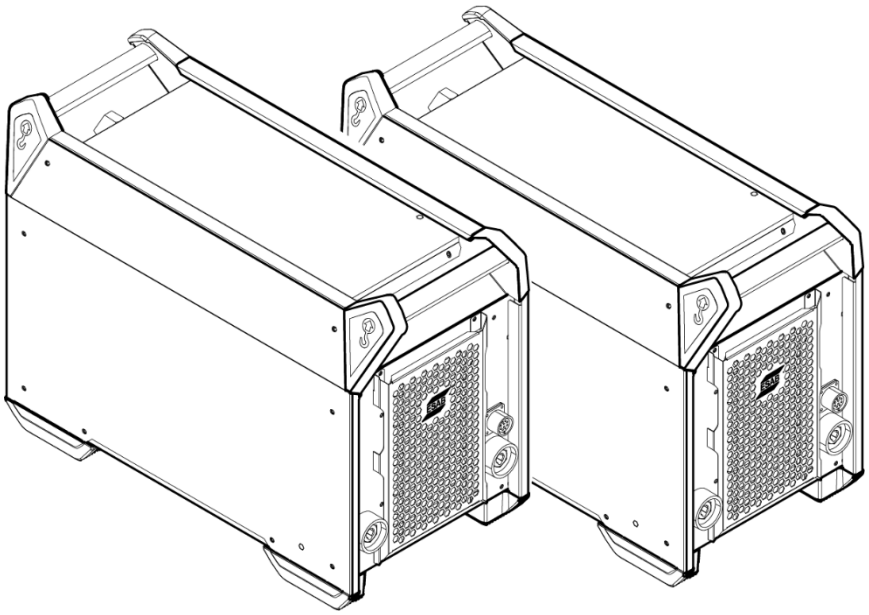
Fabricator EM 410i MV, Fabricator EM 510i MV



Instruction manual

0447 997 380 GB 20260825

Valid for: GC515YYWW, GC516YYWW

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1 SAFETY

1.1 Meaning of symbols

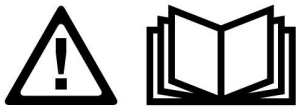
As used throughout this manual: Means Attention! Be Alert!

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 summarise precautionary information from the references listed in 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 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 watch 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, cuff less trousers, 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.

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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 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 far. 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. Remove 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 coatings 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 do 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 operations, inspect the work area to make certain there are no hot sparks or hot metal which could cause a later fire. 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 ground system of the input power.
2. Connect the workpiece to a good electrical ground.
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 earth 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 ground cable.

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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 having pacemakers should consult their physician 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 minimise 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 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 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 ventilation is not adequate. Stop work and take 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 adaptors. Maintain hoses and fittings in good condition. Follow manufacturer's operating instructions for mounting regulator to a compressed gas cylinder.

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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 engine or drive systems before installing or connecting 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.

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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 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

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4. Personal safety equipment:
    - Always wear recommended personal safety equipment, such as safety glasses, flame-proof clothing, and 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.

Recommended ESAB coolant ordering number: 0465 720 002.

For ordering information, see the "ACCESSORIES" chapter in the instruction manual.

WARNING!
Arc welding and cutting can be injurious to yourself and others. Take precautions when welding and cutting.



ELECTRIC SHOCK - Can kill

- Install and ground the unit in accordance with instruction manual.
- 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 having pacemakers should consult their physician 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 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.

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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 earmuffs 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 fire. 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!



WARNING!

Do not use the power source for thawing frozen pipes.



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.)

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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.

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2 INTRODUCTION

2.1 Overview

The **Fabricator EM 410i MV** and **Fabricator EM 510i MV** are welding power sources intended for MIG/MAG/FCAW/MMA/Live-TIG. The power sources are intended to be used with the following wire feed units:

- Fabricator Feed

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

2.2 Equipment

The power source is supplied with:

- 3m return cable with earth clamp
- 3m mains cable
- Instruction manual

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3 TECHNICAL DATA

Fabricator EM 410i MV			
Mains voltage	220 - 440 V±15%, 3~50/60 Hz		
Primary current I_{max}	**220V**	**380V**	**440V**
MIG/MAG	28.5A	26A	23.5A
MMA	37A	27A	24A
TIG	22A	22A	17.5A
Setting range (DC)			
MIG/MAG	30 A /15.5 V-300 A / 29 V	30 A /15.5 V-400 A /34 V	
MMA	20 A /20.8 V-300 A / 32 V	20 A / 20.8 V-400 A / 36 V	
TIG	10 A / 10.4 V-300 A / 22 V	10 A /10.4 V- 400 A / 26 V	
Permissible load at MIG/MAG			
60% duty cycle	300 A / 29 V	400 A / 34 V	
100% duty cycle	233 A / 25.7 V	310 A / 29.5 V	
Permissible load at MMA			
60% duty cycle	300 A / 32 V	400 A / 36 V	
100% duty cycle	233 A / 29.4 V	310 A / 32.4 V	
Permissible load at TIG			
60% duty cycle	300 A / 22 V	400 A / 26 V	
100% duty cycle	233 A / 19.4 V	310 A / 22.4 V	
Power factor at maximum current	0.82		
Maximum input power at idle mode	50W		
Efficiency at maximum current	80%		
Open-circuit voltage			
MIG	Uo=75V	Uo=71V	Uo=82V
MMA	Uo=70V Ur＜12V (VRD)	Uo=68V Ur＜12V (VRD)	Uo=78V Ur＜12V (VRD)
TIG	Uo=75V Ur＜12V (VRD)	Uo=71V Ur＜12V (VRD)	Uo=82V Ur＜12V (VRD)
Operating temperature	-10 to +40°C		
Transportation temperature	-20 to +55°C		
Dimensions l × w × h	800 × 410 × 590 mm (31.4 × 16.1 × 23.2 in.)		
Weight	49.8 kg (109.7 lb.)		
Insulation class	F		
Enclosure class	IP 23S		
Application class	S		

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Fabricator EM 510i MV			
Mains voltage	220-440 V ±15%, 3~50/60 Hz		
Primary current I_{max}	**220V**	**380V**	**440V**
MIG/MAG	41A	40A	32A
MMA	45A	41A	34.5A
TIG	28A	30A	28A
Setting range (DC)			
MIG/MAG	30 A /15.5 V-350 A-31.5 V	30 V/15.5 V-500 A/39 V	
MMA	20 A / 20.8 V-350 A / 34 V	20 A / 20.8 V-500 A /40 V	
TIG	10 A / 10.4 V-350 A / 24 V	10 A / 10.4 V-500 A / 30 V	
Permissible load at MIG/MAG			
60% duty cycle	350 A / 31.5 V	500 A / 39 V	
100% duty cycle	272 A / 27.6 V	388 A / 33.4 V	
Permissible load at MMA			
60% duty cycle	350 A / 34 V	500 A / 40 V	
100% duty cycle	272 A / 30.9 V	388 A / 35.6 V	
Permissible load at TIG			
60% duty cycle	350 A / 24 V	500 A / 30 V	
100% duty cycle	272 A / 20.9 V	388 A / 25.6 V	
Power factor at maximum current	0.82		
Maximum input power at idle mode	50W		
Efficiency at maximum current	80%		
Open-circuit voltage			
MIG	Uo=78V	Uo=77V	Uo=88V
MMA	Uo=72V Ur＜12V (VRD)	Uo=72V Ur＜12V (VRD)	Uo=84V Ur＜12V (VRD)
TIG	Uo=78V Ur＜12V (VRD)	Uo=77V Ur＜12V (VRD)	Uo=88V Ur＜12V (VRD)
Operating temperature	-10 to +40°C		
Transportation temperature	-20 to +55°C		
Dimensions l × w × h	800 × 410 × 590 mm (31.4 × 16.1 × 23.2 in.)		
Weight	50.2 kg (110.6 lb.)		
Insulation class	F		
Enclosure class	IP 23S		
Application class	S		

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 40 °C / 104 °F, 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 IP23S is intended for indoor and outdoor use, but are not intended to be used outside during precipitation unless sheltered.

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Application class

The symbol S indicates that the power source is designed for use in areas with increased electrical hazards.

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4 INSTALLATION

The installation must be carried out by a professional.

