

Dynamic Choppers

Epic



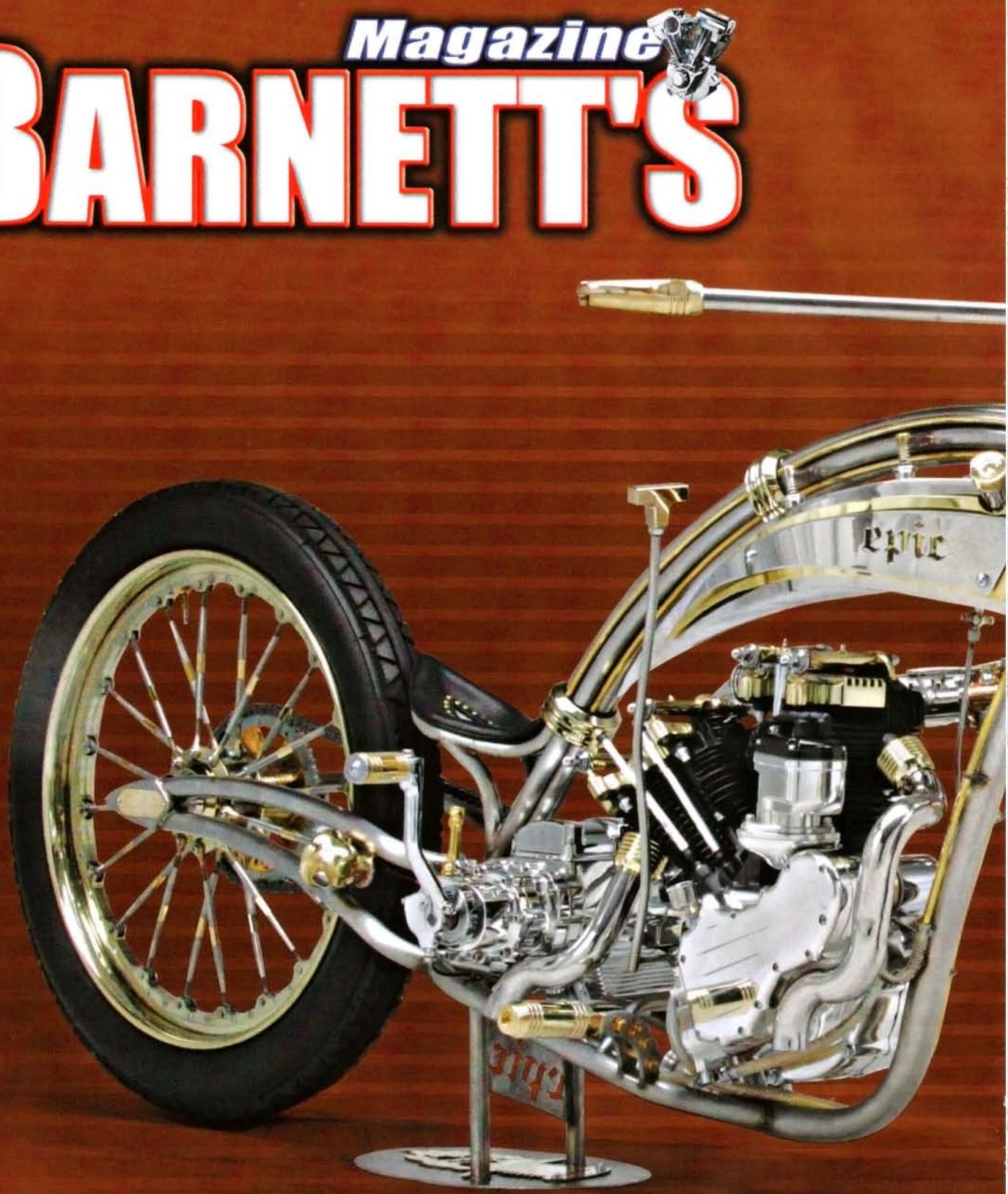
An epic undertaking usually means something that is large in scale with costly production characterized with adventurous struggles to achieve a desired result. Paul Stewart, the builder of this bike he named *Epic*, epitomizes the definition of its name. "The basic idea behind the bike was to just build a really-cool bike. A few friends decided to help with the build, and with the combination of so many minds, the idea of just a really-cool bike went out the window," Paul said. Two months of planning resulted in a few guidelines, "We wanted to show off everyone's individual talents. Nothing was to be hidden or covered by paint, including the welds, machining, and raw-metal surfaces," Paul said.

