Clarke®

weld

# Model Nos. 215TE, 250TE & 260TE


## OPERATING & MAINTENANCE INSTRUCTIONS

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0100

Thank you for purchasing this CLARKE Mig welder.
Before attempting to operate this machine, please read this leaflet thor-oughly and follow the instructions carefully, in doing so you will ensure the safety of yourself and that of others around you, and so that it will provide you with long and troublefree service.

**GUARANTEE**

This CLARKE product is guaranteed against faulty manufacture for a period of 12 months from the date of purchase. Please keep your receipt as proof of purchase. This guarantee is invalid if the product is found to have been abused or tampered with in any way, or not used for the purpose for which it was intended.
Faulty goods should be returned to their place of purchase, no product can be returned to us without prior permission. This guarantee does not effect your statutory rights.

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## SAFETY

Special care is taken during all stages of manufacture to ensure that your Clarke Mig Welder arrives with you in good condition.
Before using the machine it is in your own interest to read this manual thoroughly, paying particular attention to the following rules, and the EMC Regulations:

1 Do not open or remove side panels from the machine unless the mains plugs disconnected.
2 Do not use the machine with any of the panels open or 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 or CLARKE International Service Dep't on 020 8988 7400.
4 Remove any flammable materials from the welding area.
5 Do not expose gas cylinder to high temperature, and do not strike an arc near or on the gas cylinder.

Caution: Gas cylinders are pressurised 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 strongly recommended.
8 Never use in a wet or damp environment.
9 If welding outdoors, screens MUST BE USED around the weld site, to protect the general public from the glare of the arc.

## ELECTROMAGNETIC INTERFERENCE (EMC)

Whilst this unit complies with EMC regulations, the user is responsible for installing and using the welding equipment according to the manufacturers instructions. If electromagnetic disturbances are detected then it shall be the responsibility of the user of the welding equipment to resolve the situation. In some cases this remedial action may be as simple as earthing the welding circuit, see 'Note'. In other cases it could involveconstructing an electromagnetic screen enclosing the power source and the work complete with associated input filters. In all cases electromagnetic disturbances must be reduced to the point where they are no longer troublesome.

NOTE: The welding circuit may not be earthed for safety reasons. Changing the earthing arrangements should only be authorised by a person who is competant to assess whether changes will increase the risk of injury, e.g. by allowing parallel welding current return paths which may damage the earthing circuits of other equipment.

## 1. ASSESSMENT OF AREA

Before installing welding equipment the user shall make an assessment of potential electromagnetic problems in the surrounding area. Avoid using your welder in the vicinity of:
**a)** Other supply cables, control cables, signalling and telephone cables; above, below and adjacent to the welding equipment;
**b)** Radio and television transmitters and receivers;
**c)** Computer and other control equipment;
**d)** Safety critical equipment, e.g. guarding of industrial equipment;
**e)** Pacemakers and hearing aids etc;
**f)** Equipment used for calibration or measurement;
**g)** Other equipment in the environment. The user shall ensure that other equipment being used in the environment is compatible. This may require additional protection measures;

It may be possible to avoid the above by changing the time of day that welding or other activities are to be carried out.

The size of the surrounding area to be considered will depend on the structure of the building and other activities that are taking place. The surrounding area may extend beyond the boundaries of the premises.

## 2. METHODS OF REDUCING EMISSIONS

### 2.1Mains supply

Welding equipment should be connected to the mains supply according to the manufacturers recommendations. If interference occurs, it may be necessary to take additional precautions such as filtering of the mains supply. Consideration should be given to shielding the supply cable of permanently installed welding equipment, in metallic conduit or equivalent. Shielding should be electrically continuous throughout its length. The shielding should be connected to the welding power source so that good electrical contact is maintained between the conduit and the welding power source enclosure.

### 2.2Maintenance of the welding equipment

The welding equipment should be routinely maintained according to the manufacturers recommendations. All access and service doors and covers should be closed and properly fastened when the welding equipment is in operation. The welding equipment should not be modified in any way except for those changes and adjustments covered in the manufacturers instructions. In particular, the spark gaps of arc striking and stabilizing devices should be adjusted and maintained according to the manufacturers recommendations.

## 2.3Welding cables

The welding cables should be kept as short as possible and should be positioned close together, running at or close to the floor level.

## 2.4Equi-potential bonding

Bonding of all metallic components in the welding installation and adjacent to it should be considered. However, metallic components bonded to the work piece will increase the risk that the operator could receive a shock by touching these metallic components and the electrodes at the same time. The operator should be insulated from all such bonded metallic components.

## 2.5 Earthing of the workpiece

Where the workpiece is not bonded to earth for electrical safety, nor connected to earth because of its size and position, e.g. ships hull orn building steelwork, a connection bonding the workpiece to earth may reduce emissions in some, but not all instances. Care should be taken to prevent the earthing of the workpiece increasing the risk of injury to users, or damage to other electrical equipment. Where necessary, the connection of the workpiece to earth should be made by a direct connection to the workpiece, but in some countries where direct connection is not permitted, the bonding should be achieved by suitable capacitance, selected according to national regulations.

## 2.6 Screening and shielding

Selective screening and shielding of other cables and equipment in the surrounding area may alleviate problems of interference. Screening of the entire welding installation may be considered for special applications.

# SAFETY PRECAUTIONS

## 1.0 Introduction

Read and understand these safe practices before attempting to install, operate, or service the equipment. Comply with these procedures as applicable to the particular equipment used and their instruction manuals, for personal safety and for the safety of others. Failure to observe these safe practices may cause serious injury or death. When safety becomes a habit, the equipment can be used with confidence.

## 2.0 General precautions

### 2-A Burn prevention

Wear protective clothing - gauntlet gloves designed for use in welding, hat, and protective shoes. Button shirt collar and pocket flaps, and wear cuffless trousers to avoid entry of sparks and slag. Wear helmet with safety goggles or glasses with side shields underneath, appropriate filter lenses or plates (protected by clear cover glass). This is a MUST for welding or cutting, (and chipping) to protect the eyes from radiant energy and flying metal. Replace cover glass when broken, pitted, or spattered. Avoid oily greasy clothing. A spark may ignite them. Hot metal such as electrode stubs and workpieces should never be handled without gloves. First aid facilities and a qualified first aid person should be available for each shift unless medical facilities are close by for immediate treatment of flash burns of the eyes and skin burns. Ear plugs should be worn when working overhead or in a confined space. A hard hat should be worn when others work overhead. Flammable hair preparations should not be used by persons intending to weld or cut.

### 2-B Toxic fume prevention

Severe discomfort, illness or death can result from fumes, vapours, heat, or oxygen enrichment or depletion that welding (or cutting) may produce. Prevent them with adequate ventilation. NEVER ventilate with oxygen. Lead-, cadmium-, zinc-, mercury- and beryllium-, bearing materials, when welded (or cut) may produce harmful concentrations of toxic fumes. Adequate local exhaust ventilation must be used, or each person in the area as well as the operator must wear an air- supplied respirator. For beryllium, both must be used. Metals coated with or containing materials that emit toxic fumes should not be heated unless coating is removed from the work surface, the area is well ventilated, or the operator wears an air-supplied respirator. Work in a confined space only while it is being ventilated and, if necessary, while wearing an air-supplied respirator. Vapours from chlorinated solvents can be decomposed by the heat of the arc (or flame) to form PHOSGENE, a highly toxic gas, and other lung and eye irritating products. The ultraviolet (radiant) energy of the arc can also decompose trichloroethylene and perchlorethylene vapours to form phosgene. DO NOT WELD or cut where solvent vapours can be drawn into the welding or cutting atmosphere or where the radiant energy can penetrate to atmospheres containing even minute amounts of trichloroethylene or perchlorethylene.

## 2-C Fire and explosion prevention

Causes of fire and explosion are: combustibles reached by the arc, flame, flying sparks, hot slag or heated material; misuse of compressed gases and cylinders; and short circuits. BE AWARE THAT flying sparks or falling slag can pass through cracks, along pipes, through windows or doors, and through wall or floor openings, out of sight of the goggled operator. Sparks and slag can fly 10m. To prevent fires and explosion: keep equipment clean and operable, free of oil, grease, and (in electrical parts) of metallic particles that can cause short circuits. If combustibles are in area, do NOT weld or cut. Move the work if practicable, to an area free of combustibles. Avoid paint spray rooms, dip tanks, storage areas, ventilators. If the work cannot be moved, move combustibles at least 10m. away out of reach of sparks and heat; or protect against ignition with suitable and snug fitting, fire- resistant covers or shields. Walls touching combustibles on opposite sides should not be welded on (or cut). Walls, ceilings, and floor near work should be protected by heat resistant covers or shields. Fire watcher must be standing by with suitable fire extinguishing equipment during and for some time after welding or cutting if:

**a)** appreciable combustibles (including building construction) are within 10m.

**b)** appreciable combustibles are further than 10m but can be ignited by sparks.

**c)** openings (concealed or visible) in floors or walls within 10m can expose combustibles to sparks.

**d)** combustibles adjacent to walls, ceilings, roofs or metal partitions can be ignited by radiant or conducted heat.

After work is done, check that area is free of sparks, glowing embers, and flames. An empty container that held combustibles, or that can produce flammable or toxic vapours when heated, must never be welded on or cut, unless container has first been cleaned. This includes: a thorough steam or caustic cleaning (or a solvent or water washing, depending on the combustible's solubility) followed by purging and inerting with nitrogen or carbon dioxide, and using protective equipment. Water filling just below working level may substitute for inerting. A container with unknown contents should be cleaned (see paragraph above), do NOT depend on sense of smell or sight to determine if it is safe to weld or cut. Hollow castings or containers must be vented before welding or cutting -they can explode. In explosive atmospheres, never weld or cut where the air may contain flammable dust, gas, or liquid vapours (such as gasoline).