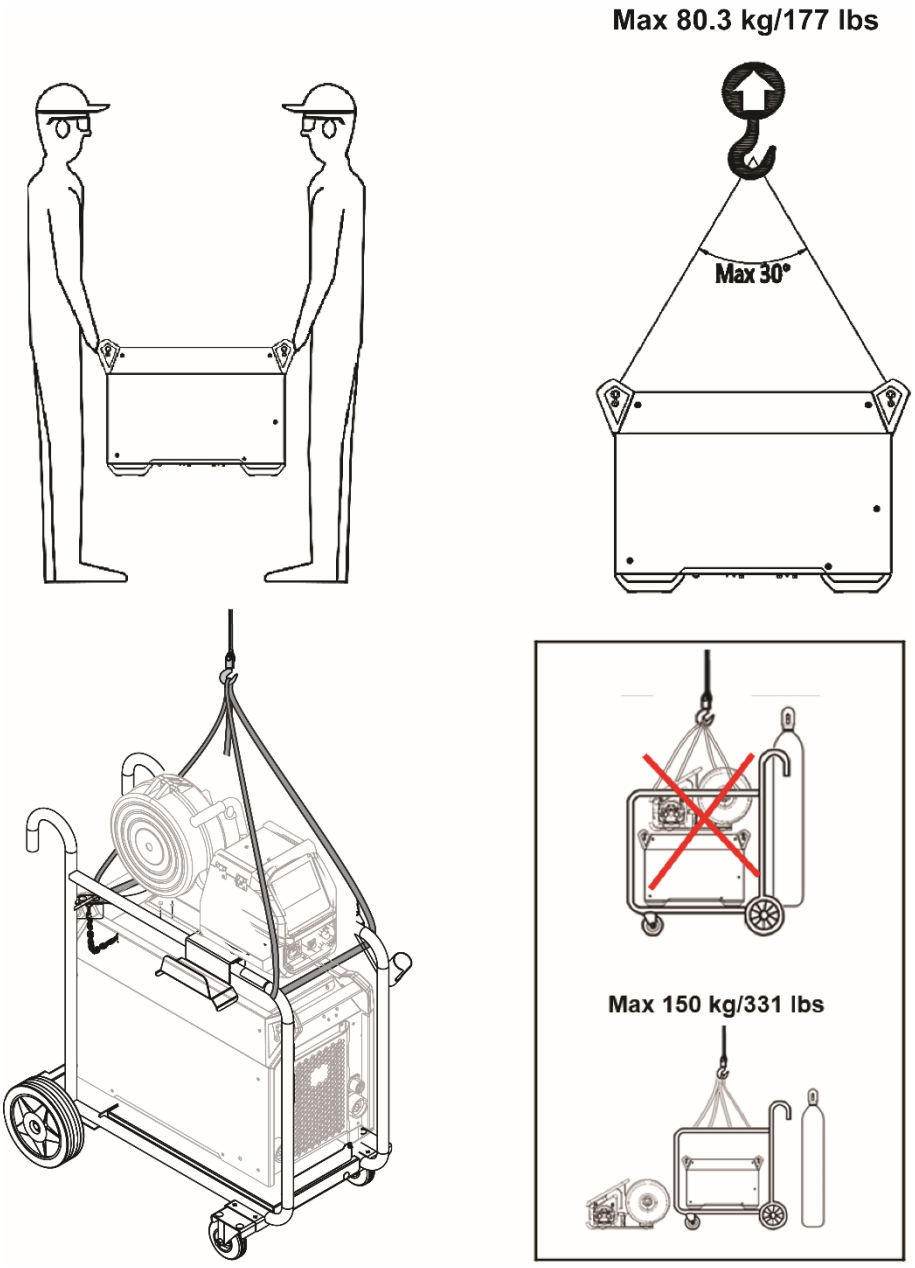
CAUTION!
This product is intended for industrial use. In a domestic environment this product may cause radio interference. It is the user's responsibility to take adequate precautions.

4.1 Location

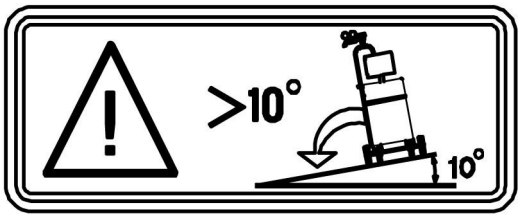
Position the power source so that cooling air inlets and outlets are not obstructed.

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4.2 Lifting instructions



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



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4.3 Mains supply

NOTE!
This equipment does not comply with IEC 61000-3-12. If it is connected to a public low voltage system, it is the responsibility of installer or the user of the equipment to ensure, by consultation with the distribution network if necessary, that the equipment may be connected.

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 earth connection must be made in accordance with regulations.

The power source will automatically adjust to the supplied input voltage.

Recommended MCB sizes and minimum cable area

Fabricator EM 410i MV			
Mains voltage	220 V	380 V	440 V
Mains cable area	4 × 6 mm²	4 × 6 mm²	4 × 6 mm²
Maximal current rating I_{max}	31.2 A	26.3 A	22.5 A
I_{1eff}			
MIG/MAG	-	-	-
MMA	24.1 A	20.4 A	17.5 V
Input circuit breaker-MCB (distribution box)	Type C & 40 A or greater		

Fabricator EM 510i MV			
Mains voltage	220 V	380 V	440 V
Mains cable area	4 × 6 mm²	4 × 6 mm²	4 × 6 mm²
Maximal current rating I_{max}	38.2 A	36 A	32 A
I_{1eff}			
MIG/MAG	-	-	-
MMA	29.6 A	27.9 A	24.8 A
Input circuit breaker-MCB (distribution box)	Type C & 63A or greater		

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NOTE!
The mains cable areas and fuse sizes as shown above are in accordance with Swedish regulations. For other regions, supply cables must be suitable for the application and meet local and national regulations.

