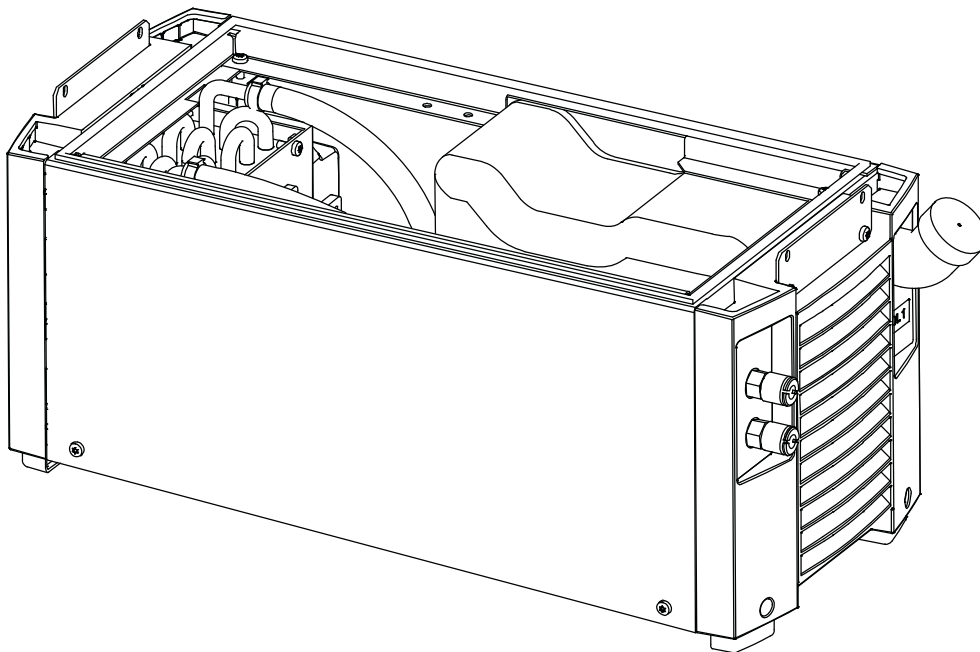


COOL 1



Instruction manual



DECLARATION OF CONFORMITY

According to

The Low Voltage Directive 2006/95/EC, entering into force 16 January 2007

The EMC Directive 2004/108/EC, entering into force 20 July 2007

Type of equipment

Arc welding cooling unit

Type designation

COOL 1, from serial number 033 xxx xxxx (2010 w.33)

Brand name or trade mark

ESAB

Manufacturer or his authorized representative established within the EEA:

Name, address, phone, website:

ESAB AB

Lindholmsallén 9

Box 8004, 402 77 GÖTEBORG, Sweden

Phone: +46 31 509 000

Website: www.esab.com

The following harmonized standards, in force within the EEA, has been used in the design:

EN 60974-2, Arc welding equipment – Part 2: Liquid cooling systems

EN 60974-10, Arc welding equipment – Part 10: Electromagnetic compatibility (EMC) requirements

Additional information:

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

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

Date

2012-09-27

Signature

A handwritten signature in black ink, appearing to be "JF", written over a light blue horizontal line.

Jerker Funnemark
Clarification

Position

Managing Director
Equipment & Automation

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1 SAFETY

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
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
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. 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.

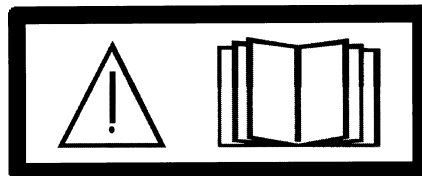
Read and understand the instruction manual before installing or operating.

PROTECT YOURSELF AND OTHERS!



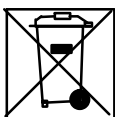
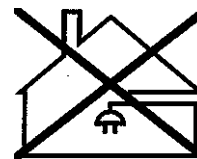
CAUTION

Read and understand the instruction manual before installing or operating.



