

UNIMIG



RAZOR TIG200 AC/DC
WATER COOLER

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1. Safety

Welding and cutting equipment can be dangerous to both the operator and people in or near the surrounding working area if the equipment is not correctly operated. Equipment must only be used under the strict and comprehensive observance of all relevant safety regulations.

Read and understand this instruction manual carefully before the installation and operation of this equipment.

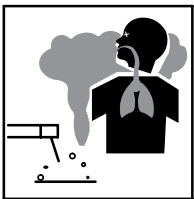
Machine operating safety

- Do not switch the function modes while the machine is operating. Switching of the function modes during welding can damage the machine. Damage caused in this manner will not be covered under warranty.
- Disconnect the electrode-holder cable from the machine before switching on the machine, to avoid arcing should the electrode be in contact with the workpiece.
- Operators should be trained and or qualified.



Electric shock: it can kill

- Touching live electrical parts can cause fatal shocks or severe burns. The electrode and work circuit is electrically live whenever the output is on. The input power circuit and internal machine circuits are also live when power is on. In MIG/MAG welding, the wire, drive rollers, wire feed housing, and all metal parts touching the welding wire are electrically live. Incorrectly installed or improperly grounded equipment is dangerous.
- Connect the primary input cable, according to Australian and New Zealand standards and regulations.
- Avoid all contact with live electrical parts of the welding/cutting circuit, electrodes and wires with bare hands.
- The operator must wear dry welding gloves while he/she performs the welding/cutting task.
- The operator should keep the workpiece insulated from himself/herself.
- Keep cords dry, free of oil and grease, and protected from hot metal and sparks.
- Frequently inspect input power cable for wear and tear, replace the cable immediately if damaged, bare wiring is dangerous and can kill.
- Do not use damaged, undersized, or badly joined cables.
- Do not drape cables over your body.
- We recommend (RCD) safety switch is used with this equipment to detect any leakage of current to earth.



Fumes and gases are dangerous

- Smoke and gas generated while welding or cutting can be harmful to people's health. Welding produces fumes and gases. Breathing these fumes and gases can be hazardous to your health.
- Do not breathe the smoke and gas generated while welding or cutting, keep your head out of the fumes.
- Keep the working area well ventilated, use fume extraction or ventilation to remove welding/cutting fumes and gases.
- In confined or heavy fume environments always wear an approved air-supplied respirator.
- Welding/cutting fumes and gases can displace air and lower the oxygen level, causing injury or death. Be sure the breathing air is safe.
- Do not weld/cut in locations near degreasing, cleaning, or spraying operations. The heat and rays of the arc can react with vapours to form highly toxic and irritating gases.
- Materials such as galvanised, lead, or cadmium plated steel, containing elements that can give off toxic fumes when welded/cut. Do not weld/cut these materials unless the area is very well ventilated, and or wearing an air-supplied respirator.



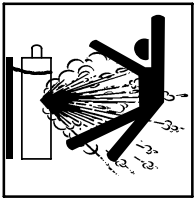
Arc rays: harmful to people's eyes and skin

- Arc rays from the welding/cutting process produce intense visible and invisible ultraviolet and infrared rays that can burn eyes and skin.
- Always wear a welding helmet with the correct shade of filter lens and suitable protective clothing, including welding gloves while the welding/cutting operation is performed.
- Measures should be taken to protect people in or near the surrounding working area. Use protective screens or barriers to protect others from flash, glare and sparks; warn others not to watch the arc.



Fire hazard

- Welding/cutting on closed containers, such as tanks, drums, or pipes, can cause them to explode. Flying sparks from the welding/cutting arc, hot workpiece, and hot equipment can cause fires and burns. Accidental contact of the electrode to metal objects can cause sparks, explosion, overheating, or fire. Check and be sure the area is safe before doing any welding/cutting.
- The welding/cutting sparks & spatter may cause fire, therefore remove any flammable materials well away from the working area. Cover flammable materials and containers with approved covers if unable to be moved from the welding/cutting area.
- Do not weld/cut on closed containers such as tanks, drums, or pipes, unless they are correctly prepared according to the required Safety Standards to ensure that flammable or toxic vapours and substances are totally removed, these can cause an explosion even though the vessel has been “cleaned”. Vent hollow castings or containers before heating, cutting or welding. They may explode.
- Do not weld/cut where the atmosphere may contain flammable dust, gas, or liquid vapours (such as petrol)
- Have a fire extinguisher nearby and know how to use it. Be alert that welding/cutting sparks and hot materials from welding/cutting can easily go through small cracks and openings to adjacent areas. Be aware that welding/cutting on a ceiling, floor, bulkhead, or partition can cause a fire on the hidden side.



