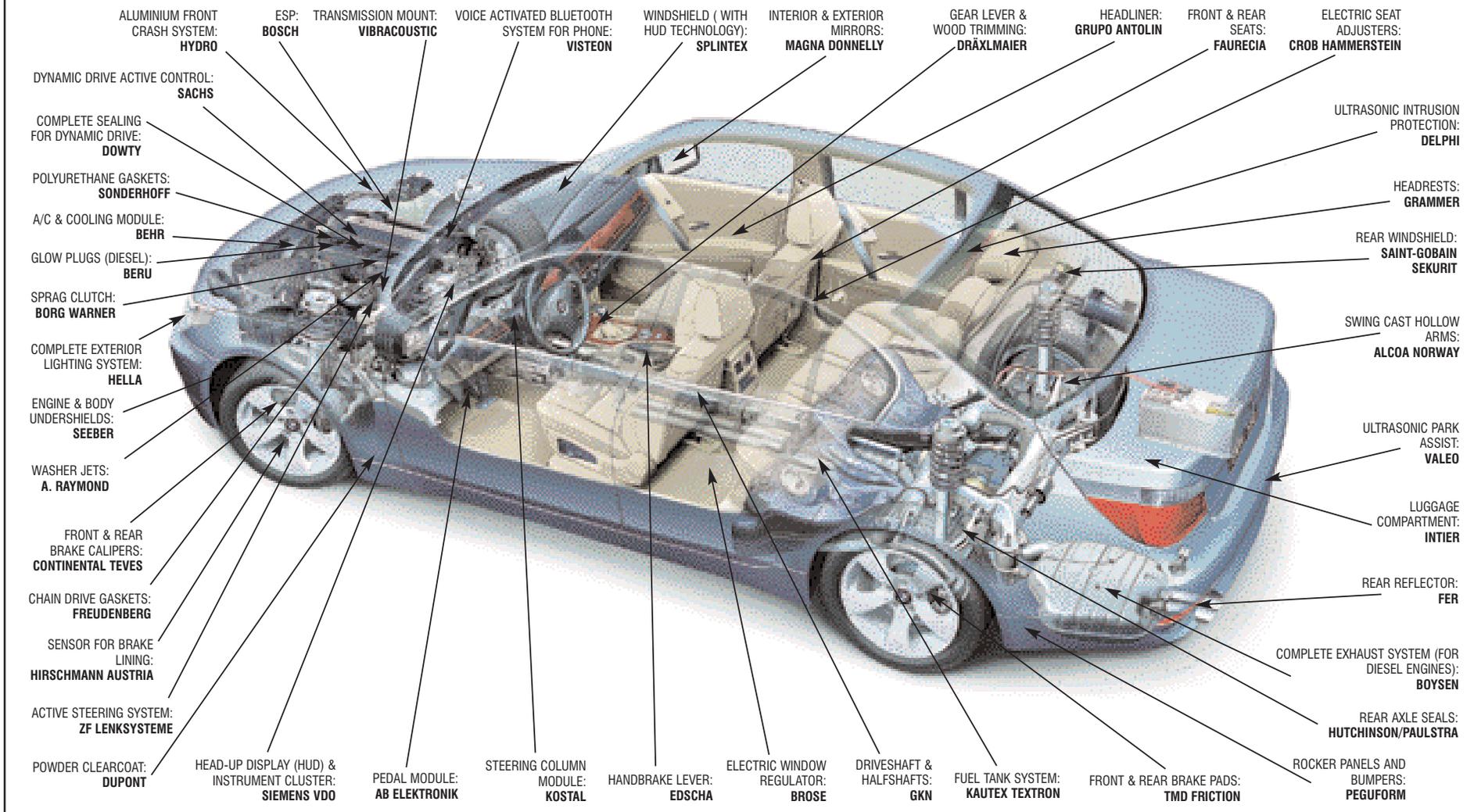


Suppliers to the BMW 5 series



BMW 5 series adds technology, luxury features to fight E class

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AUTOMOTIVE NEWS EUROPE

BMW's new 5 series adds technology and luxury equipment to compete with the Mercedes-Benz E class sedan which was introduced in the first half of 2002.

The 5 series uses advanced chassis production technology and is packed with innovations, many developed by suppliers.

The front subframe or cradle is all aluminum, while the rest of the body-in-white is made from traditional steel.

The front fender, hood and the front and rear suspension are also aluminum. The new 5 series is 75kg lighter than its predecessor.

Several supplier-developed technologies are aimed at increasing comfort and convenience.

German steering systems supplier ZF Lenksysteme's radical Active Steering is the closest to a steer-by-wire system in production. By adding an electronic override to standard rack-and-pinion power steering, the steering ratio can be varied to suit driving conditions.

Active Steering also is integrated into Robert Bosch's Electronic Stability Program, an active braking system. In case of loss of vehicle control, safety systems can use wheel and engine braking to restore a stable course. Active Steering also can correct under- or oversteer.

Active steering

ZF Lenksysteme hopes the €1,000 option sells. BMW has exclusive rights to the technology until 2005, which is a long time to turn away other automakers if BMW sales are slow.

Active Steering also is expected to be offered on the 6 series coupe, which will debut in September at the Frankfurt IAA.

German chassis supplier ZF Friedrichshafen supplies the dynamic-drive suspension system, as it does for the 7 series. The system provides active input onto the vehicle's anti-roll bars to keep the body of the car flat while cornering.

Robert Bosch will supply the Active Cruise Control which is already on the 7 series.

The system maintains a pre-set distance from the vehicle in front by reducing speed if traffic slows down. Once the road ahead is clear, Active Cruise Control returns the vehicle to the original cruising speed.

A simplified, second-generation iDrive controller interface also comes from the 7 series. Many 7 series owners disliked the original

iDrive – it was difficult to learn and prone to malfunction. BMW defended the device's potential and stuck with it in the 5 series.

Swiveling lights

Hella's adaptive front lights are available as an option in combination with bi-xenon headlights. Adaptive front lights can swivel up to 15 degrees horizontally as drivers steer around corners. The rear lights also offer Brake Force Display technology. Using light emitting diodes as the light source, the system causes the brake lights to shine brighter as the driver presses the brake pedal harder. Coupled with LED light-up time (250 milliseconds quicker than conventional bulbs) Brake Force Display can alert following drivers to heavy braking.

EU legislation does not yet permit brake-force-display rear lights,

so in European versions of the car the feature is switched off.

Another advanced feature is the Siemens VDO head-up display available as an option starting in 2004. By passing an illumination source through a thin film transistor display behind the instrument cluster, information can be projected onto the windshield. This is claimed to cut visual adjustment time – the time taken for the driver to look at the instruments and re-focus on the road – from about one second to about a half second.

The display appears to float around two meters forward of the driver's position, rather than appearing directly on the windshield.

One mirror in the projection unit is adjustable, and the system monitors ambient light levels to dim the display when necessary.