

# serenelife™



## *SLMIGWL135*

### Portable Digital MIG Welding Machine

MIG Inverter Welder with Complete Accessories Set  
for Household Worker, Supports Dual Voltage 110V/220V

**USER MANUAL**

## **⚠ WARNING!**

Read and understand all safety warnings and instructions carefully before using this machine. Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury. Save this manual for future reference.

**Only qualified persons should install, operate, maintain, and repair this unit.**

### **WELDING SAFETY TIPS:**

Exposure to a welding arc is extremely harmful to the eyes and skin. Prolonged exposure to a welding arc can cause blindness and burns. Never strike an arc or begin welding unless you are adequately protected. Wear fire resistant welding gloves, a heavy long-sleeved shirt, cuffless pants, high topped shoes, and a welding helmet.

### **CAUTION:**

**To prevent serious injury, fire, and burns:**

Keep welding tip clear of grounded objects whenever the unit is plugged in.

### **WELDING PREPARATION:**

An important factor in making a satisfactory weld is preparation. This includes studying the process and equipment and practicing welding before attempting to weld the finished product. An organized, safe, ergonomic, comfortable, and a well-lit work area should be prepared for the operator. The work area should specifically be free of all flammables with both a fire extinguisher and a bucket of sand available.

**To properly prepare for welding with your new welder, it is necessary to:**

- Read the safety precautions at the front of this manual.
- Prepare an organized, well-lit work area.
- Provide protection for the eyes and skin of the operator and bystanders.
- Attach the ground clamp to the bare metal to be welded, making sure of good contact.
- Make sure that the wire-roller groove in the roller corresponds to the diameter and type of wire being used.
- Plug the machine into a suitable outlet.

## **FIRE PRECAUTIONS**

- All flammable materials **MUST** be removed from the welding area.
- **DO NOT** strike an Arc on or near the gas cylinder.
- **DO NOT** attempt to weld fuel or gas containers unless adequate procedures have been taken to ensure that no vapour remains. Fuel tanks should be thoroughly steam cleaned before welding.

## **WELDING FUMES**

Toxic gases are given off during the MIG welding process. Always use in a well ventilated area.

## **ARC GLARE**

Always use face shield or welding helmet fitted with the correct glass filter. Never use damaged safety equipment.

## **HEAT**

Wear welding gloves at all times whilst welding. They will protect the hands from ultra-violet radiation and direct heat of the arc. It is also recommended that overalls are worn.