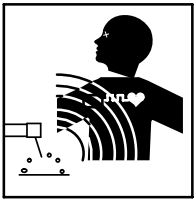
Gas cylinders

- Shielding gas cylinders contain gas under high pressure. If damaged, a cylinder can explode. Because gas cylinders usually are part of the welding/cutting process, be sure to treat them carefully. CYLINDERS can explode if damaged.
- Protect gas cylinders from excessive heat, mechanical shocks, physical damage, slag, open flames, sparks, and arcs.
- Ensure cylinders are held secure and upright to prevent tipping or falling over.
- Never allow the welding/cutting electrode or earth clamp to touch the gas cylinder, do not drape welding cables over the cylinder.
- Never weld/cut on a pressurised gas cylinder, it will explode and kill you.
- Open the cylinder valve slowly and turn your face away from the cylinder outlet valve and gas regulator.



Gas build-up

- The build-up of gas can cause a toxic environment, deplete the oxygen content in the air resulting in death or injury. Many gases use in welding/cutting are invisible and odourless.
- Shut off shielding gas supply when not in use.
- Always ventilate confined spaces or use approved air-supplied respirator.



Electronic magnetic fields

- MAGNETIC FIELDS can affect Implanted Medical Devices.
- Wearers of Pacemakers and other Implanted Medical Devices should keep away.
- Implanted Medical Device wearers should consult their doctor and the device manufacturer before going near any electric welding, cutting or heating operation.



Noise can damage hearing

- Noise from some processes or equipment can damage hearing.
- Wear approved ear protection if noise level is high.



Hot parts

- Items being welded/cut generate and hold high heat and can cause severe burns.
- Do not touch hot parts with bare hands. Allow a cooling period before working on the welding/cutting gun. Use insulated welding gloves and clothing to handle hot parts and prevent burns.

Precautions

For optimal performance and to prevent any damage to the machine, please follow these important guidelines:

Power Grid Compatibility: Prior to using the machine, ensure that the power grid matches the specifications indicated on the machine label. Connecting the machine to an incorrect power grid can result in damage to the machine's components.

Ventilation and Obstacle Clearance: Maintain a clearance of at least 0.3 meters around the water tank vent to ensure proper ventilation for the machine. Avoid placing any objects or obstacles near the vent to allow for adequate airflow.

Grounding Connection: Ensure that the ground wire is securely connected to a reliable ground source. Proper grounding is essential for the safe operation of the machine and to prevent any electrical hazards.

Selection of Coolant: Only use clean, pure, and anti-corrosive coolant for the machine, such as UNIMIG Coolant. Coolants containing impurities or corrosive substances can lead to machine damage, leakage, and operational abnormalities. It is recommended to use welding coolant for optimal performance.

Anti-Freezing Solution: When operating the machine in temperatures lower than 5 °C, it is important to add an appropriate anti-freezing solution to the coolant. This precaution helps to prevent freezing-related issues and ensures the machine functions properly.

Environmental Considerations: Do not use the machine in environments where the air contains high levels of acid, alkali, or salt. Exposure to these substances can be detrimental to the machine's components and overall performance.

Maintenance

To ensure proper functioning and longevity of the machine, it is crucial to follow these guidelines:

Water Level Observation: Before using the machine, carefully check the water level and ensure that the coolant level is not below the lowest recommended mark. This will prevent any potential issues during operation.

Internal Circuit Inspection: Regularly inspect the internal circuitry of the machine to guarantee its smooth operation. Ensure that all pipelines are connected correctly and securely. If any damaged or loose parts are detected, promptly replace them and reinforce the connections to maintain optimal performance.