## 3.0 Electric arc (Mig, Tig) welding

Comply with precautions in 1, 2 and this section. Arc welding, properly done, is a safe process, but a careless operator invites trouble. The equipment carries high currents at significant voltages. The arc is very bright and hot. Sparks fly, fumes rise, ultraviolet and infrared energy radiates, weldments are hot. The wise operator avoids unnecessary risks and protects himself and others from accidents.

## 3-A Burn protection

Comply with precautions in 2. The welding arc is intense and visibly bright. Its radiation can damage eyes, penetrate lightweight clothing, reflect from light coloured surfaces, and burn the skin and eyes. Skin burns resemble acute sunburn, those from gas - shielded arcs are more severe and painful.

**DON'T GET BURNED! COMPLY WITH PRECAUTIONS!**

### (I) Protective clothing

Wear long sleeved clothing (particularly for gas shielded arc) in addition to gloves, hat and shoes (2-A). As necessary, use additional protective clothing such as leather jacket or sleeves, flameproof apron, and fire-resistant leggings. Avoid outer garments of untreated cotton. Protect bare skin. Wear dark substantial clothing. Button collar to protect chest and neck and button pockets to prevent entry of sparks.

### (II) Eye and head protection

Protect eyes from exposure to arc. NEVER look at an electric arc without protection. Welding helmet or shield containing a filter plate shade no. 12 or denser must be used when welding. Place over face before striking arc. Protect filter plate with a clear cover plate. Cracked or broken helmet or shield should NOT be worn; radiation can pass through to cause burns. Cracked, broken, or loose filter plates must be replaced IMMEDIATELY. Replace clear cover plate when broken, pitted, or spattered. WE SUGGEST to wear flash goggles with side shields under the helmet, to give some protection to the eyes should the helmet not be lowered over the face before an arc is struck. Looking at an arc momentarily with unprotected eyes (particularly a high intensity gas-shielded arc) can cause a retinal burn that may leave a permanent dark area in the field of vision. Before welding whilst wearing contact lenses, seek advice from your optician.

### (III) Protection of Nearby Personnel

For production welding, a separate room or enclosed bay is best. In open areas, surround the operation with low reflective, non-combustible screens or panels. Allow for free air circulation, particularly at floor level. Provide face shields for all persons who will be looking directly at the weld. Others working in the area should wear flash goggles. Before starting to weld, make sure that screen or bay doors are closed.

## 3-B Toxic Fume Prevention

Comply with precautions in 2-B. Generator engine exhaust must be vented to the outside air. Carbon monoxide can kill.

### 3-C Fire and Explosion Prevention

Comply with precautions in 2-C. Equipment's rated capacity. Do not overload arc welding equipment. It may overheat cables and cause a fire. Loose cable connections may overheat or flash and cause a fire. Never strike an arc on a cylinder or other pressure vessel. It creates a brittle area that can cause a violent rupture or lead to such a rupture later under rough handling.

### 3-D Shock Prevention

Exposed hot conductors or other bare metal in the welding circuit, or in ungrounded, electrically-HOT equipment can fatally shock a person whose body becomes a conductor. DO NOT STAND, SIT, LIE, LEAN ON, OR TOUCH a wet surface when welding, without suitable protection.

### 3-E Protection for Wearers of Electronic Life Support Devices (Pacemakers).

Magnetic fields from high currents can affect pacemaker operation. Persons wearing electronic life support equipment (pacemaker) should consult with their doctor before going near arc welding, gouging, or spot welding operations.

### 3-F To Protect Against Shock:

Keep body and clothing dry. Never work in damp area without adequate insulation against electrical shock. Stay on a dry duckboard, or rubber mat when dampness or sweat can not be avoided. Sweat, sea water, or moisture between body and an electrically HOT part - or grounded metal - reduces the body surface electrical resistance, enabling dangerous and possibly lethal currents to flow through the body.

**(I) Grounding the equipment**

When arc welding equipment is grounded according to the National Electrical Code, and the work is grounded, a voltage may exist between the electrode and any conducting object. Examples of conducting objects include, but are not limited to, buildings, electrical tools, work benches, welding power source cases, workpieces, etc. Never touch the electrode and any metal object unless the welding power source is off. When installing, connect the frames of each unit such as welding power source, control, work table, and water circulator to the building ground. Conductors must be adequate to carry ground currents safely. Equipment made electrically HOT by stray current may shock, possibly fatally. Do NOT GROUND to electrical conduit, or to a pipe carrying ANY gas or a flammable liquid such as oil or fuel.

**(II) Electrode holders**

Fully insulated electrode holders should be used. Do NOT use holders with protruding screws or with any form of damage.

**(III) Connectors**

Fully insulated lock-type connectors should be used to join welding cable lengths.

**(IV) Cables**

Frequently inspect cables for wear, cracks and damage. IMMEDIATELY REPLACE those with excessively worn or damaged insulation to avoid possibly lethal shock from bared cable. Cables with damaged areas may be taped to give resistance equivalent to original cable. Keep cable dry, free of oil and grease, and protected from hot metal and sparks.

**(V) Terminals and other exposed parts**

Terminals and other exposed parts of electrical units should have insulating covers secured before operation.

**(VI) Electrode**

**a)** Equipment with output on/off control (contactor) Welding power sources for use with the gas metal arc welding, gas tungsten arc welding and similar processes normally are equipped with devices that permit on/off control of the welding power output. When so equipped the electrode wire becomes electrically HOT when the power source switch is ON and welding gun switch is closed. Never touch the electrode wire or any conducting object in contact with the electrode circuit unless the welding power source is off.

**b)** Equipment without output on/off control (no contactor) Welding power sources used with shielded metal arc welding and similar processes may not be equipped with welding power output on/off control devices. With such equipment the electrode is electrically HOT when the power switch is turned ON. Never touch the electrode unless the welding power source is off.

**(VII) Safety devices**

Safety devices such as interlocks and circuit breakers should not be disconnected or shunted out. Before installation, inspection, or service of equipment, SHUT OFF all power and remove line fuses (or lock or red-tag switches) to prevent accidental turning ON of power. Do not open power circuit or change polarity while welding. If, in an emergency, it must be disconnected, guard against shock burns, or flash from switch arcing. Always shut OFF and disconnect all power to equipment. Power disconnect switch must be available near the welding power source.

## PREPARATION OF THE WORKING AREA

The working area must be sufficiently spacious, not humid, and well-ventilated as to avoid any fumes which develop from the welding process and from incidental material adhering to the pieces to be welded (oils, paints, tars...) which may cause annoyance to the operator.
Avoid welding by contact with humid parts nearby combustible liquids. Least of all, do not weld upon tanks which may contain inflammable residuals.

## SAFETY EQUIPMENT

A comprehensive range of CLARKE safety equipment for use when welding is available from your local dealer.

## 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 the material, fusing it together. 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 wasteful and 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 material.

## WELDER SPECIFICATIONS

| **PRIMARY or INPUT POWER DATA** | MIG215TE | MIG250TE | MIG260TE |
|---|---|---|---|
| Primary Volts | 230V/1PH | 230V/1PH | 230/400V/3Ph |
| Primary Amps | 29 Amps | 36 Amps | 23 Amps (230V)<br>13.3Amps(400V) |
| Frequency | 50 HZ | 50 HZ | 50Hz |

| **SECONDARY or OUTPUT POWER DATA** | | | |
|---|---|---|---|
| Sec. Volts | 21-43 V | 21-48 V | 17-38 V |
| Max. Sec. Amps | 200 Amps | 250 Amps | 260 Amps |
| Current Range | 30-200 Amps | 30-250 Amps | 30-260 Amps |

| **DUTY CYCLES** | | | |
|---|---|---|---|
| 100% | 95 Amps | 115 Amps | 80 Amps |
| 60% | 123 Amps | 150 Amps | 103 Amps |
| 35% | -- | -- | 230 Amps |
| 25% | 190 Amps | 230 Amps | -- |

NOTE: Duty Cycles are rated over a 10 minute period.
Example: If welding with a MIG 215TE at 100amps, a 25% duty cycle applies. This means that over a 10 minute period, the welding time is 2.5 minutes, the down time is 7.5 minutes.

| **USABLE WIRE SIZES** | | | |
|---|---|---|---|
| Mild Steel Wire | 0.6-1.0mm | 0.6-1.0mm | 0.6-1.0mm |
| Stainless Steel Wire | 0.8-1.0mm | 0.8-1.0mm | 0.8-1.0mm |
| Aluminium Wire | 0.8-1.0mm | 0.8-1.0mm | 0.8-1.0mm |

| **USABLE GASES MAIN USES** | | |
|---|---|---|
| 75% Argon 25% CO2 | - | Thin Sheet Metal, Mild Steel |
| 100% Argon | - | Welding Aluminium, Stainless Steel |
| 100% CO2 | - | Mild Steel |

The details and specifications contained herein, are correct at the time of going to print. However, CLARKE International reserve the right to change specifications at any time without prior notice. Consult machines data plate.

