

EPEQ WELDER140 Electrified Power Equipment™

Instruction Manual Portable Li-ion Battery Welder



WELDER140

Part Number: 282037



VANAIR®
MOBILE POWER SOLUTIONS®

INTRODUCTION

Thank you for choosing our product. For safe and efficient use of this equipment, please keep this user manual and read it carefully before use. After unpacking, please check the product carefully, and check the items against the packing list. If there are any inconsistencies, please contact Vanair® at 800-526-8817.

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

The relevant design schemes and manufacturing technology used in this product are protected by patents.

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CONTENTS

1. Safety Tips and Precautions.....	4
2. Product Introduction.....	6
3. Instructions for Use.....	9
4. Troubleshooting.....	12
5. Maintenance, Storage, and Disposal.....	12
6. Service.....	13
7. Packing List	13
8. Replacement Parts.....	13
9. Warranty	14

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.



Lithium-Ion Battery Warning

- This welder uses Lithium-Ion type batteries. All Lithium-Ion 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.



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.



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.



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.



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.



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.



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.



Other Safety Tips

- Avoid violent vibration and collision since the welder contains a Lithium-Ion 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.



Beware of Noise

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

⚠ WARNING: This product can expose you to chemicals including antimony [oxide], arsenic, beryllium, chromium [hexavalent], cobalt, cadmium, lead, and nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information, go to www.P65Warnings.ca.gov.

Note:

If the welder needs maintenance and repair, call the Vanair® Service Department at 844-VAN-SERV. If the user delivers the welder to an unauthorized service center for maintenance or repair, the user is no longer entitled to the manufacturer's warranty service.

PRODUCT INTRODUCTION

Appearance



	Name	Description
1	Panel Cover	Operational Panel Protection
2	Main Control Panel	See Section 1.3 for Details on its Functions
3	Welding Output “+”	Connect to Positive Welding Cable
4	Welding Output “-”	Connect to Negative Welding Cable
5	Air Outlet	Cooling Air Outlet, Do Not cover
6	Charging Interface	Connect to Charging Cable
7	Circuit Breaker	Welding Output Main Switch
8	Air Inlet	Cooling Air Inlet, Do Not Cover
9	Warning Label	Applicable Warning Reference

Control Panel



	Name	Description
A	Note Window	Important Note
B	Digital Display	Displaying Working Status / Welding Current
C	Power Indicator Window	Battery Indicator / Quick and Standard Charge Indicator
D	Power Switch	Turn On / Off the Welding Power Source
E	Current Adjusting Knob	Adjust the Welding Current
F	Charging Indicator	Indicating Charge Status
G	High Temperature Indicator (HT)	Indicating High Temperature Status
H	Low Temperature Indicator (LT)	Indicating Low Temperature Status
I	Warning Indicator	Indicating An Abnormal State
J	Battery Button	Check Battery Capacity / Switch Between Quick and Standard Charge
K	Reset Button	Restart the Product When the Product Crashes

Technical Details

Description	
Model	EPEQ™ WELDER140
Battery Capacity	604.8WH
Battery Type	Lithium-Ion
Input Voltage Range	100V - 240V AC
Input Voltage Frequency	50/60HZ
Charging Mode	CC - CV
Charging Time	3 Hours / Standard Charge
	1.5 Hours / Quick Charge
Charging Temperature Range	32°F - 113°F (0°C - 45°C)
Output Current Range	DC40-140A
Rated Output Voltage	25.6V
No-Load Voltage	70V ± 10V
Duty Cycle	20% 140A
	50% 110A
	100% 80A
Discharging Temperature Range	14°F - 140°F (-10°C - 60°C)
Arc Force	Auto
Hot Start	Built-In
Cooling Mode	Smart Double Air Cooling
Protection Class	IP23
Lead Length	10 ft
Weight	34 lbs (15.5kg)
Dimension	18.3 x 7.6 x 14.9 in (466 x 193 x 379 mm)

INSTRUCTIONS FOR USE

Battery Level Checking

Under the power-off state, press the Battery Button (J) to observe the remaining battery capacity through the Battery Indicator LED (C). The LED will turn off if the Battery Button (J) is pressed again or no other operation is performed within 10 seconds.

	100% Capacity
	80% Capacity
	60% Capacity
	40% Capacity
	20% Capacity
	Low Capacity

Charging Mode

The EPEQ™ WELDER140 has been equipped with a built-in charger. So the user only needs to connect the welder to AC power with rated input voltage through the charging cable, when the power level is low. At this time, the Digital Display (B) shows "SC" (Standard Charging), and the Battery Indicator (F) shows that it is charging.

