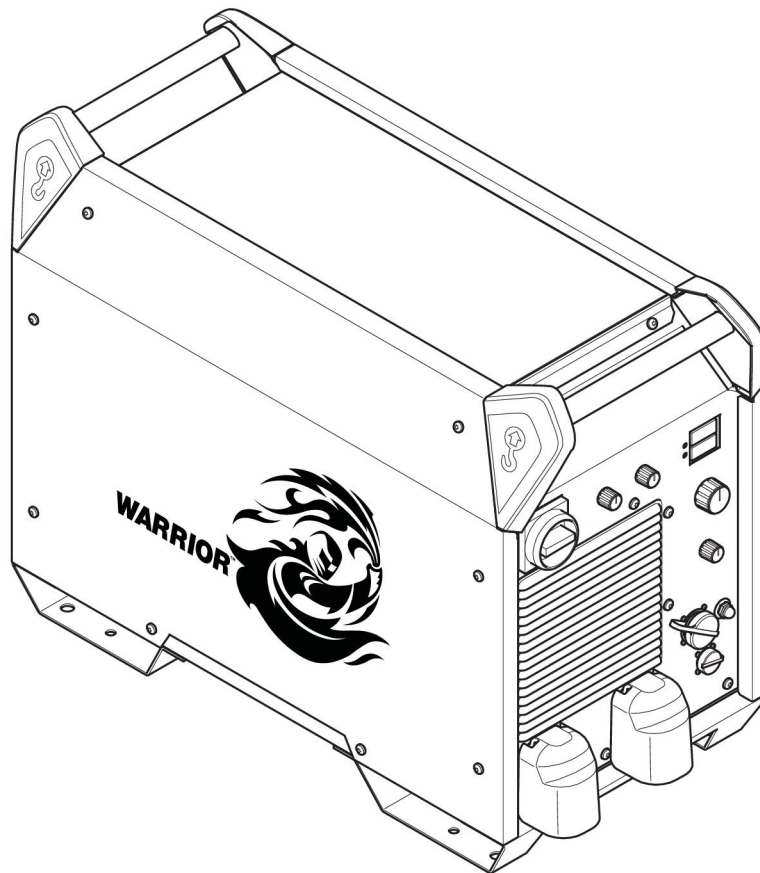




# **Warrior™ 750i CC/CV**



## **Instruction manual**



## EU DECLARATION OF CONFORMITY

According to:

The Low Voltage Directive 2014/35/EU;  
The RoHS Directive 2011/65/EU;

The EMC Directive 2014/30/EU;  
The Ecodesign Directive 2009/125/EC

Type of equipment

Arc welding power source

Type designation

Warrior 750i CC/CV

with serial numbers from 110 xxx xxxx (2021 w10)

Brand name or trademark

ESAB

Manufacturer or his authorised representative established within the EEA

ESAB AB

Lindholmsallén 9, Box 8004, SE-402 77 Göteborg, Sweden

Phone: +46 31 50 90 00, [www.esab.com](http://www.esab.com)

The following EN standards and regulations in force within the EEA has been used in the design:

EN IEC 60974-1:2018/A1:2019

Arc welding equipment - Part 1: Welding power sources

EN 60974-10:2014/A1:2015,

Arc welding equipment - Part 10: Electromagnetic compatibility (EMC) requirements

EU no. 2019/178

Ecodesign requirements for welding equipment pursuant to Directive 2009/125/EC

Additional Information:

Restrictive use, Class A equipment, intended for use in locations other than residential.

IEC EN draft standard 26/708/CDV have been used to establish EU no. 2019/1784 data.

By signing this document, the undersigned declares as manufacturer, or the manufacturer's authorised representative established within the EEA, that the equipment in question complies with the safety and environmental requirements stated above.

Place/Date

Göteborg  
2021-03-02

Signature

Pedro Muniz  
Standard E equipment Director





## UK DECLARATION OF CONFORMITY

**According to:**

- Electric Equipment (Safety) Regulations 2016;
- Electromagnetic Compatibility Regulations 2016;
- The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012 (as amended)
- The Ecodesign for Energy-Related Products and Energy Information Regulations 2021

**Type of equipment**

Arc welding power source

**Type designation**

Warrior 750i CC/CV

with serial numbers from 110 xxx xxxx (2021 w10)

**Brand name or trademark**

ESAB

**Manufacturer or his authorised representative established within United Kingdom**

ESAB Group (UK) Ltd,  
322 High Holborn, London, WC1V 7PB, United Kingdom  
www.esab.co.uk

**The following British Standards and Instruments in force within the United Kingdom has been used in the design:**

- EN IEC 60974-1:2018/A1:2019	Arc welding equipment - Part 1: Welding power sources
- EN 60974-10:2014	Arc welding equipment - Part 10: Electromagnetic compatibility (EMC)
- UK S.I. 2021/745	Requirements for welding equipment pursuant to the Ecodesign for Energy-Related Products and Energy Information Regulations 2021

**Additional Information:**

Restrictive use, Class A equipment, intended for use in locations other than residential.

**By signing this document, the undersigned declares as manufacturer, or the manufacturer's authorised representative established within the UK, that the equipment in question complies with the safety and environmental requirements stated above.**

**Signature**

Gary Kisby  
Sales & Marketing Director,  
ESAB Group UK & Ireland  
London, 2022-06-10



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# 1 SAFETY

## 1.1 Meaning of symbols

As used throughout this manual: Means Attention! Be Alert!

**DANGER!**

Means immediate hazards which, if not avoided, will result in immediate, serious personal injury or loss of life.

**WARNING!**

Means potential hazards which could result in personal injury or loss of life.

**CAUTION!**

Means hazards which could result in minor personal injury.

**WARNING!**

Before use, read and understand the instruction manual and follow all labels, employer's safety practices and Safety Data Sheets (SDSs).



## 1.2 Safety precautions

Users of ESAB 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 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 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 equipment must be familiar with:
  - its operation
  - location of emergency stops
  - its function
  - relevant safety precautions
  - welding and cutting or other applicable operation of the equipment
2. The operator must ensure that:
  - no unauthorised person is stationed within the working area of the equipment when it is started up
  - no-one is unprotected when the arc is struck or work is started with the equipment
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

### If equipped with ESAB cooler

Use ESAB approved coolant only. Non-approved coolant might damage the equipment and jeopardize product safety. In case of such damage, all warranty undertakings from ESAB cease to apply.

For ordering information, see the "ACCESSORIES" chapter in the instruction manual.



#### **WARNING!**

Arc welding and cutting can be injurious to yourself and others. Take precautions when welding and cutting.



#### **ELECTRIC SHOCK - Can kill**

- Install and ground the unit in accordance with instruction manual.
- Do not touch live electrical parts or electrodes with bare skin, wet gloves or wet clothing.
- Insulate yourself from work and ground.
- Ensure your working position is safe



#### **ELECTRIC AND MAGNETIC FIELDS - Can be dangerous to health**

- Welders having pacemakers should consult their physician before welding. EMF may interfere with some pacemakers.
- Exposure to EMF may have other health effects which are unknown.
- Welders should use the following procedures to minimize exposure to EMF:
  - Route the electrode and work cables together on the same side of your body. Secure them with tape when possible. Do not place your body between the torch and work cables. Never coil the torch or work cable around your body. Keep welding power source and cables as far away from your body as possible.
  - Connect the work cable to the workpiece as close as possible to the area being welded.



#### **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.



**NOISE - Excessive noise can damage hearing**

Protect your ears. Use earmuffs or other hearing protection.



**MOVING PARTS - Can cause injuries**



- Keep all doors, panels and covers closed and securely in place. Have only qualified people remove covers for maintenance and troubleshooting as necessary. Reinstall panels or covers and close doors when service is finished and before starting engine.
- Stop engine before installing or connecting unit.
- Keep hands, hair, loose clothing and tools away from moving parts.



**FIRE HAZARD**

- Sparks (spatter) can cause fire. Make sure that there are no inflammable materials nearby.
- Do not use on closed containers.



**HOT SURFACE - Parts can burn**

- Do not touch parts bare handed.
- Allow cooling period before working on equipment.
- To handle hot parts, use proper tools and/or insulated welding gloves to prevent burns.

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

**PROTECT YOURSELF AND OTHERS!**



**CAUTION!**

This product is solely intended for arc welding.



