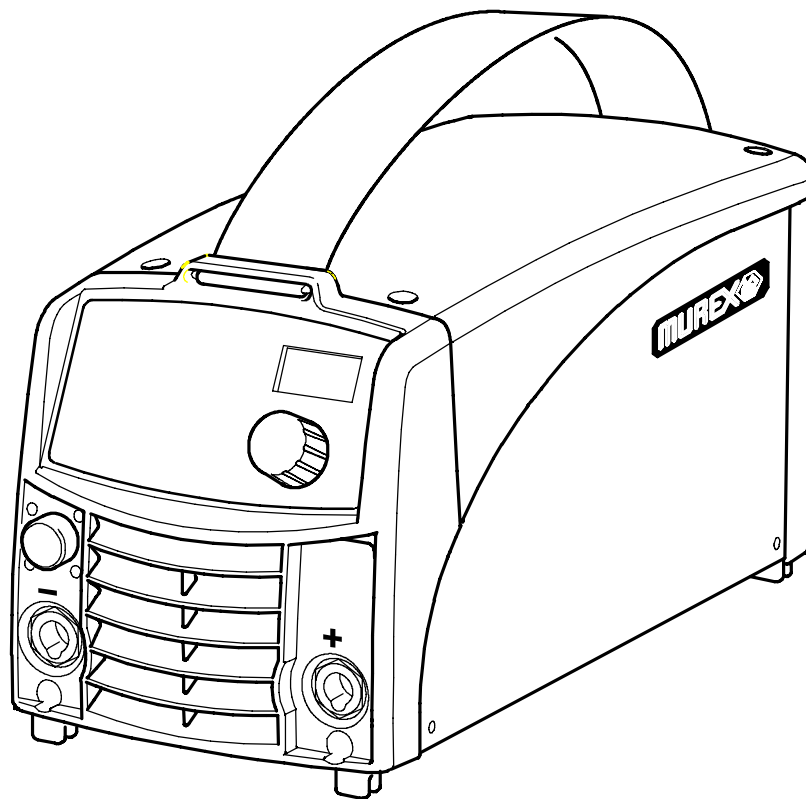


GB



Transarc 250



**Instruction manual and
spare parts list**

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1 DIRECTIVE

Murex Welding Products Ltd, EN8 7TF England, gives its unreserved guarantee that welding power source Transarc 250 from serial number 819 (2008 w.19) are constructed and tested in compliance with the standard EN 60974-1 and EN 60974-10 (Class A) in accordance with the requirements of directive (2006/95/EC) and (2004/108/EEC).

On behalf of Murex Welding Products Ltd.
Laxå 2008-08-22



Kent Eimbrodt
Global Director
Equipment and Automation

Manufactured by ESAB AB, Welding Equipment
SE-695 81 Laxå Sweden

2 SAFETY

Users of welding equipment have the ultimate responsibility for ensuring that anyone who works on or near the equipment observes all the relevant safety precautions. Safety precautions must meet the requirements that apply to this type of welding equipment. The following recommendations should be observed in addition to the standard regulations that apply to the workplace.

All work must be carried out by trained personnel well-acquainted with the operation of the welding equipment. Incorrect operation of the equipment may lead to hazardous situations which can result in injury to the operator and damage to the equipment.

1. Anyone who uses the welding equipment must be familiar with:
 - its operation
 - location of emergency stops
 - its function
 - relevant safety precautions
 - welding
2. The operator must ensure that:
 - no unauthorized person is stationed within the working area of the equipment when it is started up.
 - no-one is unprotected when the arc is struck
3. The workplace must:
 - be suitable for the purpose
 - be free from drafts
4. Personal safety equipment
 - Always wear recommended personal safety equipment, such as safety glasses, flame-proof clothing, safety gloves.
 - Do not wear loose-fitting items, such as scarves, bracelets, rings, etc., which could become trapped or cause burns.
5. General precautions
 - Make sure the return cable is connected securely.
 - Work on high voltage equipment **may only be carried out by a qualified electrician.**
 - Appropriate fire extinguishing equipment must be clearly marked and close at hand.
 - Lubrication and maintenance must **not** be carried out on the equipment during operation.



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 take fumes and gases away 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 earmuffs 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!



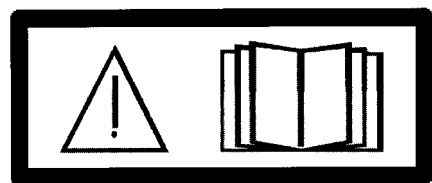
WARNING!

Do not use the power source for thawing frozen pipes.



CAUTION!

Read and understand the instruction manual before installing or operating.



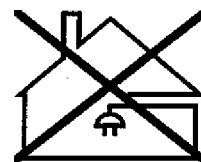
CAUTION!

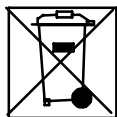
This product is solely intended for arc welding.



CAUTION!

Class A equipment is not intended for use in residential locations where the electrical power is provided by the public low-voltage supply system. There may be potential difficulties in ensuring electromagnetic compatibility of class A equipment in those locations, due to conducted as well as radiated disturbances.





Do not dispose of electrical equipment together with normal waste!

In observance of European Directive 2002/96/EC on Waste Electrical and Electronic Equipment and its implementation in accordance with national law, electrical equipment that has reached the end of its life must be collected separately and returned to an environmentally compatible recycling facility. As the owner of the equipment, you should get information on approved collection systems from our local representative.

By applying this European Directive you will improve the environment and human health!

We can provide you with all necessary welding protection and accessories.

3 INTRODUCTION

The **Transarc 250** is a welding current power source intended for use with coated electrodes (MMA welding) and TIG welding.

Accessories for the product can be found on page 26.

