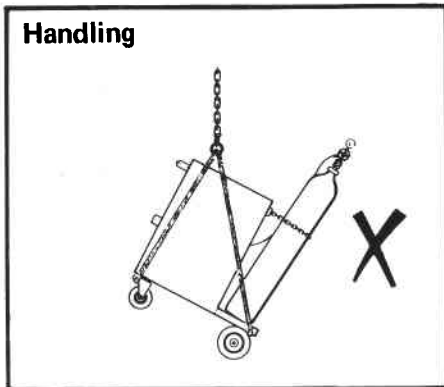




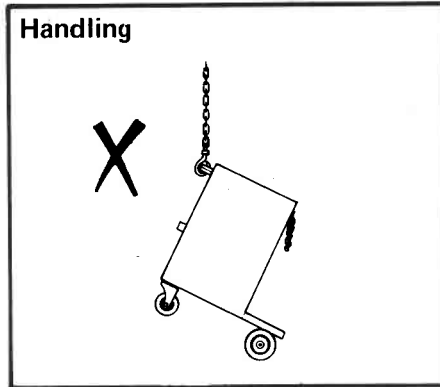
At the rear of this manual is a pull-out technical broadsheet and parts list. Please pass these documents to your Maintenance Department.

SAFETY

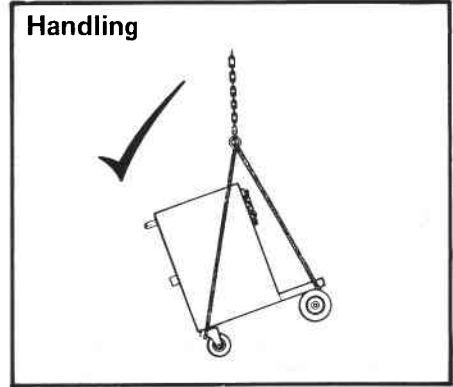
Operators of Electric arc welding equipment must always be aware of the inherent risks involved in the arc welding process. Your attention is therefore drawn to the Safety Leaflets available from the Welding Institute, particularly Publications 236 and 237.



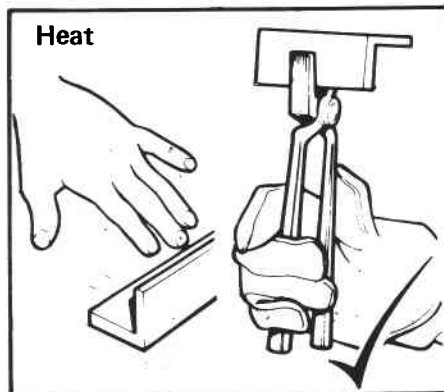
Remove cylinder before lifting.



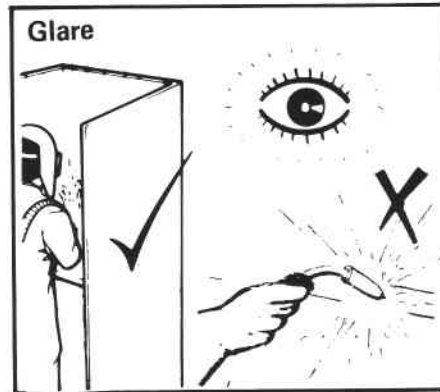
Do not lift using handle.



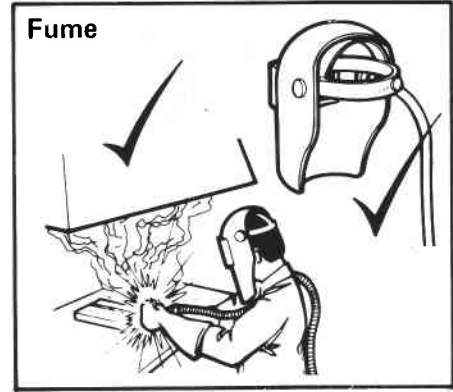
Sling the unit when lifting.



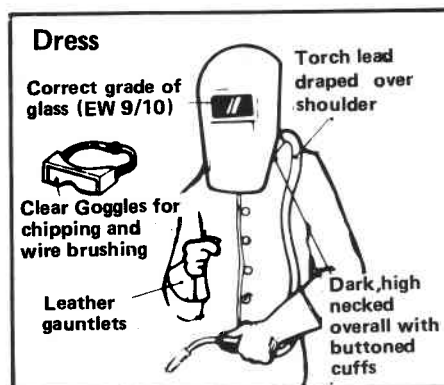
Don't burn yourself!
Wear gauntlets and use tongs.



