

Part # 538.0003

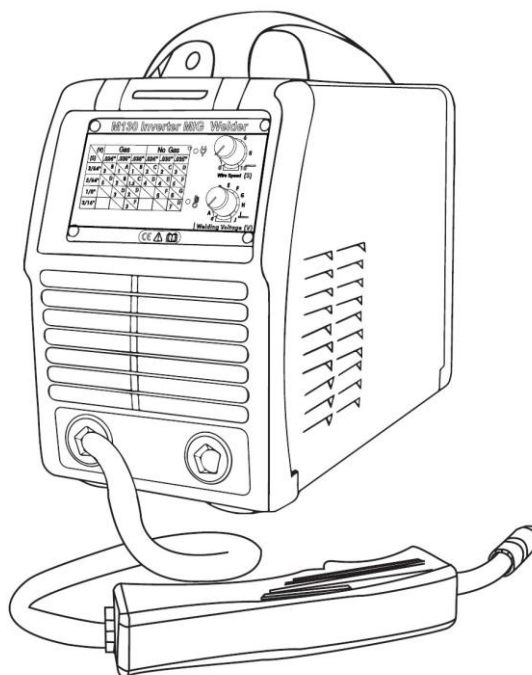
Processes



MIG/MAG(GTAW) Arc Welding
Flux-Cored (FCAW) Arc Welding
115 VAC 50/60Hz

INVERTER MIG WELDING MACHINE

AUTO-MIG 130



OPERATOR'S MANUAL

IMPORTANT: Read this Owner's Manual Completely before attempting to use this equipment. Save this manual and keep it handy for quick reference. Pay particular attention to the safety instructions we have provided for your protection. Contact your distributor if you do not fully understand this manual.



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§1 Safety

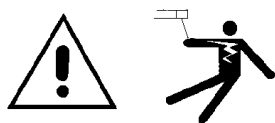
§1.1 Signal Explanation



• The above signals mean warning! Moving parts, electric shocks or high temperature components will cause serious injury or death. The corresponding notices are as follows. Machine operation is quite safe after taking necessary protection measures as outlines below.

§1.2 Arc Welding Damage

- The following signals and word explanations are to some damages for your body or others happening on the welding operation. While seeing these, please remind of yourself or others to be dangerous.
- Only professionally trained individuals can install, operate, maintain and/or repair the equipment.
- During the operation, non-concerned personnel should be restricted from work area and equipment.
- After shutting off the machine power, please maintain and examine the equipment according to §5 because of the DC voltage existing in the electrolytic capacitors.



ELECTRIC SHOCK CAN KILL.

- Never touch electrical parts.
- Wear dry, approved welding gloves and welding clothes to insulate yourself.
- Take care when using the equipment in small, confined space and do not use if inadequate for safe operation, cooling and ventilation.
- Always remove LINE power from the machine before installation and adjustment.

Ensure to install the equipment correctly and ground the work or metal to be welded to a good electrical (earth) ground according the NEC, welding and local code standards.

- The electrode and work (or ground) circuits may be electrically “hot” when the welder is ON. Do not touch these “hot” parts with your bare skin or wet clothing.
- In semiautomatic or automatic wire welding, the electrode, electrode reel, welding head, nozzle or semiautomatic welding gun may also electrically “hot” so caution must be used.
- Always be sure the work cable makes a good electrical connection with the metal being welded. The connection should be as close as possible to the area being welded.
- Maintain the electrode holder, work clamp, welding cable and welding machine in good, safe operating condition. Replace damaged insulation.
- Never dip the electrode in water for cooling.
- Never simultaneously touch electrically “hot” parts of electrode holders connected to two welders because voltage between the two can be the total of the open circuit voltage of both welders.
- When working above the floor level, use a safety equipment to protect yourself from a fall.



FUMES AND GASES CAN BE DANGEROUS.

- Welding may produce fumes and gases hazardous to health. Avoid breathing these fumes and gases. When welding, keep your head out of the fume. Use enough ventilation and/or exhaust at the arc to keep fumes and gases away from the breathing zone. When welding with electrodes which require special ventilation such as stainless or hard facing or on lead or cadmium plated steel and other metals or coatings which produce highly toxic fumes, keep exposure as low as possible and below Threshold Limit Values using local exhaust or mechanical ventilation. In confined spaces or in some circumstances outdoors, a respirator may be required. Additional precautions are also required when welding on galvanized steel.
- Do not weld in locations near chlorinated hydrocarbon vapors coming from degreasing, cleaning or spraying operations. The heat and rays of the arc can react with solvent vapors to form phosgene, a highly toxic gas, and other irritating products.
- Shielded gases used for arc welding can displace air and cause injury or death. Always use enough ventilation, especially in confined areas, to insure breathing air is safe.
- Read and understand the manufacturer’s instructions for this equipment and the consumables to be used, including the material safety data sheet and follow your employer’s safety practices.

**ARC RAYS CAN BURN.**

- Use a shield with the proper filter and cover plates to protect your eyes from sparks and the rays of the arc when welding or observing open arc welding.
- Use suitable clothing made from durable flame-resistant material to protect your skin and that of your helpers from the arc rays.
- Protect other nearby personnel with suitable, non-flammable screening and /or warn them not to watch the arc nor expose themselves to the arc rays or to hot spatter or metal.

**SELF-PROTECTION**

- Keep all equipment safety guards, covers and devices in position and in good repair. Keep hands, hair, clothing and tools away from motors, gears, fans and all other moving parts when starting, operating or repairing equipment.

**WELDING SPARKS CAN CAUSE FIRE & INJURY**

- Remove fire hazards from the welding area. If this is not possible, cover them to prevent the welding sparks from starting a fire. Remember that welding sparks and hot materials from welding can easily go through small cracks and openings to adjacent areas. Avoid welding near hydraulic lines. Have a fire extinguisher readily available.
- Where compressed gases are to be used at the job site, special precautions should be used to prevent hazardous situation.
- When not welding, make certain no part of the electrode circuit is touching the work or ground. Accidental contact can cause overheating and create a fire hazard.
- Do not heat, cut or weld tanks, drums or containers until the proper steps have been taken to insure that such procedures will not cause flammable or toxic vapors from substances inside. They can cause an explosion even though they have been “cleaned”.

- Vent hollow castings or containers before heating, cutting or welding. They may explode without vents.
- Sparks and spatter are thrown from the welding arc. Wear oil free protective garments such as leather gloves, heavy shirt, cuff less trousers, high work boots and a cap over your hair. Wear ear plugs when welding out of position or in confined places. Always wear DIN rated safety glasses with side shields when in a welding area.
- Connect the work cable to the work as close to the welding area as practical. Work cables connected to the building framework or other locations away from the welding area increase the possibility of the welding current passing through lifting chains, crane cables or other alternate circuits. This can create fire hazards or overheat lifting chains or cables causing premature failure.

1.3 Knowledge of Electric and Magnetic Fields

Electric current flowing through any conductor causes localized Electro Magnetic Fields (EMF). The discussion on the effect of EMF is ongoing all around the world. Up to now, no material evidence shows that EMF may have effects on health. However, the research on damage of EMF is still ongoing. Before any conclusion, we should minimize exposure to EMF as few as possible.