3.1 Equipment

The power source is supplied with:

- Instruction manual
- 3 m return cable
- 3 m welding cable

4 TECHNICAL DATA

Transarc 250	
Mains voltage	400 V ± 15%, 3~ 50/60 Hz
Mains supply	S _{sc min} 3.3 MVA
Primary current	
I _{max} MMA	14 A
I _{max} TIG	10 A
No-load power demand when in the energy-saving mode, 6.5 min. after welding	30 W
Setting data	
Current for MMA	4 - 250 A
Current for TIG	3 - 250 A
Activ panel	OFF or ON
Remote control unit	OFF or ON
Hot start	0 - 99 %
Arc force	0 - 99%
Drop welding (hidden function)	OFF or ON
Permissible load at MMA	
30 % duty cycle	250 A / 30 V
60 % duty cycle	190 A / 27.6 V
100% duty cycle	150 A / 26 V
Permissible load at TIG	
30 % duty cycle	250 A / 20 V
60 % duty cycle	190 A / 17.6 V
100% duty cycle	150 A / 16 V

Transarc 250	
Power factor at maximum current	
MMA	0.94
TIG	0.93
Efficiency at maximum current	
MMA	83 %
TIG	79 %
Open-circuit voltage	
without VRD	65 V
with VRD	< 35 V
Operating temperature	-10 to +40 °C
Transportation temperature	-20 to +55 °C
Continual sound pressure at no-load	<70 db (A)
Dimensions l x w x h	418 x 188 x 208 mm
Weight	10.5 kg
Insulation class transformer	H
Enclosure class	IP 23
Application class	S

Mains supply, $S_{sc \min}$

Minimum short circuit power on the network in accordance with IEC 61000-3-12

Duty cycle

The duty cycle refers to the time as a percentage of a ten-minute period that you can weld at a certain load without overloading. The duty cycle is valid for 40 °C.

Enclosure class

The IP code indicates the enclosure class, i. e. the degree of protection against penetration by solid objects or water. Equipment marked **IP23** is designed for indoor and outdoor use.

Application class

The symbol **S** indicates that the power source is designed for use in areas with increased electrical hazard.

5 INSTALLATION

The installation must be executed by a professional.

5.1 Location

Place the power source so that its cooling air inlets and outlets are not obstructed.

5.2 Mains supply

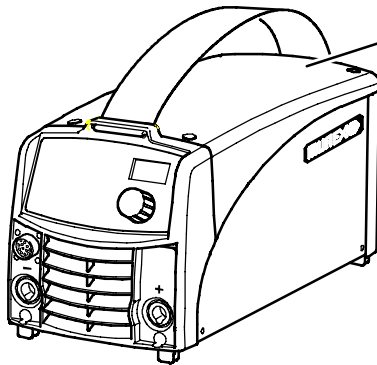
Note!

Mains supply requirements

High power equipment may, due to the primary current drawn from the mains supply, influence the power quality of the grid. Therefore connection restrictions or requirements regarding the maximum permissible mains impedance or the required minimum supply capacity at the interface point to the public grid may apply for some types of equipment (see technical data). In this case it is the responsibility of the installer or user of the equipment to ensure, by consultation with the distribution network operator if necessary, that the equipment may be connected.

5.3 Mains power supply

Make sure that the welding power source is connected to the correct supply voltage and that it is protected by the correct fuse rating. A protective earth connection must be made in accordance with regulations.



Rating plate with supply connection data

5.3.1 Recommended fuse sizes and minimum cable area

Transarc 250	
Mains voltage	400V
Mains cable area mm ²	4 G 1.5
Phase current $I_{1\text{eff}}$	8 A
Fuse	
anti-surge	10 A
type C MCB	10 A

NOTE!

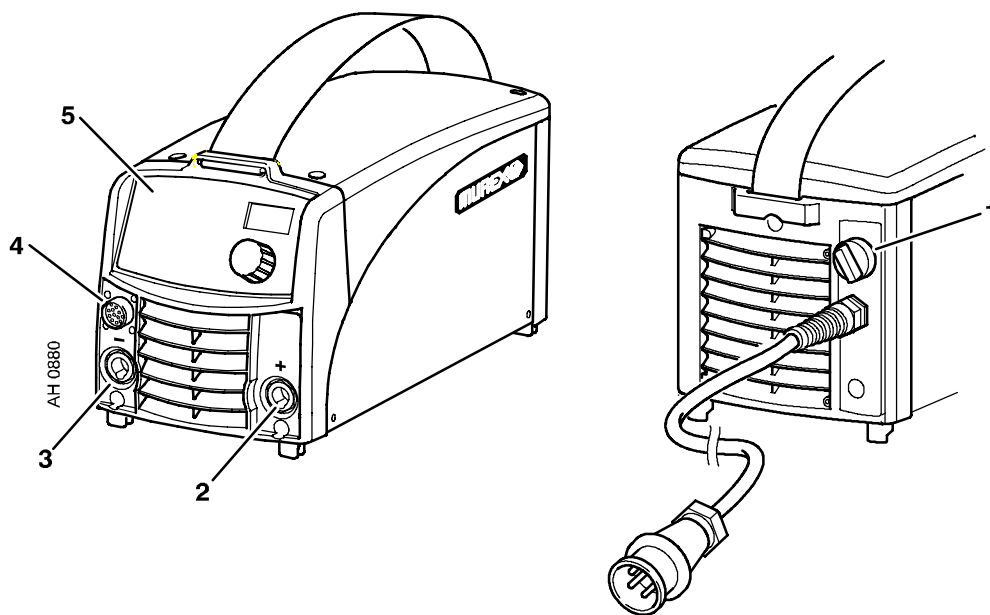
The cable area and fuse rating above comply with Swedish regulations. Use the welding power source in accordance with the relevant national regulations.

6 OPERATION

General safety regulations for the handling of the equipment can be found on page 3. Read through before you start using the equipment!

6.1 Connections and control devices

- | | |
|--|--|
| <p>1 Mains voltage switch</p> <p>2 Connection (+)
TIG: return cable
MMA: welding cable or return cable</p> <p>3 Connection (-)
TIG: torch
MMA: return cable or welding cable</p> | <p>4 Connection for remote control unit</p> <p>5 Control panel, see title 7.</p> |
|--|--|



6.2 Connection of welding and return cable

The power source has two outputs, a positive terminal (+) and a negative terminal (-), for connecting welding and return cables. The output to which the welding cable is connected depends on the type of electrode used. The connecting polarity is stated on the electrode packaging.

