

**BETJENINGSVEJLEDNING  
OPERATING MANUAL  
BETRIEBSANLEITUNG  
MANUEL D'INSTRUCTION**

**AUTOMIG XE & MXE**



**micatronic**

Valid from 0345

50111800 D

**MIGATRONIC**

SVEJSEMASKINER

WELDING EQUIPMENT

SCHWEISSMASCHINEN

EQUIPMENT DE SOUDURE

**EU-OVERENSSTEMMELSESERKLÆRING**

MIGATRONIC A/S  
Aggersundvej 33  
9690 Fjerritslev  
Danmark

erklærer, at nedennævnte maskiner

Type: Automig XE & MXE  
fra: uge 45, 1995

er i overensstemmelse med bestemmelserne i  
direktiverne 73/23/EØF og 89/336/EØF.

Europæiske standarder: EN60974-1  
EN50199

Udfærdiget i Fjerritslev, d. 6. november 1995.

**EC DECLARATION OF CONFORMITY**

MIGATRONIC A/S  
Aggersundvej 33  
9690 Fjerritslev  
Denmark

hereby declare that our machines as stated  
below

Type: Automig XE & MXE  
as of: week 45, 1995

conform to directives 73/23/EEC and  
89/336/EEC.

European Standards: EN60974-1  
EN50199

Issued in Fjerritslev on 6th November 1995.

**EG KONFORMITÄTSESKLÄRUNG**

MIGATRONIC A/S  
Aggersundvej 33  
9690 Fjerritslev  
Dänemark

erklärt, daß die unten erwähnte Geräte

Typ: Automig XE & MXE  
ab: KW 45, 1995

den Bestimmungen der EG Richtlinien  
73/23/EG und 89/336/EG entsprechen.

Europäische Normen: EN60974-1  
EN50199

Am 6. November in Fjerritslev ausgestellt.

**DECLARATION CE DE CONFORMITE**

MIGATRONIC A/S  
Aggersundvej 33  
9690 Fjerritslev  
Danemark

déclare que les machines ciaprès désignées

Type: Automig XE & MXE  
de: la semaine 45, 1995

sont conformes aux modalités en application  
des directives 73/23/CEE et 89/336/CEE.

Normes Européennes: EN60974-1  
EN50199

Etabli à Fjerritslev, le 6 novembre 1995

Peter Roed  
Managing director

## INDLEDNING

*MIGATRONIC's* årelange erfaring indenfor produktion af svejsemaskiner ligger til grund for Deres svejseapparat og garanterer sammen med Deres fagmæssigt korrekte betjening og vedligeholdelse en fejlfri indsats i fremtiden. Vi takker for Deres tillid.

## INTRODUCTION

*MIGATRONIC's* long experience in designing and producing welding machines, combined with your proper operation and maintenance, will ensure satisfactory performance of this machine. Thank you for your confidence.

## EINLEITUNG

Die Konstruktion Ihres neuen Schweißapparats basiert auf der jahrelangen Erfahrung der Firma *MIGATRONIC* mit der Produktion von Schweißmaschinen. Zusammen mit Ihrer sachgemässen Bedienung und Wartung wird also eine einwandfreie Leistung in der Zukunft gewährleistet. Wir danken Ihnen für Ihr Vertrauen.

## INTRODUCTION

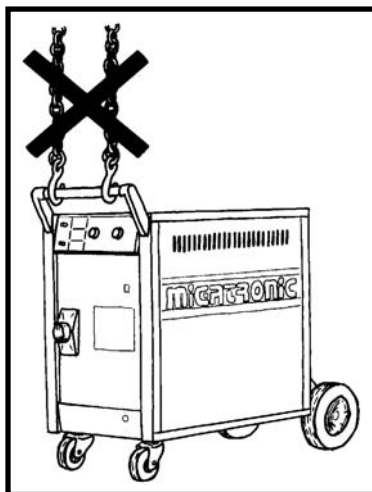
La grande expérience de *MIGATRONIC* dans la conception et la fabrication de machines de soudage combinée à vos connaissances et à vos qualités de maintenance assureront à ce matériel les performances que vous en attendez. Merci de votre confiance.

Man **må ikke** løfte en AUTOMIG XE/MXE i håndtaget med en kran.

**Do not** lift a AUTOMIG XE/MXE in the handle by use of a crane.

Sie **dürfen** die AUTOMIG XE/MXE mit einem Kran im Traggriff **nicht** heben.

Ne pas lever un AUTOMIG XE/MXE dans la poignée par un appareil de levage.



# INITIAL OPERATING

## Mains connection

Care must be taken to ensure that the voltage supply for which the machine has been built is the same as the mains electrical power that is to be used. If the machine can be adjusted for use on several different voltages then the machine must be checked to confirm that it has been set to the correct voltage.



### -marking

This machine meets the demands made for machines which are to operate in environments with an increased hazard of electric shock.

In certain types of welding jobs there is an increased hazard of getting an electric shock, e.g. in environments where the welder has to work in a crouched position and is therefore in contact with the work-piece, in places which are partially or totally surrounded by conductive parts, and in wet, damp or hot places.

When welding under such conditions there must be a person nearby who can render help in case of an emergency and he must be able to quickly cut off the current.

## Protection class

The machine is designed for indoor operation and meets the requirements of protection class IP21.

Please ensure that the air inlet and outlet are not blocked.

## Electromagnetic emissions and the radiation of electromagnetic disturbances

In conformity with the Electromagnetic Compatibility (EMC) Directive within the European Union this high-quality welding machine for industrial and professional use is designed, built and tested in accordance with the European Standard EN50199 on radiation and incident radiation of electromagnetic disturbances, the purpose of this standard being to prevent the occurrence of situations, where the machine is disturbed or is itself the source of disturbance in other electrical equipment or appliances.

### The responsibility of the user

A trouble-free performance without disturbances or disruption caused by electromagnetic emissions, does, however, require that certain measures are taken when installing and using the welding equipment.

Thus it is the responsibility of the user to ensure that the operation of this machine does not occasion disturbances of the above mentioned nature.

Before installing and operating the welding machine, an assessment of the surrounding area is therefore required and this assessment is best performed by the specialist installing the welding machine.

