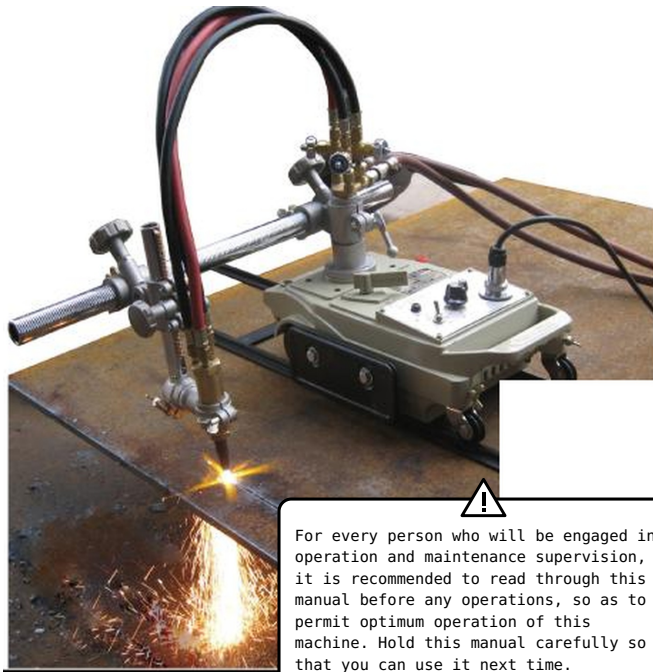


OPERATING INSTRUCTIONS



For every person who will be engaged in operation and maintenance supervision, it is recommended to read through this manual before any operations, so as to permit optimum operation of this machine. Hold this manual carefully so that you can use it next time.

UNITRACK-45K Gas Cutter

Cruxweld Industrial Equipments Pvt. Ltd. · 5, Sector 29, Faridabad - 121008 (Haryana), India
Phone: +91 8800 882 983 | Email: sales@cruxweld.com | Website: www.cruxweld.com

Foreword

Thank you very much for buying this product. We sincerely remind you that you can use the device correctly, safely and effectively by reading the operation manual carefully. In the workplace, cooperation between colleagues is essential for safe and smooth operation. That cooperation must also be based on familiarity with the safe operation of the device. As you read, you should first understand how to operate and maintain the device. Therefore, be sure to read this operation manual. Understand and observe all pre-operation safety precautions.

Safety precautions before operation

The product is designed to be safe, but it can still cause serious accidents if it is not operated correctly. Operation and maintenance personnel must read this manual carefully before operating, checking and maintaining the device. Keep the manual near the unit so that the operator can refer to it if necessary.

- Do not operate the machine without following the instructions.
- Do not operate the machine until you fully understand the instructions.
- If you do not understand any of the instructions, please contact our company or sales service department.
- Keep the instructions with you and read them again and again until you fully understand them.
- If the manual is lost or damaged, order a new one from our company or sales service department.
- When the device is sold on to another person, it must be accompanied by this manual.

Qualification of the machine operator

The operation and maintenance personnel of the device must be able to fully understand the contents of the operation manual and must hold one of the following qualifications:

1. Gas welding foreman permit.
2. Completion certificate of a gas welding training course.
3. Qualification certificate recognised by the labour authority.

UNITRACK-45K Gas Cutting Machine (trolley cutting machine)

Symbol	Meaning	Explanation
	General	General precautions, warnings and hazards.
	Be careful of your hands.	If you reach into the opening, you could injure your fingers.
	Caution: beware of electric shock.	Electric shock can occur under certain conditions.
	Grounding device.	The operator must earth the device through a safety ground terminal.
	Remove the power plug from the socket.	In case of failure or lightning, the operator must remove the power plug from the socket.
	Precautions against explosion.	Explosions may occur under certain conditions.
	General prohibition	General warning.
	Beware: overheating!	Under certain conditions the high temperature may cause personal injury.
	Caution: flammable!	May ignite under certain conditions.

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1 Safety instructions

Many accidents are caused by disregard of the basic safety rules when operating, checking and maintaining machines. Therefore, before operating, checking and maintaining the machine, carefully read, understand and observe the safety measures and precautions given in this operation manual and on the machine.

The safety messages on the safety labels of the device are classified as follows:

WARNING

Used as a warning reminder and on warning labels where personal injury or a serious accident may occur.

CAUTION

Used as a warning and on labels where minor personal injury or damage to the device is likely to occur. It is also used as a warning against risky operations.

NOTICE

Such labels alert operators and maintenance engineers to precautions where the device and the surrounding facilities and equipment may be damaged.

1.1 General safety precautions before operation of the machine

Read and fully understand the following important safety instructions:

1.1.1 Machine safety

1. In order to reduce the weight, the machine shell is mostly made of aluminium alloy. Aluminium alloy is not designed to withstand large impacts, so be careful not to drop heavy objects on the machine and not to drop the machine when moving it.
2. Tighten the hoses to the cutting torch and the distributor using a spanner. After tightening, be sure to use a test solution to check and confirm that there is no gas leakage. If a leak is found, tighten the nut firmly again.
3. When installing the cutting nozzle on the cutting torch, tighten the nuts with two spanners. Avoid damaging the taper of the cutting nozzle, to prevent backfiring.
4. Do not dismantle the machine except during maintenance and inspection; otherwise a fault will occur.
5. Do not modify the machine, as it is very dangerous to do so.
6. Be sure to cut off the power when the machine is not in use.
7. Do not use the machine in a damp environment; otherwise the machine will malfunction and cause electric shock, resulting in serious injury.

1.1.2 Safety clothing

1. Wear protective equipment (protective gloves, goggles, face mask and safety shoes) during operation.
2. It is forbidden to operate the machine when clothes or hands are wet, in order to avoid electric shock and injury.