Connect the return cable to the other output on the power source. Secure the return cable's contact clamp to the work piece and ensure that there is good contact between the work piece and the output for the return cable on the power source.

6.3 Overheating protection

The welding power source has overheating protection that operates if the temperature becomes too high. When this occurs the welding current is interrupted and a fault code is displayed on the control panel.

The overheating protection resets automatically when the temperature has fallen.

7 CONTROL PANEL



When mains power is supplied the unit runs a self diagnosis of the LEDs and the display, the program version is displayed and in this example the program version is 0.18.



1 Display

2 Indication of which parameter is shown in the display (current, voltage or percent)

3 Choice of current indication (A) or voltage indication (V) during welding, in the display



4 Knob for setting data (current or percent)

5 Buttons for settings in welding data memory. See title 7.1 .

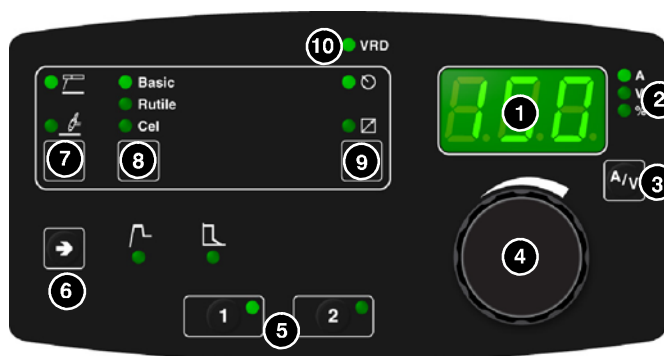
6 Button for choosing parameters "Hot start"  or arc pressure "Arc force"  when MMA welding

7 Choice of welding method MMA  or TIG 

8 Choice of electrode type "Basic", "Rutile" or "Cellulose" when MMA welding



9 Setting from panel  and connecting remote control unit 



10 Display of VRD function (reduced open-circuit voltage).



7.1 Welding data memory

Two different welding data programs can be stored in the control panel memory.

Press button  or  for 5 seconds to store the welding data in the memory. The welding data is stored when the green indicator lamp starts to flash.

To switch between the different welding data memories press button  or .

The welding data memory has a back-up so that the settings remain even if the machine has been switched off.

8 MMA WELDING

8.1 Symbol and function explanations



MMA welding

MMA welding may also be referred to as welding with coated electrodes. Striking the arc melts the electrode, and its coating forms protective slag.

Setting current

A higher current produces a wider weld pool, with better penetration into the workpiece.



Active panel

Settings are made from the control panel.



Remote control unit

Settings are made from the remote control unit.

The remote control unit must be connected to the remote control unit socket on the machine before activation. When the remote control unit is activated the panel is inactive.



Hot Start

Increases the welding current during a fixed time at the start of the welding process. Set the value of the hot start current by using the knob. This reduces the risk of incomplete fusion at the start of the weld.



Arc force

The arc force is important in determining how the current changes in response to a change in the arc length. A lower value gives a calmer arc with less spatter.



VRD (Voltage Reduction Device)


Note! The VRD function is not active (LED has gone out) on delivery. Contact an authorised ESAB service technician to activate the function.

The VRD function ensures that the open-circuit voltage does not exceed 35 V when welding is not being carried out. This is indicated by a lit VRD LED. The VRD function is deactivated when the system senses that welding has started.

If the VRD function is activated and open-circuit voltage exceeds the 35 V limit, this is indicated by an error message (16) appearing in the display and welding cannot be started whilst the error message is displayed.

8.1.1 Hidden functions

There is one hidden function in the control panel.

To access the functions hold button  depressed for 5 seconds. The display shows a letter and a value. The correct function is selected by pressing the buttons. The knob is used to change the value of the selected function.

Function letter	Function
d	Drop welding

To leave the function hold the button  depressed for 5 seconds.

Drop welding

Drop welding can be used when welding with stainless electrodes. The function involves alternately striking and extinguishing the arc in order to achieve better control of the supply of heat. The electrode needs only to be raised slightly to extinguish the arc.

9 TIG WELDING

At TIG-welding complete the power source with:

- a TIG torch with gas valve
- an argon gas tube
- an argon gas regulator
- tungsten electrode

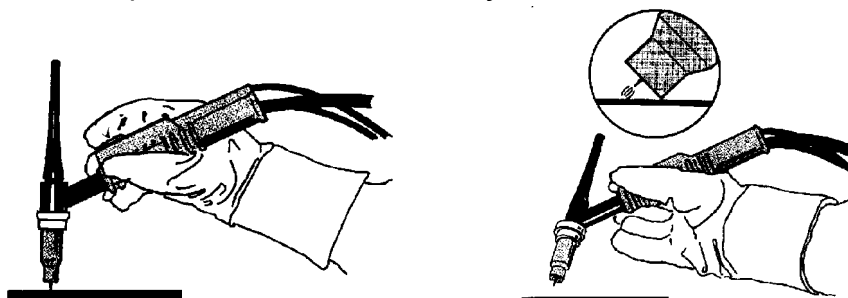
9.1 Symbol and function explanations

TIG welding

TIG welding melts the metal of the workpiece, using an arc struck from a tungsten electrode, which does not melt itself. The weld pool and the electrode are protected by shielding gas.

”LiveTig start”

With “LiveTig start” the arc strikes when the tungsten electrode is brought into contact with the workpiece and then lifted away from it.





Active panel

Settings are made from the control panel.



Remote control unit

Settings are made from the remote control unit.

The remote control unit must be connected to the remote control unit socket on the machine before activation. When the remote control unit is activated the panel is inactive.



VRD (Voltage Reduction Device)

Note! The VRD function is not active (LED has gone out) on delivery. Contact an authorised ESAB service technician to activate the function.

The VRD function ensures that the open-circuit voltage does not exceed 35 V when welding is not being carried out. This is indicated by a lit VRD LED. The VRD function is deactivated when the system senses that welding has started.

If the VRD function is activated and open-circuit voltage exceeds the 35 V limit, this is indicated by an error message (16) appearing in the display and welding cannot be started whilst the error message is displayed.

