



WELDING EQUIPMENT

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MIG-MTS-450 SWFU

INVERTER MIG & MMA WELDING MACHINE

OPERATION INSTRUCTIONS



Version 2017-10

Thank you for selecting the R-Tech MTS 450 Inverter MIG Welder. We want you to take pride in operating our MTS 450 as much pride as we have taken in making this product for you.

PLEASE EXAMINE CARTON AND EQUIPMENT FOR DAMAGE IMMEDIATELY

When this equipment is shipped, title passes to the purchaser upon receipt from the courier. Consequently all claims for material damaged in shipment must be made by purchaser against the transportation company used.

Please record your equipment identification below for future reference. This information can be found on data plate at rear of machine.

Product MTS 450 SWFU

Serial No. _____

Date of Purchase _____

Where Purchased _____

Whenever you request replacement parts or information on this equipment please always supply information you have recorded above

This product is covered by 3 years parts and labour warranty. External items, torch, earth lead etc are covered by 3 months warranty. Any faults/damage found caused by customer will be charged pro-rata.

Please read this operator manual completely before attempting to use this equipment.

Pay particular attention to the safety instructions we have provided you for your protection

The level of seriousness to be applied to each section is explained below

Safety depends on you

Arc Welding and cutting equipment is designed and built with safety in mind. However your overall safety can be increased by proper installation and thoughtful operation on your part.

DO NOT INSTALL, OPERATE OR REPAIR THIS EQUIPMENT WITHOUT READING THIS MANUAL AND THE SAFETY PRECAUTIONS CONTAINED THROUGHOUT.

And, most importantly, think before you act and be careful.



This statement appears where the information must be followed exactly to avoid serious personal injury.

CAUTION

This statement appears where the information must be following to avoid a minor personal injury or damage to this equipment.

SAFETY PRECAUTIONS**ELECTRIC SHOCK CAN KILL**

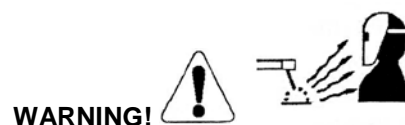
Do not touch electrically live parts or electrode with skin or wet clothing.
 Insulate yourself from work and ground
 Always wear dry insulating gloves

**FUMES AND GASES can be dangerous**

Keep your head out of fumes & gases produced from welding.
 Use ventilation or exhaust to remove fumes & gases from breathing zone and general area.

**WELDING SPARKS can cause fire or explosion**

Keep flammable material away from work area.
 Do not weld on containers that have held combustibles

**ARC RAYS can burn**

Wear eye, ear and body protection – Make sure work area is protected by proper shielding to avoid injury to yourself and other persons.

Product Description

The R-Tech MTS 450 is a member of our field acclaimed family of welding products. Premium features include:-

1. High 60% Duty cycle at 450 Amps @ 40°C
2. Heavy Duty 4-Roll geared wire feed unit for long working life and consistent wire feeding.
3. Infinite adjustment of welding power due to its advanced inverter technology.
4. Adjustable burn back control
5. 2T/4T torch trigger operation (4T = Latching)
6. Digital Amp & Volts meters
7. Euro type torch fittings for easy torch fitment / replacement

Recommended Processes

The R-Tech MTS 450 is recommended for the MIG welding processes within its output capacity of 450 Amps DC

Equipment Limitations

The R-Tech MTS 450 is protected from overloads beyond the output ratings and duty cycle as per machine specifications with thermostat protection of the output coils and rectifiers.

Welding Capability – Duty Cycle

The R-Tech MTS 450 is rated at 450 Amps at 60% duty cycle on a ten minute basis. If the duty cycle is exceeded a thermal protector will shut machine off until the machine cools.

