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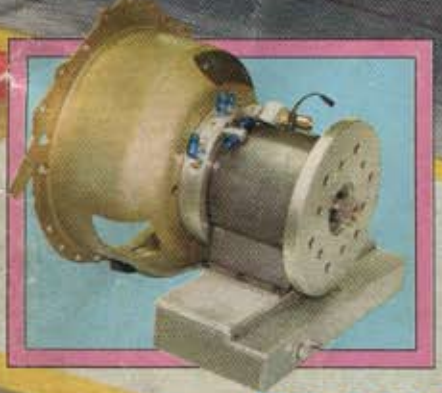

EXCLUSIVE!

RADICAL NEW TRANSMISSION

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Clutch Remover

A Torque converter for Lenco Transmissions

BY DAVE WALLACE

Super Comp racer Reed Christensen had always been successful with Powerglide transmissions. Indeed, his Pontiac Trans Am won two NHRA national events with a conventional Powerglide and torque converter. Yet he continued to search for a stronger, safer alternative to modified passenger-car transmissions.

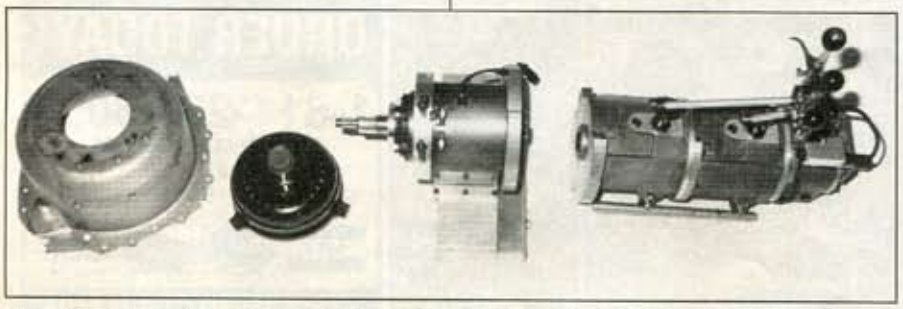
"I broke two Powerglides in my first year and a half of racing," Reed recalls. "When the second one failed, it cost me the top half of my motor. I complained to (engine builder) Dave Riolo that a man shouldn't have to buy trannies like cord wood. Dave agreed, and suggested switching over to a Lenco."

After much consideration, Christensen reluctantly purchased Powerglide Number Three, instead. "I realized that not many people are capable of setting up, staging, and consistently launching a clutch car as well as Dave Riolo," he explains.

What Reed really wanted—and suspected the rest of the world needed—was the consistency of a trans brake and torque converter, combined with the efficiency and durability of a planetary transmission. With the encouragement and guidance of Riolo, Christensen and prototype engineer Jim Galatioto set out to accomplish what a handful of other dreamers had attempted but failed to achieve: successfully mating a converter to a three-speed Lenco.

Three years later, Reed secretly debuted

This working prototype has been in Reed Christensen's Super Comp car since late 1989. Everything but the CEM pump body and the solenoid was fabricated out of steel and aluminum by Jim Galatioto (of ATO Racing Transmissions). The production CPS Drive uses its own billet pump assembly, billet gears, cast-aluminum pan, and a custom trans-brake solenoid.



The standard CPS Drive package includes three modular components: a Top Fuel-style bellhousing; a specially reinforced CPS torque converter; and the actual drive unit. (These handbuilt prototypes are replaced with cast-aluminum bellhousing, drive case, and oil pan in production assemblies.) To accommodate the CPS Drive, Lenco already offers a three-speed transmission without an input shaft.

just such a combination at the 1989 Winston Finals. Several of his fellow competitors commented on the sexy aluminum Lenco levers newly sprouting from the Firebird's transmission tunnel. What nobody noticed, at first, was the absence of a clutch pedal.

