

ALTERNATIVE

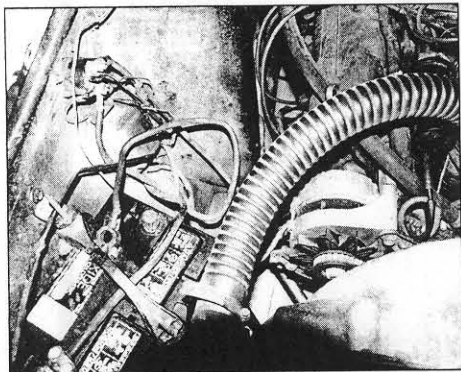
Energy Source

Photography: Terry McGean

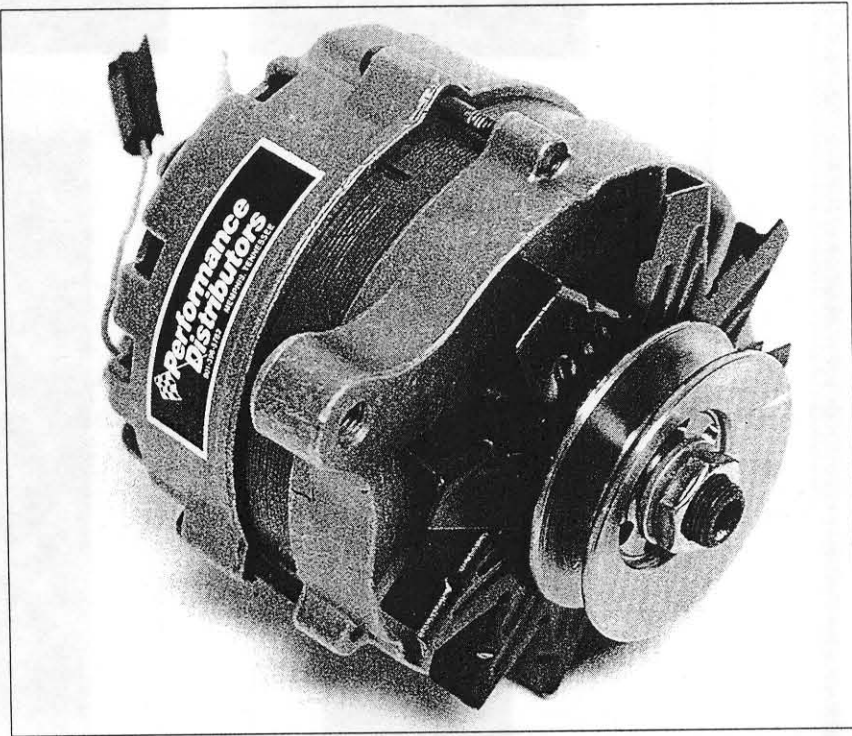
Improving the Charging System with a "One-Wire" Alternator

By Terry McGean

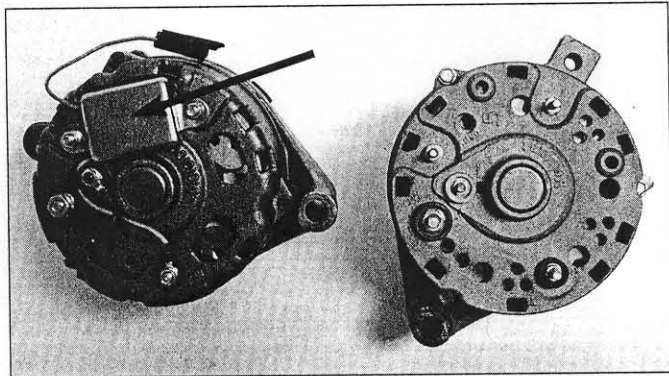
By the mid-'60s, most American cars had shed their ancient generators in favor of more efficient alternators. Soon after, mechanical voltage regulators gave way to transistorized units. Finally, voltage regulators became electronic, and many manufacturers incorporated them into the alternators they governed. Along the way, much of the wiring associated with the charging system was eliminated, leaving a much cleaner looking engine bay.