Installation

Technical Specifications

Model No.	R-Tech MTS 450	
Input		415V 3 ~ AC 50/60Hz
MIG/MMA Operation	Rated Input Power	26 KVA
	Rated Input Current	32 AMPS
	Rated Output Current	450 AMPS
	Duty Cycle @ 450 AMPS	60% @ 40°C
	Duty Cycle @ 350 AMPS	100% @ 40°C
	Output current Range	40-450 AMPS
	No Load Voltage	75V MAX
	Voltage Adjustment Range	10V – 45V +/- 3V
	Suitable Wire Diameter	0.6mm 0.8mm 1.0mm 1.2mm 1.6mm
Dimensions		670 x 310 x 565
Gross Weight		65 KG
Insulation		Class F

Safety Precautions

Read entire section before starting installation



Electric Shock can kill – Only qualified personnel should perform this installation. Turn off input power at the fuse box before working on this equipment. Do not touch electrically live parts. Always connect the machine to an earthed mains supply as per national recommended standards.

Select suitable location

Place the welder where clean cooling air can freely circulate in and out of the front & rear louver vents. Dirt, dust or any foreign material that can be drawn through vents into welder must be kept to a minimum. Failure to observe these precautions can result in excessive operating temperatures which can lead to plant failure.

Grinding

Do not direct grinding particles towards the welder. An abundance of conductive material can cause plant failure.

Stacking

This machine cannot be stacked.

Transport – Unloading

Never underestimate the weight of equipment, never move or leave suspended in the air above people. Use recommended lifting equipment at all times.



Falling Equipment can cause injury. Never lift welder with gas bottle attached. Never lift above personnel.

Tilting

Machine must be placed on a secure level surface or on a recommended undercarriage/trolley. This machine may topple over if this procedure is not followed.

Environmental Rating

The welding power source carries the IP21S rating. It may be used in normal industrial and commercial environments. Avoid using in areas where water / rain is around.

Read and follow the 'Electric Shock Warnings' in the safety section if welding must be performed under electrically hazardous conditions such as welding in wet areas or water on the work piece.

Machine grounding and High Frequency Interference Protection

This welder must be grounded to earth. See national electrical codes for proper grounding methods.

The high frequency generator being similar to a radio transmitter may cause interference to radio, TV and other electronic equipment. These problems may be the result of radiated interference. Proper grounding methods can reduce or eliminate this.

Radiated interference can develop in the following ways

1. Direct interference from welder power source
2. Direct interference from the welding leads
3. Direct interference radiated from feedback into power lines
4. Interference from re-radiation by un-grounded metallic objects.

Keeping these contributing factors in mind, installing equipment as per following instructions should minimize problems.

1. Keep the welder input power lines as short as possible and enclose as much of them as possible in metal conduit or equivalent shielding. There should be a good electrical contact between this conduit and ground (Earth).
2. Keep the work and electrode leads as short as possible. Tape the leads together where practical.
3. Be sure the torch and earth leads rubber coverings are free from cuts and cracks that allow welding power leakage
4. Keep earth lead connection to work in good condition – Clean area on workbench where earth clamp is situated on a regular basis.

Input Connections

Make sure the voltage, phase and frequency of input power is as specified on machine rating plate located at rear of machine.

Have a qualified electrician provide suitable input power as per national electrical codes. Make sure machine is earthed / grounded.

Make sure fuse or circuit breaker is correct rating for machine. Using fuses or circuit breakers smaller than recommended will result in 'nuisance' shut off from welder inrush currents even if welding at low amperages.



ELECTRIC SHOCK CAN KILL

Turn the input power OFF at the mains switch & fuse box before working on this equipment.

Have a qualified electrician install & service this equipment.

Connecting to a mains electrical supply

**THIS MACHINE IS OF AN INDUSTRIAL SPECIFICATION AND MUST BE
FITTED TO A 32AMP 415V MAINS INPUT**

Connecting to an Engine Driven Generator

**If connecting this machine to an engine driven generator please ensure
the following**

Minimum Generator KVA Output –15 KVA continuous

Generator to be fitted with AVR (automatic voltage regulation)

DO NOT USE ON A GENERATOR WITHOUT AVR

**Connecting to a generator without the above minimum requirements will
in-validate your warranty.**

Setup machine as per diagrams below:

Rear machine connections



1. **On / Off Switch**
2. **240V Auxiliary output for water cooler**
3. **Protection fuses**
4. **Mains input cable – Connect to mains supply**
5. **External 2nd earth point** – This can be used to earth the machine to workbench if you are experiencing interference - Sometimes required when using automated machinery - Not normally used
6. **Cooling fan** – Do not obstruct cooling fan – failure to ensure good air flow can result in reduced duty cycle

Front machine connections



1. Connect 7 pin socket on 5M interconnecting cable from WFU.
2. Connect dinse power connector on 5M MIG interconnecting cable from WFU
In MMA mode connect electrode holder or earth lead depending on polarity of welding electrode used.
3. Connect dinse power connect from earth lead and connect earth lead to bench / workpiece
In MMA mode connect electrode holder or earth lead depending on polarity of welding electrode used.

WFU (Wire Feed Unit) connections



1. Voltage control - This will change voltage (welding power) on LED display on main machine

2. Wire feed control – This will change wire feed speed and will be shown in amperage display as value in display for reference purposes.
3. Connect euro type MIG torch – Ensure pins are located first then tighten securely
4. Water cooler connectors (optional when water cooler fitted) – Connect 2 x water cooler hoses from water cooled torch.

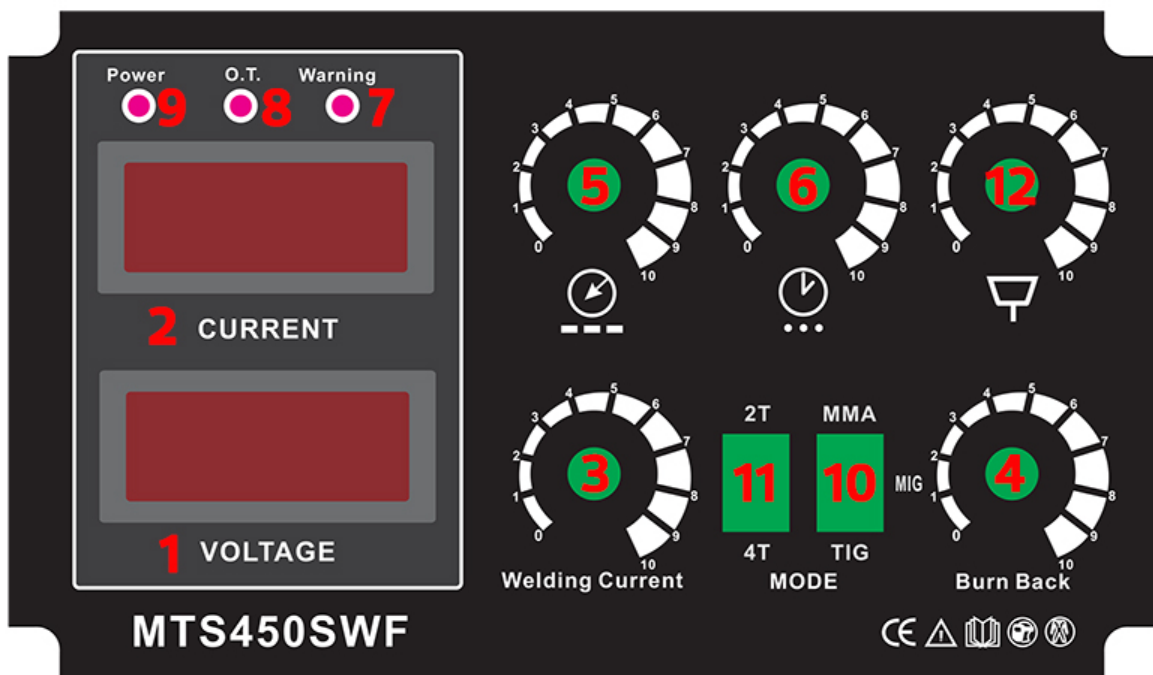
Blue = water out – cooled water from water cooler
 Red = water return – to be cooled

5. Gas hose connection – Connect 3/8 BSP nut on end of 5M interconnection cables to gas regulator (not shown)

Connect the gas input hose to gas regulator, Set gas flow/pressure to 10-14 LPM, In a drafty or open areas a higher flow may be required to stop porosity of weld.