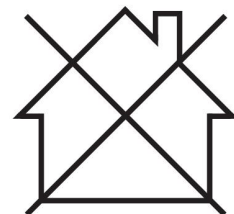
**WARNING!**

Do not use the power source for thawing frozen pipes.



**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.





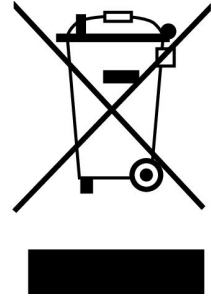
**NOTE!**

**Dispose of electronic equipment at the recycling facility!**

In observance of European Directive 2012/19/EC on Waste Electrical and Electronic Equipment and its implementation in accordance with national law, electrical and/or electronic equipment that has reached the end of its life must be disposed of at a recycling facility.

As the person responsible for the equipment, it is your responsibility to obtain information on approved collection stations.

For further information contact the nearest ESAB dealer.



**ESAB has an assortment of welding accessories and personal protection equipment for purchase. For ordering information contact your local ESAB dealer or visit us on our website.**



## 2 INTRODUCTION

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### 2.1 Overview

The **Warrior 750i CC/CV** is a welding power source intended for arc air gouging, GMAW welding, as well as for welding with powder filled cored wire (FCAW-S), for TIG welding and welding with coated electrodes (MMA).

The power sources are intended for use with the following wire feed units:

- Robust Feed PRO
- Warrior Feed 304
- Warrior Feed 304w

**ESAB accessories for the product can be found in the "ACCESSORIES" chapter of this manual.**

### 2.2 Equipment

The power source is supplied with:

- Quick start guide
- Safety instruction
- 5m return cable with earth clamp
- Instruction manual
- 5m mains cable with 63A plug (5P)



**NOTE!**

63A plug is intended to use for supply voltage  $\geq 400\text{VAC}$ .

### 3 TECHNICAL DATA

<b>Warrior 750i CC/CV</b>					
<b>Working voltage</b>	380 – 460 V, $\pm 10\%$ , 3~50/60 Hz				
<b>Mains supply <math>S_{scmin}</math></b>	5.4 MVA				
<b>Mains supply <math>Z_{max}</math></b>	0.0319 ohm				
<b>Primary current</b>	380 V	400 V	415 V	440 V	460 V
$I_{max}$ . GMAW - MIG	67 A	63 A	61 A	57 A	54 A
$I_{max}$ . TIG	51 A	49 A	47 A	44 A	42 A
$I_{max}$ . MMA	67 A	63 A	61 A	57 A	54 A
$I_{max}$ . Gouging	67 A	63 A	61 A	57 A	54 A
<b>No load power</b> in energy-saving mode 6.5 min. after welding	25 W				
<b>Setting range for all modes</b>					
GMAW - MIG flat characteristic	16 A / 15 V – 820 A / 44 V				
TIG drooping characteristic	10 A / 10 V – 820 A / 34 V				
MMA drooping characteristic	15 A / 15 V – 820 A / 44 V				
Gouging	100 A / 18 V – 850 A / 44 V				
<b>Permissible load at GMAW and MMA</b>					
60% duty cycle	820 A / 44 V				
100% duty cycle	750 A / 44 V				
<b>Permissible load at TIG</b>					
60% duty cycle	820 A / 34 V				
100% duty cycle	750 A / 34 V				
<b>Gouging</b>					
35% duty cycle	850 A / 44 V				
60% duty cycle	820 A / 44 V				
100% duty cycle	750 A / 44 V				
<b>Power factor at maximum current</b>	0.91				
<b>Efficiency at maximum current</b>	91%				
<b>Open-circuit voltage without VRD function (RMS/Peak)</b>	63/89 V DC				
<b>Open-circuit voltage with VRD function (RMS/Peak)</b>	25/33 V DC				
<b>Operating temperature</b>	14 to 104 °F (-10 to 40 °C)				
<b>Transport temperature</b>	-4 to 131 °F (-20 to 55 °C)				
<b>Constant sound pressure when idling</b>	<70 dB (A)				
<b>Dimensions l × w × h</b>	33.5×16.3×25.1 in. (850×415×637 mm)				
<b>Weight</b> (welding power source)	222.7 lb (101 kg)				

<b>Warrior 750i CC/CV</b>	
<b>Insulation class</b>	H
<b>Enclosure class</b>	IP23
<b>Application class</b>	<span style="border: 1px solid black; padding: 2px;">S</span>

**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 or cut at a certain load without overloading. The duty cycle is valid for 40 °C / 104 °F, or below.

**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 intended 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.

## 4 INSTALLATION

### 4.1 General

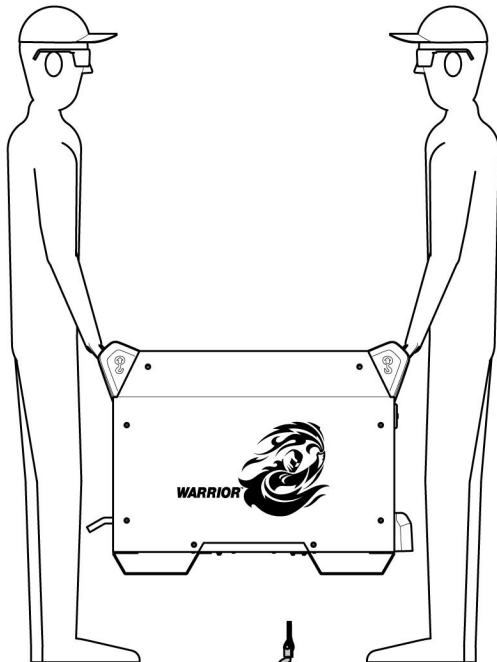
The installation must be carried out by a professional.



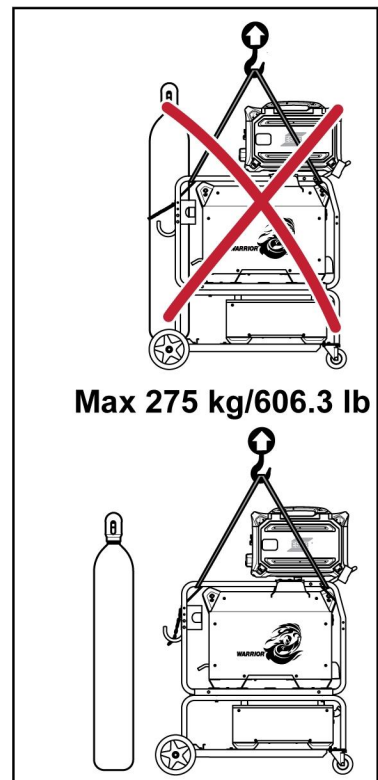
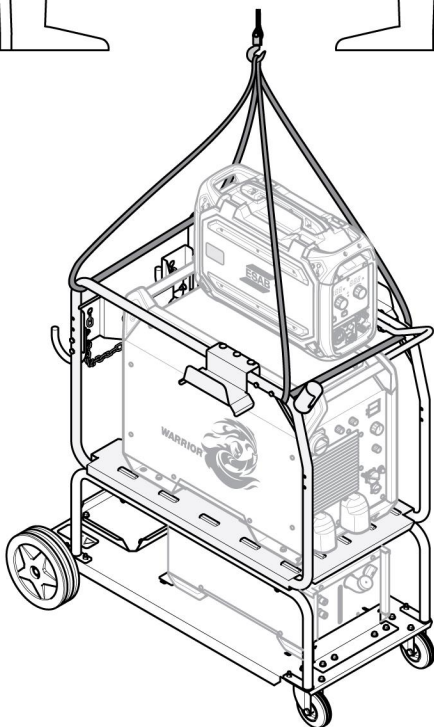
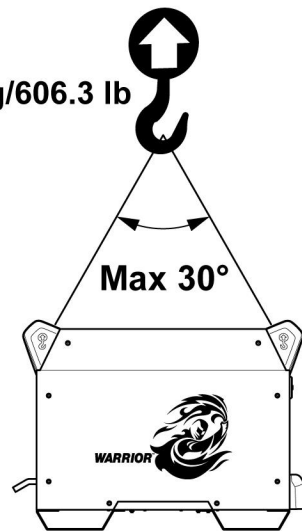
#### CAUTION!

This product is intended for industrial use. In a domestic environment this product may cause radio interference. It is the user's responsibility to take adequate precautions.

