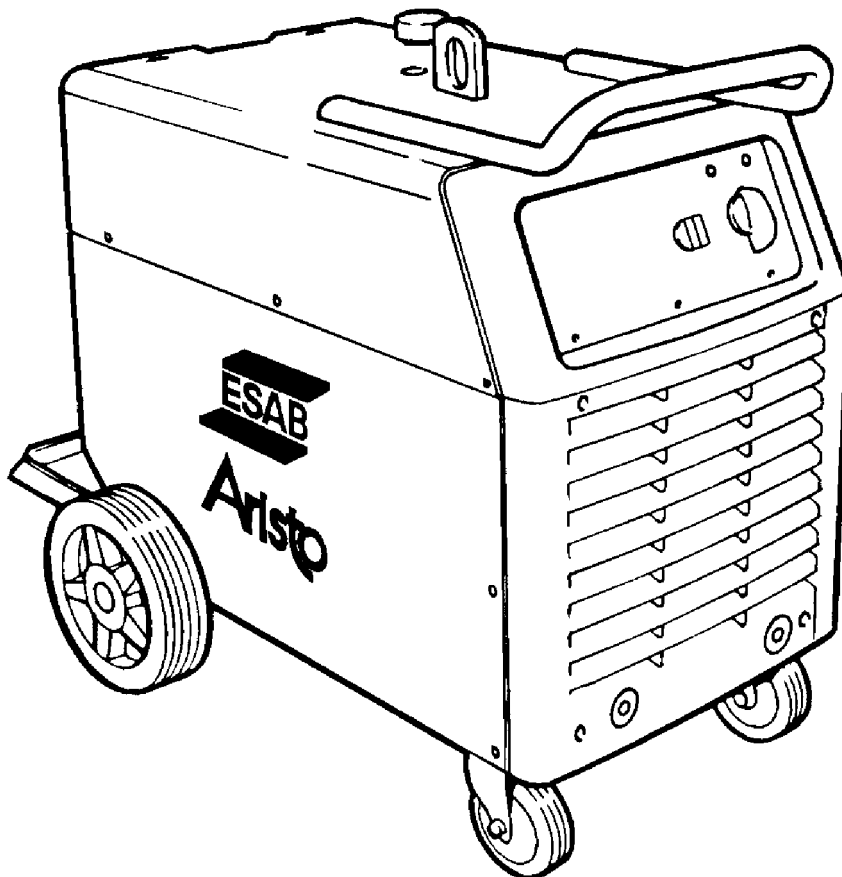




Aristo 320

Aristo 450

LUD 320, LUD 450



**Bruksanvisning
Brugsanvisning
Bruksanvisning
Käyttöohjeet
Instruction manual
Betriebsanweisung**

**Manuel d'instructions
Gebruiksaanwijzing
Instrucciones de uso
Istruzioni per l'uso
Manual de instruções
Οδηγίες χρήσεως**

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Rätt till ändring av specifikationer utan avisering förbehålles.
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1 DIRECTIVE

DECLARATION OF CONFORMITY

ESAB Welding Equipment AB, S-695 81 Laxå, Sweden, gives its unreserved guarantee that welding power source LUD 320/450-320W/450W from serial number 716 complies with standard IEC/EN 60974-1, in accordance with the requirements of directive (73/23/EEC) and addendum (93/68/EEC) and with standard EN 50199 in accordance with the requirements of directive (89/336/EEC) and addendum (93/68/EEC).

Laxå 1997-06-05



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2 SAFETY



WARNING



ARC WELDING AND CUTTING CAN BE INJURIOUS TO YOURSELF AND OTHERS. TAKE PRECAUTIONS WHEN WELDING. ASK FOR YOUR EMPLOYER'S SAFETY PRACTICES WHICH SHOULD BE BASED ON MANUFACTURERS' HAZARD DATA.

ELECTRIC SHOCK - Can kill

- Install and earth the welding 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!



WARNING!

Do not use the power source for thawing frozen pipes.