Make sure gas bottle is secured machine securely to avoid injury.

Controls and Settings



1. Voltage LED – This meter can show actual welding voltage and preset welding voltage in increments of 0.1v. It indicates preset voltage during no welding.
2. Current LED – This meter shows actual welding current during welding and indicates the preset speed of wire feeding during no welding.
3. Welding current control knob for MMA welding, It can be set between 40-450Amps
4. Burnback adjustment - Burnback adjustment – This sets amount of time welding power stays on after torch button released and wire feed has stopped. If too little Burnback is set, wire may stick to work after trigger released, if too much Burnback is set wire will Burn back into welding tip.

5. Stitch timer – This is used in combination with the spot welding control. This sets the interval time between spot welds.

When you press the torch switch the machine will do a spot weld as set by the spot welding control knob and then a delay time set on stitch welding knob and then another spot weld is carried out. To stop stitch welding release the torch trigger.

6. Spot timer – This adjusts the amount of time the weld will last. When you press the torch switch the machine will do a single spot weld according to the time you have set and then stop, then release torch switch. Press torch switch again to do another spot weld.
7. Warning LED – Lights when machine senses output power problem and shuts down machine
8. Overheat warning LED – Shows when plant has overheated due to overwork of duty cycle and machine will stop working – fan still runs until plant has cooled, light will go off and machine will start working again.

DO NOT TURN OFF MACHINE WHILST LAMP IS LIT - ALLOW TO COOL FIRST.

9. Power on LED – Lights when machine is turned on
10. MMA/MIG/TIG Switch – Select between MMA, MIG or TIG operation – WARNING – When set to MMA operation output terminals are continuously live.
11. 2T/4T selector switch – In 2T position when torch trigger is pressed welding starts and when trigger is released welding stops. In 4T position when trigger is pressed and welding arc is established you can release trigger and welding continues, upon pressing trigger and releasing again the welding stops – this is also known as trigger latching.
12. Arc force control - Gives further adjustment on weld characteristics, on traditional transformer machines this was known as choke. Low setting is ideal for automotive work.

Lower setting = softer weld with less splatter and less penetration – for thinner materials

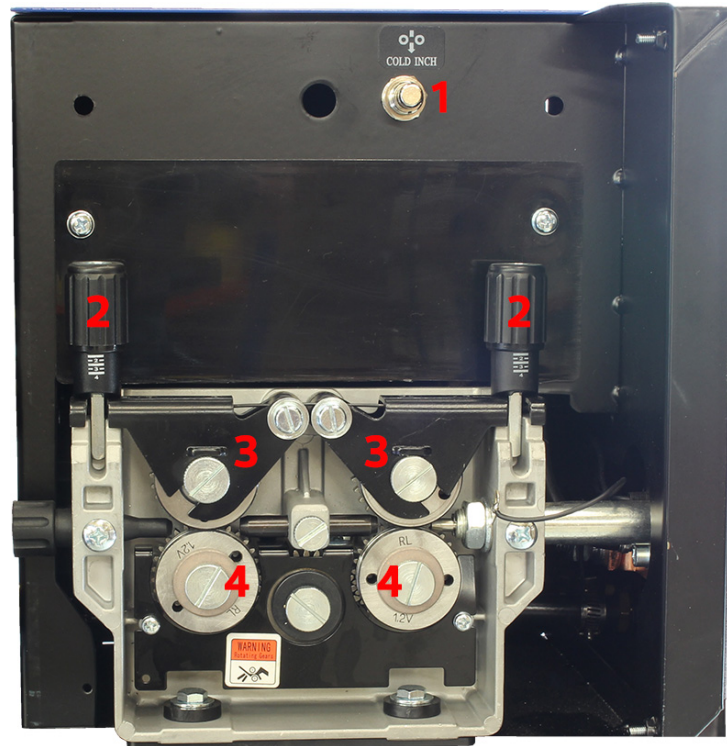
Higher setting = harsher weld with more splatter and penetration – for thicker materials