## ELECTRICAL CONNECTIONS

**WARNING: THESE MACHINES MUST BE EARTHED.**

**MIG 215TE & 230TE**

This welder must be connected to the correct receptacle, 1Ph 230 volt (50Hz). A 13 Amp plug is not suitable for this device. Connect the three core mains lead to a suitably fused supply through an isolator or heavy duty plug.

**IMPORTANT: The wires in the mains lead are coloured in accordance with the following colour code:**

**Green & Yellow - Earth**
**Blue - Neutral**
**Brown - Live**

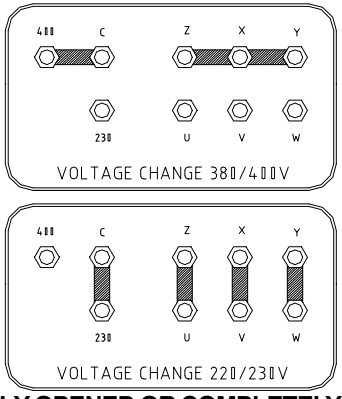
Connect GREEN & YELLOW coloured cord to plug terminal marked with a letter "E" or Earth symbol '⏚'.
Connect BROWN coloured cord to plug terminal marked letter "L"
Connect BLUE coloured cord to plug terminal marked letter "N"

We strongly recommend that this machine is connected to the mains supply through a Residual Current Device.

**MIG 260TE**

These machines are normally supplied connected to at 400V three-phase. For safety double check the sticker placed at the end of the input cable.
Should it became necessary to use an input current at 230V three-phase follow these simple instructions:

1 Bring on the "OFF" position the ON/OFF switch, disconnect the mains switch and the input voltage plug from the mains.
2 Open the right side panel (facing the welder) undoing the screws holding it to the frame.
3 Change the connection by following the instructions displayed on the here attached drawing.
4 Make sure that the nuts holding the bridges are securely tightened.
5 Re-assemble the side panel.



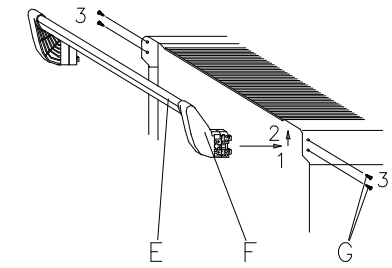

**DO NOT WORK WITH THE SIDE PANLES PARTIALLY OPENED OR COMPLETELY REMOVED FROM THE POWER SOURCE IN ORDER TO AVOID CONTACTS WITH WIRE OR PARTS.**

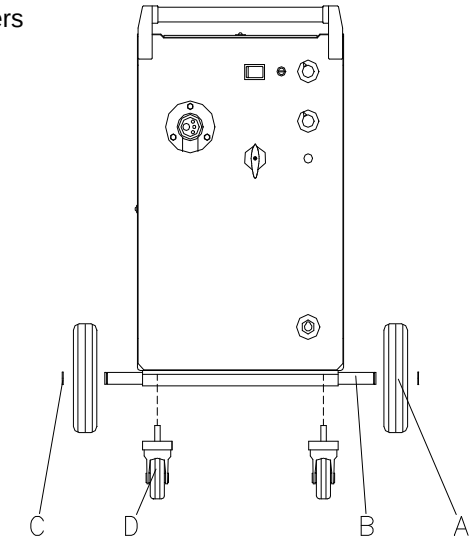
**IMPORTANT: If in doubt, consult a qualified electrician. Do not attempt any electrical repairs yourself.**

## ASSEMBLY

1 The side panel is hinged at its rear edge: Open by pulling sideways at the front edge, lay out all components contained within, and check to ensure that they are all correct according to the list below. FIG.1

A 2 Wheels
B 1 Axle
C 2 Wheel retaining washers
D 2 Castors
E 1 Handle
F 2 Brackets
G 4 Fixing screws
1 Mask with fixing screws & washers
1 Transparent glass
1 Dark glass
1 Gas regulator
1 Worm drive clips for gas hose connections
1 Welding torch and lead
1 Cover for hose support bracket
2 Self tapping screws for cover
1 Earth Cable
1 0.6mm welding tip
1 0.8mm welding tip
1 1.0mm welding tip



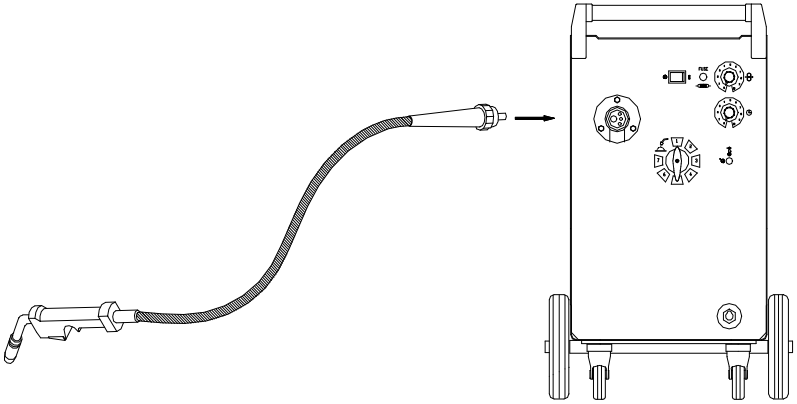




**SHOULD ANY PART BE MISSING OR DAMAGED, CONTACT YOUR LOCAL DEALER FOR REPLACEMENT.**

2 Attach the handle (E) to the welder unit by sliding the brackets (F) on the front of the machine, lining up the holes with those in the casing and securing the four screws (G) provided.
3 Fix the wheels (A) to the back of the unit and the castors (D) to the front.
4 Connect the earth return lead to the negative (-) socket on the fornt panel of the welder unit.
5 Ensure that the side panels are securely closed before using the welder.
6 Connect the torch lead assembly to the welder, following the appropriate instructions.

## TORCH LEAD ASSEMBLY INSTRUCTIONS

Plug the troch hose into the socket on the front of the welder and secure by hand screwing in the threaded connection. FIG.2



## FACE MASK

To assemble the face mask, first place the dark glass window and the clear glass window together in the recessed window area of the body.

**IMPORTANT: the clear glass window should be placed on the outside of the mask.**

Secure in place using the screws and nuts provided. Bend the sides of the mask into shape and fix together using the screws and nuts provided, and finally, fit the handle to the shield body also using the screws and nuts provided.

## ATTACHING THE GAS BOTTLE AND REGULATOR

1. The bottle (not supplied) should be located at the rear of the welder, securely held in position by the chain provided.
2. For safety, and economy, ensure that the regulator is fully closed, (turned anti-clockwise) when not welding and when fitting or removing the gas cylinder.
3. Connect the gas hose to the regulator securing with clip/nut provided.
4. Screw the gas regulator fully down on the gas bottle valve, and fully tighten.
5. Turn the power on, open the cylinder valve, then set the gas flow to approx. 8l/min. on the regulator. Operate the torch trigger to ensure that the gas is flowing through the torch.

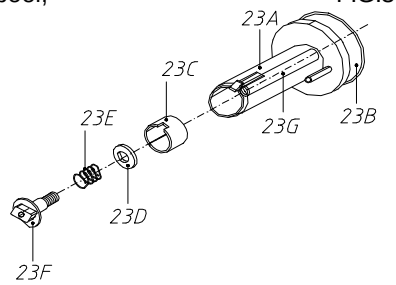
## LOADING WIRE

**NOTE:** These machines are designed to accept either 5Kg or 15Kg wire spools of mild steel, stainless steel or aluminium according to the type of metal you wish to weld. Wire spools ARE NOT supplied with the unit and must be purchased separately.

1 Ensure the gas and electrical supplies are disconnected;

2 (Ref. Fig. 3) Turn the plastic knob (23F), 180°.

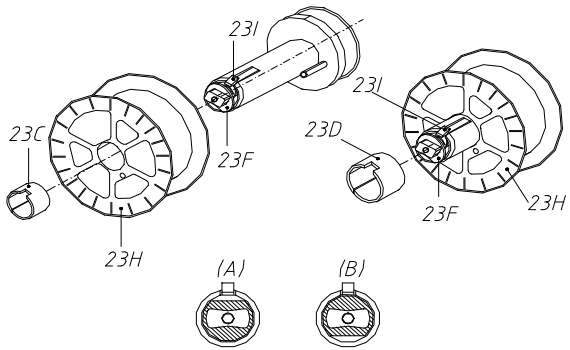
3 Take off the plastic cover of the wire spool; FIG.3




4 To fit the wire spool (23H) into the hub (23A) push the button (23I), insert the wire spool, followed by the collar (23C)(it must be used only with 5Kg wire spools) .

