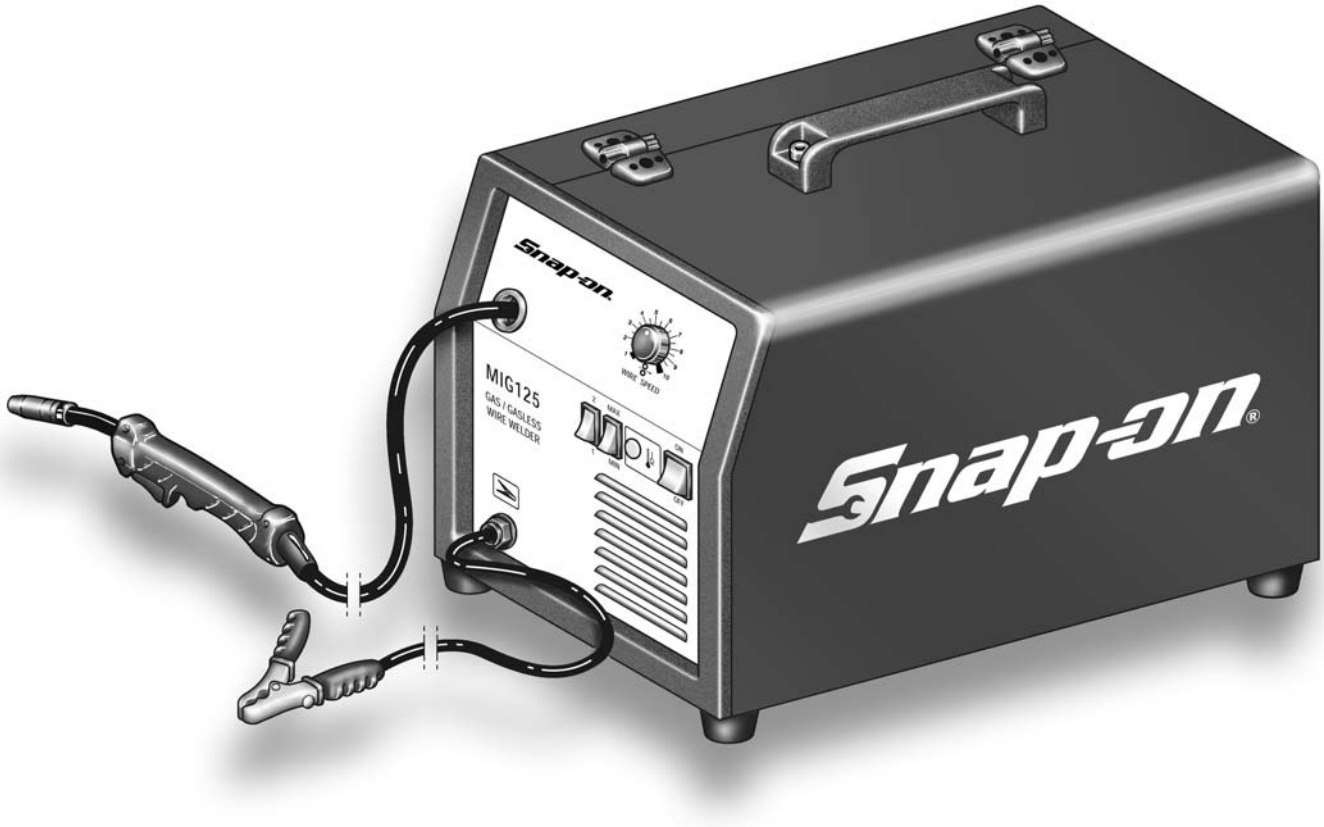
OPERATING INSTRUCTIONS

FOR MODELS:

MIG125



IMPORTANT OPERATING INSTRUCTIONS
SAVE THESE INSTRUCTIONS

DANGER

- Electric welding or plasma cutting cause ultraviolet rays and weld spatter. Bystanders will be exposed to ultraviolet rays and weld spatter.

Wear welding helmet with appropriate shade lens while using electric welders or plasma cutters.

Do not allow bystanders while welding or cutting.

Wear safety shield and protective clothing (user and bystanders).

Read and follow instructions.

Ultraviolet rays will burn eyes; weld spatter can cause injury.

WARNING

- Acetylene gas does not burn safely with torches.

Do not use torches with acetylene gas.

Read and follow instructions.

Uncontrolled burning can cause injury.

- Materials can cause sparks or flying metal when heated which can cause fire.

