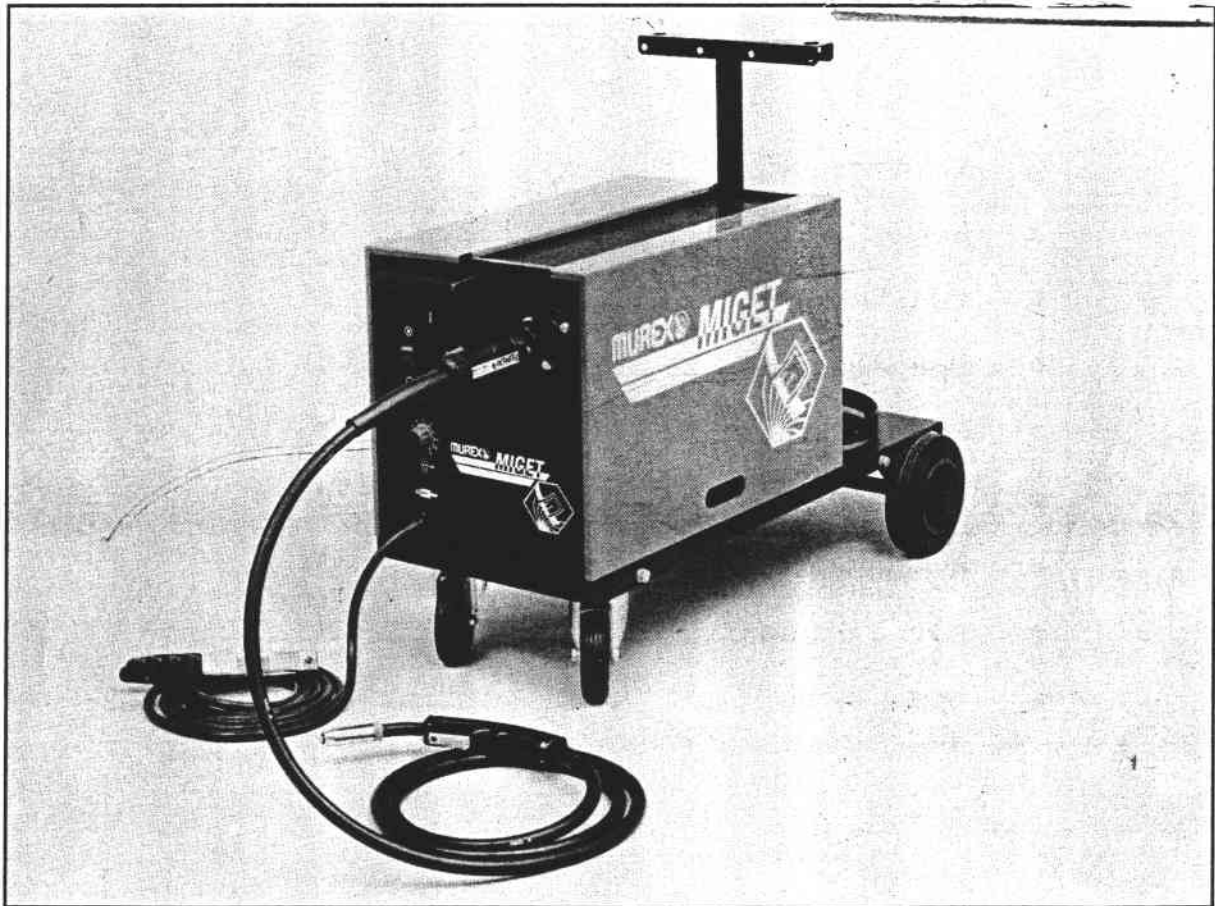




# Operating Manual

## MIGET



**Please ensure that this  
Instruction Manual  
is made available  
to the user of  
the equipment**

£2.50



## Contents

	Page
● Warnings.....	3
● Safety.....	4
● Introduction.....	5
● Specification.....	6
● Installation.....	7
● Controls.....	8
● Maintenance.....	11
● Circuit Diagram.....	12
● Spare Parts.....	13



## WARNING



This welding equipment has been designed, manufactured and tested to the highest standards to ensure long and trouble free life. However, regular maintenance is an essential part of keeping the machine operating in a reliable and safe manner and your attention is drawn to any maintenance instructions that are contained in this manual.

