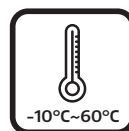
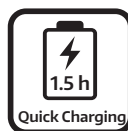
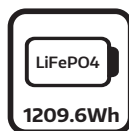


Lk-power

Battery Powered Welder User Manual



LK-160ML

Lk-power

INTRODUCTION

Thank you for choosing our product. Please read the user manual thoroughly before using our product for optimal and secure usage. Please carefully inspect the product and compare all items to the packing list upon unpacking.

Design standards of the product: GB15579.1 EN60974-1
Certification standards: PSE CE UN38.3 ROHS

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This manual will explain how to use the unit safely and effectively. Please read and follow these instructions and precautions carefully.

SAFETY TIPS AND PRECAUTIONS

Please keep this User Manual and read it carefully before use.
This user manual describes how to use the equipment safely and efficiently.
Be sure to follow the instructions during its use.



1.1 LFP4 Battery Warning

- This welder uses LFP4 type batteries. All LFP4 batteries have the potential to overheat when used improperly.
- Overheating may lead to fire, property damage, personal injury or death.
- Please read and adhere to the following safety instructions.



1.2 Beware Of Electric Shock

- Install the grounding device correctly according to the application standard.
- Wear dry and hole-free protective clothing and protective gloves to keep your hands insulated. When in contact with live parts, do not expose any part of your skin or wear wet gloves or clothes.
- Please use the product in a clean and dry environment to ensure the work site is safe.
- Insulate yourself from the workpiece and the ground.
- Ensure the workpiece is properly connected to the ground lead.



1.3 Beware Of Fire

- Remove all flammable or explosive materials from the worksite.
- This welder should be used in an upright position.
- The welding position should be isolated from surrounding objects.
- Avoid welding at hydraulic lines. Place the fire extinguisher in an easy-to-access location.
- When not in use, disconnect the welding leads from the workpiece.
- When welding, splashing sparks and hot metal fragments may cause clothing to catch fire. Be sure to wear protective equipment and appropriate clothing.
- Do not heat, cut or weld fuel tanks, drums, or other containers which may contain flammable or toxic substances.
- The built-in battery of the welder should be used within the environmental conditions specified in this manual.



1.4 Beware Of Smoke Damage

- Harmful fumes and gases may be generated during the welding process. Direct inhalation should be avoided.
- Keep the working environment well-ventilated.



1.5 Beware Of Arc Flash

- Strong arc flash will be generated during welding. Therefore, a welding helmet with a qualified filter and cover should be used to prevent the eyes from being hurt by sparks or arcs when welding or observing the arc.
- Wear durable protective clothing and protective gloves made from flame retardant material to protect the skin from arc flash.
- Instruct personnel around the workplace not to look directly at the arc and when necessary, install protective barriers to shield against arc flash.



1.6 Beware Of Electromagnetic Radiation

- When the welder is working, there may be electromagnetic radiation around the welding cable and the welder.
- Operators with a cardiac pacemaker should consult their doctor before welding.
- When welding, maintain a safe distance from the welder.
- Wrapping the welding cable around your body is strictly prohibited.



1.7 Beware Of Burns

- Several parts of the welding process may present the risk of high temperature burns before, during, and after use of the welder.
- Do not touch the hot workpieces with bare hands.
- Wear protective clothing to avoid being burnt by welding sparks.
- The temperature of the electrode holder is high after use and it takes a long time to dissipate its heat.
- Warn surrounding personnel to avoid burns.



1.8 Other Safety Tips

- Avoid violent vibration and collision since the welder contains a LFP4 battery. Do not store the welder with other items.
- Do not place heavy objects on top of the welder.
- Do not disassemble the welder by yourself in case of failure.
- Keep away from high-temperature heat sources.
- Keep moisture off of the welder.



1.9 Beware Of Noise

- Wear a hearing protective device to protect ears from noise.
- Warn bystanders to avoid potential damage caused by noise.

