

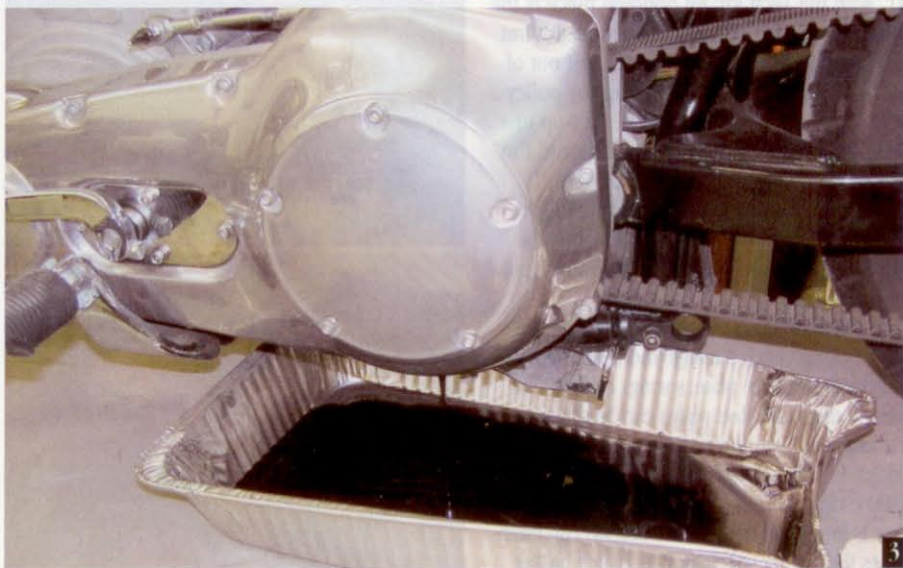
# TC BELT DRIVE INSTALLATION

By Zak Skibo

**T**his article is meant as something of a follow up to Irish Rich's two-part series from last year detailing the installation of a Twin Cam 88A engine and transmission into a hard tail frame. I too have a Twin Cam 88A, although it's currently sitting in a stock 2002 Dyna Glide frame (pic 1). I have always wanted an open belt drive on my bike and this past winter I was able to purchase one through Tech Cycle out of Huntington Valley, PA. For installation, I took my bike up to see good friend Jeff Shelton, owner of Independents Choppers ([www.IndependentsChoppers.com](http://www.IndependentsChoppers.com)) in Newark, Delaware.

Tech was one of the first manufacturers to come out with an open primary drive setup for the Twin Cam Dyna Glide. The clutch package is produced by none other than Bandit Machine Works for Tech Cycle, so you know there is nothing you can do to this clutch that it can't handle. The clutch rides on a double row, sealed bearing and is adjusted through six coil springs. Also included are a set of spring shims should you have a monster motor up front. The motor plates, the motor pulley, and clutch basket are machined from 6061-T651 aluminum and the clutch basket and motor pulley are jet black hard anodized. The ring gear is an 84 tooth setup for a greater starting ratio and has much stronger teeth than the factory version. The nose cone jackshaft support assembly even has its own needle bearing assembly so there is no chance of getting your jackshaft bound in the ring gear unlike some other manufacturer's setups. That being said, I'll take you through the relatively straightforward process of shedding that big cheesy closed primary drive and bolting on the kickass Tech Cycle setup.

First thing's first. When you order your belt drive kit from Tech, you must specify the year of your bike; mine, being a 2002 FXD, sort of falls somewhere in the middle of H-D's Twin Cam 88A motor case Evolution. This is important because the primary drive mounting holes are slightly offset between the "early" Twin Cam (99' to 01') and the later 00' and up (who knew?). When you receive your kit from Tech, lay everything out (pic 2) and familiarize yourself with the various parts. Once you've done that, it's time to tear into your primary drive for the last time. After securing your bike on a lift, remove the rear oil plug and drain all that nasty primary oil (pic 3) out and dispose of it "properly." Once