3. Check whether the speed control knob is in the "0" position before switching on the power.
 4. Before operating the machine, check whether the surrounding environment is safe, to avoid accidents.
 5. While the flame is being preheated, do not move the machine.
 6. When using guide rails to cut straight lines, clean any debris out of the guide groove first. Otherwise it will affect the machine's travel and thus the cutting quality.
 7. Be careful not to bruise or knock the track.
 8. As the track is made of manganese steel, it has a certain elasticity and wear resistance. Do not bend the track forcibly; if the bending strength of the track is exceeded, it will not be able to recover.
 9. When cutting along a straight line, be sure to tighten the positioning screws of the universal wheel.
 10. Be careful not to drop the machine and the cut steel when a large-circle cut is about to finish.
 11. When cutting circles or arcs, loosen the positioning screws of the universal wheel so that the universal wheel can rotate freely.
 12. Direction change switch:
 - The direction switch on the machine is used for forward/backward conversion in straight cutting, or for clockwise/anticlockwise conversion in circular cutting. Check the running direction or the direction of the knob before cutting.
 - When changing the direction of operation, the drive knob should be returned to the stop position. Wait until the machine stops completely before changing direction.
- Note: Before switching on the power switch, be sure to check whether the drive knob is in the stop position.** If the drive switch is in the ON position, it is dangerous to start the machine.
13. When the machine is running, do not touch the rotating parts (driving wheel), to avoid accidents.
 14. Prevent the machine from being knocked during the cutting operation.
 15. Connect the gas hoses properly.
 16. When checking machine operation before work and during cutting positioning, be sure to close the preheating oxygen valve and the fuel gas valve.
 17. After cutting, the cutting nozzle, cutting torch, moving seat and butterfly screws will be very hot. Wear gloves when touching them.
 18. If the machine is dropped, its service life will be shortened, and the resulting valve damage will lead to gas leakage.
 19. Do not pull the power cable forcibly.
 20. Do not place the machine directly in sand or mud.
 21. Do not leave the machine unattended while it is running.
 22. Always coil the hoses properly to prevent danger.
 23. When the fuse blows frequently, do not fit a higher-current fuse until the cause of the fault has been determined.

You must hold the machine by its handle when carrying it, not by any other part of the machine.

1.1.4 Precautions before operating the electrical system

1. Before operation, the input voltage of the machine must be checked. The input voltage should be within $\pm 10\%$ of the rated voltage.
2. The metal plug is threaded, so it must be fully tightened to prevent it from loosening during operation.
3. The rubber-sheathed insulated cable of the machine must be earthed.
4. **In the following circumstances the operation must be stopped and the power supply cut off , and a qualified electrician must be asked to repair the device:**
 1. Cable rupture or wear.
 2. The machine leaks, or liquid damages the machine.
 3. The machine still operates abnormally although it is being operated according to the instructions.
 4. The device is damaged.
 5. The machine performs poorly and needs to be repaired.
5. Check the electrical system regularly.

1.1.5 Precautions before maintenance and inspection

1. Maintenance and inspection work must be completed by qualified electrical personnel.
2. Disconnect the power plug before checking and servicing the machine.
3. Maintain the machine regularly.

1.2 Safety precautions before cutting operation

Strictly follow the safety rules and precautions before operation to ensure the safety of the cutting operation. Operators and managers must keep the word "safety" in mind.

1.2.1 To prevent explosion

1. Do not cut high-pressure cylinders or sealed containers.
2. When cutting, ensure good ventilation to prevent air pollution.

1.2.2 Safety precautions before operating the pressure regulator

1. Before starting operation, check that all pressure regulators are working properly.
2. Ask skilled maintenance engineers to carry out maintenance and inspection.
3. Do not use leaking or faulty pressure regulators.
4. Do not use pressure regulators smeared with oil or grease.

1.2.3 Safety precautions before operating high-pressure gas cylinders

1. Do not use cracked or leaking cylinders.
2. Place the cylinder vertically and take measures to prevent it from tipping over.
3. Gas cylinders should only be used for their specified purpose.
4. Do not use pressure regulators smeared with oil or grease.
5. Gas cylinders should be kept away from heat sources, sparks, slag and open flames.

6. If the cylinder valve does not open, contact the distributor. Never use a hammer, spanner or other tool to force the valve open.

1.2.4 Safety precautions before operating the hoses

1. Oxygen hoses may only be used to deliver oxygen.
2. Replace any hose that has cracks or that is damaged by sparks, heat sources or open flames.
3. Do not kink the hose when installing it.
4. Take special care during operation to avoid hose rupture.
5. Do not pull the hose when moving the machine.
6. Check the hoses periodically for damage, gas leakage, ageing or loose connections, to ensure safety.
7. Keep the hose as short as possible. A short hose reduces hose damage, pressure drop and resistance to gas flow.

1.2.5 Precautions for fire safety before operation

Before cutting, safety measures should be taken to prevent fire. Neglect of hot metal, sparks and slag can lead to a fire.

1. Prepare fire extinguishers, sand for fire fighting, buckets filled with water and so on at the cutting site.
2. Do not store flammable material in the cutting area, to prevent it being ignited by flying sparks.
3. After cutting a steel plate, be sure to cool hot cut parts or waste before moving them near combustible material.
4. Do not cut containers with flammable residues.

