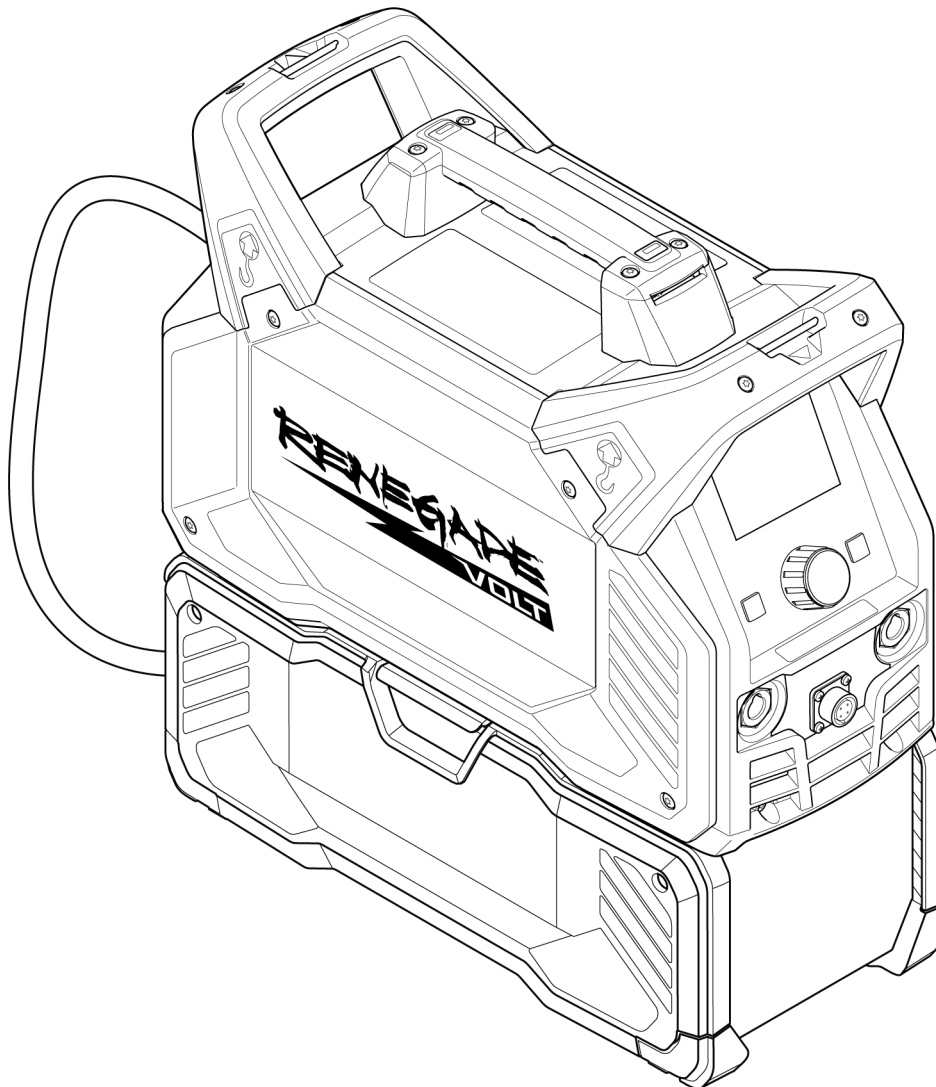




Renegade VOLT ES 200i



Instruction manual

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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).



WARNING!

Shock hazard. Battery voltage class B classification of an electric component or circuit with a maximum Battery Working Voltage between 60 VDC and 1500 VDC.



1.2 User responsibility

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



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, guards and covers closed and securely in place.
- Have only qualified people remove covers for maintenance and troubleshooting as necessary.
- To prevent accidental starting of equipment during service, disconnect negative (-) battery cable from battery, remove batteries, or unplug from the wall.
- Keep hands, hair, loose clothing and tools away from moving parts.
- Reinstall panels or covers and close doors when service is finished and before starting the unit.



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.



CAUTION!

Battery box is recommended only for Renegade VOLT ES 200i power source.



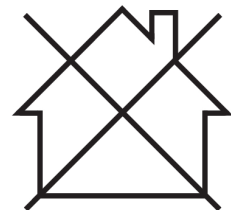
CAUTION!

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.



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.



1.3 Precautions for operations



WARNING!

Do not remove the batteries from the battery box during the operation.

**CAUTION!**

Turn off the power source before removing the batteries from the battery box.

- Make sure the battery box interface cable is connected to the power source.
- Do not unplug the battery box / DC Interface cable irrespective of any mode.
- Make sure to turn OFF the power source as stated below before unplugging the battery box interface cable,
 - By pressing the ON/OFF Membrane switch in the front panel.
 - By turning OFF the mains switch (120/230 VAC) in the back panel.
- Make sure to close the battery box door closed during operation.
- Do not attempt to clean the battery box internally either when the batteries are connected or during the operation.
- When the power source and battery box are **transported separately** by any means,
 - Ensure that the battery packs are correctly inserted in their respective slots and firmly seated. The battery box door should always be locked.
 - On the power source, the battery box socket lid should be closed.
- When both the power source and battery box are **connected and transported** by any means,
 - Ensure that the battery packs are correctly inserted in their respective slots and firmly seated. The battery box door should always be locked.
 - Ensure that the DC / battery box interface cable in the battery is connected to the power source.
 - Ensure that the battery box latch is firmly connected to the power source.
 - Ensure that the battery box door latch lock is firmly locked.

1.4 Safety instructions for battery packs

**WARNING!**

Read all safety warnings and all instructions for the battery pack, charger, and welding power source. Failure to follow the warnings and instructions may result in electric shock, fire, and/or serious injury.

**WARNING!**

Burn hazard. Battery liquid may be flammable if exposed to spark or flame.

**WARNING!**

Never service damaged battery packs. Service of battery packs should only be performed by the manufacturer or authorized service providers.

**WARNING!**

Fire hazard. Never attempt to open the battery pack for any reason. If the battery pack case is cracked or damaged, do not insert into the charger. Do not crush, drop, or damage the battery pack. Do not use a battery pack or charger that has received a sharp blow, been dropped, run over or damaged in any way (e.g., pierced with a nail, hit with a hammer, stepped on). Damaged battery packs should be returned to the service center for recycling.

- **Do not** charge or use the battery pack in explosive atmospheres, such as in the presence of flammable liquids, gases, or dust. Inserting or removing the battery pack from the charger may ignite the dust or fumes.
- Never force the battery pack into the charger. **Do not** modify the battery pack in any way to fit into a non-compatible charger as battery pack may rupture causing serious personal injury. Only charge the battery pack with chargers recommended in this manual.
- Charge the battery packs only in designated DeWALT chargers.
- **Do not** splash or immerse in water or other liquids.

- **Do not** store or use the welding power source and battery pack in locations where the temperature may reach or exceed **40 °C (104 °F)** (such as outside sheds or metal buildings in the summer). For best battery life, store battery packs in a cool, dry location.

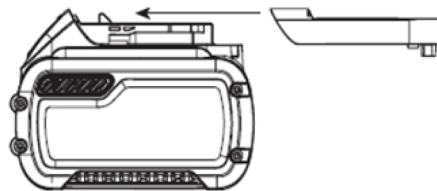
**NOTE!**

Store the battery packs in a battery box with the interface cables connected to the welding power source.

- **Do not** incinerate the battery pack even if it is severely damaged or is completely worn out. The battery pack can explode in a fire. Toxic fumes and materials are created when lithium-ion battery packs are burned.
- If battery contents come into contact with the skin, immediately wash area with mild soap and water. If battery liquid gets into the eye, rinse water over the open eye for 15 minutes or until irritation ceases. If medical attention is needed, the battery electrolyte is composed of a mixture of liquid organic carbonates and lithium salts
- Contents of opened battery cells may cause respiratory irritation. Provide fresh air. If symptoms persist, seek medical attention.

Transportation

- Fire hazard. **Do not** store or carry the battery pack so that metal objects can contact exposed battery terminals. For example, do not place the battery pack in aprons, pockets, toolboxes, product kit boxes, drawers, etc., with loose nails, screws, keys, etc. Transporting batteries can cause fires if the battery terminals inadvertently come in contact with conductive materials such as keys, coins, hand tools, etc.
- Transporting the DeWALT FLEXVOLT™ battery. The DeWALT FLEXVOLT™ battery has two modes: **Use** and **Transport**.
 - **Use mode:** The FLEXVOLT™ battery can operate as a 20V battery in a DeWALT 20V tool and a 60V battery in a DeWALT 60V tool. The Renegade Volt ES 200i can utilise only 20V of the DeWALT FLEXVOLT™ batteries.
 - **Transport mode:** When the cap is attached to the FLEXVOLT™ battery, the battery is in transport mode. Keep the cap for shipping. When in transport mode, strings of cells are electrically disconnected within the pack resulting in three batteries with a lower Watt hour (Wh) rating as compared to one battery with a higher Watt hour rating. This increased quantity of three batteries with the lower Watt hour rating can exempt the pack from certain shipping regulations that are imposed upon the higher Watt hour batteries.



The battery label indicates two Watt hour ratings (refer to following image). For example, the transport Wh rating might indicate 3 x 36 Wh, meaning three batteries of 36 Wh each. The use Wh rating might indicate 108 Wh (one battery implied).

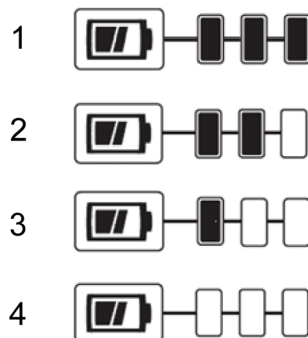
**NOTE!**

Make sure that the protective covers are not disposed of after transportation.



Charge status gauge battery packs

Some DeWALT battery packs include a charge status gauge which consists of three green LED lights that indicate the level of charge remaining in the battery pack. The charge status gauge is an indication of approximate levels of charge remaining in the battery pack according to the following indicators:



- | | |
|----------------------|--------------------------------|
| 1. 75 - 100% charged | 3. < 50% charged |
| 2. 51 - 74% charged | 4. Battery needs to be charged |

To actuate the charge status gauge, press and hold the charge status gauge button. A combination of the three green LED lights will illuminate designating the level of charge left. When the level of charge in the battery is below the usable limit, the charge status gauge will not illuminate, and the battery will need to be recharged.



NOTE!

The charge status gauge is only an indication of the charge left on the battery pack. It does not indicate tool functionality and is subject to variation based on product components, temperature, and end-user application.

For more information regarding charge status gauge battery packs, please visit DeWALT www.dewalt.com.

The RBRC® seal



The RBRC® (Rechargeable Battery Recycling Corporation) seal on nickel cadmium, nickel metal hydride, or lithium-ion batteries (or battery packs) indicates that the costs to recycle these batteries (or battery packs) at the end of their useful life have already been paid by DeWALT. In some areas, it is illegal to throw used nickel cadmium, nickel metal hydride or lithium-ion batteries in the trash or municipal solid waste stream and the Call 2 Recycle® program provides an environmentally conscious alternative.

Call 2 Recycle, Inc., in cooperation with DeWALT and other battery users, has established the program in the United States and Canada to facilitate the collection of used nickel cadmium, nickel metal hydride, or lithium-ion batteries. Help protect our environment and conserve natural resources by returning the spent nickel cadmium, nickel metal hydride, or lithium-ion batteries to an authorized DeWALT service center or to your local retailer for recycling. You may also contact your local recycling center for information on where to drop off the used battery. RBRC® is a registered trademark of Call 2 Recycle, Inc.

1.5 Safety instructions for battery chargers



WARNING!

Read all safety warnings and all instructions for the battery pack, charger, and welding power source. Failure to follow the warnings and instructions may result in electric shock, fire, and/or serious injury.

- **Do not** attempt to charge the battery pack with any chargers other than the ones recommended in this manual. The charger and battery pack are specifically designed to work together.
- These chargers are not intended for any uses other than charging DeWALT rechargeable batteries. Any other uses may result in risk of fire, electric shock, or electrocution.
- **Do not** expose the charger to rain or snow.
- When disconnecting the charger, pull by the plug rather than the cord. This reduces the risk of damage to the electric plug and cord.
- Make sure that the cord is located so that it will not be stepped on, tripped over, or otherwise subjected to damage or stress.
- **Do not** use an extension cord unless it is necessary. Use of improper extension cord could result in fire, electric shock, or electrocution.
- If the plug or power cord is damaged, it must be replaced by the manufacturer or its representative or by an equally qualified person to avoid danger.
- **Do not** place any object on top of the charger or place the charger on a soft surface that might block the ventilation slots and result in excessive internal heat. Place the charger in a position away from any heat source. The charger is ventilated through slots in the top and the bottom of the housing.
- **Do not** operate the charger with a damaged cord or plug.
- **Do not** operate the charger if it has received a sharp blow, been dropped, or otherwise damaged in any way. Take it to an authorized service center.
- **Do not** disassemble the charger; take it to an authorized service center when service or repair is required. Incorrect reassembly may result in electric shock, electrocution, or fire.

- Disconnect the charger from the outlet before attempting any cleaning. This reduces the risk of electric shock. Removing the battery pack will not reduce this risk.
- **Never** attempt to connect two chargers together.
- The charger is designed to operate on standard 230 V household electrical power. **Do not** attempt to use it on any other voltage. This does not apply to the vehicular charger.

**WARNING!**

Shock hazard. Do not allow any liquid to get inside the charger. This may result in electric shock.

**WARNING!**

Burn hazard. Do not submerge the battery pack in any liquid or allow any liquid to enter the battery pack. Never attempt to open the battery pack for any reason. If the plastic housing of the battery pack breaks or cracks, return to a service center for recycling.

**CAUTION!**

Burn hazard. To reduce the risk of injury, only charge DeWALT rechargeable battery packs. Other types of batteries may overheat and burst resulting in personal injury and property damage.

**NOTE!**

Under certain conditions, with the charger plugged into the power supply, the charger can be shorted by foreign material. Foreign materials of a conductive nature, such as, but not limited to, grinding dust, metal chips, steel wool, aluminum foil or any buildup of metallic particles should be kept away from the charger cavities. Always unplug the charger from the power supply when there is no battery pack in the cavity. Unplug the charger before attempting to clean.

Operations

- Longest life and best performance can be obtained if the battery pack is charged when the air temperature is between 18 ° – 24 °C. **Do not** charge the battery pack below 4.5 °C or above 40 °C. This is important and prevents serious damage to the battery pack.
- The charger and battery pack may become warm to the touch while charging. This is a normal condition and does not indicate a problem. To facilitate the cooling of the battery pack after use, avoid placing the charger or battery pack in a warm environment such as in a metal shed or an uninsulated trailer.
- The DCB104 battery charger is equipped with an internal fan designed to cool the charger. The fan turns on automatically when the charger needs to be cooled. Never operate the charger if the fan does not operate properly or if ventilation slots are blocked. **Do not** permit foreign objects to enter the interior of the charger.
- If the battery pack does not charge properly:
 - Check operation of socket by plugging in a lamp or other appliance.
 - Move the charger and battery pack to a location where the surrounding air temperature is approximately 18 ° – 24 °C.
 - If charging problems persist, take the welding power source, battery pack, and charger to your local service center.
- The battery pack should be recharged when it fails to produce sufficient power on jobs which were easily done previously. **Do not** continue to use under these conditions. Follow the charging procedure. You may also charge a partially used pack whenever you desire with no adverse effect on the battery pack
- Foreign materials of a conductive nature such as, but not limited to, grinding dust, metal chips, steel wool, aluminum foil, or any build-up of metallic particles should be kept away from charger cavities. Always unplug the charger from the power supply when there is no battery pack in the cavity. Unplug the charger before attempting to clean.
- Do not freeze or immerse the charger in water or any other liquid.

