

AUTOMIG

Brugsanvisning
Instruction manual
Betriebsanleitung
Manuel d'instruction
Bruksanvisning
Gebruikershandleiding
Manuale d'istruzione
Käyttöohje



MiCATRONiC

Valid from 0312

50111805 G



WARNING



Arc welding and cutting can be dangerous to the user, people working nearby, and the surroundings if the equipment is handled or used incorrectly. Therefore, the equipment must only be used under the strict observance of all relevant safety instructions. In particular, your attention is drawn to the following:

Electricity

- The welding equipment must be installed according to safety regulations and by a properly trained and qualified person.
- Avoid all contact with live components in the welding circuit and with electrodes and wires if you have bare hands. Always use dry welding gloves without holes.
- Make sure that you are properly and safely earthed (e.g. use shoes with rubber sole).
- Use a safe and stable working position (e.g. avoid any risk of accidents by falling).
- Make sure that the welding equipment is correctly maintained. In the case of damaged cables or insulation work must be stopped immediately in order to carry out repairs.
- Repairs and maintenance of the equipment must be carried out by a properly trained and qualified person.

Light and heat emissions

- Protect the eyes as even a short-term exposure can cause lasting damage to the eyes. Use a welding helmet with suitable radiation protection glass.
- Protect the body against the light from the arc as the skin can be damaged by welding radiation. Use protective clothes, covering all parts of the body.
- The place of work should be screened, if possible, and other persons in the area warned against the light from the arc.

Welding smoke and gases

- The breathing in of the smoke and gases emitted during welding is damaging to health. Make sure that any exhaust systems are working properly and that there is sufficient ventilation.

Fire hazard

- Radiation and sparks from the arc represent a fire hazard. As a consequence, combustible materials must be removed from the place of welding.
- Working clothing should also be secure against sparks from the arc (e.g. use a fire-resistant material and watch out for folds and open pockets).

Noise

- The arc generates surface noise according to welding task. In some cases, use of hearing aids is necessary.

Use of the machine for other purposes than it is designed for (e.g. to unfreeze water pipes) is strongly deprecated. If occasion should arise this will be carried out without responsibility on our part.

**Read this instruction manual carefully
before the equipment is installed and in operation**

Electromagnetic emissions and the radiation of electromagnetic disturbances

This welding equipment for industrial and professional use is in conformity with the European Standard EN50199. The purpose of this standard is to prevent the occurrence of situations where the equipment is disturbed or is itself the source of disturbance in other electrical equipment or appliances. The arc radiates disturbances, and therefore, a trouble-free performance without disturbances or disruption, requires that certain measures are taken when installing and using the welding equipment. **The user must ensure that the operation of the machine does not occasion disturbances of the above mentioned nature.**

The following shall be taken into account in the surrounding area:

1. Supply and signalling cables in the welding area which are connected to other electrical equipment.
2. Radio or television transmitters and receivers.
3. Computers and any electrical control equipment.
4. Critical safety equipment e.g. electrically or electronically controlled guards or protective systems.
5. Users of pacemakers and hearing aids etc.
6. Equipment used for calibration and measurement.
7. The time of day that welding and other activities are to be carried out.

8. The structure and use of buildings.

If the welding equipment is used in a domestic establishment it may be necessary to take special and additional precautions in order to prevent problems of emission (e.g. information of temporary welding work).

Methods of reducing electromagnetic emissions:

1. Avoid using equipment which is able to be disturbed.
2. Use short welding cables.
3. Place the positive and the negative cables close together.
4. Place the welding cables at or close to floor level.
5. Remove signalling cables in the welding area from the supply cables.
6. Protect signalling cables in the welding area, e.g. with selective screening.
7. Use separately-insulated mains supply cables for sensitive electronic equipment.
8. Screening of the entire welding installation may be considered under special circumstances and for special applications.

INITIAL OPERATING

Mains connection

It is important to ensure that the mains supply voltage is in accordance with the voltage to which the machine is built. 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.

