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## I-MIG200 MIG/MMA WELDER

# OPERATION INSTRUCTIONS





Thank you for selecting the R-Tech I-MIG 200 Compact Inverter Mig Welder.

The I-Mig200 has many benefits over traditional transformer mig welders, including infinite power control, adjustable arc force and features a heavy duty 4-roll geared wire feed mechanism to provide very smooth wire feed and weld characteristics

Provides very smooth welds on all steels and aluminium due to its inverter technology, for alloy welding just simply fit alloy rollers and a Teflon liner to torch

Ideal for automotive work with its minimum current of 30 Amps.

We want you to take pride in operating our I-MIG200 as much pride as we have taken in making this product for you. Please read all information in this manual before operation

#### **PLEASE EXAMINE THE 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 the data plate at rear of machine.

Product: I-MIG200

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 a 2 year parts and labour warranty; we will cover the cost of collecting and returning the item to you. External items, (torch, earth lead etc...) are covered by a 3 month warranty. Any faults/damage found caused by a customer will be charged accordingly.

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

#### **WARNING**

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.

## **Introduction**

**The R-Tech I-MIG 200 is a member of our field acclaimed family of welding products.**

**Premium features include:-**

1. Inverter power source – more efficient to operate, provides smoother weld characteristics.
2. Heavy duty 4-Roll geared wire feed unit for long working life and consistent wire feeding.
3. Infinite welding voltage to allow fine tuning of weld characteristics
4. Adjustable arc force – controls splatter – ideal for thin materials
5. Adjustable burnback control
6. Spot welding & stitch welding facilities
7. Digital amp & volts meters
8. Euro type torch fittings for easy torch fitment/replacement
9. 35% Duty cycle at 200 Amps @ 40°C

### **Recommended Processes**

The R-Tech I-MIG 200 is recommended for the MIG welding processes within its output capacity of 200 Amps DC

### **Equipment Limitations**

The R-Tech I-MIG 200 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 I-MIG 200 is rated at 200 Amps at 35% duty cycle on a ten minute basis. If the duty cycle is exceeded a thermal protector will shut machine off until the machine cools.

## **Technical Specifications**

|               |                                |                     |
|---------------|--------------------------------|---------------------|
| Model No.     | R-Tech I-MIG 200               |                     |
| Input         |                                | 240V 1~ AC 50/60Hz  |
| MIG Operation |                                |                     |
|               | Rated Input Current I-Eff      | 19 AMPS             |
|               | Rated Output Current           | 200 AMPS            |
|               | Duty Cycle @ 200 AMPS          | 35% @ 40°C          |
|               | Duty Cycle @ 155 AMPS          | 60% @ 40°C          |
|               | Output current Range           | 30-200 AMPS         |
|               | No Load Voltage                | 55-75V MAX          |
|               | Voltage Adjustment Range       | 14V – 26V +/- 3V    |
|               | Suitable Wire Diameter - Steel | 0.6mm, 0.8mm, 1.0mm |
|               | Suitable Wire Diameter - Alloy | 0.8mm, 1.0mm, 1.2mm |
| Insulation    |                                | Class F             |

## **Safety Precautions**

Read entire section before starting installation



### **WARNING!**

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.



### **WARNING!**

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.

## **Electrical Installation**



**WARNING!**

### **ELECTRIC SHOCK CAN KILL**

#### **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.

Failure to follow these instructions can cause immediate failure within the welder and void machines warranty.

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

The I-MIG 200 Mig Welder requires a 240V 50/60Hz 1-Phase supply. It requires an 19A supply. It comes with a 3 metre mains cable attached.

Connect wires according to national coding.