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.



Dispose of electronic equipment at the recycling facility!

In observance of European Directive 2002/96/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

Cooling unit **COOL 1** is intended for cooling water-cooled MIG/MAG welding guns. **ESAB's accessories for the product can be found on page 15.**

2.1 Equipment

The cooling unit is supplied with an installation instructions and instruction manual.

3 TECHNICAL DATA

COOL 1	
Power consumption	24V DC / 2A
Cooling power	1.3 kW
Noise (Constant sound pressure when idling)	< 70 dB (A)
Coolant	ready mixed (see accessories on page 15)
Coolant quantity	4.5 l
Maximum water flow	2.0 l/min
Max pressure lift for torch Q_{max}	4 bar
Operating temperature	-10° to +40°C
Transportation temperature	-20° to +55°C
Dimensions l x w x h	610 x 256 x 256 mm
Weight empty	12 kg
Enclosure class	IP23

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 designed for indoor and outdoor use.

4 INSTALLATION

The installation must be carried out by a professional.



CAUTION

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

4.1 Location

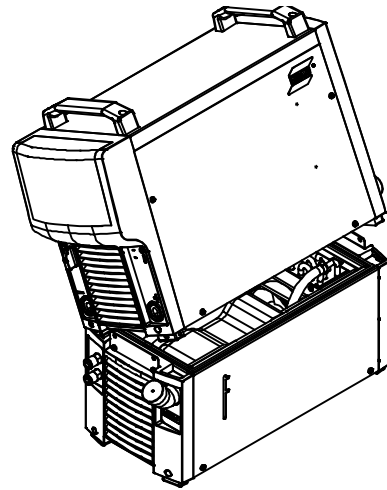
Position the cooling unit such that its cooling air inlets and outlets are not obstructed.

4.2 Power supply

The cooling unit is supplied from the power source, see page 10.

4.3 Installing welding equipment

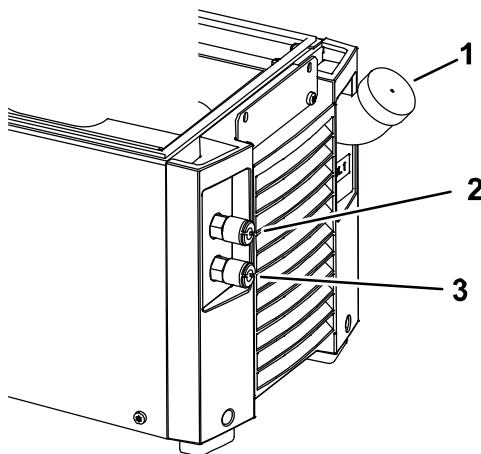
See installation instructions on page 10.



5 OPERATION

General safety regulations for handling the equipment can be found on page 4. Read through before you start using the equipment!

5.1 Connections and control devices



- 1 Filling the coolant
- 2 Connection BLUE for coolant from cooling unit
- 3 Connection RED for coolant (return) to cooling unit.

5.2 Coolant connection

For problem free operation it is recommended that the height from the cooling unit to the water-cooled MIG/MAG gun is a maximum of 8.5 m.

5.3 Coolant pressure switch

The pump has an enclosed coolant pressure switch. The switch opens if the coolant pressure is too high. This can occur if a hose is folded, which makes the flow to fail or stop.

The pump motor and cooling fan are connected in parallel and powered from the power source. The welding process, the pump and the fan can not be restarted until the sensor circuit is closed.

The MMC panel of the system displays fault code 29 - No cooling water flow. Check if a hose is folded and reset the fault code by pressing any button on the control panel.

5.4 Water flow guard - option

The water flow guard blocks the power source if the coolant stops (minimum water flow of 0.7 l/m). The water flow guard is an accessory, see page 15.

6 MAINTENANCE

Regular maintenance is important for safe, reliable operation.

Only those persons who have appropriate electrical knowledge (authorized personnel) may remove the safety plates.