### Assessment of area

The following shall be taken into account:

1. Supply cables for other equipment, control cables, signalling and telephone cables in the vicinity of the welding machine.
2. Radio or television transmitters and receivers.
3. Computers and any control equipment.
4. Critical safety equipment, e.g. electrically or electronically controlled guards or protective systems around process equipment.
5. The medical health circumstances of people in the area, e.g. the use of pacemakers, hearing aids etc.
6. Equipment used for calibration and measurement.
7. The immunity to disturbance or disruption of other equipment in the environment which may be disturbed and which therefore may require special protection measures.
8. The time of day that welding or other activities are to be carried out.

The size of the surrounding area to be considered will depend on the structure of the building and those other activities that are to take place in the environment. Special circumstances may require an extension of this area.

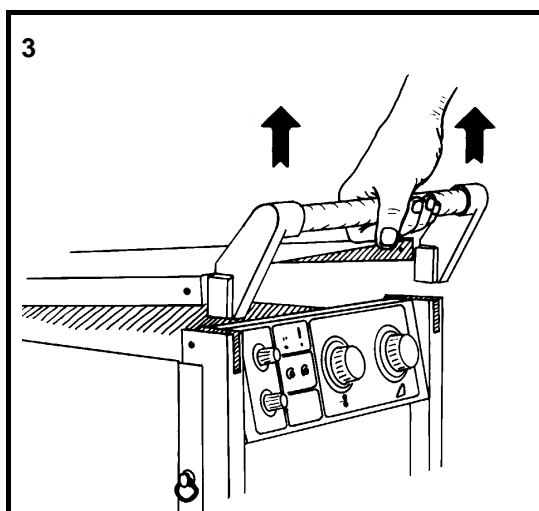
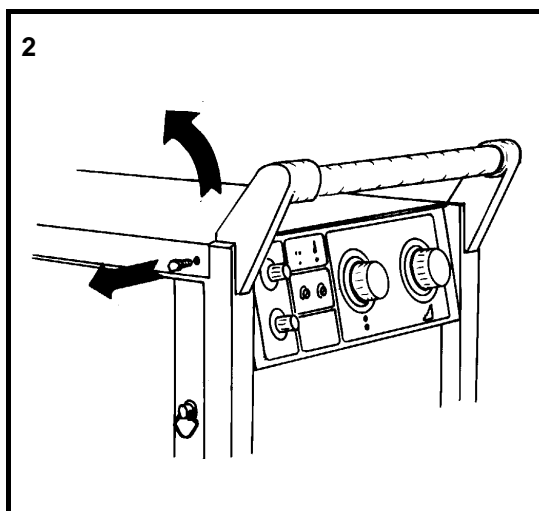
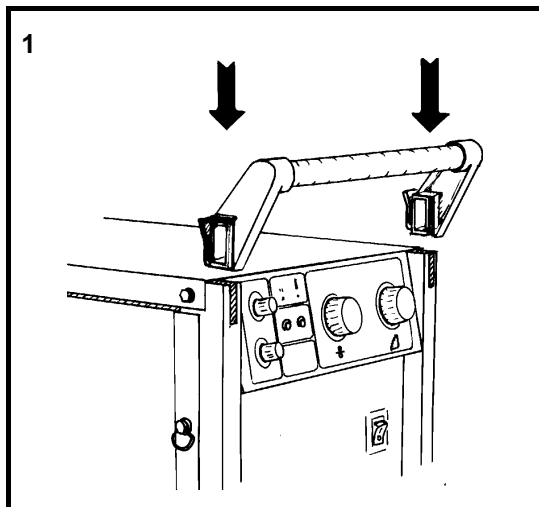
### Use in domestic establishments

This welding machine is normally expected to be used in industrial situations and areas, and if used in a domestic establishment the hazard of disturbing other electric appliances is increased and it may be necessary to take special and additional precautions in order to prevent problems of emission.

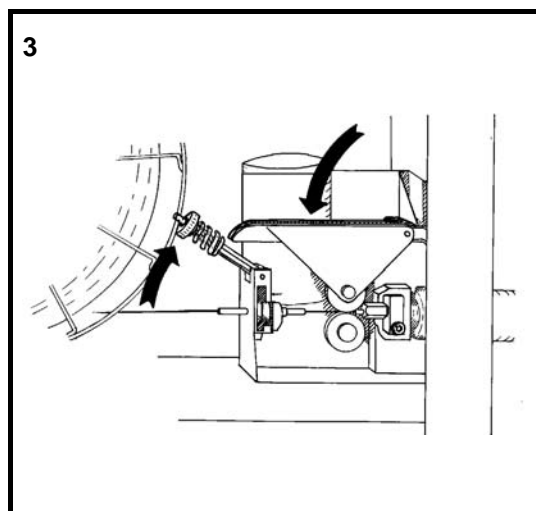
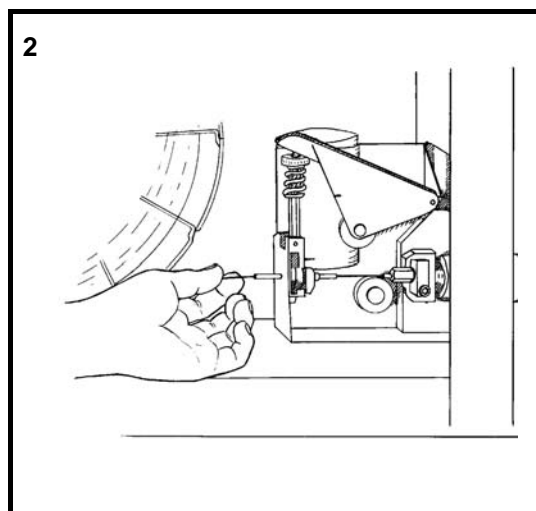
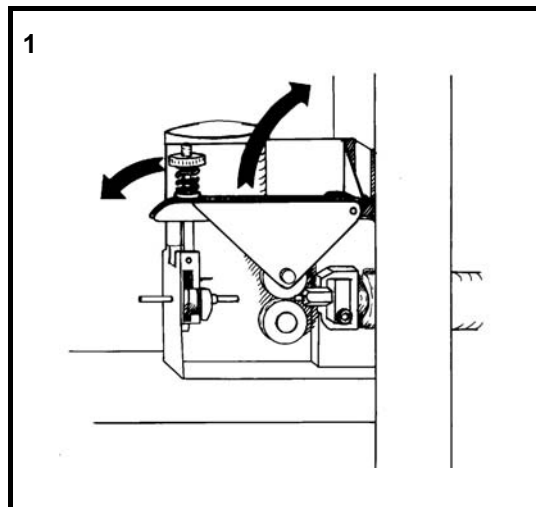
### Methods of reducing electromagnetic emissions

