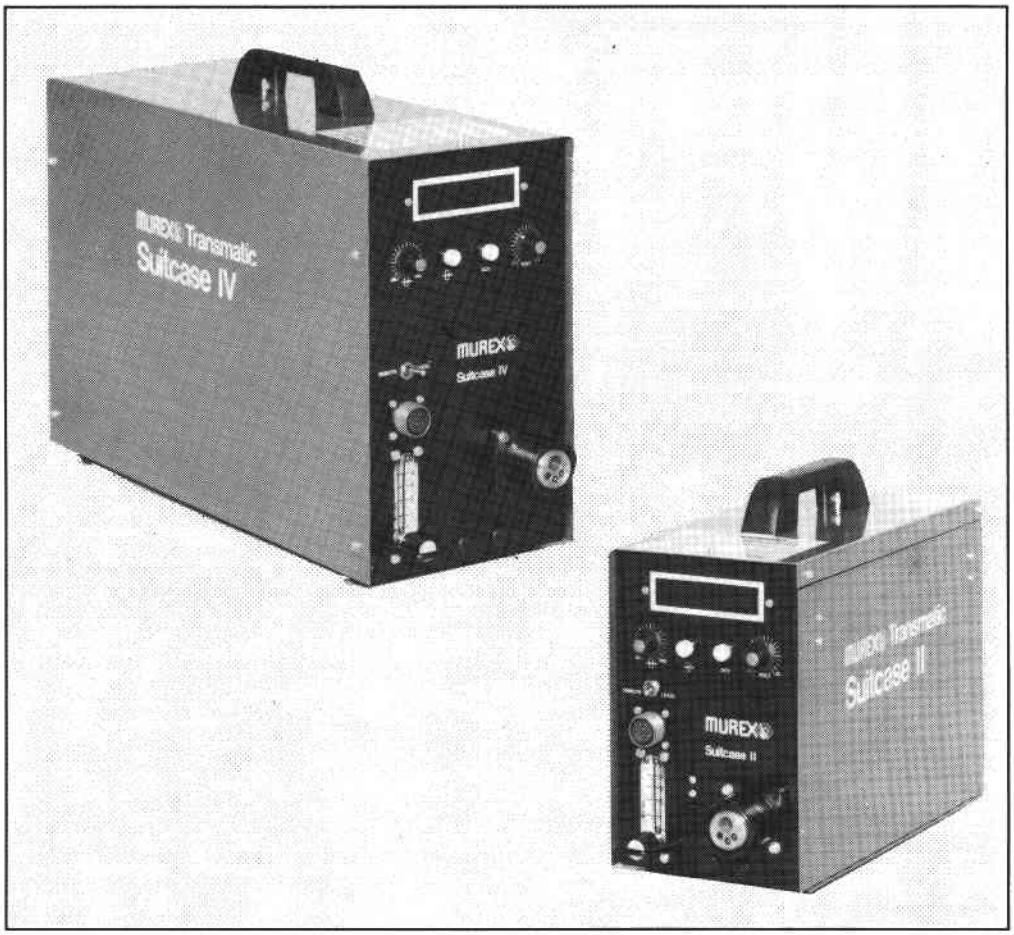
17.20.1

MUREX

Operating Manual

Transmatic Suitcase Mk. II and Mk. IV



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

APPROVED
17.9.91
GROUP TECHNICAL MANAGER
ARC EQUIPMENT

£2:50

WARNING

This welding equipment has been designed, manufactured and tested to the highest quality 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.