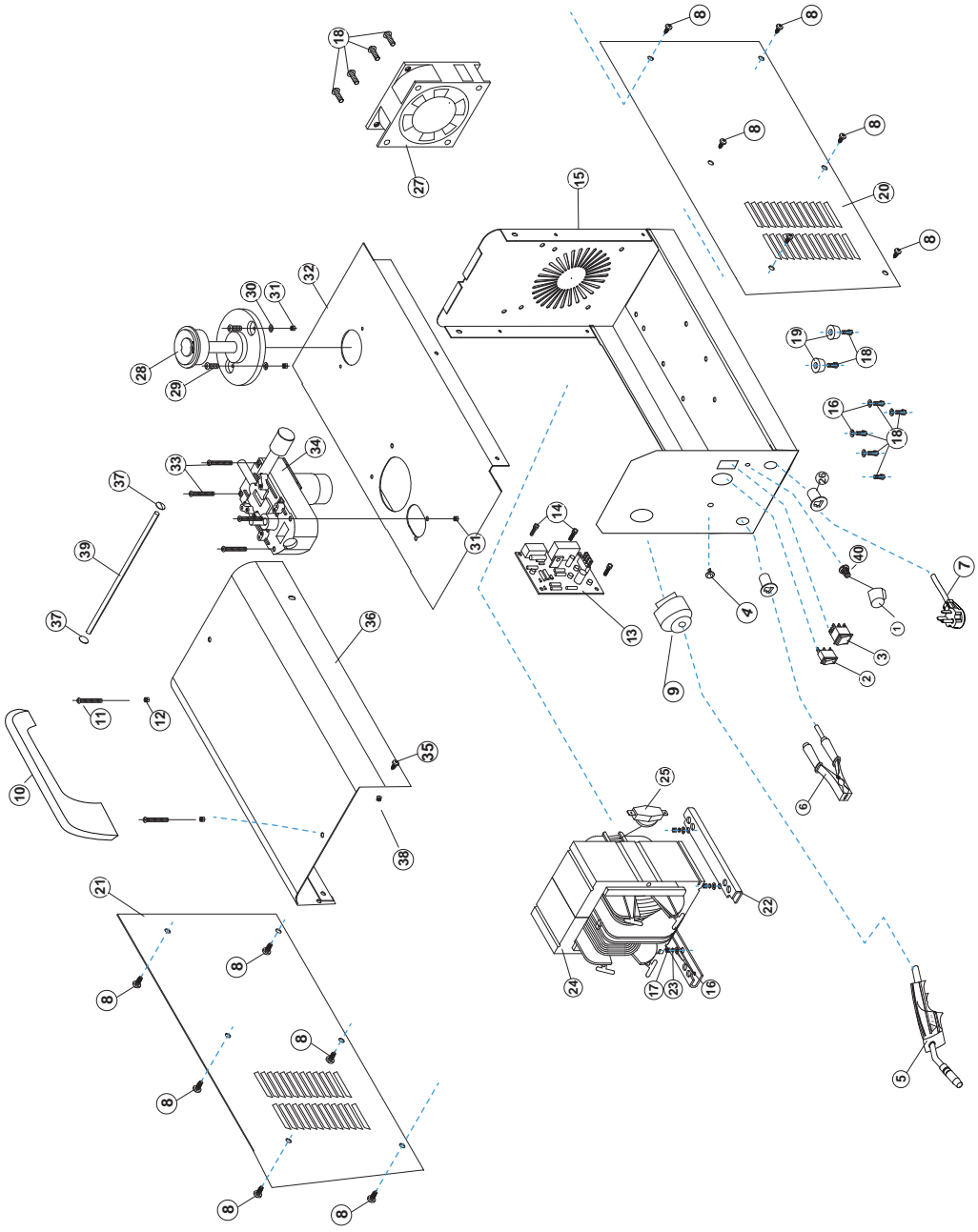
## **ADDITIONAL PROTECTIVE CLOTHING**

- When welding at higher settings wear a leather apron to protect the operator from spatter
- When welding in the overhead position, a suitable cap should protect the head and neck.
- We recommend that you wear industrial foot wear including steel toes caps.

## **IMPORTANT:**

1. These units should never be exposed to rain or snow.
2. Do not use in a wet or damp environment.
3. Never use to thaw or heat up frozen pipes.
4. These unit should be connected to the mains supply through a circuit breaker.

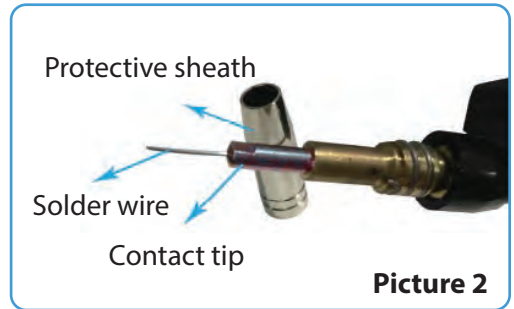
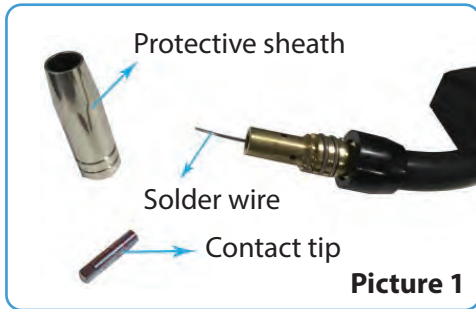
# PARTS DESCRIPTION



