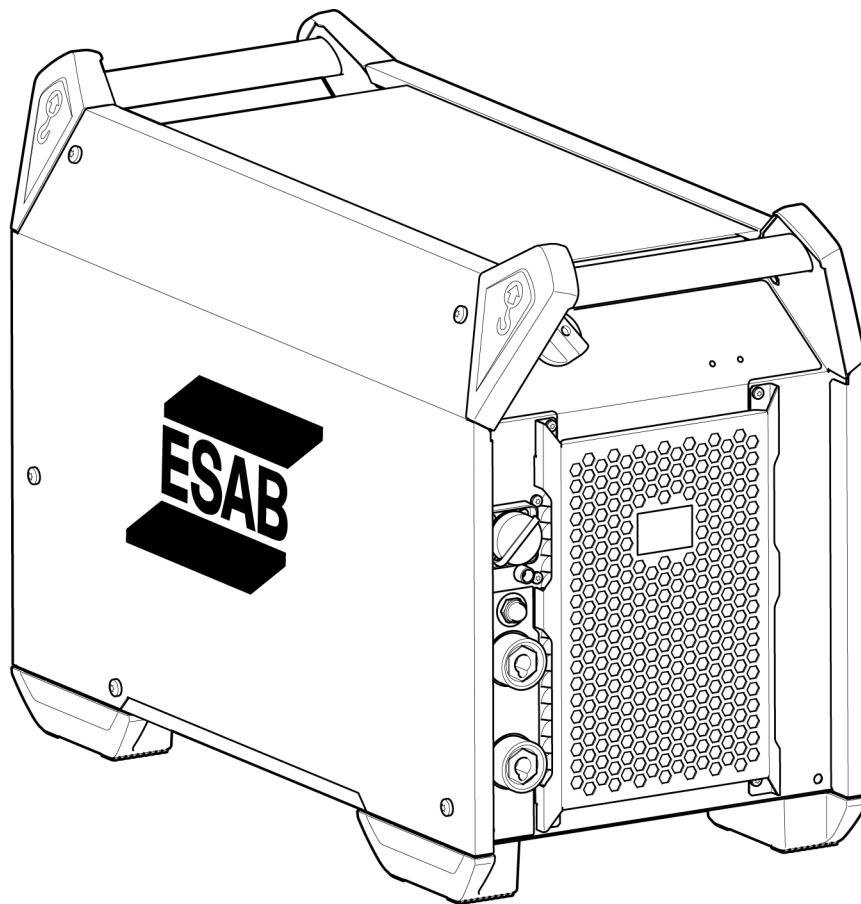




# ***Aristo® 500ix***



## **Instruction manual**

## TABLE OF CONTENTS

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|          |  |           |
|----------|--|-----------|
| <b>1</b> | <b>SAFETY</b> .....                          | <b>3</b>  |
| 1.1      | Meaning of symbols .....                     | 3         |
| 1.2      | Safety precautions .....                     | 3         |
| 1.3      | User responsibility .....                    | 6         |
| 1.4      | California proposition 65 warning .....      | 8         |
| <b>2</b> | <b>INTRODUCTION</b> .....                    | <b>10</b> |
| 2.1      | Equipment .....                              | 10        |
| <b>3</b> | <b>TECHNICAL DATA</b> .....                  | <b>11</b> |
| <b>4</b> | <b>INSTALLATION</b> .....                    | <b>13</b> |
| 4.1      | Location .....                               | 13        |
| 4.2      | Lifting instructions .....                   | 14        |
| 4.3      | Main supply .....                            | 15        |
| <b>5</b> | <b>OPERATION</b> .....                       | <b>18</b> |
| 5.1      | Connections and control devices .....        | 18        |
| 5.2      | Symbols .....                                | 19        |
| 5.3      | Connection of welding and return cable ..... | 19        |
| 5.4      | Turning the power source on/off .....        | 19        |
| 5.5      | Fan control .....                            | 20        |
| 5.6      | Thermal protection .....                     | 20        |
| 5.7      | VRD (Voltage Reducing Device) .....          | 20        |
| 5.8      | Remote control unit .....                    | 20        |
| 5.9      | Arc voltage feedback .....                   | 20        |
| <b>6</b> | <b>MAINTENANCE</b> .....                     | <b>21</b> |
| 6.1      | Routine maintenance .....                    | 21        |
| 6.2      | Power source .....                           | 21        |
| <b>7</b> | <b>TROUBLESHOOTING</b> .....                 | <b>23</b> |
| <b>8</b> | <b>ORDERING SPARE PARTS</b> .....            | <b>24</b> |
|          | <b>ORDERING NUMBERS</b> .....                | <b>25</b> |
|          | <b>BLOCK DIAGRAM</b> .....                   | <b>26</b> |
|          | <b>ACCESSORIES</b> .....                     | <b>27</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



### WARNING!

These Safety Precautions are for your protection. They summarize precautionary information from the references listed in the Additional Safety Information section. Before performing any installation or operating procedures, be sure to read and follow the safety precautions listed below as well as all other manuals, material safety data sheets, labels, etc. Failure to observe Safety Precautions can result in injury or death.



### PROTECT YOURSELF AND OTHERS

Some welding, cutting and gouging processes are noisy and require ear protection. The arc, like the sun, emits ultraviolet (UV) and other radiation and can injure the skin and eyes. Hot metal can cause burns. Training in the proper use of the processes and equipment is essential to prevent accidents. Therefore:

1. Wear a welding helmet fitted with a proper shade of filter to protect your face and eyes when welding or watching.
2. Always wear safety glasses with side shields in any work area, even if welding helmets, face shields and goggles are also required.
3. Use a face shield fitted with the correct filter and cover plates to protect your eyes, face, neck and ears from sparks and rays of the arc when operating or observing operations. Warn bystanders not to look at the arc and not to expose themselves to the rays of the electric-arc or hot metal.
4. Wear flameproof gauntlet-type gloves, heavy long-sleeve shirt, cuffless pants, high-topped shoes, and a welding helmet or cap for protection, to protect against arc rays and hot sparks or hot metal. A flameproof apron may also be desirable as protection against radiated heat and sparks.
5. Hot sparks or metal can lodge in rolled up sleeves, trouser cuffs, or pockets. Sleeves and collars should be kept buttoned and open pockets eliminated from the front of the clothing.
6. Protect other personnel from arc rays and hot sparks with a suitable non-flammable partition or curtains.
7. Use goggles over safety glasses when chipping slag or grinding. Chipped slag may be hot and can fly for long distances. Bystanders should also wear goggles over safety glasses.



### FIRES AND EXPLOSIONS

Heat from flames and arcs can start fires. Hot slag or sparks can also cause fires and explosions. Therefore:

1. Protect yourself and others from flying sparks and hot metal.
2. Move all combustible materials well away from the work area or cover the materials with a protective non-flammable covering. Combustible materials include wood, cloth, sawdust, liquid and gas fuels, solvents, paints, and coating paper, etc.
3. Hot sparks or hot metal can fall through cracks or crevices in floors or wall openings and cause a hidden smoldering fire or fires on the floor below. Make certain that such openings are protected from hot sparks and metal.
4. Do not weld, cut, or perform other hot work until the work piece has been completely cleaned so that there are no substances on the work piece which might produce flammable or toxic vapors. Do not perform hot work on closed containers, they may explode.
5. Have fire extinguishing equipment handy for instant use, such as a garden hose, water pail, sand bucket, or portable fire extinguisher. Be sure you are trained in its use.
6. Do not use equipment beyond its ratings. For example, an overloaded welding cable can overheat and create a fire hazard.
7. After completing work, inspect the work area to make sure there are no hot sparks or hot metal that could cause a fire later. Use fire watchers when necessary.