Wear safety shield and protective clothing (user and bystanders).

Sparks, fire and flying metal can cause injury.

WARNING

- Electrical shock can result from absence of grounding prong.

Do not remove or bypass the grounding prong in any electrical plug.

Electrical shock can cause injury.

- Smoke, fumes and gases are created by the welding process.

Use only in well ventilated area.

Avoid breathing smoke, fumes and gases.

Smoke, fumes and gases can cause injury.

INSTRUCTION MANUAL FOR WIRE WELDING MACHINES

WARNING!
READ, UNDERSTAND AND FOLLOW THIS MANUAL CAREFULLY BEFORE INSTALLING, USING, OR SERVICING THE WELDING MACHINE, PAYING SPECIAL ATTENTION TO SAFETY RULES. CONTACT YOUR DEALER IF YOU DO NOT FULLY UNDERSTAND THESE INSTRUCTIONS.

1 INSTALLATION

This machine must be used for welding only. It must not be used to defrost pipes.
It is also essential to pay special attention to the chapter on SAFETY PRECAUTIONS.The symbols next to certain paragraphs indicate points requiring extra attention, practical advice or simple information.
This manual must be stored carefully in a place familiar to everyone involved in using the machine. It must be consulted whenever doubts arise and be kept for the entire life-span of the machine; it will also be used for ordering replacement parts.

1.1 PLACEMENT

Unpack the machine and place it in an adequately ventilated area, dust-free if possible, taking care not to block the air intake and outlet from the cooling slots.

CAUTION!
REDUCED AIR CIRCULATION causes overheating and could damage internal parts.

Keep at least 20 inches of free space around the machine.
Never place any filtering device over the air intake points of this welding machine.
The warranty shall become void if any type of filtering device is used.

2 DESCRIPTION OF THE MACHINE

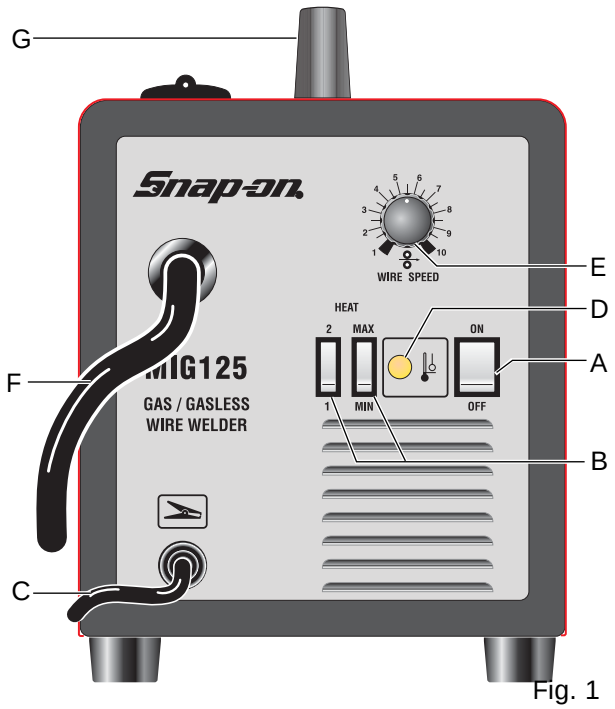


Fig. 1

A) **Switch**
Turns the machine on and off.
B) **Adjustment switches**
By means of these switches one adjusts the welding voltage.
C) **Ground cable**
D) **Yellow LED**
Lights only when the thermostat is tripped and interrupts the machine operation.
F) **Welding torch**
G) **Handle**
Use this handle to lift the machine.

3 GENERAL DESCRIPTIONS

3.1 SPECIFICATIONS

This welder is used for welding soft steel, stainless steel and aluminium.

3.2 EXPLANATION OF TECHNICAL SPECIFICATIONS

SERIAL №			
			CLASS OF INSULATION ISOLIERSTOFFKLASSE CLASSE DES ISOLANTS **H** CLASE DE AISLAMIENTO CLASSE DI ISOLAMENTO
U0 V MAX. O.C.V.	**X**		
	I2		
	U2		THERMAL PROTECTION THERMISCH GESCHÜTZ PROTECTION THERMIQUE PROTECCION TERMICA PROTEZIONE TERMICA
1~ **60**Hz	**I**1		
	U1		
			FORCED VENTILATION KUHLART F VENTILE VENTILACION FORZADA VENTILAZIONE FORZATA
			IP 21

N° Serial number, which must always be indicated in any inquiry regarding the welding machine.
U0 Secondary no-load voltage.
X The duty cycle expresses the percentage of 10 minutes during which the welding machine can run at a certain current without overheating.
Example: X = 60% at I2 = 100 A
This means that the machine can weld with a current I2 = 100A for 6 out of 10 minutes, thus 60%.
I2 Welding current
U2 Secondary voltage with welding current I2
U1 Rated power voltage.
1~60Hz Single-phase 60-Hz power supply.
I1 Current absorbed at the corresponding welding current I2
IP21 Degree of housing protection.
Grade one as the second digit means that this device is not suitable for use outdoors in the rain.