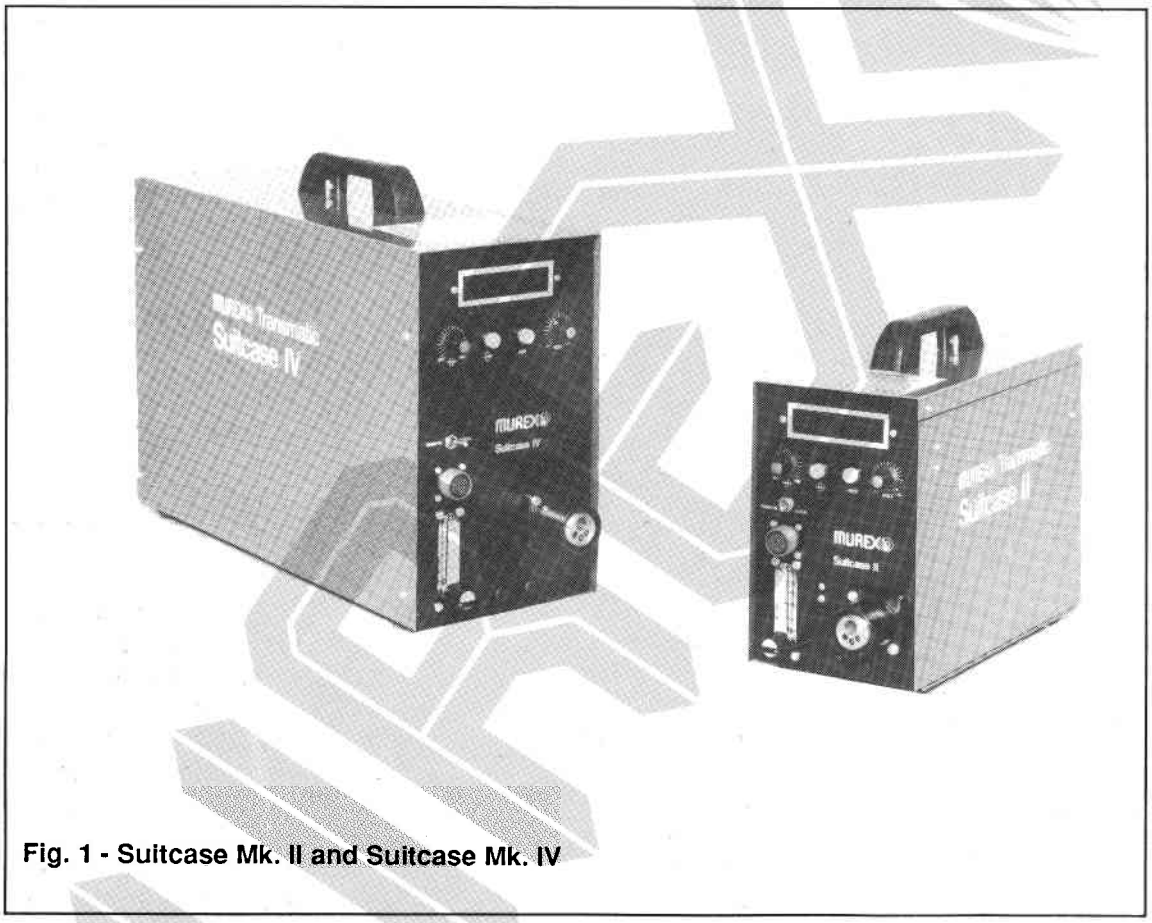


Fig. 1 - Suitcase Mk. II and Suitcase Mk. IV

GENERAL

The Transmatic Suitcase Mk. II and Mk. IV are feed units designed for use in MIG/MAG welding installations to feed Hard, Soft or Tubular (cored) wires. Details of the wire sizes handled are given in the specification (see Technical Notes).

Both units totally enclose the wire reel. The Mk. II is designed to accept a 5Kg wire reel and the Mk. IV a 15Kg wire reel.

A quick-fit central adaptor (Euroconnector) allows the full range of air and water cooled torches to be fitted quickly and with minimum preparation. When using a water-cooled torch the water adaptor kit must be fitted.

Wire is fed from the feeder by either two (Mk. II) or four (Mk. IV) driven feed rolls. The feed rolls are driven by a DC Motor using a worm drive and spur gears.

Each feed roll has two alternative grooves and is stamped with the wire size on the outside edge (facing the operator).

Note. *When changing wire sizes the feed roll(s), outlet guide tube liner, Inlet Guide and Intemediate Guide may have to be changed, see Parts List. The Pressure Roll tension(s) can be adjusted to counteract wire slip.*

Standard facilities include variable wire feed speed, wire inching, gas purge, torch switch latching and digital meters to display wire feed speed/ amps and voltage.