Storage

- The best storage place is one that is cool and dry, away from direct sunlight and excess heat or cold.
- For long storage, it is recommended to store a fully charged battery pack in a cool and dry place out of the charger for optimal results.



NOTE!

Battery packs should not be stored completely depleted of charge. The battery pack will need to be recharged before use.

Cleaning



WARNING!

Shock hazard. Disconnect the charger from the AC outlet before cleaning. Dirt and grease may be removed from the exterior of the charger using a cloth or soft non-metallic brush. Do not use water or any cleaning solutions.

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 VOLT **ES 200i** is an inverter-based power source that can be run off either battery power (DC) or 120/230 VAC. This power source is intended to be used for MMA / SMAW / Stick and TIG / GTAW welding. The power source can be run using either one of the methods below:

- Mains Mode
- Battery Mode
- AMP+ Hybrid Mode

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

2.1 Equipment

The Renegade VOLT **ES 200i** is supplied with:

- Power source
- Battery box
- DeWALT FLEXVOLT 12AH batteries (4 X)
- DeWALT FLEXVOLT Four-port fast charger
- Electrode holder, 3 m, 16 mm², 50 OKC
- Return cable 200A, 3 m (10 ft)
- Mains cable, 3 m (10 ft)
- Shoulder strap kit
- Safety instruction manual
- Quick start guide

2.2 Batteries and chargers

The battery pack is not fully charged out of the carton. Before using the battery pack and charger, read the safety instructions in the "SAFETY" chapter and then follow the charging procedures outlined. When ordering replacement battery packs, be sure to include the catalog number and voltage.



CAUTION!

Do not use 15AH battery packs for the welding operation.

The following battery packs are only recommended:

- FLEXVOLT 6AH
- FLEXVOLT 9AH
- FLEXVOLT 12AH

Only use the DeWALT battery back for the DeWALT charger. Be sure to read all safety instructions before using your charger. Consult the represented chart below for compatibility of DeWALT chargers to the respective DeWALT battery packs.

Batteries				Chargers/Charge Times (Minutes)
Catalog number (#)	VDC	Battery capacity (AH)	Weight (kg)	DCB104
DCB546	18/54	6.0/2.0	1.05	60
DCB547	18/54	9.0/3.0	1.46	75
DCB548	18/54	12.0/4.0	1.44	120

2 INTRODUCTION

For further information regarding DeWALT batteries and chargers, please call or visit the contact information provided below,

Regions	Contact number	Website information
Belgian Luxembourg	NL: 32 15 47 37 63 FR: 32 15 47 37 64	www.dewalt.be enduser.BE@SBDinc.com
Denmark	70 20 15 10	www.dewalt.dk kundeservice.dk@sbdinc.com
Germany	06126-21-0	www.dewalt.de infodwge@sbdinc.com
Spain	934 797 400	www.dewalt.es respuesta.postventa@sbdinc.com
France	04 72 20 39 20	www.dewalt.fr scufr@sbdinc.com
Switzerland	044 - 755 60 70	www.dewalt.ch service@rofoag.ch
Ireland	00353-2781800	www.dewalt.ie Sales.ireland@sbdinc.com
Italy	800-014353 39 039-9590200	www.dewalt.it
Netherlands	31 164 283 063	www.dewalt.nl
Norway	45 25 13 00	www.dewalt.no kundeservice.no@sbdinc.com
Austria	01 - 66116 - 0	www.dewalt.at service.austria@sbdinc.com
Portugal	+351 214667500	www.dewalt.pt resposta.posvenda@sbdinc.com
Finland	010 400 4333	www.dewalt.fi asiakaspalvelu.fi@sbdinc.com
Sweden	031 68 61 60	www.dewalt.se kundservice.se@sbdinc.com
Turkey	+90 216 665 2900	www.dewalt.com.tr support@dewalt.com.tr
United Kingdom	01753-567055	www.dewalt.co.uk emeaservice@sbdinc.com
Middle East Africa	971 4 812 7400	www.dewalt.ae support@dewalt.ae

3 TECHNICAL DATA

3.1 Technical data for Mains Mode

Renegade VOLT ES 200i		
Outlet voltage	120 V \pm 15%, 1~ 50/60 Hz	230 V \pm 15%, 1~ 50/60 Hz
Primary current		
I_{1max}	27 A	28 A
I_{1eff}	13.5 A	14 A
No-load power demand when in energy-saving mode	<50 W	<50 W
Setting range		
MMA / SMAW / Stick	10-110 A	10-200 A
TIG / GTAW	10-140 A	10-200 A
Permissible load at MMA / SMAW / Stick		
25% duty cycle	110 A / 24.4	200 A / 28 V
60% duty cycle	70 A / 22.8 V	129 A / 25.2 V
100% duty cycle	55 A / 22.2 V	100 A / 24 V
Permissible load at TIG / GTAW		
25% duty cycle	140 A / 15.6 V	200 A / 18 V
60% duty cycle	90 A / 13.6 V	129 A / 15.2 V
100% duty cycle	70 A / 12.8 V	100 A / 14 V
Apparent power I₂ at maximum current	3.4 kVA	5.8 kVA
Active power I₂ at maximum current	3.3 kW	5.7 kW
Power factor at maximum current		
MMA / SMAW / Stick		0.99
TIG / GTAW		0.99
Efficiency at maximum current		
MMA / SMAW / Stick		82%
TIG / GTAW		82%
Open-circuit voltage U₀ max		
VRD deactivated		80 V
VRD activated		<30 V
Operating temperature		-10 to +40°C (+14 to 104°F)
Transportation temperature		-20 to +55°C (-4 to +161°F)
Constant sound pressure when idling		<70 db (A)
Dimensions l × w × h		

Renegade VOLT ES 200i	
Power source	460 × 200 × 320 mm (18.1 × 7.9 × 12.6 in.)
Power source with battery box	480 × 220 × 485 mm (18.9 × 8.7 × 19.1 in.)
Weight	
Power source	12 kg (26.5 lbs)
Battery box without batteries	7 kg (15.4 lbs)
Battery box with batteries	12.5 kg (27.5 lbs)
System	24.5 kg (54.0 lbs)
Insulation class	H
Enclosure class	IP 23
Application class	S

3.2 Technical data for Battery Mode - 4 DeWALT batteries

Renegade VOLT ES 200i	
Outlet voltage	80 V – 4 DeWALT batteries
Primary current	
$I_{b \max}$	80 A
No-load power demand when in energy-saving mode	<50 W
Setting range	
MMA / SMAW / Stick	10-140 A
TIG / GTAW	10-150 A
Permissible load at MMA / SMAW / Stick	
18% duty cycle	140 A / 25.6 V
25% duty cycle	110 A / 24.4 V
60% duty cycle	80 A / 23.2 V
100% duty cycle	60 A / 22.4 V
Permissible load at TIG / GTAW	
18% duty cycle	150 A / 16 V
25% duty cycle	115 A / 14.6 V
60% duty cycle	90 A / 13.6 V
100% duty cycle	70 A / 12.8 V
Apparent power I_2 at maximum current	NA
Active power I_2 at maximum current	NA
Power factor at maximum current	
MMA / SMAW / Stick	NA
TIG / GTAW	NA
Efficiency at maximum current	

Renegade VOLT ES 200i	
MMA / SMAW / Stick	80%
TIG / GTAW	80%
Open-circuit voltage U_0 max	
VRD deactivated	68 V
VRD activated	<30 V
Operating temperature	-10 to +40°C (+14 to 104°F)
Transportation temperature	-20 to +55°C (-4 to +161°F)
Constant sound pressure when idling	<70 db (A)
Dimensions l × w × h	
Power source	460 × 200 × 320 mm (18.1 × 7.9 × 12.6 in.)
Power source with battery box	480 × 220 × 485 mm (18.9 × 8.7 × 19.1 in.)
Weight	
Power source	12 kg (26.5 lbs)
Battery box without batteries	7 kg (15.4 lbs)
Battery box with batteries	12.5 kg (27.5 lbs)
System	24.5 kg (54.0 lbs)
Insulation class	H
Enclosure class	IP 23
Application class	S

3.3 Technical data for AMP+ Hybrid Mode

Renegade VOLT ES 200i		
Outlet voltage	120 VAC ± 15% + 80 V DC, 1~ 50/60 Hz + DC	230 VAC ± 15% + 80 V DC, 1~ 50/60 Hz + DC
Primary current		
I_{max}	27 A	28 A
No-load power demand when in energy-saving mode	<50 W	<50 W
Setting range		
MMA / SMAW / Stick	10-150 A	10-200 A
TIG / GTAW	10-180 A	10-200 A
Permissible load at MMA / SMAW / Stick		
25% duty cycle	150 A / 26 V	200 A / 28 V
60% duty cycle	90 A / 23.6 V	129 A / 25.2 V
100% duty cycle	70 A / 22.8 V	100 A / 24 V
Permissible load at TIG / GTAW		
25% duty cycle	180 A / 17.2 V	200 A / 18 V
60% duty cycle	130 A / 15.2 V	129 A / 15.2 V

Renegade VOLT ES 200i		
100% duty cycle	100 A / 14 V	100 A / 14 V
Apparent power I₂ at maximum current	3.4 kVA	5.8 kVA
Active power I₂ at maximum current	3.3 kW	5.7 kW
Power factor at maximum current		
MMA / SMAW / Stick		0.99
TIG / GTAW		0.99
Efficiency at maximum current		
MMA / SMAW / Stick		82%
TIG / GTAW		82%
Open-circuit voltage U₀ max		
VRD deactivated		80 V
VRD activated		<30 V
Operating temperature	-10 to +40°C (+14 to 104°F)	
Transportation temperature	-20 to +55°C (-4 to +161°F)	
Constant sound pressure when idling	<70 db (A)	
Dimensions l × w × h		
Power source	460 × 200 × 320 mm (18.1 × 7.9 × 12.6 in.)	
Power source with battery box	480 × 220 × 485 mm (18.9 × 8.7 × 19.1 in.)	
Weight		
Power source	12 kg (26.5 lbs)	
Battery box without batteries	7 kg (15.4 lbs)	
Battery box with batteries	12.5 kg (27.5 lbs)	
System	24.5 kg (54.0 lbs)	
Insulation class	H	
Enclosure class	IP 23	
Application class	S	

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 may be used outdoors if sheltered during precipitation.

Application class

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

3.4 ECO design information

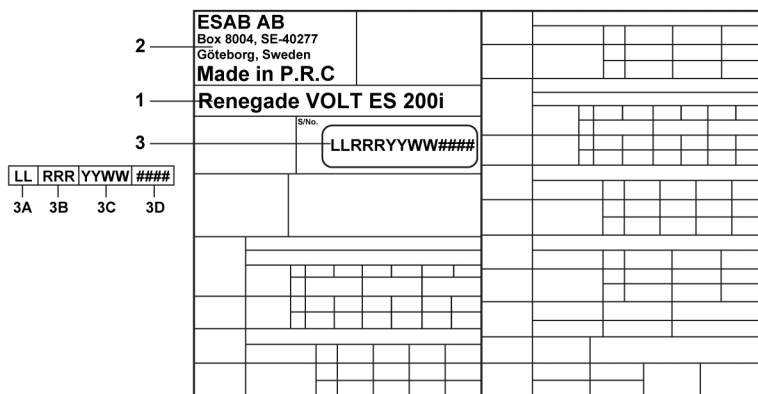
The equipment has been designed in order to be compliant with the Directive 2009/125/EC and the Regulation 2019/1784/EU.

Efficiency and idle power consumption:

Name	Idle power	Efficiency when max power consumption
Renegade Volt ES 200i	<50 W	82%

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.



CAUTION!

Remove any packaging material prior to use. Do not block the air vents at the front or rear of the welding power source.

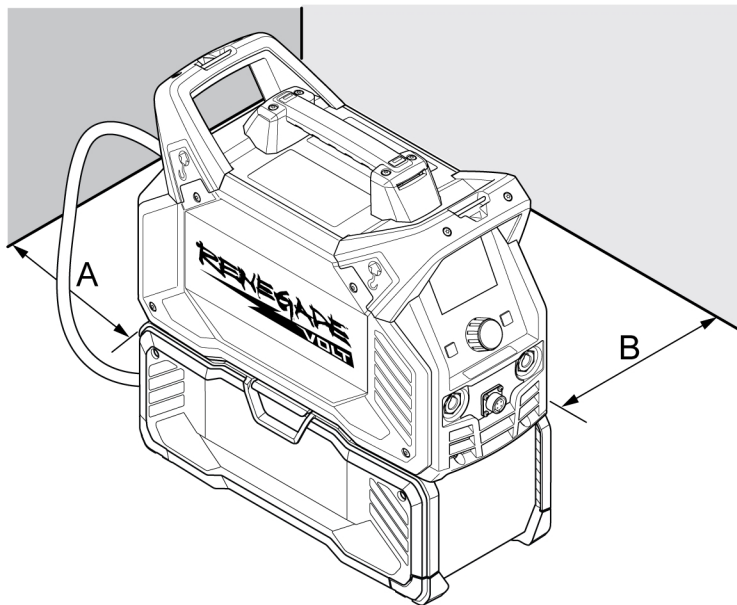


CAUTION!

Loose welding terminal connections can cause overheating and result in the male plug being fused in the terminal.

4.1 Location

Position the power source and battery box in such a way that the cooling air inlets and outlets are not being obstructed.



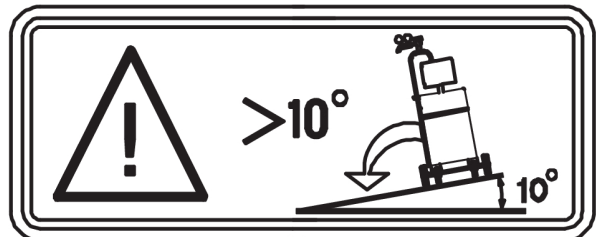
A. Minimum 200 mm (8 in).

B. Minimum 200 mm (8 in).

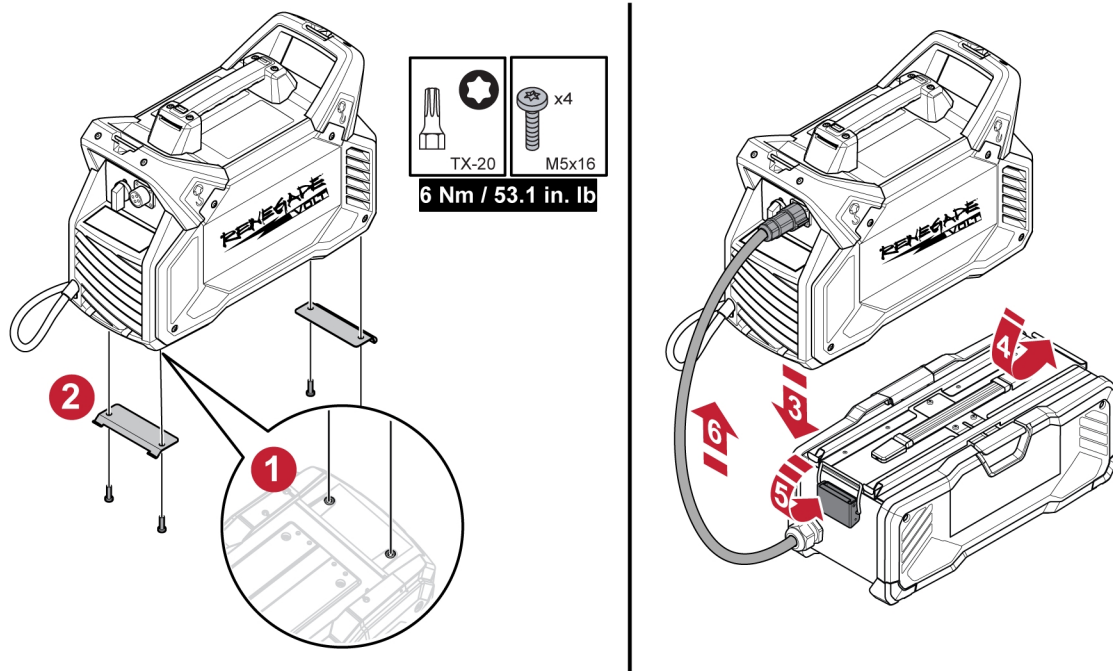


WARNING!

