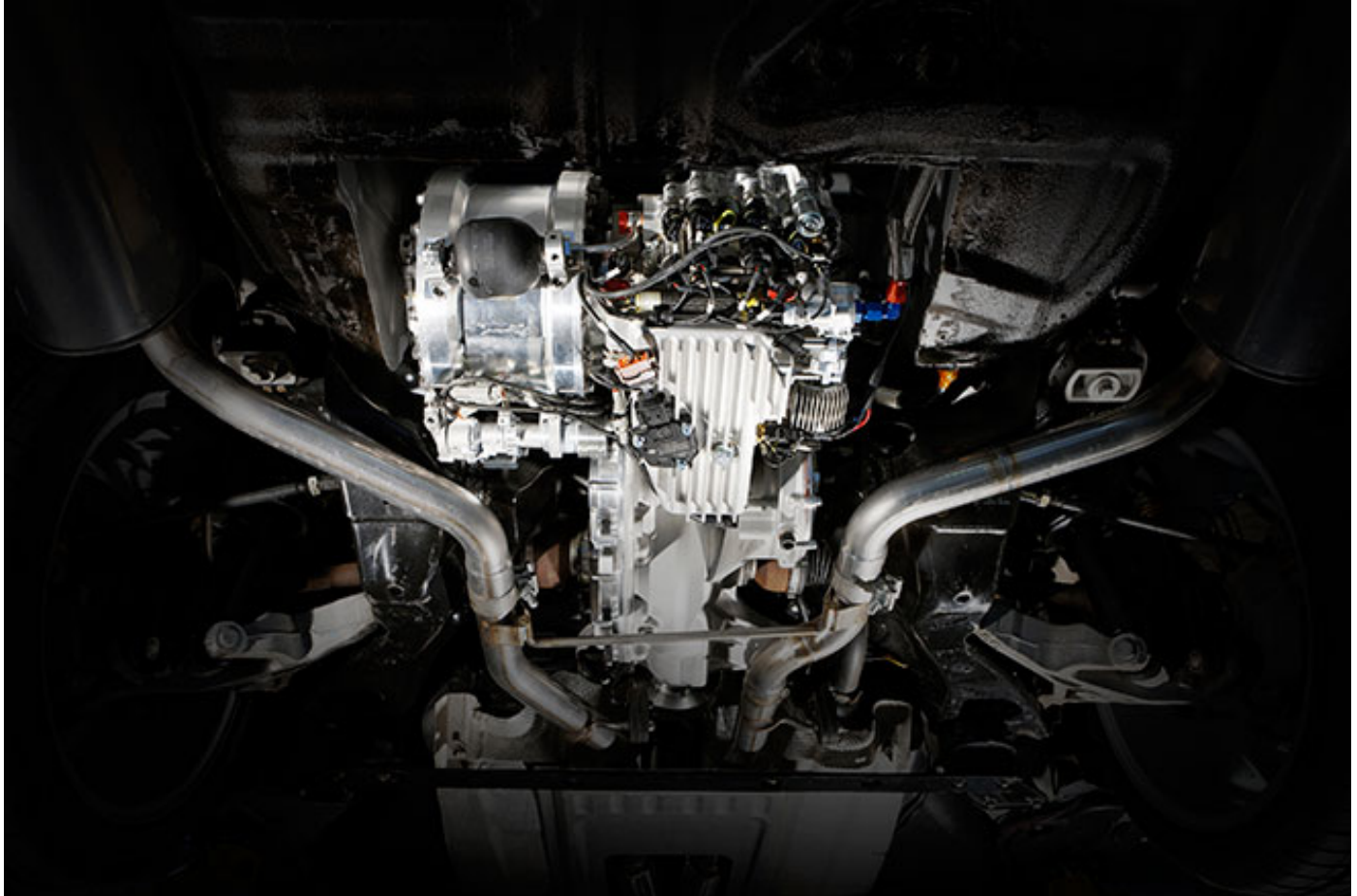


KERS Comes to Cars as Jaguar Tests Flywheel Hybrid



Kinetic-energy recovery systems didn't fare well in Formula 1, but a bunch of British automotive companies bet the technology will catch on with road cars.

A consortium led by a Jaguar Land Rover is developing a flywheel-hybrid system that it says boosts performance by 60 kilowatts (about 80 horsepower) while improving fuel efficiency 20 percent. The consortium, which includes automakers like Ford and engineering firms like Prodrive, sees a market for flywheel hybrids among luxury automakers.

"We have investigated the base technology, built the prototype and will be testing it in the next few months to see if it lives up to its potential," said Pete Richings, Jaguar Land Rover chief engineer.