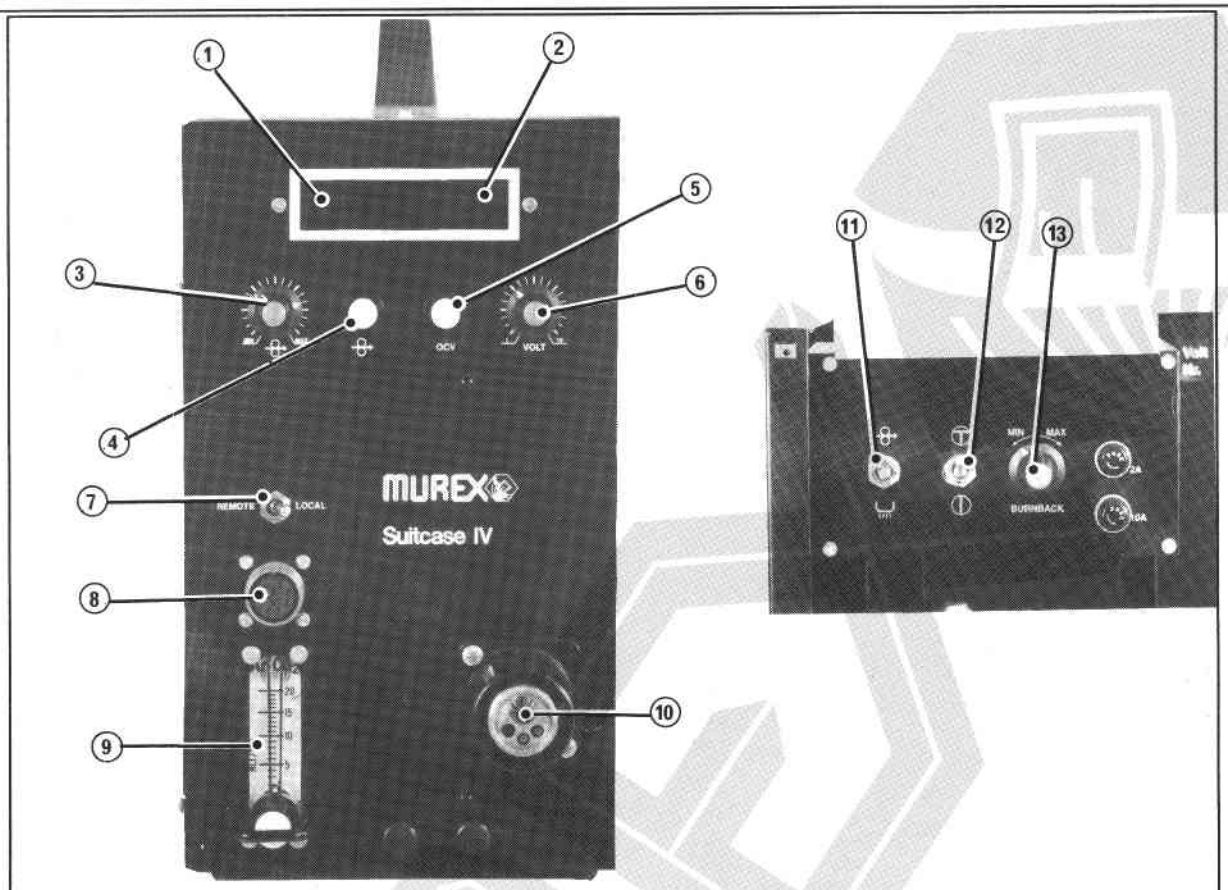


Fig. 2 - Controls on Front Panel and Wire Feed Compartment

CONTROLS

1. Digital Meter

Displaying wire feed speed (m/min) or Welding Current (amps).

Note. *When depressing the front panel pushbutton the meter displays wire feed speed in m/min. When the pushbutton is released and the welding process commences the welding current is displayed.*

2. Digital Voltmeter

3. Wire Feed Speed Control

Provides continuously variable wire feed speed control. The wire speed is directly proportional to welding current so that increasing the speed increases the current and vice-versa

4.

Depressing this pushbutton allows the presetting of the wire feed speed via the wire feed speed control and the digital meter.

5. O.C.V.

Depressing this pushbutton energises the welding power source main contactor, thereby displaying the power source open circuit voltage on the digital voltmeter.

6. Volt

Adjusts the welding output voltages.

Note. *This facility will only operate in conjunction with a suitable thyristor controlled welding power source.*

7. Local/Remote

In the local position adjustment of wire feed speed and voltage is obtained via the front panel controls. In the remote position adjustment of wire feed speed and voltage is obtained via a remote control unit.

8. Remote Socket

Provides connection for a remote control unit.

9. Gas Flow Meter

Provides adjustable gas flow control.

10 Central Adaptor

Provides easy connection for Murex MX Torches carrying power, control switching, gas and wire to the torch nozzle.

11. Inch/Gas Purge Switch

Holding this switch to the UP position operates the wire feed motor but not the other welding services. It is used to 'inch' the wire through the equipment during setting up and adjustment procedures.

Holding the switch to the DOWN position opens the gas valve in the unit, allowing the gas to flow through the welding torch. It is used when initially adjusting the gas flow and when purging the gas lines of air.

12. Latching Switch

This switch provides latching facilities as follows:-

Unlatched (2 stroke) UP

Press - Continuous welding whilst torch switch is held pressed.

Release - Welding stops.

Latched (4 stroke) DOWN

Press - Gas purge

Release - Continuous Welding

Press - Welding stops, gas continues giving post weld gas coverage.

Release - Gas stops

13. Burnback Timer

Controls the burn back time over a range of 0 to 500 milliseconds and should be adjusted as required for the welding application.

INSTALLATION

INITIAL SETTING UP

1. Feed Rolls

Note: *When changing wire sizes the inlet guide, intermediate guide, outlet guide tube liner and feed rolls may need changing as given below.*

Before connecting the electrical and gas supplies, ensure that the equipment is set up for the type and size of wire to be used as follows:
(a) Power Source switched off.
(b) When changing wire sizes it may be necessary to change the feed roll(s), outlet guide tube liner, inlet guide and intermediate guide.
The size of feed roll is stamped on the visible surface of the roll when fitted. - See 'Feed Roll changing'.

2. Interconnections

Lay out the torch leads keeping the leads as straight as possible.
Check that the power source is switched off.

CAUTION: *Do not extend the interconnections beyond 20m, if in doubt call your nearest Murex distributor for advice.*

3. Gas

Connect the shielding gas hose between the regulator and the nipple provided on the rear panel.

4. Control and Power Cable

Connect the control and power cables between the fittings on the rear panel and the socket on the power source.

5. Work Return Lead.

Connect the work return lead to a clean area on the work piece.

6. Reference Lead

Connect the reference lead from the workpiece to the insulated terminal mounted on the rear panel of the suitcase.

