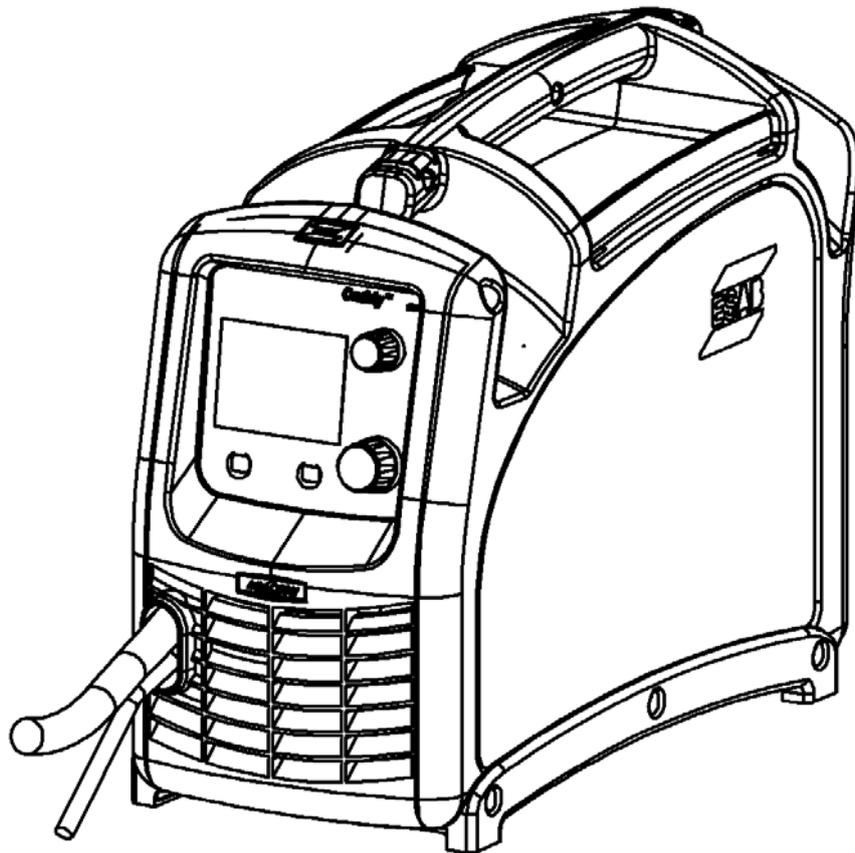


GB



Caddy[®]

Mig C200i



Instruction manual



DECLARATION OF CONFORMITY

In Accordance with

The Low Voltage Directive 2006/95/EC of 12 December 2006, entering into force 16 January 2007

The EMC Directive 2004/108/EC of 15 December 2004, entering into force 20 July 2007

Type of equipment

Welding power sources for MIG/MAG welding

Brand name or trade mark

ESAB

Type designation etc.

Caddy[®] Mig C200i Valid from serial number 932-xxx-xxxx (2009 w.32), 111-xxx-xxxx (2011 w.11)

Manufacturer or his authorised representative established within the EEA

Name, address, telephone No, telefax No:

OZAS-ESAB Sp. z o.o.

ul.A.Struga 10 , 45-073 Opole , Poland

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

EN 60974-1, Arc welding equipment – Part 1: Welding power sources

EN 60974-5, Arc welding equipment – Part 5: Wire feeders

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 authorised representative established within the EEA, that the equipment in question complies with the safety requirements stated above.

Place and Date
Opole , 2011-03-23

Signature

Dariusz Brudkiewicz

Clarification

Position
Managing Director
OZAS-ESAB Sp. z o.o.

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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!



WARNING

Do not use the power source for thawing frozen pipes.



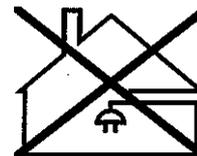
CAUTION

This product is solely intended for arc welding.



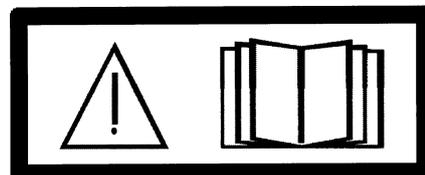
CAUTION

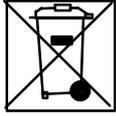
Class A equipment is not intended for use in residential locations where the electrical power is provided by the public low-voltage supply system. There may be potential difficulties in ensuring electromagnetic compatibility of class A equipment in those locations, due to conducted as well as radiated disturbances.



CAUTION

Read and understand the instruction manual before installing or operating.





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

Mig C200i is a portable welding power source in a compact design, intended for MIG/MAG welding.

It is possible to switch between welding with solid wire/shielding gas and welding with selfshielded cored wire without gas.

The power source operates with wire diameters from $\varnothing 0.6$ to $\varnothing 1.0$ mm. Pure argon, mixed gas or pure CO₂ may be used as shielding gases.

2.1 Equipment

The power source is supplied with:

- Instruction manual
- Welding gun MXL™ 180 (3m, fixed)
- Return cable with clamp (3m, fixed)
- Mains cable (3m, fixed, with plug)
- Shoulder strap (see page 8)
- Gas hose with quick connection (4.5m)

ESAB's accessories for the product can be found on page 23.