Brown wire – Live

Blue wire – Neutral

Green/Yellow Wire – Earth (Ground)

### **Connecting to a mains electrical supply**

**THIS MACHINE IS OF AN INDUSTRIAL SPECIFICATION AND MUST BE FITTED TO A 20AMP 240V MAINS INPUT**

**Failure to connect to correct supply will in-validate your warranty**

**DO NOT CONNECT TO A 13AMP DOMESTIC PLUG**

### **Connecting to an Engine Driven Generator**

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

**Minimum Generator KVA Output – 7 KVA continuous**

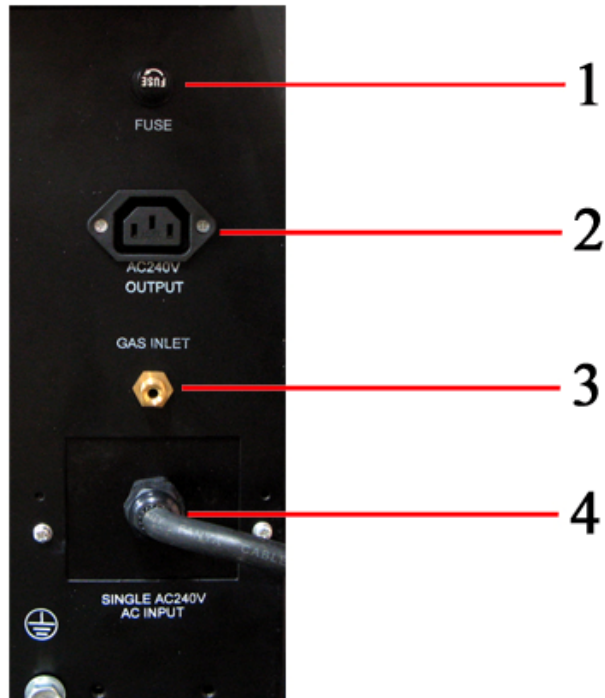
**Generator to be fitted with AVR (automatic voltage regulation)**

**DO NOT USE ON A GENERATOR WITHOUT AVR**

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

## Connections for I-Mig 200

### Rear machine connections



**Fig 1**

**1. Fuse Holder**

Fuse for wire feed motor protection

**2. Auxiliary AC output**

For water cooler – Maximum load 3A – Do not connect to power tools etc

**3. Gas inlet connection**

Connect gas hose to rear of machine and then to regulator on gas bottle. Ensure all connections are tight to ensure no loss of gas.

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

**4. Mains input cable**

Fit required plug as per your electrical installation



## Front machine connections



**Fig 2**

### **1. Euro torch connector**

Connect Euro type Mig torch to euro torch connector, align torch connector to machine connector and then turn retaining ring clockwise to secure.

Ensure torch is secured tightly to avoid weld power problems

To avoid electric shock keep the Mig torch in good condition and replace if any of the insulation is damaged.

### **2. Earth / Workpiece connector**

Connect the earth lead (negative - ) to this connector.

Insert male connector into socket and twist clockwise until tight.

Secure other end of earth lead to Workpiece via the earth clamp.

## Controls and Settings



**Fig3**

### **1. Spot Welding**

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.

### **2. Arc Force**

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

### **3. Welding Voltage**

This adjusts the welding voltage (weld power) from 0 to 10. Adjust knob for power output required by job, preset welding voltage is shown in LED (Fig 3.7)

### **4. Stitch Welding**

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 (Fig 3.1) 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.

**5. On/Off Power Switch**

This turns the I-Mig200 Mig Welder on and off.

**6. Wire Speed**

This adjusts the wire feed speed from 0-100%

Adjust the wire speed to suit welding voltage (Fig 3.1) and job requirements

When adjusting the wire feed speed a value is shown in the amperage LED (Fig 3.8)

This feature allows you to record this value along with the preset welding voltage for easy setup to specific job when several different welding jobs are being done

**7. Voltage LED Display**

This shows the preset welding voltage when no welding is being carried out

When welding this shows the actual welding voltage

This allows the machine to be calibrated to BS if required by your company

**8. Amperage LED Display**

This shows the preset wire feed speed when no welding is being carried out

When welding this shows the actual welding amperage

This allows the machine to be calibrated to BS if required by your company

**9. Warning LED**

This warning light will come on under these situations

Duty cycle of machine has been exceeded, the machine will stop working and the fan will continue to run until machine has cooled down. The light will go off and welding may be carried out again.