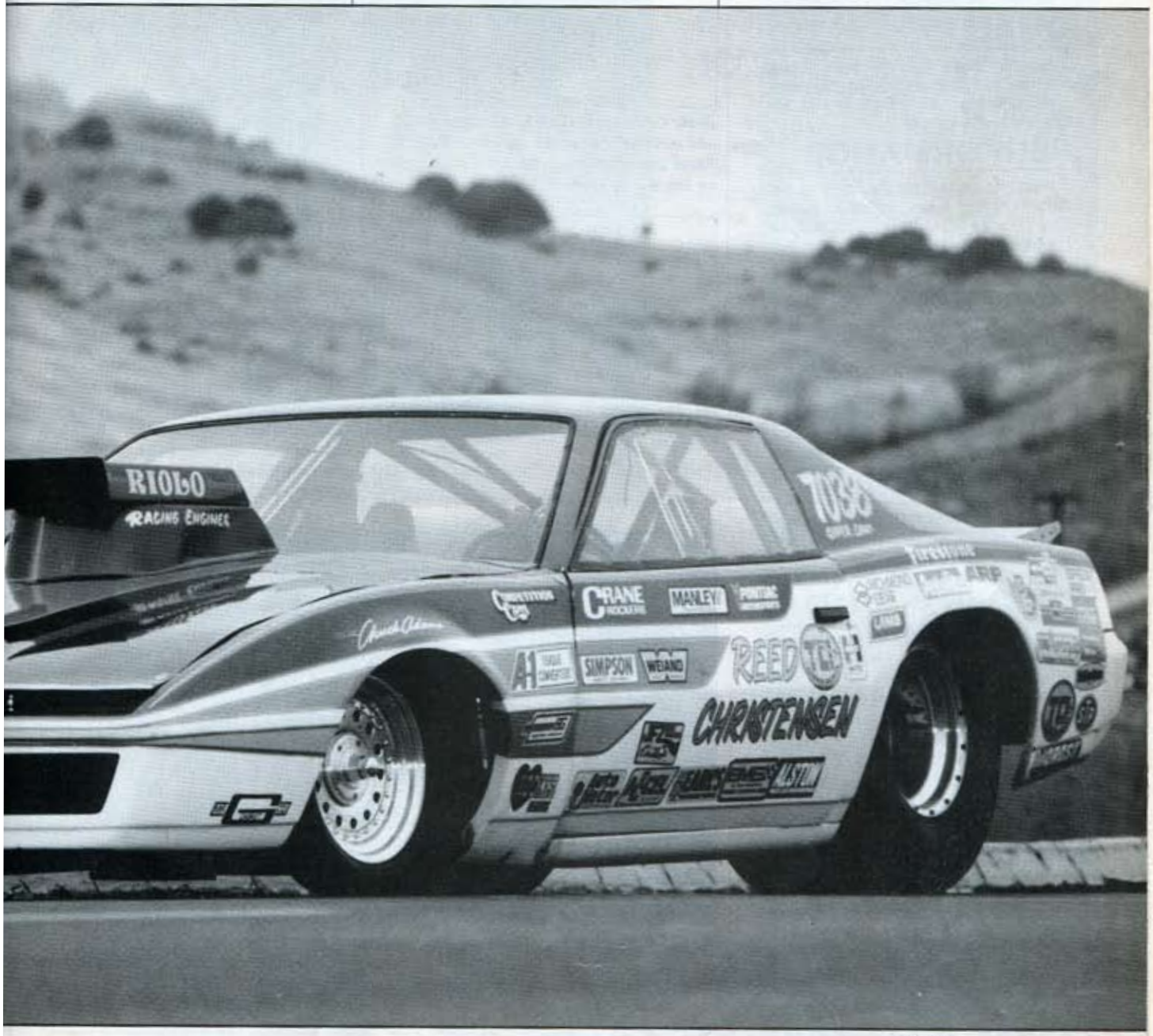
Now, after one full year of in-car testing — and intense speculation on the part of his fellow West Coast racers — Christensen is coming out of the closet. Indeed, he's formed Christensen Performance Systems (CPS) in Sacramento, California, to begin manufacturing and marketing a product that Reed believes will benefit fellow Lenco racers in classes ranging from Super Gas to Top Alcohol. This exclusive report is the first public exposure of the CPS Drive.

"We started with a fresh sheet of paper," says Christensen. "We identified the weaknesses of junkyard automatics, and engineered solutions to these problems into the CPS Drive. This unit uses no factory gears or parts whatsoever. Even the pump is a special design. Every component was custom-engineered for the drag racing environment."

Along with the all-new drive unit, CPS's modular package includes a Top Fuel-style bellhousing an 8- or 10-inch diameter, specially strengthened converter, and a top-quality Reactor flex plate (which qualifies the user for contingency payments from Reactor Products). The visible pieces are all aluminum castings, including an integral fluid pan. A unique trans brake is built right into the drive unit.

The only modifications necessary to bolt the CPS Drive into an existing Lenco car are cutting a new driveshaft and building a new pair of slider mounts for the transmission. Virtually anybody can lift CPS's three modular aluminum components, according to Christensen. Prototype engineer Jim Galatioto confirms that he has personally broken down and removed the entire CPS-Lenco assembly from Reed's Trans Am in less than 10 minutes — without air tools.

