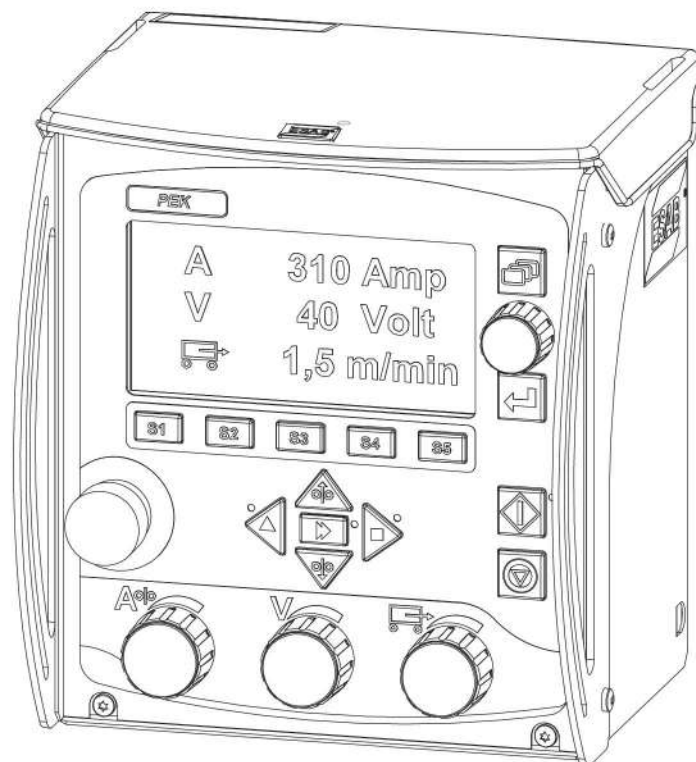


# ***A2, A6 PEK Control Unit***



## **Instruction manual**



## EU DECLARATION OF CONFORMITY

According to  
The Low Voltage Directive 2014/35/EU  
The EMC Directive 2014/30/EU  
The RoHS Directive 2011/65/EU

**Type of equipment**

Arc Welding Control Unit

**Type designation**

PEK serial number starting with 628 XXX XXXX

**Brand name or trademark**

ESAB

**Manufacturer or his authorised representative established within the EEA****Name, address, and telephone No:**

ESAB AB  
Lindholmsallén 9, Box 8004, SE-402 77 Göteborg, Sweden  
Phone: +46 31 50 90 00, [www.esab.com](http://www.esab.com)

**The following harmonised standards in force within the EEA has been used in the design:**

|                              |                                                                                   |
|------------------------------|-----------------------------------------------------------------------------------|
| EN IEC 60974-1:2018/A1:2019, | Arc Welding Equipment – Part 1: Welding Power Sources                             |
| EN 60974-10:2014,            | Arc Welding Equipment – Part 10: Electromagnetic Compatibility (EMC) requirements |

**Additional Information:**

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

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

Place/Date

Signature

A handwritten signature in dark ink, appearing to read "Peter Kjällström", written in a cursive style.

CE

Gothenburg  
2022-02-01

Peter Kjällström  
Standard Automation Director

|          |                                   |           |
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# 1 SAFETY

**NOTE!**

The unit is tested by ESAB in a general set-up. The responsibility for safety and function, of the specific set-up, lies with the integrator.

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!**

Risk of crushing when replacing the wire bobbin! Do **not** use safety gloves when inserting the welding wire between the feed rollers.

**WARNING!**

Arc welding and cutting can be injurious to yourself and others. Take precautions when welding and cutting. Ask for your employer's safety practices which should be based on manufacturers' hazard data.

**ELECTRIC SHOCK - Can kill**

- Install and earth the unit in accordance with applicable standards
- Do not touch live electrical parts or electrodes with bare skin, wet gloves or wet clothing
- Insulate yourself from earth and the workpiece
- Ensure your working stance is safe

**FUMES AND GASES - Can be dangerous to health**

- Keep your head out of the fumes
- Use ventilation, extraction at the arc, or both, to take fumes and gases away from your breathing zone and the general area

**ARC RAYS - Can injure eyes and burn skin**

- Protect your eyes and body. Use the correct welding screen and filter lens and wear protective clothing
- Protect bystanders with suitable screens or curtains

**FIRE HAZARD**

- Sparks (spatter) can cause fire. Make sure therefore that there are no inflammable materials nearby

**NOISE - Excessive noise can damage hearing**

- Protect your ears. Use earmuffs or other hearing protection.
- Warn bystanders of the risk

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

**Read and understand the instruction manual before installing or operating.**

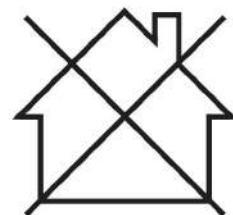
**PROTECT YOURSELF AND OTHERS!**

**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.

**CAUTION!**

Read and understand the instruction manual before installing or operating.