Introduction to Charging Mode

Two charging modes are available for the EPEQ™ WELDER140: Standard Charging (SC) and Quick Charging (qC).

Standard Charging		2s	
Quick Charging		2s	

Standard Charging Mode

This mode is automatically activated when the welder is connected to AC power. The Battery Indicator (F) flashes red. The Digital Display (B) will show "SC" (Standard Charging Mode), and the standard charging time is about 3 hours.

Quick Charging Mode

Press the Battery Button (J) for 2 seconds, and it will switch to the quick charging mode. The cycling of Battery Indicator (C) speeds up and the Digital Display (B) will show "qC" (Quick Charging Mode). The quick charging time is about 1.5 hours. Press and hold the Battery Button (J) for 2 seconds to switch back to the standard charging mode.

Note:

- Standard charging mode is recommended as this mode optimizes the battery charging power and maximizes the battery life.
- When the battery capacity is charged to 90%, it will automatically jump to standard charge mode. At this time, the charging indicator flashes yellow and then turns green when it is fully charged.
- After it is fully charged, please unplug the charging cable.
- Charging is automatically disabled after 8 hours.

Welding Mode

Note:

The Lithium-Ion battery must be fully charged before first use of the welder. Make sure the equipment has a safety clearance of 1.5 ft (0.5 m) and there is no obstruction at the air inlet and outlet to ensure the cooling air enters and exits freely.

Make Sure the Welder Power is Off Before Working

- With the power off, ensure the electrode is secure in the stinger, and the ground clamp is secured to the workpiece.
- Flip the Circuit Breaker (7) on the rear cover to the "ON" position.
- Press the Power Button (D) on the front panel; a green light will illuminate.
- Wait for the Digital Display (B) to display the current correctly, and then turn the Current Adjusting Knob (E) to select the desired welding current parameter.
- Once you are finished welding, turn off the welder by pressing the Power Button (D); the green light will turn off.
- Flip the Circuit Breaker (7) on the rear cover to the "OFF" position.
- Remove the positive and negative welding cables.

Note:

The welder will automatically shut down if no welding operation is performed within 2 minutes.

Reference Table for Welding Electrode Size and Corresponding Current

Welding Electrode Size	Recommended Current (A)
1/16" (1.6 mm)	25 - 40
5/64" (2.0 mm)	40 - 65
3/32" (2.5 mm)	50 - 90
1/8" (3.2 mm)	100 - 130

Mixed Mode

The EPEQ™ WELDER140 supports welding while charging. The specific steps are as follows:

- Insert the charging cable, and the welder will automatically enter the charging state.
- Connect the welding cable and make sure that the electrode holder and the ground clamp are not in contact with each other.

- Flip the Circuit Breaker (7) on the rear cover to the "ON" position. Press the Power Button (D) on the front panel; a green light will illuminate. Mixed mode will be automatically enabled and the welder is ready for operation. In the mixed mode, it will automatically switch to the quick charge mode and the charge mode switch will be locked; it will be unlocked only when the welding operation is stopped.

Note:

In mixed mode, if no welding operation is performed within 2 minutes, the Power Button (D) will automatically go off and the welder will enter the charging mode.

Protection Status Indicators

Digital Display	LED Indicator	Status
	HT (G) Flashing	Battery temperature is too high. Shut down and allow the unit to cool.
	LT (H) Flashing	Battery temperature is too low. Please use the welder within the allowable ambient temperature range.
	HT (G), LT (H) Flashing	The temperature difference inside the battery is large. Shut down and wait for temperatures to normalize.
	(C) Flashing	The battery is low. Please recharge.
	HT (G) Flashing	The temperature of welder is too high. Discontinue use, and wait for system temperatures to recover.
	AT (I) Flashing	Welding electrode adhesion (short circuit); please separate the electrode holder and the ground clamp.
	HT (G) Normally On	High temperature indication during charging; will resume after temperatures normalize.
	LT (H) Normally On	Low temperature indication during charging; will resume after temperatures normalize.
	AT (I) Flashing	System error code. Try to restart the welder and please contact Service if the code reappears after restarting.

TROUBLESHOOTING

Common Failures	Solutions
The Welder Does Not Strike an Arc	• Check whether a prompt is given.
	• Check whether the welding leads are connected correctly.
	• Check whether rear panel breaker is switched "ON".
The Battery is Not Fully Charged After More Than 8 Hours of Charging	• Check whether the charging cable is connected properly.
	• Check whether any temperature prompt is given.
Poor Arc Starting or Arc Breaking	• Check whether the size of the welding electrode matches the adjusted current.
	• Check whether the welding cables are suitable and whether the connections are reliable. Ensure that the workpiece is properly connected to the negative terminal of the welder.
Serious Splashing When Welding	• Check whether the welding lead polarity is correct.
	• Check whether the size of the welding electrode matches the adjusted current.
Hot Electrode Holder	• Check whether the welding electrode and the stinger are connected reliably.
	• Check whether the selected current matches welding electrode.