Connection of gas bottle

Use only gas bottles with a max. height of 100 cm. If larger bottles are used the machine may tip over.

Configuration

MIGATRONIC disclaims all responsibility for damaged cables and other damages related to welding with under sized welding torch and welding cables measured by welding specifications e.g. in relation to permissible load.

TECHNICAL DATA								We reserve the right to changes
Type	Automig 181	Automig 183	Automig 221	Automig 223	Automig 231	Automig 271	Automig 273	Units
Current range	30-160	20-180	20-180	20-200	20-200	20-250	20-250	A
Voltage adjustment	4	7	7	10	11	9	10	
Duty cycle, 100%	40	65	60	105	85	110	140	A
Duty cycle, 60%	50	85	75	125	105	150	165	A
Duty cycle, 35%	60	110	90	150	145	190	200	A
Duty cycle, 30%				155				A
Duty cycle, 20%						230		A
Duty cycle, 14%			150					A
Duty cycle, 15%					200			A
Duty cycle, 6%	160							A
Open circuit voltage	19-33	14-30	14-41	14-30	17-47	14-54	15-34	V
¹ Mains voltage	230	400	230	400	230	230	400	V
Fuse	10	10	16	10	16	35	10	A
Mains current, effective	4.3	2.5	11.5	4.0	14.7	21.2	5.9	A
Mains current, max.	17.4	5.7	30.8	7.3	38	47.5	10.0	A
Consumption, 100%	0.7	1.3	1.7	2.3	2.3	2.8	3.4	kW
Consumption, open circuit	<10	<10	<10	<10	<10	<10	<10	W
Efficiency	0.85	0.84	0.85	0.85	0.85	0.80	0.82-0.84	
Wire dimension	0.6-0.8	0.6-1.0	0.6-1.2	0.6-1.2	0.6-1.2	0.6-1.2	0.6-1.2	mm
Wire reel capacity	5-15	5-15	5-15	5-15	5-15	5-15	5-15	kg
Wire speed	2-12	2-12	2-12	2-14	2-12	2-15	2-15	m/min
² Spot welding time		0.15-2.5	0.15-2.5	0.15-2.5	0.15-2.5	0.15-2.5	0.15-2.5	sec.
² Stitch welding time		0.15-2.5	0.15-2.5	0.15-2.5	0.15-2.5	0.15-2.5	0.15-2.5	sec.
Burn-back	0.05-0.5	0.05-0.5	0.05-0.5	0.05-0.5	0.05-0.5	0.05-0.5	0.05-0.5	sec.
³ Application class	S	S	S	S	S	S	S	
⁴ Protection class	IP21	IP21	IP21	IP21	IP21	IP21	IP21	
Standards	EN/IEC60974-1 EN50199	EN/IEC60974-1 EN50199	EN/IEC60974-1 EN50199	EN/IEC60974-1 EN50199	EN/IEC60974-1 EN50199	EN/IEC60974-1 EN50199	EN/IEC60974-1 EN50199	
Dimensions, lxxwxxh	72x38x70	72x38x70	72x38x70	72x38x70	72x38x70	90x44x71	72x38x70	cm
Weight	52	57	54	64	54	71	66	kg

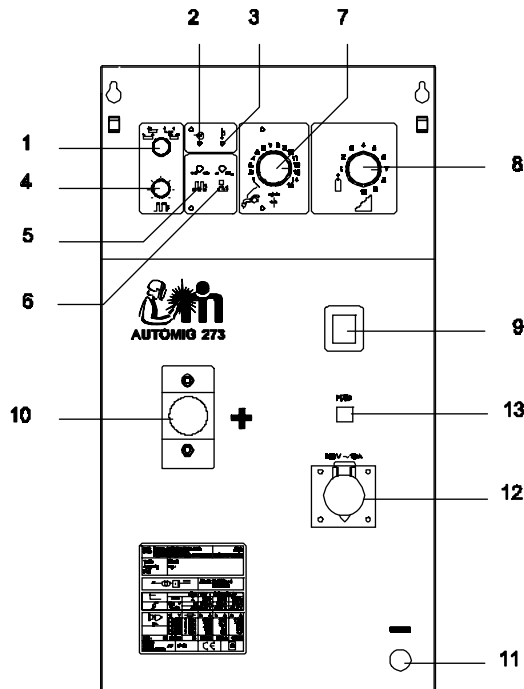
¹ Delivery for other mains voltages is possible