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

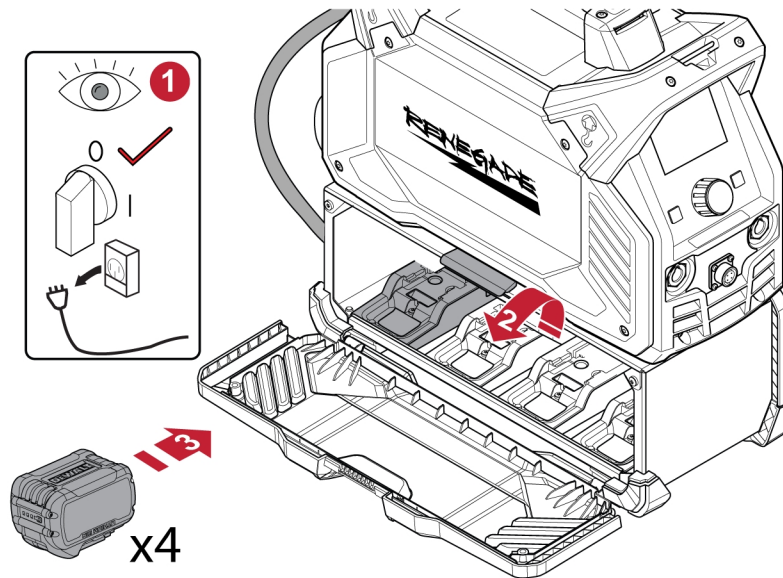


4.2 Connecting battery box to power source



- 1) Invert the power source on a stable surface.
- 2) Place the power source interface mounting kit in location and secure it with provide hardware. Use 6 Nm/53.1 in.lbs.
- 3) Bring the power source and the battery box together.
- 4) Insert the front power source interface into the battery box front catch.
- 5) Secure the latch on the rear of the battery box on the catches to the rear power interface mounting bracket.
- 6) Connect the battery box interface cable to the receptacle on the rear panel of the power source.

4.3 Installing and removing the battery pack

**CAUTION!**

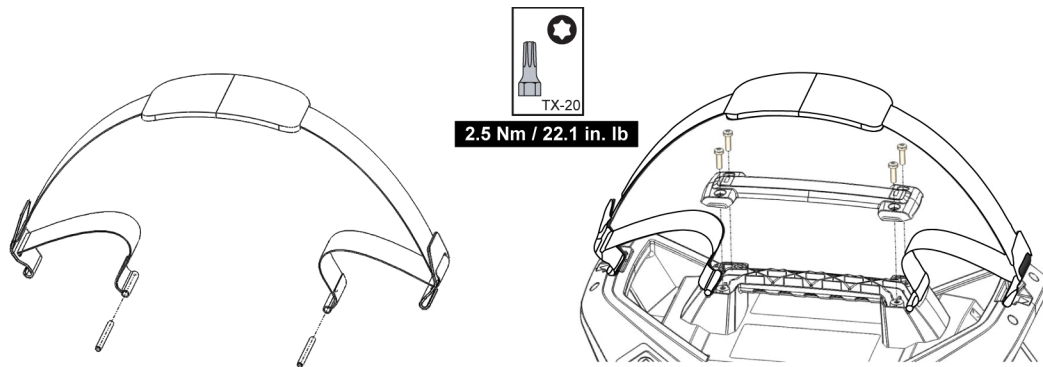
Do not install or remove the battery pack during power ON.

**NOTE!**

Make sure the batteries are fully charged for better performance.

- 1) Make sure that the mains switch (120/230 VAC) is turned to OFF position and the mains supply has been cut off.
- 2) Open the left side panel (L) of the battery box by lifting up the door latch lock.
- 3) To install the battery pack into the battery holder, align the battery pack with slots provided in the battery holder.
- 4) Slide the battery pack gently into the battery holder until the battery pack is firmly seated in their respective slots and ensure that it does not disengage.
- 5) To remove the battery pack from the holder, press the release button provided at the bottom side of the battery and firmly pull the battery pack out of the battery holder.

4.4 Installing shoulder strap



- 1) Insert retention pins into the small loops in the shoulder strap.
- 2) Remove the four screws securing the top handle cover using a TX20 screwdriver.
- 3) Remove handle cover.
- 4) Locate pin retention socket in the handle.
- 5) With pins inserted in the shoulder strap, press each pin into the retention sockets. They will snap into place.
- 6) Reinstall the top handle cover with the four screws using a tightening torque of 2.5Nm (22.1 in/lbs).
- 7) Use the front and rear handle pins to secure saddle hooks.

4.5 Lifting instructions

The unit is equipped with handles for both mechanical and manual handling means.



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!

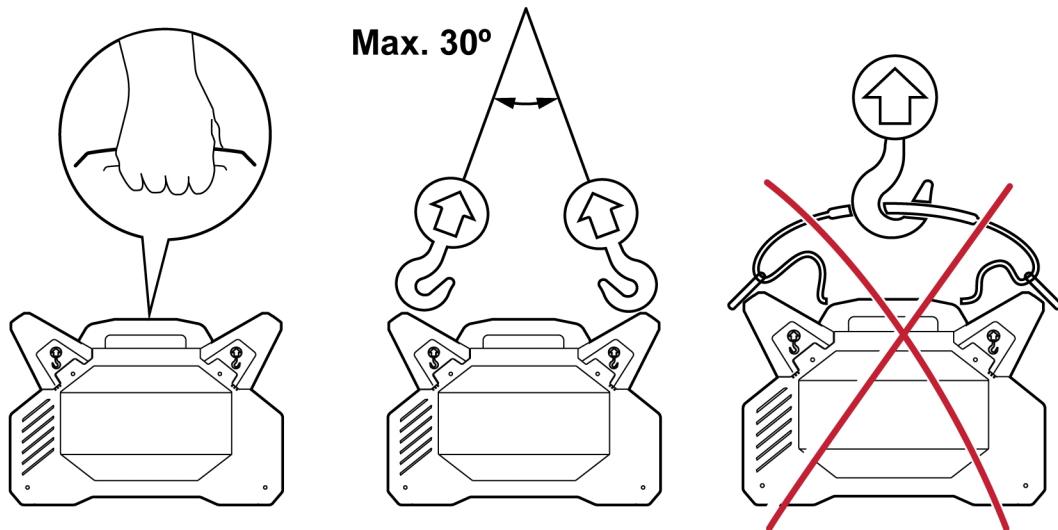
Falling equipment can cause serious personal injury and equipment damage.



WARNING!

Make sure that the hooks are firmly connected before lifting.

Lift the unit with the handle on top of the case.



4.6 Mains supply

The supply voltage should be 230 VAC \pm 15% or 120 VAC \pm 15%. Too low supply voltage may cause poor welding performance. Too high welding supply voltage will cause components to overheat and possibly fail.



WARNING!

Contact the local electric utility for information about the type of electrical service available, how proper connections should be made, and inspection required.

The welding power source must be:

- Correctly installed, if necessary, by a qualified electrician.
- Correctly earthed (electrically) in accordance with local regulations.
- Connected to the correct size power point and fuse as following table.

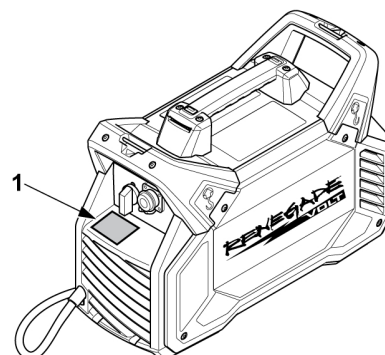


NOTE!

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 when connected at Mains Mode and AMP+ Hybrid Mode. 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 VOLT ES 200i

	Renegade VOLT ES 200i	
Supply voltage	120 VAC 1P - 50/60 Hz	230 VAC 1P - 50/60 Hz
Maximum current rating (I_{1max}) MMA / SMAW / Stick	27 A	28 A
Maximum effective supply current (I_{1eff}) MMA / SMAW / Stick	13.5 A	14 A
Fuse anti-surge type D MCB	20 A	20 A
Mains supply cable	2.5 mm ² (14 AWG)	2.5 mm ² (14 AWG)
Maximum recommended extension cord length	100 m (328 ft)	100 m (328 ft)
Minimum recommended extension cord size	2.5 mm ² (14 AWG)	2.5 mm ² (14 AWG)

**NOTE!**

For 0447 800 883 (UK), if there is a need to change the mains plug refer to the instructions provided along with the mains plug kit 0448 274 880.

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 **4 kW for 120 VAC and 7 kW for 230 VAC** are recommended.

**WARNING!**

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

5 OPERATION

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!



WARNING!

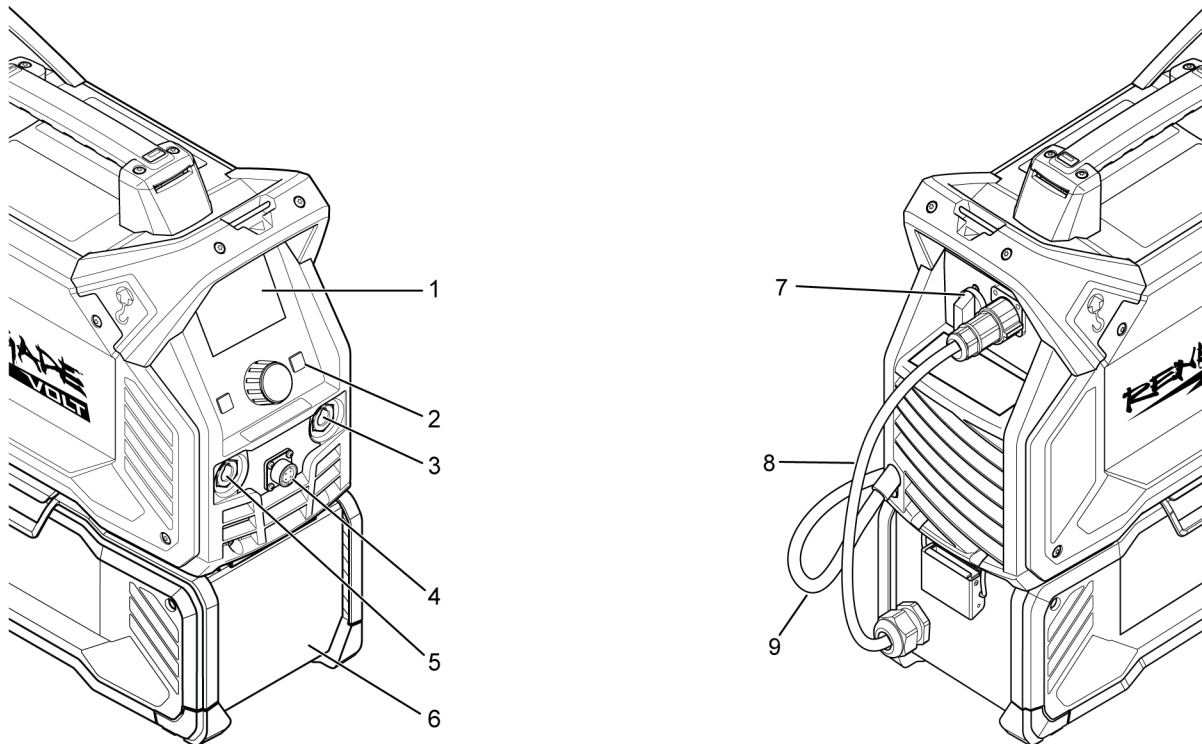
Electric shock! Do not touch the workpiece or the welding head during operation!



NOTE!

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

5.1 Connections



1. Setting panel / TFT display
2. ON/OFF Membrane switch
3. Positive welding terminal
4. Remote socket
5. Negative welding terminal

6. Battery box
7. Mains switch (120/230 VAC)
8. Battery box / DC interface cable
9. Mains supply cable

5.2 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 process or type of electrode used.

- For MMA / SMAW / Stick 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.
- For TIG / GTAW welding, the negative welding terminal (-) is used for the welding torch and the positive welding terminal (+) is used for the return cable.

- 1) Connect the return cable to the other output on the power source.
- 2) 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.

5.3 MMA / SMAW / Stick welding



MMA / SMAW / Stick welding melts the electrode as well as a local part of the workpiece. The flux, when melting, forms a protective slag and creates a shielding gas to protect the weld pool from atmospheric contamination.

5.4 TIG / GTAW welding



TIG / GTAW 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.

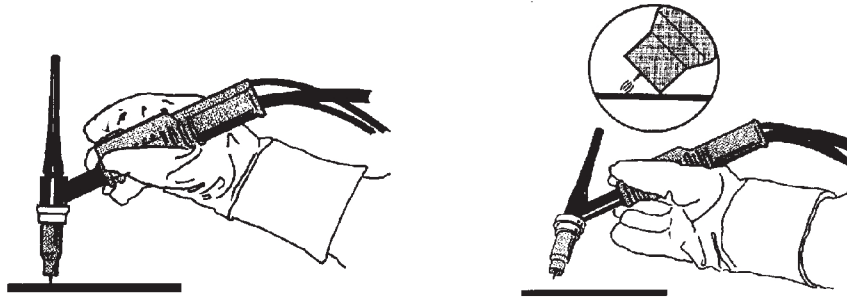
For TIG / GTAW welding, the welding power source shall be supplemented with:

- a TIG / GTAW torch with gas valve and accessories
- a gas hose connected to the gas supply input (threaded fitting 5/8"-18 RH (male))
- an argon gas cylinder
- an argon gas regulator
- a tungsten electrode

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

Live TIG / GTAW arc initiation

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



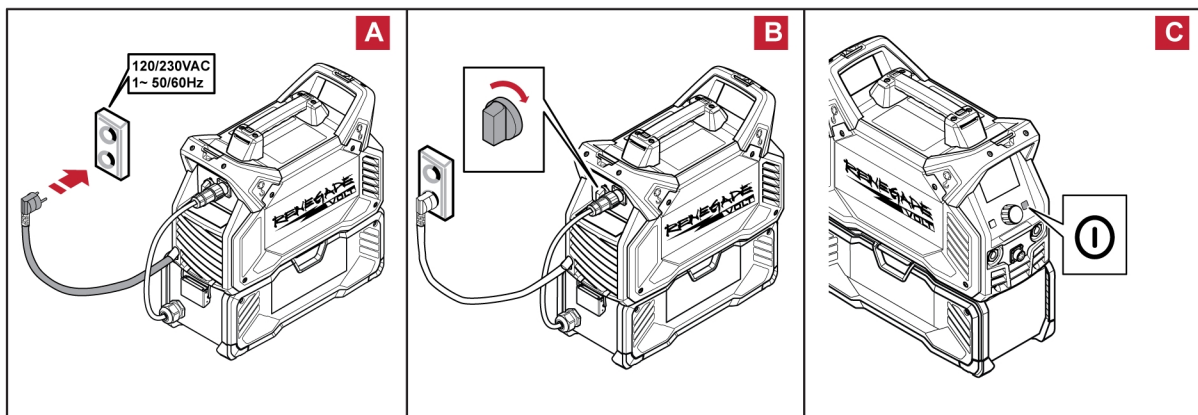
Voltage Reduction Device (VRD)

VRD

The VRD function ensures that the open-circuit voltage does not exceed 35 V when welding is not being carried out. If the VRD is enabled, it will be indicated on the header bar of the menu screen. Contact an authorised ESAB service technician to activate / deactivate this function.

This function is by default set to **OFF**.

5.5 Turning the power ON/OFF for Mains Mode



CAUTION!