3 TECHNICAL DATA

Mig C200i	
Mains voltage	230 V, 1~ 50/60 Hz
Permissible load at	
25 % duty cycle	180 A
60 % duty cycle	120 A
100 % duty cycle	100 A
Setting range	30 A - 200 A
Open circuit voltage	60 V
Open circuit power	15 W
Efficiency at maximum current	82%
Power factor at maximum current	0.99
Wire feed speed	2.0 - 12.0 m/min
Wire diameter	
Fe	Ø 0.6 - 1.0
Cored wire	Ø 0.8 - 1.0
Ss	Ø 0.8 - 1.0
Al	Ø 1.0
Max. diameter wire bobbin	Ø 200 mm
Continual sound pressure at no-load	< 70 dB
Dimensions l x w x h	449 x 198 x 347 mm
Weight	12 kg
Operating temperature	-10 to +40°C
Transportation temperature	-20 to +55°C
Enclosure class	IP 23C
Application classification	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.

Enclosure class

The **IP** code indicates the enclosure class, i. e. the degree of protection against penetration by solid objects or water. Equipment marked **IP23C** 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.

4 INSTALLATION

The installation must be carried out by a professional.

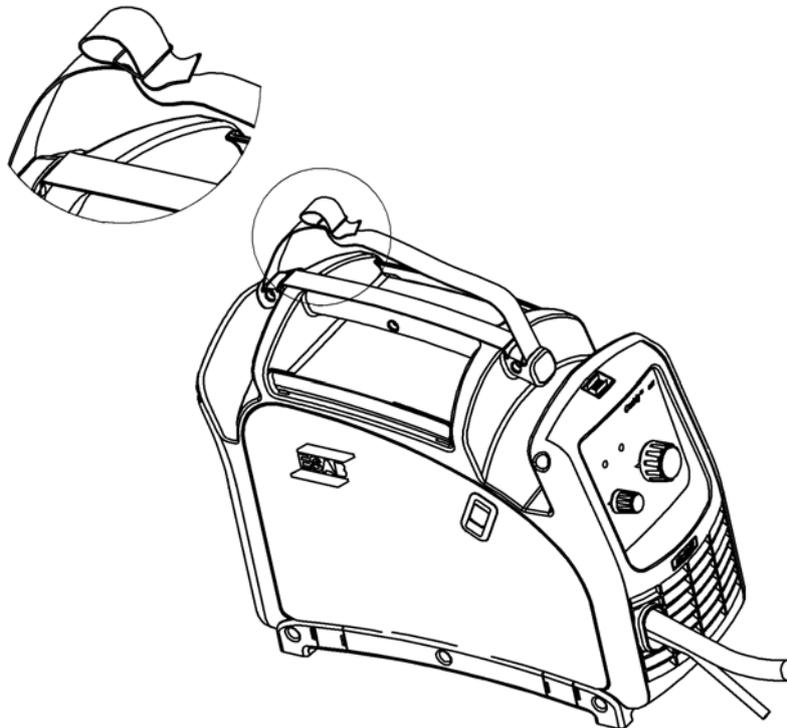
Note

Mains supply requirements

High power equipment may, due to the primary current drawn from the mains supply, influence the power quality of the grid. Therefore connection restrictions or requirements regarding the maximum permissible mains impedance or the required minimum supply capacity at the interface point to the public grid may apply for some types of equipment (see technical data). In this case 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 may be connected.

4.1 Lifting instruction

The power source is lifted by the handle or by the shoulder strap, supplied with the power source. The strap is fastened as shown in the picture below.



4.2 Location

Position the welding power source such a way that its cooling air inlets and outlets are not obstructed.

4.3 Mains power supply

Check that the unit is connected to the correct mains power supply voltage, and that it is protected by the correct fuse size. A protective earth connection must be made, in accordance with regulations.

Rating plate with supply connection data



Recommended fuse sizes and minimum cable area

Mig C200i	
Mains voltage	230 V \pm 15% 1~ 50/60 Hz
Mains cable area mm²	3G1.5 mm ²
Phase current, I_{eff}	10 A
Fuse anti-surge	16 A

NOTE! The mains cable areas and fuse sizes as shown above are in accordance with Swedish regulations. Use the power source in accordance with the relevant national regulations.

Extension cable

If needed, it is recommended to use an extension cable, 3G2.5 mm² of maximum length 50m.

Supply from power generators

The power source can be supplied from different types of generators. However, some generators may not provide sufficient power for welding. The generators with AVR, equivalent or better type of regulation with rated power 5.5 - 6.5 kW are recommended to supply the power source within its full capacity.

It is also possible to use generators with lower rated power, starting from 3.0kW, but in that case the setting must be proportionally limited. The power source is protected against undervoltage. If the power supplied by the generator is not sufficient, the welding is interrupted. Especially the welding start could be disturbed. In case of disturbed welding process, either adjust the welding parameters or change to a more powerful generator.

5 OPERATION

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

NOTE: *When moving the equipment use intended handle. Never pull on the gun.*



WARNING

Rotating parts can cause injury, take great care.



WARNING

Assure that the side panels are closed during operation.



