IMPORTANT INFORMATION FOR STREET VEHICLE OWNERS ABOUT THESE MAGNECOR RACE WIRES

INSTALLERS: please make sure vehicle owner receives this sheet.

The ignition wire set enclosed is designed and constructed to provide a full race engine with the **FULL OUTPUT** from the ignition system, as well as suppression for EMI and RFI (also needed by production engines). This feature also benefits your production or modified street engine, as the full output from your vehicle's ignition system will always be available to the engine. However, race engines are meticulously maintained, and never subjected to conditions encountered by street engines over an extended period of time. Therefore, if you want these wires to last, you need take the following into account:

Although the ignition cable used for Magnecor Race Wires will not deteriorate with age or use, the same can't be said about the **spark plug connectors** needed for some engines. In recent years, almost every vehicle manufacturer has become obsessed with using overly complicated (and often poorly designed) spark plug connectors on the wires they originally fit to their engines.

Because you won't ever be replacing Magnecor Race Wires for conductor deterioration, constant vigilance will be needed if you want the spark plug connectors to last, particularly with some engines that cause spark plug connectors to fail because of the engine design and/or the hostile environment in which the spark plugs are situated. Stock wires need regular replacement because of conductor deterioration — usually before most connectors fail.

The same goes for **spark plugs.** Manufacturers produce spark plugs with an assortment of different porcelain insulator shapes and sizes, as well as differently shaped tops (nuts, ferrules) made from different metals that suit the terminals used in some spark plug connectors, but not those used in others.

Spark plugs don't last forever, and occasionally they fail prematurely. Some used in supercharged stock engines develop cracks in the porcelain, and more often than not the wires are initially blamed for problems caused by failing spark plugs. Sometimes, inevitable failure of spark plugs can be disguised and postponed by fitting stock wires, which provide suppression by reducing spark energy to the plugs, and sometimes spark plug problems can be made worse by Magnecor Race wires designed to provide suppression without reducing spark energy. Unfortunately, all engines lose power if any one or all spark plugs are not performing satisfactorily, no matter which type or brand of spark plug wires are used.

Combustion gases leaking past spark plug gaskets and spark plug porcelain seals (and cracks) can cause spark plug connectors to pop off spark plugs. Also, the opposite can occur if, over time, a small amount of corrosive combustion gas continues to leak from around the very top of a spark plug porcelain to cause a galvanic action, which binds the spark plug connector's metal terminal to the spark plug top, and if enough force is used, the cable can be wrenched out of the terminal in an endeavor to remove the spark plug connector from the spark plug.

Extreme care should always be exercised when removing the wires' spark plug connectors, particularly when the wires have been connected to spark plugs for extended periods. On engines with extended spark plug connectors, always remove each wire from retainer/dividers before pulling on spark plug connector to avoid retained cable pulling the connector to one side which causes the inside metal terminal to lock on to spark plug top.

WARNING:

AVOID REMOVING SPARK PLUG WIRES UNTIL ENGINE IS COLD. HOT SPARK PLUG TOPS WILL EXPAND INTO THE METAL TERMINALS INSIDE THE SPARK PLUG CONNECTORS FITTED TO THE WIRES, AND MUCH MORE FORCE WILL BE NEEDED TO REMOVE THE CONNECTORS FROM THE SPARK PLUGS

Spark plug wires used on some recent street engines which feature **extended connectors** to reach spark plugs situated in deep un-drained holes will need more attention than wires that don't use extended connectors. **Race wires** conducting **full coil current** will be more affected by moisture accumulation in deep spark plug holes than the original wires which were designed to reduce spark current (for suppression) — more so, if the plug gaps have widened as a result of high-mileage tip erosion in a rarely tuned street vehicle. A turbo or supercharged engine can exacerbate this problem. The majority of the cost for ignition wires with extended connectors is in the connectors themselves, so attention to conditions which cause connectors to fail will ultimately save you money.

