MUREX

Operating Manual

Transtig AC/DC 201i

Please ensure that this Instruction Manual and Parts List is made available to the user of the equipment

DECLARATION OF CONFORMITY

Murex Welding Products Ltd.

Declare hereby that:

Murex Transtig AC/DC 201i Power Source

Part No: 1415620

- is manufactured in accordance with the Council Directive 73/23/EEC (1973-02-19) and 89/336/EEC (1989-05-03) amended by Council Directive 93/68/EEC relating to electrical equipment designed for use within certain voltage limits.
- conforms with the protection requirements of Council Directive 89/336/EEC, amended by Council Directives 91/263/EEC, 92/31/EEC and 93/68/EEC relating to electromagnetic compatibility.
- is manufactured in accordance with EN60974-1 Safety Requirements for Arc Welding Equipment.
- is manufactured in accordance with EN50199 Electromagnetic Compatibility for Arc Welding Equipment.

On behalf of Esab Group (UK) Ltd
Hertford Road
Waltham Cross
Herts. EN8 7RP
England

P.G. Dodd
Managing Director
Esab Group (UK) Ltd
1st May 2000

Contents

WARNING

This welding equipment has been designed, manufactured and tested to the highest standards to ensure long and trouble free life. However, regular maintenance is an essential part of keeping the machine operating in a reliable and safe manner and your attention is drawn to any maintenance instructions that are contained in this manual.

In general, all welding equipment should be thoroughly inspected, tested and serviced at least annually. More frequent checking will be required when the equipment is heavily used.

Wear and tear, particularly in electro-mechanical and moving components, are gradual processes. Caught in time, repair costs are small and the benefits in performance reliability and safety are significant. Left alone, they can put the equipment, and you, at risk.

Have this equipment regularly inspected and maintained by an approved service centre.

WARNING

ARC WELDING AND CUTTING CAN BE INJURIOUS TO YOURSELF AND OTHERS. TAKE PRECAUTIONS WHEN WELDING. ASK FOR YOUR EMPLOYER'S SAFETY PRACTICES WHICH SHOULD BE BASED ON MANUFACTURERS' HAZARD DATA.

ELECTRIC SHOCK - Can Kill

- Install and earth the welding unit in accordance with applicable standards.
- Do not touch live electrical parts or electrodes with bare skin, wet gloves, or wet clothing.
- Insulate yourself from earth and work.
- Ensure your working position is secure.

FUMES AND GASES – Can be Dangerous to Health

- Keep your head out of the fumes.
- Use ventilation, extraction at the arc, or both, to keep fumes and gases from your breathing zone and the general area.

ARC RAYS – Can Injure Eyes and Burn Skin

- Protect your eyes and body. Use the correct welding screen and filter lens and wear protective clothing.
- Protect bystanders with suitable screens or curtains.

NOISE– Excessive noise can damage hearing

- Protect your ears. Use ear defenders or other hearing protection.
- Warn bystanders of the risks.

READ AND UNDERSTAND THE INSTRUCTION MANUAL BEFORE INSTALLING OR OPERATING AND SEE 18 PUBLICATION 237 'The arc welder at work' AVAILABLE FROM THE MANUFACTURER.

PROTECT YOURSELF AND OTHERS

SAFETY

In any arc welding or gouging operation, it is the responsibility of the user to observe certain safety rules to ensure his personal safety and to protect those working near him.

Read all safety articles relevant to arc welding published by the 18. Pay particular attention to any CAUTION or WARNING Notes included in this manual. CAUTION indicates possible equipment damage. WARNING indicates possible hazard to life.

> ⚠ **WARNING** ⚠
>
> *The ON/OFF switch on this equipment does not isolate the unit from the mains electrical supply.* ***AC POWER IS PRESENT ON THE ON/OFF SWITCH TERMINALS.*** *The On/Off lamp is an indication that the supply is switched on and does not imply that the unit is isolated from the supply.* ***BEFORE REMOVING THE COVERS FOR MAINTENANCE, ISOLATE THE UNIT FROM THE MAINS ELECTRICAL SUPPLY.***

1. Electrical

⚠ Treat electricity with respect. Even the open circuit voltage of this equipment can be dangerous. Adjustments to the torch or replacement of torch parts should be undertaken with the mains supply isolated from the unit.

If damaged torch cables or torch components are found, the unit must be disconnected from the mains and defective parts must be replaced using only Murex spare parts.

⚠ Do not work on live circuits or cables. Disconnect the main power supply before checking the machine or performing any maintenance operation.

⚠ Be sure the case of the welding machine is properly connected to a good electrical earth.

⚠ Have the wiring for the welding machine installed by a qualified electrician. All connections must be made according to specifications in force and to general safety standards.

⚠ Do not stand in water or on damp floors while using an arc welder or cutter. Do not use in the rain.

⚠ Do not operate with worn or poorly connected cables. Inspect all cables frequently for insulation failure, exposed wires and loose connections.

⚠ Do not overload cables or continue to operate with overheating cables. Cables which are too small for the current carried will overheat, causing rapid deterioration of the insulation.

⚠ Pay attention that live parts of the torch do not touch any metal which is connected to the earth cable. Fix an insulated hook to hang the torch on when it is not in use.

1. Ventilation

⚠ Do not weld or cut on containers which have held combustible or flammable materials, or materials which give off flammable or toxic vapours when heated, without proper cleaning.

⚠ Locate the welding/cutting operation far enough from any vapour-type degreaser using trichlorethylene or other chlorinated hydrocarbons as solvents. The ultraviolet light from the arc can decompose these vapours into toxic gases at a considerable distance from the arc, even though the concentration of the gases is low enough to be undetectable by smell.

⚠ Be sure to provide adequate ventilation for removal and dilution of fume and gases. Fume exhaust facilities near the arc, or a ventilated helmet should be used when cutting in confined spaces or on toxic material.

2. Glare

⚠ Never look at the arc without wearing eye protection.

Always use the proper protective clothing, filter glasses, and gloves. Be careful to avoid exposed skin areas. Do not use cracked or defective helmets or shields.

⚠ Never strike an arc when there is someone near who is not protected from the strong light of the arc.

⚠ Warn bystanders who are not aware of the dangers of ultra-violet light.

3. General

⚠ Take care when lifting the unit.

⚠ Ensure that cylinders are secured by chains.

⚠ Locate the unit so that there is adequate air flow to the ventilation louvres.

⚠ Always dress correctly to protect against glare, radiation and spatter.

4. Fire

⚠ Ensure that the correct type of fire extinguisher is available in the welding area.