WARNING

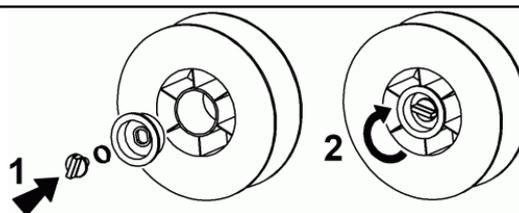
Risk of crushing when replacing the wire bobbin!

Do not use safety gloves when inserting the welding wire between the feed rollers.



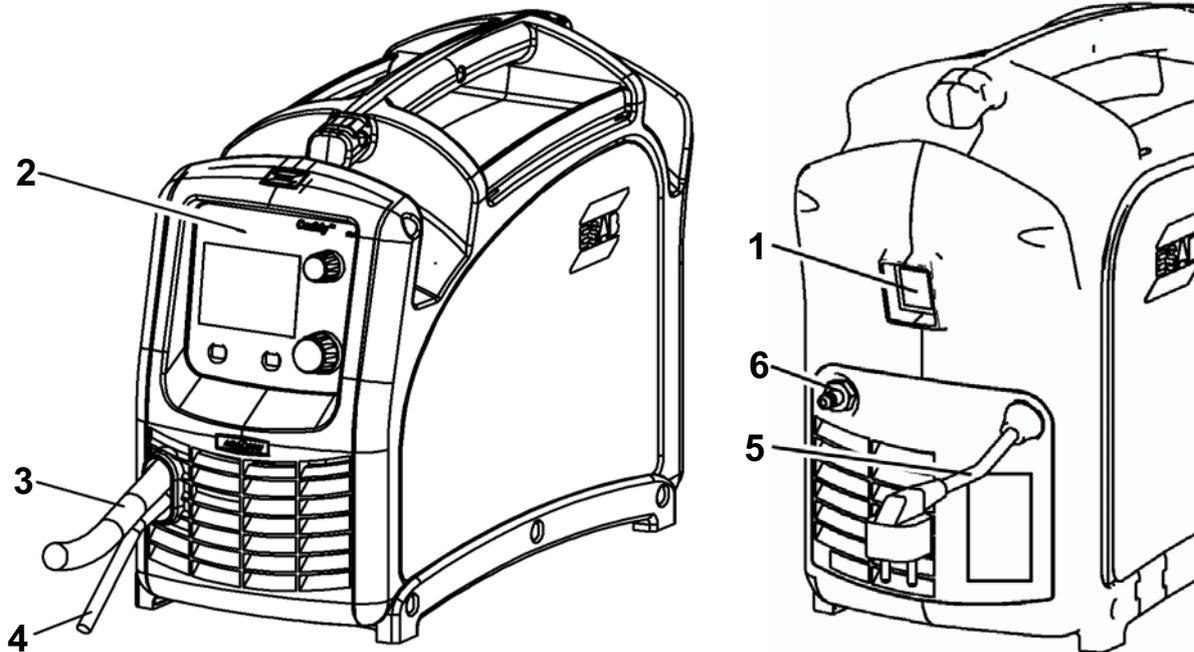
WARNING!

Lock the bobbin in order to prevent it from sliding off the hub.



5.1 Connection and control devices

- | | | | |
|---|---------------------|---|----------------|
| 1 | Mains supply switch | 4 | Return cable |
| 2 | Display | 5 | Mains cable |
| 3 | Welding gun | 6 | Gas connection |



5.2 Operation

The power source is not powered instantly when the mains switch (1) is turned on. After approximately 2 seconds the display (2) indicates that the power source is ready.

If the welding gun trigger is pressed while the power source is being turned on, the operation is disabled, until the trigger is released.

The return cable (4) must be reliably connected to the workpiece or to the welding table.

The side panel covering the wire feeder must be closed prior to the welding.

The power source is instantly switched off by means of the mains switch (1).

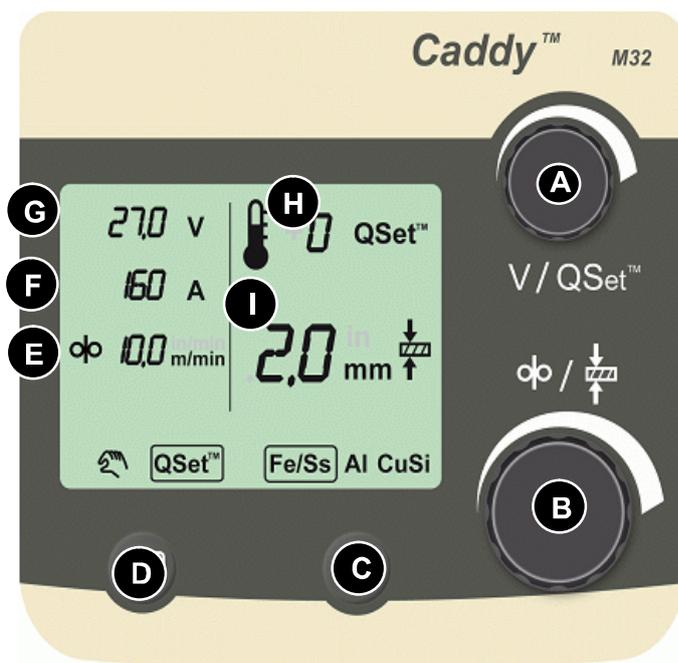
5.2.1 Manual mode



- A** Voltage setting
- B** Wire feed speed setting
- C** Inductance setting
- D** Manual/QSet mode
- E** Wire feed speed
- F** Welding current
- G** Welding voltage

The operator must set appropriate values for the wire feed speed and welding voltage.

