



Operating Manual

Tradesarc 131i

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





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DECLARATION OF CONFORMITY

Murex Welding Products Ltd.

Declare hereby that:

Murex Tradesarc 131i power source
Part No. 1415294
From production Serial No. 535-xxx-xxx

- are manufactured in accordance with the Council Directive 73/23/EEC, amended by Council Directive 93/68/EEC relating to electrical equipment designed for use within certain voltage limits.
- are manufactured in accordance with EN 60 974-1. Safety requirements for arc welding equipment. Part 1: welding power sources.

On behalf of Murex Welding Products Ltd.
Hertford Rd
Waltham Cross
Herts. EN8 7RP
England

A handwritten signature in black ink, appearing to read "P. Karlsson".

.....
P.Karlsson
Managing Director.
Esab Welding Equipment AB
Date: 1 June 1995

Manufactured by Esab Welding Equipment AB.
S-695 81 Laxå Sweden



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 the workpiece.
- Ensure your working stance is safe.

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.

FIRE HAZARD

- Sparks (spatter) can cause fire. Make sure therefore that there are no inflammable materials nearby.

NOISE - Excessive noise can damage hearing

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

MALFUNCTION - Call for expert assistance in the event of malfunction.

READ AND UNDERSTAND THE INSTRUCTION MANUAL BEFORE INSTALLING OR OPERATING.

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 WMA. 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.

2. 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.

3. 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 ultraviolet light.

4. 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.

5. 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.

6. 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.



INTRODUCTION

The Tradesarc 131i is a transistor controlled rectifier designed for welding with MMA electrodes and for TIG welding (scratch start). Since the Tradesarc 131i is double insulated no mains earth connection is required.

The advanced electronics provide rapid control response, low power demand and excellent welding characteristics. Inverter technology contributes to low weight and compact dimensions of the unit. The rounded slimline shape of the unit makes it comfortable to carry. The strap can be folded to serve as a carrying handle, or fully extended to serve as a shoulder strap.

TECHNICAL DESCRIPTION

Tradesarc 131i is equipped with OKC cable connectors to allow simple and rapid connection of welding and return cables.

The inverter is supplied with a fitted 3 meter long mains cable.

Tradesarc 131i is delivered with 3 meter long welding and return cables. These are attached to cable connectors allowing quick change of polarity.

The manufacturer's serial number is stamped on the rating plate.

TECHNICAL SPECIFICATION

Performance: at 35% duty cycle at 60% at 100%	130A/25 V 100A/24 V 75A/23 V
Setting range	continuously variable 3-130A
Open circuit voltage	64-80 V
Mains supply: voltage primary current fuse	230 V, 50/60 Hz 21A 16A*
Weight	approx. 11 kg

**When welding below 100A a 13A slow fuse is adequate.*

INSTALLATION

Tradesarc 131i is intended for 230 V, single phase supplies.

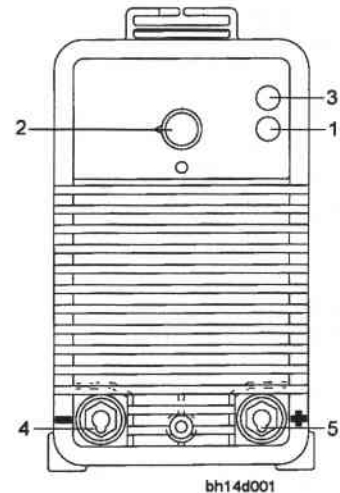
The 230 V can be used with 230-240 V, 50-60 Hz supplies.

To get maximum performance from the Tradesarc 131i it must be fitted with a 16A slow fuse. A 13A slow fuse is adequate for welding at currents up to 100A.

OPERATION

The power switch is at the rear of the Tradesarc 131i. The white lamp on the front will glow when the power is on.

1. Yellow lamp – thermal overload indication
2. Welding current control 3–130A
3. White lamp – mains power on
4. Welding negative connection – normally the work in MMA
5. Welding positive connection – normally the electrode in MMA



The current is adjusted using the knob on the front.

To save you worrying about overloading the Tradesarc 131i it has a thermal cut-out that will trip before the temperature becomes too high. You can tell when the rectifier has been overloaded because the yellow light comes on and it will no longer be possible to weld, until the unit has cooled to normal levels.