² The functions 4-times, spot and stitch welding can only be found on some machine versions

³ Meets the demands made for machines which are to operate under special working conditions

⁴ This machine is designed for indoor operation and meets the requirements of protection class IP21.

CONTROL SWITCHES



1. Switch:

2-times  symbol

Start welding by pressing the trigger on the torch. Welding continues until the trigger is released.

Spot  symbol

The switch is set at Spot. When the trigger on the torch is pressed, welding starts. Welding stops automatically, depending on the time set on control 4 (0.15-2.5 secs.)

Stitch  symbol

The switch is set at Stitch. When the trigger is pressed, welding starts. The welding automatically stops, depending on the time set on control 4. After an interval fixed at control 5 the same cycle continues automatically and only ceases when the trigger on the torch is released.

4-times  symbol

Welding starts the first time the trigger is pressed (after which the trigger can be released) and continues until the trigger is pressed again to stop the welding process.

2. ON

Lights when the machine has been turned on.

3. Overheating

Lights if the welding process is automatically stopped due to overheating of the transformer. The light extinguishes when the transformer temperature has dropped to normal, and welding can continue.

4. Welding time

With this control the welding time can be infinitely varied between 0.15 and 2.5 secs when switch 1 is set to position Spot or Stitch.

5. Pause time

With this control the pause time can be infinitely varied when switch 1 is in position Stitch.

6. Burn-Back

Variable time delay for wire to stop feeding after voltage is switched off. This function is used to prevent the wire sticking to the work-piece or torch.

Variable between 0.05 and 0.5 secs.

7. Wire feed speed control

Infinitely variable (0.5 - 14 m/min).

8. Switch for welding voltage

For machines with "Gas-test".

When set at "Gas-test", the gas flows when the torch trigger is pressed.

9. Main switch

10. Connection of welding hose

11. Earth cable

12. Plug

Mains voltage tap 230 V AC intended for electric hand tools.

13. Automatic fuse 10 A

For plug (pos. 12). The plug can be reclosed by pushing the button.

NB!

Pos. 12-13 is special equipment for model 183-223-273 in 400 V standard version.

MAINTENANCE

Insufficient maintenance may result in reduced operational reliability and in lapse of guarantee.

Wire feed unit

This unit must be kept clean with dry, clean, compressed air and maintained regularly in the areas of the wire drive rolls and capillary tubes, as it is essential for consistent wire feed, satisfactory welding results, and a minimum of wear and tear, that the wire passes through the wire drive system without any deformation of the wire or the wire drive rolls.

The contact tips must be checked often and changed if the copper plating of the wire is damaged on its way through the tips.

Copper dust may prevent free passage of wire through the torch liner. Check and cleaning of the capillary tubes and the wire drive rolls is recommended when necessary.

Welding hose

Great care should be taken to ensure that the welding hose is not overloaded. It should not be pulled over sharp edges, and heavy machines should not run over it as this may damage the torch liner.

The torch hose assembly should be dismantled when necessary and blown out with clean, dry compressed air. The torch must be disconnected from the machine 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 shroud.

During the welding process, these parts are bombarded with spatter that sticks to the shroud. This may disturb the shielding gas flowing from the gas shroud down to the molten pool, and must be removed regularly. The use of MIGATRONIC MIG SPRAY loosens spatter.

During the cleaning process, the gas shroud should be removed. Do not clean by banging or hitting the torch.

Power source

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

Important!

Make sure that the machine is disconnected from the mains supply when the power source needs to be opened for e.g. replacement of control unit.

TROUBLE SHOOTING

Too little welding effect.

