

CLARKIE®



MIG WELDERS

Models 130TE • 150TE

Operating & Maintenance
Instructions

GUARANTEE:

This **Clarke** product is guaranteed against faults in manufacture, for 12 months from purchase date.

Keep your receipt as proof of purchase.

This guarantee is invalid if the product has been found to have been abused in any way, or not used for the purpose for which it was intended, or to have been tampered with in any way.

The reason for return must be clearly stated.

This guarantee does not effect your statutory rights.

CONTENTS:

Cautions for safety	3
Mig welding - How it works	4
Benefits of Mig welding	4
Welder Specifications	5
Wiring	6
Assembly	6-7
Attaching gas bottle and regulator	8
Connecting the wire feed	9
Preparation for welding	11
Welding procedures	11
Wire size specification chart	12-13
Welding techniques	14
Tuning the welder	14
Replacing the spool of wire	15
Replacement welding wire and gas bottles	16
Welding hints	16
Spot welding	16
Types of joints	17
Drawings & parts list	18-19-20
Wiring diagram	21
Troubleshooting chart	22

Congratulations on the purchase of your new **Clarke** MIG Welder.

Before attempting to operate this machine, please read this instruction manual thoroughly and follow all directions carefully. By doing so you will ensure the safety of both yourself and others around you, and at the same time, you should look forward to long and troublefree service from your **Clarke** MIG Welder.

CAUTIONS FOR SAFETY

Special care is taken during all stages of manufacture to ensure that your **Clarke** MIG Welder arrives with you in good condition. However, before using the machine it is in your own interest to read and pay attention to the following safety rules:

- 1) Do not attempt to remove side panels of the machine unless the mains plug is disconnected.
- 2) Do not use the machine with any of the panels removed.
- 3) Do not try to attempt any electrical or mechanical repair unless you are a qualified technician. If you have a problem with your machine contact your local dealer.
- 4) Remove any flammable materials from the welding area.
- 5) Do not expose gas cylinders to high temperature, and do not strike an arc near or on the gas cylinder.
Caution: Gas cylinders are pressurized containers. Do not pierce or burn, even when empty. Protect from direct sunlight.
- 6) Make sure you have good ventilation in the welding area since toxic gases are released during the MIG welding process.
- 7) Ultra-violet radiation is released by the MIG welding process and it is of the utmost importance that the operator, and any spectators, protect themselves by using welding face-shields or helmets with suitable filter lenses. The wearing of gloves and proper working clothes is also recommended.
- 8) Never use in a wet/damp environment.

MIG WELDING - HOW IT WORKS

MIG (Metal Inert Gas) welding is a process in which a power wire electrode is fed continuously into the weld pool at a controlled constant rate.

The wire is connected to the positive side of a rectified voltage supply. The workpiece is connected to the negative side of the supply.

When the wire is fed, it comes into contact with the workpiece and an arc is struck. The arc melts the wire and it is deposited onto the workpiece.

The wire, which is fed by the wire feed motor, is fed into the weld pool, burning itself off at a rate dependent upon the selected wire feed speed.

To protect the weld pool from oxidation and impurities during the welding process, a shielding gas flows over and around the weld pool.

This gas flow must be sufficient to protect the weld, but not wasteful.

NOTE: Poor gas coverage will result in poor welding. Excessive gas coverage is expensive.

BENEFITS OF MIG WELDING

1. 50% faster welding time;
2. Operator training time kept to a minimum;
3. There is no slag removal, thus eliminating almost all post-welding cleaning operations;
4. Minimum waste of welding consumables;
5. Overall, a faster more efficient way of getting the job done;
6. Less heat - less distortion.
7. Ability to weld thin materials.

WELDER SPECIFICATIONS

PRIMARY OR INPUT POWER DATA

	MIG 130 TE	MIG 150 TE
Primary Volts	240 Volts	240 Volts
Primary Amps	15 Amps	20 Amps
Frequency	50 Hz	50 Hz

SECONDARY OR OUTPUT POWER DATA

Max. Sec. Volts	30 Volts	31 Volts
Max. Sec. Amps	130 Amps	150 Amps
Duty Cycle at 60%	58 Amps	65 Amps

DUTY CYCLE

These welders are rated at a 60% duty cycle. This means for example, that when welding with the MIG 130 TE at a current output of 58 amps over a period of 10 minutes, the total welding time is 6 minutes, and the rest time is 4 minutes.

USABLE WIRE SIZES

Mild Steel Wire	- 0,6 and 0,8 mm.
Stainless Steel Wire	- 0,8 mm.
Aluminium Wire	- 0,8 mm.

USABLE GASES

75% Argon 25% CO ²	- Thin Sheet Metal, Mild Steel
100% Argon	- Welding Aluminium, Stainless Steel
100% CO ²	- Mild Steel.

WIRING:

Connect the mains lead (Diagram 1, Item A) to a suitable, fused 240 Volt, 1 phase electricity supply.

IMPORTANT: The wires in the mains lead of your welder are colour coded as follows: Green and Yellow - Earth, Blue - Neutral, Brown - Live. As the colours of the wires in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The wire which is coloured green-and-yellow must be connected to the terminal in the plug which is marked with the letter E or by the earth symbol \perp or coloured green or green-and-yellow. The wire which is coloured blue must be connected to the terminal which is marked with letter N or coloured black. The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

FUSE RATING: The fuse for the plug in these appliances must be rated at 15 amps.

WARNING: This machine must be earthed.