3.3 DESCRIPTION OF PROTECTION

This device is protected by a normally closed thermostat on the power transformer.
When the thermostat is tripped the machine stops welding, while the motor-driven fan continues to run and the yellow LED lights.
After it has been tripped, wait a few minutes to allow the transformer to cool down.

4 INSTALLATION

WARNING!
The MIG125 must be installed by qualified personnel. All connections must be made in full compliance with all applicable rules and regulations.
Make sure that the wire diameter corresponds to the one indicated on the roller, and mount the wire reel. Make sure that the welding wire passes through the groove in the small roller.
Before connecting the power cable **13**, make sure that the power voltage corresponds to that of the welder, then:

a) for permanent connection to the power mains without a plug, you must insert a main switch having a suitable capacity in compliance with the rated specifications.
b) for a plug-socket connection, use a plug having a suitable capacity in compliance with the rated specifications. In this case the plug must be used to completely disconnect the machine from the mains, after setting the switch **33** to “O” (off).

The yellow-green wire must be connected to the ground terminal. Connect the ground clamp **21** to the part to be welded. The welding circuit must not be deliberately placed in direct or indirect contact with the protection wire except in the workpiece.
If the workpiece is deliberately grounded using the protection wire, the connection must be as direct as possible, using a wire at least as large as the welding current return wire, and connected to the workpiece at the same point as the return wire, using the return wire clamp or a second grounding clamp placed next to it. All precautions must be taken to avoid stray welding currents.
Turn the machine on using the switch **33**.
Remove the tapered gas tip by turning it clockwise.
Unscrew the contact tip.
Do not press the torch trigger until you have read the instructions carefully.
It is important to make sure the machine is turned off whenever changing the wire reel and wire roller, to prevent the wire feed motor from starting accidentally.
Press the torch trigger and release it only when the welding wire comes out.
Welding wire can cause puncture wounds.
Never aim the torch at parts of the body, other people or metals when loading the welding wire.
Screw the contact tip back on, making sure that the hole diameter corresponds to the wire used.
Slide the tapered gas welding tip on, always turning clockwise.

4.1 CONNECTING THE GAS HOSE

- The gas cylinder must be equipped with a pressure regulator and gauge.
- If the cylinder is placed on the cylinder holder of the machine, it must be held in place by the chain provided and be of an appropriate size to avoid jeopardizing the stability of the machine.
- Connect the gas hose leaving the back of the machine to the pressure regulator only after the cylinder is in place.
- Open the gas cylinder and set the gauge to approximately 20-25 CFH.

CAUTION: Make sure the gas used is compatible with the material to be welded.

5 WELDING

5.1 WELDING MILD STEEL

5.1.1 With shielding gas.

Either 75% ARGON + 25% CO2 or 100% CO2 may be used for welding mild steel.
Connect the cables according to the instructionsgiven in the plate stuck inside the machine (see figure 2).

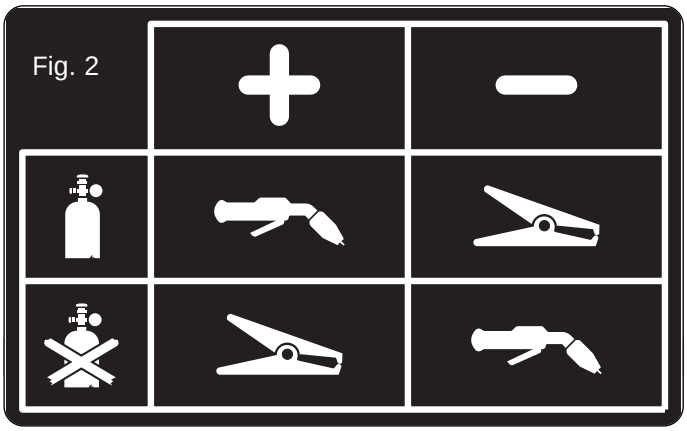


Fig. 2

Select the welding current by means of the switches **35**.
Move the torch near the welding point and press the trigger.
Adjust the potentiometer knob **27** until the welding is done with a constant, continuous noise.
If the speed is too fast, the wire tends to stick to the piece and cause the torch to skip; if the speed is too low, the wire melts in spaced drops or the arc does not remain lit.
When you have finished welding, turn off the machine and close the gas cylinder.
For the correct welding angle see figure 3.

