TECH BY CHRIS MAIDA

GETTING BELTED

Installing Tech Cycle's 3" Cyclone primary belt drive

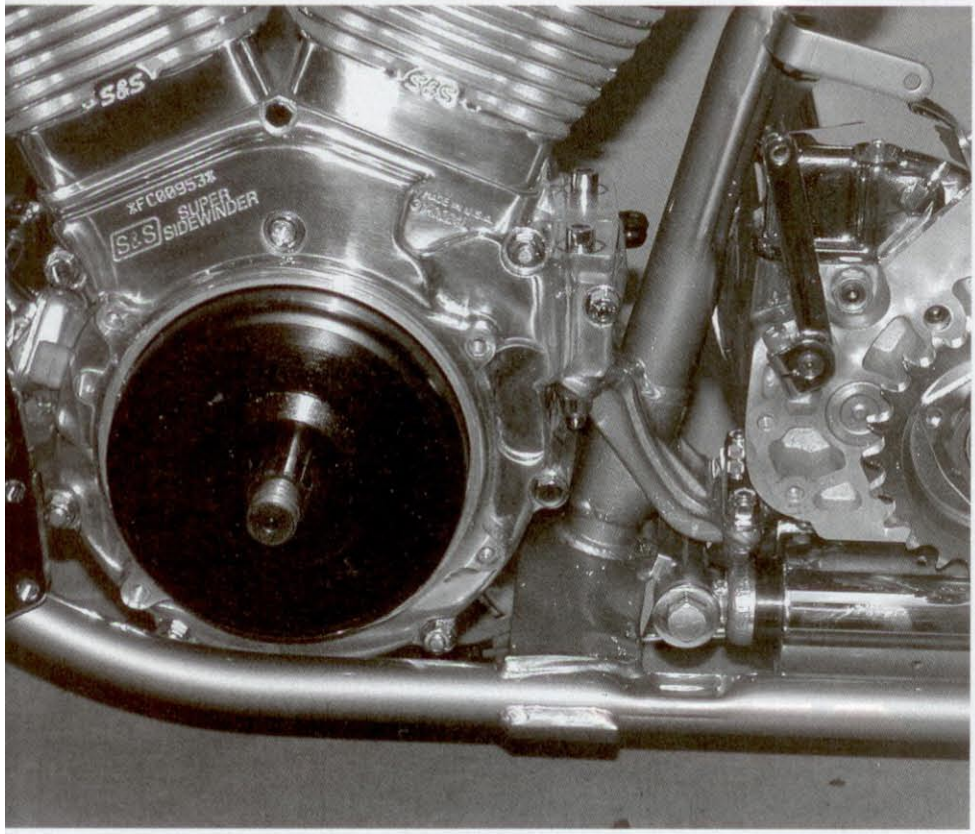
GIVING YOUR RIDE A RADICAL LOOK IS THE whole purpose of doing a custom build. And while a hot carb/intake setup and a set of outrageous pipes do wonders for the right side of the bike, nothing tricks out the left like having a belt drive hanging off the engine and tranny shafts.

Knowing this to be an axiom in the customizing universe, Tech Cycle offers its 3" Cyclone belt drive system for those who desire a wide rubber band connecting their power plant components. This system is built solidly, since all of the Cyclone 's metal parts are machined from 6061 billet aluminum. The clutch shell and engine pulley are then treated with a Jet Black, hard anodized process for a cool look. The one-piece, polished inner support, which is available with up to 1" offset, has a large sealed bearing for mainshaft support. (The inner support we used in this build also has a rotor cover and recessed ring gear.)

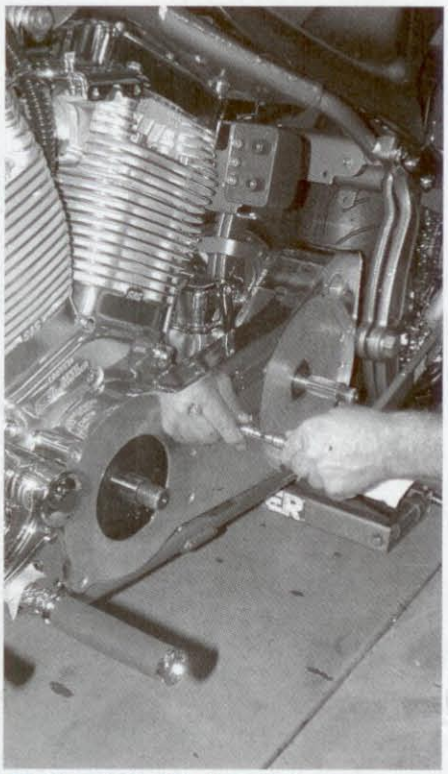
As for the Cyclone's clutch assembly, which is designed and manufactured by Bandit Machine Works, it features a sealed double-row bearing in the steel inner hub for excellent support and seven full-size friction plates, which provide twice as much contact area as a stock clutch. Each kit also comes with two different pressure spring sets. By using either all six springs in a set, or three from each set, you have three options to dial in the correct amount of pressure for your application.

