



Operating Manual

Tradesmarc 151



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



Contents

	Page
● Warnings.....	3
● Safety.....	4
● Introduction	5
● Specification	5
● Installation	6
● Welding Guidelines	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.

⚠ **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.**

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 trichlorethylene 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 Tradesmarc 151 is a compact welding power source intended for MIG/MAG welding of mild and stainless steels, aluminium and also self shielded (gasless) cored wire.

A special connection block within the wire feed compartment allows easy reversal of welding polarity to enable quick change between welding with solid wires with a shielding gas and using gasless wires.

The Tradesmarc 151 accepts the standard 15Kg 300mm wire reel keeping it totally enclosed within the wire feed compartment.

The complete package consists of the welding power source with integral wire feed unit, PSG 14v welding torch, mains lead fitted with 13 amp fused plug, gas hose and the undergear.

Protections 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 on the front panel illuminates.

SPECIFICATION

INPUT

Voltage	240v
Phase	1
Frequency	50 Hz
Fuse Rating	13 amp

OUTPUT

Open circuit Voltage	16.6 - 28.6 volts	
Current Range	40 - 150 amps	
Duty Cycle	20%	100 A/19v
	60%	55 A/17v
	100%	40 A/16v

150A/16V at 8% DUTY

Standard	IEC 974 - 1	
Enclosure Class	IP21	
Application Class	S	
Max. size gas Cylinder	Height 1m	Diameter 210mm

NB. The symbol S indicates that this power source is safe to use in areas where there is an increased electrical hazard. The enclosure class IP21 means the Tradesmarc 151 is designed for indoor use.

INSTALLATION

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. Assemble undergear (see Figure 3).
3. Check the air louvres in the front and rear panels for any packing materials that might obstruct the air flow.
4. 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.

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. Polarity Selection Cables

Connect the polarity selection cables (positioned above the wire feed black) according to the welding wire being utilised (see Figure 1).

NOTE

For solid wires using a shielding gas, the work return cable is connected to -ve

For gasless (cored/tube) wires, the work return cable is connected to the +ve

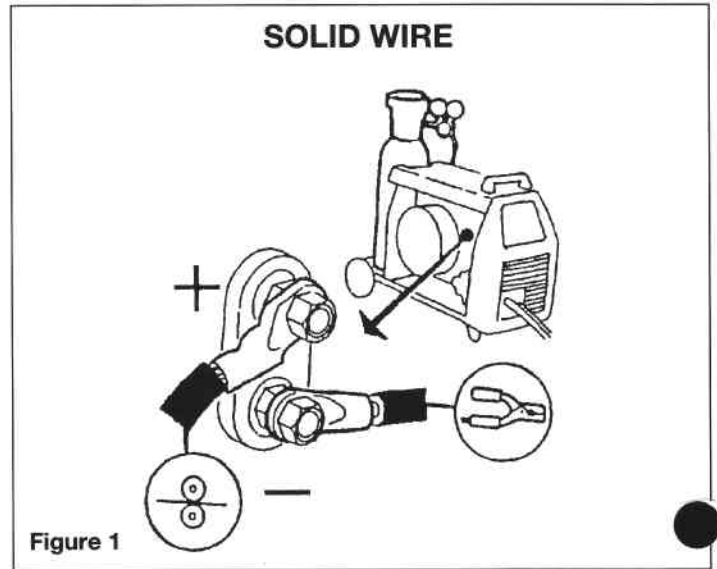


Figure 1

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).

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

NOTE

Too high tension may cause excessive wear on the pressure roller, feed roller and drive motor

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.
3. Fit the nozzle.

WARNING

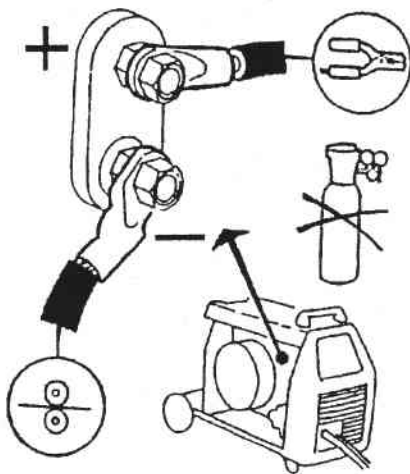
The wire contact tip, and wire feed mechanism are 'live' when the torch switch is pressed.