### ELECTRICAL SHOCK

Contact with live electrical parts and ground can cause severe injury or death. DO NOT use AC welding current in damp areas, if movement is confined, or if there is danger of falling. Therefore:

1. Be sure the power source frame (chassis) is connected to the earth system of the input power.
2. Connect the workpiece to a good electrical earth.
3. Connect the work cable to the workpiece. A poor or missing connection can expose you or others to a fatal shock.
4. Use well-maintained equipment. Replace worn or damaged cables.
5. Keep everything dry, including clothing, work area, cables, torch/electrode holder and power source.
6. Make sure that all parts of your body are insulated from both the work piece and from the ground.
7. Do not stand directly on metal or the ground while working in tight quarters or a damp area; stand on dry boards or an insulating platform and wear rubber-soled shoes.
8. Put on dry, hole-free gloves before turning on the power.
9. Turn off the power, before removing your gloves.
10. Refer to ANSI/ASC Standard Z49.1 for specific grounding recommendations. Do not mistake the work lead for a earth cable.



### ELECTRIC AND MAGNETIC FIELDS

May be dangerous. Electric current flowing through any conductor causes localized Electric and Magnetic Fields (EMF). Welding and cutting current creates EMF around welding cables and welding machines. Therefore:

1. Welders with pacemakers fitted should consult their doctor before welding. EMF may interfere with some pacemakers.
2. Exposure to EMF may have other health effects which are unknown.

3. Welders should use the following procedures to minimize exposure to EMF:
  - a) Route the electrode and work cables together. Secure them with tape when possible.
  - b) Never coil the torch or work cable around your body.
  - c) Do not place your body between the torch and work cables. Route cables on the same side of your body.
  - d) Connect the work cable to the workpiece as close as possible to the area being welded.
  - e) Keep the welding power source and cables as far away from your body as possible.



### FUMES AND GASES

**Fumes and gases, can cause discomfort or harm, particularly in confined spaces. Shielding gases can cause asphyxiation. Therefore:**

1. Keep your head out of the fumes. Do not breathe the fumes and gases.
2. Always provide adequate ventilation in the work area by natural or mechanical means. Do not weld, cut or gouge on materials such as galvanized steel, stainless steel, copper, zinc, lead beryllium or cadmium unless positive mechanical ventilation is provided. Do not breathe in the fumes from these materials.
3. Do not operate near degreasing and spraying operations. The heat or arc can react with chlorinated hydrocarbon vapors to form phosgene, a highly toxic gas, and other irritant gases.
4. If you develop momentary eye, nose or throat irritation while operating, this is an indication that the ventilation is not adequate. Stop work and take the necessary steps to improve ventilation in the work area. Do not continue to operate if physical discomfort persists.
5. Refer to ANSI/ASC Standard Z49.1 for specific ventilation recommendations.
6. **WARNING:** This product when used for welding or cutting, produces fumes or gases which contain chemicals known to the State of California to cause birth defects and in some cases cancer (California Health & Safety Code §25249.5 et seq.)



### CYLINDER HANDLING

**Cylinders, if mishandled, can rupture and violently release gas. A sudden rupture of cylinder valve or relief device can injure or kill. Therefore:**

1. Locate cylinders away from heat, sparks and flames. Never strike an arc on a cylinder.
2. Use the proper gas for the process and use the proper pressure reducing regulator designed to operate from the compressed gas cylinder. Do not use adapters. Maintain hoses and fittings in good condition. Follow the manufacturer's operating instructions for mounting a regulator to a compressed gas cylinder.
3. Always secure cylinders in an upright position, by chain or strap, to suitable hand trucks, undercarriages, benches, wall, post or racks. Never secure cylinders to work tables or fixtures where they may become part of an electrical circuit.
4. When not in use, keep cylinder valves closed. Have valve protection cap in place if regulator is not connected. Secure and move cylinders by using suitable hand trucks.



### MOVING PARTS

**Moving parts, such as fans, rotors and belts can cause injury. Therefore:**

1. Keep all doors, panels, guards, and covers closed and securely in place.
2. Stop the engine or drive systems before installing or connecting a unit.
3. Have only qualified people remove covers for maintenance and troubleshooting as necessary
4. To prevent accidental starting of equipment during service, disconnect negative (-) battery cable from battery.
5. Keep hands, hair, loose clothing and tools away from moving parts.

6. Reinstall panels or covers and close doors when service is finished and before starting engine.



**WARNING!  
FALLING EQUIPMENT CAN INJURE**

- Only use lifting eye to lift unit. Do NOT use running gear, gas cylinders or any other accessories.
- Use equipment of adequate capacity to lift and support unit.
- If using lift forks to move unit, be sure forks are long enough to extend beyond opposite side of unit.
- Keep cables and cords away from moving vehicles when working from an aerial location.



**WARNING!  
EQUIPMENT MAINTENANCE**

**Faulty or improperly maintained equipment can cause injury or death. Therefore:**

1. Always have qualified personnel perform the installation, troubleshooting and maintenance work. Do not perform any electrical work unless you are qualified to perform such work.
2. Before performing any maintenance work inside a power source, disconnect the power source from the incoming electrical power.
3. Maintain cables, earthing wire, connections, power cord and power supply in safe working order. Do not operate any equipment in faulty condition.
4. Do not abuse any equipment or accessories. Keep equipment away from heat sources such as furnaces, wet conditions such as water puddles, oil or grease, corrosive atmospheres and inclement weather.
5. Keep all safety devices and cabinet covers in position and in good repair.
6. Use equipment only for its intended purpose. Do not modify it in any manner.



**CAUTION!  
ADDITIONAL SAFETY INFORMATION**

**For more information on safe practices for electric arc welding and cutting equipment, ask your supplier for a copy of “Precautions and Safe Practices for Arc Welding, Cutting and Gouging,” Form 52-529.**

The following publications are recommended:

- ANSI/ASC Z49.1 - “Safety in Welding and Cutting”
- AWS C5.5 - “Recommended Practices for Gas Tungsten Arc Welding”
- AWS C5.6 - “Recommended Practices for Gas Metal Arc welding”
- AWS SP - “Safe practices” - Reprint, Welding Handbook
- ANSI/AWS F4.1 - “Recommended Safe Practices for Welding and Cutting of Containers That Have Held Hazardous Substances”
- OSHA 29 CFR 1910 - "Safety and health standards"
- CSA W117.2 - "Code for safety in welding and cutting"
- NFPA Standard 51B, “Fire Prevention During Welding, Cutting, and Other Hot Work”
- CGA Standard P-1, “Precautions for Safe Handling of Compressed Gases in Cylinders”
- ANSI Z87.1, "Occupational and Educational Personal Eye and Face Protection Devices"

## 1.3 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 could result in injury to the operator and damage to the equipment.

1. Anyone who uses the equipment must be familiar with:
  - its operation
  - the location of emergency stops
  - its function
  - the relevant safety precautions
  - welding and cutting or other applicable operation of the equipment
2. The operator must ensure that:
  - no unauthorized person is 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 may cause injury to yourself and others. Take precautions when welding and cutting.



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

- 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 with pacemakers fitted should consult their doctor 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 the 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 ear defenders 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 a fire. Therefore, 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.