ASSEMBLY (See diagram 1)

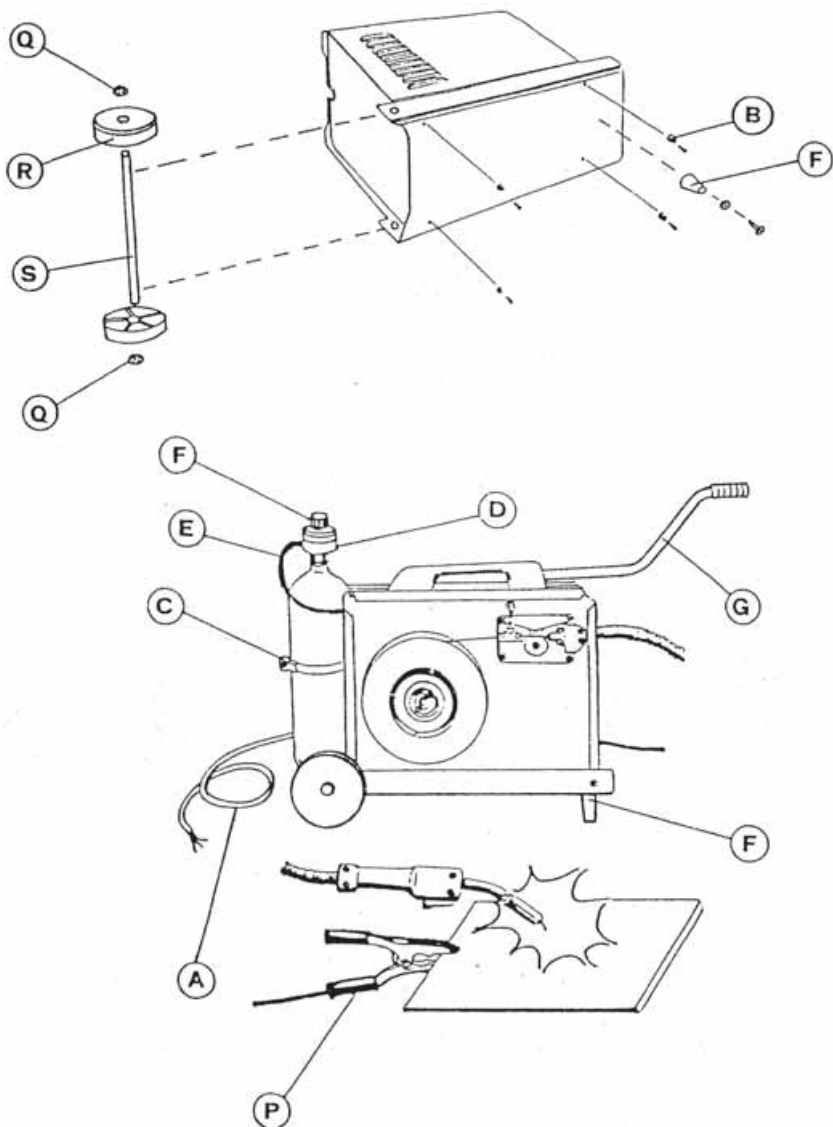
1) Remove the side panel by sliding upwards and check that all the accessories listed below are included:

2 Wheels	1 Gas regulator
1 Axle	1 0,6 mm. Welding tip
2 Wheel retaining washers	1 0,8 mm. Welding tip
1 Front foot with screw and washer	1 1,0 mm. Welding tip
1 Handle with screw	1 Gas bottle
1 Mask body	1 Spool of steel welding wire
1 Mask handle	1 Large metal fastening band
1 Darkened glass lens	1 Handle extension with screw
2 Plastic fasteners	1 End cap for handle extension
1 Welding torch and lead (filled)	

- 2) Slide axle (S) through the two holes at the rear of the base of the machine, then push the wheel (R) onto each end of the axle. Secure wheels in position by gently tapping the retaining washers (Q) onto the ends of the axle. Place the welding machine gently on its side and affix the rubber foot (F) to the front of the base using the screw and washer provided. Stand the machine upright again and slot the handle arm (G) into the front of the carry handle and secure with the screw provided.
- 3) To assemble face shield, first place the darkened glass lens in the recessed window area in the body. Secure in place using the two plastic screw fasteners provided. Locate the handle fixing into the slot in the shield body, press firmly and rotate the handle through 90° until the lug locates into the hole in the shield body.

WARNING: Never look direct at welding arc, it can seriously damage your eyes. Always use the face-shield provided or an approved welding mask or helmet suitable for this welder.

DIAGRAM 1



ATTACHING GAS BOTTLE AND REGULATOR

(See diagram 1)

- 1) Attach the gas bottle to the rear of the welder using the large metal fastening band (C) provided. To do this first open the band fully by raising the hinged tightening screw, then pass the end through the centre slot in the back panel of the machine, around the gas bottle and finally locate back into the band and tighten.
- 2) When using disposable gas bottles (supplied with the machine) remove the protective plastic cap from the threaded top of the bottle and screw the regulator (D) down in a clockwise fashion until tight (be careful not to put too much force on the regulator when tightening).
- 3) Insert the plastic gas tube (E) into the regulator (push all the way in). Note: When changing disposable bottles, push in the outer flange of the regulator orifice to allow easy release of the plastic tube.
- 4) The operation of the pressure regulator, for use with disposable bottles, is based on the action of a needle operated by a knob (F) placed over a graduated dial plate (from "0" to "6"), acting on the valve of the bottle. With the knob turned to position "0" there is no gas flow; before starting to weld bring the knob to position "3" or "4", achieving a gas flow of 2/3 litres/minute. In order to obtain the maximum service from each gas bottle, always maintain a minimum gas flow (2/3 litres per minute) which is sufficient to obtain a good weld without porosity. The pressure regulator is equipped with a safety valve which will automatically operate should the pressure surge.
- 5) For safety and economy, ensure that the regulator is fully closed (turning fully anti-clockwise) when not welding and/or before fitting or removing the gas bottle.
- 6) When using a rechargeable bottle (not supplied) insert the plastic gas tube (E) into the large gas bottle adaptor, (not supplied, available as spare part no. 6000497). Connect the tail end of the adaptor to a gauged pressure regulator (not supplied) which is screwed onto the rechargeable bottle.
The gauged pressure regulator is then used to control the flow of gas which should be 2/3 litres per minute.