Supply from power generators

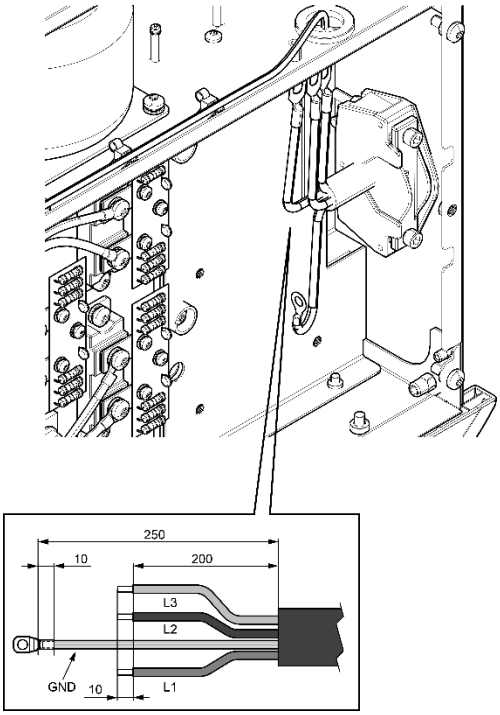
The power source can be supplied from different types of generators. However, some generators may not provide sufficient power for the welding power source to operate correctly. Generators with Automatic Voltage Regulation (AVR), with rated power ≥40 kW, are recommended.

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!

If the mains cable needs to be changed, the earth 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.



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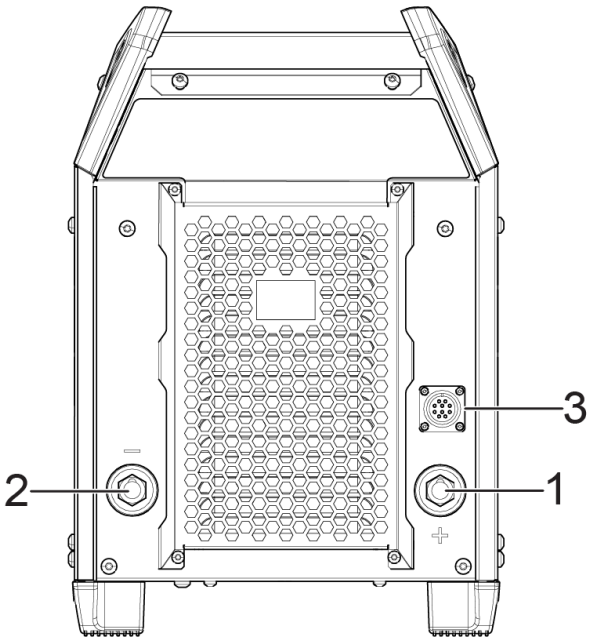
5 OPERATION

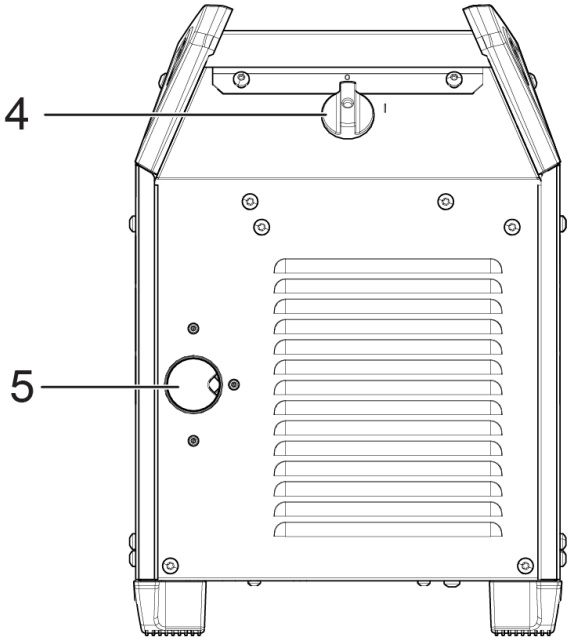
General safety regulations for handling the equipment can be found in the "SAFETY" chapter of this manual. Read it through before you start using the equipment!

NOTE!
When moving the equipment use intended handle. Never pull the cables.