### 4.2 Lifting instructions

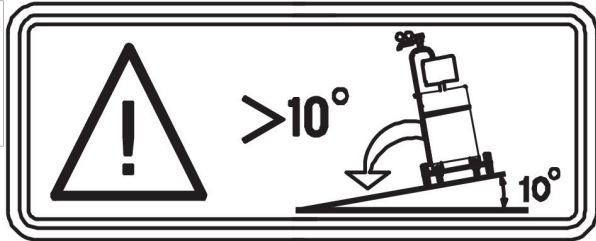


Max 275 kg/606.3 lb



**WARNING!**

Secure the equipment - particularly if the ground is uneven or sloping.



### 4.3 Location

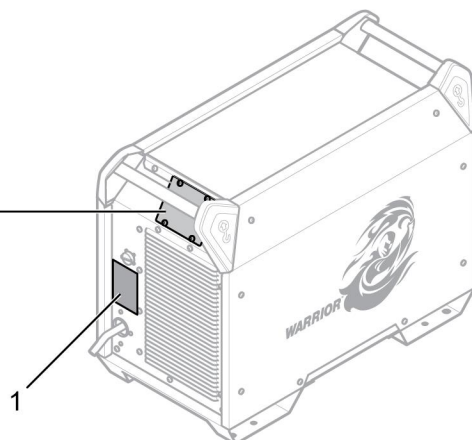
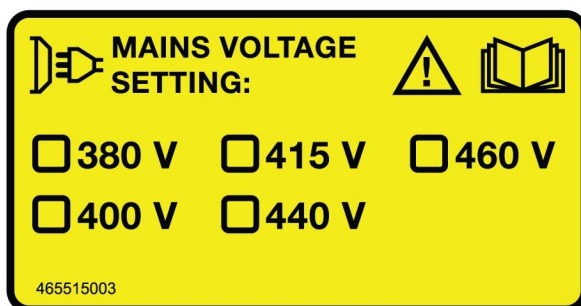
Position the welding power source such that its cooling air inlets and outlets are not obstructed.

### 4.4 Mains supply

**NOTE!****Mains supply requirements**

This equipment complies with IEC 61000-3-12 and IEC 60974-10 provided that the short-circuit power is greater than or equal to  $S_{scmin}$  at the interface point between the user's supply and the public system. 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 is connected only to a supply with a short-circuit power greater than or equal to  $S_{scmin}$ . Refer to the technical data in the TECHNICAL DATA chapter.

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.



1. Rating plate with supply connection data

#### 4.4.1 Recommended fuse sizes and minimum cable area Warrior 750i CC/CV

Warrior 750i CC/CV		
<b>Mains voltage</b>	380V 3~ 50/60 Hz	400V 3~ 50/60 Hz
<b>Mains cable area</b>	4x16 mm <sup>2</sup>	4x16 mm <sup>2</sup>
<b>Phase current I<sub>eff</sub></b>	65 A	62 A
<b>Fuse</b> anti-surge type C MCB	80 A	63 A

Warrior 750i CC/CV		
<b>Mains voltage</b>	415V 3~ 50/60 Hz	440V 3~ 50/60 Hz
<b>Mains cable area</b>	4x16 mm <sup>2</sup>	4x12 mm <sup>2</sup>
<b>Phase current I<sub>eff</sub></b>	60 A	56 A
<b>Fuse</b> anti-surge type C MCB	63 A	63 A

Warrior 750i CC/CV		
<b>Mains voltage</b>	460V 3~ 50/60 Hz	
<b>Mains cable area</b>	4x12 mm <sup>2</sup>	
<b>Phase current I<sub>eff</sub></b>	54 A	
<b>Fuse</b> anti-surge type C MCB	63 A	



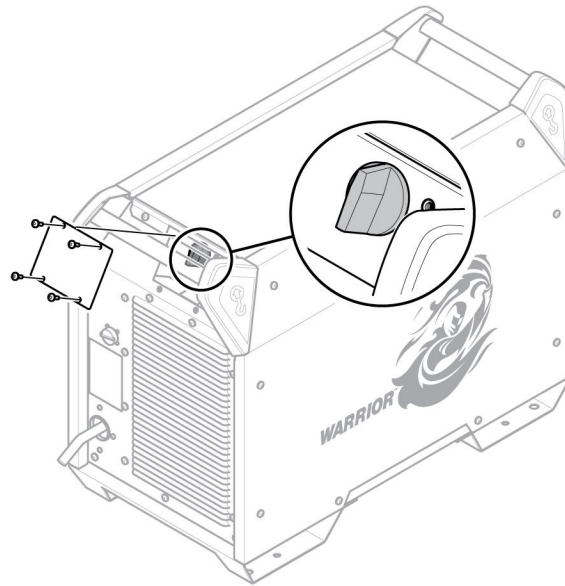
#### NOTE!

The mains cable areas and fuse sizes as shown above are in accordance with Swedish regulations. Use the power source in accordance with the relevant national regulations.

#### 4.4.2 Supply from power generators

The power source can be supplied from different types of generators. However, some generators may not provide sufficient power for the welding power source to operate correctly. Generators with Automatic Voltage Regulation (AVR) or with equivalent or better type of regulation, with rated power  $\geq 75$  kW, are recommended.

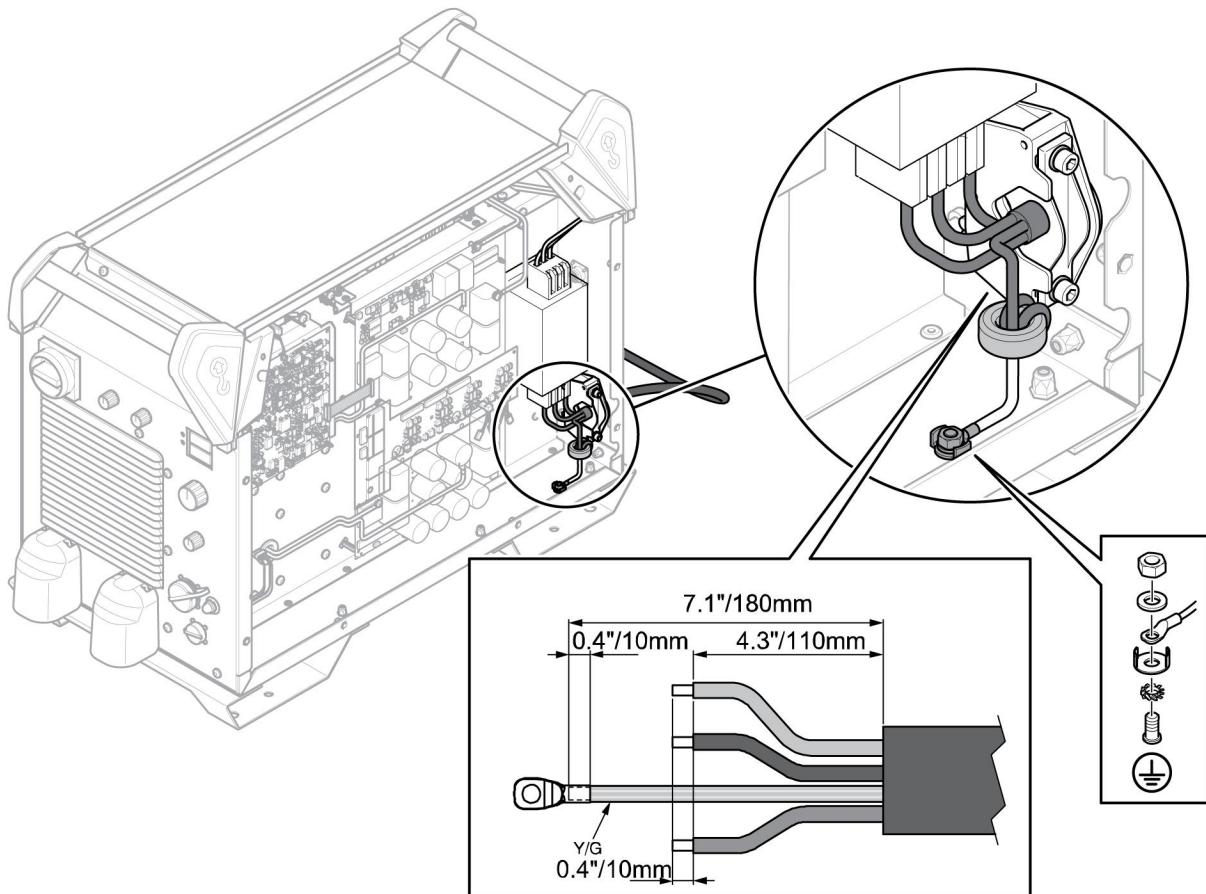
### 4.4.3 Connection instruction



The power source Warrior 750i CC/CV (0445 555 880) for CE variant and (0445 555 882) for Australian variant is connected to 415 V from the factory.