3 INTRODUCTION

LUD 320 and LUD 450 are transistorised welding rectifiers intended for MMA (Manual Metal Arc), MIG/MAG (semi-automatic) welding, TIG welding and arc gouging. LUD units are used in combination with a controller and wire feed unit MEK 4C, MEK 44C, MEK 20C and MLC 30C.

The welding rectifiers are fan cooled, and fitted with a thermal cut-out to prevent overheating.

The cut-out is reset automatically when the welding rectifier has cooled down.

See page 140 for details of ESAB's accessories for the power source.

3.1 Setting control

All the settings are controlled by the PUA1 setting box.

For operating instructions see the programming manual **456 685-xxx**.

4 TECHNICAL DATA

	LUD 320/320 W	LUD 320/320 W
Voltage	400V 3~50/60 Hz	230/400/500V 3~50Hz 208/230/460/475V 3~60 Hz
Permissible load at 100% duty cycle 60% duty cycle	270A / 30,8V 320A / 32,8V	270A / 30,8V 320A / 32,8V
Setting range MIG/MAG	15A/15V(8V)-320A/30V	30A/15V(8V)-320A/30V
Setting range MMA	16A/20V-320A/32,8V	10A/20V-320A/32,8V
Setting range TIG	4A/10V-320A/22,7V	10A/10V-320A/22,7V
Open circuit voltage MIG/MAG	65-80 V	65-80 V
Open circuit voltage MMA/TIG	50-60 V	50-60 V
Open circuit power	520 W	520 W
Efficiency, at max current	MIG/MAG 82% MMA 84,5% TIG 82%	MIG/MAG 82% MMA 84,5% TIG 84,5%
Power factor, at max current	MIG/MAG 0,85 MMA 0,85 TIG 0,80	MIG/MAG 0,85 MMA 0,85 TIG 0,80
Enclosure class	IP 23	IP 23
Weight kg	96/110	143/157
Dimensions , lxwxh	910x642x835	910x642x835
Application classification	[S]	[S]

	LUD 450/450 W	LUD 450/450 W
Voltage	400V 3~50/60 Hz	230/400/500V 3~50Hz 208/230/460/475V 3~60 Hz
Permissible load at 100% duty cycle	360A / 34,4V	360 / 34,4V
60% duty cycle	425A / 37V	425A / 37V
45% duty cycle	450A / 38V	450A / 38V
Setting range MIG/MAG	15A/15V (8V)–450A/36,5V	30A/15V (8V)–450A/36,5V
Setting range MMA	16A / 20V–450A / 38V	10A / 20V–450A / 38V
Setting range TIG	4A/10V–450A/28V	10A/10V–450A/28V
Open circuit voltage MIG/MAG	65 – 80 V	65 – 80 V
Open circuit voltage MMA /TIG	50 – 60 V	50 – 60 V
Open circuit power	520 W	520 W
Efficiency, at max current	MIG/MAG 82% MMA 83% TIG 83%	MIG/MAG 82% MMA 83% TIG 83%
Power factor, at max current	MIG/MAG 0,92 MMA, 0,92 TIG 0,90	MIG/MAG 0,92 MMA 0,92 TIG 0,90
Enclosure class	IP 23	IP 23
Weight kg	96/110	143/157
Dimensions , lxxwxh	910x642x835	910x642x835
Application classification	S	S

These welding rectifier conform to the requirements of IEC 974-1.

Duty cycle

The duty cycle refers to the time as a percentage of a ten-minute period that you can weld at a certain load without overloading the welding power source.

Enclosure class

The IP code indicates the enclosure class, i. e. the degree of protection against penetration by solid objects or water. Equipment marked **IP 23** is designed 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.

5 INSTALLATION

The installation must be executed by a professional.

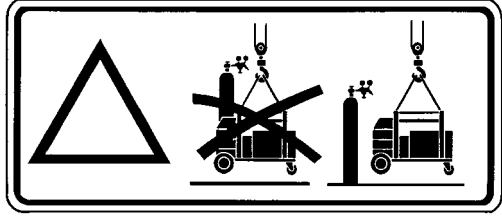


WARNING!

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.