TORCH

1. Check that the torch leads are laid out straight and connect the torch to the torch adaptor.
2. Remove the nozzle and contact tip from the torch.
Using the inching button, feed the wire through the torch. (see below)
Thread a contact tip over the wire and screw it into the torch.
Tighten the contact tip with the key provided.
3. Fit the appropriate nozzle.
4. Press the torch switch and check that wire flows smoothly from the torch.

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 bottom. Ensure that the pin on the hub locates in the hole in the side of the reel. Refit the hand nut on the hub.
3. Release the end of the wire from the side of the reel but do not allowthe 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. Adjust the hub reel brake screw so that the reel revolves freely. Tighten the screw just enough to prevent over-run when wire feed stops. Too much pressure will cause excessive drag.
5. Lift the pressure roll arm(s).
6. Thread the wire through the inlet guide over the feed roll(s) and into the outlet guide, for approximately 50mm (2in).
Lower the pressure roll arm(s) so that the welding wire is clamped into position in the groove.
7. Push the inching switch and check that the wire is driven smoothly through the outlet guide.
8. Check that the wire feed is smooth and positive. If the wire slips in the feed rolls, tighten the pressure adjuster(s) just enough to obtain positive wire feed drive.
Do not overtighten.
9. Cut off the wire to protrude 10mm from the torch connector.

REPLACEMENTS AND ADJUSTMENT

1. Outlet Guide Tube Liner Removal

(a) Remove torch from torch adaptor
(b) Release the pressure roll(s).
(c) Loosen the retaining cap nut on the brass outlet connection tube and push out the guide tube liner using a suitable soft tool (e.g. dowel) 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 score the end of the guide tube and impair wire feeding.*

2. Feed Roll Changing

Remove the feedroll retaining screw(s). It will be necessary to give the screwdriver a sharp twist to avoid turning the motor.
Lift the pressure arm(s) and pull off the feedroll(s). When replacing the feedroll(s), note the wire size which is stamped on the face of the roll(s). The required size must face outwards when the roll is fitted.
Fit the feedroll(s) and lower the pressure arm(s). Refit the retaining screw(s) giving a sharp twist with the screwdriver to tighten.

3. Inlet Guide Replacement

Slacken retaining screw and pull inlet guide out from the rear.

4. Intermediate Guide Replacement (MK IV only)

Release pressure arm. Slacken intermediate guide retaining screw. Remove rear feed roll. Slide out intermediate guide from the rear.

5. Overrun Adjustment

Tighten or unscrew the screw 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.*

6. 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.