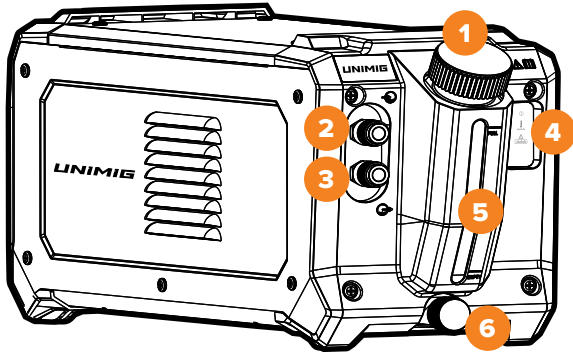
Machine Cleaning: It is important to clean the inside of the machine on a regular basis. Use suitable air pressure during the cleaning process to prevent any harm to the delicate components. By keeping the machine clean, you enhance its efficiency and prolong its lifespan.

Extended Periods of Inactivity: If the machine is not going to be used for a prolonged period, it is recommended to drain the coolant from the water tank. This precautionary step helps prevent any potential issues that may arise from stagnant coolant, ensuring that the machine is ready for use when needed.

By adhering to these guidelines, you can maximize the machine's performance, minimise the risk of damage, and extend its overall lifespan.

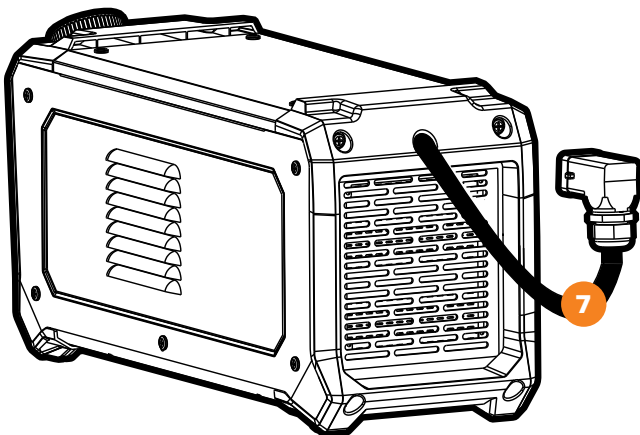
Caution: Only qualified technicians are authorized to undertake the repair of this welding/cutting equipment. For your safety and to avoid electrical shock, please observe all safety notes and precautions detailed in this manual.

2. Machine Layout



2.1 Front Panel Layout

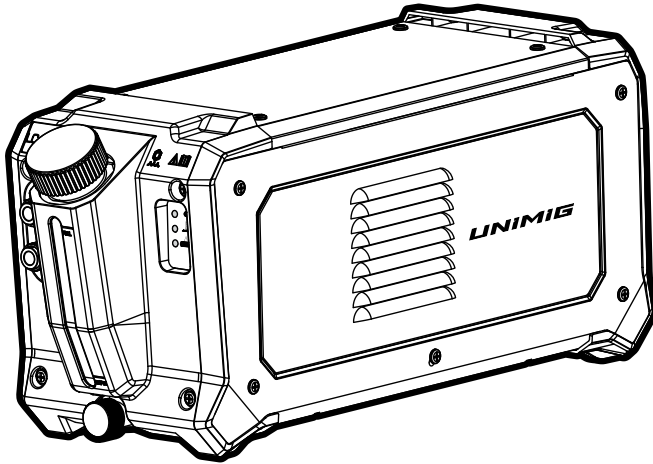
1. Screw Cap For Coolant Container
2. Coolant Return Connection (Red)
3. Coolant Flow Connection (Blue)
4. Machine Status Lights
 - i. Power LED
 - ii. Over-temperature LED
 - iii. Water Flow Error LED
5. Coolant Viewing Window
6. Drain Plug