If duty cycle has not been exceeded the warning light comes on to warn of either low input voltage has been sensed or there is an internal fault with machine

**10. Power LED**

This lights when machine is switched on

**Cont....**  
**Side Panel**

### Wire Spool Adjustment

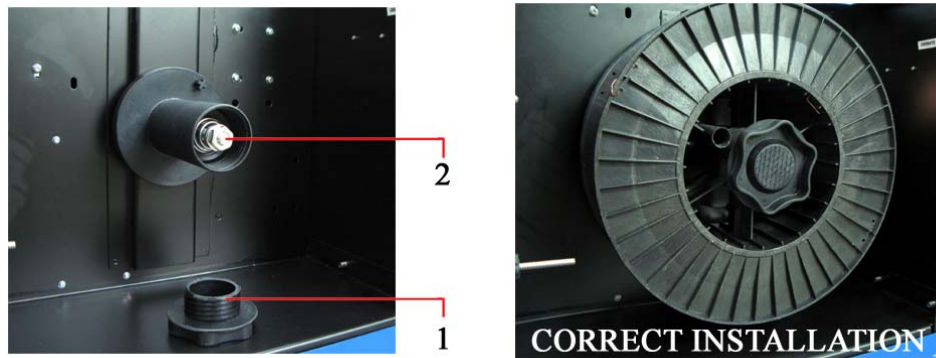


Fig 4

#### 1. Wire reel retainer

This screws onto wire reel holder to secure wire reel roll

#### 2. Wire reel tensioner nut

This adjusts the tension on wire feed reel which stops the reel from over running and causing wire to come of reel (birds nest) when torch switch is released. Some times known as reel brake.

This is set in factory, if adjustment is required do not over tighten as this can cause stress to wire feed motor.

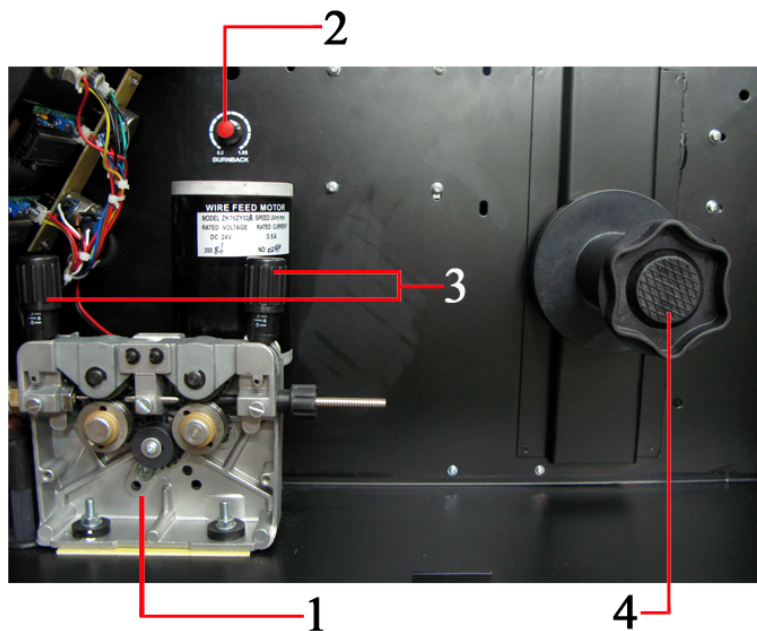


Fig 5

#### 1. Wire Feed Drive 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.

**2. Burnback control knob**

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 Burnback into welding tip.

**3. 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 Burnback into tips

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

Cont....

## Operating machine

### SAFETY PRECAUTIONS



**WARNING!**

#### **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



**WARNING!**

#### **FUMES AND GASES can be dangerous**

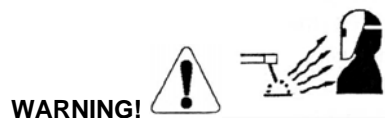
Keep your head out of fumes & gases produced from welding.  
 Use ventilation or exhaust to remove fumes & gases from breathing zone and general area.



**WARNING!**

#### **WELDING SPARKS can cause fire or explosion**

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



**WARNING!**

#### **ARC RAYS can burn**

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

## Operating Machine

1. Ensure machine has been setup as previously stated
2. Fit reel of wire to machine, ensuring correct size rollers are fitted. For steel only use wire of 0.6mm, 0.8mm and 1.0mm, for aluminium only use wire of 0.8mm, 1.0mm, 1.2mm.