Tips on operation:

Wire reel holder – remove retainer screw cap and fit wire reel and refit securing screw cap. The reel holder features an internal adjustable braking system so that reel of wire stops quickly when torch trigger released, otherwise wire reel would continue for a few seconds causing wire to come off sides of reel and cause tangle (birds nest)

Wire feed assy – make sure rollers are correct size for wire diameter selected, to change rollers release retaining knurled head screw fit rollers onto shafts making sure the right size groove is in line with wire and refit retaining screws. Do not over tighten wire feed pressure rollers as this can cause premature motor and roller failure. TIP: Correct way to adjust tensioners is to slacken off pressure so that wire does not feed, slowly adjust pressure until wire feeds smoothly, you should be able to stop wire feeding by holding wire and it should slip on rollers. If you have too little pressure wire will slip when welding causing unwanted Burnback into tips, if you have too much pressure wire can snag in rollers when wire hits work and cause wire tangle by rollers.

Wire feed Unit Diagram



1. Wire inch button – press button and wire feed rollers will start to allow wire to come through tip ready for welding.
2. Wire tensioners - Do not over tighten wire feed pressure rollers as this can cause premature motor and roller failure.

Correct way to adjust tensioners is to slacken off pressure so that wire does not feed, slowly adjust pressure until wire feeds smoothly, you should be able to stop wire feeding by holding wire and it should slip on rollers.

If you have too little pressure wire will slip when welding causing unwanted Burn back into tips

If you have too much pressure wire can snag in rollers when wire hits work and cause wire tangle by rollers.

3. Top pressure rollers, release wire tensioners and arms will move up to allow wire to be installed.
4. Main rollers – these can be removed by un-screwing retaining screws – ensure correct size roller is fitted according to wire size on reel.

Welding operation

Once you have set machine up as per above instructions.

Operating in Mig Mode

1. Fit wire reel onto wire feed unit
2. Inch wire to end of torch tip using 'Inch' button on wire feed unit
3. Select welding voltage (power) required on wire feed unit

Note: Welding voltage preset can be viewed in Voltage LED on front panel of machine

4. Select wire feed speed required on 'Welding Current' knob on wire feed unit
5. Select either 2T or 4T operation switch in desired position
6. Set ARC force switch to middle position for medium weld inductance (know as choke on traditional welding power sources)

Low setting = Soft ARC (less splatter & penetration)

High setting = Strong ARC (more penetration)

7. Press torch trigger to start welding process and adjust welding current knob to adjust wire feed accordingly.

Note: You can finely adjust the welding current knob to fine tune weld arc length to either DIP or SPRAY welding

8. When welding actual voltage and amperage will be shown in corresponding LED display meters on machine

Operating in MMA Mode

Select welding amperage required on current control knob on front panel of welder, select MMA mode on switch no.10, welding terminals are now constantly live, machine is now ready to weld.

Once you have finished weld either turn machine off or switch back into mig mode so terminals are not live.

Maintenance

Routine and periodic maintenance



ELECTRIC SHOCK CAN KILL

Turn the input power OFF at the mains switch & fuse box before working on this equipment.

Have a qualified electrician install & service this equipment.

Allow machine to sit for 5 minutes minimum to allow the power capacitors to discharge before working inside this equipment.

Do not touch electrically live parts

1. Periodically remove the side/top panels of machine and clean out machine with a low pressure dry air line paying particular attention to PC Boards, Fan blades, HF points
2. Inspect input and output cables & hoses for fraying, cuts & bare spots
3. Keep tig torch and cables in good condition
4. Clean air vents to ensure proper air flow and cooling
5. The fan motor has sealed bearings which requires no maintenance

Troubleshooting

Service & repair should only be performed by R-Tech welding trained personnel. Unauthorized repairs performed on this equipment may result in danger to the technician and machine operator and will invalidate your warranty. For your safety and to avoid electric shock, please observe all safety notes and precautions detailed throughout this manual

The troubleshooting guide is provided to help you locate possible machine malfunctions.

