



On the Run

INSTALLING A VINTAGE AIR FRONT RUNNER ENGINE DRIVE SYSTEM

TEXT AND PHOTOS BY MATT EMERY

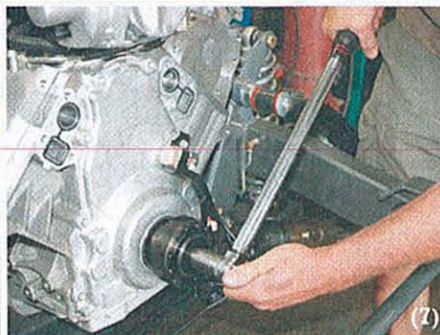
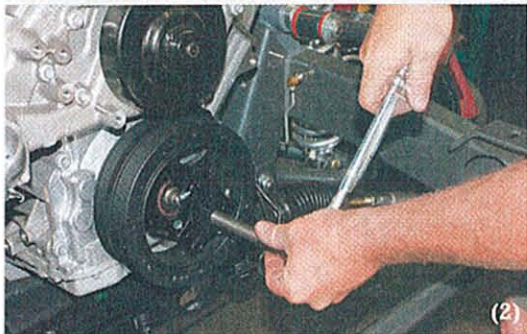
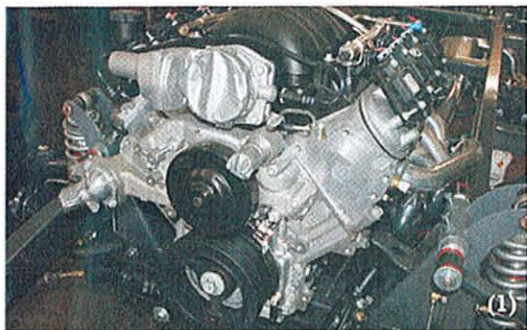
It's been said that it's the little things that make the biggest difference, and no truer words have ever been spoken in regard to building a show-winning muscle car. Virtually everywhere you look on a vehicle, there is some room for improvement, and that goes double for the engine. Be it valve covers, air cleaners or simply routing the plug lead wires with cool, chromed brackets, there seems to be no end to improvement when it comes to engine dress up.



It was this reasoning that lead Vintage Air (VA) to come up with its award-winning Front Runner Engine Drive System. Having dealt with folks trying to align the A/C compressor pump using other aftermarket pulley systems, Vintage Air decided that there had to be a better way, and they found it with the Front Runner. Named the 2002 NSRA Street Rod Product of the Year, the Front Runner replaces the traditional pulley system with an

integrated, single serpentine belt-based system where all of the various components are housed in one system. According to Vintage Air, its Front Runner is a "modular design based on the latest CAD/CAM architecture that places all driven components in the tightest possible configuration." It's that and a whole lot more.

Let's face it, the standard pulley systems on most engines are unruly affairs. Even the nice ones that are



(1) As this newly No Limit-framed, LS3-equipped vehicle was due to ship out to the customer, now was the time to do the Front Runner install.

(2) A puller is required to remove the harmonic balancer/lower pulley, but it is the first thing to go.

(3) Once all of the mounting bolts are removed, the water pump is pulled.

(4) As this is a new LS3 engine, there is no debris or dirt to be concerned with, but for an engine that has been running for a while, now is the time to make sure that the surfaces are clean.

(5) Oil is used to lube the crank end prior to the new VA balancer mount being installed.

(6) Heating the balancer mount prior to installing it makes getting it onto the crank snout much easier, hence the gloves. This can be done in an oven or using a torch.

(7) Anti-seize should be applied to the threads of the main bolt prior to installation. With the block being aluminum and the hardware stainless steel, anti-seize compound should be used on virtually every bolt.

(8) Again, a little oil makes slipping the balancer onto the mount easier.

polished or chromed have pieces stuck out at every angle. In some cases, such as hot rods, there simply isn't enough room under the hood for everything and a radiator too. The Front Runner takes away that "here, there and everywhere" look by packing the water pump, alternator, power steering pump, and of course, the air conditioning compressor pump into one unit. They do this with ingeniously designed aluminum brackets that fit together like a shining jigsaw puzzle. When assembled, the Front Runner tucks everything together in such a compact way that even those with small engine compartments can still have plenty of room for other necessary items.