5.1.2 Without shielding gas.

Connect the cables according to the instructionsgiven in the plate stuck inside the machine (see figure 2).
Use only diam. .035 flux cored wire that complies with thestandard AWS AS.20 E71 TII or E71 TGS, suitable for use without shielding gas.
Connect the ground cable clamp to the workpiece.
After connecting the cables, follow the instructions given in paragraph 5.1.1.
NOTE: For compact, well-protected welds always work from left to right and from top to bottom.
Remove all waste after each welding operation.
For the correct welding angle see figure 3.

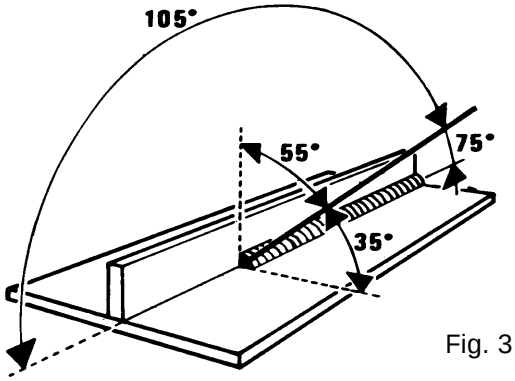


Fig. 3

5.2 WELDING ALUMINIUM

The welder must be prepared as for welding mild steel with gas protection, but with the following differences:
- 100% ARGON as the shielding gas for welding.
- A wire having a composition suited to the base material to be welded.
For welding ALLUMAN: 3÷5% silicon wire
- For welding ANTICORODAL: 3÷5% silicon wire
- For welding PERALUMAN: 5% magnesium wire
- For welding ERGAL: 5% magnesium wire
Use grinding wheels and brushes specifically designed for aluminium, and never use them on other materials.
REMEMBER that cleanliness is quality!
The wire reels must be stored in nylon bags with dehumidifying packets.
For the correct welding angle see figure 3.

5.3 WELDING STAINLESS STEEL

The welder must be prepared as for welding mild steel with gas protection, but with the following differences:
- Reel of stainless steel wire compatible with the composition of the material to be welded.
- Cylinder containing 98% ARGON + 2% 02 (recommended composition)
The recommended torch angle and welding direction are shown in figure 3.

6 MAINTENANCE AND CHECKS

6.1 GENERAL NOTES

WARNING!

● Turn off the welder and unplug the power cord from the socket before each checking and maintenance operation.

● Moving parts can cause serious injuries.
● Keep away from moving parts.

GLOWING HOT SURFACES can cause serious burns.

● Let the unit cool before servicing.
● Periodically remove any dust or foreign matter that may have deposited on the transformer or diodes; to do so, use a jet of clean, dry air.
● When replacing the wire roller, make sure the groove is aligned with the wire and corresponds to the diameter of the wire used.
● Always keep the interior of the gas nozzle clean to avoid metal bridges created by welding dross between the gas nozzle and the contact tip. Make sure the outlet hole of the contact tip has not expanded excessively; if so, replace.
● Strictly avoid striking the torch or allowing it to suffer violent impact.

6.2 TROUBLESHOOTING GUIDE

TROUBLE	PROBABLE CAUSE	REMEDY
The welding machine supplies limited current	Line fuse blown	Replace line fuse
	Burnt out diode or diodes	Replace
	Burnt out electronic board	Replace
	Loose torch or ground connections or any other electrical power connections	Tighten all connections
Welding with a lot of metal spatter	Voltage adjustment switch has a loose contact	Replace the switch
	Improper adjustment of welding parameters	Select the correct parameters through the welding-voltage switch and the wire-speed adjustment potentiometer
	Poor ground connection	Check grounding connections
The wire jams or entangles between the drive rolls and the torch infeed wire guide	Contact tip with wrong diameter	Replace
	Misalignment of the drive roll groove	Realign
	Obstructed or clogged liner	Remove and clean
No wire feed or irregular wire feed	Drive roll with too large a groove	Replace the drive roll
	Obstructed or clogged liner	Remove and clean
	Wire holding roller not completely tightened	Tighten all the way
	Clogged contact tip	Replace
	Insufficient shielding gas	Increase gas delivery
Porosity in the welding seam	Excess oxidation of the edges to be welded	Thoroughly clean the edges with a metal brush
	Gas nozzle partially or completely clogged by spatter	Remove and clean or replace being careful not to clog the gas outlets

7 SAFETY PRECAUTIONS

7.1 FIRE

WARNING!