CAUTION

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

6.1 Inspection and cleaning



WARNING

The mains supply must be disconnected before cleaning.

Dust, grinding swarf etc The air stream through the cooling unit carries particles that become trapped in the cooling element, particularly in dirty working environments. This results in reduced cooling capacity. For this reason, blow clean using compressed air at regular intervals.

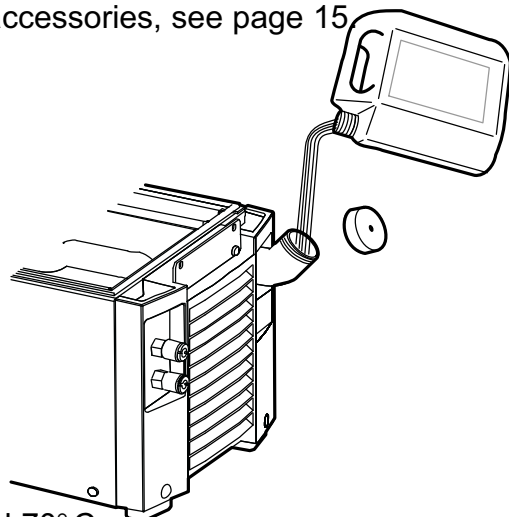
The coolant system - The recommended coolant must be used in the system otherwise clumps can be created that block the pump, water connections or elements. Flushing can only be performed via red water connection. Then drain the tank manually, i.e. empty via the tank's filling hole.

6.2 Filling the coolant

ESAB's coolant is recommended for use. See accessories, see page 15

- Fill with coolant.
(The fluid level must not exceed the upper marking but neither must it be below the lower marking)

Note! Coolant must be topped up if connecting a welding gun or coolant hoses that are 5 metres in length or longer. When adjusting the water level by topping up, the coolant hoses do not need to be disconnected.



The temperature of the coolant must not exceed 70° C



CAUTION

The coolant must be handled as chemical waste.

7 FAULT-TRACING

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

Error code	Corrective action
Poor cooling effect	<ul style="list-style-type: none">• Clean the cooling element using compressed air.• Check the coolant level.