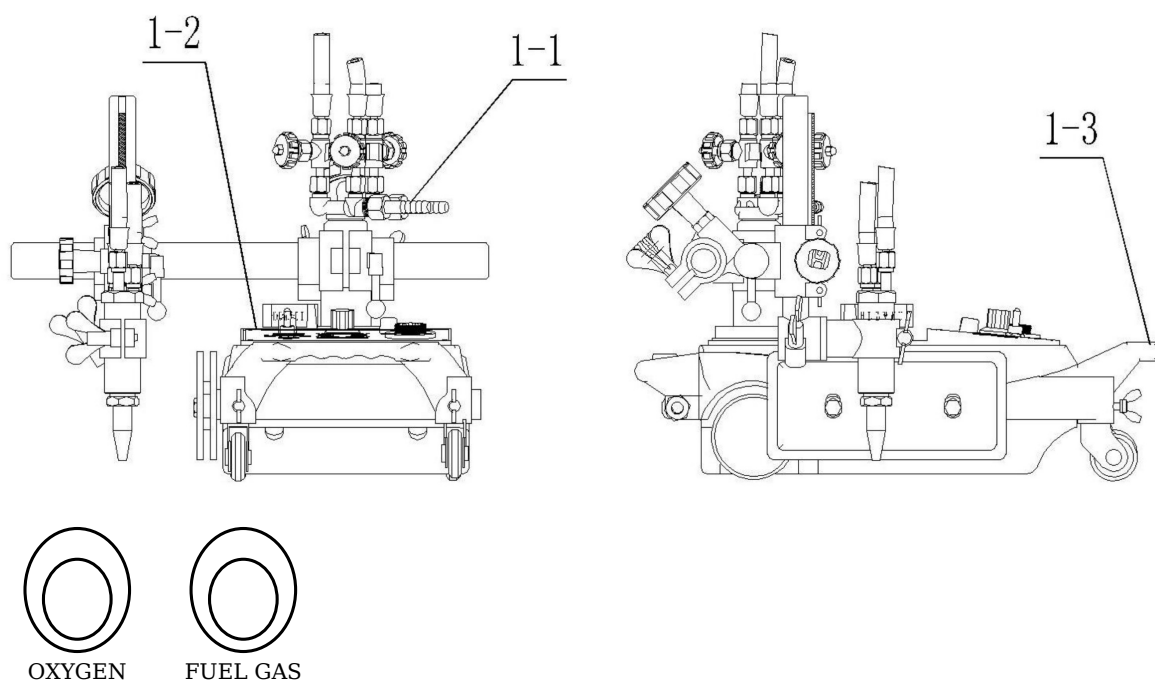
1.2.6 Safety precautions to prevent skin burns

Follow the safety precautions before operation to prevent skin burns. Neglecting heat sources, splashes and sparks may cause fire or skin burns.

1. Do not cut near combustible material (move combustible material away from sparks).
2. Do not cut containers containing flammable materials.
3. Do not leave lighters, matches or other flammable objects nearby.
4. The flame from the cutting torch can burn your skin. Keep your body away from the torch and nozzle, and check for safety before operating switches and valves.
5. Wear the required protective equipment to prevent injury.
6. Tighten the cutting nozzle properly to prevent backfiring.
 - When installing the cutting nozzle on the cutting torch, use two spanners to tighten the nut.
 - If the cutting nozzle is over-tightened, it will become even tighter during cutting because of the heat, making the nozzle difficult to remove.
 - Avoid damaging the cone of the cutting nozzle, as this will cause backfiring.
7. Use soap and water to check the connections of the distributor, hoses and cutting torch for gas leakage. Do not use oil or grease at the connection of the oxygen hose, as this will cause backfiring and may cause a blow-out.
8. Pay attention to the following points when igniting:
 - Install the cutting torch on the fixing frame before ignition.
 - Be sure to wear the required protective equipment (protective gloves, goggles, mask, etc.).
 - Check for obstacles, hazards and combustible material near or in the direction of cutting.
 - Set the gas pressure: the gas pressure must be within the appropriate range.
9. The torch, nozzle and roller lock knob become very hot. Always wear protective gloves when handling these items. The cut surface is also very hot after cutting, so do not touch it, even with protective gloves.

2 Location of the safety labels

Safety labels and other labels for correct operation are attached to the device. When operating the device, read the labels carefully and follow the instructions on them. Do not remove the labels. Always keep the labels clean and easy to read.



1-1 Gas inlet safety labels

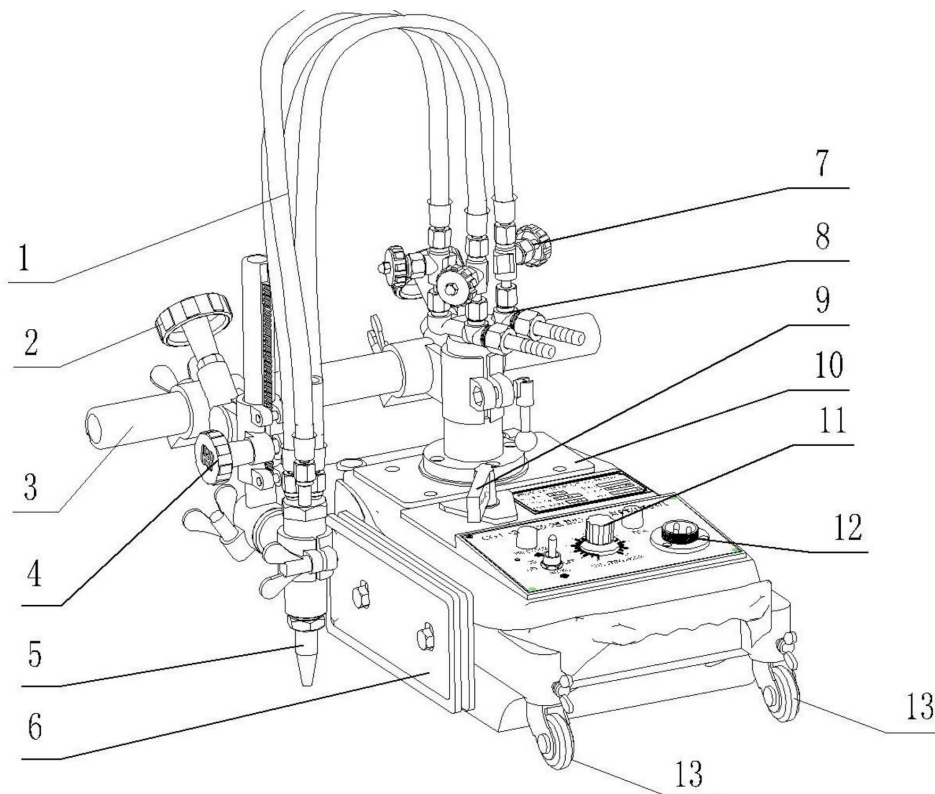
3 Introduction to the machine

3.1 Machine features

The UNITRACK-45K trolley gas cutting machine is one of the Cruxweld range of cutting products. The internal structure of the machine is well designed and its appearance is neat and functional. After listening to customers' advice and following technical discussion, this product has received a number of technical innovations and process improvements. The machine uses new materials, and the parts are produced to strict processing requirements, so that the operability and durability of the machine and its heat-insulating ability have been greatly improved.