● Avoid causing fire because of sparks, slag, hot metal or pieces.
● Make sure that suitable fire-fighting equipment is available close to welding area.
● Remove all flammable and combustible material from the welding area and its surrounding (32 ft minimum).

● Do not weld containers of combustible or flammable material, even when empty.

● Allow the welded material to cool down before touching it or putting it in contact with combustible or flammable material.
● Do not weld parts with hollow spaces, containing flammables.
● Do not work under conditions with high concentrations of combustible vapours, gases, or flammable dust.
● Always check the work area half an hour after welding so as to make sure that no fire has started.
● Do not keep any combustible material such as lighters or matches in your pockets.

7.2 BURNS

WARNING!

● Wear protective clothing in order to protect against burns caused by ultraviolet radiation given off by the arc, and from weld metal sparks and slag.

● Wear protective gloves designed for use in welding, hat and high safety-toe shoes. Button shirt collar and pocket flaps, and wear cuff-less trousers to avoid entry of sparks and slag.

● Wear helmet with safety goggles and glasses with side shields underneath, appropriate filter lenses or plates (protected by clear cover glass). This is a MUST for welding to protect the eyes from radiant energy and flying metal. Replace cover glass when broken, pitted, or spattered.
● Avoid oil or greasy clothing. A spark may ignite them. Hot metal such as electrode stubs and workpieces should never be handled without gloves.

● Ear plugs should be worn when working on overhead or in a confined space. A hard hat should be worn when others work overhead.
● Flammable hair preparations should not be used by persons intending to weld or cut.

7.3 FUMES

WARNING!

Welding operations give off harmful fumes and metal dusts which may be hazardous to your health, therefore:
● Work in a well-ventilated area.
● Keep your head out of fumes.
● In closed areas, use suitable exhaust fans.

● If ventilation is not enough, use breathing apparatus approved for this procedure.
● Clean the material to be welded of any solvents or halogen degreasers. Some clorine solvents may decompose with the radiation emitted by the arc, and create phosgene gas.
● Do not weld plated metals or those containing lead, graphite, cadmium, zink, chrome, mercury or beryllium, unless you have the proper breathing apparatus.
● The electric arc creates ozone. A long exposure to high concentrations may cause headaches, nasal, throat and eye irritation as well as serious congestions and chest pains.
IMPORTANT: DO NOT USE OXYGEN FOR VENTILATION.
● Gas leaks in a confined space should be avoided. Leaked gas in large quantities can change oxygen concentration dangerously. Do not bring gas cylinders into a confined space.
● DO NOT WELD where solvent vapors can be drawn into the welding atmosphere or where the radiant energy can penetrate to atmospheres containing even minute amounts of trichloroethylene or perchloroethylene.

7.4 EXPLOSIONS

WARNING!

Do not weld above or near containers under pressure.
● Do not weld in environments containing explosive dusts, gases or vapors.
This welding machine uses inert gases such as CO2, ARGON, or a mixture of ARGON + CO2 for the protection of the arc, thus you should take special precautions:

A) CYLINDERS
● Do not directly connect cylinder to the machine gas hose without a pressure regulator.
● Handle or use pressure cylinders in conformity with the existing rules.
● Do not use leaking or damaged cylinders.
● Do not use cylinders which are not well secured.
● Do not carry cylinders without the protection of the installed valve.
● Do not use cylinders whose content has not been clearly identified.
● Never lubricate cylinder valves with oil or grease.
● Do not put the cylinder in electrical contact with the arc.
● Do not expose cylinders to excessive heat, sparks, molten slags or flame.
● Do not tamper with the cylinder valves.
● Do not try to loosen tight valves by means of hammers, keys, or any other object.
● NEVER DEFACE or alter name, number, or other markings on a cylinder.
● Do not lift cylinders off the ground by their valves or caps, or by chains, slings or magnets.
● Never try to mix any gases in a cylinder.
● Never refill any cylinder.
● Cylinder fittings should never be modified or exchanged.

