

SereneLife



SLMIGWL140

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.

SAFETY INSTRUCTIONS

The machine is safe to use due to its plastic cover, which does not conduct electricity. The welding gun has an overheating protector which prevents operation when the machine is overheated. The machine is also protected from too low or too high supply voltage. However, there are some risk factors connected to welding. You should therefore read and follow the following safety instructions carefully.

USE OF PROTECTIVE ACCESSORIES

The arc and its reflecting radiation may damage unprotected eyes. Always protect your eyes and face with an appropriate welding mask. The arc and welding spatters burns unprotected skin. When welding, always use protective gloves and clothing.

SAFE USE OF THE WELDING GUN

- Parts of the machine, such as the end of the filler wire and welding gun becomes burning hot during use.
- The wire is also sharp and moves quickly, so be careful when threading it to place.
- Never carry the machine on your shoulder during welding, but place it on an even surface. **DO NOT** store the machine by hanging it from the shoulder strap. The shoulder strap is for carrying only.
- Do not keep the machine near or on hot objects, as the plastic cover may melt.
- Do not move the shielding gas bottle when the control valve is in place.
- Fix the gas bottle securely in an upright position to a separate wall rack or bottle cart.
- Always close the gas bottle after use.

FIRE SAFETY

Welding is always classified as hot work, so pay attention to fire safety regulations. Protect the environment from welding spatters. Remove inflammable material, such as burning fluids, from the vicinity of the welding site and supply the site with adequate fire-fighting equipments. Take into account dangers caused by special workplaces, such as fire risk and danger of explosion when welding container-like pieces.

⚠ NOTE!

Fire caused by sparks may brake out even after several hours!

CAUTION! Welding in inflammable and explosive sites is strictly forbidden!

SUPPLY VOLTAGE

- Do not place the welding machine inside a workpiece, for example in to a container or a car.
- Do not install or place the welding machine on a wet surface.
- Change faulty cables immediately for they are life threatening and may cause fire.
- Ensure that cables are not squeezed or in contact with sharp edges or a hat workpiece.

WELDING CIRCUIT

- Insulate yourself from the welding circuit by using dry and undamaged protective clothing.
- Do not work on a wet surface.
- Do not use damaged welding cables.
- Do not place the welding gun or earthing clamp on the welding machine or other electrical device.

WELDING FUMES

- Make sure ventilation is sufficient.
- Take special precautions when welding metals containing lead, cadmium, zinc, mercury or beryllium.
- Supply of sufficient clean air can also be ensured with the use of a fresh air mask.

MACHINE USE

The machine is delivered ready for operation without adjustments with 0.8 mm diameter filler wire. If you use non-recommended filler wire, make sure that the feed roll groove welding gun contact tip and machine polarity are suited for the used wire size and type.

BEFORE IMPLEMENTATION

The products are packed to durable packages especially designed for them. However, always make sure before use that products have not been damaged during transportation. Check also that you have received the products you ordered and the instruction manuals needed. Product packing material is recyclable.

NO.:	NAME
1	Machine bottom
2	Guard coil
3	Welding torch
4	Wire feeder
5	Point switch
6	Screw disc shaft
7	Wid-vertical slab
8	Fan
9	Fan cover
10	Waterproof joint
11	Power wire
12	Rear plastic panel
13	Power switch
14	Hinge
15	Door buckle
16	Door cover
17	Handle
18	Machine cover
19	Control PCB
20	Iron stud
21	Diaphragm
22	Knob PCB
23	Front plastic panel
24	Output board
25	plug
26	Front panel
27	Potentiometer knob
28	Potentiometer
29	Indicator light
30	Output line
31	FRD radiator
32	IGBT radiator
33	Silicon Bridge Radiator
34	Relay
35	Capacitor
36	Master PCB
37	Power module
38	Main transformer
39	Inductance

Transportation

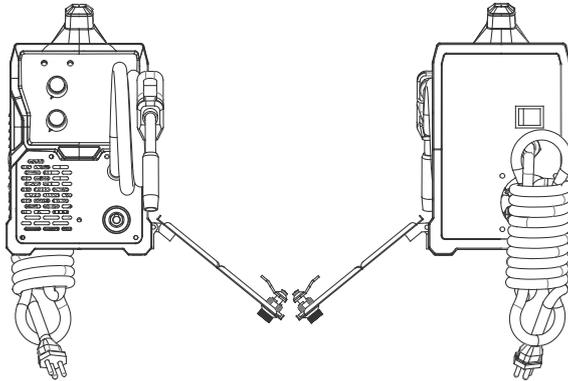
The machine should be transported in an upright position.