In the starter department, this clutch shell uses an 84-tooth ring gear with stronger-than-stock gear teeth. The Cyclone has needle bearings in the jackshaft nose cone and uses a one-piece extension on the starter jackshaft to help eliminate starter problems. An available option, which we went with for our build, is Tech Cycle's Tornado high-torque starter.

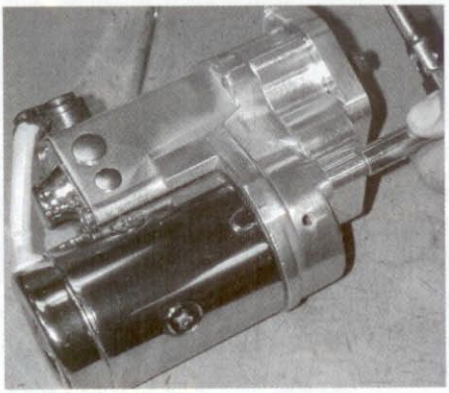
Finding a shop to do the install for us was a no-brainer. Since I was going to Tech Cycle's open house and BBQ, I headed on down to its Pennsylvania shop a day early and shot the install at Simon's Performance, which is located right across the street. Once at Simon's, master wrench Larry Drake was chosen to do the wrenching. Checking out the following photos will show you what he had to do for this easy install. (However, what you won't see is what happened the next day at the party. And though that would be a lot more entertaining, it wouldn't tell you a thing about how to bolt on this belt system.)



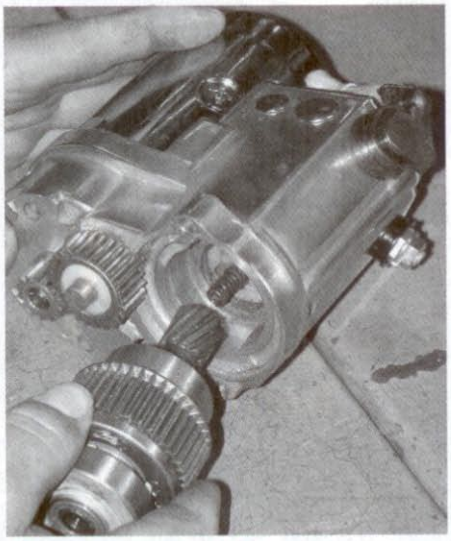
1 Our opening shot shows the primary system on this custom Big Twin completely removed. Since there was a stock primary already on the bike, the engine and tranny are already lined up.



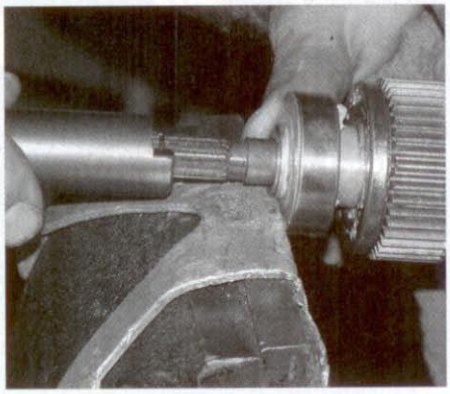
2 The polished Tech Cycle inner support plate gets installed using the supplied stainless steel hardware. Torque the bolts to the stock H-D specs using a 1/4" Allen and some blue Loctite.



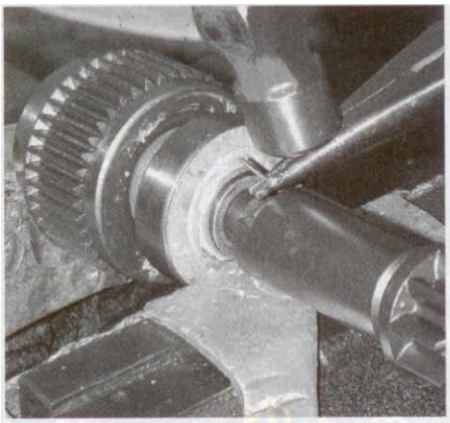
3 If you're not installing a Tech Cycle Tornado starter, you must install a jackshaft extension onto your stock starter, so disassemble the starter by using a 10mm wrench to remove the four bolts.