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Before fitting Magnecor Race Wires to spark plugs situated in deep holes, always ensure that the holes are free of moisture and oil. It is not always easy to see moisture — oil is very obvious. Use compressed air if available (with safety glasses) or a shop vacuum to clean out holes. Unless spark plugs are double platinum, replace them if they have run in excess of 30,000 miles — sooner if you see signs of gas leakage from the metal body or top on the porcelain insulator, or see microscopic cracks in the porcelain. Do not attempt to alter worn spark plug electrodes on spark plugs used in recent engines. If the engine in your vehicle is prone to accumulating water and/or oil in the spark plug holes, you should be prepared to periodically clean out the spark plug holes to avoid damage to the spark plug connectors. See our web site www.magnecor.com for vehicles with known problems which affect ignition wires.

If any of the following adverse conditions exist, or develop in the future, you will most likely experience trouble with the **spark plug connectors** on your wires. Any one connector with a problem will cause the engine to misfire:

1. **Wires not fitted correctly** — see fitting instructions enclosed;

2. **Moisture and/or oil has accumulated in un-drained spark plug holes** — all extended connectors are vented, therefore moisture will always accumulate if vehicle is used in areas where condensation forms over the engine or the engine is washed. Some vehicles suffer more than others. The problem gets worse as vehicles age;

3. **Spark plug gaps have become excessive or plugs are failing** — causing coil output to find it easier to arc down spark plug insulators or from cracks in insulators, or through the side of any wire connector covered in moisture (a pin hole will be burnt). Indication of arcing (white tracks) usually will be evident around bottom connector seals. A pin hole can be detected by closely inspecting the outside of a connector, usually in the area where the metal terminal (inside) ends.

Magnecor makes every effort to overcome difficulties caused by poor production engine and original spark plug connector design. Wherever possible, longer-lasting substitute spark plug connectors (to help alleviate known problems caused by the original connectors) will be fitted to Magnecor Race Wires, although substitute connectors may not be available for every engine.

However, Magnecor can't fully overcome the problems attributed to poor engine design, failing spark plugs, and/or lack of maintenance or care in fitting and removing the wires. Vehicle owners need to accept that moisture needs to be removed from some deep un-drained spark plug holes from time to time, oil leaks need fixing, spark plugs need to be checked periodically and replaced before they fail and possibly damage spark plug connectors, and care needs to be taken whenever wires are fitted or removed.

Increasingly, as engine running problems become more difficult to diagnose and engine designs make it more difficult and time consuming to fit ignition wires, many wires are unnecessarily replaced during the search for a solution to problems caused by spark plug and other component failures or adjustments without being re-fitted to the engine after the true cause is found and rectified, and for this reason, because an installer tells you the wires were replaced because they were also "defective," we can't accept a warranty claim unless the wires are first tested by us to establish whether or not the wires are in fact "defective."

Always retain your old wires. If at any time in the future you discover a spark plug connector is damaged by any of the above causes, you can send it to us for repair or replacement, and use an old wire in place of a wire sent for repair or replacement. Alternatively, fully assembled single wires for all vehicles are available separately for immediate delivery at a special low price for existing wire set owners.

If you think the wire set you receive does not fit or has a problem, please notify us immediately.

MAGNECOR LIMITED WARRANTY

Magnecor Ignition Wires will be replaced or repaired free of charge if the product should fail for any reason other than abuse, accident, negligence, improper installation, alteration or failure attributed to original engine design, engine maintenance (or lack thereof) or engine modification. Warranty applies only to the original purchaser and is limited to replacement or repair of the suspected failed wire and does not include labor charges for removal or replacement. Wire should be returned together with proof of purchase to any authorized Magnecor distributor or dealer or Magnecor itself for authorization for replacement or repair.

IMPORTANT KV85 FITTING INSTRUCTIONS

Magnecor KV85 8.5mm Competition Ignition Cables (unlike conventional resistive carbon conductor ignition wires) use a 2.5mm Metallic Inductance Suppressed conductor and are specifically designed to conduct the total output of the ignition coil (which, with some racing ignition systems can be considerable) and provide RFI (radio frequency interference) and EMI (electro magnetic interference) suppression. Therefore, to get the best results, care should be taken when fitting Magnecor Cables. Magnecor KV85 Competition Ignition Cables are made entirely of a silicone rubber that is extremely strong and flexible - so it's possible to fit them into 7mm and 8mm separators and retainers - despite their 8.5mm size.