**DO NOT USE 1.2MM STEEL WIRE AS THIS WILL OVERLOAD MACHINE AND VOID WARRANTY**

3. Feed wire into wire feed assy and into guide tube, clamp down top pressure feed rollers and set tensioner pressure.
4. Press torch switch and wire will feed to torch head (adjust wire feed speed to approx 3) – When wire has come through torch to welding tip release trigger.
5. Turn on gas and set flow rate to approx 14 LPM
6. Set welding voltage and wire feed speed according to thickness of job
7. Ensure you are wearing the correct safety clothes & equipment for welding (i.e welding mask, gloves, apron etc)
8. Select welding voltage (power) required on front panel
9. Select wire feed speed required on 'wire speed' knob
10. 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)

11. Press torch trigger to start welding process.

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

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

### **Tips on welding aluminium**

When welding aluminium as the wire is much softer than steel wire you have to fit a teflon liner in place of the steel liner in mig torch, this is so the wire feeds much smoother and stops it snarling at rollers.

To fit a teflon liner, remove steel liner from torch and fit teflon liner so you have about 10 inches left coming out end of mig torch at the machine end. In the brass euro body where torch fits onto you will see a brass guide tube, remove this tube and fit torch to machine and cut off excess teflon liner as required. You want the teflon liner to get as close to the wire feed rollers as possible. Best way to cut liner is with a sharp stanley knife blade.

Next you will need to fit U-Groove rollers made specifically for alloy wire to the feed unit. These are available from R-Tech. Remove the steel rollers (V-Groove) from the machine and fit U-Groove rollers ensuring correct size groove is in line with the welding wire guides. For Aluminium you can use up to 1.2mm wire.

Adjust the wire tensioner to minimum pressure and tighten down until wire is gripped, too much pressure will deform wire and end up with snarls by rollers.

Fit oversize welding tip. These are available and have an 'A' after tip size. I.E 1.0A where as for steel wire it would just say 1.0

## **Maintenance**

### **Routine and periodic maintenance**



**WARNING!**

#### **ELECTRIC SHOCK CAN KILL**

Turn the input power OFF at the mains switch & fuse box and remove mains plug from socket before working on this equipment.

Have a qualified electrician install & service this equipment.

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

Do not touch electrically live parts

1. Periodically (3-6 months depending on use / environment), 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 and switchgear

Failure to maintain plant can void manufacturers warranty.

2. Inspect input and output cables & hoses for fraying and cuts, replace if damaged present
3. Keep mig torch and earth 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. Unauthorised repairs performed on this equipment may result in danger or injury 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

If fault / problem is not listed below check our [Mig Welder Support](http://www.r-techwelding.co.uk/support.php) page on our website

[www.r-techwelding.co.uk/support.php](http://www.r-techwelding.co.uk/support.php)

or contact R-Tech by phone. Contact details can be found on our website



## **Output Problems**

- **No output - Power light is not lit**

Check machine on/off switch is in the 'on' position  
 Check Input power to machine  
 Check plug wiring  
 Check mains trip / fuses

- **No output - Fan runs - Power light is lit**

Check torch connections are secure and torch switch operation, try replacing mig torch.

- **No output - Power light is lit - Warning light shows RED colour**

Welding application may have exceeded recommended duty cycle, allow machine to cool down until the warning light goes out.

- **No output – Power light is lit – Warning light shows GREEN colour**

Output overload problem – Output diodes or IGBT faulty – Contact R-Tech

- **No output – Power light is lit – Gas at torch tip – No wire feed**

Check wire feed unit protecting fuse on rear of machine, if blown replace with new fuse of same rating, If fuse flows again contact R-Tech

- **Machine keeps overheating - Warning light is lit RED on machine**

Check if fan is running – if not contact R-Tech for repair

Check the cooling vents for obstruction, blow out machine with clean dry low pressure air supply.