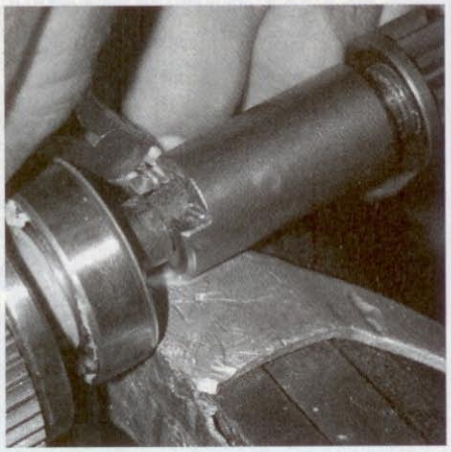
4 You can now pull the starter clutch out from the housing. If yours has been acting up, now's the time to change it.



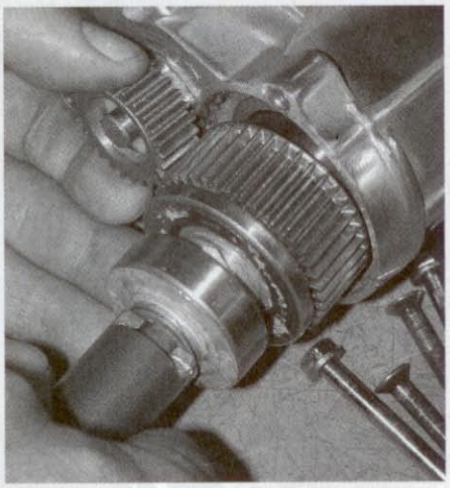
5 After lightly clamping the jackshaft extension into a vise with soft jaws as shown, push the extension onto the clutch shaft until it clicks into place.



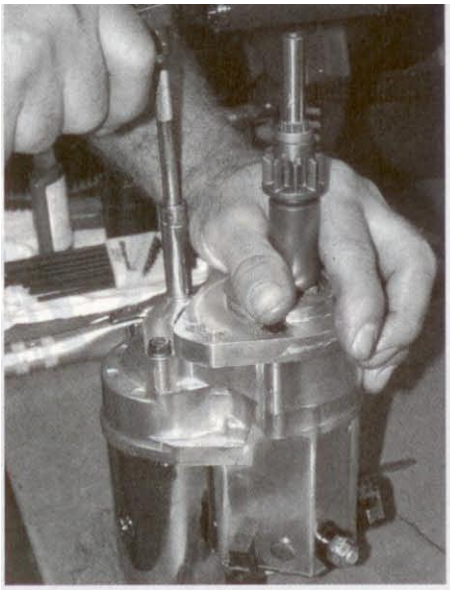
6 Using a small hammer and a needlenose pliers, tap the supplied copper retaining wire into the gap between the shaft and the extension by tapping on the pliers, not the wire.



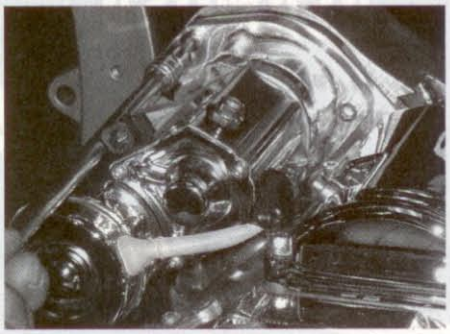
7 Once the wire comes out the other side, bend both ends over as shown and clip off the excess with wire cutters.



8 To install the clutch back into the starter housing, cock the gear over to one side as shown, so the gear can pass by and mesh with the other gear.

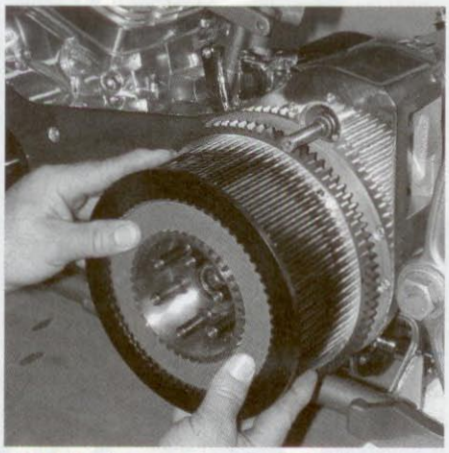


9 The outer starter housing can now go back on using the stock hardware, with a little blue Loctite on the threads. Torque the bolts to H-D spec using a 10mm wrench.