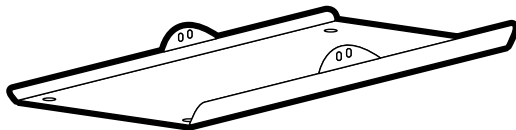
2.2 Rear Panel Layout

7. Power Cable

3. Package Contents



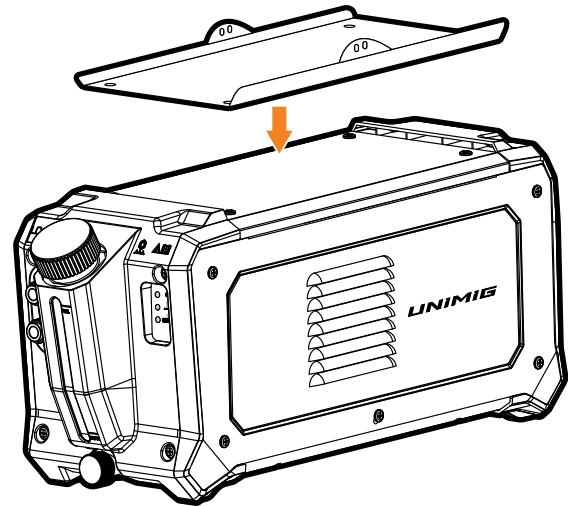
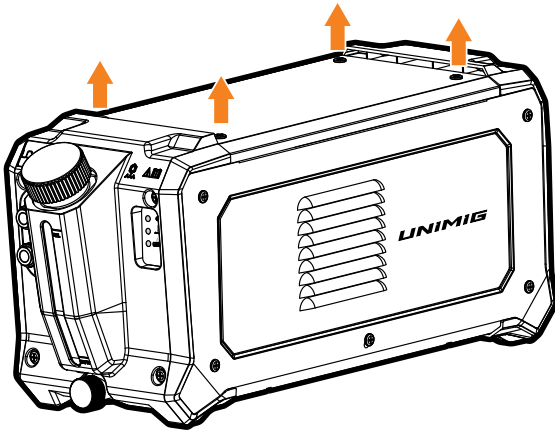
RAZOR TIG 200 AC/DC Water Cooler



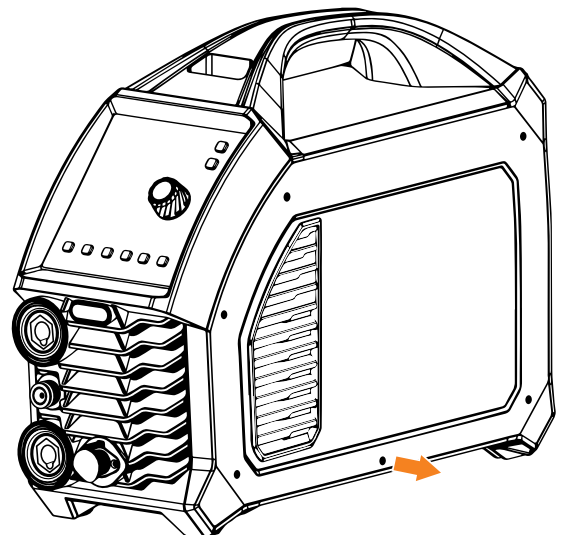
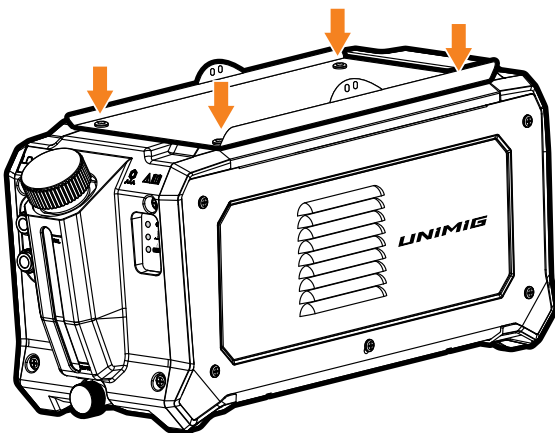
Mounting Bracket

4. Setup: Mounting The Water Cooler

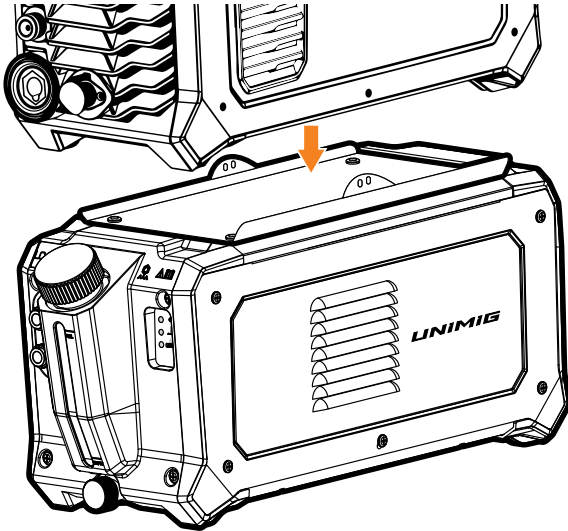
1. Remove the 4 screws from the top plate of the water cooler unit.
2. Place the mounting bracket on top of the water cooler unit.