- The welding cables should be kept as short as possible.
- The welding cables should be positioned with the negative and the positive cables close together.
- The welding cables should be running at or close to floor level.
- Mains cables and other cables, e.g. telephone, computer, and signalling cables, should not be carried or placed parallel and close to each other, e.g. not in the same cable tray or box.
- Separately-insulated mains supply cables for sensitive electronic equipment, e.g. computers.
- Selective screening of cables may be considered under special circumstances.
- Screening of the entire welding installation may be considered under special circumstances and for special applications.

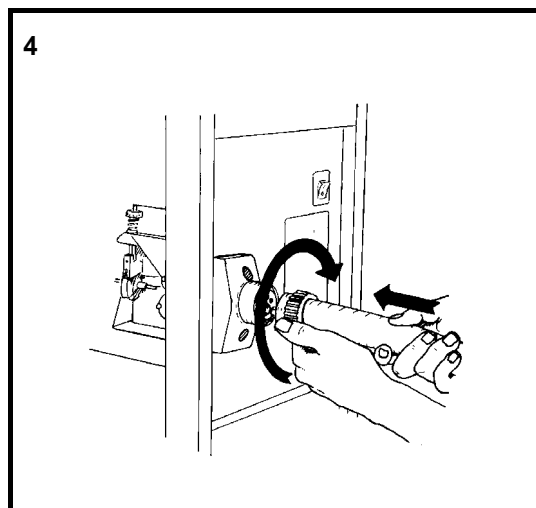
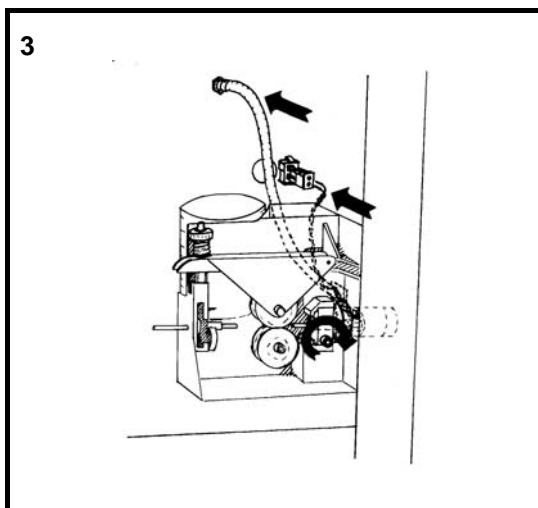
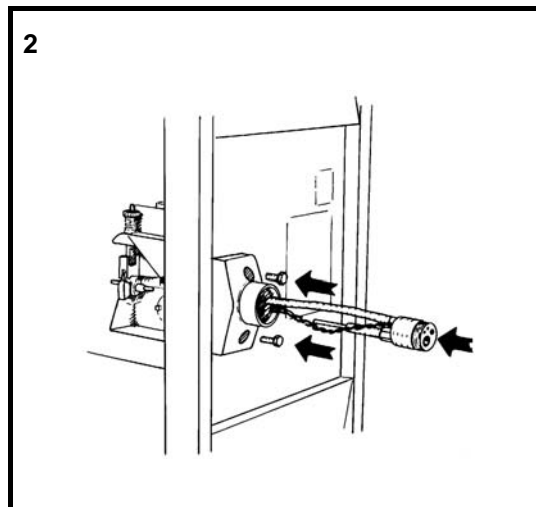
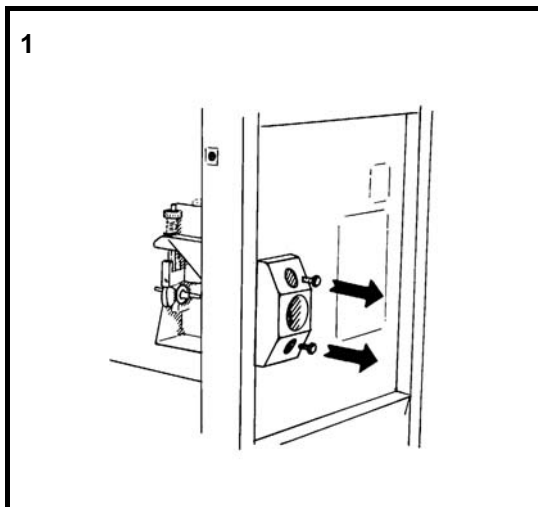
**PÅSÆTNING AF HÅNDTAG**  
**FIXING OF HANDLE**  
**MONTIERUNG DES HANDGRIFFES**  
**MONTAGE DE LA POIGNEE**



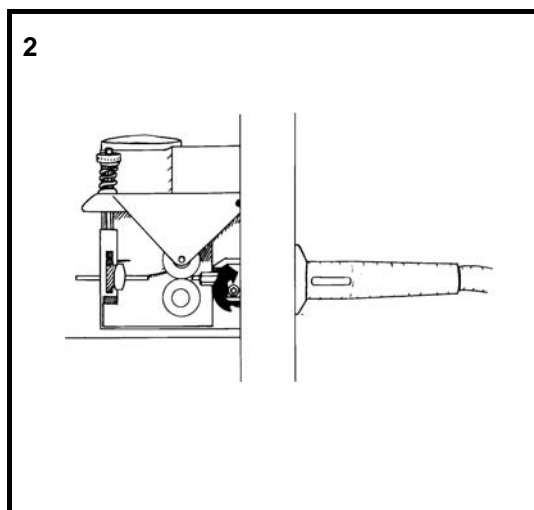
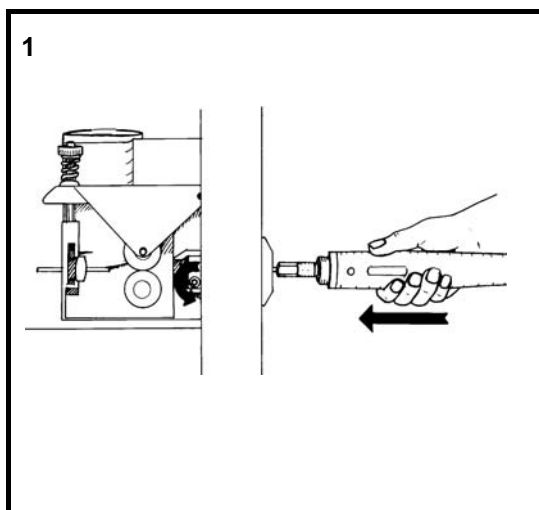
**ISÆTNING AF TRÅD**  
**FITTING THE WELDING WIRE**  
**EINLEGEN DES SCHWEISSDRAHTES**  
**MISE EN PLACE DU FIL**



