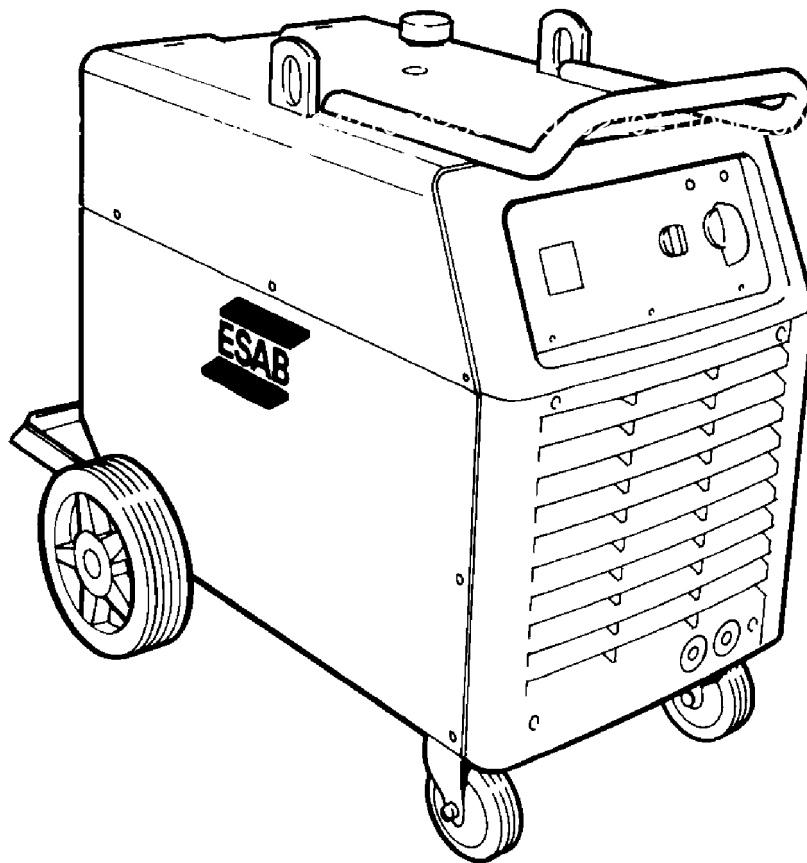




LAW 410/510

410W/510W



claw0p00

Bruksanvisning
Brugsanvisning
Bruksanvisning
Käyttöohjeet
Instruction manual
Betriebsanweisung

Manuel d'instructions
Gebruiksaanwijzing
Instrucciones de uso
Istruzioni per l'uso
Manual de instruções
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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, 695 81 Laxå, Sweden, gives its unreserved guarantee that welding power source LAW 410/510 - 410/510 W from serial number 708 complies with standard EN 60974-1, in accordance with the requirements of directive (73/23/EEA) and addendum (93/68/EEA).

Laxå 97-02-18



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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 keep fumes and gases 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

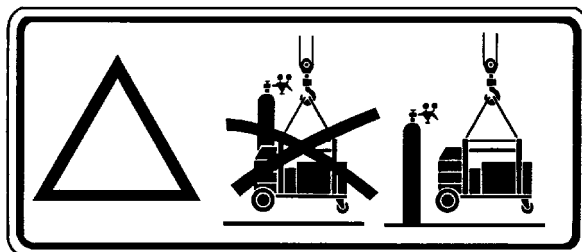
- Protect your ears. Use ear defenders or other hearing protection.
- Warn bystanders of the risk.

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

READ AND UNDERSTAND THE INSTRUCTION MANUAL BEFORE INSTALLING OR OPERATING.

PROTECT YOURSELF AND OTHERS!

3 INTRODUCTION



WARNING

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

The LAW 410 and LAW 510 are 6-pulse thyristor rectifiers designed for semi-automatic welding.

Both rectifiers are fan-cooled and equipped with thermal overload protection.