B) PRESSURE REGULATORS
● Keep pressure regulators in good condition. Damaged regulators may cause damages or accidents, they should only be repaired by skilled personnel.
● Do not use regulators for gases other than those for which they are manufactured.
● Never use a leaking or damaged regulator.
● Never lubricate regulators with oil or grease.

C) HOSES
● Replace hoses which appear damaged.
● Keep the excess hose wound and out of the working area in order to avoid any damage.

7.5 RADIATIONS

WARNING!

Ultra-violet radiation created by the arc may damage your eyes and burn your skin. Therefore:

- Wear proper clothing and helmet.
- Do not use contact lenses!!

The intense heat coming from the arc may cause them to stick to the cornea.

- Use masks with grade DIN 10 or DIN 11 safety lenses at the least.
- Protect people in the surrounding welding area.

Remember: the arc may dazzle or damage the eyes. It is considered dangerous up to a distance of 15 meters (50 feet). Never look at the arc with the naked eye.

- Prepare the welding area so as to reduce reflection and transmission of ultra-violet radiation. Install sheathings or curtains to reduce ultra-violet transmissions.
- Replace mask lenses whenever damaged or broken.

7.6 ELECTRIC SHOCK

WARNING!

Electric shock can kill.
All electric shocks are potentially fatal.

- Do not touch live parts.
- Insulate yourself from the piece to be welded and from the ground by wearing insulated gloves and clothing.
- Keep garments (gloves, shoes, hats, clothing) and body dry.
- Do not work in humid or wet areas.
- Avoid touching the piece to be welded.
- Should you work close to or in a dangerous area, use all possible precautions.
- If you should feel even the slightest electric shock sensation, stop welding immediately. Do not use the machine until the problem is identified and solved.
- Have an emergency disconnect switch as close to the machine as possible and make sure all personnel are aware of the switch's location.
- Frequently inspect the power supply cable.
- Disconnect power supply cable from mains before replacing cables or before removing unit covers.
- Do not use the unit without installed covers.
- Always replace any damaged parts of the unit, with original material.
- Never disconnect unit safety devices.
- Make sure that the power supply line is equipped with a properly grounded plug.
- Make sure that the work bench is connected to a good earth ground.
- Any maintenance should only be carried out by qualified personnel.

7.7 PACE MAKER

WARNING!

- Magnetic fields from high currents can affect pacemaker operation. Persons wearing electronic life support equipment (pacemaker) should consult their doctor before going near any welding operations.

7.8 WELDING WIRE CAN CAUSE PUNCTURE WOUNDS.

WARNING!

- Do not press gun trigger until instructed to do so.
- Do not point gun toward any part of the body, other people, or any metal when threading welding wire.

7.9. MOVING PARTS CAN CAUSE INJURY.

WARNING!

Moving parts, such as fans, can cut fingers and hands and catch loose clothing.

- Keep all doors, panels, covers, and guards closed and securely in place.
- Have only qualified people remove guards or covers for maintenance and troubleshooting as necessary.
- Keep hands, hair, loose clothing, and tools away from moving parts.
- Reinstall panels or guards and close doors when servicing is finished and before starting the machine.

