

REZERVO™ BATTERYLESS JUMP STARTER

MAINTENANCE FREE



RZ-300MINI USER'S MANUAL

- Energy recycling and batteryless jump start technology are world wide patented.
- US PATENT PENDING EUROPEAN PATENT PENDING

**Prop. 65 Warning
for California Residents**
This product may contain chemicals known
to the State of California to cause cancer,
birth defects, or other reproductive harm.

Technical Specification:

Input: DC12V 10A, DC5V 2A

Working Temperature: -30°F to 140°F

Starting Current:	300AMP
Recharge Time from Battery	Approx. 1 min.
Recharge Time from 12V Socket	Approx. 2 mins.
Recharge Time from USB (5V 2A)	Approx. 40 mins.

THIS JUMP STARTER REQUIRES NO REGULAR MAINTENANCE. JUST LEAVE IT IN YOUR CAR, IT'S ALWAYS READY TO JUMP START YOUR CAR ANYTIME ANYWHERE YOU NEED IT.

General Safety Guide:



Refer to
Instruction Manual



Warning:
Explosive Risk



Wear Eye
Protection



Wear
Protective Gloves



Warning:
Electricity

1. Read vehicle owner's manual: The vehicle manufacturer may have specific precautions and instructions about jumping your vehicle of which you should be aware of.
2. Please wear safety glasses and gloves while jump starting your vehicle.
3. Only attempt to jump start your vehicle in a well-ventilated area.
4. Put your vehicle in PARK position and engage the emergency brake.
5. Turn off ALL electronics in your vehicle (air conditioner, heat, radio, lights, chargers, etc.) to ensure the best performance of your jump starter.
6. Ensure key is in the "OFF" position in the ignition. For smart-key fobs (push-to-start vehicles), make sure the vehicle is completely "OFF" before jump starting.
7. Keeps clear of any pulleys, belts etc. that will move once the engine starts.
8. Ensure correct connection polarity; red clamp to positive, black clamp to negative.
9. As a good practice, do not allow the two clamps to touch, even though this jump starter has short circuit protection.
10. Recharge the jump starter only at ambient temperatures between -30°F to 140°F.
11. When not in use, switch off and store in a cool, dry place and out of the reach of children.

DO NOT allow this jump starter to become wet.

DO NOT disassemble this jump starter; there are no user-servicable parts inside.

DO NOT use in explosive atmospheres (e.g. the presence of flammable liquids, gases or dust).













DO NOT use the jump starter if it appears damaged in any way.

DO NOT use this product for any purpose other than it is designed for.

DO NOT leave in direct sunlight for prolong periods of time or expose to heat.

DO NOT use abrasive or solvent cleaners on this product.

Control Panel

1.	 12.0 V	Vehicle Battery Voltage
2.	 82 %	Capacitor charging percentage
3.	  94 %	As long as ignition sign  appears, it's ready to start the engine
4.	 1.88 	Charger mode, displaying charging current
5.	 12.0 V 	Charger mode, displaying charging voltage
6.	 LOW 3.6 V	Error: Battery is too low to charge the jump starter
7.	 Err	Error: Reverse Polarity
8.	 Err	Error: Internal failure, do not use

How To Use:

1. Standard Mode



Turn off headlights, A/C, and audio when jump starting

In most situations, the weak battery can fully recharge Rezervo, follow these three steps to get your car started!



1. Connect jumper clamps to battery terminals, Rezervo will turn on automatically and display will show voltage of vehicle's battery.



2. Press the ON/OFF switch, Rezervo will start to recharge itself. Display will show percentage during charging.



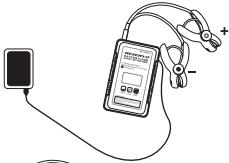
3. After ignition sign appears, buzzer will start beeping. Indicating Rezervo is ready to start the engine.

a.) Pre-charge methods: Use one of the following three ways to recharge Rezervo



1. From a battery

Connect to a battery and press the ON/OFF switch, Rezervo will be fully recharged in minutes.