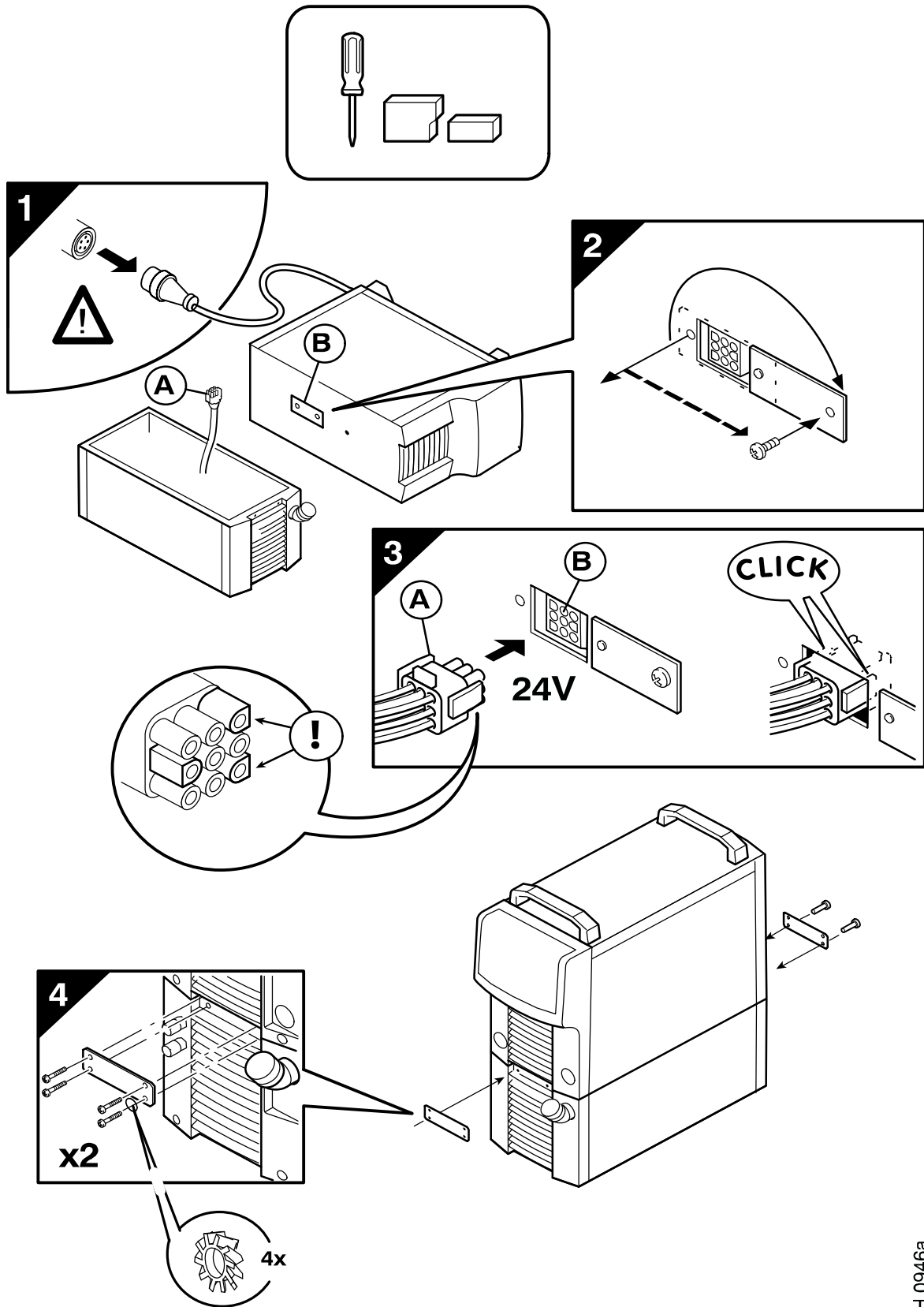
8 ORDERING SPARE PARTS

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

COOL 1 is designed and tested in accordance with the international and European standards EN 60974-2 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.

