INSTRUCTION

TYPE: AUTOMIG T

migatronic

50170008

VALID FROM SERIAL NO. 8712XXXX

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INTRODUCTION

"Reputation implies obligation". That goes for **MIGATRONIC** and it also goes for your own products.

It is **MIGATRONIC**'s longstanding experience in welding machine design and production that is at the heart of your welding set and which, together with proper technical operation and maintenance on your part, will guarantee flawness performance in future.
Thank you for your confidence in us.

MIGATRONIC A/S
Peter Roed.

GENERAL DESCRIPTION

The Migatronic **Automig T** is a thyristor-controlled MIG/MAG welding machine which has been specially developed for the car trade and the thin-plate industry.

New features:

We should like to highlight the following features, which make the **Automig T** welding machine a considerable improvement over any previous machines.

Good strike: Before striking an arc, the thyristors are set in such a way that the initial voltage is higher than normal - as a result of which the arc strikes more easily when the wire touches the workpiece.

Before the arc is struck, the wire travels at a crawl, and only at the instant when the arc is struck does the wire travel at its correct speed.

With a slow start and high voltage, the arc is established without hefty short-circuiting and the welding spatter and bristling wire-ends which that entails.

New wire feed: A steady, even wire-feed rate is essential for quality welding. Migatronic has therefore developed an entirely new wire feed unit. The motor console is cast in fibreglass-reinforced Noryl, a plastic material with great dimensional stability, high rigidity and good electrical properties. The designers of Migatronic have dimensioned the motor console to enable it to withstand even major overloading. The motor console is supplied as standard with roller-borne pressure roller and a wire-feed reel with pay-out tracks providing optimum transfer power to the wire.

Optional extras include two wirefeed rolls with toothed wheel transmission of tensile force to the upper reel - this is an advantage with aluminium welding, in particular.

Operating comfort: In the **Automig T**, the settings for wire speed and welding voltage are coupled together in such a way that only ONE control need be operated, this control being positioned in the only proper place, one which is right to hand - in the welding torch.

Since the **Automig T** is thyristor-controlled, continuous adjustment is possible from minimum to maximum welding output. Being thyristor-controlled, the setting of the machine remains unaffected by fluctuations in mains voltage and temperature conditions in the machine - that means no readjustments.

Secondary functions such as burn back adjustment and wire inching control are located behind the side cover of the machine near the wire reel, since these controls are only needed when changing wire - i.e. no superfluous, puzzling knobs on the front panel of the machine.

The top panel of the **Automig T** is designed in the form of a tray with room for tools, etc.

Minimum spatter: The **Automig T**'s power source and regulating system are designed to produce a minimum of welding spatter. That cuts out any unnecessary grinding work and means the welding torch needs less frequent cleaning.

Power Take-Off (PTO) for electrical tools: The **Automig T** can be supplied with a 240V plug and 10A automatic fuse built into the front of the welding machine. Ideal for right-angle grinders and electric drills - no more loose 240V extension cords.

Modular structure: The **Automig T** is designed in modules. That makes it easy to re-design the welding machine to meet other requirements as well as providing scope for easy and quick servicing.

The top electronic box is available in three versions which can be exchanged in 5 minutes and which offers a choice of welding functions.

The bottom box is available in two versions, one of which offers a power take off facility.

Wire feed can be changed form standard version to double feed roll system in no time at all and at little expense. A great advantage if you're welding in aluminium.

The welding hose can be fitted with several different types of internal liners. Substitution is very easy and requires the use of no special tools. The hose must not be disconnected from the machine when changing the internal liner.

Machine description:

The principal components of the machine are the welding transformer, rectifier, choke coil, wire feed unit, gas solenoid valve and electronic control box.

The welding transformer is dimensioned so as to achieve optimal welding properties. The transformer is manufactured from materials able to withstand a working temperature of up to 180°C.

By way of a further safeguard against overloading, there is a built-in thermal fuse which cuts out the machine at 120°C. The thermal fuse is automatically reconnected once the transformer has cooled down.

The rectifier is constructed from a fan, thyristors, diodes and a capacitor battery. When welding, or when the machine is hotter than 70°C, the fan cools the rectifier and the transformer.

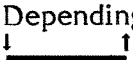
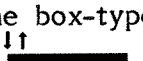
The rectifier is electronically protected against overloading in the event of any short-circuit between welding positive and negative, with the machine cutting out approx. 1 second after the onset of short-circuiting.

Functional description:

The transformer converts the high mains voltage into a low alternating voltage, which is rectified and equalized into DC voltage in the rectifier module. A choke coil reduces the peaks in the welding current and thus eliminates the cause of welding

spatter. When the switch on the torch is depressed, the thyristors come on. The rectifier emits a DC voltage - which is determined by the remote control in the welding trigger and the gas/wire matching switch (pos. 5) on the box. Simultaneously, shielding gas is turned on and the wire-feed motor started up at a speed also determined by remote regulation from the torch.

When the trigger is released, the motor decelerates and after a short time-lag, the gas flow and welding voltage are interrupted. This time delay is called burn back (pos. 10) and causes the welding wire to burn a little way back from the molten pool, thus preventing it from sticking to the workpiece.

Depending on the box-type selected, the following functions are available: **"seam"**  , **"spot"**  , **"stitch"**  , **"latching"** (4-cycle)  .