7.10 NOISE

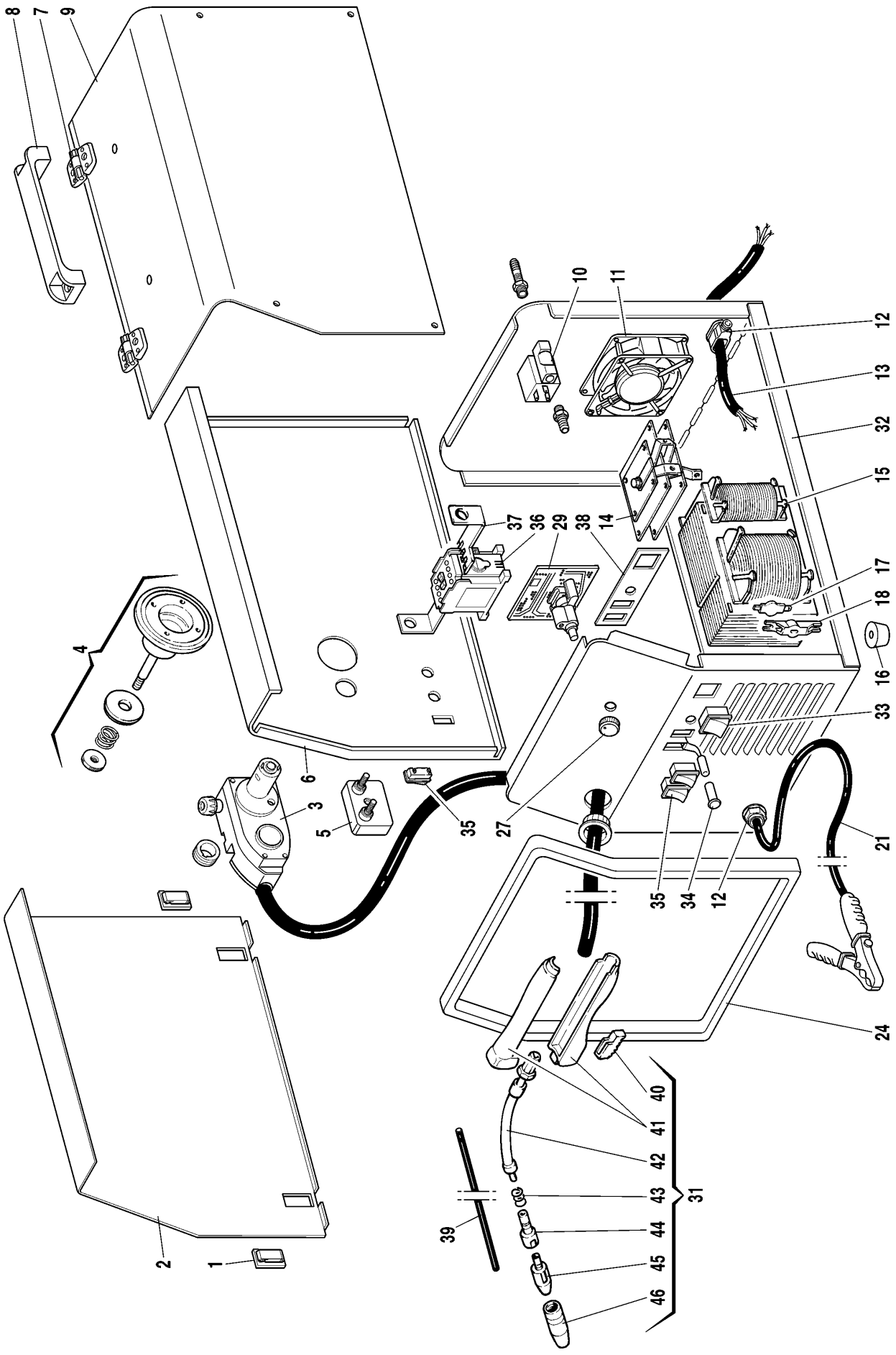
WARNING!

