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USER MANUAL





PROFESSIONAL BATTERYLESS JUMP STARTER



- 1. Jumper clamps
- 2. 5V/2A Micro USB Input Port
- 3. 12V 10A Input port
- 4. On/Off Switch
- 5. GLOW switch
- 6. Condition indicator
- 7. Voltage indicator
- 8. 12V charging cable

● Energy recycling and batteryless jump start technology are world wide patented.
 ● US PATENT PENDING 14/443,021 EUROPEAN PATENT PENDING 15167725.9

Q. What is the effect of low temperature on this jump starter?

A. Traditional batteries, such as lead acid or lithium-ion, deliver lower cranking current at low temperature. The ultracapacitors in our batteryless jump starter keep the same starting current even at extreme cold weather down to -30°C

	20°C	0°C	-10°C	-20°C	-30°C	-40°C
Lead-Acid	300Amp	180Amp	120Amp	100Amp	50Amp	30Amp
Lithium-Ion	300Amp	190Amp	120Amp	80Amp	60Amp	40Amp
Ultra-capacitor	300Amp	300Amp	300Amp	300Amp	280Amp	250Amp

Q. What is the safety of batteryless jump starter?

A. This jump starter is extremely safe because of ultracapacitor technology. It is one of the foremost advantages over the battery-based jump starters. Ultracapacitors are designed especially to receive and release large electrical current of instantaneous power. It's even safe to short circuit fully recharged ultracapacitors without any side effect. This jump starter is also equipped with short circuit/reverse polarity protection. Therefore short circuit due to unintended uses will not damage ultracapacitors. They will not self-heat to cause fire or explosion under any circumstance.

Q. Does it need to be regularly recharged?

A. No!
 Our jump starter is based on the instant recharging of ultracapacitors 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 BYPASS mode?

A. ECU of some cars does not allow engine to start if 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. Then ECU can detect the high voltage provided by the jump starter.
CAREFULLY READ USER'S MANUAL BEFORE BYPASS.

Q. What is GLOW?

A. In cold weather, the glow plugs in most diesel vehicles will be first energized to heat up the engine chamber before the engine start as indicated by the GLOW sign on dashboard. The process needs current of 40-60Amp and takes about 4-6 seconds. In this situation, after the jump starter is fully recharged, press GLOW button, and then turn on ignition.



Q. What size of engines can these jump starters work on?

A. Success of a jump start depends on many factors such as battery condition, temperature, age of the car and etc.
 Here is general guide of jump starter choice for different engine size

MODEL	CRANKING CURRENT	GASOLINE		DIESEL		
		WARM NO BATTERY	COLD NO BATTERY	WARM NO BATTERY	COLD WEAK BATTERY	COLD NO BATTERY
01.60.301	300AMP	> 4.0L	> 3.0L	> 2.0L	> 2.0L	-
01.60.451	450AMP	> 6.0L	> 5.0L	> 3.0L	> 3.0L	> 1.6L
01.60.801	800AMP	> 8.0L	> 6.0L	> 5.0L	> 4.0L	> 3.0L

2. Pre-charge methods:

Sometimes, the weak battery can not fully recharge the batteryless jumpstarter, FAULT light turn on during charging, then follow four simple steps to get your car started!



1. Pre-charge the jumpstarter from a donator car or battery.



2. Connect pre-charged jump starter to casualty car. The indicators now shows voltage of the weak battery.



3. Press ON/OFF to active jump starter, indicators show up to 14V.



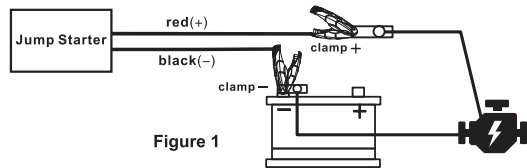
4. Turn on engine.

3. Bypass mode

If pre-charge mode fails, please resort to bypass mode as bellowing steps.



1. Pre-charge the jumpstarter from a donator car or battery.



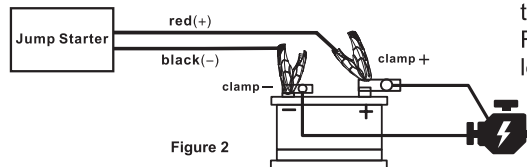
2. Connect jumpstarter to car as figure1.



3. Long press ON/OFF to active bypass mode.



4. Turn on engine.



5. Put positive lead to battery terminal together with positive clamp. Remove positive clamps after positive lead is fastened to battery terminal.

