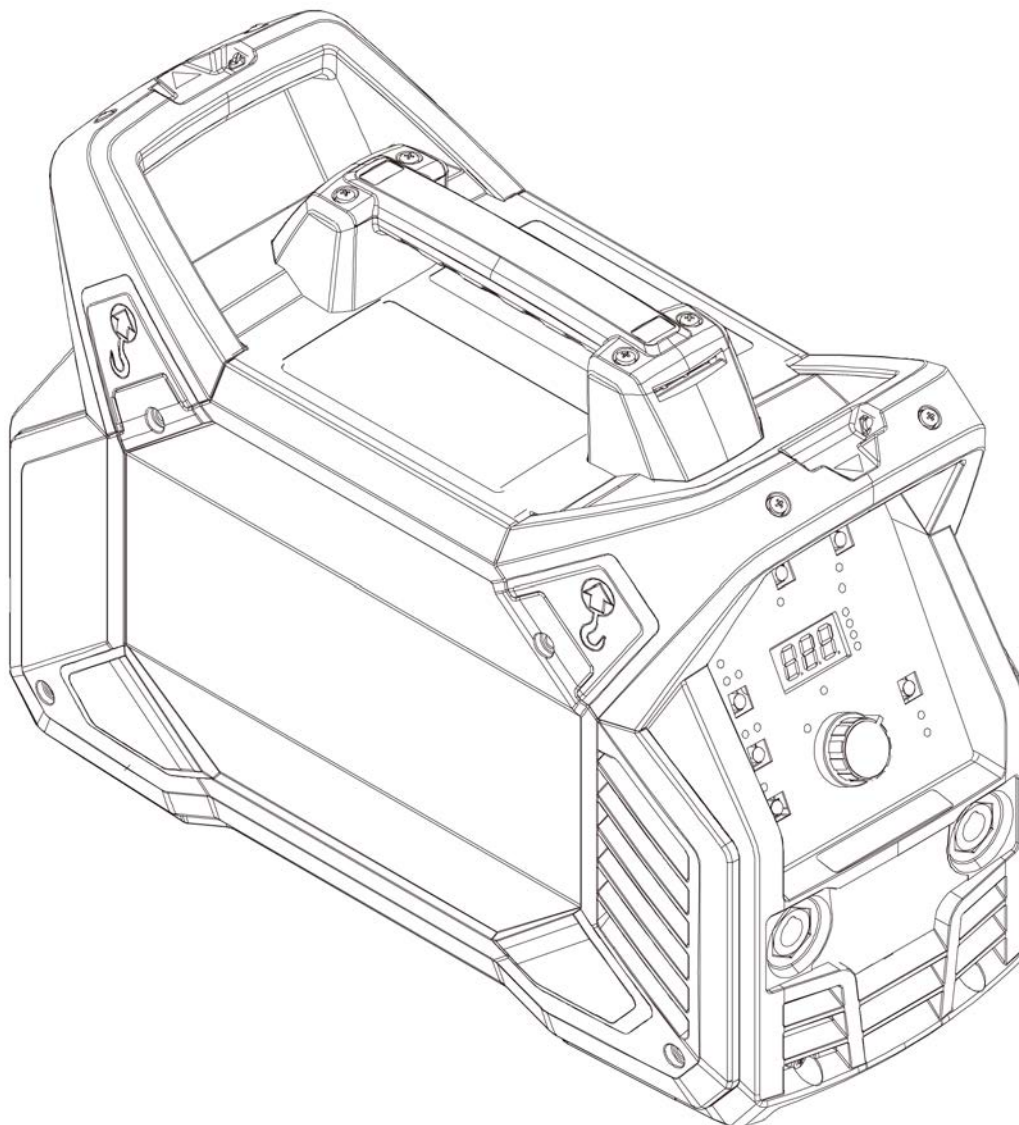


Renegade  
***ES 210i***



**Instruction manual**



## EU DECLARATION OF CONFORMITY

**According to:**

The Low Voltage Directive 2014/35/EU;      The EMC Directive 2014/30/EU;  
The RoHS Directive 2011/65/EU;              The Ecodesign Directive 2009/125/EC

**Type of equipment**

Arc welding power source

**Type designation**

ES 210i    from serial number HA 203 YY XX XXXX  
X and Y represents digits, 0 to 9 in the serial number, where YY indicates year of production.

**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
EU reg. no. 2019/1784	Ecodesign requirements for welding equipment pursuant to Directive 2009/125/EC
EN 60974-10:2014	Arc Welding Equipment - Part 10: Electromagnetic compatibility (EMC) requirements

**Additional Information:**

Restrictive use, Class A equipment, intended for use in locations other than residential.  
The ES 210i are part of the ESAB Renegade product family.

**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**

Gothenburg  
2022-06-07

**Signature**

Pedro Muniz  
Standard 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

ES 210i from serial number HA 203 YY XX XXXX

X and Y represents digits, 0 to 9 in the serial number, where YY indicates year of production.

### 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.

ES 210i are part of ESAB Renegade product family.

**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.**

### Signatures

Gary Kisby  
Sales & Marketing Director,  
ESAB Group UK & Ireland  
London, 2022-06-07



TABLE OF CONTENTS

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<b>1</b>	<b>SAFETY</b> .....	<b>5</b>
1.1	Meaning of symbols .....	5
1.2	Safety precautions .....	5
<b>2</b>	<b>INTRODUCTION</b> .....	<b>8</b>
2.1	Equipment .....	8
<b>3</b>	<b>TECHNICAL DATA</b> .....	<b>9</b>
3.1	ECO design information .....	11
<b>4</b>	<b>INSTALLATION</b> .....	<b>12</b>
4.1	Location .....	12
4.2	Lifting instructions .....	13
4.3	Mains supply .....	13
<b>5</b>	<b>OPERATION</b> .....	<b>15</b>
5.1	Overview .....	15
5.2	Connections and control devices .....	15
5.3	TIG welding .....	16
5.4	MMA welding .....	16
5.5	Connecting welding and return cables .....	16
5.6	Turning the power on/off .....	16
5.7	Fan control .....	17
5.8	Thermal protection .....	17
5.9	Remote control .....	17
5.10	Functions and symbols .....	18
5.11	Setting panel .....	19
	5.11.1 Navigation .....	20
5.12	MMA settings .....	20
	5.12.1 Hidden MMA functions .....	21
	5.12.2 Measured values .....	21
5.13	MMA functions explanation .....	21
<b>6</b>	<b>MAINTENANCE</b> .....	<b>22</b>
6.1	Routine maintenance .....	22
6.2	Cleaning instruction .....	23
<b>7</b>	<b>TROUBLESHOOTING</b> .....	<b>26</b>
<b>8</b>	<b>ERROR CODES</b> .....	<b>27</b>
8.1	Error code descriptions .....	27
<b>9</b>	<b>ORDERING SPARE PARTS</b> .....	<b>28</b>
	From serial number HA203-xxxx-xxxx .....	29
	<b>ORDERING NUMBERS</b> .....	<b>30</b>
	<b>ACCESSORIES</b> .....	<b>31</b>

# 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

---

The Renegade **ES 210i** is an inverter-based power source intended for MMA (Manual Metal Arc) and TIG (Tungsten Inert Gas) welding.