Welding with MMA electrodes

The Tradesarc 131i supplies DC current, which allows you to weld most types of alloyed and unalloyed steels, stainless steels and cast iron. With the Tradesarc 131i you can use the majority of MMA electrodes from \varnothing 1.6 to \varnothing 3.25.

TIG welding

TIG welding is particularly useful when high quality standards are required and when welding thin sheet. Tradesarc 131i also has very good TIG welding characteristics. For TIG the work is connected to the 131 positive outlet and the torch to the negative outlet. The best method to use is the scratch start, where you gently stroke the tungsten electrode against the workpiece to establish the arc. Before using the Tradesarc 131i for TIG welding it must be equipped with a TIG torch and gas valve, a cylinder of argon, an argon regulator, tungsten electrodes and, if necessary, suitable filler metal.

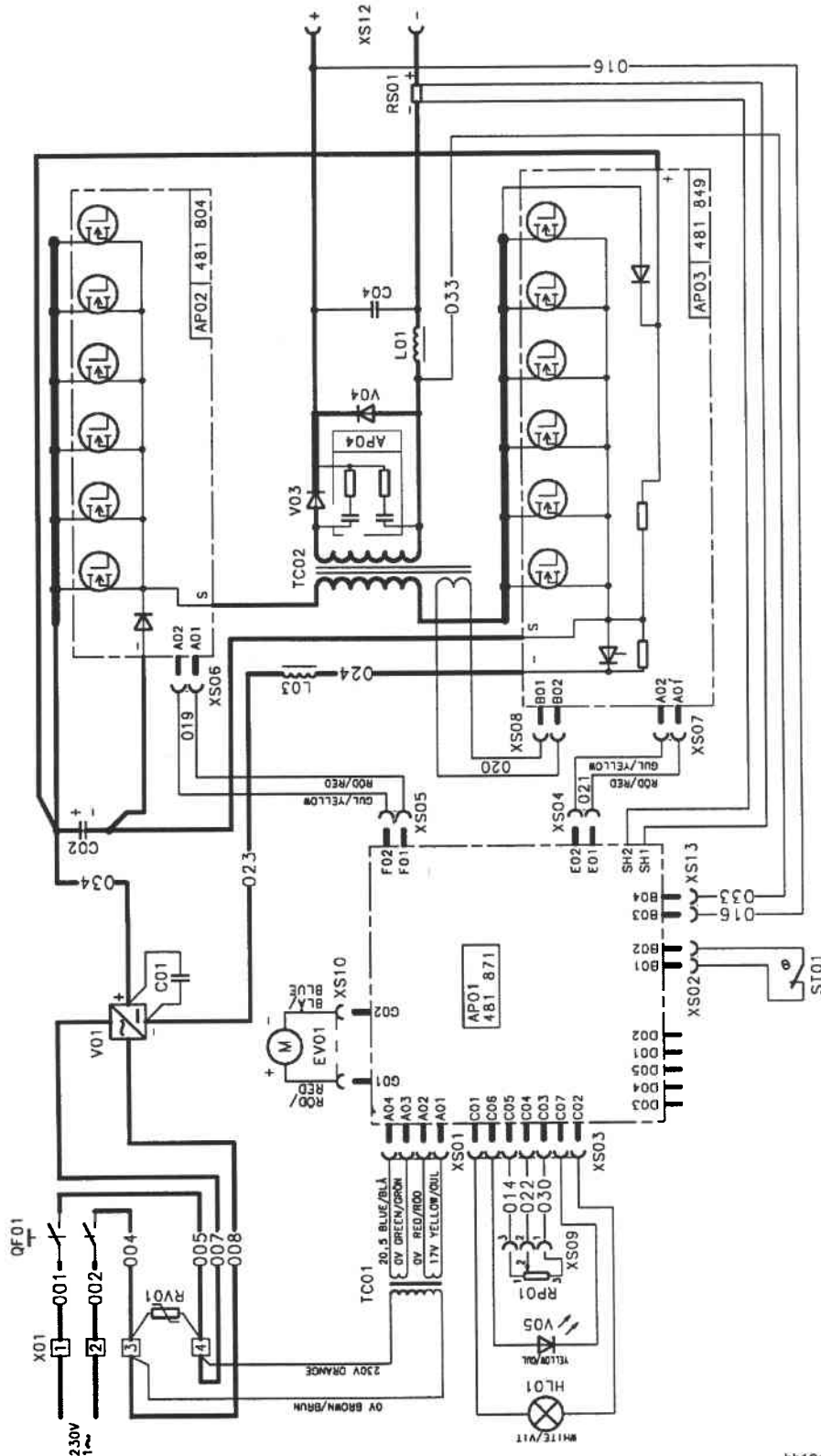
MAINTENANCE

Tradesarc 131i requires a minimum of maintenance. Normally it is sufficient to blow the unit clean with dry compressed air once a year.