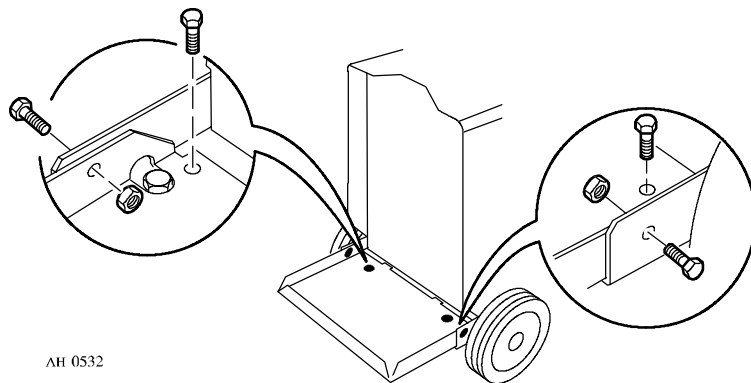
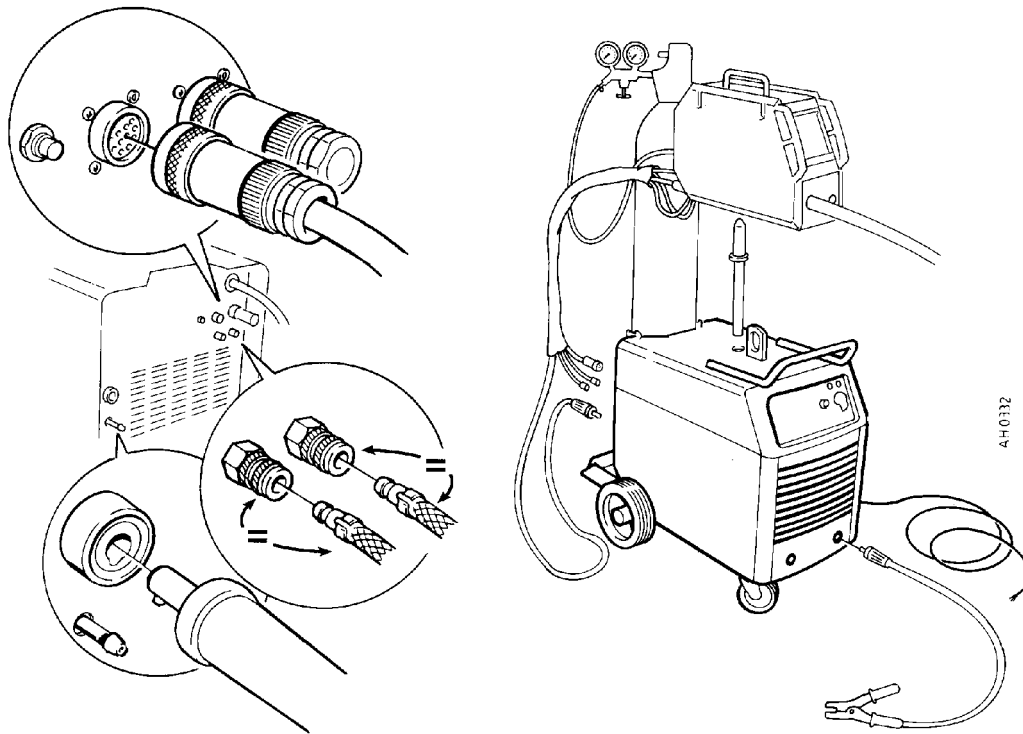
Lifting instructions

The power supply should be lifted by means of its lifting eye. The handle is only intended for pulling it along the ground.



IMPORTANT

- Place the welding power source in a suitable place and make sure the welding rectifier is not covered or set-up so that cooling is prevented.
- Make sure the welding rectifier is connected to the correct mains voltage. Earth according to applicable directives.



5.1 MAINS SUPPLY

- Connect the power supply lead using the appropriate fuse in conformance with local regulations.

Power supply lead complies to Swedish electrical regulations.

