

Review: Dynamic "Crossroad 7" Shaft-Drive Bicycle

July 26th, 2007 by Jack "Ghost Rider" Sweeney



DYNAMIC BICYCLES - CROSSROAD 7

The good folks at Dynamic Bicycles offered their "Crossroad 7" commuter bike to us for testing. In many respects, it is like so many other commuter-oriented bicycles on the market — TIG-welded aluminum frame, mounting points for fenders and rear rack, upright riding position. Where this bike differs, however, is how power gets from the pedals to the rear hub. This bike uses a very clever and deceptively simple shaft drive. Yeah, that's right — no greasy chain, no chainrings to chew up your pants. In fact, Dynamic takes things a step further by mounting the shaft-drive to a Shimano Nexus Inter-7 internal hub. So, no derailleurs either!

Specifications:

- Aluminum Frame
- Aluminum front fork
- Dynamic Street Shaft Drive
- Shimano Nexus Inter-7 Gearing, All-internal
- Shimano Nexus 7-speed Twist Grip Shift
- Alex DA-16 High Profile Alloy Rims
- (28-38mm tires)
- Kenda Tires, 700C×35, 50-85psi
- Tektro Quartz alloy brakes; front disc brake optional
- Tektro 2-finger Alloy brake levers
- Base price: \$699.00

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Unique, Stylish Frame



The frame for this bike is unique: a narrower-width bottom bracket (BB) shell that is also larger in diameter from a traditional BB and elevated chainstays that are welded to the base of the seat tube rather than to the back of the BB shell. The elevated chainstays give room to mount the shaft-drive assembly. The rear-facing "track style" forkends position the rear wheel in the frame and align the rear hub's spiral bevel gear with the rest of the shaft-drive assembly. Obviously, retrofitting this shaft-drive assembly to a traditional bicycle frame is out of the question.



Bottom bracket clearance to the ground with 700x35C tires is a whopping 10 inches! And this is pure clearance, too – there is no

chainring to catch on obstacles if a rider should happen to find him- or herself hopping over a steep curb.

Did I mention the paint job on this bike? In low light, it appears to be a dull charcoal grey. In sunlight, however, it shines with pink and blue iridescence...every bit as flashy and sexy as a Japanese keirin bike! Here's a picture of the headtube and the glossy paintjob...the photo doesn't do this color justice!



S-M-O-O-T-H Ride

Over the past month, I have ridden this bike over 100 miles to and from work and on a number of recreational rides. While I don't have any way to quantify (with cold, hard numbers – this ain't a physics lab) just how much more efficient a shaft-drive is as compared to a traditional chain-driven bicycle, I can say with confidence that this shaft-drive feels s-m-o-o-t-h. In fact, it is so smooth that it feels oddly boneless; chain-driven bikes give the rider a lot of feedback in terms of friction as the chain wraps around cogs, chainrings and derailleur pulleys. When I rode the Dynamic, the only sensation was that I could very faintly feel the bevel gears meshing against each other. It is DEFINITELY different-feeling than a chain-driven bike!

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Another perceived benefit of this shaft-drive is there is no "gear lash" or lag when pedaling – pedaling force is instantly and seamlessly converted to forward motion. On a chain-drive bike, there is always a bit of lag as chain slack is taken up by the derailleur springs and as the freewheel/cassette pawls engage. Not so with the Crossroad 7 – you pedal and GO!!!

The rear spiral bevel gear of the shaft-drive system attached to the Nexus hub:



Standing on the pedals to grunt up hills was when this system felt weirdest – and when the nearly frictionless drivetrain was most noticeable (and appreciated!). The system is silent – the only noise it makes is some occasional faint ticking in certain gears, and that can be attributed to the Nexus hub, not the shaft-drive. This bike is STEALTH all the way! Shifting is a breeze – the Nexus hub is spectacular. I found myself shifting more often because it was so easy and smooth, and I found the range of seven speeds to be more than adequate for my relatively flat commute. For people living in more hilly areas, an 8-speed Crossroad model is available from Dynamic.

How much does the shaft-drive system add in weight to a bicycle? The manufacturer claims that the system adds less than one

pound as compared to a geared bicycle, and this makes sense...after all, the entire assembly consists of four chromoly spiral bevel gears, a shaft and aluminum housing. I think most people can live with an extra pound...and for the real weight-weenies out there, a few judicious parts swaps could help lose some of that weight.

Easy Maintenance

Maintenance is, for the most part, a non-issue with this bike. I rode this bike in two heavy Florida summer downpours with deep puddles almost up to the hubs, and I never had to worry about a rusty chain. Dynamic recommends adding a shot of grease to the drive every 600-1,000 miles. The shaft-drive comes complete with a zerk-type grease gun fitting...just attach your grease gun and squirt a bit in there. The manufacturer recommends Finish Line's Teflon grease. I couldn't find my grease gun, so I used a 12cc syringe with a plastic "gastric tube lavage" tip to inject 4-6cc of grease into the shaft-drive after removing the zerk fitting.

