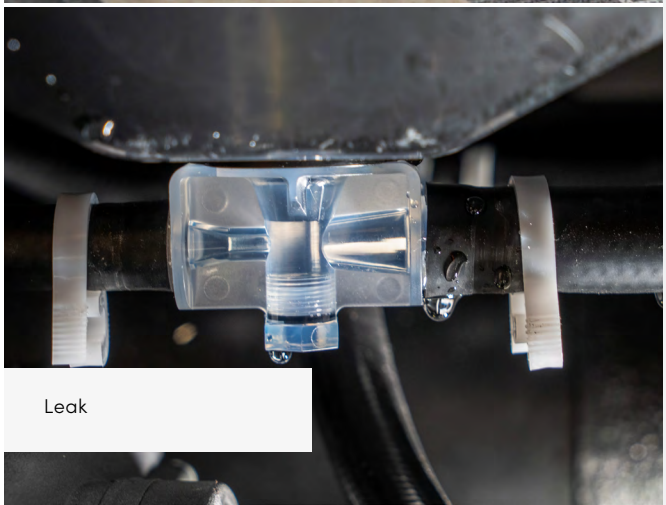
Partial Cutting



Partial Cutting Identification



Leak



Leak

Piercing sound:

WAZER Pro always starts every segment of a cut with a pierce. When the high-speed slurry coming out of the nozzle hits the work piece you will hear a very loud noise coming from the cutting area. However, as the water/slurry stream progresses through the material you will hear the pitch change. Once the work piece is pierced through, the volume of noise will significantly drop. This sudden change in loudness is the tell tale sign of successful pierce and indicates WAZER Pro is ready to proceed with cutting motion. However, if no obvious change in either sound level or pitch takes place for a prolonged time, it likely means something is not right. Pause the cut and refer to trouble shooting section to diagnosis the problem.

Abrasive usage:

Whenever the WAZER Pro is cutting or piercing it is consuming abrasive. During a cut you can verify that abrasive is flowing by observing the pile up of used abrasive around the nozzle. If you see any problem combined with partial or no cutting, pause the cut and refer to the support section for problem diagnosis.

Pressure fluctuation:

Water supply at homes and commercial settings may suffer from temporary pressure inconsistency. As a result, this will affect the output pressure of the Pump. Make sure water input pressure stays above 35 psi (2.4 Bar), minor reductions of a few PSI are not an issue. If pressure fluctuation is too frequent, contact local water supply authority for more information.

Partial cutting / tail cutting:

Partial Cutting means that the Jet is not cutting all the way through the Material. This is evident when the Jet exits horizontally (opposite the Nozzle's traverse direction) instead of downward into the Tank. If this happens, press Start/ Stop immediately. Refer to the website support section for more information.



NOTICE Allowing your machine to partially cut puts a lot of stress on the machine. This will cause permanent damage to your machine.

Various error messages may pop up during cutting

- **Add Water To Cut Bed Level:** This error indicates that the Water Level in the Tank is too low. Refer to the website support section for more information.
- **Check Drain Filter And Dump Hose:** This error indicates that WAZER is not draining properly, likely due to a clogged Drain Filter or an obstructed Water Drain Hose. Follow the instruction on the screen, or refer to the website support section for more information. If this error message appears often, contact customer support.
- **Fill Abrasive Hopper & Empty used abrasive:** This message indicates that the Abrasive Hopper is nearly empty. Refill the Abrasive Hopper and continue cutting.
- **Cut Failed Lower Tank Water To Cut Bed Level:** Something has gone wrong in the drain system and the tank has filled to the high water level safety switch.
- **Service Required Check Backflow and Water Sensor:** High pressure water backflows into the abrasive hose and backflow sensor pauses the machine operation.
- **Regenerate Cut File With the Latest Version of Wam:** Proper function of the WAZER it is important that both the firmware and the version of WAM used are the latest so they are compatible. This error occurs when the firmware version is significantly newer than the WAM version used to generate the file.
- **Unexpected End of the Cut File. Check Setup & File:** This error will typically occur when something goes wrong with the transfer of the cut file to the controller, contact customer support.

Finishing

Cut Quality

Cut quality on WAZER Pro is a function of the Cut Rate. A Fine Cut (slower Cut Rate) will result in a smoother surface along the edge, whereas a Coarse Cut (faster Cut Rate) will result in a rougher surface along the edges.