10 MAINTENANCE

Regular maintenance is important for safe, reliable operation.

Only those persons who have appropriate electrical knowledge (authorized personnel) may remove the safety plates.



CAUTION!

All guarantee undertakings from the supplier cease to apply if the customer himself attempts any work in the product during the guarantee period in order to rectify any faults.

10.1 Power source

Check regularly that the welding power source is not clogged with dirt.

How often and which cleaning methods apply depend on:

- the welding process
- arc times
- placement
- the surrounding environment.

It is normally sufficient to blow the power source clean with dry compressed air (reduced pressure) once a year.

Clogged or blocked air inlets and outlets otherwise result in overheating.

10.2 Welding torch


The wear parts should be cleaned and replaced at regular intervals in order to achieve trouble-free welding.

11 FAULT CODES

Fault codes are used to indicate that a fault has occurred in the equipment. It is indicated in the display by an E followed by a fault code number.

A unit number is displayed to indicate which unit has generated the fault, for example U 0.

If several faults have been detected only the code for the last occurring fault is displayed. Press any function button or turn the knob to remove the fault indication from the display.

Note! If the remote control unit is activated, deactivate the remote control unit by pressing  to remove the fault indication.

11.1 List of fault codes

Unit number:

U 0 = welding data unit **U 2** = power source

U 4 = remote control unit

11.2 Fault code descriptions

The fault codes that the users can correct themselves are given below. If a different code appears, call a service technician.

Fault code	Description
<p>E 6</p>	<p>High temperature The thermal overload cut-out has tripped. The current welding process is stopped and cannot be restarted until the temperature has fallen. Action: Check that the cooling air inlets or outlets are not blocked or clogged with dirt. Check the duty cycle being used, to make sure that the equipment is not being overloaded.</p>
<p>E 14</p>	<p>Communication error (bus off) Serious interference on the CAN bus. Action: Check that there are no faulty units connected on the CAN bus. Check the cables. Send for a service technician if the fault persists.</p>

Fault code	Description
E 16	<p>High open-circuit voltage Open circuit voltage has been too high. Action: Turn off the mains power supply to reset the unit. Send for a service technician if the fault persists.</p>
E 19	<p>Memory error Content of existing memory is incorrect. Basic data will be used. Action: Turn off the mains power supply to reset the unit. Send for a service technician if the fault persists.</p>

12 FAULT-TRACING

Try these recommended checks and inspections before sending for an authorized service technician.

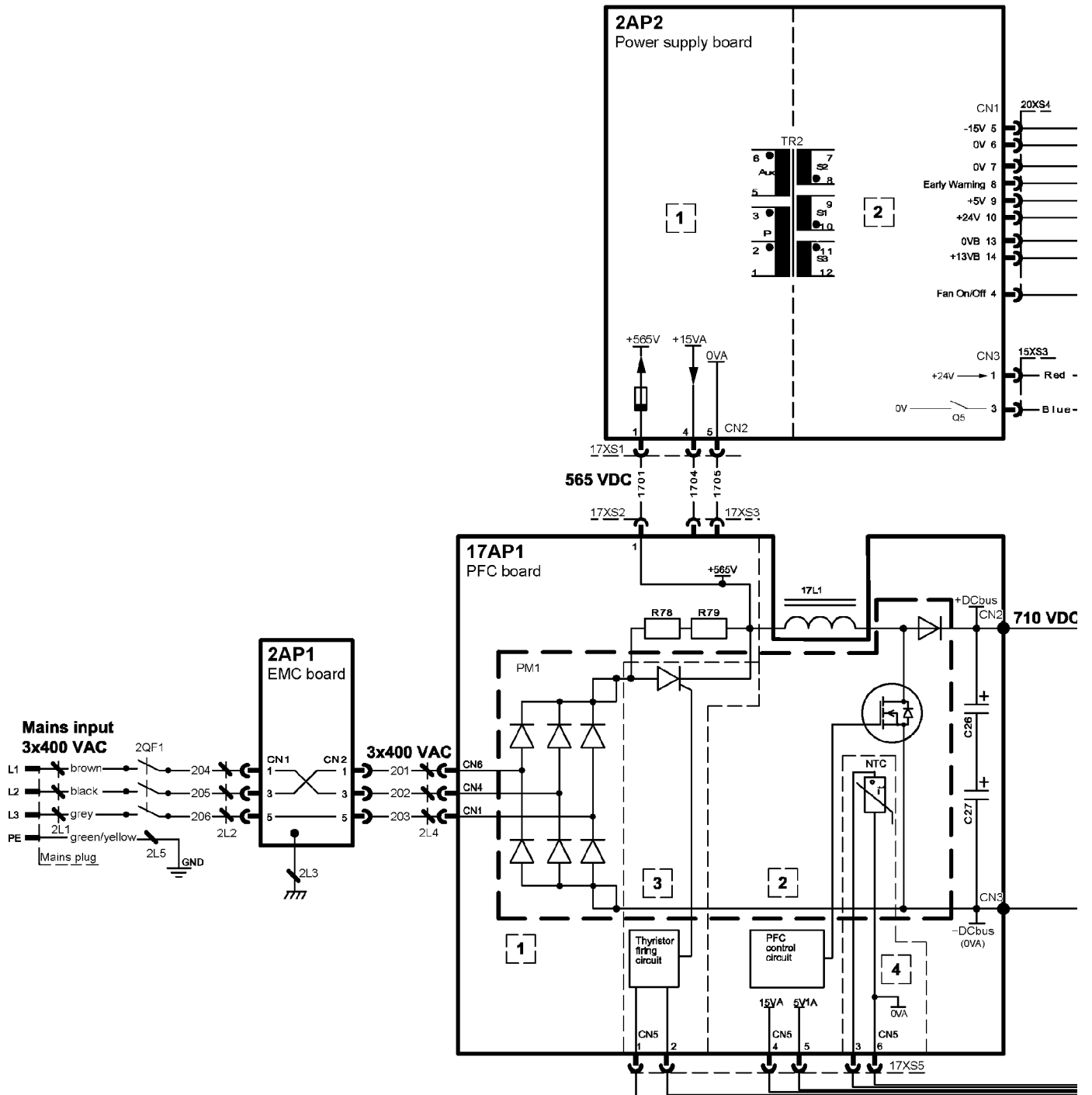
Type of fault	Corrective action
No arc.	<ul style="list-style-type: none"> • Check that the mains power supply switch is turned on. • Check that the welding current supply and return cables are correctly connected. • Check that the correct current value is set. • Check the mains power supply fuses.
The welding current is interrupted during welding.	<ul style="list-style-type: none"> • Check whether the thermal cut-outs have tripped (a fault code is displayed on the control panel). • Check the mains power supply fuses.
The thermal cut-out trips frequently.	<ul style="list-style-type: none"> • Make sure that you are not exceeding the rated data for the welding power source (i.e. that the unit is not being overloaded). • Check that the welding power source is not clogged with dirt.
Poor welding performance.	<ul style="list-style-type: none"> • Check that the welding current supply and return cables are correctly connected. • Check that the correct current value is set. • Check that the correct electrodes are being used.