3.1 TECHNICAL DATA

	LAW 410/410W	LAW 410/410W
Voltage	400-415V, 3~50Hz	230/400-415/500V, 3~50Hz 230/440-460V, 3~60Hz
Permissible load at 100% duty cycle	280 A/28 V	280 A/28 V
60% duty cycle	350 A/32 V	350 A/32 V
45% duty cycle	400 A/34 V	400 A/34 V
Setting range (DC)	60 A/17(12)V-400 A/34 V	60 A/17(12)V-400 A/34 V
Open circuit voltage	53-58 V	53-58 V
Open circuit power	590/790W	640/840W
Efficiency	0,74	0,76
Power factor	0,86	0,84
Control voltage	42 V, 50/60 Hz	42 V,50/60 Hz
Enclosure class	IP 23	IP 23
Weight kg	200/214	201/215
Dimensions lxbxh	800x640x835	800x640x835
Application classification	S	S

These welding power sources conform to the requirements of **IEC 974-1**

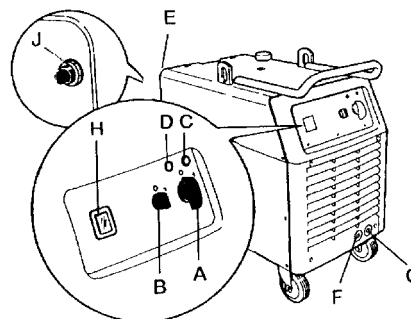
	LAW 510/510W	LAW 510/510W
Voltage	400-415V, 3~50Hz	230/400-415/500V, 3~50Hz 230/440-460V, 3~60Hz
Permissible load at 100% duty cycle	400 A/34 V	390 A/33,5 V
80% duty cycle	450 A/37 V	435 A/36 V
60% duty cycle	500 A/39 V	500 A/39 V
Setting range (DC)	60 A/17(12)V-500 A/39 V	60 A/17(12)V-500 A/39 V