NOTE! Always move the welding machine by lifting it from the handle. Never pull it from the welding gun or other cables.

Environment

The machine is suitable for both indoor and outdoor use but it should be protected from heavy rain and sunshine. Store the machine in a dry and clean environment and protect it from sand and dust during use and storage. The recommended operating temperature range is -20°C - $+40^{\circ}\text{C}$ (-4°F - $+104^{\circ}\text{F}$). Place the machine in such a way that it does not come in contact with hot surfaces, sparks and spatters. Make sure the air flow in the machine is unrestricted.

GENERAL VIEW OF THE MACHINE



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.

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. 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. 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.

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.

MIG WELDING GAS SET UP

The first thing that we need to do before setting up MIG welding with gas is about safety and securing the tank to the back of your cart. You can use a chain, rope or whatever method you want to avoid falling and hitting the floor. Always secure the tank and make sure of all the safety precautions.

1. Check your hoses, make sure they're still in good shape. Check your fittings and also make sure everything is snug, put together well and you're ready to reach over to the tank to take the valve and want to crack it. Open quickly and shut it fast so it won't take all that debris and blow it up.
2. Stick the fitting into the hole of the tank and use your finger to tighten it down. Start to thread it in with your hand and go down as much as you can, then use the crescent wrench to secure it down a little bit better. Set those gauges and just snug it.

- Once you have done, open the valve on the tank. You'll see the gauge on the upper right and it'll swing way up and will show you in pounds per square inch and how much gas is in the cylinder. If it's full, it'll swing way up.
- Turn the machine on and flip the power switch on then reach over and grab your gun next. Hold the big gun and don't worry about the wire coming out. Look down at the gauge that you had set and pull the trigger on the MIG gun. You will notice a depth and reach over the little brass T-handle, turn it in a little bit more so that when you hit the trigger, it'll stay in your desired range.
- When everything is set up and you have your gas set, grab your helmet, clip MIG wire with MIG pliers cutting. Cut the wire as you desired and get ready to weld.

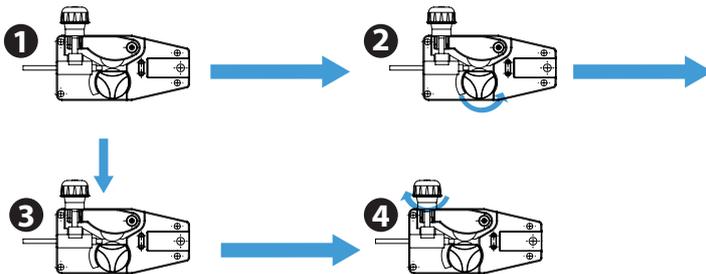
HOW TO ADJUST SETTINGS

MIG Gun Nozzle Size Inside Diameter	Minimum Current Matching Flow	Typical Flow Setting	Maximum Current Matching Flow
0.03" (For access on small welders)	50CFH	50-160CFH	~200CFH

FILLER WIRE

The machine is delivered with the welding gun connected to +pole making it suitable for steel solid wire welding without adjustments.

WIRE FEED ROLL CHANGE



- Open the pressure control rod.
- Lift up the feed gear.
- Turn the black knob clockwise 90°, remove the wire feeder.
- Change the wire feeder or choose the right wire feeding trough, and then install the new wire feeder.

THREADING THE FILLER WIRE

1. Open the door, install the welding wire.
2. Release the wire and hold it in hand.
3. Cut out the curve part.
4. Open the pressure control rod, then open the feed gear.
5. Feed the wire through the guide apparatus.
6. Close the feed gear and pressure control rod, make sure the wire feeds well.
7. Adjust the pressure to a suitable position.