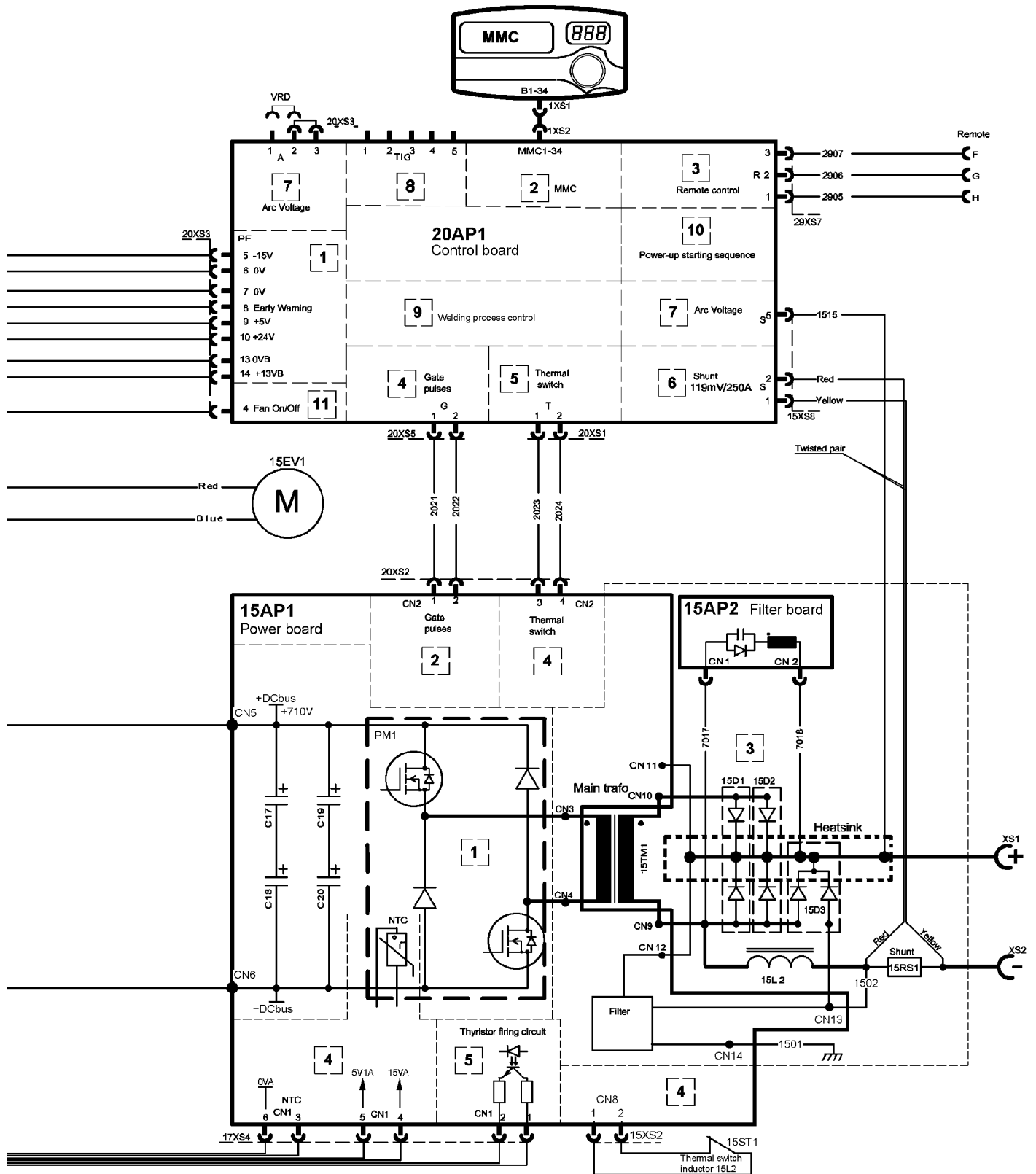
13 ORDERING SPARE PARTS

Repair and electrical work should be performed by an authorized serviceman. Use only original spare and wear parts.