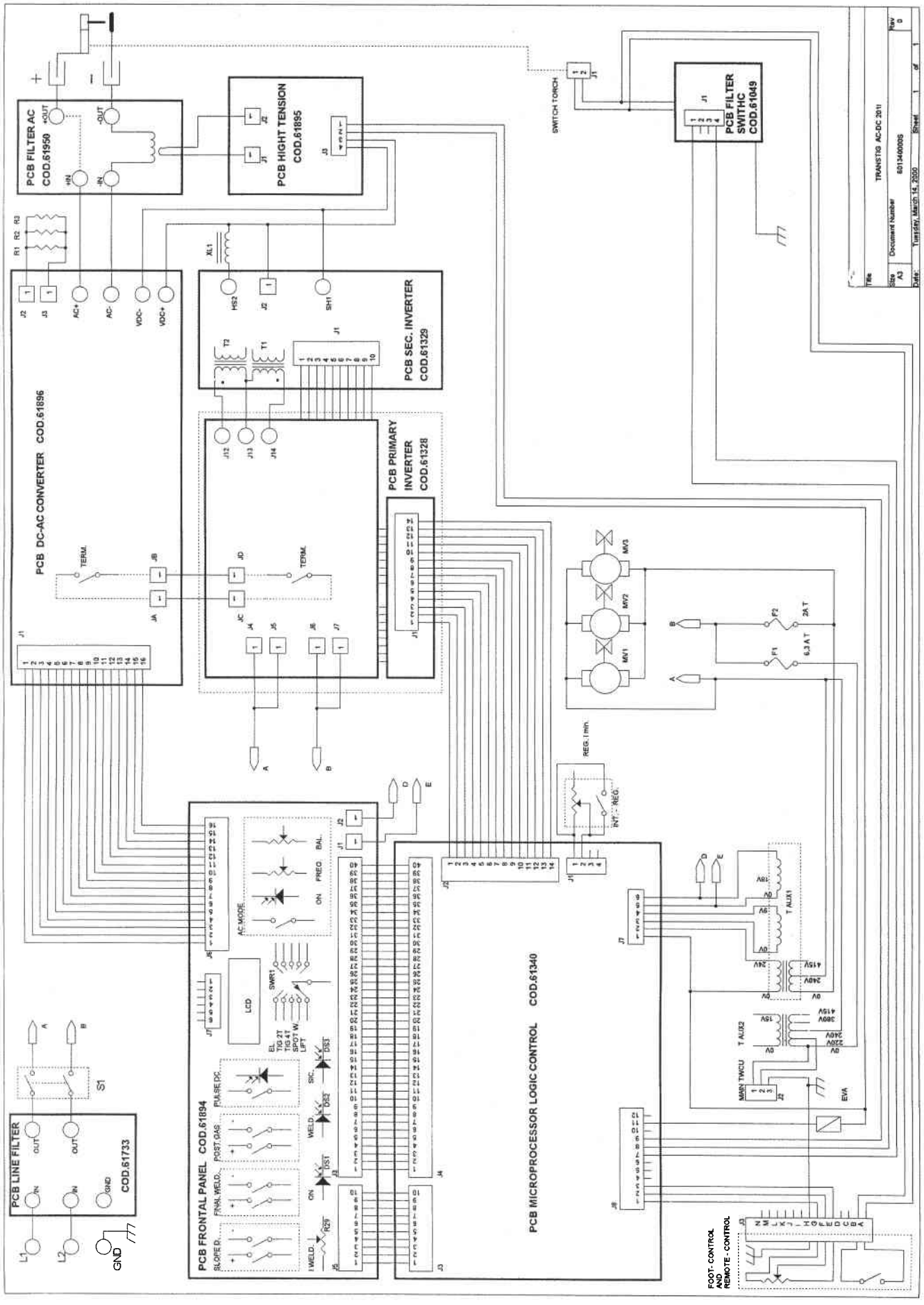
⚠ Do not weld near flammable materials or liquids, in or near explosive atmospheres, or on pipes carrying explosive gases.

5. Vehicle Electrics

⚠ When working on motor vehicles, remove the battery and any circuitry which may be damaged by the arc.

⚠ Whilst welding be aware of the possibility of 'hidden wires' behind panels or bulkheads.

CIRCUIT DIAGRAM



INTRODUCTION

The Transtig AC/DC 201i is a state of the art DC and AC squarewave power source for TIG or MMA welding. It utilises inverter based technology in combination with microprocessor control. Rated up to 200A at 35% duty (TIG) the 201i operates from standard single phase 230V supplies (16A slow fuse).

The operator control panel comprises both conventional type rotary controls together with membrane key switches to enable the precise setting of the required welding parameters. A large LCD display provides a precise readout of the various welding data, both preset and actual.

For DC TIG welding applications the 201i features both non-contact HF arc initiation and lift-arc striking facilities. HF starting is used for AC TIG applications but, unlike with other AC TIG units, the HF is switched off whilst the arc is established. This fact means that the possibility of electrical interference from the equipment is greatly reduced.

The power source is built in a small all metal enclosure incorporating convenient carrying handles and weighing only 25Kg. Multiple fans at the rear provide cooling for the internal components. Full thermal overload protection is standard. A 230Vac auxiliary supply is available, accessed through the rear panel, when using the 201i together with the Transtig T.W.C.U. TIG torch water cooling unit.

The Transtig AC/DC 201i is designed, manufactured and tested to meet the requirements of EN 60974-1 'Safety Requirements for Arc Welding Power Sources' and also complies with EN 50199 covering Electromagnetic Compatibility Requirements.

SPECIFICATION

Input	
Mains Supply	230V, 1 Phase, 50/60Hz
Fuses	16A slow
KVA	5.6
P.F.	0.8
Output	
TIG Current Range	5 - 200A
TIG Rating	200A 35% Duty 160A 60% 135A 100%
MMA Current Range	5 - 190A
MMA Rating	190A 35% Duty
O.C.V.	65V
AC Frequency	20 - 200Hz
AC Balance	10 - 90%
Pulse Frequency	0.4 - 300Hz DC, 0.4 - 2Hz AC
Pulse Time	33% of Cycle Time
Background (when pulsing)	25% of Peak Current
Slope Down Time	0.1 - 9.9 Seconds
Start/Crater Current (4S mode)	1 - 99% of main current
Post Purge Time	0.2 - 20 Seconds
Dimensions (Power Source)	
Height	510mm
Width	240mm
Depth	500mm
Weight	25Kg (Net)
Standards	EN 60974-1 & EN 50199

INSTALLATION

1. Radio Interference

Murex welding power sources have been designed to high standards of electromagnetic compatibility. However, arc welding, by its very nature, generates radio-frequency energy and may cause interference. By installing and using the equipment correctly, in accordance with these instructions, the problems of interference may be minimised.

This equipment satisfies the requirements of the EU Directive 89/336/EC on EMC and complies with the limits in EN50199, 'EMC product standard for arc welding equipment'. These limits are designed to provide reasonable protection against interference in heavy industrial areas.

If this equipment is used in domestic areas, e.g. for repair or maintenance, particular care should be taken. The time of day should be chosen and the duration of welding limited, to minimise any potential problems.

If this equipment causes interference the guidance given below should be considered. If a solution cannot be found please contact your distributor or the manufacturer.

Before installing this welding equipment an assessment should be made of potential EMC problems that may occur. It is good practice not to install welding equipment next to computers or safety critical control circuits, e.g. electronic machine guards, unless they have been suitably protected.

This equipment should be connected to the primary supply using the cable provided. However, for permanent installation, if interference problems occur, shielded cable or conduit should be considered. The primary cabling and welding cables should be kept separate to other mains wiring and control, signalling or communications leg (telephone) cables. If interference occurs then greater separation or re-routing should be considered. Welding cables should be kept as short as practically possible.

Interference may also be reduced by separating the welding equipment from the other equipment affected. A partition, brick wall or particularly, a metal screen will also reduce interference. Earthing and equi-potential bonding should also be considered but guidance should be sought from a competent person, the distributor or manufacturer.

To ensure continued compliance to the EMC Directive this equipment should be routinely maintained according to the manufacturer's instructions and using only approved spare parts. In particular, the spark gaps of HF units should be adjusted and maintained according to the manufacturer's recommendations.

All access and service doors and covers should be closed and properly fastened when the equipment is being used. This equipment should not be modified in any way except for those changes and adjustments approved by the manufacturer.

2. Trolley Unit

Assemble the trolley/cylinder carrier unit if supplied. Refer to Figure 2. for assembly details. Locate the 201i power source on the sloping shelf; temporarily removing the gas cylinder support/chain holder bracket makes this easier.

WARNING!

Do not let the 201i slide backwards off the shelf when the cylinder support bracket is not fitted.

3. Connection to the Supply

The Transtig AC/DC 201i requires a standard 1 phase 230V 50Hz electricity supply, note that there is no neutral connection. Supplies should be fused at 16A and HRC types are recommended. If circuit breaker protection is to be used, type D/4 breakers should be specified. Ensure the green/yellow earth conductor is securely connected to mains earth.

