NUVINCI® CVP DRIVETRAIN

DEVELOPER KIT

The *NuVinci* CVP is a revolutionary, new class of continuously variable transmission for two-wheeled electric and gas-powered vehicles. It offers electronically-controlled, tunable shifting over an infinite number of ratios. Acceleration, hill climbing and top speed can be dramatically improved.

Overall vehicle performance and efficiency are optimized to provide greater range for electric vehicles and better fuel economy for gas-powered vehicles. Best of all, *NuVinci* technology offers vehicle designers affordable, advanced technology to create performance and vehicle capabilities never before possible.

Key Benefits include:

- Breakthrough CVT technology for electric / gas vehicles and pedal-assist bicycles
- Electronically-controlled / tunable shifting over an infinite number of ratios
- Multiple shift configurations supported: automated (CVT or stepped ratio), semi-automated manual (paddle or push-button), manual (analog CVT)
- Optimizes overall vehicle performance and efficiency
- Able to improve acceleration, hill-climb, and top speed performance over direct-drive applications
- Increases electric motor and battery life by managing vehicle current draw
- Extend vehicle range / improve fuel economy

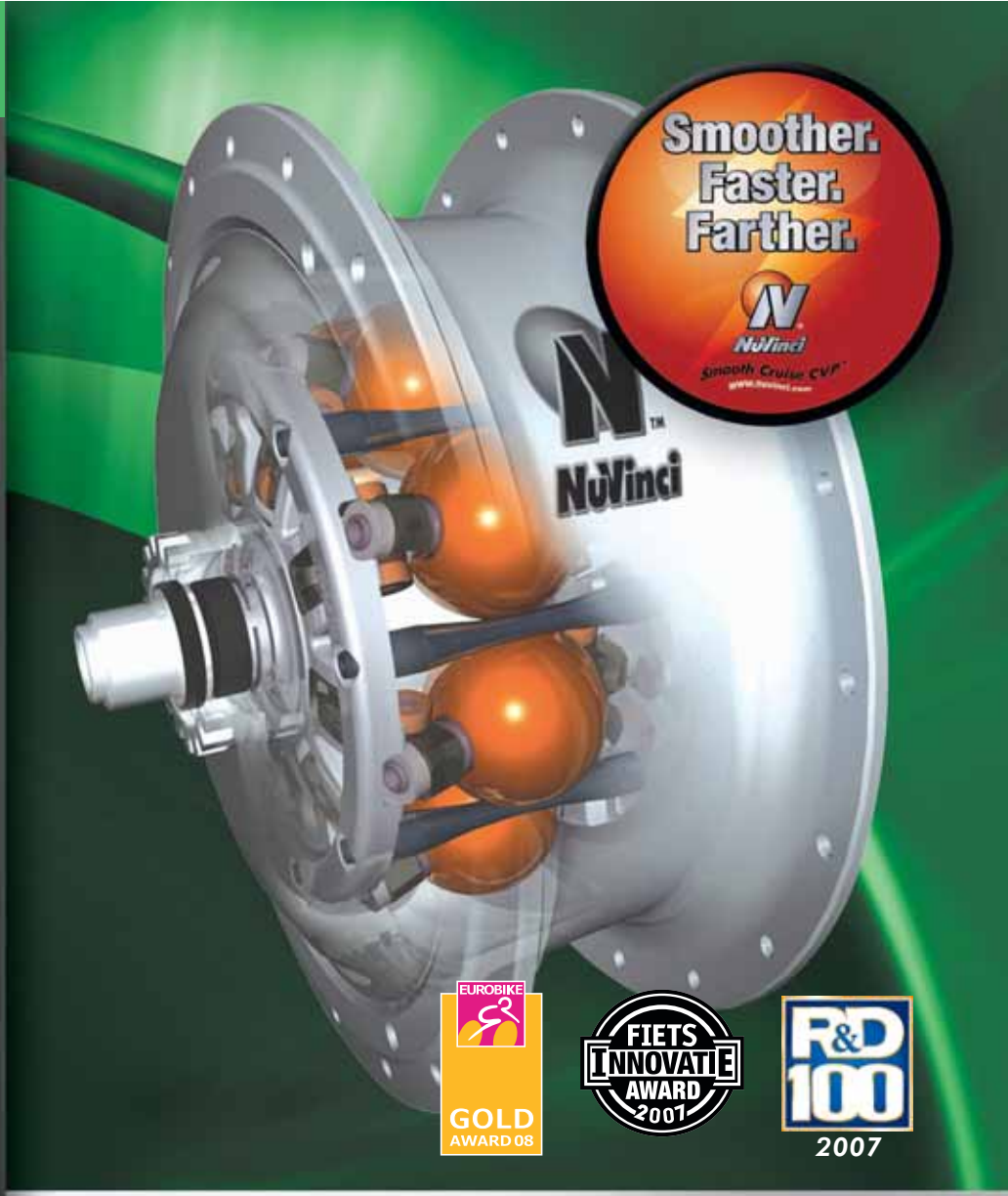
If you are a manufacturer or someone who builds electric, gas-powered or pedal-assist vehicles as a hobby, kick-start your next generation design with a *NuVinci* Developer Kit from Fallbrook. You get what you need to speed design and accelerate development of a vehicle with the revolutionary performance of a *NuVinci* CVP drivetrain. The kit includes the *NuVinci* transmission, shift actuator, programmable controller, wiring and mounting hardware. The kit also includes software tools, design instructions and developer's technical documentation.