If a different voltage is required, switch off the mains, then remove the cover plate and the selector switch can be positioned for the required voltage.

### 4.4.4 Installation of mains cable



#### 4 INSTALLATION

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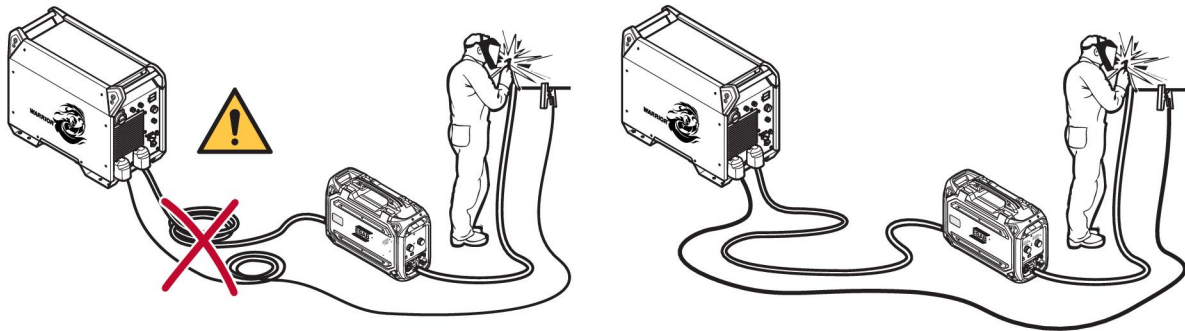
The welding power source is supplied with the mains cable. If it is replaced, it is important that the earth connection to the bottom plate is made in the correct way. See the picture above for the order in which the washers, nuts and screws are placed.



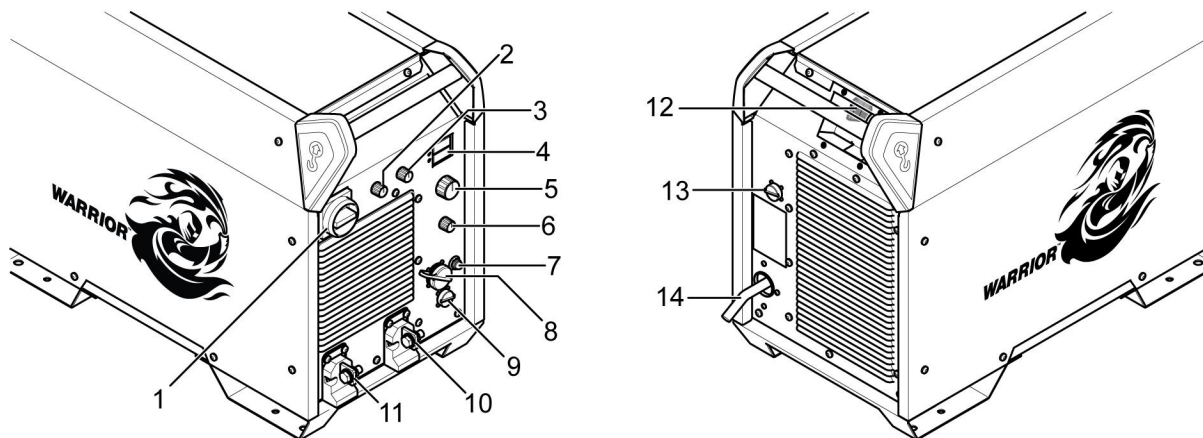
## 5 OPERATION

### 5.1 Overview

General safety regulations for handling the equipment can be found in the chapter "Safety". Read it through before you start the equipment.



### 5.2 Connections and control devices



- |  |  |
|--|--|
| 1. Mains power supply switch, O/I                                  | 8. Connection for wire feed unit   |
| 2. Knob for selecting electrode type                               | 9. Connection for remote control unit  |
| 3. Knob for inductance (MIG/MAG) and arc force (MMA)               | 10. Lug connection (-): MIG/MAG: Return cable TiG: Welding torch MMA: Welding cable or return cable Gouging: Return cable  |
| 4. Display, current (A) and voltage (V)                            | 11. Lug connection (+): MIG/MAG: Welding cable TiG: return cable MMA: Welding cable or return cable Gouging: Welding torch |
| 5. Knob for setting: MMA/TiG: current (A) and Gouging: voltage (V) | 12. Voltage selector switch  |
| 6. Process selection knob (MMA, GMAW, TiG, Mobile feed, Gouging)   | 13. Connection for cooler power supply   |
| 7. Circuit breaker, 10 A, 42 V                                     | 14. Connection for mains power supply  |



#### NOTE!

Welding terminals, positive (+) and negative (-), are lug type connectors and adapter cables are required to connect lug to OKC for 70 mm<sup>2</sup> and 95 mm<sup>2</sup> cables.

### 5.3 Connection of welding and return cables

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 welding method or type of electrode used.

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.

For MMA welding, the welding cable can be connected to the positive terminal (+) or negative terminal (-) depending on the type of electrode used. The connecting polarity is stated on the electrode packaging.

#### Recommended maximum current values for connection cables set

At an ambient temperature of +25 °C and normal 10 minutes cycle:

Cable area	Duty cycle			Voltage loss / 10 m
	100%	60%	35%	
50 mm <sup>2</sup>	280 A	310 A	370 A	0.35 V / 100 A
70 mm <sup>2</sup>	350 A	400 A	480 A	0.25 V / 100 A
95 mm <sup>2</sup>	430 A	500 A	600 A	0.19 V / 100 A
120 mm <sup>2</sup>	500 A	580 A	720 A	0.15 V / 100 A
2×70 mm <sup>2</sup>	700 A	800 A	960 A	0.25 V / 100 A

At an ambient temperature of +40 °C and normal 10 minutes cycle:

Cable area	Duty cycle			Voltage loss / 10 m
	100%	60%	35%	
50 mm <sup>2</sup>	250 A	270 A	320 A	0.37 V / 100 A
70 mm <sup>2</sup>	310 A	350 A	420 A	0.27 V / 100 A
95 mm <sup>2</sup>	370 A	430 A	520 A	0.20 V / 100 A
120 mm <sup>2</sup>	430 A	510 A	620 A	0.16 V / 100 A
2×95 mm <sup>2</sup>	740 A	860 A	1040 A	0.20 V / 100 A

Please use additional cables in parallel, if the current carrying capacity of the cable, presented in the table, is exceeded.

#### Duty cycle

The duty cycle refers to the time as a percentage of a ten-minute period that you can weld or cut at a certain load without overloading.

### 5.4 Turning the mains power on/off

Turn on the mains power by turning switch to the "I" position, see 1 on the picture above.

Turn the unit off by turning the switch to the "O" position.

Whether the mains power supply is interrupted or the power source is switched off in the normal manner, welding data will be stored so that it is available next time the unit is started.













#### CAUTION!

Do not turn off the power source during welding (with load).

## 5.5 Fan control

The power source has a time control that means that the fans continue to run for 6.5 minutes after welding has stopped, and the power source switches to energy-saving mode. The fans start again when welding restarts.

## 5.6 Symbols and functions

	Placement of lifting eye	VRD	Voltage Reducing Device
	Overheating protection	Basic	Basic electrode
Rutile	Rutile electrode	Cel	Cellulosic electrode
	Arc force		Inductance
	TIG welding (Live TIG)		Arc air gouging
	MMA welding		MIG/MAG welding
	Wire feed unit Mobile feed CV (Constant voltage)		Protective earth

### 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 an overheating indication lamp is lit.

The overheating protection resets automatically when the temperature has fallen, within normal working temperature.

### 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.

*It only applies to MMA welding.*

### Inductance

Higher inductance results in a wider weld pool and less spatter. Lower inductance produces a harsher sound but a stable, concentrated arc.