With "seam", welding starts when the switch on the welding trigger is actuated and stops when the switch is released. For use in short-duration welding and tacking.

With "spot", welding starts when the switch is actuated and is subsequently controlled by the "welding-time" timer (pos. 6) for a time between 0.2 and 2.5 secs. It makes no difference when the switch is released. This function ensures uniform spot welds, providing the correct setting has been found.

With "stitch", the wirefeed motor starts and stops at intervals which are set on the two timers "welding time" (pos. 6) and "pause time" (pos. 7). When welding is interspersed with "pauses" in this way, the average amount of added heat is reduced, which prevents any melting through on difficult welding jobs.

With "latching", welding starts when the switch is actuated; the switch can then be released and welding continues. By re-actuating the switch, welding stops when the switch is released. For use on long seams.

INITIAL OPERATION

Mains connection:

Check that the machine voltage on the type-plate conforms with the mains voltage on the site. If the machine is dual voltage or more, be sure to check that the machine is correctly set.

The mono machine is designed for connection to single-phase 220-240 V (Ph. + Zero + Earth)/25 amps.

The three-phase machine is designed for 240-415 V (3 Ph. + Zero + Earth)/10A-16A.

Where machines are fitted with the PTO socket for electrical tools, it is important to ensure the zero conductor is wired up properly. If the zero conductor is **not** connected, the PTO will not work.

THREE-PHASE		MONO	
yellow/green	earth	yellow/green	earth
blue	zero	blue	zero
brown	phase	brown	phase
black	phase		
black	phase		

Conductor colours on mains cable

Fitting torch hose assembly:

Mount the inlet nozzle (pos. 22). Pull the wire liner approx. 25 cm out of the hose at the connecting end and then guide it through the rosette of the machine (pos. 16) and into the motor console through the inlet nozzle (pos. 22). Push the wire liner right in up to the wire-feed roller and fasten with the retaining clip (pos. 23).

Run the hose connection carefully into the rosette of the machine (pos. 16), and check that the three contact pins on the hose connection are correctly orientated in relation to the motor console.

Align the hose connector with the socket of the rosette (pos. 16) and push the connector fully home. Tighten the allen screw. (pos. 21)

Before replacing and shortening the internal liner, see the section on maintenance.

Connecting shielding gas:

Mount the cylinder containing the shielding gas onto the machine and attach with the

chains. Fit the reducing valve onto the cylinder. If the valve is equipped with a flowmeter, set the gas volume to 5 - 15 litres per minute.
The gas is automatically connected to the hose when this is mounted in the wire-feed device.

Insertion of welding wire:
First remove the contact tip from the torch then insert the reel of wire into the machine, straighten out the first 10 - 15 cm of wire and file the tip so as to remove all burrs. Guide the wire through the feed roll system and a short way into the internal liner, tilt the pressure lever (pos. 26) down and push the tensioning bolt (pos. 27) into position. Straighten the hose out and press the wire inching switch (pos. 11) to actuate the wire-feed motor at half speed.
When the wire is right through, stop the wire-feed motor and fit the contact nozzle. Tighten the tensioning bolt (pos. 27) so that the wire-feed roller just slides on the wire when braked at the contact nozzle.
When welding with aluminium wire, teflon liners must be used in order to prevent damage to the aluminium wire.
The hub of the welding wire reel has an inbuilt friction brake (pos. 28), designed to ensure that the reel of wire does not continue paying out when the wire-feed motor decelerates. Tensioning the nut inwards causes the brake to tighten. A large, heavy reel of wire at max. speed requires great braking force - however, the brake must never be tightened more than necessary.


AUTOMIG 200T
MIGATRONIC
16. Rosette
17. Hose protection
12. Grommet
15. Switch
13. PTO for electric tool
14. Automatic fuse
18. Swan neck