3.2 Names and functions of each component

UNITRACK-45K Gas Cutting Machine (trolley cutting machine)



1. Gas delivery hoses: three in total, for fuel gas, preheating oxygen and cutting oxygen
2. Horizontal handwheel: adjusts the horizontal position of the cutting torch
3. Horizontal moving rack
4. Cutting torch vertical adjustment handwheel
5. Cutting nozzle
6. Heat insulation plate: prevents the heat generated by cutting from spreading into the machine
7. Two-way gas valve: adjusts the gas flow

8. Gas distributor
9. Clutch handle: align the tip of the handle with "STOP" to disengage; align it with "START" to engage
10. Main unit
11. Speed control knob: turning from "0" towards "10" increases the speed, and vice versa
12. Power socket
13. Universal wheel

3.3 Technical specifications

1. Weight (main unit)	16 kg
Attachments	7.8 kg
2. Machine size	435 mm × 210 mm × 240 mm
3. Speed control	Thyristor (SCR) controlled
4. Power supply	AC 220 V, 50 Hz (tolerance ±10%)
5. Cutting speed	50 - 750 mm/min
6. Cutting thickness	5 - 100 mm
7. Bevel (groove) angle	0 - 45°
8. Circle cutting diameter	ø200 - ø2000 mm
9. Cutting nozzle	G02 (for acetylene), G03 (for propane)
10. Motor	DC 110 V, 50 Hz, 30 W, 4200 r/min

4 Preparation for operation

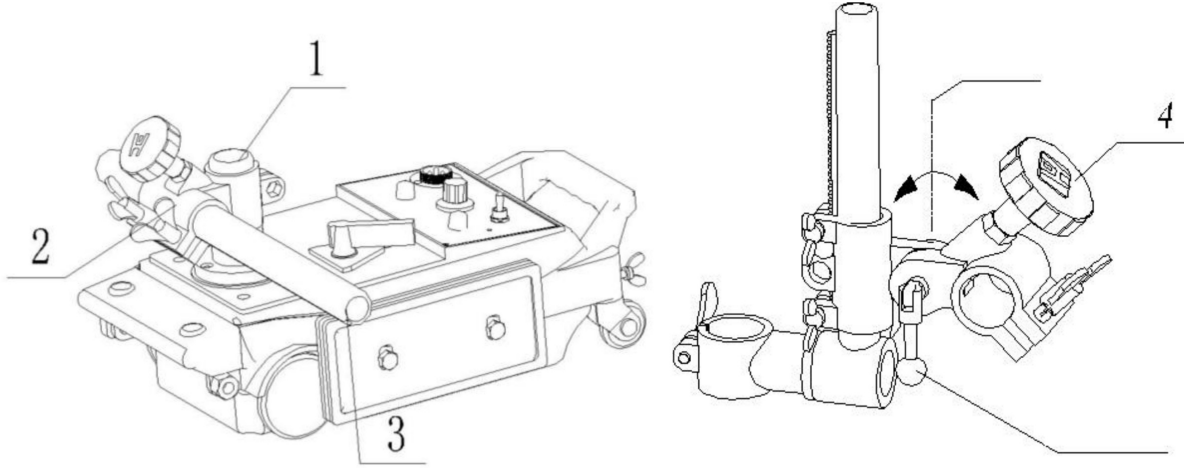
4.1 Packing list

Carefully remove the device from the packing case. First, check the parts to make sure they are intact. The following is the list of standard single-torch configuration parts for acceptance.

1. Main unit		1
2. Cutting torch gas circuit assembly		1 set
3. Moving assembly		1 set (including left-right and up-down moving assembly and rack)
4. Cutting nozzle (optional according to user requirements)	G02: 1#, 2#, 3# (acetylene)	one each
	G03: 1#, 2#, 3# (propane)	one each
5. Power cord		1
6. Instruction manual and certificate of quality		one copy each
7. Inlet connector / pressure cap		2 pairs
8. Ball-head screw M4		2
Standard accessories supplied with the machine		
1. Circle cutting assembly		1 set
2. Guide rail (choose one according to the customer's requirement)		1) Two convex-slot rails (each 1.8 m)
		2) One groove guide rail (1.8 m)
Optional accessory		Groove guide rail 2 (1.2 m)

4.2 Machine assembly

1. Take the main unit out of the packing case.
2. Connect the left-right moving seat (2) to the support seat (1) on the main unit.
3. After adjusting to the proper stroke, tighten it with the bolt screws.
4. Take out the up-down moving assembly (4) and install it on the large rack (3); adjust to the appropriate stroke and lock it with the butterfly screws.



5. Remove the torch assembly and install the gas distributor on the bracket (1). Adjust the angle and fix it with two M4 screws.
6. Loosen the butterfly screw of the nozzle holder, gently insert the cutting torch into the inner hole, and then tighten the butterfly screw.