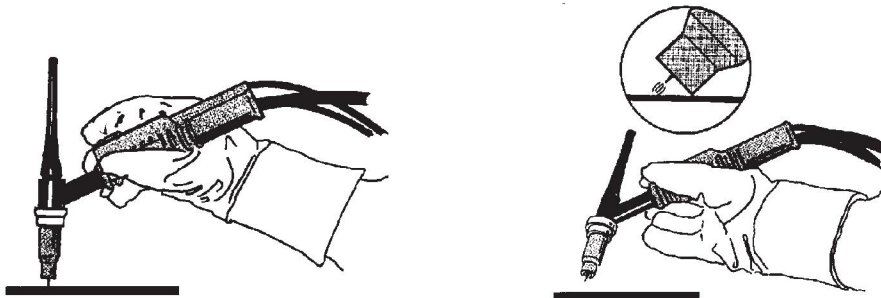
*It only applies to GMAW welding.*

### TIG welding

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

"Live TIG-start"

At a "Live TIG-start" the tungsten electrode is placed against the workpiece. When the electrode is lifted away from workpiece, the arc is struck at a limited current level.



For TIG welding, the welding power source shall be supplemented with:

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

### 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.

For MMA welding the power source shall be supplemented with:

- welding cable with electrode holder
- return cable with clamp

### GMAW and self shielded cored wire welding

An arc melts a continuously supplied wire. The weld pool is protected by shielding gas.

For GMAW and self shielded core wire welding, the power source shall be supplemented with:

- wire feed unit
- welding torch
- connection cable between power source and wire feed unit
- gas cylinder
- return cable with clamp

## 6 SHIELDING GAS RECOMMENDATION

Welding	Shielding Gas	Material	Recommended Flow Rate (l/min)
MAG	Mix Ar/CO <sub>2</sub>	Carbon steel	Wire Ø × 10
MAG	Mix Ar/CO <sub>2</sub>	Stainless steel	Wire Ø × 10
MIG	100% Ar	Aluminium	Wire Ø × 12
FCAW	Mix Ar/CO <sub>2</sub>	Carbon steel	Wire Ø × 12
FCAW	100% CO <sub>2</sub>	Carbon steel	Wire Ø × 12
FCAW	Mix Ar/CO <sub>2</sub>	Stainless steel	Wire Ø × 12
FCAW	100% CO <sub>2</sub>	Stainless steel	Wire Ø × 12
TIG DC	100% Ar	Carbon steel	Cup size or nozzle number × 1.2
TIG DC	100% Ar	Stainless steel	Cup size or nozzle number × 1.2
TIG DC	100% Ar	Stainless steel	Cup size or nozzle number × 1.2
TIG AC	100% Ar	Aluminium	Cup size or nozzle number × 1.2

A general rule to be followed for shielding gas flow rate is 10 to 12 times of wire size. It may increase for different welding applications where higher stick out and parameters are used. When using Helium mixtures, the flow rate must be 1.5 to 3 times more than with argon.

## 7 PROCEDURE FOR CAG PROCESS

### Arc air gouging

With arc air gouging, a special electrode comprising a carbon rod with a copper casing is used.

An arc is formed between the carbon rod and the workpiece, which melts the material. Compressed air is supplied so that the melted material is blown away.

For arc air gouging the power source shall be supplemented with:

- ARCAIR torches
  - compressed air
  - return cable with clamp
1. Measure the thickness of the metal you are about to gouge and select the electrode size appropriately. See table *"Recommended voltage setting and groove depth for ARCAIR Gouging Electrodes"*, page 22.
  2. Fix the gouging rod in the gouging torch so the projection of the rod can be around 150mm
  3. Set the pressure of the compressed air between 80psi – 100psi
  4. Before gouging, ensure the compressed air is pointing to the work area for proper blowing
  5. Set the voltage on the power source by referring the gouging table on the manual or the power source
  6. Initiate the arc by scratching the metal with gouging rod
  7. Maintain gouging rod in an angle of 30–40 degree for most of the gouging application. Steeper angle or lower travel speed may require when going for a deep cut
  8. Maintain a constant travel speed for better performance
  9. After finishing gouging, the groove has to be cleaned or grinding to be done for a smooth surface



#### NOTE!

To ensure the correct setting for the process, melt the copper coating on the gouging rod at the same level as the carbon rod.

*Recommended voltage setting and groove depth for ARCAIR Gouging Electrodes*

Electrode size	Groove depth (Min to Max)	Set voltage
3.2 mm (1/8")	2-3.5 mm	18.5-24 V
4 mm (5/32")	3.2-4 mm	25-32 V
4.8 mm (3/16")	3.2-6.4 mm	32-37 V
6.4 mm (1/4")	3.2-8 mm	33-38 V
7.9 mm (5/16")	4-9.5 mm	35-41.5 V
9.5 mm (3/8")	4.8-12.7 mm	35-41.5 V
13 mm (1/2")	6.4-19 mm	38-45.5 V

**NOTE!**

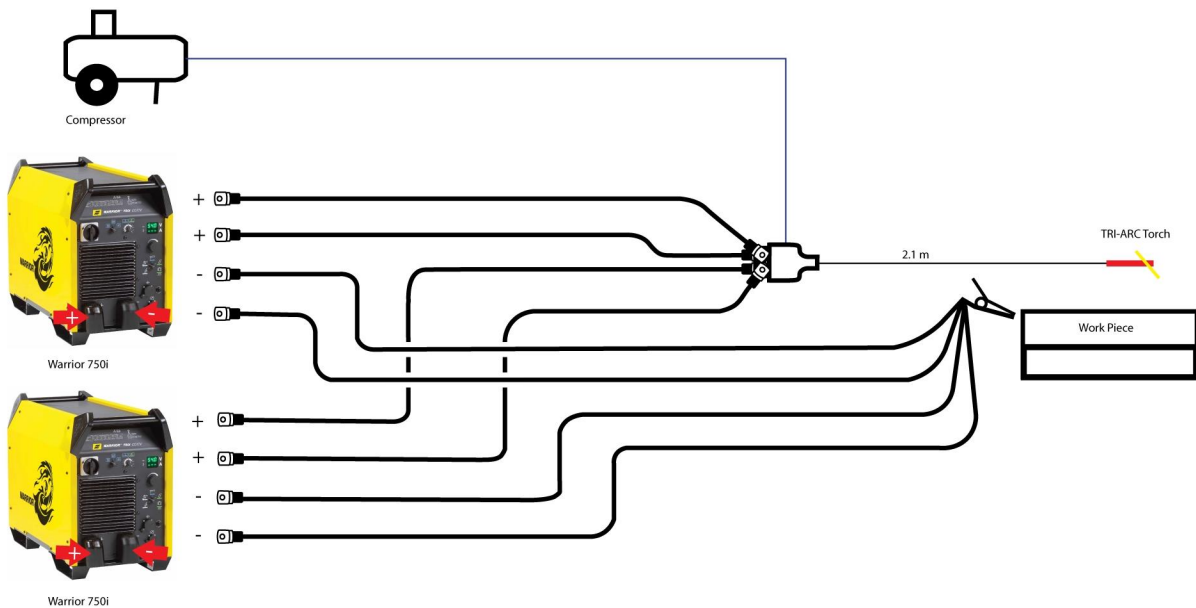
Field results may vary due to type of metal, compressed air supply, travel speed and operator's experience.

The minimum and maximum settings are starting points for the rods indicated, with relatively clean metal, an acceptable gouge groove should be expected. These specific recommendations are based on the result of test carried out on A36/ASME mild steel.

For different types of metal, adjust the voltage setting and air flow for better performance.

For any gouging issues other than performance, see the TROUBLESHOOTING section.

## 7.1 Parallel operation of CAG process



1. Connect  $2 \times 70 \text{ mm}^2$  cable for each terminal if the ambient temperature is  $25 \text{ }^\circ\text{C}$ .
2. Connect  $2 \times 95 \text{ mm}^2$  cable for each terminal if the ambient temperature is  $40 \text{ }^\circ\text{C}$ .
3. Connect +ve terminal cable to the torch and -ve terminal cable to the work piece.
4. Connect compressed gas to the torch.
5. Set equal voltage on both power sources and start gouging.

## 8 MAINTENANCE

### 8.1 Overview

Regular maintenance is important for safe, reliable operation.

Only personnel with the appropriate electrical skills (authorized staff) may remove safety plates.



#### CAUTION!

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

### 8.2 Power source

To maintain the performance and increase the lifetime of the power source it is mandatory to clean the product regularly. How often depends on:

- the welding process
- the arc time
- the working environment
- the surrounding environment, that is grinding etc.

