

PREPPED FOR POWER

Getting Car Craft's Ford Coyote Crate Engine Ready to Swap

By Jeff Huneycutt / Photos: Jeff Huneycutt

Ford's Coyote crate engine is a great power package that's becoming very popular among the Blue Oval crowd for dropping into everything from Mustangs to classic pickups, and that makes complete sense. Ford's latest 5.0L makes great power, it's dependable, and it absolutely loves boost.

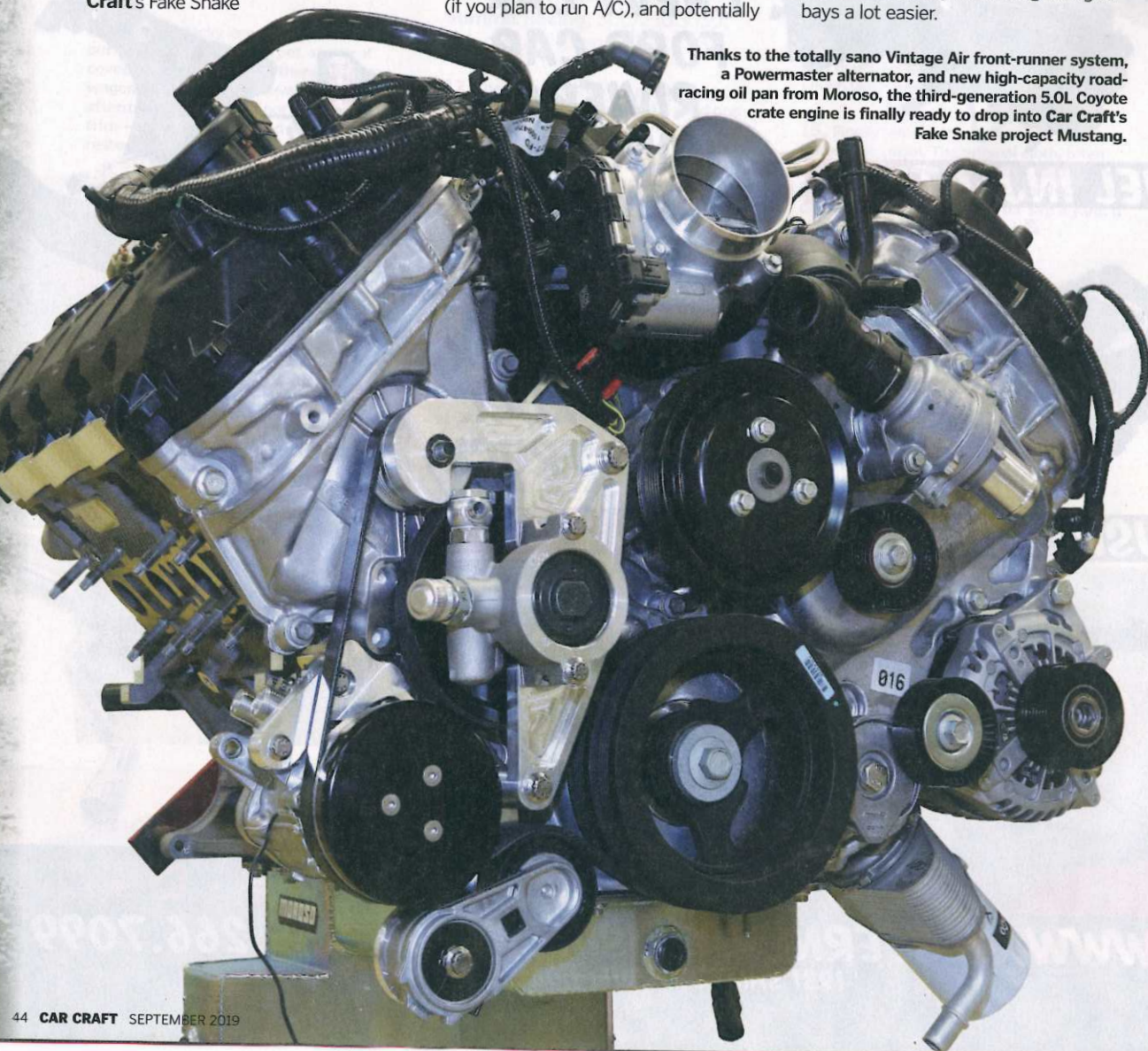
We've got big plans for ours in **Car Craft's Fake Snake**

project Mustang—the 1999 Mustang GT we picked up for \$1,500—but before we can drop it in place of the stock 4.6 Modular, we need to make a few additions and upgrades. The Coyote crate is a nearly complete engine, but it requires a few items like an alternator, power-steering pump (if you plan to run a conventional hydraulic power-steering system), air-conditioning compressor (if you plan to run A/C), and potentially

a few other items.

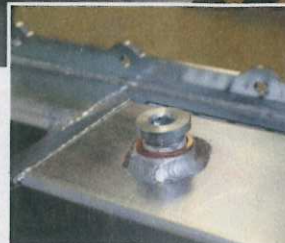
We'll cover the full install in some upcoming **Car Craft** stories, but there's so much involved that a pre-installation "prep" story is warranted here—including the front-runner accessory drive system from Vintage Air. This unit features all-billet brackets and an efficient layout that makes fitting the big Coyote into tight engine bays a lot easier.

Thanks to the totally sano Vintage Air front-runner system, a Powermaster alternator, and new high-capacity road-racing oil pan from Moroso, the third-generation 5.0L Coyote crate engine is finally ready to drop into **Car Craft's Fake Snake** project Mustang.