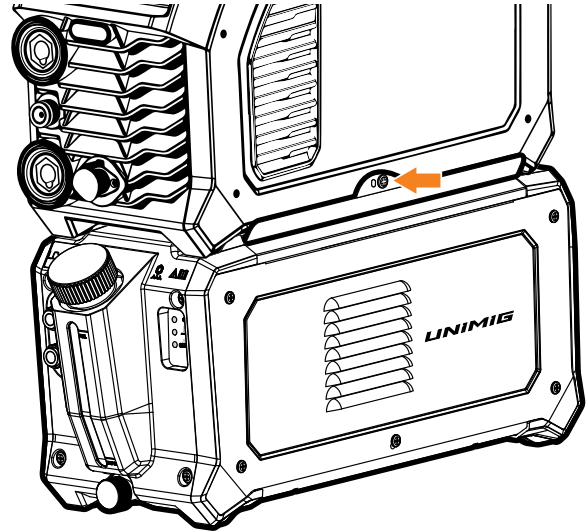
3. Fasten the previously removed screws into the corresponding holes on the mounting bracket to secure it to the water cooler unit.
4. Remove the middle screw located at the bottom of the RAZOR TIG 200 AC/DC from both sides of the unit.



5. Place the RAZOR TIG 200 AC/DC on top of the secured mounting bracket.

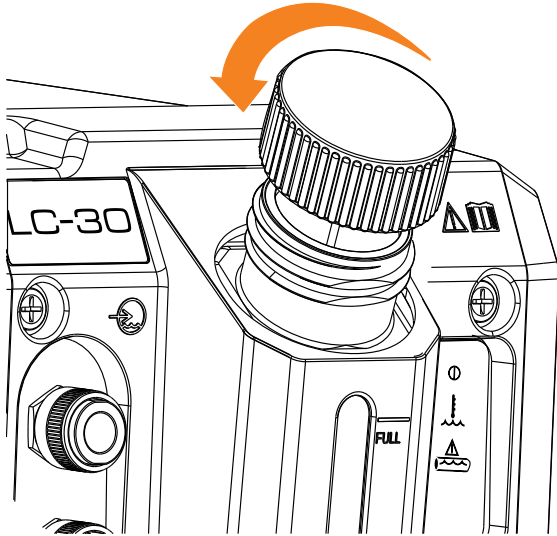


6. Fasten the previously removed screws into the corresponding holes on the mounting bracket to secure it to the water cooler unit.

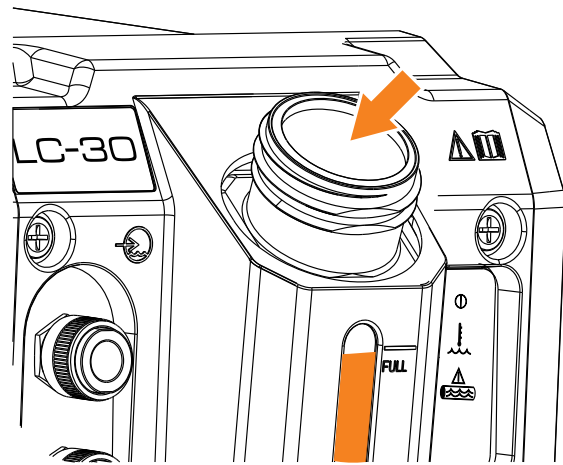


5. Setup: Using The Water Cooler

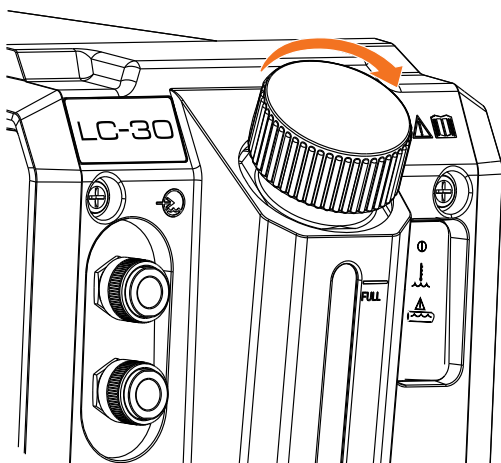
1. Unscrew the screw cap for coolant container.



