Tier 4 final with SCR

From the beginning of 2014 mobile machinery with engines over 130 kW will have to comply with EU Stage IV and US Tier 4 Final. The new legislation particularly imposes much stricter nitrogen oxide (NOx) emission limits and requires highly effective SCR systems that are over 90% efficient. Emitec develops and supplies essential components for NOx reduction based on selective catalytic reduction (SCR). During the SCR process nitrogen oxides in the exhaust gas are minimised in special catalytic converters with the addition of small amounts of AdBlue. The structured metal substrate catalytic converters ensure maximum efficiency with low pressure loss when used in SCR systems. When using metal substrates, possible special designs, such as oval cross-sections or ring-shaped versions, give engine and machine manufacturers additional scope to fit compact exhaust systems safely under the bonnet and so avoid obstructing the driver’s field of vision.

Emitec has a range of AdBlue dosing systems that are optimised for specific requirements. Compressed air atomisation systems (UDA type) are widely used in commercial vehicles while electromagnet injectors are used to atomise the AdBlue into the exhaust gas of mobile machinery without air compressors. Emitec developed the relevant UDL dosing system and cooled WCI injector, which have been in serial production for several years. In future, dosing units will be integrated in the tank to simplify assembly and reduce the number of system components because extraction unit, fill level sensors and quality sensors will be combined in the dosing unit. The system requires no extra space and fewer connections in the vehicle or machine. Emitec has developed a compatible in-tank Gen III dosing unit, which is about to go into production.
Emitec AdBlue dosing systems