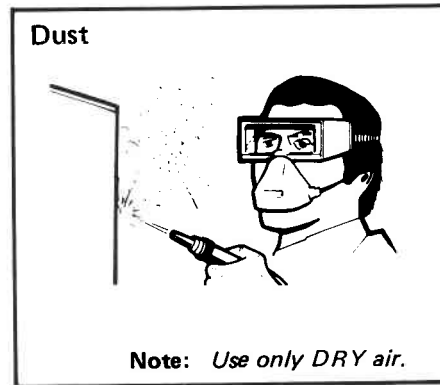
Wear your headshield (or face screen) and screen the welding area.



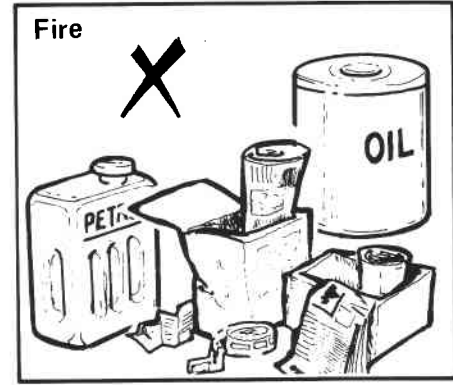
Ventilate the welding area to prevent a build-up of gas and fumes.



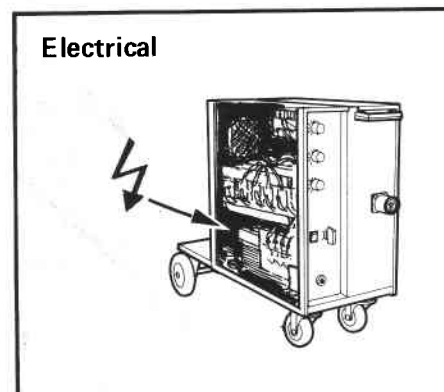
Dress correctly when welding and preparing the weld.



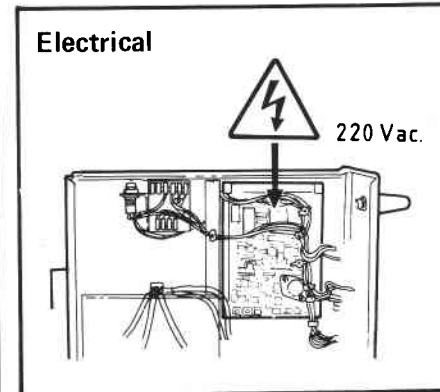
Wear goggles and mask when removing dust with an airline.



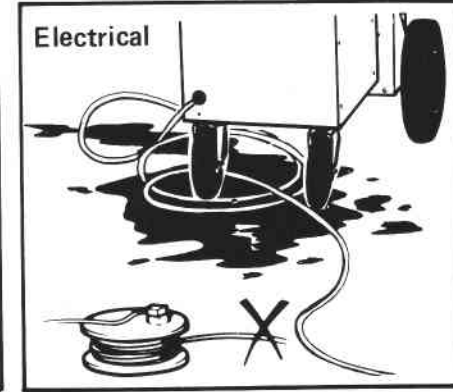
Before commencing welding, clear the area of flammable materials.



Don't work with the cover off. Leave it to the experts.



220V a.c. is supplied to the p.c.b. Isolate the unit before removing covers or p.c.b.



Don't allow leads to lie in oil, water or corrosive liquid or extend them with extension leads - fit a longer cable.

INTRODUCTION

The Tradesmig 130S, 160, 230 and 240 are Transformer/Rectifier power sources fitted with an integral wire feed system. All four units are capable of continuous, spot and stitch welding using CO₂ or Argonrich gases. A 42volt a.c. output is available to power a CO₂ heater (TM 160, TM230 and TM240 only). — See page 4.

Protection is provided against the effects of overheating by a thermal protection device mounted on the transformer assembly. In the event of overheating, power to the unit is interrupted. This protective device automatically resets once the unit cools. In the event of a mains input current surge, circuit breakers, mounted on the back panel, will interrupt a.c. supplies within the unit. These circuit breakers must be reset manually before the unit will function.