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

5.1 Connections and control devices





1. Connection (+): MIG/MAG: Welding cable, MMA: Welding cable or return cable
2. Connection (-): MIG/MAG: Return cable, MMA: Return cable or welding cable
3. Connection of wire feed unit
4. Mains power supply switch, ON/OFF
5. Mains cable inlet

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5.2 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 welding current values for the welding/return cable(copper) at an ambient temperature of +25°C and normal 10minutes cycle

Cable size mm²	Duty cycle			Voltage drop/10m
	100%	60%	35%	
50	285 A	320 A	370 A	0.352 V / 100 A
70	355 A	400 A	480 A	0.254 V / 100 A
95	430 A	500 A	600 A	0.189 V / 100 A

Recommended maximum welding current values for the welding/return cable(copper) at an ambient temperature of +40°C and normal 10minutes cycle

Cable size mm²	Duty cycle			Voltage drop/10m
	100%	60%	35%	
50	250 A	280 A	320 A	0.352 V / 100 A
70	310 A	350 A	420 A	0.254 V / 100 A
95	375 A	440 A	530 A	0.189 V / 100 A

5.3 Symbols and functions

ON ▬ OFF	Mains power supply switch		Overheating (3)
	Protective earth		Positioning of lifting eye

5.4 Thermal protection

The welding power source has overheating protection that operates if the temperature becomes too high. When this occurs, the welding current is interrupted, and an overheating indication lamp is lit. The overheating protection resets automatically when the temperature has fallen with in its normal working temperature.

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5.5 Fan control

When the device is powered ON, the fan will rotate for about 1 second and then stop automatically, allowing users to quickly determine the fan's condition.

If the fan is not operated for an extended period, it will stop automatically to extend its service life.

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6 MAINTENANCE

WARNING!
The mains supply must be disconnected during cleaning and maintenance.

CAUTION!
Only persons with the appropriate electrical knowledge (authorised personnel) may remove the safety plates.

CAUTION!
The product is covered by manufacturer's warranty. Any attempt to carry out repair work by non-authorised service centers or personnel will invalidate the warranty.

NOTE!
Regular maintenance is important for safe and reliable operation.

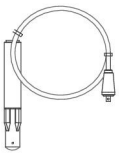
NOTE!
Perform maintenance more often during severe dusty conditions.

Before each use, make sure that:

- Product and cables are not damaged,
- The torch is clean and not damaged.

6.1 Routine maintenance

Maintenance schedule during normal conditions. Check equipment prior to every use.

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

6.2 Power source

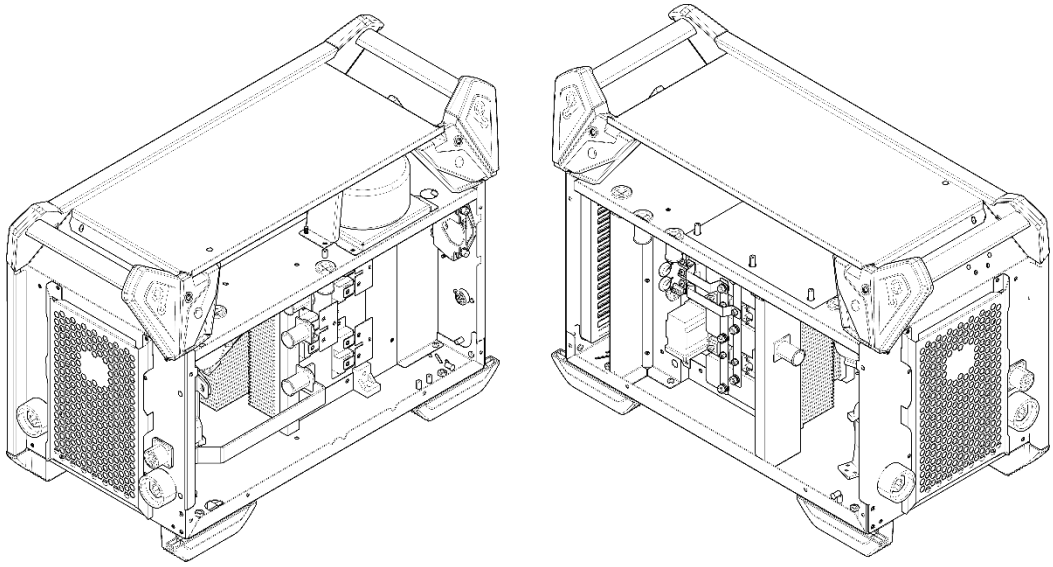
To maintain the performance and increase the lifetime of the power source it is mandatory to clean it regularly. How often depends on:

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- the welding process
- the arc time
- the working environment

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

Cleaning procedure



1. Disconnect the power source from the mains supply.

   WARNING!
   Wait for 4 minutes for the capacitors to discharge before continuing.
2. Remove the side panels on the power source.
3. Remove the plastic cover between the heat sink and fan.
4. Clean the power source with dry compressed air (4 bar) as follows:
   - The upper rear part.
   - From the rear panel through the secondary heat sink.
   - The inductor, transformer, and current sensor.
   - The power components side, from the rear side behind PCB15AP1.
   - The PCBs on both sides.
5. Make sure that there is no dust left on any part of the power source.
6. Install the plastic cover between the heat sink and the fan and make sure it is correctly fitted against the heat sink.
7. After having finished cleaning the power source, reattach the power source panels in the reverse order.