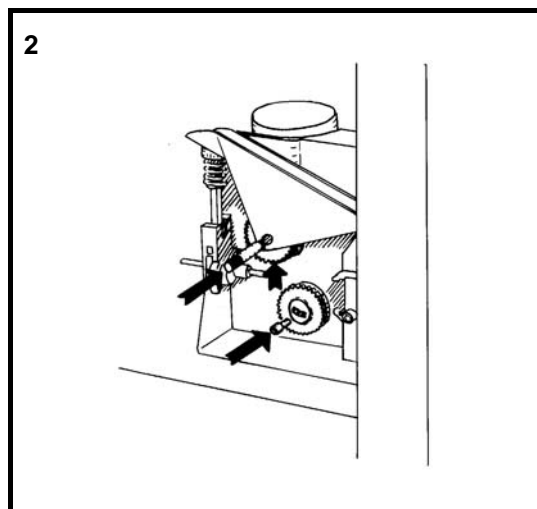
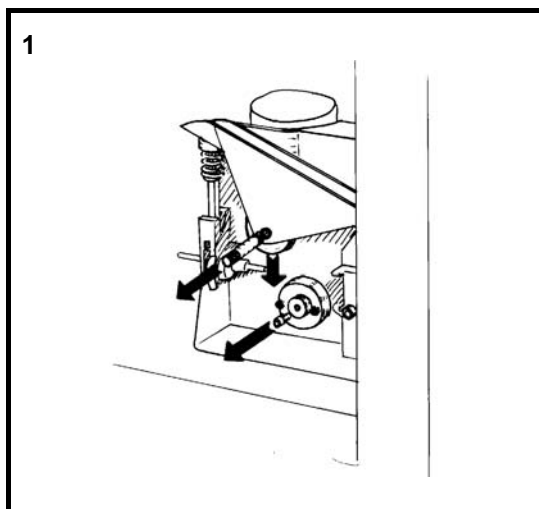
**PÅSÆTNING AF SLANGE MED ZA**  
**FIXING OF TORCH WITH CENTRAL CONNECTION**  
**ANSCHLUSS DES SCHLAUCHPAKETES MIT ZENTRALANSCHLUSS**  
**MONTAGE DU FAISCEAU DE TORCHE AVEC RACCORDEMENT CENTRAL**



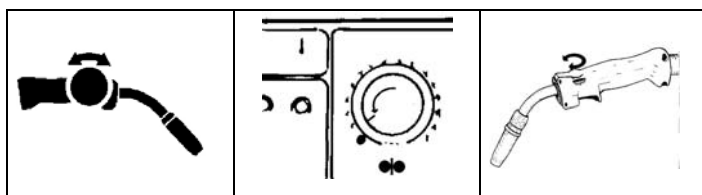
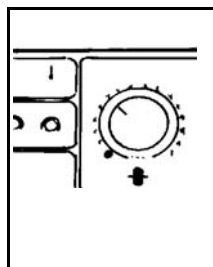
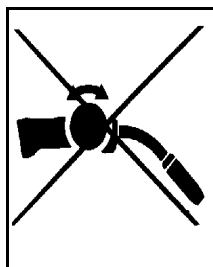
**PÅSÆTNING AF SLANGE UDEN ZA**  
**FIXING OF TORCH WITHOUT CENTRAL CONNECTION**  
**ANSCHLUSS DES SCHLAUCHPAKETES OHNE ZENTRALANSCHLUSS**  
**MONTAGE DU FAISCEAU DE TORCHE SANS RACCORDEMENT CENTRAL**



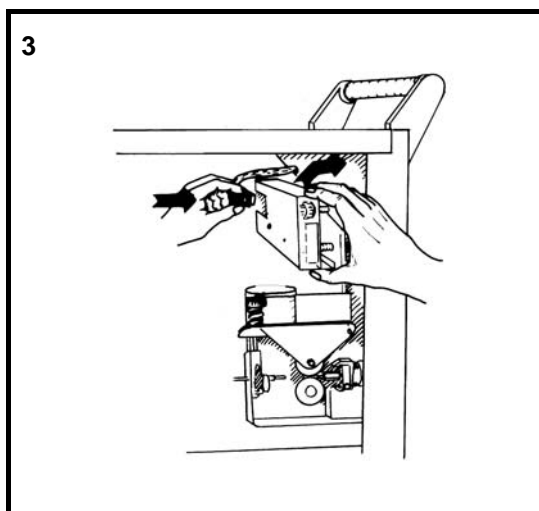
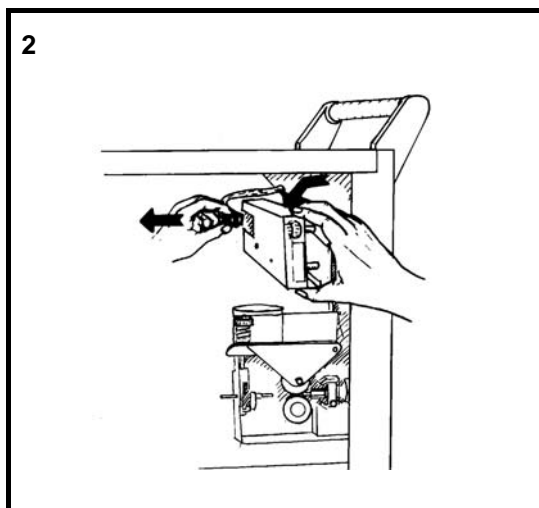
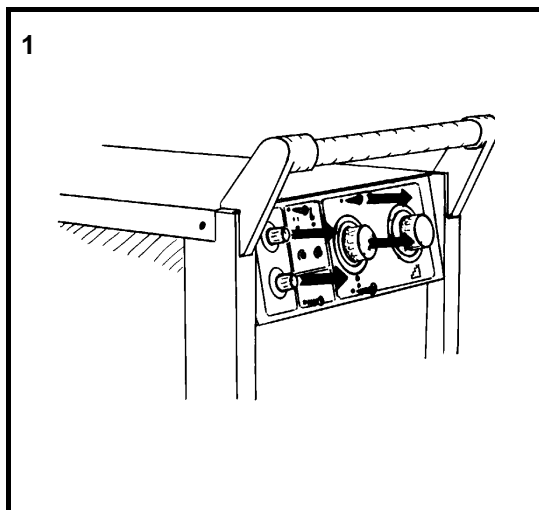
**ÆNDRING TIL 2-HJULSTRÆK**  
**MODIFICATION TO A 2-ROLL WIRE FEED SYSTEM**  
**ÄNDERUNG IN 2-ROLLEN-ANTRIEB**  
**MODIFICATION: ENTRAÎNEMENT PAR 2 GALETS**