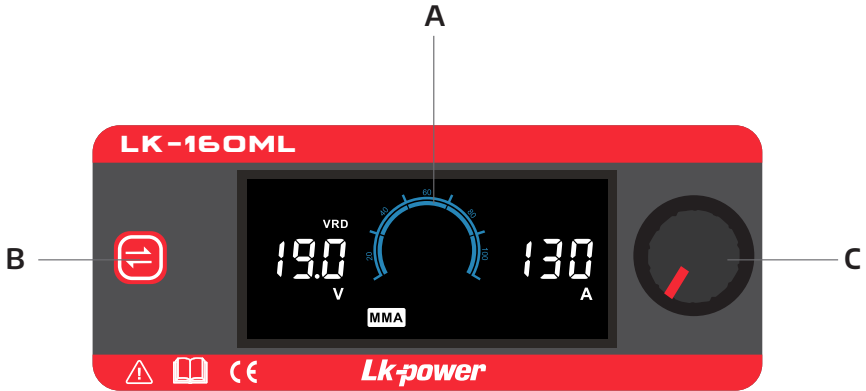
PRODUCT INTRODUCTION

2.1 Appearance



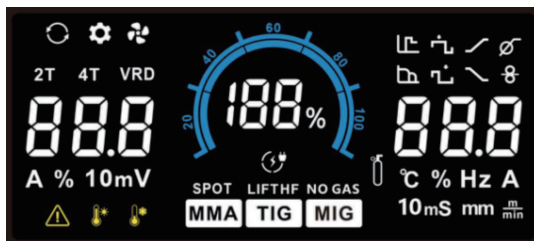
SN.	Name	Description
1	Control Panel	See Control Panel for Details on its Functions
2	Signal Port	Connect to MIG & TIG Welding Torch
3	Gas Outlet	Connect to TIG Welding Torch
4	DC Output Connector	Connect to Welding Cable
5	Battery Pack Power Indicator	Display the Remaining Battery Level
6	Battery Pack Power Button	Press to turn the Battery Pack on and off
7	Battery Pack Dust Cover/Air Inlet	Cooling Air Inlet, Do Not Cover
8	Strap Hole	For Securing the Strap
9	Air Outlet	Main Unit Air Outlet, Do Not cover
10	Gas Input	Connect the Argon Gas Cylinder
11	Battery Pack Signal Port	Connect Main Unit and Battery Pack
12	Battery Pack Power Output Port	Connect Main Unit and Battery Pack
13	Air Outlet	Battery Pack Air Outlet, Do Not cover
14	Charging Input Port	Connect to AC /PV Charging Cable

2.2 Control Panel



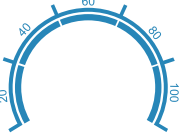











SN.	Name	Description
A	LCD Screen Display	See 2.3 for Details on its Icon Means
B	Function/Mode Switch Button	Short Press:Detail Functions Selection Long Press: Switch MMA/TIG/MIG Mode
C	Adjustment Knob	Press and Turn to Adjust Parameters

2.3 LCD Screen Display



Pic	Icon means
	Set up Icon
	Initialization Icon
	Fan Icon
	Charging Icon
	Alarm Icon
	High Temperature Icon
	Low Temperature Icon
VRD	VRD Mode Icon
A	Current Icon
V	Voltage Icon
10 mV	Voltage Icon
°C	Temperature Icon
10 mS	Time Icon
Hz	Frequency Icon
%	Percent Icon
	Wire Feeding Icon
$\frac{m}{min}$	Wire Feeding Speed Icon

	Diameter Icon
mm	Length Icon
	Gas Cylinder Icon
	Batter Capacity Icon
	Hot/Soft Start Icon
	Arc Force Icon
	In TIG function, Icon represents setting pulse width status
	In TIG function, Icon represents setting pulse base status
	MMA Mode Icon
SPOT	Spot MMA Icon
	TIG Mode Icon
LIFT	Lift TIG Icon
HF	High Frequency TIG Icon
	In TIG function, Icon represents enabling pulse function status
	Times Spot Welding Mode Icon
	MIG Mode Icon
NO GAS	Gas Empty Mode Icon