The most important thing to remember is that all sorts of problems can occur if the metal terminals inside the wires' protective boots are not fully engaged with spark plug tops and distributor and ignition coil connectors.

If you are replacing burnt out resistive carbon conductor ignition wires, it would be worthwhile to check spark plugs, rotor and distributor cap for defects such as cracks and excessively burnt metal arcing points, as well as for a badly worn or broken carbon contact (rubs on center of rotor) inside cap. Also, check coil tower for cracks and corrosion.

FITTING CABLE SPARK PLUG ENDS:

To properly fit a spark plug boot/terminal assembly (including those with plastic extensions) onto a spark plug, take care to ensure that the assembly is lined up to follow the angle at which the spark plug is fitted into the cylinder head. Push assembly over spark plug until a click is felt (or heard) as terminal engages the spark plug top. Important: **DO NOT** stuff silicone grease into boots, as the terminal inside will not lock onto the spark plug top properly, if at all.

On some engines it is almost physically impossible to comfortably get both your hand and the spark plug boot/terminal assembly near the spark plug. The best approach in this situation is to get the spark plug boot/terminal assembly onto the spark plug as best you can and to ensure the metal terminal is engaged over the spark plug top - push and gently rock on the top half of the rubber boot (or top cover on plastic connector). There will be a loose spongy feel, and boot or connector will lift off easily if terminal is not engaging, whereas there will be a more solid feel, and more effort will be needed to pull off boot or connector when terminal is engaging the spark plug top.

FITTING DISTRIBUTOR AND COIL ENDS:

Carefully fit distributor and coil boot/terminal assemblies into (or over) distributor cap and coil connectors. The metal terminals inside the boots must fully engage the metal connecting surfaces of both the distributor cap and coil tower connectors. With any boot sliding-on-cable style, engage the terminal first, then slide the boot into place. On older GM distributor caps it is important to ensure that each and every distributor boot/terminal assembly is pushed down until click is heard or felt. Do not just place distributor boot/terminal assemblies in position and rely on the retaining ring (if used) to push them down to properly engage onto distributor cap towers.

Some aftermarket push-in style distributor caps have brass inserts without a top taper to allow terminal to be easily pushed into the insert. Care should be taken to ensure that terminal (particularly the 90° style) is pushed into cap insert straight and centered. If a resistance is felt (edge of terminal is hung up against un-tapered lip of insert) - don't apply too much force to terminal as it could be distorted and become too loose inside the cap insert. The terminal can be bent back into shape by expanding the section that pushes into the cap insert to its original size.

A worthwhile practice is to again check wire boot/terminal assemblies for proper engagement after the vehicle has run a few miles. The vibration of the vehicle traveling will quickly loosen up any boot/terminal assembly not properly engaged.

REMOVING CABLES FROM SPARK PLUGS:

Important: Some spark plug tops expand inside the terminals when hot, and terminals will lock onto those tops, making removal difficult. If the boots or connectors appear to be locked onto the spark plugs, let engine COOL down to avoid damaging the wires.

Short flexible boots: With fingers placed on boot where it fits over spark plug (inside), slightly twist boot to break seal between boot and spark plug's porcelain insulator. Try to pull boot up and off spark plug at the same angle the spark plug is fitted into the engine.

Long Extension type spark plug connectors: Avoid twisting the connector. Pull connector straight up, pulling it to one side could cause the heavy duty terminal to get hooked onto some soft metal spark plug tops, and because extra force will be needed to drag connector off plug top, in extreme cases the ignition cable could be wrenched out of the terminal if enough force is applied, particularly with a multi-part (with plastic tube) connector, as the floating terminal needed for some connectors could be pulled out of position inside the plastic tube, and/or the bottom seal could be jolted off.