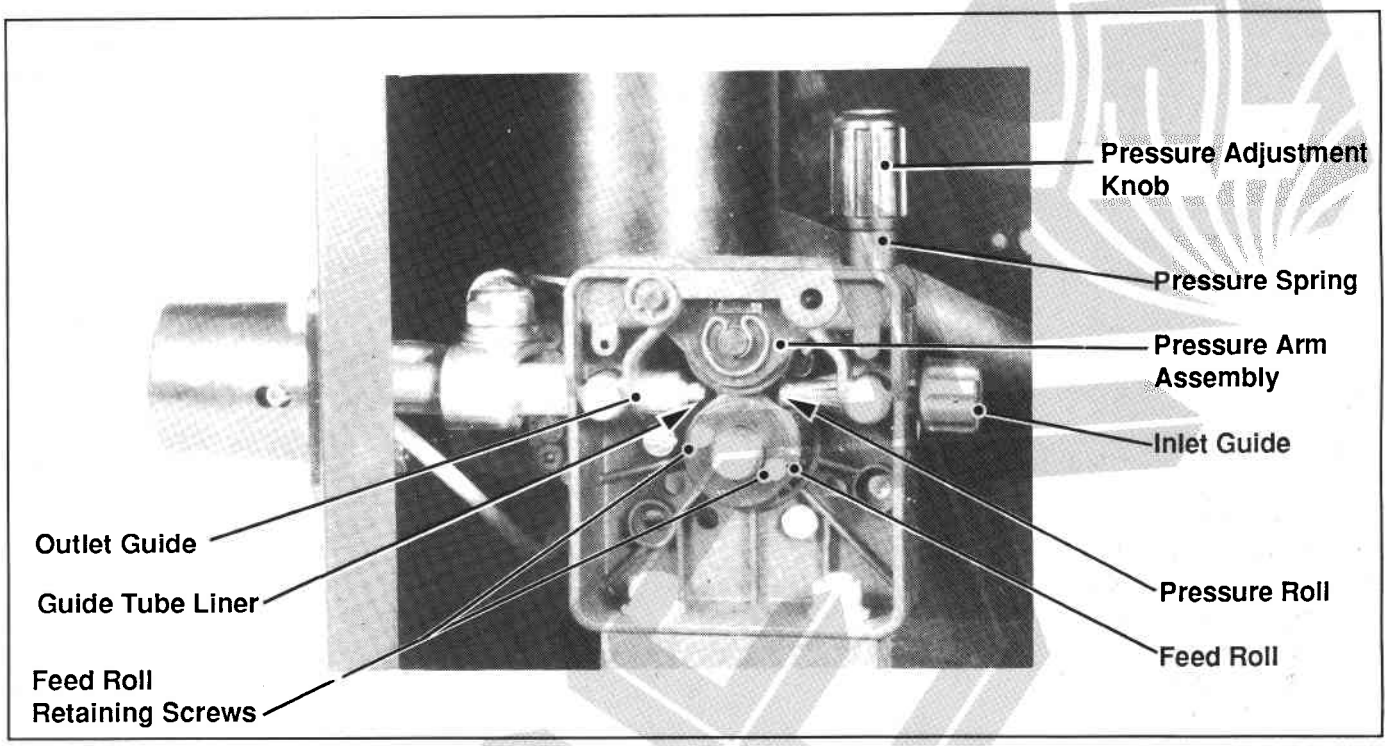


Fig 3 - Suitcase Mk. II

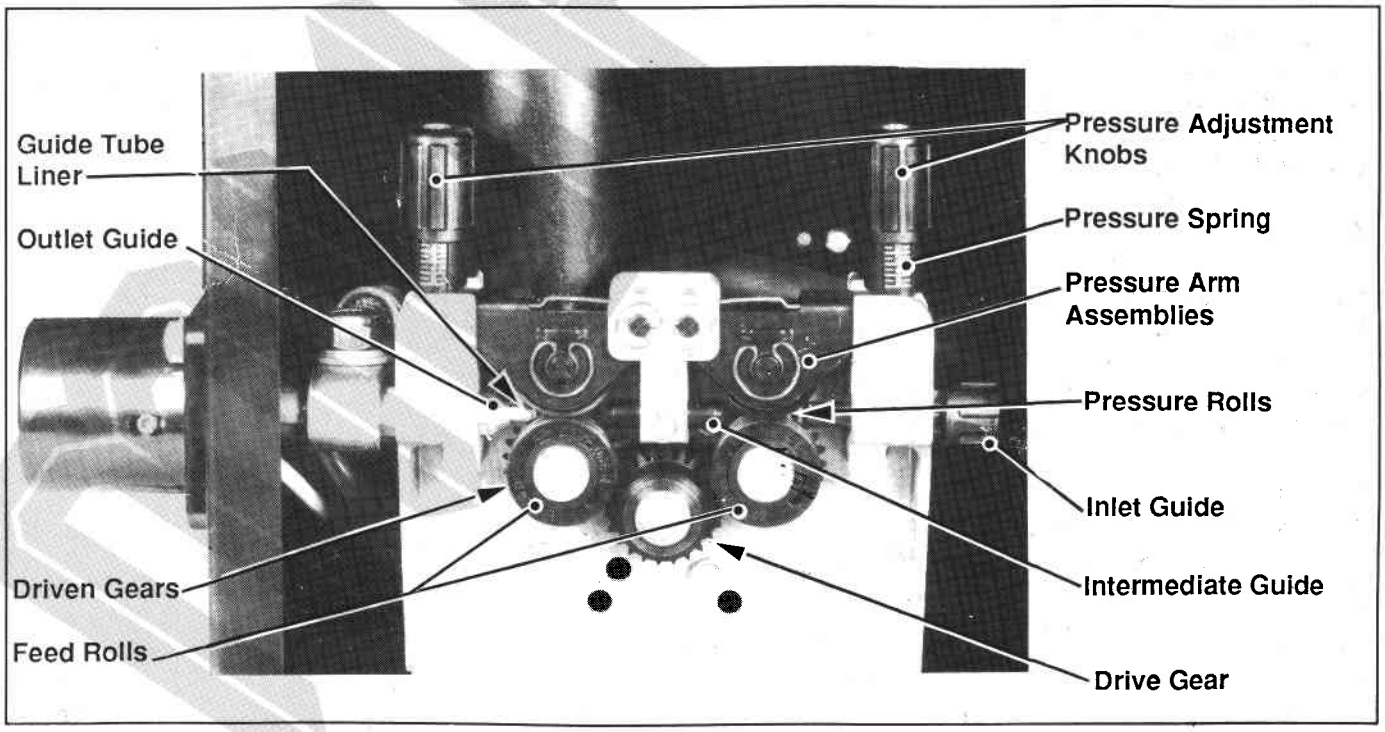


Fig 4 - Suitcase Mk. IV

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

OPTIONS

1. The Transmatic MK II can be fitted with a base plate to allow the fitting of a 15Kg wire reel Pt. No. 1414565

2. Both units can be adapted to suit water cooled torches by the fitting of water cooled adaptor kit Part No. 1413647

Note. *The water cooled adaption kit can only be fitted to the Suitcase II when used in conjunction with the 15Kg base plate.*

3. Five Programme Remote Control Unit Pt.No. 1414566

The five programme remote gives remote control of both voltage and wire feed speed, and also allows the selection of five voltage and wire feed speed parameters which are preset via potentiometers mounted behind a lockable cover.

A trim potentiometer is provided for the welder to undertake minor variation of the preset welding voltage to enable fine tuning of the pre-programmed value.