5.2.2 QSet mode



- A** QSet value setting
- B** Plate thickness setting
- C** Material selection/
Inductance setting
- D** Manual/QSet mode
- E** Wire feed speed
- F** Welding current
- G** Welding voltage
- H** QSet value
- I** Plate thickness



In QSet mode the appropriate welding voltage is automatically set by the power source. QSet monitors the welding arc and continuously adjusts the voltage to maintain the optimal setting.

Calibration

The first time you use QSet mode, and when you change welding wire, material or shielding gas, you need to allow QSet to calibrate. This is done by making a test weld (min. 6 seconds). Simply start welding and let QSet find the correct parameter settings.

Material selection

Since different materials have different heat dispersion, it is necessary to select the right material group (C) so that a correct plate thickness value can be calculated. Settings for cored wire is done only in manual mode.

Plate thickness setting

Set the plate thickness of the object you want to weld using the plate thickness setting knob (B). This knob sets the wire feed speed (E). A suitable voltage setting is automatically calculated by QSet. The recommended plate thickness for the set wire feed speed is displayed simultaneously (I). The plate thickness recommendation is calculated for a fillet weld using the following wire dimensions: Fe/Ss and CuSi - $\varnothing 0.8\text{mm}$, Al - $\varnothing 1.0\text{mm}$. If you use a smaller diameter wire you should set a slightly higher value for plate thickness than what you are going to weld. If you use a larger diameter wire set a slightly lower value.

Heat input adjustment

The heat input can be adjusted with the QSet knob (A) in steps from -9 to +9 to make the weld hotter or colder. A higher value gives a hotter, more concave, weld (longer arc length) for more penetration. A lower value gives a colder, more convex, weld (shorter arc length) to prevent burning through the workpiece. Typically the QSet value should be set to 0 which gives you an average heat input that is suitable in most cases. The heat input setting is symbolised with a thermometer indicating hotter or colder settings.

5.2.3 Unit of measurement

The setting of the unit of measurement is a hidden function. The default value for the power source is mm. This can be changed to inch by pressing the pushbuttons D and C and holding them pressed in 5 sec. With the help of the knob (B) the required unit of measurement is selected.

5.3 Error codes

If an error occurs, only the error code will be visible.



Error No.	Description	Action
1	Program related error	Switch the machine OFF, wait 30 sec. and switch it ON. Call for service if the error remains.
2	Hardware related error	
3	Hardware related error	
5	Program related error	
4	Thermal protection	Do not switch the power source OFF, let it to cool down.

5.4 Inductance settings (Fe/SS)

In certain cases especially for mild steel welding in different gases the quality of welding may be improved by changing the inductance settings of the power source.

The inductance function is normally hidden, but can be invoked by the pressing and keeping pressed the pushbutton (C) for 5s or more. When this setting is available, all graphics from the right side of the display disappears, and only number from 00 to 10 is displayed. This number corresponds to the inductance value. 00 means that the inductance is low and the welding arc is "sharp", 10 means that the inductance is high and the welding arc is "soft".

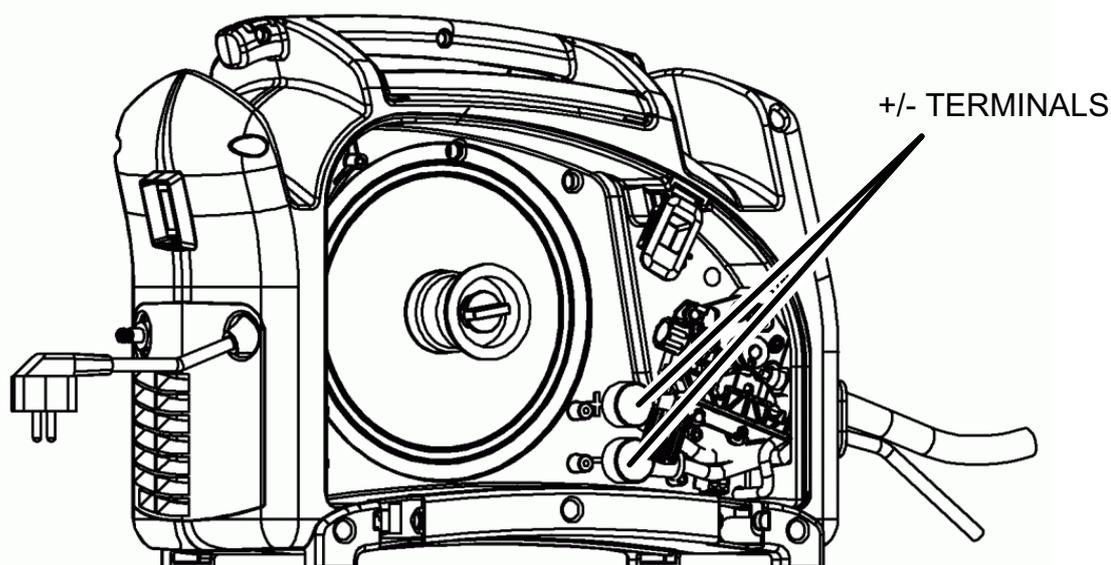
The value of the inductance can be set by means of the knob (B). Default setting is 05.