5 Turn the plastic knob (23F) by 180° again.

6 Loosen the plastic knob by turning it anti-clockwise, (this maintains pressure on the wire via the roller). Pull, on the plastic knob, so that the screw rod comes out of its slot, thereby releasing the pivoted roller bracket. Raise the bracket together with the pressure roller, and pullout any wire that has been left in the hose.




7 If you are changing the size of wire, you must also select the appropriate groove on the feed roller. To change to the other groove, undo the Hex. Socket Screw and remove the roller from its shaft. Turn it through 180°, replace it on the shaft, and adjust so that the groove is directly in line with the Wire Liner. Firmly secure it in that position with the Hex. Socket Screw.

8 Clip the end of the wire, on the spool, cleanly, ensuring there are no burrs or sharp edges, and, ensuring it is straight, feed it through the guide tube , over the channel on the roller and into the wire liner, by approx. 10 - 15cm.

9 Reposition the pressure roller and plastic knob and tighten slightly.

**IMPORTANT: 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.**

10 Pull off the torch shroud by twisting it clockwise, and unscrew the contact tip. Close the side panel of the machine, plug into a 230V, 50HZ outlet (or switch on isolator), 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.

**IMPORTANT: Ensure the hose is kept straight during this operation, to assist the wire as it is feed through to the nozzle.**

## PREPARATION FOR WELDING

1 Attach the earth clamp to the bare metal to be welded, making sure of good contact.
2 Make sure that the wire-roller groove in the roller corresponds to the diameter of the welding wire being used. Refer to “Loading wire” above.
3 Plug the machine into a 230V AC 50Hz outlet.
4 Open the gas valve on the gas cylinder regulator, (turn knob clockwise)and adjust the gas regulator to the proper setting position. **NOTE: this varies with different metals, thicknesses and currents. Refer to a MIG welding manual for instructions.**

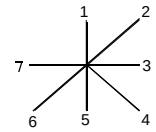
## OPERATION

1 These machines have 7 welding positions (see the table below) in which to regulate current for various conditions.
2 The selection of a welding position is determined by the thicknessof 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 accordingly.
4 For welding adjustments, refer to the table below.

**WARNING**

(i) Make sure all flammable materials are removed from the work area.
(ii) Never look directly at the welding arc, it can seriously damage your eyes. Always use an approved welding mask or helmet.
(iii) Wear protective clothing so that all skin areas are covered.
(iv) Keep a fire extinguisher handy.

## WIRE SIZE SPECIFICATION CHART

| | SWITCH   | STEEL WIRE DIAMETER (mm) | WIRE SPEED ADJUSTMENT |
|---|---|---|---|
| SWITCH POSITIONS | 1 | 0.6 | LOW |
| | 2 | 0.6 | LOW |
| | 3 | 0.6 - 0.8 | MEDIUM |
| | 4 | 0.6 - 0.8 | MEDIUM |
| | 5 | 0.8 | MEDIUM - HIGH |
| | 6 | 0.8 | HIGH |
| | 7 | 1.0 | HIGH |

## TUNING THE WELDER

The tuning of a Mig welding machine requires some practice, due to the fact that - contrary to the arc welding procedure - two parameters must be accommodated to achieve a perfect weld. These are:
**(A) Wire Feed Speed, and (B) Welding Voltage.**

It is important to arrive at the correct combination to suit the type and thickness of material to be welded. **The current necessary for welding is directly dependent upon the wire feed speed.**

If the wire feed speed is increased, the current is also increased, but the arc length is decreased. Conversely, if the wire feed speed is decreased, and current is therefore decreased, the length of arc is increased.

Increase of the welding voltage leads to a longer arc (without substantially affecting the current). Conversely, a decreased welding voltage results in a shorter arc, (the current again is not substantially changed).
A change in wire diameter results in changed parameters. A smaller diameter wire requires an increase in wire feed speed to reach the same current. If certain limits are exceeded, a satisfactory weld cannot be obtained. These are:

A) A too high wire feed speed (too high with regard to the welding voltage) results in pulsing within the torch. This is because the wire electrode dips into the puddle and cannot be melted off fast enough.
B) If the welding voltage is set too high, large drops can be seen at the end of the wire electrode. These drops are often deposited beside the welding seam.

The correct rate of wire feed speed (current) and welding voltage, results in very little spatter and a continuous, intensive hissing can be heard from the arc.

## WELDING HINTS AND MAINTENANCE

1 Always weld clean, dry and well prepared material.
2 Hold gun at a 45° angle to the workpiece with nozzle about 6mm from the surface.
3 Move the gun smoothly and steadily as you weld.
4 Avoid welding in very draughty areas. A weak pitted and porous weld will result due to air blowing away the protective welding gas.
5 Keep wire and wire liner clean. Do not use rusted wire.
6 Sharp bends or kinks on the welding hose should be avoided.
7 Always try to avoid getting particles of metal inside the machine since they could cause short circuits.
8 If available, use compressed air to periodically clean the hose liner when changing wire spools

IMPORTANT: Disconnect from power source when carrying out this operation.

9 Using low pressure air (20-30 PSI), occasionally blow the dust from the inside of the welder. This keeps the machine running cooler. Note: do not blow air over the printed circuit board and electronic components.
10 The wire feed roller will eventually wear during normal use. With the correct tension the pressure roller must feed the wire without slipping. If the pressure roller and the wire feed roller make contact (when the wire is in place between them), the wire feed roller must be replaced.
11 Check all cables periodically. They must be in good condition and not cracked.

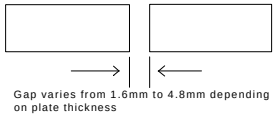
## TROUBLE SHOOTING

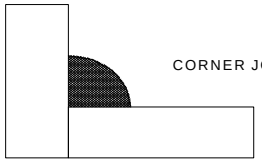
Your Clarke Mig Welder has been designed to give long and trouble free service. If, however, having followed the instructions in this booklet carefully, you still encounter problems, the following points should help identify and resolve them.

| PROBLEM | PROBABLE CAUSE | POSSIBLE SOLUTION |
|---|---|---|
| 1. No "life" from the welder | Check fuses and mains lead. | a) Replace fuses as necessary. If problem persists, return welder to your local dealer.<br>b) Check fuse size. |
| 2. No wire feed | Motor malfunction | Return welder to your local dealer. |
| 3. Feed motor operates but wire will not feed | a) insufficient feed roller pressure<br>b) Burr on end of wire<br>c) Linerblocked or damaged<br>d) Inferior wire | a) Increase roller pressure<br>b) Re-cut wire square<br>c) Clear with compressed air or replace liner.<br>d) Use only good clean wire |
| 4. Wire welds itself to tip | a) Wire feed speed too low<br>b) Wrong size tip | a) Unscrew tip, cut wire and fitnew tip. Increase wire speed before operating again.<br>b) Change tip size. |
| 5. Wire feeds into "bird's" nest tangle. | a) Wire welded to tip.<br>b) Wire liner damaged preventing smooth operation. | a) As above plus reduce feedroller pressure so that if blockage occurs wire sleeps on roller. i.e. no feed<br>b) Renew wire liner. |
| 6. Loose coils of wire tanglearound wire druminside machine | Drum brake too slack. | Tighten drum brake - DO NOT OVERTIGHTEN |
| 7. Erratic wire feed | a) Drum brake too tight<br>b) Feed roller worn<br>c) Insufficient pressure on feed roller<br>d) Wire dirty, rusty, damp or bent<br>d) Liner partilly blocked | a) Loosen drum brake slightly<br>b) Checkand replace if necessary<br>c) Increase pressur eon feed roller DO NOT OVERTIGHTEN<br>d) Re-cut wire and ensure it is clean<br>e) Clear with compressed air |
| 8. Poor quality welds | a) Insufficient gas at weld area<br>b) Incorrect gas/wire combination<br>c) Rusty, painted, damp, oily or greasy workpiece<br>d) Rusty, dirty wire.<br>e) Poor earth contact | a) Check that gas is not being blown away by draughts, if so, move to a sheltered area. If no draught, incrtease gas supply.<br>b) Consult your Mig Welding manual<br>c) Ensure workpiece is clean and dry<br>d) Ensure wire is clean and dry<br>e) Check ground clamp/workpiece connection. |
| 9. Wire jams in tip when welding aluminium | Tip too small | Use slightlyoversize tip i.e. for 0.8mm wire use 1mm tip (Applies to aluminium only) |
| 10.Welder cuts out whilst in use | Duty cycle exceeded (auto cut-out operates) | Allow welder to cool for 15-30min. before continuing. Note if duty cycle is continually exceeded, damage to the welder may result and welder output is probably too small for application. |