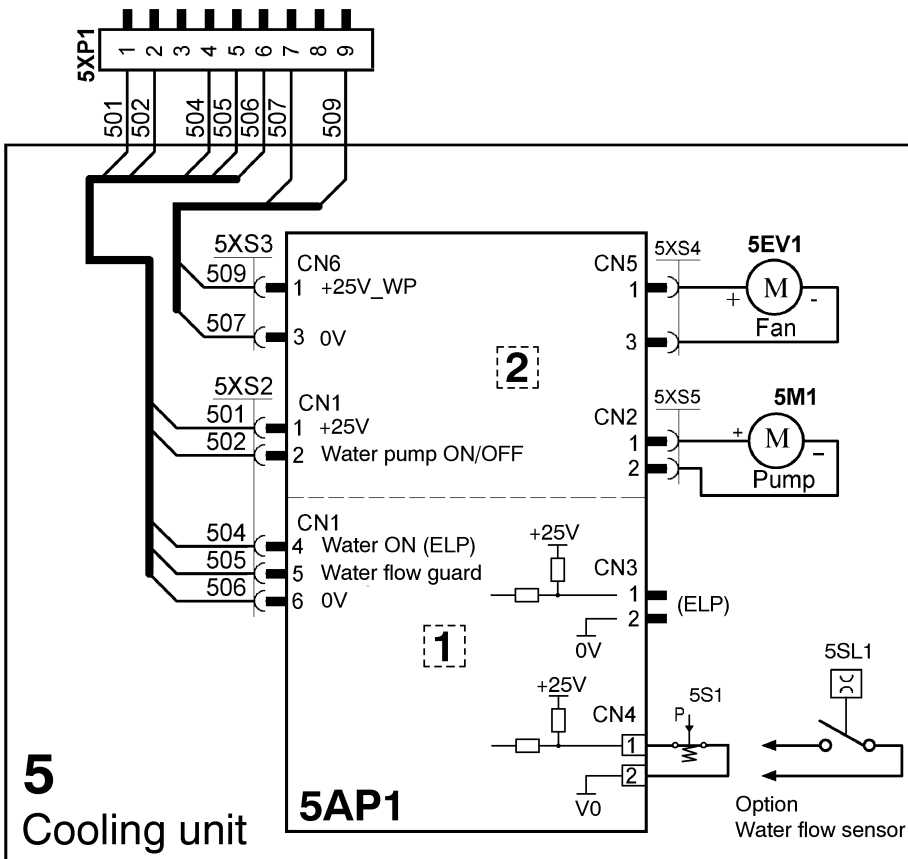
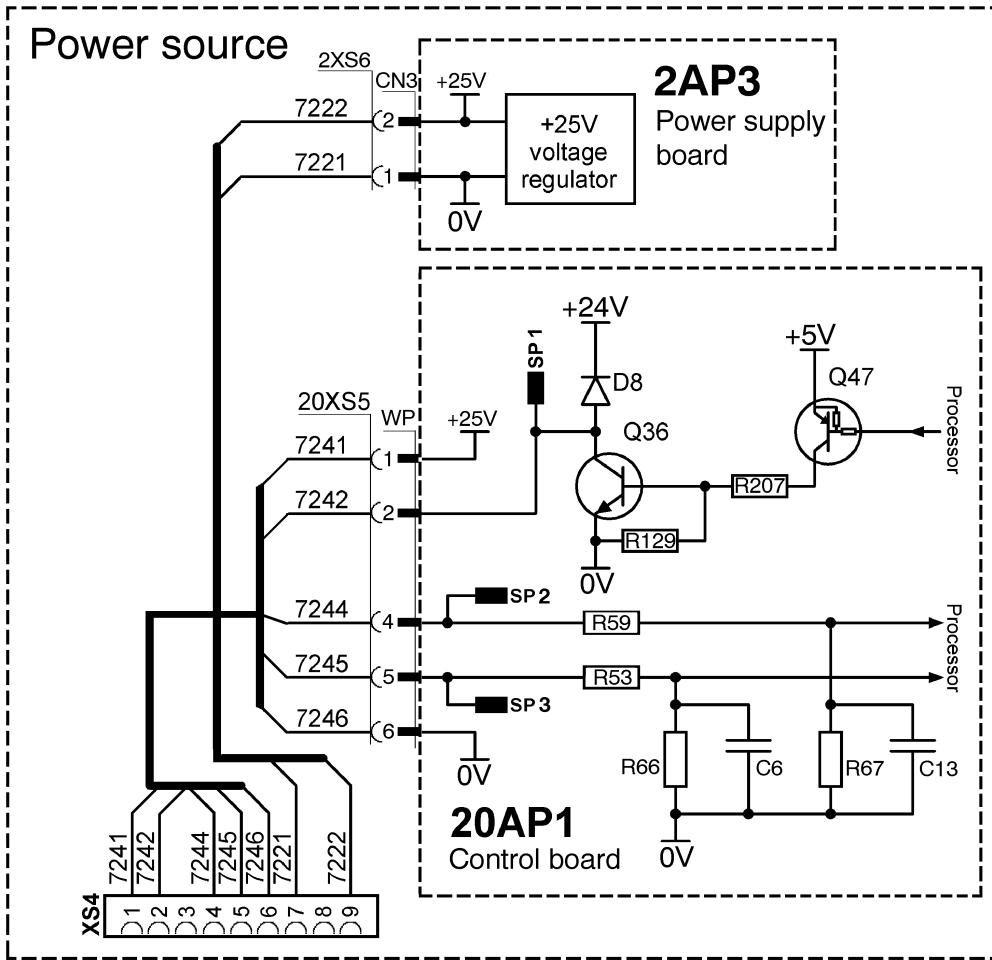
Spare parts may be ordered through your nearest ESAB dealer, see the last page of this publication.