LUD 320	3~50 Hz	3~50 Hz	3~50 Hz	3~60 Hz	3~60 Hz	3~60 Hz	3~60 Hz
Voltage V	230	400	500	208	230	460	475
Current A 100%	27	16	13	30	27	13,5	13
60%	37	21	15	38	34,5	17	16,5
Mains lead rating	4x10	4x4	4x4	4x10	4x10	4x4	4x4
Fuse, slow A	25	16	16	35	25	16	16

LUD 450	3~50 Hz	3~50 Hz	3~50 Hz	3~60 Hz	3~60 Hz	3~60 Hz	3~60 Hz
Voltage V	230	400	500	208	230	460	475
Current A 100%	40	24,5	18,5	45	41	20	19,5
60%	51	30,5	23	57,5	51,5	25	24,5
45%	55,5	34	25	62	56,5	27,5	26,5
Mains lead rating	4x10	4x4	4x4	4x10	4x10	4x4	4x4
Fuse, slow A	50	20	20	50	50	20	20

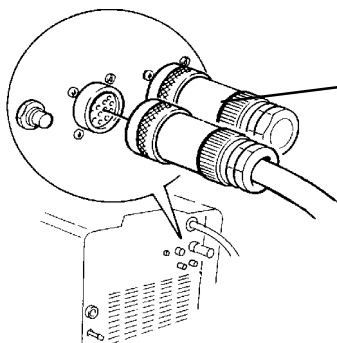
5.2 Termination resistance

The termination resistance must be connected to the ends of the CAN bus to prevent communication problems.

The controller has a built-in terminator, but the power source and wire feed unit do not.

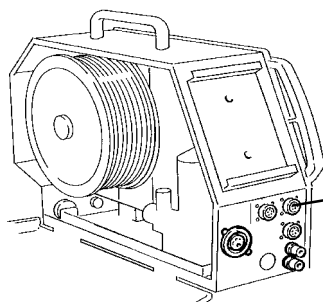
The terminator should be fitted as follows depending on how the units are connected:

1. Controller connected to wire feed unit.



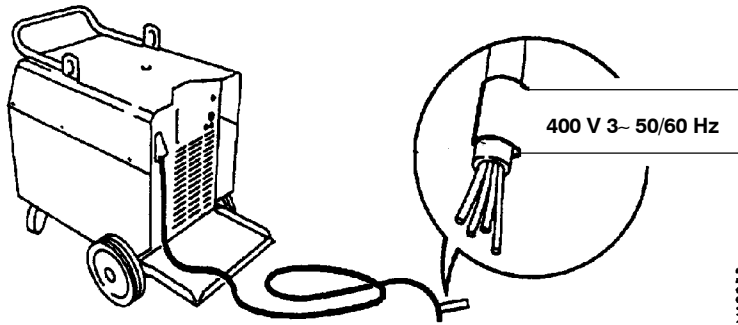
The termination resistance must be connected to the rear of the power source. (Already connected this way on delivery).

2. Controller connected to power source.

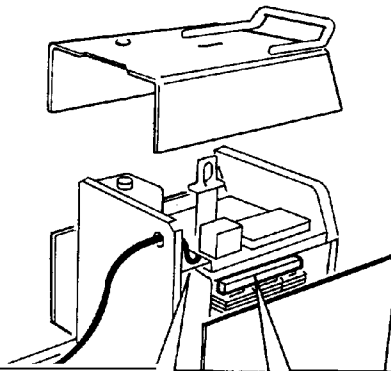
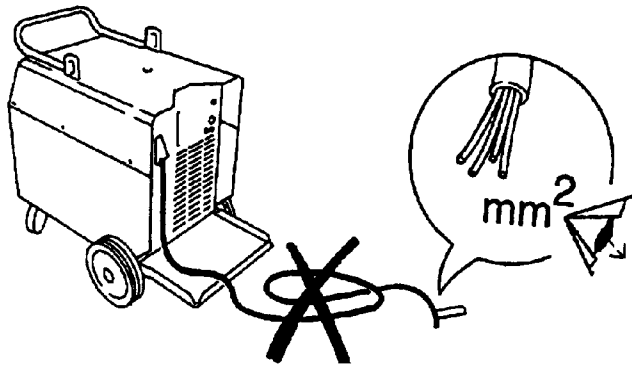


The termination resistance must be connected to the front of the wire feed unit.

