



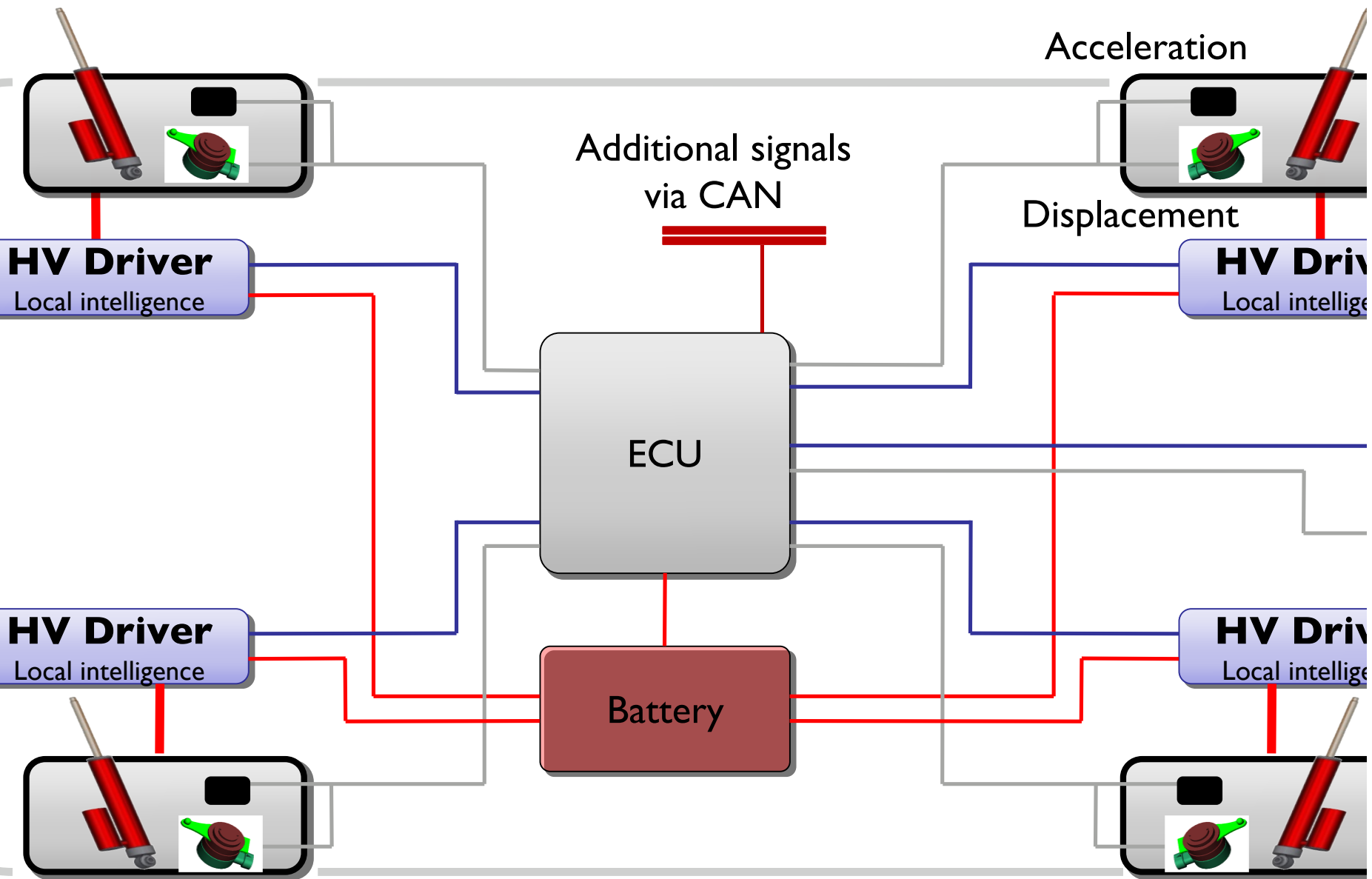
• Increased comfort • Better driveability • More safety

V E R B L I C K

Is a suspension control system for Light Commercial Vans (LCV) and Vans, such as transport, medical emergency and recreational vehicles.

Consists of ER fluid-based, continuously variable control dampers with local control intelligence, a central ECU and specific sensors.

It includes proprietary, real-time algorithms which adjust damping force at each corner of the vehicles every 10ms, optimising vehicle ride comfort, handling, safety and speed.



The controllable dampers are filled with Electrorheologic (ER) fluid, which reacts to externally applied electrostatic fields by a fast reversible change in yield stress or viscosity.

The dampers do not use any electro-mechanical valves, are very stable, quiet and extremely responsive, both in terms of dynamic response (fast) and dynamic range (turn up ratio).