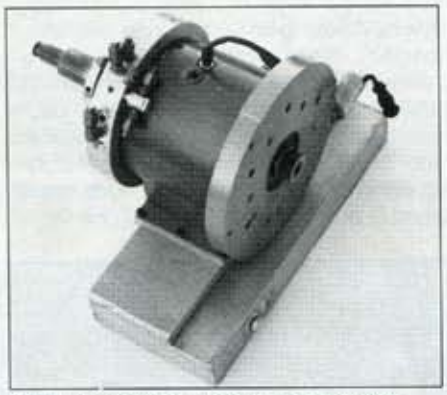
At this point, CPS won't allow photography of components inside the sealed drive unit. (Several patents have been applied for as this story goes to press.) However, Christensen did agree to describe the basic design and operation,



without divulging the sophisticated hydraulic system at the heart of the unit.

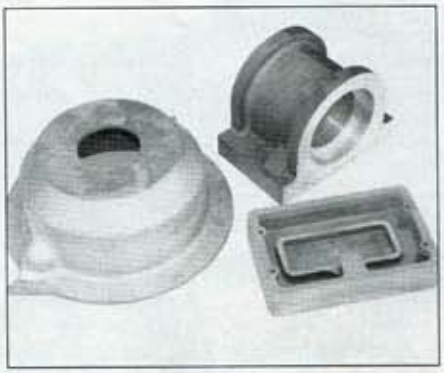
The huge, Lenco-sized CPS input shaft (1/4 inch larger in diameter than a Ford C-6 shaft) is splined to the inside race of a Top Fuel-type sprag. The outer race is splined to the output shaft. According to CPS, this built-in safety feature ensures that if the car's engine seizes, its drive wheels will not lock up. The splined output shaft holds friction plates inside of a clutch drum.

A hydraulic piston at the rear activates a unique trans brake that compresses this assembly, preventing the output shaft from turning. The piston is actuated by an electric solenoid wired to two buttons in the driver's compartment. The first switch is

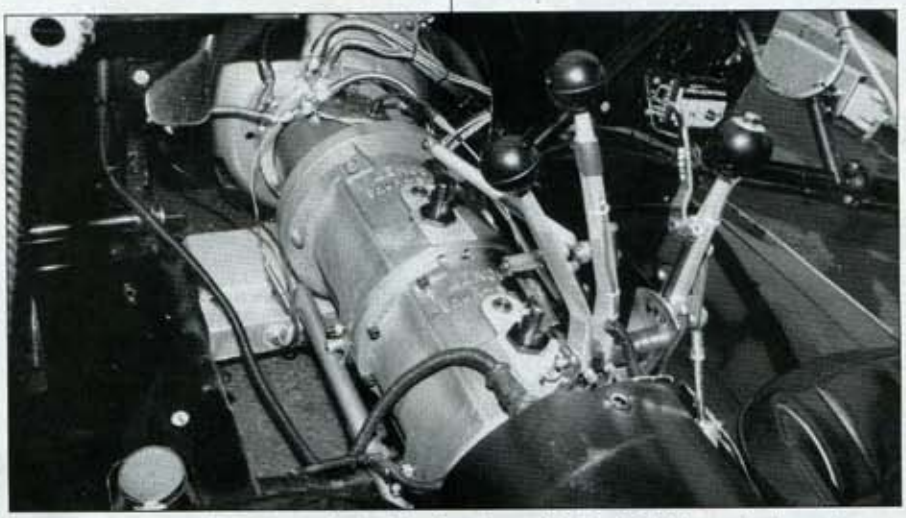


Beefy CPS output shaft is the same size and material that Lenco installs in its Pro Stock transmissions. Electrical connection on top is a computer hookup.

After four years of semi-secret development — including a year of testing in his own Super Comp car — Reed Christensen proudly unveils the CPS Drive for our photographer.



The first batch of aluminum castings was delivered to CPS as this article was written. Fluid pan (lower right) attaches to the drive case (above) with four bolts. Bellhousing is specially formed to correctly register the drive unit.



Here's what's been hiding beneath the aluminum tunnel in Reed Christensen's Trans Am since mid-1989. Modular design of CPS components permits easy access and removal of the bellhousing, converter, drive unit and Lenco transmission. Electric button on reverser knob locks the trans brake after the car has stopped, letting the driver change gears or select neutral.