In order to minimize EMF, we should use the following procedures:

- Route the electrode and work cables together – Secure them with tape or sleeve.
- All cables should be kept as far away from the operator as possible.
- Never coil the power or earth cables around operator body.
- Connect the work cable to the workpiece as close as possible to the area being welded.
- The people with heart-pacemaker should be away from the welding area.

§2 Overview

§2.1 Brief Introduction

The 130 MIG INVERTER arc welding machine adopts the latest pulse width modulation (PWM) technology and insulated gate bipolar transistor (IGBT) power module, which can change work frequency to medium frequency so as to replace the traditional hulking work frequency transformer with the compact medium frequency transformer. This technology provides a compact, lightweight, portable power supply with high output power and superior efficiency.

The 130 MIG INVERTER arc welding machines are designed to use active gas (Ar+O₂, Ar+CO₂ and inactive gas (Ar) for MIG/MAG welding or Flux-Cored wire for non-shield gas welding.

The 130 MIG INVERTER *Series* arc welding machine has automatic protection functions with intelligent to over-voltage, over-current and over-heat sensing with auto-reset. If any one of the above problems happens, the alarm lamp on the front panel will illuminate and output current will be shut off automatically to protect itself and prolong the equipment using life.

130 MIG INVERTER Features:

1. Infinitely variable control system with *AUTO-MIG* settings for power & wire speed
2. Electronic inverter power source provides high performance and efficiency
3. IGBT technology insures low power dissipation in compact package
4. Superior duty cycle inverter provides 30% DC @ 100A and 100% DC @ 70A(40°C).

The 130 MIG INVERTER arc welding machine is suitable for all positions welding for various materials including stainless steel, carbon steel, alloy steel, etc. common in the auto body repair, light fabrication, pipe installment, petrochemical, architectural, general construction, farming and restoration industries.

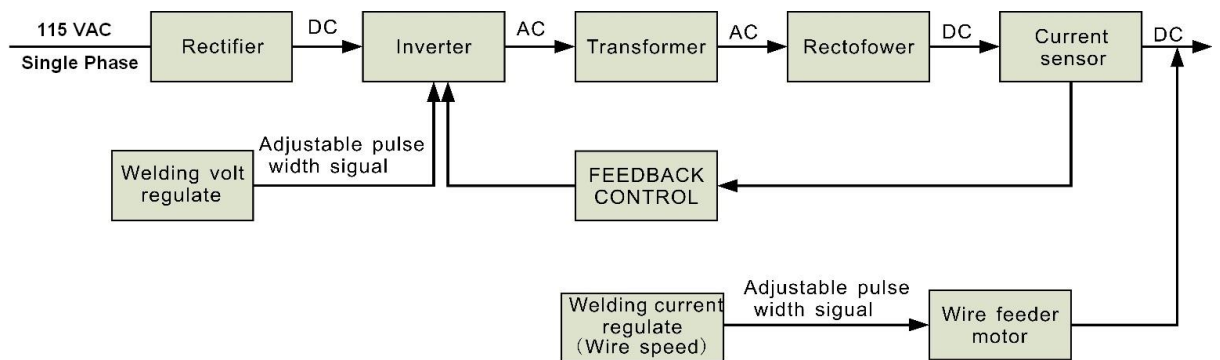
MAG--Metal Active Gas Welding (Mixed Argon, CO₂ or O₂)

MIG--Metal Inert Gas Welding (Argon or Helium Gas)

FLUX-CORED—Arc Welding (No-Gas)

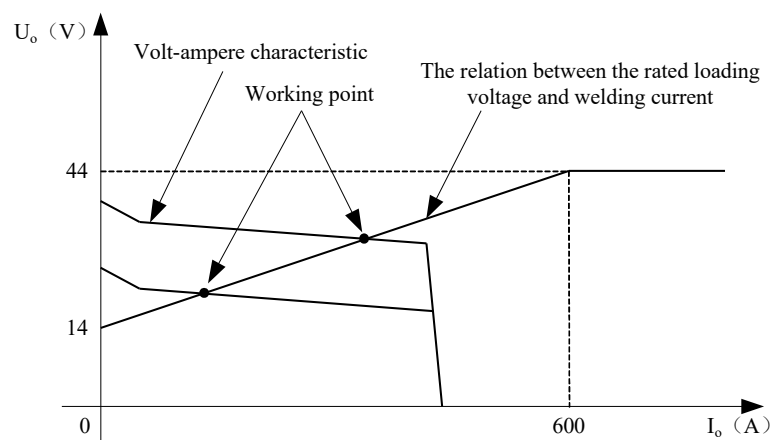
§2.2 Working Principle

The working principle of 130 MIG INVERTER arc welding machine is shown as the following figure. single-phase 110V work frequency AC is rectified into DC (154V), then is converted to medium frequency AC (about 37KHz) by inverter device (IGBT), after reducing voltage by medium transformer (the main transformer) and rectifying by medium frequency rectifier (fast recovery diodes) and is outputted by inductance filtering. Meanwhile, the welding current parameter can be adjusted infinitely to meet with the requirements of welding application.



§2.3 Volt-Ampere Characteristic

The inverter has an excellent volt-ampere characteristic, whose graph is shown as the following figure. The relation between the rated loading voltage U_2 and welding current I_2 is as follows: $U_2 = 14 + 0.05I_2(V)$



§2.4 Parameters

Model Parameters	MIG130 (115V)
Input Voltage (V)	1~115VAC±10%
Input Current (A)	20 (max.)
Input Power (KW)	2.4
Welding Current (A)	35~100
No-load Voltage (V)	57
Duty cycle (40°C)	30%100A 100%70A
Diameter(mm)	Fe: 0.6/0.8 SS: 0.6/0.8 Flux-Cored: 0.6/0.8/0.9
Protection class	IP23
Insulation class	H
Dimensions (mm)	17.4375" x 7.50" x 16.625" (443*191*320)
Weight (Kg)	21 Lbs. (8.9)

Note: The above parameters are subject to change.

§2.5 Duty Cycle & Overtemp

The CSA/UL rated duty cycle is defined as the proportion of the time that a machine can work continuously over a 10 minute cycle when set at 100% of rated output welding current in 40C (104F) ambient environment.

When the transformer reaches an over-heat condition, the heat sensor inside it will open and will output an instruction to circuit board to cut AC relay and the output welding current while illuminating the over-heat pilot lamp in the front panel. At this time, all welding operations should cease for 15 minutes allowing the cooling fan to reduce the temperature. The unit will auto-reset when correct temperature has been achieved and pilot light will go out. If the machine reached the over-temp capacity again, the welding output current or the arc cycle should be reduced.

§3 Inspection & Installation

§3.1 Unpacking Inspection

Identify and account for each item per the following list:

- 1) 130 Amp inverter power source (with NEMA5-15P cord).
- 2) NM14A MIG Torch 8.5' with gas valve in handle design.
- 3) 200A Earth Clamp 10' with UV/IR welding power cable.
- 4) Dual gauge gas regulator and gas hose with brass connectors
- 5) ER70S6-030 mild steel welding wire on 4 inch (100mm) spool
- 6) E71TGS-030 flux-cored welding wire on 4 inch (100mm) spool
- 7) Operator Manual

Inspect each item for possible shipping damage. If damage is evident, contact your distributor and/or shipping company before proceeding with the installation.