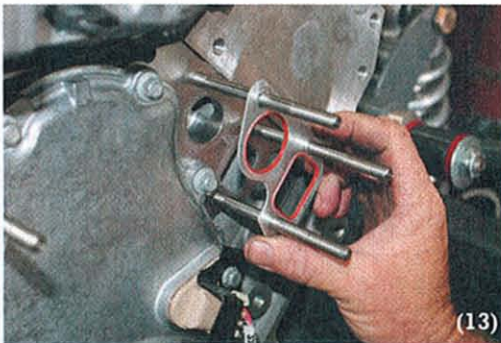
The Front Runner systems are available in a short or long pump style and three different finishes. Vintage Air supplies virtually everything that you need to install the kit onto nearly any engine that you have. We say "virtually" because oddly enough, they failed to supply a water neck, which is necessary for the new water pump (which they do include). You'll have to have the neck before the assembly can be completed, so be sure to have one on hand before starting the job.

Speaking of starting the job, we were at No Limit Engineering in San Bernardino, California, where the No Limit crew was just finishing up one of their custom-built frames. It was in said frame that the engine in question, an LS-3, was in need of the Front Runner, so we followed along as the system was installed. Rob MacGregor, owner of No Limit, had the system installed in only a few hours. Yes, he's an engineer, so he's good at things like this, but you at home can also have the system installed in much less than a day too. Just be sure to have a good supply of anti-seize on hand.

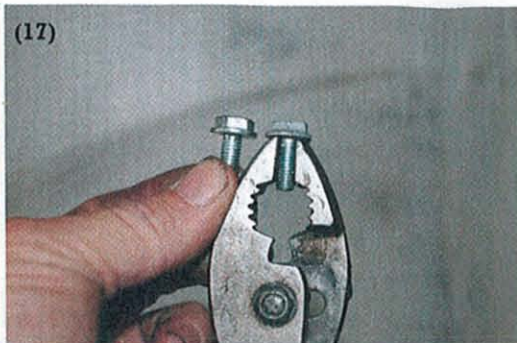
In our opinion, the Vintage Air Front Runner Engine Drive System is a very compact serpentine pulley system that looks great, works well and appeals to our sense of minimalism. It doesn't come cheap, but the Front Runner does the job in a "money" way. **FA**