2.4 Technical Details

Technical Specification	
Model	LK-160ML
Battery Type	LiFePO4
Battery Capacity	1209.6Wh
Cycle life	2000 Times
AC Charging Input	100 ~ 240 V AC, 50/60Hz, 1 Phase
AC Charging Time	1.5~2.0 hrs
Solar Charging Input <small>* Optional</small>	11 ~50 V DC (Max 240 W)
Car Charging Input <small>* Optional</small>	12/24 V DC (Max 10.5 A)
Charging Temperature	0°C - 50°C
Discharging Temperature	-10°C - 60°C
Weight	12 KG
Product Dimension (LxWxH mm)	360*164*279 mm

MMA Parameters	
Weld Current	20A~130A
No-load Voltage	40V~53V
Reduced No-Load Voltage	18±2V
Duty Cycle	77% @130A 100% @100A
Hot Start	Support
Soft Start	Support
Arc Force	Support
Support	VRD, Spot Welding, Anti-Stick
Welding Capacity	E4303-φ3.2-350mm * 17 rods E4303-φ2.5-350mm * 34 rods
TIG Parameter	
Weld Current	30A~160A
Welding Wire	φ1.0mm~φ2.0 mm
Arcing Way	LIFT
Welding Mode	TIG-DC, TIG-Pulse
MIG Parameter	
Weld Current	50A~160A
Welding Wire	φ0.8mm~φ1.0 mm
Wire Feeding Speed	2~8 m/min
Wire Feeder	Handheld
Welding Wire	Flux-Cored Wire

INSTRUCTIONS FOR USE

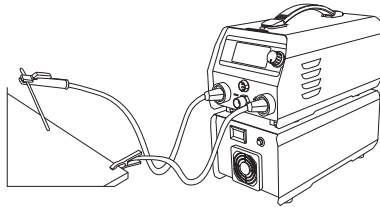
3.1 Turn On/Off Welder

Connect the two wires on the Main unit to the **Battery Pack Signal Port (11)** and the **Battery Pack Power Output Port (12)** respectively, and then press the **Battery Pack Power Button (6)** to turn on/of the welder.

3.2 Charging Methods

Insert the AC charger into the **Charging Input Port (14)**. The red light on the charger indicates that it is charging, and the green light on the charger indicates that it is fully charged.

3.3 MMA Mode



To switch MMA mode, Long press the Function/Mode Switch Button (B). Then, follow these steps to set up the ground cable:

1. Insert the ground cable into the - DC Output Connector(4).
2. Rotate the cable clockwise to secure it.
3. Connect the other end of the cable to the workpiece.
4. Insert the welding clamp into the + DC Output Connector(4).
5. Rotate the clamp clockwise to secure it.

After completing these steps, you can insert the welding rod into the clamp and begin your welding project.

Short press the Function/Mode Switch Button (B) briefly to cycle through options.

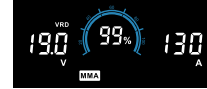
MMA function



SPOT MMA function



VRD MMA function



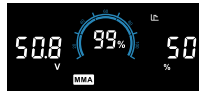
3.3.1 MMA

Press the Adjustment Knob (C) briefly to change the setting and make the necessary adjustments by rotating the Adjustment Knob (C).

Welding current
(Range 20A - 130A)



Hot/Soft start current percent
(Range 50%-150%)



Arc force current percent
(Range 100%-150%)



3.3.2 SPOT MMA

Short press the Function/Mode Switch Button (B) to choose SPOT MMA functions. Press the Adjustment Knob (C) briefly to change the setting and make the necessary adjustments by rotating the Adjustment Knob (C).

Spot welding current
(Range 20A - 130A)



10ms Spot welding time
(Range 200ms- 2000ms)



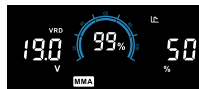
3.3.3 VRD MMA

Short press the Function/Mode Switch Button (B) to choose VRD MMA functions. Press the Adjustment Knob (C) briefly to change the setting and make the necessary adjustments by rotating the Adjustment Knob (C).