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

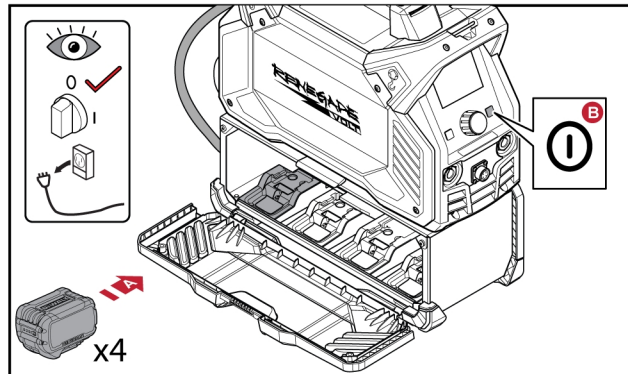
- 1) To turn the unit on:
 - a) Connect the mains supply cable to 120V or 230V mains supply.
 - b) Rotate the mains switch (120/230 VAC) located on the back panel to the ON (I) position.
 - c) Press the ON/OFF Membrane switch located on the front panel.
- 2) To turn the unit off:
 - a) Press and hold the ON/OFF Membrane switch for 3.0 seconds



NOTE!

All weld data will be saved when the power is interrupted or switched off under normal conditions.

5.6 Turning the power ON/OFF for Battery Mode



CAUTION!

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

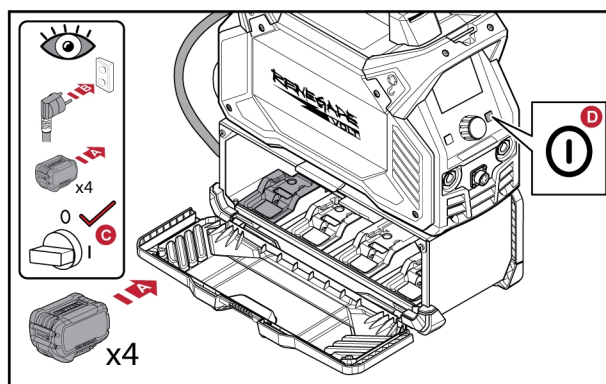
- 1) To turn the unit on:
 - a) Install the four batteries.
 - b) Press the ON/OFF Membrane switch on the front of the power source.
- 2) To turn the unit off:
 - a) Press and hold the ON/OFF Membrane switch for 3.0 seconds



NOTE!

All weld data will be saved when the power is interrupted or switched off under normal conditions.

5.7 Turning the power ON/OFF for AMP+ Hybrid Mode



CAUTION!

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



CAUTION!

Do not remove the batteries during welding.

- 1) To turn the unit on:
 - a) Install the four batteries.

- b) Connect the mains supply cable to 120V or 230V mains supply.
 - c) Rotate the mains switch (120/230 VAC) located on the back panel to the ON (I) position.
 - d) Press the ON/OFF Membrane switch located on the front panel.
- 2) To turn the unit off:
- a) Press and hold the ON/OFF Membrane switch for 3.0 seconds



NOTE!

All weld data will be saved when the power is interrupted or switched off under normal conditions.

5.8 Fan control

The Renegade VOLT ES 200i is fitted with a cooling fan. When cooling fan is not in use, the fan will automatically turn off.

This functionality has two advantages:

- To minimize power consumption.
- To minimize the number of pollutants into the power source, such as dust.

5.9 Thermal protection



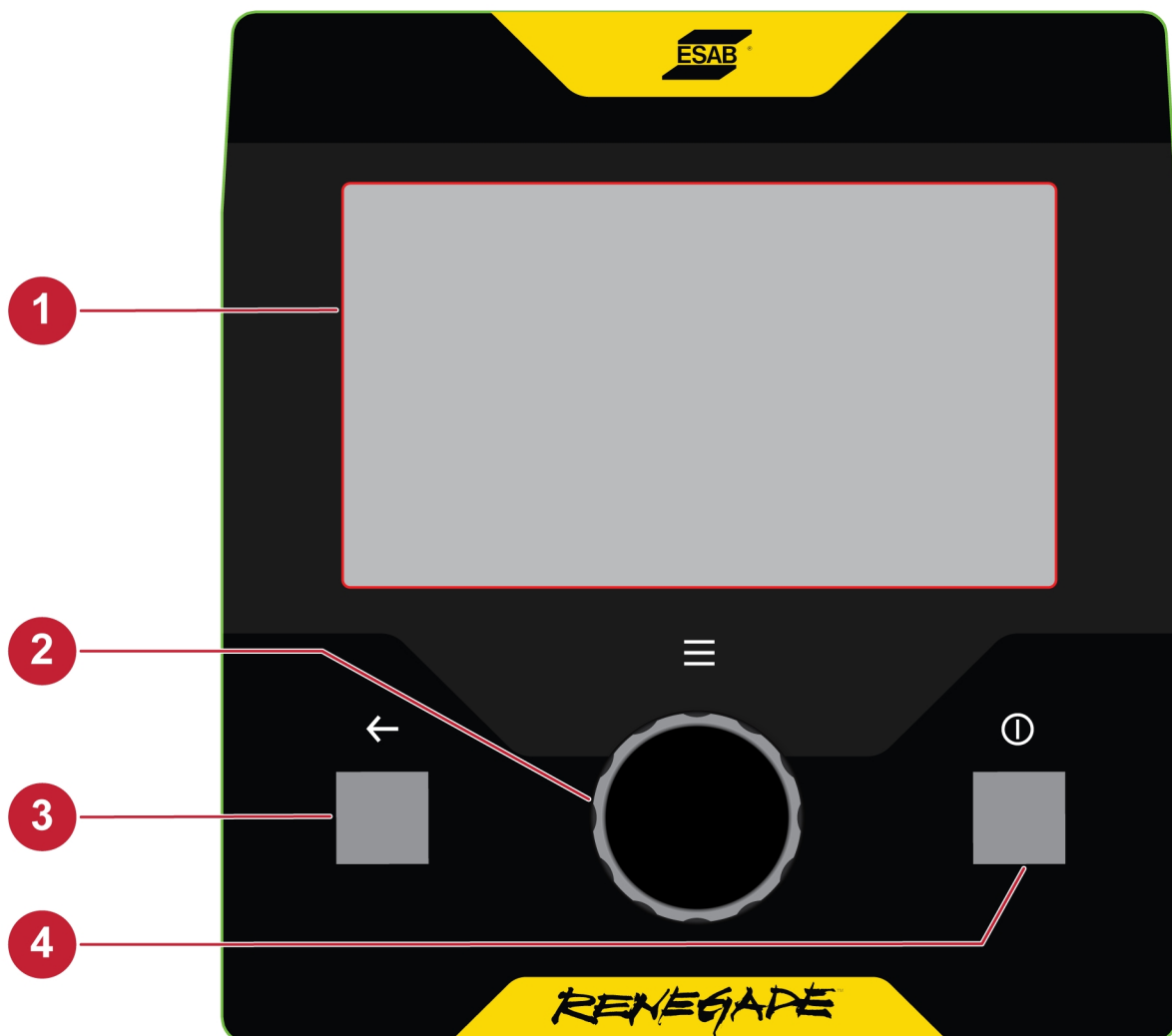
The unit is equipped with thermal protection. When overheating occurs, welding stops and over temperature indication activates on the front panel. The unit automatically resets when normal operating temperature is achieved.

6 USER INTERFACE

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!

General information about operation can be found in the "OPERATION" chapter of this manual. Read it through before you start using the equipment!

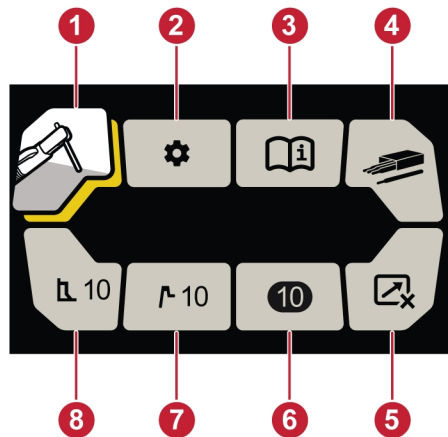
6.1 How to navigate



1. **Display** - shows set and measured values, and it allows for interaction with the unit.
2. **Pushbutton encoder** - used to adjust current, settings, enter menu, navigation, and selecting desired functions and features.
3. **Back button** - used to navigate to the previous screen and erase a saved job operation.
4. **ON/OFF Membrane switch** - used to turn the the power source on and off.
 - Single press – used to turn the power source on.
 - Long press (3 seconds) – used to turn the power source off.

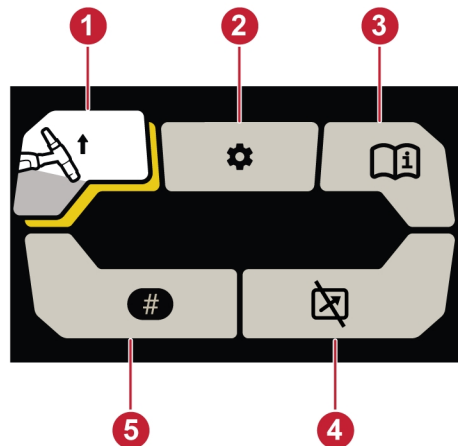
6.2 Menu screen

6.2.1 MMA / SMAW / Stick menu overview



1. Process selection
2. Settings
3. Information
4. Electrode type
5. Remote control
6. Jobs
7. Hot start
8. Arc force

6.2.2 TIG / GTAW menu overview

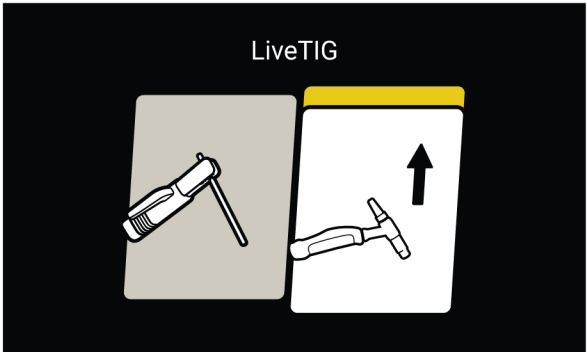
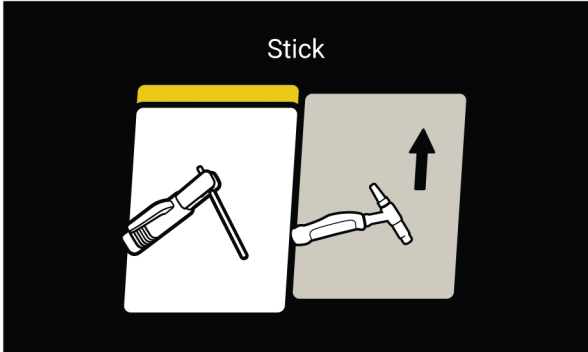
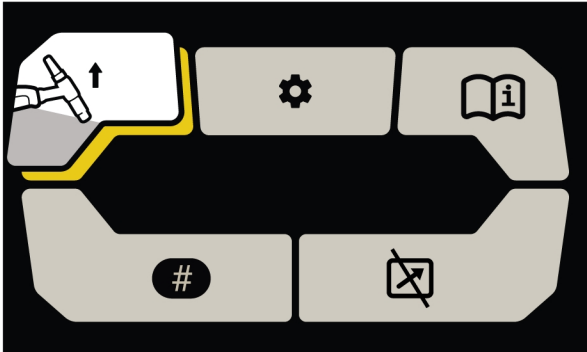


1. Process selection
2. Settings
3. Information
4. Remote control
5. Jobs

6.2.3 Process selection

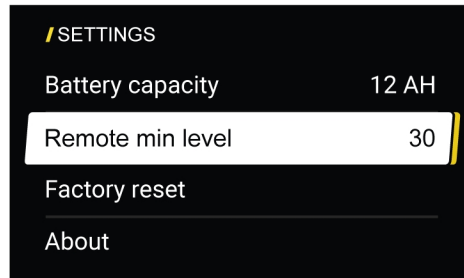
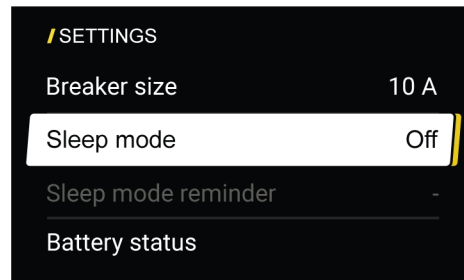
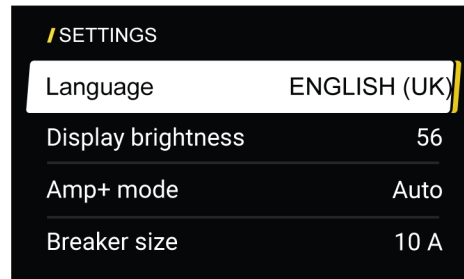
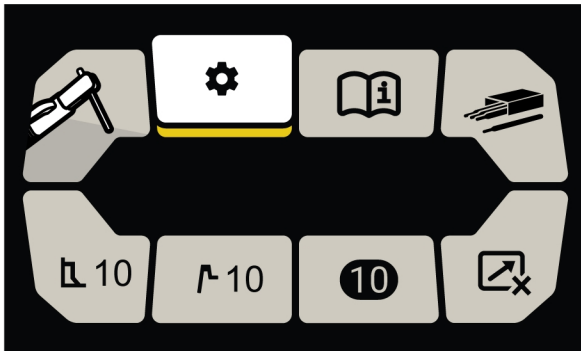
The option of selecting between MMA / SMAW / Stick or Live TIG / GTAW mode.

From the home screen, press the pushbutton encoder to enter the menu screen. Select the desired welding process and press the pushbutton encoder.



6.2.4 Settings

From the home screen, press the pushbutton encoder to enter the menu screen. Turn the pushbutton encoder to the settings icon and press to enter the settings options.



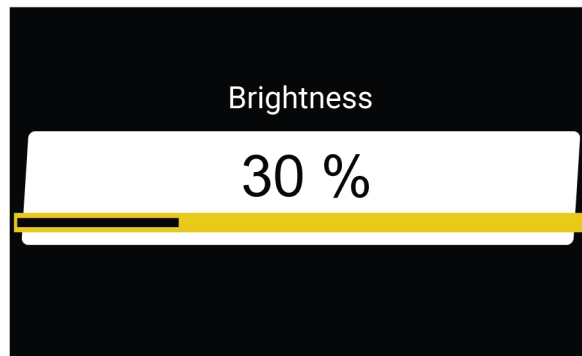
Language

This function enables the user to choose the language of the display. Press the pushbutton encoder, rotate the encoder to the desired language, and press the encoder again. Press the back button to confirm the selected language.



Display brightness

This function enables the user to adjust the TFT display brightness from 20% to 100%. Press the pushbutton encoder, rotate the encoder to the desired brightness, and press the back button to confirm.



AMP+ Hybrid Mode

AMP+ Hybrid Mode is used only when both mains supply and battery packs are connected by the user.

It consists of three modes, **OFF**, **Auto**, and **Extended**. Default mode is **OFF**.

For 120 V mains supply,

- **OFF:** The user cannot make any adjustments corresponding to the AMP+ Hybrid Mode.
- **Auto:**
For MMA / SMAW / Stick operation, the unit will operate in AMP+ Hybrid Mode from 110 A to 150 A weld current.
For Live TIG / GTAW operation, the unit will operate in AMP+ Hybrid Mode 140 A to 180 A weld current.
- **Extended:**
For MMA / SMAW / Stick operation, the unit will operate in AMP+ Hybrid Mode from 55 A to 150 A weld current.
For Live TIG / GTAW operation, the unit will operate in AMP+ Hybrid Mode 70 A to 180 A weld current.
- **Circuit breaker selection during 120 V operation:**
This function will be enabled when the setting is in either "Auto" or "Extended" under AMP+ Hybrid Mode.
The default circuit breaker setting is 20 A. The user can select the correct circuit breaker size based on the specified breaker size the unit is connected to.
For e.g., if the breaker size is selected as 10 A, the effective input current will be limited to 10 A through AMP+ Hybrid Mode.