The Nexus hub needs occasional cable adjusting, which takes all of two minutes, and the brakes could use some occasional tweaking. Is it ever that simple on a gearie? No grease gun? No problem, especially if you know a medical professional with access to syringes:



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Straight Forward Tire Changes

Are there additional steps when changing a flat rear tire? Yes, but the process only takes an extra 30 seconds from a traditional bolted-on or QR wheel. With a screwdriver, remove the two screws that hold the black plastic rear hub cover on. Slide the cover off. Pull the shifter cable sharply downwards to release it from the hub's cable guide and detach the leaded end from the hook on the hub. Unscrew the axle nuts with a 15mm wrench, taking care to keep the unique washers on each side of the hub in proper order. Change the flat and reverse the disassembly process. Those special washers realign the hub with the tail end of the shaft-drive, so no fiddling is required to get things running smoothly again. Hell, it takes longer to write it out than to actually do it!

Ride With Confidence

The frame feels stiff. To be fair, this is the first aluminum-framed bike I've ridden more than a couple miles – I don't know if aluminum bikes always transmit this amount of shock. The Dynamic frame appears utterly flex-free, and with the beefy, ovalized down tube, aluminum forks and 36-spoked deep profile rims, the ride felt a little harsh. Over two miles of my round-trip commute is over cobblestones, which can be pretty punishing! Perhaps a carbon fork and a suspension seatpost would have improved the "seat feel" of this bike and taken some of the edge off?

Customize The Cockpit

The parts specifications for this bike have high and low points. Tektro Quartz linear pull brakes are about the best "off-brand" V brakes money can buy; easy to adjust and tremendous stopping power. The Nexus hub is superlative – smooth and easy to shift and virtually maintenance-free. The front hub is a sealed bearing model made by Access. I am unfamiliar with the brand, but

the hub is beefy and smooth, and comes disc-ready (Dynamic offers a front-disc brake upgrade for an additional \$60).

The Alex DA-16 rims are tough – real pothole killers! The handlebars and stem are workmanlike...nothing fancy. The saddle is such a personal choice that I wholly expected this "Velo Plush" saddle to be not so plush, and I was right! The seat was a bit stiff for my preference. (*since this review was written, Dynamic has changed the seat on this model to a more comfortable padded seat*). Also, the pedals that come with the bike are designed with a narrow profile that were slippery. Even with lugged running shoes, my feet slipped off the pedals a couple times in the dampness that is summertime Florida. (*since this review was written, Dynamic has changed the pedals on this model to a rubber-coated non-slip pedal that gives very good traction*). Dynamic offers a variety of seats and pedals and many of their other bike models come standard with suspension padded seats and rubber coated pedals. I was told substitutions of these components can be made at no cost, so feel free to ask for something that might be more your style.

The "track-style" rear dropouts:



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Does the shaft-drive wear out? Well, yes...eventually. Patrick Perugini, the president of Dynamic, indicated that the shaft-drive is designed for about 10,000 miles (depending on frequency of greasing) before it requires replacement. And, a replacement assembly with all bearings is only \$89.00, available directly from Dynamic. Now, compare that to a traditional geared bike – can you get 10,000 miles out of one set of chainrings, cassette cogs and a chain? I didn't think so! Can you replace two (or three) chainrings, 8/9/10 cogs and a chain for less than \$89.00? Only if you really, really shop around!

Only Minor Gripes

Two gripes stand out in my mind: the first is the riding position, which is pretty upright. While this position gives the rider a commanding view of the streets, there is no place to hide once stiff headwinds come into play. With this configuration, the Crossroad 7 is really not designed for long-distance fast commuting. Your options here would be to install a lower rise stem or choose Dynamic's road bike model with drop handlebars and a more aerodynamic riding position.

The other gripe is that while Dynamic inexpensively offers accessories such as a rear rack and fenders, at this price point I would like to see both of those included as standard features (never hurts to ask). Most similarly-equipped bikes from other manufacturers (and here I mean geared

commuter bikes) come standard with rack and full-coverage fenders.

Overall, I think Dynamic has a winner with their Crossroad 7. It appears (and rides) in every way like the around-town errand, commuting and recreation bike it was meant to be, and you just can't beat its low-maintenance features. No more greasy chain tattoos, tattered pants cuffs or dirty hands from a mid-ride tire change!

Hits:

- low maintenance
- smooth, effortless drivetrain and shifting system
- sexy paintjob
- lifetime frame warranty
- perfectly suited for around-town cruising and medium-distance (5-12 miles) commuting
- Dynamic's sterling customer service – questions promptly answered
- great website documentation for maintenance and service of these bikes

Misses:

- Frame and ride may be stiff for some bumpier commutes
- Saddle and pedals may need changing (*both components have been upgraded since this review was written*)
- Upright stance is comfortable, but gives some aerodynamic issues in headwinds

Visit Dynamic's website, www.dynamicbicycles.com to learn more about the shaft drive – there is a great "FAQ" on the site – and to see other Dynamic models.