Note: The gas bottle supplied with your welding machine is disposable and should be thrown away when empty. Replacements, together with rechargeable bottles and other optional accessories are available from your local welding dealer. If you experience difficulties obtaining gas supplies contact your local **Clarke** stockist.

CONNECTING THE WIRE FEED (See diagram 2)

Your **Clarke** MIG welder is supplied with a 0,8 Kg. spool of 0,6 mm. mild steel welding wire. To connect this wire through the feed system ready for operation, follow the instructions below and refer to diagram 2.

- 1) Unscrew the spool holder (Drum brake) wingnut (H) and remove the washer and spring.
- 2) Pull off the external ring (I) from the spool holder and remove the spool (J).
- 3) Take the wire spool out of its plastic wrapping and replace on the spool holder. Replace the external ring, spring, washer and drum brake wingnut.

Note: Do not overtighten the wingnut. 2-3 turns is normally sufficient for smooth wire feed without allowing the spool to overrun.

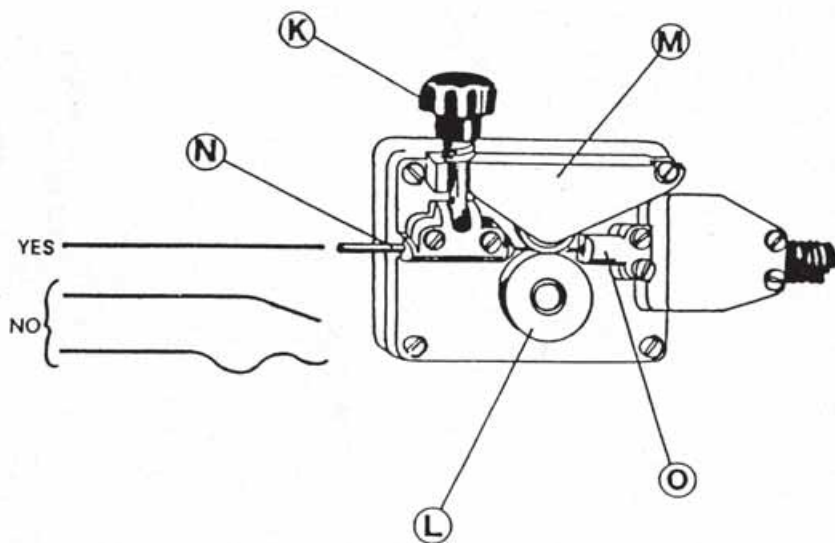
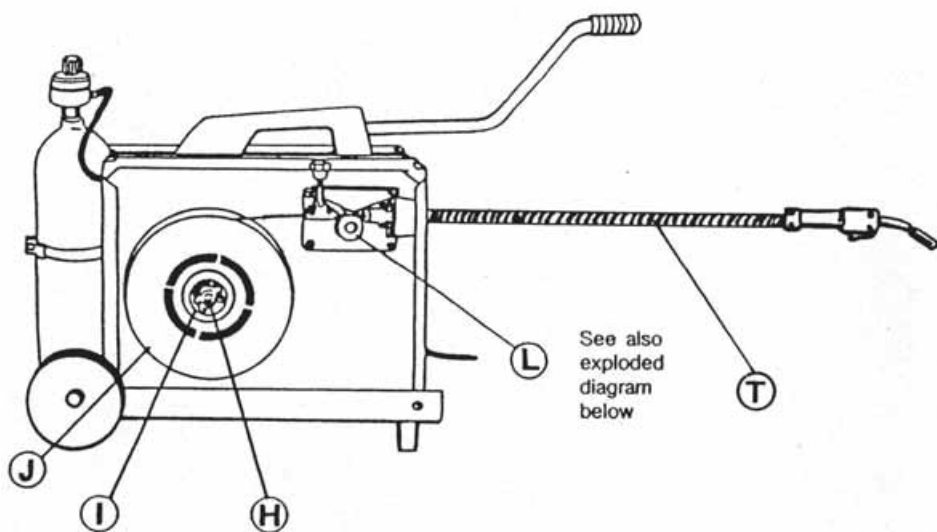
- 4) Loosen the plastic knob (K) (turn anti-clockwise) that holds pressure on the wire via the roller (L), then raise the pressure roller (M) and pull out any wire that has been left in the hose.
- 5) Without allowing the spool to unwind, cleanly clip the end of the wire from the spool and straighten if necessary, then feed the wire through the guide tube (N) over the channel on the roller (L) and into the torch sheath (O) about 10 to 15 cm.
- 6) Reposition the pressure roller (M) and the plastic knob (K) and tighten slightly

(TOO TIGHT WILL CRUSH THE WIRE AND DAMAGE THE WIRE FEED MOTOR; TOO LOOSE WILL NOT ALLOW THE WIRE TO BE PULLED BY THE ROLLER).

Pull off the torch shroud (item 8, page 18) and unscrew the contact tip (item 9, page 18).

Replace the side panel of the machine, plug into a 240 V, 50 Hz outlet, switch on the machine and press the trigger. The wire will feed through the hose and when it appears at the torch end, release the trigger, switch off the machine and replace the contact tip and the torch shroud.

DIAGRAM 2



WARNING: The torch (Diagram 2, Item T) must be kept straight. When feeding a new wire through the liner, make sure the wire is cut cleanly (no burrs or angles) and at least two inches of the end is straight (no curves).

Failure to follow these instructions could lead to the wire damaging the liner.

PREPARATION FOR WELDING

- 1) Plug the machine into a 240 V. - 50 Hz. outlet.
- 2) Open the gas tap of the regulator. (see gas bottle instructions on page No. 8)
- 3) Attach ground clamp (Diagram 1, item P) to bare metal to be welded making sure of good contact, and as close as possible to the weld.
- 4) Make sure that the wire-roller groove (Diagram 2, Item L) corresponds to the diameter of the welding wire being used. Note that each roll has two grooves, one for 0,6 mm. wires and one for 0,8 mm. wires.
To change position just unscrew the Allen screw that holds the roller in place, reverse the roller and replace the Allen screw.
- 5) Adjust the gas regulator to the proper setting position (this varies with different metals, thickness and current needed), refer to guide given on page No. 8.