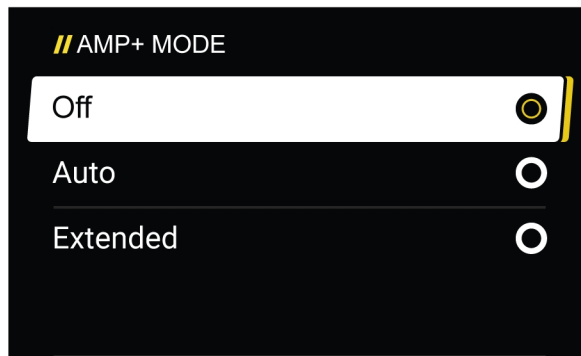
For 230 V mains supply,



NOTE!

AMP+ Hybrid Mode will work when a circuit breaker setting is done.

- **OFF:** The user cannot make any adjustments corresponding to the AMP+ Hybrid Mode.
- **Auto/Extended:**
This function will be enabled when the setting is in either "Auto" or "Extended" under AMP+ Hybrid Mode.
- **Circuit breaker selection during 230V operation:**
The default circuit breaker setting is 20 A. The user can select the correct circuit breaker size based on the specified breaker size the unit is connected to.
For e.g., if the breaker size is selected as 10 A, the effective input current will be limited to 10 A through AMP+ Hybrid Mode.



Breaker size

This function is accessible when the AMP+ Hybrid Mode is in "ON". The default setting is 20A. The user can select the correct breaker size based on the specified breaker size the unit is connected to.

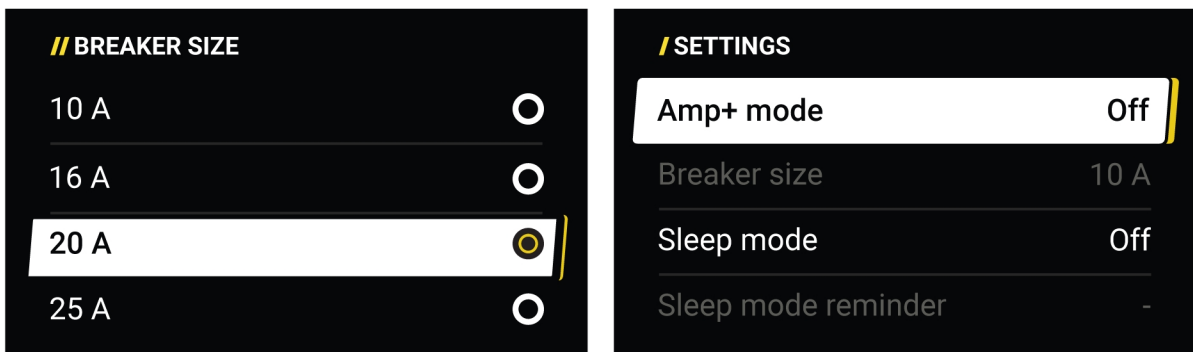


NOTE!

The selected breaker size will reduce the current drawn from the main's supply when the power source is connected to a main's supply with a rating lower than the essential circuit breaker rating demanded by the power source.

The output current delivered from the main's supply will be supplemented by the batteries connected to avoid tripping of the circuit breaker.

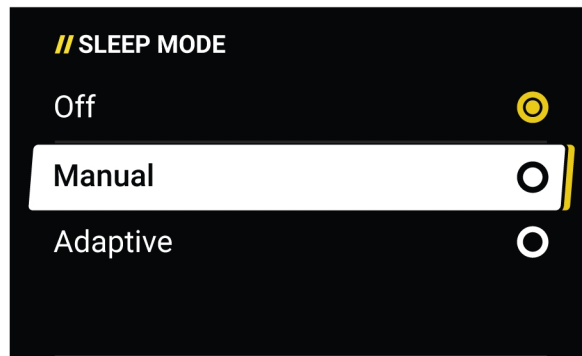
When the AMP+ Hybrid Mode is in "OFF", the breaker size function will be disabled.



Sleep mode

Sleep mode can be configured in three ways,

- **Off:** System will not enter "SLEEP MODE".
- **Manual:** User determines when the sleep mode reminder will be displayed.
- **Adaptive:** Will be activated based on the system temperature.



Sleep mode reminder

When “Manual” sleep mode has been selected, a reminder will be displayed on the user interface that the unit will be entering sleep mode. This reminder time can be selected, 7, 10, or 15 minutes.

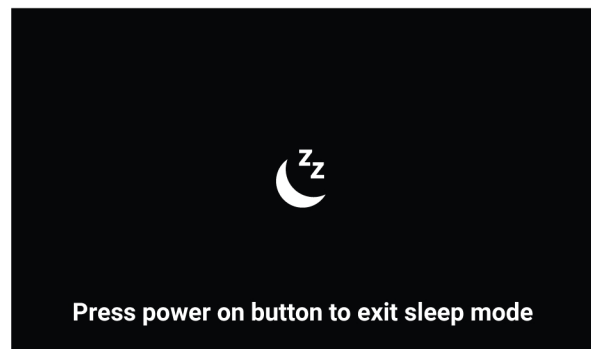
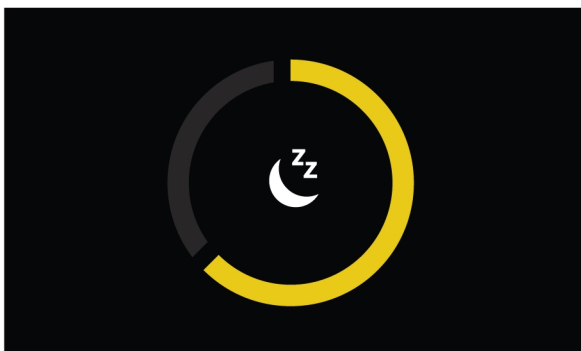
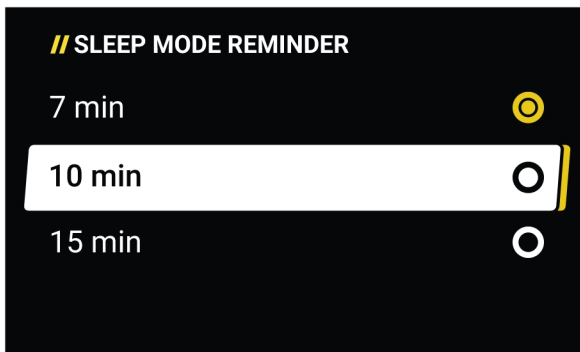
When the unit has been inactive for 3 minutes, a countdown screen will be displayed on the user interface and start the countdown process, for the reminder of the selected time. If 7 minutes has been selected as the countdown reminder time, the countdown screen will be displayed for 4 minutes.

To return to working mode during the countdown time, turn the control knob.

During Mains Mode, if the unit has entered the sleep mode the user will be prompted to press “ON/OFF Membrane switch” to exit sleep mode.

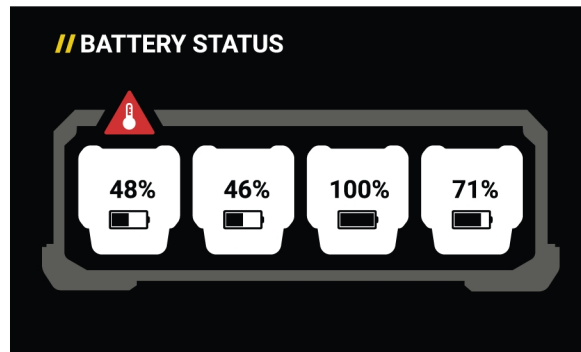
During Battery Mode, if the unit has entered the sleep mode the unit will turn off. Press the “ON/OFF Membrane switch” to turn the unit on.

During AMP+ Hybrid Mode, if the unit has entered the sleep mode, the user will be prompted to press “ON/OFF Membrane switch” to exit sleep mode.



Battery status

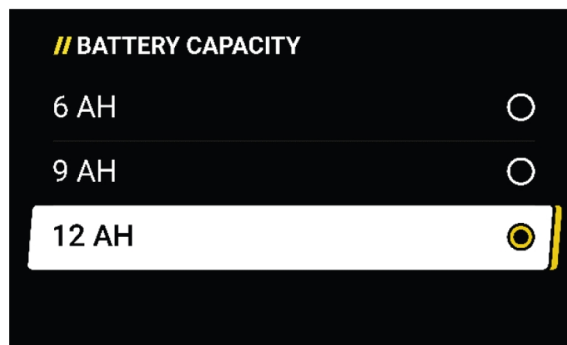
To see the status of the batteries, navigate to the Battery status display. This display provides the status of each battery installed and will indicate high battery temperature.



Battery capacity

The Renegade VOLT can be configured to operate with 6AH, 9AH, or 12AH batteries. Make the correct selection by matching the AH of the battery with one of the options in the display. Default setting is 12AH.

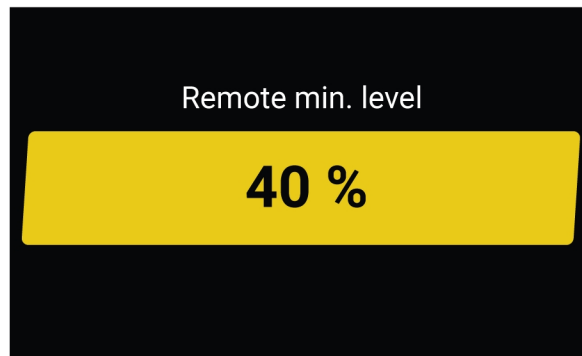
Mixed battery AH combinations are not recommended and will not be displayed.



Remote min level

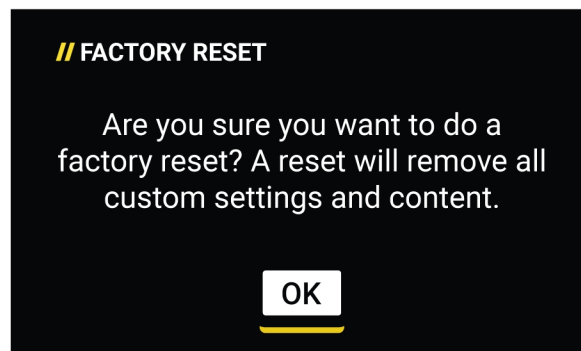
This is used to set the minimum current for the foot control or hand control. It is set in % of the current value, from 0–99% in steps of 1%.

For example: If the set current value is 100 A and the remote min current function is set to 20, the remote min current will be 20 A. If the current is set to 80 A and the remote min current function is set to 50, the remote min current will be 40 A.



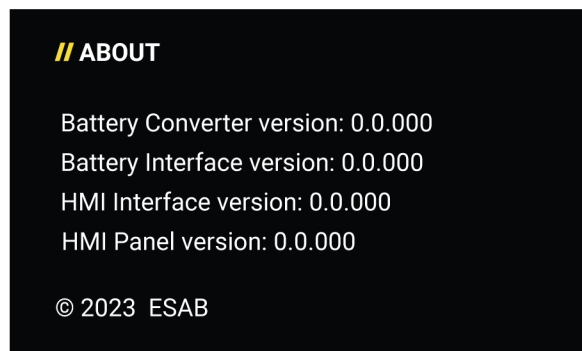
Factory reset

Factory reset will delete all custom configurations and reset the unit to the original factory configuration.



About

Provides the software revision levels of all main components of the system, power supply and battery box. This information may be required if the unit ever needs to be serviced.

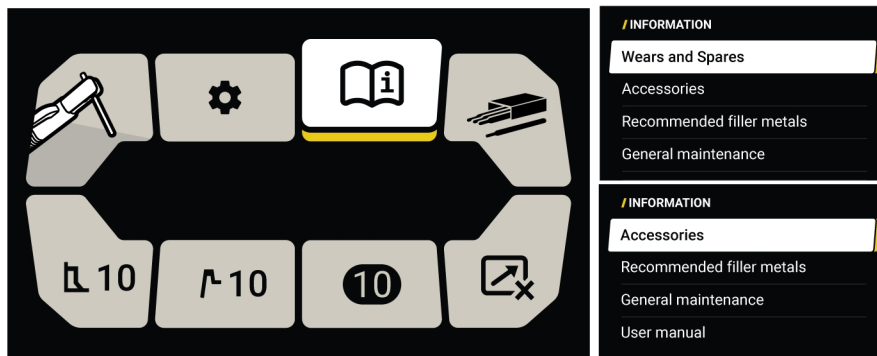


6.2.5 Information

Provides information to the user that can be beneficial and recommended maintenance process.

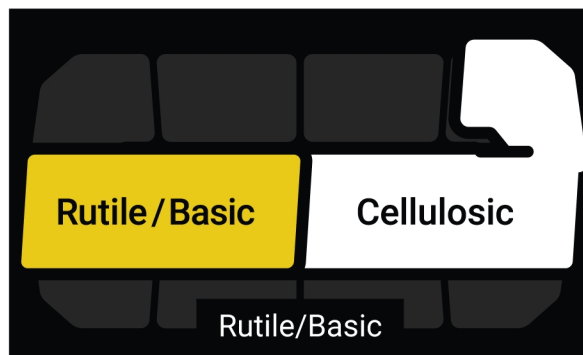
- Wears and spares
- Accessories
- Filler metals

- General maintenance
- User manual

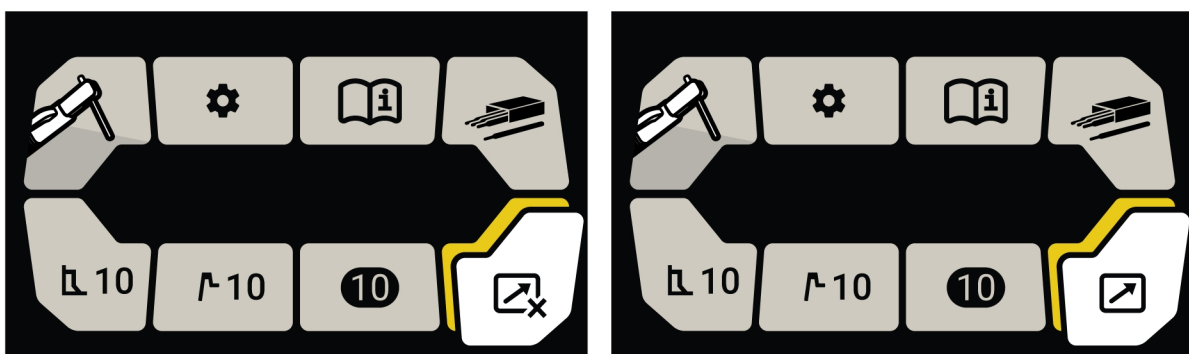


6.2.6 Electrode

Allows the user to select between cellulosic (6010) or basic/rutile electrodes (most others), determining the type of arc characteristic that is best suited to run that type of electrode.



6.2.7 Remote control

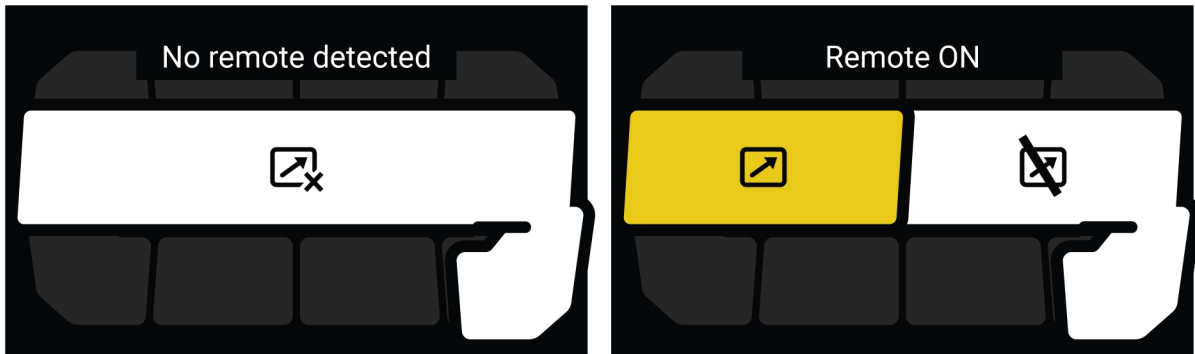


Allows the user to determine how to control the output of the unit, home screen or remotely.