**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.**

## 1.4 California proposition 65 warning



**WARNING!**

Welding or cutting equipment produces fumes or gases which contain chemicals known in the State of California to cause birth defects and, in some cases, cancer. (California Health & Safety Code Section 25249.5 et seq.)





**WARNING!**

This product can expose you to chemicals including lead, which are known to the state of California to cause cancer and birth defects or other reproductive harm. Wash hands after use.

For more information, go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

## 2 INTRODUCTION

---

The power source **Aristo® 500ix** combined with U6, U8<sub>2</sub> or MA25 Pulse panels offers a complete multi-process package supporting GMAW, pulse GMAW, GTAW and gouging, depending on which feeder it is used with.

The power source is intended for use with the wire feed unit **RobustFeed U6**, **RobustFeed U82**, **RobustFeed Pulse**, Feed 3004/4804 or YardFeed 2000 and the cooling unit COOL 2. For more information about the feed units and the cooling unit, refer to the instruction information for the specific product.

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

### 2.1 Equipment

The power source is supplied with:

- 5 m (16 ft) return cable with earth clamp
- 5 m (16 ft) mains cable
- Instruction manual
- Quick start guide

## 3 TECHNICAL DATA

| <b>Aristo® 500ix</b>                         |   |              |              |
|--|---|--------------|--------------|
| <b>Mains voltage</b>                         | 380 - 575 V, $\pm 10\%$ , 3~ 50/60 Hz       |              |              |
| <b>Mains supply <math>S_{sc\ min}</math></b> | 7.2 MVA                                     |              |              |
| <b>Primary current <math>I_{max}</math></b>  | <b>380 V</b>                                | <b>460 V</b> | <b>575 V</b> |
| GMAW   | 38 A  | 30 A         | 26 A         |
| SMAW   | 40 A  | 31 A         | 26 A         |
| GTAW   | 30 A  | 24 A         | 20 A         |
| <b>Idle power</b>                            | 25 W  | 28 W         | 33 W         |
| <b>Setting range (DC)</b>                    |   |              |              |
| GMAW   | 16 A / 14.8 V - 500 A / 39 V                |              |              |
| SMAW   | 16 A / 20.6 V - 500 A / 40 V                |              |              |
| GTAW   | 5 A / 10.2 V - 500 A / 30 V                 |              |              |
| <b>Permissible load at GMAW</b>              |   |              |              |
| 60% duty cycle                               | 500 A/39.0 V                                |              |              |
| 100% duty cycle                              | 400 A/34.0 V                                |              |              |
| <b>Permissible load at SMAW</b>              |   |              |              |
| 60% duty cycle                               | 500 A/40.0 V                                |              |              |
| 100% duty cycle                              | 400 A/36.0 V                                |              |              |
| <b>Permissible load at GTAW</b>              |   |              |              |
| 60% duty cycle                               | 500 A/30.0 V                                |              |              |
| 100% duty cycle                              | 400 A/26.0 V                                |              |              |
| <b>Power factor at maximum current</b>       | 0.9   |              |              |
| <b>Efficiency at maximum current</b>         | 88%   |              |              |
| <b>Open-circuit voltage</b>                  | 58 V  |              |              |
| <b>Operating temperature</b>                 | -20 to 40°C (-4 to 104°F)                   |              |              |
| <b>Transport temperature</b>                 | -20 to 55°C (-4 to 131°F)                   |              |              |
| <b>Constant sound pressure when idling</b>   | <70 dB (A)                                  |              |              |
| <b>Dimensions l×w×h</b>                      | 712 × 325 × 470 mm (28.0 × 12.8 × 18.5 in.) |              |              |
| <b>Weight</b>                                | 58.5 kg (128.9 lb)                          |              |              |
| <b>Insulation class</b>                      | H   |              |              |
| <b>Enclosure class</b>                       | IP23  |              |              |
| <b>Application classification</b>            | <b>S</b>                                    |              |              |

### Mains supply, $S_{sc\ min}$

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

### Duty cycle

The duty cycle refers to the time as a percentage of a ten-minute period that you can weld or cut at a certain load without overloading. The duty cycle is valid for 104 °F (40 °C) 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.

**Class-H** insulations can withstand a temperature of up to 180°C. It is made of inorganic material glued with silicone resin or adhesives of equivalent performance.

## 4 INSTALLATION

---

**The installation must be carried out by a professional.**

The equipment used together with Aristo® 500ix must have at least the following program versions in order for the power source to work properly:

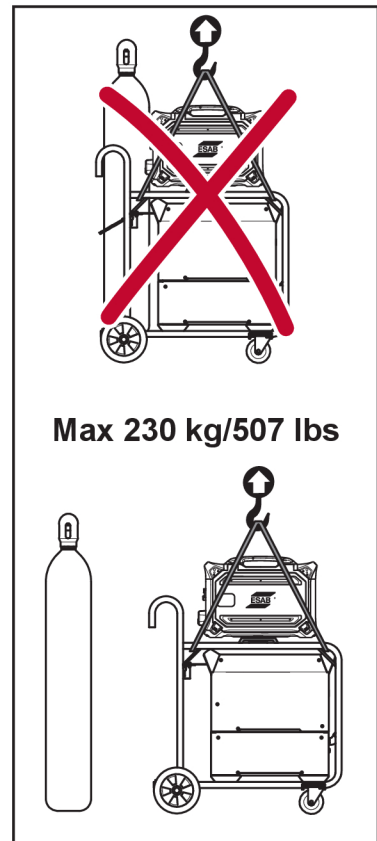
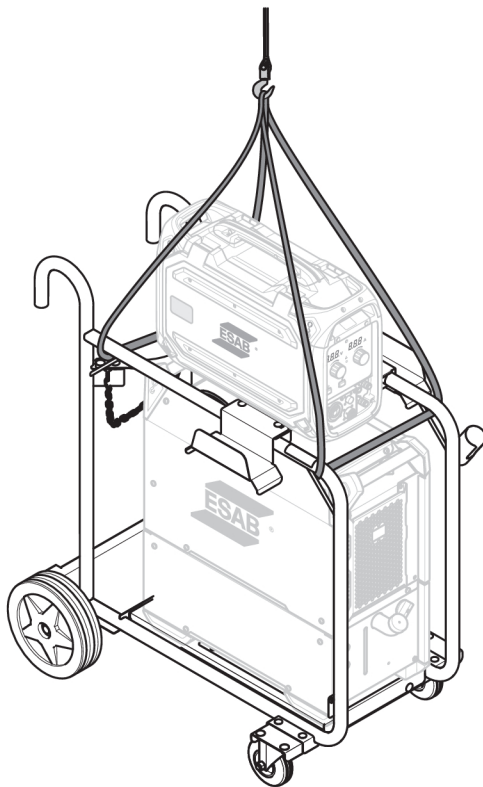
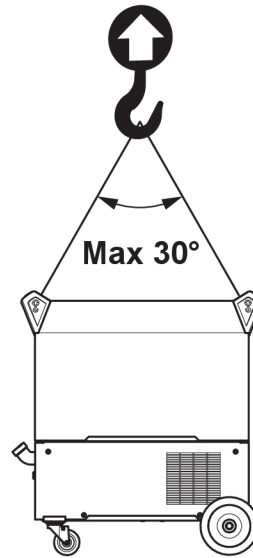
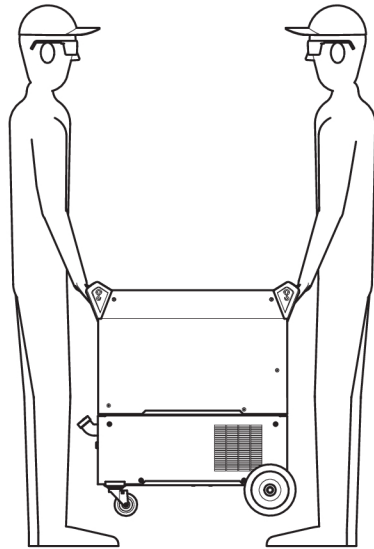
- for RobustFeed U8<sub>2</sub>: 3.02G or later
- for RobustFeed U6: 2.16P or later
- for MA25 Pulse: 1.88H or later