Paul has built a number of bikes over the years, but he came across a design he never had direct experience with. "I had a photo of an old 1915 Emblem motorcycle that I liked. I wanted to use some of their frame designs in this bike, but only ended up using the tire size on *Epic*. But that bike did inspire me to build a modern-day board-track racer with a very antique feel," Paul said. He had a great idea for a frame that he relayed to 8 Ball Manufacturing. 8 Ball fabricated the stainless-steel frame with five separate radius-rolled one-inch OD backbone bars with a single-loop downtube made with 1.5"-OD stainless-steel tubing. Oil is held inside the frame and it's filled from the front end (with a cap that is labeled "O") and is contained by all the tubes up to the rear-axle blocks and it is circulated through an oil cooler located underneath the transmission and back into the frame. 8 Ball finished the frame by integrating the seating area into the backbone. Paul had front fork legs machined from (what

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Magazine

BARNETT'S







UP CLOSE

Baker Drivetrain's 6-into-4 Transmission

With ten years of experience as a premium drivetrain manufacturer, BAKER Drivetrain has nothing to prove. Yet, Burt and Lisa Baker and their crack team of expert techs, engineers, and awesome employees continue to create new, innovative aftermarket parts — not to mention acting as a leader in the drivetrain aspect of the industry. And while BAKER's 6-into-4 transmission isn't exactly one of their latest transmission innovations, it is an exceptional piece that can infuse new life into a custom bike or an old Shovel, Pan, or Knucklehead.

Obviously, the 6-into-4 in these photos isn't resting in a stock bike, but it is a good example of the transmission's fitment range. Originally it was intended as a direct replacement for 1970-E84 4-speeds and it's available with or without the 1936-1984-style kicker. According to their website, "In a 4-speed, 4th gear is 1:1. Our 6-into-4 6-speed overdrive has a 1:1 5th gear and a .86 6th; good for a 500RPM reduction in cruising RPM on the highway." The transmission gives 4-speed riders two reasons to ride that they didn't have before.

They also offer a host of options for the trans like show polish, wrinkle black or raw finishes, a hydraulic (for an extra cost) or conventional mechanical kicker cover, an assortment of different gear ratios, or a 33-tooth pulley, and they each come with a polished brass kick pedal.

The 6-into-4 trans as a whole might not be new, but for 2008, BAKER just introduced new mainshaft lengths that allow for Knucklehead and Pan-head applications, further expanding the range of the 6-into-4's applicability.

Take a gander at BAKER's website, www.bakerdrivetrain.com, to see if they've got a trans for your bike or call their friendly, knowledgeable staff toll free at 877-640-2004.

else?) stainless steel with the master cylinder incorporated into the fork leg and its reservoir resting on the lower part of the brass-plated triple tree. The brake is operated using reverse-mounted levers with cables run through the right side of the bars. On the left side, the clutch lever is operated by a cable that is run through the bars and continues through the backbone to the reservoir that holds fluid for the hydraulically-actuated clutch.

As mentioned earlier, Paul was inspired by that old Emblem to use super-tall wheels. The enormous 26.875" front wheel was assembled from 365 individually-machined components including the stainless-steel hub, stainless and brass spokes and fittings, brass-plated rims and a perimeter braking system. The incredibly tall and skinny tires are actually Excelsior antique car tires made by Coker Tire. Using his water-jet cutting machine, Paul cut the stainless-steel perimeter rotor and stand-offs that the perimeter brake is mounted to. A single two-piston Jaybrake caliper puts the squeeze on the rotor and is the bike's sole brake. "The bike needed some kind of stopping power, but we tried hard to completely avoid it — original board-track racers didn't have any brakes at all," Paul said. The rear wheel shares the same diameter as the front; but because there is no rear brake, it's only comprised of 330 pieces (yes, he counted).

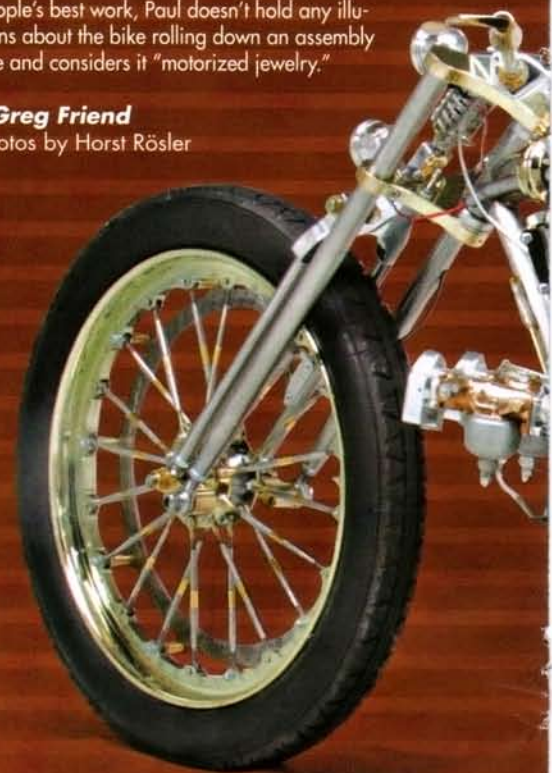
Epic's motor is the last 93" knucklehead built exclusively by Flathead Power (before S&S bought the company) and they wanted to make sure it was given extra attention. First they rotated the motor's orientation towards the rear so the front cylinder is perpendicular to the ground as homage to the single-cylinder motorcycles built in the early Twentieth Century. "Rotating the motor in the frame looked cool, but it created its own set of problems. The front cylinder is starved for gas which is why we ended up running two Linkert carbs with individual runners so each cylinder and carb can be adjusted separately," Paul said. Creating a more mechanical look, he assembled the top end sans the "knuckle" covers but also designed a support system for the fixed-length pushrods on adjustable tappet blocks. He finished the motor off with stainless-steel exhaust pipes held in place with compression fittings that create a cleaner look than the stock factory bolt-on flange mounts. A modified Tech Cycle open-chain primary drive connects the motor to the transmission with a lengthened chain and a tensioner located just in front of the clutch. The four-speed BAKER trans case houses six gears and is mounted in the frame an inch higher and four-inches further away from the motor to line up the driveline with the rear-wheel pulley. The trans is shifted on the right side of the bike with a brass T-handled jockey shifter engraved with the N1 shift pattern (neutral is the first position and first through sixth gear is located up from there). The 1960s H-D 51-tooth rear sprocket is connected to the transmission with an extremely long chain and another chain tensioner mounted underneath the left-rear frame leg.