In general, all welding equipment should be thoroughly inspected, tested and serviced at least annually. More frequent checking will be required when the equipment is heavily used.

Wear and tear, particularly in electro-mechanical and moving components, are gradual processes. Caught in time, repair costs are small and the benefits in performance reliability and safety are significant. Left alone, they can put the equipment, and you, at risk.

Have this equipment regularly inspected and maintained by an approved service centre.



## WARNING



**ARC WELDING AND CUTTING CAN BE INJURIOUS TO YOURSELF AND OTHERS. TAKE PRECAUTIONS WHEN WELDING. ASK FOR YOUR EMPLOYER'S SAFETY PRACTICES WHICH SHOULD BE BASED ON MANUFACTURERS' HAZARD DATA.**

### **ELECTRIC SHOCK - Can Kill**

- Install and earth the welding unit in accordance with applicable standards.
- Do not touch live electrical parts or electrodes with bare skin, wet gloves, or wet clothing.
- Insulate yourself from earth and work.
- Ensure your working position is secure.

### **FUMES AND GASES - Can be Dangerous to Health**

- Keep your head out of the fumes.
- Use ventilation, extraction at the arc, or both, to keep fumes and gases from your breathing zone and the general area.

### **ARC RAYS - Can Injure Eyes and Burn Skin**

- Protect your eyes and body. Use the correct welding screen and filter lens and wear protective clothing.
- Protect bystanders with suitable screens or curtains.

### **NOISE- Excessive noise can damage hearing**

- Protect your ears. Use ear defenders or other hearing protection.
- Warn bystanders of the risks.

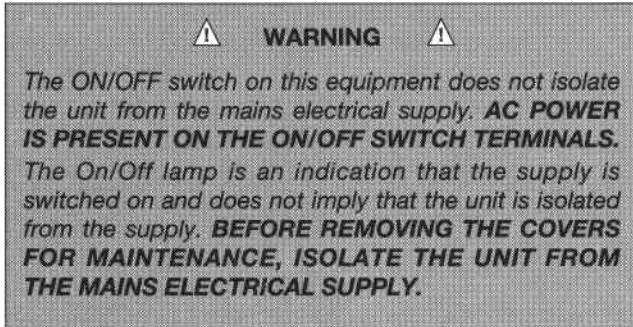
**READ AND UNDERSTAND THE INSTRUCTION MANUAL  
BEFORE INSTALLING OR OPERATING AND SEE WMA PUBLICATION 237  
'The arc welder at work' AVAILABLE FROM THE MANUFACTURER.**

**PROTECT YOURSELF AND OTHERS**

## SAFETY

In any arc welding or gouging operation, it is the responsibility of the user to observe certain safety rules to ensure his personal safety and to protect those working near him.

Read all safety articles relevant to arc welding published by the WMA. Pay particular attention to any **CAUTION** or **WARNING** Notes included in this manual. **CAUTION** indicates possible equipment damage. **WARNING** indicates possible hazard to life.



### 1. Electrical

- ⚠ Treat electricity with respect. Even the open circuit voltage of this equipment can be dangerous. Adjustments to the torch or replacement of torch parts should be undertaken with the mains supply isolated from the unit.  
If damaged torch cables or torch components are found, the unit must be disconnected from the mains and defective parts must be replaced using only Murex spare parts.
- ⚠ Do not work on live circuits or cables. Disconnect the main power supply before checking the machine or performing any maintenance operation.
- ⚠ Be sure the case of the welding machine is properly connected to a good electrical earth.
- ⚠ Have the wiring for the welding machine installed by a qualified electrician. All connections must be made according to specifications in force and to general safety standards.
- ⚠ Do not stand in water or on damp floors while using an arc welder or cutter. Do not use in the rain.
- ⚠ Do not operate with worn or poorly connected cables. Inspect all cables frequently for insulation failure, exposed wires and loose connections.
- ⚠ Do not overload cables or continue to operate with overheating cables. Cables which are too small for the current carried will overheat, causing rapid deterioration of the insulation.
- ⚠ Pay attention that live parts of the torch do not touch any metal which is connected to the earth cable. Fix an insulated hook to hang the torch on when it is not in use.