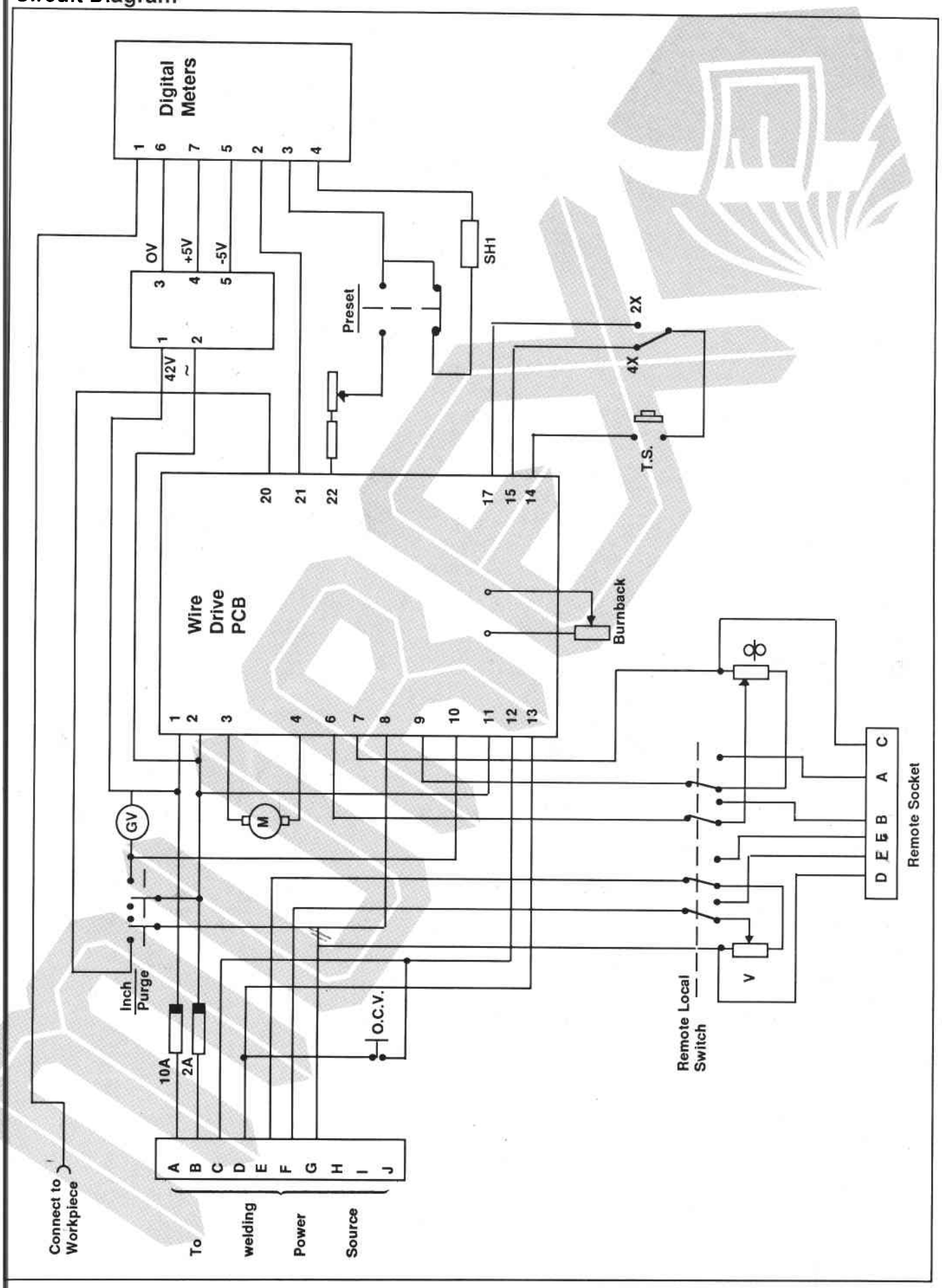
Technical Notes

SPECIFICATION

	Transmatic Suitcase II	Transmatic Suitcase IV
Drive System	2 Roll Geared	4 Roll Geared
Speed Range	1 - 20 m/min	1 - 20 m/min
Supply Voltage	42 Vac	42 Vac
Wire Size: Hard	0.8 - 1.6mm	0.8 - 2.4mm
Soft	1.0 - 1.6mm	1.0 - 2.4m
Cored	1.2 - 1.6mm	1.2 - 2.4mm
Dimensions:		
Height (inc. of Handle)	345mm	425mm
Width	190mm	212mm
Length (inc. of connectors)	480mm	635mm
Weight (approx.)	12.0Kg	18.5Kg

Due to variations which can occur in manufactured products, claimed performances,voltages, ratings, all capacities, measurements, dimensions,and weights quoted are approximate only.
Achievable capacities and ratings in use and operation will depend upon correct installation,use, application,maintenance and service.

Circuit Diagram



Parts List

When ordering spare parts, please quote both the Part Number and the description. Customers should also give the type and serial number of the unit for which the parts are required.

