

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

**TYPE: KDO**



**micatronic**

## 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

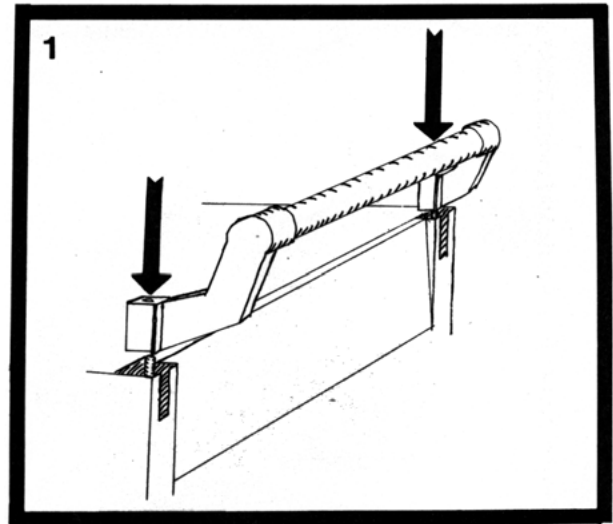
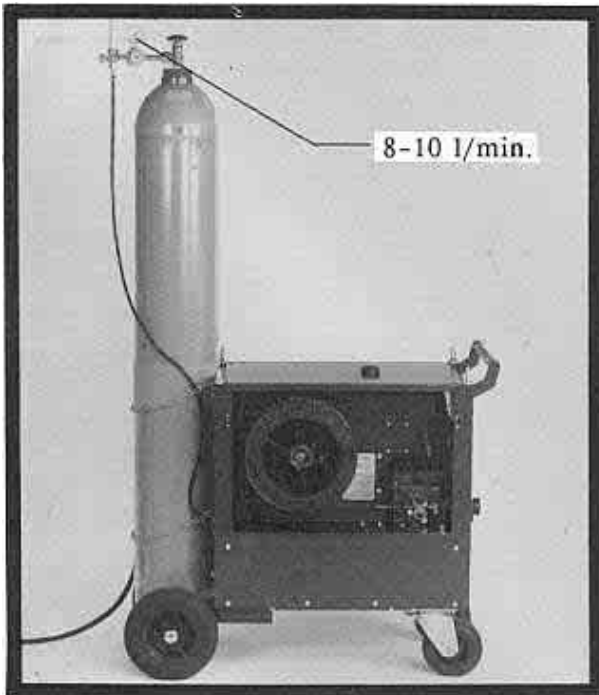
La grande expérience de *MIGATRONIC* dans la conception et la fabrication de machines de soudage combinée à vos connaissances et à vos qualités de maintenance assureront une promotion satisfaisante de ces machines.

Merci de votre confiance.

**MIGATRONIC**

Peter Roed

# IBRUGTAGNING INITIAL OPERATING INBETRIEBNAHME OPERATIONS PRELIMINAIRES



## NETTILSLUTNING.

Kontroller at maskinens påstemplede spænding er i overensstemmelse med netspændingen. Hvis maskinen er omkøbelbar, må det kontrolleres at maskinen er koblet korrekt.

## MAINS CONNECTION.

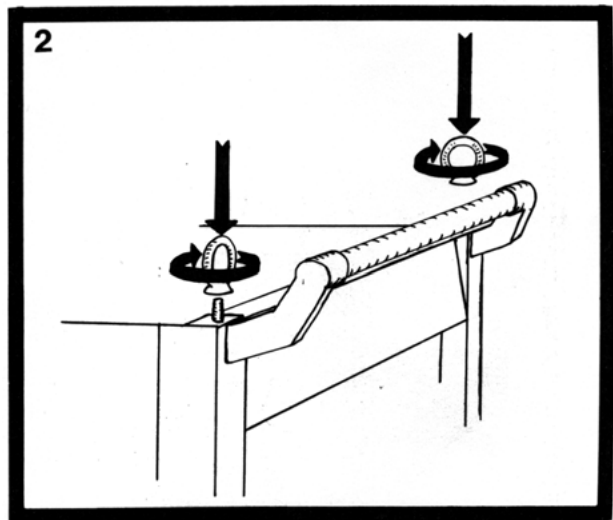
Control of accordance between the voltage of the machine stamped on the type sign and mains power. If the machine can be switched between different voltages it must be checked if it has been mounted correctly.

## NETZANSCHLUSS.

Es ist unbedingt zu kontrollieren, ob die auf dem Typeschild der Maschine angegebene Spannung mit der Netzspannung übereinstimmt. Ist die Maschine auf verschiedene Spannungen umklemmbar, muss darauf geachtet werden, dass das Gerät innen für die richtige Spannung angeklemt ist.

## PRINCIPAUX BRANCHEMENTS.

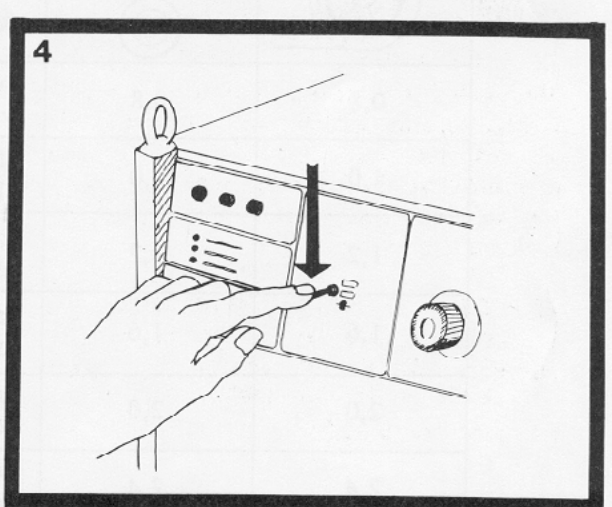
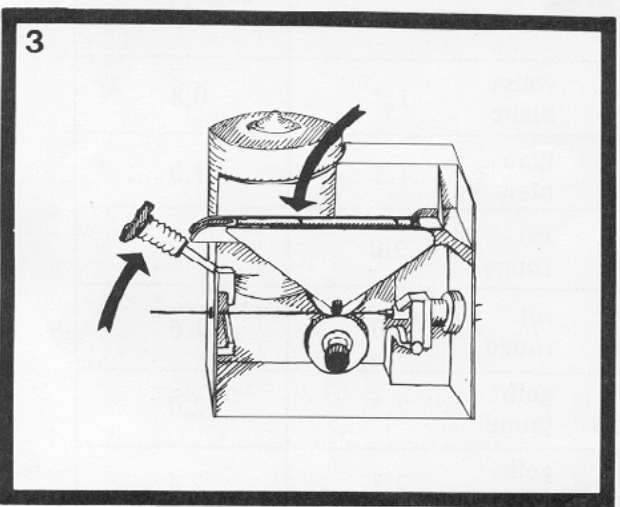
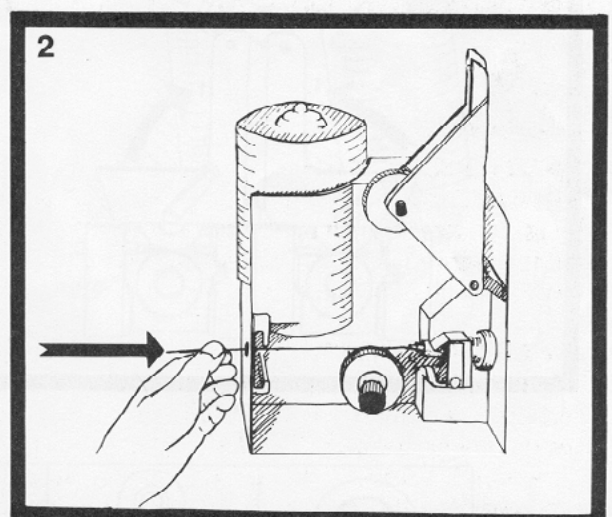
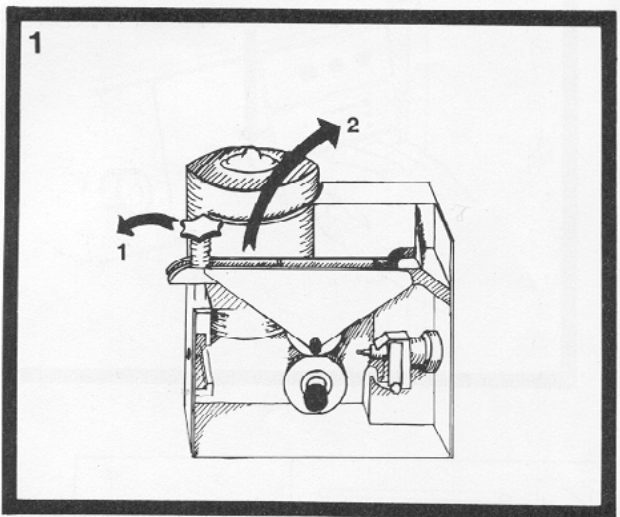
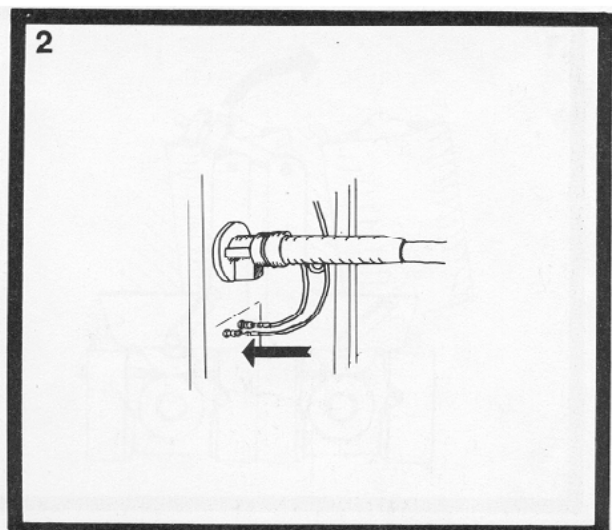
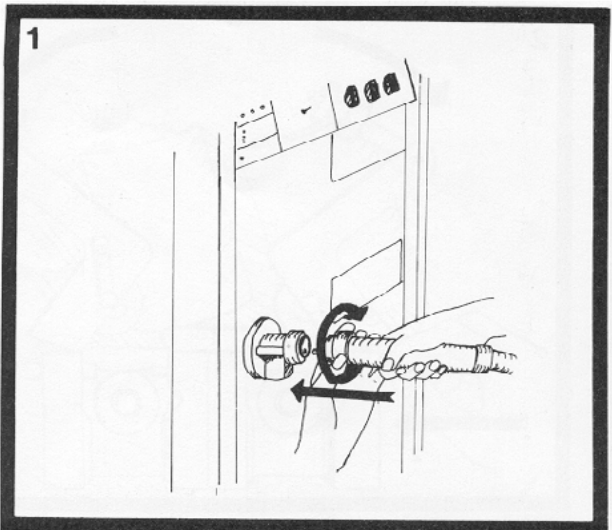
Contrôler que la tension de la machine est en harmonie avec la source de courant. Ce contrôle est très important dans le cas de machine commutable 3x220 V ou 3x380 V.