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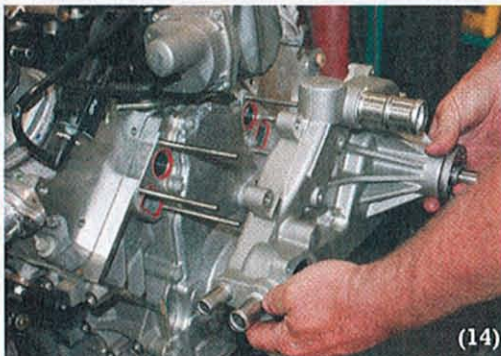
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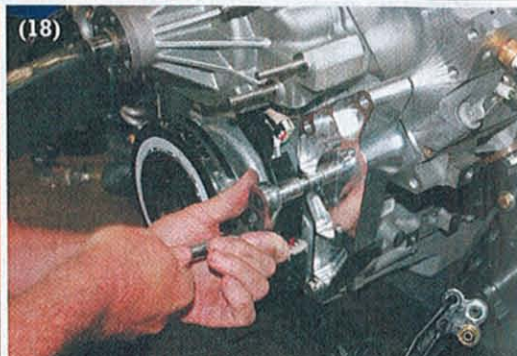
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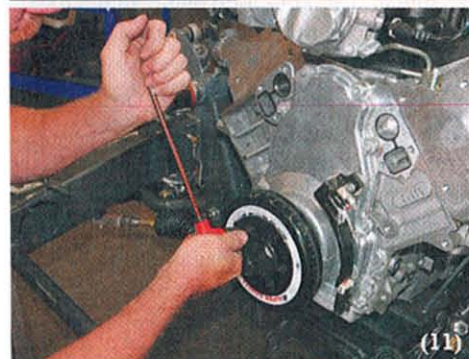
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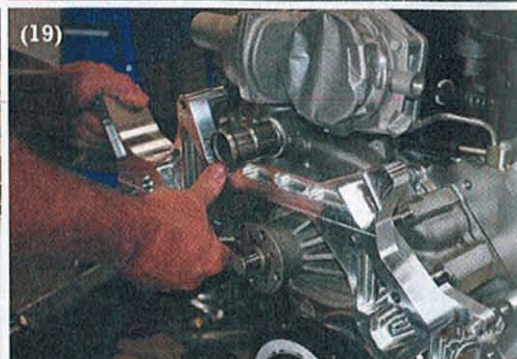
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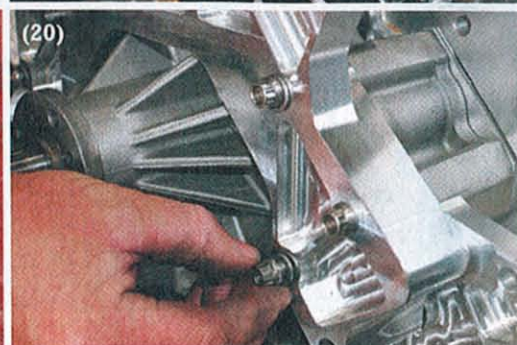
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(9) Of course, a few taps of a rubber mallet work too. Never use a steel hammer to tap the balancer.

(10) Vintage Air supplies a quality ATI Performance Super Damper with their kit. Loc-Tite is applied to the threads of the balancer mounting bolts prior to installation.

(11) The bolts should be tightened in a rotating pattern to ensure that the balancer is on perfectly square.

(12) Stainless steel VA studs are inserted into the block. Anti-seize compound should be used on these threads too.

(13) Because the water pump gaskets are new, they will be reused. For an engine that has been run hard, now is the time to make sure that new gaskets are in place.

(14) The VA-supplied water pump is installed and clearance is checked. The unit must fit flush! Vintage Air notes that sometimes a bolt head may hit necessitating some "clearanceing."

(15) That clearanceing was necessary in this case, but only one bolt needed slight work.

(16) A few passes on the disc sander and the bolt was good to go.

(17) It only took a few millimeters to get the required clearance, but this is a very important step to ensuring that the water pump fits correctly and doesn't leak.

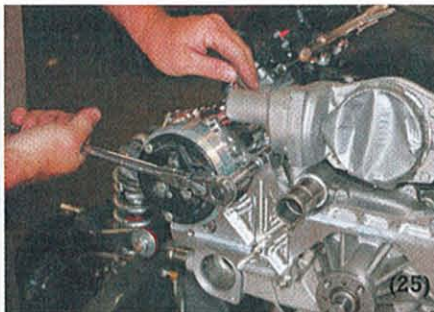
(18) With the pump on, the first piece of the polished VA Front Runner goes on.

(19) The main Front Runner bracket is installed.

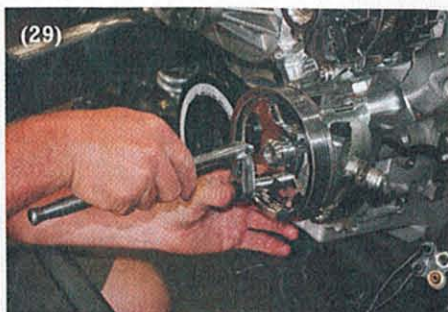
(20) VA supplies all of the hardware, such as these 12-point nuts, so make sure that you have the correct sockets beforehand.



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(21) Two spacers are installed behind the alternator bracket.

(22) Don't forget the anti-seize compound when installing the SS hardware.

(23) VA supplies this trick polished alternator with the kit as well.

(24) With the alternator in place, the hardware can be torqued down. VA recommends that the 8mm hardware be torqued to 22 lb.-ft., while the 10mm pieces be torqued to 37 lb.-ft., and that a criss-cross, rotating pattern be used when tightening the hardware.