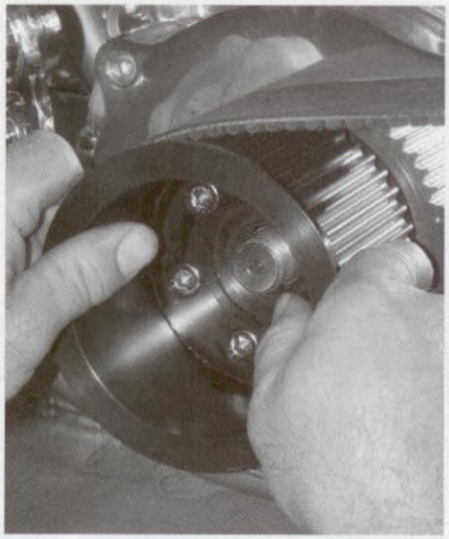


10 The starter can then be bolted to the Tech Cycle inner support using the Tech Cycle-supplied hardware, some blue Loctite, and a 1/4" Allen. Again, torque the bolts to H-D spec.

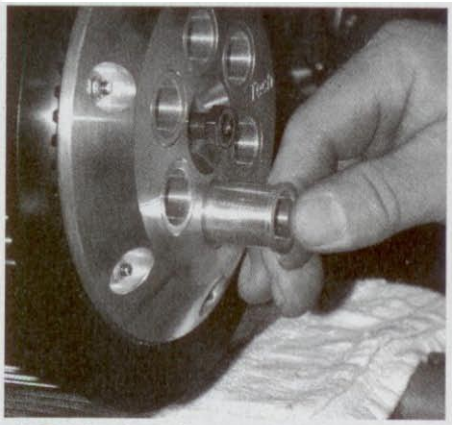
11 Larry can now disassemble the clutch assembly using a 3/16" Allen. He removes all six bolts, springs, spring cups, and the pressure plate from the Tech Cycle clutch pack.



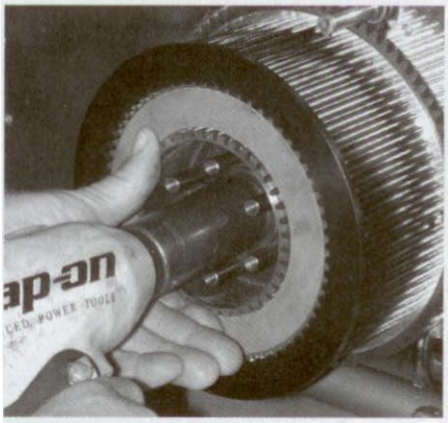
12 As it comes from Tech Cycle, slip the clutch hub assembly onto the tranny's mainshaft. Be sure you have the splines properly aligned.



15 The Tech Cycle front pulley can now be slipped onto the engine sprocket and under the belt. Rotate the pulley until the splines line up.

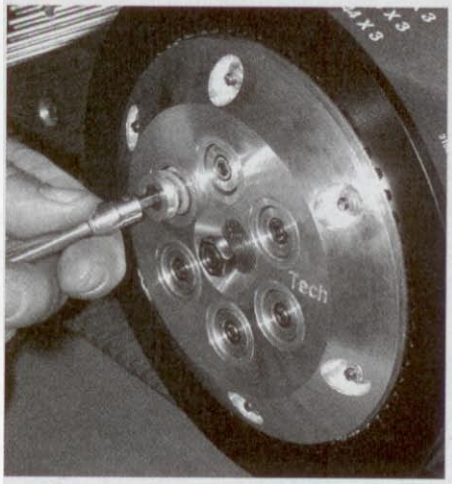


18 The six spring cups can now be slipped back into their wells in the pressure plate. They go all the way in until the outer lip seats against the pressure plate.