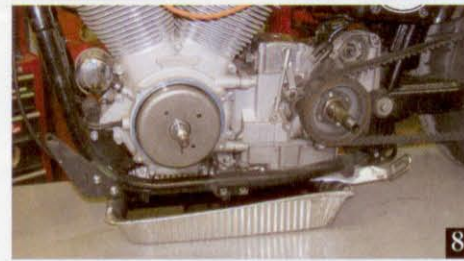
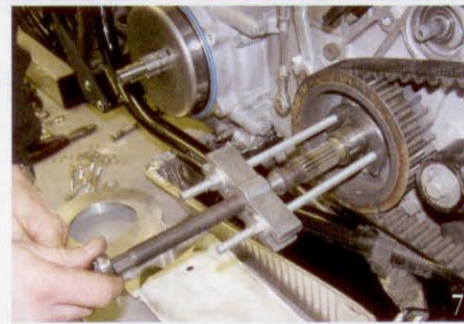
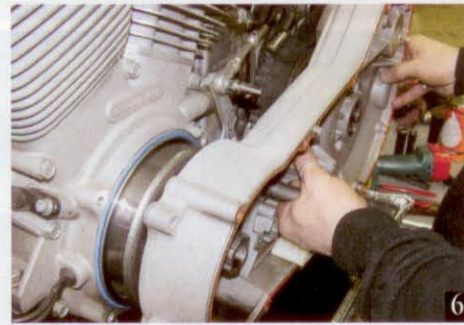
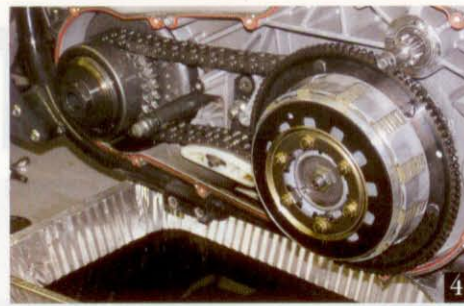


that's done, you can remove the bolts securing your shifter lever and the cover plate. I removed the footpeg mount just to make things easy to see. Then remove the bolts securing the outer primary cover to the inner cover. With that out of the way, you need to pull the clutch hub, the chain tensioner and the primary chain sprocket. Basically, everything in pic 4.

Once this is done, you'll need to bend the locking tabs off the bolts which secure the inner primary cover to the motor and transmission (pic 5). You'll also need to unbolt your starter as those two long bolts run into the inner primary case. You might as well totally remove the starter for a moment because we have to put the jackshaft extension on it before installing the starter anyway. Once you've got that out of the way, the inner primary can come off (pic 6). I sold my entire primary drive setup on Egay for damn near close to half of what I paid for the Tech Cycle setup. At this point, you're almost halfway done! One last thing which you need to do is pull the clutch hub bearing race, found on the transmission mainshaft. Yeah, that little copper thing in (pic 7). Jim's makes a special tool for this or you can make your own like we did. Either way, yank that sucker off there. If this is a new bike, the bearing should come right off; older bikes may take a bit more "convincing" to let it go! Just a heads up for ya there!

The first thing you'll notice on the Tech Cycle kit for the Twin Cam is that there is no motor plate. You don't really need one on a twinkie as the motor and transmission are bolted together anyway (pic 8). Additionally, I think the setup looks a little cleaner without having a big chunk of aluminum sitting behind it. Prior to installing anything, I recommend that you run a tap into all the mounting holes just to clean everything out and make installation that much easier (pic 9). With the Tech kit, an optional piece is the alternator cover. You don't really need it but it is nice for keeping all the road shit out of the alternator area and cleans up the pulley area when you're done (pic 10). It's up to you. As this one is my personal ride and I'm not one for cleaning unless I have to, I dropped the extra money and got the cover. Simply bolt the alternator cover onto the motor and the tranny plate on the tranny (pic 11). (No shit, right?)