(25) Next to be installed is the polished VA air conditioning compressor.

(26) For the belt to run true, it's very important that the pulley depth be the same. Measurements were taken off of the stock steering pump prior to the pulley being removed. Note that it takes a puller to get the pulley off.

(27) The snout of the steering pump is lubed.

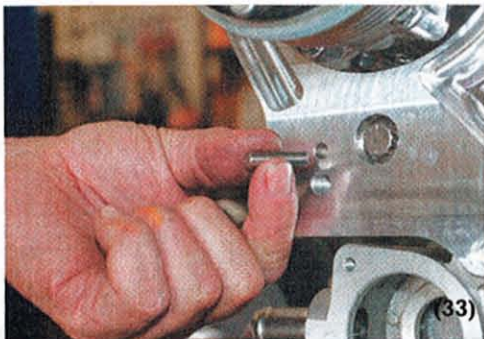
(28) The pulley is installed to the correct height using the correct tools. Never beat on the pulley with a hammer to get it onto the PS pump, or damage will surely occur. The depth should be 3.29 inches from the table to the lower edge of the pulley.

(29) With the pulley in place, the steering pump is bolted up. Note that some GM pumps have threaded mounting bases, these need to be drilled out to 5/16-inch to allow the VA studs to pass through.

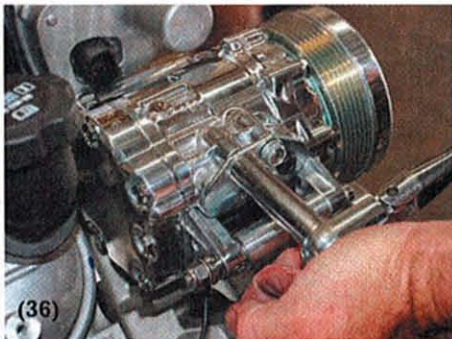
(30) With the PS pump on, the water pump pulley is installed.

(31) The crank pulley is installed.

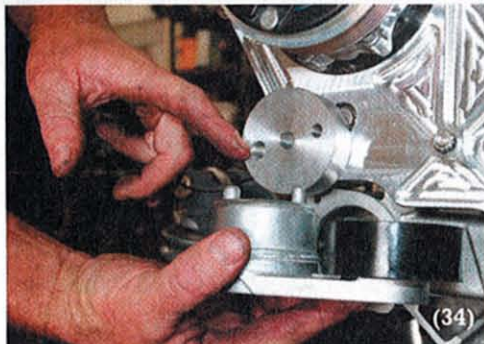
(32) With the tensioner roller removed, a small tab needs to be installed into the tensioner. This tab has the threads needed to later install the cover plate, and it can't be done with the tensioner roller on.