Open circuit voltage	53-60 V	53-60 V
Open circuit power	670/870 W	720/920 W
Efficiency	0,78	0,78
Power factor	0,90	0,90
Control voltage	42 V, 50/60 Hz	42 V,50/60 Hz
Enclosure class	IP 23	IP 23
Weight kg	225/239	227/241
Dimensions lxbxh	800x640x835	800x640x835
Application classification	S	S

These welding power sources conform to the requirements of **IEC 974-1**

The symbol **S** indicates that the power source is designed for use in areas where there is an increased electrical hazard. Equipment marked **IP 23** is designed for use indoors and outdoors.

3.2 TECHNICAL DESCRIPTION

- A- On/Off mains supply.
- B- On/Off cooling unit (LAW 410W/510W)
- C- Mains indicator lamp
- D- Thermal overload warning lamp, lights up in case of overheating
- E- Welding socket, + terminal
- F- Inductance socket, - terminal
- G- Inductance socket, - terminal
- H- Space for digital meters (optional)
- J- Automatic fuse 42 V AC-circuit



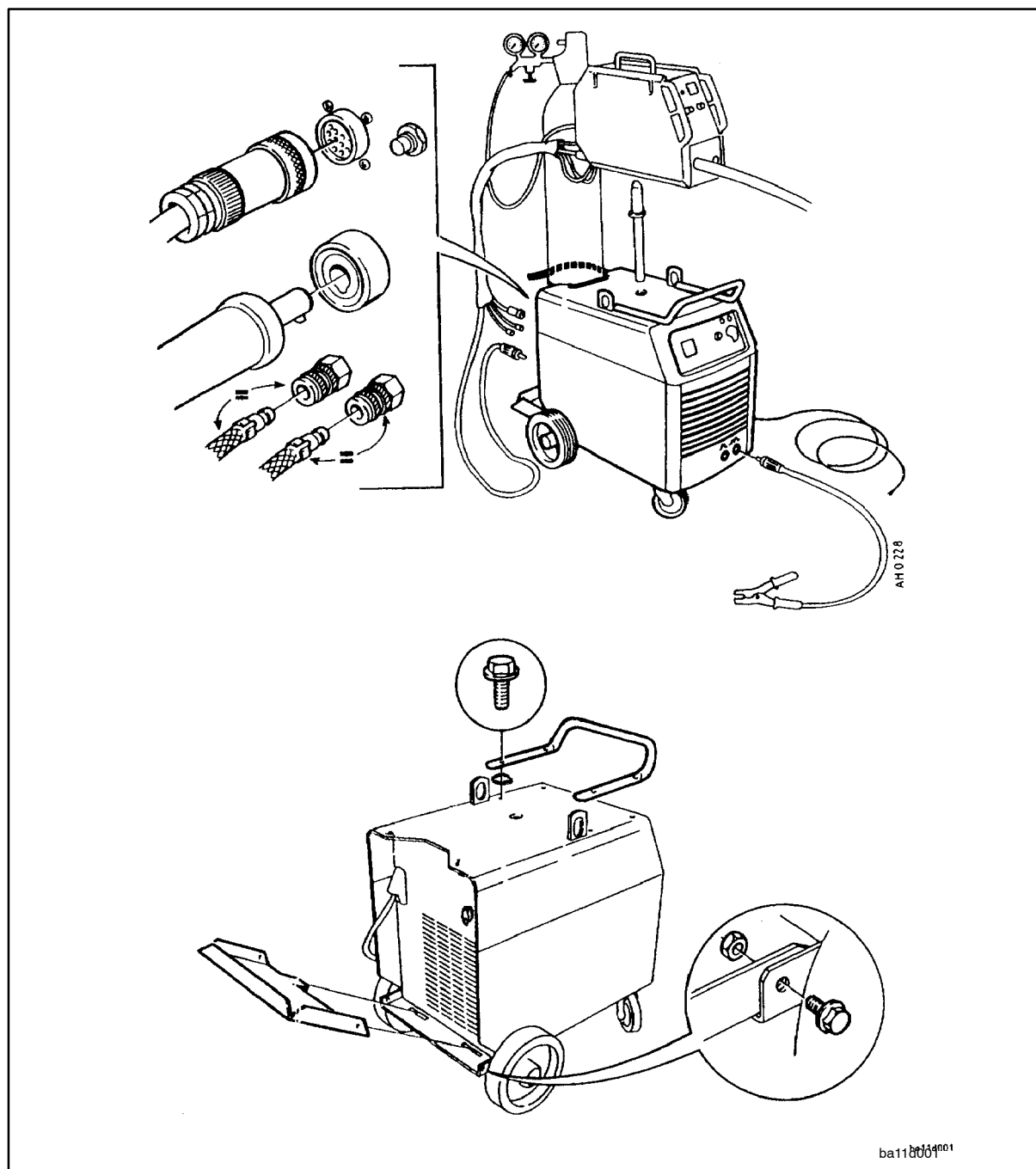
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4 INSTALLATION