WARNING — IF THE CIRCUIT BREAKERS TRIP MORE THAN ONCE, ISOLATE THE UNIT FROM THE MAINS SUPPLY (REMOVE THE SUPPLY FUSES) AND CALL FOR TECHNICAL ASSISTANCE. *

** Through your Murex Distribution Networks.*



Tradesmig 130S

Designed for dip transfer welding of mild steel from 0.5 to 3mm thickness.

May also be used for spot welding of materials 0.5mm to 1.2mm thickness. (top sheet)

Typical Applications — Manufacture and Repair of:

Commercial vehicles	Wrought iron work
Coach bodies	Shop fittings
Heating and ventilating equipment	Tubular metal furniture
Exhaust systems	

Tradesmig 160

This unit is designed to suit the light fabrication industry for the welding of Mild Steel plate or sections from 0.5 to 4.5mm thickness. It may also be used for spot welding of materials from 0.5 to 1.6mm thickness. (top sheet)

Typical Applications — Manufacture and Repair of:

Agricultural machinery	Architectural metal work
Ductings	Elevators and conveyors
Exhaust systems	Garden equipment and tools
Gates and railings	Heating and ventilating equipment
Steel products	Tubular metal furniture
Trucks, Barrows and Trolleys	Window frames
Wrought iron work	



Tradesmig 230 and Tradesmig 240

These units offer maximum flexibility of operation for medium and volume production. They are capable of welding Mild Steel, Stainless Steel and Aluminium plate and sections in thickness ranging from 1mm to 10mm.

Spot capability ranges from 0.5mm to 1.6mm. (top sheet)

The Tradesmig 240 is a single phase version of the TM230 with slightly increased output current capacity.

Typical Applications — Manufacture and Repair of

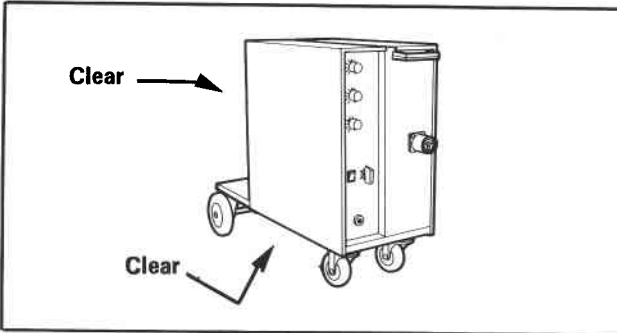
Agricultural machinery
Commercial vehicles
Gates and railings
Trailers
Refuse skips
Dust extraction and handling plants
Motor cycle frames
Steel fabrications
Ductings



INSTALLATION

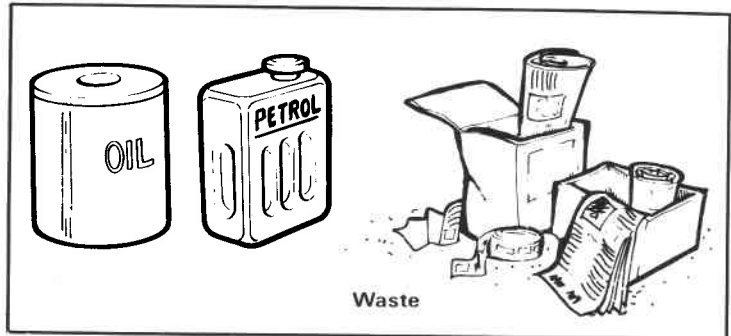
Installation must only be undertaken by a qualified electrician or suitably trained person.

Ventilation



Place the unit so that the vents are clear of any obstruction to ventilating air.

Working Area Preparation



Remove all flammable materials from the area.

Electrical Connections

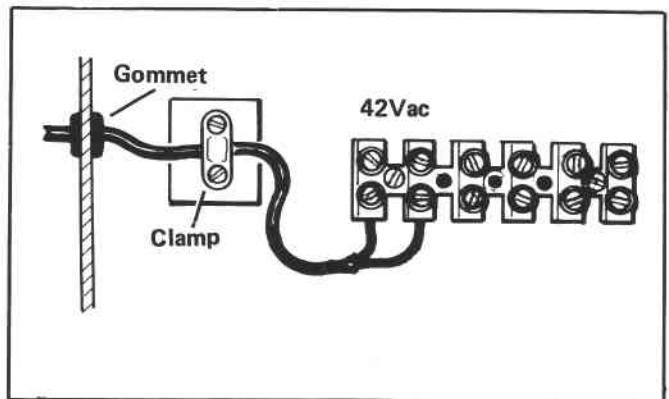
Remove the cover to expose the mains input selection and termination. Set the mains input selection links to suit the local mains supply voltage.