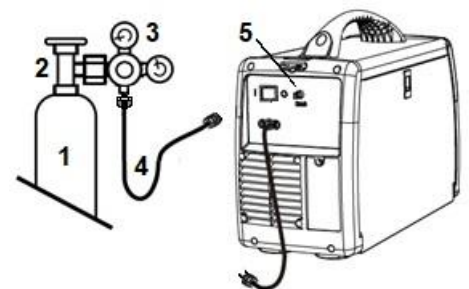
3.2 Input Power Connections

The 130 MIG inverter machine features a high efficiency inverter power supply designed to be connected to any 110-120 VAC, 1-Phase LINE power outlet with **20+ amp circuit breaker**. This unit will draw maximum power from the LINE; therefore, it is ***not recommended that any extension cord be installed*** between machine and electrical outlet.

3.3 Shield Gas Connections

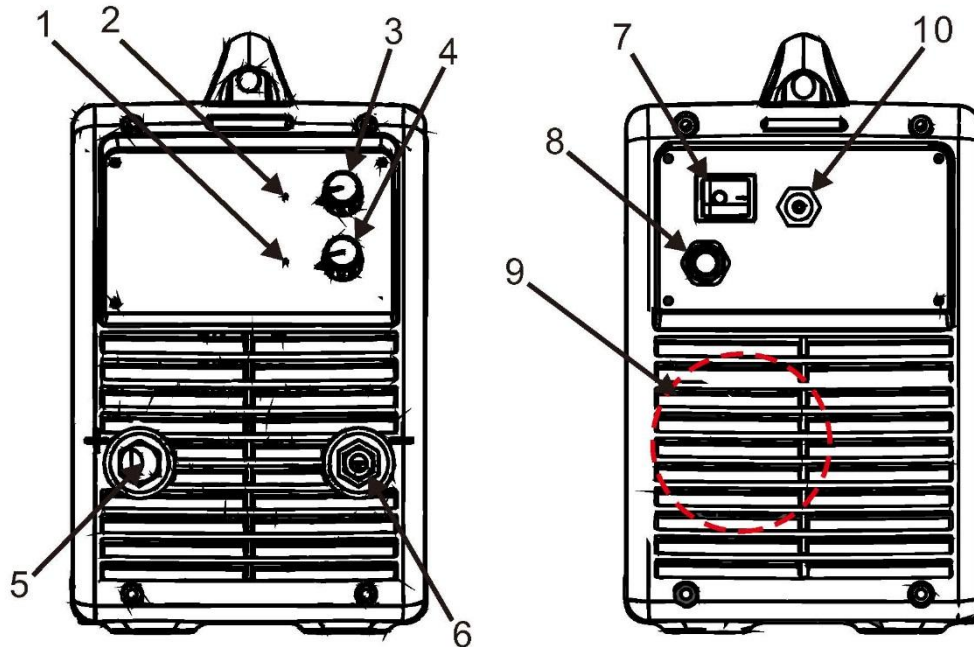
When using machine in MIG and/or TIG welding mode, it is necessary to use the appropriate shield gas with the welding torch. Carefully follow the instructions.

- 1) Shield gas cylinder AR, AR/C02, C02, Etc.
- 2) Gas valve. Must remained closed at all times except during welding operations.
- 3) Gas regulator must installed securely on cylinder valve. Tighten with wrench in clockwise direction.
- 4) Gas hose assembly with 5/8-18 RHT brass nipple fittings to be installed between regulator and machine input fitting.
- 5) Machine shield gas input fitting 5/8-18 RHT. Install gas line securely checking for no leaks.