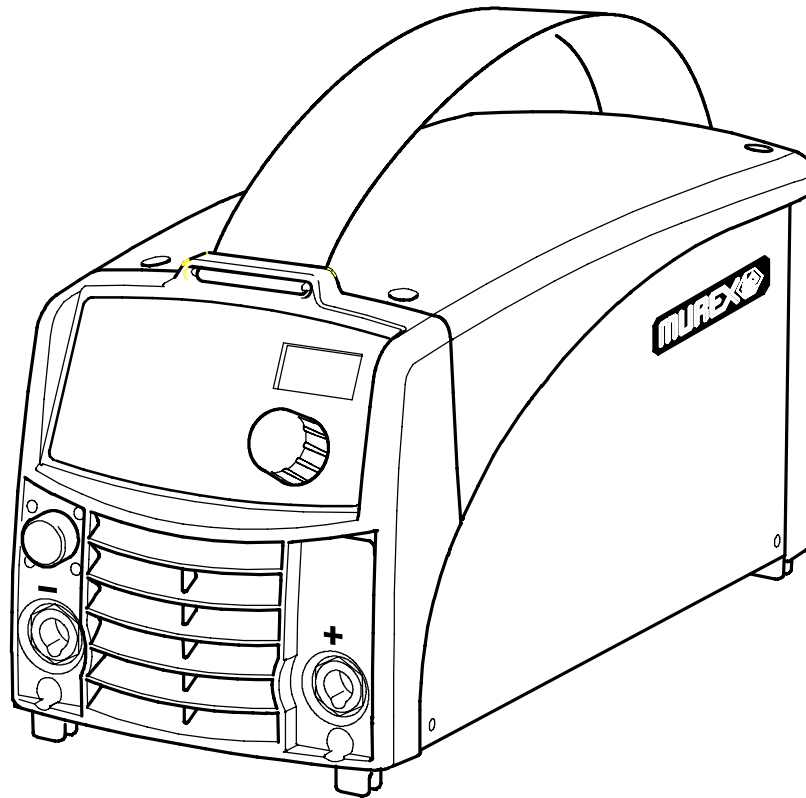
Transarc 250 is designed and tested in accordance with the international and European standards EN 60974-1 and EN 60974-10. It is the obligation of the service unit which has carried out the service or repair work to make sure that the product still conforms to the said standard.

Diagram





Spare parts list



Valid for serial no. 819-xxx-xxxx

Ordering number

0460 300 891 Transarc 250

Spare parts are to be ordered through the nearest MUREX agency. Kindly indicate type of unit, serial number, denominations and ordering numbers according to the spare parts list.

Maintenance and repair work should be performed by an experienced person, and electrical work only by a trained electrician. Use only recommended spare parts.

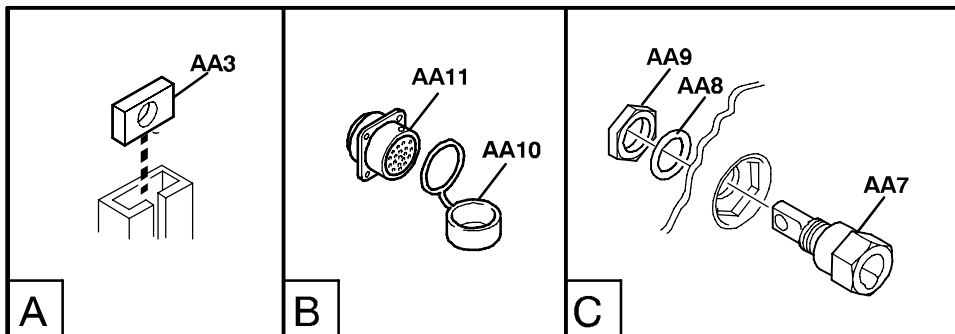
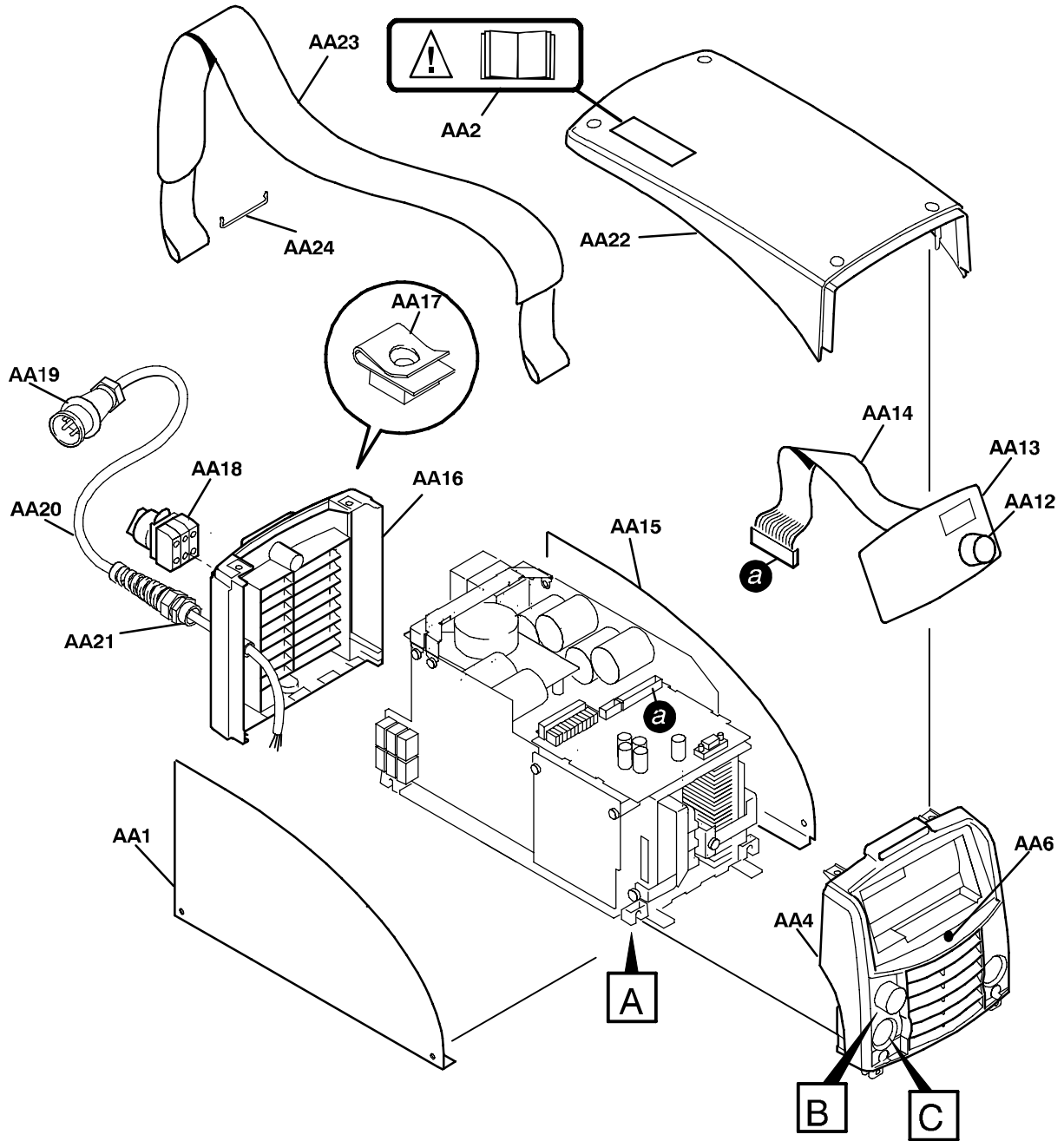
Transarc 250