4. T.W.C.U. Torch Water Cooler

If supplied install the T.W.C.U. on the base of the trolley, the 4 moulded feet should sit inside the retaining corner angles.

WARNING!

Ensure the 201i power source is isolated from the mains supply.

Remove the 8 retaining screws and lift the top lid off the 201i power source. Locate the 230Vac auxiliary access hole/strain relief in the upper RH corner of the rear panel. Loosen the 2 screws that mount the strain relief moulding and feed the T.W.C.U. primary cable through the hole/strain relief.

The 230Vac auxiliary supply 3 way terminal block is located next to the access hole on the inside of the rear panel, see Figure 1. Install the 3 insulated push-on connectors as shown. Ensure the green/yellow earth wire connection is made to the LH terminal as viewed from the front of the machine. The position of the other 2 connections is not important.

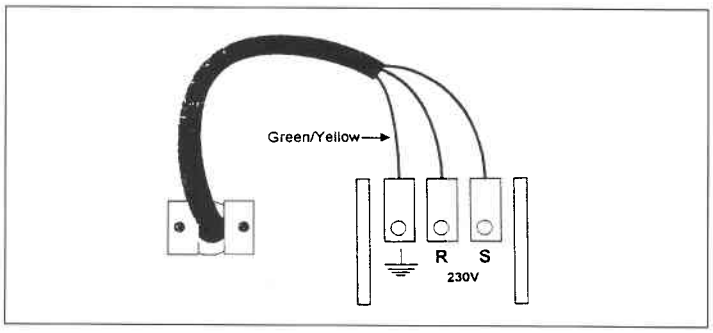
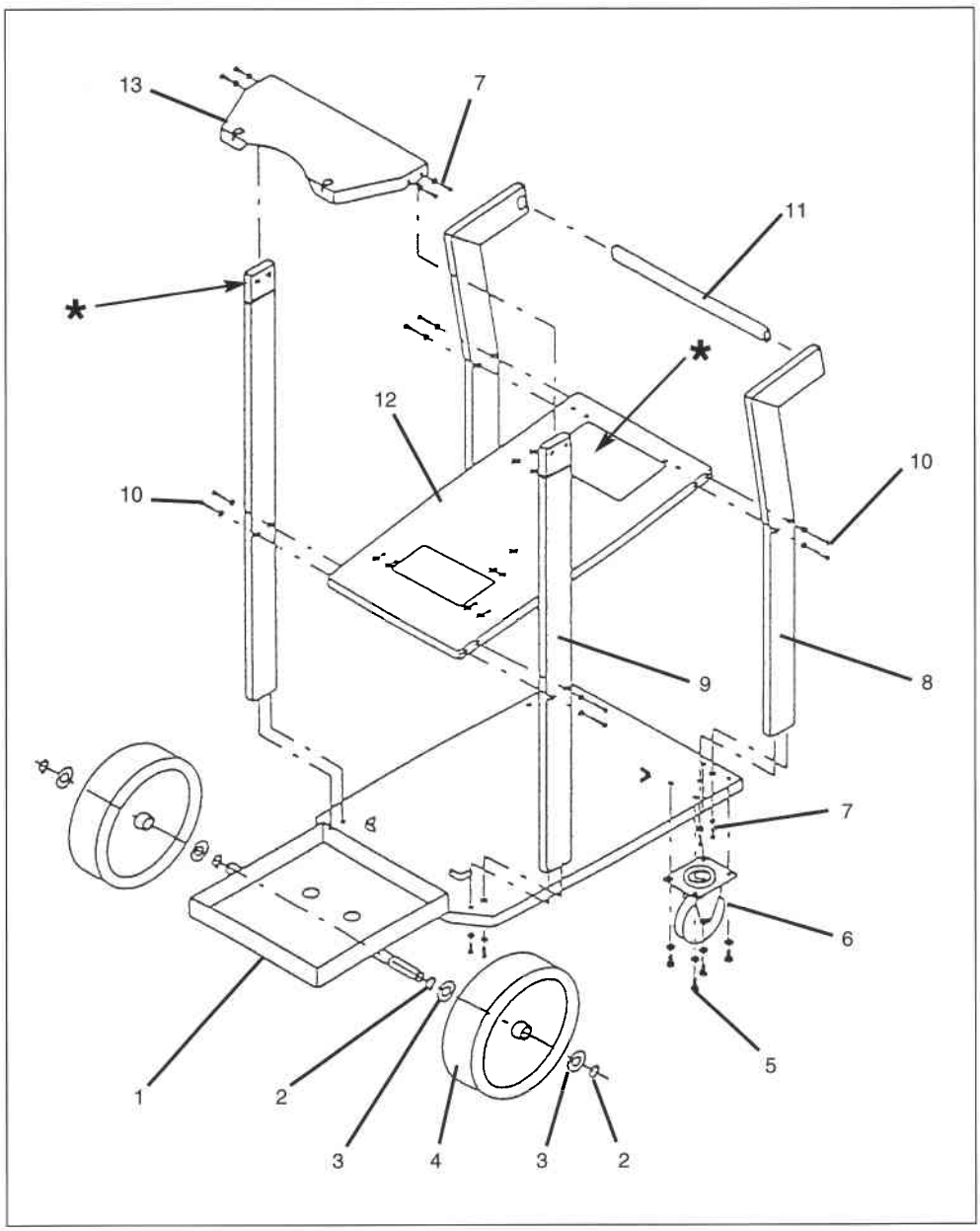


Figure 1. 230V ac Auxiliary Connection

Figure 2. Transtig AC/DC 201i Undergear Pt. No. 1415510
Assembly Instructions



1. Fix rear uprights (9) to upper tray (12) using M6 x 30 bolts and washers (10). Ensure the uprights are correctly oriented as shown.
2. Fit front uprights (8) to upper tray (12) using M6 x 30 bolts and washers (10). Ensure the handle bar (11) is inserted between the uprights before fastening.
3. Fit the cylinder/lower tray assembly (1) to the bottoms of the 4 uprights using M6 x 15 bolts and washers (7).
4. Fit the upper cylinder plate (13) to the rear uprights (9) using M6 x 15 bolts and washers (7).
5. Fit the 2 front caster wheels (6) to the underside of (1) using M8 x 12 bolts and washers (5).
6. Fit circlips (2) to inner grooves of both rear axle stubs. Place a large washer (3) onto each axle and then slide on the rear wheels. Fit another large washer (3) onto the axle stubs outside each rear wheel and then install the circlips (2) to retain them.

WARNING!

Remove extender plates (marked ✱) when using trolley unit with AC/DC201i.

WARNING!

Ensure the green/yellow earth wire is correctly connected to the LH terminal.

Tighten the 2 strain relief mounting screws so as to retain the T.W.C.U. primary cable. Refit the lid of the 201i ensuring star washer(s) are properly refitted. Before energising the cooler ensure it is correctly filled with coolant, refer to T.W.C.U. Instruction Sheet, and connect the TIG torch cooling hoses to its front panel.

IMPORTANT!

Ensure the T.W.C.U. is correctly filled with coolant and that the TIG torch water hoses are connected before switching on. Failure to do so may damage the motor and pump.

When MMA welding with the 201i ensure the T.W.C.U. is switched off using its front panel on/off switch.

After running the cooler for a few minutes the coolant level should be checked and topped-up if necessary.

5. Connection of the TIG Torch, Work Return and Gas Hose

5.1 Connect the TIG torch power lead dins plug to the negative dins socket on the lower front of the 201i (marked with the torch symbol), see Figure 3.

5.2 Water cooled TIG torches have the water return hose exiting from the side of the dins plug. This must be connected to the red water return fitting on the T.W.C.U. front panel. Connect the other water-in hose of the torch to the blue water-out fitting of the cooler.