**NOTE!**

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

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

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

For further information contact the nearest ESAB dealer.



**ESAB can provide you with all necessary welding protection and accessories.**

## 2 INTRODUCTION

PEK is a control unit intended for submerged arc welding (SAW) and for gas metal arc welding (GMAW). The control unit is used together with automatic welding machines, power sources, column and booms.

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

### 2.1 Equipment

The control unit is supplied with:

- An instruction manual for the control unit
- An instruction manual for the control panel in English

Instruction manuals in other languages can be downloaded from: [www.esab.com](http://www.esab.com).

### 2.2 Control panel

See the separate instruction manual for a detailed description of the control panel



### 3 TECHNICAL DATA

| PEK                                          |                                                                                    |
|----------------------------------------------|------------------------------------------------------------------------------------|
| Supply voltage                               | 42 V, 50/60 Hz                                                                     |
| Power requirement                            | Max 900 VA                                                                         |
| Engine connections adapted for ESAB's motors | 6 A 100%                                                                           |
| Speed control                                | Feedback from pulse encoder                                                        |
| Operating temperature                        | -15°C to +45°C                                                                     |
| Transportation temperature                   | -20°C to +55°C                                                                     |
| Relative air humidity                        | Max 95%                                                                            |
| Dimensions l×w×h                             | 246 × 235 × 273 mm                                                                 |
| Weight                                       | 6.6 kg                                                                             |
| Enclosure class                              | IP23                                                                               |
| Travel speed                                 | 0–200 cm/min *)<br>See separate instruction manual for automatic welding machines. |
| Max manual travel speed                      | 2.0 m/min                                                                          |
| Wire feed speed, filler wire                 | 0–2500 cm/min *)<br>See separate instruction manual for wire feed unit.            |

\*) The setting range is dependent on the product used.

#### 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.

## 4 INSTALLATION

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The installation must be executed by a professional.