Connect the mains cable to the mains input terminal block leaving sufficient slack in the earth wire.

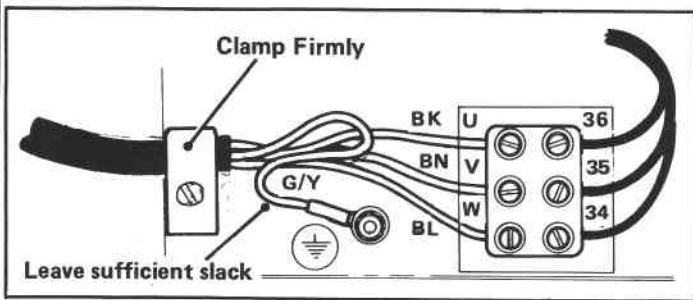
Clamp the cable firmly.

42Vac Connection

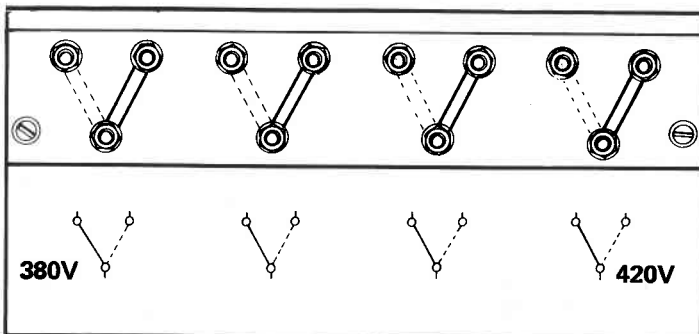
Feed the cable through the grommet in the back panel and connect the wires to the terminal block as shown. Clamp the cable firmly in the panel mounted clamp provided.



Tradesman 230

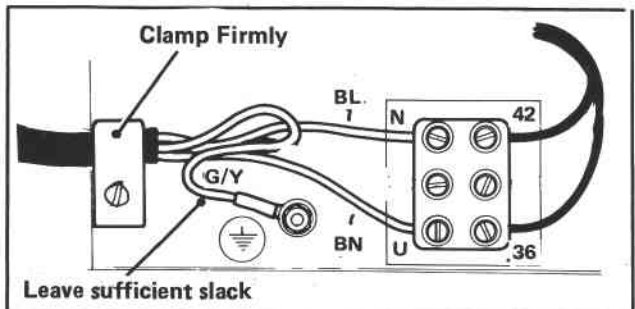


Mains Input Connections

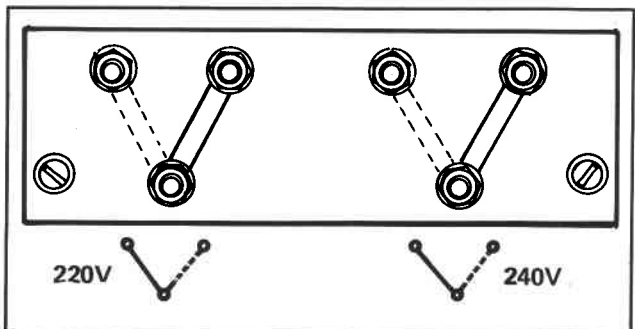


Mains Supply Selection

Tradesman 130S, TM160 & TM240

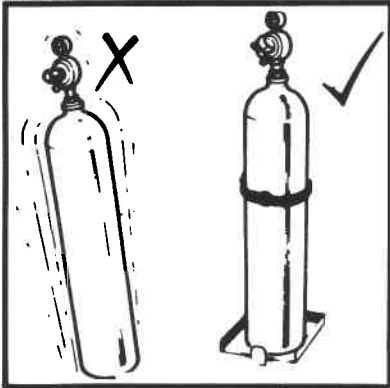


Mains Input Connections

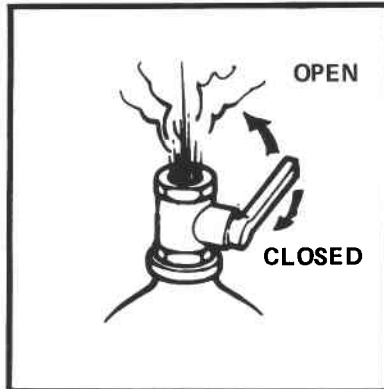


Mains Supply Selection

INSTALLATION (Continued)



Support the gas cylinder with a retaining strap or mount it on a trolley.