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

### 2.1 Equipment

The power source is supplied with:

- Work clamp leadset
- Electrode holder leadset
- Shoulder strap
- Safety manual
- Quick setup guide



## 3 TECHNICAL DATA

<b>Renegade ES 210i</b>		
<b>Outlet voltage</b>	230 V $\pm$ 15%, 1~ 50/60 Hz	115 V $\pm$ 15%, 1~ 50/60 Hz
<b>Primary current</b>		
<b>I<sub>max</sub></b>	26 A	29 A
<b>No-load power demand when in energy-saving mode</b>	<50 W	<50 W
<b>Setting range</b>		
MMA	5-180 A	5-110 A
TIG	5-210 A	5-140 A
<b>Permissible load at MMA</b>		
25 % duty cycle	180 A / 27.2 V	110 A / 24.4
60 % duty cycle	116 A / 24.6 V	71 A / 22.8 V
100% duty cycle	90 A / 23.6 V	55 A / 22.2 V
<b>Permissible load at TIG</b>		
25 % duty cycle	210 A / 18.4 V	140 A / 15.6 V
60 % duty cycle	135 A / 15.4 V	90 A / 13.6 V
100% duty cycle	105 A / 14.2 V	70 A / 12.8 V
<b>Apparent power I<sub>2</sub> at maximum current</b>	6.1 kVA	3.33 kVA
<b>Active power I<sub>2</sub> at maximum current</b>	6 kW	3.3 kW
<b>Power factor at maximum current</b>		
MMA		0.99
TIG		0.99
<b>Efficiency at maximum current</b>		
MMA		>80%
TIG		>80%
<b>Open-circuit voltage U<sub>0</sub> max</b>		
VRD 35 V deactivated		78 V
VRD 35 V activated		<30 V
<b>Operating temperature</b>	-10 to +40°C (+14 to 104°F)	
<b>Transportation temperature</b>	-20 to +55°C (-4 to +161°F)	
<b>Constant sound pressure when idling</b>	<70 db	
<b>Dimensions l × w × h</b>	460 × 200 × 320 mm (18.1×7.9×12.6 in.)	
<b>Weight</b>	9.9 kg (21.8 lbs)	
<b>Insulation class</b>	F	
<b>Enclosure class</b>	IP 23	
<b>Application class</b>	<b>S</b>	

**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.

### 3.1 ECO design information

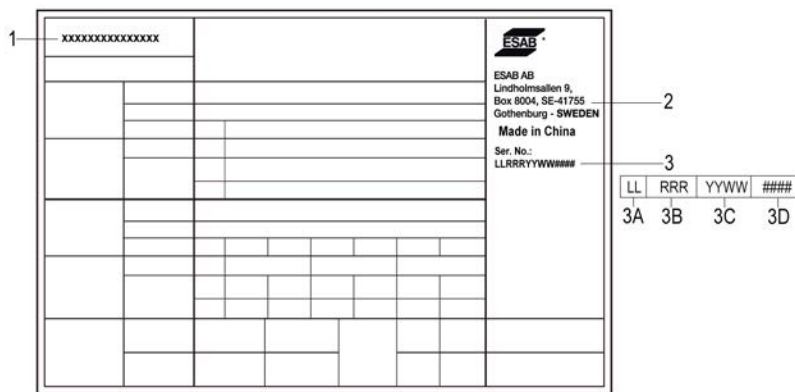
The equipment has been designed in order to be compliant with the Directive 2009/125/EC and the Regulation 2019/1784/EU.

Efficiency and idle power consumption:

Name	Idle power	Efficiency when max power consumption
Renegade ES 210i	<50 W	>80%

The value of efficiency and consumption in idle state have been measured by method and conditions defined in the product standard EN 60974-1:2012.

Manufacturer's name, product name, serial number and date of production can be read from rating plate.



- 1. Product name
- 2. Manufacturer's name and address
- 3. Serial number
  - 3A. Manufacturing location code
  - 3B. Revision level (last digit of year and week number)
  - 3C. Year & week produced (last two digits of year and week number)
  - 3D. Sequential number system (each week starts with 0001)

## 4 INSTALLATION

The installation must be carried out by a professional.

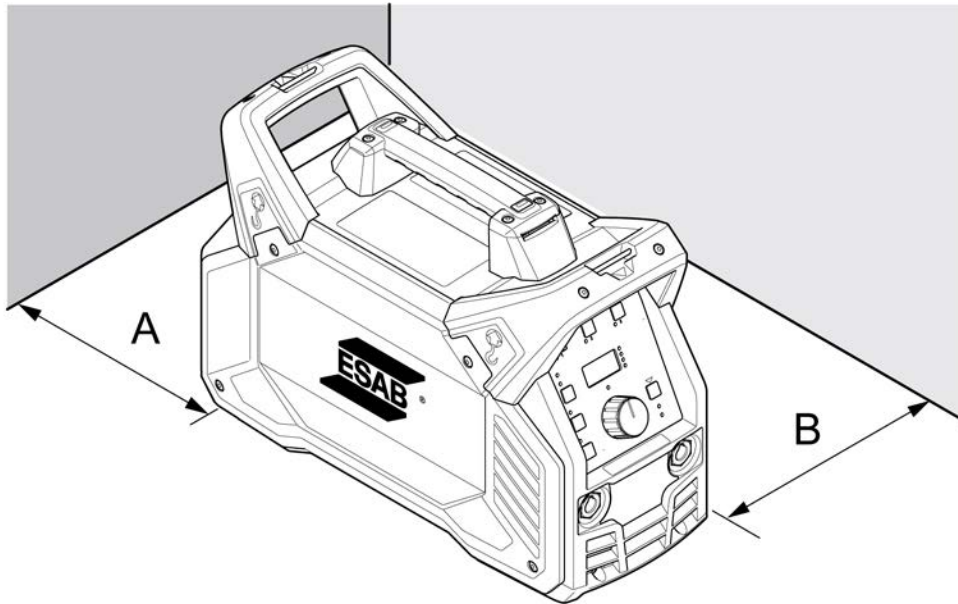


**CAUTION!**

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.