## SIKRING/ FUSE/ SICHERUNG/ FUSIBLE.

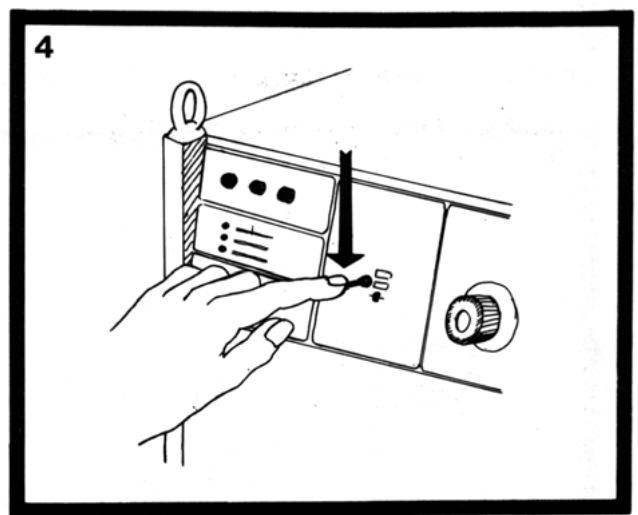
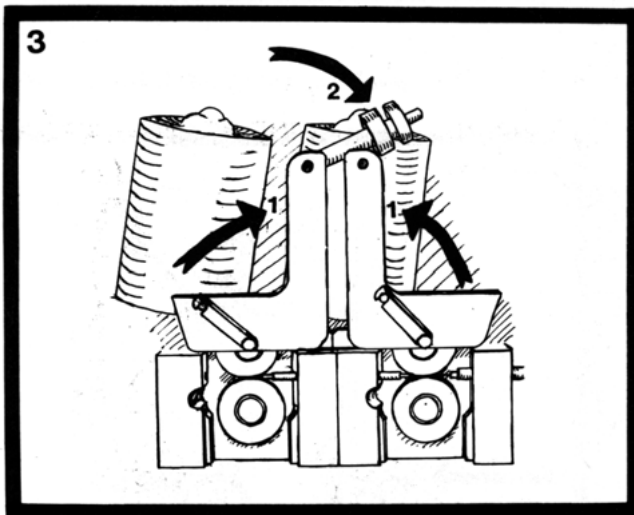
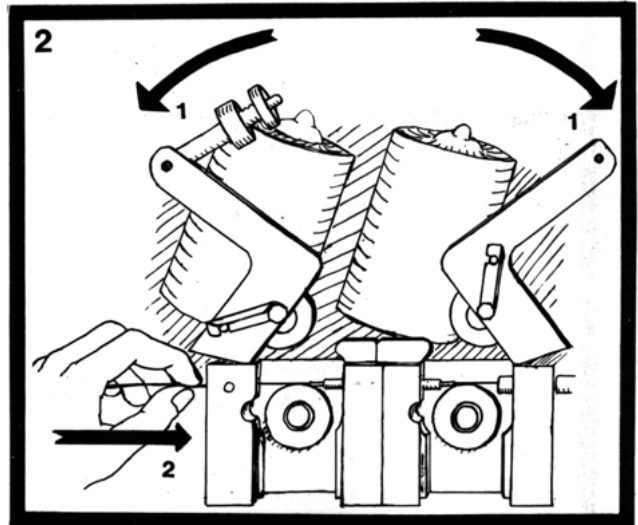
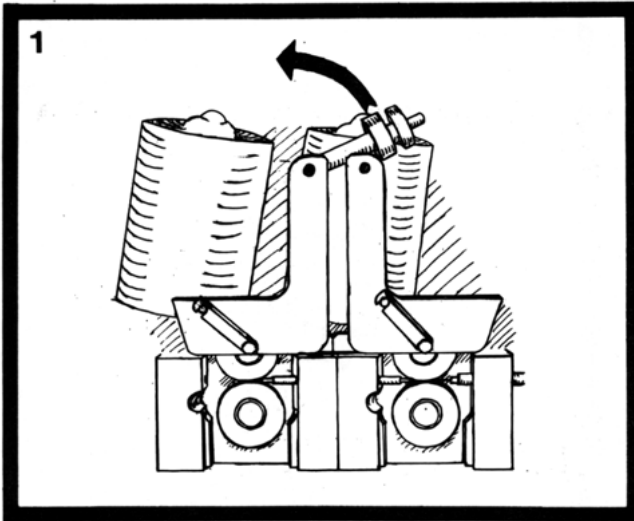
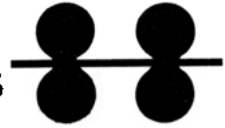
|         | 220V | 240V | 380V | 415V | 440V | 500V |
|---------|------|------|------|------|------|------|
| KDO 260 | 25A  | 25A  | 16A  | 16A  | 10A  | 10A  |
| KDO 325 | 25A  | 25A  | 16A  | 16A  | 16A  | 16A  |
| KDO 400 | 40A  | 40A  | 25A  | 25A  | 25A  | 25A  |
| KDO 500 | 50A  | 50A  | 35A  | 35A  | 25A  | 25A  |
| KDO 600 | 63A  | 63A  | 35A  | 35A  | 35A  | 35A  |