### 4.1 Location

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

## 4.2 Lifting instructions

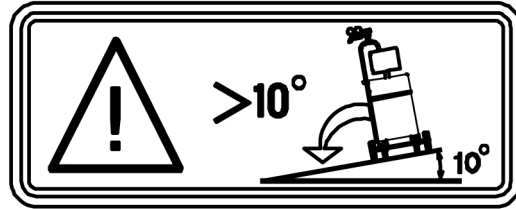
Max 80.3 kg/177 lbs





**WARNING!**

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



### 4.3 Main supply

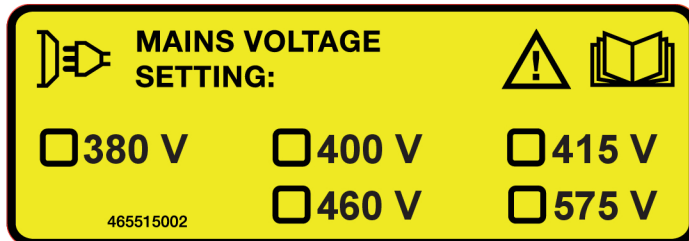


**NOTE!**

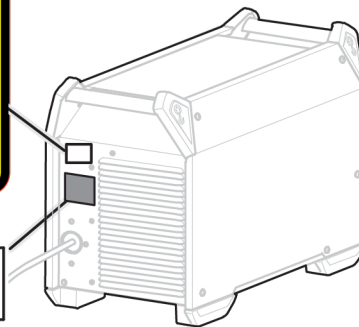
**Mains supply requirements**

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  $S_{scmin}$ . Refer to the technical data in the TECHNICAL DATA chapter.

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



465515002



Rating plate with supply connection data

**Recommended fuse sizes and minimum cable area Aristo® 500ix**

| Aristo® 500ix                    |                      |                      |                      |                      |
|----------------------------------|----------------------|----------------------|----------------------|----------------------|
| Mains voltage                    | 380 V<br>3~ 50/60 Hz | 400 V<br>3~ 50/60 Hz | 460 V<br>3~ 50/60 Hz | 575 V<br>3~ 50/60 Hz |
| Mains cable area                 | 4 × 10 AWG           | 4 × 10 AWG           | 4 × 10 AWG           | 4 × 10 AWG           |
| Maximal current rating $I_{max}$ | 40 A                 | 35 A                 | 31 A                 | 26 A                 |
| $I_{1eff}$                       |                      |                      |                      |                      |
| GMAW                             | 30 A                 | 27 A                 | 24 A                 | 19 A                 |
| SMAW                             | 31 A                 | 25 A                 | 24 A                 | 18 A                 |
| GTAW                             | 24 A                 | 21 A                 | 19 A                 | 14 A                 |

| Fuse       |      |      |      |      |
|------------|------|------|------|------|
| anti-surge | 35 A | 35 A | 35 A | 35 A |
| type C MCB | 32 A | 32 A | 32 A | 32 A |

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

**Supply from power generators**

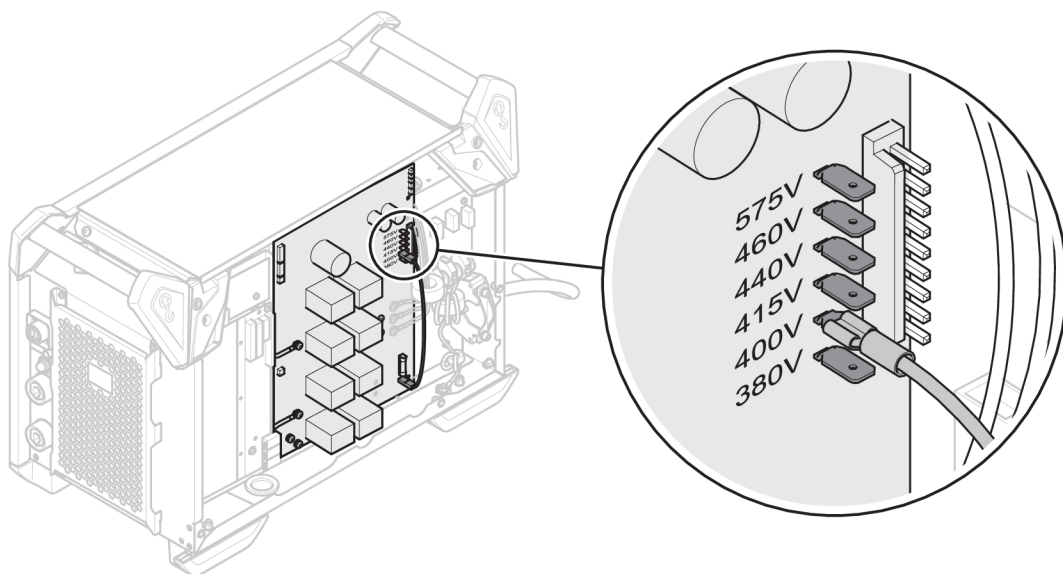
The power source can be supplied from different types of generators. However, some generators may not provide sufficient power for the welding power source to operate correctly. Generators with Automatic Voltage Regulation (AVR) or with an equivalent or better type of regulation, with rated power  $\geq 40$  kW, are recommended.

**Connection instruction**

**WARNING!**  
The mains supply must be disconnected during installation.

**WARNING!**  
Wait until the DC bus capacitors are discharged. The DC bus capacitor discharge time is at least 2 minutes!