### 4.1 Location

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



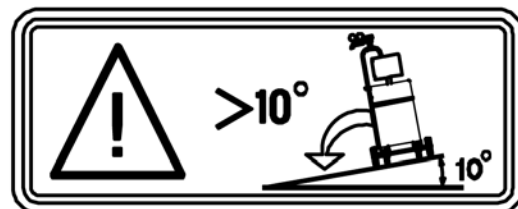
A. Minimum 200 mm (8 in.)

B. Minimum 200 mm (8 in.)



**WARNING!**

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



## 4.2 Lifting instructions

These units are equipped with a handle for carrying purposes.



### WARNING!

Electric shock can kill. Do not touch live electrical parts. Disconnect input power conductors from de-energized supply line before moving the welding power source.

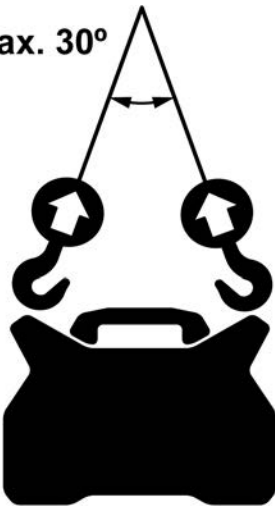


### WARNING!

Falling equipment can cause serious personal injury and equipment damage.

Lift the unit with handle on top of case.

Max. 30°



## 4.3 Mains supply

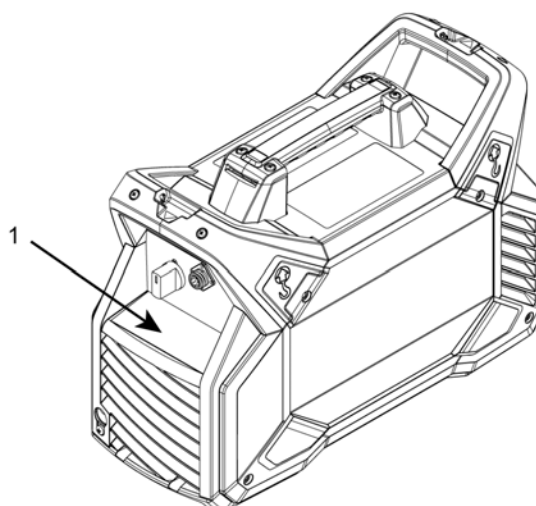


### NOTE!

#### Mains supply requirements

This equipment complies with IEC 61000-3-12 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  $S_{scmin}$ .

1. Rating plate with supply connection data.



Recommended fuse sizes and minimum cable area for the Renegade ES 210i		
	Renegade ES 210i	
<b>Supply voltage</b>	230 V AC	115 V AC
<b>Mains cable area</b>	2.5 mm <sup>2</sup>	2.5 mm <sup>2</sup>
<b>Maximal current rating <math>I_{max}</math></b> MMA/Stick (SMAW)	26 A	29 A
<b><math>I_{1eff}</math> MMA/Stick (SMAW)</b>	13 A	14.5 A
<b>Fuse anti-surge type D MCB</b>	20 A	20 A
<b>Maximum recommended extension cord length</b>	100 m (328 ft)	100 m (328 ft)
<b>Minimum recommended extension cord size</b>	2.5 mm <sup>2</sup>	2.5 mm <sup>2</sup>

#### 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 of 7 kW are recommended.



#### **WARNING!**

If used under 115 VAC input supply, the supply plug must be higher than 20 A.

## 5 OPERATION

### 5.1 Overview

General safety regulations for handling the equipment can be found in the "SAFETY" chapter of this manual. Read it through before you start using the equipment!

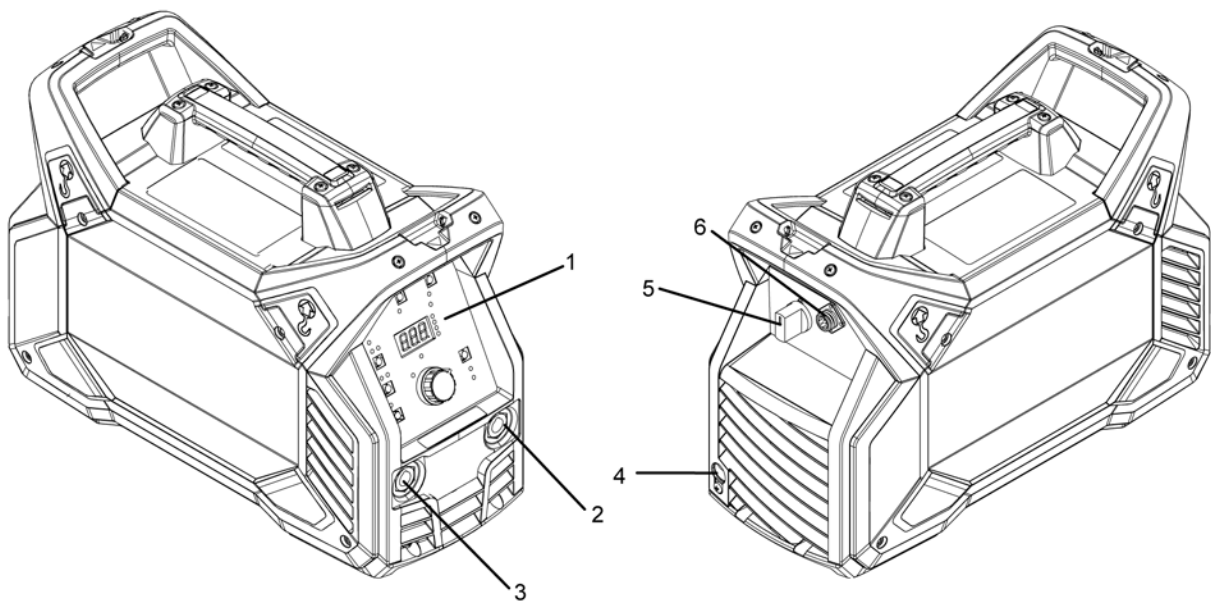
**NOTE!**

When moving the equipment use intended handle. Never pull the cables.