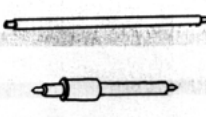

ISÆTNING AF TRÅD  
FITTING THE WELDING WIRE  
INLEGEN DES SCHWEISSDRAHTS  
MONTAGE DE LA BOBINE DE FIL



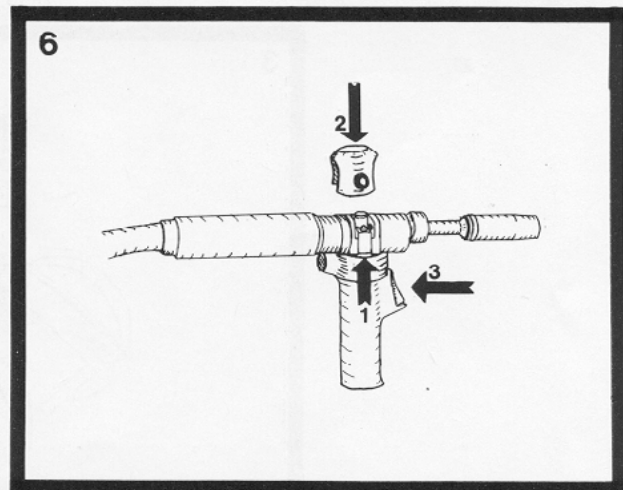
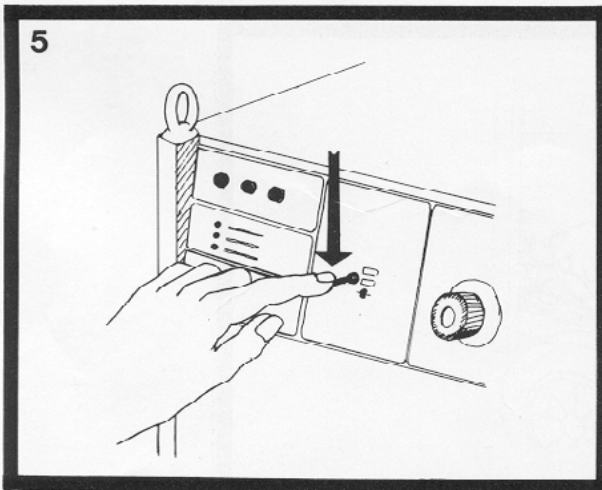
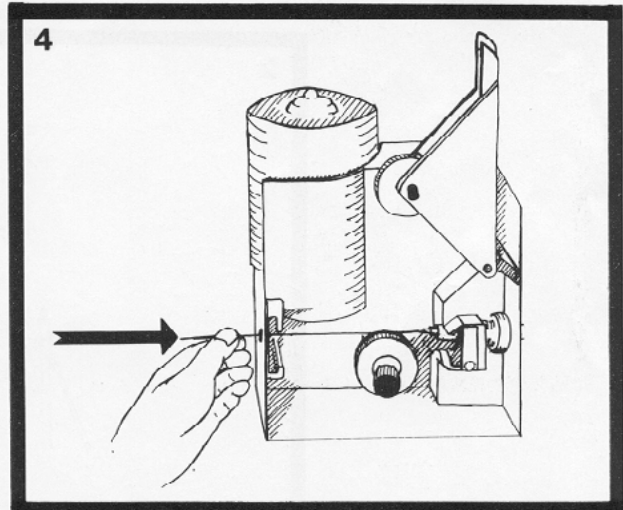
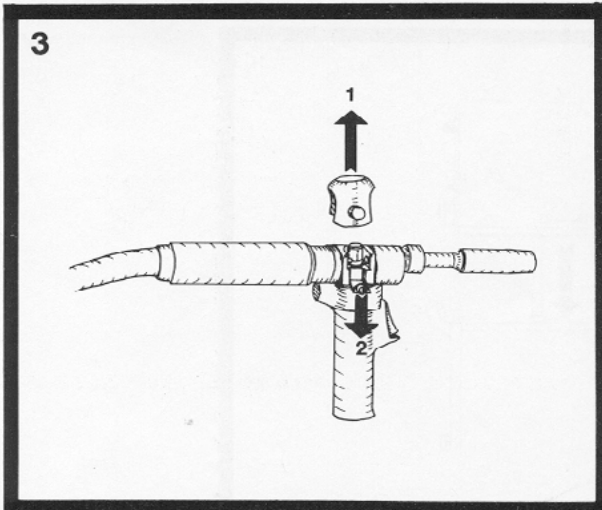
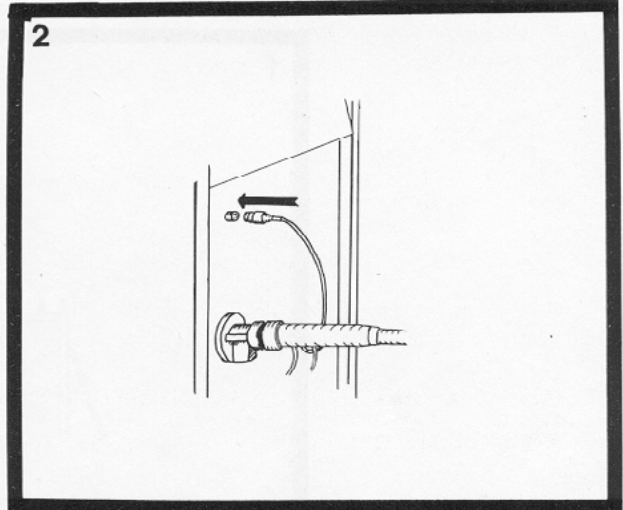
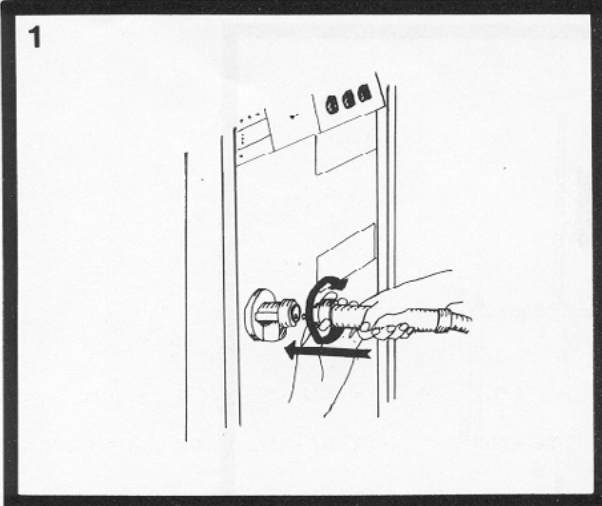
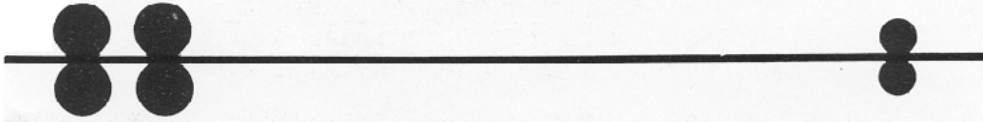