When working on a bike of this caliber, every part has to be a perfect match with the bike's other components. "We built four different tanks before we decided on one that showed off more of the frame and went with the shape of the bike," Paul said. The hand-formed tank was welded together with 14-gauge stainless steel with brass accents and a petcock from a 1916 H-D VL. Corresponding with other antique parts of the bike, Paul used more historical elements like a pair of 1917 Cadillac headlights mounted next to the front-end spring and a 1912 Cadillac taillight. The hydraulic clutch and brake is operated with reverse-mounted hand control levers.

After all the parts had been made, Paul was able to get the bike assembled in a few days with the help of his employees at his shop. They got the bike together early enough to take the bike to Sturgis instead of just their target show, the *Artistry in Iron* event in Las Vegas. As it was the culmination of all his and many other people's best work, Paul doesn't hold any illusions about the bike rolling down an assembly line and considers it "motorized jewelry."

- Greg Friend

Photos by Horst Rösler



SPECIFICATIONS:

- Owner:** Paul Stewart
- Year/Make:** '07 Paul Stewart
- Fabrication:** Paul Stewart/8-Ball Mfg.
- Assembly:** Paul Stewart/Flathead Power
- Build time:** 2-days
- Engine:** Flathead Power 93" Knucklehead
- Cases/Flywheels/Rods:** S&S
- Pistons:** Wiseco
- Cylinders/Heads:** Flathead Power/ Paul Stewart
- Cam:** S&S
- Ignition:** Morris Magneto
- Carb:** Dual Linkert M88
- Pipes:** Paul Stewart Stainless Steel
- Air Cleaner:** Paul Stewart
- Transmission:** BAKER 6-into-4
- Primary:** Tech Cycle/ Paul Stewart
- Clutch:** Paul Stewart
- Frame:** '07 8 Ball Manufacturing
- Rake/Stretch:** 40°/5" in backbone
- Forks:** Paul Stewart
- Wheels:** Paul Stewart 26.875"
- Tires:** Coker Tire Excelsior 34.25"
- Front Brake:** Jaybrake caliper
- Fuel Tank:** Paul Stewart
- Oil Tank:** 8 Ball Mfg. (in frame)
- Handlebars/Risers:** Paul Stewart
- Headlight:** 1917 Cadillac Marker Light
- Taillight:** 1912 Cadillac Marker Light
- Hand Controls:** Paul Stewart/Dave Cook
- Foot Controls:** Paul Stewart
- Electrical:** Paul Stewart
- Color:** Stainless Steel/ Aluminum
- Polishing:** Paul Stewart
- Seat:** 8 Ball Mfg./ Paul Stewart
- Special thanks to:** 8 Ball Mfg., Scott Tudury, Dom, and Scott



**Builder: Paul Stewart
Dynamic Choppers**

Paul Stewart was the head of the project that became the bike known as *Epic*, but he sold the shop, Dynamic Choppers, that he ran during the course of the build. He let the shop go in October '07, and has been working on his own in the process of opening up a new business.

Originally from Great Britain where there is a limited number of customers looking for custom Harley parts, Paul emigrated to the United States and settled in Las Vegas, Nevada, in '98 because of the greater demand for custom Harleys and custom Harley parts. He worked at a few bike shops while he learned the lay of the land, like where he could get materials, and where he should live until he found his footing and opened his own shop, Dynamic Choppers, in 2001. When he sold the shop, it was ranked as the 75th largest bike manufacturer in the nation out of the 1,650 licensed manufacturers. He had up to 12 people working for him full time. "I started building bikes working out of my garage. After selling Dynamic, I'm back to building customs by myself in my garage again. My custom bike building career has come 'round full-circle," Paul said.

He hasn't given up on the industry; he never intended the sale of the shop to buy him a ticket into another line of work. Now Paul is focusing his efforts on unique, one-off parts and building a few full-custom bikes a year. "I'm more interested in the fabrication of custom designs. I'm not crazy about service work, I'd rather turn an idea to a reality," Paul said.

Visit www.pistonbrokeclub.com to see what Paul is working on now and what he's got planned for the future or call 702-476-2222 if you're scared of the Web.