### 1. Ventilation

- ⚠ Do not weld or cut on containers which have held combustible or flammable materials, or materials which give off flammable or toxic vapours when heated, without proper cleaning.
- ⚠ Locate the welding/cutting operation far enough from any vapour-type degreaser using trichloroethylene or other chlorinated hydrocarbons as solvents. The ultraviolet light from the arc can decompose these vapours into toxic gases at a considerable distance from the arc, even though the concentration of the gases is low enough to be undetectable by smell.
- ⚠ Be sure to provide adequate ventilation for removal and dilution of fume and gases. Fume exhaust facilities near the arc, or a ventilated helmet should be used when cutting in confined spaces or on toxic material.

### 2. Glare

- ⚠ Never look at the arc without wearing eye protection. Always use the proper protective clothing, filter glasses, and gloves. Be careful to avoid exposed skin areas. Do not use cracked or defective helmets or shields.
- ⚠ Never strike an arc when there is someone near who is not protected from the strong light of the arc.
- ⚠ Warn bystanders who are not aware of the dangers of ultraviolet light.

### 3. General

- ⚠ Take care when lifting the unit.
- ⚠ Ensure that cylinders are secured by chains.
- ⚠ Locate the unit so that there is adequate air flow to the ventilation louvres.
- ⚠ Always dress correctly to protect against glare, radiation and spatter.

### 4. Fire

- ⚠ Ensure that the correct type of fire extinguisher is available in the welding area.
- ⚠ Do not weld near flammable materials or liquids, in or near explosive atmospheres, or on pipes carrying explosive gases.

### 5. Vehicle Electrics

- ⚠ When working on motor vehicles, remove the battery and any circuitry which may be damaged by the arc.
- ⚠ Whilst welding be aware of the possibility of 'hidden wires' behind panels or bulkheads.

---

## INTRODUCTION

The MIGET is a MIG/MAG welding power source fitted with an integral wire feed system suitable for welding mild and stainless steel and aluminium.

The MIGET accepts the standard 15Kg 300mm  $\varnothing$  wire reel keeping it totally enclosed within the wire feed compartment.

Rugged undergear ensures portability even with the larger size gas cylinders mounted on the cylinder carrier.

The MIGET is supplied complete with the MXA 153 detachable (Euro connector) 3 metre Welding Torch, Work Return Lead and Clamp, Gas Hose plus  $\frac{3}{8}$  BSP Nut and Nipple, and Primary Mains Cable.

Protection against the effects of overheating is provided by a thermal protection device. In the event of overheating, power from the MIGET is shut down and the yellow indicator lamp illuminates.

## Specification

### Input

Voltage	240v
Phase	1
Frequency	50Hz
Fuse Rating	13A
Max KVA	4.5 KVA

### Output

OCV	16.6 - 27.0 Volts
Current Range	30 - 170 Amps
Rated Output	
20% Duty Cycle	140A/21v
35%	105A/19v
60%	80A/18v
Standards	EN 60 - 974
Insulation Class	F & H

### Dimensions (inclusive of undergear)

Height	520mm
Width	480mm
Length	840mm
Weight	55Kg

### Wire Sizes

Steel	0.6/0.8mm
Aluminium	1.0mm


## INSTALLATION

### WARNING

*Installation should only be undertaken by a qualified electrician or trained individual.*

Correct installation is important for the reliable and safe operation of the equipment. Before continuing carry out the following checks:

1. Having unpacked the power source, inspect for evidence of damage or missing parts. Notify the carrier or Murex immediately.
2. Check the air louvres in the front and rear panels for any packing materials that might obstruct the air flow.
3. Position the equipment in a safe area. Leave at least 0.5m clearance around the unit to allow air to circulate freely. The position should be free from dust, fumes and heat. See SAFETY at the front of this manual.
4. If the mains cable is not fitted, connect it to the mains input terminal block (marked L and N) leaving sufficient slack in the green and yellow earth wire.