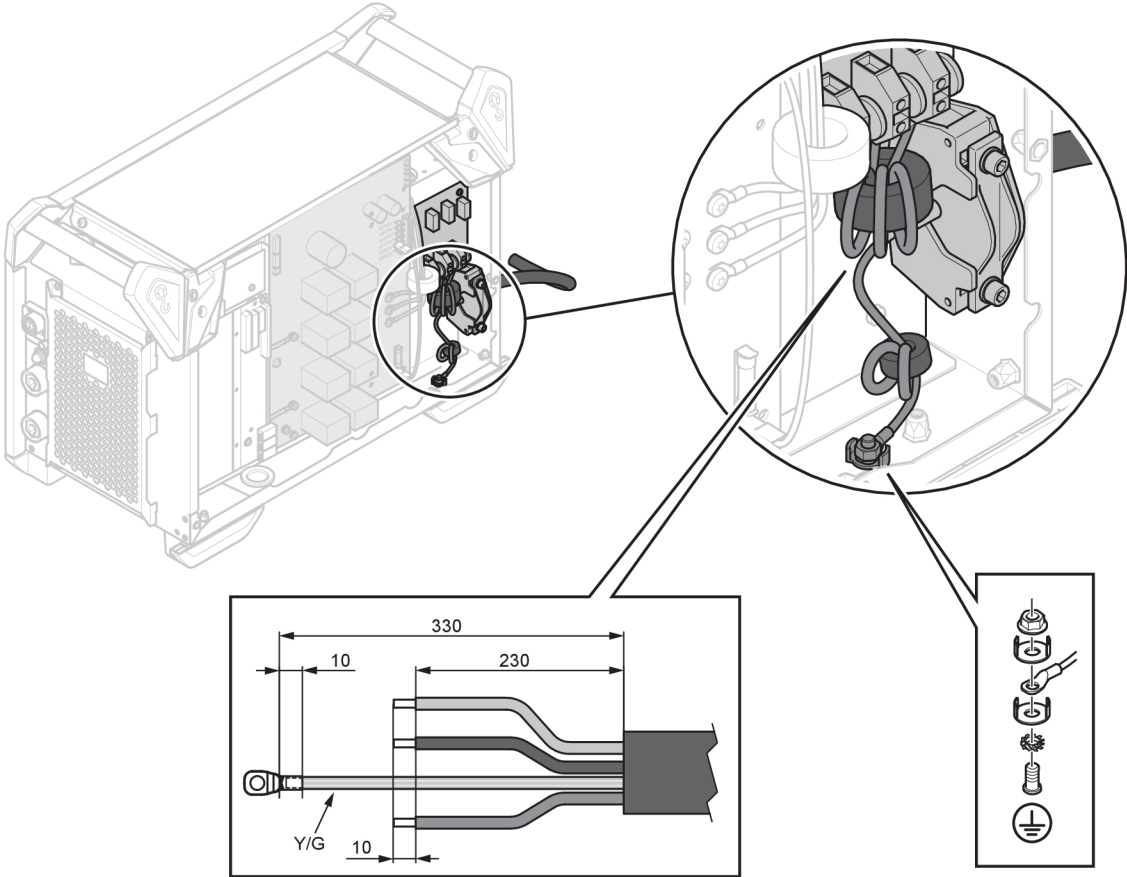
The power source is factory set to 460 V AC. If another mains voltage setting is required, the cable on the printed circuit board has to be moved and put in the correct position. The label that is at the rear of the power source and marked with the mains voltage setting must also be updated. This operation must be done by a person who has the appropriate electrical knowledge.



**NOTE!**  
This power source version is designed for a nominal input voltage from 380 to 575 V AC.

If the mains cable needs to be changed, the ground connection to the bottom plate and the ferrites must be installed correctly. See the picture below for the installation order of the ferrites, washers, nuts and screws.





## 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!



### NOTE!

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



### WARNING!

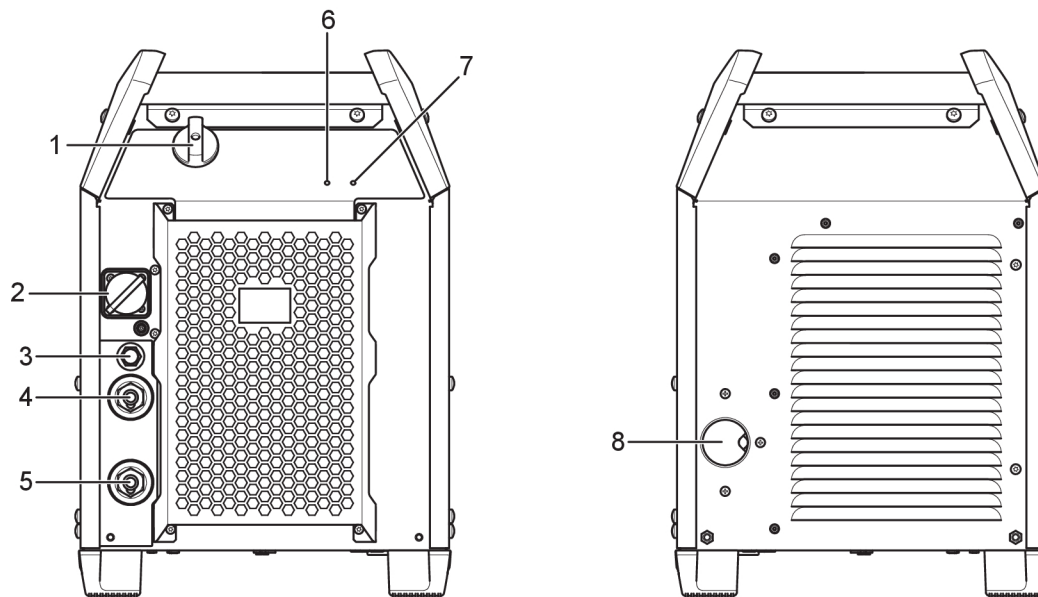
Electric shock! Do not touch the workpiece or the welding head during operation!



### NOTE!

To achieve the best possible result with GMAW short pulsing, the welding and return cables must not exceed 10 m (33 ft).





### 5.1 Connections and control devices



1. Mains power supply switch, O/I
2. Connection for wire feed unit
3. Fuse (10 A) for supply voltage (42 VAC) for feeder unit
4. Positive welding terminal: Welding cable

5. Negative welding terminal: Return cable
6. Indicating LED, overheating
7. Indicating LED, power supply ON
8. Mains cable inlet

## 5.2 Symbols

|   |                     |   |                            |
|---|---------------------|---|----------------------------|
|  | Power supply ON (4) |  | Overheating (3)            |
|  | Protective ground   |  | Positioning of lifting eye |

## 5.3 Connection of welding and return cable

The power source has two outputs, a positive terminal (+) and a negative terminal (-), for connecting welding and return cables.

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

### Recommended maximum current values for connection set cables

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

| Cable area         | Duty cycle |     | Voltage loss / 10 m |
|--------------------|------------|-----|---------------------|
|                    | 100%       | 60% |                     |
| 50 mm <sup>2</sup> | 290        | 320 | 0.35 V / 100 A      |
| 70 mm <sup>2</sup> | 360        | 400 | 0.25 V / 100 A      |
| 95 mm <sup>2</sup> | 430        | 500 | 0.19 V / 100 A      |

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

| Cable area         | Duty cycle |     | Voltage loss / 10 m |
|--------------------|------------|-----|---------------------|
|                    | 100%       | 60% |                     |
| 50 mm <sup>2</sup> | 250        | 280 | 0.37 V / 100 A      |
| 70 mm <sup>2</sup> | 310        | 350 | 0.27 V / 100 A      |
| 95 mm <sup>2</sup> | 370        | 430 | 0.20 V / 100 A      |

### 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 104 °F (40 °C).

## 5.4 Turning the power source on/off

Turn the power source on by turning switch (1) to the "I" position. Turn the power source off by turning the switch (1) to the "O" position. Welding data will be stored regardless of whether the electrical supply is interrupted abnormally or the power source is switched off in the normal manner, which allows it to be available the next time the unit is turned on.

## 5.5 Fan control

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

## 5.6 Thermal protection

The welding power source has thermal protection circuit that operates if the internal temperature becomes too high. If this occurs, the welding current is blocked and the indicating LED (6) lights. The thermal protection resets automatically when the temperature has fallen within normal operation temperature.

## 5.7 VRD (Voltage Reducing Device)

The VRD function ensures that the open-circuit voltage does not exceed 35 V when welding is not being carried out. The VRD function must be activated by a qualified service technician, by means of ESAT (ESAB Software Administration Tool, a kit for technical service including software to manage settings, update of software, etc.).

