

ADVANCED RESEARCH TECHNOLOGY SDN. BHD.

USER MANUAL FOR I'SPARK V3.8, V3.8A, V3.9 & V3.9A

Device Application

1) This device only applies to Petrol and NGP 4 stroke engine with operation under 12 V signal.

Recommended Device Usage

- 1) V3.8 / V3.8A For 1500CC and below
- 2) V3.9 / V3.9A For 1500CC and above.



Working Theory

The I'spark design is based on the Original Car Wiring design concept by taking the supply from the same source - IE THE BATTERY. The only difference is the fuse rating for different device used. Any modification of wiring may effect the performance and used of the device.

Function of the I'Spark

- 1) To stabilize the electrical supply of the car - It does not increase supply thus it will not cause any damage to the car device like ECU, Ignition coil, aircon, audio system etc.....
- 2) It detects the Back EMF from the ignition coil and perform the below function:-
 - a) Rapid and more Complete discharge for stronger spark at the spark plug.
- 3) Act as Battery Doctor (Optional).
 - a) Green Led lighted up indicate the device is functioning.
 - b) Red Led lighted up when you switch on the ignition key (without starting the car), esp in the morning or when after the engine stopped for few hours. It indicate the battery is weak, requires replacement.
 - c) Red Led lighted up when the engine is started, it indicate the battery is overcharge, requiring to check the alternator to avoid battery damage.
 - d) When ignition key is switched of, the Green and Red Led lights up for 2 to 3 sec - This is normal.

Safety Instruction

- 1) **Do not plug in the device when the ignition key is switched On or the engine is started.**

How to Install

- 1) Just plug in the device into the cigarette lighter holder/socket and stick the device to the side of the dashboard. **(During installation ensure the ignition key is switched off or the car engine is stopped)**

Device Electrical Specification.

Supply Voltage : 11 to 15VDC
Input fuse (optional) : 5 Amp.

Click Sound (Only Applied to V3.8A & V3.9A.)

A click sound from the device is normal when the ignition key is Switched On or Off .

Warranty

- 1) This device replacement warranty period is 1 year under below condition:-
 - a) Led not lighted-up
 - b) Device not functioning.
 - c) Warranty period is from the date of purchase.
 - d) Warranty claim from the authorized dealer must present relevant Official receipt and warranty card.
 - e) Warranty is void if the seal or device is being tampered.
 - f) Warranty is on one to one exchange basis excluding Fuse blow (Optional - Apply to Device with fuse holder)

- 2) This Device carry a Product Liability insurance of RM1,000,000.00. For Asia region except Australia.
 a) Terms and conditions applied.

Troubleshooting

Problem/s	Check for:-
1) When engine start, the Device Led is not On	<ul style="list-style-type: none"> > Check for cigarette lighter fuse > Check for cigarette lighter holder > Ensure the device is properly plug-in.
2) When Driving, you feel the power and pick-up but no fuel saving	<ul style="list-style-type: none"> > Check for engine ignition timing, it should be set at original factory setting. > Check for exhaust gas CO reading, it should be set at original factory setting. > The combustion chamber cleaning is in process, Check the petrol consumption after finishing 2 tanks of petrol.
3) Alarm malfunction : Cannot immediately switch On alarm when car engine is just switched off. The alarm auto lock system can't be open when the ignition key is switched off. (This is due to the Alarm circuit taking supply from the cigarette lighter socket) Audio player still on for 1 to 2 minutes after Switching off the ignition Key .	<ul style="list-style-type: none"> > Relocate your alarm or Audio Player supply wire. > Or do small modification to your Cigarette lighter supply wire as per diagram A. <ul style="list-style-type: none"> > For Audio Player without modification will not damage your Player, it just takes 1 to 2 minutes to switch off.
4) When Driving, you cannot feel the power and Pick up.	<ul style="list-style-type: none"> > When other brand of booster is used on the same car - Remove it. (Not applicable to other version of I'spark used.) > Check for engine ignition timing, it may be too low, set to original factory setting. > Check for loose contact on the cigarette lighter and fuse box junction.

For other problem or the problem still exist, please refer to the authorized dealer only.

Note : Do not open the unit for any reason as the electronic parts are sealed and cannot be repaired.

Formula to Calculate your Fuel saving.

(Require to fill in Full Tank of Fuel for each calculation)

Example (Before used I'Spark)

	Start Milage (KM)	Refill Milage (KM)	Total Milage Travelled (KM)	Full tank of Fuel Cost (RM)
1		100000		Full tank
2	100000	100350	350	125
3	100350	100820	470	160
4	100820	101202	382	135
		Total	1202	420

Cost per KM without using I'Spark (RM)

$$420 / 1202 = 0.35$$

Example (After used I'Spark)

	Start Milage (KM)	Refill Milage (KM)	Total Milage Travelled (KM)	Full tank of Fuel Cost (RM)
1		101202		
2	101202	101615	413	120
3	101615	102075	460	135
4	102075	102435	360	105
		Total	1233	360

Cost per KM after installed of I'Spark (RM.)

$$360 / 1233 = 0.29$$

% of saving

$$(0.35 - 0.29) / 0.35 = 17\%$$