2. From USB

Rezervo can be recharged from any 5V=1A or greater USB port. Just plug in Micro USB adapter, it starts recharging automatically. (or you can use a power bank that recharges mobile devices)



3. From 12V socket

Rezervo can be recharged from a another car's 12V socket. Just plug in the 12V adapter, recharging starts automatically.

2. Pre-Charge Mode

Sometimes, the weak battery may not fully recharge the Rezervo, LOW battery icon will turn on during charging, then follow these four steps to get your car started.



1. Pre-charge Rezervo from one of the three pre-charge methods.



2. Connect pre-charged Rezervo to the car with the weak battery still connected. The indicators now show voltage of the weak battery.



3. Press ON/OFF switch to activate Rezervo, indicators should show it is fully charged and ready to jump start your car.



4. Turn on engine

3. Override Mode*

If pre-charge mode fails, please resort to override mode shown in the following steps.

***Warning:**

Do not leave engine running without Rezervo or battery firmly connected.

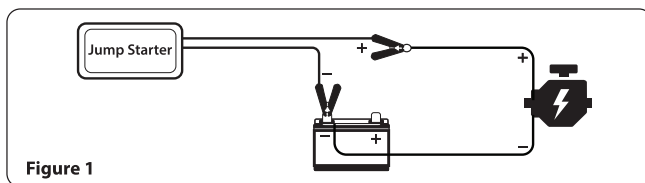
Do not reverse polarity. There is not reverse or short circuit protection in override mode.



1. Pre-charge the Rezervo from one of the three pre-charge methods.

2. Connect Rezervo to car as shown in Figure 1.

Disconnect the positive terminal from the weak battery then connect the positive clamp of Rezervo to positive terminal of the vehicle. (bypassing the weak battery)

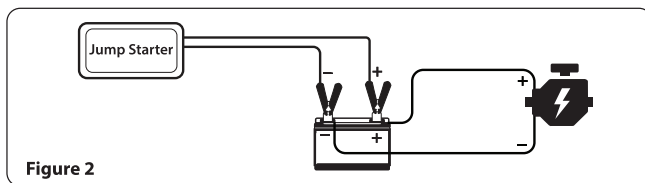


3. Press and hold ON/OFF switch to activate override mode. The display will start to flash, override function is activated when the flashing stops and display will show "OVR" while the buzzer beeps.



4. Turn on engine


5. As soon as the engine starts, while keeping Rezervo attached, reconnect the terminal back to the weak battery.

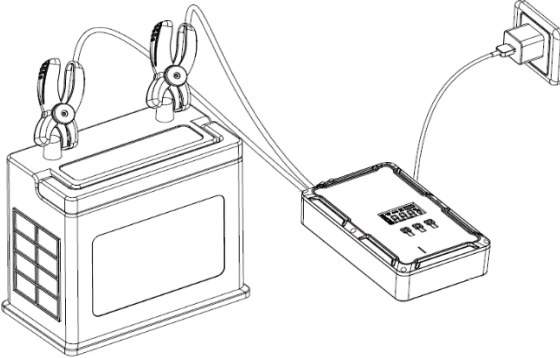


4. Use as a Maintainer/ Battery Charger*


This Rezervo can work as a battery charger

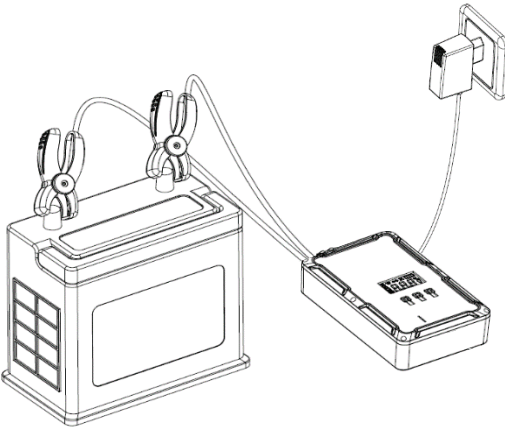
1. 12V 0.8A maintainer

- Connect clamps to battery terminal
- Connect a USB adaptor with Micro USB cord to Rezervo
- Press charger button , Rezervo will maintain the battery with 0.5-0.8Amp



2. 12V 2A battery charger (*optional 15V 2A adaptor required)

- Connect clamps to battery terminal
- Connect AC adaptor from wall outlet
- Press charger button , Rezervo starts to recharge the battery with Max. 2Amp. Once battery is fully charged, Rezervo switches to maintainer mode.