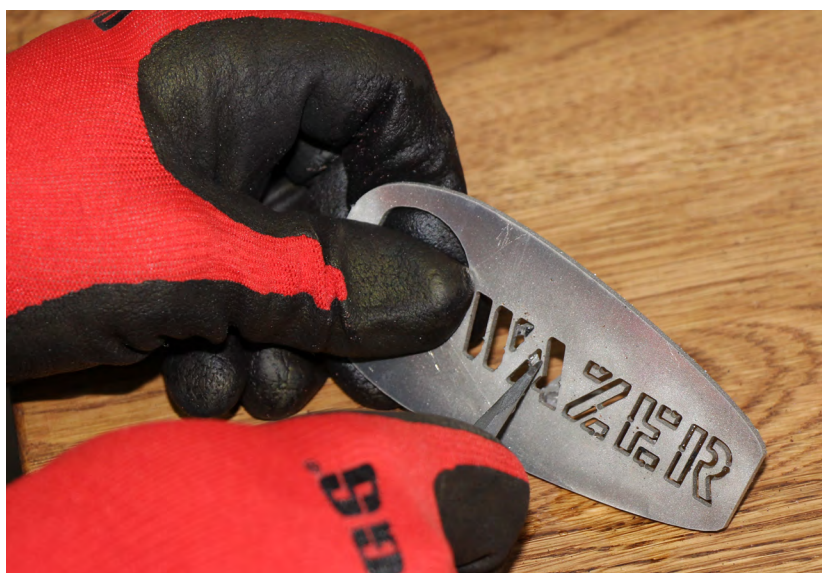
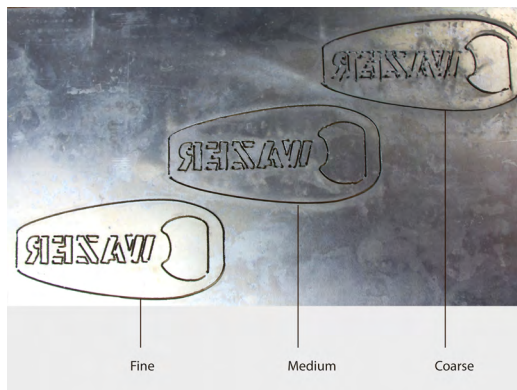
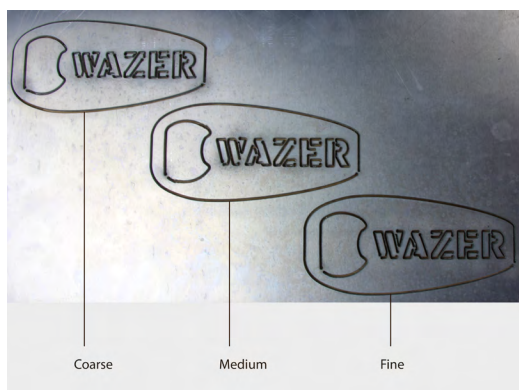
As a reference guide, the illustration provided shows approximately what to expect at three different levels of available Cut Quality.

Remove the Tabs

Tab removal refers to the activity of removing your desired Part and the remainder of the scrap Material by breaking the small tab between them. To do this, wear protective gloves and use a blunt tool or set of pliers to bend the pieces until the Tabs break.

Deburr your Part

Parts may be sharp immediately after cutting. It may be required to remove a sharp edge on the bottom side of the Part. We have included some basic tools like a set of small pliers, a file, and deburring tool in the black toolkit that came with your machine. These will aid you in cleaning up some of these cut imperfections.



Shutdown WAZER Pro

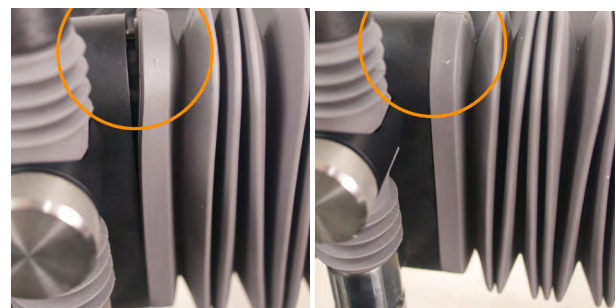
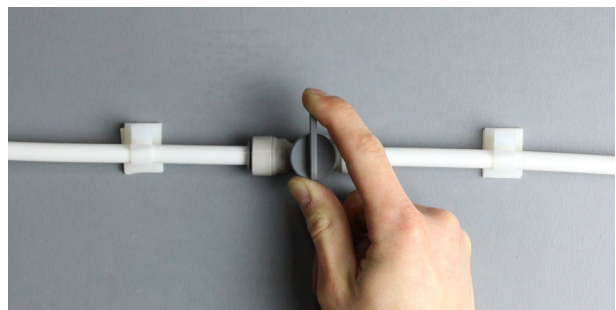
Once you have completed your Cut, perform the following Shutdown procedure:

1. **NOTICE** Close the On/Off Valve
Turn the On/Off Valve to the "off" position.
2. Turn WAZER Pro Off
Flip the power switch to turn WAZER Pro off. Do not use the Emergency stop at the top of your machine.

CAUTION Bacteria can build up in the standing water of the Tank. Any injuries or cuts, even minor ones, should be treated with caution. If you have open wounds avoid contact with the water or wear gloves that do not expose you to the Tank water

3. Leave the Door Open
After a Cut, everything inside WAZER Pro is wet. We suggest leaving the Door open so the internal surfaces can dry. This prevents tight areas from growing mold and allows you to brush away the Used Abrasive once it is dry.
4. Perform a General Inspection
It is always a good idea to inspect WAZER for leaks and abnormal wear:
 - Is there water around WAZER Pro?
 - Are there any pieces of the Cut Bed that stick out? Remove unwanted material from Cut Bed.
 - Are the Bellows sealed against the aluminum Gantry Blocks?
 - Are the rubber gaskets around the inside of the machine correctly seated around the machine.
 - Do any of the hose lines have too much tension?

NOTICE You MUST remember you are dealing with water, which can result in things such as electrical shorts and water damage.



Maintenance Between Cuts

Perform the following maintenance actions after every long cut. We provide the maintenance steps in the checklist in the following 2 pages. WAZER encourages you to post one copy of the checklist near the location of your WAZER Pro and ensure it is followed with every cut!

It is essential to perform these tasks routinely; Performing them less often can lead to decreased performance or more serious maintenance issues.

1. Clean Magnetic Drain Filters

Magnetic Drain Filters trap iron particles and block them from Low Pressure Pumps. To keep the filters in good shape, clean the filter mesh and magnets regularly.

NOTICE We encourage you at least check the condition of the drain filters and magnets **after every cut**.



2. Collect Used Abrasive and Tank Cleaning

The Low Pressure System is able to collect all of the abrasive used during cutting and deposit it into the two abrasive buckets. If both buckets can be filled within 90 minutes of cutting, it indicates the Low Pressure system is performing as expected. If water input pressure is low (< 40 Psi), Tank Cleaning cycle needs to be conducted once every week, to keep the Low Pressure system in good condition. Contact WAZER support if collection efficiency drops or used abrasive starts to accumulate in the tank.

Maintenance

> Used Abr. Collect
Nozzle Purge
Abr. Flow Rate
Tank Cleaning
Abr. Pickup Cleaning
Water Level Setup

3. Leveling the Cut Bed

Use the height tool to check the levelness of Cut Bed. In some occasion, worn Cut Bed may warp or deform after extended use.

Make sure the Cut Bed is level across the cut piece before and after every cut help to ensure the cut quality.

4. General water seal inspection

Check if all bellow, gasket and o-rings are seated properly. If you see any water-proof mechanisms not seated as they should be, correct them before next cut.

5. Abrasive Accumulation

Rinse or Brush away loose abrasive from door window, bellow and side of tank.

- Maintaining a clear view to cut area is vital in safe operation.
- Remove used abrasive accumulated in the buckets.
- Make sure that your abrasive buckets are always properly seated.

6. **NOTICE** Short, Medium, and Long Term Maintenance To ensure safe and reliable operation, you **MUST** familiarize yourself with and perform the procedures in Maintenance > Preventative Maintenance in our online menu. Further maintenance schedules (short, medium, and long term) are explained.



Added Features on WAZER Pro

If you have some prior experiences with WAZER Desktop, WAZER V1.5 or WAZER V1.0, you will find WAZER Pro operation fairly similar. A lot of the key learning points from WAZER Base Workflow can be directly applied to WAZER Pro operation.

However, there are some added features implemented on WAZER Pro that will greatly improve your user experience and work efficiency. We recommend your getting familiar with those added feature and use them in daily routine.