Protect the eyes and open the cylinder valve to remove any dirt in valve socket.



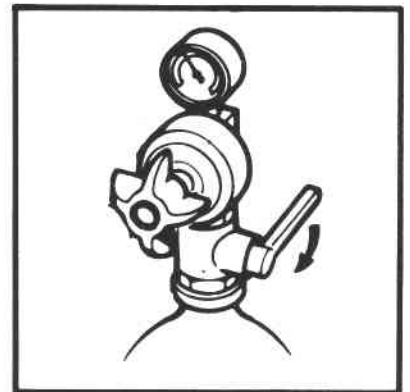
Fit the gas regulator to the cylinder and hand tighten using the correct size spanner. (A sharp blow with the hand at the end of the spanner will ensure a gas tight seal).



Fit the gas hose to the regulator, and open cylinder valve.



Open the cylinder valve and check the cylinder pressure. (Must be greater than 10 bar (150 lb/in²)).



Close the cylinder valve.

Feed Roll Changing

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

Lift 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.

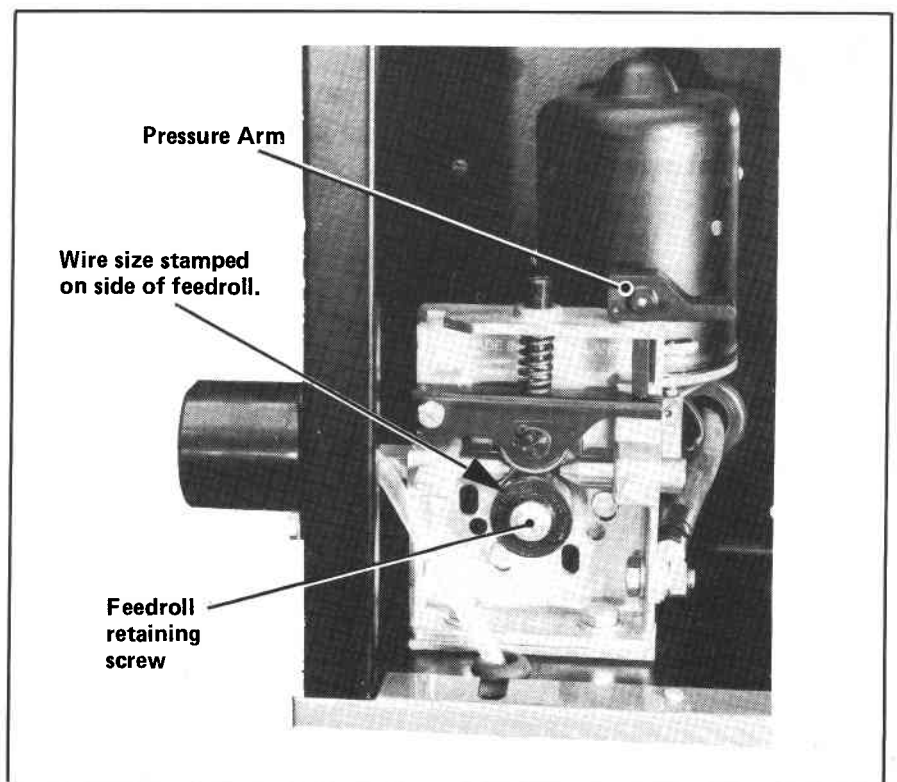
The required size must face outwards when the roll is refitted.

