

# **WAZER**

Cleaning, Maintenance,  
& Inspection Checklist

## Instruction for use

- Frequent activities checklist is intended for machine users
- Long interval activities checklist is intended for machine administrators.
- Inspection list is intended for machine administrators.
- Detailed instructions are provided as footnotes.

# Frequent Activities Checklist

\*This checklist is intended for machine users



# Cleaning and Maintenance Checklist

Checks Before a Cut		
Activity	Frequency	Status check
Check for leaks anywhere	Before every cut	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Check abrasive hose for kink or clog	Before every cut	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Check abrasive hose end for holes, O-ring wear and seating	Before every cut	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Check banjo washers' condition	Before every cut	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Check cut bed condition and levelness	Before every cut	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Check abrasive flow by pressing abrasive pinch valve	Before every Cut	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Cleaning After a Cut		
Activity	Frequency	Status check
Clean abrasive leaked out below the hopper	After every cut	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Check abrasive flow by pressing abrasive pinch valve	After every cut	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Check all bellows are seated corrected	After every cut	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Clean used abrasive from bellows	After every cut	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Clean used abrasive around cutting head	After every cut	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Conduct a Tank Clean cycle	After every cut	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Empty used abrasive bucket	After every cut	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

**Instruction:**

- Before each cut, the user shall conduct the checks according to the checklist.
- After each cutting, the user shall conduct the cleaning and maintenance according to the checklist
- After each check, cleaning and maintenance activity is completed, users mark the cell of each checklist with their initials
- Replace with a new page after the page is filled.

# Long Interval Activities Checklist

\*This checklist is intended for machine administrator

# Cleaning Checklist

Regular Cleaning after Listed Duration				
Activity	Frequency	Status check		
Check and clean the whip wire gasket	Every 10 hours of cut			
Check and clean the wire gasket behind nozzle	Every 10 hours of cut			
Clean float sensors for debris	Every 20 hours of cut			
Clean drain filters for clog	Every 20 hours of cut			
Check and clean used abrasive behind cutting bed and in drain filter pit	Every 20 hours of cut			
Check and clean accumulated abrasive at tank bottom	Every 30 hours of cut			

**Instruction:**

- Each machine administrator has the responsibility of checking the total cut time on the machine after each day.
- Machine administrator conducts the cleaning and maintenance after the operation time is met.
- After each cleaning and maintenance is completed, administrator put in the total cut time and initials in the cell.
- Replace a new page after the sheet is filled.

# Regular Maintenance Checklist

Short and Medium Term Maintenance				
Activity	Frequency	Status Check		
Flip cutting bed	Every 20 hours, or when cutting bed cannot support cut material completely flat anymore			
Full tank clean	Every 20 hours, or whenever the cutting bed is removed			
Check anti-pierce plate	Every 20 hours, or whenever the cutting bed is removed			
Check and clean accumulated abrasive at tank bottom	Every 30 hours of cut			
Change cutting bed	Every 40 hours, or when cutting bed cannot support cut material completely flat anymore			
Check and adjust abrasive flow rate	Every 40 hours, or after every abrasive backflow			
Inspect and change high pressure O-ring	Every 20-50 hours, or every time a leak is detected			
Oil change	First 30-50 hours, then every 300 hours			

**Instruction:**

- Each machine administrator has the responsibility of checking the total cut time on the machine after each day.
- Machine administrator conducts the cleaning and maintenance after the operation time is met.
- After each cleaning and maintenance is completed, administrator put in the total cut time and initials in the cell.
- Replace a new page after the sheet is filled.



# Need Based Maintenance Checklist

Long term and Need based maintenance		
Activity	Frequency	Status check
Orifice stream and pressure check; Replace orifice or nozzle assembly if needed	Every 300 hours, or after partial cutting is detected	
Kerf width check; replace nozzle assembly if needed	Every 300 hours	
Firmware upgrade	Every roll out	
Adjust pump box pressure	After instructed by WAZER customer service personnel	
Flush water filter canister	Depends on the shop condition; after detecting debris	
Inspect and clean pump box water inlet filter.	Depends on the shop condition; after detecting debris	
Check and flush venturi block	Perform as needed	
Check and clean pump box air filter	Perform as needed	
Check and clean pump box inlet filter	Perform as needed	
Check and flush filter canister.	Perform as needed	

## Instruction:

- Each machine administrator has the responsibility of checking the total cut time on the machine after each day.
- Machine administrator conducts the cleaning and maintenance after the operation time is met.
- After each cleaning and maintenance is completed, administrator put in the total cut time and initials in the cell.
- Replace a new page after the sheet is filled.