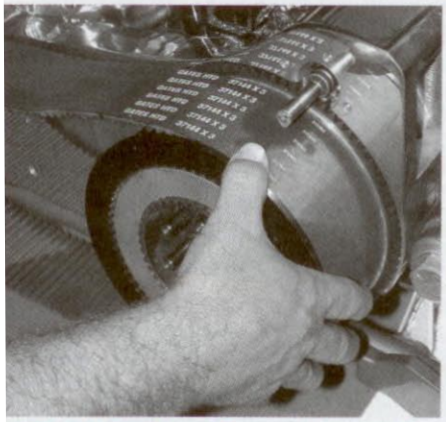


13 The supplied hub nut, which is a reverse threaded nut, can then be installed using a 1-1/8" deep socket and some red Loctite. Torque the nut to H-D spec.

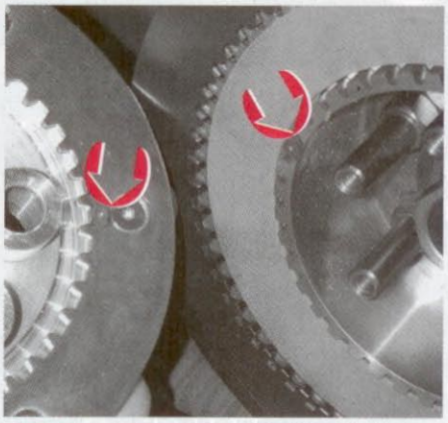
16 The Tech Cycle-supplied engine nut can now be installed, with some red Loctite on the threads, using a 1-5/16" socket. Torque the nut to H-D spec.



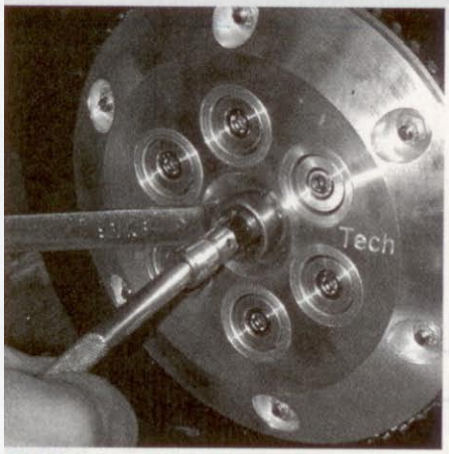
19 The six spring packs get bolted back into the spring cups using a 3/16" Allen until they are snug.



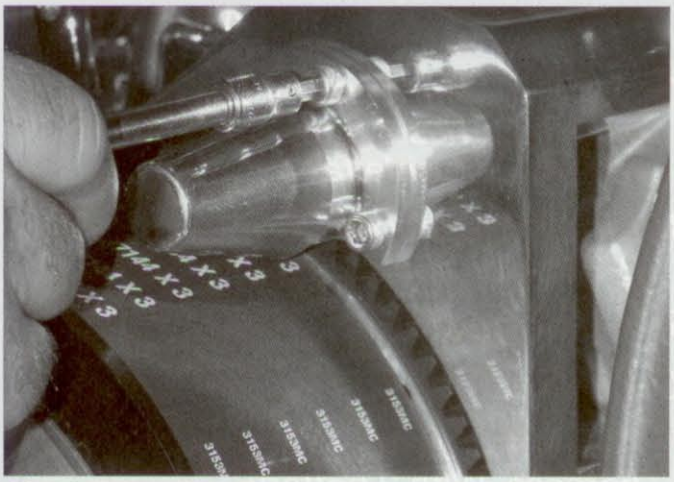
14 The Gates belt can now be slipped over the clutch assembly. Larry always installs the belt so you can read the lettering when alongside the bike.



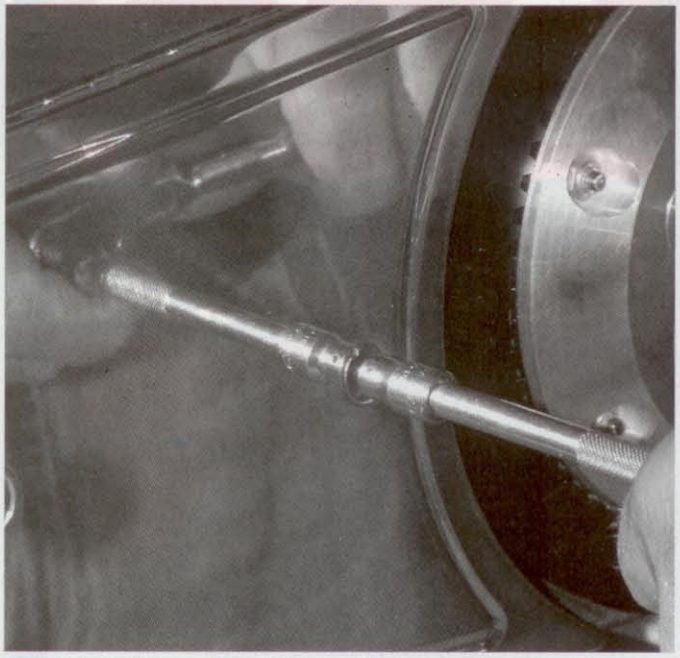
17 There's an alignment dot on both the pressure plate and clutch hub (arrows). These must be aligned when you position the pressure plate on the clutch assembly.