Notice: if the pressure is too high, it will damage the wire; if the pressure is too low, the feed gear will slip, wire will not work properly.

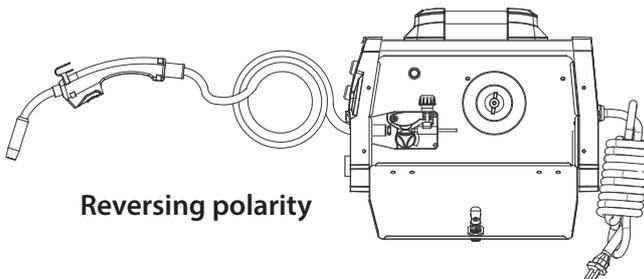
9. Press the welding gun trigger and wait for the wire to come out.
10. Close the reel housing cover.

⚠ CAUTION!

When driving the wire in to the gun, do not point the gun at yourself or others. For example, your hand in front of the tip, because the cut wire end is extremely sharp. Also, do not put your fingers near the feed rolls, because they might get squeezed between the rolls.

REVERSING POLARITY

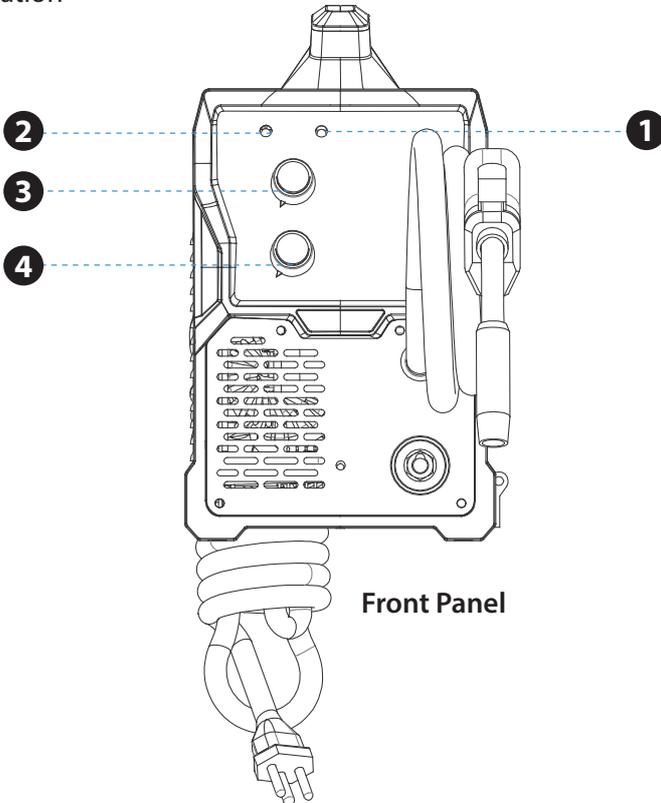
Some filler wires are recommended to be welded with the gun in the pole so the polarity should be reversed. Check the recommended polarity from the filler wire package.



1. Disconnect the machine from the mains.
2. Bend the rubber cover of the earthing cable's pole in such way that the cable can be disconnected.
3. Remove poles tightening nuts and washers. Note the correct order of the washers!
4. Interchange the cables.
5. Install the washers in place and close the tightening nuts to spanner tightness.
6. Put the rubber cover of the earthing cable's pole firmly in place.
The rubber cover must always protect the earthing cable's pole.

CONTROLS AND INDICATOR LIGHTS

1. Overheating indicator light
2. Welding power control
3. Adjust wire feeding speed
4. Voltage regulation



WELDING POWER ADJUSTMENT

Adjusting the welding power according to sheet thickness affects simultaneously both wire feed speed and amount of current lead to the wire. This is a good starting point for welding in different operating situations. However, connection type and root opening may influence the amount of welding power needed.

Select the correct parameter with the welding power control according to the welded fillet weld's sheet thickness. If the fillet weld's sheets are of different thickness, use their average as a default parameter.