CONSUMABLES

Transmatic Suitcase Mk II

Note: *as standard the Suitcase MK II is supplied fitted for 1.0/1.2 Hard Wires.*

Wire Size & Type	Feed Roll	Pressure Roll	Outlet Guide Tube Liner (139mm)	
0.6 - 0.8H	1413458	1413844 (P)	(1.5 ID)	1414543
0.8 - 1.0H	1413459	1413844 (P)	(2.0 ID)	1414542
1.0 - 1.2H	1413486	1413844 (P)	(2.0 ID)	1414542
1.2 - 1.6H	1413843	1413844 (P)	(2.0 ID)	1414542
1.0 - 1.2S	1413460	1413844 (P)	(Nylon)	1414545
1.2 - 1.6T	1413487	1413845 (K)	(2.0 ID)	1414542

Key: P = Plain K = Knurled

Transmatic Suitcase Mk IV

Note: *as standard the Suitcase Mk IV is supplied fitted for 11.0 - 1.2 Hard Wires*

Wire Size & Type	Inlet Guide	Feed Rolls (Pack of 2)	Pressure Roll (2 req'd)	Intermediate Guide	Outlet Guide Tube Liner (115.5mm)	
0.6 - 0.8H	1413103	1409001	1413844 (P)	1411769	(1.5 ID)	1413885
1.0 - 1.2H	1413103	1409002	1413844 (P)	1411769	(2.0 ID)	1413886
1.2 - 1.6H	1413103	1409003	1413844 (P)	1411769	(2.0 ID)	1413886
1.2 - 1.6 T	1413103	1411533	1413845 (K)	1411769	(2.0 ID)	1413886
1.6 - 2.4T	1413854	1409005	1413845 (K)	1411770	(3.0 ID)	1413888
2.8 - 3.2T	1413854	1409006	1413845 (K)	1411770	-	Not used
1.0 - 1.2S	1413103	1409007	1413844 (P)	1411769	(Nylon)	1413889
1.2 - 1.6S	1413103	1409007	1413844 (P)	1411769	(Nylon)	1413889
2.0 - 2.4S	1413854	1409007	1413844 (P)	1411770	(3.0 ID)	1413888