40	2.2k potentiometer	1
39	Ø4 rebar	1
38	M4 self-locking nut; stop nut	2
37	Ø4 Riveting fastening	4
36	The case cover plate	1
35	M4*12 bolt	2
34	Board potentiometer in chassis	1
33	M4*50 Cross screw with half round head	4
32	Chassis plate	1
31	M4 nut	6
30	M4 flat gasket	2
29	M4*12 Cross screw with half round head	2
28	Wire holding plate	1
27	Fan	1
26	adapting piece	1
25	thermal protector	1
24	transformer	1
23	M5 spring washer	4
22	Transformer backing plate	1
21	left side plate	1
20	right side plate	1
19	The bottom of the rubber bead	4
18	M5*12 Cross screw with half round head	14
17	M5 nut	8
16	M5 flat gasket	12
15	Chassis backplane	1
14	M3*25 Cross screw with half round head	4
13	Feed control circuit board	1
12	M5 nut	1
11	M5*35 Philip's head screw	2
10	hand shank	1
9	M 27*1.5 clip M27*1.5	1
8	ST5*12 Cross screw with half round head	12
7	Plug	1
6	earth clamp	1
5	welding gun	1
4	indicator light	1
3	power switch	1
2	switch	2
1	Potentiometer knob	1

## NOTICE:

While installing the new solder wire. Please take off the protective sheath and contact tip of the MIG torch (see picture 1). Then press the Mig torch switch to let the wire out till 3.5cm. At last assemble the protective sheath and contact tip back (see picture 2 and 3). To avoid the wire block the contact tip.



## SETTING UP THE WELD:

1. Make practice welds on pieces of scrap the same thickness as your intended workpiece to practice the technique before welding anything of value.
2. Clean the weld surfaces thoroughly with a wire brush or angle grinder; there must be no rust, paint, oil, or other materials on the weld surfaces, only bare metal.
3. Use clamps (not included) to hold the workpieces in position so that you can concentrate on proper welding techniques. The distance (if any) between the two workpieces must be controlled properly to allow the weld to hold both sides securely while allowing the weld to penetrate fully into the joint. The edges of thicker workpieces may need to be chamfered (or beveled) to allow proper weld penetration.

4. Clamp Ground Cable to bare metal on the workpiece near the weld area, or to the metal workbench where the workpiece is clamped.
5. Set the Wire Speed Dial and the Current Switch to the desired settings. Refer to the chart on the Welder or the chart on the facing page.  
**WARNING:** Do not switch the current while welding.
6. Flip the Power Switch to the OFF position, then plug the Welder into a dedicated, 120VAC, 20A circuit with delayed action type circuit breaker or fuses.
7. Hold the Gun, without touching the Trigger, with the wire and tip clearly away from any grounded objects. Then, turn the Power Switch to ON.

## FEEDING THE WIRE

**When fitting a new reel adopt the following procedure.**

- a. Remove the shroud from the torch and unscrew the contact tip.
- b. Fit the wire reel onto the spindle. The spring mounting must be correctly fitted.
- c. Locate the free end of the wire usually positioned in a thole on the reel rim.  
Remove the end of the wire from the hole and use sharp wire cutters to remove any distorted wire. Do not allow the wire to become slack on the reel.
- d. Hinge back the pressure arm and feed the end of the wire into the hole at the end of the liner. Ensure that the wire is fitted so that it is fed into the wire feed mechanism in a straight line.
- e. Fasten the pressure arm down ensuring that the MIG wire is in the groove in the feed roller. Ensure that the correct groove is used depending on the diameter of the wire i.e. one groove is for 0.6mm and the other for 0.8mm.
- f. To reverse the roller, unscrew the two screws securing the roller, supporting bracket and remove the bracket. The roller can then be removed from its shaft and reversed.
- g. Hold the torch straight. Switch the machine on and operate the torch trigger, the wire feed roller will turn feeding the wire through the torch.
- h. The wire will emerge from the far end of the torch, then feed the tip onto the wire (make sure the tip is the correct size for the diameter of wire being used), tighten it and replace the shroud.