Tools needed for the cleaning procedure:

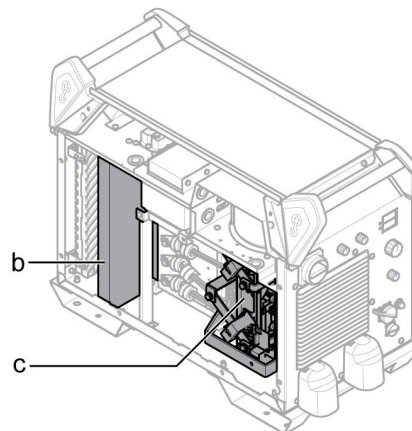
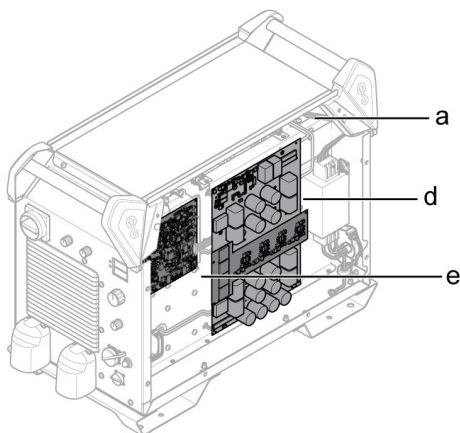
- torx screwdriver, T25 and T30
- dry compressed air at a pressure of 4 bar
- protective equipment like ear plugs, safety glasses, masks, gloves and safety shoes



#### CAUTION!

Make sure that the cleaning procedure is done in a suitable prepared workspace.

#### Cleaning procedure



1. Disconnect the mains supply.
2. Wait for 4 minutes to discharge the capacitors.
3. Remove the side panels on the power source.
4. Remove the top panel on the power source.
5. Remove the plastic cover between the heat sink and fan (b).



6. Clean the power source with dry compressed air (4 bar) as follows:
  - a) The upper rear part.
  - b) From the rear panel through the secondary heat sink.
  - c) The inductor, transformer and current sensor.
  - d) The power components side, from the rear side behind PCB 15AP1.
  - e) The PCBs at both sides.
7. Make sure that there is no dust left on any part.
8. Install the plastic cover between the heat sink and the fan (b) and make sure it is correctly fitted against the heat sink.
9. Install the top panel on the power source.
10. Install the side panels on the power source.
11. Connect the mains supply.

### **8.3 Welding torch**

A regular programme of care and maintenance reduces unnecessary and expensive downtime.

Each time a wire bobbin is changed, the welding torch should be removed from the power source and blown clean with compressed air.

The wire end must not have sharp edges when inserted into the wire liner.

For detailed information see instruction manuals for welding torches.

## 9 TROUBLESHOOTING

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

Type of fault	Corrective action
The display is not working.	<ul style="list-style-type: none"> <li>• Check that the supply is available and the main switch is turned ON.</li> <li>• Check the supply fuses/MCB (see the "Mains supply" section).</li> <li>• Press the resettable fuse near to voltage selector switch in the rear side of power source.</li> </ul>
Overheating on welding/return cable connections.	<ul style="list-style-type: none"> <li>• Check the electrical connections and ensure that the welding cables are tightened properly to the copper bars.</li> <li>• Check the size of the welding cable (see the "Connection of welding and return cables" section).</li> </ul>
No arc.	<ul style="list-style-type: none"> <li>• Check that the mains power supply switch is turned on.</li> <li>• Check that the mains, welding and return cables are correctly connected.</li> <li>• Check that the correct current value is set.</li> <li>• Check the mains power supply fuses.</li> </ul>
The welding current is interrupted during welding.	<ul style="list-style-type: none"> <li>• Check whether the overloading protection has deployed (indicated on the front).</li> <li>• Check the mains power supply fuses.</li> <li>• Check that the return cable is correctly fastened.</li> </ul>
The overheating protection trips frequently.	<ul style="list-style-type: none"> <li>• Make sure that you are not exceeding the rated data for the power source (i.e. that the unit is not being overloaded).</li> </ul>
Poor welding performance.	<ul style="list-style-type: none"> <li>• Check that the welding and return cables are correctly connected.</li> <li>• Check that the correct current value is set.</li> <li>• Check that the correct wire or electrode is used.</li> <li>• Check the mains power supply fuses.</li> <li>• Check the gas pressure in the equipment connected to the power source.</li> </ul>
"Err" on display in open circuit mode.	<ul style="list-style-type: none"> <li>• Check the mains power supply fuses.</li> <li>• Check that the voltage on the voltage selection label on the rear of the power source is equal to the nominal mains voltage.</li> <li>• Restart the power source with the main switch.</li> </ul>

<b>Type of fault</b>	<b>Corrective action</b>
Intermittent gouging stops or contact between carbon and metal lost.	<ul style="list-style-type: none"><li>• Air pressure too high. Reduce the air pressure.</li><li>• Check the air pressure whether it is set to recommended value. Check the manual of the torch used.</li></ul>
Carbon deposit on the gouge metal.	<ul style="list-style-type: none"><li>• Air pressure too low. Turn on air before striking the arc and air should flow between the electrode and the workpiece.</li><li>• Check the air pressure whether it is set to recommended value. Check the manual of the torch used.</li></ul>
No arc during start or erratic arc during gouging.	<ul style="list-style-type: none"><li>• Check whether the voltage is set to recommended value.</li></ul>
Intermittent arc action resulting in an irregular resulting in an irregular groove surface or copper deposition on the metal plate.	<ul style="list-style-type: none"><li>• Check whether the voltage is set to recommended value.</li></ul>

## 10 ORDERING SPARE PARTS

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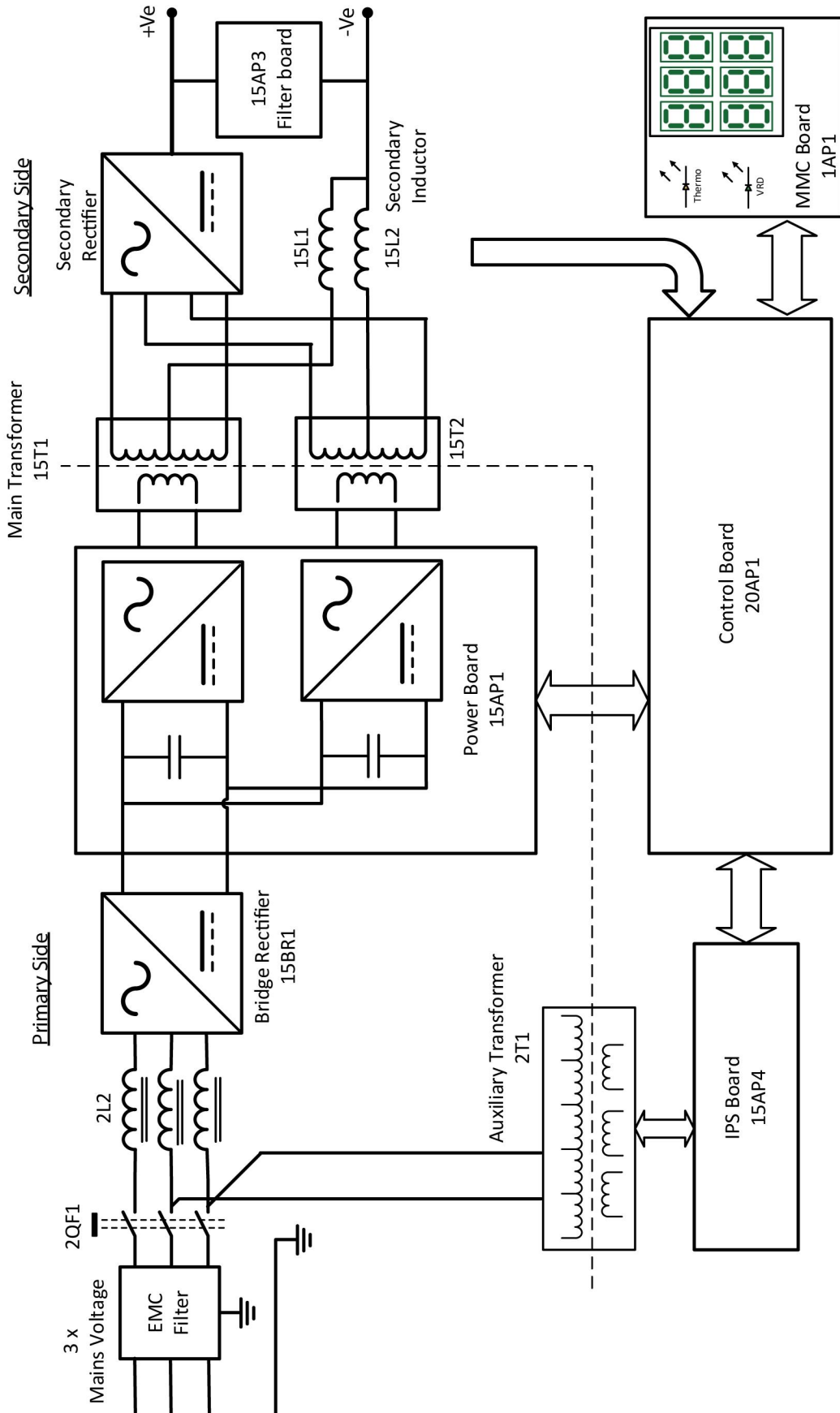
### CAUTION!