**WARNING!**

Electric shock! Do not touch the workpiece or the welding head during operation!

### 5.2 Connections and control devices



1. Setting panel
2. Positive welding terminal
3. Negative welding terminal

4. Power cable
5. Mains power supply switch, I/O
6. Remote socket

## 5.3 TIG welding



TIG welding melts the metal of the workpiece, using an arc initiated from a non-consuming tungsten electrode. The weld pool and electrode are protected by a shielding gas that usually consists of an inert gas.

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

- a TIG torch with gas valve
- a gas hose connected to the gas supply input (using a hose clamp)
- an argon gas cylinder
- an argon gas regulator
- a tungsten electrode
- a return cable (with clamp)

This power source performs **Live TIG start**.

The tungsten electrode is placed against the workpiece. When lifted away from workpiece the arc is struck at a limited current level.

## 5.4 MMA welding



MMA welding may also be referred to as welding with covered electrodes. The arc melts the electrode as well as a local part of the workpiece. The coverage, when melting, forms a protective slag and creates a shielding gas to protect the weld pool from atmospheric contamination.

For MMA welding the power source shall be supplemented with:

- welding cable with electrode holder
- return cable with clamp

## 5.5 Connecting welding and return cables

The power source has two outputs, a positive welding terminal (+) and a negative welding 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 workpiece, and make sure that there is a good contact between the workpiece and the output for the return cable on the power source.

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

## 5.6 Turning the power on/off

Turn on the power by turning the switch to the "ON" (I) position.

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

Whether the power supply is interrupted or the power source is switched off in the normal manner, weld programs are stored so that they are available the next time the unit is started.





**CAUTION!**

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

## 5.7 Fan control

The ES 210i is fitted with a fan as an additional feature. When cooling fan is not in use, the fan will automatically turn off.

This has two advantages:

1. To minimize power consumption,
2. To minimize the amount of pollutants absorbed into the power source, such as dust.



**NOTE!**

When cooling requires, the fan will operate otherwise it will automatically turn off.

## 5.8 Thermal protection



The power source includes thermal protection against overheating. When overheating occurs the welding is stopped and overheating indicator on the panel will be lit and an error message ERR 206 shows in the display. The protection is automatically reset when the temperature has been sufficiently reduced.

## 5.9 Remote control



Connect the remote control on the rear side of the power source and activate the remote control by pressing the remote control button on the panel (remote control indicator being lit when activated). When the remote control is activated the control panel is locked for interaction but displays welding data.

Should a remote device be connected the maximum output current of the power source will be determined by the front panel control knob, irrespective of the remote control device setting.

## 5.10 Functions and symbols



### 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

### Arc force

The arc force function determines how the current changes in response to variations in arc length during welding. Use a low value of arc force to get a calm arc with little spatter and use a high value to get a hot and digging arc.

Arc force only applies to MMA welding.

### Hot start

The hot start function temporarily increases the current in the beginning of the weld. Use this function to reduce risk of insufficient fusion and electrode sticking and scratching.

Hot start only applies to MMA welding.

### Cel 6010

Optimised arc characteristics for cellulosic electrodes, such as 6010.



### TIG welding

TIG welding melts the metal of the workpiece, an arc initiated from a non-consuming tungsten electrode. The weld pool and electrode are protected by shielding gas.

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

This power source performs **Live TIG start**.

The tungsten electrode is placed against the workpiece and press the torch trigger. When lifted away from workpiece the arc is struck at a limited current level.