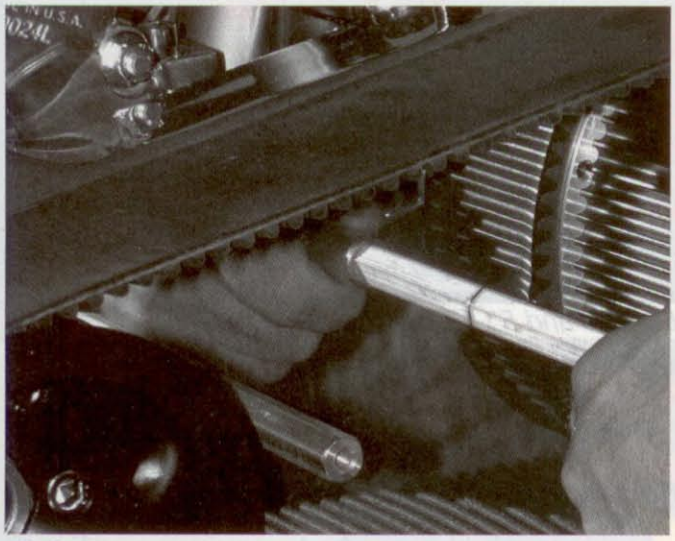
20 Using a 3/16" Allen and a 9/16" box wrench, Larry can now adjust the clutch as per the standard H-D procedure.



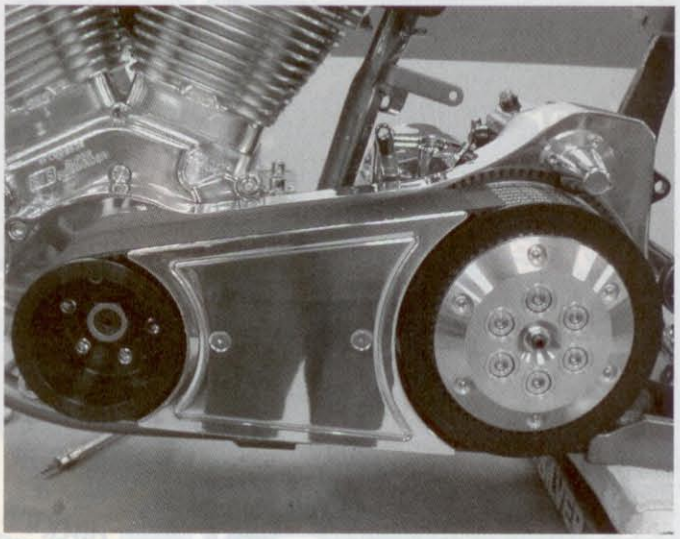
21 Spinning a 3/16" Allen, Larry bolts the starter shaft nose cone onto the inner support plate using the supplied hardware and some blue Loctite. Torque the bolts to 100 in-lbs.



23 Install the polished billet outer cover using some blue Loctite; a 5/32" Allen finishes the build.



22 The two supplied cover stand-offs are installed onto the inner support plate using a 1/2" deep socket and some blue Loctite.



24 Here's how the finished install looks. Other belt guards and pulley covers are also available. AIM

TIPS & TRICKS

PLEASE NOTE THAT TECH CYCLE'S BELT SYSTEM WILL NOT WORK WITH a Compu-Fire starter.

If you're installing a Tech Cycle Tornado starter with the Cyclone belt drive you do not have to do steps 3 through 9.

When you're installing the Tech Cycle clutch hub assembly onto the tranny's mainshaft, you may have to lightly tap the inner hub to get it to fully seat on the mainshaft of some aftermarket transmissions.

Before you install the Tech Cycle front pulley and belt onto the engine sprocket, test-fit the pulley onto the shaft without the belt until you find the easiest position for the splines to line up. You would think that all the splines are the same, but sometimes the pulley will go on easier in one position than another. ■

SOURCES

TECH CYCLE PERFORMANCE
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