The green and yellow earth wire should be securely fitted to the chassis of the welding machine via the stud and nut marked 

### INITIAL SETTING UP

1. Check that the ON/OFF switch is 'off'.

### WARNING

*This switch does not isolate the unit from the mains electrical supply*

### 2. Feed Roll

Before connecting the gas supplies, ensure that the equipment is set up for the type and size of wire to be used.

### 3. Work Return Lead

Connect the work return lead between the work return socket and a clean area on the work piece.

### WELDING WIRE

#### Fit the reel of welding wire:

1. Remove the hand nut from the hub.
2. Place the reel of wire on the hub so that the wire will be drawn off from the top. Ensure that the pin on the hub locates in the hole in the side of the reel. Replace hub hand nut.
3. Release the end of the wire from the side of the reel but do not allow the coils to loosen. Cut off the kinked portion and remove any sharp edges from the end of the wire. This must be done every time the wire is threaded through the equipment.
4. Release the pressure roll arm.
5. Thread the wire through the inlet guide over the feed roll and into the outlet guide, for approximately 50mm (2in).

Lock the pressure roll arm so that the welding wire is clamped into position in the groove.

6. Switch on the power source.

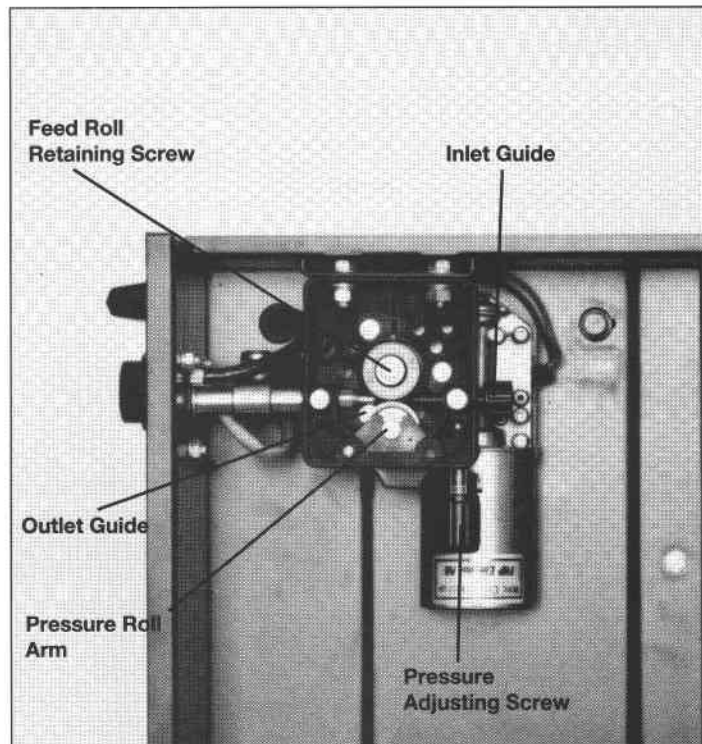
### TORCH

1. Check that the torch lead is laid out straight and connect the torch to the torch adaptor, ensuring that the wire enters the liner correctly.
2. Remove the nozzle and contact tip from the torch. Using the torch switch, feed the wire through the torch. Thread a contact tip over the wire and screw it into the torch. Tighten the contact tip with the key provided.
3. Fit the nozzle.

### WARNING

*The wire contact tip, and wire feed mechanism are 'live' when the torch switch is pressed.*

4. Press the torch switch.



5. Check that the wire feed is smooth and positive. If the wire slips in the feed roll, tighten the pressure adjusting screw just enough to obtain positive wire feed drive.