The welding seam forms a bead standing proud of the plate.

1. One of the three fuses in the main switch is not working. (This applies to three-phase machines only).
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 - too little 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 feeds at slow speed.

1. The damaged wire should be cut off, pulled out and replaced. The pressure on the wire feed roller should be checked and adjusted if necessary.
2. Worn out contact tip.
3. Wire feed speed may need increasing.

GARANTIBESTEMMELSER

MIGATRONIC yder 12 måneders garanti mod skjulte mangler ved produktet. En sådan mangel skal meddeles senest to måneder, efter at den er konstateret. Garantien gælder i 12 måneder fra det tidspunkt, hvor produktet er fakteret til slutkunde.

Garantien dækker materiale- og fabriktionsfejl, som ikke umiddelbart kan erkendes.

Bortfald af garanti:

Uhensigtsmæssige produktionsegenskaber

Garantien omfatter ikke åbenbare egenskaber ved produktet, som efterfølgende findes uhensigtsmæssigt.

Forkert installation

Garantien dækker ikke fejl som skyldes forkert installation af produktet, eksempelvis tilslutning til forkert netspænding.

Forkert eller unormal anvendelse

Garantien dækker ikke ved anvendelse af produktet til andre formål, end hvad det er beregnet til. **Hvis produktet anvendes i mere end otte timer dagligt, vil fejl, der kan føres tilbage til denne intensive driftsbetingelse, ikke være dækket af garantien.**

Mangelfuld vedligeholdelse

Garantien bortfalder, hvis produktet ikke er vedligeholdt forskriftsmæssigt. Eksempelvis hvis produktet er tilmudset i en grad, hvor maskinens køling hindres. Garantien dækker ikke skader, der kan føres tilbage til en uautoriseret og mangelfuld reparation af produktet.

Overbelastning/ekstrem belastning

Garantien dækker ikke overbelastning eller ekstrem belastning. Det gælder også transport-skader, skader der opstår som følge af forkert håndtering, fald m.m. Garantien dækker ikke unormale forhold med hensyn til temperatur, fugt eller miljøbelastninger, udover hvad produktet er beregnet til.

Skadedyrsangreb

Garantien dækker ikke defekter som skyldes angreb af skadedyr.

Sliddele

Dele af produktet, som udsættes for slitage, dækkes ikke af garantien. Disse dele er eksempelvis, trådfremføringens trisser. Garantien dækker ikke forringelse som følge af normalt brug, herunder skrammer, rustangreb og mekanisk beskadigelse. Svejsekabler og svejse-slanget samt dele heraf betragtes som sliddele og er derfor ikke omfattet af garantien.

Følgeskader

Anvendelse af produktet skal straks ophøre, efter at der erkendes en fejl på produktet, således at produktet ikke bliver ikke yderligere beskadiget. Følgeskader på produktet, som skyldes, at produktet anvendes, efter at der er erkendt fejl ved produktet, dækkes ikke. Garantien omfatter ikke følgeskader på andre genstande som følge af fejl ved produktet.

WARRANTY

All MIGATRONIC machines carry a twelve-month guarantee against hidden defects. Such defects must be notified no later than two months after it has been noticed. The warranty runs for twelve months after invoicing to end customer.

The warranty covers material and manufacturing faults that cannot be immediately acknowledged.

Lapse of warranty

The warranty covers no obvious product characteristics, which in time are thought as being inconvenient.

Incorrect installation

The warranty does not cover defects due to incorrect installation of the product, e.g. connection to the wrong mains voltage.

Incorrect or abnormal use of the product

The warranty does not cover use of the product for other purposes than it has been designed for. **If the product is used for more than 8 hours daily, the warranty does not cover defects due to these intensive working conditions.**

Lack of maintenance

There is a lapse of warranty if the product is not properly maintained. E.g. if the product is dirty to such a degree that cooling is hindered. The warranty does not cover damages, which can be traced back to unauthorised and lacking repairs of the product.