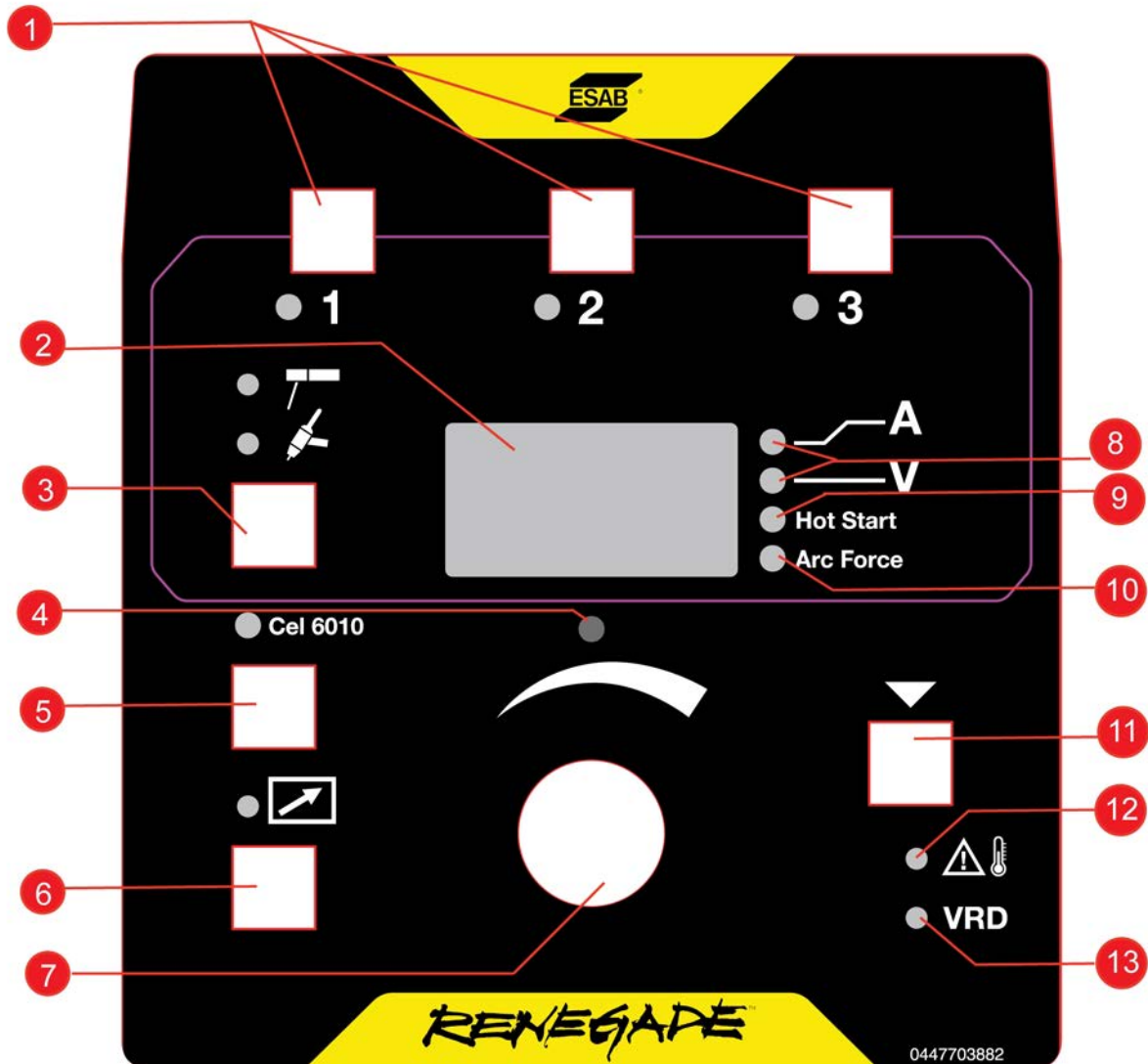


### Voltage Reduction Device (VRD)

## VRD

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 indicator on the panel. Contact an authorised ESAB service technician to activate this function.

## 5.11 Setting panel



- |  |  |
|--|--|
| 1. Welding program buttons, see section "Weld program"             | 8. Current set and measure value / Voltage measure value           |
| 2. Display, shows set or measured value                            | 9. Hot start indicator   |
| 3. Button to select welding method: Live TIG or MMA                | 10. Arc force indicator  |
| 4. Set indicator   | 11. Parameter selection button, selection indicated by (8, 9, 10). |
| 5. Cel 6010 (Choice of electrode type "cellulose" for MMA welding) | 12. Overheating indicator.   |
| 6. Button to activate and deactivate remote control unit           | 13. VRD function (reduced open-circuit voltage) indicator.         |
| 7. Knob for setting data   |  |

## 5.11.1 Navigation

### Parameter selection

By pressing the button (11) different values can be shown and changed. Use the knob (7) to change the values. The sequence is:

1. Set current value.
2. Measured current value.
3. Measured voltage value.
4. Hot start, setting range: 0-99%, default: 20%. (only MMA)
5. Arc force, 0-99%, default: 50%. (only MMA)

### Set parameter

The set indicator (4) will be lit when a displayed value can be changed. It cannot be changed from the panel when a remote control is activated. Trying to change a value while in measured value mode will result in automatically move to set current value mode.

The set indicator (4) is off when measured values are shown.

### Weld program

For each welding process (MMA/TIG) three different weld programs can be stored in the setting panel memory (1). Press selection button 1, 2 or 3 for 3 seconds to store a weld program in the memory. The memory indicator will be lit when finished.



To switch between the different weld programs press button 1, 2 or 3.

### Remote control

Connect the remote control on the rear side of the power source and activate it by pressing the remote control button (7) on the panel (remote control indicator being lit when activated).

When the remote control is activated the control panel is locked for interaction but displays actual welding data.

## 5.12 MMA settings

Symbol	Function	Setting range	Setting steps	Default value	ES 210i
	MMA*	ON/OFF		ON	x
<b>A</b>	Current	1ph: 15-180 A	1	100 A	x
	Arc force	0-99%	1	50%	x
	Hot start	0-99%	1	20%	x
	Remote control unit*	ON/OFF		OFF	x

\* Parameter cannot be changed during welding.

### 5.12.1 Hidden MMA functions

There are hidden functions in the control panel. To access the functions, press parameter selection button for 3 seconds (refer to section SETTING PANEL for button placement). The display shows a letter and a value. Select function by pressing the same button. The knob is used to change the value of the selected function. To exit hidden functions, press the button for 3 seconds again.

Letter	Function	Settings
I	Remote min current	0-99%

### 5.12.2 Measured values

# A

#### Measured current

Measured value in the display for welding current A is arithmetic average value.

# V

#### Measured voltage

Measured value in the display for arc voltage V is arithmetic average value.

## 5.13 MMA functions explanation

#### Arc force

The arc force function determines how the current changes in response to variations in arc length during welding. Use a low value of arc force to get a calm arc with little spatter and use a high value to get a hot and digging arc.

Arc force only applies to MMA welding.

#### Hot start

The hot start function temporarily increases the current in the beginning of the weld, thus reducing the risk of lack of fusion in the starting point.

Hot start only applies to MMA welding.

## 6 MAINTENANCE

**WARNING!**

The mains supply must be disconnected during cleaning and maintenance.

**CAUTION!**

Only persons with the appropriate electrical knowledge (authorised personnel) may remove the safety plates.

**CAUTION!**

The product is covered by manufacturer's warranty. Any attempt to carry out repair work by non-authorised service centers or personnel will invalidate the warranty.

**NOTE!**

Regular maintenance is important for safe and reliable operation.

**NOTE!**





Perform maintenance more often during severe dusty conditions.

Before each use - make sure that:

- Product and cables are not damaged,
- The torch is clean and not damaged.

### 6.1 Routine maintenance

Maintenance schedule during normal conditions. Check equipment prior to every use.

Interval	Area to maintain		
Every 3 months	 Clean or replace unreadable labels.	 Clean weld terminals.	 Check or replace weld cables.
Every 6 months	 Clean inside equipment. Use dry compressed air with 4 bar pressure.		

## 6.2 Cleaning instruction

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

- the welding process
- the arc time
- the working environment

**CAUTION!**

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

**CAUTION!**

During cleaning, always wear recommended personal safety equipment, such as ear plugs, safety glasses, masks, gloves and safety shoes.