ISÆTNING AF TRAD  
 FITTING THE WELDING WIRE  
 EINLEGEN DES SCHWEISSDRAHTES  
 MONTAGE DE LA BOBINE DE FIL

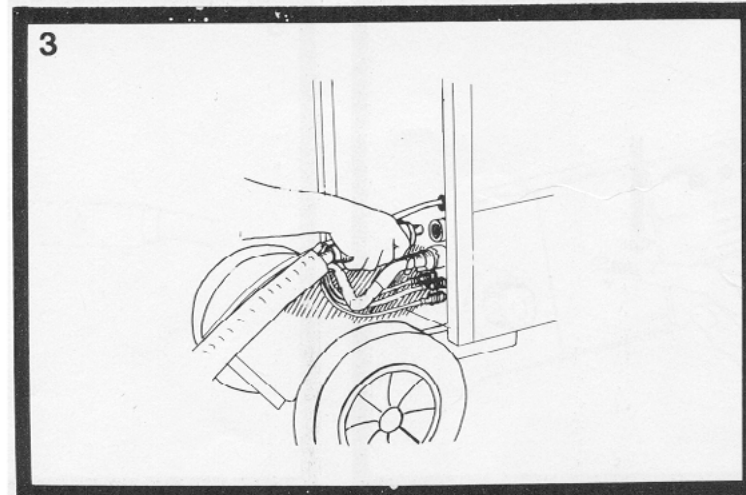
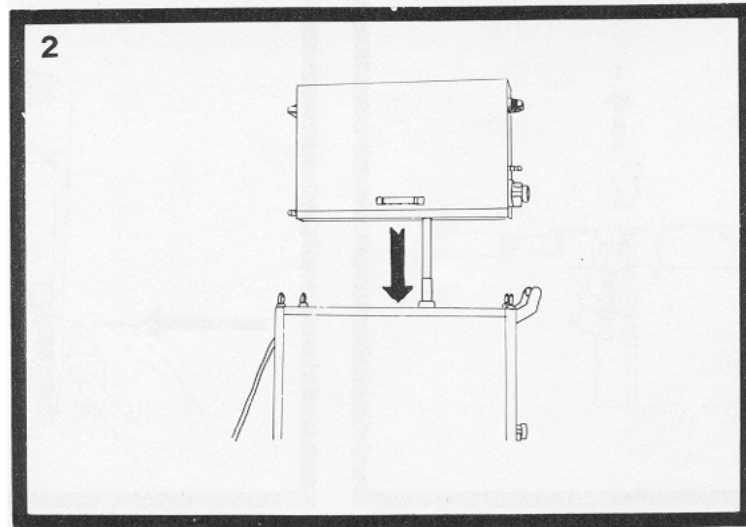
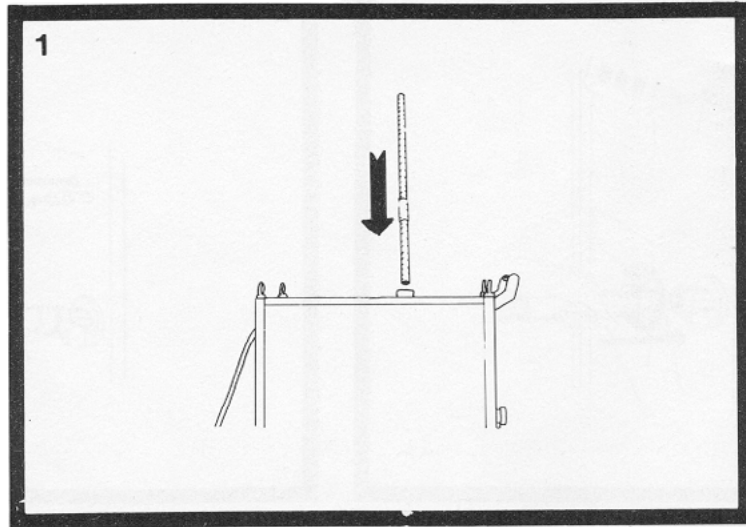


|   |   |   |  |   |
|---|---|---|--|---|
|  |  |  |  |  |
| 0,8   | 0,8   | hvid<br>white   | weiss<br>blanc   | 1,2   |
| 1,0   | 1,0   | blå<br>blue   | blau<br>bleu   | 1,5   |
| 1,2   | 1,2   | rød<br>red  | rot<br>rouge   | 2,0   |
| 1,6   | 1,6   | rød<br>red  | rot<br>rouge   | 2,0   |
| 2,0   | 2,0   | gul<br>yellow   | gelb<br>jaune  | 2,7   |
| 2,4   | 2,4   | gul<br>yellow   | gelb<br>jaune  | 2,7   |

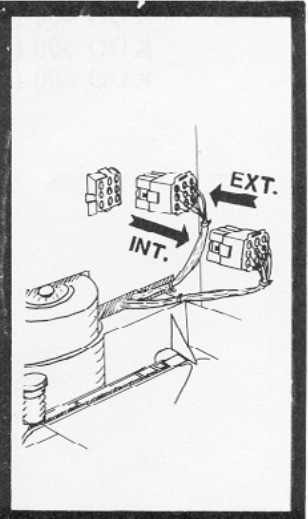
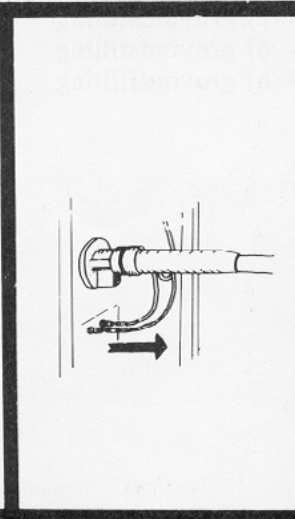
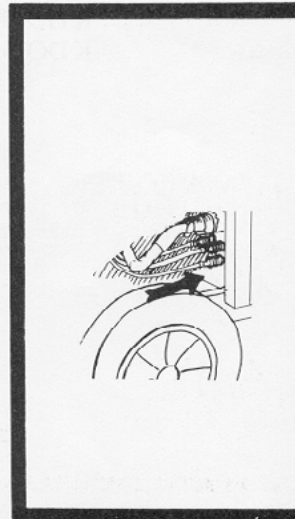
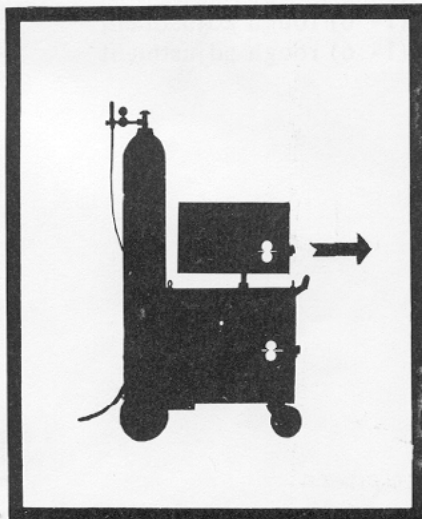
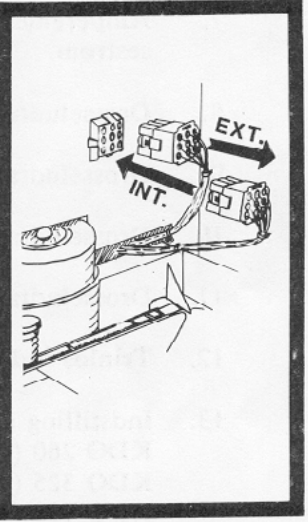
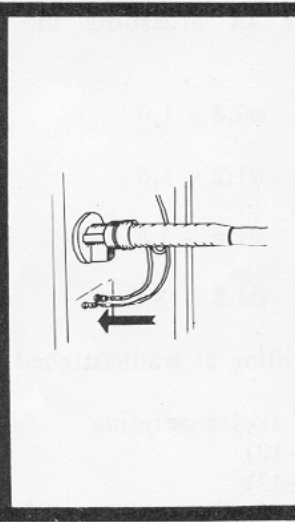
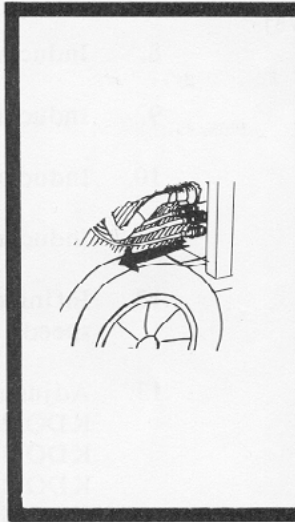
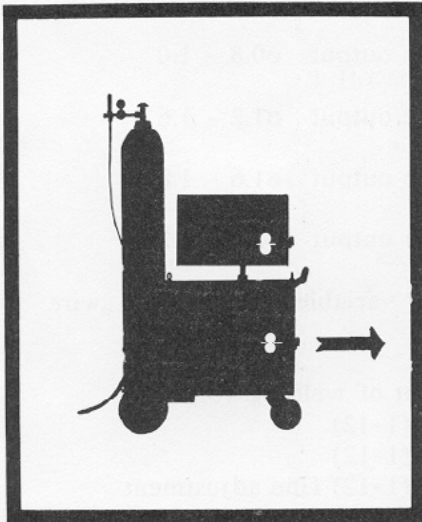
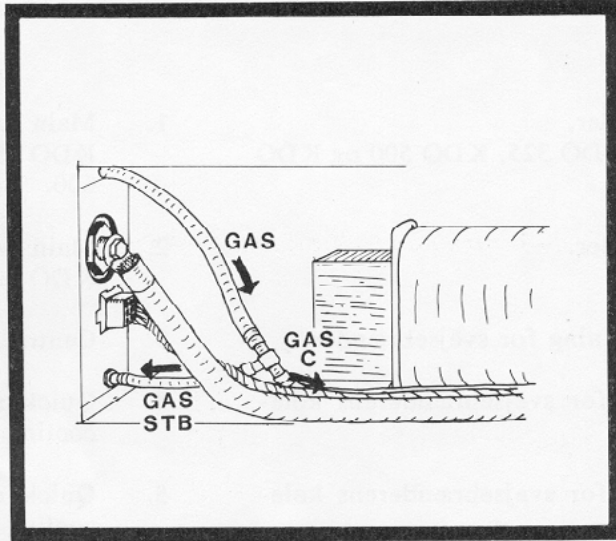
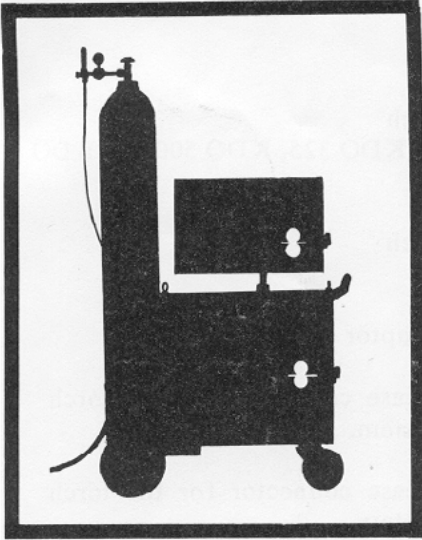
# PUSH-PULL