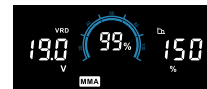
VRD welding current
(Range 20A - 130A)



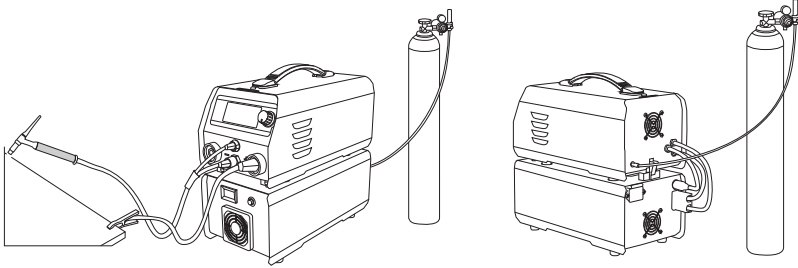
Hot/Soft start current percent
(Range 50%-150%)



Arc force current percent
(Range 100%-150%)



3.4 TIG Mode



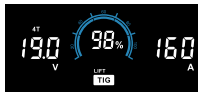
To switch TIG mode, Long press the Function/Mode Switch Button (B). For safe and proper gas flow during welding, connect the argon gas cylinder to the gas input port (10) using a PU8*5 plug tube, ensuring a tight connection and checking for leaks. To secure the TIG welding torch, insert it into the Gas outlet port (3) and the signal port (2), and then rotate it clockwise. For the ground cable, insert it into the + current port, and then rotate it clockwise to secure it. Finally, connect the other end of the ground cable to the workpiece.

Toggle through TIG functions by short pressing the Function/Mode Switch Button (B). Select desired functions sequentially.

2T_HF_TIG function



4T_HF_TIG function

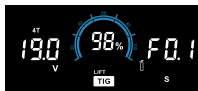


Adjust your TIG functions by turning the Adjustment Knob (C) to cycle through parameters and make necessary changes for optimal performance.

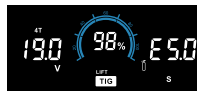
TIG welding current
(Range 30A - 160A)



Forward gas time
(Range 0.1s - 3.0s)



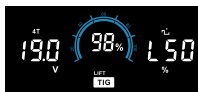
End gas time
(Range 1.0s - 5.0s)



Hz Pulse frequency
(Range 0 - 200)



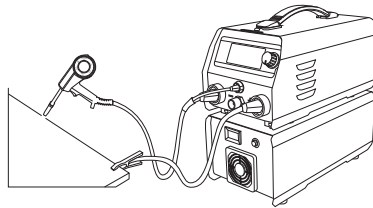
Pulse current base value
(Range 10% - 50%)



Pulse current width
(range 10% - 50%)



3.5 MIG Mode



To switch MIG mode, Long press the Function/Mode Switch Button (B). Then, insert the MIG welding torch into the - DC Output Connector(4) and signal port (2), and turn it to secure it in place. Place the ground cable into the + DC Output Connector(4) and turn it to secure it. Finally, connect the other end of the ground cable to the workpiece.

Toggle through MIG functions by short pressing the Function/Mode Switch Button (B). Select desired functions sequentially.

2T_MIG function



4T_MIG function

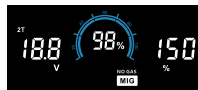


Adjust your MIG functions by turning the Adjustment Knob (C) to cycle through parameters and make necessary changes for optimal performance.

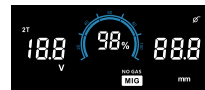
⊗ Wire feeding speed
(Range 3.0m/min-6.0m/min)




% Voltage fine-tuning
(Range 50%-150%)











∅ Wire diameter
(Range 0.6mm-1.0mm)



3.6 Set Up













Long press the Adjustment Knob (C) for 10 seconds, the  will light up. To flip through the pages one by one, the Adjustment Knob (C) simply .