# Daily Inspection Sheet

\*This inspection sheet is intended for Machine Administrators.

\*Instruction is provided as footnotes.

# Inspection Checklist

Machine Inspection Checklist	
Item	Status check
Bellow and seals: <ul style="list-style-type: none"> <li>• X axis bellows</li> <li>• Y axis bellows</li> <li>• cutting head bellows</li> </ul>	
O-rings: <ul style="list-style-type: none"> <li>• high pressure hose O-ring</li> <li>• Abrasive hose end O-ring</li> </ul>	
Gasket: <ul style="list-style-type: none"> <li>• Cutting head block rear gasket</li> <li>• whip tank gasket</li> <li>• banjo washers</li> </ul>	
Leaks: anywhere	
All outputs <ul style="list-style-type: none"> <li>• LP pump</li> <li>• Pinch valve</li> <li>• Dump valve</li> <li>• Vibration motor</li> <li>• HP valve</li> <li>• HP pump</li> </ul>	
Abrasive flow rate: <ul style="list-style-type: none"> <li>•Ensure the abrasive flow rate is within 145-155g/min</li> </ul>	
Vibration motor motions: <ul style="list-style-type: none"> <li>•Ensure two motors are spinning at the same rate.</li> </ul>	
Orifice stream condition: <ul style="list-style-type: none"> <li>•Ensure the Orifice stream is focused and uniform.</li> </ul>	
Operation pressure readings: <ul style="list-style-type: none"> <li>• high pressure gauge</li> <li>• low pressure gauge</li> </ul>	
High Pressure valve condition: check for water dripping from nozzle during shut off	
Limit switch input check: <ul style="list-style-type: none"> <li>• Conduct a limit switch input check, ensure the gantry motion is good.</li> </ul>	
Firmware version: <ul style="list-style-type: none"> <li>•Check WAZER newsletter, and upgrade firmware when needed.</li> </ul>	
AC power cord conditions <ul style="list-style-type: none"> <li>•Visually check the exterior of two power cords</li> </ul>	
GFCI function <ul style="list-style-type: none"> <li>•Manually check the GFCI function by pressing "Test" then "Rest"</li> </ul>	

**Instruction:**

- Machine administrator has the responsibility to carry out regular inspection every day before any cutting
- When the need for accountability arises, administrator use this checklist to record each items' status after inspection.

# Inspection Checklist

Consumables and Wear Components Inspection checklist	
ITEM	Status check
Back up SD card and microSD card	
Cutting bed screws	
Extra height tool	
Abrasive stock	
Extra cutting beds	
Spare orifice	
Spare nozzle assembly	
Spare controller fuses	
Spare abrasive hose, hose ends and O-rings	
Spare high pressure O-rings	
Spare Banjo Washers	
Pump Oil	
High flow and Low flow abrasive orifice	

**Instruction:**

- Machine administrator has the responsibility to carry out regular inspection every day before any cutting
- When the need for accountability arises, administrator use this checklist to record each items' status after inspection.

# Inspection Checklist

Documentation Inspection Checklist	
Items	Status check
Cut material SDS are available	
WAZER User manual is available	
WAZER Safety pamphlets are available	
WAZER Safety posters are available	
Medical information cards are available	
PPE, safety goggles and gloves are available	
Warning stickers are legible and intact on WAZER	

Workshop Inspection Checklist	
Item	Status check
All guardians and teachers in this group have reviewed user manual and safety pamphlet	
All student in this group have received safety training; viewed the operation video	
Personnel understand eating and drinking are prohibited near the machine	
WAZER has at least 0.4m of clearance in all directions	
Water input pressure is maintained above 35psi/2.5BAR	
All hoses are properly seated	
No water leaks around machine, along input and drain hose,	
No Cut material and scrap materials pose tripping hazards	
AC power cables are in good condition	
No extension cords or plug adapters are used	

**Instruction:**

- Machine administrator has the responsibility to carry out regular inspection every day before any cutting
- When the need for accountability arises, administrator use this checklist to record each items' status after inspection.

# Inspection Checklist

Emergency Planning and Response checklist	
Item	Status check
All personnel know where the emergency stop button, power switch, and GFCI are located and what their functions are	
All personnel know where the water shut off valve, low pressure filter canister and drain hose are located	
All personnel know where the first aid kits are located.	
All personnel know where to find the medical information cards.	
All personnel know where the nearest urgent care or emergency room is located.	
Water alarm sensors are placed, and personnel know what they sound like.	
Spill control equipment is available, and personnel are familiar with their use.	

Instruction:

- Machine administrator has the responsibility to carry out regular inspection every day before any cutting
- When the need for accountability arises, administrator use this checklist to record each items' status after inspection.