Note:

For other non-common failures, if multiple restarts cannot be recovered, try to restart the welder after pressing the reset button (K). If it is still unable to recover from the failure after restarting, please contact the Vanair® Service Department at 844-VAN-SERV.

MAINTENANCE, STORAGE, AND DISPOSAL

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.
- Do not disassemble the equipment. There are no parts that may be repaired by users, and all repair services shall be provided by qualified maintenance personnel.
- It is recommended to fully charge the product after each use.

EPEQ™ WELDER 140 - ERROR CODE TABLE

No communication	E01: The fault light flashes, buzzer sounds
BMS receiving abnormality	E02: The fault light flashes, buzzer sounds
Main control receiving abnormality	E03: The fault light flashes, buzzer sounds
BMS serial port failure	E04: The fault light flashes, buzzer sounds
BMS management chip failure	E05: The fault light flashes, buzzer sounds
Overvoltage	E06: All the light bars flash, buzzer sounds
Undervoltage	E07: The outer frame of the light bar flashes, buzzer sounds
Big voltage difference	E08: Light bar 1 and 5 flashes, buzzer sounds
Short circuit / Over current	E09: The fault light flashes, buzzer sounds
Charging failure	E11: The light bar always on (stop charging); Charging light always on; fault light flashes, buzzer sounds
Charging timeout	E12: The light bar always on (stop charging); Charging red light always on; fault light flashes, buzzer sounds

Storage

- Before long-term storage, the welder shall be fully charged.
- The recommended ambient environment for long-term storage is around 77°F (25°C), dry and ventilated.
- When it is not frequently used, charge it at least once every 3 months to avoid excessive discharge.

Disposal

For the disposal of this product, please refer to your state and local regulations on Lithium-Ion battery disposal and recycling.

SERVICE

Please keep the warranty card. This product is warranted for one year from the date of purchase. This warranty does not cover failures caused by normal wear or misuse. For further details on warranty coverage and warranty information, please contact the Vanair® Service Department at 844-VAN-SERV.

PACKING LIST

Name	Quantity
EPEQ™ WELDER140	1 pcs
Carry Strap	1 pcs
Ground Cable	1 pcs
Weld Sting Cable	1 pcs
Charging Cable	1 pcs
Manual	1 pcs

REPLACEMENT PARTS

Name	Part Number
Carry Strap	282037-01
Ground Cable	282037-02
Weld Sting Cable	282037-03

WARRANTY

The EPEQ™ WELDER140 is warranted from the date of purchase at retail against failure due to defective material and/or workmanship for a period of one (1) year. This warranty does not cover any product that has been used for a purpose other than for which it is intended or used in a manner inconsistent with any instruction regarding its use. This warranty is void if the unit is repaired, modified by anyone other than the Manufacturer, or if this unit has been resold through an unauthorized retailer. In the event of a warranty claim covered by this Limited Warranty, the exclusive remedies shall be, at Vanair's sole discretion, to repair or replace the unit.

TO BE ELIGIBLE FOR WARRANTY, THE CUSTOMER MUST REGISTER THE PRODUCT ONLINE AT <https://vanair.com/support/registration.html> AND RETAIN PROOF OF PURCHASE RECEIPT.

All returns must receive a Return Material Authorization (RMA) number from the factory and be returned directly postage or freight prepaid. See RMA for instructions regarding the shipping of products containing Lithium Batteries. DO NOT SHIP LITHIUM BATTERIES VIA AIR FREIGHT. Vanair does not provide any warranty for any accessories used with this product that are not manufactured by Vanair Manufacturing and approved for use with this product. Vanair will make final determination of defects. No agent, employee, or representative of Vanair has any authority to bind to any affirmation, representation or warranty concerning Vanair products, except as stated herein.

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FOR SERVICE: CALL 844-VAN-SERV

www.EPEQ.com

Vanair Manufacturing, Inc.

10896 West 300 North, Michigan City, IN 46360

NOTE: Before disposing of damaged goods, check with your state Environmental Protection Agency to find out about special restrictions on the disposal of the lamp and batteries or return them to a certified service center for recycling.



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800.526.8817 | EPEQ.com

10896 West 300 North | Michigan City, Indiana 46360 USA