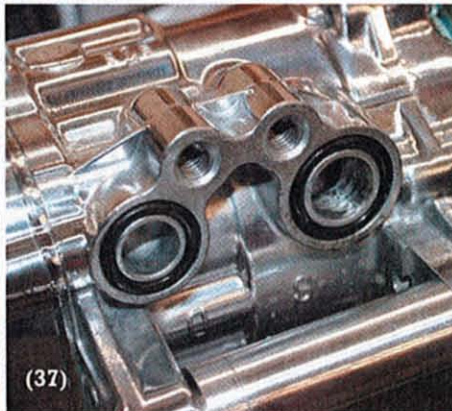
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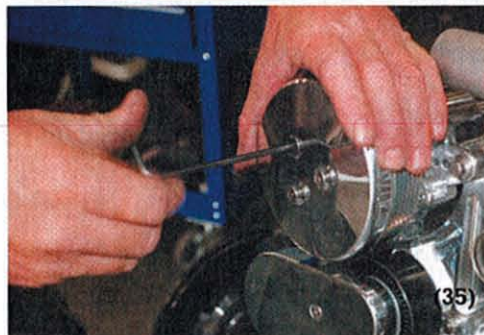
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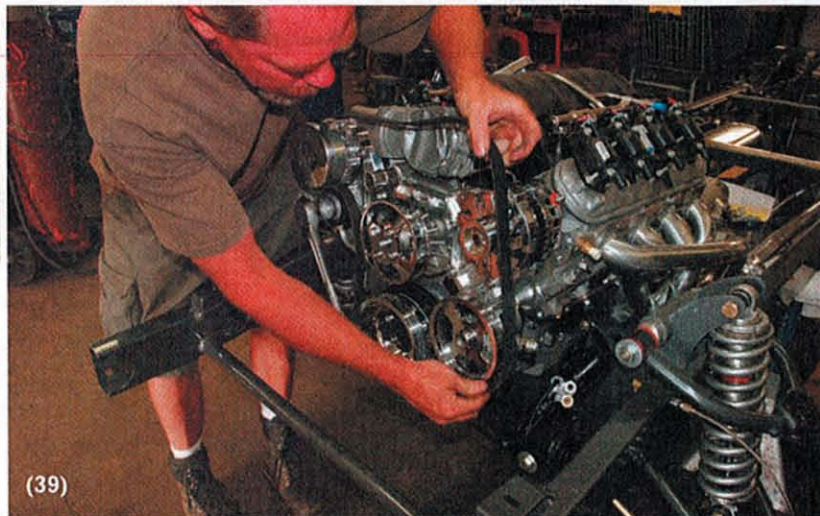
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(33) Small dowel pins are inserted into the main bracket and hold the tensioner spacer in place. As the dowels are a press fit, a few taps of a hammer are needed to properly seat it in place.

(34) With the spacer in place, the tensioner assembly is installed.

(35) The cover for the A/C pump is installed.

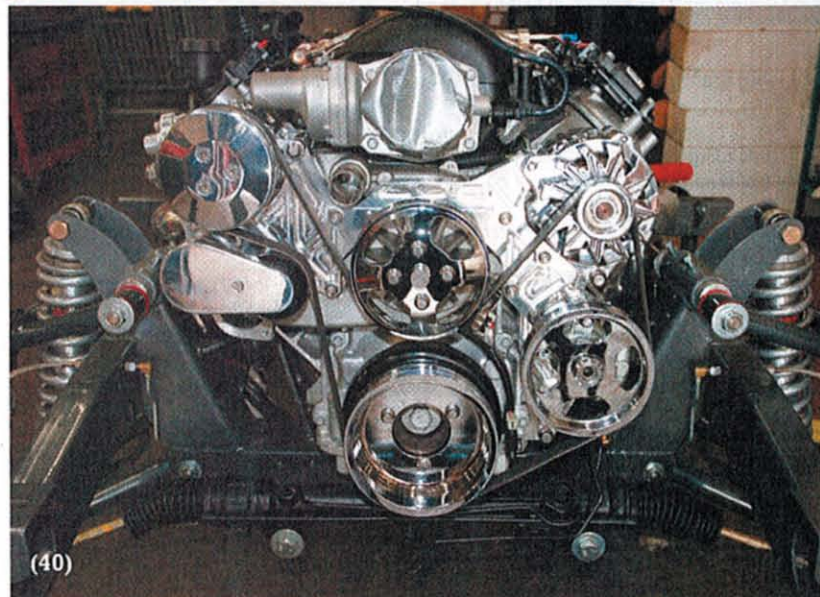
(36) There is a small block-off plate on the A/C pump that covers up where the fittings go.

(37) As one would expect, these rubber O-rings are very important. They not only need to be in place, they, and the surrounding mating area, must be clean of debris. A little oil on the rings helps too.

(38) The fittings for the A/C pump are installed.

(39) For engines with power steering, a 66-inch serpentine belt is used. It is fed over the various pulleys. A socket wrench fits into the hole in the tensioner, which is pulled down, allowing the belt to be routed.

(40) And that's it. In less than a few hours, the Vintage Air Front Runner is on and looking great. The compact, integrated design screams clean, and the polished aluminum pieces that make up the kit will warm the heart of any show judge.



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SOURCES

Vintage Air

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