**CAUTION!**

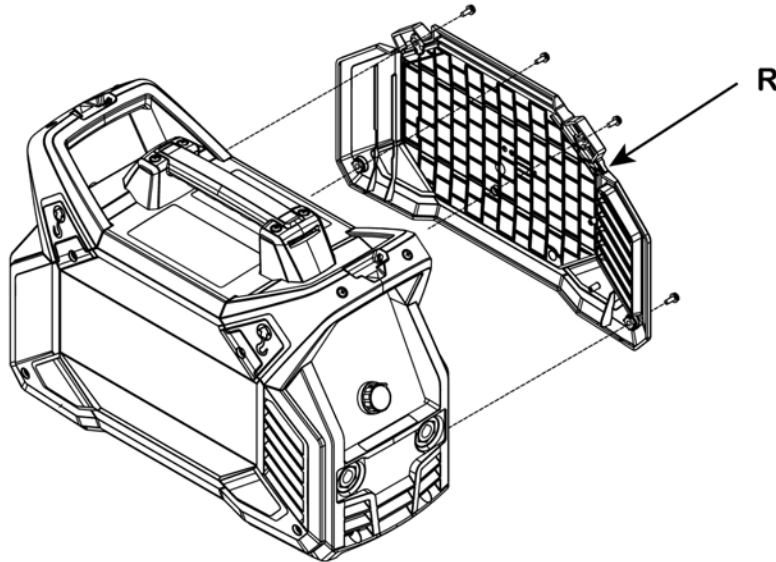
The cleaning procedure should be carried out by authorised service technician.

1. Disconnect the power source from the mains supply.

**WARNING!**

Wait at least 30 seconds for the capacitors to discharge before continuing.

2. Remove the four screws holding the right side panel (**R**) and remove the panel.

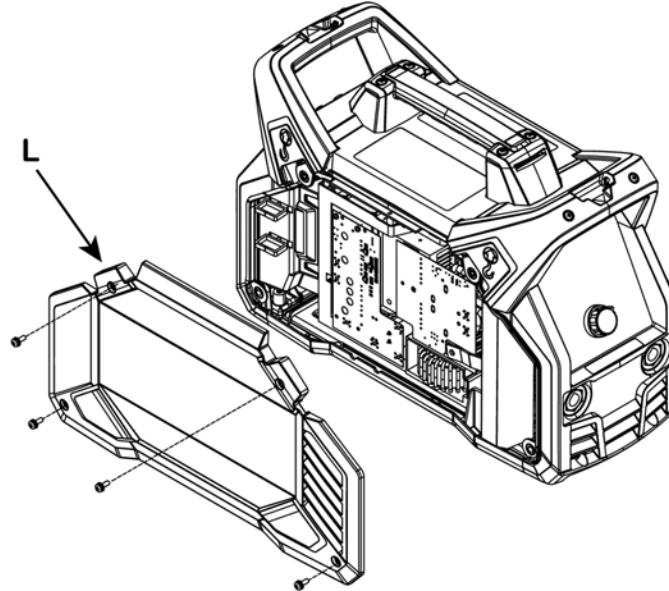


3. Clean the right side of the power source, using dry compressed air with reduced pressure.

**NOTE!**

Since the power source contains one "dirty side" (the right side) and one "clean side" (the left side), it is important that you do not remove **the left** side panel before cleaning the right side of the power source.

4. Remove the four screws holding the left side panel (**L**) and remove the panel.



5. Clean the left side of the power source, using dry compressed air with reduced pressure.
6. Make sure that there is no dust left on any part of the power source.

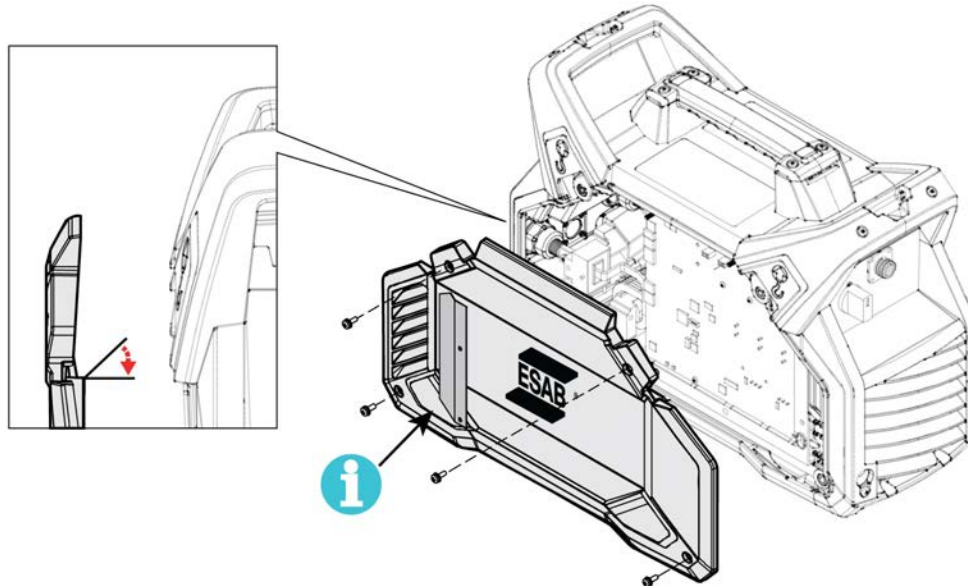


7. Reassemble the power source after cleaning and perform testing according to IEC 60974-4. Follow the procedure in section "After repair, inspection and test" in the Service manual.

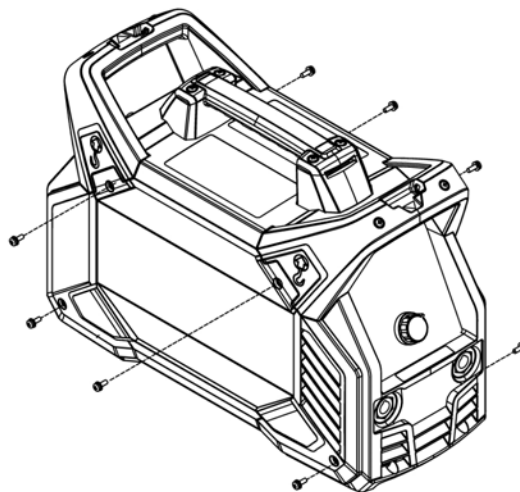


**NOTE!**

When reattaching the right side panel, make sure the IP shield on the inside of the panel is in the correct position. The IP shield should be angled approximately 90° into the power source, so that it is positioned between the welding outlet connector and the transformer outlets.



8. Tighten the screws on the side panels with  $3 \text{ Nm} \pm 0.3 \text{ Nm}$  (26.6 in lb.  $\pm$  2.6).



## 7 TROUBLESHOOTING

Perform these checks and inspections before sending for an authorised service technician.