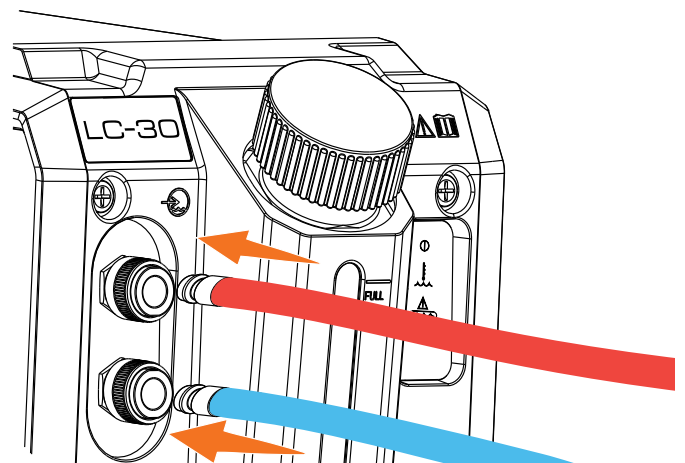
2. Pour coolant into the inlet until it reaches the 'FULL' marker on the coolant viewing window. The maximum coolant capacity of this water cooler is 3.5L. **Do not run water cooler if the coolant level is below 'EMPTY'.**



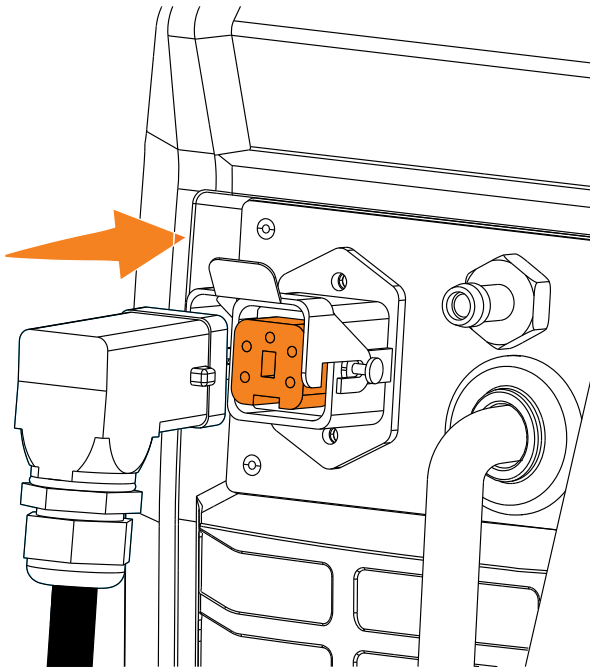
3. Fasten the screw cap for coolant container.



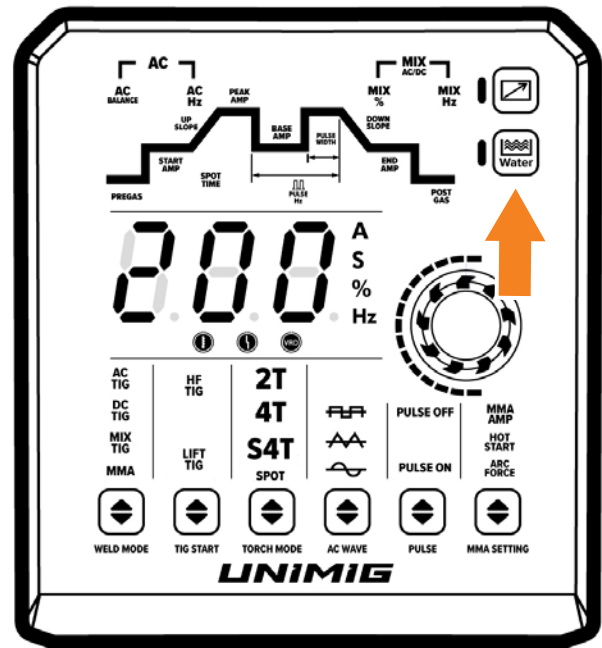
4. Connect the red coolant return cable into the red coolant connection. Connect the blue coolant flow cable into the blue coolant connection.



5. Connect the power plug into the water cooler power outlet on the back of the RAZOR TIG 200 AC/DC.



6. Once the machine is powered on and set up for welding, push the water cooler button on the RAZOR TIG 200 AC/DC to turn the water cooler unit ON.