C = component designation in the circuit diagram

Item	Qty	Ordering no.	Denomination	Notes	C
AA1	1	0460 479 003	Side cover	Left	
AA2	1	0458 950 001	Sign		
AA3	4	0366 588 001	Nut	4-K	
AA4	1		Front panel	Included in item AA50	
AA6	1	0460 690 005	Label	Transarc 250	
AA7	2	0160 362 026	OKC 50 contact	Welding connection, Included in item AA50	XS1, XS2
AA8	2	0366 306 003	Spring washer	Ø 21/15 x 1, included in item AA50	
AA9	2	0366 247 001	Nut	6-k brass, included in item AA50	
AA10	1	0366 285 001	Protection cap	For 12-pole connection, included in item AA50	
AA11	1	0460 482 887	Cable with connection	Included in item AA50	29XS7
AA12	1	0460 600 528	Knob	Included in item AA13	
AA13	1	0460 476 884	MMC Module	Complete, configured	
	1	0460 420 001	Insulation sticker	Included in item AA13	
AA14	1	0193 700 711	Ribbon cable with connectors		1XS1, 1XS2
AA15	1	0460 479 004	Side cover	Right	
AA16	1	0460 140 002	Rear panel		
AA17	6	0469 381 002	Fast look nut	M5	
AA18	1	0460 424 880	Main switch	Complete	2QF1
AA19	1	0349 891 207	Motor plug		2XT1
AA20	1	0456 193 882	Mains cable	4G1.5 grounded	
AA21	1	0194 034 001	Ferrite core		2L1
AA22	1	0460 143 001	Cover		
AA23	1	0460 265 001	Strap		
AA24	2	0468 497 001	Holder		

SPARE PARTS SETS

Item	Qty	Ordering no.	Denomination	Notes
AA50	1	0460 379 895	Front complete	Includes items AA4, AA7, AA8, AA9, AA10 and AA11. When replacing "front complete" also item AA13, MMC module, must be replaced.



AH 0890

C = component designation in the circuit diagram

Item	Qty	Ordering no.	Denomination	Notes	C
AB1	1	0192 790 102	Circuit card holder		
AB2	1	0487 584 880	Printed circuit board	EMC board	2AP1
AB3	1	0194 034 002	Ferrite core		2L3
AB4	1	0459 197 887	Control module (VRD) digital	Control board	20AP1
AB5	1	0457 304 880	Shunt		15RS1
AB6	2	0468 538 002	Current bar		
AB7	1	0460 423 001	Bar minus		
AB8	1	0460 375 880	Coil inductor complete		15L2
AB9	2	0460 373 001	Ferrit core		
AB10	1	0487 588 880	Printed circuit board	Power supply	2AP2
AB11	1	0193 700 719	Ribbon cable with connectors		20XS3, 20XS4
AB12	1	0460 312 001	Heat sink rectifier		
AB13	1	0487 618 880	Printed circuit board	LC filter	15AP2
AB14	1	0460 117 001	Inductor	PFC	17L1
AB15	1		Printed circuit board	PFC board, included in item AB50	17AP1
AB16	1	0193 700 717	Ribbon cable with connectors		17XS3, 17XS4
AB17	1		Primary module	Included in item AB50	
AB18	1	0460 501 001	Rail DC-buss		
AB19	1	0394 516 034	Spacing screw	M5x15	
AB20	2	0394 516 038	Spacing screw	M5x30	
AB21	4	0192 790 102	Spacer	6.3 mm	
AB22	2	0192 790 104	Spacer	12.7 mm	
AB23	1	0192 790 109	Spacer	28.6 mm	

SPARE PARTS SETS

Item	Qty	Ordering no.	Denomination	Notes
AB50	1	0460 653 881	PFC-board kit	Includes item AB14, AB15, AB17 screws (type A and B), 2 capacitors 470 µF, 2 capacitors 1 µF, thermal compound and roller
		0458 910 002	Roller handle	For the roller in the spare parts sets above
		0192 058 101	Thermal compound	