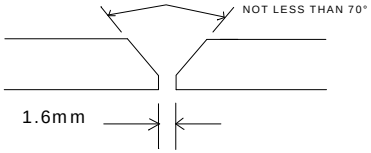
# TYPES OF JOINTS

OPEN SQUARE BUTT JOINT

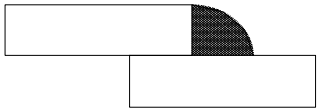


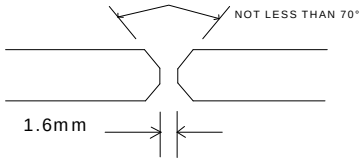

SINGLE VEE BUTT JOINT



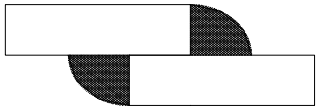

SINGLE FILLET LAP JOINT



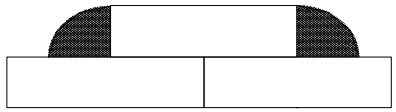
DOUBLE VEE BUTT JOINT



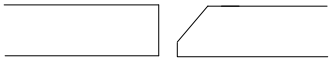

DOUBLE FILLET LAP JOINT



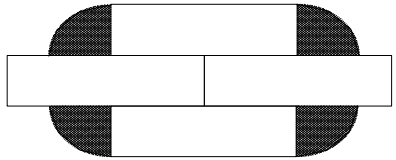
SINGLE STRAP JOINT



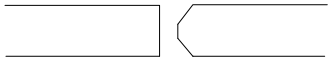
SINGLE BEVEL JOINT



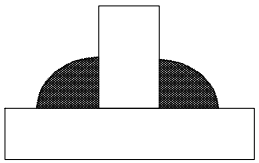
DOUBLE STRAP JOINT



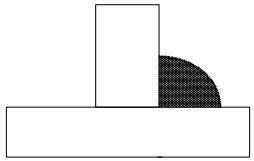
DOUBLE BEVEL JOINT



DOUBLE FILLET TEE JOINT



SINGLE FILLET TEE JOINT

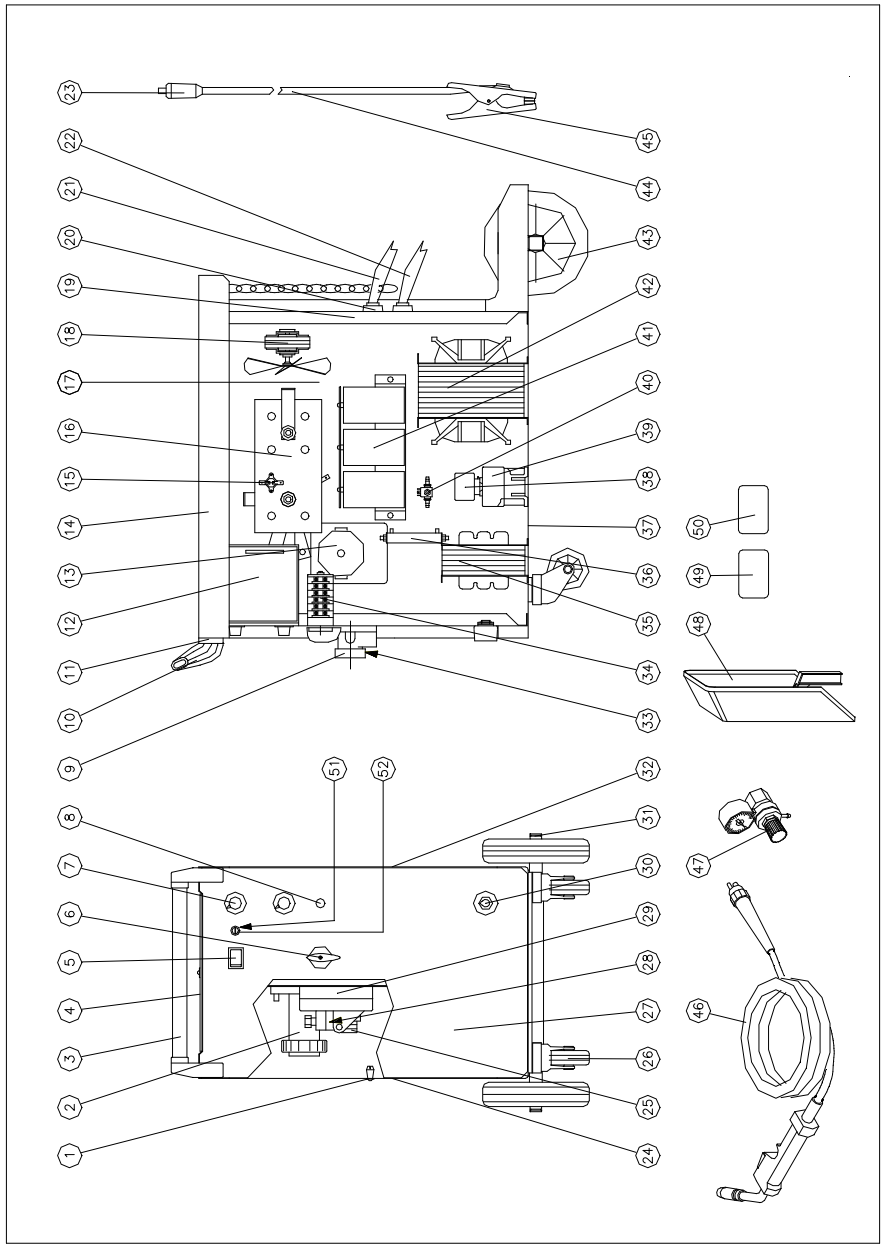


**PARTS DRAWINGS AND LISTS**

**&**

**WIRING DIAGRAMS**

## PARTS DRAWING - MIG 215TE (Part No.6015215) & MIG 250TE (Part No. 6010250)



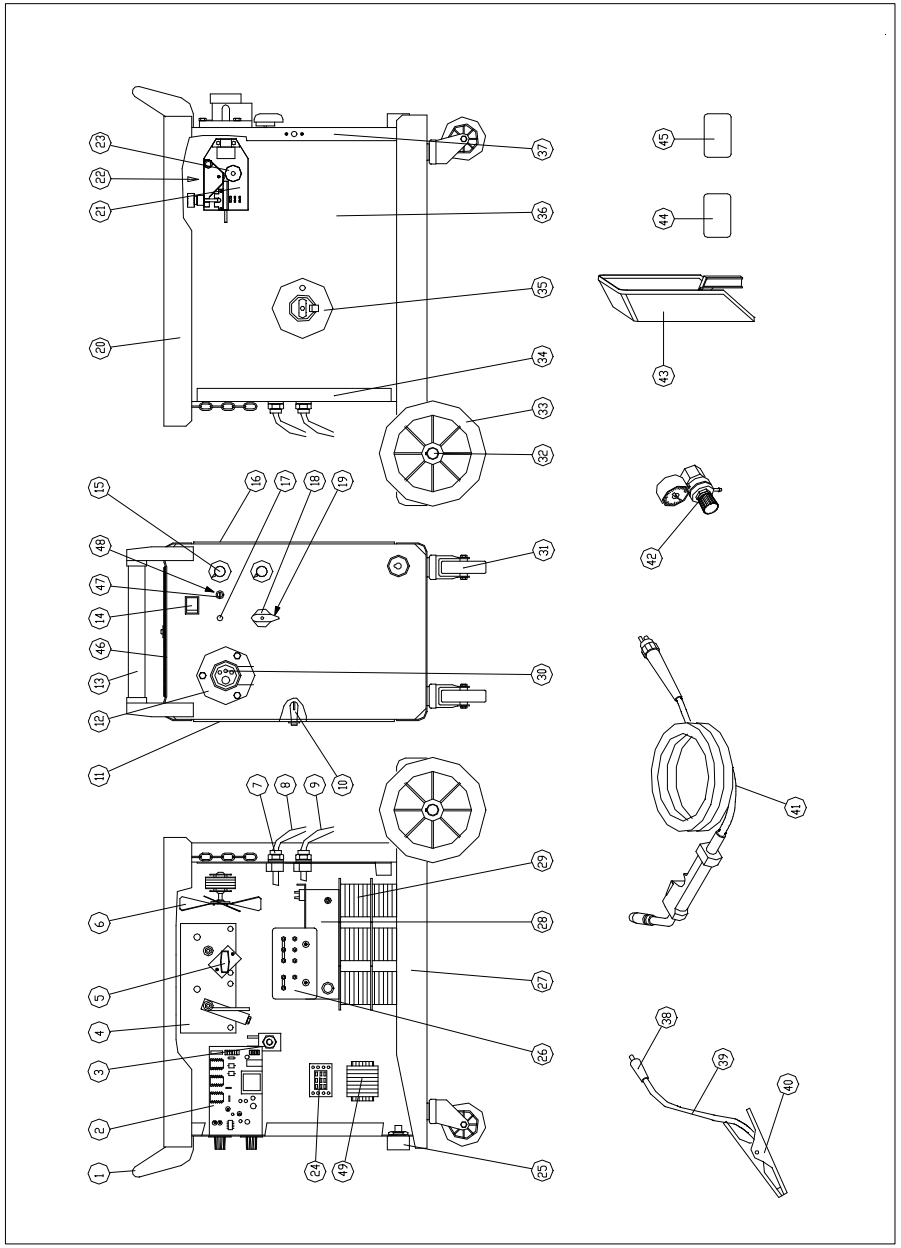
## PARTS LIST - MIG 215TE (Part No. 6015215)