Page No.	Pic	Description	
		Left Side	Right Side
P0		Battery Cycle Times <small>*Range: 0-999999.</small>	
P1		Battery Pack Voltage	Battery Pack Current
P2		Maximum Cell Voltage	Maximum Voltage Cell Index
P3		Minimum Cell Voltage	Minimum Voltage Cell Index
P4		Maximum Cell Temperature	Minimum Cell Temperature
P5		Charger PCB Temperature	Welding PCB Temperature
P6		Mainboard Firmware Version	BMS Firmware Version
P7		RESET	Off means that the factory settings have not been restored. If you need to restore them, follow these steps: on the P7 page, briefly press and rotate the Adjustment Knob (C) to switch from OFF to ON, then press and hold the Function/Mode Switch Button (B).

To exit the set up process, Long press the Adjustment Knob (C) for 10 seconds.

3.7 Protection Status

3.7.1 LCD Screen Alarm Display

Code	Icon Status	Description	Solution
	 Flash	Low Battery Protection	Charge the product for reuse or storage
PLo	 Flash		
CLo	 Flash		
	 Flash	Battery Discharge High Temperature Protection	Move the machine to a cool place and wait for the battery to cool down
	 Flash	Battery Discharge Low Temperature Protection	Move the machine to a warm place and wait for the battery to warm up
	 Light	Battery Charge High Temperature Protection	Move the machine to a cool place and wait for the battery to cool down
	 Light	Battery Charge Low Temperature Protection	Move the machine to a warm place and wait for the battery to warm up
	 Flash	System High Temperature Protection	Keep powered on and wait for the machine to cool down
	 Flash	Charging Fault Protection	Shutdown, try to restart after 10 minutes. If still invalid, please contact service
	 Flash	Temperature Sensor Failure	Shutdown, try to restart after 10 minutes. If still invalid, please contact service
	 Flash	System Initialize	If it keeps flashing, please contact service
EXX	 Flash	BMS Fault Protection	Shutdown, try to restart after 10 minutes. If still invalid, please contact service

3.7.2 Battery Pack Alarm Display

Code	Description	Solution
FUL	Battery Fully Charged	
dHt	Discharge at High Temperature	Move to a cool place and wait for it to cool down.
dLt	Discharge at Low Temperature	Move to a warm place and wait for it to warm up.
Cht	Charge at High Temperature	Move to a cool place and wait for it to cool down.
CLt	Charge at Low Temperature	Move to a warm place and wait for it to warm up.
PLo	Low Battery	Please charge it.
Clo		
Lo		

MAINTENANCE, STORAGE, AND DISPOSAL

4.1 Maintenance

- After use, remove the charging cable and welding leads before performing maintenance.
- Use a piece of dry cloth to remove the dust and oil stains on the clamps, wires, and casing.
- Please refrain from disassembling the equipment as there are no user-repairable parts.
- Qualified maintenance personnel should be contacted for any repair services needed.
- It is recommended to fully charge the product after each use.

4.2 Storage

- Charge the welder fully before storing long-term.
- For long-term storage, it is recommended to keep the ambient environment dry, ventilated, and at a temperature of approximately 77°F (25°C).
- To prevent excessive discharge, it is important to charge your device at least once every three months, even if it is not used regularly.

4.3 Disposal

To properly dispose of this product, kindly refer to your state and local regulations regarding the disposal and recycling of FP4 batteries.

AFTER-SALE SERVICE

Kindly keep the warranty card in a secure location. This product has a one-year warranty that starts from the purchase date. Please be aware that this warranty does not cover damages due to regular usage or abuse. If you need more details about the warranty policy or have any warranty-related inquiries, feel free to contact us.

PACKING LIST

Name	Quantity
LK-160ML Welder	1pc
AC Charger	1pc
Ground Cable	1pc
Welding Cable	1pc
Strap	1pc
Manual	1pc
MIG Welding Torch (Optional)	1pc
TIG Welding Torch (Optional)	1pc
Solar Controller (Optional)	1pc