Simply follow the 3 step procedure below

Step 1 Locate problem (symptom)

Look under the column labeled 'Problem (symptoms)'. This column describes possible symptoms that the machine may exhibit. Find the listing that best describes the symptom that the machine is exhibiting

Step 2 - Possible Cause

The second column labeled 'possible cause' lists the obvious external possibilities that may contribute to the machine symptom

Step 3 - Recommended course of action

This column provides a course of action for the possible cause, generally it states to contact R-Tech welding for repair of machine on 01452 733933 or email: techsupport@r-techwelding.co.uk

Output Problems

Problems action	Symptoms	Rec. Course of
Machine is dead – No Output – No fan	1 Make sure the input switch is in the 'ON ' position 2 Check the input voltage at the machine. Input voltage must match the rating plate. Refer to installation in this manual.	If all recommended areas of fault have been checked and problem persists, Contact R-Tech Welding for repair.

	3 Blown or missing fuses on mains input.	
Fan runs normally at power up – No output from machine	Check for proper input voltages as per rating plate.	As Above
Fan runs –No output form machine and the overheat warning light on control panel is lit.	Welding application may have exceeded recommended duty cycle. Allow the unit to run until fans cools the welder and the light goes out.	As Above
Fan runs – Machine does not respond to torch switch.	The torch switch is faulty. Check for continuity on torch trigger wires or replace torch. If torch is working then suspect PCB failure or broken wiring.	As Above
Problems	Symptoms	Rec. Course of action
Machine regularly overheats – warning light on front panel lit. Fan runs but machine has no output	1 Welding application may exceed recommended duty cycle – Reduce the duty cycle of job. 2 Dirt and dust may have clogged the cooling vents. Blow out machine with dry, clean low pressure air. 3 Air vents may be blocked due to inadequate clearance around machine	If all recommended areas of fault have been checked and problem persists, Contact R-Tech Welding for repair.

MIG Weld Problems

No gas flow when torch switch activated. Machine has output and fan runs. A click can be heard indicating gas solenoid is operating	1 Gas supply is empty or turned off 2 Flow regulator may be set too low 3 Gas hose may be pinched 4 Gas pipe blocked. Blow out with low pressure air line	If all recommended areas of fault have been checked and problem persists, Contact R-Tech Welding for repair.
Poor weld penetration	Check condition of earth lead & clamp and make sure it is fitted to clean area on bench/workpiece.	If all recommended areas of fault have been checked and problem persists, Contact R-Tech Welding for repair.
Porosity in weld	Check gas flow from torch tip, if you cant get enough gas flow, adjust gas regulator flow if bottle has gas check torch for gas restriction – try replacing torch	If all recommended areas of fault have been checked and problem persists, Contact R-Tech Welding for repair.