STB



# COMBI





## BETJENINGSVEJLEDNING

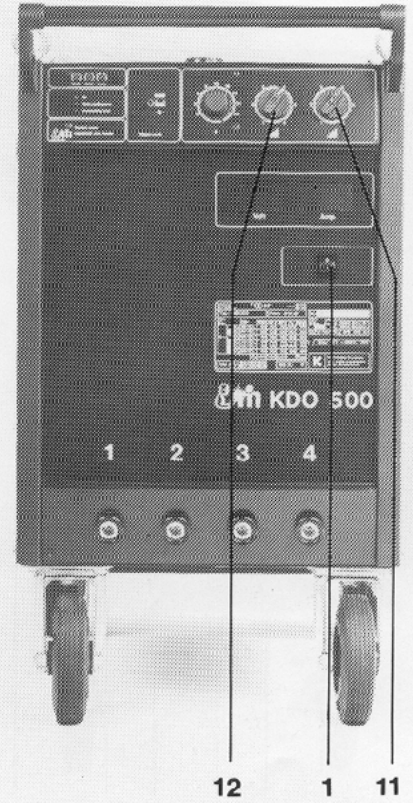
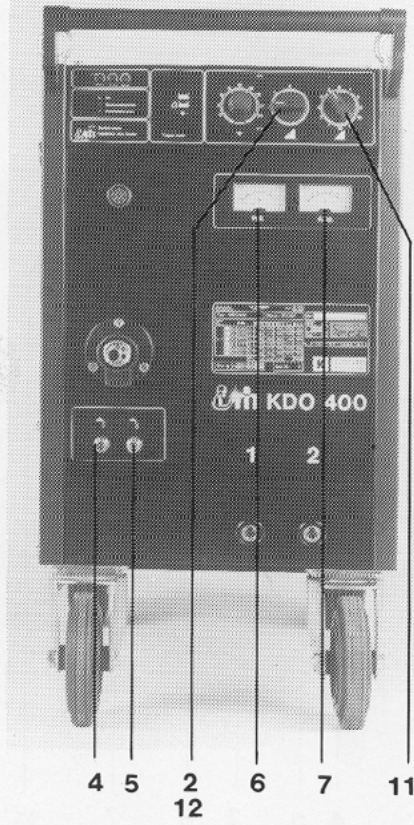
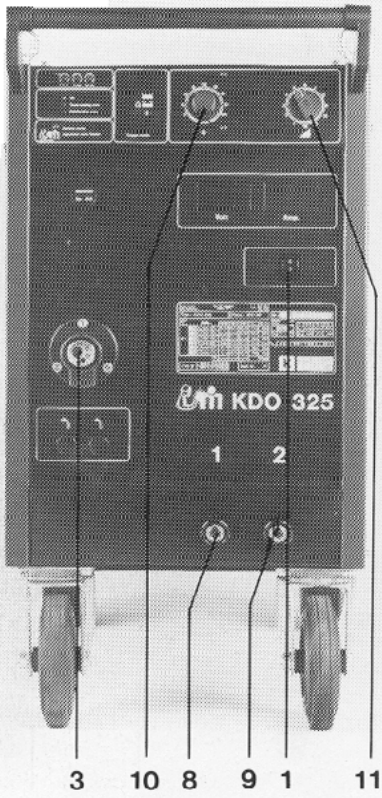
## CONTROL SWITCHES

- |  |  |
|--|--|
| Hovedafbryder.<br>KDO 260, KDO 325, KDO 500 og KDO 600.  | 1. Main switch<br>KDO 260, KDO 325, KDO 500 and KDO 600.   |
| 2. Hovedafbryder.<br>KDO 400.  | 2. Main switch<br>KDO 400.   |
| 3. Centraltilslutning for svejsebrænder.   | 3. Central adaptor for welding torch.  |
| 4. Lynkobling for svejsebrænderens køle-<br>system.  | 4. Quick release connector for the torch<br>cooling system.  |
| 5. Lynkobling for svejsebrænderens køle-<br>system.  | 5. Quick release connector for the torch<br>cooling system.  |
| 6. Voltmeter til aflæsning af svejse <span>­</span> pænd-<br>ing.  | 6. Voltmeter, shows the welding voltage.   |
| 7. Amperemeter til aflæsning af svej-<br>sestrøm.  | 7. Ammeter, shows the welding current.   |
| 8. Drosseludtag $\varnothing$ 0,8 - 1,0  | 8. Inductance output $\varnothing$ 0.8 - 1.0   |
| 9. Drosseludtag $\varnothing$ 1,2 - 1,6  | 9. Inductance output $\varnothing$ 1.2 - 1.6   |
| 10. Drosseludtag $\varnothing$ 1,6 - 1,8   | 10. Inductance output $\varnothing$ 1.6 - 1.8  |
| 11. Drosseludtag $\varnothing$ 1,8 - 3,2   | 11. Inductance output $\varnothing$ 1.8 - 3.2  |
| 12. Trinløs indstilling af trådhastighed.  | 12. Infinitely variable control of wire<br>speed.  |
| 13. Indstilling af svejse <span>­</span> pænding.<br>KDO 260 (1-12)<br>KDO 325 (1-12)<br>KDO 400 (1-12) finindstilling<br>KDO 500 (1- 6) finindstilling<br>KDO 600 (1- 6) finindstilling | 13. Adjustment of welding voltage.<br>KDO 260 (1-12)<br>KDO 325 (1-12)<br>KDO 400 (1-12) fine adjustment<br>KDO 500 (1- 6) fine adjustment<br>KDO 600 (1- 6) fine adjustment |
| 12. Indstilling af svejse <span>­</span> pænding<br>KDO 400 (1- 2) grovindstilling<br>KDO 500 (1- 6) grovindstilling<br>KDO 600 (1- 6) grovindstilling                                   | 12. Adjustment of welding voltage.<br>KDO 400 (1- 2) rough adjustment<br>KDO 500 (1- 6) rough adjustment<br>KDO 500 (1- 6) rough adjustment                                  |

