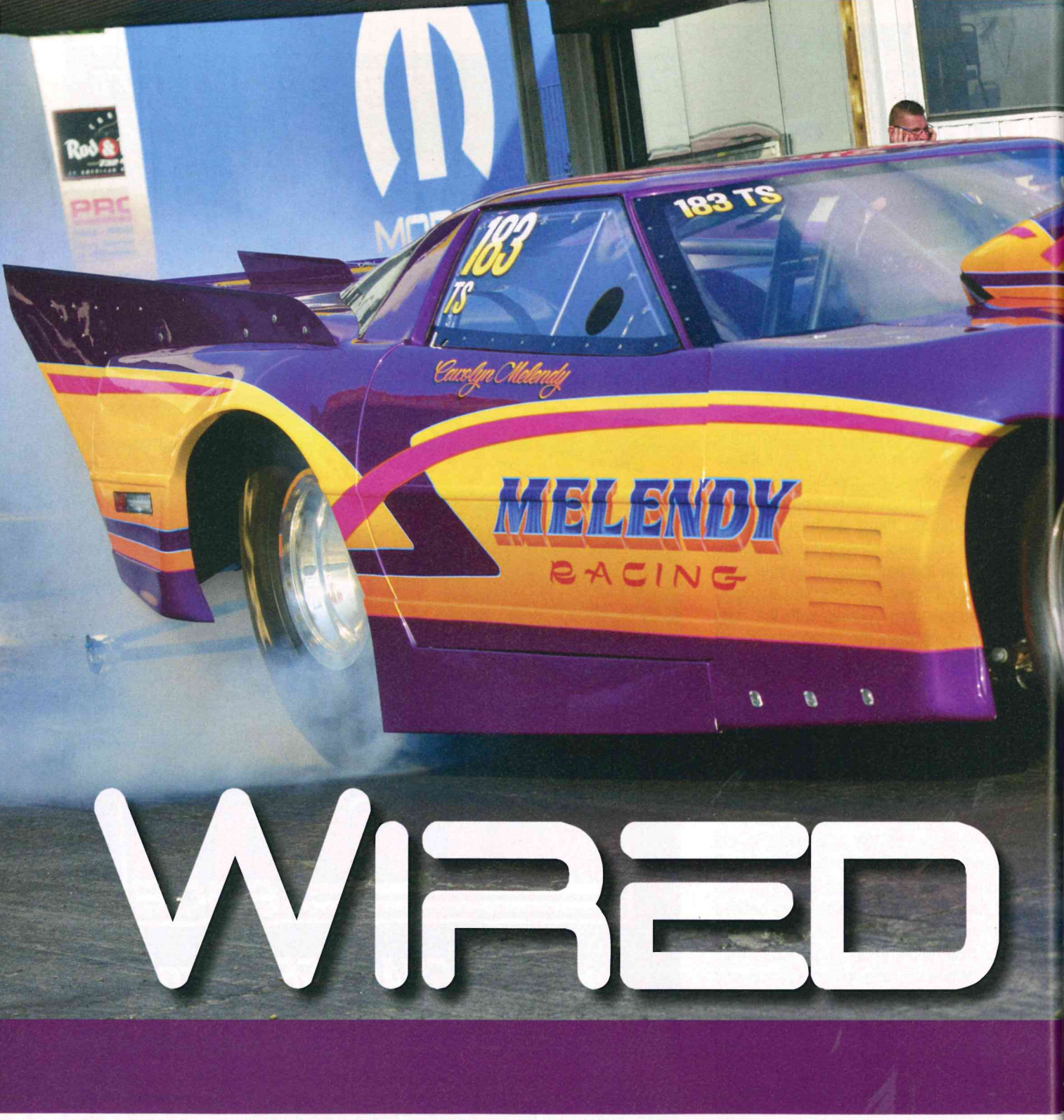


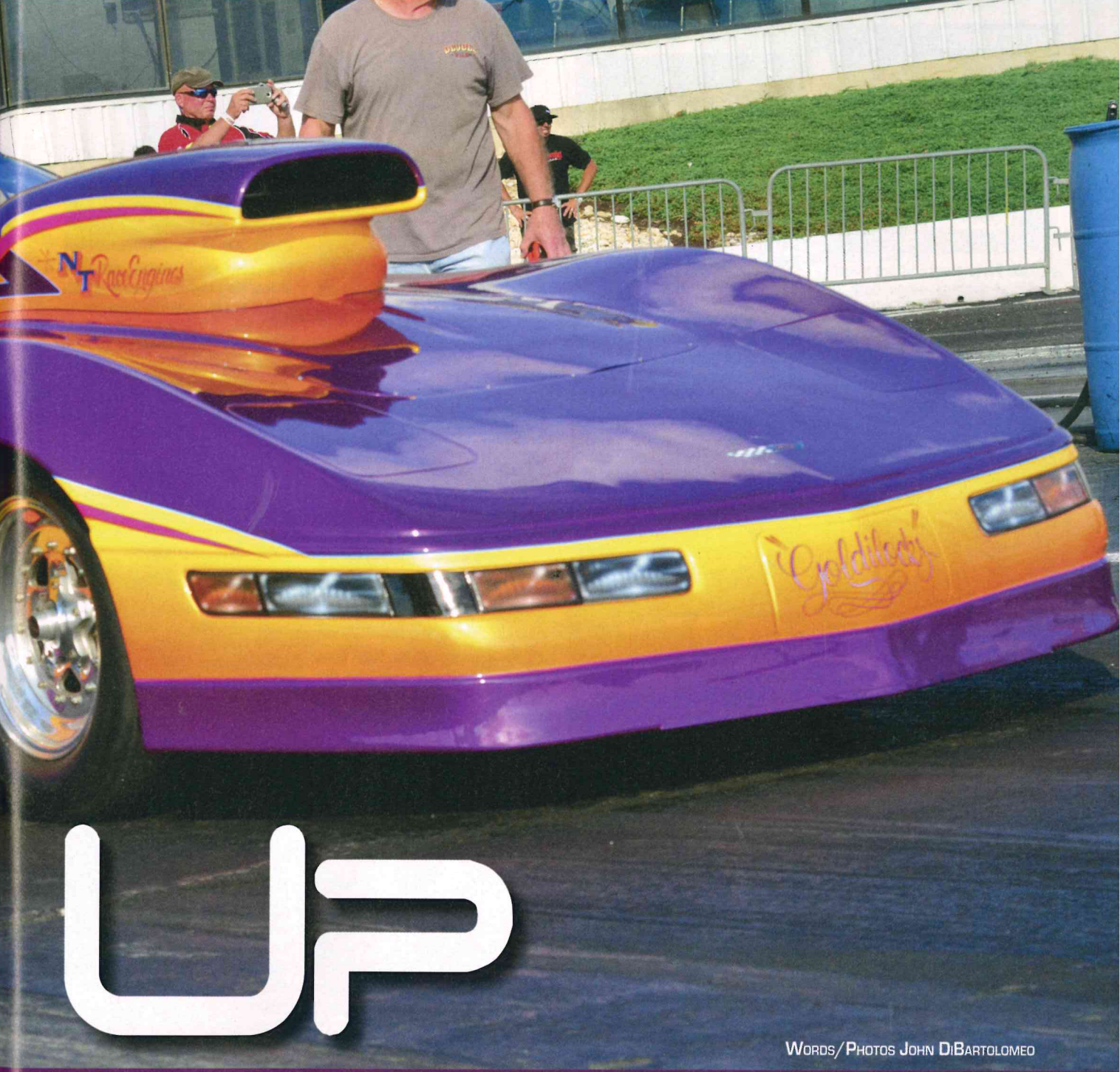
WIRED

The connection between your ignition system and the spark plugs is the job of the spark plug wires. Those wires carry untold amounts of amperage from the distributor cap to the plugs themselves. If you've ever had a bad set of wires on your car and happened to open the hood in the dark of night, you might have witnessed the light show that emanates from the wires as they short out against any metal objects nearby.

One of the most important things to bear in mind is that as we increase pressure within the combustion chamber, it becomes harder to light a fire through a spark from the spark plugs. This places more emphasis on the secondary wiring we call plug wires. While the type and quality of plug wires today has far surpassed anything we've had in the past, plug wires do go bad. Replacing them every so often will ensure that a problem doesn't crop up when you least expect it.

"There are dozens of variables to take into account when it comes to making a decision as to when to replace plug wires," says Moroso Performance's Scott Hall. "Generally speaking though, we'd like a racer to at least run them a full season and in some cases that could be 200-300 runs which is fine.