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 contact tip.

GASLESS/CORED WIRE



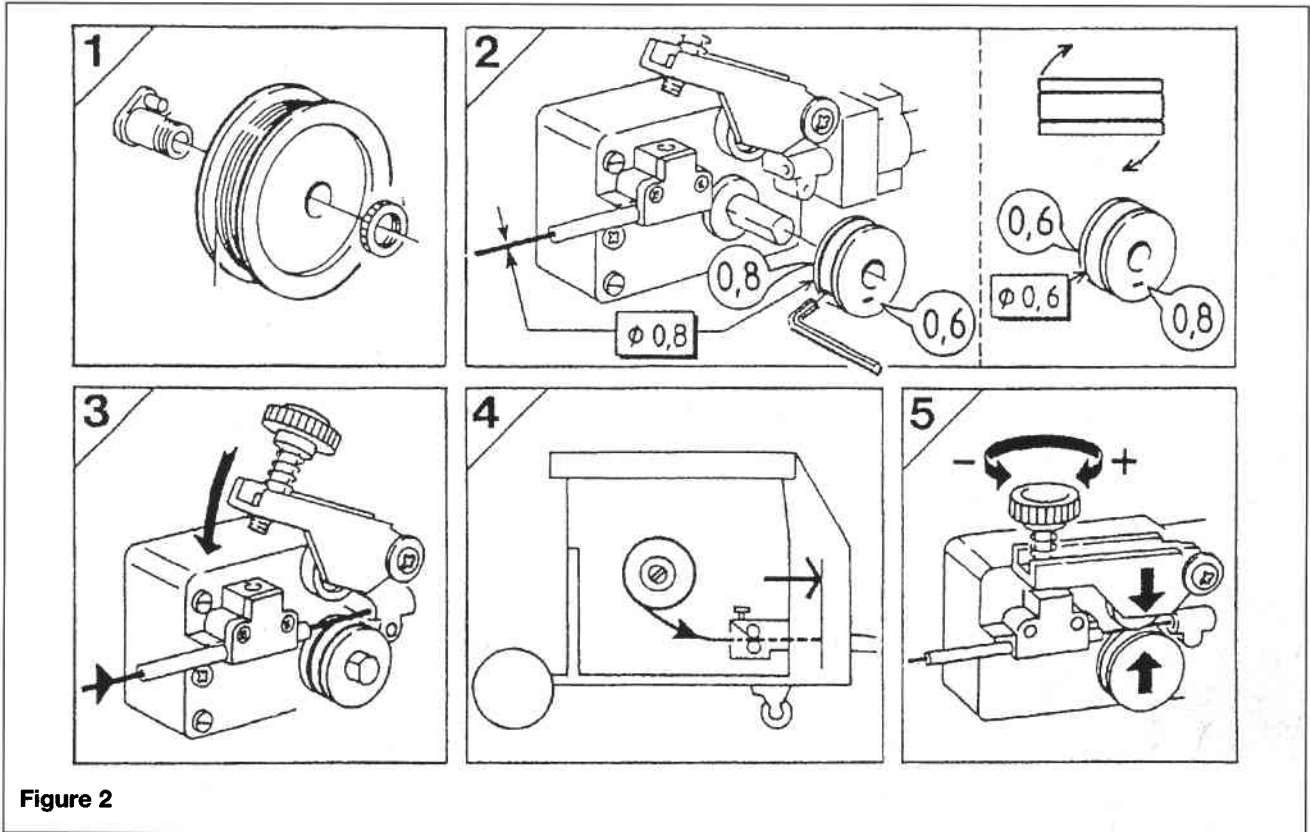
3. Feed Roll

Before connecting the gas supplies, ensure that the equipment is set up for the type and size of wire to be used (see Figure 2).