FIG. 1

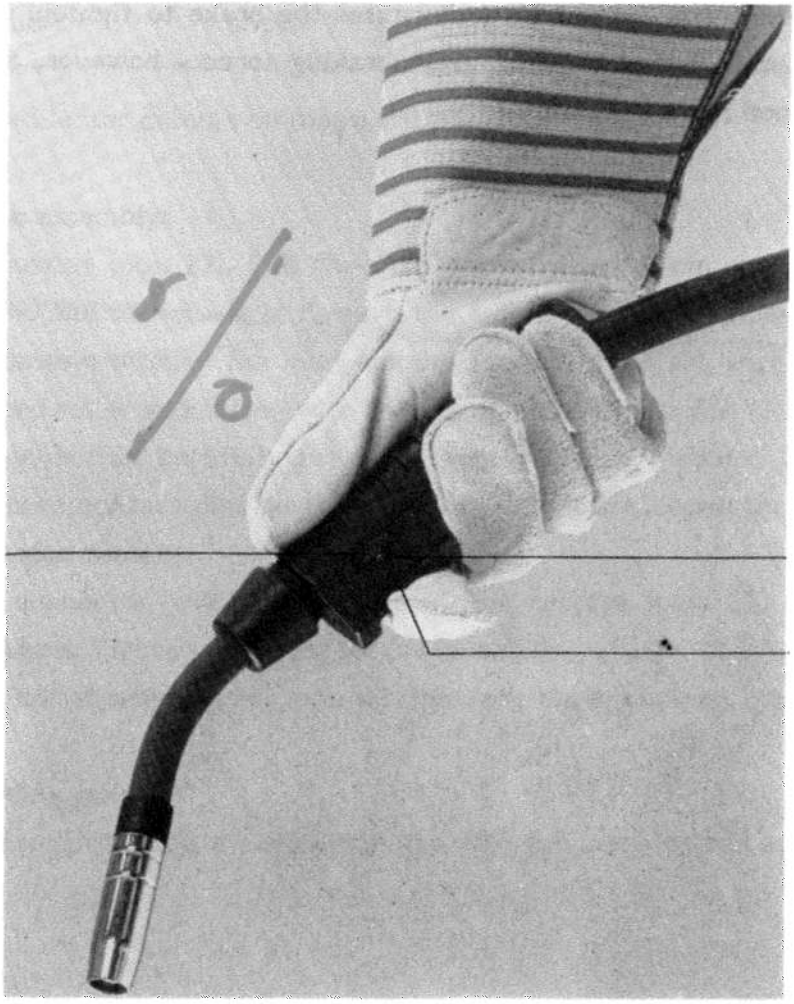

31. Remote control
32. LED
30. Switch

FIG. 2

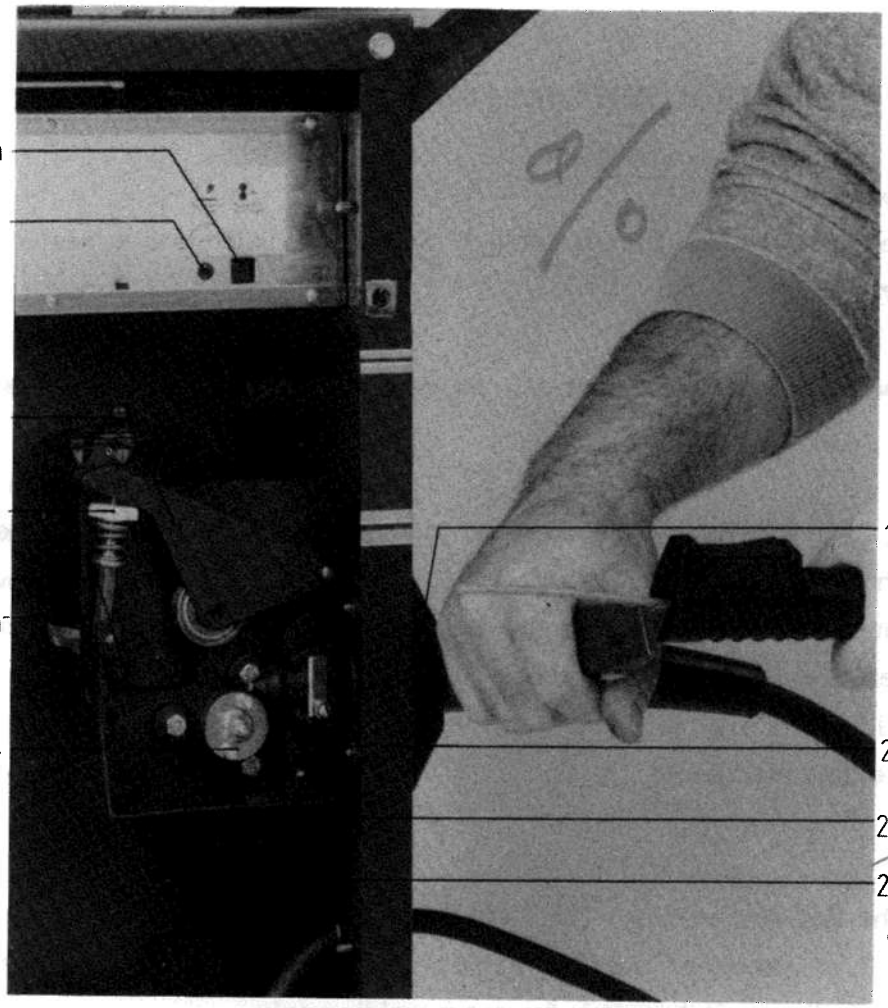

11. Wire inching switch
10. Burn back time
26. Pressure lever
27. Tensioning bolt
24. Inlet nozzle
25. Retaining clip
29. Wire feed roller
16. Rosette
21. Allen screw
23. Retaining clip
22. Inlet nozzle