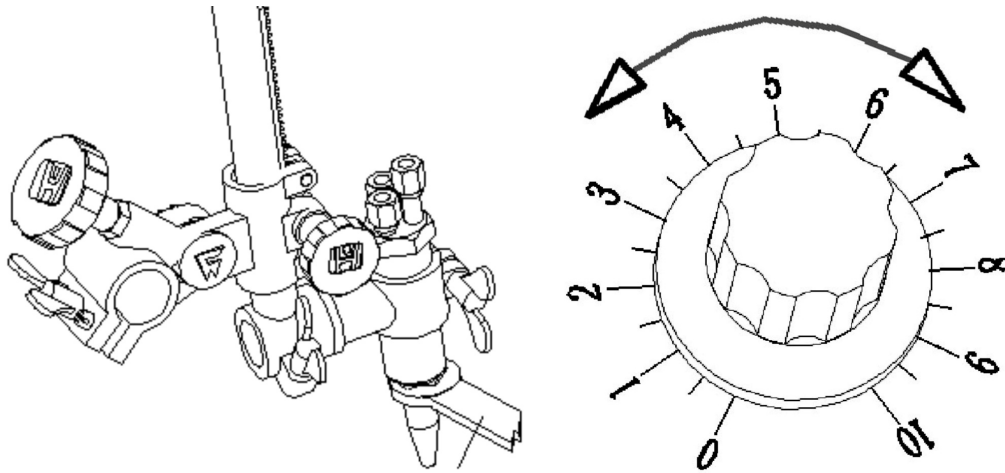
4.3 Preparations ⚠ ⚡

4.3.1 Connecting the power cable

1. Connect the metal plug on the side of the power cable to the metal socket on the operating panel. Check that there is no foreign matter or dust before connecting.
2. The metal plug is threaded, so it should be fully tightened to prevent it from loosening during operation.

4.3.2 Connecting the cutting nozzle

1. Select the appropriate cutting nozzle according to the thickness of the steel plate and install it on the cutting torch (refer to the cutting data table for the choice of cutting tip).
 - When installing the cutting nozzle on the cutting torch, tighten the nut with two spanners.
 - If the cutting nozzle is over-tightened, it will become even tighter because of the heat during cutting, making the nozzle difficult to remove.
 - Avoid damage to the cone of the cutting nozzle, as damage will cause backfiring.



4.3.3 Speed setting

After the machine starts running, engage the clutch and immediately adjust the cutting speed to suit the thickness of the steel with the speed adjustment knob. Turning from “0” towards “10” increases the cutting speed; turning the other way reduces it.

5 Cutting operations

5.1 Safety measures before operation

5.1.1 Earth the machine

The power cord of the machine is fitted with an earth wire. For safety, be sure to connect the earth wire as described, and also check the connection of the power cord.

5.1.2 Choice of cutting nozzle

According to the cutting data, choose the appropriate cutting nozzle for the thickness of the steel plate. For steel plates with severe corrosion, or for a groove cutting angle of more than 20°, a cutting tip of a higher grade than indicated in the cutting data should be selected.

5.1.3 Switch for change of direction of operation

1. The direction switch on the device is used for forward/backward conversion in straight cutting, or for clockwise/anticlockwise conversion in circular cutting. Check the running direction or rotation direction before cutting.
2. When changing the direction of operation, the drive knob should be returned to the stop position. Wait for the device to stop completely, then change the direction of operation.

Note: Before switching on the power switch, be sure to check whether the drive knob is in the stop position. If the drive switch is in the ON position, it is very dangerous to start the device.

5.2 Ignition and flame control

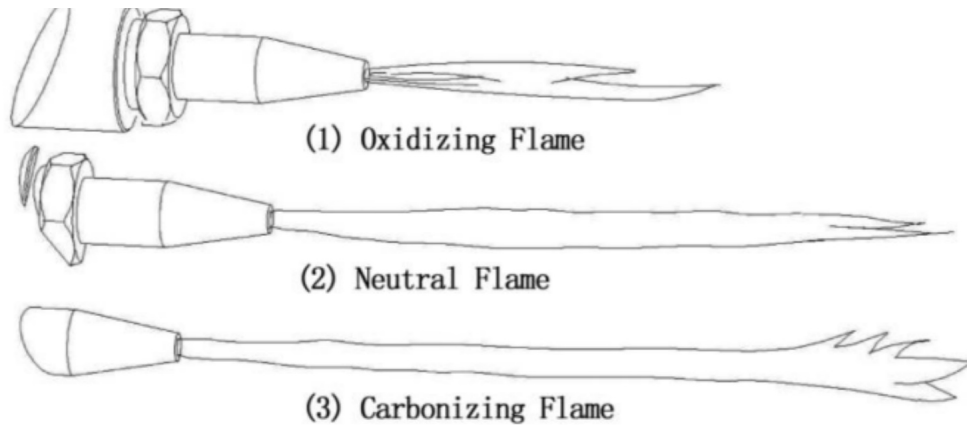
Note: Adjust the gas pressure according to the cutting data; this is the value when all valves are open. The pressure should be re-adjusted after ignition.

1. First turn the fuel gas valve 1/4 turn.
2. Turn the preheating oxygen valve 1/2 turn and ignite with an igniter.
3. Then gradually open the preheating oxygen valve until a white tapered standard flame is obtained (the bright inner cone should be uniform, about 5 - 6 mm long).
4. Completely open the cutting oxygen valve, and re-adjust the flame if the flame condition changes. If the cutting oxygen flow is irregular, it will affect the quality of the cut surface. In this case, close the preheating oxygen and fuel gas valves. When the cutting oxygen valve is open, clean the cutting oxygen hole carefully with a nozzle cleaning needle.
5. The appropriate distance between the end face of the cutting nozzle and the surface of the steel plate is:

Acetylene ... 8 - 10 mm

LPG ... 5 - 8 mm

6. A neutral flame ensures good cut-surface quality. (An oxidising flame can be used for groove cutting.) The oxidising flame produces a shorter cutting oxygen stream, allows slag to stick to the cut surface and melts the upper edge of the cut, among other adverse effects on the cut surface. When the cutting oxygen pressure is too high, the same cut-surface quality defects will occur.



5.3 Cutting and perforating methods

1. Cut from the edge of the steel plate.
 2. Drill a small hole in the steel plate before cutting.
- Perforation method
1. Start the ignition and adjust the flame.
 2. Thoroughly preheat the cutting point until it is white hot.
 3. Open the cutting oxygen valve and let the flame pierce the steel plate. The cutting nozzle should be 15 - 20 mm away from the steel plate to prevent slag splashing onto the nozzle, which would shorten its service life.