### 4.1 Mains supply



**NOTE!**

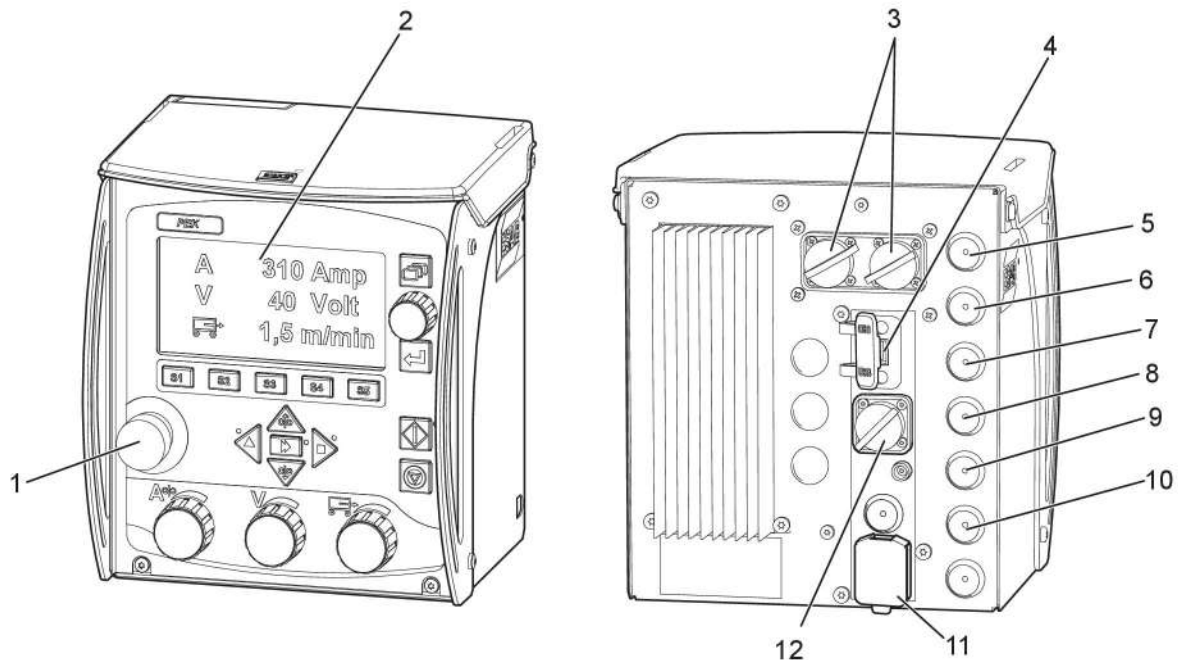
**Mains supply requirements**

This equipment complies with IEC 61000-3-12 provided that the short-circuit power is greater than or equal to  $S_{scmin}$  at the interface point between the user's supply and the public system. It is the responsibility of the installer or user of the equipment to ensure, by consultation with the distribution network operator if necessary, that the equipment is connected only to a supply with a short-circuit power greater than or equal to  $S_{scmin}$ . Refer to the technical data in the TECHNICAL DATA chapter.

## 5 OPERATION

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

### 5.1 Connections



- |                                                                        |                                                                       |
|------------------------------------------------------------------------|-----------------------------------------------------------------------|
| 1. Emergency stop                                                      | 7. Connection of speed feedback for travel motion                     |
| 2. Control panel, see separate instruction manual                      | 8. Connection for arc voltage feedback                                |
| 3. Connection (CAN) for remote control unit or service tool            | 9. Connection of motor cable for travel motion                        |
| 4. USB connection, see section of USB connection                       | 10. Connection of motor cable for wire feed                           |
| 5. Connection for limit position switch or cable with solenoid for gas | 11. LAN connector, Ethernet port used to connect to WeldCloud™ Mobile |
| 6. Connection of speed feedback for wire feed                          | 12. Connection for control cable from power source                    |

### 5.2 USB connection

The external USB memory can be used to transfer programs to and from systems.

During normal use there is no risk of "viruses" "infecting" equipment. To eliminate the risk entirely, we recommend that the memory, which is used together with this equipment, not be used for any other purpose other than its intended.

Certain USB memories may not work with this equipment. We recommend using USB memories from a reputable supplier.

*ESAB assumes no responsibility for any damage caused as a consequence of incorrect use of the USB memory.*

**To insert a USB memory**

1. Switch off the power supply main switch.
2. Insert the USB memory into the USB socket.
3. Switch on the power supply main switch.

**5.3 LAN/Ethernet connector**

The PEK control unit is equipped with an Ethernet interface to be able to connect the unit to an ESAB WeldCloud™ Mobile unit. For further information about the WeldCloud™ system, see the WeldCloud™ instruction manual. For further information about the WeldCloud™ Mobile unit, see the WeldCloud™ Mobile instruction manual.

**5.4 Key to symbols**

|                                                                                     |                                     |                                                                                     |                                     |
|-------------------------------------------------------------------------------------|-------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------|
|    | Main menu                           |    | Enter                               |
|    | Manual travel motion in direction ▲ |    | Manual travel motion in direction ▼ |
|    | Fast motion                         |    | Manual wire feed upwards            |
|   | Manual wire feed downwards          |   | Start                               |
|  | Stop                                |  | Current                             |
|  | Wire feed speed                     |  | Voltage                             |
|  | Travel speed                        |                                                                                     |                                     |

See separate instruction manual for more information regarding the control panel.

## 6 MAINTENANCE

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*Regular maintenance is important for safe, reliable operation.*

Maintenance may only be carried out by an authorised technician. Only personnel with the appropriate electrical skills (authorised staff) may remove safety plates.



### **CAUTION!**

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

### **6.1 Inspection and cleaning**

Check regularly that the control unit is not clogged with dirt.

How often and which cleaning methods apply depend on:

- welding process
- arc time
- location of the unit
- surrounding environment

Usually it will be sufficient to blow the unit clean once a year, using dry compressed air (reduced pressure).