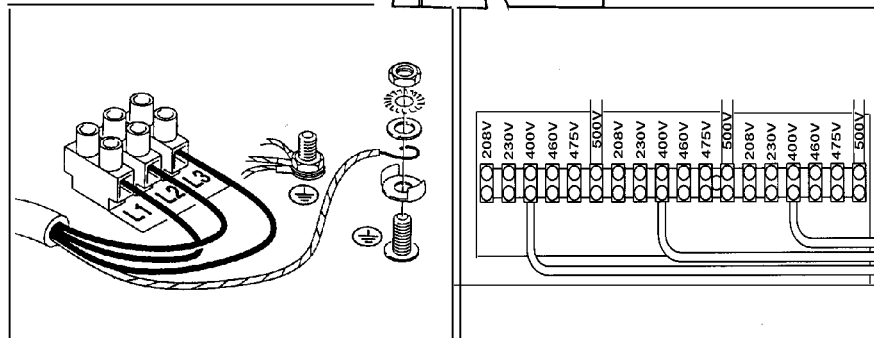
5.3 Electrical installation



208 V 60Hz, 230 V 50/60 Hz



AH 330

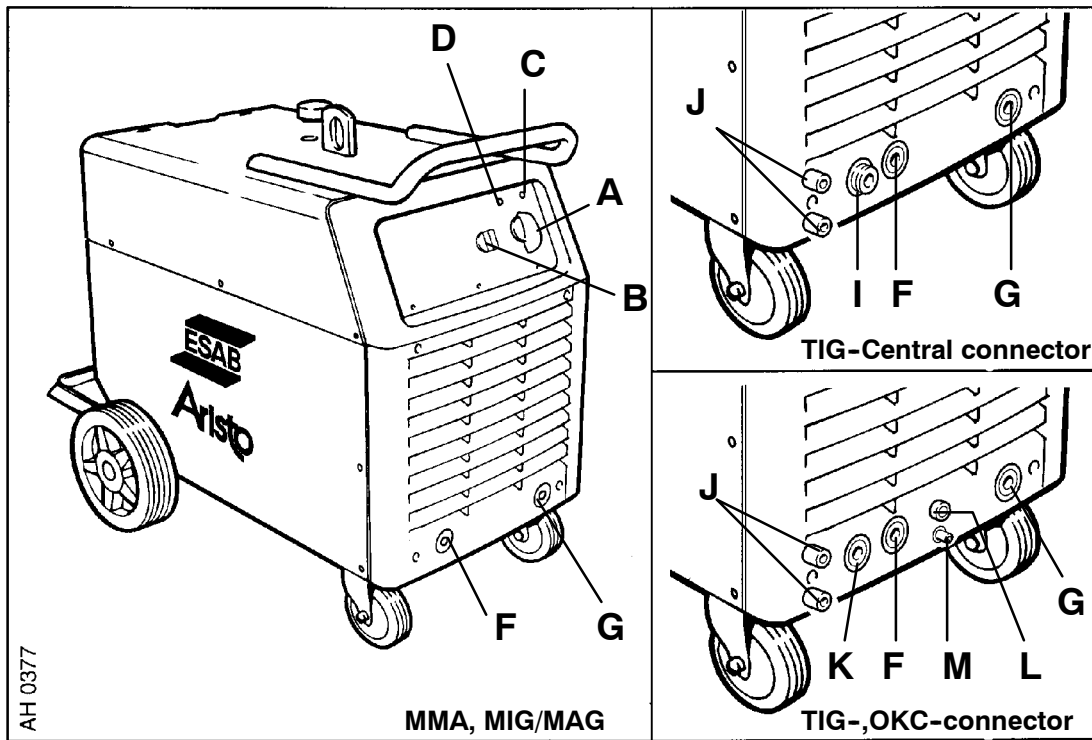


6 OPERATION

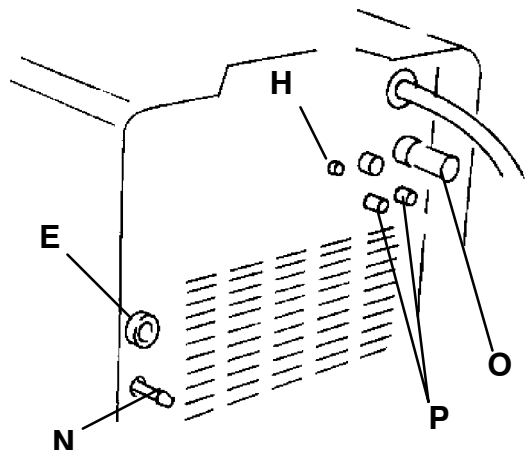
General safety regulations for the handling of the equipment can be found on page 44. Read through before you start using the equipment!

CAUTION!

When pulse welding make sure that the return cable (max. 8 m) and the connecting cable (max. 8 m) between the power source and wire feed unit are not coiled up.



- A - Power on/off
- B - Cooling unit on/off (LUD 320W/450W)
- C - Power on light
- D - Thermal cut-out warning light, lights up in case of overheating
- E - Welding terminal, + polarity
- F - Welding terminal, - polarity
- G - Welding terminal, + polarity
- H - Automatic fuse 42 V AC circuit
- I - Central connector TIG torch, - polarity HF
- J - Water connection, TIG torch
- K - OKC connector TIG torch, - polarity HF
- L - Connection for TIG torch trigger switch
- M - Gas connection for TIG torch
- N - Gas nipple (connection to gas bottle)
- O - Termination resistance
- P - Water connection, wire feed unit



7 MAINTENANCE

Note:

All warranty undertakings given by the supplier cease to apply if the customer attempts to rectify any faults on the machine during the warranty period.

Only those persons who have appropriate electrical knowledge (authorised personnel) may remove the safety plates to connect or carry out service, maintenance or repair work on welding equipment.

Cleaning

