



Eureka Magazine

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Pull for performance

A new add-on for a seat belt fastener provides a simple way of ensuring that the lap section of the belt holds the driver firmly in the seat, and gives around 80% of the support of a full harness without incurring either the associated cost or inconvenience.

especially for those prone to backache and in cars with leather seats.

Tightening fixes the driver's centre of gravity, preventing 'dive' under braking and gives a much better feeling of what the car is doing. For amateur racers, it enables faster cornering, improves control and comfort,

The device, CG-Lock, requires no changes to belt mountings, and tests to FMVSS 208 safety standards show that it in no way compromises safety. It attaches to the tongue of an existing seat belt and works rather like an aircraft belt, allowing tightening simply by pulling on the part of the belt that emerges upwards and goes over the shoulder. Release is by a lever on the cam end.

Tests by motorsport drivers show that it significantly reduces lap times, compared with a conventional belt, and at £45, it comes much cheaper than most of the gadgets and enhancements available at the show for getting a bit more speed out of otherwise ordinary cars. The idea is protected by patent.



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Autosport **Motorsport & Automotive Design Report**

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Non-contact rotary sensor for extreme environments

A new non-contact rotary position sensor uses Hall technology to ensure precise and accurate rotary measurements in extreme motor sport environments such as steering position and suspension monitoring.

The SP-420 from Perry & Giles, can operate under high vibration conditions with no deterioration of the sensing element.

The sensor uses a 28mm flanged housing with protection to IP68. It provides an electrical output over the full 360° range and is launched with a 10-bit microprocessor. A 12-bit version will be available later in 2006. For ease of configuration, it is available with analogue or pulse width modulated signal output. Intended applications include:

- single seat cars, sports cars, touring cars and motorcycles.

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Pressures monitored in tight wheel spaces

A unique wireless tyre sensing system has been developed that is small enough to be able to monitor the pressure between the outer tyre and inner rim in NASCAR racing cars taking part in four-vehicle oval circuit races.

The Dig Tyre D2™ has been developed by Batsi F1 Systems to fit in a small cup-shaped enclosure on the inside of wheel rim.

NASCAR cars race at speeds of more than 200mph and have two tyres on each rim, one within the other, in order to prevent punctures leading to major accidents. The company already has

the cup, which has a screen on its end and is sealed by an O-ring. Data transfer rate can be set to be from 1Hz to once every 5 or 10 minutes.

A coil switch detects motion, which changes the transmit mode. A hand-held device can be used to transmit a low frequency signal to the sensor to force it to transmit. The sensing area is a silicon diaphragm.

The manufacture is keen to sell it into other application areas, such as for use in heavy goods vehicle tyres, where there is a strong move

from double wheels with tyre, to super single wheel and tyre, which by being only single, increase the risk of loss of vehicle control in the event of a failure.

Prices for a complete kit of four sensors with vehicle plus electronic control unit and four digital antennae, start at £1,960.

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