6. Troubleshooting Guide

6.1 Power light does not light up, water pump does not work, water does not flow in the water pipe, and fan does not work.

1. **Check Power Connection:** Inspect whether the power line is correctly connected. Ensure a secure connection to the power source.
2. **Verify Input Cables:** Confirm that the input cables are properly connected to the power supply.
3. **Check Main Board Patch Cord:** Inspect if the patch cord of the main board is loose. If so, tighten it securely.

6.2 Power light lights up, water pump does not work, water does not flow in the water pipe, and fan does not work. Flow warning light lights up.

1. **Clear Fan Blockages:** Inspect if foreign objects are obstructing the fan. If found, remove them carefully.
2. **Verify Main Board Patch Cord:** Check if the patch cord of the main board is loose. If so, tighten it securely.
3. **Check Main Board Output:** Inspect if the main board is outputting DC24V. If not, it may be necessary to replace the main board.

6.3 Power light lights up, water pump does not work, water does not flow in the water pipe, and fan works properly. Flow warning light lights up.

1. **Verify Main Board Patch Cord:** Inspect if the patch cord of the main board is loose. If so, tighten it securely.
2. **Check Main Board Output:** Inspect if the main board is outputting DC24V. If not, it may be necessary to replace the main board.
3. **Inspect Water Pump Operation:** The water pump should work properly at DC24V. If it does not, it may be damaged and require replacement.

6.4 Power light lights up, water pump works properly, water flows in the water pipe, and fan does not work.

1. **Clear Fan Blockages:** Inspect if foreign objects are obstructing the fan. If found, remove them carefully.
2. **Verify Main Board Patch Cord:** Check if the patch cord of the main board is loose. If so, tighten it securely.
3. **Check Main Board Output:** Inspect if the main board is outputting DC24V. If not, it may be necessary to replace the main board.
4. **Inspect Fan Operation:** The fan should work properly at DC24V. If it does not, it may be damaged and require replacement.

6.5 Power light lights up, water pump works properly, water flows in the water pipe, and fan works properly. Flow warning light lights up.

1. **Check Internal Connections:** Inspect if internal lines are loose. If any are found, tighten them securely.
2. **Inspect Flow Switch:** Verify if the flow switch is functioning correctly. When water flows in the water pipe, the flow switch should be open. If abnormalities are detected, consider replacing the flow switch.
3. **Check Coolant for Impurities:** Impurities in the coolant can cause flow switch breakdown or damage. If impurities are present, please replace the flow switch.

6.6 Power light lights up, water pump works properly, water flows in the water pipe, and fan works properly. Temperature warning light lights up.

- 1. Check Operating Power:** Inspect if the operating power exceeds the cooling power. Do not exceed the recommended cooling power limits. If the water temperature is too high, allow it to decrease before reusing the machine. The temperature warning light will turn off once the temperature falls within the acceptable range.
- 2. Verify Internal Connections:** Inspect if any internal lines are loose. If any are found, tighten them securely to ensure proper electrical connections.
- 3. Inspect Temperature Switch:** Check the temperature switch for normal operation. If the water temperature exceeds the maximum threshold of the temperature switch, it will close. If the water temperature falls below the minimum threshold, it will open. If there are any issues with the temperature switch, consider replacing it to maintain accurate temperature control.

6.7 Leakage is observed.

- 1. Reconnect and Tighten Joints:** If water is leaking from a joint, carefully reconnect and tighten it to ensure a secure and watertight connection.
- 2. Replace Corroded Condenser and Coolant:** If the condenser pipe is leaking water due to corrosion, replace the condenser. Additionally, replace the coolant with a non-corrosive alternative to prevent further damage.
- 3. Replace Faulty Water Pump:** If the water pump is leaking water, it is necessary to replace it. A leaking water pump can affect the performance and efficiency of the machine.
- 4. Replace Leaking Coolant Tank:** If water leakage is observed from the coolant tank, it is recommended to replace the tank to maintain proper functioning and prevent any hazards.
- 5. Replace Leaking Pulsation Damper:** In the case of water leakage from the pulsation damper, it is necessary to replace the damper to ensure optimal performance and prevent any potential issues.

NOTES

A series of horizontal dotted lines for taking notes.

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