			
WARNING	<ul style="list-style-type: none"> Do not touch electrically live parts or electrode with skin or wet clothing. Insulate yourself from work and ground. 	<ul style="list-style-type: none"> Keep flammable materials away. 	<ul style="list-style-type: none"> Wear eye, ear and body protection.
Spanish AVISO DE PRECAUCION	<ul style="list-style-type: none"> No toque las partes o los electrodos bajo carga con la piel o ropa mojada. Aislese del trabajo y de la tierra. 	<ul style="list-style-type: none"> Mantenga el material combustible fuera del área de trabajo. 	<ul style="list-style-type: none"> Protéjase los ojos, los oídos y el cuerpo.
French ATTENTION	<ul style="list-style-type: none"> Ne laissez ni la peau ni des vêtements mouillés entrer en contact avec des pièces sous tension. Isolez-vous du travail et de la terre. 	<ul style="list-style-type: none"> Gardez à l'écart de tout matériel inflammable. 	<ul style="list-style-type: none"> Protégez vos yeux, vos oreilles et votre corps.
German WARNUNG	<ul style="list-style-type: none"> Berühren Sie keine stromführenden Teile oder Elektroden mit Ihrem Körper oder feuchter Kleidung! Isolieren Sie sich von den Elektroden und dem Erdboden! 	<ul style="list-style-type: none"> Entfernen Sie brennbares Material! 	<ul style="list-style-type: none"> Tragen Sie Augen-, Ohren- und Körperschutz!
Portuguese ATENÇÃO	<ul style="list-style-type: none"> Não toque partes elétricas e electrodos com a pele ou roupa molhada. Isole-se da peça e terra. 	<ul style="list-style-type: none"> Mantenha inflamáveis bem guardados. 	<ul style="list-style-type: none"> Use proteção para a vista, ouvido e corpo.
Japanese 注意事項	<ul style="list-style-type: none"> 通電中の電気部品、又は溶材にヒフやぬれた布で触れないこと。 施工物やアースから身体が絶縁されている様にして下さい。 	<ul style="list-style-type: none"> 燃えやすいものの側での溶接作業は絶対にはなりません。 	<ul style="list-style-type: none"> 目、耳及び身体に保護具をして下さい。
Chinese 警告	<ul style="list-style-type: none"> 皮肤或湿衣物切勿接触带电部件及焊条。 使你自已与地面和工作件绝缘。 	<ul style="list-style-type: none"> 把一切易燃物品移离工作场所。 	<ul style="list-style-type: none"> 佩戴眼、耳及身体劳动保护用具。
Korean 위험	<ul style="list-style-type: none"> 전도체나 용접봉을 젖은 헝겊 또는 피부로 절대 접촉치 마십시오. 모재와 접지를 접촉치 마십시오. 	<ul style="list-style-type: none"> 인화성 물질을 접근 시키지 마십시오. 	<ul style="list-style-type: none"> 눈, 귀와 몸에 보호장구를 착용하십시오.
Arabic تحذير	<ul style="list-style-type: none"> لا تلمس الأجزاء التي يسري فيها التيار الكهربائي أو الألكترود بجند الجسم أو بالملابس المبللة بالماء. ضع عازلا على جسمك خلال العمل. 	<ul style="list-style-type: none"> ضع المواد القابلة للاشتعال في مكان بعيد. 	<ul style="list-style-type: none"> ضع أدوات وملابس واقية على عينيك وأذنيك وجسمك.

READ AND UNDERSTAND THE MANUFACTURER'S INSTRUCTION FOR THIS EQUIPMENT AND THE CONSUMABLES TO BE USED AND FOLLOW YOUR EMPLOYER'S SAFETY PRACTICES.

SE RECOMIENDA LEER Y ENTENDER LAS INSTRUCCIONES DEL FABRICANTE PARA EL USO DE ESTE EQUIPO Y LOS CONSUMIBLES QUE VA A UTILIZAR, SIGA LAS MEDIDAS DE SEGURIDAD DE SU SUPERVISOR.

LISEZ ET COMPRENEZ LES INSTRUCTIONS DU FABRICANT EN CE QUI REGARDE CET EQUIPMENT ET LES PRODUITS A ETRE EMPLOYES ET SUIVEZ LES PROCEDURES DE SECURITE DE VOTRE EMPLOYEUR.

LESEN SIE UND BEFOLGEN SIE DIE BETRIEBSANLEITUNG DER ANLAGE UND DEN ELEKTRODENEINSATZ DES HERSTELLERS. DIE UNFALLVERHÜTUNGSVORSCHRIFTEN DES ARBEITGEBERS SIND EBENFALLS ZU BEACHTEN.