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

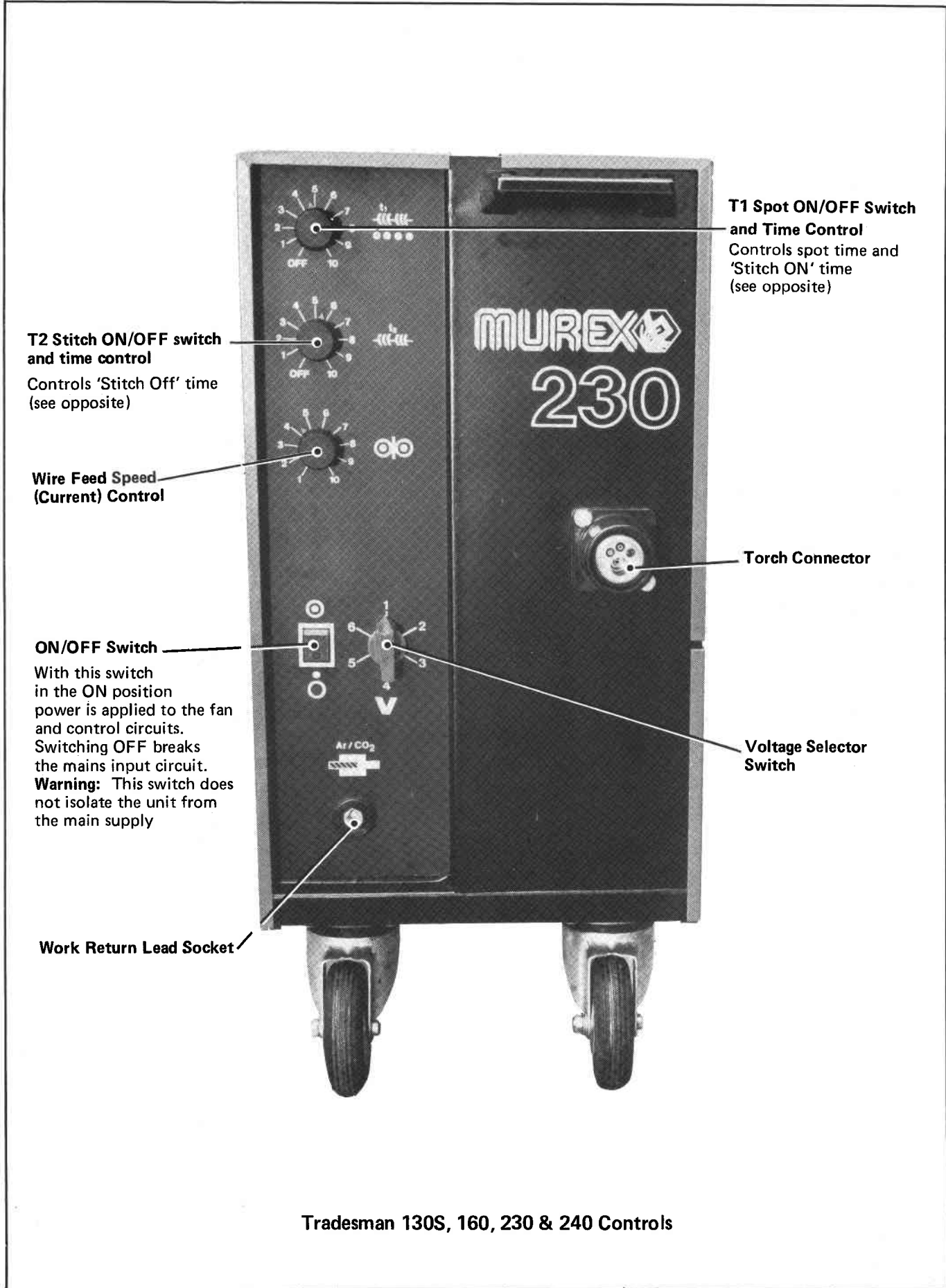
Overrun adjustment

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 over tighten or the wire will slip in the feed rolls.