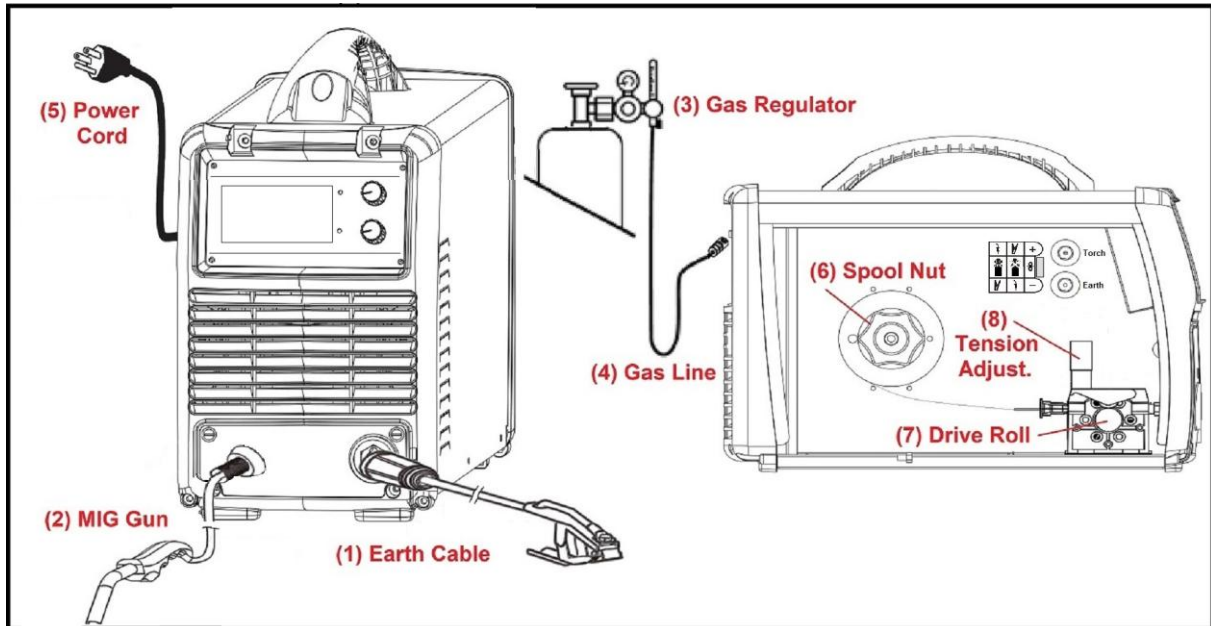
§4 Set-Up & Operation

§4.1 Layout for the front and rear panel



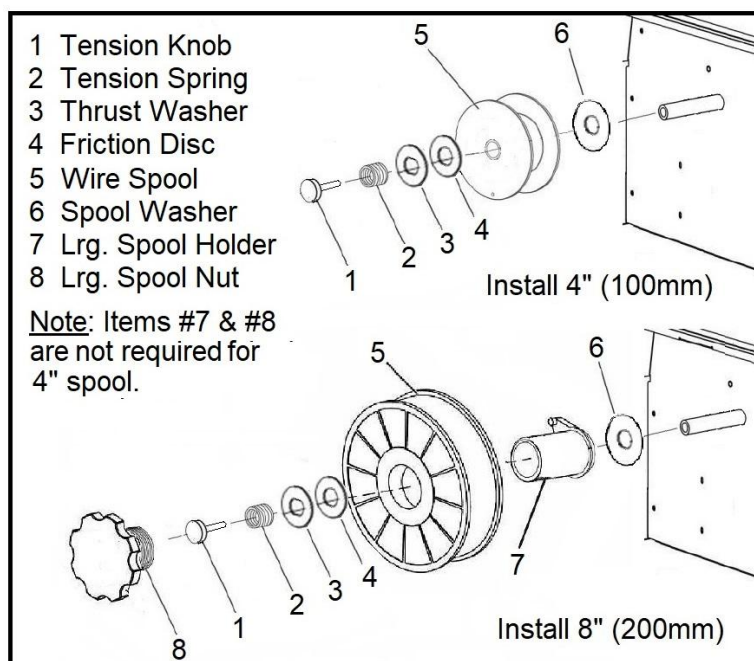
1. **Alarm LED:** Illuminated in over or under LINE voltage or over heated condition.
2. **Power LED:** Power led is illuminated when LINE power is in machine.
3. **Wire speed knob:** Adjusts the feeder speed of the welding wire.
4. **Welding volt knob:** Adjusts the welding voltage & current
5. **MIG gun output:** Connection point for MIG welding torch
6. **Earth cable output:** Connection point for the work piece cable.
7. **Power switch:** Controls the power supply (ON/OFF) to the machine.
8. **Service cord:** 115VAC LINE service cord with NEMA5-15 3-prong plug.
9. **Cooling fan:** Moves cooling air into machine to extend duty cycle.
10. **Gas inlet:** Shield gas inlet connection fitting for gas hose from regulator.

§4.2 MIG Welding Set-Up



Operation Steps:

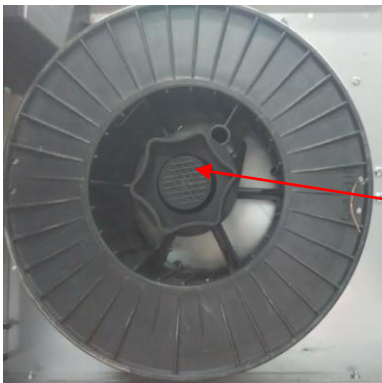
1. Connect the negative (-) earth cable clamp to the work piece (base metal).
2. Confirm the MIG gun has the correct size contact tip for the welding wire installed.
3. Connect the gas regulator to the gas cylinder and the gas line to the regulator.
4. Connect input shield gas hose from regulator to input fitting on back of machine.
5. Connect the power cord of welding machine to electric outlet with the NEMA5-15P.
6. Install spool of welding wire on spool holder as shown in illustration below.



7. Lift idler roller arm up and, while holding the end of wire taunt, feed it through the feeder inlet.
8. Maintaining tension, guide welding wire over V-groove on drive roll and feed into torch liner.
9. Confirm drive roll V-groove "matches" the wire diameter on spool and close tension arm.
10. Remove gas nozzle and contact tip from torch neck.
11. Turn ON machine and, holding torch away from face, push trigger to feed wire out of swan neck.
12. Turn machine OFF! Replace contact tip over wire, tighten with wrench, and reinstall gas nozzle.



13. To set drive roll tension, feed 6" of wire from nozzle and bend the end of the wire at 90-degrees. Then, hold it about 4" (100mm) from your **GLOVED** hand letting it run into your palm. It should coil (bow) without slipping. Increase the drive roll tension knob ½ turn until the welding wire does not slip over the drive roller.



14. To set spool tension, press trigger to START & STOP the wire feeder. If the weight and speed of the wire spool turning creates an inertia that causes the spool to run on (coast), **TIGHTEN** the knob until the spool stops when the trigger is released. The knob should be set to create a slight "drag" on the spool so the wire stays taunt all times.

15. Turn on shield gas valve ON and set regulator flow rate.
16. Turn welder power switch to ON position and you are ready to weld.
17. **For Flux-cored**, reverse torch & earth polarity & flip gas switch in cabinet to OFF position.

§4.3 MIG Welding Operation

(V) (S)	Gas			No Gas		
	.024"	.030"	.035"	.024"	.030"	.035"
3/64"	3 B	1 A	1 B	2 C	2 C	3 D
5/64"	5 D	2 B	1.5 C	4 D	4 E	5 F
1/8"		3 D	2 D		6 F	6 G
3/16"			3 F			7 H

§4.3.1 Output Voltage Setting (V)

SELECT “Gas” or “No Gas” chart. Follow welding wire diameter (installed in machine) down the chart to the material thickness to be welded and **SET VOLTAGE “A – H”**.

§4.3.2 Wire Speed Setting (S)

SELECT “Gas” or “No Gas” chart. Follow welding wire diameter (installed in machine) down the chart to the wire feed speed to be welded and **SET SPEED “1 - 10”**.

§4.4 Operation Environment

- Height above sea level is below 3200 Ft. (1000 meters).
- Operation range: temperature 14°F-104°F (-10°C-40°C) & relative humidity below 90 % (20°C).
- Ventilation of at least 1 foot (30cm) free space between the machine and any structure.

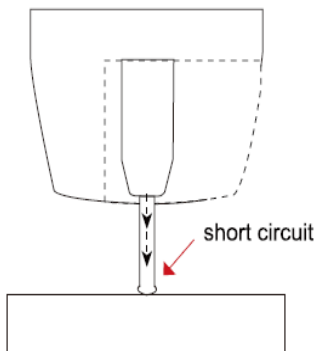
§4.5 Operation Notices

- ▲ Read §1 carefully before attempting to use this equipment.
- ▲ Install ground wire lead on the NEMA5-15 plug directly into the 115VAC outlet.
- ▲ Ensure that the input LINE circuit is rated at 115VAC (50/60Hz) with **20-amp** breaker.
- ▲ Ensure good ventilation of the machine to improve duty-cycle ratio.
- ▲ Make certain welding area is free of all flammable or combustible materials.
- ▲ Turn off the power switch when the operation finished for economize energy sources.
- ▲ When power shuts off and ALERT lamp illuminates, do not restart it until problem is resolved.

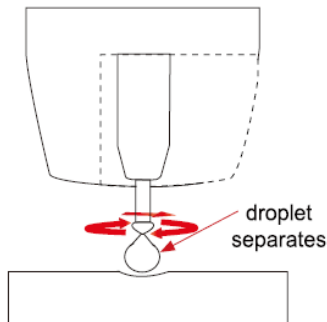
Otherwise, the cause of problem could still be present and machine may be damaged.

- ▲ In case of problems, contact your local dealer or authorized repair center.

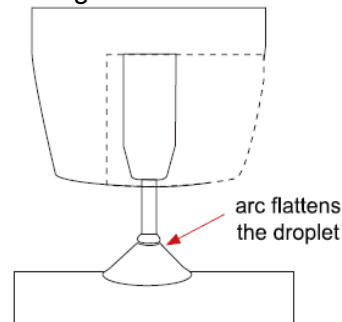
§4.6 MIG Welding Technics



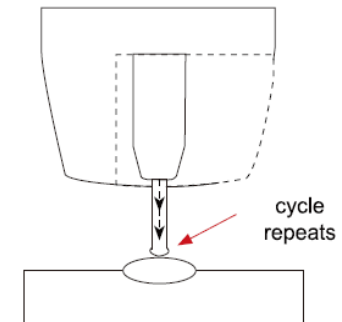
The wire touches the work creating a short circuit between it and the base metal, causing the current to flow through the welding wire.