			
<ul style="list-style-type: none"> ● Keep your head out of fumes. ● Use ventilation or exhaust to remove fumes from breathing zone. 	<ul style="list-style-type: none"> ● Turn power off before servicing. 	<ul style="list-style-type: none"> ● Do not operate with panel open or guards off. 	WARNING
<ul style="list-style-type: none"> ● Los humos fuera de la zona de respiración. ● Mantenga la cabeza fuera de los humos. Utilice ventilación o aspiración para gases. 	<ul style="list-style-type: none"> ● Desconectar el cable de alimentación de poder de la máquina antes de iniciar cualquier servicio. 	<ul style="list-style-type: none"> ● No operar con panel abierto o guardas quitadas. 	Spanish AVISO DE PRECAUCION
<ul style="list-style-type: none"> ● Gardez la tête à l'écart des fumées. ● Utilisez un ventilateur ou un aspirateur pour ôter les fumées des zones de travail. 	<ul style="list-style-type: none"> ● Débranchez le courant avant l'entretien. 	<ul style="list-style-type: none"> ● N'opérez pas avec les panneaux ouverts ou avec les dispositifs de protection enlevés. 	French ATTENTION
<ul style="list-style-type: none"> ● Vermeiden Sie das Einatmen von Schweißrauch! ● Sorgen Sie für gute Be- und Entlüftung des Arbeitsplatzes! 	<ul style="list-style-type: none"> ● Strom vor Wartungsarbeiten abschalten! (Netzstrom völlig öffnen; Maschine anhalten!) 	<ul style="list-style-type: none"> ● Anlage nie ohne Schutzgehäuse oder Innenschutzverkleidung in Betrieb setzen! 	German WARNUNG
<ul style="list-style-type: none"> ● Mantenha seu rosto da fumaça. ● Use ventilação e exaustão para remover fumo da zona respiratória. 	<ul style="list-style-type: none"> ● Não opere com as tampas removidas. ● Desligue a corrente antes de fazer serviço. ● Não toque as partes elétricas nuas. 	<ul style="list-style-type: none"> ● Mantenha-se afastado das partes moventes. ● Não opere com os painéis abertos ou guardas removidas. 	Portuguese ATENÇÃO
<ul style="list-style-type: none"> ● ヒュームから顔を離すようにして下さい。 ● 換気や排煙に十分留意して下さい。 	<ul style="list-style-type: none"> ● メンテナンス・サービスに取りかかる際には、まず電源スイッチを必ず切して下さい。 	<ul style="list-style-type: none"> ● パネルやカバーを取り外したままでは機械操作をしないで下さい。 	Japanese 注意事項
<ul style="list-style-type: none"> ● 頭部遠離煙霧。 ● 在呼吸區使用通風或排風器除煙。 	<ul style="list-style-type: none"> ● 維修前切斷電源。 	<ul style="list-style-type: none"> ● 蓋表板打開或沒有安全罩時不準作業。 	Chinese 警告
<ul style="list-style-type: none"> ● 얼굴로부터 용접가스를 멀리하십시오. ● 호흡지역으로부터 용접가스를 제거하기 위해 가스제거기나 통풍기를 사용하십시오. 	<ul style="list-style-type: none"> ● 보수전에 전원을 차단하십시오. 	<ul style="list-style-type: none"> ● 관널이 열린 상태로 작동치 마십시오. 	Korean 위험
<ul style="list-style-type: none"> ● إبعاد رأسك بعيداً عن الدخان. ● استعمال التهوية أو جهاز ضغط الدخان للخارج لكي تبعد الدخان عن المنطقة التي تتنفس فيها. 	<ul style="list-style-type: none"> ● أقطع التيار الكهربائي قبل القيام بأية صيانة. 	<ul style="list-style-type: none"> ● لا تشغل هذا الجهاز إذا كانت الاغطية الحديدية الواقية ليست عليه. 	Arabic تحذير

LEIA E COMPREENDA AS INSTRUÇÕES DO FABRICANTE PARA ESTE EQUIPAMENTO E AS PARTES DE USO, E SIGA AS PRÁTICAS DE SEGURANÇA DO EMPREGADOR.

使う機械や溶材のメーカーの指示書をよく読み、まず理解して下さい。そして貴社の安全規定に従って下さい。

請詳細閱讀並理解製造廠提供的說明以及應該使用的銀焊材料，並請遵守貴方的有關勞動保護規定。

이 제품에 동봉된 작업지침서를 숙지하시고 귀사의 작업자 안전수칙을 준수하시기 바랍니다.

اقرأ بتمعن وافهم تعليمات المصنع المنتج لهذه المعدات والمواد قبل استعمالها واتبع تعليمات الوقاية لصاحب العمل.