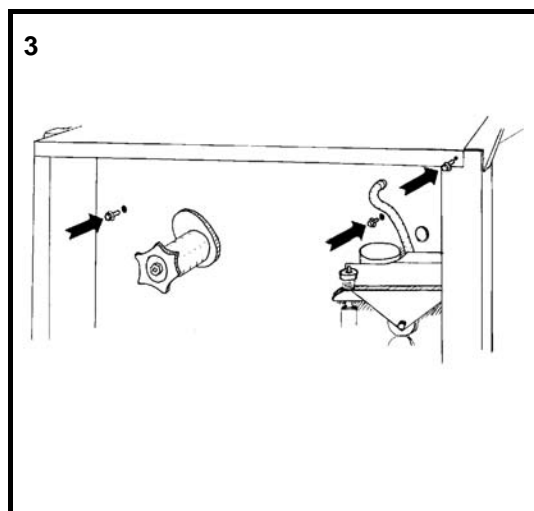
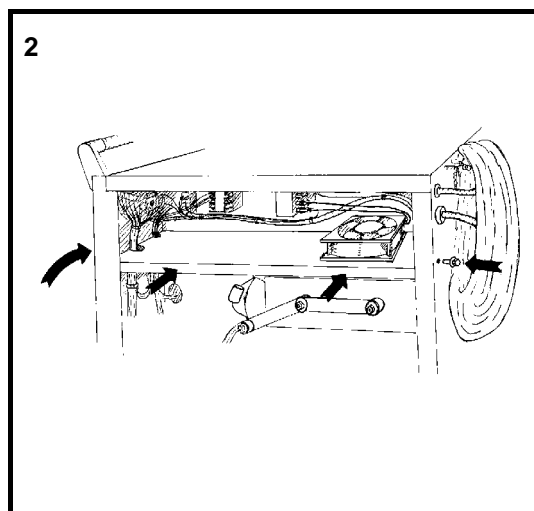
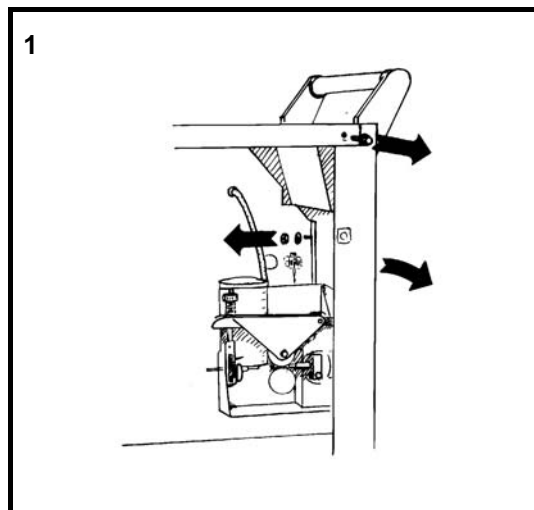
**BRÆNDERREGULERING**  
**TORCH CONTROL**  
**BRENNERREGELUNG**  
**COMMANDE TORCHE**



UDSKIFTNING AF ELEKTRONIK-BOKS  
 REPLACEMENT OF CONTROL UNIT  
 AUSTAUSCH DER STEUEREINHEIT  
 REMPLACEMENT DU BOITIER ELECTRO-  
 NIQUE