Repair and electrical work should be performed by an authorised ESAB service technician. Use only ESAB original spare and wear parts.

Warrior 750i CC/CV is designed and tested in accordance with the international standards **IEC 60974-1 and IEC 60974-10**, European standards **EN 60974-1:11** and Australian standard **AS 60974-1:2008**. On completion of service or repair work, it is the responsibility of the person(s) performing the work to ensure that the product still complies with the requirements of the above standards.

Spare parts and wear parts can be ordered through your nearest ESAB dealer, see [esab.com](http://esab.com). When ordering, please state product type, serial number, designation and spare part number in accordance with the spare parts list. This facilitates dispatch and ensures correct delivery.

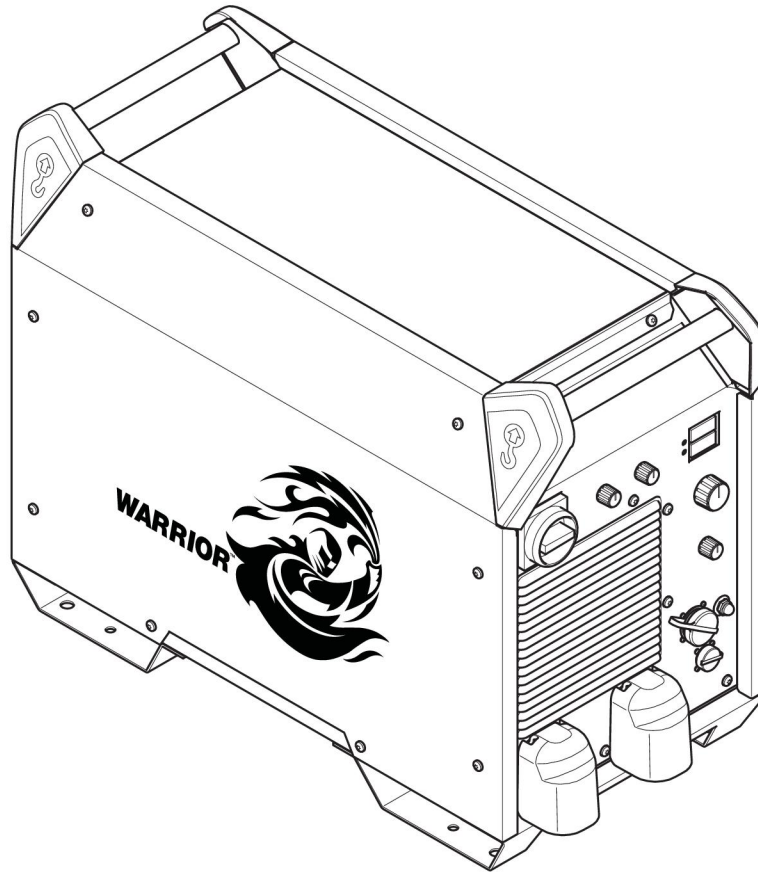
# BLOCK DIAGRAM



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## ORDERING NUMBERS

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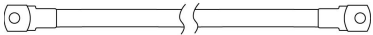
Ordering number	Denomination	Type	Notes
0445 555 880	Welding power source	Warrior 750i CC/CV - CE variant	Factory set voltage: 400 VAC
0445 555 882	Welding power source	Warrior 750i CC/CV - Australian variant	Factory set voltage: 415 VAC and VRD activated
0463 730 *	Instruction manual		
0463 734 002	Spare parts list		
0463 771 001	Service manual		


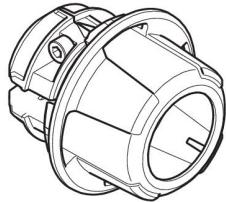
The three last digits in the document number of the manual show the version of the manual. Therefore they are replaced with \* here. Make sure to use a manual with a serial number or software version that corresponds with the product, see the front page of the manual.

Technical documentation is available on the Internet at: <http://manuals.esab.com>.

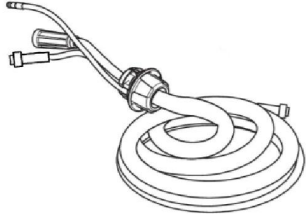
## ACCESSORIES

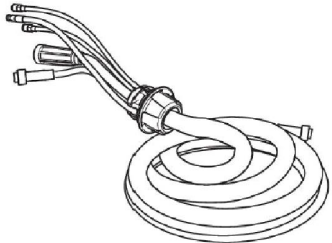
6106 5006	<b>K3000</b> <ul style="list-style-type: none"> <li>• Medium-duty general-purpose torch</li> <li>• Accepts 5/32" (4.0 mm) to 3/8" (9.5 mm) round electrodes and 3/8" (9.5 mm) flat electrodes</li> <li>• Maximum of 600 A</li> </ul>	
6108 2008	<b>K4000</b> <ul style="list-style-type: none"> <li>• Heavy-duty general-purpose torch</li> <li>• Accepts 5/32" (4.0 mm) to 1/2" (13 mm) round electrodes and 3/8" (9.5 mm) and 5/8" (16 mm) flat electrodes</li> <li>• Maximum of 1000 A</li> </ul>	
6108 4008	<b>AirPro X4000</b> <ul style="list-style-type: none"> <li>• Heavy-duty general-purpose torch</li> <li>• Accepts 3/16" (4.8 mm) to 1/2" (13 mm) pointed round, 3/8" (9.5 mm) and 5/8" (16 mm) flat, 5/8" (16 mm) half round</li> <li>• Maximum of 1000 A</li> </ul>	
6110 4007	<b>K5</b> <ul style="list-style-type: none"> <li>• Heavy-duty general-purpose torch</li> <li>• Accepts 5/16" (7.9 mm) to 1/2" (13 mm) pointed, 5/16" (7.9 mm) to 5/8" (16 mm) jointed, and 5/8" (16 mm) half round</li> <li>• Maximum of 1250 A</li> </ul>	
6299 1417	<b>Tri ARC</b> <ul style="list-style-type: none"> <li>• Heavy-duty general-purpose torch</li> <li>• Accepts 5/16" (7.9 mm) to 1" (25 mm) round electrodes</li> <li>• Maximum of 2200 A</li> </ul>	

<b>Welding cable for gouging, 95 mm<sup>2</sup></b>		
0413 768 897	5 m	
0413 768 898	10 m	
0413 768 899	15 m	
0413 768 880	18 m	
0413 768 881	21 m	
0413 768 882	24 m	
0413 768 883	27 m	
0413 768 884	30 m	

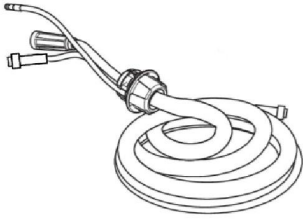
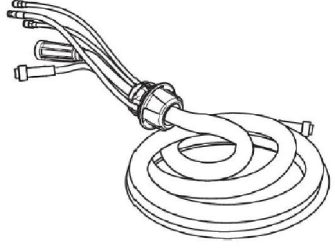
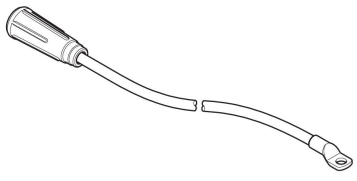
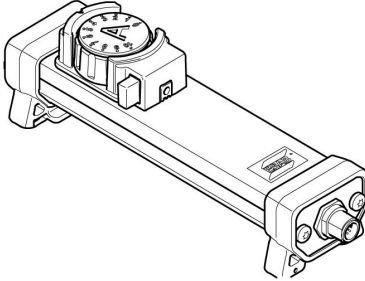

<b>Wire feeder-Robust feed Pro</b>		
0445 800 880	<b>Robust Feed PRO</b>	
0445 800 881	<b>Robust Feed PRO, Water</b>	
0445 800 882	<b>Robust Feed PRO, Offshore</b>	
0445 800 883	<b>Robust Feed PRO Offshore, Water</b>	
0445 800 884	<b>Robust Feed PRO, Tweco</b>	
0445 800 885	<b>Robust Feed PRO Offshore, Tweco</b>	
0446 050 880	<b>Interconnection strain relief kit</b> (for update of cables without strain relief)	

**Interconnection cable with pre-assembled strain relief (Use with Robust Feed Pro)**  
 Must order Lug to OKC adapter along with interconnection cable set.