The wire cannot support all the current flow, resistance builds up and the wire becomes hot and weak and begins to melt.



The current flow creates a magnetic field that begins to pinch the melting wire forming it into droplet.



The pinch causes the forming droplet to separate and fall towards the now creating weld pool.

An arc is created at the separation of the droplet and the heat & force of the arc flattens out the droplet.

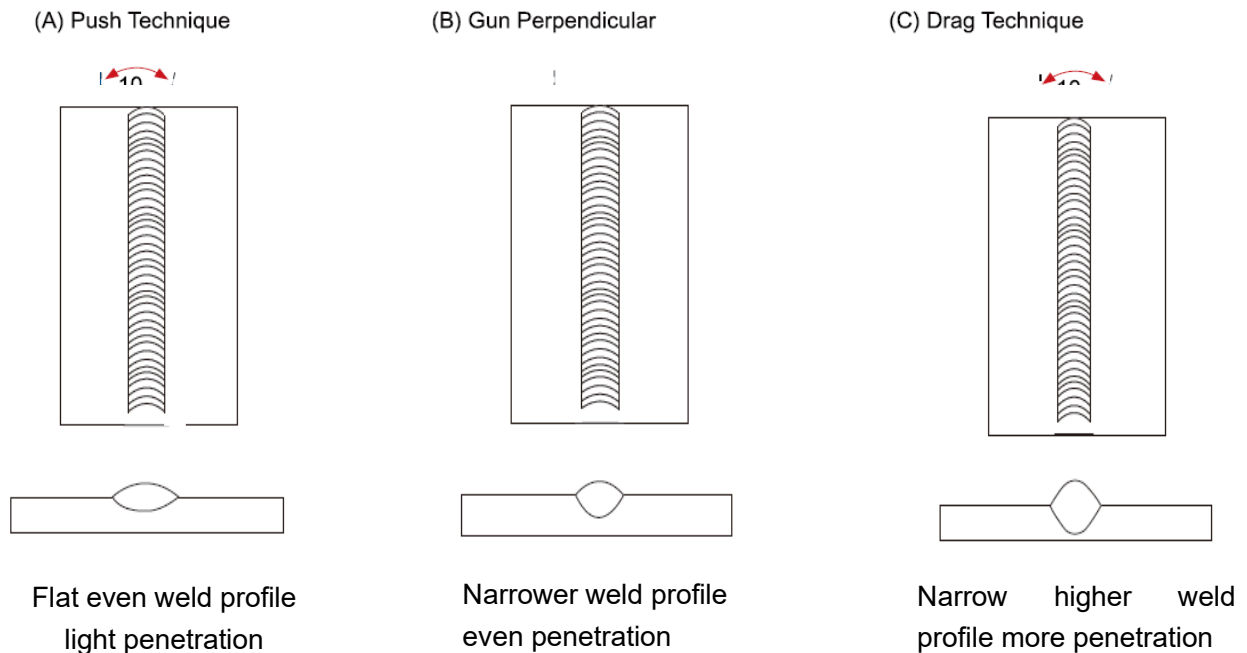
The wire feed speed overcomes the heat of the arc and the wire again approaches the work to short circuit and repeat the cycle.

Gun Position: Gun position or technique usually refers to how the wire is directed at the base metal, the angle and travel direction chosen. Travel speed and work angle will determine the characteristic of the weld bead profile and degree of weld penetration.

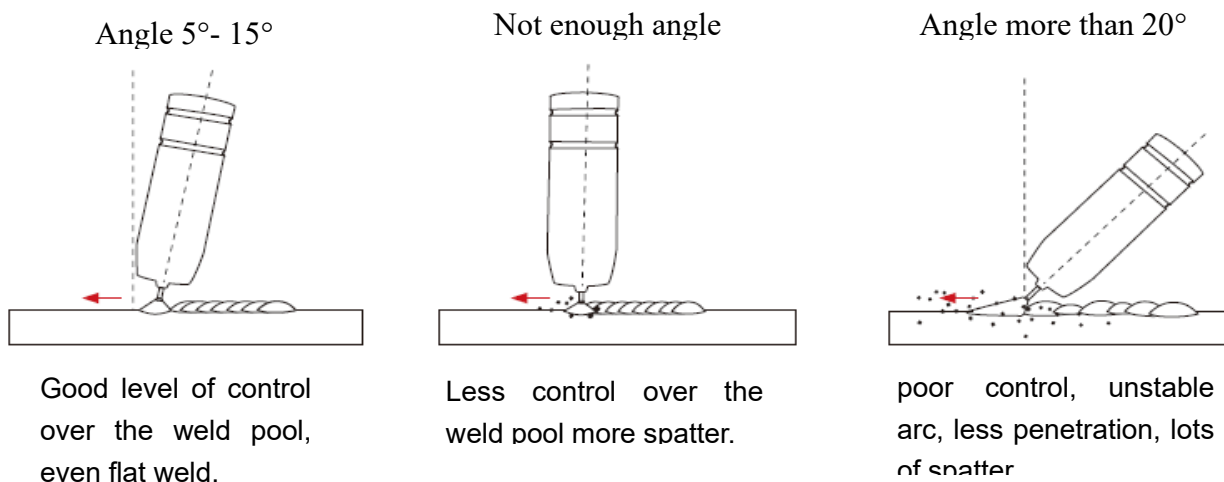
Push Technique - The wire is located at the leading edge of the weld pool and pushed towards the unmelted work surface. This technique offers a better view of the weld joint and direction of the wire into the weld joint. Push technique directs the heat away from the weld puddle allowing faster travel speeds providing a flatter weld profile with light penetration - useful for welding thin materials. The welds are wider and flatter allowing for minimal clean up / grinding time.

Perpendicular Technique - The wire is fed directly into the weld, this technique is used primarily for automated situations or when conditions make it necessary. The weld profile is generally higher and a deeper penetration is achieved.

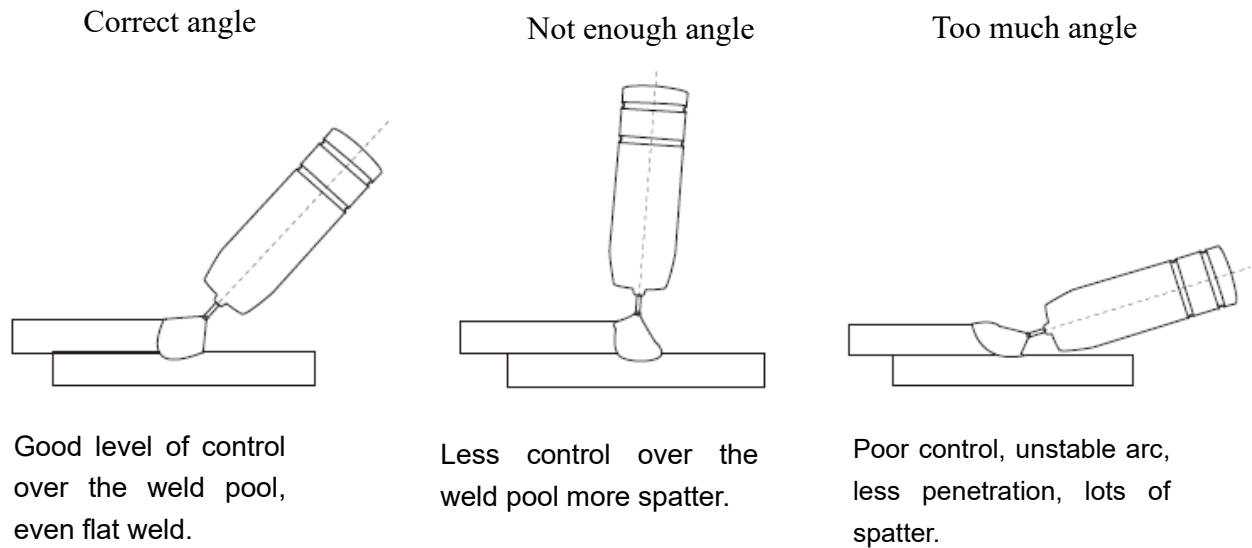
Drag Technique - The gun and wire is dragged away from the weld bead. The arc and heat is concentrated on the weld pool, the base metal receives more heat, deeper melting, more penetration and the weld profile is higher with more build up.