KDO 260  
KDO 325

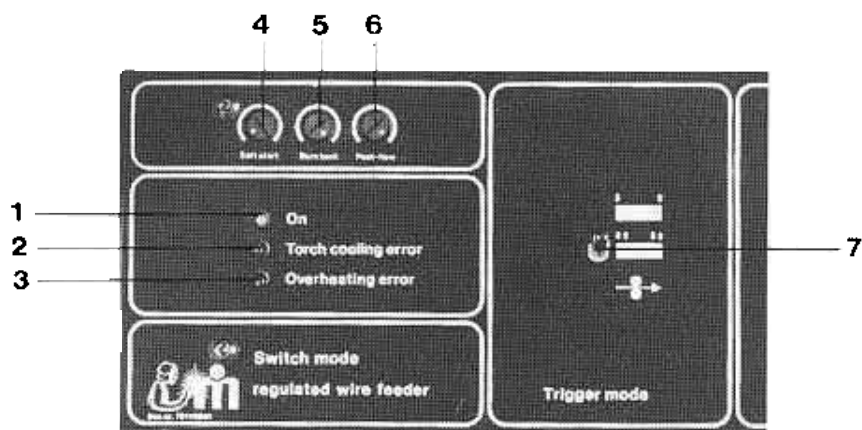
KDO 400







KDO 500  
KDO 600



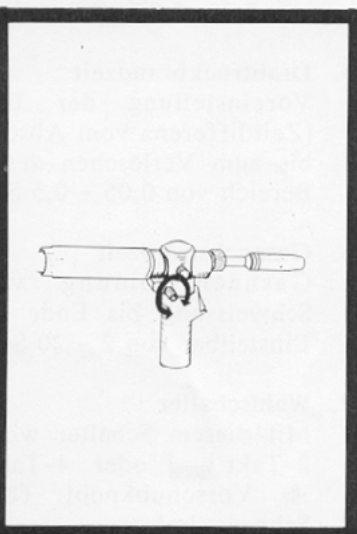
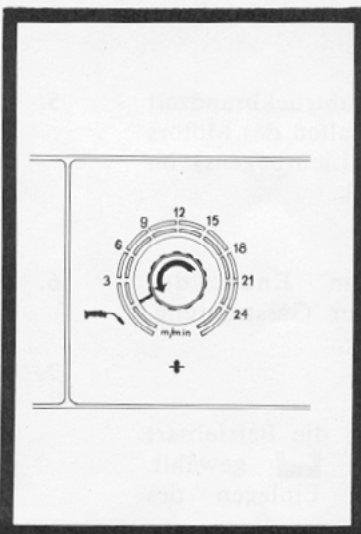
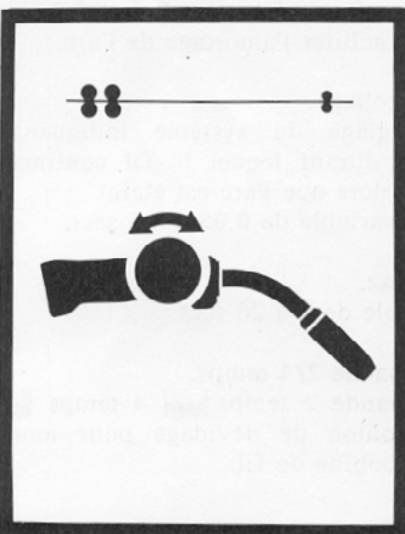
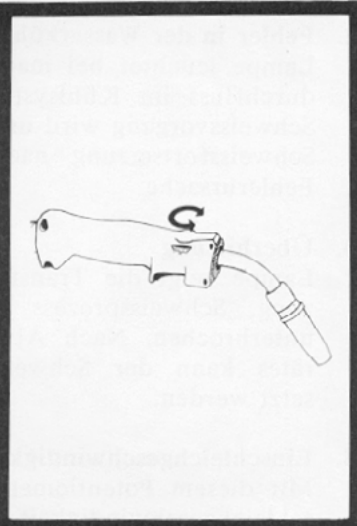
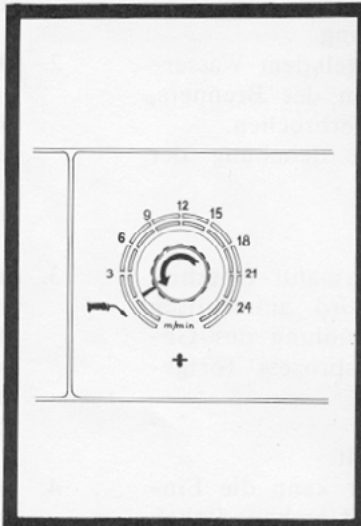
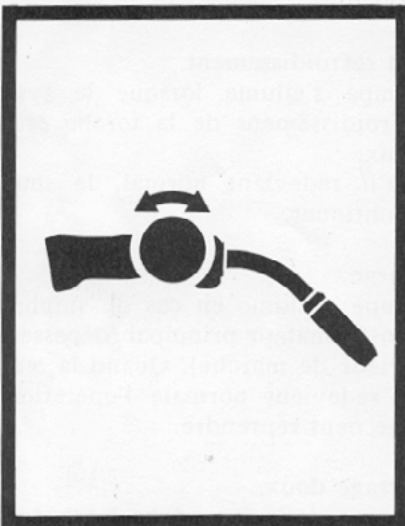
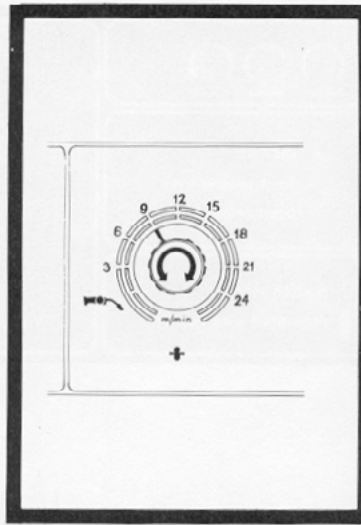
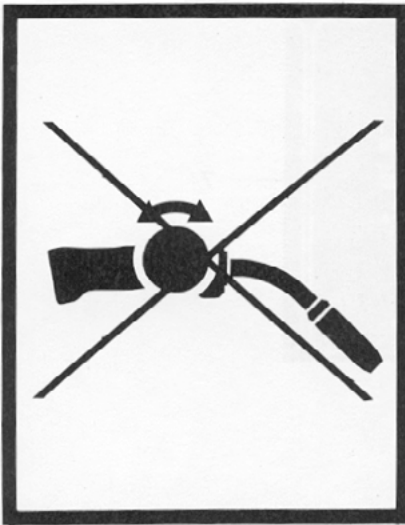
## BETJENINGSVEJLEDNING