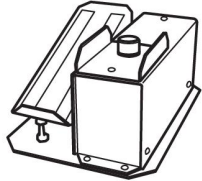
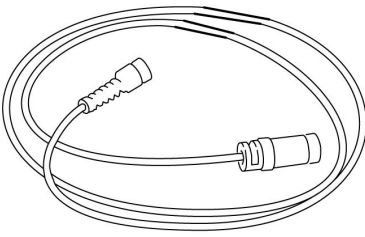
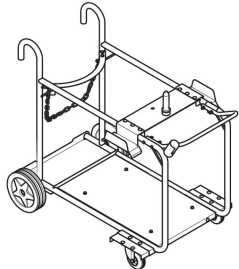
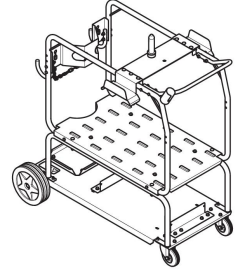
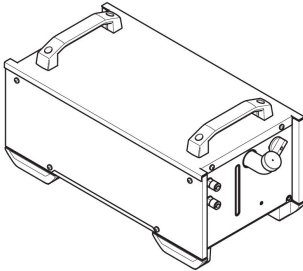
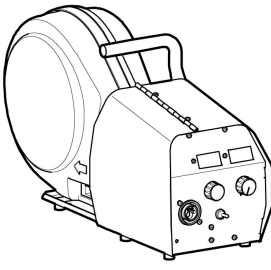
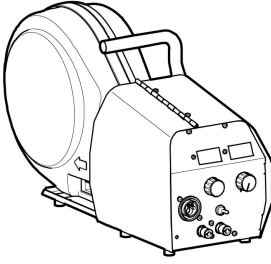
<b>Interconnection cable set, 70 mm<sup>2</sup>, 19 poles</b>		
0446 160 880	70 mm <sup>2</sup> , gas cooled, 2.0 m	
0446 160 881	70 mm <sup>2</sup> , gas cooled, 5.0 m	
0446 160 882	70 mm <sup>2</sup> , gas cooled, 10.0 m	
0446 160 883	70 mm <sup>2</sup> , gas cooled, 15.0 m	
0446 160 884	70 mm <sup>2</sup> , gas cooled, 25.0 m	
0446 160 885	70 mm <sup>2</sup> , gas cooled, 35.0 m	
0446 160 887	70 mm <sup>2</sup> , gas cooled, 20.0 m	

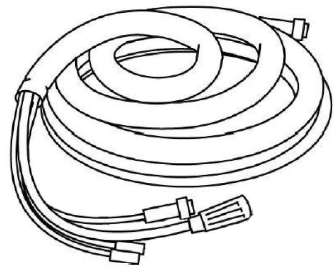
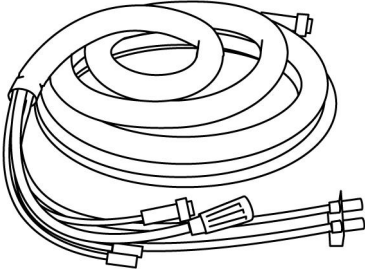
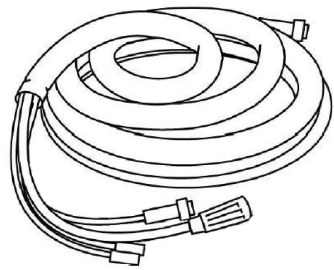
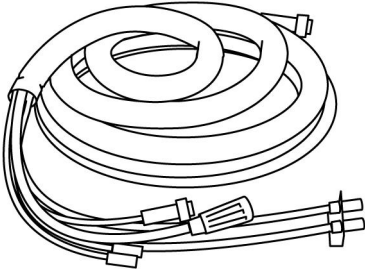

<b>Interconnection cable set water, 70 mm<sup>2</sup>, 19 poles</b>		
0446 160 890	70 mm <sup>2</sup> , liquid cooled, 2.0 m	
0446 160 891	70 mm <sup>2</sup> , liquid cooled, 5.0 m	
0446 160 892	70 mm <sup>2</sup> , liquid cooled, 10.0 m	
0446 160 893	70 mm <sup>2</sup> , liquid cooled, 15.0 m	
0446 160 894	70 mm <sup>2</sup> , liquid cooled, 25.0 m	
0446 160 895	70 mm <sup>2</sup> , liquid cooled, 35.0 m	



<b>Interconnection cable set, 95 mm<sup>2</sup>, 19 poles</b>		
0446 160 980	95 mm <sup>2</sup> , gas cooled, 2.0 m	
0446 160 981	95 mm <sup>2</sup> , gas cooled, 5.0 m	
0446 160 982	95 mm <sup>2</sup> , gas cooled, 10.0 m	
0446 160 983	95 mm <sup>2</sup> , gas cooled, 15.0 m	
0446 160 984	95 mm <sup>2</sup> , gas cooled, 25.0 m	
0446 160 985	95 mm <sup>2</sup> , gas cooled, 35.0 m	
<b>Interconnection cable set, 95 mm<sup>2</sup>, 19 poles</b>		
0446 160 990	95 mm <sup>2</sup> , liquid cooled, 2.0 m	
0446 160 991	95 mm <sup>2</sup> , liquid cooled, 5.0 m	
0446 160 992	95 mm <sup>2</sup> , liquid cooled, 10.0 m	
0446 160 993	95 mm <sup>2</sup> , liquid cooled, 15.0 m	
0446 160 994	95 mm <sup>2</sup> , liquid cooled, 25.0 m	
0446 160 995	95 mm <sup>2</sup> , liquid cooled, 35.0 m	
0446 507 880	<b>Lug to OKC adapter</b>	
0459 491 896	<b>Remote control unit AT1</b> MMA and TIG current	
0459 491 897	<b>Remote control unit AT1 CF</b> MMA and TIG: course and fine setting of current	

ACCESSORIES

0349 090 886	<b>Foot control FS002</b> MMA and TIG: current	
<b>Remote control cable, 12 pole, 8 pole</b>		
0459 552 880	5 m	
0459 552 881	10 m	
0459 552 882	15 m	
0459 552 883	25 m	
0446 398 880	<b>Trolley (Air cooled)</b>	
0446 270 880	<b>Trolley (Water cooled)</b>	
0465 427 881	<b>Cool2 Standalone</b>	
0465 250 880	<b>Warrior Feed 304</b>	
0465 250 881	<b>Warrior Feed 304w</b> with water cooling	

<b>Interconnection set for Warrior Feed 304</b>		
Must order Lug to OKC adapter along with interconnection cable set.		
<b>Interconnection cable set, 70 mm<sup>2</sup>, 19 poles</b>		
0459 836 880	2 m	
0459 836 881	5 m	
0459 836 882	10 m	
0459 836 883	15 m	
0459 836 884	25 m	
0459 836 885	35 m	
<b>Interconnection cable set water, 70 mm<sup>2</sup>, 19 poles</b>		
0459 836 890	2 m	
0459 836 891	5 m	
0459 836 892	10 m	
0459 836 893	15 m	
0459 836 894	25 m	
0459 836 895	35 m	
<b>Interconnection cable set, 95 mm<sup>2</sup>, 19 poles</b>		
0459 836 980	2 m	
0459 836 981	5 m	
0459 836 982	10 m	
0459 836 983	15 m	
0459 836 984	25 m	
0459 836 985	35 m	
<b>Interconnection cable set water, 95 mm<sup>2</sup>, 19 poles</b>		
0459 836 990	2 m	
0459 836 991	5 m	
0459 836 992	10 m	
0459 836 993	15 m	
0459 836 994	25 m	
0459 836 995	35 m	
<b>TIG torches</b>		
0700 025 530	TIG Torch SR-B 26V HD, 4 m	
0700 025 531	TIG Torch SR-B 26V HD, 8 m	



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