The factory charging system on our Merc used an external voltage regulator mounted to the inner fender. By switching to the PD one-wire unit, we cut down on the clutter in this corner.



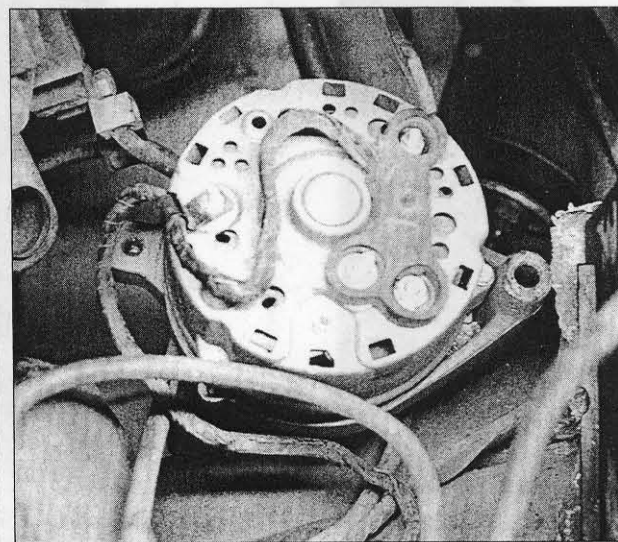
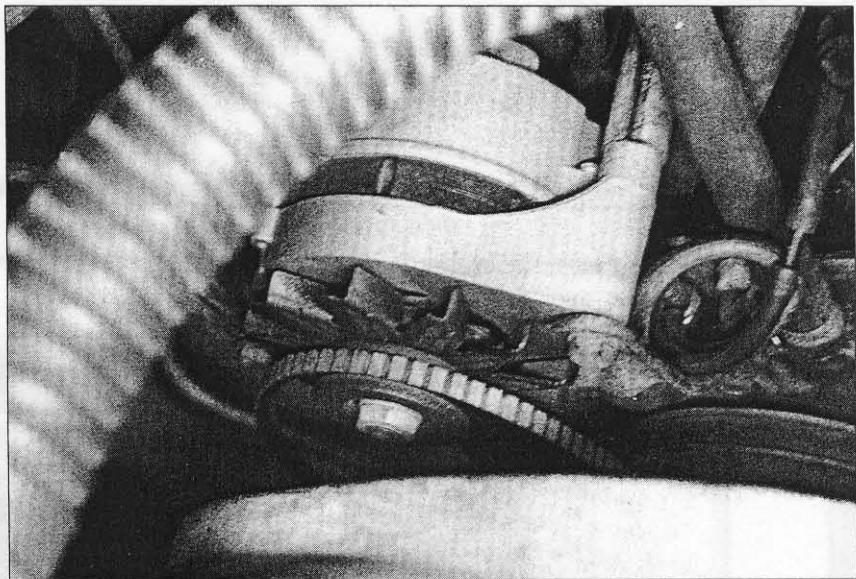
Don't be fooled by this alternator's circa-1970 appearance—the Motorcraft piece benefits from late-model charging-system technology. Performance Distributors (PD) of Memphis completely rebuilds these units, increasing the output to a minimum of 60 amps in the process. (Ours was 43 amps stock.) In addition, each alternator is equipped with an integral voltage regulator, eliminating the need for a separate regulator and wiring.



The PD unit (*left*) has a voltage regulator mounted to the back of the case (*arrow*), which is wired to the alternator. Look at our stock alternator (*right*) and you'll see that the two cases are nearly identical.