Warning:

Do not leave engine running without jump starter or battery is firmly connected. Do not reverse polarity. There is no reverse or short circuit protection at bypass.

GLOW MODE:

In cold weather, the glow plugs in most diesel vehicles will be first energized to heat up the engine chamber before the engine start, as indicated by the GLOW sign on dashboard. The process needs current of 40-60Amp and takes about 4-6 seconds. In this situation, after the jump starter is fully recharged and connected, press GLOW button, and then turn on ignition.



Note:

GLOW is inactivated under BYPASS mode.

Pre-charge methods:



1. From a battery

Connect to a battery and press ON/OFF, jump starter will be fully recharged.



2. From USB

The jump starter can be recharged from any 5V 2A USB port. Just plug in Micro USB adapter, it starts recharging automatically.



3. From 12V socket

The jump starter can be recharged from a donator car's 12V socket. Just plug in 12V adapter, it starts recharging automatically.

CONDITION INDICATOR

Condition indicator turns RED under following fault :

1. Reverse connection.
2. Short circuit .
3. Battery voltage is lower than 3 Volt

Condition indicator turns GREEN under BYPASS mode.

Condition indicator blinks between RED and GREEN under GLOW mode.

WORKING CYCLE

	MAX OPERATIONS IN A ROW	MIN INTERVAL BETWEEN TWO SESSION
01.60.301	5 TIMES	15MINUTES
01.60.451	5 TIMES	15MINUTES
01.60.801	3 TIMES	20MINUTES

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

FREQUENTLY ASKED QUESTIONS:

Q: Is batteryless jumpstarter safe to ECU or car's computer?

A: Traditional jump start could put ECU at risk.

Most ECU damage are caused by following reasons,

1. Jump start car to car

Some modern cars are equipped with smart charging system, which produce voltage up to 18V. When either of donator car or casualty car are equipped with other charge system, its ECU could be fried.

2. Jump start with a booster pack or other battery

When car is started by a booster pack or a donator car's battery, alternator start to recharge both batteries after engine is started. The current go into booster pack's battery could be as high as 50-100Amp.

When the booster pack is disconnected from car, the power produced by alternator is much more than what car's battery can absorb, thus push up voltage. Transient voltage spike can reach 25-100V, which can easily fry out ECU.

Batteryless jumpstarter use super-capacitors instead of traditional battery. The voltage of capacitors are restricted within safe range of all kinds of ECU. So it has no risk from over-voltage.

Capacitors has very small capacity, about 0.2-0.4Ah. they will be fully recharged from alternator within couple seconds once casualty car is started. Disconnecting batteryless jump starter will not cause any load dump, so there is no any voltage spike produced.

Q. Will transfer of residual energy to the jump starter damage the weak battery?

A. No.

Batteryless jump starter draws only 0.2-0.4Ah energy from the battery. A weak car battery normally has a capacity of 10-30Ah and can recharge the jump starter many times without any side effects.

Q. How many jump starts can a fully recharged jump starter perform?

A. This jump starter is designed to start only once when fully recharged.

It automatically starts to recharge itself after each use which takes only about 100 seconds. Therefore, it can jump start many times as needed successively.

Q. How long can this jump starter hold charge?

A. This jump starter will self-discharge to 0 in couple days.

The period of charge storage, is a critical issue with traditional battery, but is less relevant for our batteryless jump starter technology because it can be instantly recharged from a weak battery within 100 seconds for uses.

Q. What's the life span of this jump starter?

A. This jump starter provides more than 10,000 times of use before noticeable performance degradation.

Ultracapacitors remain operatable more than 10 years.

Technical Specification:

Input : DC12V 10A , DC5V 2A

Working temperature:-40°C to 65°C (-40°F to 150°F)

	01.60.301	01.60.451	01.60.801
Starting current	300AMP	450AMP	800AMP
Recharge time from battery	60seconds	90seconds	150seconds
Recharge time from 12V socket	100seconds	120seconds	200seconds
Recharge time from USB	15minutes	20minutes	40minutes

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

General Safety Guide

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 jumping your vehicle.
3. If you are not in a well-ventilated area, please do not attempt to jump start your vehicle.
4. Put your vehicle in PARK 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.



Turn off headlights, A/C, audio and etc.

How to use:

1. Standard mode



In most situation, the weak battery can fully recharge the jump starter, follow three simple steps to get your car started!



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



2. Press ON/OFF, jump starter will start to recharge itself. Indicators show jump starter's voltage during charging.



3. After 14V indicator stops blinking, turn on engine.