| ITEM | PART NO. | DESCRIPTION | QTY. |
|---|---|---|---|
| 01 | EM04600025 | CLIP+COUPLING FOR PANEL | 1 |
| 02 | EM04600001 | COMPLETE SPOOL HOLDER D.50 | 1 |
| 03 | EM33725047 | HANDLE | 1 |
| 04 | EM30905001 | HOLDER MAT 3X270X640 | 1 |
| 05 | EM22200002 | ON/OFF SWITCH 16A-250V | 1 |
| 06 | EM21690015 | SWITCH KNOB D.34 | 1 |
| 07 | EM21690058 | POTENTIOMETER KNOB 1945/B GREEN | 2 |
| 08 | EM22610013 | ORANGE PILOT LAMP 220V L=500 | 1 |
| 09 | EM21690003 | BINZEL CONNECTION TORCH GROMMET | 1 |
| 10 | EM21600012 | COUPLE OF INCLINED-OVAL HANDLES 15X30 | 1 |
| 11 | EM21690129 | DISTANCE PIECE FOR INCLINED HANDLE | 1 |
| 12 | EM22710010 | P.C.BOARD E0788 220V | 1 |
| 13 | EM22810006 | WIRE FEEDING MOTOR 42V D.62 | 1 |
| 14 | EM33705162 | UPPER PANEL | 1 |
| 15 | EM22210601 | RECTIFIER'S THERMOSTAT 100ø 16A | 1 |
| 16 | EM22400013 | RECTIFIER PMS 20/4/2 F 1/MOV | 1 |
| 17 | EM33720013 | DIVIDING PANEL | 1 |
| 18 | EM22800013 | FAN C20 240V VENT ASP.154 ALL | 1 |
| 19 | EM33715054 | BACK PANEL | 1 |
| 20 | EM21605010 | CABLE CLAMP FOR HOLE D.20 | 2 |
| 21 | E M30900026 | BLACK GAS HOSE D.5X10,5 L=2150 | 1 |
| 22 | EM20220020 | PVC INPUT CABLE 3X2,5 M.2,5 | 1 |
| 23 | EM22100001 | DINSE PLUG 25SQMM TSKM25 CX20 | 1 |
| 24 | EM33705164 | SIDE PANEL | 1 |
| 25 | EM33805003 | WIRE FEED ROLL 0,6-0,8MM AL.MOTOR 2R | 1 |
| 25 | EM33805005 | WIRE FEED ROLL 1,0-1,2MM AL.MOTOR 2R | 1 |
| 25 | EM33805021 | WIRE FEED ROLL 0,8-1MM NYLON AL.MOTOR 2R | 1 |
| 25 | EM33805022 | WIRE FEED ROLL 1,2-1,6MM NYLON MOT.AL.2R | 1 |
| 26 | EM21625002 | RUBBER PIVOTING WHEEL D.80 | 2 |
| 27 | EM33710134 | FRONT PANEL | 1 |
| 28 | EM21500004 | BALL BEARING D10X30 SP.9 | 1 |
| 29 | EM44410017 | AL. WIRE FEEDER D62 42V 2ROLLS 06-08 | 1 |
| 30 | EM22100002 | DINSE PLUG 25SQMM TBEM25 CX30 | 1 |
| 31 | EM55200001 | WHEELS-AXLE D.20 L=488 | 1 |
| 32 | EM33705163 | RIGHT-SIDE PANEL | 1 |
| 33 | EM23005048 | BINZEL TORCH ADAPTOR L=40 AT109 | 1 |
| 34 | EM22205033 | SWITCH 20 A CM 17 | 1 |
| 35 | EM44135007 | CHOKE 50X60CU | 1 |
| 36 | EM22305004 | RESISTANCE 3 OHM D.16 L=90 | 1 |
| 37 | EM33700111 | LOWER PANEL | 1 |
| 38 | EM22225018 | AUXILIARY CONTACT BL/X 2NC | 1 |
| 39 | EM22225008 | CONTACTOR 220V 16A CN-16 (LX1) | 1 |
| 40 | EM22900001 | GAS SOLENOID VALVE 4W 220V 50HZ 1/8"FF | 1 |
| 41 | EM22315003 | CAPACITOR 22000 MF 63V 63X105 | 3 |
| 42 | EM44120018 | TRANSFORMER 230V 64X90 CU | 1 |
| 43 | EM21625009 | WHEEL D.175 RUBBER HOLE D.20 | 2 |
| 44 | EM43210036 | EARTH CABLE 25 SQMM MT.3 W/C.261/DN25 | 1 |
| 45 | EM22110007 | EARTH CLAMP ART.261 - OK 150 | 1 |
| 46 | EM23000322 | TORCH PLUS 14 M.3 BZ CONN L,B14 MAM411 | 1 |
| 47 | EM22905017 | REDUCER MAXI ARG/UK 1/GAUGE | 1 |
| 48 | EM21905019 | CARTON MASK 82X108 | 1 |
| 49 | EM21905020 | TRANSPARENT GLASS 82X108 ART.470 | 1 |
| 50 | EM21905024 | DARK GLASS 82X108 ART.471 BS DIN13 | 1 |
| 51 | EM22220004 | FUSE 5X20 T 2A 250V | 1 |
| 52 | EM22220016 | FUSE HOLDER PTF/35 6,3A 250V | 1 |

## PARTS LIST - MIG 250TE (Part No. 6010250)

| ITEM | PART NO. | DESCRIPTION | QTY. |
|---|---|---|---|
| 01 | EM04600001 | COMPLETE SPOOL HOLDER D.50 | 1 |
| 02 | EM04600001 | COMPLETE SPOOL HOLDER D.50 | 1 |
| 03 | EM33725047 | HANDLE | 1 |
| 04 | EM30905001 | HOLDER MAT 3X270X640 | 1 |
| 05 | EM22200002 | ON/OFF SWITCH 16A-250V | 1 |
| 06 | EM21690015 | SWITCH KNOB D.34 | 1 |
| 07 | EM21690058 | POTENTIOMETER KNOB 1945/B GREEN | 2 |
| 08 | EM22610013 | ORANGE PILOT LAMP 220V L=500 | 1 |
| 09 | EM21690003 | BINZEL CONNECTION TORCH GROMMET | 1 |
| 10 | EM21600012 | COUPLE OF INCLINED-OVAL HANDLES 15X30 | 1 |
| 11 | EM21690129 | DISTANCE PIECE FOR INCLINED HANDLE | 1 |
| 12 | EM22710010 | P.C.BOARD E0788 220V | 1 |
| 13 | EM22810006 | WIRE FEEDING MOTOR 42V D.62 | 1 |
| 14 | EM33705162 | UPPER PANEL | 1 |
| 15 | EM22210601 | RECTIFIER'S THERMOSTAT 100ø 16A | 1 |
| 16 | EM22400016 | RECTIFIER PMS 24/4/2 F 1/MOV | 1 |
| 17 | EM33720013 | DIVIDING PANEL | 1 |
| 18 | EM22800013 | FAN C20 240V VENT ASP.154 ALL | 1 |
| 19 | EM33715054 | BACK PANEL | 1 |
| 20 | EM21605010 | CABLE CLAMP FOR HOLE D.20 | 2 |
| 21 | EM30900026 | BLACK GAS HOSE D.5X10,5 L=2150 | 1 |
| 22 | EM20220044 | INPUT CABLE 3X4 2,5MT. | 1 |
| 23 | EM22100001 | DINSE PLUG 25SQMM TSKM25 CX20 | 1 |
| 24 | EM33705164 | SIDE PANEL | 1 |
| 25 | EM33805003 | WIRE FEED ROLL 0,6-0,8MM AL.MOTOR 2R | 1 |
| 25 | EM33805005 | WIRE FEED ROLL 1,0-1,2MM AL.MOTOR 2R | 1 |
| 25 | EM33805021 | WIRE FEED ROLL 0,8-1MM NYLON AL.MOTOR 2R | 1 |
| 25 | EM33805022 | WIRE FEED ROLL 1,2-1,6MM NYLON MOT.AL.2R | 1 |
| 26 | EM21625002 | RUBBER PIVOTING WHEEL D.80 | 2 |
| 27 | EM33710134 | FRONT PANEL | 1 |
| 28 | EM21500004 | BALL BEARING D10X30 SP.9 | 1 |
| 29 | EM44410017 | AL. WIRE FEEDER D62 42V 2ROLLS 06-08 | 1 |
| 30 | EM22100002 | DINSE PLUG 25SQMM TBEM25 CX30 | 1 |
| 31 | EM55200001 | WHEELS-AXLE D.20 L=488 | 1 |
| 32 | EM33705163 | RIGHT-SIDE PANEL | 1 |
| 33 | EM23005048 | BINZEL TORCH ADAPTOR L=40 AT109 | 1 |
| 34 | EM22205033 | SWITCH 20 A CM 17 | 1 |
| 35 | EM44135008 | CHOKE 50X60 CU | 1 |
| 36 | EM22305004 | RESISTANCE 3 OHM D.16 L=90 | 1 |
| 37 | EM33700111 | LOWER PANEL | 1 |
| 38 | EM22225018 | AUXILIARY CONTACT BL/X 2NC | 1 |
| 39 | EM22225008 | CONTACTOR 220V 16A CN-16 (LX1) | 1 |
| 40 | EM22900001 | GAS SOLENOID VALVE 4W 220V 50HZ 1/8"FF | 1 |
| 41 | EM22315003 | CAPACITOR 22000 MF 63V 63X105 | 4 |
| 42 | EM44120082 | TRANSFORMER 230V 60X100 CU | 1 |
| 43 | EM21625009 | WHEEL D.175 RUBBER HOLE D.20 | 2 |
| 44 | EM43210013 | EARTH CABLE 25 SQMM M3 W/C.411/DN25 | 1 |
| 45 | EM22110009 | EARTH CLAMP ART.411 | 1 |
| 46 | EM23000349 | TORCH ERGOPLUS 15 MT.3 EURO CON. MA7007 | 1 |
| 47 | EM22905017 | REDUCER MAXI ARG/UK 1/GAUGE | 1 |
| 48 | EM21905019 | CARTON MASK 82X108 | 1 |
| 49 | EM21905020 | TRANSPARENT GLASS 82X108 ART.470 | 1 |
| 50 | EM21905024 | DARK GLASS 82X108 ART.471 BS DIN13 | 1 |
| 51 | EM22220004 | FUSE 5X20 T 2A 250V | 1 |
| 52 | EM22220016 | FUSE HOLDER PTF/35 6,3A 250V | 1 |

