WINTERBURN CD IGNITION	RACING CD IGNITION
Output Voltage regulated to limit insulation stress to vintage ignition components such as ignition coils, distributor caps, rotors and ignition wires. This is done over a wide range of battery voltage and engine speed.	Extremely high available voltages limited only by the size of the spark plug gap. A loose spark plug wire creating an external spark gap or worse, an open circuit, could mean voltage rises to the point where it shorts out elsewhere. Even if there is no short, the extreme voltage rise could stress insulation over time such as the insulation on the magnet wire inside the ignition coil. Any other insulating material (distributor cap for example) or insulating component will be degraded prematurely due to the added voltage stress. Also, some CD ignitions cannot tolerate firing with the coil secondary open-circuit without being damaged.
No claim for spark energy since it is dependent on the coil used and other factors. Do claim that spark power for the WINTERBURN CD is many times greater than the Kettering system at any engine speed. Output energy and spark power with this design relies on a relatively large discharge capacitor charged to a lower voltage than any racing CD ignition. Racing ignitions typically charge a smaller capacitor to a much higher voltage. Energy stored in a capacitor is proportional to the voltage squared times the capacity. However, the stored energy in the discharge capacitor does not determine the spark energy directly. For example, experiments show that to initiate a spark of 20kv with a 0.5uF capacitor compared to a capacitor of 1uF requires more stored energy with the smaller capacitor.	Untruthful advertising with respect to spark energy. In fact, the vast majority of CD ignitions produce less spark energy than the Kettering system, but as mentioned, spark energy alone is not an indicator of a good ignition. Case in point: aircraft magneto ignitions have up to ten times the spark energy of CD ignitions but make short work of spark plugs due to very fast erosion. However, excessive spark power (energy delivered per unit time) also increases contact erosion, and this is a feature of many racing CD ignitions. Excessive spark power due to the high voltage charge (often in excess of 400 volts) of a rather small discharge capacitor result in increased spark plug and high voltage contact erosion as does the very high energy spark with a magneto system. The difference is that one causes erosion in under 10 microseconds(racing CD) and the other occurs in 100s of microseconds (magneto and Kettering).
Ability to start an engine at 5V battery voltage with almost full coil secondary voltage on 12V model. (3.7V battery input on 6V model)	Might produce a spark down to 6V with better systems but unlikely to produce enough coil secondary voltage for consistent starting with a weak battery.
Ability to operate on cars with positive or negative ground without any wiring changes. 12V and 6V models.	Only designed for 12V negative ground systems.
The WINTERBURN CD ignition will only trigger with the existing distributor points, or points replacement modules such as Pertronix that mimic the points.	Most will trigger with almost any trigger, magnetic, optical or points. Only some are compatible with Hall effect triggers.
The WINTERBURN CD ignition has an o-ring	Unless the points are retained as the trigger,

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sealed switch to revert from CD to Kettering with a centre 'off' position. This allows redundancy as the car has two types of ignition at the flip of a switch. The 'off' position also allows a degree of theft protection. In the event of a fault with the ignition, whether it be a standard component or the ignition box, the switch makes troubleshooting easy.	conversion back to Kettering is impossible and there is no switch for that purpose. If the CD box fails and the points trigger is retained, conversion back to Kettering requires wiring changes; the difficulty of which depends on the manufacturer. Also most racing CD ignitions prefer that their own proprietary ignition coil is used which may not work well with the standard Kettering system.
The WINTERBURN CD ignition has simple robust circuitry designed to outlast the car and proven with similar types in service for over 5 decades and still working with no end in sight. Modern, higher rated components mean that long lifetime can be extended even further. High voltage and current specs on all components far exceed any possible charging system failures. 12V units are designed to withstand 25 V battery input for at least two hours continuously without permanent damage and 6V units up to 18V. Both will withstand charging system spikes up to 60V continuously and trigger system spikes up to 630V. No electrolytic capacitors are used, only high quality film type from various manufacturers with high temperature ratings. Will operate with any kind of ignition wire including solid copper core.	Often complicated micro circuitry susceptible to voltage spikes. Automotive electronics can be very prone to failure from high voltage spikes in the power supply system. Some CD ignitions will not tolerate alternator or generator voltage spikes which are normally absorbed by the car battery should the battery be disconnected while the charging system is still supplying loads. Also, most racing CD ignitions specifically state not to use copper core ignition wires. The radio interference can disrupt the CD electronics and cause misfires. Misfires can result in engine damage.
No Rev Limiter. Does your car have now?	Often times come with a built in adjustable rev limiter.
No multiple spark technology, just one multiphase extended duration spark. The spark duration can be as long as 0.5 milli-seconds depending on the coil used.	Multiple sparks in some units are claimed to increase spark duration as a means of overcoming the supposed shortcoming of CD ignitions. However multiple sparks increase spark plug and distributor cap conductor erosion. May also shorten life of insulation for reasons given above. May in some cases lead to combustion by artificially retarding spark when first spark could not light fuel due to timing being over-advanced. Does NOT increase spark duration as most manufacturers claim, since spark events are separated by too much time for the multiple sparks to simulate one long duration spark. Most racing CD ignitions have short duration sparks of 100 microseconds or less.
Very low current draw: Maximum 3 amps at 8000 rpm with an 8 cylinder engine (4 amps with 6V	Some units are not energy efficient and require a separate power supply wire direct from the battery

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unit). Normal power to unit is supplied through ignition switch from the same wire supplying the existing Kettering system. 12V units will operate with ballast resistor or without. The WINTERBURN CD ignition current draw is so low that the ballast resistor does not reduce the efficiency of the unit by very much. The unit will draw slightly less current and will put out only slightly less voltage at the highest rpm achievable (8000rpm-8cyl). Also, the ballast resistor will not get very hot as most of the time the WINTERBURN CD ignition draws less current than the Kettering system.	to reduce current through ignition switch. Some ignition switches will not tolerate high current. Having to bypass the ignition switch for the power supply also complicates hook-up and means an extra relay or other device to shut off the CD unit when the ignition switch is turned off. Some also require that the ballast resistor be bypassed or removed.
Compatible with most* tachometers, either current sensing (RVI style) or voltage sensing types without a special adaptor. Directions for hooking up each type given on request. *Some exceptions noted to date: 1969 to 1971 Porsche 911 tachs, and early Fiat Spider tachs. For most applications the MSD 8920 tach adapter works well, but for Mercedes 350SL and Porsche, a recommeded adapter can be found at: http://www.ashlocktech.com/Home.php	Most often require a tach adaptor to signal tachometer due to single phase CD spark type, and may still require the tachometer to be calibrated.