5.3 Connect the TIG torch shielding gas hose to the $\frac{1}{4}$" BSP fitting on the 201i lower front panel.

5.4 Connect the TIG torch switch, if fitted, to the 2 pin socket.

5.5 If required connect the remote control unit, eg. FC-5B foot control, to the 14 pin socket.

5.6 Connect the $\frac{1}{4}$" BSP gas-in fitting on the 201i rear panel to the shielding gas regulator/flowmeter.

5.7 Connect the work return lead dins plug to the positive dins socket on the 201i lower front panel.

6. Connections for MMA Welding

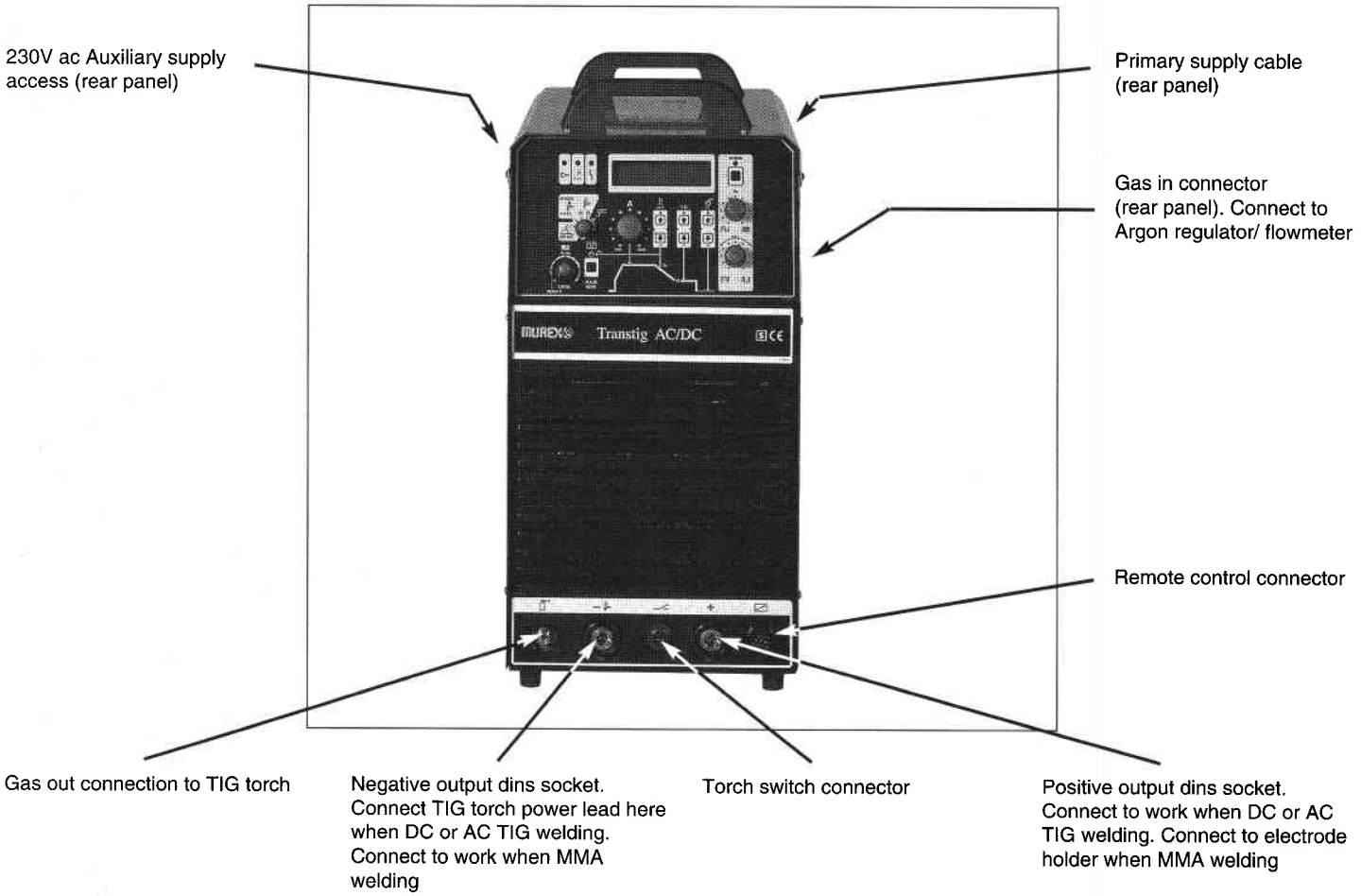
6.1 Connect the MMA electrode holder lead to the positive dins socket on the lower front of the 201i. Note that for DC MMA applications this will make the electrode positive polarity, see Figure 3.

6.2 Connect the work return lead dins plug to the negative dins socket.

WARNING!

If a Transtig T.W.C.U. torch water cooler is fitted to the 201i when MMA welding, remember to either switch off the cooler or to leave the TIG torch go and return water hoses connected to it. Failure to do this may damage the cooler.

Figure 3. Transtig 201i Connections



CONTROLS & OPERATION

Refer to Figures 4 & 5. Circled numbers, e.g. ③ refer to detail within Figure 5.

1. Switching On

1.1 Set the main power switch to on (rear panel), the mains power on light will come on and the LCD display will read as indicated in ①. If the machine has previously been used for AC process and/or in Pulse Mode, the AC MODE light and/or the Pulse Mode light will also illuminate.

1.2 After 3 seconds (approx.) the display will change to ② showing the process/mode 'FUNCTION' as set by the process/mode switch.

1.3 After a further 3 seconds the display will again change to 'STANDBY MODE' ③ indicating the process/ mode selected together with the 'PRESET' main current as set by the main current control A.

NOTE

Ensure the Remote/Local A_{min} control is 'clicked' off, fully anti-clockwise.

1.4 After changing the process/mode selection or any other parameters, slope down time, AC frequency etc. etc. the display will always revert to the standby mode ③ within 3-5 seconds.

1.5 Whilst welding the display changes to show the process/mode being used together with the 'ACTUAL' value of the welding current ④. Also during welding the welding output on light is illuminated. At the end of welding the display reverts to standby mode ③ immediately.

2. Local/Remote A_{min} Control Operation

2.1 Connect the remote control unit, e.g. FC-5B foot control, to the 14 pin remote control socket.

2.2 Ensure the Local/Remote A_{min} control is fully anticlockwise, clicked off.

2.3 Set the required maximum welding current, corresponding with the maximum position of the remote control, using current control A whilst the display is in standby mode ③.

2.4 Rotate the Local/Remote A_{min} control to set the desired value of the minimum current (start current) corresponding with the minimum position of the remote control.

2.5 To revert to Local control mode, rotate the Local/Remote A_{min} control fully anti-clockwise to its 'clicked' off position.

3. AC or DC Process Selection

3.1 At the standby mode display ③ momentarily press the AC MODE key. The green AC MODE light will illuminate and the display will change to ⑤ confirming that AC mode has been selected and showing the AC frequency and AC balance values as set by the F2 and BAL potentiometers. After 3 seconds the display reverts to standby mode ③. Re-operate the AC MODE key again if more time is required to set the F2 or BAL values as needed. Note F2 and BAL can be adjusted whilst welding.

3.2 To revert to DC process, at the standby mode display ③ press and hold the AC MODE key until the green AC MODE light goes off (2-3 seconds).