## **BASIC WELDING TECHNIQUE**

1. Press (and hold) Trigger and contact area to be welded with electrode wire to ignite arc.
2. For a narrow weld, you can usually draw the wire in a steady straight line. This is called a stringer bead. For a wider weld, draw the wire back and forth across the joint. This is called a weave bead.
3. Hold Gun in one hand and the face shield in the other. If a hands-free welding shield is used, then both hands can be used to control Gun.
4. Direct the welding wire straight into the joint. This gives an angle of 90° (straight up and down) for butt (end to end) welds and an angle of 45° for fillet (T-shaped) welds.
5. The end of Gun should be tilted so that wire is angled anywhere in-between straight on and 15° in the direction you are welding. The amount of tilt is called the drag angle.
6. The welding wire should extend no more than 1/2" past the tip. This distance is called stick out or CTWD.
7. After welding the test weld on a piece of scrap for a few seconds, stop, and check your progress.
8. When the weld is complete, lift the Gun and welding wire clearly away from any grounded object, and turn the Power Switch off.
9. Set the Gun down on a heat-proof, electrically non-conductive surface. Unplug the Power Cord.

## **GETTING TO KNOW YOUR FLUX-CORED WIRE WELDER**

### **1. HANDLE**

The rugged, top-mounted handle allows for easy transport of your welder and a place to wrap your cables.

### **2. INPUT VOLTAGE INDICATOR LED**

This will be illuminated when the input voltage to the machine is present and the ON/OFF SWITCH is in the ON position.



### 3. FAULT/THERMAL OVERLOAD INDICATOR LED

This will be illuminated under the following conditions:

- a. The duty cycle of the machine has been exceeded or airflow is blocked. The fan will continue to run until the machine has cooled, but output power will be disabled. Ensure that the cooling fan is running and that there are 12 inches of clearance around all vents. When the LED turns off, welding power will be enabled again.
- b. If the LED Indicator Light remains illuminated for more than 10 minutes, it is likely that there is an input voltage problem.

### 4. VOLTAGE ADJUSTMENT KNOB

Use this dial to adjust the arc voltage or “heat” of your welder (1 is the lowest and 10 is the highest). Different materials and material thickness will require different voltage settings. You will need to adjust your voltage accordingly for different welding conditions. By properly adjusting your voltage settings and wire feed speed, you will produce clean welds.

### 5. WIRE FEED ADJUSTMENT KNOB

Use this dial to adjust the speed at which the welder feeds wire to the gun (1 is the slowest and 10 is the highest). You will need to adjust or “tune-in” your wire-speed for different welding conditions (thickness of metals, metal type, wire size, etc.) Refer to the setup chart for a starting point. When the wire speed is properly “tuned-in” the welding wire will melt into the material you’re welding as quickly as it is fed through the welding gun. This welder operates best between 5-7 on this dial and will do well in most conditions in this range.

**NOTE:** This is a scale, not actual wire feed speed.

### 6. MIG GUN AND CABLE

The welding gun controls the delivery of the welding wire to the material to be welded. The welding wire is fed through the welding cable and welding gun when the welding gun trigger is pulled. You will need to install a contact tip and welding nozzle to the end of the welding gun prior to welding.

### 7. GROUND CLAMP AND CABLE

Attaching the ground clamp to your workpiece completes the welding current circuit. You must attach the ground clamp to the metal you are welding.

If the ground clamp is not connected to the metal workpiece you intend to weld, the welder will not have a completed circuit and you will be unable to weld. A poor connection at the ground clamp will create an erratic arc and may damage your welder. Scrape away dirt, rust, scale, oil, or paint before attaching the ground clamp.

## **8. ON/OFF SWITCH**

This switch turns the welder ON and OFF. (Make sure the power switch is in the OFF position before performing any maintenance on the welder.)

## **9. INPUT POWER CABLE**

This is a standard, grounded 120-volt power cord. (Make sure you are using a properly grounded 120 Volt AC, single-phase power source with 20 amp time-delay ("slow-blow") breakers.)

## **10. WIRE SPOOL SPINDLE**

## **11. TWO-ROLL WIRE FEEDER**

### ***SELECTING THE WELDING WIRE***

This welder uses only four or eight-inch spools of 0.030-inch (0.8mm) self-shielding flux-core wire. Steel from 24 gauge up to 1/4-inch thick can be welded with 0.030-inch wire. Larger diameter wire will be less capable with thicker materials, will not increase your deposition rate, and may overdraw your AC power source.