Applications:

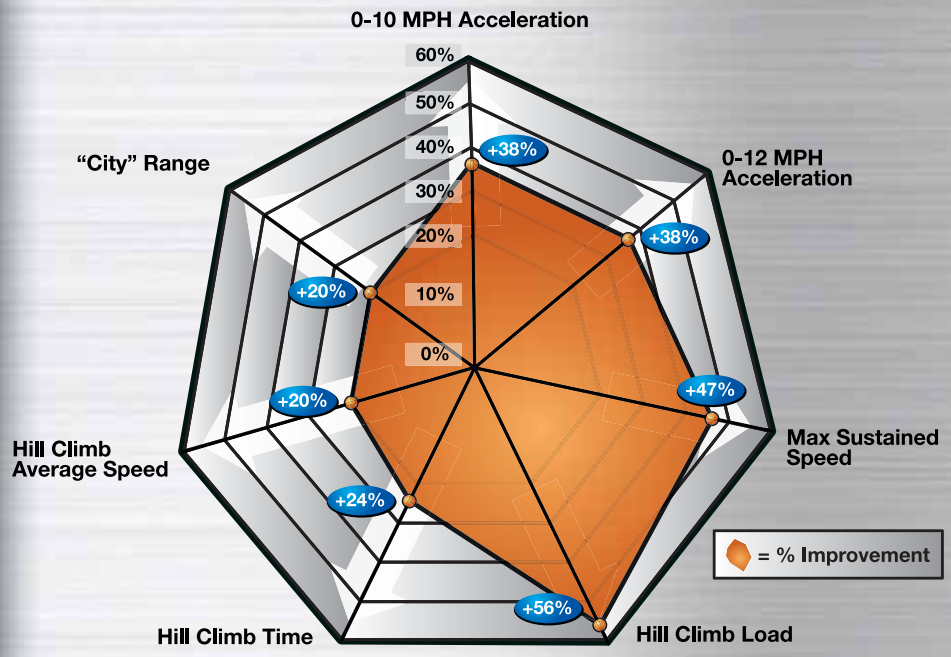
- Light Electric Vehicles
- Gas-Powered Vehicles
- Human-Powered Vehicles
- Hybrid Vehicles (eg. pedal-assist electric bicycles)

FALLBROOK® TECHNOLOGIES

www.nuvinci.com



EV Performance Boost with *NuVinci* Drivetrain.



Performance improvements were made on Currie IZIP™ 1000 with NuVinci integrated shift and motor controller.

CVP DEVELOPER KIT

NuVinci® Developer Kit Contents:

***NuVinci* Continuously Variable Planetary (CVP) Transmission**

- Mounting/Dropout Width: 135mm
- ISO disk brake mount
- ISO threaded sprocket/freewheel interface (1.375inch x 24 tpi)
- 36 spoke design (13 or 14 gauge spokes)

Electronic Shift Controller with 32-bit Microprocessor

- System operates on 12-48VDC
- Automated or manual shifting via serial commands and USB interface
- Automated or manual shifting via external reference signal (0-5VDC)
- External mode switch (eg. "Performance" or "Range") & display connections are supported (not provided)
- Able to be configured with an integrated drive motor controller (contact Fallbrook Technologies Inc for further details)

Electronic Shift Actuator with integrated Position Encoder

Speed Sensor and Integrated Wiring Harness

***NuVinci* PC Application and USB Connection Cable**

- Create custom-tuned shift maps for your application
- Modify parameters for system operation
- Record real-time data via USB connection