Obtaining spare parts

Spare parts can be ordered from your nearest Murex distributor. When ordering spare parts you should state the voltage rating (e.g. 230 V), the serial number, and the name and number of spare parts. This will simplify ordering and ensure correct delivery.

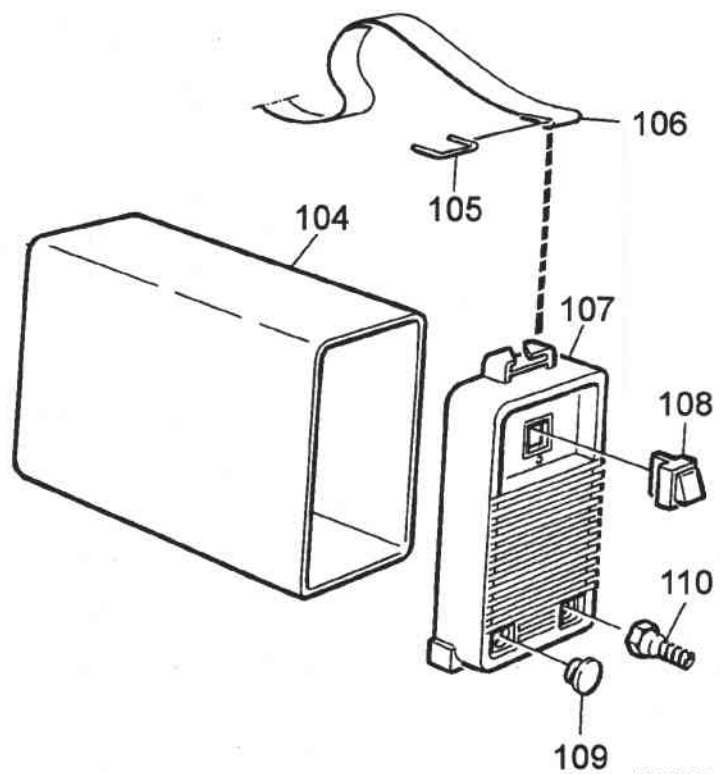
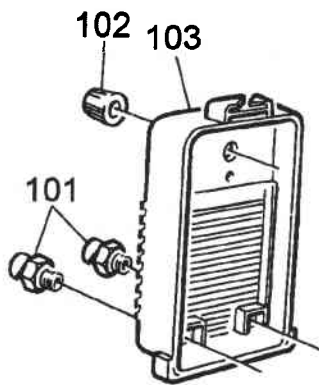
CIRCUIT DIAGRAM Tradesarc 131i



