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Cummins New QSF3.8 Ready to Redefine Compact Power Capability

Launched at BAUMA With up to 132 HP, SCR-Only Aftertreatment for Tier 4 Final

MUNICH, GERMANY -- (Marketwired) -- 04/15/13 -- Cummins Inc. (NYSE: CMI) today unveiled the new QSF3.8 engine at the BAUMA show in Munich, with a power output extending from 85 hp to 132 hp (63-98 kW) that is ready to meet EPA Tier 4 Final and EU Stage IV emissions regulations. The 3.8-liter engine redefines the meaning of 4-cylinder compact power by delivering an unprecedented combination of performance and durability with economic operation.

The QSF3.8 simplifies machine integration by meeting near-zero emissions standards with a Selective Catalytic Reduction (SCR) only aftertreatment system. With Particulate Matter (PM) reduction focused in-cylinder, the QSF3.8 avoids the need for either a Diesel Oxidation Catalyst (DOC) or a Diesel Particulate Filter (DPF).

The innovative SCR-only system features an extra-high efficiency catalyst able to convert Oxides of Nitrogen (NOx) emissions at lower exhaust temperatures, while requiring only low dosing levels of Diesel Exhaust Fluid / AdBlue. The SCR-only system has been developed by Cummins Emission Solutions, based on industry leading experience with over 1 million SCR systems supplied.

The higher efficiency of the SCR-only aftertreatment also reduces the amount of cooled exhaust gas being recirculated (EGR) by the engine, with a corresponding reduction in engine loading and cooling demand. The lighter flow EGR system enables the performance potential of the QSF3.8 to be fully realized, with the 132 hp (98 kW) output leading the below 4-liter engine class. Peak torque of 360 lb ft (488 Nm) is effortlessly delivered by the simple, but effective Cummins wastegate turbocharger used for all QSF3.8 ratings.

"The new QSF3.8 will take compact equipment forward to Tier 4 Final standards with more power, more economy and more durability than ever expected for an engine of this size," said Hugh Foden, Executive Director - Cummins Off-Highway Business.

"We took on the challenge of introducing the 3.8-liter engine with the simplest and smallest

aftertreatment solution we could develop - and our SCR-only approach has succeeded in creating that advantage for increasingly space-constrained equipment," added Foden.

The QSF3.8 continues to uphold the enviable reputation established by the popular Cummins QSB3.3 at Tier 4 Interim / Stage IIIB emissions regulations. Although it is larger in displacement and meets stricter emissions standards, the QSF3.8 achieves fuel efficiency similar to that of the 3.3-liter engine while providing 10 percent higher power output and increasing peak torque by 18 percent. The QSF3.8 is equivalent in engine size and weight to the current QSB3.3, providing an easier transition from Tier 4 Interim to Tier 4 Final for compact equipment installations.

An extensive field test program for the QSF3.8 is underway focused on the toughest duty cycles and most challenging applications. The new 3.8-liter engine will be available for equipment manufacturers ahead of EU Stage IV standards commencing October 2014 and Tier 4 Final taking effect January 2015 for engines within the 75 hp to 173 hp (56-129 kW) category.

Smaller Meets Stronger

The QSF3.8 is built with exceptional strength at the heart of the engine, capable of the same peak cylinder pressure as the larger Cummins QSB4.5. This means the QSF3.8 is designed to operate at relaxed ease, resulting in higher in-service reliability and engine durability than equipment operators or rental companies will have experienced before from a compact engine, enhancing the residual value of their QSF3.8 powered equipment.

The QSF3.8 also takes a design lead from the Cummins QSB4.5 engine by featuring a rear gear train, providing superior mounting stiffness and lower gear noise. The high strength cast-iron block is a sculpted design, allowing unnecessary weight to be removed while retaining maximum rigidity. The use of composite material for the valve cover and oil pan brings a further weight reduction, contributing to the impressive power-to-weight credentials of the QSF3.8.

Less to Service

With robust performance and maintenance requirements kept to a minimum, the QSF3.8 is ideally suited to the high-hour duty cycles of the rental equipment market. Servicing is made simpler through remote mounting of the Electronic Control Module (ECM) for easy plug-in diagnostics and data downloads. The oil fill, lube filter and fuel filter are set up for rapid service, with 500-hour intervals.

The QSF3.8 features the Cummins Direct FlowTM air filtration system, providing greater dust-holding capacity in a smaller package and a filter element change interval at least twice that of a conventional air filter. The filter also features an embedded smart sensor to fully integrate air-intake flow with the engine combustion.

The engine is equipped with a robust high-pressure common-rail (HPCR) fuel system driven by Cummins full-authority electronic controls, delivering dependable and fuel-efficient performance.

To protect the fuel injectors against fuel contaminated with hard particles, a two-stage fuel filter system with Cummins latest NanoNetTM media traps almost 99 percent of all particles as small as 5 microns, so that the filter works more effectively for longer with less fuel-flow

restriction.

The QSF3.8 crankcase ventilation system eliminates blow-by gas emissions to provide an ultra-clean engine. The system is a patented design, integrated into the camshaft with no service requirements. The engine lubricating pump is driven by the crankshaft rather than driven by gear from the camshaft. This approach benefits the design through its simplicity and packaging benefits. Noise is reduced and oil flow improved during cold starts. A compact cooling module on the engine brings together the water pump, oil filter and oil cooler, leading to improved pressure management and better reliability.

QSF Clean Sheet Design

The QSF3.8, like the QSF2.8 before it, is the result of clean-sheet design collaboration among Cummins technical teams located in Europe, China and the United States, which are focused on introducing a fully global engine platform with forward-looking architecture.

The QSF off-highway platform shares a parent design with the preceding ISF on-highway engine. With over 160,000 ISF engines operating in Russia, China, South America and the Middle East, this proven engine population fully validates base engine reliability and durability.

Broadest Ever 4-Cylinder Range

The QSF3.8, together with the QSF2.8 and QSB4.5 extend Cummins 4-cylinder engine range to a broadest ever 49 hp to 173 hp (37-129 kW) capability for Tier 4 Final / Stage IV emissions standards, bringing electronic commonality and diagnostics.

The three engine platforms offer an ideal step-up in displacement and incremental performance to provide equipment manufacturers with 4-cylinder power for machines such as skid steer loaders, telehandlers, compact excavators and loaders, forklifts, compactors, compressors and more.

About Cummins

Cummins Inc., a global power leader, is a corporation of complementary business units that design, manufacture, distribute and service diesel and natural gas engines and related technologies, including fuel systems, controls, air handling, filtration, emission solutions and electrical power generation systems. Headquartered in Columbus, Indiana, (USA) Cummins currently employs approximately 46,000 people worldwide and serves customers in approximately 190 countries and territories through a network of approximately 600 company-owned and independent distributor locations and approximately 6,500 dealer locations. Cummins earned $1.66 billion on sales of $17.3 billion in 2012. Press releases can be found on the Web at www.cummins.com. Follow Cummins on Twitter at @Cummins and on YouTube at CumminsInc.

Note To Editor - images of the QSF3.8 can be downloaded athttp://cumminspr.com

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Source: Cummins Inc.