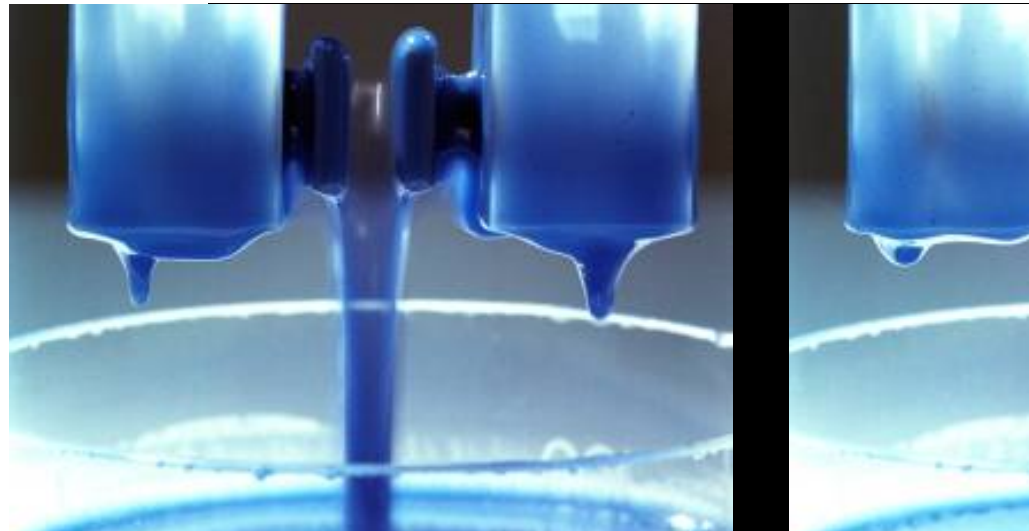
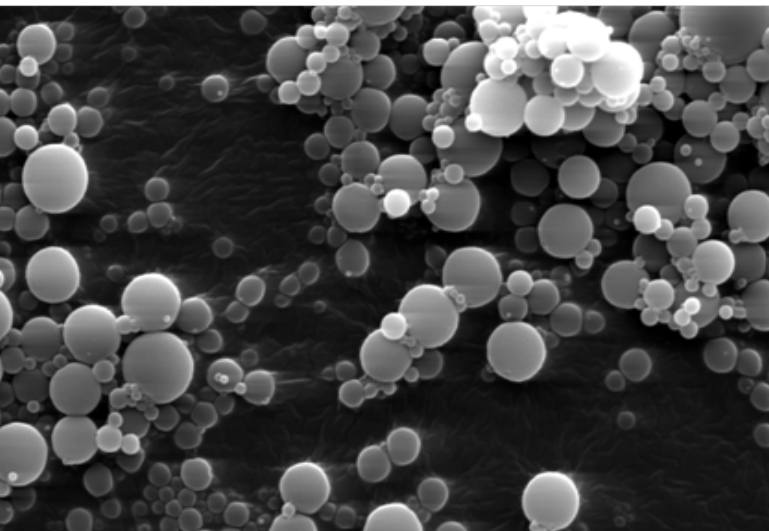
The electrostatic field is generated by the local high-voltage power driver built within the CarCon, which is mounted directly on



Fludicon's ER fluid consists of silicone oil and micron-sized polyurethane particles and proprietary additives; it is produced by Fludicon's proprietary process.

The yield stress of the ER fluid changes in the presence of an external electric field. The ER effect is very fast and completely reversible.

The fluid is light (specific gravity = 1.04), non-abrasive, non-toxic and eco-friendly.



shocks and struts of twin-tube construction.