Detailed Instructions and Mounting Hardware

NuVinci CVP:

Speed Ratio Range: 350% (0.5 Underdrive to 1.75 Overdrive)

Maximum Instantaneous Input Torque: 130 Nm*

Maximum Sustained Input Power: 5kW*

Maximum Input and Output Speed: 1000 RPM**

* *Operation at these torque and power conditions is not recommended for extended durations. Durability is heavily dependent on duty cycle…use discretion and contact Fallbrook Technologies for your particular production application needs.*

** *High speed, custom configurations (up to 10,000 RPM) are possible. Contact Fallbrook Technologies for your production application needs.*

FALLBROOK® TECHNOLOGIES

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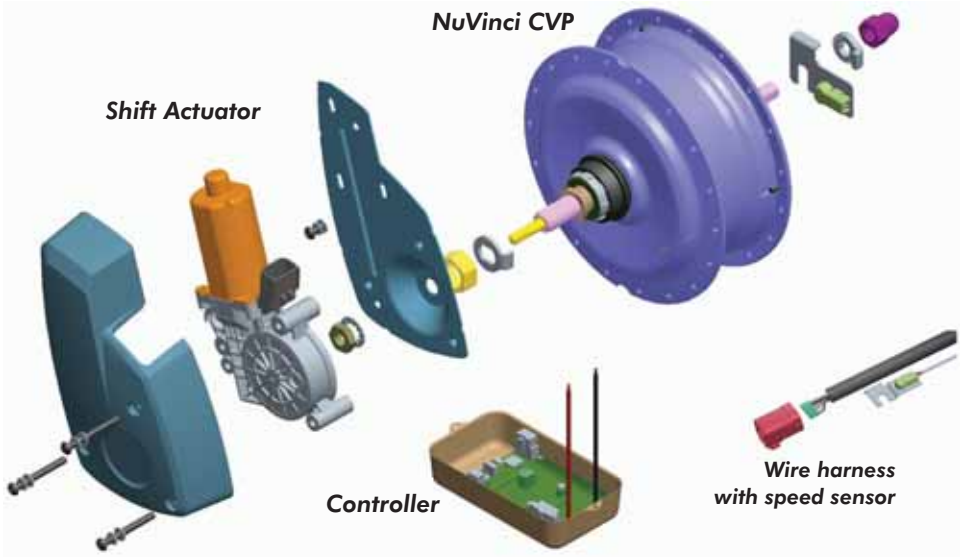
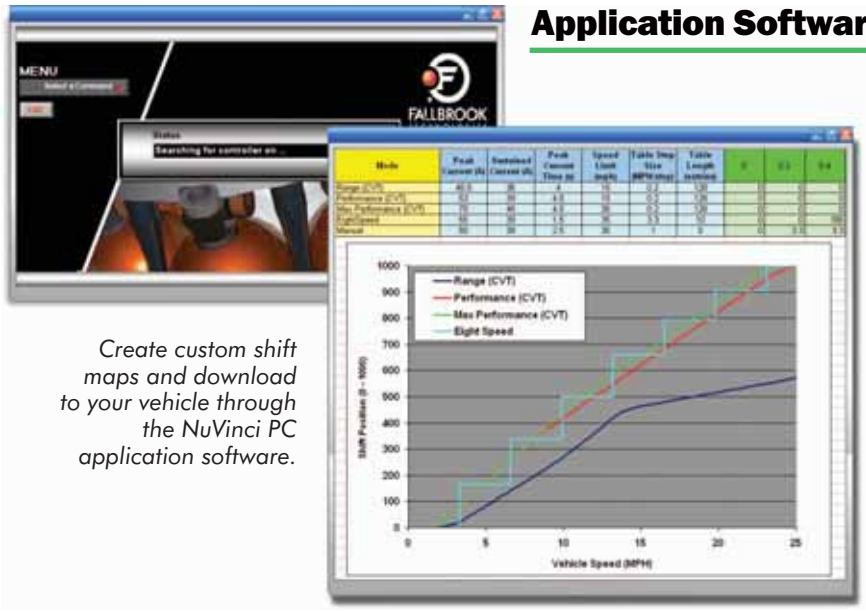
Exploded View of Primary System Components



Application Software



Create custom shift maps and download to your vehicle through the NuVinci PC application software.

CVP

Note: The NuVinci CVP may be placed in a variety of locations including in-wheel, in-drivetrain, in-differential or in connection with the motor. Package dimensions will vary with placement options. The dimensional drawing shown here is an example of an in-wheel CVP configuration.