#### **NOTE:**

- If a spool has developed heavy oxidation, the only solution to the problem is to discard the spool of wire.
- If you have an oxidized spool of wire, do not discard it until you have unspooled a few turns of wire to see if the wire farther down on the spool is in usable condition. If it is not, discard the spool.

*The contents and illustrations in this manual are subject to change without notice*

## TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSES
Weld deposit too thick	<ul style="list-style-type: none"> <li>• Welding voltage too low.</li> <li>• Torch moved over the work piece too slowly.</li> </ul>
Weld deposit incomplete and stringy	<ul style="list-style-type: none"> <li>• Torch moved over the work piece too quickly.</li> <li>• Rust, paint or grease on the work piece.</li> </ul>
Arc unstable, excessive spatter and weld porosity	<ul style="list-style-type: none"> <li>• Torch held too far from the work piece.</li> <li>• No gas - check bottle content, connections and regulator settings.</li> <li>• Incorrect gas for material.</li> </ul>
Wire repeatedly burns back	<ul style="list-style-type: none"> <li>• Torch held too close to the work piece.</li> <li>• Break in the welding circuit</li> <li>• Possible causes: <ul style="list-style-type: none"> <li>• Incorrect size of contact tip for wire.</li> <li>• Contact tip damaged - replace.</li> <li>• Contact tip loose - tighten.</li> <li>• Feed rollers worn - replace.</li> <li>• Welding wire corroded - replace.</li> <li>• Pressure roller adjustment incorrect - adjust.</li> <li>• Pressure roller sticking - lubricate or replace.</li> <li>• Wire tangled on reel</li> </ul> </li> </ul>
Lack of weld penetration	<ul style="list-style-type: none"> <li>• Welding output too low.</li> <li>• Wire feed speed too low.</li> <li>• Torch moved too fast.</li> </ul>
Burning holes in work piece	<ul style="list-style-type: none"> <li>• Welding output too high.</li> <li>• Torch moved erratically Or too slowly.</li> </ul>
No arc produced	<ul style="list-style-type: none"> <li>• Earth lead or torch cable in open circuit.</li> <li>• Poor earth clamp connection</li> </ul>
Welder does not operate (mains indicator not lit)	<ul style="list-style-type: none"> <li>• Check mains connection.</li> <li>• Check supply fuse.</li> </ul>
Welder does not operate with trigger pressed	<ul style="list-style-type: none"> <li>• Check torch trigger and it's connections.</li> <li>• Thermal overload cut out - allow to cool.</li> </ul>

## ROUTINE MAINTENANCE

**Electrical repairs must only be carried out by a qualified or approved engineer.**

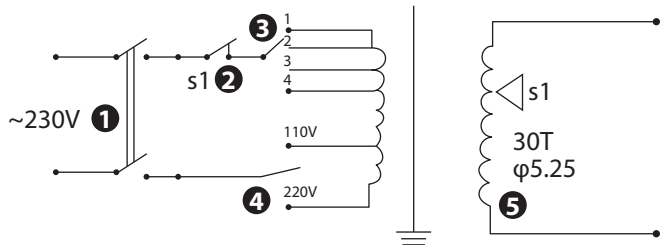
**Welding Cables: Regularly inspect their connections.**

**Torch:** Regularly dean the contact tip and shroud to remove spatter that will eventually disturb flow. Spraying the tip and shroud with anti-spatter spray can reduce the build up of spatter. Replace the tip periodically to maintain a good electrical contact between the tip and the wire. Blow clean dry air through the torch liner from time to time to ensure the wire passes freely through it If this has no effect the liner should be replaced.

**Note:** Ensure the torch lead is held in a straight line and fully extended when feeding the wire through the torch, otherwise there is risk of the wire puncturing the wire feed liner and torch hose.