- Check that the mains voltage is disconnected before starting any type of repair action.

Type of fault	Corrective action
MMA welding problems	Check that the welding process is set to MMA.
	Check that the welding and return cables are correctly connected to the power source.
	Make sure that the return clamp has good contact with the workpiece.
	Check that the correct electrodes and polarity are being used. For polarity, check electrode packaging.
	Check that the correct Welding current (A) is set.
	Adjust Arc Force and Hot start.
TIG welding problems	Check the welding process is set for Live TIG as necessary.
	Check that the TIG torch and return cables are correctly connected to the power source.
	Make sure that the return clamp has good contact with the workpiece.
	Make sure that the TIG torch lead is connected to the negative welding terminal.
	Make sure that the correct shielding gas, gas flow, welding current, filler rod placement, electrode diameter and welding mode on power source is used.
No arc	Check that the electrical power supply switch is turned on.
	Check that the display is on to verify that the power source has power.
	Check that the setting panel is displaying correct values.
	Check that welding and return cables are correctly connected.
	Check the electrical power supply fuses.
Welding current is interrupted during welding	Check whether the Over Temperature LED (Thermal Protection) on the setting panel is on.
	Continue with fault type "No Arc".
The thermal protection trips frequently	Make sure the recommended duty cycle for the weld current has not been exceeded.
	See section "Duty cycle" in the TECHNICAL DATA chapter.
	Make sure the air inlets or outlets are not clogged.
	Clean inside machine according to routine maintenance.

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## 8 ERROR CODES

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The error code is used to indicate that a fault has occurred in the equipment. Errors are indicated by the text "Err" followed by the error code number shown in the display.

If several errors have been detected only the code for the last occurring error is displayed.

### 8.1 Error code descriptions

Error codes that the user can handle are listed below. If any other error code appears, contact an authorised ESAB service technician.

Error code	Description
206	<p><i>Temperature fault</i></p> <p>The temperature of the power source is too high. A LED indicating temperature fault is also lit on the panel. A temperature fault is indicated by the overheating indicator on the control panel.</p> <p><b>Action:</b> The error code will automatically disappear and the LED indicating temperature fault will be turned off when the power source has cooled down and is ready for use again. If the error persists, contact a service technician.</p>

## 9 ORDERING SPARE PARTS

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**CAUTION!**

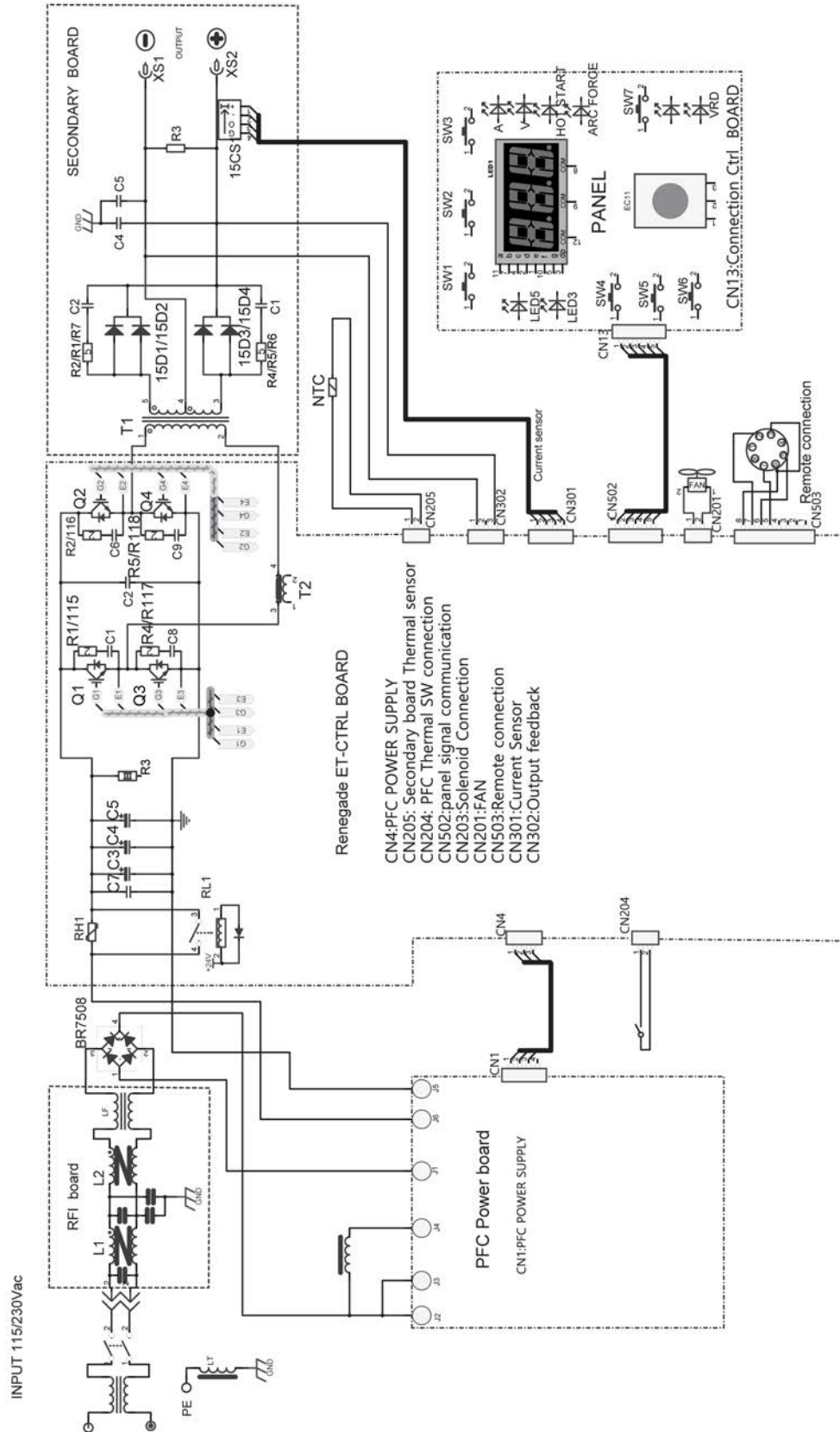
Repair and electrical work should be performed by an authorised ESAB service technician.  
Use only ESAB original spare and wear parts.