With that done, you're ready to get that cool looking clutch package mounted. Remove the clutch pressure plate, springs and etc. The friction discs and steel plates can be set aside for the moment. Before you do anything, inspect the backside of the clutch basket. There should be TWO c-clips in front of the clutch basket bearing. This is important because the second clip establishes the proper spacing of the clutch basket



from the transmission mainshaft bearing support plate. If your clutch basket rubs the plate once it's installed and you didn't check those c-clips, don't say I didn't warn you! Assuming both clips are there, slide the new clutch basket onto the transmission mainshaft. Place all of your friction discs and steel plates into the basket, followed by the pressure plate and springs (pic 12). Once you have your clutch package installed, turn your attention back to the starter assembly for a minute. Tech includes a jackshaft extension as part of their kit that rides in its own bearing assembly. To install, drive the small piece of copper wire into the groove of the extension so that both ends are inside the jackshaft extension to your and the groove of the original jackshaft (pic 13). Don't settle for halfway here as that little bit of wire holds the whole jackshaft extension together and you don't want to have to fix that on the side of the road. With that done, you can put the starter back on the bike. Bolt the jackshaft housing onto the transmission plate using a bit of red Loctite on the three bolts.

Once everything is tightened down you're ready to place the belt over the clutch basket assembly. Line up your motor pulley in the belt and push it onto the motor shaft splines. Torque the mainshaft nut down to 150 ft/lbs and you're done (pic 14)! If you intend to have your belt pin-striped or painted, now is the time to have it ready! I had my belt done (pics 15 and 16) by local tattoo artist and pin striping madman John Minke of Bewitched Studios in Lewes DE (302.245.1527) following the same procedure as detailed by Robert Pradke a few issues back.

Overall, Tech Cycle makes a great clutch package for the TC88A Dyna Glide setup. I've since seen one installed on a Softail and although a bit different, it installed as smoothly as this one did. One issue I have with the setup is the lack of a mount for the belt guard (which oddly enough, is supplied). Not that I run a belt guard but you might want to. The second issue is the fact that no provision is made for mounting the stock shifter linkage. This wasn't a problem for me as I wanted a mid-mount jockey shift setup anyway so this was an ideal time to make one (thanks Jeff!). As nobody that I could find sells a mid-mount jockey shift kit and I didn't feel like shelling out the bucks for something that could be custom made in house, I talked with Jeff about the possibility of getting a setup on my bike. The easy part was the shifter handle itself. The stock ratchet lever was chopped and then TIG welded onto a length of 1/2" twisted



steel square stock. An old skull shifter knob was chopped a bit and drilled, threaded and mounted to the rod. Done! The harder bit was the clutch pedal fabrication. Following *The Horse* mantra of "use what you have, buy as little as possible", we flipped the stock shifter pedal and mounted a stock passenger footpeg on a stud for a clutch pedal. The clutch pedal support bracket is tied into the footpeg support on the frame and allows for the clutch pedal shaft to ride in a full length tube which can be greased for trouble free operation. A custom cable was ordered but you could just as easily use your stock clutch cable by splitting it at the adjustment nut and soldering a new end onto it. By pushing the clutch pedal down, the cable is pulled and the clutch is disengaged. See pic 17 for a shot of the clutch pedal assembly. It's still in "shakedown" form, and as such, needs finishing and plating, but you get the general idea. We added a set of shims to the clutch pack just to get a bit more resistance as the Bandit clutch is pretty smooth to start with, which can make "feeling" the clutch a little difficult through your boot. Finally, we added a pedal stop (a bolt through the clutch pedal support plate) to prevent overtravel in the pedal. First time out and it worked great.

Overall, I enjoy having the belt drive much more than the enclosed chain primary. It sounds great (like a friggin supercharger) and really cleans up the left side of the Dyna Glide. I've managed to shred only one pair of jeans since installing it (my fault...too much beer) and I've gotten much better at running a jockey. Not as scary as I thought it'd be and loads of fun; especially after a few beers or whatever. That "Weed man" isn't on that belt for nothing! Jeff at Independents Choppers can be reached at 302.733.7923, Monday-Friday 10-7 and Saturday 11-5. Tech Cycle can be reached at 215-702-1482 or on the web at [www.techcycle.com](http://www.techcycle.com). Ask for Billy and tell 'em Independents Choppers sent you! Contacts: Independents Choppers, Newark, DE 302.733.7923 Bewitched Studios, Lewes, DE 302.245.1527 Tech Cycle, Huntington Valley, PA 215.702.1482