To enable the remote function, connect the remote control to the 8-pin remote control receptacle. The remote control is automatically detected.

When a remote control is not connected, the display shows “No remote detected”. When a remote control is connected, the user can select “Remote ON” or “Remote OFF”.

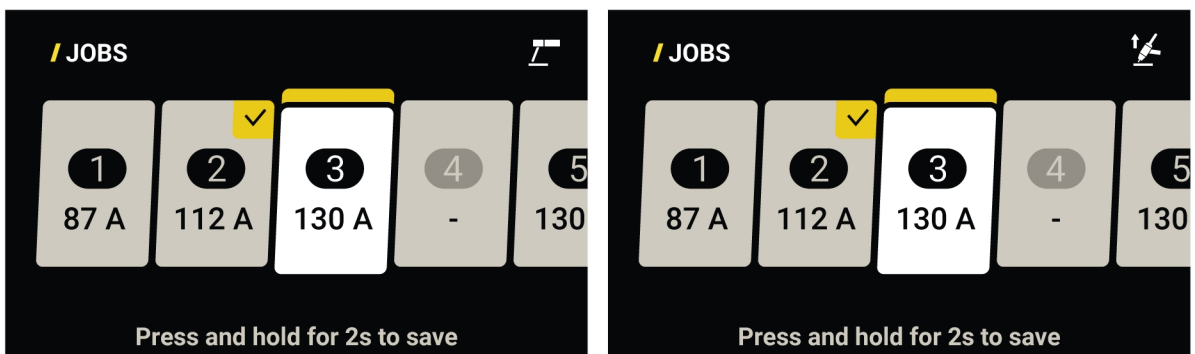
The operating range of the remote is determined by the amperage setting on the main display. The remote control will control the amperage from the minimum of the power source to the maximum current set on the main display.



6.2.8 Jobs



Provides the user the option to easily save and recall specific welding condition that are used on a frequent basis.



To create jobs: It is required to establish specific welding parameters that are desired in MMA / SMAW / Stick or Live TIG / GTAW mode. Ten (10) job operations are available distinctly for each mode (MMA / SMAW / Stick or Live TIG / GTAW).

To save jobs: Initially, to create the welding parameters access the menu and select the Jobs tile. There are 10 individual jobs that can be created for each process setting. Use the push button encoder to select the desired job number. When the desired job number is selected, press, and hold the encoder for 2 seconds. The job is now saved. The parameters that were established are displayed in the job tile and will be the active job. The job number will be displayed on the home screen.

To recall jobs: Access the menu and select the jobs tile under the corresponding weld process. Scroll through the jobs library to find the desired job to recall. Press the rotary encode to load the job.

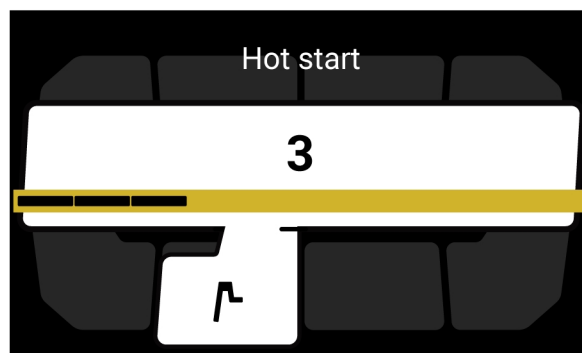


To delete jobs: Access the menu and select the jobs tile. Use the push button encoder to select the desired job number. When the desired job number is selected, press, and hold the back button until the screen displays "Clear this Job position?". Press control knob to confirm. The job is now deleted.

6.2.9 Hot start

Controls the amount of additional amperage at arc initiation to prevent the electrode from sticking to the work piece and preventing a cold start at the beginning of the weld.

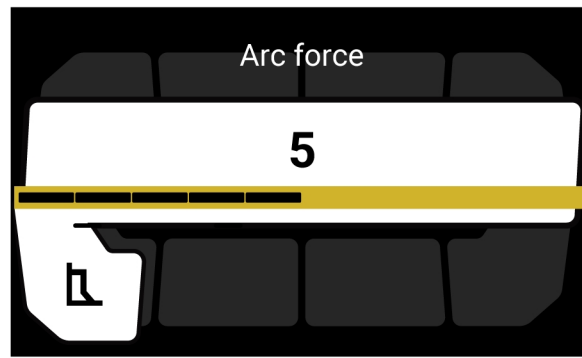
Increase the hot start value if there are difficulties striking the arc or decrease the hot start value if electrode appears to flare excessively at the start of the weld (range 0-10).



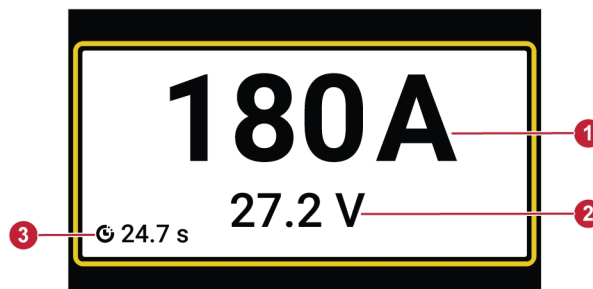
6.2.10 Arc force

Controls the amount of additional amperage when in short arc length condition.

Increase the arc force percentage when in a tight or narrow weld joint or decrease the arc force percentage when welding a normal weld (range 0-10).



6.3 Welding screen

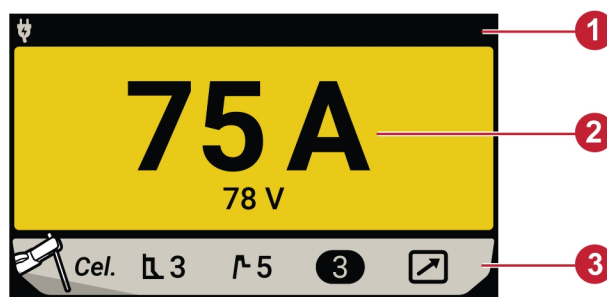


1. Reflects the preset current value, momentary current value during welding, or average current of the last weld.
2. Reflects the open circuit voltage value when idle, momentary voltage during welding, or the last weld voltage value.
3. Reflects the time duration of the last weld.

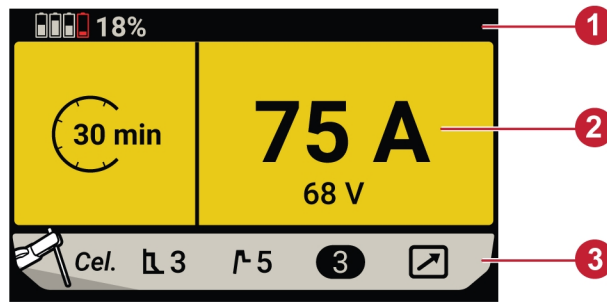
Values of last weld will be displayed for 40 seconds after welding. When time expires, the display will return to the home view.

6.4 MMA / SMAW / Stick home screen settings

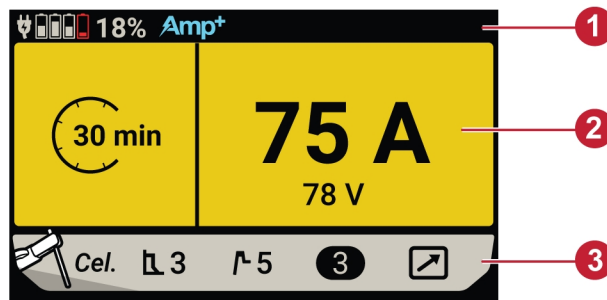
Mains Mode



Battery Mode



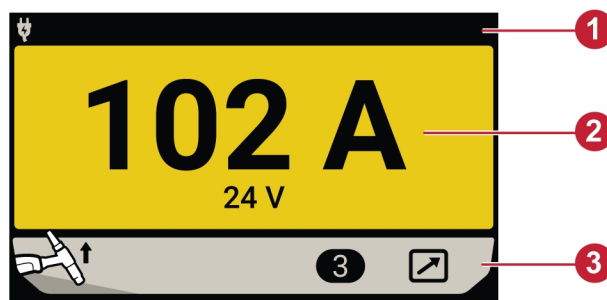
AMP+ Hybrid Mode



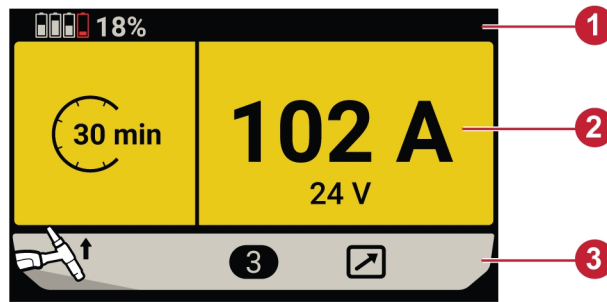
1. Header bar of home screen displays the battery status and mode of power source.
2. The home screen preset weld current when operating in “Mains Mode”. When the unit is operating in “Battery Mode” or “AMP+ Hybrid Mode”, the display will show preset weld current and approximate remaining arc-on time.
3. Footer bar of home screen display the status of the weld process, arc force level, hot start level, job selection and remote connection. To make any adjustment, press pushbutton encoder to enter menu screen, and navigate to the desire variable to be adjusted and select to make adjustment.

6.5 TIG / GTAW home screen settings

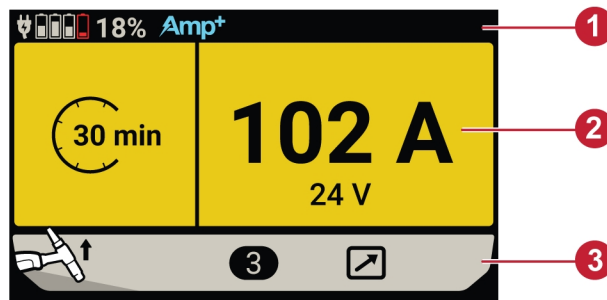
Mains Mode



Battery Mode



AMP+ Hybrid Mode



1. Header bar of home screen displays the battery status and mode of power source.
2. The home screen shows preset weld current when operating in "Mains Mode". When the unit is operating in "Battery Mode" or "AMP+ Hybrid Mode" the display will show preset weld current and approximate remaining arc-on time.
3. Footer bar of home screen displays the status of the weld process, job selection and remote connection. To make any adjustment, press pushbutton encoder to enter menu screen and navigate to the desired variable to be adjusted and select to make adjustment.

7 MAINTENANCE

**WARNING!**

The mains supply must be disconnected during cleaning and maintenance.

**CAUTION!**

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

**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.



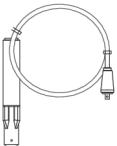

Before each use - make sure that:

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

7.1 Routine maintenance

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

The schedule is valid for both power source and battery box.

Interval	Area to maintain		
Every 3 months	 <p>Clean or replace unreadable labels.</p>	 <p>Clean weld terminals.</p>	 <p>Check or replace weld cables.</p>
Every 12 months or depending on environmental conditions (by authorised service technician)	 <p>Clean inside equipment. Use dry compressed air with 4 bar pressure.</p>		

7.2 Cleaning

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!

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

7.2.1 Cleaning the power source

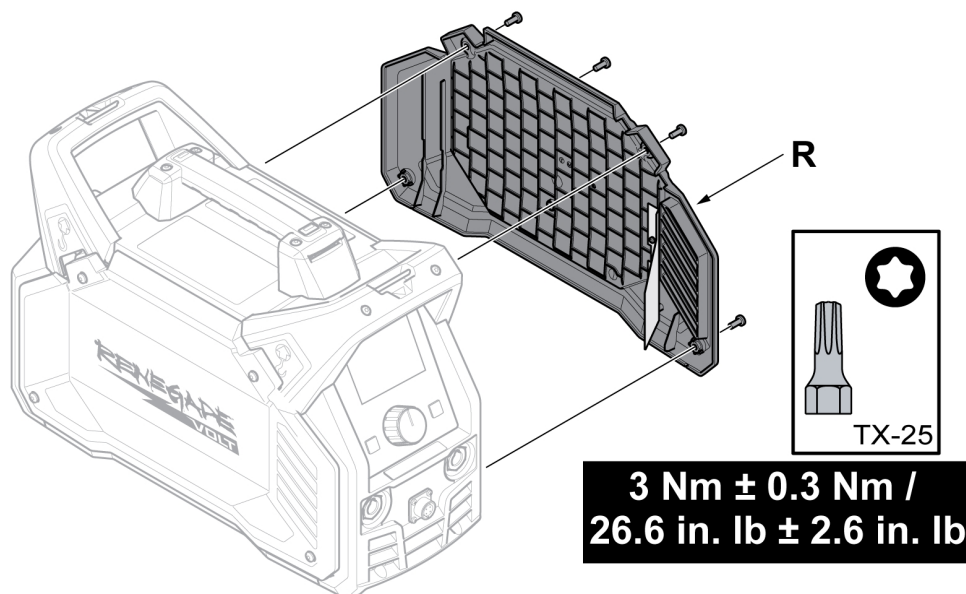
- 1) Disconnect the power source from the mains supply.



WARNING!

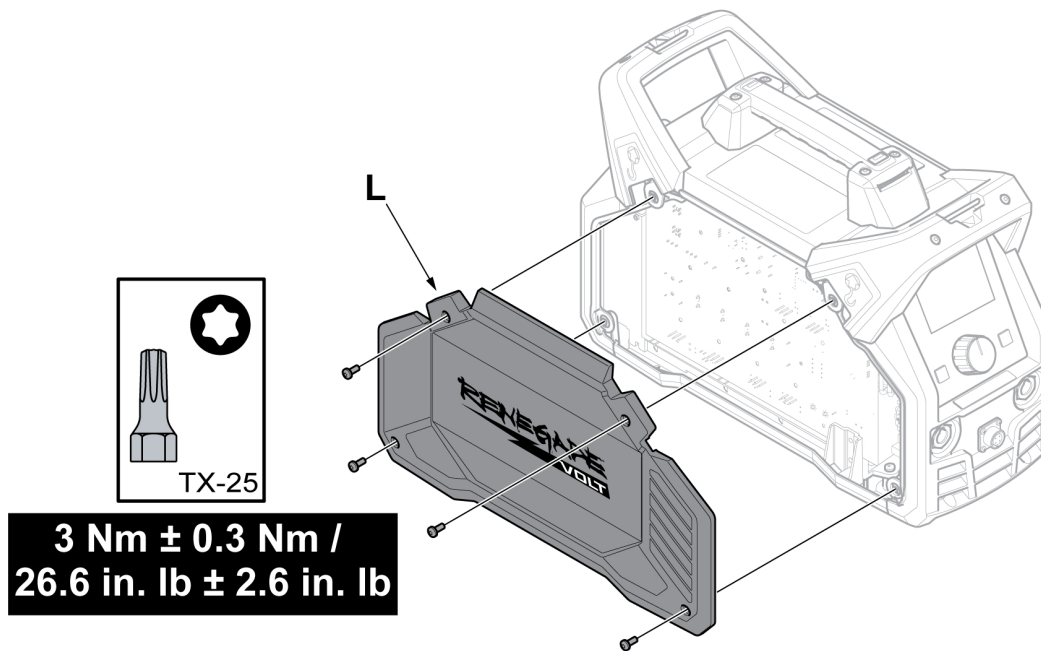
Wait at least 4 minutes for the capacitors to discharge before continuing.