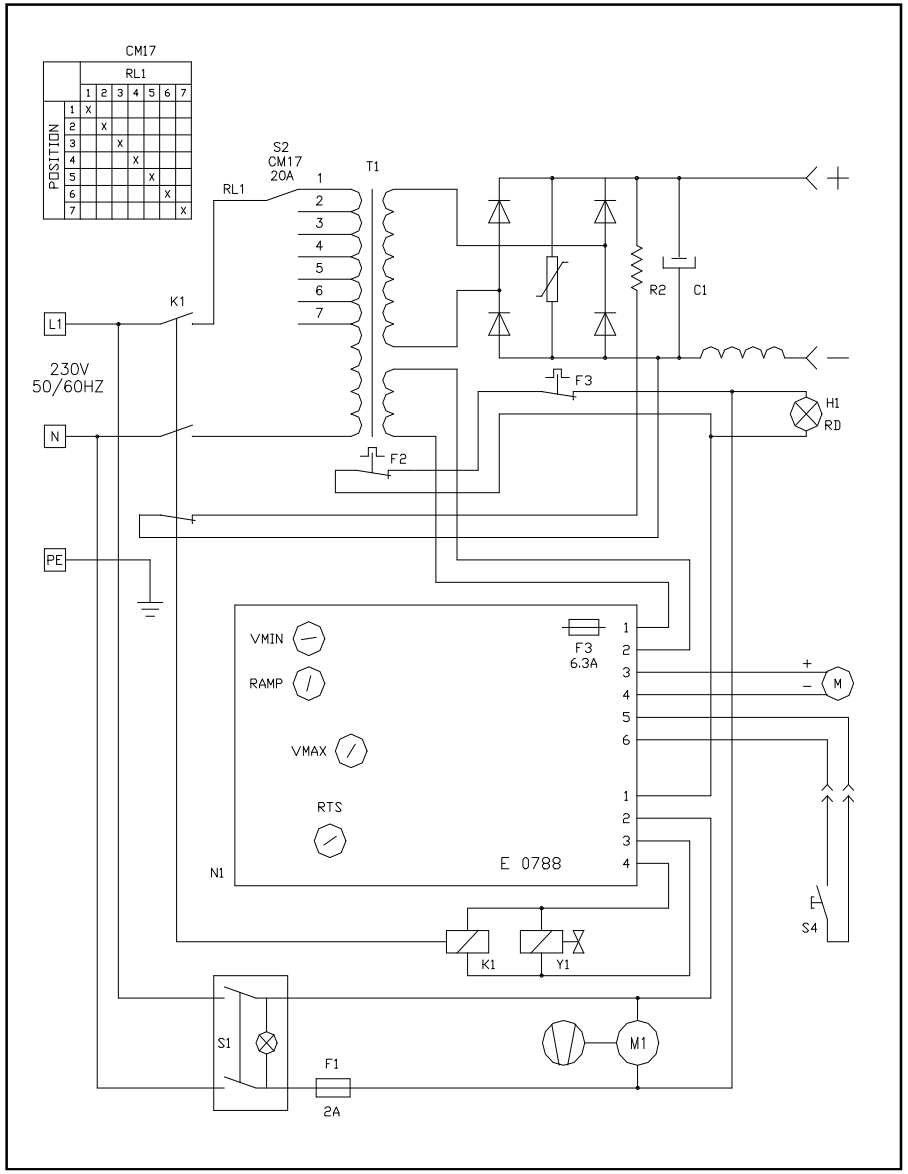
## PARTS DRAWING - MIG 260TE (Part No. 6010390)



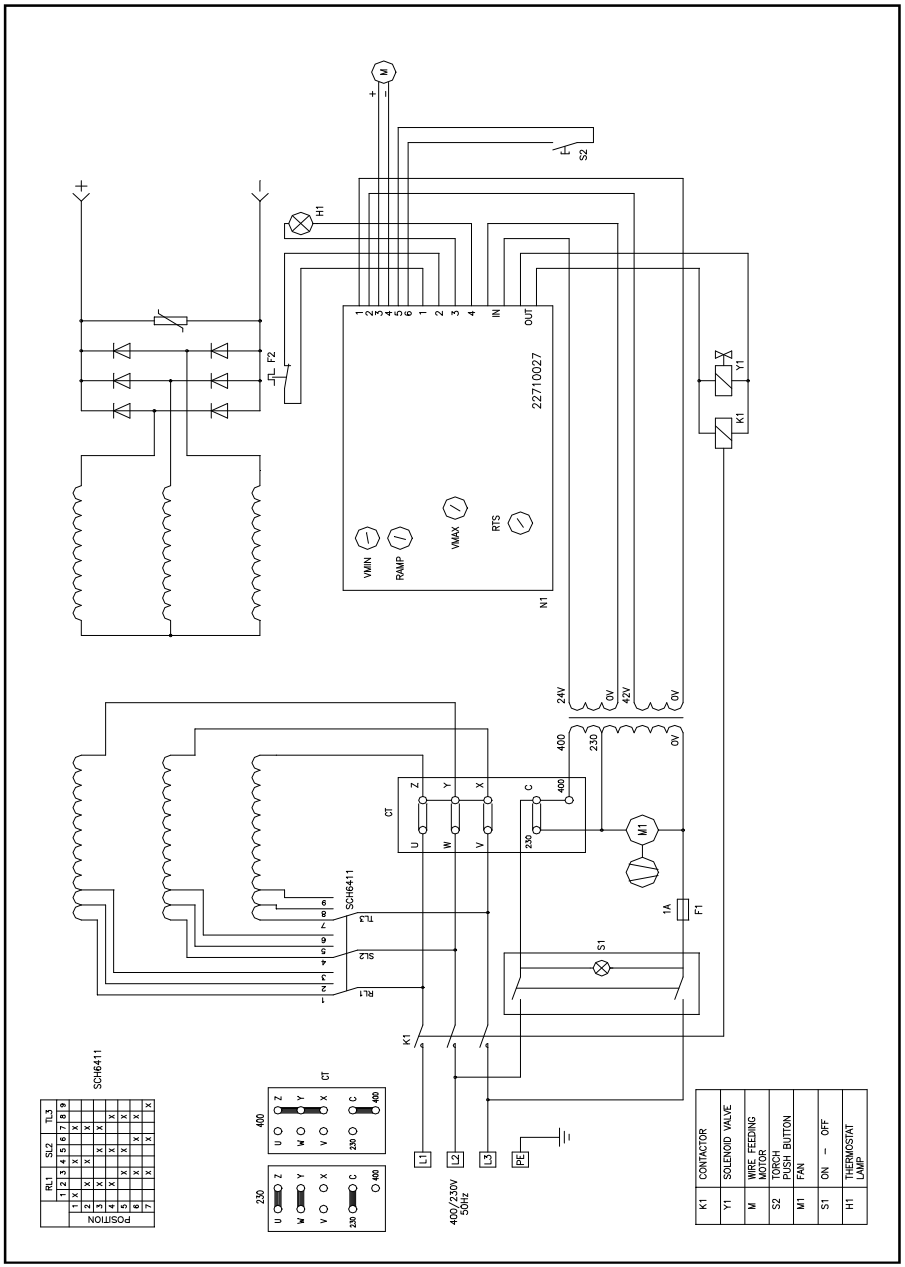
## PARTS LIST- MIG 260TE (Part No. 6010390)