4. Selecting Pulse Mode, see Figure 6.

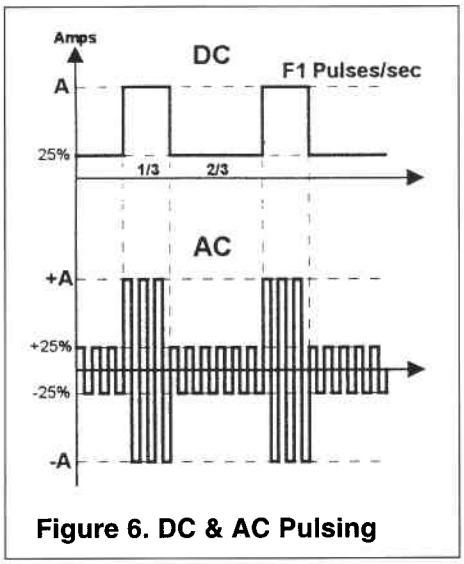


Figure 6. DC & AC Pulsing

4.1 In standby mode ③ momentarily operate the PULSE MODE key. The green Pulse Mode light will illuminate and the display will change to read as in ⑥. The pulse frequency F1 can be adjusted up or down using the F1 up/down keys. After 3 seconds the display reverts to standby mode ③.

4.2 The pulse frequency range when DC welding can be set between 0.4 & 300Hz, and in AC between 0.4 and 2Hz. Pulse width is internally set to be 1/3 of the cycle time (33% duty cycle) and the background current to be 25% of the main (peak) value. If necessary re-operate the PULSE MODE key to display and hence adjust the pulse frequency F1 using the F1 up/down keys.

4.3 To cancel pulsing, with the display at standby mode ③ press and hold the PULSE MODE key until the green Pulse Mode light goes off (roughly 3 seconds).

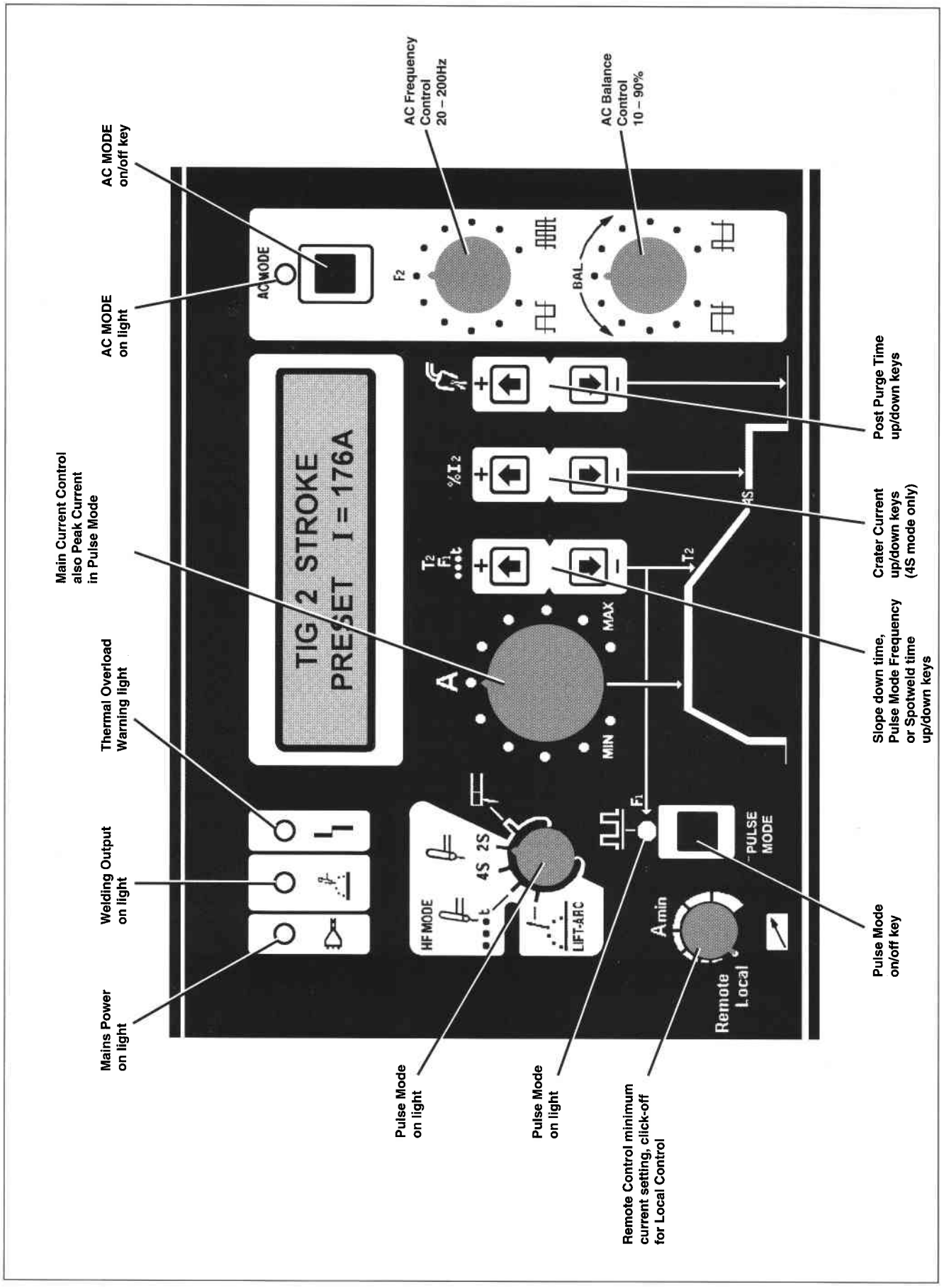
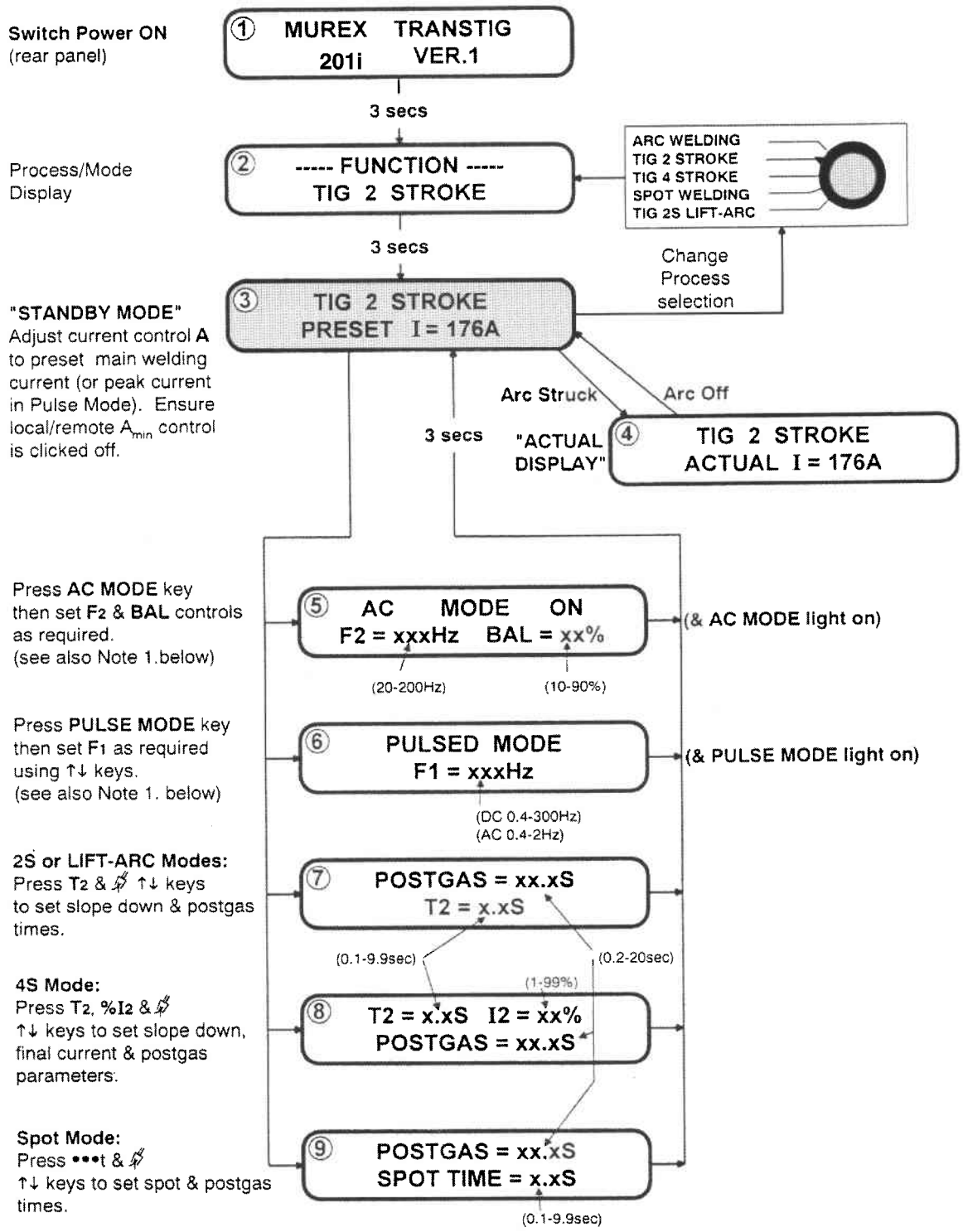