Check regularly that the power source is free from dirt.

How often, and to what extent, cleaning should be carried out depends on the welding process, arc time, disposition and the surrounding environment. It will normally suffice to blow the power source clean using compressed air (reduced pressure) once a year.

If the power source is very dirty, brushing and vacuuming are recommended.

- Disconnect the welding power source from the mains current supply.
- Remove the adapter from the socket. Lock the socket to prevent unauthorised connection.

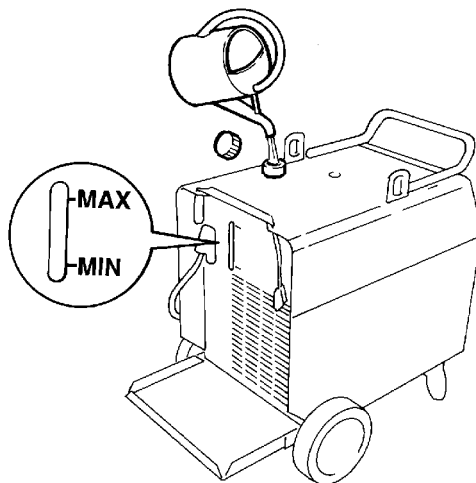
At fixed installations, the safety switch should be set to the off position. Lock the switch.

- Remove the power source's safety plates for best access.

After cleaning, all safety plates must be mounted before you connect the power source to the mains supply.

7.1 Topping up coolant

We recommend a 50/50 % mixture of water and ethylene glycol.





WARNING!

There is a risk of tipping if the wire feed cabinet is fitted with a counterbalance arm. Secure the equipment, especially if used on an uneven or sloping surface.

Limit the angle of rotation of the wire feed cabinet using the straps supplied.

When moving the equipment, do **NOT** pull on the torch.

8 ORDERING OF SPARE PARTS

Spare parts are ordered through your nearest ESAB representative, see back cover. When ordering spare parts, please state machine type and number as well as designation and spare part number as shown in the spare parts list. This will simplify dispatch and ensure you get the right part.