## CONTROL SWITCHES

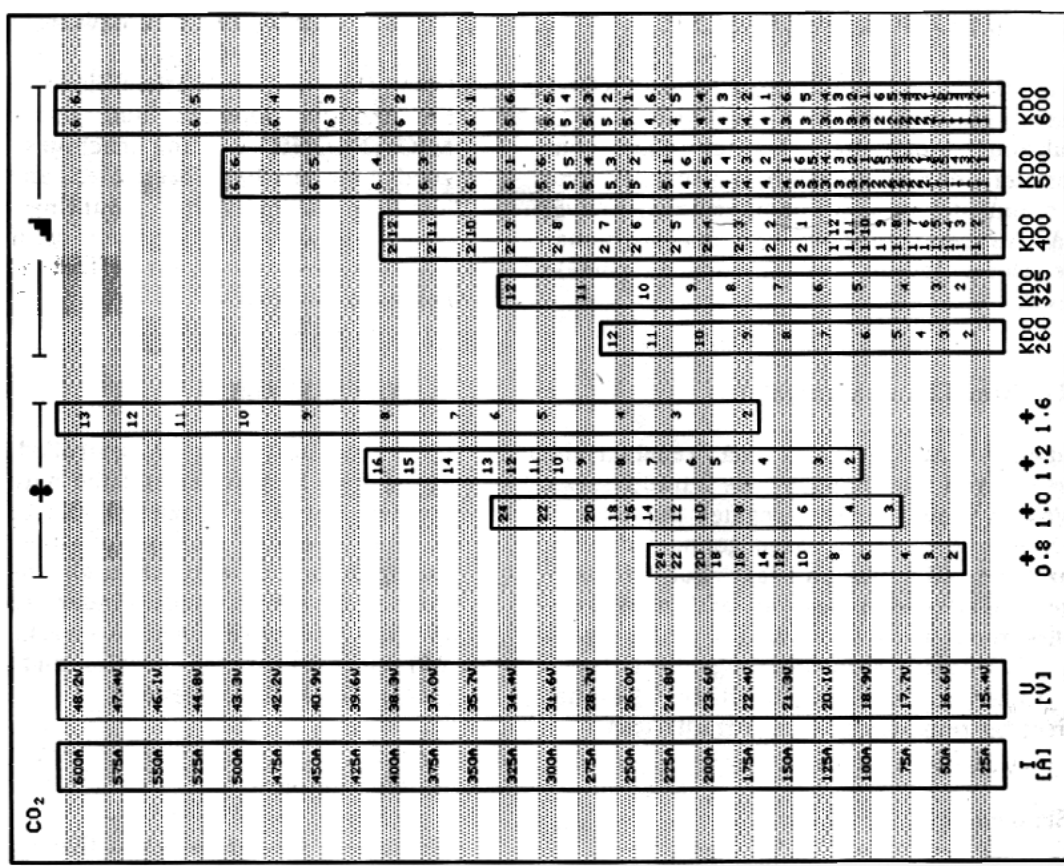
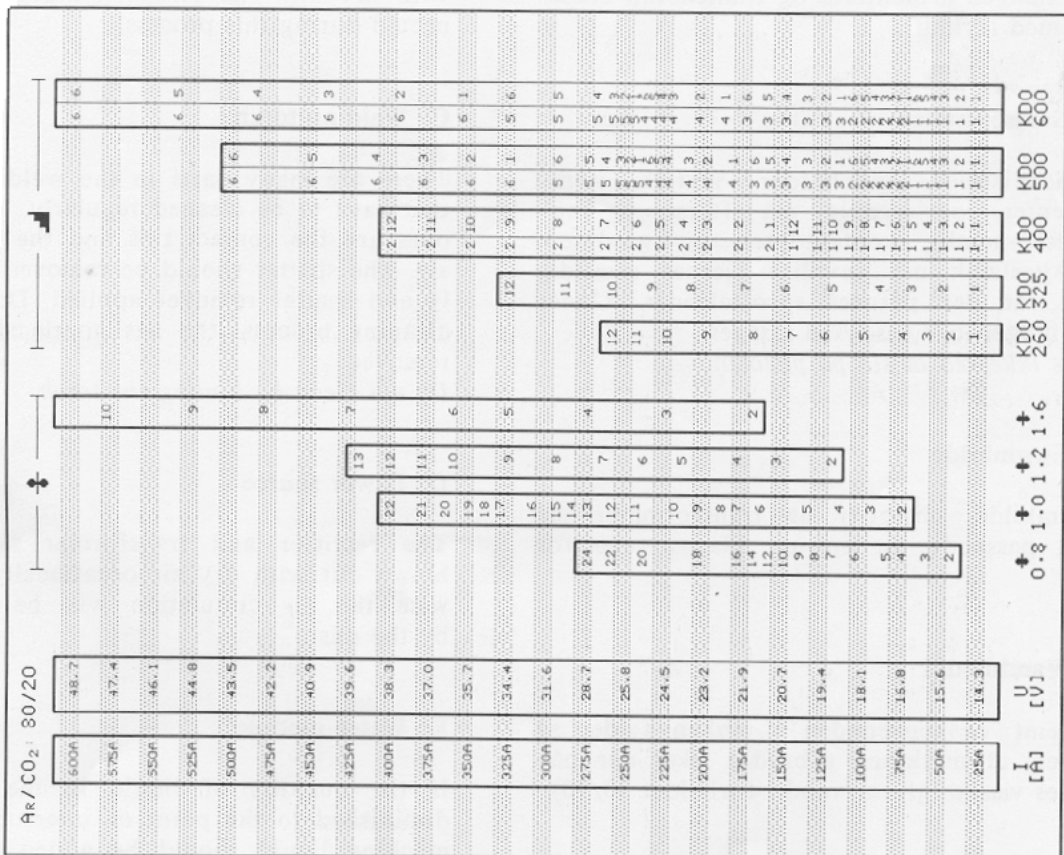


- |  |   |
|--|---|
| <p><b>1. ON</b><br/>Lyser når maskinen er tændt.</p> <p><b>2. Torch cooling error</b><br/>Lyser når svejsningen standses som følge af for dårlig gennemstrømning i svejsepistolens kølesystem. Når fejlen er rettet, kan svejsningen fortsættes.</p> <p><b>3. Overheating</b><br/>Lyser, hvis svejsningen automatisk afbrydes som følge af overophedning af maskinens transformator. Når temperaturen på transformatoren er normaliseret, kan svejsningen fortsættes.</p> <p><b>4. Soft start</b><br/>Forindstilling af krybestart, dvs. den hastighed tråden starter med, inden lysbuen etableres. Kan reguleres fra 0,5 til 5,0 m/min.</p> <p><b>5. Burn back</b><br/>Forindstilling af efterbrændingstid. Bestemmer tiden, fra trådfremføringen standses, til lysbuen slukkes. Kan reguleres fra 0,05 til 0,5 sek.</p> <p><b>6. Post-flow</b><br/>Gasefterstrømningstid, kan reguleres fra 2 til 20 sec.</p> <p><b>7. Trigger mode</b><br/>Med denne omskifter stilles funktionen af tasten i svejsehåndtaget, totakt  eller firtakt .  rangerknop for trådilægning.</p> | <p><b>1. ON</b><br/>Lights when the machine has been turned on.</p> <p><b>2. Torch cooling error</b><br/>Lights if welding stops as a result of bad water circulation in the torch cooling system. The error being corrected, the welding can continue.</p> <p><b>3. Overheating</b><br/>Lights if the welding is automatically switched off, due to overheating of the transformer. When the temperature is normal, the welding can continue.</p> <p><b>4. Soft start</b><br/>This allows the initial wire feed speed to be set between 0.5-5.0 m/min. and assists initial striking of the arc.</p> <p><b>5. Burn back</b><br/>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.</p> <p><b>6. Post-flow</b><br/>Post-weld gas flow. Variable 2-20 secs.</p> <p><b>7. Trigger mode</b><br/>With this switch, the switch on the torch handle is set for 2 cycle  or 4 cycle  operation,  feed button for fitting the welding wire.</p> |
|--|---|

BRÆNDERREGULERING  
TORCH CONTROL  
BRENNER REGELUNG  
COMMANDE TROCHE







## 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.

### A. 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.

### B. Slangen

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

### C. Svejsepistolen

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

*Rens ikke ved at slå på pistolen.*

### D. Strømkilde

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

### E. Vandmodul

Såfremt væskemængden i tanken falder så meget, at maskinen afbrydes, skal der påfyldes væske (glycol/vand i forholdet 30/70).