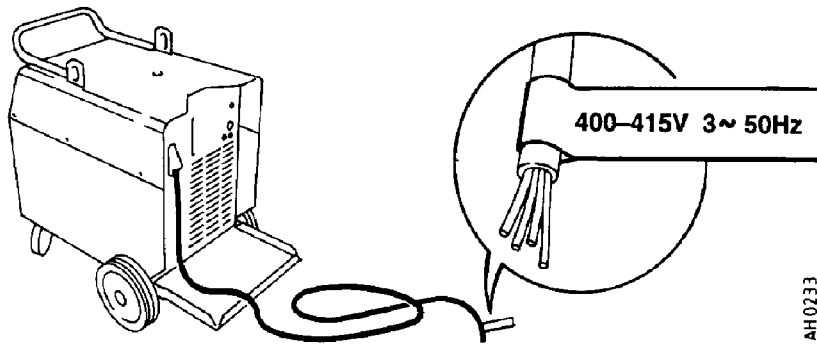
IMPORTANT

- Installation must be carried out by a qualified electrician.
- 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.
- Connect the power supply lead using the appropriate fuse in conformance with local regulations.
Power supply lead complies to Swedish electrical regulations.

4.1 Assembly of components



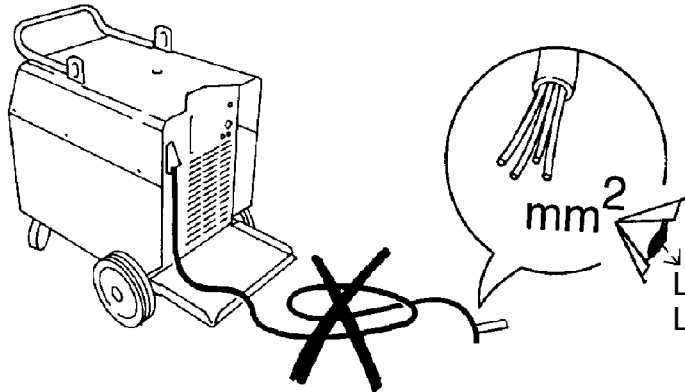
4.2 Electrical installation



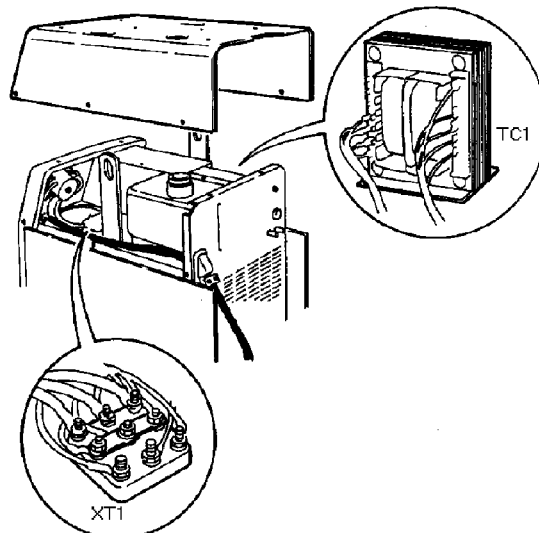
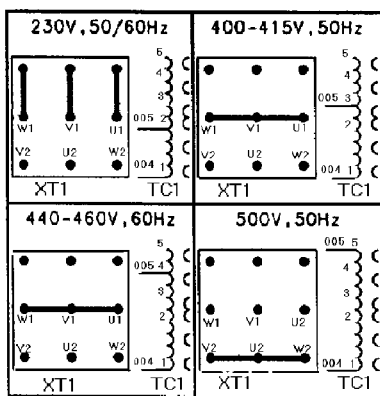
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230 V 50/60 Hz



LAW410/410W 4x10mm²
LAW510/510W 4x16mm²



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4.3 Mains supply

LAW 410

	3~50 Hz	3~50 Hz	3~50 Hz	3~60 Hz	3~60 Hz
Voltage V	230	400-415	500	230	440-460
Current A					
100%	39	23	19	37	22
60%	47	28	22	45	27
45%	51	31	25	51	30
Mains lead rating	4x10	4x4	4x4	4x10	4x4
Fuse, slow A	35	25	20	35	20

LAW 510

	3~50 Hz	3~50 Hz	3~50 Hz	3~60 Hz	3~60 Hz
Voltage V	230	400-415	500	230	440-460
Current A					
100%	59	35	27	56	33
80%	63	39	29	61	37
60%	69	41	33	69	42
Mains lead rating	4x16	4x6	4x6	4x16	4x6
Fuse, slow A	63	35	35	50	25

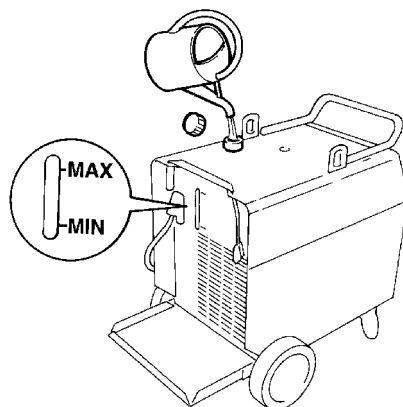
5 MAINTENANCE

The power source should be regularly blown clean using dry compressed air at reduced pressure. More frequently in dirty environments.

Otherwise the air inlet/outlet may become blocked and cause overheating.