Figure 4. Transtig AC/DC 201i Control Panel Layout

Figure 5. Transtig AC/DC 201i LCD Display Modes



Note1. To revert to DC, or to cancel Pulse Mode, at the main menu press and hold either the AC MODE key or PULSE MODE key for roughly 3 seconds until the light above it goes off

5. MMA Welding

5.1 Set the process/mode selector switch to MMA.

WARNING!

Open circuit voltage is now present at the welding output terminals.

5.2 With the display in standby mode ③ set the desired welding current using the welding current control A.

5.3 If required select AC process, see **3.** above. Set the AC frequency (F2) and balance (BAL) as desired, normally 50Hz and 50% Balance.

5.4 The machine is now ready to weld.

6. TIG Welding with 2 Stroke Torch Switch and HF Start, see Figure 7.

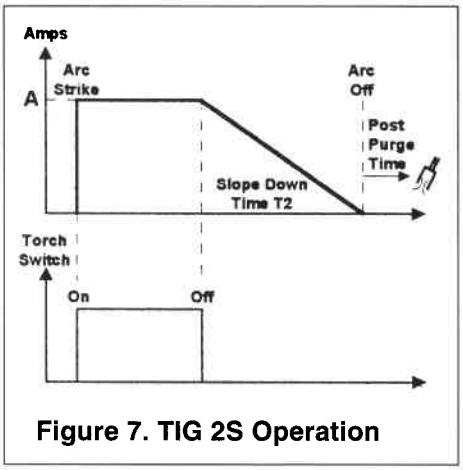


Figure 7. TIG 2S Operation

6.1 Set the process/mode selector to 2S.

6.2 Set the desired welding current with current control potentiometer A.

6.3 Set the required slope down time (0.1-10 secs) using T2 up/down keys, see ⑦.

6.4 Set the required gas post purge time (0.2-20 secs) using ⚡ up/down keys, see ⑦.

6.5 If required choose AC process when the display is in standby mode ③, see **3.** above.

6.6 If required choose pulse mode when the display is in standby mode ③, see **4.** above.

6.7 Position the electrode within 3-5mm of the work.

6.8 Press the torch switch, after 0.5 second gas pre-flow time the arc will strike at the current set.

6.9 Release the torch switch to initiate the slope-down time after which the arc will go off and the gas post purge time will commence.

7. TIG Welding with 4 Stoke Torch Switch and HF Start, see Figure 8.

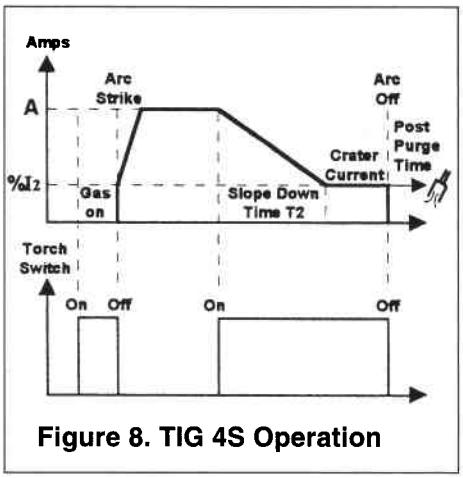


Figure 8. TIG 4S Operation

7.1 Set the process/mode selector to 4S.

7.2 Set the desired welding current with current control potentiometer A.

7.3 Set the required slope down time (0.1-10 secs) using T2 up/down keys, see ⑧.

7.4 Set the final crater current level (0-99%) using %I2 up/down keys, see ⑧.

7.5 Set the required gas post purge time (0.2-20 secs) using ⚡ up/down keys, see ⑧.

7.6 If required choose AC process and/or Pulse Mode when the display is in standby mode ③, see **3.** & **4.** above.

7.7 Position the electrode 3-5mm from the work, press the torch switch and shielding gas will flow.

7.8 Release the switch and the arc will strike and the welding current will slope up to the value set by the current control A.

7.9 Press and hold the torch switch again and the current will slope down to the final crater level set in 7.4 above in the time set in 7.3 above. Whilst the torch switch is held the current will remain at the final level. Release the torch switch to extinguish the arc and initiate the gas post purge.

8. TIG Spot Welding (2 Stroke Torch Switch and HF Start), see Figure 9.

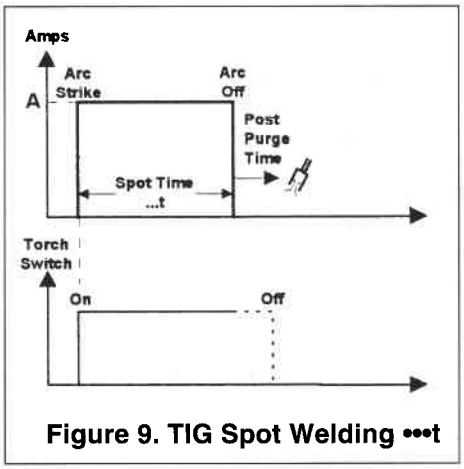


Figure 9. TIG Spot Welding •••t

8.1 Set the process/mode selector to **•••t.**

8.2 Set the welding current with current control potentiometer A.

8.3 Set the spot welding time (0.1-10 secs) using **•••t** up/down keys, see ⑨.

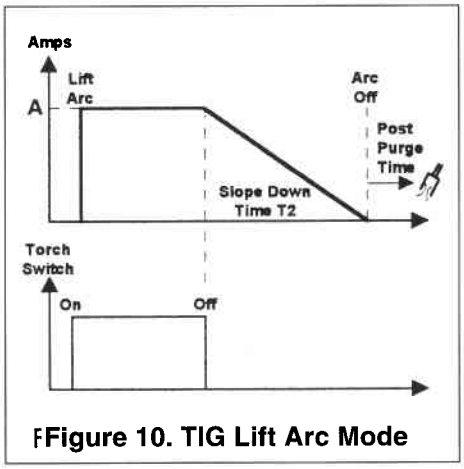
8.4 Set the required gas post purge time (0.2-20 secs) using ⚡ up/down keys, see ⑨.

8.5 Position the electrode 3-5mm from the work.

8.6 Press and hold the torch switch, after an 0.5 sec preflow time the arc will be struck at the preset welding current.

8.7 After the preset spot time the arc will go off and gas will post flow. The torch switch can now be released.

9. TIG Welding with 2 Stroke Torch Switch Using Lift Arc, see Figure 10.



FFigure 10. TIG Lift Arc Mode

IMPORTANT!