The VRD function is blocked when the system senses that welding has started.

## 5.8 Remote control unit

For more information about the operation of the remote control unit, see the instruction information for the control panel.

## 5.9 Arc voltage feedback

To achieve a good welding result, the arc voltage feedback is a crucial factor. In GMAW welding, the power source is prepared to sense the arc voltage in the wire feeder. Prerequisite for this functionality is that an ESAB wire feeder and an ESAB interconnection cable is used! This method of measuring the arc voltage compensates for the voltage drop in the welding cable to the wire feeder. With an ESAB torch supporting "TrueArcVoltage," the voltage drop all the way to the contact tip is compensated.

**NOTE!**

To compensate for the voltage drop in the return cable, the power source can be configured (by authorized ESAB service personnel) to use an external arc voltage sense wire from the workpiece.

## 6 MAINTENANCE

**WARNING!**

The mains supply must be disconnected during cleaning and maintenance.

**CAUTION!**

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

**CAUTION!**

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

**NOTE!**

Regular maintenance is important for safe and reliable operation.

**NOTE!**



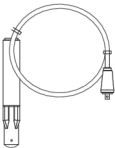

Perform maintenance more often during severe dusty conditions.

Before each use, make sure that the:

- Product and cables are undamaged, and
- The torch is clean and undamaged.

### 6.1 Routine maintenance

Maintenance schedule during normal conditions. Check equipment before every use.

| Interval       | Area to maintain   |   |  |
|----------------|--|---|--|
| Every 3 months | <br>Clean or replace unreadable labels.                                   | <br>Clean weld terminals. | <br>Check or replace weld cables. |
| Every 6 months | <br>Clean inside equipment. Use dry compressed air with reduced pressure. |   |  |

### 6.2 Power source

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

- The welding process,
- The arc time, and

- The working environment.
- the surrounding environment, that is grinding etc.

Tools needed for the cleaning procedure:

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

### Cleaning procedure



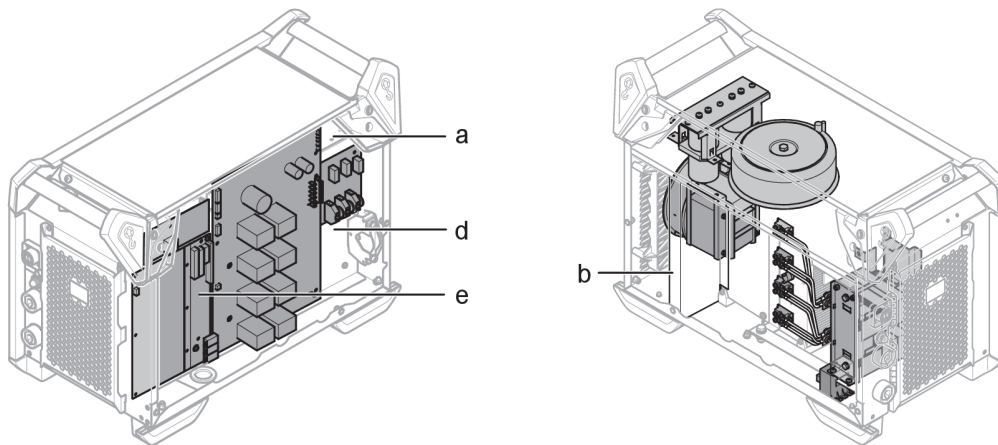
**CAUTION!**

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



**CAUTION!**

The cleaning procedure should be carried out by an authorized service technician.



1. Disconnect the mains supply.
2. Wait for 4 minutes to discharge the capacitors.
3. Remove the side panels on the power source.
4. Remove the top panel on the power source.
5. Remove the plastic cover between the heat sink and fan (b).
6. Clean the power source with dry compressed air (4 bar) as follows:
  - a) The upper rear part.
  - b) From the rear panel through the secondary heat sink.
  - c) The inductor, transformer, and current sensor.
  - d) The power components side, from the rear side behind PCB 15AP1.
  - e) The PCBs at both sides.
7. Make sure that there is no dust left on any part.
8. Install the plastic cover between the heat sink and the fan (b) and make sure it is correctly fitted against the heat sink.
9. Reassemble the power source after cleaning and perform testing according to IEC 60974-4. Follow the procedure in the section “After repair, inspection and test” in the Service manual.

## 7 TROUBLESHOOTING

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

| Type of fault                                      | Corrective action  |
|--|--|
| No arc.  | <ul style="list-style-type: none"> <li>• Check that the main power supply switch is turned on.</li> <li>• Check that the mains, welding, and return cables are correctly connected.</li> <li>• Check that the correct current value is set.</li> <li>• Check the electrical power supply fuses.</li> </ul> |
| The welding current is interrupted during welding. | <ul style="list-style-type: none"> <li>• Check whether the thermal protection trip has operated (indicated by the orange LED on the front [6])</li> <li>• Check the main power supply fuses if the LED indicating power supply (7) is not lit.</li> </ul>  |
| The thermal protection trips frequently.           | <ul style="list-style-type: none"> <li>• Make sure that you are not exceeding the rated data for the power source (i.e. that the unit is not being overloaded).</li> <li>• Check that the ambient temperature is not above the one for the rated duty cycle 40 °C/104 °F.</li> </ul>                       |
| Poor welding performance.                          | <ul style="list-style-type: none"> <li>• Check that the welding current supply and return cables are correctly connected.</li> <li>• Check that the correct current value is set.</li> <li>• Check that the correct welding wires are being used.</li> <li>• Check the main power supply fuses.</li> </ul> |

## 8 ORDERING SPARE PARTS

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**CAUTION!**

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

Aristo® 500ix is designed and tested in accordance with the international and European standards **IEC/EN 60974-1** and **IEC/EN 60974-10 Class A**, Canadian standards **CAN/CSA-E60974-1** and US standards **ANSI/IEC 60974-1**. Upon 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 the back cover of this document. 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.

