UNIMIG RAZOR

CUT80 AIR COMPRESSOR

U11165 | Operating Manual

Contents

1. Safety

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 for all system components, especially the safety instructions and warning notices before the installation and operation of this equipment.

Product specifications and features are subject to change without notice. While every effort has been made to provide accurate and current information at the time of publication, this manual is intended as a general guide and is not exhaustive regarding safety, cutting, or the operation and maintenance of this unit. Due to the many variables in the welding field and the evolving nature of both the field and the UNIMIG product line, Welding Guns of Australia Pty Ltd. does not guarantee the accuracy, completeness, authority, or authenticity of the information in this manual or provided by any UNIMIG employee during conversations or business dealings. The product owner assumes all liability for its use and maintenance. Welding Guns of Australia Pty Ltd. does not warrant this product or this document for fitness for any particular purpose, performance, accuracy, or suitability of application. Furthermore, Welding Guns of Australia Pty Ltd. accepts no liability for injury or damages, whether consequential or incidental, resulting from the use of this product or from the content of this document, nor does it accept third-party claims of such liability.

Note:

- Observe the accident prevention regulations and any regional regulations.
- Safety and warning labels on the machine indicate any possible risks.
- Keep these labels clean and legible at all times.
- Technical changes due to further development in machine technology may lead to different welding behaviour.

Items in the manual that require particular attention in order to minimise damage and harm are indicated with the below symbols. Read these sections carefully and follow their instructions.

Note: Gives the user a useful piece of information.

Caution: Describes a situation that may result in damage to the equipment or system.

Warning: Describes a potentially dangerous situation. If not avoided, it will result in personal damage or fatal injury.

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.
- Only qualified persons should install, operate, maintain, and repair this equipment.
- During operation, keep everyone, especially children, away.

Electric Shock

Electric shock 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. 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 cutting circuit, such as sockets and electrodes with bare hands.
- The operator must wear dry, hole-free welding gloves and body protection while they perform the cutting task.
- The operator should keep the workpiece insulated from themselves.
- Keep cords dry, free of oil and grease, and protected from hot metal and sparks.
- Frequently inspect input power cable for wear and tear, and replace the cable immediately if damaged. Bare wiring is dangerous and can kill.
- Do not use damaged, undersized, or badly joined cables.
- Do not cut in the rain or in wet, moist, or damp areas.
- Do not drape cables over your body.
- Disconnect power source before servicing or maintaining this equipment.
- We recommend an RCD safety switch is used with this equipment to detect any leakage of current to earth.

DC voltage remains in the inverter power source after the removal of input power.

Arc Rays

Arc rays are harmful to your eyes and skin. Arc rays from the cutting process produce intense visible and invisible ultraviolet and infrared rays that can burn eyes and skin.

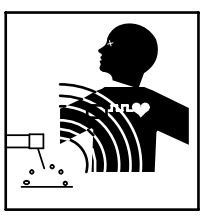
- Always wear an approved welding helmet with the correct shade of filter lens and suitable protective clothing, including welding gloves, while the cutting operation is performed.

Recommended filter shades for plasma cutting

Less than 20 amps	4
20 to 40 amps	5
40 to 60 amps	6
60 to 80 amps	8
80 to 300 amps	8

**Use one shade darker for aluminium.*

- Wear safety glasses under your helmet.
- 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.
- Wear proper PPE and body protection made from durable, flame-resistant materials like leather.



Electro Magnetic Fields (EMF)

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 plasma cutting.

Fire Hazard

Cutting on closed containers, such as tanks, drums, or pipes, can cause them to explode. Flying sparks from the cutting arc, hot workpiece, and hot equipment can cause fires and burns. Accidental contact of the electrode with metal objects can cause sparks, explosions, overheating, or fire. Check and be sure the area is safe before doing any cutting.

- Remove any flammable materials well away from the working area. Cover flammable materials and containers with approved covers if they cannot be moved from the area.
- Do not cut on closed containers or containers that have held combustible materials, 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 cutting. They may explode.
- Do not 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 cutting sparks and hot materials from cutting can easily go through small cracks and openings to adjacent areas.
- Be aware that cutting on a ceiling, floor, bulkhead, or partition can cause a fire on the hidden side.
- Avoid cutting on tyre rims or wheels, as heating can cause tyres to explode and repaired rims may fail.
- Attach the earth clamp as close as possible to the cutting area to minimise the risk of electric shock, sparks, and fire hazards caused by the cutting current travelling through long or unknown paths.
- Before cutting, remove any combustible items, like butane lighters or matches, from your person.
- Post cutting, thoroughly inspect the area to ensure there are no lingering sparks, glowing embers, or flames.
- Always use the correct fuses or circuit breakers, and don’t oversize or bypass them.
- Wear proper PPE and body protection made from durable, flame-resistant materials like leather.
- Read and understand the Safety Data Sheets (SDSs) and the manufacturer’s instructions for adhesives, coatings, cleaners, consumables, coolants, degreasers, fluxes, and metals.