Kinetic-energy recovery systems first gained widespread attention in Formula 1, as teams like [McLaren](#) and Ferrari [experimented with KERS last year](#). The technology flopped, but Ferrari adopted in the [599 Hy-KERS concept](#) car, and there's speculation McLaren's road car division is [exploring hybrid drivetrains](#).

Jaguar's system uses a flywheel. During braking, a small continuously variable transmission (CVT) mounted on the rear differential transfers the kinetic energy to a flywheel. When the driver applies the accelerator, the flywheel returns the energy through the CVT to the wheels, providing a boost of 60 kilowatts for around 7 seconds. The flywheel spins at up to 60,000 rpm.

Porsche is using an [electromechanical flywheel hybrid system](#) with generator-motors in the [911 GT3-R Hybrid race car](#) this season.

Jaguar is testing its purely mechanical flywheel system, which reportedly weighs 143 pounds, in an XF sedan. Jaguar says it is superior to battery-electric hybrid systems because flywheels are smaller, cheaper and more efficient. Instead of converting kinetic energy into electricity that is stored in a battery, the CVT transfers the energy directly to the flywheel and then back to the wheels.

The Flywheel Hybrid System for Premium Vehicles consortium includes Jaguar Land Rover, Ford, Prodrive, Torotrak, Xtrac, Flybrid Systems and Ricardo.

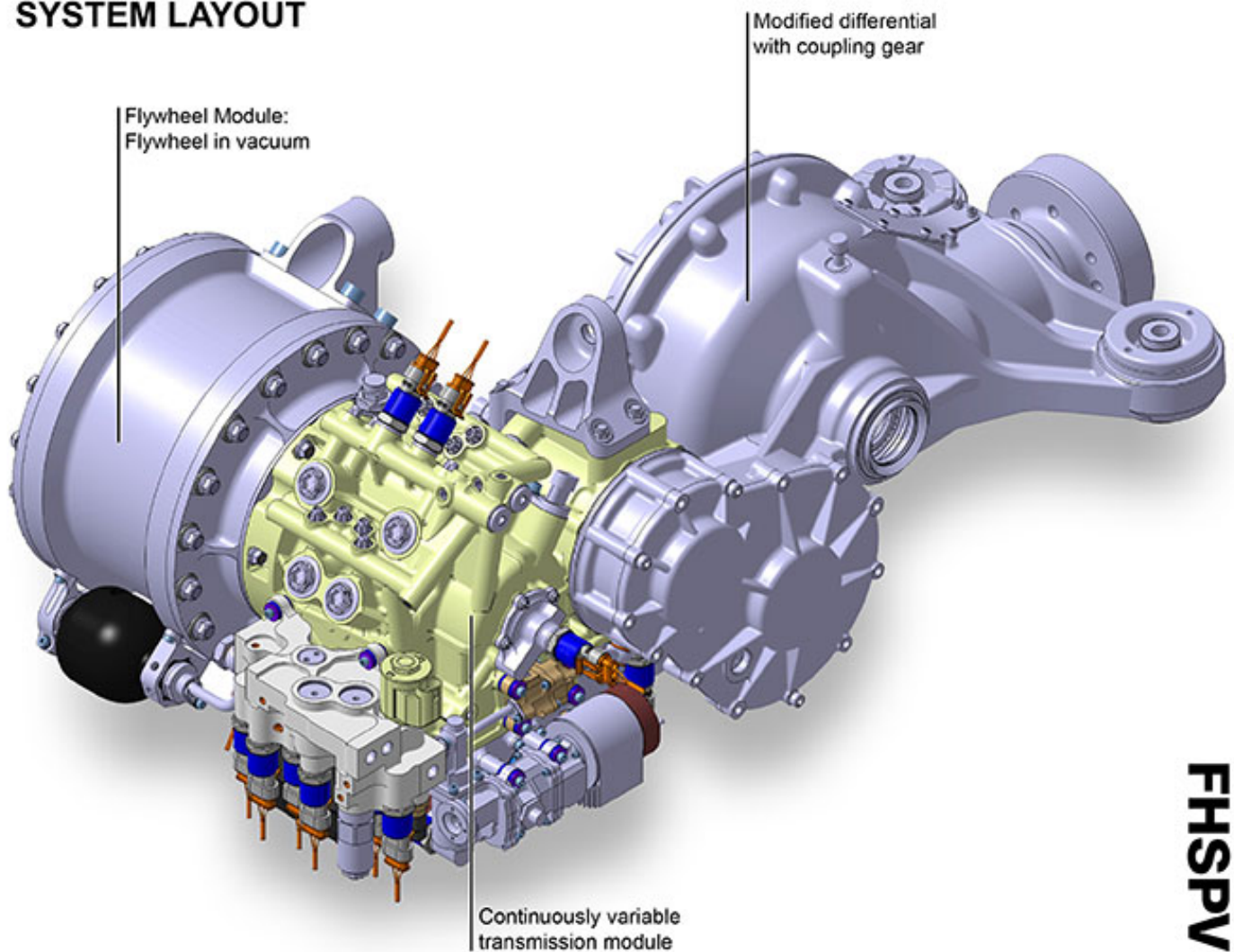
Photo and graphics: Flywheel Hybrid System for Premium Vehicles. Top

photo shows the flywheel-hybrid system mounted to the rear differential.