4. Work Return Lead

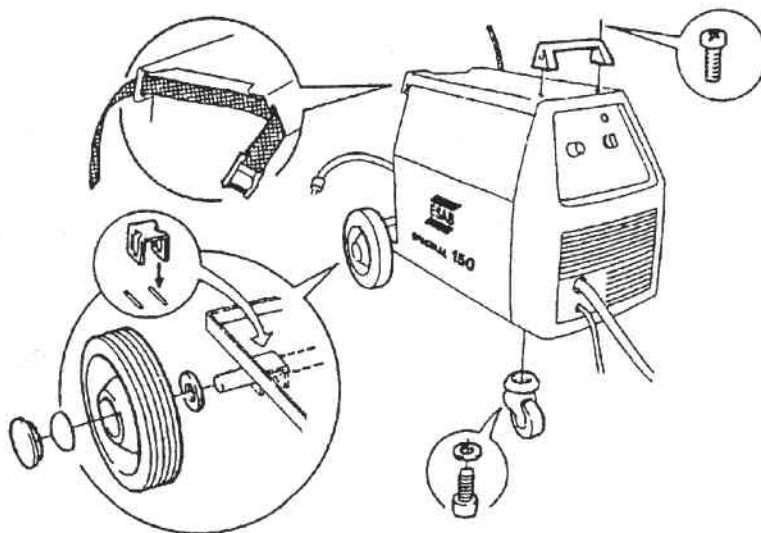
Connect the work return lead between the work return socket and a clean area on the work piece.

INSTALLATION (Continued)



INSTALLATION

Assembly of components



GAS CONNECTION

Does not apply to tube electrode

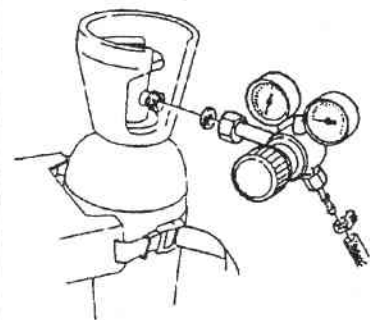

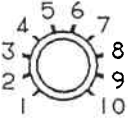
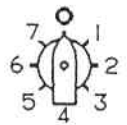
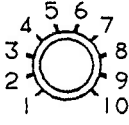
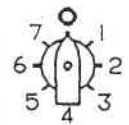
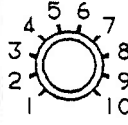
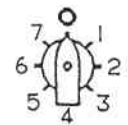
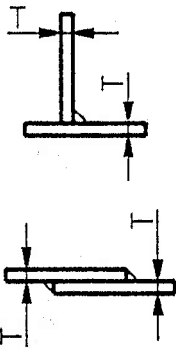
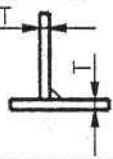
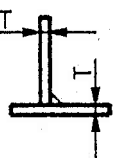


Figure 3

WELDING GUIDELINES

	T mm	TRAD WIRE DRAHT FIL	MIX		CO ₂			
								
Fe 	0,6	Fe 0,6	5,5	3				
		Fe 0,8	3,5	3				
		Gl 0,8					5	1
	0,8	Fe 0,6	5,5	4	6	6		
		Fe 0,8	4,5	3				
		Gl 0,8					5	1
	1,0	Fe 0,6	6,5	5	6,5	6		
		Fe 0,8	5	4	4,5	6		
		Gl 0,8					5,5	2
	1,5	Fe 0,6	7	6	7,5	7		
		Fe 0,8	6	5	5	6		
		Gl 0,8					6	4
2,0	Fe 0,6	8	6					
	Fe 0,8	7	6	6,5	6			
	Gl 0,8					6	5	
3,0	Fe 0,8	8	7	7,5	7			
	Gl 0,8					8	7	
Al 			Ar					
	1,0	Al 1,0	7,5	2				
	1,5	Al 1,0	8	4				
	2,0	Al 1,0	8	6				
	3,0	Al 1,0	8	7				
Ss 			Ar + O₂					
	1,0	Ss 0,6	6,5	4				
		Ss 0,8	6	4				
	1,5	Ss 0,6	8	5				
		Ss 0,8	6,5	5				
	2,0	Ss 0,6	8,5	6				
		Ss 0,8	7	6				
	3,0	Ss 0,6	10	7				
Ss 0,8		8	7					

469 387-001