Recommendations:

- When the CO₂ is used it is recommended to set lower inductance then 05, for instance from 03 down to 00.
- When the Ar/CO₂ mixture is used, the operator should set higher inductance from 05 up to 10.

The display goes back to the regular appearance 10s after the last movement of the knob (B) or pressing pushbutton (C). The return to the regular mode can accelerate by again pressing and keeping the pushbutton (C) pressed for 5s.

5.5 Polarity change



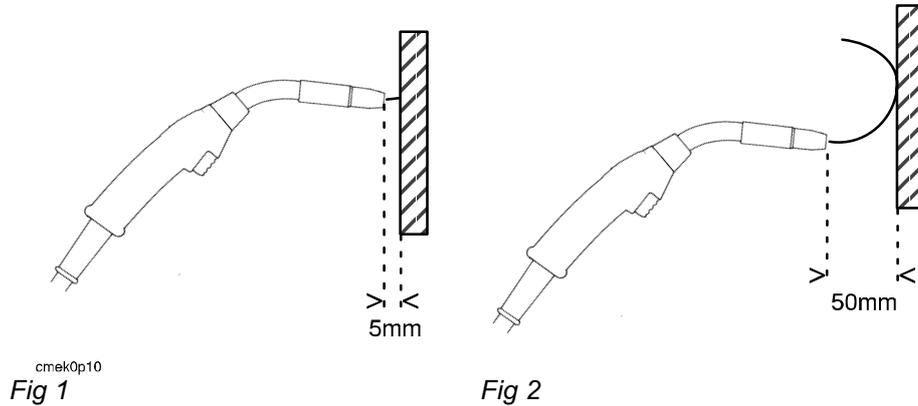
The power source is delivered with the welding wire connected to the plus pole. Some wires, e.g. shelfshielded cored wires, are recommended to be welded with negative polarity. Negative polarity means that the wire is connected to the minus pole and the return cable to the plus pole. Check the recommended polarity for the welding wire you want to use.

The polarity can be changed as follows:

1. Switch off the power source and disconnect the mains cable.
2. Open the side panel.
3. Bend the rubber covers back to give access to the +/- terminals.
4. Remove the nuts and washers. Note the correct order of the washers.
5. Change the position of the cables to the desired polarity (see marking).
6. Install the washers in correct order and tighten the nuts to spanner tightness.
7. Make sure the rubber covers are covering the +/- terminals.

5.6 Wire feed pressure

Start by making sure that the wire moves smoothly through the wire guide. Then set the pressure of the wire feeder's pressure rollers. It is important that the pressure is not too great.



To check that the feed pressure is set correctly, you can feed out the wire against an insulated object, e.g. a piece of wood.

When you hold the gun approx. 5 mm from the piece of wood (fig. 1) the feed rollers should slip.

If you hold the gun approx. 50 mm from the piece of wood, the wire should be fed out and bend (fig. 2).

5.7 Replacing and inserting wire

1. Open the side panel.
2. Place the spool on the hub and secure it with the lock.
3. Disconnect the pressure arm by folding it sideways, the pressure roller slides away.
4. Straighten out the new wire 10-20 cm. File away burrs and sharp edges from the end of the wire before inserting it into the wire feeder.
5. Make sure that the wire goes properly into the feed roller groove and into the outlet nozzle and the wire liner.
6. Secure the pressure arm.
7. Close the side panel.

Feed the wire through the welding gun until it comes out through the nozzle. This operation should be carried out carefully, as the wire is ready for welding and an unintentional arc may occur. Keep the gun off conducting parts during feeding the wire through and terminate wire feeding instantly when the wire comes out.

See Technical Data, chapter 3, for suitable wire dimensions for each wire type.

Use only $\varnothing 200\text{mm}$ spools. *Note!* $\varnothing 100\text{mm}/1\text{kg}$ spools are not applicable.

WARNING!

Do not keep the torch near the ears or the face during wire feeding, as this may result in personal injury.

NOTE.

Remember to use the correct contact tip in the welding gun for the wire diameter used. The torch is fitted with a contact tip for \varnothing 0.8mm wire. If you use another diameter you must change the contact tip. The wire liner fitted in the gun is recommended for welding with Fe and Ss wires. Change the liner to the PTFE type for welding Al or Brazing (CuSi). See [6.2](#) regarding how to change the wire liner.

5.7.1 Changing the feed roller groove

The power source is delivered with the feed roller set for \varnothing 0.8/1.0mm welding wire. If you want to use it for \varnothing 0.6 mm wire you must change the groove in the feed roller.