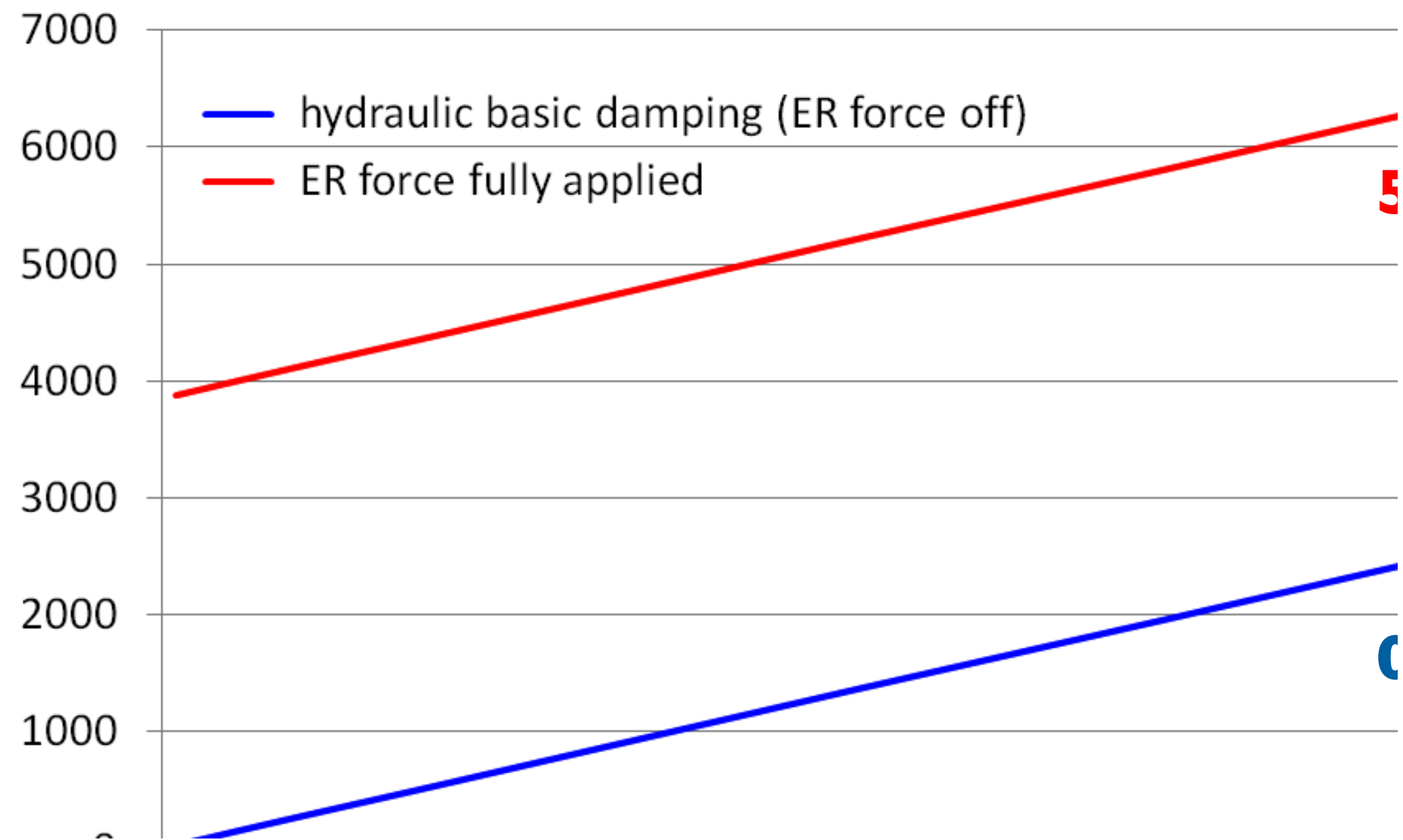
low Nitrogen pre-charge pressure for low friction and low gas

standard damper parts and materials used extensively.

ER fluid flow annulus formed by inner cylinder tube (+ electro
damper tube (ground electrode) where the ER effect takes place

ample base and piston check valves rectify the flow (ER fluid fl
the direction through the annulus).





Vehicle Applications

Control Strategies, Release I

At low vehicle speeds, comfort is emphasized, and control parameters are low.

At higher vehicle speeds, improved road holding is emphasized.

Control Strategies, Release II (with CAN access, lateral acceleration sensor, steering wheel sensor)

Skyhook control emphasizes road isolation and comfort when driving

Groundhook control emphasizes road holding when manoeuvring (steering, accelerating)

Vehicle Configurations and Transports

Driver's preference switch (Sport/Comfort settings) can be added

VB-Airsuspension specializes in air suspension systems for LCV and Van. The company is an OE supplier to eight top-range LCV and VAN manufacturers and an active partner for new developments.

In the LCV and Van market there is no doubt about the fact that air suspension will have an even stronger entrance in the future.

Discussions with several vehicle manufacturers have shown that the benefits of mechanical suspensions need to be more substantial to justify the cost at larger volumes. Cost vs. Performance vs. Safety are not properly balanced. VB sees a need for a combined, low-cost leveling system together with a damping control system. Next generation VB-Airsuspension system will be a combination of a VB-NivoAir like system with a **VB-eRRide®** Phase I.

For special applications and low market volumes there will be a VB-FullA

Conventionally Sprung Vehicles)

Mercedes-Benz Sprinter

First project of VB-eRRide is based on Mercedes-Benz Sprinter 5,0T. The application for a Letter of Non Objection (LONO) from Daimler AG is in process. VB-Airsuspension Partner for Mercedes-Benz Vans they work closely together to introduce this system as a future option to their Vans.

At Stand 5120, you can see one of the first vehicles with the **VB-eRRide®** system. VB-Airsuspension has started testing of the system with a selective number of the following markets:

- Bus / Coach application, VDL-Kusters in Holland
- RV / Camper application, Le Voyageur France
- Rescue / Ambulance application, GSF Germany

AMC chassis on Fiat Ducato