1. Quick Drain Function

The Quick Drain function is designed to improve the user experience by allowing the users to drain water with a dedicated button. This function enables the users to lower the water level for servicing items in the tank or to gain better visibility to the material during cutting. The users can activate this function while the WAZER Pro is in Home Screen or during a cut.

2. Dump Pump Addition

In WAZER Desktop, WAZER V1.5 and WAZER V1.0, the Low Pressure Pumps take charge of Used Abrasive collection and Drainage. WAZER Pro uses a dedicated Dump Pump to pump the excess water out, and 2 other Low Pressure Pumps just for the Used Abrasive collection. The specialization of tasks increases the overall performance and sytem reliabliity.

3. Submerge Cutting Function

The Submerge Cutting Function allows the cut job being performed either above or below the water, based on user's preference. Cutting under water results in a huge decrease in noise level; cutting above water allows the user to monitor the progress.

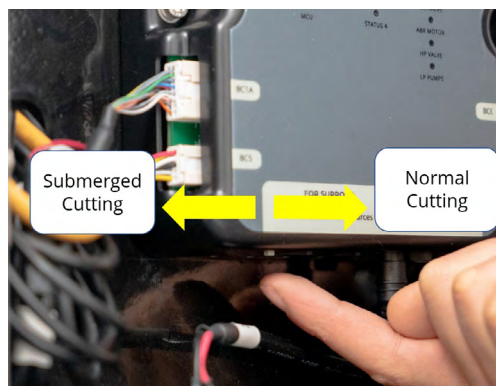
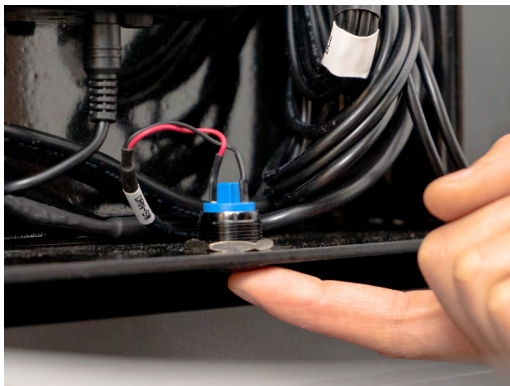
The selection of Above-Water Cut or Submerged Cut is achieved by a small switch under the controller. When the small switch is flipped to the front, Submerged Cut is selected; if to the rear, Above-Water Cut is selected. Change of state must be completed before switching on.

4. Backflow Detection

One of the most common machine error is abrasive hose water backflow. WAZER Pro incorporates backflow detection sensor in the Abrasive Hose. As soon as backflow occurs, the sensor detects ingression of water and prompts controller to pause the operation. This allows the customer to fix the machine error immediately and decrease the effort to address possible implications.

5. Low Pressure System Purge Function

Used Abrasive Collection is further faciliated in WAZER Pro by the help of Low Pressure System Purge. Hoses and actuators are implemented to regularly bring fresh water from the water supply. The fresh water cleans the low pressure plumbings and boosts the used abrasive collection performance. Refer to our support section for more information.



WAZER

Cutting with WAZER Pro Checklist

⚠WARNING

NEVER skip any Startup or Shutdown steps. Failure to complete these steps could lead to injury, damage to WAZER Pro and your property.

We suggest you take this page out of the User Manual and leave it near your WAZER Pro.

1. Preparation

- ☐ Wear proper Personal Protective Equipment
- ☐ Open the On/Off Valve
- ☐ Fill the Tank
- ☐ Once dry, brush away used abrasive on door window, bellows, and side of tank
- ☐ Level the Cut Bed
- ☐ Check Water Drain Hose Location and Attachment
- ☐ Check for Leaks
- ☐ Confirm all Electrical Connections (Check GFCI/PRCD/RCBO functions)
- ☐ Check Position the Water Alarms

2. Cut Setup

- ☐ Insert the SD Card
- ☐ Turn on WAZER Pro
- ☐ Select the File to Cut
- ☐ Follow the Control Panel Prompts
 - Lift the Nozzle
 - Home WAZER
 - Load Abrasive
 - Empty the Used Abrasive Buckets
 - Confirm the Water Supply is On
 - Fasten the Material
 - Set the Nozzle Height

- Check Cut Extents & Dry Run
- Shut door

3. Cutting

- ☐ Listen for the sound of piercing through the material
- ☐ Check the pressure gauge reading
- ☐ Pay attention to the following
 - Pop-Ups
 - Abrasive Clogs
 - Partial Cutting
 - Leaks
 - Abnormal sounds

4. Shutdown

- ☐ Run Tank Cleaning Cycle
- ☐ Check condition of O-ring, and re-seat hose end into cutting head
- ☐ Close the On/Off Valve
- ☐ Turn WAZER Pro Off
- ☐ Empty the Used Abrasive bin
- ☐ Leave the Door Open

WAZER

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- ☐ Leave the Door Open

Machine Maintenance and Setup Menu

After a few cuts, you are very familiar with the cutting menu. Now it is time to familiar yourself with the menus that are built into the Maintenance & Setup menu on your WAZER Pro.