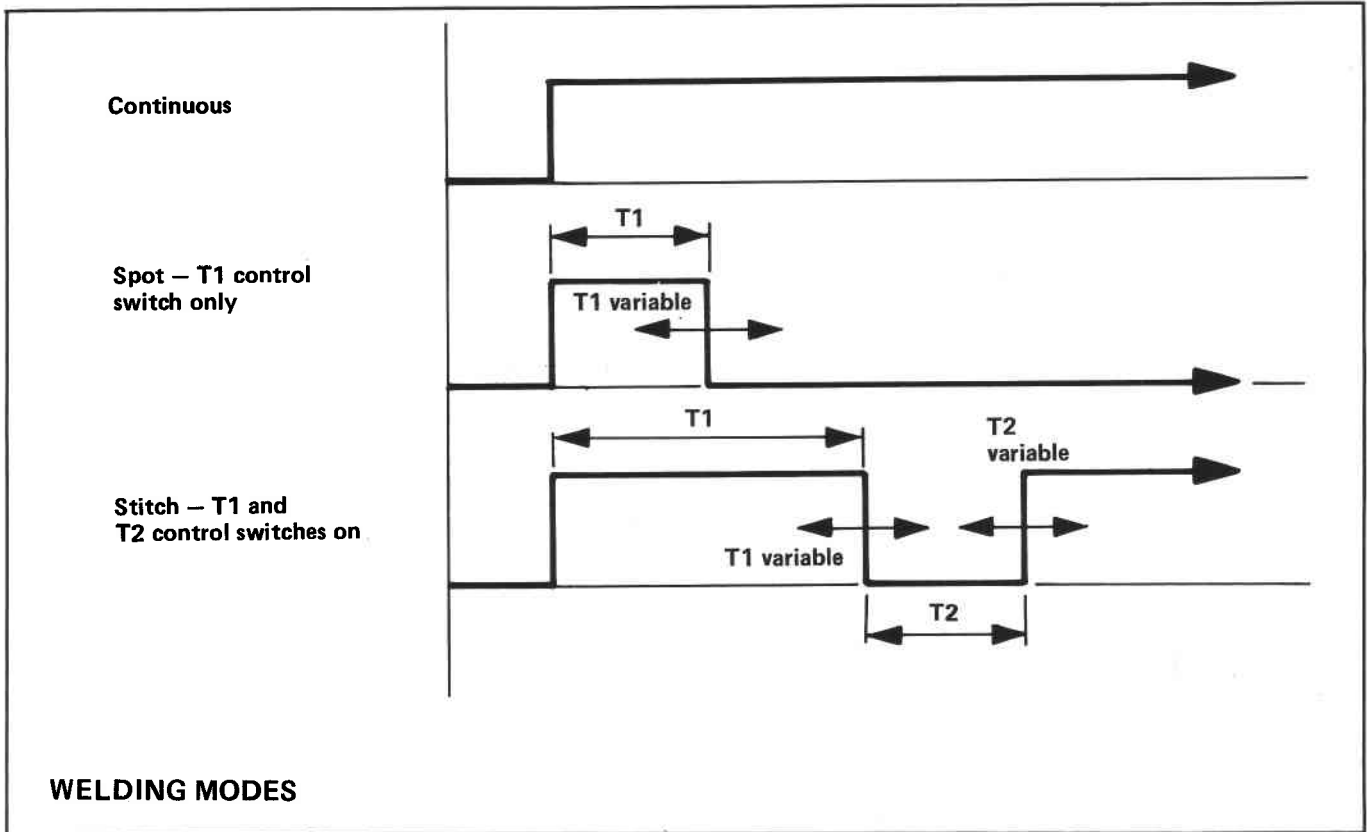


OPERATION




Tradesman 130S, 160, 230 & 240 Controls

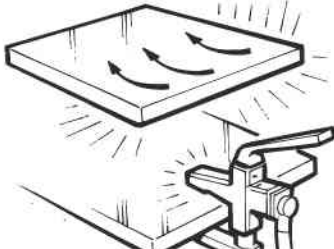
OPERATION (Continued)



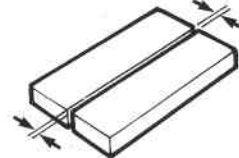
WELDING MODES




Clean the material to be welded with a wire brush



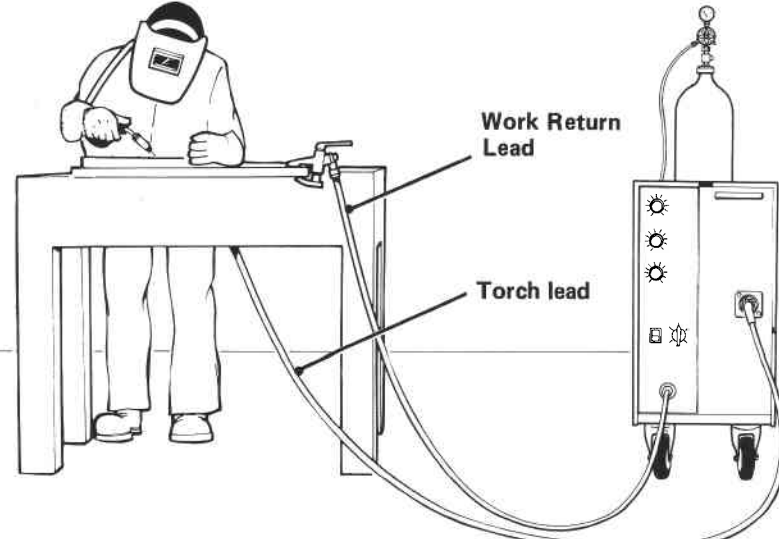
Clamp the work return cable to a clean area of the workpiece