FIG. 3

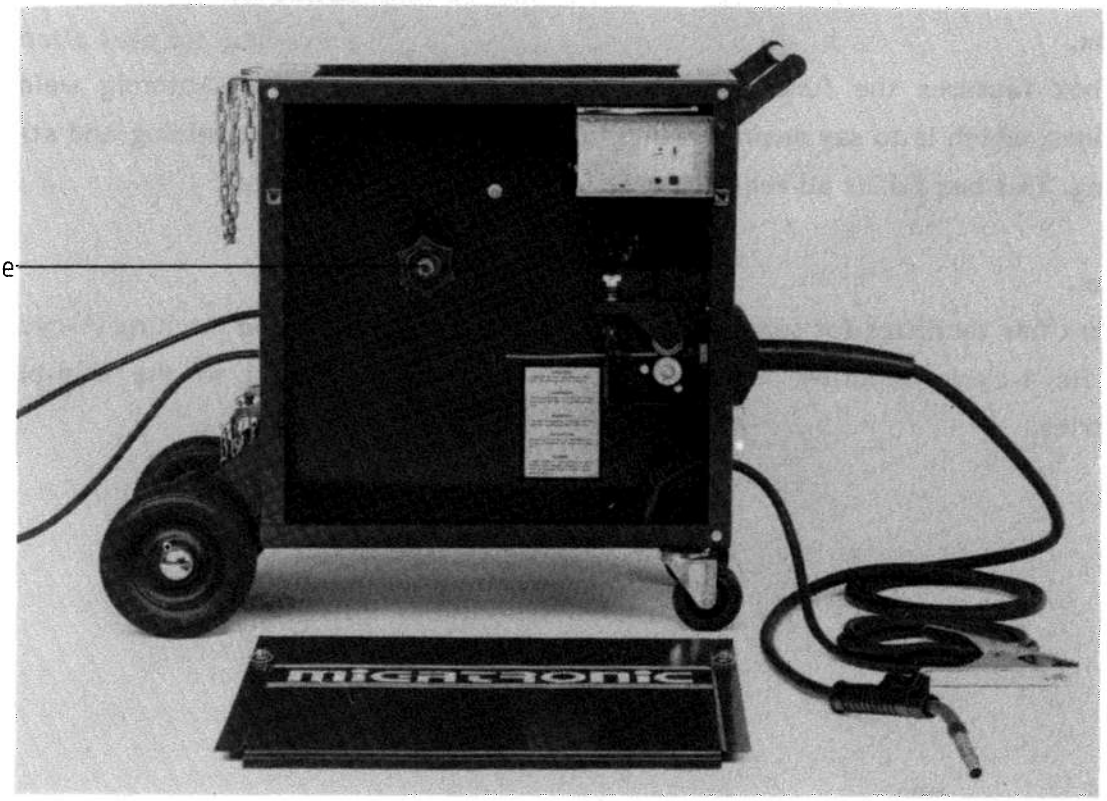

3. Friction brake
migtronic

FIG. 4

CONTROL SWITCHES / INSTRUCTIONS FOR USE

Electronic boxes:

The entire electronics for the **Automig T** Series are built into a sealed, easy-to-replace control box.

Warning: Repairs/maintenance must only be carried out when the machine is switched off.

By loosening two screws on the front of the machine, the electronic box can be removed without having to open the machine.
There is a multiplug on the back of the electronic box connecting the electronic box with the other modules of the machine.
The electronic box is available in several versions with different functions to suit all **Automig T** welding machines.

T-Box.

This box is the simplest version. The box has all the good characteristics which make the **Automig T** an excellent welding machine, while at the same time there are no superfluous, puzzling switches. It is for seam welding only.
This box satisfies most welding professionals' requirements.

T2-Box.

This box features the functions known from Migatronic's other Automig welding machines, which is to say seam welding (also called 2-cycle), spot welding and stitch welding. This box fulfils all requirements for car-body repair work.

T4-Box.

This box has facilities for seam welding (2-cycle), spot welding and latching (4-cycle). With its 4-cycle function, the box is particularly well suited to the thin-plate industries.

BOXTYPE:	T	T2	T4
FUNCTIONS:			
Single-switch operation	X	X	X
2-cycle, tacking	X	X	X
4-cycle, latching			X
Spot welding		X	X
Stitch welding		X	
Gas/wire matching switch	X	X	X
High strike voltage	X	X	X
Crawl start	X	X	X
Wire inching switch	X	X	X
Burn back control	X	X	X
Welding voltage short-circuit cut-out	X	X	X

Bottom Box	TS	TP
Feed-through grommet for earth cable	X	X
Mains plug for optional extras		X
Automatic fuse for mains plug		X