## MAINTENANCE

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

### A. Wire feed unit

Wire feed unit is to be controlled regularly at the wire feed roller and the wire nozzles. The wire nozzles should be changed if the copper plating of the wire is damaged on its way through the nozzles. Copper dust may totally hinder free passage through the wire liner. A weekly control and cleaning of the nozzles and the wire feed roller is recommended.

### B. 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.

### C. 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.*

### D. Power source

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

### E. Water module

If the quantity of liquid in the tank is diminished to the point of interrupting the machine liquid should be added (glycol/water, ratio 30/70).

## 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 snævset, 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 kkkset 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 beskyttelsesgasen.

**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.**

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

## TECHNISCHE DATEN

## DONNEES TECHNIQUES

|  |  |  |  |
|--|--|--|--|
| Netspænding  | Mains voltage  | Netzspannung   | Tension d'alimentation   |
| Sikring: 220-240V<br>Sikring: 380-415V                                       | Fuse: 220-380V<br>Fuse: 380-415V   | Sicherung: 220-380V<br>Sicherung: 380-415V   | Fusible: 220-380V<br>Fusible: 380-415V   |
| Effekt max.  | Consumption max.   | Anschlussleistung max.   | Consommation maximum   |
| Virkningsgrad  | Efficiency   | Wirkungsgrad   | Rendement  |
| Cos. phi.  | Cos. phi   | Cos. phi   | Cos. phi   |
| Tomgangsspænding min.<br>Tomgangsspænding max.                               | Open circuit voltage min.<br>Open circuit voltage min                              | Leerlaufspannung min.<br>Leerlaufspannung max.   | Tension à vide min.<br>Tension à vide min.   |
| Belastning 100%<br>Belastning 60%<br>Belastning 35%                          | 100% duty cycle<br>60% duty cycle<br>35% duty cycle                                | ED 100%<br>ED 60%<br>ED 35%  | Charge admissible 100% int.<br>Charge admissible 60% int.<br>Charge admissible 35% int.      |
| Strømråde min.<br>Strømråde max.   | Current range min.<br>Current range max.   | Schweisstrombereich min.<br>Schweisstrombereich max.   | Plage de courant min.<br>Plage de courant max.   |
| Induktansudtag   | Inductance positions   | Drosselanzapfungen   | Nombre de sortie de self   |
| Temperaturklasse<br>Beskyttelsesklasse<br>Norm                               | Insulation class<br>Protection class<br>Norm                                       | Temperaturklasse<br>Schutzklasse<br>Norm   | Classe d'isolation<br>Classe de protection<br>Normes   |
| Trådmotoreffekt<br>Trådrulledimension<br>Tråddimension<br>Trådhastighed      | Effect, wire feed unit<br>Wire reel capacity<br>Wire dimension<br>Wire speed       | Leistungsaufnahme<br>Drahtrolle<br>Drahtdurchmesser<br>Fördergeschwindigkeit                           | Consommation du moteur<br>Bobine utilisable<br>Diamètre de fil<br>Vitesse de défilement      |
| Mode switch<br>Pre flow<br>Soft start<br>Burn back<br>Post flow              | Mode switch<br>Pre-flow<br>Soft-start<br>Burn-back<br>Post-flow                    | Betriebs-Funktion<br>Gasvorströmung<br>Einschleichvorrichtung<br>Drahtrückbrandzeit<br>Gasnachströmung | Commande torche<br>Pré gaz<br>Vitesse du fil à l'amorçage<br>Anti collage<br>Post gaz        |
| Kølesystem *   | Cooling system *   | Kühlgerät *  | Systeme de refroidissement *   |
| Dim. lxbxh Compact<br>Dim. lxbxh SWF<br>Total vægt Compact<br>Total vægt SWF | Dim. lwxh Compact<br>Dim. lwxh Compact<br>Total weight Compact<br>Total weight SWF | Masse LxBxH Compact<br>Masse LxBxH SWF<br>Gesamtgewicht Compact<br>Gesamtgewicht SWF                   | Dim. lxbxh Compact<br>Dim. lxbxh<br>Poids total du poste Compact<br>Poids total du poste SWF |






## KDO 260

## KDO 325

## KDO 400

## KDO 500

## KDO 600

|  |  |  |  |  |
|--|--|--|--|--|
| 3x220-240V<br>3x380-415 V  | 3x220-240V<br>3x380-415 V  | 3x220-240V<br>3x380-415 V  | 3x220-240V<br>3x380-415 V  | 3x220-240V<br>3x380-415 V  |
| 25 A<br>16 A   | 25 A<br>16 A   | 40 A<br>25 A   | 50 A<br>35 A   | 63 A<br>35 A   |
| 9,3 KVA  | 13,1 KVA   | 21,7 KVA   | 26,3 KVA   | 33,8 KVA   |
| 0,76   | 0,77   | 0,71   | 0,88   | 0,87   |
| 0,95   | 0,93   | 0,87   | 0,92   | 0,85   |
| 16,6-18,2 V<br>39,2-42,9 V   | 17,6-19,2 V<br>41,6-45,4 V   | 17,4-19,0 V<br>48,5-53,0 V   | 17,6/19,0 V<br>54,0/59,0 V   | 17,6/19,0 V<br>59,0/64,4 V   |
| 170 A<br>205 A<br>260 A  | 205 A<br>255 A<br>325 A  | 235 A<br>300 A<br>400 A  | 300 A<br>382 A<br>500 A  | 360 A<br>458 A<br>600 A  |
| 40 A/16 V<br>260 A/25 V  | 40 A/16 V<br>325 A/29 V  | 40A/16 V<br>400 A/34 V   | 40 A/16 V<br>500 A/39 V  | 40 A/16 V<br>600 A/44 V  |
| 2  | 2  | 2  | 4  | 4  |
| H<br>IP 21 AF<br>VDE 0542<br>ISO R700<br>SEN 8301  | H<br>IP 21 AF<br>VDE 0542<br>ISO R700<br>SEN 8301  | H<br>IP 21 AF<br>VDE 0542<br>ISO R700<br>SEN 8301  | H<br>IP 21 AF<br>VDE 0542<br>ISO R700<br>SEN 8301  | H<br>IP 21 AF<br>VDE 0542<br>ISO R700<br>SEN 8301  |
| 105/210 W<br>5-30 Kg<br>0,8-3,2<br>1,7-24 m/min  | 105/210 W<br>5-30 Kg<br>0,8-3,2<br>1,7-24 m/min  | 105/210 W<br>5-30 Kg<br>0,8-3,2<br>1,7-24 m/min  | 105/210 W<br>5-15 Kg<br>0,8-3,2<br>1,7-24 m/min  | 105/210 W<br>5-15 Kg<br>0,8-3,2<br>1,7-24 m/min  |
| 2T/4T/ <br>0,2 S<br>1,7-5 m/min<br>0,05-1 S<br>0-20 S | 2T/4T/ <br>0,2 S<br>1,7-5 m/min<br>0,05-1 S<br>0-20 S | 2T/4T/ <br>0,2 S<br>1,7-5 m/min<br>0,05-1 S<br>0-20 S | 2T/4T/ <br>0,2 S<br>1,7-5 m/min<br>0,05-1 S<br>0-20 S | 2T/4T/ <br>0,2 S<br>1,7-5 m/min<br>0,05-1 S<br>0-20 S |
| 3L *   | 3L *   | 3L *   | 7L *   | 7L *   |
| 94x47x81 cm<br>94x47x130 cm<br>112 Kg<br>127 Kg  | 94x47x81 cm<br>94x47x130 cm<br>124 Kg<br>139 Kg  | 94x47x81 cm<br>94x47x130 cm<br>152 Kg<br>167 Kg  | -<br>94x51x130 cm<br>-<br>205 Kg   | -<br>94x51x130 cm<br>-<br>210 Kg   |

\*) OPTIONAL