Hot Parts

Hot parts can burn. Items being welded can 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 equipment.
- Use the proper tools and insulated welding gloves and clothing to handle hot parts and prevent burns.

Noise Hazards

The noise from some processes or equipment can damage hearing.

- Wear approved ear protection if the noise level is high.

Fumes & Gases

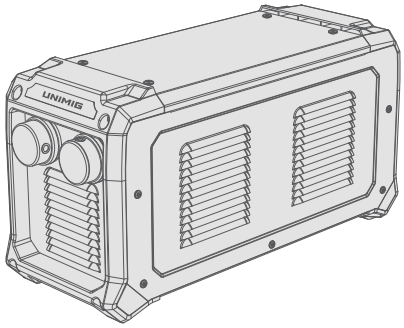
Fumes and gases are dangerous. Welding produces fumes and gases and breathing these fumes and gases can be hazardous to your health.

- Do not breathe the smoke and gas generated while cutting. Keep your head out of the fumes.
- Keep the working area well-ventilated and use fume extraction or ventilation to remove cutting fumes and gases.
- In confined or heavy fume environments, always wear an approved air-supplied respirator.
- 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 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 contain elements that can give off toxic fumes when cut. Do not cut these materials unless the coating is removed, or the area is very well-ventilated and/or you are wearing an air-supplied respirator.
- Read and understand the Safety Data Sheets (SDSs) and the manufacturer's instructions for adhesives, coatings, cleaners, consumables, coolants, degreasers, fluxes, and metals.

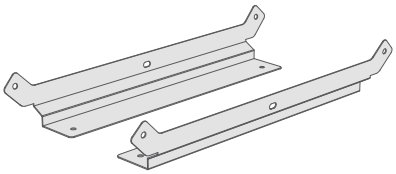
PLEASE NOTE that under no circumstances should any equipment or parts be altered or changed in any way from the standard specification without written permission given by UNIMIG.

To do so will void the warranty.

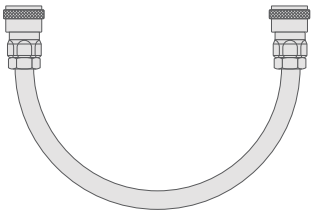
5. Package Contents



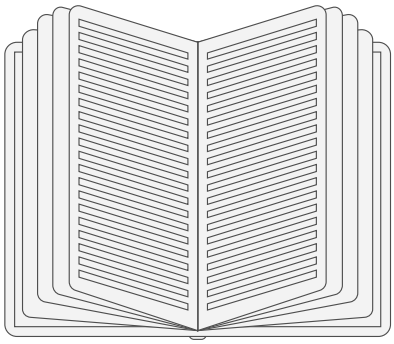
RAZOR CUT 80 Air Compressor



Air Compressor Mounting Brackets



Air Hose



Manual

6. Technical Specifications

6.1 Compressor Specifications

Technical Data

Parameter	Values
SKU	U11165
Rated Power	1500 Watts ±4%
Rated Air Pressure (MPa)	0.4
Maximum Instantaneous Working Pressure (MPa)	0.7
Protection Class	IP20
Warranty (Years)	2

Size & Weight

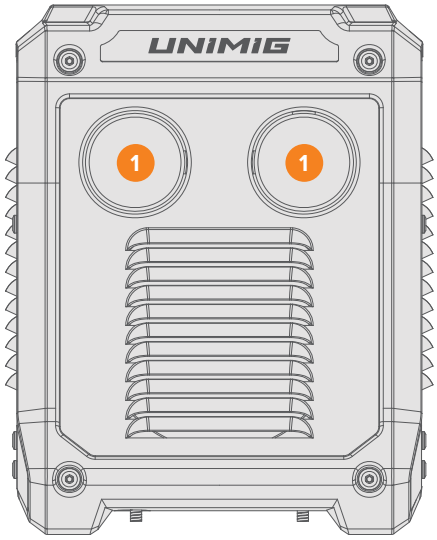
Parameter	Values
Dimensions (mm)	233x144x215
Weight (kg)	20kg