ADJUSTMENT FUNCTION BOXES

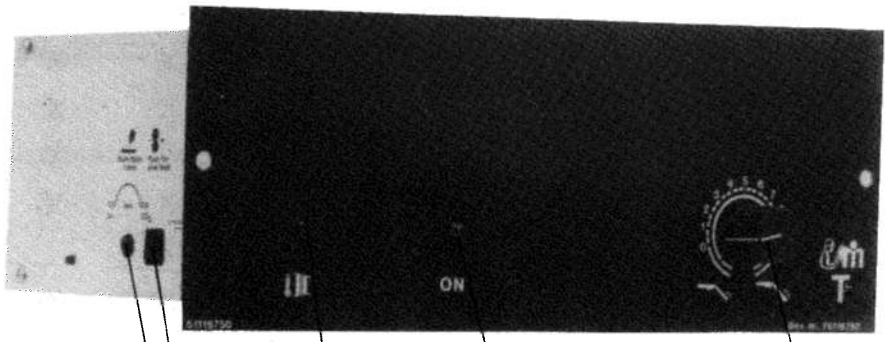


FIG. 5

10. Burn back time
11. Wire inching switch
1. Overload indicator
4. ON indicator
5. Gas/Wire matching switc

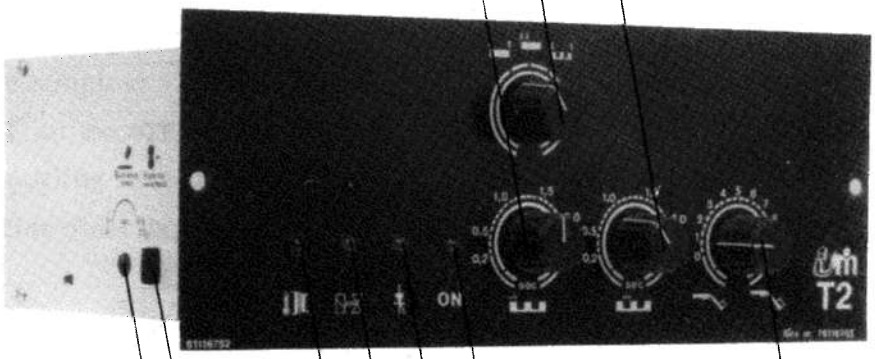


FIG. 6

8. Function selector
6. Welding time
7. Pause time
10
11
1
4
5
2. Gas valve indicator
3. Thyristor indicator

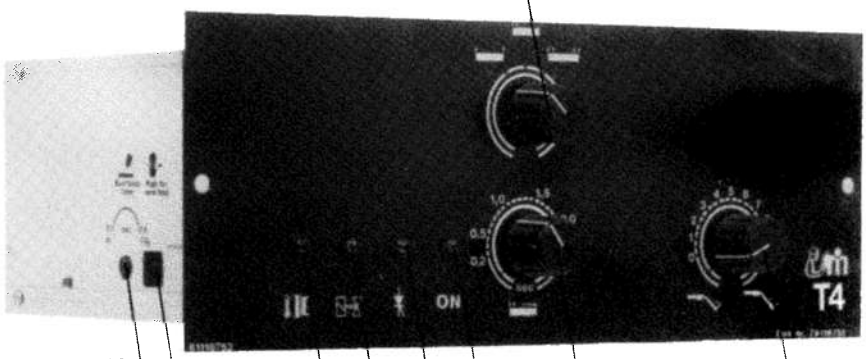


FIG. 7

9. Function selector
10
11
1
2
3
4
6
5

OPERATING INSTRUCTION BOXES

Pos. 1 Overload indicator

The red lamp lights if the automatic thermal fuse on the machine has been cut out due to overloading. The thermostatically-controlled fan continues to run until the machine has cooled down to normal operating temperature again, at which point the red lamp goes off and the machine is once again ready for use.

Pos. 2 Gas valve indicator

The green lamp lights when the gas valve on the machine has been actuated for gas flow.

Pos. 3 Thyristor indicator

The green lamp lights when the thyristors on the machine have been actuated, and there is welding voltage on the torch.

Pos. 4 ON indicator

The green lamp lights when the machine is switched on.

Pos. 5 Gas/Wire matching switch

This switch must normally be used only if the wire dimensions or gas-type are changed. The switch can also be used if it is required to fine adjust the arc voltage. See table for machine adjustment.

Pos. 6 Welding time

With the function selector in the spot-welding position  (only boxes T2 and T4), this switch can be used to set the welding time.

When stitch welding  (only box T2), this switch determines the welding time.

The switch can be set from 0.2 to 2.5 secs.

Pos. 7 Pause time

When stitch welding  (only box T2), this switch can be used to determine the pause time from 0.2 to 2.5 secs.

Pos. 8 Function selector switch

The function selector switch for box T2 has three settings:

A. **Seam:** 

The machine welds when the torch switch is actuated and stops when the switch is released.

B. **Spot:** 

When the torch switch is actuated the machine welds automatically, controlled by the "welding-time timer" (pos. 6).
The time is adjustable from 0.2 to 2.5 secs, and when the set time runs out, welding stops. Welding starts when the switch is actuated, and it makes no difference when the switch is released.
This function ensures uniform spot welds providing the correct setting has been found.

C. **Stitch:** 

Stitch welding starts and stops the motor at intervals which can be set using the "welding time" and "pause time" timers. When welding is interspersed with "pauses" in this way, the average amount of added heat is reduced, which prevents any melting through on difficult welding jobs.

Pos. 9 Function selector switch

The function selector switch for box T4 has three settings:

A. See section 8A above

B. See section 8B above

C. 4-cycle (latching)

When the torch switch is actuated, welding starts, after which the switch can be released and welding continues. Re-actuating the switch causes welding to be interrupted when the switch is released.
If, with "latching", welding is not begun within 8 secs, the machine stops automatically. This is in order to avoid wire wastage if the machine is actuated by accident.
Latching is used on long welding runs.

Pos. 10 Burn back time

When the torch switch is released, the wire-feed motor decelerates and after a short time delay gas-flow and welding voltage are interrupted. This

delay, known as burn back time, causes the welding wire to burn a little way back from the molten pool and stop it burning in.

If the welding wire has a tendency to burn into the hardening molten pool, the burn back time must be increased. If, on the other hand, the wire tends to burn fast in the contact nozzle, the burn back time must be shortened.

With mixture gases, such as CO_2/Argon, the time must be relatively shorter than when CO_2 only is used as the shielding gas.

Pos. 11 **Wire inching switch**

This switch is used when a new reel of welding wire is put into the machine and the wire fed through the hose. The **Automig T** is equipped with crawl start, i.e. the wire is fed at a gentle speed when there is no arc - use the wire inching switch, therefore, when inserting a new reel of wire.