5.4 Starting the cutting operation and extinguishing the flame

1. Align the cutting nozzle with the starting point of the cut, open the fuel gas valve and the preheating oxygen valve, ignite, and then adjust the flame.
2. Fully preheat the cutting starting point.
3. After preheating, turn the cutting oxygen valve more than 1/8 turn.
4. Carefully check the cutting condition and use the speed regulator to control the cutting speed. For cutting speeds, see the cutting data.
5. After cutting, extinguish the flame as follows:
 1. Turn the handle of the quick distributor to close the gas supply; all gas is then cut off without closing the two-way valve.
 2. When cutting steel plate of the same thickness a second time, only the handle of the quick distributor has to be operated, and the size of the preheating flame does not change. The cutting efficiency is therefore greatly improved.

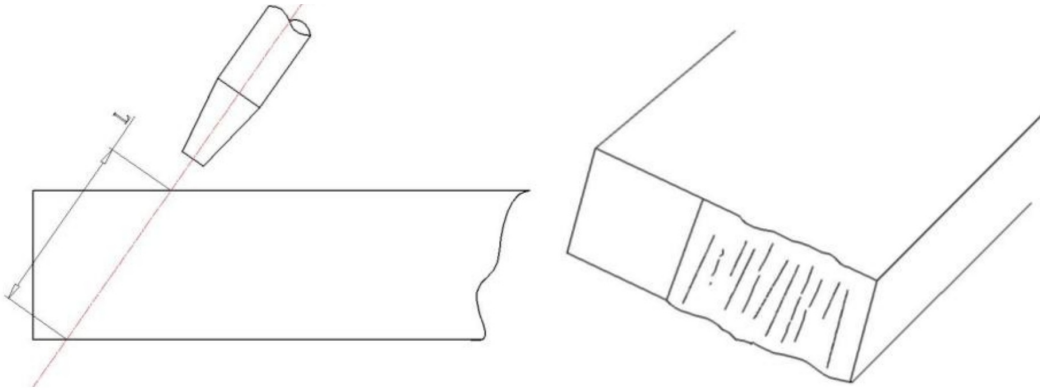
5.4.1 Sheet cutting

When cutting thin sheet up to 6 mm:

1. The cutting nozzle specification and the appropriate gas pressure should be selected in accordance with the cutting data, and the flame should then be adjusted slightly weaker.
2. Loosen the bolt screw inside the up-down moving assembly, tilt the cutting tip slightly forward, and then start the cutting operation. If the cutting oxygen pressure is too high or the plate is over-preheated, it will lead to incomplete separation of the steel or slag at the bottom of the cut.

5.4.2 Groove (bevel) cutting

For groove cutting, the cutting torch is set to the required angle using the scale plate on the cutting torch holder (with 5° as the basic unit). When selecting the cutting nozzle for groove cutting, the thickness of the steel plate shall be taken as the length L shown in the figure. To compensate for the excessive heat loss caused by groove cutting, a cutting tip of a higher grade than shown in the cutting data sheet shall be used. A slightly oxidising flame increases cutting efficiency and reduces the speed setting by 20 to 30 per cent. Insufficient preheating will result in poor cut-surface quality as shown in the figure. The cutting nozzle should then be re-selected and the preheating and cutting speed adjusted.



5.4.3 Straight-line cutting

Use a guide rail in most cases. The guide rail should be parallel to the pre-drawn cutting line and about 80 to 100 mm away from the line. Adjust the two driving wheels of the machine so that they fall into the grooves on both sides of the guide rail, make sure the universal wheel also falls into the grooves on both sides of the guide rail, and lock the positioning butterfly screw.

Put the cutting torch on the cutting starting point, ignite and adjust the flame, thoroughly preheat the starting point, then open the cutting oxygen control valve and the power switch, and adjust the cutting speed with the speed control knob according to the cutting condition.

The cutting oxygen valve should be fully opened in advance. When the gas pressure for cutting a thin plate is too high, the valve can be used to reduce the pressure, thus making the cutting operation easier.

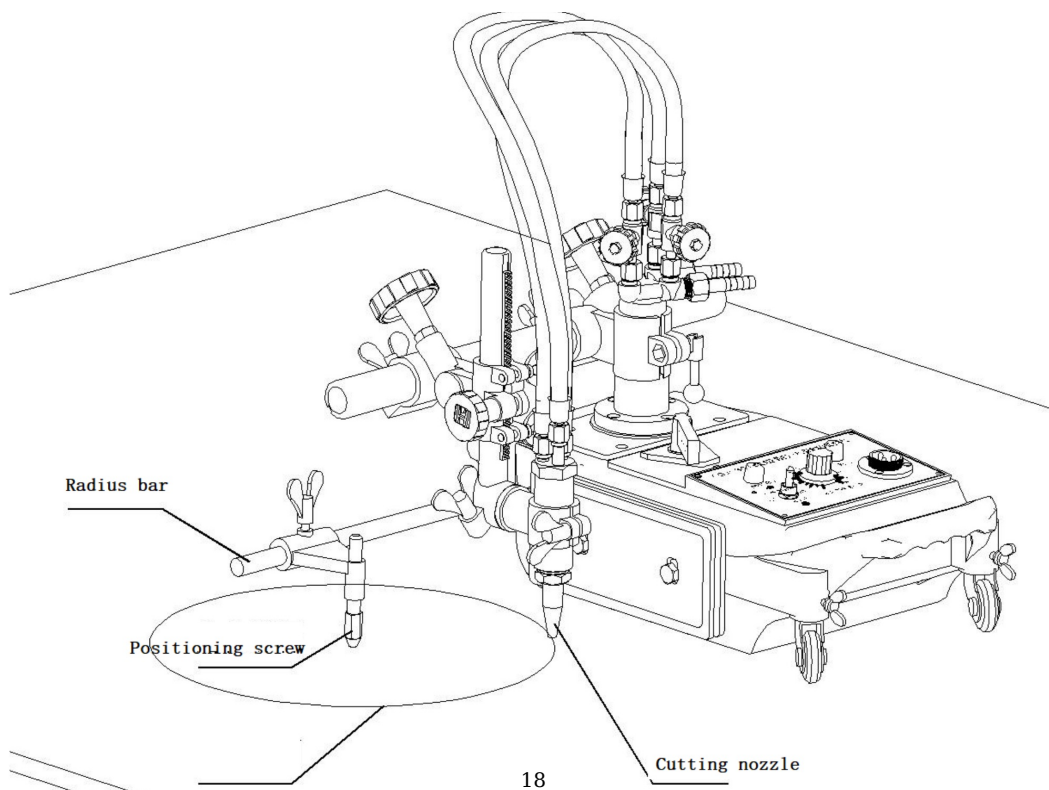
The cutting length can be extended freely by using extended guide rails. If there are large lumps of slag or other debris on the guide rail, the device will vibrate strongly when it reaches that point, and this will damage the cut surface. Therefore, be sure that there are no obstacles on the guide rail. Also be careful not to let the hose hang over the edge of the steel plate.