6.2 Equipment Identification

Serial Number

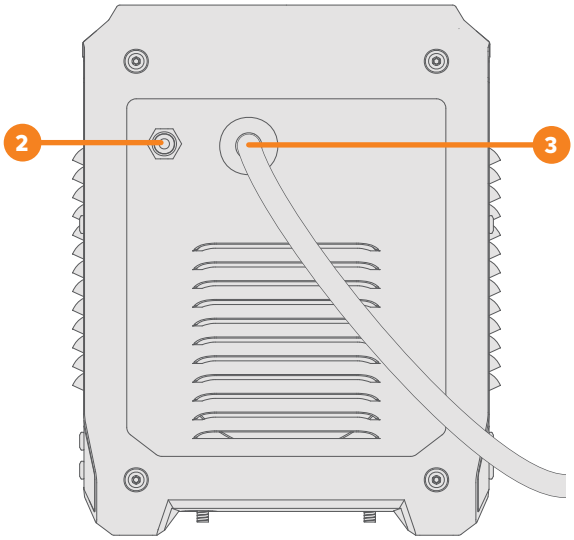
The serial number of the device is marked below the data plate on the underside of the machine. It is important to make correct reference to the serial number of the product when ordering spare parts or making repairs, for example.

6.3 Air Compressor Layout



Front Panel Layout

1. Air Filter Covers



Back Panel Layout

2. Air Inlet

3. Power Cable

7. Installation

Don’t connect the equipment to the wall socket/mains supply before the installation is complete.

Don’t modify the equipment in any way except for the changes and adjustments covered in the manufacturer’s instructions.

This air compressor should only be used with UNIMIG machines and strictly for its designated purpose. Misuse or use beyond these guidelines is not permitted and any damage or errors resulting from such misuse will not be covered by the manufacturer.

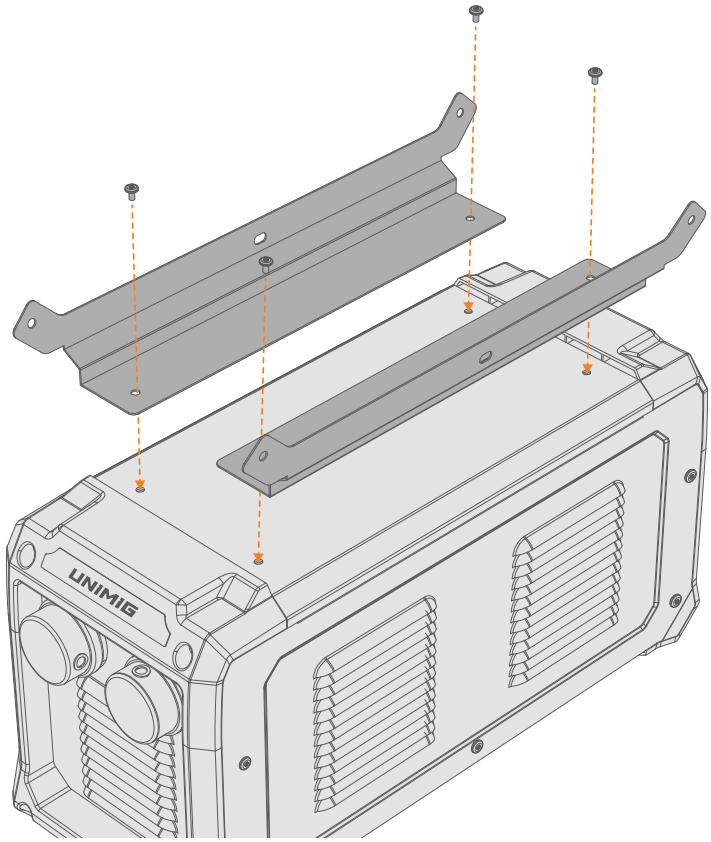
Place the machine on a horizontal, stable and clean ground. Check that there is enough space for cooling air circulation in the machine’s vicinity. Don’t cover the machine’s ventilation as it could overheat.

Tools needed:

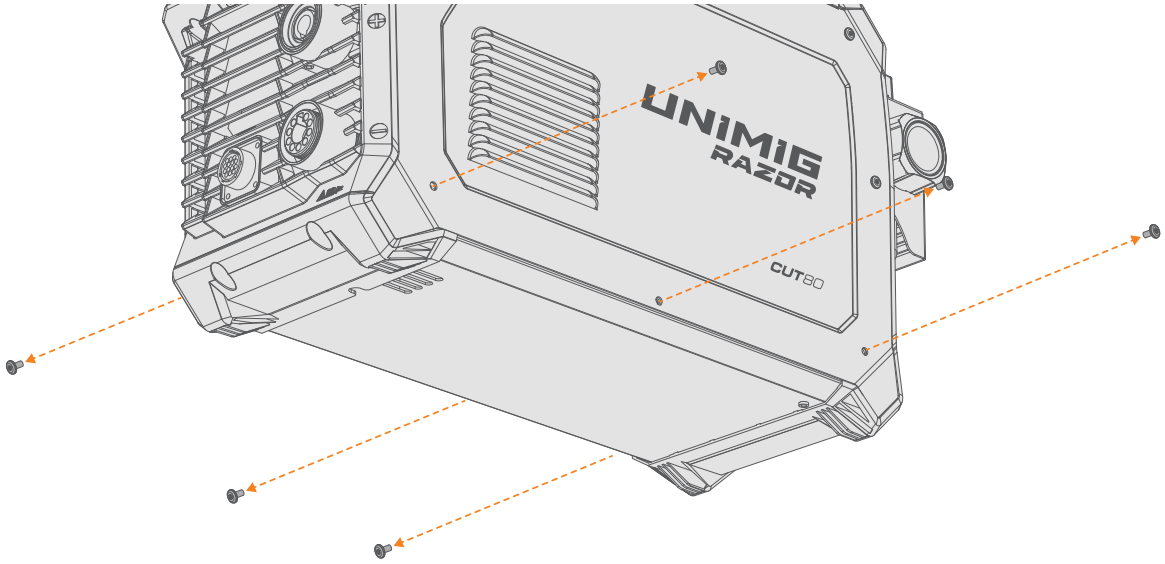
- **Phillips Head Screwdriver**

7.1 Installing the Machine on the Air Compressor

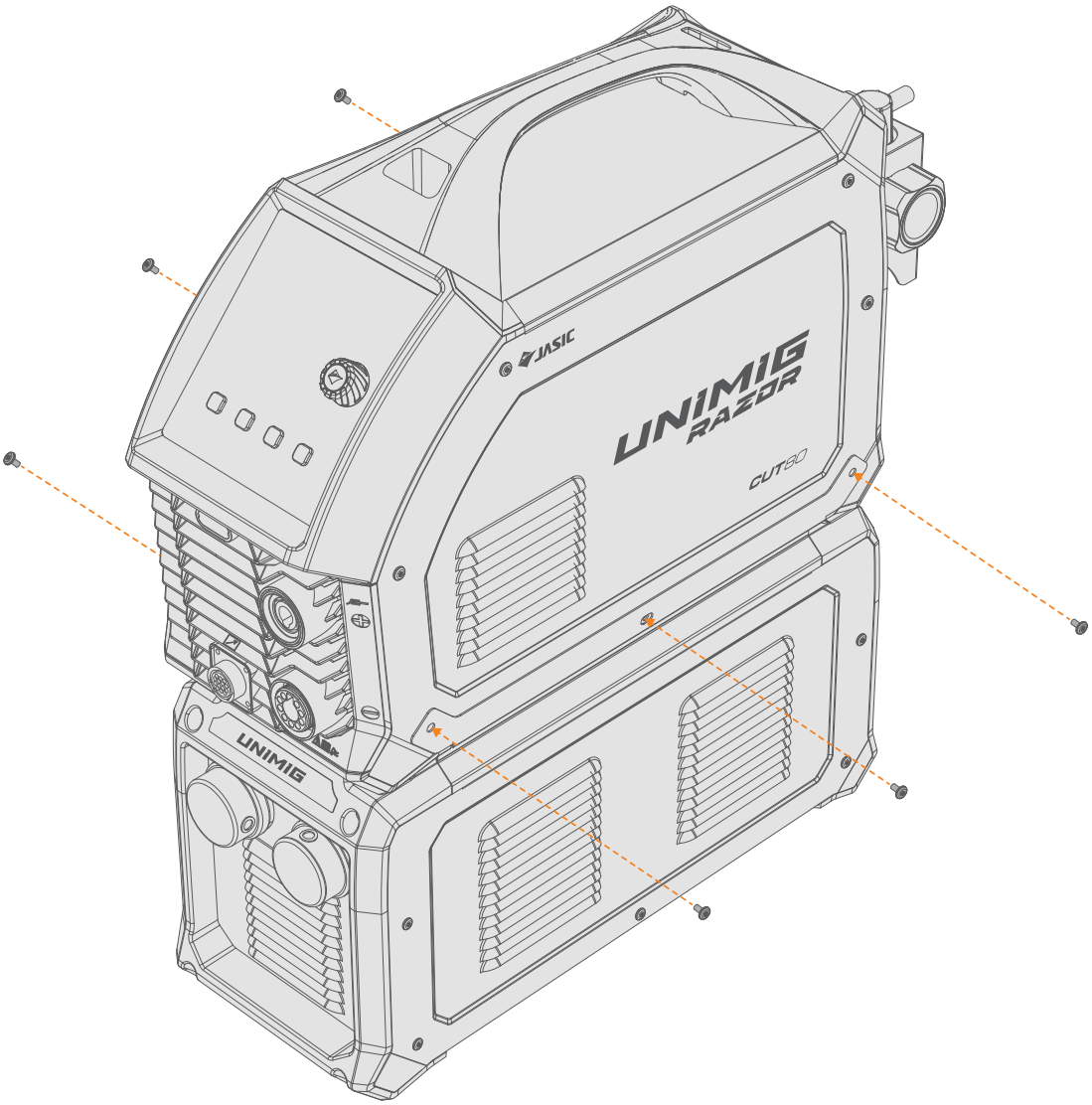
1. Attach the two mounting brackets to the top of the water cooler.