Check for adequate ventilation around machine

- **Porosity in weld – No / low gas at torch tip**

Check gas supply from gas bottle & check flow rate on regulator

Check gas hose for restrictions

Check for draughts in local area, open doors etc

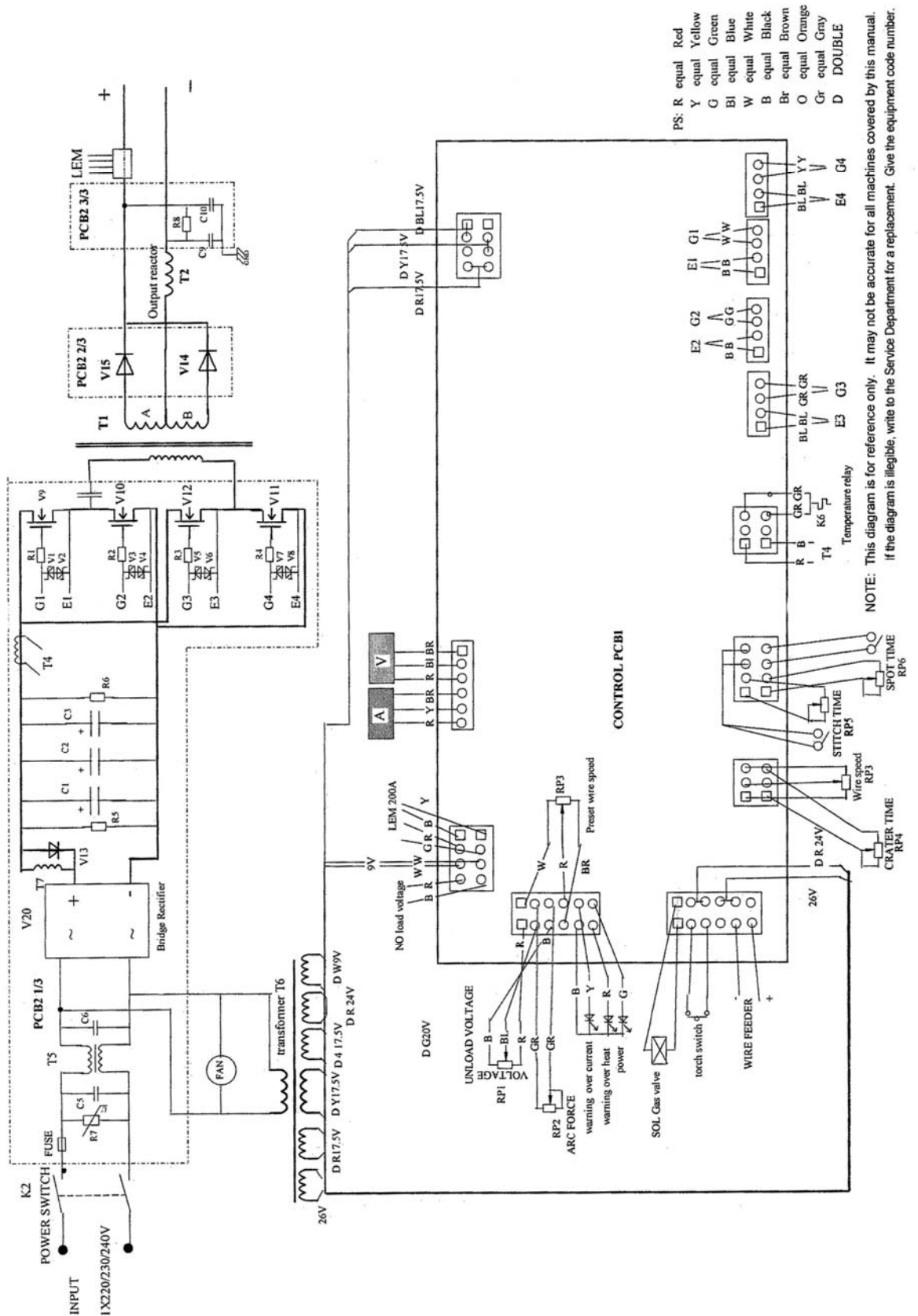
Replace mig torch – may have gas restriction

- **Poor weld penetration**

Check condition of earth lead and clamp and ensure clamp is connection via a clean area on work piece

Check condition of mig torch, try other mig torch

# Wiring Diagram



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

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

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 للمنتج لهذه المعدات والمواد قبل استعمالها واتبع تعليمات الوقاية لصاحب العمل.