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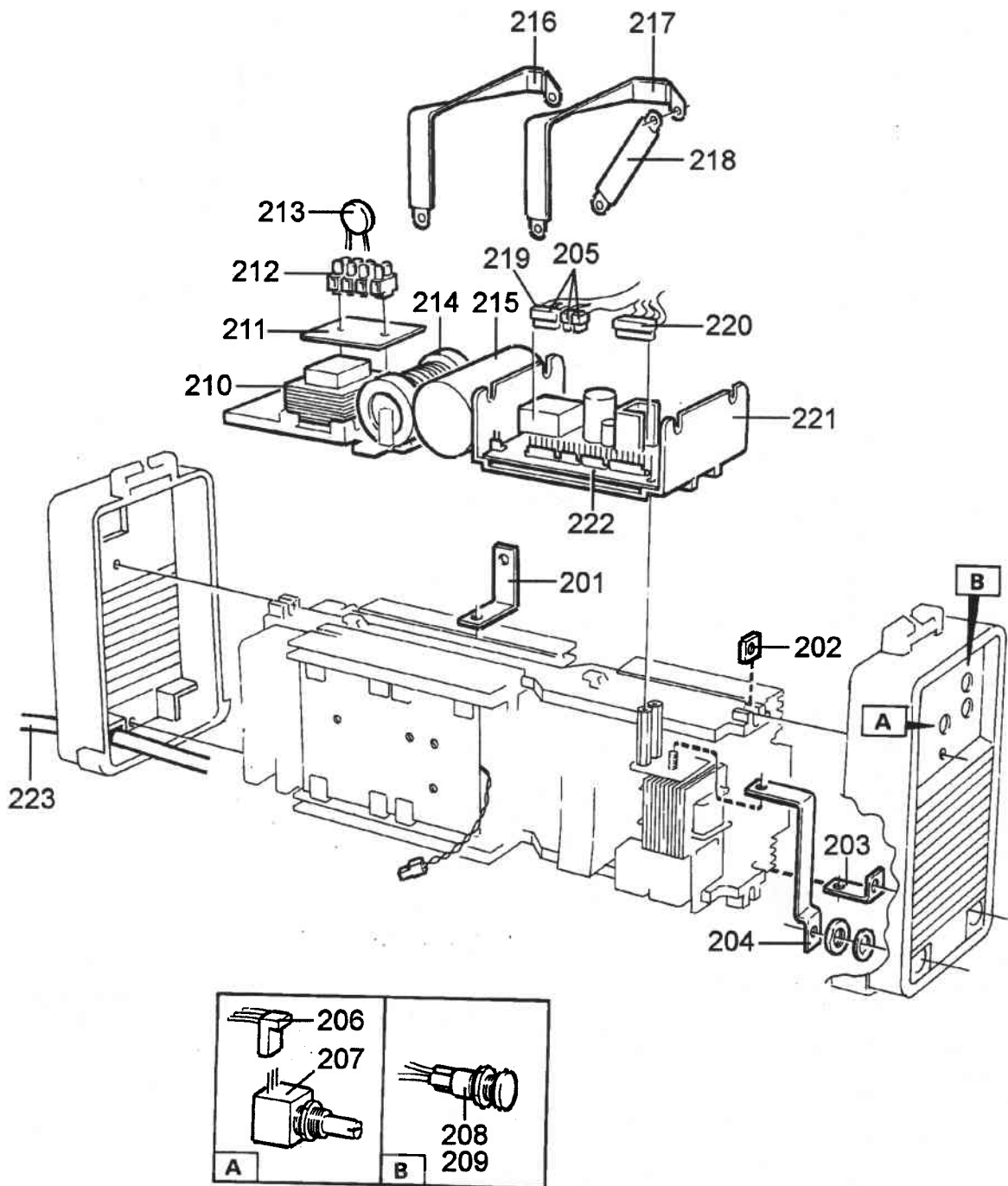
SPARE PARTS LIST

Pos	Qty	Part No.	Description
101	2	366 306-880	OKC 25
102	1	321 475-881	Knob
103	1	455 997-002	Front panel
104	1	365 544-004	Cover
105	2	365 750-001	Strap clips
106	1	468 208-001	Strap
107	1	365 545-002	Rear panel
108	1	193 317-001	Switch
109	1	468 536-003	Tube plug
110	1	193 308-103	Strain relief



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Pos	Qty	Part No.	Description
201	1	See pos. 500	Current bar
202	4	366 588-001	Nut
203	1	See pos. 501	Current bar
204	1	See pos. 501	Current bar
205	5	193 260-001	Connector 2-pol
	5	193 260-180	Cover 2-pol
206	1	193 260-062	Connector 3-pol
	1	193 260-092	Cover 3-pol
207	1	191 870-616	Potentiometer
208	1	193 759-001	Lamp, white
209	1	193 759-002	Diod, yellow
210	1	468 028-001	Control transformer
211	1	468 882-001	Sign
212	1	193 045-011	Connection block
213	1	192 149-126	Varistor
214	1	467 809-880	Inductor primary
	2	0409 536-11	Clamp heat resistance
215	1	192 903-500	Capacitor
216	1	See pos. 500	Current bar
217	1	See pos. 500	Current bar
218	1	See pos. 500	Current bar
219	1	193 260-152	Connector 4-pol
	1	193 260-182	Cover 4-pol
220	1	193 260-006	Connector 4-pol
	1	193 260-185	Cover 4-pol
221	1	467 802-001	Guide
222	1	481 870-880	Main circuit board
223	1	366 514-013	Mains cable



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