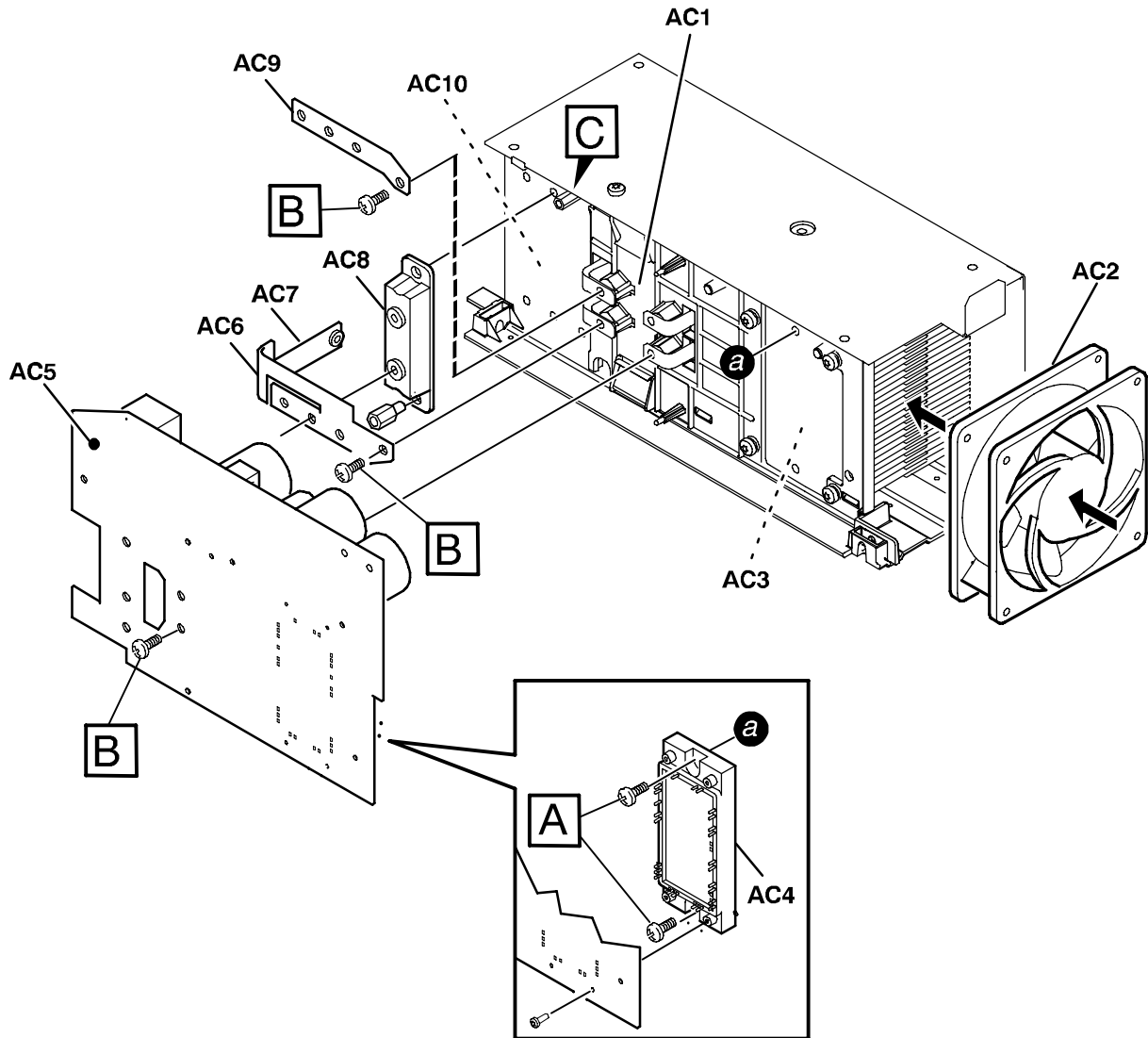
Transarc 250

C = component designation in the circuit diagram

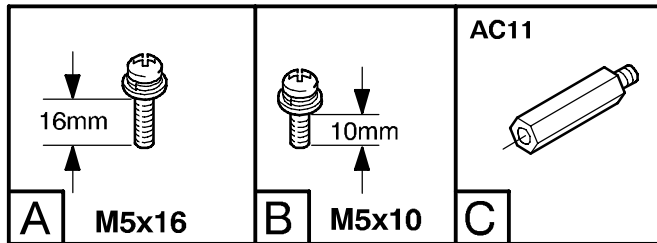
Item	Qty	Ordering no.	Denomination	Notes	C
AC1	1	0460 329 880	Transformer		15TM1
AC2	1	0460 414 001	Fan		15EV1
AC3	1	0460 312 001	Heat sink rectifier	Inverter	
AC4	1		Primary module	Included in AC50	
AC5	1		Printed circuit board	Power board, Included in AC50	15AP1
AC6	1	0460 484 001	Cu-bar		
AC7	1	0190 209 118	Hose	L =0.04 m, Ø 12 mm, To be ordered per metre	
AC8	3	0193 948 001	Diode module		15D1, 15D2, 15D3
AC9	1	0460 413 001	Rail, secondary		
AC10	1	0460 338 001	Heat sink for secondary diod		
AC11	1	0394 516 023	Distancescrew	M4x25	

SPARE PARTS SETS




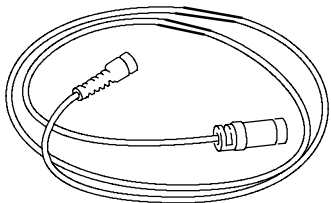
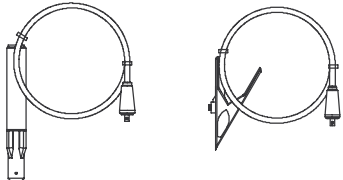


Item	Qty	Ordering no.	Denomination	Notes
AC50	1	0460 653 880	Power board kit	Includes item AC4, AC5, screws (type A and B), thermal compound and roller
		0458 910 002	Roller handle	For the roller in the spare parts sets above
		0192 058 101	Thermal compound	



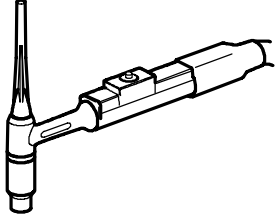
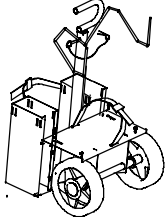

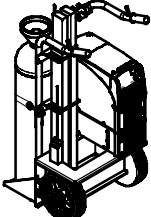
AH 0892



Accessories

	<p>Remote control unit AT1 0459 491 896 MMA and TIG: setting of current</p>
	<p>Remote control unit AT1 CF 0459 491 897 MMA and TIG: rough and fine setting of current</p>
	<p>Foot pedal FS002 with 5 m cable 0349 090 886</p>
	<p>Remote cable 12 pole - 8 pole</p> <p>5 m 0459 552 880 10 m 0459 552 881 15 m 0459 552 882 25 m 0459 552 883</p>
	<p>Welding cable kit 0700 006 902 Return cable kit 0700 006 903</p>
	<p>Cable holder 0460 265 002</p>
	<p>Shoulder strap 0460 265 003</p>

Transarc 250

	<p>Tig torch TXH 150 4 m 0460 011 843 Tig torch TXH 150 8 m 0460 011 883 Tig torch TXH 200 4 m 0460 012 841 Tig torch TXH 200 8 m 0460 012 881</p>
	<p>Trolley for 5-10 litre gas cylinder 0459 366 885</p>
	<p>Trolley for 20-50 litre gas cylinder 0459 366 886</p>
	<p>Trolley for 20-50 litre gas cylinder 0460 330 880</p>



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