BOTTOM BOXES

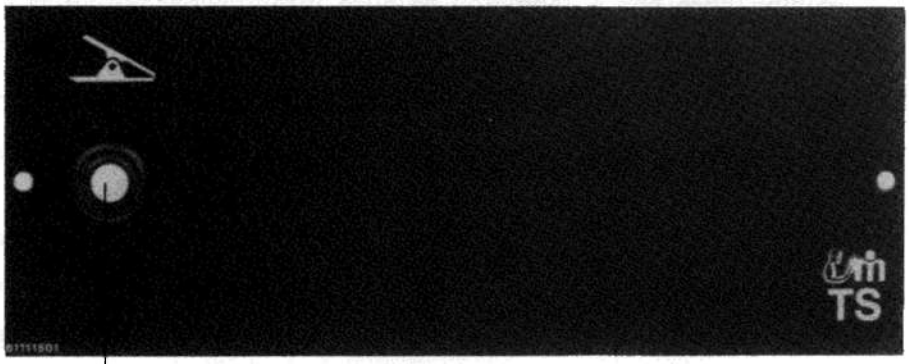


FIG. 8

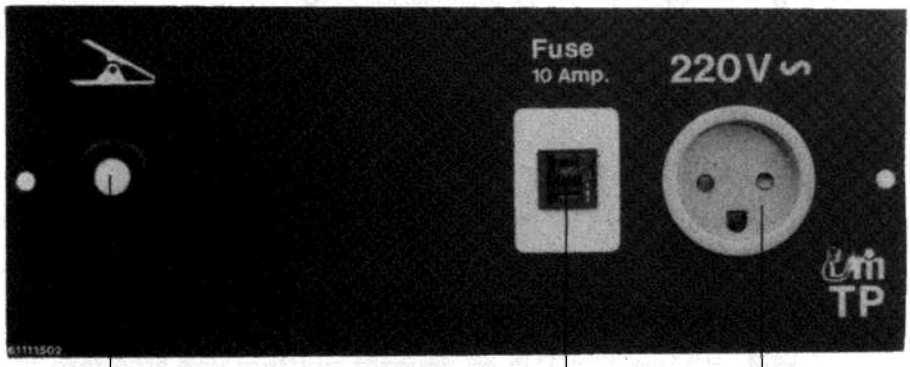


FIG. 9

At the present time two types of bottom box are available for **the Automig t, i.e. TS and TP**

TS - bottom box:

This is the simple version, in which the only grommet (pos. 12) is for the cable to the earth (frame) terminal.

TP - bottom box:

This version has also a grommet (pos. 12) for the cable to the earth terminal. In addition there is a PTO (pos. 13) for electric tools. The plug is provided with automatic fuse (pos. 14) of 10 A. If the automatic fuse is cut out, a white edge appears on the switch - after approx. 5 - 10 secs, the automatic fuse can be pressed in again. The electric-tool PTO is interrupted when the cut-out switch on the machine (pos. 15) is interrupted.

For three-phase machines, a neutral must be installed in the mains cable in order for the plug to work.

WELDING WITH THE AUTOMIG T

1. Set the interruptor switch (pos. 15) on the machine to "1". The "ON" LED (pos. 4) must light up and the LED (pos. 32) in the torch must also come on.
2. Connect the machine to shielding gas and insert a reel of welding wire - if necessary, consult the section on initial operation.
3. The machine is controlled from the welding trigger - before starting, however, it is necessary to adjust the "gas/wire matching switch" (pos. 5) according to this table:

ADJUSTMENT OF GAS/WIRE MATCHING SWITCH

Wire diameter / Shielding gas	ø 0,6 20A - 150A	ø 0,8 30A - 200A	ø 1,0 50A - 200A
CO_2	5	6	8,5
Mixture gas	2	3	3

TABLE 1

The switch on the welding trigger (pos. 31) controls the wire speed, and the electronics then regulate the welding voltage correctly, once the "gas/wire matching switch" (pos. 5) has been set. The table is intended to be of help, but the welding voltage (pos. 5) can, of course, be fine-adjusted to the job in hand.

4. Select "Seam welding" ↓▬▬↑ on the box.
   Set the remote control switch (pos. 31) to 2-3. The number is displayed opposite the LED.
5. Hold the welding torch down to the component and press the torch switch. Welding should now take place without a hitch.
   Fine-adjust the welding voltage, if necessary, on "gas/wire matching" (pos. 5).
6. The scale on the remote-control switch (pos. 31) goes from "0" to "10". The "0" setting gives the lowest welding current. The "10" setting gives the greatest welding current.
7. If welding is unsatisfactory, then consult the section on fault-finding (page 6-1).

WELDING TECHNIQUE

Adjusting the machine

Adjusting a MIG/MAG welding machine requires a fair amount of experience on part of the welder, as in principle there are two parameter settings which must match each other, that is: wire speed and welding voltage. It is important, therefore that the wire speed and the welding voltage conform. The wire speed gives the welding current, which must match the component being welded. An increase in wire-feed rate increases the welding current, at the same time reducing the lenght of the arc just a fraction. If the wire speed is reduced, the current intensity is diminished, at the same time increasing the length of the arc. Raising the open circuit voltage increases the arc voltage, though the current intensity remains roughly unchanged. A reduced open circuit voltage will produce a shortened arc length. When welding with CO_2 as shielding gas, the open circuit voltage must be increased by approx. 5 volts per 100 amps.