Topping up coolant

Mix: 50 % water 50 % glycol



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1a

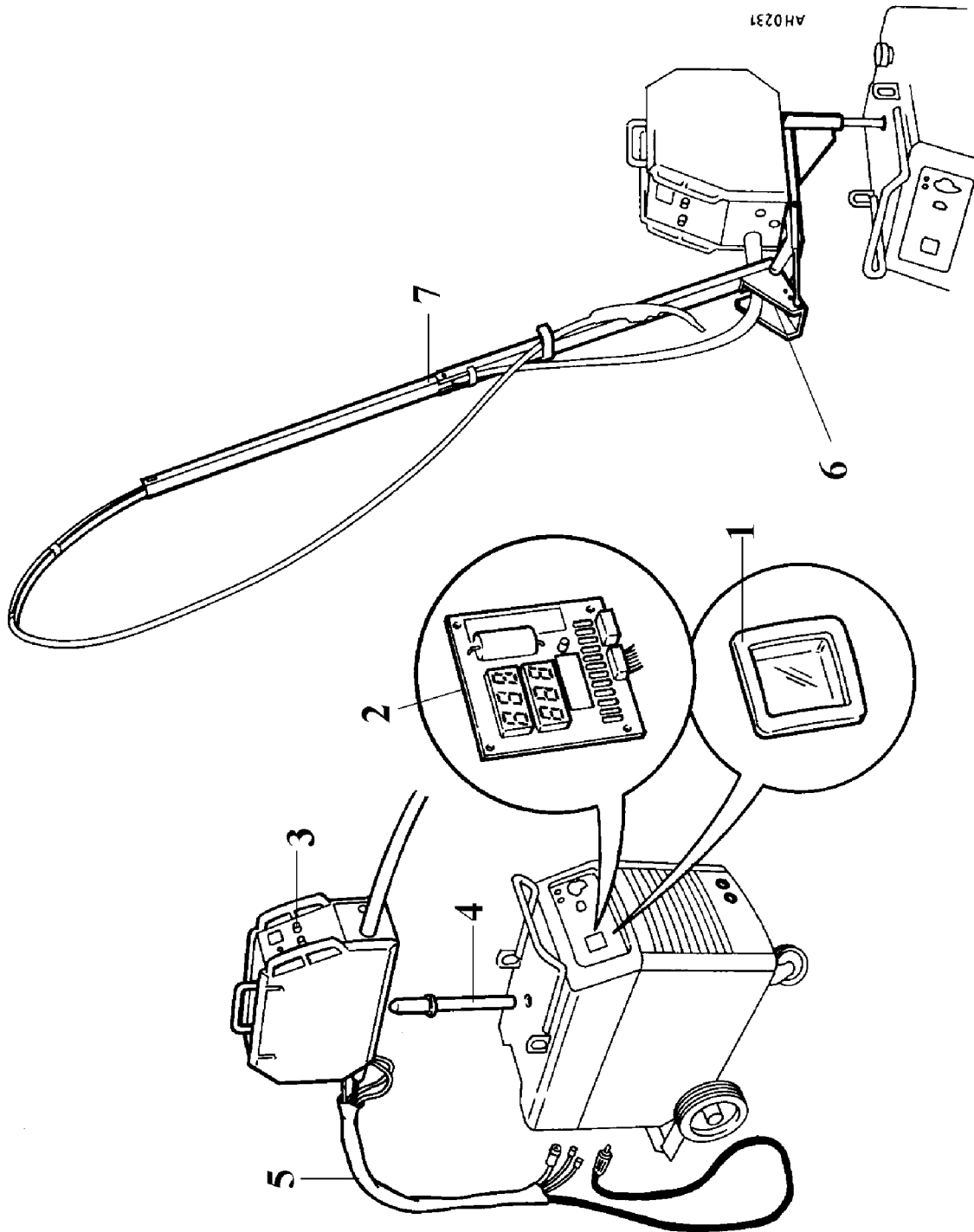
6 ACCESSORIES

Fig no.	Ord.no.	Qty.	Designation	410	410 W	510	510 W
1	455 172-001	1	Meter glass	x	x	x	x
2	455 173-882	1	Meter kit	x	x	x	x
3	469 962-880	1	Wire feed unit MEK4	x		x	
	469 962-881	1	Wire feed unit MEK4 I	x		x	
	469 962-882	1	Wire feed unit MEK4 W		x		x
	469 962-883	1	Wire feed unit MEK4 IW		x		x
	455 175-880	1	Wire feed unit MEK4 S	x		x	
	455 175-881	1	Wire feed unit MEK4 SW		x		x
4	156 654-883	1	Guide pin	x	x	x	x
5	469 836-880	1	Connection kit 1,7 m	x			
	469 836-881	1	Connection kit 8 m	x			
	469 836-882	1	Connection kit 16 m	x			
	469 836-883	1	Connection kit 25 m	x			
	469 836-884	1	Connection kit 35 m	x			
	469 836-885	1	Connection kit 1,7 m		x		
	469 836-886	1	Connection kit 8 m		x		
	469 836-887	1	Connection kit 16 m		x		
	469 836-888	1	Connection kit 25 m		x		
	469 836-889	1	Connection kit 35 m		x		
	469 836-890	1	Connection kit 1,7 m			x	
	469 836-891	1	Connection kit 8 m			x	
	469 836-892	1	Connection kit 16 m			x	
	469 836-893	1	Connection kit 25 m			x	
	469 836-894	1	Connection kit 35 m			x	
	469 836-895	1	Connection kit 1,7 m				x
	469 836-896	1	Connection kit 8 m				x
	469 836-897	1	Connection kit 16 m				x
	469 836-898	1	Connection kit 25 m				x
	469 836-899	1	Connection kit 35 m				x
6	469 792-881	1	Counter balance arm	x	x	x	x
7	156 746-880	1	Boom	x	x	x	x

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.



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7 ORDERING OF SPARE PARTS

When ordering spare parts please specify the machine model, serial number and the designation and order numbers of parts as shown in the list of spare parts. This simplifies dispatch and ensures correct delivery.