**Do not overtighten the adjusting screw.**

6. Cut off the wire to protrude 10mm from the torch connector.

### REPLACEMENTS AND ADJUSTMENTS

#### 1. Guide Tube Removal

- (a) Release the pressure roll.
- (b) If the guide tube will move freely, push it forward out of the torch adaptor using a pencil or soft wooden dowel rod, then withdraw it from the torch adaptor using a pair of long nose pliers.

If the guide tube liner does not move freely, it may be necessary to drive it out using a hard wooden dowel or old guide tube.

*Note: Do not use a screwdriver or metal tool to push out the tube. Use of such a tool may damage the end of the guide and impair wire feeding.*

#### 2. Feed Roll Changing

Remove the feedroll retaining screw. It will be necessary to give the screwdriver a sharp twist to avoid turning the motor.

Drop the pressure arm and pull off the feedroll. When replacing the feedroll, note the wire size which is stamped on the face of the roll. The required size must face outwards when the roll is refitted. Ensure that the Woodruff Key is not lost.

Fit the feedroll and lock the pressure arm. Refit the retaining screw giving it a sharp twist with the screwdriver to tighten.

#### 3. Feed Roll Pressure

Correct feed roll pressure will provide smooth, uninterrupted feeding of the wire. Inspection of the wire should reveal only slight marks from the feed rolls and no deformation of the wire. Use of the correct pressure is especially important when feeding aluminium wires. **The pressure should be just enough to provide positive wire drive without slipping.**

#### 4. Overrun adjustment

Tighten or unscrew the hub tension nut in the centre of the wire reel hub until sufficient hub friction is achieved to prevent overrun.

*Note: Do not overtighten or the wire will slip in the feed rolls resulting in slow or irregular wire feed.*

## CONTROLS

### 1. ON/OFF Switch

⚠ **WARNING** ⚠

*The ON/OFF switch on this equipment does not isolate the unit from the mains electrical supply. **AC POWER IS PRESENT ON THE ON/OFF SWITCH TERMINALS.** The On/Off lamp is an indication that the supply is switched on and does not imply that the unit is isolated from the supply. **BEFORE REMOVING THE COVERS FOR MAINTENANCE, ISOLATE THE UNIT FROM THE MAINS ELECTRICAL SUPPLY.***

### 2. Over Temperature Indicator Lamp

The indicator will illuminate and the power source will be inhibited if the temperature of internal components becomes excessive. Should this occur, leave the power source to idle for a few minutes to cool down, do not switch the power source off as this will remove power from the cooling fan.

**CAUTION**

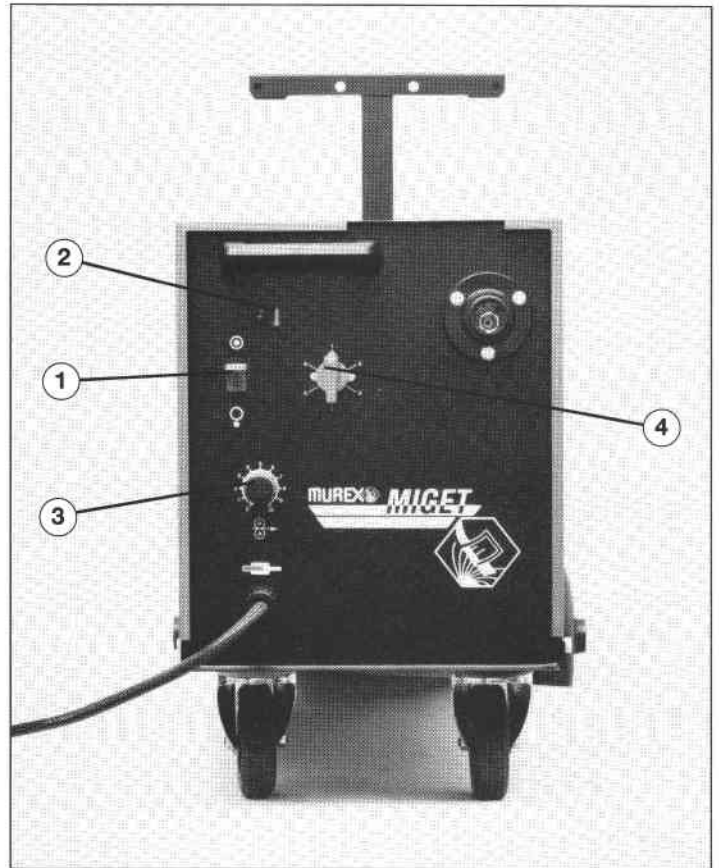
*If this indicator lamp persistently operates do not use until the power source has been checked by an approved Service Engineer.*