Key: P = Plain K = Knurled

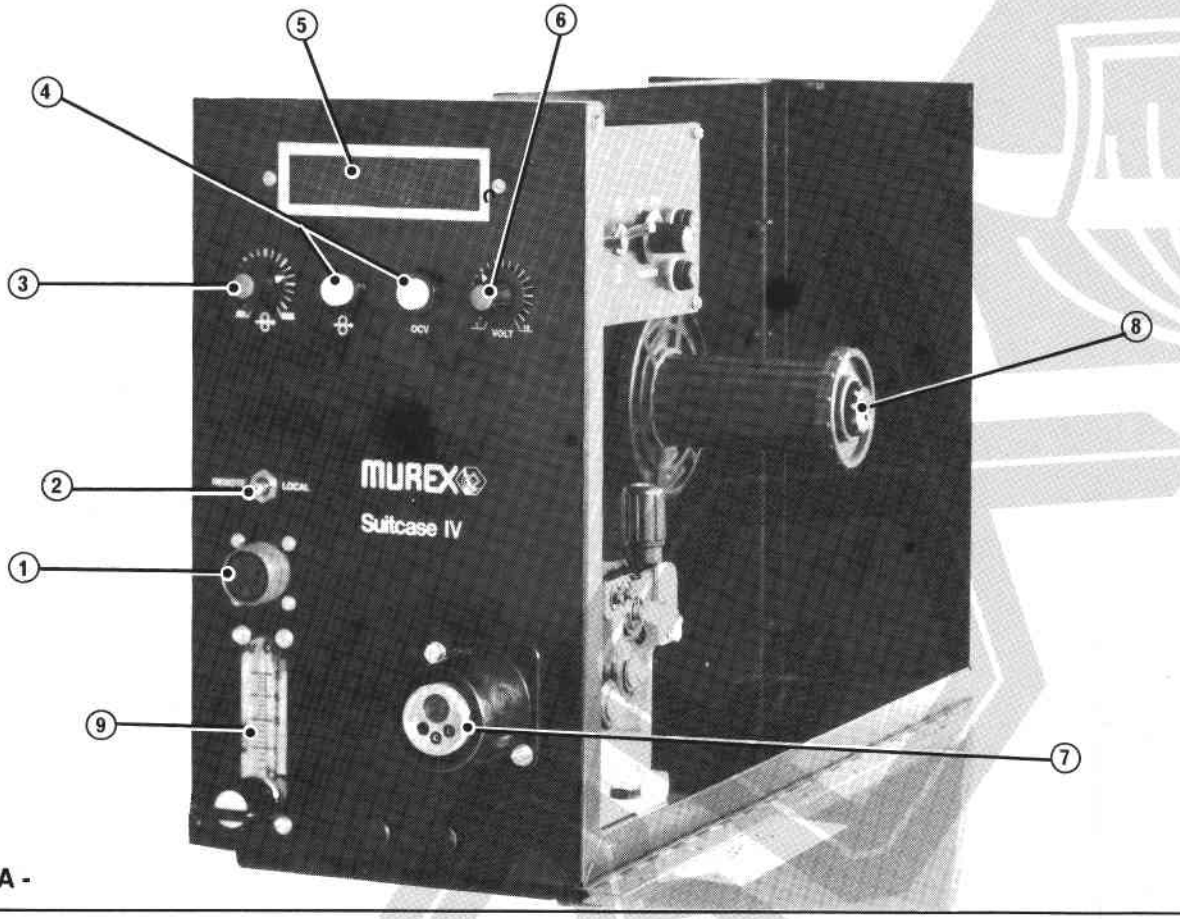


Fig. A -

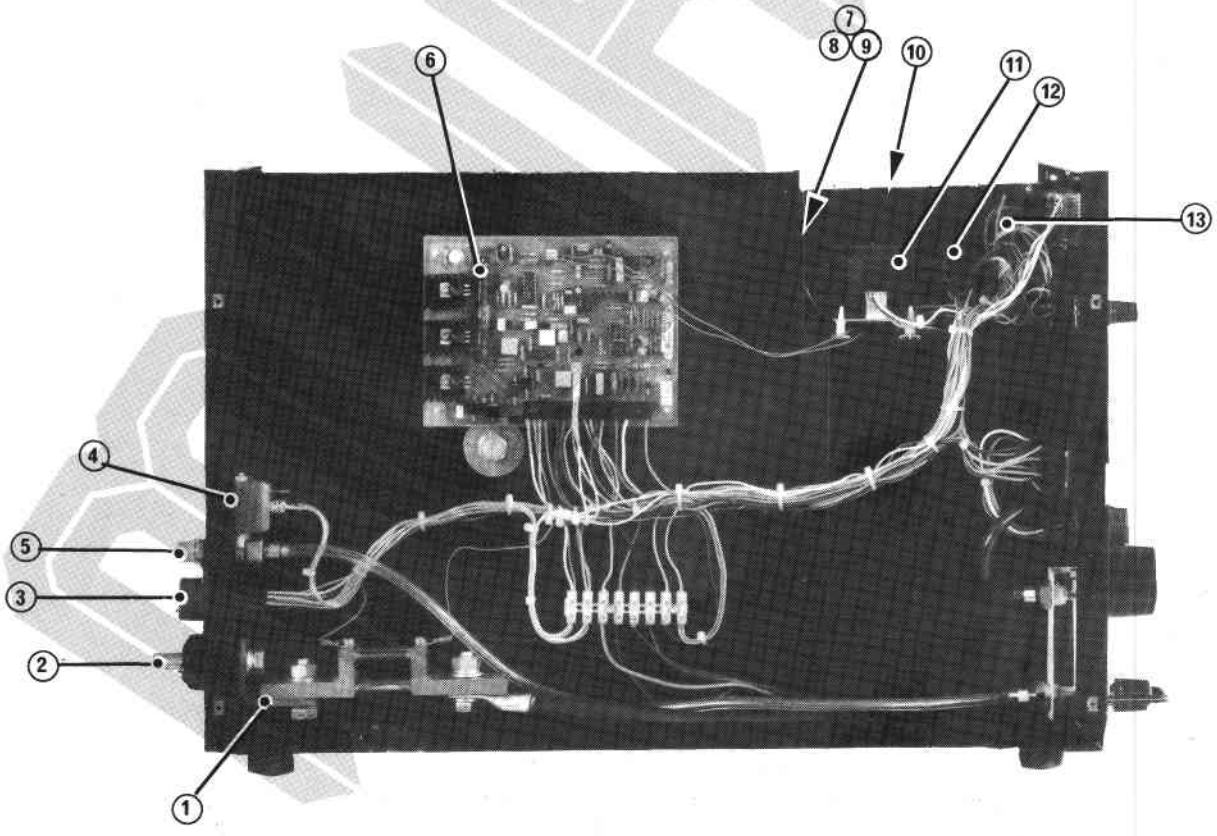


Fig B-

Fig. A -

Item	Part No.	Description
1	1414560	Remote control socket
2	1414564	Remote/Local switch
3	1414554	Potentiometer - wire speed
-	1414563	Knob for item 3
4	1414562	Pushbutton
5	1414559	Digital meters
6	1414553	Potentiometer - voltage
-	1414563	Knob for Item 6
7	1409035	Central adaptor block inc: Switch leads
-	1408699	Bushing for Item 7
8	1414548	Hub assembly Suitcase II
-	1414549	Hub assembly Suitcase IV
9	1414547	Flowmeter
Not Shown	1414550	Handle

Fig B-

Item	Part No.	Description
1	1414561	Shunt
2	678339	Dinse plug, panel mounting
-	1380438	Dinse socket cable mounting
3	1411519	10 pin plug panel mounting
-	653567	Socket for Item 3 cable mounting
4	1414546	Gas solenoid valve
5	1414556	Gas nipple fitting
6	1414557	PCB
7	1414552	Fuse holder
8	1413893	Fuse 10 amp
9	-	Fuse 2 amp
10	1414555	Potentiometer - Burnback
11	1414558	P.S.U. printed circuit board
12	1414571	Switch - Latching
13	1414570	Switch - Purge/Inch