WELDING PROCEDURES

- 1) Your welding machine has 6 positions in which to regulate current for various conditions, obtainable through three two-position switches placed on the front panel.
- 2) The selection of a welding position is determined by the thickness of the metal to be welded. The thicker it is, the higher the current must be.
- 3) According to the thickness to be welded, the amount of gas regulated to the work also varies and must be adjusted to comply.
- 4) For welding adjustments please refer to the wire size specification chart on page 12.

MIG 130 TE - MIG 150 TE

WIRE SIZE SPECIFICATION CHART

STEEL

Workpiece Thickness (millimetre)	Welding wire 0,6 mm.				Welding wire 0,8 mm.			
	Welding Pos. Switch			Wire Spd.	Welding Pos. Switch			Wire Spd.
	X	Y	Z	Adjust N	X	Y	Z	Adjust N
0,5-0,6	1	2/3	Min.	Low	1	2/3	Max	Low
0,6-0,8	1	2/3	Max.	Low	A	2	Min.	Low
0,8-1,0	A	/2	Min.	Med.	A	3	Min.	Med.
1,0-1,2	A	3	Min.	Med.	A	2	Max.	Med.
1,2-2,0	A	2	Max.	Med.	A	3	Max.	Med.
2,0-3,0	A	3	Max.	High	A	3	Max.	High

N.B. Please note that for position 1, Y switch can be on 2 or 3 position.

NOTE: With correct preparation it is possible to weld upto 4 mm thick mild steel with the MIG 130TE

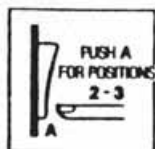
NOTE: With correct preparation it is possible to weld upto 5 mm thick mild steel with the MIG 150TE.

ALUMINIUM

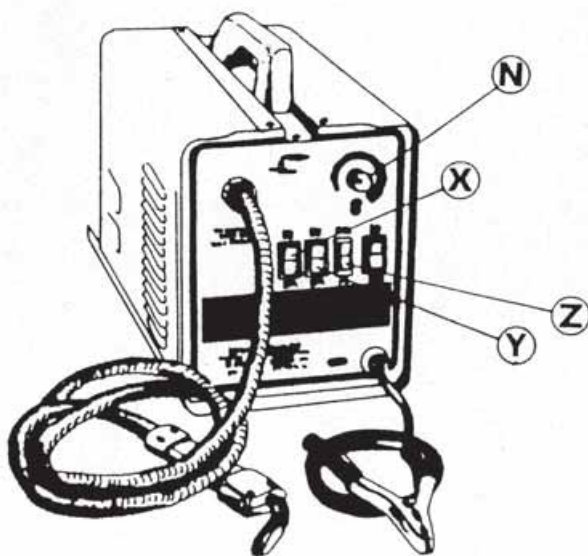
Workpiece Thickness (millimetre)	Welding wire 0,8 mm.			Wire Spd. Adjust N
	Welding Pos. Switch			
	X	Y	Z	
0,8	A	2	Min.	Med.
1,0-1,5	A	3	Min.	Med.
1,5-2,0	A	2	Max.	High
2,0-3,0	A	3	Max.	Med./High

N.B. Please note that for position 1, Y switch can be on 2 or 3 position.

MIG 130 TE - MIG 150 TE



X	Y	Z	
1	2	MIN	OFF
A	3	MAX	ON



WELDING TECHNIQUES

Before welding, READ THE FOLLOWING SAFETY INSTRUCTIONS carefully: make sure flammable materials are removed from work area.

Keep a fire extinguisher (Dry powder / CO² / BCF, not water) handy. Wear protective clothing so that all skin areas are covered. Use approved helmet and gloves.

TUNING THE WELDER

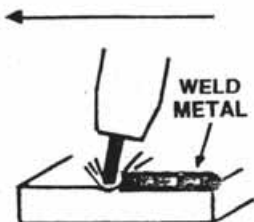
TO SET VOLTAGE: Use proper "stick out". Wire "stick out" is the distance from the CONTACT TIP to the WORK. Wire "stick out" (sometimes incorrectly called arc length) should be between 5 and 10 mm. to achieve optimum welding conditions (and sound).

- 1) First set the voltage setting to the desired number. Lower settings for light sheet metal, higher settings for thicker metal.
- 2) Next adjust wire feed speed. Start with a piece of scrap metal that is free of paint and rust. Attach the ground clamp to the scrap metal. Turn the wire feed to a high setting. Pull trigger, (Please note that the trigger must be pulled firmly and fully in order to produce its three operations ie gas flow, wire feed, and welding current). Initiate an arc and start to turn the wire feed down slowly. Listen as you continue to decrease the wire feed speed. The sound will go from a sputter to a high pitched buzz (like the sound of bacon frying). This buzz will indicate the proper wire speed setting for the thickness of metal you are welding.

You must retune the wire speed whenever the amperage setting is changed. Always start with a higher wire feed speed setting. This will help to prevent damage to the contact tip during the welder tuning procedure.

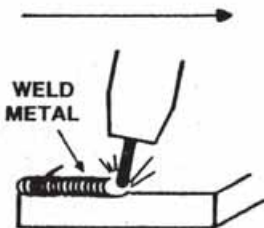
As you weld, the gun should be held at approximately a 45 degree angle. Keep the tip of the nozzle 5 to 10 mm. from work.

DIRECTION OF TRAVEL



FOREHAND WELDING - A welding technique in which the welding torch or gun is directed toward the progress of welding.

DIRECTION OF TRAVEL



BACKHAND WELDING - A welding technique in which the welding torch or gun is directed opposite to the progress of welding. Sometimes referred to as the "pull technique".