Maintenance

Used Abr. Collect: This function turns on the Low Pressure system of WAZER Pro to collect Used Abrasive.

Nozzle Purge: This function turns on the High pressure system of WAZER Pro several times. It can be used to observe the water stream and pressure for troubleshooting. Follow the instruction shown on UI screen.

Abr. Flow Rate: This function turns on the abrasive system for 60 seconds to help the user measure the abrasive flow rate. Refer to Online Support section for more information.

Tank Cleaning: This function engages the High Pressure and Gantry systems to strategically stir used abrasive sediment at the bottom of your tank. It will also turn on Low pressure system to collect used abrasive from tank bottom. Follow the instruction shown on UI screen.

Water Level Setup: This function engages the High Pressure system and dump system to rise/lower water level to be within operational range. Follow the instruction shown on UI screen.

Input/output check

Input

Door Switch: Follow the instructions on the screen to ensure the proper function of door switches interlock system.

Water Level Sensor: Follow the instructions on the screen to ensure the proper function of water level sensors.

Service Sensor: Follow the instructions on the screen to ensure the proper function of the backflow sensor.

SD card: Follow the instructions on the screen to ensure SD card reader is able to register an inserted SD card.

Limit Switch: Follow the instruction on the screen to ensure the proper function of gantry and limit switches for your X and Y axis.

Output

LP Pump: This function engages the Low Pressure Pump for a short time. You may hear a light humming noise as well as see water being circulated in your tank.

Dump Valve: This function engages the Dump valve for a short time. You may hear a clicking sound being emitted from the Right Side Cavity area, once to open the valve and once to close it. Follow the instruction shown on UI screen

Vibration Motors: This function engages vibration motors for a short time. You can discern a constant buzzing sound from the Abrasive Hopper.

Abrasive Valve: This function engages the Abrasive Valve for a short time. You may hear two clicking sounds being emitted from the Right Side Cavity area, once to open the valve and once to close it

Clutch: This function engages the High Pressure Pump Clutch for a short time. You may hear two soft click sounds from the Pump section. If Clutch is not in good condition, you will hear squeaking noise and see Operation Pressure dropping.

HP Pump: This function engages the AC motor in the Pump section for a short time. You may hear AC motor running in the Pump Section powering up and down.

Jog: This feature enables you to move the nozzle to any point on the Cut Bed by manually controlling the buttons on control pad.

Cut Rate Testing

The WAZER will cut a series of arcs at increasing speeds to help you determine the cutting parameters for a new material.

General Cut: Run this cut when you have no idea how fast the WAZER should cut your material. This test will use the most material and have the least fine resolution.

Fast Cut: Run this when you know that your material should cut on the faster side.

Medium Cut: Run this when you know that your material should cut in the middle of our range.

Slow Cut: Run this when you know that your material is going to be slow, typical for materials on the thicker or harder side.

Machine Info

This feature displays the current firmware version installed in WAZER control unit as well as the accumulated cut hours.



Full Manual
International Manual Download



Creating Cut Files



Maintenance

Warranty

Overview

THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY HAVE OTHER RIGHTS THAT VARY FROM STATE TO STATE. TO THE EXTENT PERMITTED BY LAW, THIS WARRANTY AND THE REMEDIES SET FORTH ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, REMEDIES AND CONDITIONS, WHETHER ORAL, WRITTEN, STATUTORY, EXPRESS OR IMPLIED. WAZER DISCLAIMS ALL STATUTORY AND IMPLIED WARRANTIES, INCLUDING WITHOUT LIMITATION WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE AND WARRANTIES AGAINST HIDDEN OR LATENT DEFECTS, TO THE EXTENT PERMITTED BY LAW. INsofar AS SUCH WARRANTIES CANNOT BE DISCLAIMED, WAZER LIMITS THE DURATION AND REMEDIES OF SUCH WARRANTIES TO THE DURATION OF THIS WARRANTY AND, AT WAZER'S OPTION, THE REPAIR OR REPLACEMENT SERVICES DESCRIBED BELOW. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY MAY LAST, SO THE LIMITATION DESCRIBED ABOVE MAY NOT APPLY TO YOU.