Although Magnecor KV85 Competition Ignition Cables are able to withstand a service heat of 600°F, and 1,000°F for short burst race conditions, their jackets and boots could lose their effectiveness if allowed to rest for prolonged periods against headers and turbocharger plumbing that reach temperatures in excess of 1200°F. We recommend that cables are routed so that a gap of at least 20mm is left between these cables and any 1,200°F plus heat source. Severe heat destruction of spark plug boots too close to headers can rarely be cured by shielding boots. Header heat wraps and coatings, etc. can be very effective.

NOTE:

It is possible that the boot/terminal assemblies fitted to the wires enclosed do not resemble the original or replacement ignition wires you are about to replace. The reason is that we have found (after 20 years experience) that the design and construction used for some original and replacement ignition wires, a well as some original engine designs, cause wire assemblies to become inherently unreliable (the reason you are replacing them), and wherever possible we try not to imitate a design that we know will inevitably fail - particularly with our name on it!

EVERY PART OF ANY MAGNECOR IGNITION CABLE ASSEMBLY IS AVAILABLE AS A SEPARATE SPARE PART.

LIMITED WARRANTY

Magnecor Ignition Wires will be replaced or repaired free of charge if the product should fail for any reason other than abuse, accident, negligence, improper installation, alteration or failure attributed to original engine design, engine maintenance (or lack thereof) or engine modification. Warranty applies only to the original purchaser and is limited to replacement or repair of the suspected failed wire and does not include labor charges for removal or replacement. Wire should be returned together with proof of purchase to any authorized Magnecor distributor or dealer or Magnecor itself for authorization for replacement or repair.

Manufactured exclusively by Magnecor, Farmington Hills, Michigan, USA.
Made in USA
Rev.090804

Important Note: Magnecor Spark Plug Connectors

The spark plug connectors used for this Magnecor spark plug wire set probably look different to your current spark plug wires. For this wire set we have replaced solid plastic extension tubes (that connect over your spark plugs) with more flexible silicone rubber extensions and heavy duty stainless steel terminals. The silicone rubber extensions perform the same purpose as solid plastic extensions, and provide **increased** reliability, temperature resistance, dielectric strength and will not burn out due to age or exposure to moisture.

The engine in your car is particularly prone to moisture and oil accumulating over spark plugs and the bottom of spark plug connectors. This problem can cause sparks to track (inside the connector) from the metal spark plug top, down the outside of the spark plug's porcelain insulator (under the connector's bottom seal) to eventually ground out into the moisture. This problem is exacerbated by the spark finding it easier to track down the outside of a wet spark plug in preference to firing the spark plug gap - usually because of an excessive spark plug gap or high combustion pressure. The problem is mostly noticed by the engine hesitating when under load (particularly at low speeds). Usually diagnosed by a dealer or mechanic as "bad wires," the problem can be solved (after cleaning moisture out from around the spark plugs) by simply applying silicone grease to the inside of the bottom seal or, at worst, replacing the seal if car has been driven for some time with the problem. Generally, the chance of the problem occurring can be reduced by applying silicone grease to the inside of the bottom connector seal (or preferably directly to the outside of the spark plug insulator itself) at regular intervals.

To fit the Magnecor spark plug connectors in this set:

✗ Lower the spark plug connector into the spark plug hole, making sure it fits over the top of the spark plug.

✗ Push down on the very top of the spark plug connector to ensure the spark plug terminal (inside connector) properly engages the spark plug top. Proper engagement will be indicated by the connector's top sealing boot fitting completely into and over the spark plug hole in the valve cover. Even though the silicone rubber extension and the top sealing boot feels much more flexible, the heavy duty metal terminal (inside) will lock properly onto the spark plug top- although the click may not be as pronounced as with the original connector.

When removing a spark plug connector, it's best to pull it straight up and off the spark plug - not at an angle (a precaution you should take with any spark plug wire). To facilitate this method, we recommend you first remove the wires from the wire looms and possibly the distributor cap before removing connectors from the spark plugs.

Please contact Magnecor or your dealer if you have any questions.