Sheet thickness scale has been given in millimetres and it is based on 0.8 mm wire diameter. When using a 0.6 mm wire, set the welding power control slightly higher than the used sheet thickness and correspondingly slightly lower with 0.9-1.0 mm wires.

NOTE! When welding for the first time, we recommend that you set the arc length trimmer to the middle position.

ARC LENGTH TRIMMER

The arc length trimmer adjusts the length of the arc shorter or longer and affects the welding temperature. A shorter arc is colder and a longer one hotter.

The arc length trimmer also affects the arc's welding properties and spatters with different combinations of filler wire diameters and shielding gases. If the weld is too convex, the arc is too short or cold. Then adjust the arc longer or hotter by turning the control clockwise. If on the other hand, you want to weld with a colder arc to prevent for example the parent material from burning through, adjust the arc shorter by turning the control counter clockwise. You can also adjust the welding power, if need be. Once the arc has been trimmed, it usually does not need to be changed when the welded sheet thickness changes.

SERVICE

When servicing the machine, its utilization degree and environmental circumstances should be taken into account. If you use the machine appropriately and service it regularly, you will spare yourself from unnecessary malfunctions.

CAUTION! Disconnect the machine from the mains before handling the electrical cables.

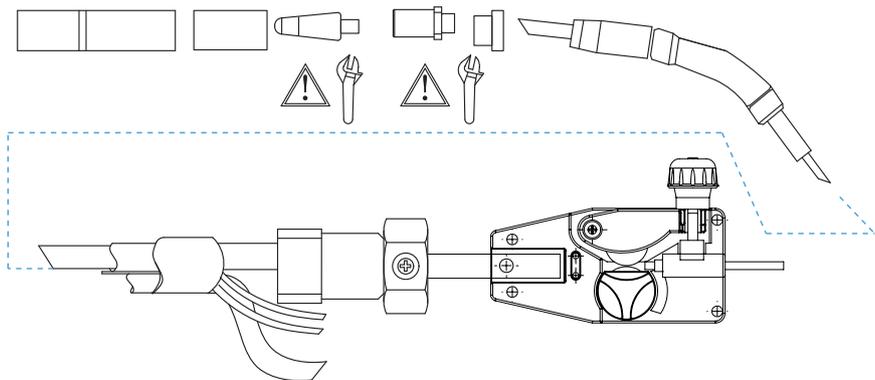
DAILY MAINTENANCE

- Remove welding spatters from the welding gun's tip and check the condition of the parts. Change damaged parts to new ones immediately.
- Check that the insulating tips of the welding gun's neck are undamaged and in place. Change damaged insulation parts to new ones immediately.
- Check the tightness of the welding gun's and earthing cable's connections.
- Check the condition of the supply voltage and welding cable and replace faulty cables.

MAINTENANCE OF THE WIRE FEED MECHANISM

Service the wire feed mechanism at least every time the reel is changed.

- Check the wear of the feed roll groove and change the feed roll when necessary.
- Clean the welding gun wire guide with compressed air.



Parts of the welding gun and wire guide

CLEANING THE WIRE GUIDE

Pressure of the feed rolls remove metal dust from the filler wire's surface which then finds its way to the wire guide. If the wire guide is not cleaned, it gradually clogs up and causes wire feed malfunctions. Clean the wire guide in the following manner:

1. Remove the welding gun's gas nozzle, contact tip and contact tip's adapter.
2. With a pneumatic pistol, blow compressed air through the wire guide.
3. Blow the wire feed mechanism and reel housing clean with compressed air.
4. Reattach the welding gun's parts. Tighten the contact tip and contact tip's adapter to spanner tightness.