REPLACING THE SPOOL OF WIRE

- 1) Your MIG welder comes with a mini spool of wire. After it is depleted, you can replace it with either a 0,8 Kg. or 5,0 Kg. spool of wire in either 0,6 mm. diameter mild steel or 0,8 mm. mild steel, stainless steel or aluminium.

0,6 mm. is used for thin metals to 3 mm.

0,8 mm. is used for thick metals to 6 mm.

The wire is pulled by the roller (item L, diagram 2) which is moved by a set of gears. The roller has two grooves. One 0,6 mm. deep and one 0,8 mm. deep. You must use the groove corresponding to the thickness of wire being used, otherwise the wire will not be carried through efficiently, or will flatten; also make sure that the contact tip at the end of the torch corresponds to the diameter of the wire being used. (Except when using aluminium wire - for 0,8 mm. Alum. use 1,0 mm. tip).

TO REPLACE THE USED SPOOL (See diagram 2)

Repeat the procedure outlined on page 9, "Connecting the wire feed".

REPLACEMENT WELDING WIRE AND GAS BOTTLES

Replacement welding wire and gas bottles are easily available through our **Clarke** national dealer network, motor accessory shops, engineering outlets, chain stores and D.I.Y. shops.

Should you have any difficulty obtaining replacements, telephone **Clarke** on 01992 565300 for your nearest retail outlet.

WELDING HINTS

- 1) Hold the gun at a 45° angle to the work-piece with the nozzle about 6 mm. from the surface.
- 2) Move the gun smoothly and steadily as you weld.
- 3) Avoid welding in very draughty areas. A weak pitted and porous weld will result due to air blowing away the protecting welding gas.
- 4) Keep wire and wire liner clean. Do not use rusted wire.
- 5) Sharp bends or kinks on the welding hose should be avoided.
- 6) If available, use compressed air to periodically clean the hose liner when changing wire spools.
- 7) Using low pressure air (20-30 PSI), occasionally blow the dust from the inside of the welder. This keeps the machine running cooler.

SPOT WELDING

It is possible to spot weld two sheets of up to 0,8 mm. thickness mild steel by replacing the torch gas nozzle with a spot welding nozzle (not supplied), which is available from most welding equipment suppliers as an optional extra.

It is sufficient to place the torch nozzle on the upper sheet and then push the torch, pressing the trigger to spot the first sheet with the second one.

For spot welding the machine must be regulated at the highest welding current and at a high feeding speed. It is advisable to use 0,8 mm. \varnothing wire.

HOW TO CHANGE THE WIRE LINER

Before attempting to fit your new wire liner, ensure that your welder is turned OFF, disconnected from the main electrical supply and gas cylinder.

Please refer to the diagrams on Page 19.

- 1) Lift off the side panel and remove the welding wire from the torch and hose assembly.
- 2) Remove the 2 screws and the 2 bolts from the Torch securing bracket and remove from Item 16.
- 3) Remove the right side panel (Item 19) from the machine.
- 4) Unscrew the screws in the torch assembly (Item 47) and separate the two halves (Item 12).
- 5) Lift out the gas valve (Item 11) and disconnect the liner by depressing and holding in the raised lip and pulling the liner with the lip depressed.
- 6) Straighten the hose assembly and pull the liner completely out of the hose.
- 7) Replace with the new wire liner and repeat steps 1-4 in the reverse order to re-assemble your machine.
- 8) When assembled trim the liner to the correct length at the wire feed end.

WELDING ACCESSORIES AND CONSUMABLES

A full range of Welding Accessories and Consumables (Welding Tips, Wires, Torch Shrouds, Welding Gas, Anti-Spatter Spray, Welding Headshields, Regulators etc), is available from your local dealer or Clarke International (Tel. 01992 565300).

PARTS & SERVICE CONTACTS

For Spare Parts and Service, please contact your nearest dealer,
or CLARKE International, on one of the following numbers.

