



QUALITY RUNS DEEP AT KCEC

First Cummins QSB6.7 engine with Stage V near-zero emissions levels on the KCEC production line in May.

Cummins and Komatsu have a long-standing partnership that cuts across many areas of the companies' businesses, including multiple joint ventures such as diesel engine design and manufacturing.



One of the joint ventures is Komatsu Cummins Engine Company (KCEC) in Japan which builds mid-range industrial engines for both companies. The KCEC facility is situated within Komatsu's Oyama plant; production started in late 1995 and the one-millionth KCEC engine was built in 2018. Production volume for 2019 is around 45,000 units.

The KCEC plant (around 40 min from Tokyo on the bullet train) is one of more than 20 global Cummins engine manufacturing sites, some of which are joint venture operations. These sites are in the US, Mexico, Brazil, China, India, Russia, Japan and the UK.

At KCEC, all of Cummins' popular mid-range engines are built – the legendary B-series (3.9, 4.5, 5.9 and 6.7 litres) along with the 8.3 litre C-series, and 8.9-litre L series. Many of the engines are Tier 4 Final emissions compliant although these will be replaced with the new ultra-clean Stage V engines for the Japanese and global markets over the next few years.



Former KCEC managing director Haruo Ohashi (left) with Fumiyasu Ono, general manager of KCEC's coordination department (centre) and manufacturing section adviser Masaru Terada.

Leading the way.

Traditional Japanese quality is at the core of KCEC's operations and there is a strong feeling within the company that there is no better Cummins or Komatsu production plant in the world.

"We pride ourselves on our quality," says Fumiyasu Ono, general manager of KCEC's coordination department and a member of a global quality committee – made up of representatives from all Cummins and Komatsu mid-range engine plants – that meets once a year to discuss any issues.

Haruo Ohashi, currently an advisor to Cummins Japan, has an intimate knowledge of KCEC's workings. He joined Komatsu in 1969 and then moved to KCEC as manager of manufacturing and engineering in 1994. He went on to become managing director of KCEC in 2011.

"The strength of KCEC is that it combines the advanced engineering technology of Cummins with the high quality manufacturing and engineering of Komatsu," he says.

He points out that the Quality First culture, including employees leading Quality Circle activities to improve the quality as well as workplace environment, is another critical factor in quality leadership.

"The employees build in the quality at KCEC because of their understanding of the product," he explains. "Komatsu invests in its employees in terms of training and providing job satisfaction and job security, and that shows in their dedication and product knowledge."

Near-zero emissions.

In May this year, KCEC produced its first Cummins QSB6.7 engine with Stage V near-zero emissions levels. The most stringent ever off-highway emissions standard, Stage V will become a requirement in Japan and other global markets over the next couple of years.

The photo of the Stage V engine accompanying this article shows there is no EGR cooler under the exhaust manifold; that's because EGR has been removed from the engine due to Cummins' technology leadership that has enabled a solution with less complexity, lower cost and higher performance than previous emissions steps.

Key Stage V benefits include increases in power and torque, reduced maintenance, longer service intervals and the use of Cummins' 'Single Module' aftertreatment technology which combines the DPF, SCR and urea-dosing in one unit, providing significant reductions in envelope size and weight compared with Tier 4 Final. ■



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