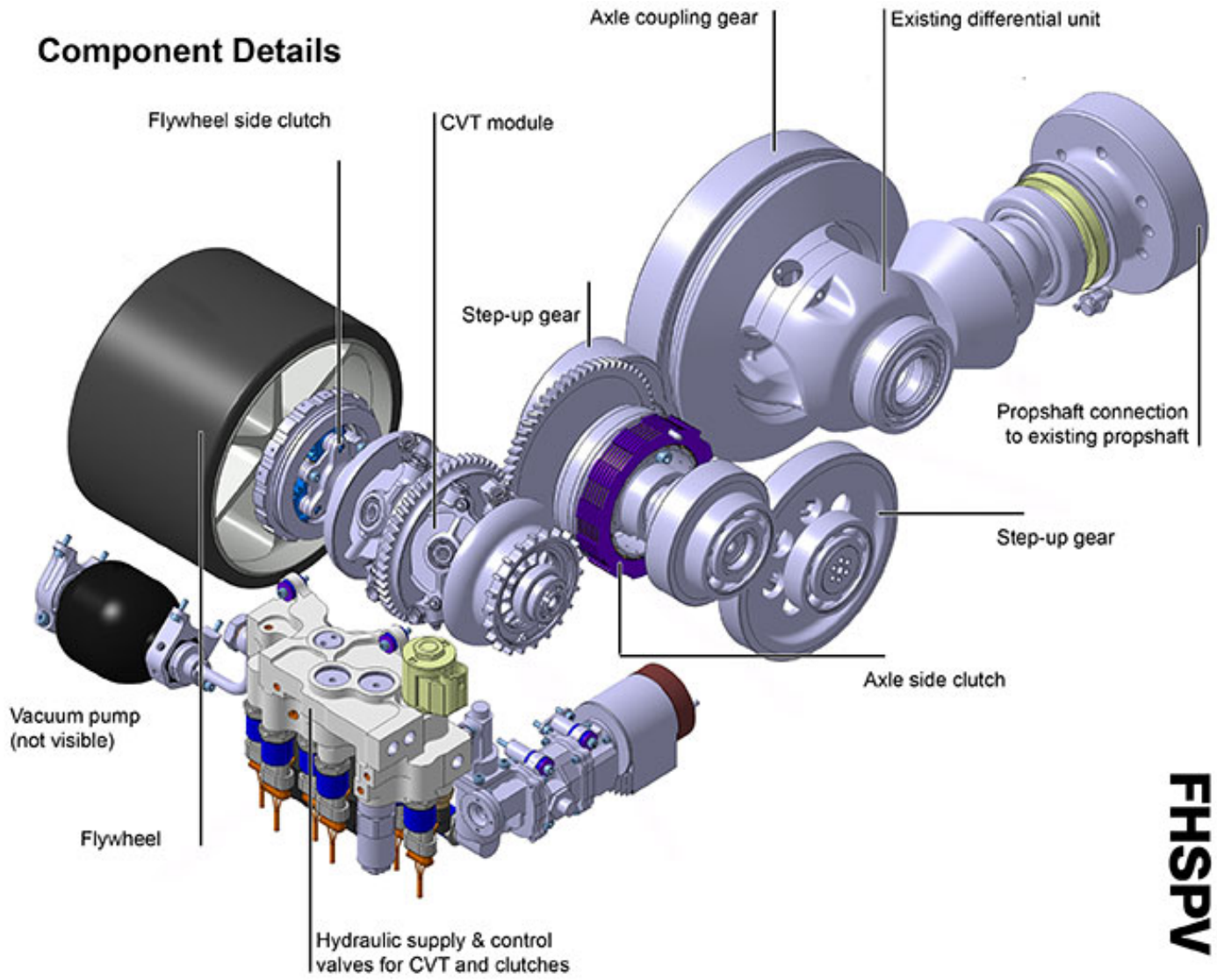
See Also:

- [Jaguar Builds A Twin-Turbine Electric Supercar You Can't Have](#)
- [50 Years On, Jaguar's Sexy C-Type Still Seduces](#)
- [Photo Gallery: 75 Years of Cool Cats](#)
- [Porsche's 911 Hybrid Making North American Racing Debut](#)
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- [Powertrain Innovation Of The Year Awarded To KERS](#)

SYSTEM LAYOUT



Component Details



FHSPV