Keep the gap between pieces to be welded to a minimum



Clear the welding area and check that a fire extinguisher is available



Labels: Work Return Lead, Torch lead

PREPARATION

Continuous Welding Faults

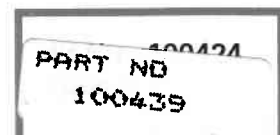
FAULT	POSSIBLE CAUSE AND REMEDY
1. Weld deposit 'Stringy' and incomplete	1a. Torch moved over workpiece too quickly 1b. Gas mixture incorrect.
2. Weld deposit too thick	2a. Torch moved over workpiece too slowly 2b. Welding voltage too low
3. Arc unstable, excessive spatter and weld porosity	3a. Torch held too far from the workpiece 3b. Rust, grease or paint on workpiece 3c. Insufficient shielding gas, check gas contents gauge, regulator setting and operation of gas valve
4. Wire repeatedly burns back	4a. Torch held too close to the workpiece 4b. Intermittent break in the welding circuit caused by: (1) Contact tip loose – Tighten (2) Contact tip damaged – Replace (3) Welding wire or liner corroded – replace wire or liner 4c. Wire feed slipping caused by: (1) Restriction in Liner (such as kinks) or contact tip – check and replace if necessary. (2) Worn feed rolls – replace. (3) Outlet guide or pressure roll alignments incorrect
5. Burning holes in the workpiece	5a. Torch moved too slowly or erratically 5b. Welding volts too high 5c. Wire feed speed too high
6. Lack of penetration	6a. Torch moved too fast 6b. Welding volts too low 6c. Wire feed speed too low

Spot Welding Faults

FAULT	POSSIBLE CAUSE AND REMEDY
1. Insufficient penetration	1a. Spot weld time too short 1b. Gap between metals to be joined too wide 1c. Wrong switch position 1d. Welding settings too low
2. Holes burnt through workpiece	2a. Spot weld time too long 2b. Gap between metals to be joined too wide 2c. Weld is too close to the edge of the material 2d. Welding settings too low
3. Wire sticks to contact tip or workpiece at the end of the weld	3a. Burn-off time incorrect – Expert assistance required since burn-back must be accurately timed
4. Wire burns back	4a. Poor gas coverage 4b. Burn-back time incorrect (see 3 above)



Murex Welding Products Limited
Hertford Road, Waltham Cross,
Herts. EN8 7RP England
Telephone: Lea Valley (0992) 710000
Telex: 25743





Tradesmig 130/160/230^o

Technical Notes

Amended February 1985

SPECIFICATION

Input	TM130	TM 160	TM230
Nominal Voltage	220/240V	220/240V	380/415V
Phase	1	1	3
Frequency	50/60Hz	50/60Hz	50/60 Hz
Max. Current at	220V 13A	220V 15A	380V 12A
Max. KVA	3	4	6
Fuse rating at supply voltage	220V 16A	220V 16A	380V 20A
Output			
Open circuit voltage	13-22V	13-22V	13-27V
Current range	30-130A	40-160A	40-230A
Rated output 100% duty cycle	40A	70A	120A
60% duty cycle	52A	90A	155A
35% duty cycle	68A	120A	203A
20% duty cycle	100A	160A	230A
Permitted max current	130A	165A	230A
Control	6 position switched	6 position switched	6 position switched
Rating specification	ISO 700/German VDE	ISO 700/ German VDE	ISO 700/German VDE
Ambient temp	40 deg. C	40 deg. C	40 deg. C
Insulation class	F and H	F and H	F and H
Max. temp. rise	115 deg. and 140 deg. C	115 deg. and 140 deg. C	115 deg. and 140 deg. C
Spot weld timer	0.5 to 6 Sec.	0.5 to 6 Sec.	0.5 to 6 Sec.
Stitch weld timer	0.5 to 6 Sec.	0.5 to 6 Sec.	0.5 to 6 Sec.
Dimensions			
Height	61.5 cm	68.5 cm	68.5 cm
Width with wheels	47.0 cm	41.0 cm	41.0 cm
Depth	68.2 cm	85.0 cm	85.0 cm
Weight (Nett)	46Kg	63Kg	75Kg