## 7 ORDERING SPARE PARTS

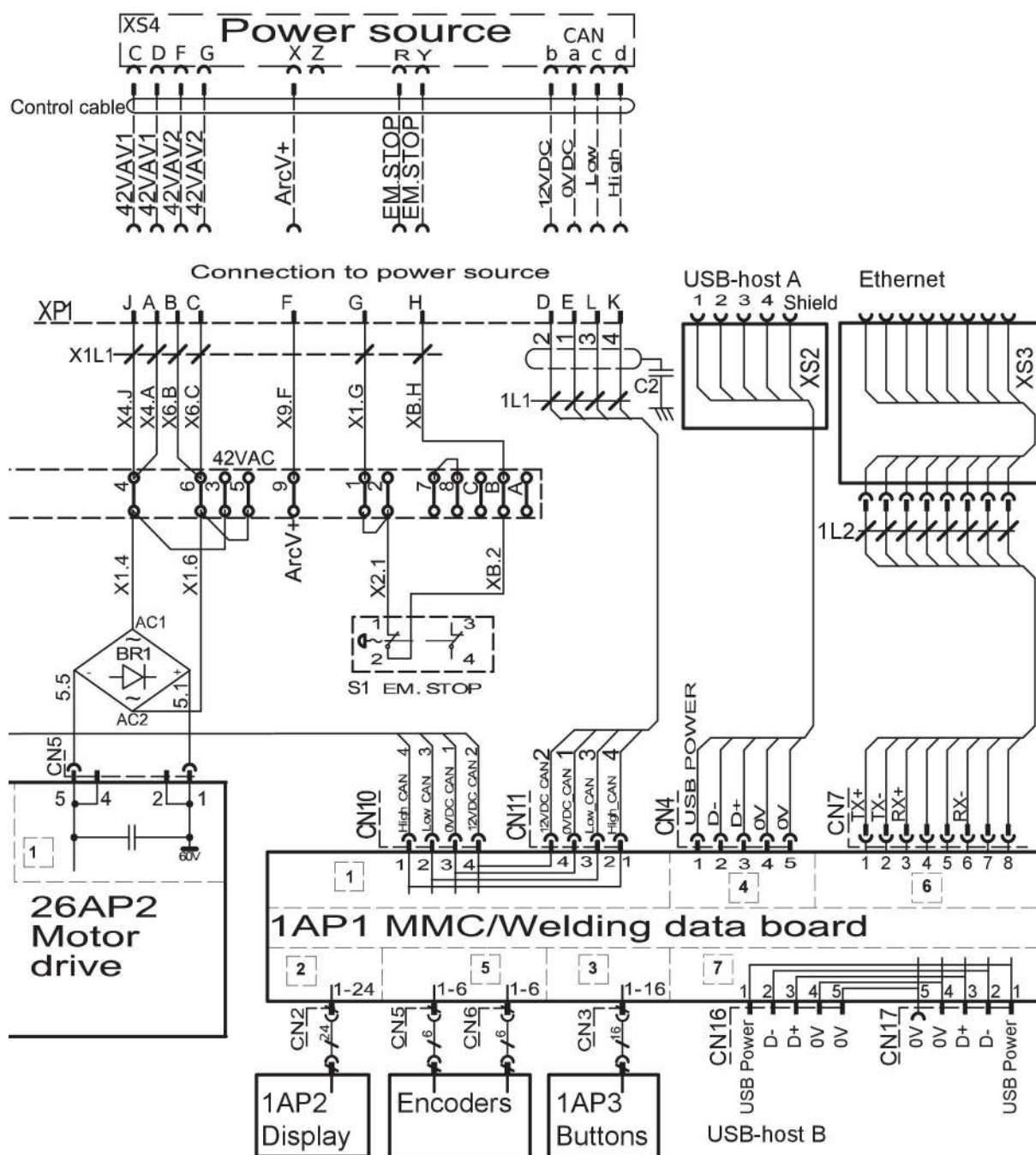
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Repair and electrical work should be performed by an authorised ESAB service technician. Use only ESAB original spare and wear parts.

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

Spare parts may be ordered through your nearest ESAB dealer, see the last page of this publication.