1. Fold back the pressure arm to release the pressure roller.
2. Switch on the power source and press the gun trigger to position the feed roller so that the locking screw is visible.
3. Switch off the power source.
4. Use a 2mm Allen key to open the locking screw about half a turn.
5. Pull the feed roller off the shaft and turn it around. See marking on the side of the feed roller for suitable wire diameters.
6. Put the roller back on the shaft and make sure it goes all the way in. You may need to turn the roller to position the locking screw over the flat surface of the shaft.
7. Tighten the locking screw.

5.8 Shielding gas

The choice of suitable shielding gas depends on the material. Typically mild steel is welded with mixed gas (Ar + CO₂) or carbon dioxide. Stainless steel can be welded with mixed gas (Ar + CO₂ or Ar + O₂) and Aluminium with pure argon. MIG/MAG brazing (CuSi) uses pure argon or mixed gas (Ar + O₂). Check the recommended gas for the welding wire you want to use. In the QSet™ mode (see chapter [5.2.2](#)) the optimal welding arc with the gas you use will be automatically set.

5.9 Overheating protection

Overheating is indicated on the display (2) with error code E4. A thermal overload fuse protects the unit against overheating by disabling the welding if overheating occurs. The fuse resets automatically when the unit has cooled down.

6 MAINTENANCE

Regular maintenance is important for safe, reliable operation.



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

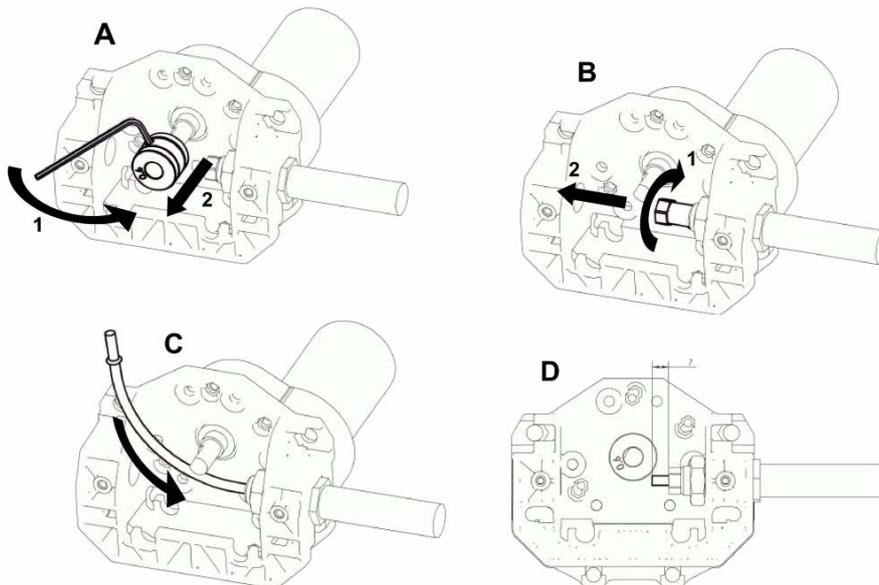
Power source

- Check regularly that the power source is free from dirt.
- How often and which cleaning methods apply depend on: the welding process, arc times, placement, and the surrounding environment. It is normally sufficient to blow the dust out of the power source with dry compressed air (reduced pressure) once a year.
- Clogged or blocked air inlets and outlets otherwise result in overheating.

Welding gun

- The welding gun's wear parts should be cleaned and replaced at regular intervals in order to achieve trouble-free wire feed. Blow the wire guide clean regularly and clean the contact tip.

6.2 Changing the wire liner



- Loosen the fixing screw and take the roller off the axle.
- Loosen the adaptor nut, straighten the gun cable and remove the liner.
- Insert the replacement liner into the straightened cable until it touches the contact tip.
- Lock the liner with adaptor nut. Cut excess of liner so it sticks 7mm out of tip adaptor.

7 FAULT TRACING

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

Type of fault	Actions
No arc	<ul style="list-style-type: none"> • Check that the mains power supply switch is turned on. • Check that the welding current supply and return cables are correctly connected. • Check that correct current value is set.
Welding current is interrupted during welding	<ul style="list-style-type: none"> • Check whether the overheating protection has tripped. (Indicated by error E4 on the display.) • Check the main power supply fuses.
The overheating protection trips frequently.	<ul style="list-style-type: none"> • Check to see whether the air inlet or outlet is clogged. • Make sure that you are not exceeding the rated data for the power source (i.e. that the unit is not being overloaded).
Poor welding performance	<ul style="list-style-type: none"> • Check that the welding current supply and return cables are correctly connected. • Check the gas supply. • Check that the correct current value is set. • Check that the correct welding wires are being used. • Check if proper rolls are applied and the pressure of the wire feeder's pressure rollers is properly set.