Assembly instructions

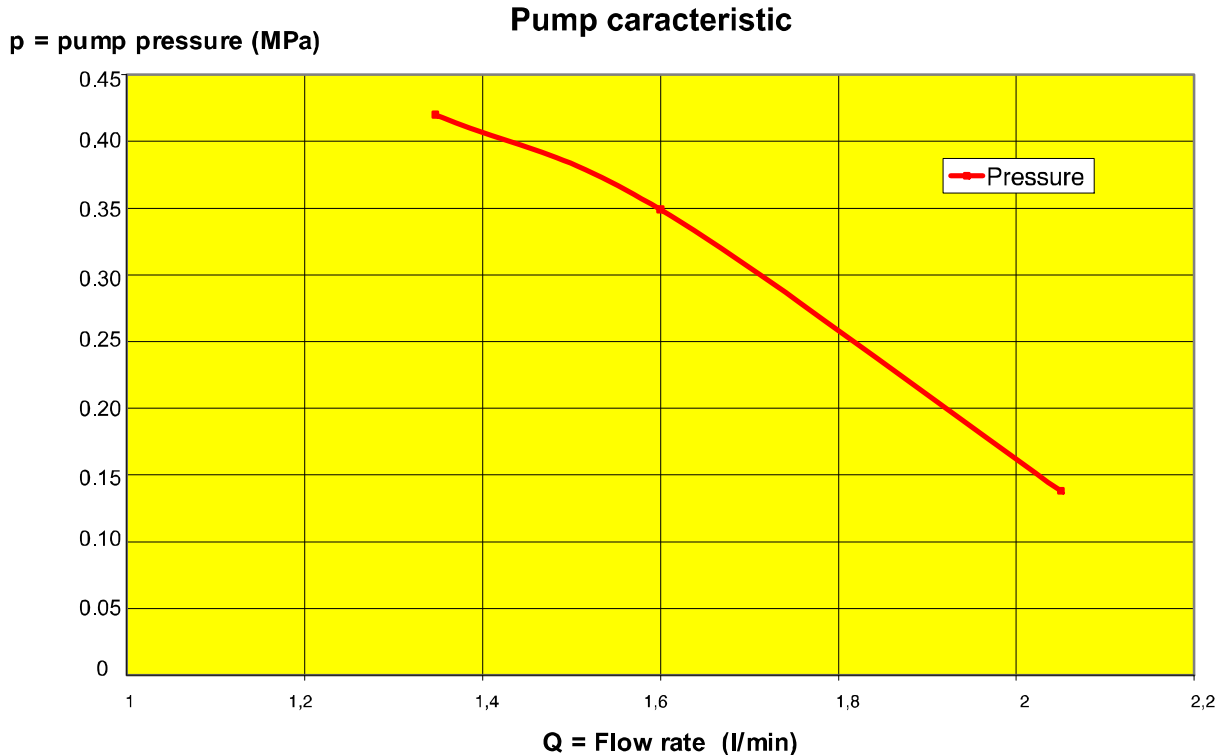


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Diagram



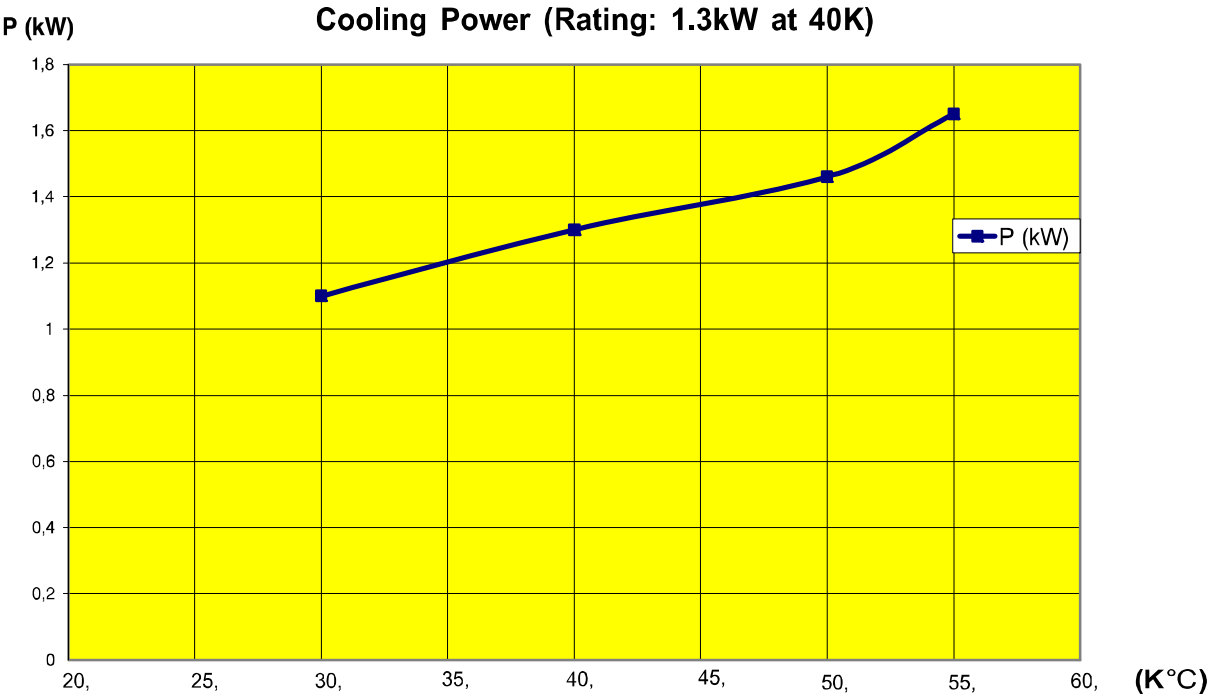
Pump data,



p = Pump pressure,

Q = Flow rate,

Cooling characteristic



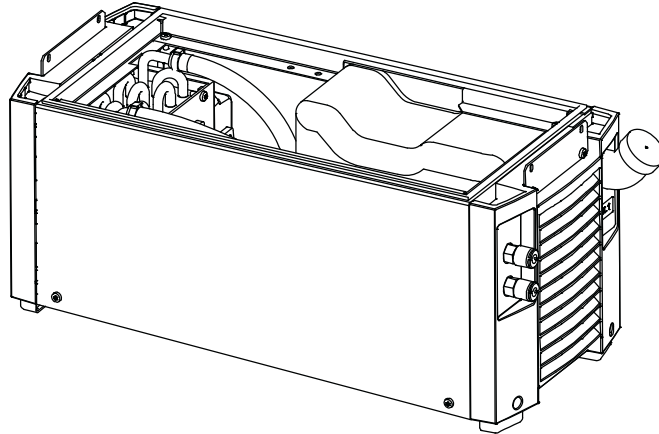
K = The temperature difference between inlet water temperature and ambient temperature (K)

P = Power,

K°C = temperature difference,

COOL 1

Order number


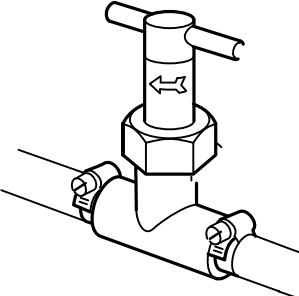


Ordering no.	Denomination	Type	Notes
0462 300 880	Cooling unit complete	Cool 1	
0459 839 048	Spare parts list	Cool 1	

Instruction manuals in other languages can be downloaded from the website, www.esab.com.

COOL 1

Accessories

	Coolant (ready mixed) 50% water and 50% mono-ethylene glycol (10 l) 0007 810 012
	Water flow guard 0456 855 881

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