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7 TROUBLESHOOTING

Perform these checks and inspections before sending for an authorised service technician.

Type of fault	Corrective action
No arc.	• Check that the mains power supply switch is turned on. • Check that the mains, welding and return cables are correctly connected. • Check that the correct current value is set. • Check the mains power supply fuses.
The welding current is interrupted during welding.	• Check whether the thermal protection trip has operated (indicated by the orange LED on the front).
The thermal protection trips frequently	• Make sure that you are not exceeding the rated data for the power source (i.e. that the unit is not being overloaded). • Check that the ambient temperature is not above the one for the rated duty cycle 40°C/104°F.
Poor welding performance	• Check that the welding current supply and return cables are correctly connected. • Check that the correct current value is set. • Check that the correct welding wires are being used. • Check the main power supply fuses.

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8 ORDERING SPARE PARTS

CAUTION!

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

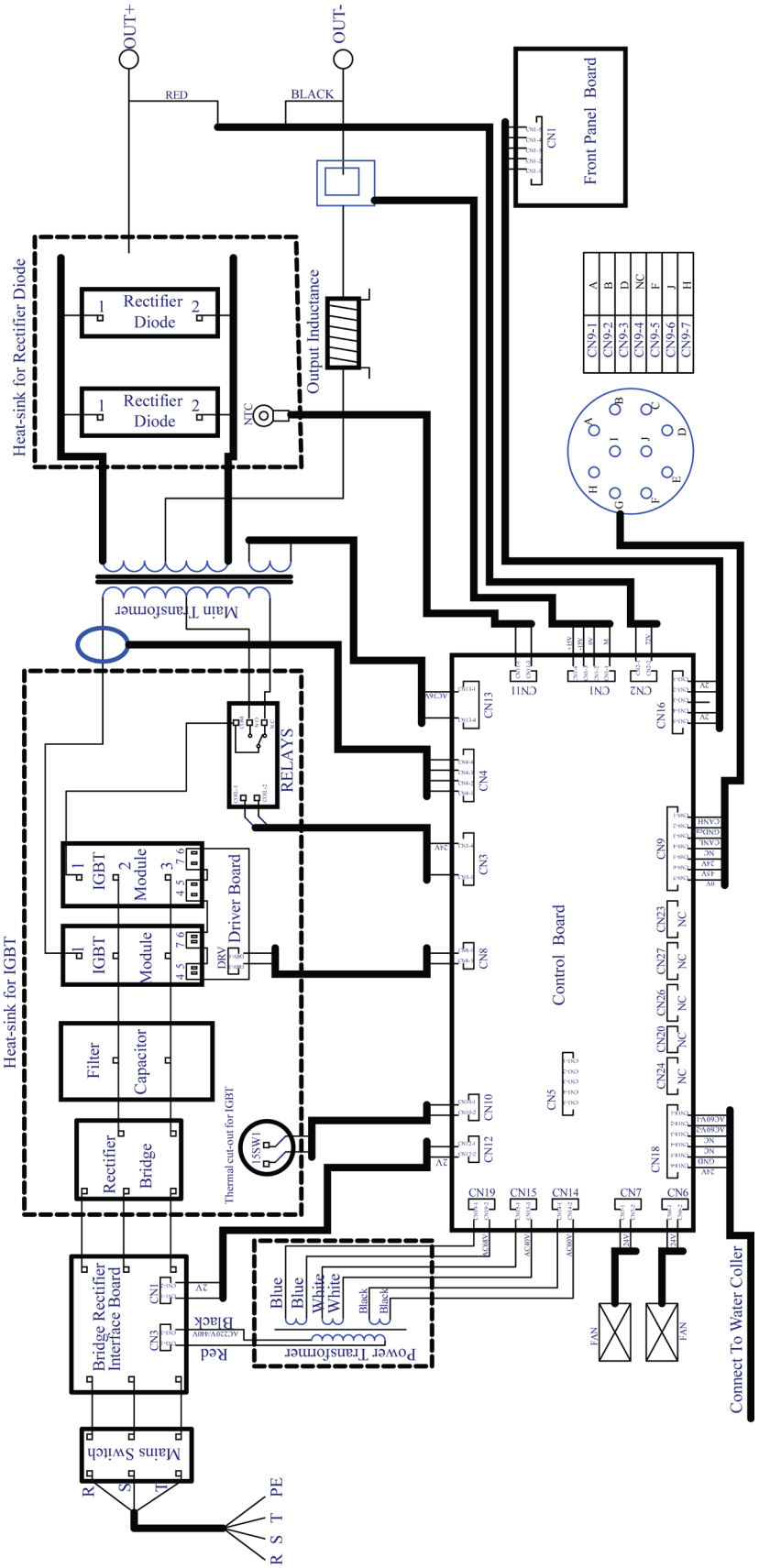
The **Fabricator EM 410i MV** / **Fabricator EM 510i MV** is designed and tested in accordance with international standard GB/T 15579.1 & IEC 60974-1. On completion of service or repair work, it is the responsibility of the person(s) performing the work to ensure that the product still complies with the requirements of the above standards.