- 2) Disconnect the power source from the battery box.
- 3) Remove the four screws securing the right-side panel (**R**) and remove the panel.



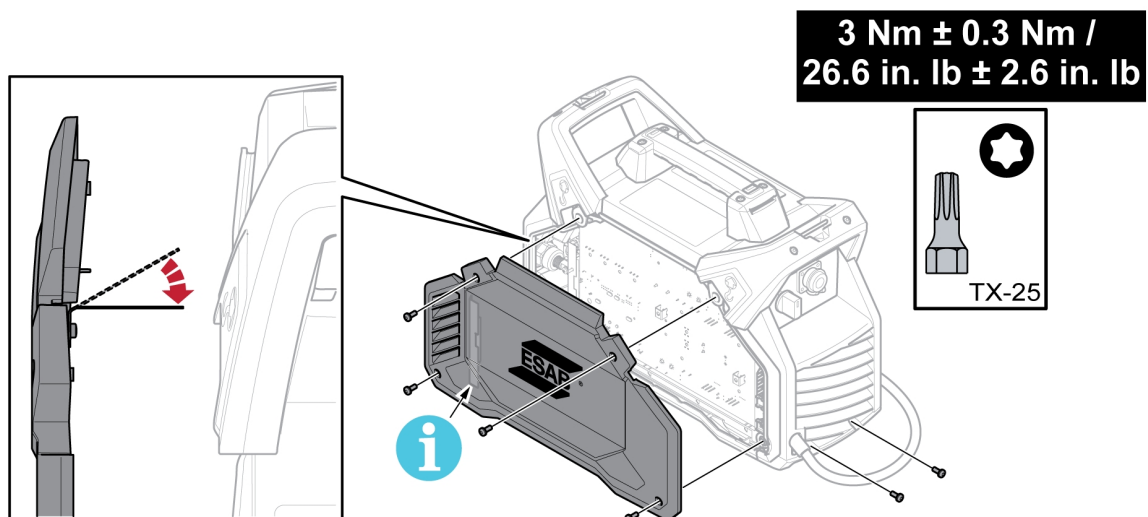
- 4) Clean the right side of the power source, using dry compressed air with reduced pressure of 4 bar (58 psi).

- 5) Remove the four screws securing the left side panel (L) and remove the panel.



- 6) Clean the left side of the power source, using dry compressed air with reduced pressure of 4 bar (58 psi).
- 7) Make sure that there is no dust left on any part of the power source.
- 8) Reassemble the power source after cleaning and perform testing according to local standards. Follow the procedure in the section "After repair, inspection and test" in the Service manual.
- 9) Install both the side panels and tighten the screws with a correct tightening torque mentioned in the following illustration.

i 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.



7.2.2 Cleaning the battery box

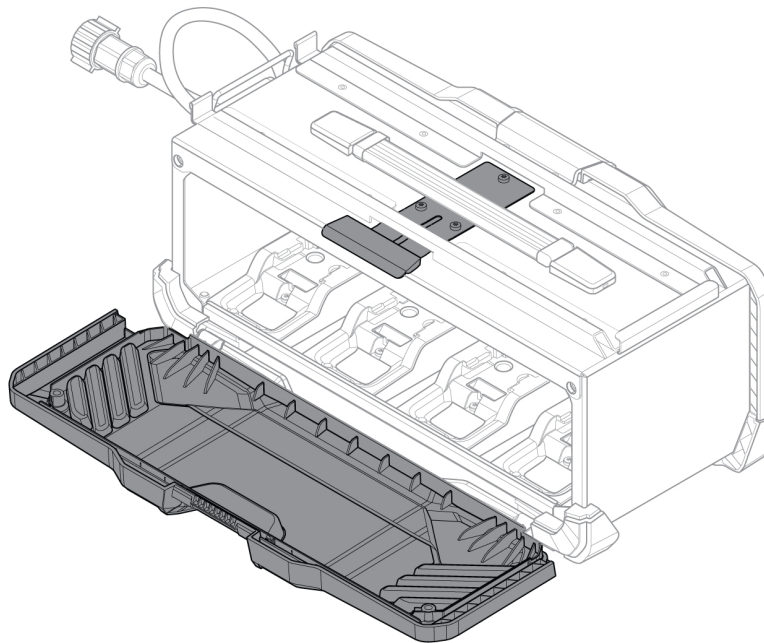
- 1) Disconnect the battery box from the power source.



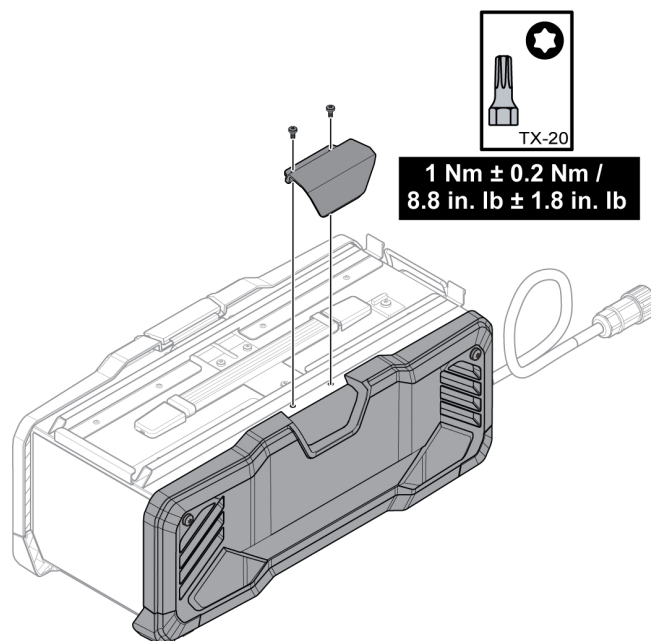
CAUTION!

Ensure that the battery box interface cable is unplugged from the power source and all the batteries are removed before cleaning.

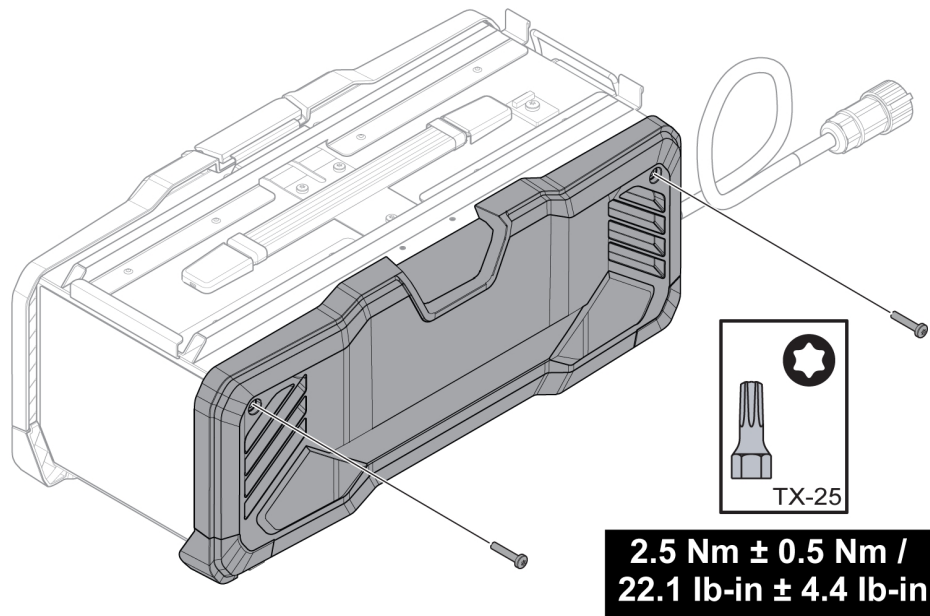
- 2) Open the left side panel by lifting up the door latch lock.



- 3) Clean the battery box, using dry compressed air with reduced pressure of 4 bar (58 psi).
- 4) Gently, close the left side panel.
- 5) To open the right-side panel, remove the two screws securing the door latch lock cover.



- 6) Remove the two screws securing the right-side panel and open the right-side panel.



- 7) Clean the battery box, using dry compressed air with reduced pressure of 4 bar (58 psi).
- 8) Close the right-side panel reassemble the door latch lock cover in the exact reverse order with the correct tightening torque mentioned in the previous illustrations.

8 TROUBLESHOOTING

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

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

Type of fault	Corrective action
MMA / SMAW / Stick welding problems	Check that the welding process is set to MMA / SMAW / Stick.
	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 / GTAW welding problems	Check the welding process is set for Live TIG / GTAW as necessary.
	Check that the TIG / GTAW 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 / GTAW 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 TFT display (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 and outlets are not clogged.
	Clean inside the power source according to routine maintenance.

9 ERROR CODES

The error code is used to indicate that a fault has occurred in the equipment. Errors are indicated by the text "ERROR" 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.

9.1 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
206.10	<p><i>Temperature fault</i> The temperature of the power source is too high. TFT display will indicate a temperature fault.</p> <p>Action: The error code will automatically disappear and the TFT display 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>
906.07	<p><i>Battery Temperature warning</i> The temperature of the battery is too high. TFT display will indicate a battery temperature warning.</p> <p>Action: The error code indicates that the user needs to remove the battery and allow it to cool down. If the error persists, contact a service technician.</p>
906.08	<p><i>Battery Temperature error</i> The temperature of the battery is too high. TFT display will indicate a battery temperature error.</p> <p>Action: This error code will automatically shut the system down after a few seconds, indicating that the user must remove the battery to cool down. If the error persists, contact a service technician.</p>
937.01	<p><i>Battery under voltage warning</i> The battery is about to drain completely. TFT display will indicate a battery under voltage warning.</p> <p>Action: The error code indicates that the user needs to remove the batteries & charge them immediately. If the error persists, contact a service technician.</p>
937.02	<p><i>Battery under voltage error</i> The battery voltage gets drained completely. TFT display will indicate a battery under voltage error.</p> <p>Action: This error code will automatically shut down the system after a few seconds, indicating that the user needs to remove the batteries & charge them immediately. If the error persists, contact a service technician.</p>
937.05	<p><i>Battery Cell - voltage unbalance error</i> If one of the cells inside the battery gets drained completely. TFT display will indicate a battery cell - voltage unbalance error.</p> <p>Action: This error code will automatically shut down the system after a few seconds, indicating that the user needs to remove the batteries & charge them immediately. If the error persists, contact a service technician.</p>

Error code	Description
937.06	<p data-bbox="379 246 566 280"><i>Battery missing</i></p> <p data-bbox="379 280 1348 347">If any of the batteries are not connected or if the user did not connect the battery properly into the battery terminal. TFT display will indicate a battery missing error.</p> <p data-bbox="379 358 1332 448">Action: The error code will automatically disappear when the user connects the batteries properly into the battery terminal. If the error persists, contact a service technician.</p>
937.07	<p data-bbox="379 470 861 504"><i>Battery Cell - voltage unbalance warning</i></p> <p data-bbox="379 504 1364 571">If one of the cells inside the battery has a low voltage compared to other cells. TFT display will indicate a battery cell - voltage unbalance warning.</p> <p data-bbox="379 582 1316 638">Action: The error code indicates that the user needs to remove the batteries & charge them immediately. If the error persists, contact a service technician.</p>

10 ORDERING SPARE PARTS



CAUTION!

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

Renegade VOLT ES 200i is designed and tested in accordance with the **international standards BS EN IEC 60974-1 & BS EN IEC 60974-10 Class A**. 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.

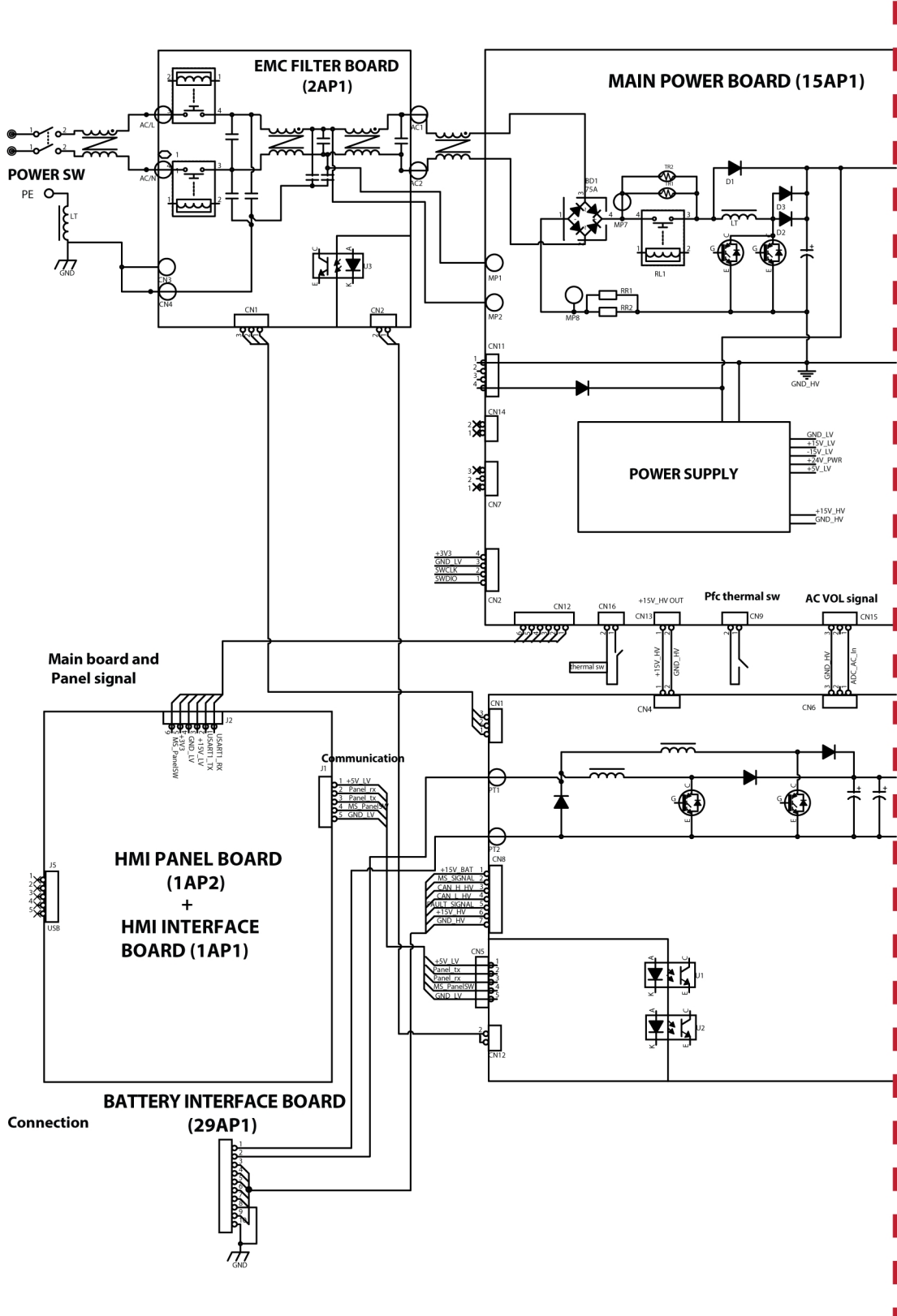
Spare parts and wear parts can be ordered through your nearest ESAB dealer, see esab.com. When ordering, please state product type, serial number, designation and spare part number in accordance with the spare parts list. This facilitates dispatch and ensures correct delivery.