2. Unscrew the three screws at the bottom of the RAZOR CUT 80.

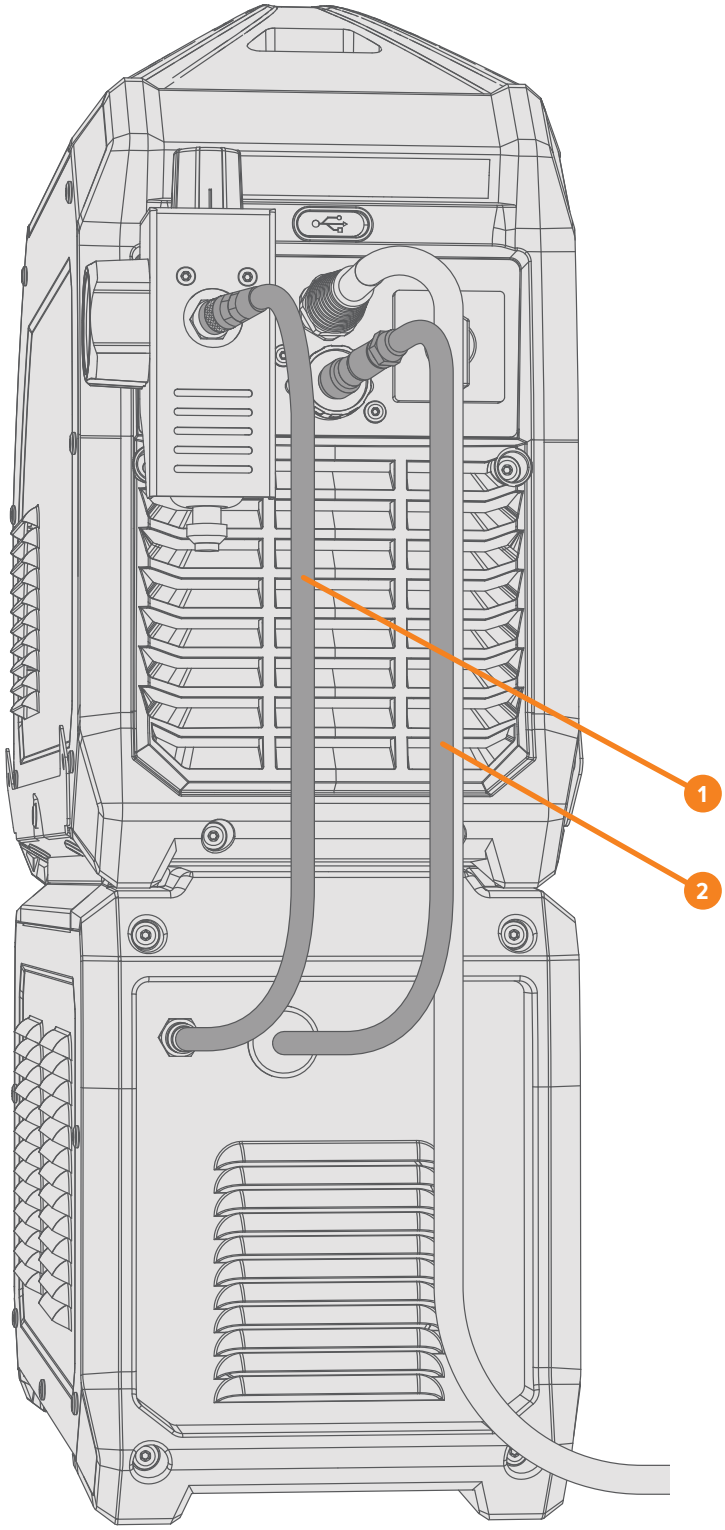


3. Place the machine on top of the air compressor and replace the screws via the mounting points.



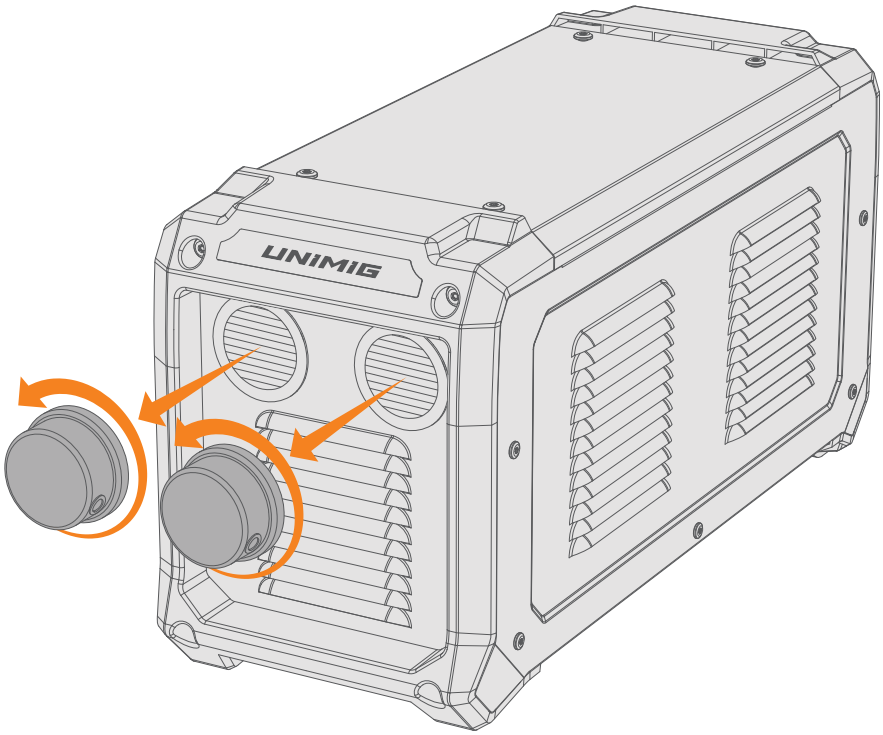
7.2 Connecting the Air Compressor

1. Connect the air hose to the air regulator on the back of the machine.
2. Connect the power plug into the connection port on the back of the machine.