Spare parts and wear parts can be ordered through your nearest ESAB dealer, see esab.com. 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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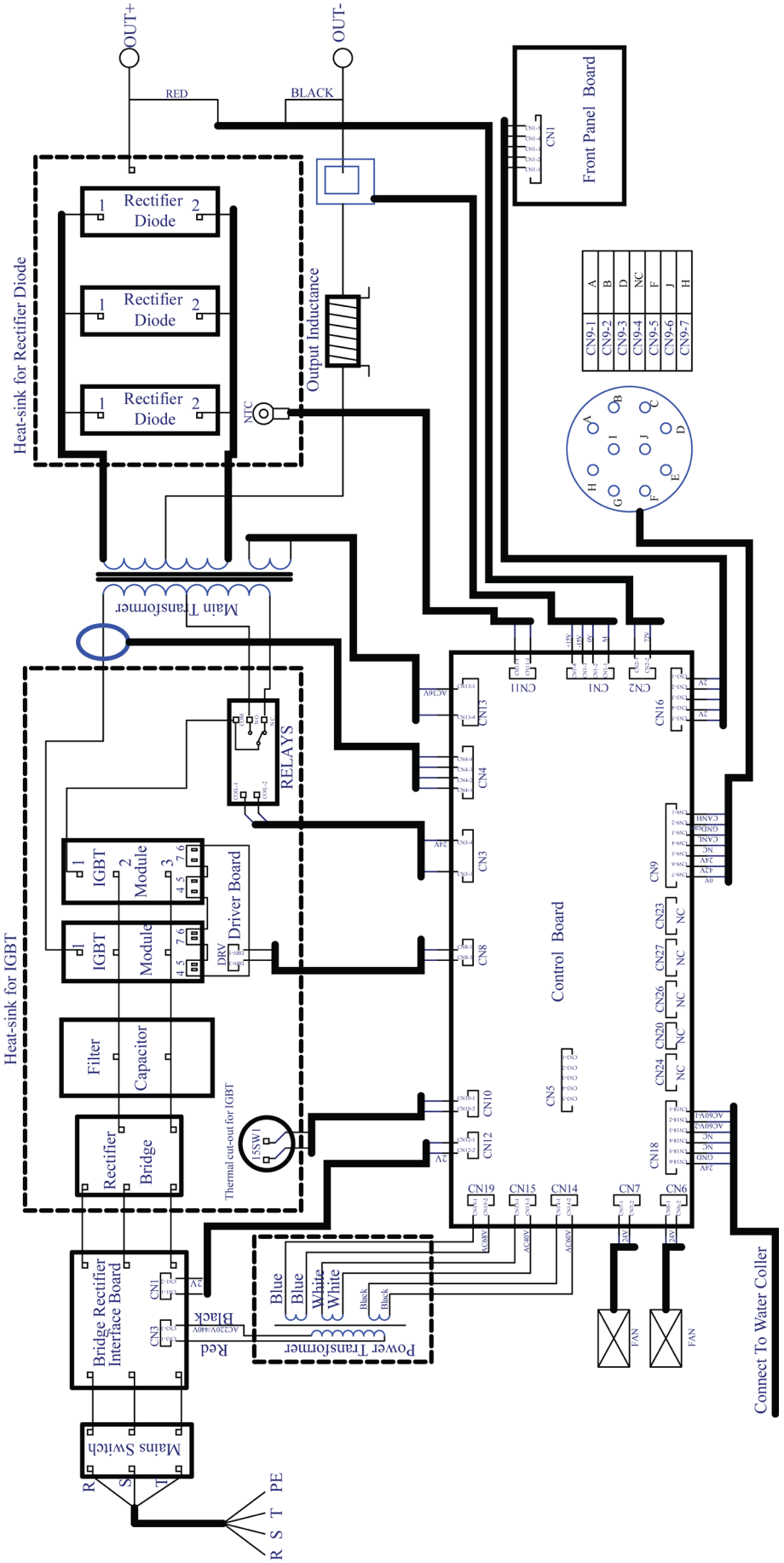
9 BLOCK DIAGRAM