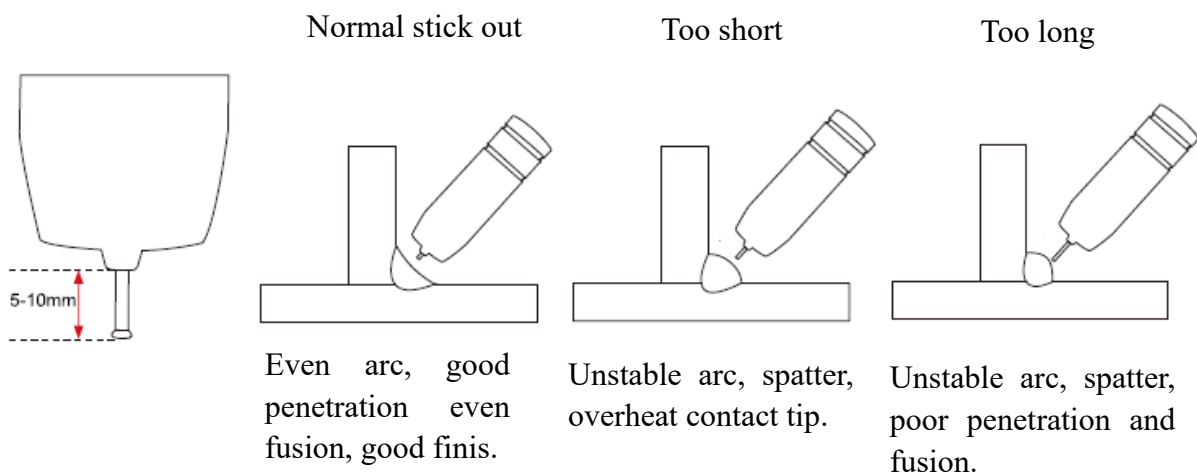
Travel Angle - Travel angle is the right to left angle relative to the direction of welding. A travel angle of 5°- 15° is ideal and produces a good level of control over the weld pool. A travel angle greater than 20° will give an unstable arc condition with poor weld metal transfer, less penetration, high levels of spatter, poor gas shield and poor quality finished weld.



Angle to Work - The work angle is the forward back angle of the gun relative to the work piece. The correct work angle provides good bead shape, prevents undercut, uneven penetration, poor gas shield and poor quality finished weld.

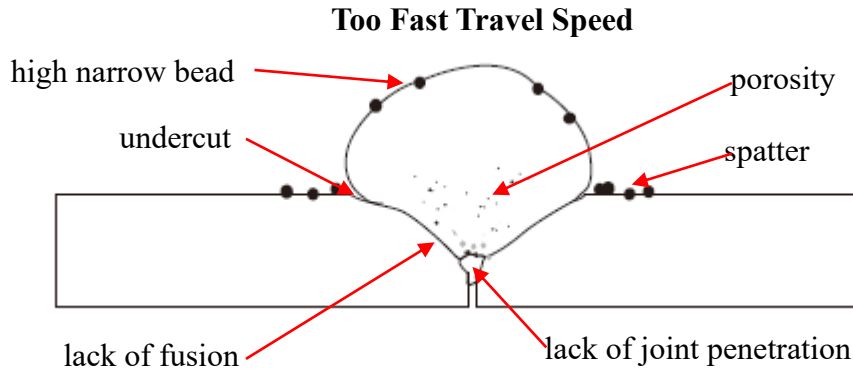


Stick Out- Stick out is the length of the unmelted wire protruding from the end of the contact tip. A constant even stick out of 5-10mm will produce a stable arc, and an even current flow providing good penetration and even fusion. Too short stick out will cause an unstable weld pool, produce spatter and over heat the contact tip. Too long stick out will cause an unstable arc, lack of penetration, lack of fusion and increase spatter.

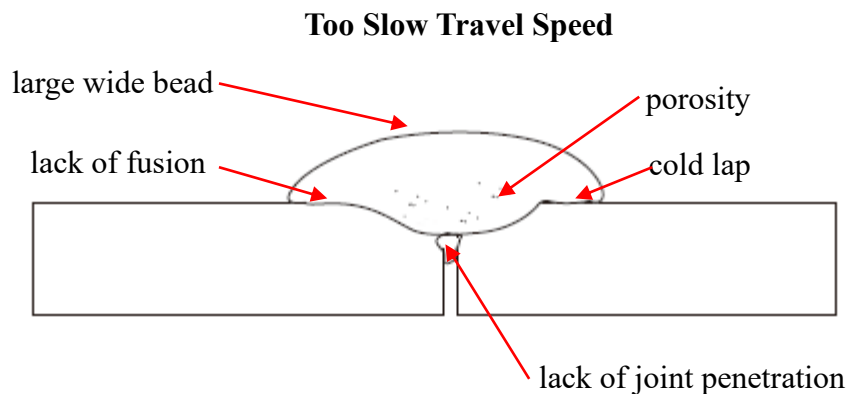


Travel Speed - Travel speed is the rate that the gun is moved along the weld joint and is usually measured in mm per minute. Travel speeds can vary depending on conditions and the welders' skill and is limited to the welders ability to control the weld pool. Push technique allows faster travel speeds than Drag technique. Gas flow must also correspond with the travel speed, increasing with faster travel speed and decreasing with slower speed. Travel speed needs to match the amperage and will decrease as the material thickness and amperage increase.

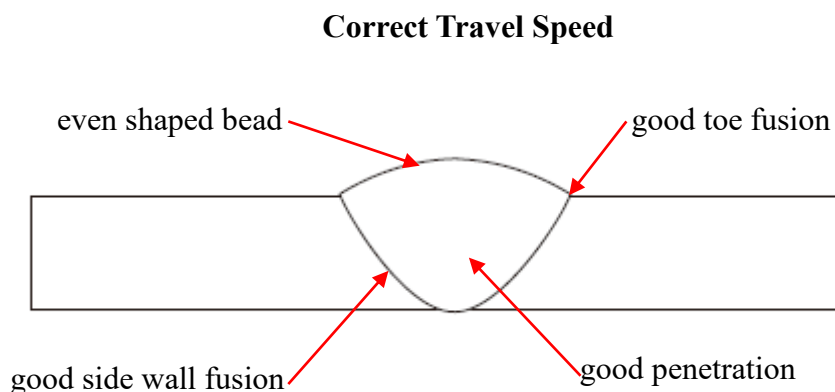
Too Fast Travel Speed - A too fast travel speed produces too little heat per mm of travel resulting in less penetration and reduced weld fusion, the weld bead solidifies very quickly trapping gases inside the weld metal causing porosity. Undercutting of the base metal can also occur and an unfilled groove in the base metal is created when the travel speed is too fast to allow molten metal to flow into the weld crater created by the arc heat.