5.4.4 Arc cutting (with optional accessories)

1. Install the circular cutting radius rod (1) in the holes on both sides of the front end of the machine shell and lock it with the M10 nut.
2. Install the radius gauge (2) on the circular cutting radius rod (1), adjust it to the appropriate position and lock it with the positioning butterfly screw. Position it in the middle of the punch mark on the steel plate, and adjust the positioning screw so that one side of the drive wheel is about 1 - 2 mm above the steel plate; then firmly tighten the locking nut.
3. Loosen the positioning butterfly screws on both sides of the universal wheel so that the universal wheel can rotate freely.
4. Install the cutting torch vertically and place the cutting nozzle on the marked line. Release the clutch and push the device around the central positioning screw to check whether the machine can travel on the required cutting track.
5. When cutting an arc, pay attention to the hoses and cable so that they do not become wound up; otherwise they will affect the travel of the machine and the quality of the cut.

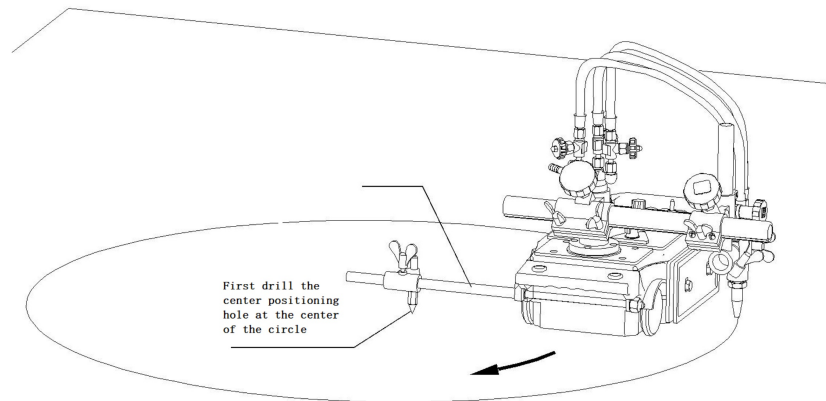
Note: Whether cutting a large or a small arc, it is necessary first to make a 60° positioning centre hole, slightly deeper, at the centre of the arc on the steel plate surface.

Small circle cutting



Large circle cutting

The method of setting up the device for cutting large circles is different from that for cutting small circles. Please refer to the following figure and install the corresponding equipment as shown.



5.5 Safety measures to prevent backfiring and backburning ⚠

5.5.1 To prevent backfiring ⚠

Backfiring can result in a serious accident or fire and care should be taken to prevent it. In case of backfire, professional personnel should be asked to find out the cause and to check and repair the device correctly before it is used again. The causes of backfiring are:

1. Improper adjustment of the gas pressure.
2. Overheating of the cutting nozzle.
3. The cutting nozzle is blocked with slag.
4. Damage to the cutting nozzle or to the cone of the cutting torch.

5.5.2 To prevent backburning ⚠

Backburning may cause a fire and damage the device. If there is a hissing sound in the cutting torch, take the following measures immediately:

1. Close the preheating oxygen valve.
2. Turn off the fuel gas valve.
3. Close the cutting oxygen valve.

If backburning occurs, professional personnel should be asked to find out the cause and carry out proper treatment, cleaning the pipe and the ash in the cutting torch, before the device is used again.

6 Maintenance and inspection

Inspect and maintain the unit in accordance with the following instructions so that it is always in optimum condition.

6.1 Gear box maintenance

Because there is a high-speed worm and worm wheel inside the gear box, every six months the machine shell should be removed, the gear box taken out, and the gears and box cleaned with a cleaning solvent. When reassembling, add new grease. When the worm wheel is worn, a new worm wheel must be fitted.

6.2 Maintenance of the cutting nozzle

The cutting tip used on the UNITRACK-45K is durable and safe. In order to ensure cutting quality, correct maintenance and the usage notes below should be observed.

1. When perforating, the distance between the cutting nozzle and the steel plate shall be raised to about 15 mm to prevent the returning flame from damaging the cutting nozzle.
2. Carefully clean the gas jet hole of the cutting nozzle with a nozzle cleaner of the appropriate size.
3. Be careful not to damage the cone.

When the following occurs, the cutting nozzle should be replaced:

1. After cleaning, the cutting oxygen jet does not come out straight.
2. The end of the oxygen jet splits into two.
3. A clicking sound can be heard in the cutting nozzle during the cutting operation.
4. There is gas leakage and burning at the fixing nut.
5. The preheating flame is very uneven.

6.3 Carbon brush maintenance

Every three months, or after 1000 hours of operation, remove the carbon brush cap and check the condition of the motor carbon brush. If it is less than 3 mm long, it should be replaced with a new carbon brush. Care must be taken to check that the carbon brush is properly placed.