Fabricator EM 410i MV



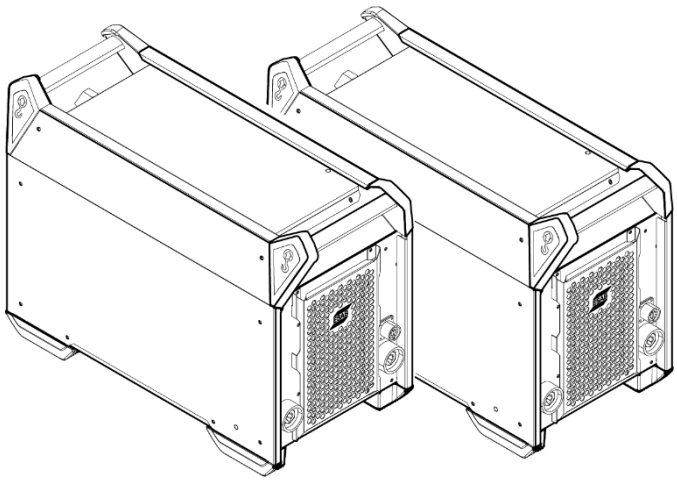
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Fabricator EM 510i MV



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ORDERING NUMBERS



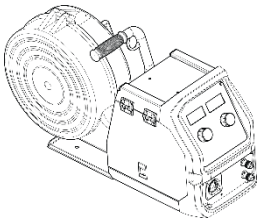
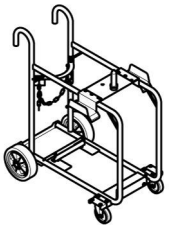
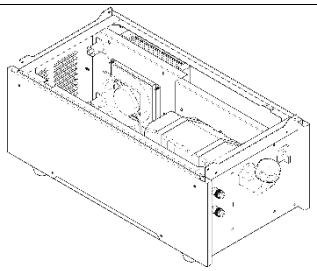
Ordering number	Denomination	Type	Notes
0700 501 411	Power source	Fabricator EM 410i MV	
0700 501 510	Power source	Fabricator EM 510i MV	
0447 997 383	Spare parts list		

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

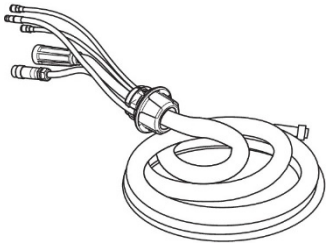
Technical documentation is available on the Internet at: www.esab.com

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ACCESSORIES

0700 501 582	Fabricator Feed	
0349 313 450C	3-in-1 Trolley	
0700 501 609	Cooling unit, Cool 2F	

Interconnection cable with strain relief, Air cooled, 70mm^2, OKC		
0700 401 148	Interconnection cable-70mm^2, Air cooled,2.3m	
0700 401 149	Interconnection cable-70mm^2, Air cooled,5m	
0700 401 150	Interconnection cable-70mm^2, Air cooled,10m	
0700 401 151	Interconnection cable-70mm^2, Air cooled,15m	
0700 401 152	Interconnection cable-70mm^2, Air cooled,20m	
0700 401 153	Interconnection cable-70mm^2, Air cooled,25m	

Interconnection cable with strain relief, Liquid cooled, 70mm^2, OKC		
0700 401 154	Interconnection cable-70mm^2, Liquid cooled,2.3m	
0700 401 155	Interconnection cable-70mm^2, Liquid cooled,5m	
0700 401 156	Interconnection cable-70mm^2, Liquid cooled,10m	
0700 401 157	Interconnection cable-70mm^2, Liquid cooled,15m	
0700 401 158	Interconnection cable-70mm^2, Liquid cooled,20m	
0700 401 159	Interconnection cable-70mm^2, Liquid cooled,25m	

A **WORLD** OF **PRODUCTS** AND **SOLUTIONS.**



For contact information visit esab.com

ESAB AB, Lindholmsallén 9, Box 8004, 402 77 Gothenburg, Sweden, Phone +46 (0) 31 50 90 00

http://manuals.esab.com