Too Slow Travel Speed - A too slow travel speed produces a large weld with lack of penetration and fusion. The energy from the arc dwells on top of the weld pool rather than penetrating the base metal. This produces a wider weld bead with more deposited weld metal per mm than is required resulting in a weld deposit of poor quality.



Correct Travel Speed - The correct travel speed keeps the arc at the leading edge of the weld pool allowing the base metal to melt sufficiently to create good penetration, fusion and wetting out of the weld pool producing a weld deposit of good quality.



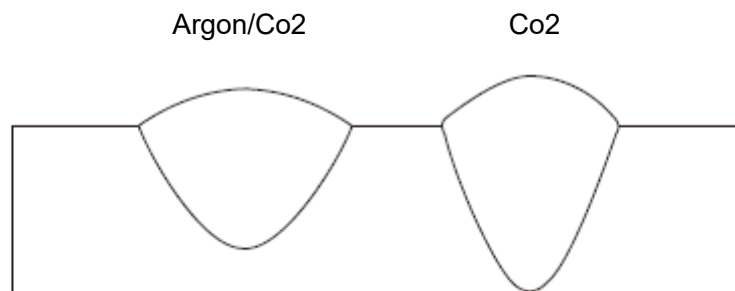
Wire types and sizes - Use the correct wire type for the base metal being welded. Use stainless steel wire for stainless steel, aluminum wires for aluminum and steel wires for steel.

Use a smaller diameter wire for thin base metals. For thicker materials use a larger wire diameter and larger machine, check the recommended welding capability of your machine. See chart below for reference:

Material	Wire diameter (mm)	GAS	Current (A)
Fe-metal Solid-cored	0.6	MIX	25-110
Fe-metal Solid-cored	0.8	MIX	40-140
Fe-metal Solid-cored	0.9	MIX	50-140
Fe-metal Flux-cored	0.8	N/A	60-140
Fe-metal Flux-cored	0.9	N/A	60-140
Ss-metal Solid - cored	0.8	MIX	60-140
Ss-metal Solid - cored	0.9	MIX	70-140

Gas selection - The purpose of the gas in the MIG process is to protect or “shield” the wire, the arc and the molten weld metal from the atmosphere. Without the protection of the shielding gas the weld produced would contain defects like porosity, lack of fusion and slag inclusions. Additionally, some of the gas becomes ionized (electrically charged) and helps the current flow smoothly.

Use the correct shielding gas: Co₂ is good for steel and offers good penetration characteristics, the weld profile is narrower and slightly more raised than the weld profile obtained from Argon/Co₂ mixed gas. Argon/Co₂ mix gas offers better weld ability for thin metals and has a wider range of setting tolerance on the machine.



Penetration Pattern for Steel

§5 Maintenance & Troubleshooting

§5.1 Maintenance

In order to guarantee that arc welding machine works efficiently and provides long life, it must be maintained regularly. Let customers understand the maintenance methods and means of arc welding machine more , enable customers to carry on simple examination and safeguarding by oneself, try one's best to reduce the fault rate and repair times of arc welding machine, so as to lengthen service life of arc welding machine .Maintenance items in detail are in the following table.

- Warning: For safety while maintaining the machine, please shut off the supply power and wait for 5 minutes, until capacitor stored voltage drops below 36V.

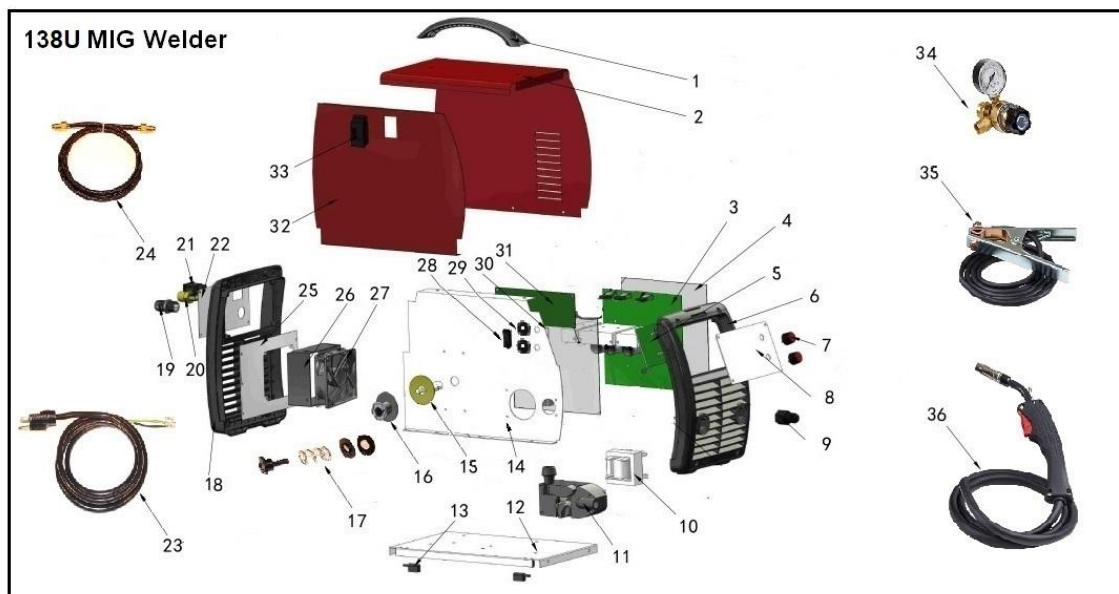
Frequency	Maintenance items
Daily examination	If the power switch does not correctly snap in position, please replace immediately. Contact service department for replacement switch. After power ON, watch/listen to confirm arc welding machine cooling fan is on and there is vibration or peculiar smell. If there is one of the above problems, disconnect power cord and remove cover to determine blockage and remove. Observe LED display lamp and confirm POWER lamp is continuously illuminated. If this lamp id flickering, LINE voltage is too high or low. Observe that both voltage “V” and wire speed “S” knobs are functional and turn easily. If not, replace potentiometers. Confirm all welding cables are not damaged and all terminal connections are secure. Loose connectors will quickly over-heat cables and terminals causing permanent damage. Observe shield gas hose and fittings are in good condition and securely fastened to regulator and machine. Cylinder control valve should be turned OFF when machine is not in use to insure there is no loss of shield gas.
Monthly examination	Using dry compressed air, clear the inside of arc welding machine of dust and contamination on main voltage transformer, inductor coil, IGBT module & diode aluminum finned heat sinks as well as across the surface of the PCB. Check the terminal lugs in arc welding machine, if loose, please secure. If burnt, please replace. If rusty, remove oxidation on bolt with emery cloth or steel wool to ensure good electrical contact.
Quarter-yearly examination	All welding wires, cables and connections must be in good condition and attached securely. Machine cooling fan must be operable and no excessive dirt or dust should be built-up on internal components.