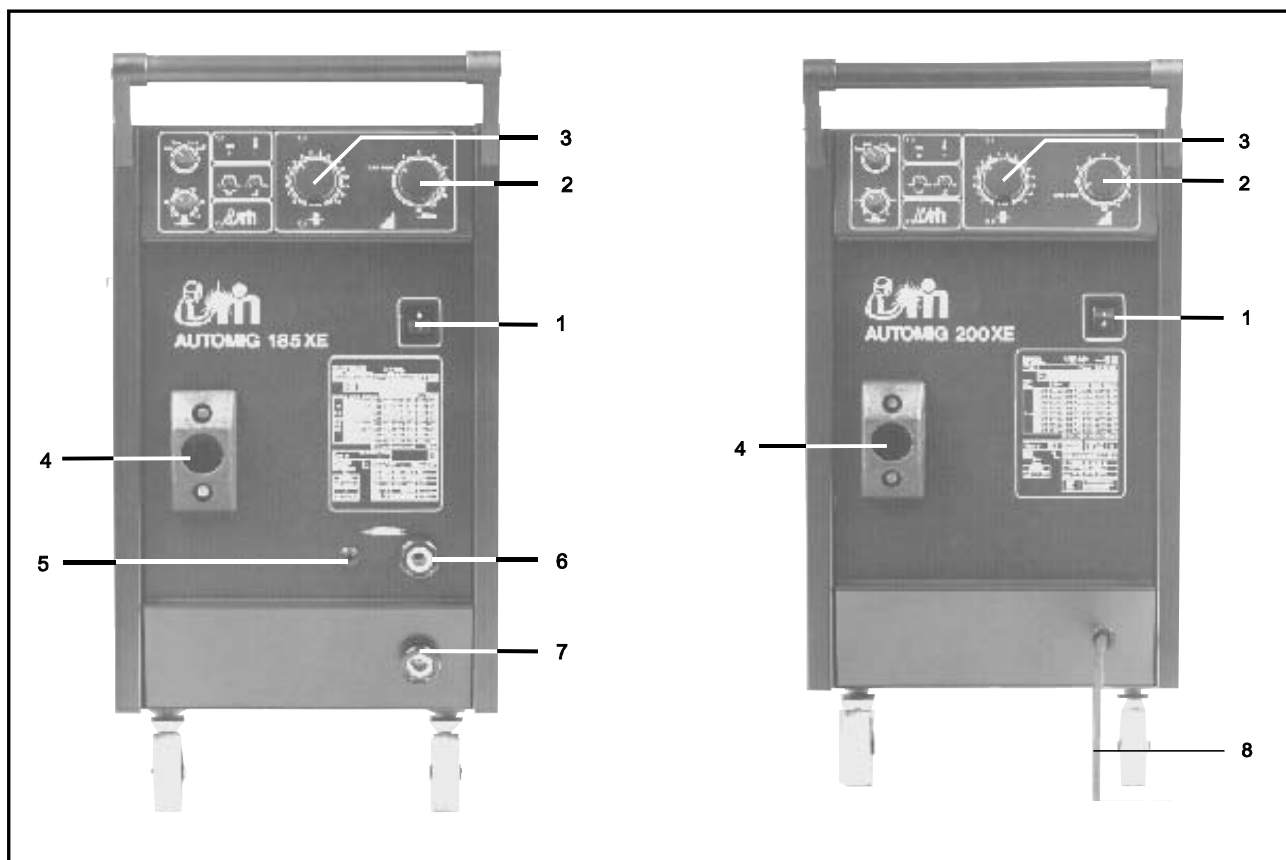
MONTERING AF VENTILATOR  
 FIXING OF FAN  
 MONTIERUNG DES LÜFTERS  
 MONTAGE DU VENTILATEUR





## BETJENINGSVEJLEDNING

## CONTROL SWITCHES

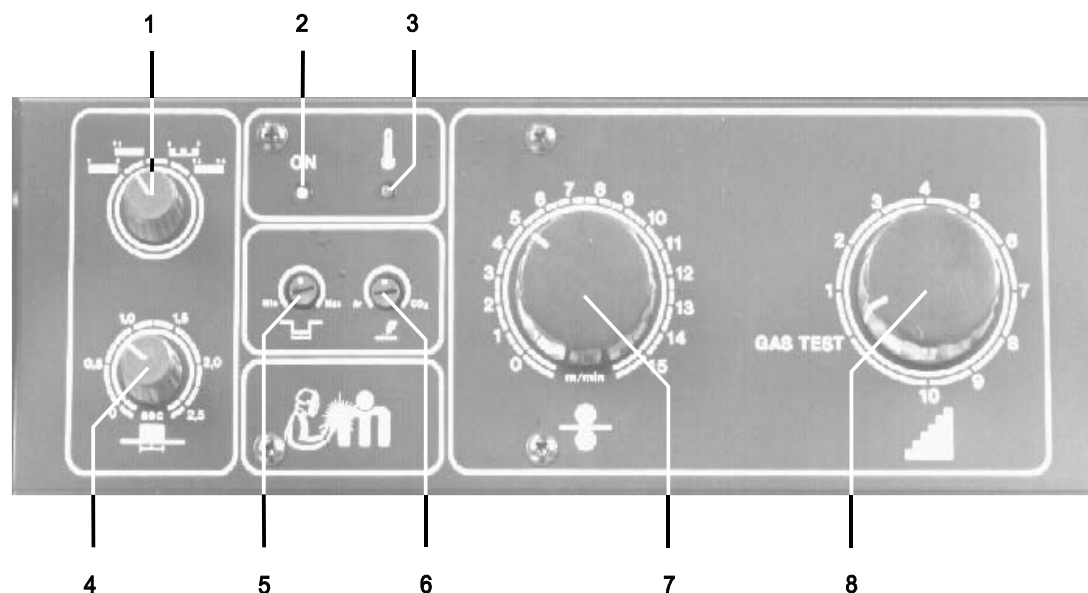


1. Hovedafbryder.
2. Indstilling af svejse-spænding.
3. Trinløs indstilling af trådhastighed.
4. Tilslutning af svejsebrænder.
5. Styreledningstilslutning (kun A-185 XE).
6. Tilslutning for boltsvejseslange (kun A-185 XE).
7. Stelkabel udtag (kun A-185 XE).
8. Stelkabel.

1. Main switch.
2. Adjustment of welding voltage.
3. Infinitely variable control of wire speed.
4. Connection of welding hose.
5. Connection of pilot cables (only on A-185 XE).
6. Connection of pull nail welding hose (only on A-185 XE).
7. Output for earth cable (only on A-185 XE).
8. Earth cable.

## BETJENINGSVEJLEDNING

## CONTROL SWITCHES



### 1. Funktionsomskifter:

**Søm:**

Omskifter stilles på søm. Knappen på svejsehåndtaget aktiveres, svejsningen starter. Slipper man knappen, afbrydes svejsningen.

**Punkt:**

Omskifter stilles på punkt. Knappen på svejsehåndtaget aktiveres, svejsningen starter. Svejsningen ophører automatisk, alt efter hvilken tid knap 4 er indstillet på (0,5-2,5 sek.)

**Step:**

Omskifter stilles på step. Knappen på svejsehåndtaget aktiveres, svejsningen starter. Svejsningen ophører automatisk, alt efter hvilken tid knap 4 er indstillet på. Efter en pausetid der bestemmes af knap 5 fortsætter samme cyklus automatisk og afbrydes først, når man slipper tasten på svejsehåndtaget.