Retrofitting a modern alternator and then wiring it accordingly is possible, but that often involves certain mounting adaptations, depending on the applications you are merging. Instead of suffering that, we simply turned to Performance Distributors (PD) in

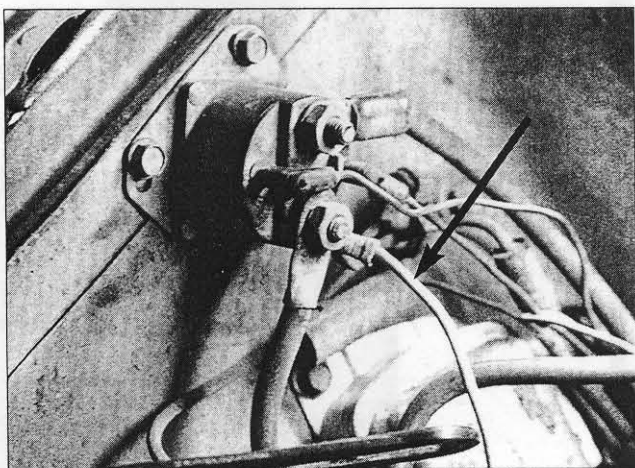
Memphis for a reprieve. PD offers an exclusive line of integral-regulator alternators, which have come to be known as one-wire alternators. Based on older case designs, these reworked units allow older vehicles to benefit from modern charging-system



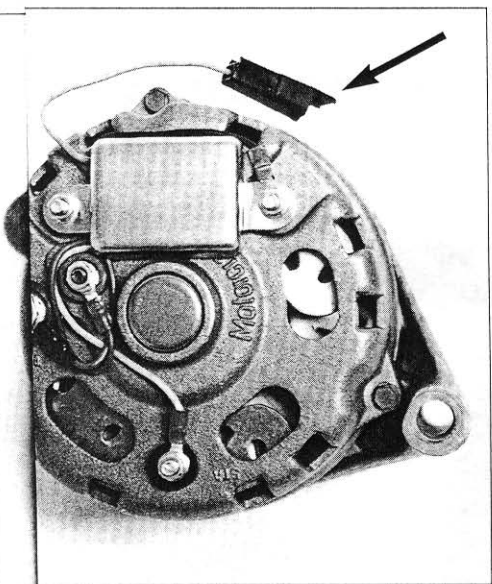
After we disconnected the battery, we loosened the two alternator mounting bolts to decrease the tension in the belt. After we took off the belt, we removed the mounting bolts completely and turned the alternator around so that its back side was accessible.

In the next stage, we removed the nuts from the output, grounded and fielded the terminals, removed the wiring harness, and took the unit out.

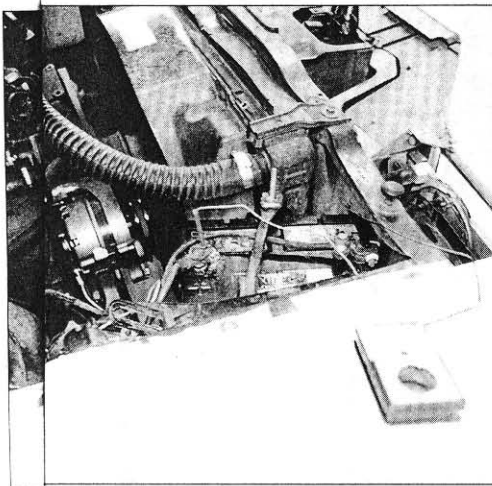
The new alternator is a direct replacement and uses a single 10-gauge wire (arrow) that runs from the output terminal on the back of the alternator to the battery. PD recommends running this line to the starter relay (on Fords) for a neater installation.



technology, while providing the ease of a bolt-on upgrade. In addition, PD throws in a steel-billet, deep-groove pulley with drilled cooling vents. As the accompanying photos outline, we easily installed this Motorcraft alternator on our '70 351C Merc mule. **HR**



The wire with the quick connector (*arrow*) is for the charging system's warning light. Some Fords have a wire with the proper connector to mate with this, but ours did not, so we had to connect it to the white wire with the black stripe in the old alternator harness.



After tightening the belt, we fired the engine and hooked up a voltmeter. At idle, output was about half a volt higher than before. The increased amperage was evident when we hit the headlights—previously, they would dim at idle, but now they shone with consistent intensity.

SOURCE

Performance Distributors
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