A change in welding-wire diameter will produce a change in current and voltage, since thinner wires require higher voltage and higher wire speeds in order to produce the same current. If the limit values are exceeded, the result will be poor welding. When the wire speed becomes too great in relation to the voltage, knocking will be felt in the welding torch, because the wire travels to the bottom of the molten pool. Welding under these conditions will normally produce adhesion defects due to lack of fusion. If the voltage becomes too great in relation to the wire speed, large drops will form on the end of the wire. These will be reluctant to leave the end of the wire and will often settle as spatter beside the weld.

When the ratio between voltage and wire speed is correct, a highly characteristic, constant hum will be heard from the arc.

See section "Welding with the **Automig T**".

The importance of the welding position

The mutual position of welding torch and workpiece in relation to each other is of importance to the appearance and quality of welding.

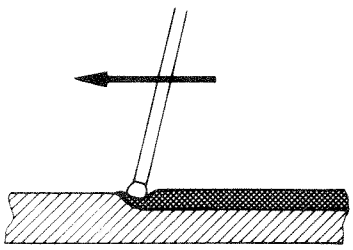
The drawings on the next page show some of the many possibilities and indicate in schematic form the importance of these positions for welding. In practice, of course, many different combinations of inclination, torch handling, welding position and component position are used.

The table below, together with the drawings, may be of assistance when it is necessary to evaluate the importance of the individual factors for the welding quality and welding procedure.
The terms draw welding and thrust welding should be understood thus:

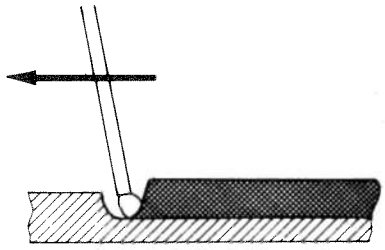
Drawing weld: Torch pointed away from direction of travel.
Thrusting weld: Torch pointed in direction of travel.

	Thrusting weld	Drawing weld
Width of seam	wider	narrower
Upper bead	smaller	larger
Penetration	decrease	increase
Tendency to lack of fusion	greater	lesser

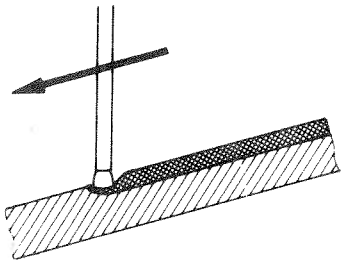
TABLE 2



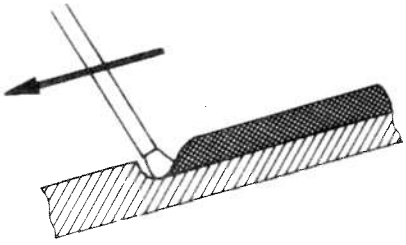
Pushing weld



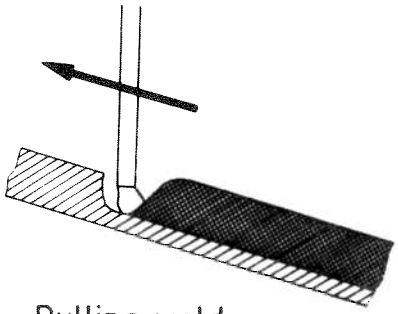
Pulling weld



Pushing weld
sloping downwards



Pulling weld
sloping downwards



Pulling weld
sloping upwards

MAINTENANCE

The following points demand special attention:

Wire-feed unit.

This unit must be checked regularly at the wire feed roller (pos. 29) and wire nozzles (pos. 24 and pos. 22), since it is of great importance for good welding and minimum wear that the wire should go through the wire mechanism without causing deformation of the wire or wire-feed roller.

Welding hose assembly.

The hose must be protected against overloading and must not be trodden on or driven over with other machinery, since this may destroy the internal liner. The hose should be dismantled weekly and the internal liner blasted clean with compressed air.

The welding hose contains vital components which must be frequently checked and cleaned; these are the contact nozzle and the gas nozzle. During welding, these parts are showered with spatter which clings to the nozzle. This may cause a disruption to the supply of shielding gas flowing from the gas nozzle down across the molten pool.

What is more, if the gas nozzle fills with spatter, short-circuiting may occur between contact nozzle and gas nozzle. The spatter must, therefore, be removed regularly, and spatter removers applied at the same time so as to prevent spatter burning onto the nozzles. The gas nozzle should be removed during cleaning.

DO NOT CLEAN BY HITTING THE TORCH

Changing the internal liner: Dismantle the swan-neck on the torch and extract the retaining clip (pos. 23). The old inner liner can now be pulled out at the torch trigger. Guide the new inner liner in through the trigger until it hits the O-ring packing in the hose connection, then squeeze the inner liner carefully through the O-ring, bringing it as close as possible to the wire-feed roller without actually touching it. Then remove the retaining clip (pos. 23) from the inlet nozzle.

If a teflon inner liner and steel neck liner are used, the teflon liner must be trimmed off with a sharp knife to make it flush with the forward edge of the trigger (fig. 3).