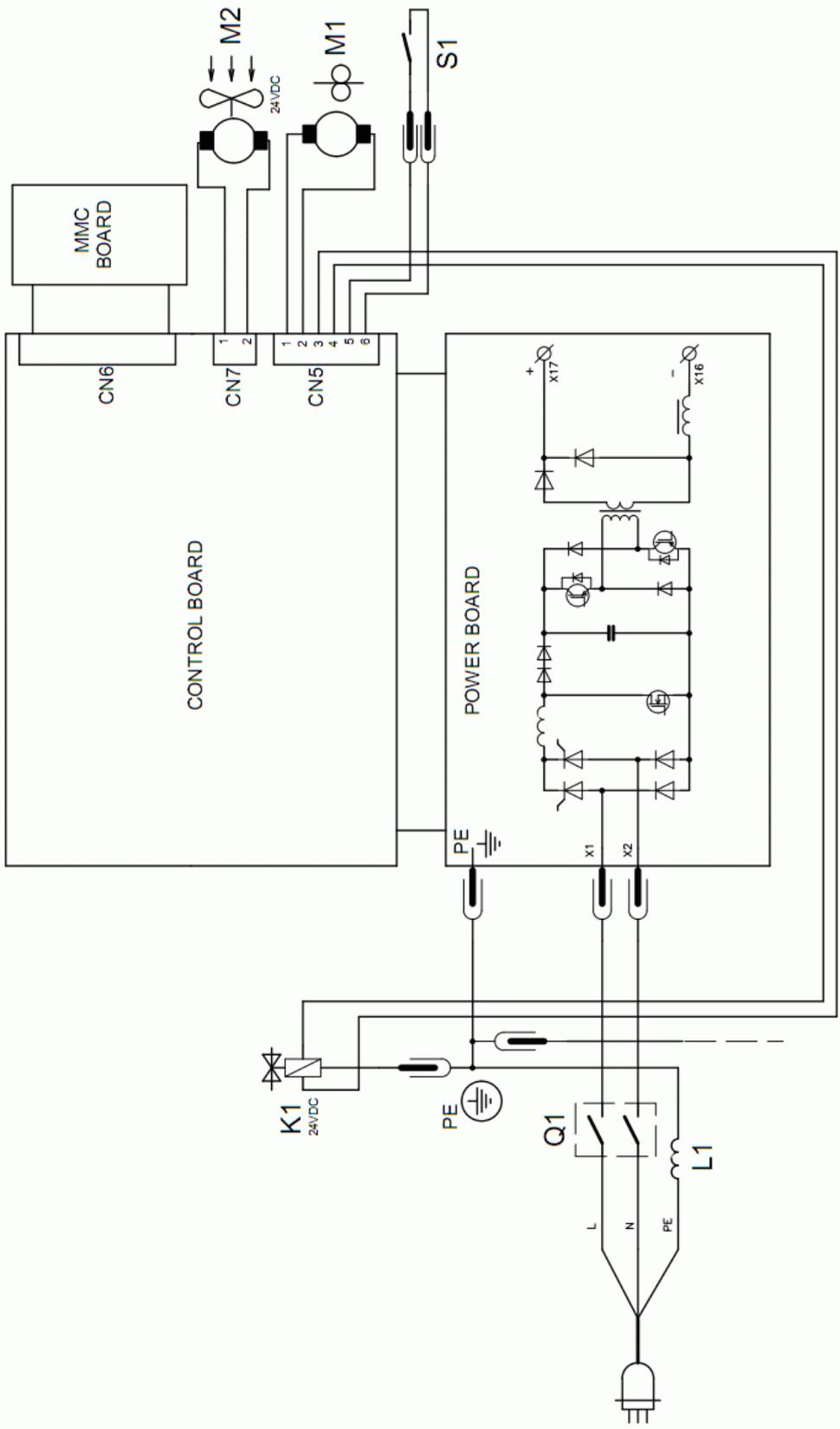
8 ORDERING OF SPARE PARTS

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

Mig C200i is designed and tested in accordance with the international and European standards 60974-1/-5 and 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.

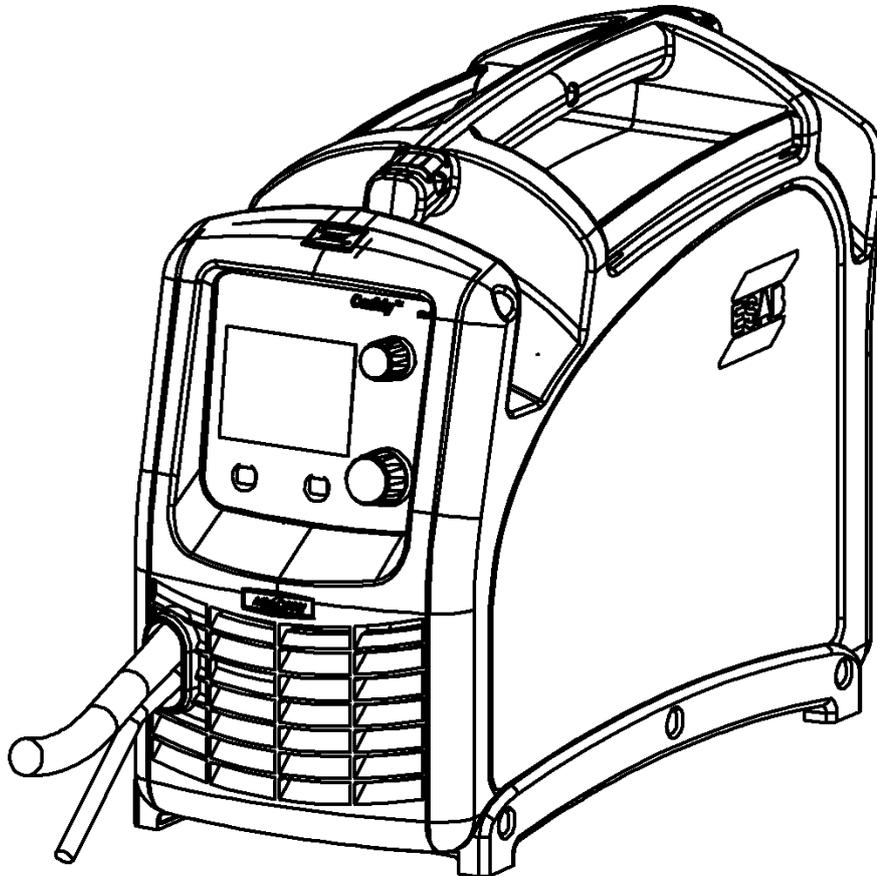
Spare parts may be ordered through your nearest ESAB dealer, see the last page of this publication.