**4-takt:**

Omskifteren stilles på 4-takt. Svejsningen starter, når tasten på svejsehåndtaget aktiveres. Man kan herefter slippe tasten, og svejsningen fortsætter. Ved at aktivere og slippe tasten på ny standser svejsningen. 4-takt, der bruges ved lange sømme, kaldes også "selvhold"

### 2. ON

Lyser når maskinen er tændt.

### 3. Overheating

Lyser, hvis svejsningen automatisk afbrydes som følge af overophedning af maskinens transformator. Når temperaturen på transformatoren er normaliseret, kan svejsningen fortsættes.

### 1. Switch:

**Seam:**

The switch is set at seam. The trigger on the welding handle is activated, welding starts. By letting go the trigger you stop the welding process.

**Spot:**

The switch is set at spot. When the trigger on the welding handle is activated, welding starts. Welding automatically stops, depending on the time adjusted by button 4 (0.5-2.5 secs)

**Stitch:**

The switch is set at stitch. When the trigger is activated, welding starts. The welding automatically stops, depending on the time adjusted by button 4. After an interval fixed at button 5 the same cycle continues automatically and is only interrupted when the trigger on the welding handle is released.

**Latch:**

The switch is set at latch. When the trigger on the handle is activated, welding starts, and continues even after the trigger is released. Welding will stop when the trigger is next activated, so improving welder comfort on long runs of welding.

### 2. ON

Lights when the machine has been turned on.

### 3. Overheating

Lights if the welding is automatically switched off, due to overheating of the transformer. When the temperature is normal, the welding can continue.

## BETJENINGSVEJLEDNING

4. **Svejsetid**  
Med denne knap indstilles svejsetiden, når knap 1 er i stilling: punkt og step.
5. **Variabel pausetid**  
Med denne knap indstilles pausetiden, når knap 1 er i stilling: step.
6. **Burn back**  
Forindstilling af efterbrændingstid. Bestemmer tiden, fra trådfremføringen standses, til lysbuen slukkes. Kan reguleres fra 0,05 til 0,5 sek.
7. **Trinløs indstilling af trådhastighed**  
(0,5-14 m/min).
8. **Trinomskifter for svejsespænding**  
For maskiner med gastest.  
I stilling "Gastest" åbnes for gasflow, når tasten på svejsepistolen aktiveres.

## CONTROL SWITCHES

4. **Welding time**  
With this switch the welding time is chosen, when switch 1 is in the positions stitch or spot.
5. **Adjustable pausetime**  
With this button the pause time is chosen, when switch 1 is in position: stitch.
6. **Burn back**  
Pre-adjustment of the burn back delay. Indicates the time from stopping the wire feed until the arc is switched off.  
Variable 0.05-0.5 secs.
7. **Adjustment of wire feed speed**  
(0.5-14 m/min).
8. **Switch for welding voltage**  
For machines with "Gas-test".  
When set at "Gas-test", the gas flows by pressing the switch on the torch handle.

## VEDLIGEHOLDELSE

Ved udvikling og produktion af **MIGATRONIC** svejsemaskiner er der kun anvendt materialer af absolut topkvalitet. Uanset hvor gode materialer, der er anvendt, og uanset hvor stor omhu, der er lagt i monteringen, kræver et så avanceret produkt som en svejsemaskine Deres indsats for at fungere perfekt i årevis.

### Trådfremføringsaggregatet

Trådfremføringsaggregatet må regelmæssigt efterses ved trådtrissen og tråddyserne. Dyserne i fremføringsaggregatet må udskiftes, hvis tråden ved passage gennem dyserne deformeres eller får ødelagt kobberbelægningen. Undertiden ses, at afskrabet kobberstøv totalt forhindrer en fri passage gennem trådlederen. Kontroller ugentligt dysernes justering, og rengør disse. Desuden efterses og rengøres rillerne i trådtrissen.

### Svejseslangen

Slange skal beskyttes mod overlast og må ikke trædes på eller køres over. Ugentlig bør slangen afmonteres og trådlederen blæses ren med trykluft.

### Svejsepistolen

Svejsepistolen indeholder vigtige komponenter, som hyppigt må efterses og rengøres, nemlig kontaktdysen og gasdysen. Sprøjtestænk må jævnligt fjernes samtidig med, at der påføres sprøjteløsner. Under rensningen bør gasdysen aftages.

*Rens ikke ved at slå på pistolen.*

### Strømkilde

Strømkilde, ensretter og transformator må med passende mellemrum blæses rene for støv.

## MAINTENANCE

Only first-class materials have been used for the development and production of **MIGATRONIC** welding machines. However good the materials that have been used, and no matter how carefully production has been carried out, an advanced product such as a welding machine demands your effort to operate perfectly for years.

### Wire feed unit

The wire feed unit must be checked regularly at the wire drive roll and at the wire guide tube. The wire guide tubes should be changed if the copper plating of the wire is damaged on its way through the tubes. Copper dust may totally hinder free passage through the wire liner. A weekly check and cleaning of the tubes and the wire drive roll is recommended.

### Welding hose

Great care should be taken that the welding hose is not overloaded. The hose should be dismantled every week and blown out with dry air. The torch should be disconnected during this process.

### Welding torch

There are many parts in the welding torch that have to be cleaned regularly. The main ones are the contact tips and the gas nozzle. The spatter should be removed regularly and spatter remover applied. During the cleaning process, the gas nozzle should be removed.

*Do not clean by beating the torch.*

### Power source

The rectifier and transformer should be blown out with dry air occasionally, other-wise the air circulation will be affected by the dust.

## FEJLSØGNING

**For lille svejseeffekt, svejsningen ligger som en "larve" på emnet.**

1. Den ene af de tre sikringer ved hovedafbryderen er sprunget.
2. Der svejses på et for lavt spændingstrin.

**Stødvis trådfremføring.**

1. Indgangsdysen og trådtrissens rille flugter ikke.
2. Rulle med svejsetråd går for stramt på akslen. Undertiden er tråden spolet forkert, så den "krydser".
3. Indgangsdyse eller kontaktdyse er slidt eller snavset, evt. tilstoppet.
4. Svejsetråden er uren eller af dårlig kvalitet, evt. rusten.
5. For dårligt tryk på modrullen.