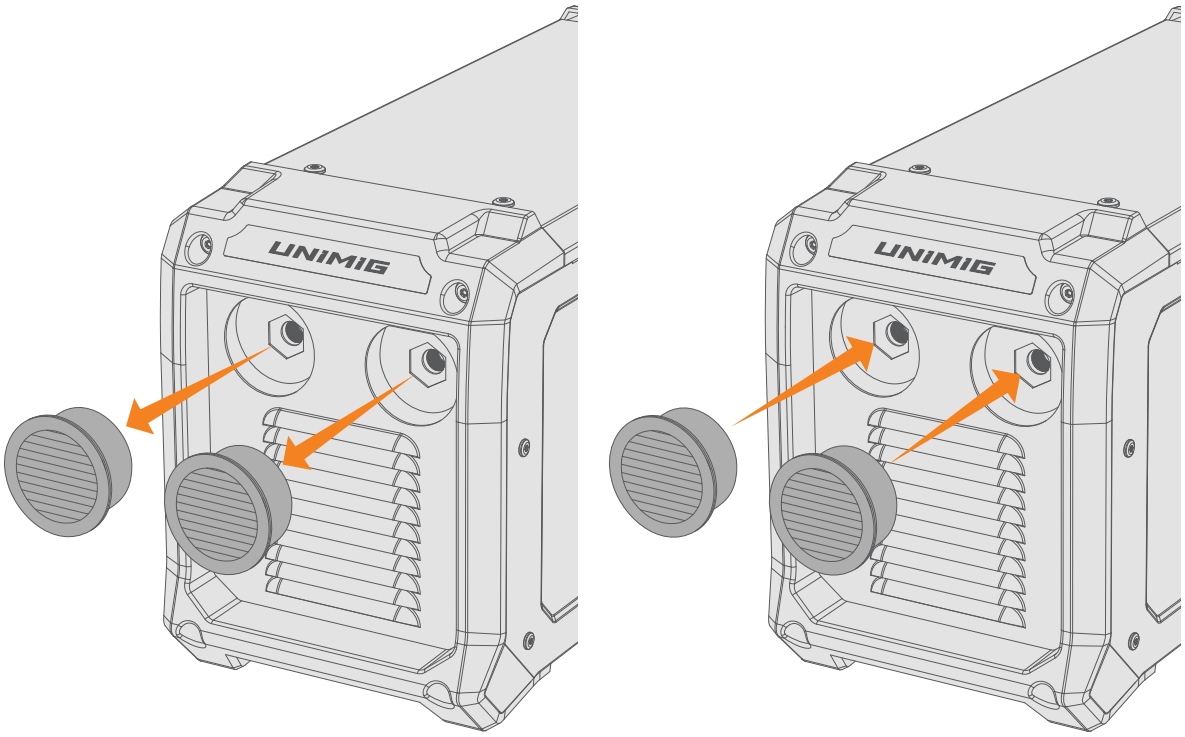


7.3 Replacing the Air Filters

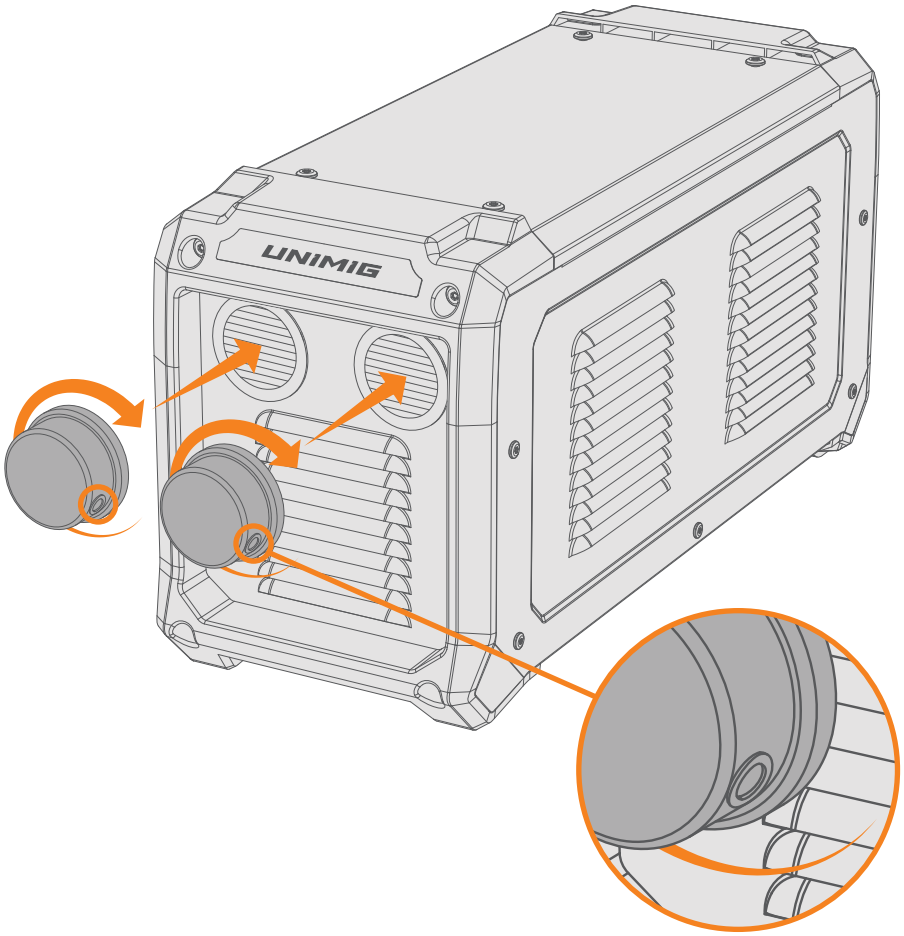
1. Unscrew the filter covers from the front of the machine.



2. Remove the old air filters from the machine and replace them with new filters.



3. Screw the filter covers back on, with the inlet holes pointed downwards.



8. Operation

Preparing for Operation

Before using the equipment, ensure that all the necessary installation actions have been completed according to your equipment setup and instructions.

Operating the Air Compressor

1. Ensure that the air compressor is plugged into the machine.
2. Press the Air Mode button and select Internal Air to use air from the connected module.

9. Maintenance

How often the machine is used and the working environment it is in should both be considered when planning the frequency of maintenance. In severe conditions, maintenance should occur more frequently.

Proper operation of the machine and regular preventive maintenance will help avoid equipment failure, increase the life-span of the machine and ensure problem-free cutting.

⚠ **Turn the machine off and unplug it from the mains before beginning any maintenance.**

Before each use, check your air hose, air filters, earth clamp and cable, and power cable are in good condition. Check that all connections are properly fastened. Any loose connections can inhibit cutting performance and cause damage.

Check that all covers and components are intact.

Check the consumables are installed properly and not worn.

Check all electrical cables and connections every 6 months.

Clean any oxidised connections and tighten them.

Clean dirt and dust from the outside and inside of the unit with a vacuum cleaner and soft brush.

ⓘ **Do not use any pressure-washing devices. Do not use compressed air, the pressure may pack the dirt even more tightly into components.**

⚠ **Only authorised electricians or service repair agents should carry out repairs and internal servicing.**

For repairs, contact UNIMIG at unimig.com.au or contact your local dealer.

10. Troubleshooting

ⓘ **The issues and potential reasons outlined are not exhaustive but indicate common scenarios that might arise with regular use of the machine.**

10.1 Machine Troubleshooting

Problem	Recommended Actions
The machine does not power up	• Check that the power cable is plugged in properly. • Check that the mains switch of the power source is at the ON position. • Check that the mains power distribution is on. • Check the mains fuse and/or the circuit breaker.
The machine stops working	• The torch may have overheated. Wait for it to cool down. • Check that none of the cables are loose. • The power source may have overheated. Wait for it to cool down and see that the cooling fans work properly and the air flow is unobstructed.