§5.2 Troubleshooting

- All welding machines have undergone 100% inspection before leaving the factory.
- Disconnect power cord from LINE before any trouble shooting and only professional maintenance personal should perform any action on the machine!

Item	Trouble		Reasons	Solution
1	Power switch “ON” but the power light not illuminated		Breaker open or damaged	Check circuit breaker
			Power switch damaged	Replace switch
			Power cord damaged	Replace cord
2	Machine over-heat LED illuminated but fan is not functioning		Fan damaged	Clear obstruction or replace
			The cable is loosen	Secure the cable tightly
3	Depress trigger switch, no output shielded gas	No output gas when test gas	No gas in cylinder or closed	Open valve or fill cylinder
			Low gas flow or leaks in hose and fittings	Adjust regulator flow, secure fittings
			Gas solenoid valve problem	Check and replace if required
		Output gas when test gas	Control switch damaged	Repair the switch
			Control circuit damaged	Check the board
4	Depress trigger switch, no wire feed	Wire feeder doesn’t turn	Motor damaged	Check and replace
			Control circuit damaged	Check and replace wire feed board
		Wire feed turns but no wire feed at nozzle	Welding wire skids over drive roller wheel	Check tension arm & tighten
			Welding wire skids over drive roller wheel	Confirm roller groove matches wire dia.
			Drive roller worn	Replace
			Wire won’t feed through gun with tip removed	Replace torch wire conduit liner
			Wire won’t feed through gun with tip installed	Wrong size or worn contact tip, change
			5	No striking arc and no output voltage
Control circuit damaged	Check the circuit			
6	Welding stops and over-temp light illuminates		Machine has reached duty-cycle limit or internal dust	Stop welding for 10-minutes to allow cool down. Auto-reset will turn lamp off
7	Welding current is run away and can be not controlled		The potentiometer damaged	Check or change it
			The control circuit damaged	Check the circuit
8	The crater current can be not adjusted		The PCB damaged	Check it
9	Weld is inconsistent		Inadequate or wrong gas	Change cylinder to correct

§5.3 Replacement Exploded Parts Drawing



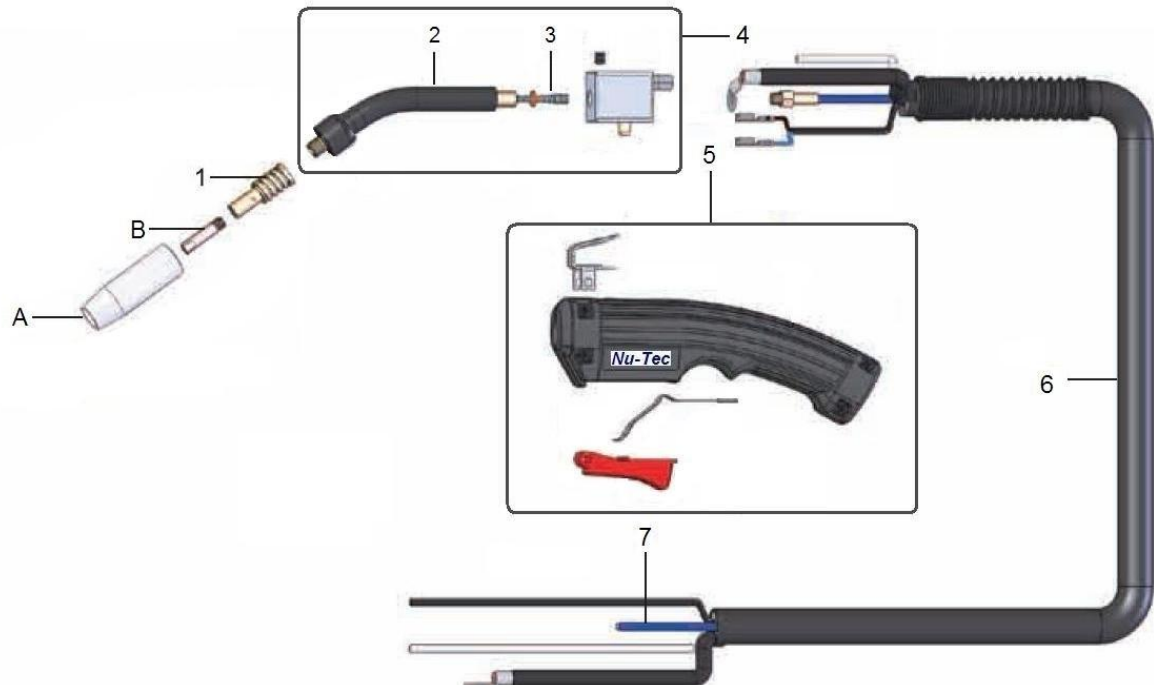
1	538.0018	Handle	19	538.0015	Strain Relief
2	538.0100	Cabinet Top	20	530.0014	Gas Hose Fitting
3	538.0005	Inverter PCB	21	530.0020	Power Switch
4	538.0006	Insulator Sheet	22	530.0030	Back Plate
5	538.0012	Control Board	23	707.0121	Power Cord 115V
6	538.0007	Cabinet Frame F	24	520.0009	Gas Hose 5/8-18
7	538.0011	Knob Control	25	530.0025	Fan Plate
8	538.0021	Front Panel	26	530.0027	Fan Shroud
9	511N0014	3550F Connector	27	530.0024	Fan Cooling
10	538.0015	Transformer Main	28	538.0021	Toggle Switch
11	530.0010	Wire Feed Drive	29	538.0023	Terminal Stud
12	538.0101	Cabinet Base	30	538.0006	Insulation Sheet
13	538.0019	Hinge Door	31	538.0014	Power Board
14	538.0009	Cabinet Center	32	538.0102	Cabinet Door
15	538.0028	Spool Gasket	33	538.0017	Latch Door
16	538.0013	Spool Core	34	720.0002	Regulator
17	538.0016	Spool Nut & Spring	35	513N0021	Clamp Assembly
18	538.0008	Cabinet Frame R	36	530.0022	MIG Gun #14

SERVICE SUPPORT: 704-935-5242

§5.4 MIG Gun Exploded Parts

NM14 Nu-Tec MIG Gun

PN: 530.0022 (OLD 006N0024)



A	NOZZLE 1/2"	145N0075
	NOZZLE 3/8"	145N0123
	NOZZLE 5/8"	145N0041
	NOZZLE SPOT-WELD	145N0168
	NOZZLE STUD-WELD	145N0186
B	CONTACT TIP .023"	140N0008
	CONTACT TIP .030"	140N0059
	CONTACT TIP .035"	140N0177
1	TIP HOLDER	006N0018
2	SWAN NECK #14	006N0006
3	LINER - NECK	206363
4	VALVE & NECK ASSM	006N0007
5	HANDLE ASSEMBLY	006N0005
6	POWER CABLE #14	160N0014
7	LINER STEEL #14	006N0008

§5.5 Electrical Schematic Drawing

MIG130 (115VAC)