## WIRING DIAGRAMS

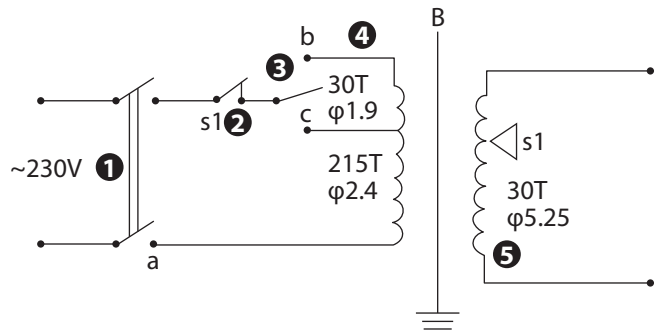
1. Switch
2. Thermal Protection
3. Settings
4. Settings
5. Primary Winding
6. Secondary Winding
7. Rectifier



### 4 POWER SETTINGS CONNECTION:

1. 230V	a.d.	35A
2. 230V	b.d.	50A
3. 230V	a.c.	75A
4. 230V	b.c.	P0A

1. Switch
2. Thermal Protection
3. Settings
4. Settings
5. Primary Winding
6. Secondary Winding
7. Rectifier



### 2 CURRENT SETTINGS CONNECTION:

1.	a.c.	PoAmp
2.	a.b.	boAmp

## **FEATURES:**

- Easy to Use and Convenient to Carry
- Powerful and Rugged MIG Welding Machine up to 120 Amp Output
- Nice Machine Appearance and Screen Printing
- Anti-corrosion & Water Resistant Metal Machine Case
- Easy to Read the Numbers of Scale
- Test Data Supports Stable Performance and Output Voltage
- Protects Components and Transformer from Corrosion and Damage
- 10% Rated Duty Cycle, Weld for One Minute, Rest for Nine Minutes
- Adjustable Welding Speed up to 6.7m per Minute
- Supports Dual Voltage 110V/220V, Wire Feeder 1-12V
- Accepts 0.8-1.0mm Flux-Cored Wire
- 1.35KVA/4.2KVA Maximum and Minimum Power
- 6.8mm of Maximum Thickness of Metal
- Allows to Weld Steel up to 0.24-0.3 inches Plate Steel
- Automatically Adjust the Inverter Pulse Width through Closed-Loop Control to Ensure the Output Stability

## **WHAT'S IN THE BOX:**

- Welding Machine
- Welding Gun
- Ground Wire Clip (1.6 meters)
- Brush
- Protective Mask
- 2.5m<sup>2</sup>1.8m Big USA Plug

## TECHNICAL SPECS:

- Construction Material: Low Carbon Steel, Low Alloy Steel, and Stainless Steel
- Power Supply: 110V/220V
- Maximum Input Current: 110V/8A, 220V/19A
- Frequency Response: 50/60Hz
- Rated Input Power: 4.2KVA
- Current & Voltage Adjustment Range (MIG) : 60A/17V-130A/20.5V
- 40°C 60% Utilization Factor Output (MIG, A/V): (56A/16.8V)
- 40°C 100% Utilization Factor Output (MIG, A/V) :(43A/16.2V)
- No-load Voltage: 31V
- Usable Wire: 0.02"-0.04" -inch
- Wire Feed Rate: 13m/min
- Power Factor: 0.93
- Efficiency: 93%
- Shell Protective Grade: IP21S
- Insulation Grade: H
- Welding Output: 60-130A, AC
- Capacity: 18 gauge (0.039") to 3/16" (0.24") mild steel only
- \* Not for welding aluminum
- Duty Cycle: 10% @130A
- Open Circuit Voltage: 20.5V
- Welder Tips / Wire Size Installed tip will accept 0.031" Flux-Core wire
- Wire Spool Capacity: 2.2 lbs. Spool
- Recommended Circuit Breaker: 30A time-delay (slow-blow) breaker (30A for maximum performance)
- Extension Cord Recommendations: 3 conductor #12A or larger up to 4.9 ft.
- Generator Requirements: Minimum 4,000W continuous output with no low-idle function (or low-idle off)
- Product Dimension (L x W x H): 16.5" x 10" x 15" -inches





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**Questions? Issues?**

We are here to help!

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