### 3. Wire Feed Speed Control

Provides infinitely variable wire feed speed up to a maximum of 16m/min.

### 4. Voltage Control Switch

Provides six output voltage levels.





## WELDING NOTES

1. Set the voltage and wire feed controls to the appropriate positions for the material to be welded. (See Guidelines on page 10).
2. Cut the electrode wire so that approximately 3-5mm of wire protrudes from the contact tip.
3. Position the torch over the seam to be welded as follows -
  - (a) Hold the contact tip approximately 10mm from the work surface.
  - (b) Hold the torch so that it makes an angle of approximately 70° to the work surface.
  - (c) Position the torch so that the nozzle is parallel to the seam to be welded.
4. Warn bystanders to shield their eyes. Lower your helmet.
5. Press the torch switch to strike arc and, as the weld is deposited push the torch slowly along the seam at a constant speed.

### WARNING

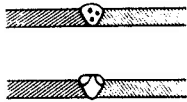

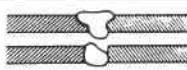



*The wire, contact tip and wire feed mechanism are 'live' when the torch switch is pressed.*

6. Using the wire feed speed control, adjust for a 'crisp' sounding arc.

### NOTE

*Low settings of wire feed speed will cause a long drawn out arc and spattering, high settings of wire feed will cause stubbing.*

## POSSIBLE WELDING PROBLEMS

Fault		Possible Cause
Wire does not move forward despite rotation of feed rollers		<ol style="list-style-type: none"> <li>1. Pressure roller inadequately loaded</li> <li>2. Dirt in wire guide and/or contact nozzle</li> </ol>
Irregular wire feed		<ol style="list-style-type: none"> <li>1. Faulty contact nozzle</li> <li>2. Dirt in groove of feed roller</li> <li>3. Feed roller groove faulty</li> </ol>
Arc will not strike		<ol style="list-style-type: none"> <li>1. Poor contact between earth return and workpiece</li> </ol>
Arc too long and irregular		<ol style="list-style-type: none"> <li>1. Voltage too high</li> </ol>
Very small arc		<ol style="list-style-type: none"> <li>1. Voltage too low</li> </ol>
Welding fault	Appearance	Possible cause
Pores		<ol style="list-style-type: none"> <li>1. Incorrect gas flow. Rec. 8-10 l/min.</li> <li>2. Inadequate gas shielding due to spatter in nozzle</li> <li>3. Draughty workplace</li> <li>4. Welding distance too long and/or welding torch wrongly held</li> <li>5. Damp, oil, rusty workpiece</li> </ol>
Poor filling up		<ol style="list-style-type: none"> <li>1. Welding speed too high</li> <li>2. Current too low relative to welding speed</li> </ol>
Binding faults		<ol style="list-style-type: none"> <li>1. Irregular movement of torch</li> <li>2. Voltage too low</li> </ol>
Spatter		<ol style="list-style-type: none"> <li>1. Voltage too high</li> <li>2. Gas nozzle dirty</li> </ol>
Uneven joint		<ol style="list-style-type: none"> <li>1. Wire tip too long</li> <li>2. Current too high relative to voltage</li> <li>3. Welding speed too low</li> </ol>
Poor penetration		<ol style="list-style-type: none"> <li>1. Current too low relative to voltage</li> </ol>

**NOTE!** Faults in the electrical parts such as the control circuits, relays, switches, transformers, etc, should only be attended to by a proficient service technician