



SCR-only for all tractors and combines

Case IH consistently focuses on Efficient Power for Tier 4 Final/EU Stage IV emission standards

Case IH Efficient Power engines fulfil strict Tier 4 Final/EU Stage IV emission standards / Consequent and consistent use in all tractor and combine series / Patent-registered system based on a SCR-only solution from FPT Industrial and a new generation of FPT Industrial engines

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Tractor manufacturer Case IH will exclusively use Efficient Power to fulfil the tightened emission standards of Tier 4 Final/EU Stage IV that will apply worldwide from 2014 on.

For this purpose, FPT Industrial has advanced the Euro IV technology which CaseIH will use in its new tractor and combine series, improving even more Efficient Power.

The new engines with the unique “SCR-only” technology feature an optimised combustion process that will further safeguard Case IH’s leading position in fuel efficiency. This patented process secures an extraordinary operating efficiency and at the same time an NO_x transformation rate of 95 percent – compared with 80 to 85 percent in other systems.

Innovative engine technology and exhaust gas cleaning using SCR-technology with AdBlue are combined in this system. With Efficient Power, cleaning of the exhaust gas takes place in a separate system outside of the engine the “SCR-only” solution. This enables considerably better performance at lower fuel consumption, and also added reliability of the engines.

Press Release

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Without increasing exhaust emissions or decreasing efficiency, the engines are set to maximum performance and production. Fine-tuning of the combustion process and the absence of exhaust gas recirculation through the engine allow for a noticeable increase of fuel efficiency.

As early as 2010, Case IH decided as one of the first manufacturers of agricultural machinery worldwide to deploy this system in combines and tractors in order to fulfil Tier 4 Final/EU Stage IV emission standards. Developed by FPT Industrial, one of the leading global producers of engines – and like Case IH an important subsidiary company of the Fiat Industrial Group – the system has proven to be very reliable in the field of heavy goods vehicles and commercial vehicles since its introduction to the market.

Obvious advantages for vehicle construction and use

The separation of engine and exhaust gas cleaning leads to a number of practical benefits in agricultural machinery. For instance, very compact yet powerful engines where proven and highly reliable turbo charger technology can be used. These engines offer substantially lower fuel consumption and considerably longer service intervals. At the same time, these engines produce less heat and are clearly more efficient.

“Efficient Power enables the engine to run in the ideal thermodynamic condition – resulting in optimum performance, and optimised fuel consumption. In addition, the system is less susceptible to fuel quality and heat build-up issues. As a result, and in contrast to other approaches, there are no additional cooling systems needed. Furthermore, these engines feature a higher power and torque density and run with considerably less noise and vibrations.



The SCR System developed by FPT Industrial, which is used for Efficient Power, is compatible with Stage IV”, explains Gabriele Hammerschmid, Case IH Marketing Director and responsible for the tractor market in Europe, Africa and Middle East.

Latest technology

As a result of the intensive research carried out by FPT Industrial the highly efficient SCR-only system offers outstanding AdBlue management with precision steering that covers the full range of operation.

The introduction of this new generation after treatment system sees creation of numerous significant patents such as:

- “closed” loop control for precise AdBlue dosing, which directly takes into account the Nitrogen Oxide (NO_x) produced by the engine,
- ammonia- and NO_x-sensors that detect the immediate state of the catalyser as well as its ageing, and
- an integrated mixing technology in the exhaust after-treatment, designed to ensure an excellent hydrolysis of the urea and an even distribution of the ammonia on the catalysers.

This technology allows for a transformation effectiveness of 95 percent, and for a complete conversion under certain conditions.

A system comes out on top!

With this knowledge and background, Case IH tractors will continue to be Innovation leaders.

Step by step, more and more models are adapted to the latest technology. Modifications of the engines include increasing the injection pressure and mean piston pressure. Constructional changes such as an enhanced crankshaft drive and



a modified cylinder head with higher structural rigidity go along these modifications. Furthermore, the engines come with a Common Rail System with multiple injection and maximum pressures of up to 2,200 bar.

A new electronic steering unit is also added to the engines. This unit adjusts operating modes and optimises the respective interactions.

In order to prevent oil mist from being carried along with blow-by gases, very high performance oil separation systems have been introduced. They reduce oil burning in the combustion chamber to the absolute minimum. In cursor engines, an oleophobic centrifugal oil separation is used.

High efficiency

Due to efficient engine management, particulate matter production is so low that emission standards are reached without the need to deploy a DPF (Diesel Particulate Filter). In combination with the fact that the engine only “breathes” filtered air and no recirculated exhaust gas, which is never filtered, the strain caused by abrasive wear is considerably lower.

Trendsetter in the industry

In order to fulfil the ever increasing globally emission standards, Case IH opted for SCR as key technology years ago. Since 2004, the engine specialist FPT Industrial has been working on the development of engine innovations for agricultural machinery together with Case IH.

More than 500,000 engines are built by FPT Industrial – one of the globally leading engine manufacturers – year after year. “Here we were able to fully exploit the synergies between our Research and Development Centre in Burr Ridge, USA, and the FPT Research and Development Centre in Arbon, Switzerland”, says the Marketing Director.



“Other manufacturers of tractors and agricultural machinery have only recently decided their approach in handling the latest emission standards, which are different in most cases. They now have to touch up their concepts. Case IH customers, however, are supplied with a long standing technology that today fulfils the requirements of tomorrow, which has proven its worth in practice, and which has been confirmed with regards to its functional safety and – most of all, its efficiency – by recognised research institutes”, explains Gabriele Hammerschmid. “In knowing that we also fulfil the emission standard EU Stage IV with this technology, farmers go for future oriented and reliable concepts. FPT Cursor engines are also used in utility vehicles such as the IVECO Stralis long distance heavy goods vehicle – this has proven their practical value over millions of kilometres.

More information at www.caseih.com

Press releases and photos are available online at <http://mediacentre.caseiurope.com/>.

CASE IH is a CNH brand

Case IH is the professionals' choice, drawing on more than 160 years of heritage and experience in the agricultural industry. A powerful range of tractors, combines and balers supported by a global network of highly professional dealers dedicated to providing our customers with the superior support and performance solutions required to be productive and effective in the 21st century.

More information on Case IH products and services can be found online at www.caseih.com.

Case IH is a division of CNH Global N.V., whose stock is listed at the New York Stock Exchange (NYSE:CNH), and which is a majority-owned subsidiary of Fiat Industrial S.p.A. (FI.MI). More information about CNH can be found online at www.cnh.com.

Press Release



About FPT Industrial

FPT Industrial is a company of FIAT Industrial dedicated to the design, production and sale of powertrains for on and off-road vehicles, marine and power generation applications. The company employs approximately 8,000 people worldwide, in ten plants and six R&D Centres. The FPT Industrial sales network consists of 100 dealers and over 1,300 service centres in almost 100 countries. A wide product offering, including five engine ranges from 31 kW up to 740 kW and transmissions with maximum torque from 300 Nm up to 500 Nm, and a close focus on R&D activities make FPT Industrial a world leader in industrial powertrains.

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