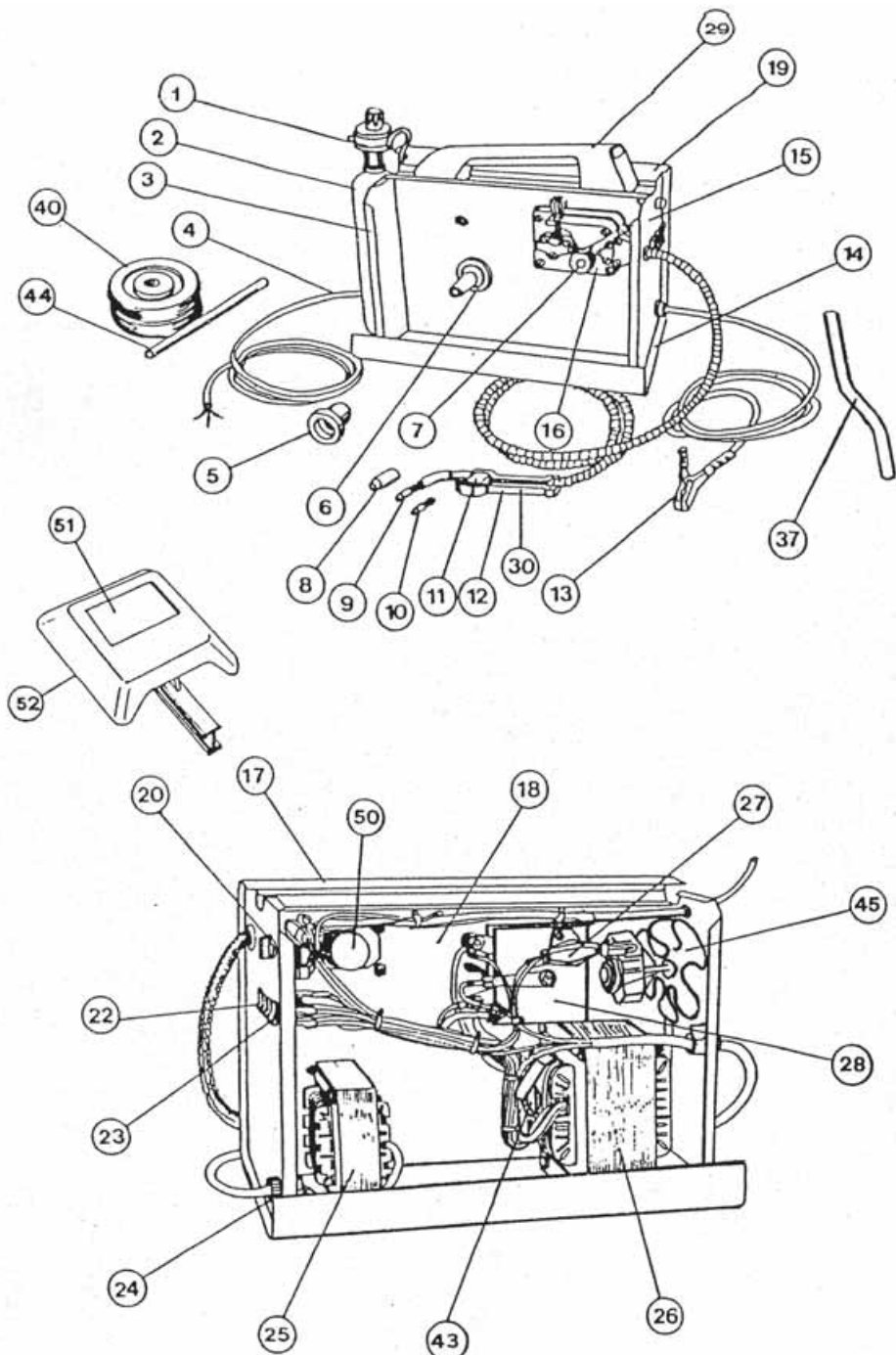
PARTS & SERVICE TEL: 020 8988 7400

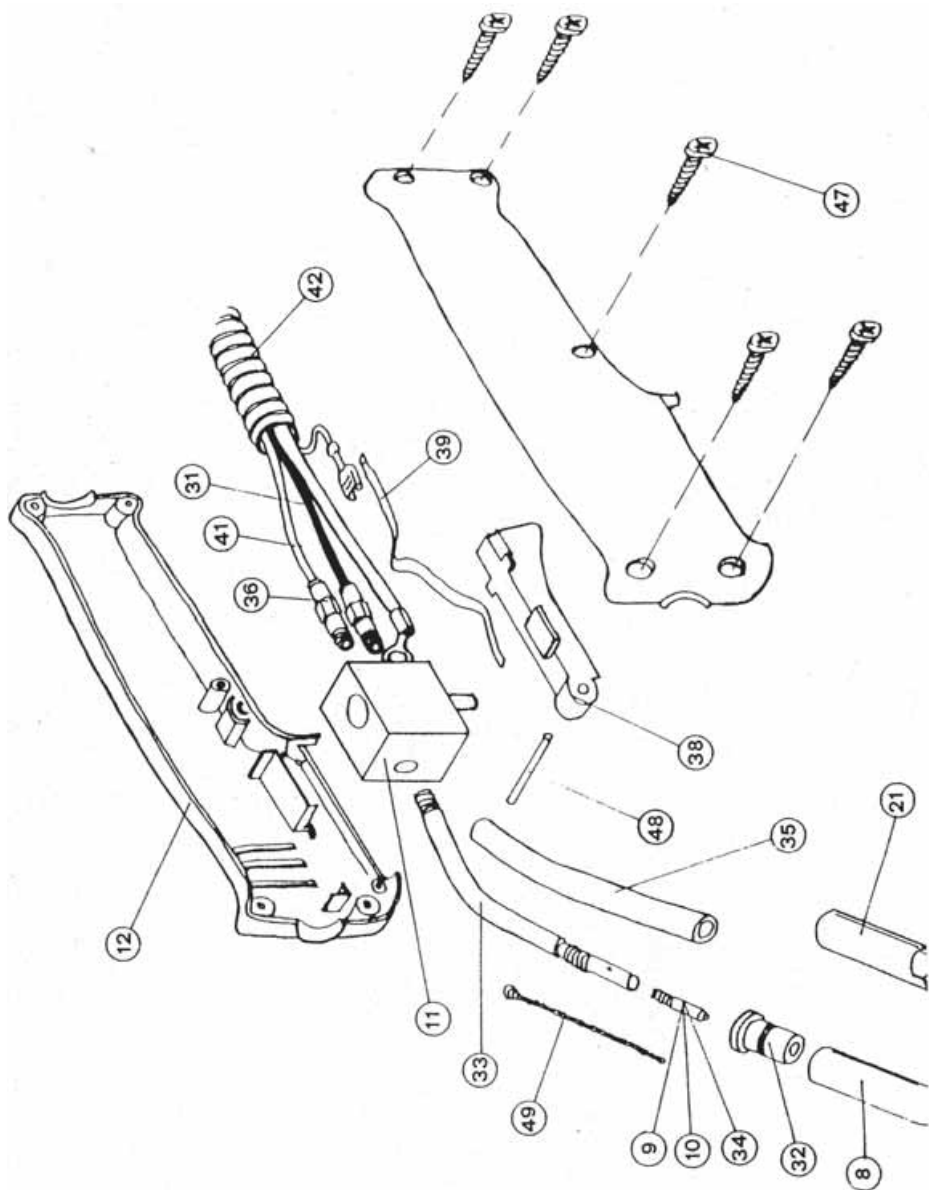
PARTS & SERVICE FAX: 020 8558 3622

or e-mail as follows:

PARTS: Parts@clarkeinternational.com

SERVICE: Service@clarkeinternational.com



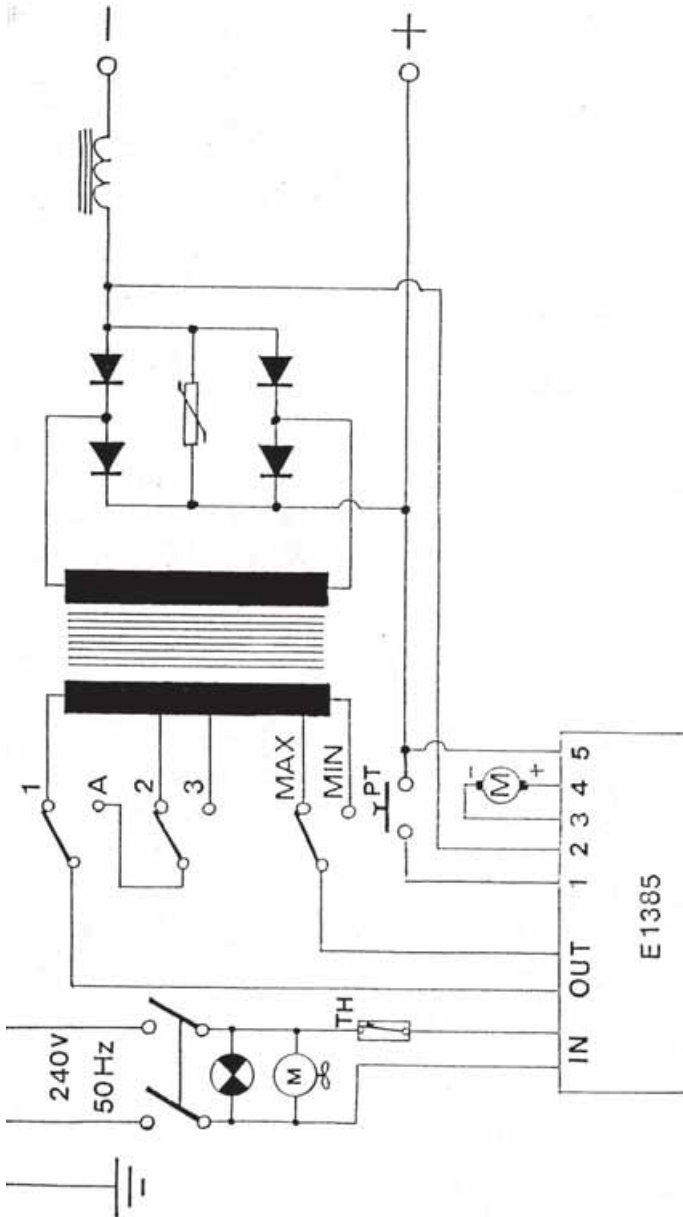


SPARE PARTS LIST

ITEM	DESCRIPTION	MIG 130 TE (240 V.)	MIG 150 TE (240 V.)
1	Pressure regulator	EM 22905001	EM 22905001
2A	Gas bottle CO ²	EM 21900001	EM 21900001
2B	Gas bottle mix	EM 21900003	EM 21900003
2C	Gas bottle Argon	EM 21900002	EM 21900002
3	Back panel	EM 55030080	EM 55030080
4	Input cable	EM 20220014	EM 20220014
5	Spool holder retaining ring	EM 21690012	EM 21690012
6	Spool holder	EM 21690011	EM 21690011
7	Wire feeding roll	EM 33805001	EM 33805001
8	Torch gas nozzle (shroud)	EM 23005007	EM 23005007
9	0,6 mm. contact tip	EM 23005004	EM 23005004
10	0,8 mm. contact tip	EM 23005005	EM 23005005
11	Torch gas valve	EM 23005009	EM 23005009
12	Torch handle	EM 21690027	EM 21690027
13	Ground clamp	EM 22110005	EM 22110005
14	Lower panel	EM 55030009	EM 55030009
15	Front panel	EM 55000061	EM 55000061
16	Complete wire feeder in plastic	EM 44400002	EM 44400002
17	Left side panel	EM 55030033	EM 55030033
18	Central dividing panel	EM 55030068	EM 55030068
19	Right side panel	EM 55030032	EM 55030032
20	P.C. board	EM 22710007	EM 22710007
21	Spot welding shroud	EM 23005008	EM 23005008
22	Welding current switch	EM 22200006	EM 22200006
23	Pilot light switch	EM 22200002	EM 22200002
24	Cable clamp	EM 21605010	EM 21605010
25	Choke/Inductance	EM 44135004	EM 44135003
26	Main transformer	EM 44120032	EM 44120025
27	Thermostat (rectifier)	EM 22210601	EM 22210601
28	Rectifier	EM 22400038	EM 22400038
29	Handle	EM 21600003	EM 21600003
30	Torch/Hose assembly	EM 23000003	EM 23000003
31	Wire liner	EM 10900001	EM 10900001
32	Torch insulator yellow	EM 23005003	EM 23005003
33	Torch neck with gas diffuser	EM 23005001	EM 23005001
34	1,0 mm. contact tip for 0,8 mm Alum. wire	EM 23005006	EM 23005006
35	Torch neck insulator	EM 23005002	EM 23005002
36	Fast coupling connector	EM 22910001	EM 22910001
37	Handle extension	EM 55000913	EM 55000913
38	Torch trigger	EM 21690029	EM 21690029
39	Contact spring	EM 33800009	EM 33800009
40	Wheel	EM 21625013	EM 21625013
41	Torch gas hose	EM 10900002	EM 10900002
42	Outer sleeve	EM 10900005	EM 10900005
43	Thermostat (transformer)	EM 22210605	EM 22210605
44	Wheel axle	EM 55200013	EM 55200013
45	Complete fan	EM 22800012	EM 22800012
46	Gas connector adaptor for larger gas bottles	EM 22910011	EM 22910011
47	Screw TC 7x3/4"	EM 21020013	EM 21020013
48	Trigger-pin	EM 33810036	EM 33810036
49	Wire liner in torch neck	EM 23005010	EM 23005010
50	Wire feeding motor	EM 22810002	EM 22810002
51	Dark glass	EM 21905021	EM 21905021
52	Face shield	EM 21905018	EM 21905018

WIRING DIAGRAM

MIG 130 TE - MIG 150 TE
INPUT 240 V. 50 Hz



TROUBLE SHOOTING

Your **Clarko** Mig welder has been designed to give long and trouble free service. If however, having followed the instructions in this booklet carefully, you still encounter problems the following points should help identify and resolve them.