| ITEM | PART NO. | DESCRIPTION | QTY. |
|---|---|---|---|
| 1 | EM21600012 | COUPLE OF INCLINED-OVAL HANDLES 15X30 | 1 |
| 2 | EM22710027 | P.C.BOARD E0788WI | 1 |
| 3 | EM22900002 | GAS SOLENOID VALVE 4W 24V 50HZ 1/8"FF | 1 |
| 4 | EM22400029 | RECTIFIER PTS 180 F 1/MOV | 1 |
| 5 | EM22210601 | RECTIFIER'S THERMOSTAT 100ø 16A | 1 |
| 6 | EM22800005 | FAN C30 220-240 VENT.ASP.154 ALL | 1 |
| 7 | EM21605010 | CABLE CLAMP FOR HOLE D.20 | 2 |
| 8 | EM30900026 | BLACK GAS HOSE D.5X10,5 L=2150 | 1 |
| 9 | EM20220030 | INPUT CABLE 4X2,5 M.3,3 | 1 |
| 10 | EM04600025 | CLIP+COUPLING FOR PANEL | 1 |
| 11 | EM33705164 | SIDE PANEL | 1 |
| 12 | EM21690003 | BINZEL CONNECTION TORCH GROMMET | 1 |
| 13 | EM33725047 | HANDLE | 1 |
| 14 | EM22200005 | GREEN PILOT-LIGHT SWITCH 10A-380V | 1 |
| 15 | EM21690058 | POTENTIOMETER KNOB 1945/B GREEN | 1 |
| 16 | EM33705163 | RIGHT-SIDE PANEL | 1 |
| 17 | EM22610011 | ORANGE PILOT-LAMP 24V L=600 | 1 |
| 18 | EM21690015 | SWITCH KNOB D.34 | 2 |
| 19 | EM22205030 | SWITCH 16 A SCH 6411 | 1 |
| 20 | EM33705162 | UPPER PANEL | 1 |
| 21 | EM44410017 | AL WIRE FEEDER D.62 42V 2ROLLS | 1 |
| 22 | EM22810006 | WIRE FEEDING MOTOR 42V D.62 | 1 |
| 23 | EM33805003 | WIRE FEED ROLL 0,6-0,8MM AL.MOTOR 2R | 1 |
| 23 | EM33805005 | WIRE FEED ROLL 1,0-1,2MM AL.MOTOR 2R | 1 |
| 23 | EM33805021 | WIRE FEED ROLL 0,8-1MM NYLON AL.MOTOR 2R | 1 |
| 23 | EM33805022 | WIRE FEED ROLL 1,2-1,6MM NYLON MOT.AL.2R | 1 |
| 24 | EM22225007 | CONTACTOR 24V 16A CN-16 (LX1) | 1 |
| 25 | EM22100002 | DINSE PLUG 25SQMM TBEM25 CX30 | 1 |
| 26 | EM21890001 | VOLTAGE CHANGE BOARD 9/HOLES 80X130 | 1 |
| 27 | EM33700111 | LOWER PANEL | 1 |
| 28 | EM44125038 | TRANSFORMER | 1 |
| 29 | EM44025084 | LATERAL WINDING 230V 50X70X150 AL | 3 |
| 30 | EM23005048 | BINZEL TORCH ADAPTOR L=40 AT109 | 1 |
| 31 | EM21625002 | RUBBER PIVOTING WHEEL D.80 | 2 |
| 32 | EM55200001 | WHEELS-AXLE D.20 L=488 | 1 |
| 33 | EM21625009 | WHEEL D.175 RUBBER HOLE D.20 | 2 |
| 34 | EM33715054 | BACK PANEL | 1 |
| 35 | EM04600001 | COMPLETE SPOOL HOLDER D.50 | 1 |
| 36 | EM33720013 | DIVIDING PANEL | 1 |
| 37 | EM33710134 | FRONT PANEL | 1 |
| 38 | EM22100001 | DINSE PLUG 25SQMM TSKM25 CX20 | 1 |
| 39 | EM43210013 | EARTH CABLE 25 SQMM M3 W/C.411/DN25 | 1 |
| 40 | EM22110009 | EARTH CLAMP ART.411 | 1 |
| 41 | EM23000349 | TORCH ERGOPLUS 15 MT.3 EURO CON. MA7007 | 1 |
| 42 | EM22905018 | REDUCER MAXI ARG/UK 2/GAUGES | 1 |
| 43 | EM21905019 | CARTON MASK 82X108 | 1 |
| 44 | EM21905020 | TRANSPARENT GLASS 82X108 ART.470 | 1 |
| 45 | EM21905024 | DARK GLASS 82X108 ART.471 BS DIN13 | 1 |
| 46 | EM30905001 | HOLDER MAT 3X270X640 | 1 |
| 47 | EM22220016 | FUSE HOLDER PTF/35 6,3A 250V | 1 |
| 48 | EM22220004 | FUSE 5X20 T 2A 250V | 1 |
| 49 | EM44140036 | AUXILIARY TRANSFORMER 28X42CU | 1 |

## WIRING DIAGRAM - MIG 215TE (Part No.6015215) & MIG 250TE(Part No. 6010250)

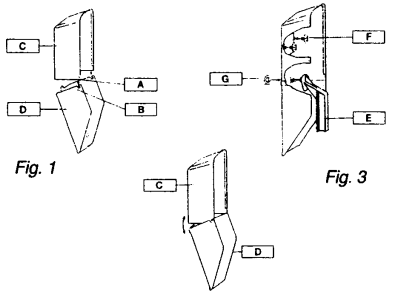


## WIRING DIAGRAM - MIG 260TE (Part No. 6010390)



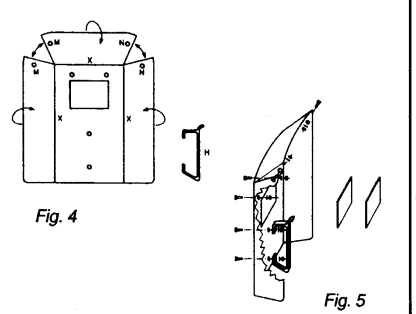

## ASSEMBLY INSTRUCTIONS

### Plastic shield




1. Take the two halves of the shield and the hand-grip out of the packaging.
2. Remove the glass fixing screws -F- and the locking ring -G- from the hand-grip -E- *(Fig.3)*.
3. Position the pins -A- of the top half of the shield -C- in correspondence with the slots -B- on the bottom half of the shield -D- as shown in figure -*1*-.
4. Turn the top half of the shield -C- until it matches the bottom half -D- perfectly, as shown in figure -*2*-.
5. Position the hand-grip -E- on the inside of the shield and insert the threaded pin and the positioning pin in the relevant holes. Fasten the hand-grip to the outside using the locking ring -G-. Insert first the clear glass and then the protection filter, so that the filter is on the operators side (the inside) of the mask. Insert the filter glass into the relevant housing on the inside of the shield and fasten it using the relevant glass fixing screws -F- as shown in figure -*3*-.

### Fyber shield




1. Remove the shield, the handle and the screws bag from the packaging.
2. Bend the two sides and the upper part of the shield along the "X" marked traces till the holes "M" and "N" will match *(fig. 4)*.
3. In the holes "M" and "N" fasten with screws the sides of the shield *(fig. 5)*.
4. Place the handle "H" in the internal part of the shield and fasten it with its screws *(fig. 5)*.
5. For the mounting of the glass follow the instructions of the plastic welding shield *(fig. 3)*.

**USE:** The shields are for personal use and must only be used to protect the welder from the optical radiation produced by the electric welding arc.

**CLEANING AND MAINTENANCE:** Clean the shields after each time it is used. The shield should only be cleaned using a soft cloth or compressed air: check whether any parts of the shield are worn and replace these if damaged. The materials used to make the shield are usually compatible but may cause allergic reactions in particularly sensitive people. Disinfecting should be performed using solutions of benzil-lauryl-dimethyl-ammonium chloride or UV germicide lamps.

**LEVELS OF PROTECTION:** Only use the shield in accordance with the operating instructions and make sure that the protection filter is suited to the type of welding . Remember that the filters are NOT shatterproof and therefore they should be protected by colourless plates of the same size. To obtain a better level of the protection against welding spatter, wear gloves and protective clothing.

**SPARE PARTS:** Replace any parts that seem damaged or deformed immediately. Only original spare parts must be used. **Do not use filter glass as replacements if these are not certified or do not have a declared optical class. Ensure that any replacement filter is the correct safety shade. If in doubt consult your local supplyer or Clarke International Parts & Service on phone: 0181-5586696.**

**RESTRICTIONS OF USE:** The shields only provide adequate protection for the forehead, the sides of the face and the neck if used for the stated purpose.

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