Lift Arc is applicable to DC TIG operation only

9.1 Set the process/mode selector to LIFT-ARC.

9.2 Set the desired welding current using potentiometer A.

9.3 Set the required slope down time (0.1-10 secs) using T2 up/down keys, see ⑦.

9.4 Set the required gas post purge time (0.2-20 secs) using ⚡ up/down keys, see ⑦.

9.5 If required choose Pulse Mode when the display is in standby mode ③, see **4.** above.

9.6 Put the tungsten tip down on the work. Press the torch switch and gently lift the tungsten off the work. The arc will be activated and welding begin.

9.7 Release the torch switch to start the slope out procedure.

OPTIMISING TIG WELDING PERFORMANCE

1. Tungsten Electrode Types

For DC TIG welding Murex recommends the use of thoriated tungstens. Either 1% or 2% thoriated types are suitable although, for optimum arc striking performance, 2% is the better choice (red tip).

For AC TIG applications either pure or zirconiated tungstens should be used. Zirconiated types (white tip) generally withstand higher currents than pure tungstens of the same diameter and are therefore recommended.

Newer ceriated tungstens (grey tip) can be used for both DC and AC TIG modes although their performance is a compromise between DC arc striking performance and AC current capability.

2. Tungsten Tip Preparation, see Figure 11

For DC TIG the tungsten electrode tip should be straight ground. Radial grinding tends to cause arc wander and may result in the tungsten point breaking off and transferring to the weld metal. Equally, using a large tungsten at low currents by excessively sharpening the tip may result in tip break-off problems.

Most welders do not bother to grind the tungsten tip before AC TIG welding. Short term pre-operation of the tungsten at high current is used to create the characteristic hemispherical shape to the tip. Pre-grinding the tip to a wide angle does help to initially focus the arc however.

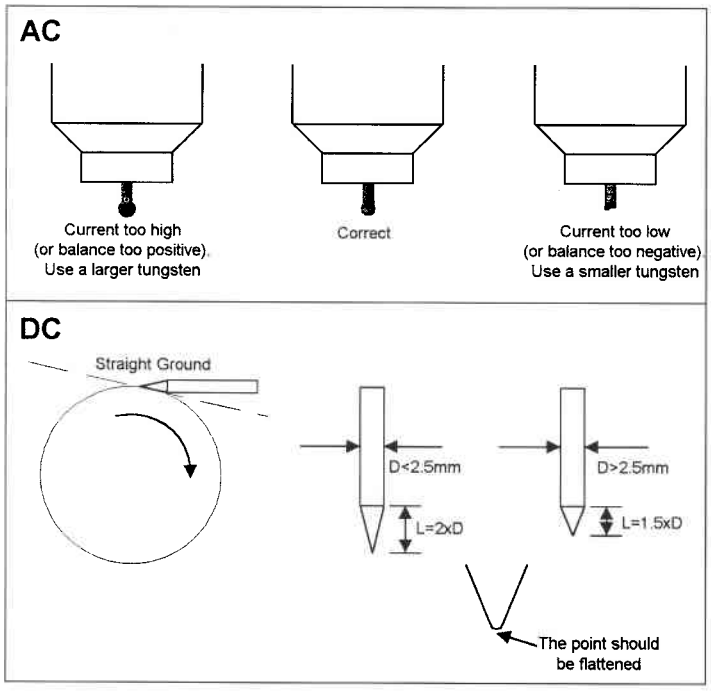


Figure 11. Tungsten Preparation

3. Maximum Current Ratings for Tungsten Electrodes

	1.6mm	2.4mm	3.2mm	4.0mm	4.8mm
DC (2% Thoriated)	150A	240A	380A	450A	500A
AC (1% Zirconiated)*	60A	100A	150A	220A	280A

* Balanced squarewave (balance = 50%)

4. AC TIG Welding Using FC-5B Foot Control

Unlike other AC TIG equipments the Transtig 201i does not use continuous HF to maintain the AC TIG arc. Once the arc is struck the HF generator is turned off and will not re-energise unless the arc voltage rises to above 40V or until the torch switch/foot control is reoperated. This feature means that the likelihood of electrical interference from the welding equipment is greatly reduced.

When using a large and cold tungsten the very low starting current that would normally occur when using a foot control can on occasion result in poor arc stability until the current is raised to a reasonable level and the tungsten is hot. To prevent this the 201i has an Amin control enabling the minimum current as set by the remote foot control to be independently preset, see CONTROLS & OPERATION section 2. Recommended minimum AC current settings, according to tungsten diameter, are as follows:

1.6mm	10A
2.4	20A
3.2	30A
4.8	40A

If at the end of welding it is required to slope out the current below the level set by the Amin control, a short final slope-out time can be set using the T2 up/down keys, see CONTROLS & OPERATION section 6, usually around 1 second is adequate. This will continue the slope down after the pedal has been fully released filling in any residual crater.

MAINTENANCE

WARNING!

Maintenance involving the removal of the outer cover must only be undertaken by qualified or suitably trained personnel.

Switch off and disconnect the unit from the mains supply before undertaking any maintenance tasks.

Daily (Operator task)

1. Check all welding and electrical cables for signs of cracking or general deterioration.
2. Check that all electrical connections are in good physical condition.
3. Check the TIG torch or electrode holder for damage. Replace any suspect part(s).

ALWAYS CHECK THE WELDING AREA DAILY FOR POSSIBLE SAFETY HAZARDS. IF IN DOUBT CONSULT YOUR SAFETY OFFICER.

4. Ensure that the water cooling unit is always filled with distilled water or if required a mixture of glycol and water.

Monthly (Maintenance Department Task)

WARNING

Be sure that the circuit or main isolation switch is open or electrical input circuit fuses are removed before attempting any inspection or work on the inside of the welding unit. Placing the POWER switch on the welding unit in the OFF position does not remove all power from inside the welding unit.

1. Switch off the unit and disconnect from the mains electrical supply.
2. Remove the covers (retain the fixing screws).
3. Using a soft brush, remove any dust or dirt from the interior of the unit. If compressed air is used to clean the unit the pressure must not exceed 2kg/cm² (30lbs/in²), and the air must be clean and dry.

SUITABLE EYE AND MOUTH PROTECTION SHOULD BE WORN.

4. Replace the cover.
5. Reconnect the unit to the mains supply.

IMPORTANT!

Inspection, troubleshooting, and repair of this equipment may ordinarily be undertaken by a competent individual having at least general experience in the maintenance and repair of semiconductor electrical equipment. Maintenance should not be undertaken or attempted by anyone not having such qualifications.

Fan Motor

All models are equipped with cooling fans and rely on forced draft for adequate cooling for high duty cycles and overloads. The fan motors are manufactured with lifetime lubricated sealed bearings and no attention should be required.

Input Power and Welding Cables

These cables should be inspected periodically. Fraying and broken wires may occur at the electrode holder and work clamp. The insulation should be checked for cracks and bare spots.

Thermal Protection

This welding unit is protected with normally closed overload thermostats. Any excessive overloading will cause the 'contactor' to open, stopping the welding unit's output. The thermal overload indicator light on the control panel will also illuminate. If this occurs leave the unit switched on with the fans running. Reset is automatic when the unit has cooled.

Spark Gap

The spark gap can be readily inspected by removing the left side of the unit.

The spark gap is set at 0.90mm (0.035ins) at the factory. It will be necessary to adjust it periodically after extended operation. Usually inspection, cleaning by blowing out dust and dirt and adjustment every three or four months will suffice. Re-adjustment is also indicated when intermittent operation of the HF is noted. Usually this occurs when the setting has increased to 1.0mm (0.040ins) or greater.

Proceed as follows to adjust the spark gap:

1. Disconnect all power to the unit.

WARNING!

Be sure the branch circuit or main isolation switch is open or electrical input circuit fuses are removed before attempting any inspection or work on the inside of the welding unit. Placing the POWER switch in the OFF position does not remove all power from inside the unit.