What is Covered by this Warranty?

WAZER grants an Exclusive Limited Warranty (the "Warranty") for the WAZER Desktop or WAZER Standup (the "Product"), and warrants against defects in materials and workmanship when used normally in accordance with WAZER's instructions for a period of Twelve (12) months from the original date of receipt by the purchaser (the "Warranty Period").

- To damage caused by operating the Product outside WAZER's instructions or improper cleaning of the Product;
- To damage caused by service (including upgrades and expansions) performed by anyone who is not a representative of WAZER (except for damage that results from do-it-yourself warranty repairs, discussed below, if the repair was conducted according to WAZER instructions);
- To a Product that has been modified to alter functionality or capability without the written permission of WAZER;
- To defects caused by normal wear and tear or otherwise due to the normal aging of the Product;

What is Not Covered by this Warranty?

This Warranty does not apply:

- To consumable parts, unless failure has occurred due to a defect in materials or workmanship;
- To cosmetic damage, including, but not limited to, scratches, dents, and broken plastic unless failure has occurred due to a defect in materials or workmanship;
- To damage caused by use with a third party component or product that does not meet WAZER's specifications;
- To damage caused by accident, abuse, misuse, fire, liquid contact to electronic components, earthquake or other external causes;
- If any serial number has been removed or defaced from the Product;
- If WAZER receives information from relevant public authorities that the product has been stolen, and you cannot prove in any way that you are the authorized user of the Product (e.g., by presenting proof of purchase);
- To items consumed or expended by their normal use, such as the Nozzle, Orifice and Cut Bed (if you do cause damage from incorrect use, WAZER may be able to send you replacement parts and you may have to pay for them);
- To damage or defect caused by: etching, including any non-through-cutting; cutting or attempting to cut material greater than the maximum thickness specified for that

material in the User Manual or on the website; servicing the Product with the Water Inlet Valve opened or with the Power Cables plugged in; accident, flood, fire, or other external causes outside of WAZER's control; modification of the Product;

- The Product's software or firmware
- To damage occurring during transportation of the Product (such claims are the sole responsibility of the shipper).

Use of third-party abrasive does not in and of itself void this warranty. However, damage caused by use of third-party abrasive is excluded from this warranty.

Conditions

The Warranty is granted under the following conditions:

- The Product was assembled, sold and delivered by WAZER.
- The Product was purchased new from WAZER or authorized reseller by the claimant, or by a member of the same household, or member of the same institution/organization of the original purchaser.
- The then-latest firmware was installed and used in the Product.
- The install and maintenance instructions in the User Manual were followed.
- In the event that a warranty has expired, or is void, basic email support is offered to allow for the purchase of replacement parts of components. Troubleshooting services are not offered for machines out of warranty.

Providing evidence of the satisfaction of these conditions is a prerequisite for any remedy under the Warranty.

Transfer of Warranty

The transfer of an existing warranty is granted if the following conditions are met:

- The transfer is from one member of the household to another or from one member of the institution/organization to another.
- WAZER is notified within ten (10) business days of this transfer and can be validated through address verification and/or domain of the new "owner". Providing evidence of the satisfaction of these conditions is a prerequisite for any remedy under the Warranty.

Procedure

If you encounter an issue with the Product, here is the procedure to follow:

1. Consult your User Manual for help.
2. Submit a claim by emailing WAZER at support@wazer.com within the Warranty Period.
3. Provide proof of purchase, including the original purchaser's invoice.
4. Help diagnose any issues related to your claim. This may involve corresponding with WAZER's support team by email or phone and by sending images, videos or files related to your claim. Any warranty claim must first be accepted by WAZER as justified.
5. If your claim is accepted, WAZER, at its sole discretion will either:
 - a. Send new or refurbished parts for you to install, along with detailed instructions for do-it-yourself ("DIY") parts service. You may be required to send the original parts to WAZER before or after your replacement parts are sent. WAZER is not responsible for any labor costs you incur relating to DIY parts service. A replacement part assumes the remaining term of the Warranty or ninety (90) days from the date of replacement or repair, whichever provides longer coverage for you; or
 - b. Send you a replacement new or refurbished Product that's substantially equivalent in function, formed from new and/or previously used parts that are equivalent to new in performance and reliability. The replacement Product assumes the remaining term of the Warranty or ninety (90) days from the date of replacement, whichever provides longer coverage for you; or
 - c. Refund you the purchase amount. If so, you may be required to return the original Product prior to or after receiving the refund.
6. The shipping cost (including any duties and taxes) for any new or refurbished parts or Product sent to you in fulfillment of your warranty claim shall be covered by WAZER. WAZER will ship via non-expedited fulfillment by default. Expedited shipping may be available at an added cost to the