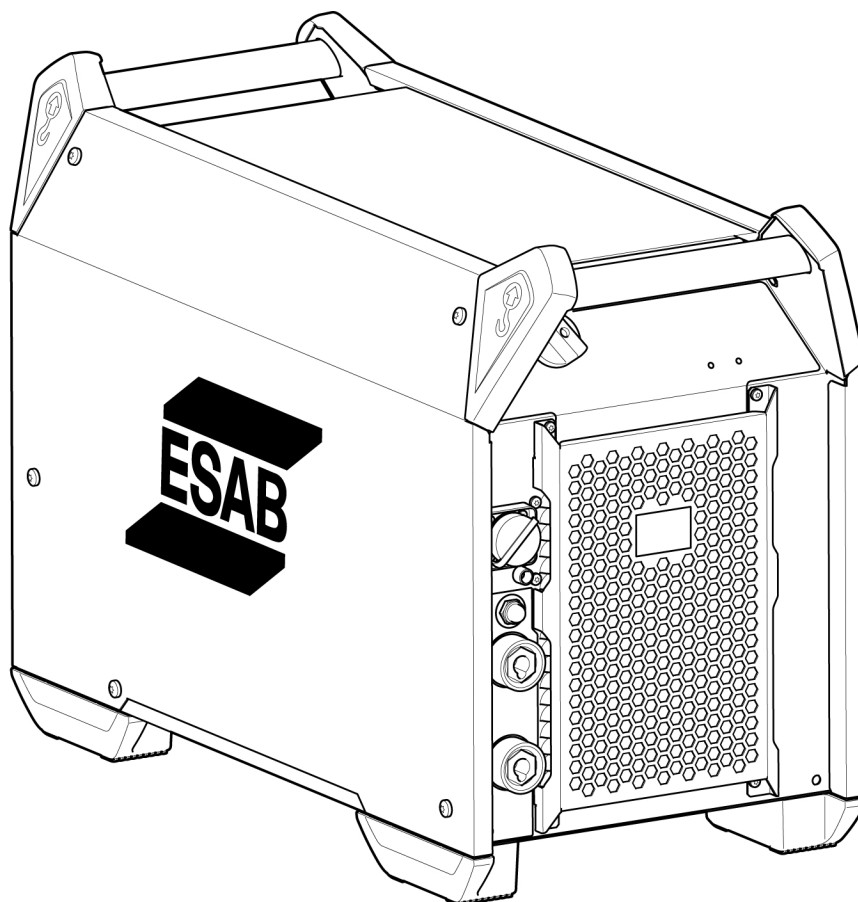


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# APPENDIX

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## ORDERING NUMBERS

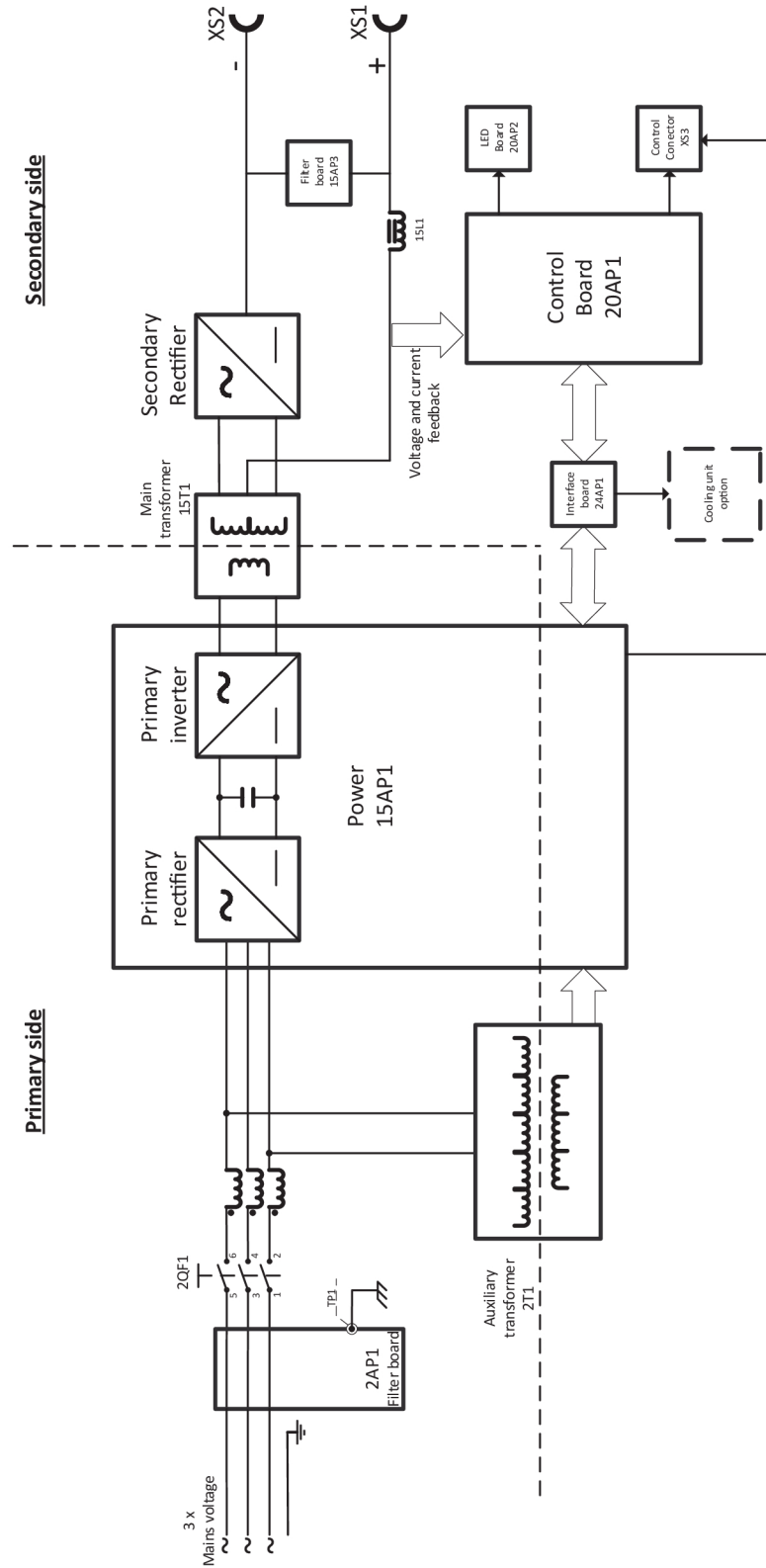


| Ordering number | Denomination       | Type          | Notes |
|-----------------|--------------------|---------------|-------|
| 0446 200 880    | Power source       | Aristo® 500ix | CE    |
| 0446 200 881    | Power source       | Aristo® 500ix | CSA   |
| 0446 200 882    | Power source       | Aristo® 500ix | AUS   |
| 0446 200 883    | Power source       | Aristo® 500ix | CCC   |
| 0463 696 *      | Instruction manual |               |       |
| 0463 700 001    | Service manual     |               |       |
| 0460 701 001    | Spare parts list   |               |       |




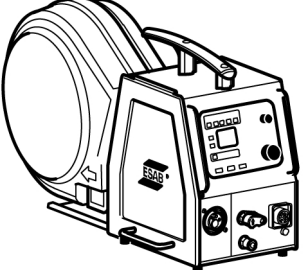
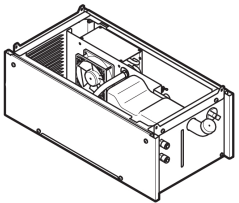
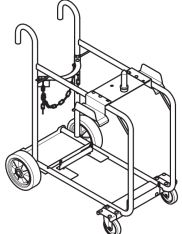
The three last digits in the document number show the version of the manual. Therefore they are replaced with \* here. Make sure to use information with a serial number or software version that corresponds with the product, see the front page of the manual.