CHANGING THE WIRE GUIDE

If the wire guide is too worn or totally clogged, change it to a new one according to the following instructions:

1. **Disconnect the welding gun from the machine.**
 - a. Disconnect the cable clamp of the gun's power cable by opening the screws.
 - b. Disconnect the gun's power cable from the machine's pole.
 - c. Disconnect the connector of the trigger conductors from the machine.
 - d. Open the gun's mounting nut.
 - e. Extract the gun gently from the machine where upon all parts come through the front part's cable hole.
2. Open the mounting nut of the wire guide which exposes the end of the wire guide.
3. Straighten the welding gun's cable and withdraw the wire guide from the gun.
4. Push a new wire guide in to the gun. Make sure that the wire guide enters all the way into the contact tip's adapter and that there is an o-ring at the machine end of the guide.
5. Tighten the wire guide in place with the mounting nut.
6. Cut the wire guide 2 mm from the mounting nut and file the sharp edges of the cut round.
7. Re-attach the gun in place and tighten the parts to spanner tightness.

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSES
The wire does not move or wire feed entangles	Feed rolls, wire conduit or contact tips are defective <ul style="list-style-type: none"> • Check that feed rolls are not too tight or too loose • Check that the feed roll groove is not too worn • Check that the wire conduit is not blocked • Check that there are no spatters on the conduit tip and that the hole is not cramped or worn loose
Main switch indicator light does not switch on	The machine has no supply voltage <ul style="list-style-type: none"> • Check supply voltage fuses • Check supply voltage cable and plug
Machine welds badly	Welding outcome is influenced by several factors <ul style="list-style-type: none"> • Check the trimming settings of welding power control and arc length • Check that the earthing clamp is fixed properly fixing point is clean, and both cable and its connections are undamaged • Check the flow of shielding gas from the tip of the welding gun • Supply voltage is uneven, too low or too high
Over-heating indicator light switches ON	The machine has over-heated <ul style="list-style-type: none"> • Check that cooling air can flow without obstructions • Machine's volume-capacity ratio has been exceeded; wait for the indicator light to switch off • The supply voltage is too low or too high

FEATURES:

- Easy to Use and Convenient to Carry
- Powerful and Rugged MIG Welding Machine up to 130 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
- Adjustable Welding Speed up to 6.7m per Minute
- Supports Dual Voltage 110V/220V, Wire Feeder 24V
- Accepts 0.6-0.8mm Flux-Cored Wire
- 0.7KVA/1.8KVA Maximum and Minimum Power
- 2mm of Maximum Thickness of Metal
- Allows to Weld Steel up to 0.08 inch Plate Steel
- Automatically Adjust the Inverter Pulse Width through Closed-Loop Control to Ensure the Output Stability
- 60% Rated Duty Cycle, Basically can Meet the Durable Welding
- Welding can be done by Connecting the Carbon Dioxide Gas
- Suitable for Indoor Work

WHAT'S IN THE BOX:

- Welding Machine
- Welding Gun
- Ground Wire Clip (1.6meters)
- Brush
- Protective Mask
- 2.5m² 1.8m Big USA Plug
- Power Adapter



TECHNICAL SPECS:

- Construction Material: Metal
- Power Supply: 110V/220V (13A Power Adapter)
- Maximum Input Current: 110V/43.1A, 220V/21.5A
- Frequency Response: 50/60Hz
- Rated Input Power: 8.1KVA
- Current & Voltage Adjustment Range (MIG, A/V) : (50A/16.5V-130A/20.5V)
- 25°C 60% Utilization Factor Output (MIG, A/V): (130A/20.5V)
- 40°C 100% Utilization Factor Output (MIG, A/V): (100A/19V)
- No-load Voltage: 42V
- Usable Wire: 0.2"-0.3" -inch
- Wire Feed Rate: 3-15m/min
- Power Factor: 0.73
- Efficiency: 85%
- Shell Protective Grade: IP21S
- Insulation Grade: F
- Welding Output: 60-125A, AC
- Capacity: 18 gauge (0.039") to 3/16" (0.24") mild steel only
- * Not for welding aluminum
- Duty Cycle: 20% @ 90 A
- Open Circuit Voltage: 30V
- 2.67KVA
- 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 5.91 ft.
- Generator Requirements: Minimum 4,000W continuous output with no low-idle function (or low-idle off)
- Product Dimension (L x W x H): 15.7" x 6.7" x 11.8" -inches



SereneLife

Questions? Issues?

We are here to help!

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