10.2 Plasma Troubleshooting

Problem	Recommended Actions
The arc doesn't ignite	• The air pressure may be incorrect, check and adjust the air pressure to 75psi (0.5MPa/5bar). • Check that the torch consumables are installed properly. • Check that the torch leads are correctly connected to the machine. • Check that the earth clamp is properly connected to a clean, dry area of the workpiece.
The temperature lamp is on, and the arc doesn't ignite	• The power source is overheated. Wait for it to cool down and see that the cooling fans work properly and the airflow is unobstructed.
The arc stops while cutting and won't restart	• The power source may have overheated. Wait for it to cool down and see that the cooling fans work properly and the airflow is unobstructed. • Check the torch consumables for wear and replace any that are worn.
The arc doesn't transfer to the workpiece	• Check that the earth clamp is properly connected to a clean, dry area of the workpiece and replace if damaged. • The pierce height distance may be too large. Move the torch closer to the workpiece and start the arc again.
The arc is hard to start	• Check the torch consumables for wear and replace any that are worn.
The arc sputters and hisses	• The air pressure may be incorrect, check and adjust the air pressure to 75psi (0.5MPa/5bar). • Check that the torch consumables are installed properly. • Check the air hose line for moisture. Replace or install additional air filtration to the power source *(See "7.3 Replacing the Air Filters" on page 13).*
The arc blows out but re-ignites when the torch trigger is pressed again	• Check the torch consumables for wear and replace any that are worn. • The air pressure may be incorrect, check and adjust the air pressure to 75psi (0.5MPa/5bar).
Low cutting output	• The amperage may be incorrect, adjust the amperage.
No airflow	• Check that the air compressor is connected properly and that the air pressure is correct, adjust the air pressure to 75psi (0.5MPa/5bar).
The torch does not cut completely through the workpiece	• Check that gouging consumables aren't installed instead of cutting consumables. • The air pressure may be incorrect, check and adjust the air pressure to 75psi (0.5MPa/5bar). • Remove materials like paint, grease, oil, and dirt, including mill scale, from the base metal. • Check the torch consumables for wear and replace any that are worn. • Check that the earth clamp is properly connected to a clean, dry area of the workpiece and replace if damaged. • The amperage may be too low, increase the amperage. • The metal being cut is too thick for the maximum capacity of the machine. • The cut speed may be too fast. Reduce the cut speed.
Dross forms on the bottom of the cut	• The air pressure may be incorrect, check and adjust the air pressure to 75psi (0.5MPa/5bar). • Check the torch consumables for wear and replace any that are worn. • The cut speed may be incorrect. Adjust the cut speed. • The amperage may be too low, increase the amperage.
The cut angle is not square	• The torch is not square to the workpiece. • The air pressure may be incorrect, check and adjust the air pressure to 75psi (0.5MPa/5bar). • Check the torch consumables for wear and replace any that are worn. • The direction of travel may be incorrect. • The torch height from the workpiece may be incorrect. • The cut speed may be incorrect. Adjust the cut speed.

Problem	Recommended Actions
The cut is poor quality	• The amperage may be too low, increase the amperage. • The cut speed may be incorrect. Adjust the cut speed. • Check the air hose line for moisture. Replace or install additional air filtration to the power source *(see "7.3 Replacing the Air Filters" on page 13)*. • The metal being cut is too thick for the maximum capacity of the machine. • Check that gouging consumables aren't installed instead of cutting consumables. • Check the torch consumables for wear and replace any that are worn. • The air pressure may be incorrect, check and adjust the air pressure to 75psi (0.5MPa/5bar). • Check the air hose line for moisture. Replace or install additional air filtration to the power source *(see "7.3 Replacing the Air Filters" on page 13)*. • Check that the machine in is the correct cutting mode *(see "Operating the Air Compressor" on page 15)*.
The consumable life is shorter than expected	• The air pressure may be incorrect, check and adjust the air pressure to 75psi (0.5MPa/5bar). • The amperage, travel speed, and other variables may be incorrect for the material being cut. • The pierce height distance may be too large. Move the torch closer to the workpiece. • Check the air hose line for moisture. Replace or install additional air filtration to the power source *(see "7.3 Replacing the Air Filters" on page 13)*.

11. Recommended Accessories

RAZOR CUT 45/80 Air Compressor Filter

U14010

Plasma Cutter Air Filter

50500

UNIMIG

BUILT FOR WELDERS

100%
AUSTRALIAN
OWNED

unimig.com.au

@UNIMIG