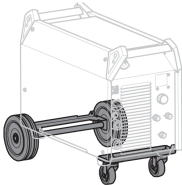
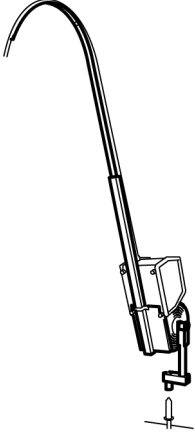
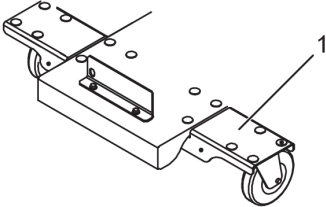


Technical documentation is available on the Internet at: [www.esab.com](http://www.esab.com)


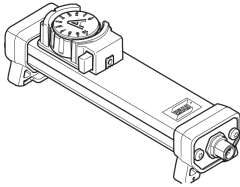


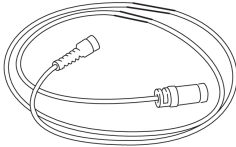
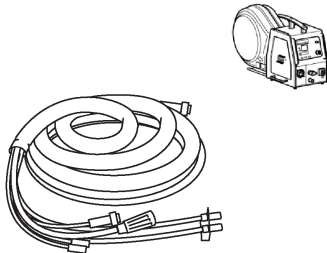
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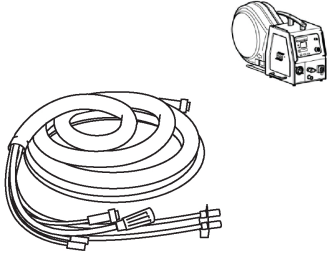
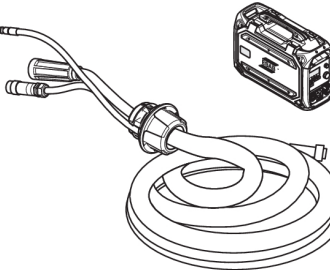
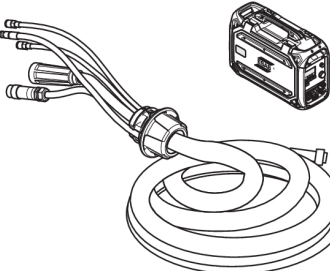


## ACCESSORIES

| <b>Wire feeders</b> |  |   |
|---------------------|--|---|
| 0445 800 893        | <b>RobustFeed Pulse,</b><br>Tweco connector, heater, MMA outlet, Push-Pull and flow meter included                         |    |
| 0445 800 890        | <b>RobustFeed U6,</b><br>with Push-Pull, Tweco connector, heater and flow meter included                                   |    |
| 0445 800 895        | <b>RobustFeed U6,</b><br>water-cooled, Push-Pull, Euro connector, heater and flow meter included                           |   |
| 0445 800 896        | <b>RobustFeed U82 offshore,</b><br>Tweco 4 connector, water-cooled, Push-Pull, heater, SMAW outlet and flow meter included |   |
| 0445 800 904        | <b>RobustFeed U82 offshore,</b><br>Tweco connector, water-cooled, Push-Pull, heater, SMAW outlet and flow meter included   |   |
| 0460 526 886        | <b>Aristo® Feed 3004 U6</b>  |  |
| 0460 526 896        | <b>Aristo® Feed 3004w U6</b>   |   |
| 0460 526 881        | <b>Aristo® Feed 3004 U8<sub>2</sub>,</b> (U8 <sub>2</sub> not included)  |   |
| 0460 526 891        | <b>Aristo® Feed 3004w U8<sub>2</sub>,</b> (U8 <sub>2</sub> not included)   |   |
| 0459 906 896        | <b>Yardfeed 2000w U6,</b> for 200mm (8 in.) spools   |   |
| 0465 427 880        | <b>Cooling unit, Cool2</b>   |  |
| 0349 313 450        | <b>Trolley,</b> compatible with RobustFeed and Aristo® Feed 3004   |  |

|                      |  |   |
|----------------------|--|---|
| 0465 416 880         | <b>Wheel kit</b>   |    |
| 0458 705 880         | <p><b>Counter balance device</b>, for Aristo® Feed 3004 (not RobustFeed)</p> <p>for 300 mm (11 in.) spools. Includes mast and counter balance</p> <p><i>For use of the counter balance device, a stabilizer kit is required!</i></p> <p><i>IP23 protection is not valid for wire feeder with counterbalance arm!</i></p> |    |
| 0465 509 880         | <b>Stabilizer kit</b>  |   |
| <b>Control units</b> |  |   |
| 0460 820 880         | <b>Aristo® U8<sub>2</sub></b> , complete including holder  |  |
| 0460 820 881         | <b>Aristo® U8<sub>2</sub> Plus</b> , complete including holder   |  |

| <b>Remote controls</b>   |  |   |
|--|--|---|
| 0459 491 880   | <b>Remote control MTA1</b>   |    |
| 0459 491 896   | <b>Remote control unit AT1</b><br>MMA and TIG current                                |    |
| 0459 491 897   | <b>Remote control unit AT1 CF</b><br>MMA and TIG: course and fine setting of current |    |
| 0459 491 911   | <b>Remote control adapter RA 23</b>  |  |
| <b>Remote control cable 12 pole - 8 pole</b>   |  |  |
| 0459 552 880   | 5 m (16 ft 4.85 in.)   |   |
| 0459 552 881   | 10 m (32 ft 9.7 in.)   |   |
| 0459 552 882   | 15 m (49 ft 2.55 in.)  |   |
| 0459 552 883   | 25 m (82 ft 0.25 in.)  |   |
| <b>Aristo® Feed 3004 Interconnection cables, gas-cooled, 70 mm<sup>2</sup>, 10 poles</b>   |  |   |
| 0459 528 780   | 1.7 m (5 ft 6.93 in.)  |  |
| 0459 528 781   | 5 m (16 ft 4.85 in.)   |   |
| 0459 528 782   | 10 m (32 ft 9.7 in.)   |   |
| 0459 528 783   | 15 m (49 ft 2.55 in.)  |   |
| 0459 528 784   | 25 m (82 ft 0.25 in.)  |   |
| 0459 528 785   | 35 m (114 ft 9.95 in.)   |   |
| <b>Aristo® Feed 3004 Interconnection cables, water-cooled, 70 mm<sup>2</sup>, 10 poles</b> |  |   |

|   |                        |  |
|---|------------------------|--|
| 0459 528 790  | 1.7 m (5 ft 6.93 in.)  |   |
| 0459 528 791  | 5 m (16 ft 4.85 in.)   |  |
| 0459 528 792  | 10 m (32 ft 9.7 in.)   |  |
| 0459 528 793  | 15 m (49 ft 2.55 in.)  |  |
| 0459 528 794  | 25 m (82 ft 0.25 in.)  |  |
| 0459 528 795  | 35 m (114 ft 9.95 in.) |  |
| <b>RobustFeed U6 and RobustFeed Pulse, Interconnection cables with pre-assembled strain relief, gas-cooled, 70 mm<sup>2</sup>, 10 poles</b>   |                        |  |
| 0446 255 880  | 2 m (6 ft 6.74 in.)    |   |
| 0446 255 881  | 5 m (16 ft 4.85 in.)   |  |
| 0446 255 882  | 10 m (32 ft 9.7 in.)   |  |
| 0446 255 883  | 15 m (49 ft 2.55 in.)  |  |
| 0446 255 884  | 20 m (65 ft 7.4 in.)   |  |
| 0446 255 885  | 25 m (82 ft 0.25 in.)  |  |
| 0446 255 886  | 35 m (114 ft 9.95 in.) |  |
| <b>RobustFeed U6 and RobustFeed Pulse, Interconnection cables with pre-assembled strain relief, water-cooled, 70 mm<sup>2</sup>, 10 poles</b> |                        |  |
| 0446 255 890  | 2 m (6 ft 6.74 in.)    |  |
| 0446 255 891  | 5 m (16 ft 4.85 in.)   |  |
| 0446 255 892  | 10 m (32 ft 9.7 in.)   |  |
| 0446 255 893  | 15 m (49 ft 2.55 in.)  |  |
| 0446 255 894  | 20 m (65 ft 7.4 in.)   |  |
| 0446 255 895  | 25 m (82 ft 0.25 in.)  |  |
| 0446 255 896  | 35 m (114 ft 9.95 in.) |  |





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