PROBLEM	CAUSE	REMEDY
1 No "life" from welder	Check fuses and mains plug lead.	Replace fuses as necessary. If problem persists return welder to your local dealer.
2 No wire feed.	Motor malfunction.	Return welder to your local dealer.
3 Feed motor operates but wire will not feed.	a) Burr on end of wire. b) Liner blocked or damaged. c) Inferior wire.	a) Re-cut wire square with no burr. b) Clear with compressed air or replace liner. c) Use only good quality "clean" wire.
4 Wire welds itself to tip.	Wire feed speed too slow.	Unscrew tip, cut wire and fit new tip. Increase wire speed before operating again.
5 Wire feeds into "birds nest" tangle.	Wire welded to tip.	As above plus reduce feed roller pressure so that if blockage occurs wire slips on roller ie. no feed.
6 Loose coils of wire tangle around wire drum inside machine.	Drum brake too slack.	Tighten drum brake. Caution: Do not over tighten.
7 Erratic wire feed.	a) Drum brake too tight. b) Feed roller worn. c) Insufficient pressure on feed roller. d) Wire dirty, rusty, damp or bent. e) Liner partially blocked.	a) Loosen drum brake slightly. b) Check and replace if necessary. c) Increase pressure on feed roller. Caution: Do not over tighten. d) Re-cut wire and ensure it is clean. e) Clear with compressed air.
8 Poor quality welds.	a) Insufficient gas at weld area. b) Incorrect gas/wire combination. c) Rusty, painted, damp, oil or greasy workpiece. d) Rusty/dirty wire. e) Poor earth contact.	a) Check that gas is not being blown away by draughts and if so move to more sheltered weld area. If not increase gas supply. b) See charts on pages 5, 12 & 13 of this booklet. c) Ensure workpiece is clean and dry. d) Ensure wire is clean and dry. e) Check ground clamp/workpiece connection.
9 Torch shroud loose.	Shroud insulator burnt or worn.	Replace insulator (item No. 32 page 20).
10 Wire jams in tip when welding aluminium.	Tip too small.	Use slightly oversize tip ie. for 0,8 mm. wire use 1 mm. tip. (Note: Applies to aluminium only).
11 Welder cuts out whilst in use.	Duty cycle exceeded (auto cut-out operates).	Allow welder to cool for 15-30 mins before continuing. Note: if duty cycle is continually exceeded, welder output is probably too small for application.

If you have any problems which cannot be resolved by reference to the above, or if you require spare parts for your welder please contact your local welding dealer.

TYPES OF JOINTS



BUTT JOINT



SINGLE V-JOINT



DOUBLE V-JOINT



SINGLE BEVEL
JOINT



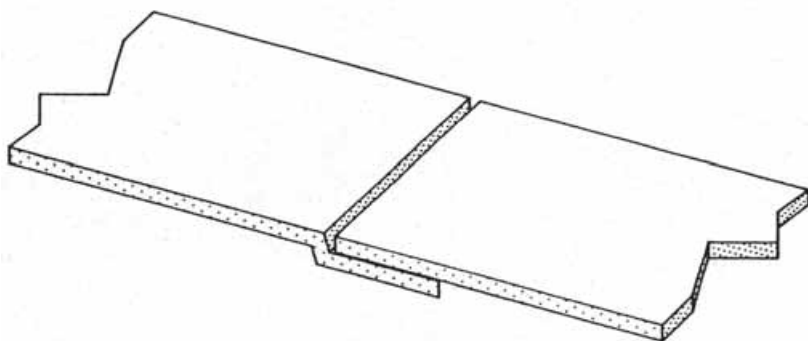
DOUBLE BEVEL
JOINT



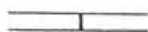
CORNER JOINT

AUTO BODYWORK

When joining 2 thin sheets, i.e. 22 swg, use an Edge Setter to form a set lap joint as below:



The CLARKE Edge Setter (Part No. 7630076) is ideal for this purpose. The Edge Setter is also available with a hole punch for spot welding (Part No. 7630075).



CLOSED JOINT

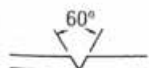


OPEN JOINT

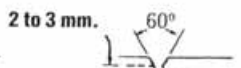


VEE JOINT

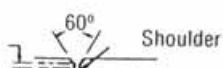
2 to 3 mm.



FEATHER EDGE
3 mm. OR MORE



SHOULDER EDGE
6 mm. OR MORE



DOUBLE VEE
JOINT

Shoulder

A SELECTION FROM THE VAST RANGE OF

Clarke®

QUALITY PRODUCTS

AIR COMPRESSORS

From DIY to industrial, Plus air tools, spray guns and accessories.

GENERATORS

Prime duty or emergency standby for business, home and leisure.

POWER WASHERS

Hot and cold, electric and engine driven - we have what you need

WELDERS

Mig, Arc, Tig and Spot. From DIY to auto/industrial.

METALWORKING

Drills, grinders and saws for DIY and professional use.

WOODWORKING

Saws, sanders, lathes, mortisers and dust extraction.

HYDRAULICS

Cranes, body repair kits, transmission jacks for all types of workshop use.

WATER PUMPS

Submersible, electric and engine driven for DIY, agriculture and industry.

POWERTOOLS

Angle grinders, cordless drill sets, saws and sanders..

STARTERS/CHARGERS

All sizes for car and commercial use.



PARTS & SERVICE: 0208 988 7400

E-mail: Parts@clarkeinternational.com or Service@clarkeinternational.com

SALES: UK 01992 565333 or Export 00 44 (0)1992 565335

Clarke® INTERNATIONAL Hemnall Street, Epping, Essex CM16 4LG
www.clarkeinternational.com