Display shows charging current and voltage alternatively under charger mode.



c.) Buzzer

Built-in buzzer gives sound signal for following situations:

1. Ready to start



2. Error



d.) Work Cycle

Max Continuous Jump Starts Per Session	Min Interval Between Two Sessions
5 Times	15 Minutes

Allow sufficient cooling time between two working sessions, failing to do so may cause damage to Rezervo.

Frequently Asked Questions

Q: Is Rezervo safe for a car's ECU or computer?

A: Yes, traditional jump starters could put the ECU at risk.

Most ECU Damage are caused by the following reasons:

1. Jump starting car to car

Some modern cars are equipped with smart charging systems, which produce voltage up to 18V. When one of the cars is equipped with different charging systems, it's ECU could be damage.

2. Jump starting with a booster pack or other battery

When a car is started by a booster pack or a donor car's batter, the alernator will start to recharge both batteries after the engine has started. The current that goes into the booster pack's battery could be as high as 50-100Amp. When the booster pack is disconnected from the car, the power produced by the alternator is much more than what the car's battery can absorb, thus pushing up the voltage. Transient voltage spikes can reach 25-100V, which can easily damage the ECU.

Rezervo uses super-capacitors instead of a traditional battery. The voltage of capacitors are restricted within safe range of all kinds of ECUs so there is no risk from over-voltage.

Capacitors have a very small capacity, about 0.2-0.4Ah and they will be fully recharged from the alternator within a couple of minutes once the car has started. Disconnecting the Rezervo will not cause any load dump, so there is no voltage spike produced.

Q: How long can Rezervo hold a charge?

A: Rezervo will only hold the charge for a day or two.

The period of charge storage, is a critical issue with traditional batteries, but is less relevant for our batteryless jump starter technology because it can be instantly recharged from a various power sources within a few minutes.

Q. Does it need to be regularly recharged?

A: No!

Rezervo is based on the instant recharging of ultracapitors rather than stored electric energy. Therefore it does not need regular recharge and can be stored for years. It's totally maintenance free!

Q: What is OVERRIDE mode?

A: The ECU of some cars does not allow the engine to start if the battery's voltage is lower than 8V. In this situation, the positive lead needs to be disconnected from the car battery and instead connected directly to the jump starter. The ECU can then detect the higher voltage provided by the jump starter.

CAREFULLY READ THE USER'S MANUAL BEFORE OVERRIDE.

Q: Can you leave Rezervo connected after the car has started?

A: Yes

Leaving Rezervo connected does not damage the jump starter nor the vehicle.

Environmental Protection



Recycle unwanted materials instead of disposing of them as waste. All tools, accessories and packaging should be sorted, taken to a recycling centre and disposed of in a manner which is compatible with the environment.

Warranty

Limited One (1) Year Warranty

Jackco Transnational Inc. warrants "Rezervo" branded products to the original purchaser against any manufacturing defect in material or workmanship for a period of one (1) year from the original date of purchase. If the defective product is determined to be covered under this warranty, it shall be repaired or replaced at manufacturer's discretion without charge. Provided that the product must be returned with proof of purchase and freight prepaid when returned to the manufacturer. This warranty shall not apply to damage due to accident, negligent use, lack of maintenance, abuse or applications other than the specific function the product is designed for.

No other warranties, expressed or implied, including those of merchantability or fitness for particular purpose shall be applicable to Jackco except as specifically stated herein. In no event shall Jackco be liable to any party for any special, direct, indirect, consequential, punitive damage of any nature caused by the sale or use of the equipment, tool, or product.

Note: This warranty gives the original purchaser specific legal rights which may vary from state to state.



This product is manufactured for
Jackco Transnational Inc.
Made in China

For Technical Assistance, Contact us at
(626) 582-8055
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