We plan to do lots of autocrossing as well as track days with the Mustang, and extended high-rpm pulls along with high-G turns can be taxing on the oiling system. To help with that, we're upgrading the oil pan to a Moroso 10-quart road-racing pan. You can see it in the foreground versus the stock steel pan in the background. Besides the extra capacity, the pan is also baffled and gated to help maintain oil near the pickup at all times. The pan isn't any deeper than the stock unit, so we were able to reuse the OEM pickup and save a few bucks.

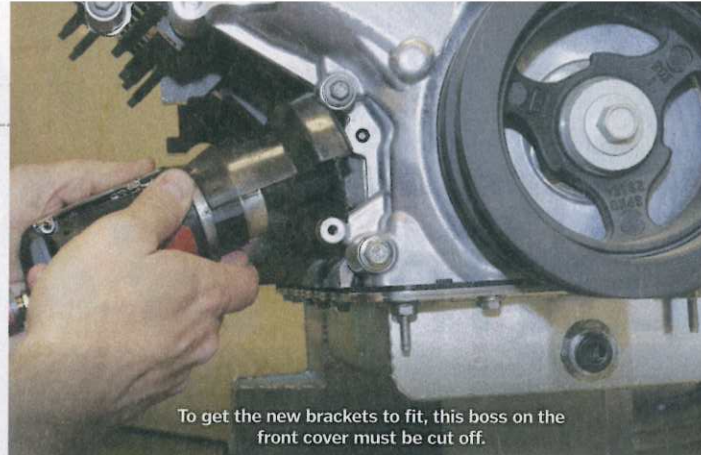


The Moroso pan includes one bung for a low-oil-level sensor, which isn't in this location on all Coyote engines. We don't have one, so Moroso sent us this plug. There are other bungs on the pan for turbo oil drain-backs, but they come with plugs already installed. The low-oil-sensor bung is a different thread pitch, so a standard pipe plug won't work.



Interestingly, Ford decided to meld the oil pan gasket and windage tray into one unit. At around \$70, a replacement is a bit pricey, but the gasket is reusable. Since this engine has never been run and has never seen any heat cycles, we felt confident bolting the new oil pan right to the gasket.

Below: Here's a look at Vintage Air's front-runner kit for the Coyote engine. One issue with swapping the Coyote into older vehicles is integrating a power-steering pump. Coyotes from 2011-and-later all use electric power steering. The front-runner kit integrates a Detroit Speed power-steering pump and A/C compressor onto the right (passenger) side of the engine so we can keep the power-steering system currently in the car.



To get the new brackets to fit, this boss on the front cover must be cut off.



You can compare this photo with the previous one to see just how little must be removed to make room for the bracket.



All the brackets are high-strength billet aluminum. This is the main bracket that locates the A/C and power-steering pumps as well as the belt tensioner.



Two bosses on the front cover must be drilled and tapped. Vintage Air provides this sleeve guide and recommends using a Q-size drill bit (We used a 2 1/4 bit, since that's closest to the 8.433mm Q size.). The hole should be 1-inch deep, so the tape marks the point where the bit extends 1 inch past the sleeve guide.



Next, the two holes are tapped to accept a 10x1.5mm bolt.

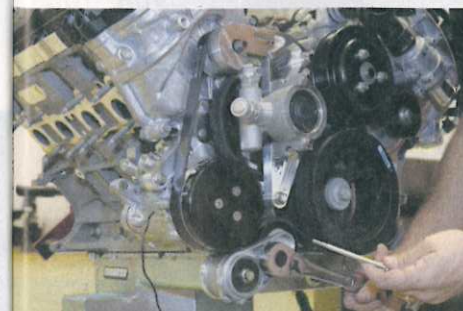


Vintage Air includes this belt tensioner. To keep it in the "loose" position so that the serpentine belt can be added later, pull it down using a 1/2-inch drive wrench in the square hole in the body of the tensioner. Then, a long 1/4-inch bolt can be used to hold the tensioner in position.



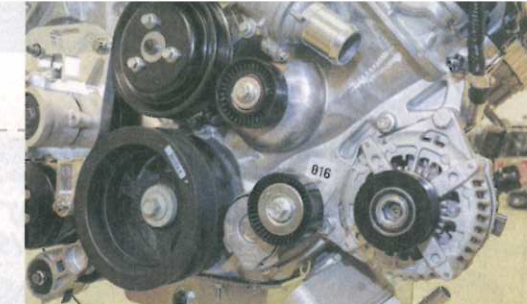
Both the power-steering pump and the A/C compressor are bolted up at this point. To make the alignment work, the power-steering pump is mounted up "backward" with the pulley facing toward the engine. All the mounting hardware provided by Vintage Air is high-quality 12-point from ARP.

Below: All that's left to do is remove the bolt holding the belt tensioner in the "loose" position to put pressure on the serpentine belt.



→ SOURCES

Ford Performance;
PerformanceParts.Ford.com
Moroso; 203/453-6571;
Moroso.com
Powermaster;
630/849-7754;
PowermasterMotorsports.com
Vintage Air;
800/862-6658;
VintageAir.com



The Coyote also needs an alternator, so Powermaster was the obvious choice. This is a 245-amp unit that will be able to provide more than enough juice. It bolts right to the block with no bracketry necessary, but we needed to purchase an OEM belt tensioner from the local auto-parts store. It is driven by a serpentine belt riding on the outer portion of the crank pulley, but the belt we purchased was way too long. We'll have to get a shorter one before the engine goes into the Mustang, but that's an easy enough task. ☑

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