claimant. Replacement parts and their shipping and duties that are required due to user misuse or user error in diagnosis or fixing are not covered by the warranty.

- a. If your original shipping address is located in the Continental United States, WAZER will cover the cost of the above shipping.
 - b. If your original shipping address is located in the Continental United States, WAZER will cover the cost of the above shipping.
7. If you are asked to send back some or all of the Product to WAZER in order to fulfill your claim, the following requirements will apply:
- a. If your original shipping address is located in the Continental United States, WAZER will cover the cost of the above shipping.
 - b. A Return Authorization Label will be provided to you, which must be included in the return package.
 - c. For purchasers in the Continental United States, WAZER will provide prepaid shipping labels.
 - d. For purchasers outside the Continental United States, you will be required to pay for the return shipping.
8. WAZER reserves the right to change the method by which WAZER may provide warranty service to you, and your Product's eligibility to receive a particular method of service. Service options, parts availability, and response times may vary according to location.

Voiding Your Warranty

The Warranty is Void if:

- The product is set up, operated, maintained or repaired without following the proper instructions provided in this manual, WAZER support or online resources from the official WAZER website.
- The Product is used outside of the country of the initial purchaser's shipping address.
- Any WAZER serial number has been removed or defaced.
- Any disassembly or reassembly by anyone other than WAZER representatives occurs, other than do-it-yourself assembly instructions outlined in the User Manual or in other official WAZER publications, or instructed by a WAZER representative.

Firmware, G-Code/CAM Software.

Critical machine functionalities are built into the firmware that prevents the machine from damaging

itself, your property, and/or harming the user. The following modifications to WAZER firmware or the loading of files onto WAZER will void the machine's warranty:

The use of non-WAZER released/approved firmware and configuration files onto a WAZER machine.

The usage of any non-WAZER approved CAM software to generate g-code or manually modified/created g-code to run a WAZER. Approved g-code creation solutions will be updated by WAZER. If there is any uncertainty, please contact WAZER customer support.

Disclaimers

WAZER does not warrant your use of the Product will be uninterrupted or error free.

- WAZER does not warrant your use of the Product will be uninterrupted or error free.
- WAZER does not warrant that the results that may be obtained from the use of the Product will be accurate or reliable.
- WAZER makes no claims about the safety or effectiveness of any device made using the Product.
- No warranty will apply after the expiration of the Warranty Period.
- EXCEPT AS PROVIDED IN THIS WARRANTY AND TO THE MAXIMUM EXTENT PERMITTED BY LAW, WAZER IS NOT RESPONSIBLE FOR DIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM ANY BREACH OF WARRANTY OR CONDITION, UNDER ANY LEGAL THEORY, INCLUDING BUT NOT LIMITED TO LOSS OF USE; LOSS OF REVENUE; LOSS OF THE USE OF MONEY; LOSS OF ANTICIPATED SAVINGS; LOSS OF BUSINESS; LOSS OF OPPORTUNITY; LOSS OF GOODWILL; LOSS OF REPUTATION; OR ANY INDIRECT OR CONSEQUENTIAL LOSS OR DAMAGE HOWEVER CAUSED INCLUDING THE REPLACEMENT OF EQUIPMENT AND PROPERTY. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU. PUNITIVE, EXEMPLARY, OR MULTIPLE DAMAGES MAY NOT BE RECOVERED UNLESS APPLICABLE LAW PROHIBITS THEIR DISCLAIMER.

General

No WAZER reseller, agent, or employee is authorized to make any modification, extension, or addition to this Warranty. If any term is held to be illegal or unenforceable, the legality or enforceability of the remaining terms shall not be affected or impaired. This Warranty is governed by and construed under the laws of the State of Delaware. WAZER or its successor in title is the warrantor under this Warranty.