Over loading/extreme loading

The warranty does not cover over loading or extreme loading. Nor transport damages, damages due to incorrect handling, drops etc. The warranty does not cover abnormal conditions as regards temperature, moisture or environmental loading above the limit, which the machine has been designed for.

Defects due to infestants

The warranty does not cover defects due to infestants.

Wear parts

The warranty does not cover parts of the product, which is exposed to wear and tear, e.g. the wire drive rolls. The warranty does not cover depreciation due to normal use, e.g. scratches, rust and mechanical damage. Welding cables and welding hoses are regarded as wear parts and therefore not included in the warranty.

Resulting damages

Use of the product must stop immediately after acknowledge of a defect in order to avoid further damage of the product. The warranty does not cover resulting damages due to use of the product after acknowledge of a defect. Moreover, the warranty does not cover resulting damages on other items due to product defect.

GARANTIEBEDINGUNGEN

MIGATRONIC leistet eine 12-monatige Garantie gegen versteckte Fehler im Produkt. Ein solcher Fehler muß spätestens 2 Monate nach Erkenntnis des Fehlers mitgeteilt werden. Die MIGATRONIC Produkte haben ein Jahr Garantie nach dem Zeitpunkt, wo das Produkt für den Endkunden fakturiert ist.

In der Garantie sind Material- und Fabrikationsfehler eingeschlossen.

Wegfall der Garantie:

Unschlagmäßige Eigenschaften des Erzeugnisses

Offensichtliche Eigenschaften im Produkt, die nachfolgend für unzuverlässig gehalten werden, sind in der Garantie nicht eingeschlossen.

Falsche Installation

Fehler, die falscher Installation des Produkts zuzuschreiben sind z.B. Anschluß an falsche Netzspannung, sind in die Garantie nicht eingeschlossen.

Unkorrekte oder unnormale Anwendung

Anwendung des Produkts für andere Zwecke als vorgesehen ist in die Garantie nicht eingeschlossen. **Wenn das Produkt täglich mehr als 8 Stunden angewendet wird, sind Fehler, die auf diesen intensiven Betrieb zurückgeführt werden kann, in die Garantie nicht eingeschlossen.**

Fehlende Wartung

Die Garantie fällt weg, wenn das Produkt nicht vorschriftsmäßig gewartet ist. Z.B. wenn das Produkt so verschmutzt ist, daß die Kühlung der Maschine verhindert ist. Schäden, die auf eine unautorisierte und fehlerhafte Reparatur des Produkts zurückgeführt werden können, sind in die Garantie nicht eingeschlossen.

Überforderung/Extremforderung

Überforderung/Extremforderung ist in die Garantie nicht eingeschlossen. Das gilt auch Transportschäden, Schäden infolge verkehrtes Handhabung, Fälle u.s.w. Unnormale Umstände bezüglich Temperatur, Feuchtigkeit oder Umweltbelastungen über die Grenzen des Produkts sind in die Garantie nicht eingeschlossen.

Schädlingsbefälle

Defekte infolge von Schädlingsbefällen sind in die Garantie nicht eingeschlossen.

Verschleißteile

Teile des Produkts, die Verschleiß ausgesetzt sind, sind in die Garantie nicht eingeschlossen. Diese Teile sind z.B. Drahtvorschubrollen. Ver-ringerung infolge normalen Betriebs, hierunter Schrammen, Rostbefälle und mechanische Beschädigung ist in die Garantie nicht eingeschlossen. Schweißkabel, Schweißschläuche und Teile davon werden als Verschleißteile betrachtet und sind deshalb in die Garantie nicht eingeschlossen.

Folgeschäden

Anwendung des Produkt soll sofort nach Feststellung eines Fehlers aufhören, damit das Produkt nicht weiter beschädigt wird. Nach Erkenntnis des Fehlers sind Folgeschäden auf das Produkt in die Garantie nicht eingeschlossen. Folgeschäden an anderen Gegenständen infolge Fehler im Produkt sind in die Garantie nicht eingeschlossen.