"Actually the one wire that should be replaced a lot sooner than that is



UP

Words/Photos John DiBartolomeo

Building Spark Plug Wires

the coil wire," Hall adds. "Think about; amperage flows through that wire eight times more than any plug wire in the case of an eight-cylinder engine."

Possibly not relevant to most racers, but almost every nitro racer will change their coil wire at every race if not sooner. Alcohol Funny Car owner Chuck Anderika says, "At the beginning of the year, we'll make up 10 or 12 coil wires. For the cost of a length of wire, it doesn't make any sense to even chance it."

Bear in mind of course that both fuel car and alcohol racers utilize an ignition system that puts out over 44 amps of power through the wires, whereas a typical capacitive discharge system such as an MSD 6, 7 or 8 style ignition box puts out far less. However, the basic philosophy is still the same: At the very least, change your coil wire regularly.

Moroso Performance offers many different types of spark plug wire kits both with completed wire ends as well as universal sets to custom make a set plug wires to your lengths. We sat down with Hall and Moroso's Brett Corriveau to show just how easy it is to custom build a set of plug wires.

SOURCE

Moroso Performance
203.453.6571
www.moroso.com

PLUG WIRES

Moroso Performance offers a multitude of ignition wires both in pre-terminated sets in addition to universal kits which require the end user to terminate the ends to your required length. Their Ultra 40 Race Wire set is the most popularly used race wire available in both straight and 90-degree plug ends. Wire sets are available in different colors.

With spark plug ends pre-terminated, the universal sets contain wires long enough to be cut to length and terminated by the end user with the variety of ends in the kit.

Having the right tools makes the job much easier and in addition to the wire sets themselves, Moroso offers the correct tools to make life easy.

The universal wire set contains eight wires in various lengths along with one extra to be used as the coil wire, all long enough to route almost anywhere. The first step is to install the wires onto the spark plugs using the longer lengths on the plugs furthest from the distributor.

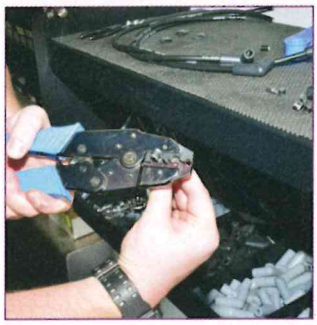
Starting with the No. 1 cylinder, place a wire boot on the distributor, route the wire in the desired length and trim them so that end of the wire is even with the deep end of the boot. The wire can now be temporarily inserted into the boot to keep it in place as you continue trimming each wire.

As each one is done, you can install numbered shrink sleeves as well as a set of shrink sleeves (both available separately) to ensure a complete seal between the wire and the distributor and plug boots. With each wire cut to the proper length, they can be removed to complete the termination process.

Because of the type of construction of the spiral-core wire where the wire is wrapped around a Kevlar core, care must be taken when stripping back the insulation. Moroso's Enhanced Ignition Wire Stripping Tool strips back the insulation without damaging the spiral core wire itself. Start by placing the end of the wire even with the end of the tool, rotating the tool to cut back the insulation.

What you're left with is the insulation cut back leaving a short portion of the spiral core wire exposed.

With the short portion of the wire bent over and a wire terminal install, pre-crimp the terminal to hold it in place.



Using Moroso's Super Duty Wire Crimping tool complete with the correct jaw set for ignition wire terminals, the terminal end is finish crimped tight in place. Jaw sets are also available to be interchanged and used for standard primary wire terminals and perform the best tight crimp very similar to expensive factory crimp machines.

With the completed crimp shown, a quick glance at the insulation shows it to be squeezed tight, evidence of a proper crimp.

Using a small shot of WD-40 or dielectric grease inside the rubber boot, the crimped terminal and wire can be pushed into the boot.

The numbered shrink set and shrink tube can now be heated with a heat gun to secure them in place.

Not always necessary but checking each wire with an ohmmeter ensures that the connection is good. Moroso's Ultra 40 wire means each wire carries an ohmmeter reading of 40-ohms per foot. This particular wire was just under two-foot long and hence a reading of 73.9 ohms.

All that's left is to install the wires using a set of Moroso's Wire Separators to keep each wire neatly in place.

One last quick tip. When using MSD's popular HVC II Coil, due to the construction of the coil, a typical plug boot will not allow the wire terminal to fully seat. Hall's suggestion: "We cut back the boot slightly to allow the terminal end to fully engage the coil terminal."