Note: The carbon brush must be fitted the right way round, with the curved face matching the commutator.

7 Fault handling

1) The machine does not work

Possible causes	Remedy
1) The power supply is not connected, or the fuse has blown	Switch on the power supply; check whether the fuse is good
2) The motor carbon brush is stuck	Take out the carbon brush, grind the front end, then refit it so that it makes reliable contact
3) The clutch is not engaged	Engage the clutch
4) The gear box connection has come apart	Check whether the keys and pins in the gear box have fallen out

2) The machine vibrates and is noisy

Possible causes	Remedy
1) There is debris on the guide surface	Remove the debris from the guide surface
2) Gear damage	Check whether the worm wheel is worn or has serious burrs. If so, replace the damaged parts.
3) Motor damage	Replace the motor

3) There is gas leakage and fire

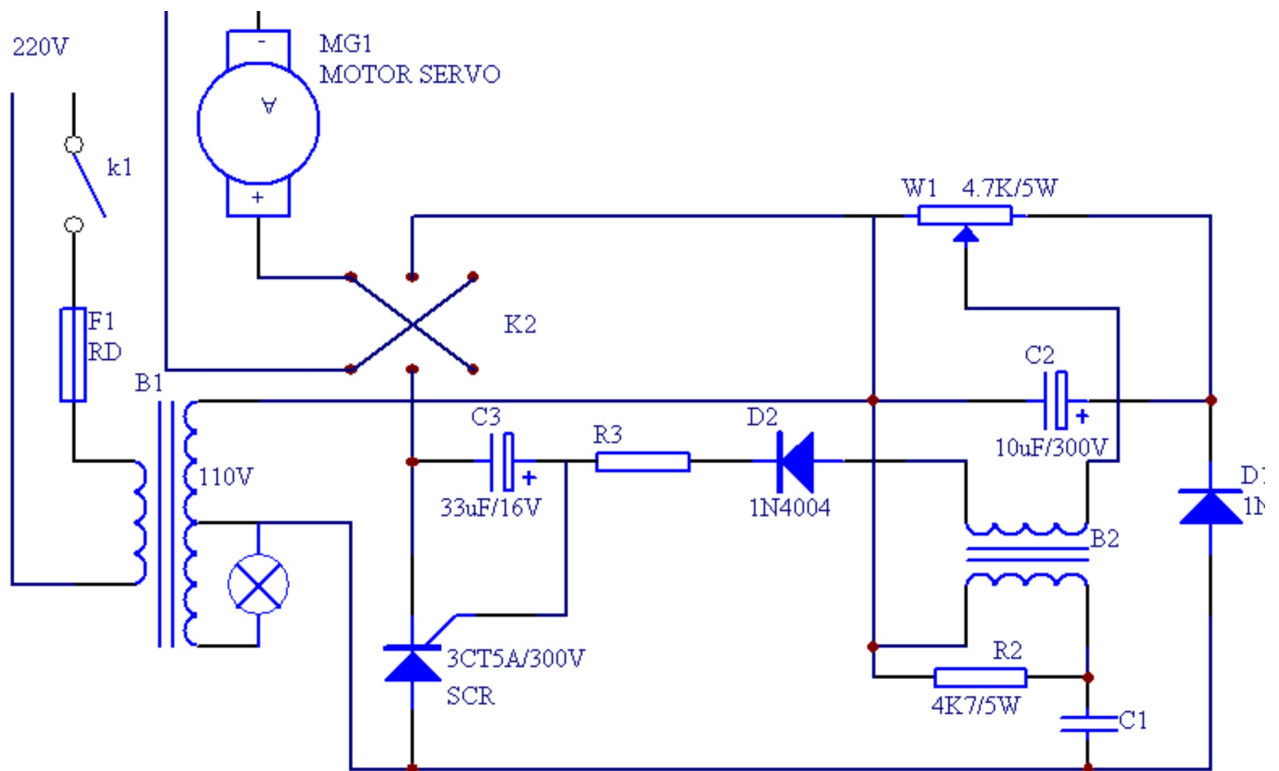
Possible causes	Remedy
1) Improper use, resulting in poor contact of the 30° cone surface	Carefully repair the 30° cone with fine emery cloth to make the contact reliable
2) The nozzle nut is not tightened	Tighten the nozzle nut

4) The cutting flame is unstable

Possible causes	Remedy
1) The orifice of the cutting nozzle is blocked by impurities	Clean the orifice of the cutting nozzle with a cleaning needle so that it is unblocked
2) Insufficient gas supply pressure and low oxygen purity	Check that the supply pressure and the oxygen purity are within the specified range

If a fault persists, or is not listed in these tables, stop the operation immediately and consult the manufacturer for help.

8 Circuit diagram



9 Warranty

From the date of delivery (invoice date), if the machine is properly used in strict compliance with the terms stated in this operation manual and the whole machine (except the wearing parts) becomes faulty for reasons of product quality, we will provide free maintenance for six months. According to the regulations, the following conditions are not covered by the free warranty:

1. Damage caused by improper transportation and storage after purchase.
2. Damage caused by failure to use the machine in accordance with the specifications, or by voltage exceeding the specified range.
3. Products without a valid warranty card and invoice.
4. Products that do not match the warranty card and equipment contents.
5. Damage caused by force majeure such as a natural disaster.
6. Any damage caused by dismantling by non-professional personnel.
7. Damage caused by using accessories not supplied by the company.

10 Contact information

If you have any comments, suggestions or unresolved faults during the use of the machine, please contact our technical department or visit our website, and inform us of the relevant details. Thank you for your cooperation.

Company	Cruxweld Industrial Equipments Pvt. Ltd.
Works & head office	5, Sector 29, Faridabad - 121008 (Haryana), India
Phone	+91 8800 882 983 +91 (129) 489 2868
Sales enquiries	sales@cruxweld.com
Service support	support@cruxweld.com
Website	www.cruxweld.com

Note: The specifications and technical content of this product are subject to change without notice.



Thank you for choosing Cruxweld.