When using teflon inner liners, mount the swan-neck without contact nozzle, pull the inner liner as far out of the torch as possible and trim off the inner liner with a sharp knife, making it flush with the forward edge of the swan-neck.

Shorten spiral inner liners in the same way as teflon ones.

When replacing the inner liner, it is not necessary to remove any wire there might be in the hose.

The following inner liners are recommended in accordance with the table below:

WIRE DIAMETER, STEEL-WIRE mm	INTERNAL DIAMETER, INNER LINER mm
ø 0,6 - ø 0,8	ø 1,2
ø 0,8 - ø 1,0	ø 1,5
ø 1,2	ø 2,0

TABLE 3

WIRE DIAMETER, ALUM. WIRE mm	INTERNAL DIAMETER, INNER LINER (teflon) mm
ø 0,8	ø 1,5
ø 1,0	ø 1,5
ø 1,2	ø 2,0

TABLE 4

Power source:

Rectifier and transformer should be blasted clean of dust at suitable intervals, since this may hinder heat conduction.

Replacing the control box: Shut off the machine. You can now remove the two screws on the front plate of the box. Pull the box out and remove the multiplug on the back of the box. Re-mount the new box in the reverse sequence.

TROUBLE SHOOTING

If the machine fails to weld correctly, there are, in principle, two possible sources of error, namely wire feeding and power source.

In the vast majority of cases, the error is to be found in irregular wire feeding.

Try, where possible, pushing and pulling the welding wire out at the contact nozzle. The wire must not be able to extend more than 3 - 7mm.

ERROR	POSSIBLE CAUSE
Too little welding effect; the weld sits like a "caterpillar" (bead) on the component	1. One of the three fuses on the main switch has blown. 2. The welding voltage is too low. Adjust on the box (pos. 5). 3. Box defective. 4. Machine defective.
ON lamp on box fails to light up	1. Check whether the machine is drawing voltage from the mains. 2. Replace box.
Motor refuses to start. ON lamp lights up.	1. Check connection to welding hose. LED (pos. 32) must light up. 2. Replace box.
Jerky wire feed	1. Inlet nozzle and groove on wire-feed roller not aligned. 2. Reel containing welding wire runs too tightly on axle. Wire is sometimes wound incorrectly, causing it to "cross over". 3. Inlet nozzle or contact nozzle is worn or dirty, possibly clogged up. 4. Welding wire is impure, of poor quality or rusty. 5. Insufficient pressure on pressure lever. 6. Inner liner defective.
Too much spatter during welding.	1. Excessive wire speed in relation to welding voltage. 2 Worn contact nozzle.
Weld becomes porous and "brittle". During spot welding, a characteristic cone appears.	1. Shielding gas lacks adequate pressure or cylinder is empty. 2. Gas nozzle clogged up. 3. Leakage in system, so that atmospheric air is sucked in owing to injector effect and mixed with shielding gas.

The arc does not look normal, and there is a lot of spatter.	1. This occurs if the material is dirty or treated with underseal or paint.
The wire keeps sticking in the contact tip and is very slow.	1. The wire can be malformed. The damaged wire should be cut off, pulled out and replaced. The pressure on the wire feed roller should be checked. 2. Worn contact tip.
No welding voltage.	1. Working voltage interrupted due to overloading of the transformer. Automatic switch on after cooling (15-30 min.).

TECHNICAL DATA

		180 MT	200 T
POWER SOURCE:			
Mains voltage 50-60 Hz*	:	1 x 240 V	3 x 415 V
Mains fuse	:	25 A	10 A
Consumption max.	:	5,1 kVA	4,7 kVA
Efficiency	:	0,77	0,82
Cos.phi	:	0,81	0,72
Open circuit voltage DC (fixed)	:	25 V	25 V
Permitted load 100% duty cycle	:	80 A	90 A
Permitted load 60% duty cycle	:	105 A	115 A
Permitted load 35% duty cycle	:	135 A	150 A
Permitted load 20% duty cycle	:	180 A	200 A
Current range DC	:	20-180 A	20-200 A
Insulation class	:	TI 180 (H)	TI 180 (H)
Protection class	:	IP 21 AF	IP 21 AF
Norm	:	ISO R 700	ISO R 700
WIRE FEED UNIT:			
Working voltage	:	24 V	24 V
Wire motor, consumption	:	70 W	70 W
Wire spool capacity	:	5-15 kg	5-15 kg
Wire dimension	:	0,6-0,8-1,0	0,6-0,8-1,0
Wire speed	:	2-15 m/min.	2-15 m/min.
Spot welding sec.	:	0,2-2,5 sec.	0,2-2,5 sec.
Interval welding sec.	:	0,2-2,5 sec.	0,2-2,5 sec.
Pause time sec.	:	0,2-2,5 sec.	0,2-2,5 sec.
Burn back delay sec.	:	0,1-0,6 sec.	0,1-0,6 sec.
WELDING TORCH/WELDING HOSE:			
Weight, torch	:	250 g	250 g
Weight, torch with hose	:	1750 g	1750 g
Length of hose	:	3 m	3 m
DIMENSIONS AND WEIGHT:			
Dimensions l x w x h cm	:	80x38x66	80x38x66
Total weight	:	63 kg	69 kg

*Available for other mains voltages

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