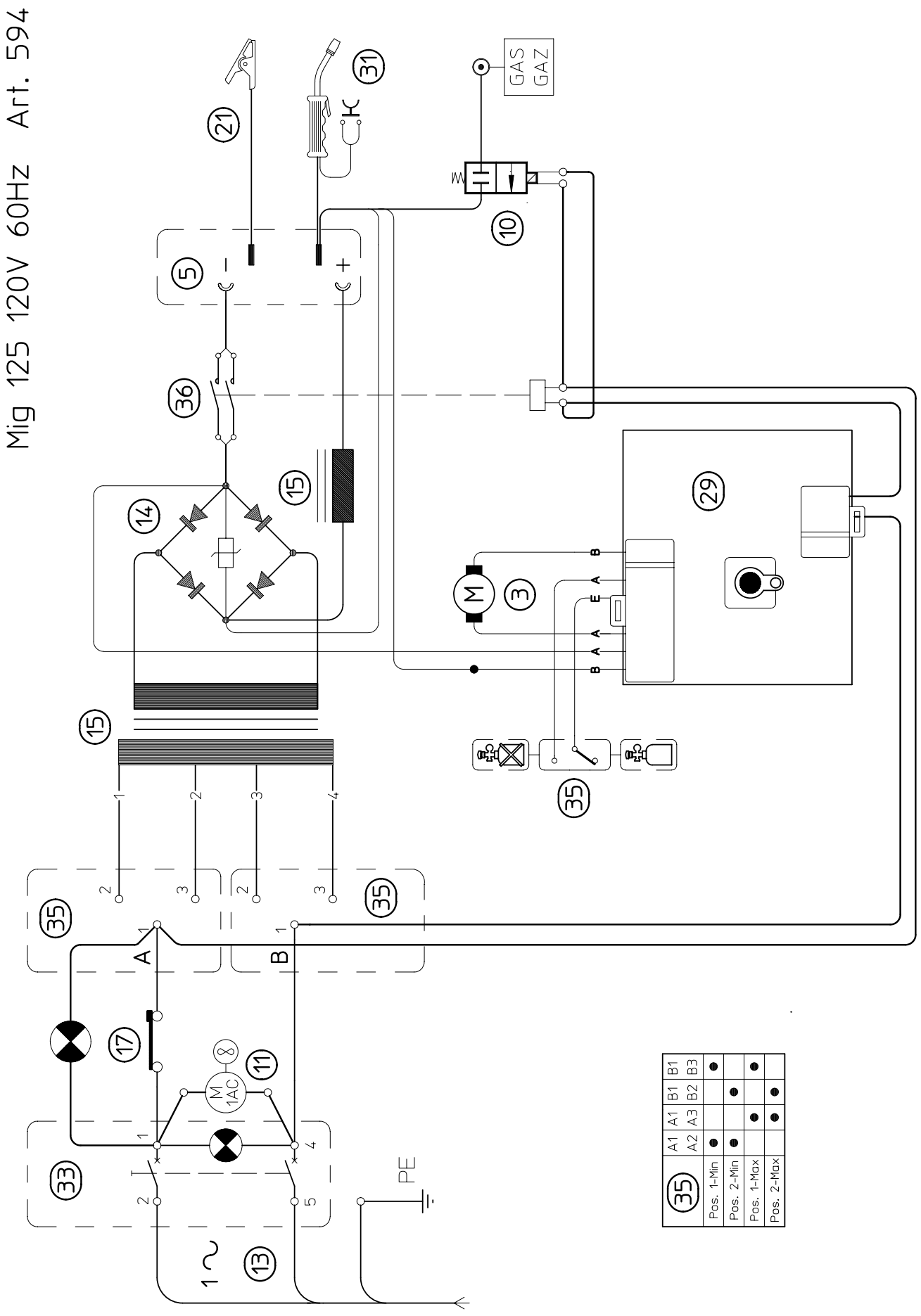
The welding procedure may produce noise levels in excess of 80 dB. in which case the machine operator must take the necessary safety precautions as prescribed by the national safety regulation.

Ref. #	Part # Model MIG125	Description
1	CKS246948	CLOSING
2	5801616	PANEL SIDE
3	3165110	WIRE FEED MOTOR
4	CKS248427	COIL SUPPORT COMPLETE
4	CKS251030	RING
4	CKS251031	SPRING
4	CKS251027	COIL SUPPORT SPACER
4	CKS251022	COIL SUPPORT
5	CKS251067	TERMINAL BOARD
6	5802830	CENTER DEVIDER
7	3120065	HINGE
8	3055203	HANDLE
9	5801615	FIXED SIDE PANEL
10	CKS260513	SOLENOID VALVE
11	CKS260453	FAN MOTOR
12	CKSB7022370	CABLE HOLDER
13	CKSB7023370	MAIN INPUT CABLE
14	CKSB7015370	RECTIFIER
15	5610061	TRANSFORMER
16	3115078	FOOT
17	CKSB7065370	THERMOSTAT
18	CKSB7028370	THERMOSTAT SUPPORT
21	CKS246983	EARTH CABLE
24	3070081	FRAME
27	CKSB7128370	KNOB
29	CKSB7067370	CIRCUIT BOARD
31	8124700	TORCH
32	5801818	UNDERCARRIAGE
33	CKSB7069370	SWITCH
34	CKS246251	LAMP HOLDER
35	CKSB7070370	SWITCH
36	CKSB7050370	CONTACTOR
37	CKS260568	SUPPORT
38	5803525	SUPPORT
39	MIG1153	STEEL LINER
40	3190066	SWITCH
41	3055629	HANDLE COMPLETE
42	8186000	TORCH NECK
43	CKSB7124370	SPRING
44	MIG1156	DIFFUSER
45	MIG023	.023” (.6MM) CONTACT TIP
45	MIG030	.030” (.8MM) CONTACT TIP
45	MIG035	.035” (.9MM) CONTACT TIP
46	MIG1151	TAPERED NOZZLE
46	MIG1152	SPOT NOZZLE

ALL CONSUMABLES AND REPAIR PARTS SHOULD BE ORDERED THROUGH YOUR SNAP-ON DEALER.

MODEL MIG125




Mig 125 120V 60Hz Art. 594
GAS
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