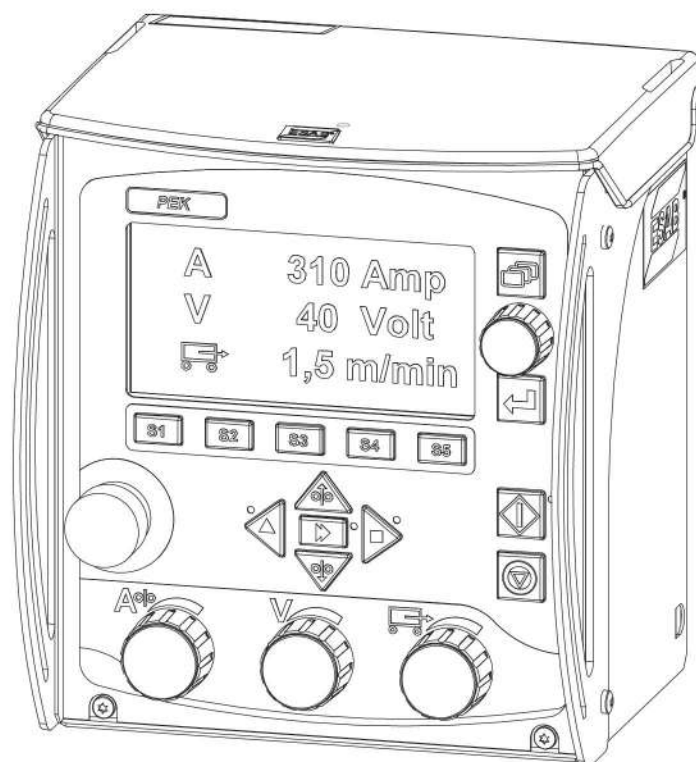




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## ORDERING NUMBERS

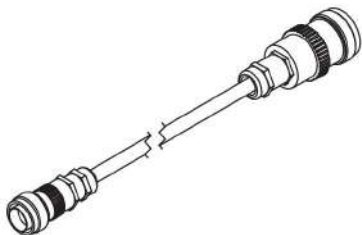
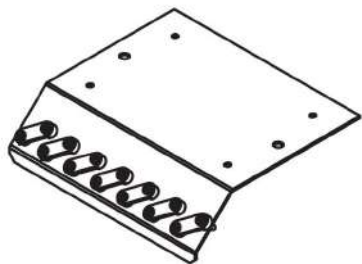
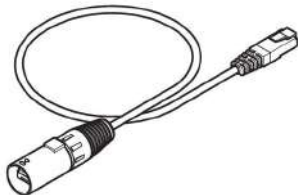
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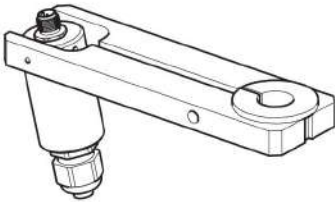
| Ordering no. | Denomination       | Type                  |
|--------------|--------------------|-----------------------|
| 0460 504 880 | Control unit       | PEK                   |
| 0459 839 036 | Spare parts list   | PEK                   |
| 0460 949     | Instruction manual | Control panel for PEK |

Instruction manuals and the spare parts list can be downloaded from: [www.esab.com](http://www.esab.com)

## ACCESSORIES

|                                             |                  |                                                                                       |
|---------------------------------------------|------------------|---------------------------------------------------------------------------------------|
| <b>Control cable PEK - Power source</b>     |                  |                                                                                       |
| 0460 910 881                                | 15 m             |    |
| 0460 910 882                                | 25 m             |                                                                                       |
| 0460 910 883                                | 35 m             |                                                                                       |
| 0460 910 884                                | 50 m             |                                                                                       |
| <b>Cable restraining bracket</b>            |                  |                                                                                       |
| 0460 861 880                                |                  |   |
| <b>USB Memory stick 2 Gb</b>                |                  |                                                                                       |
| 0462 062 001                                |                  |  |
| <b>Ethernet cable (connectors included)</b> |                  |                                                                                       |
| 0465 816 001                                | 0.5 m industrial |  |

## ACCESSORIES

|              |                                                                 |                                                                                     |
|--------------|-----------------------------------------------------------------|-------------------------------------------------------------------------------------|
| 0821 440 980 | <b>Laser lamp kit, 2 m (6 ft 6.7 in.) cable</b>                 |  |
| 0821 440 981 | <b>Laser lamp kit, 10 m (33 ft) cable</b>                       |                                                                                     |
| 0821 440 982 | <b>Laser lamp kit, 25 m (82 ft) cable</b>                       |                                                                                     |
| 0821 440 983 | <b>Laser lamp kit, 40 m (131 ft) cable</b>                      |                                                                                     |
| 0821 440 984 | <b>Laser lamp kit, 0.5 m (1 ft 7.7 in.) cable</b>               |                                                                                     |
| 0821 441 980 | <b>Laser lamp kit, hair cross,<br/>2 m (6 ft 6.7 in.) cable</b> |                                                                                     |
| 0821 441 983 | <b>Laser lamp kit, hair cross, 25 m (82 ft) cable</b>           |                                                                                     |





# A WORLD OF PRODUCTS AND SOLUTIONS.



For contact information visit [esab.com](http://esab.com)

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<http://manuals.esab.com>