**For meget sprøjt ved svejsningen.**

1. For stor trådhastighed i forhold til svejsningen.
2. Slidt kontaktdyse.

**Svejsningen bliver kokset og "sprød".**

**Ved punktsvejsning fremkommer en karakteristisk top.**

1. Beskyttelsesgas mangler: for lavt tryk, eller flasken er tom.
2. Gasdyse tilstoppet.
3. Utætheder i systemet, således at atmosfærisk luft pga. injectorvirkningen suges med ind og blandes med beskyttelsesgassen.

**Tråden brænder gentagne gange fast i kontaktdysen og går trægt.**

1. Kan bero på, at tråden er blevet deformeret i trådlederen.  
Klip tråden ved trådtrissen, og træk den deformerede tråd ud af trådlederen. Sæt ny tråd i og kontroller modrullens tryk.
2. Slidt kontaktdyse.

## TROUBLE SHOOTING

**Too little welding effect.**

**The welding seam forms a bead.**

1. One of the three fuses in the main switch is not working (one phase is missing).
2. The welding voltage is too low.  
Switch one setting higher.

**The wire feed is blocking.**

1. The inlet nozzle and the wire are not in alignment with each other.
2. The reel of wire is too taut, the wire must come off the reel evenly.
3. The inlet or contact tip has worn out or is blocked up.
4. The welding wire is not clean or it is rusty. It could also be of an inferior quality.
5. The pressure roller has to be tightened.

**Spatter.**

1. The wire feed is too fast for the voltage setting.
2. Worn out contact tip.

**Porous weld. A cone is formed when spot welding.**

1. Insufficient gas - not enough pressure or the bottle is empty.
2. Contact tip is blocked up.
3. Leakage air is pumped in and mixes with the shielding gas.

**The wire keeps sticking in the contact tip and is very slow.**

1. The damaged wire should be cut off, pulled out and replaced. The pressure on the wire feed roller should be checked.
2. Worn out contact tip.

**TEKNISKE DATA   TECHNICAL DATA****AUTOMIG 180 MXE**

---

Netspænding	Mains voltage	1x230 V
Sikring	Fuse	16 A
Effekt max.	Consumption max.	6.3 kVA
Virkningsgra	Efficiency	0.85
Cos. phi.	Cos. phi	0,72
Tomgangsspænding	Open circuit	14-41 V
Spændingstrin	Voltage adjustment	1 - 7
Belastning 100%	100% duty cycle	60 A
Belastning 60%	60% duty cycle	80 A
Belastning 35%	35% duty cycle	
Belastning 30%	30% duty cycle	
Belastning 25%	25% duty cycle	160 A
Belastning 15%	15% duty cycle.	
Strømområde DC	Current range DC	20-180 A

---

Beskyttelsesklasse	Protection class	IP 21 AN
Norm	Norm	EN60974-1
Trådfremføringsenhed:	Wire feed unit:	EN50199

---

Driftsspænding	Working voltage	2-24 V DC
Trådmotoreffekt	Wire motor, consumption	60 W
Trådrulledimension	Wire reel	5-15 kg
Tråddimension	Wire	0.6-1.2
Trådastighed	Wire speed	2-12 m/min

---

Punktsvejsetid	Spot-welding	0.04-2.5 sec.
Pausetid	Pause	0.04-2.5 sec.
Efterbrænding	Burn-back	0.04-0.5 sec.

---

Dim. Lxbxh	Dim. L x W x H	77x37x62 cm
Total vægt	Total weight	54 kg

---

# MIGATRONIC

## **Bundesrepublik Deutschland:**

MIGATRONIC SCHWEISSMASCHINEN GmbH  
Sandusweg 12, D-35435 Wettenberg  
Telefon: (+49) 641 982840  
Telefax: (+49) 641 9828450

## **Czech Republic:**

MIGATRONIC CZECH REPUBLIC a.s.  
Tolstého 451, 415 03 Teplice, Czech Republic  
Telefon: (+42) 0417 570 659  
Telefax: (+42) 0417 533 072

## **Danmark:**

MIGATRONIC AUTOMATION A/S  
Knøsgårdvej 112, 9440 Aabybro  
Telefon: (+45) 98 24 42 33  
Telefax: (+45) 98 24 44 27

## **Danmark:**

SVEJSEMASKINEFABRIKKEN MIGATRONIC  
Aggersundvej 33, 9690 Fjerritslev  
Telefon: (+45) 96 500 600  
Telefax: (+45) 96 500 601

## **Finland:**

MIGATRONIC A/S  
Puh: (+358) 102 176500  
Fax: (+358) 102 176501

## **France:**

MIGATRONIC EQUIPEMENT DE SOUDURE S.A.R.L.  
Parc d'Activités U.I.S., 2, rue d'Yvours, F-69540 Irigny  
Tél: (+33) 478 50 6511  
Télécopie: (+33) 478 50 1164

## **Hungary:**

MIGATRONIC KFT  
Szent Miklos u. 17/a, H-6000 Kecskemét  
Tel.: (+36) 76 48 14 12  
Fax.: (+36) 76 48 14 12

## **Italia:**

MIGATRONIC s.r.l.  
Via Marconi, 6/D, I-23871 Lomagna (LC) Italy  
Tel.: (+39) 039 92 78 093  
Telefax: (+39) 039 92 78 094

## **Nederland:**

MIGATRONIC NEDERLANDS B.V.  
Hallenweg 34, NL-5680 AK Best  
Tel.: (+31) 499 37 50 00  
Telefax: (+31) 499 37 57 95

## **Norge:**

MIGATRONIC NORGE A/S  
Ingv. Ludvigsensgt 24, Boks 3585, N-3007 Drammen  
Tel. (+47) 32 21 84 84  
Telefax: (+47) 32 21 84 94

## **Sverige:**

MIGATRONIC SVETSMASKINER AB  
Kråketorpsgratan 20, S-431 53 Mölndal  
Tel. (+46) 31 44 00 45  
Telefax: (+46) 31 44 00 48

## **United Kingdom:**

MIGATRONIC WELDING EQUIPMENT LTD.  
21, Jubilee Drive, Belton Park, Loughborough  
GB-Leicestershire LE11 5XS  
Tel. (+44) 15 09 26 74 99  
Fax: (+44) 15 09 23 19 59

**Homepage: [www.migatronik.com](http://www.migatronik.com)**