Renegade ES 210i is designed and tested in accordance with the international and European standards **EN60974-1** and **EN60974-10**. 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.

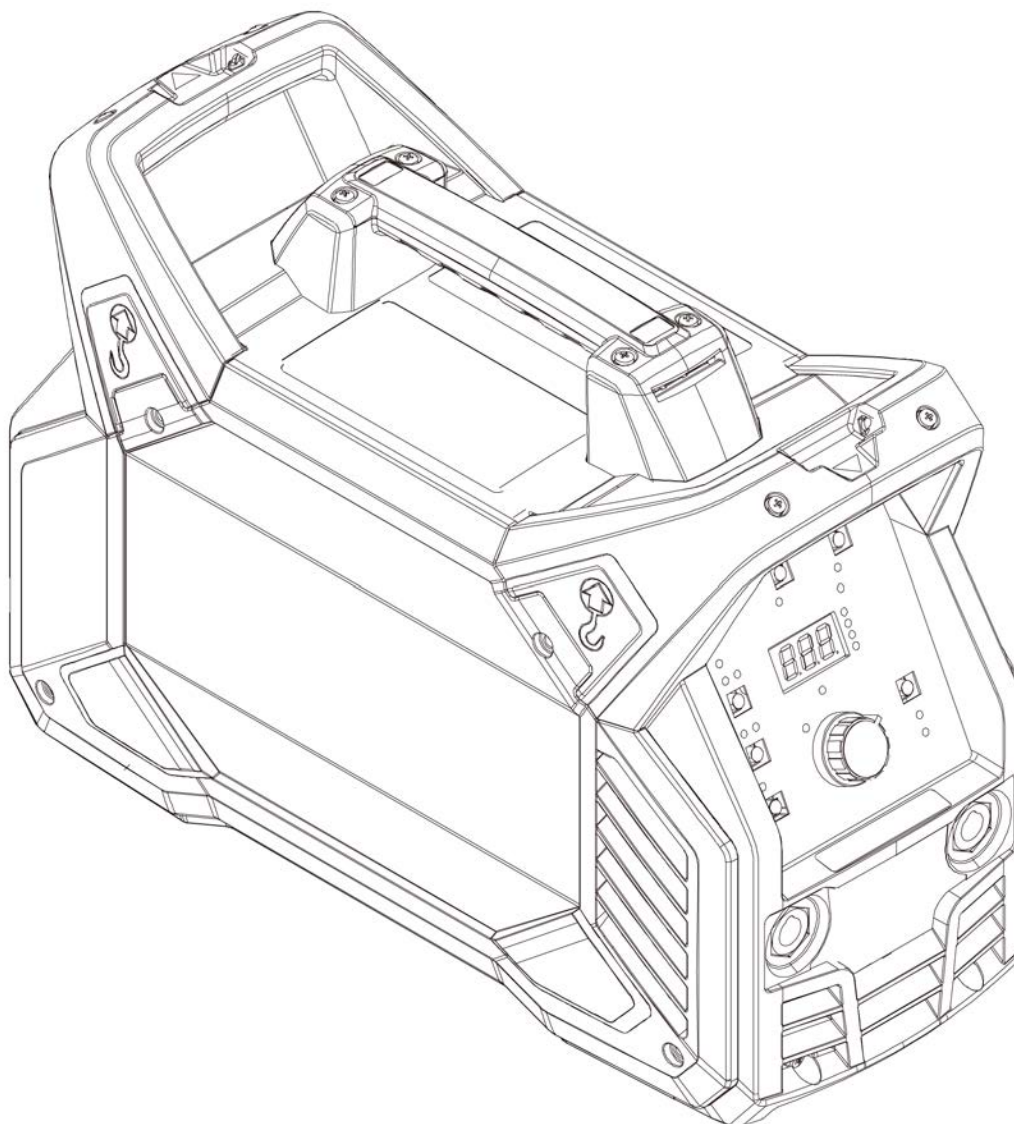
Spare parts and wear parts can be ordered through your nearest ESAB dealer, see [esab.com](https://www.esab.com). When ordering, please state product type, serial number, designation and spare part number in accordance with the spare parts list. This facilitates dispatch and ensures correct delivery.

# APPENDIX

## From serial number HA203-xxxx-xxxx



## ORDERING NUMBERS

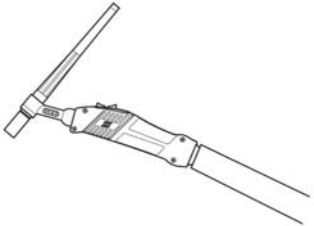
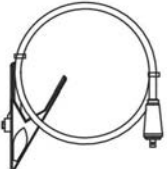
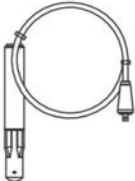
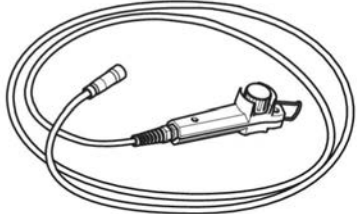

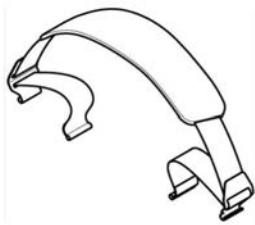
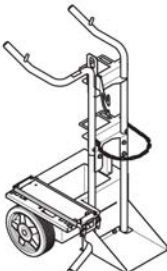


Ordering number	Denomination	Type
0447 700 881	Power source	Renegade ES 210i
0463 856 *	Instruction Manual	
0463 881 *	Spare parts list	
0463 880 *	Service manual	

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: [www.esab.com](http://www.esab.com)

## ACCESSORIES

0700 025 514 0700 025 522	SR-B 17V, OKC 50, 4 m SR-B 26V, OKC 50, 4 m	
<b>Return cable kits</b>		
0700 006 901 0700 006 885	Return cable kit, OKC 50, 3 m Return cable kit, OKC 50, 5 m	
0700 006 900	Electrode holder Handy, 200 A with 25 mm <sup>2</sup> , 3 m, OKC 50	
0700 500 084	Remote control, MMA 4	
W4014450	Foot pedal with 4.5 m (15 ft) cable, 8 PIN	
0445 197 880	Shoulder strap	
0460 330 881	Trolley	



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