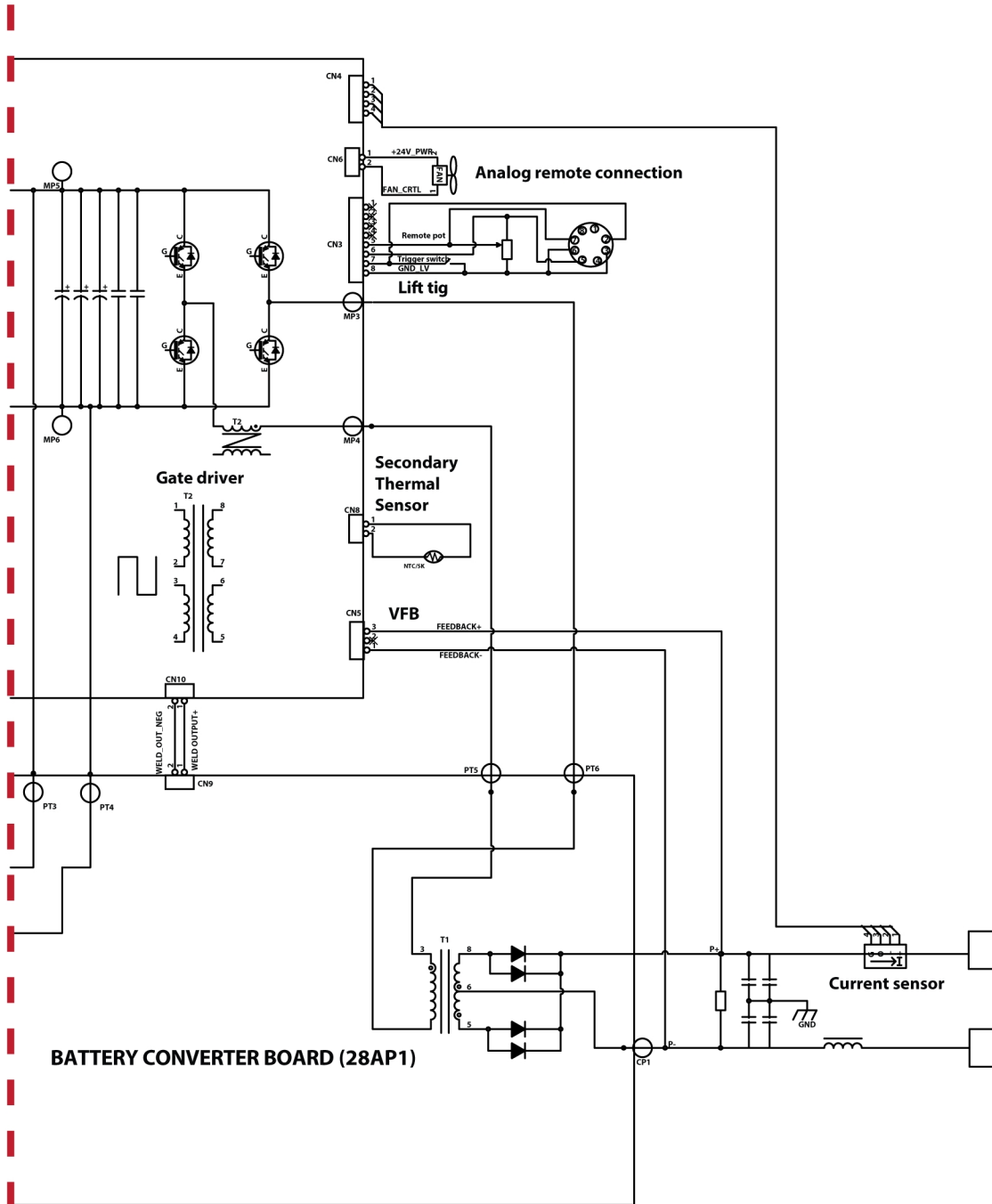
The spare parts list is published in a separate document that can be downloaded from the Internet:
www.esab.com

APPENDIX

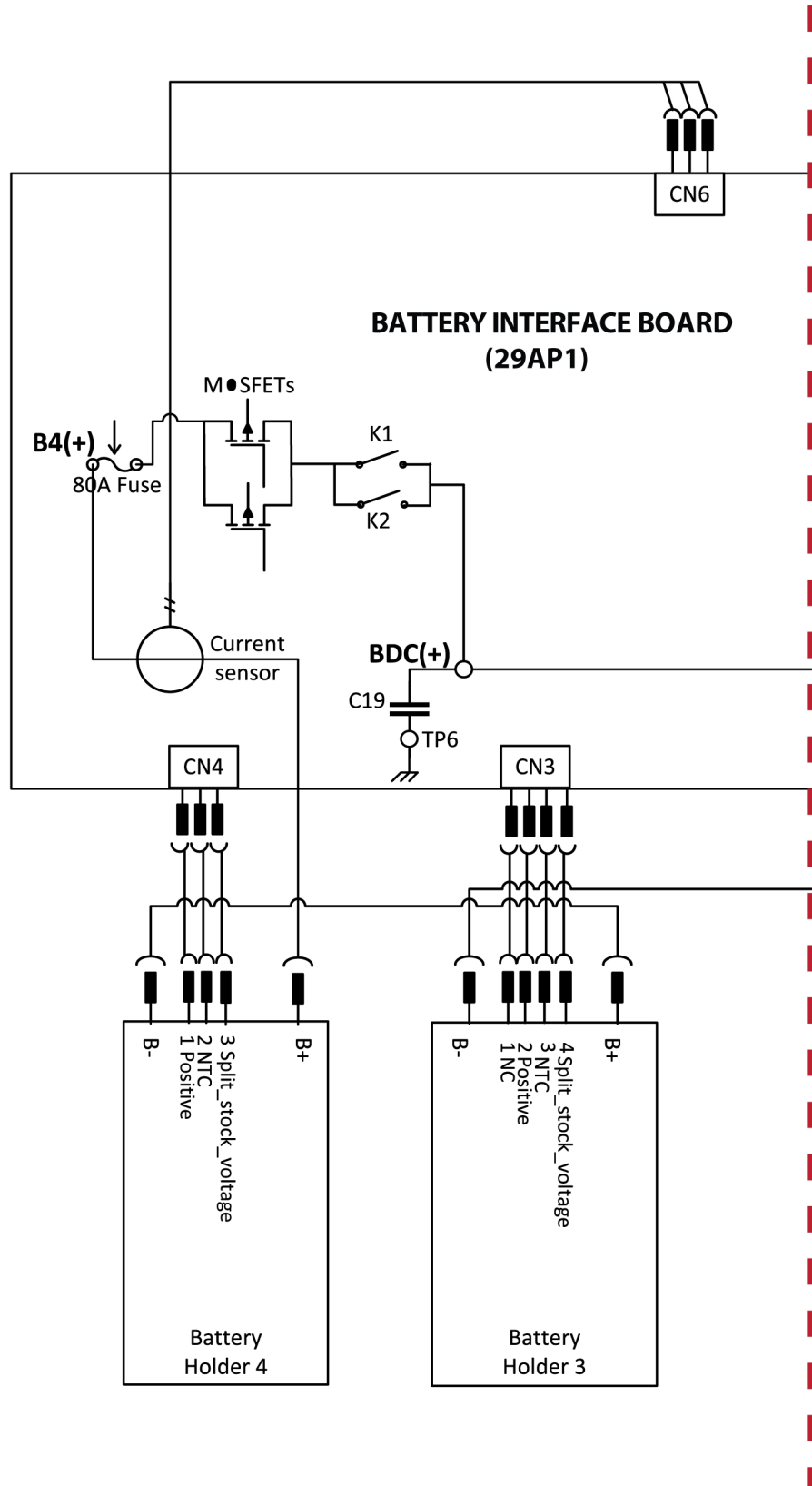
WIRING DIAGRAM

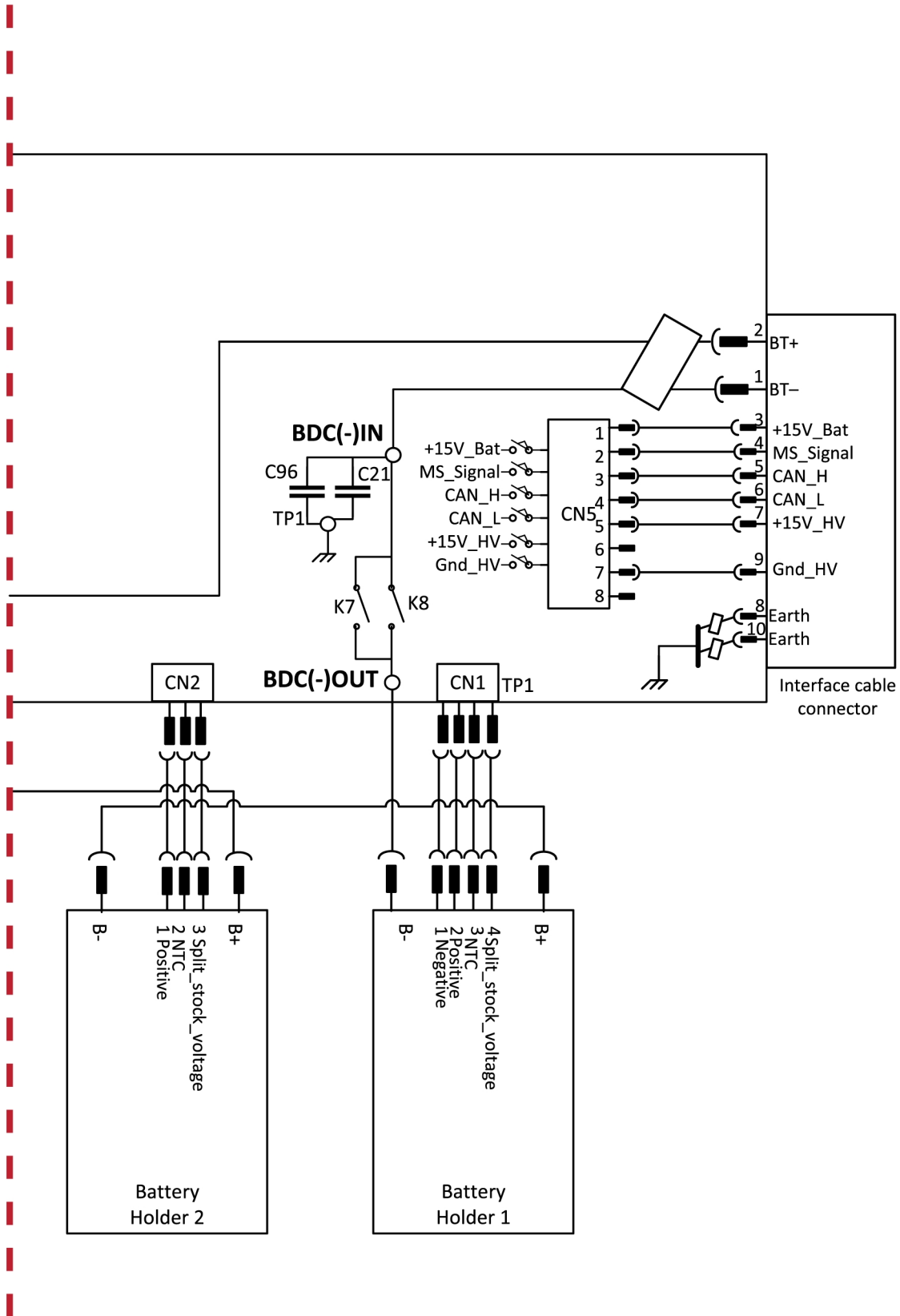
Power source



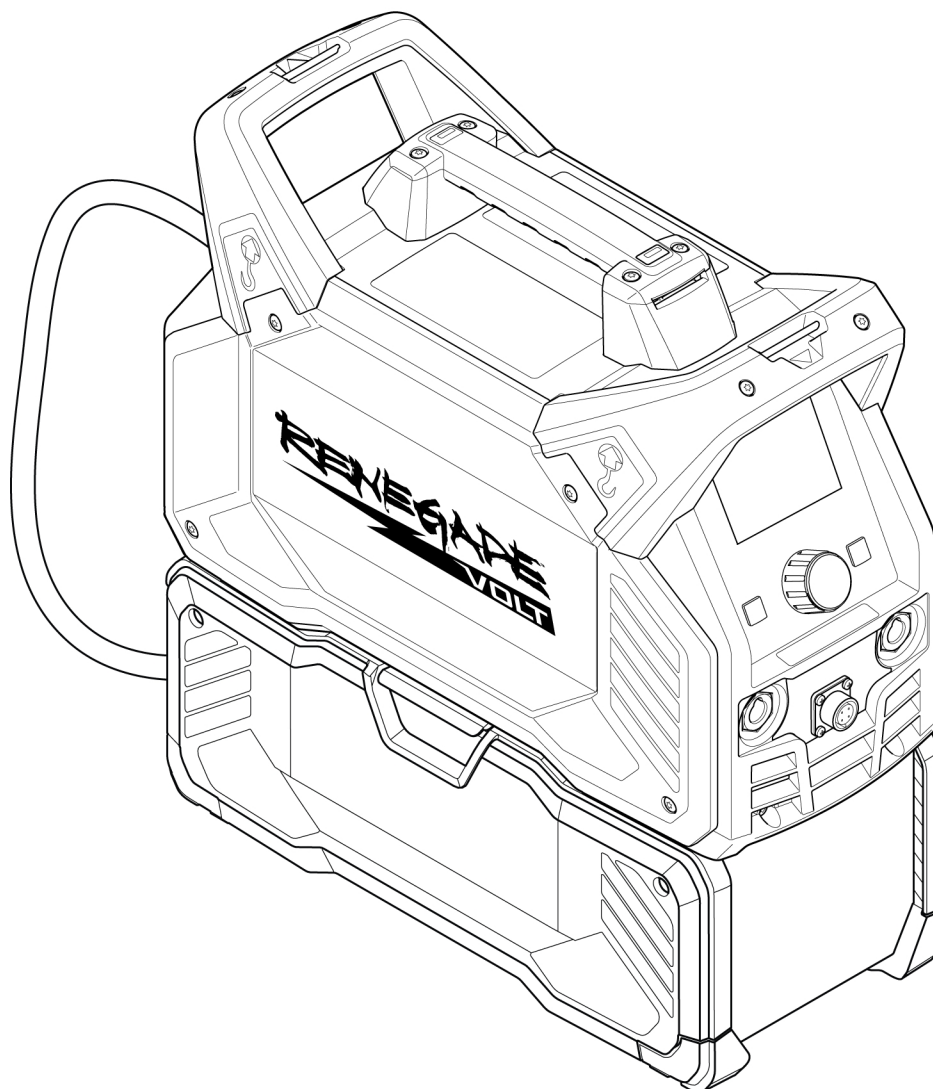


Battery box





ORDERING NUMBERS

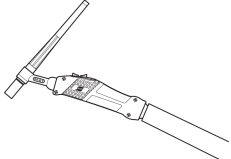
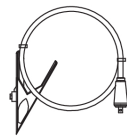
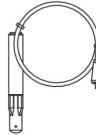
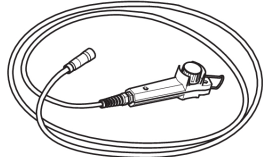
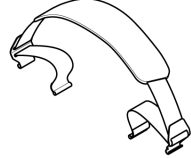

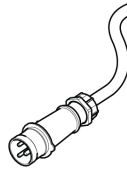


Ordering number	Denomination	Notes
0447 800 881	Renegade VOLT ES 200i	Power source with battery box - CE
0447 800 883	Renegade VOLT ES 200i	Power source with battery box - UKCA
0447 813 001	Safety Instruction manual	
0447 820 001	Spare parts list	

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

ACCESSORIES

0700 025 514 0700 025 522	SR-B 17V, OKC 50, 4 m, (12.5 ft) SR-B 26V, OKC 50, 4 m, (12.5 ft)	
0700 006 901	Return cable 200A, 10 ft. (3 m)	
0700 006 900	Electrode Holder 200 A and Lead Assembly, 3 m (10 ft)	
0700 500 084	MMA / SMAW / Stick 4 Analogue Remote-Control incl. 10 m cable	
0445 197 880	Shoulder strap	
W4014450	Foot pedal, with 4.5 m (15 ft) cable, 8-pin connector	
0448 274 880	Mains plug kit (includes mains plug and assembly instruction)	



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