Diagram



Mig C200i

Order number



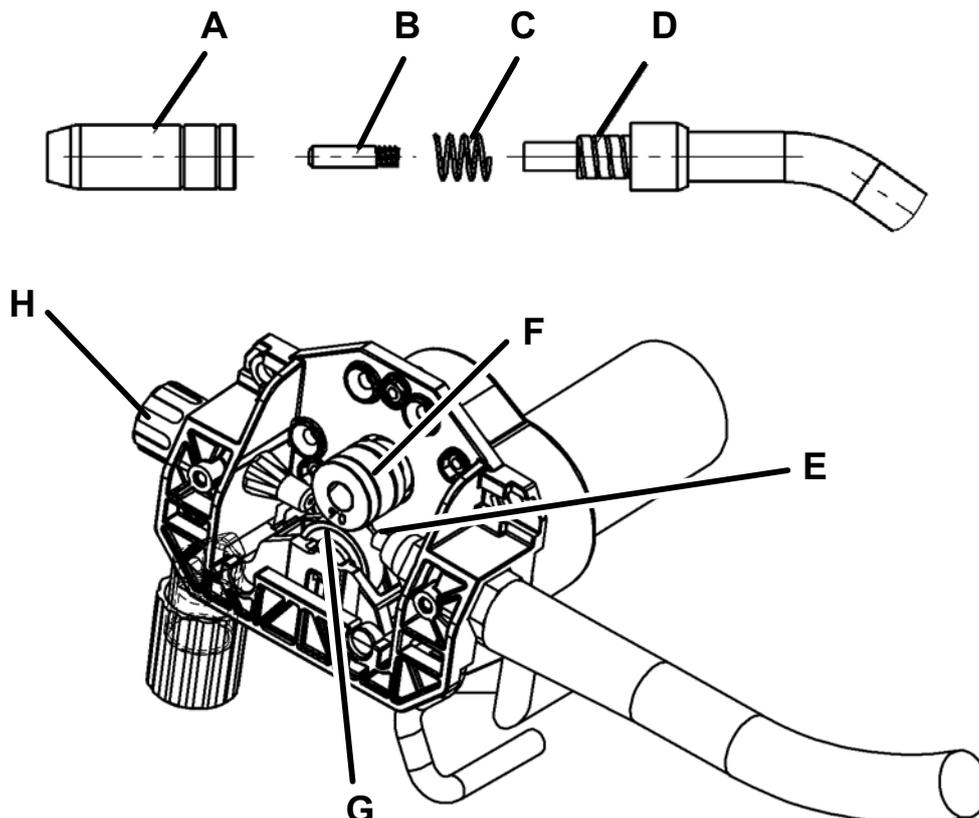
Ordering no.	Denomination	Type	Notes
0349 312 030	Welding power source	Caddy [®] Mig C200i, CE	230 V, 1~ 50/60 Hz
0349 300 556	Spare parts list		

Mig C200i

Wear parts

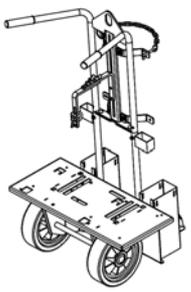
Item	Denomination	Ordering no.	Notes
A	Gas nozzle Nozzle/Tip insulator MXL	0700 200 054 0700 200 105	
B	Contact tip	0700 200 063 0700 200 064 0700 200 065 0700 200 066	W 0.6 M6x25 W 0.8 M6x25 W 0.9 M6x25 W 1.0 M6x25
C	Nozzle spring	0700 200 078	
D	Tip adaptor	0700 200 072	Left thread
E	Wire liner	0700 200 085 0700 200 087 0700 200 091	W0.6-0.8 Steel for Fe and Ss wire W0.9-1.2 Steel for Fe and Ss wire W0.9-1.2 PTFE for Al and CuSi wire
F	Feed roller	0349 311 890 0349 312 836	W0.6/0.8 -1.0 V-groove W0.6/0.8 V-groove -1.0 U-groove
G	Pressure roller	0349 312 062	
H	Inlet nozzle	0455 049 002	W0.6-1.0

The rollers are marked with wire dimension in mm and inch.



Mig C200i

Accessories

	<p>Trolley with gas shelf 0459 366 887 (incl. fixing kit for machine)</p>
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ESAB subsidiaries and representative offices

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