2. Remove the left side panel of the unit.
3. Loosen the pan head screw that secures the front spark gap contact point assembly.
4. Insert an 0.90mm (0.035ins) feeler gauge between the spark gap contact points.
5. Move the loosened contact point until a slight drag is felt as the gauge is moved between the points.
6. Tighten the loosened pan screw to secure the contact point assembly.
7. Refit the side panel.
8. Reconnect the input power to the unit.

Failure of High-Frequency

Check the following when no high-frequency is apparent on the welding cables:

1. Ensure the Process/Mode switch is set to one of the HF start TIG modes.
2. Be sure that the spark gap is set between the allowable limits.
3. Check for broken leads to the HF generator or HF transformer pcbs.
4. Check the HF transformer pcb for obvious signs of defects.
5. Replace the HF generator pcb and/or HF transformer pcb.

Rear Panel Fuses

The 230Vac auxiliary power circuit is protected by a 6.3A fuse mounted on the rear panel. In the event of failure, before fitting a new fuse examine the equipment fitted to the 230Vac supply (e.g. T.W.C.U. water cooler) for overload or shorts.

In addition a rear panel mounted 2A fuse protects the internal auxiliary supplies.

WARRANTY

Murex offers a full, normally on-site, guarantee on all its welding and cutting equipment. The Transtig AC/DC 201i power source is guaranteed for a period of 24 months from date of purchase. If during this period the product proves defective due to incorrect design, materials or workmanship, Murex or its authorised Service Centre will, free of charge, repair or at the discretion of the company replace the product or its defective parts.

Please note that the guarantee on associated items, torches, electrode holders etc is 3 months.

This guarantee excludes:

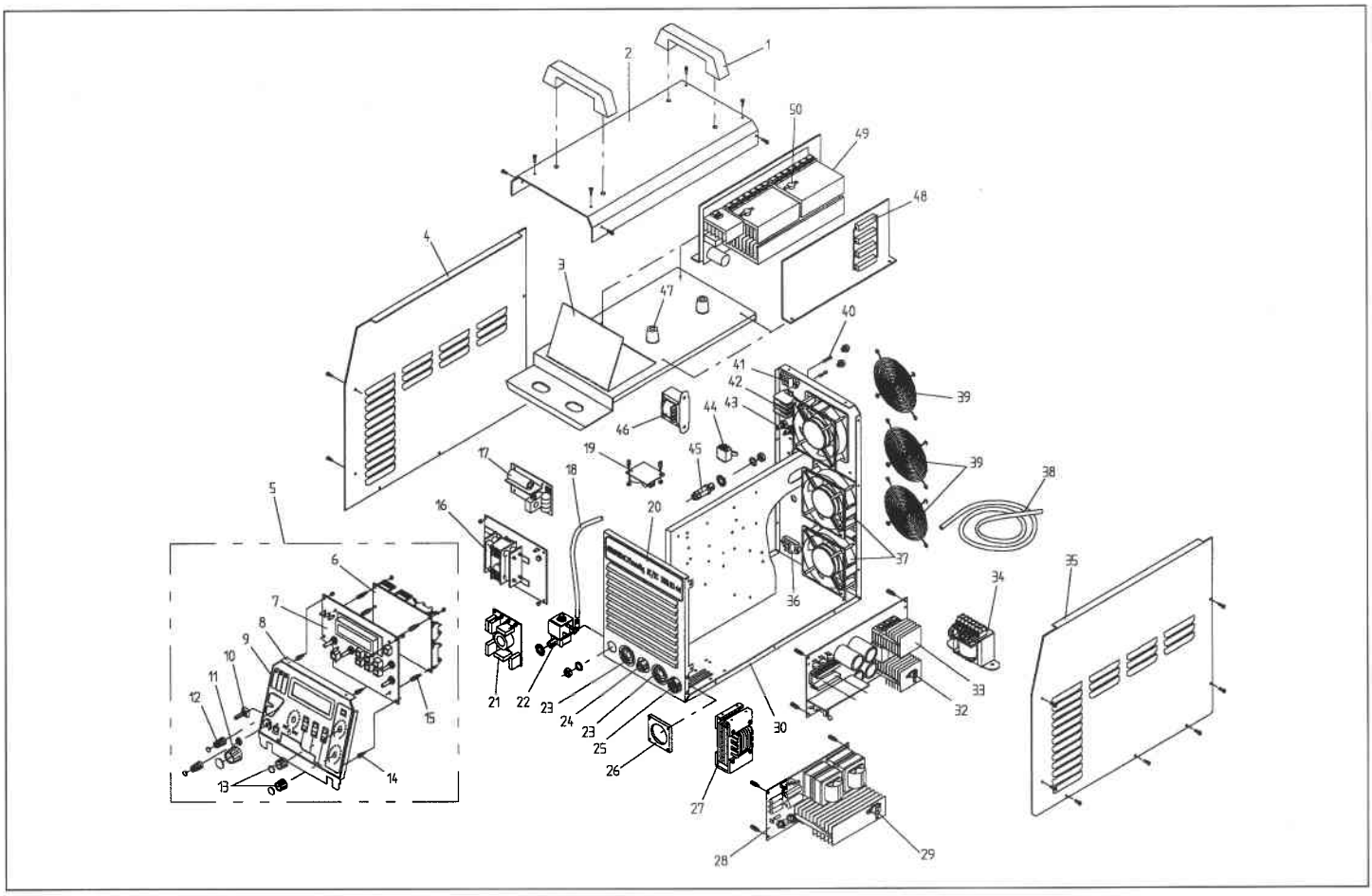
1. Normal wear and tear of consumable parts, electrodes, nozzles, motor brushes, relay/contactor contacts etc

2. Damage resulting from misuse, accident, lack of maintenance, incorrect installation or misapplication.

3. Repairs carried out by non-authorised personnel or the use of non Murex replacement parts.

4. Loss of use of the product and other incidental or consequential costs incurred by the purchaser.

SPARE PARTS



Item	Description	Part No.	Item	Description	Part No.
1	Handle	66109	26	Insulator	66402
2	Lid	62500	27	Inductor	61963
3	Shelf	62483	28	Tx/Rect PCB	61329
4	LHS Panel	62349L	29	Thermal Switch 80°C	65775
5	Control Panel Assembly	61339	30	BASE	62009
6	µP Control PCB	61340	32	Thernal Switch 60°C	65776
7	Display PCB	61894	33	Primary Inverter PCB	61328
8	Control Panel	62011	34	Aux Transformer	64637
9	Control Panel Label	66751	35	RHS Panel	62349R
10	Potentiometer/Switch 100k	65192	36	Strain Relief	66061
11	Knob d29	66208	37	Fan	64182
12	Knob d15	66081	38	Primary Cable	61650
13	Knob d22	66121	39	Fan Guard	66098
14	Pillar	66105	40a	Fuse 6.3A Slow (32x6.3mm)	64207
15	Pillar	66505	40b	Fuse 2A Slow (32 x 6.3mm)	64250
16	HF Transformer PCB	61950	41	Strain Relief	66061
17	HF Generator PCB	61895	42	Terminal Block	64144
18	Gas Hose	66160	43	Fuse Holder	64180
19	Torch Switch Filter PCB	61049	44	On/Off Switch	64053
20	Logo Panel	66725	45	Coupling	63191
21	Mains Filter PCB	61733	46	Aux Transformer	64630
22	Solenoid Valve	61703	47	Foot	66501
23	Dins Socket	64274	48	Resistor 1.5k 50W (3)	65969
24	2p Socket	64103	49	DC/AC Com PCB	61896
25	14p Socket	64104	50	Thermal Switch 70°C	64215

MUREX

Murex Welding Products Limited
Hertford Road, Waltham Cross,
Herts. EN8 7RP. England
Telephone: Lea Valley (01992) 710000

Pt. No. 100562
Rev 1

Printed in England

FMS 4/00