

## Kawasaki Delivers Cogeneration System with Newly Developed M5A Gas Turbine that Boosts World's Highest Energy Efficiency

Recently, Kawasaki delivered the first cogeneration (combined heat and power) system powered by Kawasaki's original 5 MW class M5A gas turbine to the IBIDEN Co., Ltd. Ogaki Plant in Ogaki City, Gifu Prefecture. IBIDEN started up the cogeneration system in July 2018 to provide both electricity and steam to the Ogaki Plant.



The M5A offers an electrical efficiency rating of 32.6%, the world's highest among 5 MW class models, and the GPB50D cogeneration system with the M5A enables a total energy efficiency rating of 84.5%—the highest in its class—for combined electricity and steam output. This outstanding energy efficiency contributes to reductions in both energy costs and CO<sub>2</sub> emissions. In the area of environmental performance, Kawasaki's latest combustion system with dry low emissions (DLE) technology achieves a 52.5 ppm (0% for O<sub>2</sub>) nitrogen oxide (NO<sub>x</sub>) emission volume. In terms of maintenance, the M5A is designed to facilitate overhaul replacement work onsite and to enable simplified interim inspections (borescope inspections),

which contribute to better annual operating rates (uptime).

The M5A gas turbine is the result of Kawasaki's small and medium-size gas turbine development technology cultivated over many years, and was released to the global market in November 2017. The integration of leading-edge technologies is the culmination of the company's experience in developing power-generation gas turbines, and boasts a track record of more than 11,000 units of this highly reliable product delivered to customers around the globe. Kawasaki's M5A gas turbine offers leading performance in the 5 MW class, for which global demand is particularly high.

## Kawasaki's US Plant Completes First Commercial Aircraft Cargo Doors for Boeing

On September 17 Kawasaki completed its first cargo doors to be used in a commercial aircraft for The Boeing Company. The doors were manufactured by Kawasaki's US subsidiary Kawasaki Motors Manufacturing Corp., U.S.A. (KMM) at its Lincoln Plant in the State of Nebraska. On the same day, a ceremony was held at the plant to commemorate the shipping out of these first cargo doors, with about 80 in attendance, including representatives from Boeing and the governor of Nebraska.

The 777 cargo doors, measuring 2.6 meters tall by 3.0 meters wide, are made of an aluminum alloy. The doors will be sent to Boeing's Everett Factory in Washington State. The Lincoln Plant will continue producing cargo doors for Boeing's cutting-edge 777X commercial aircraft, and it plans to begin shipping out finished doors in February 2019.

In pursuit of greater automation, the Lincoln Plant's aerostructure production line features proprietary painting robots

developed by Kawasaki that provide intricate, precise paint application, as well as an auto riveter with an expanded operating range, and other state-of-the-art equipment. The plant incorporates the unique KPS\* (developed through mass-production activities over many years) into line operations to achieve high-quality, high-efficiency production, while utilizing U.S.-made, locally procured materials and parts to cut down on transport costs and reduce lead times. To prepare for a future upgrade to a smart factory, the company also plans to integrate Information and Communication Technologies (ICT), the Internet of Things (IoT) and other technologies and infrastructure like those seen in the 777X assembly plant at Nagoya Works 1.

\* Kawasaki Production System: This proprietary Kawasaki production management approach aims to standardize operations in pursuit of consistent quality no matter who carries out operational tasks, thus ensuring reliable quality throughout. It also aims to establish workplace rules and regulations in order to ensure said standardized operations.



A scene from the ceremony.



Manufacturing a cargo door using an auto riveter.



First completed cargo doors.

## Kawasaki Launches 2019 Ninja ZX-6R models with New Styling and Enhanced Performance for Both Street and Track

Kawasaki launched two upgraded 2019 models in the 600 cc supersport category: the Ninja ZX-6R ABS and Ninja ZX-6R. Both were released in selected markets in early October 2018.

The Ninja ZX-6R was designed to deliver the enjoyment and thrills unique to Kawasaki 600 cc class supersport models to a wide range of riders. Compared with most supersport models in their class, these new Ninja ZX-6R models have a 636 cm<sup>3</sup> engine which boasts a 37 cm<sup>3</sup> advantage, offering



outstanding performance over the entire rpm range. Although its chassis was designed primarily for riding on winding roads, the highly versatile design offers a comfortable ride over a range of different situations, from track racing to street riding.

For the 2019 model, the gear ratio has been updated to provide a more powerful feel at low rpms. Sophisticated technologies for riding, such as KTRC\*, KIBS\*\* and the Power Mode Selector, are available on the new Ninja ZX-6R models, as well as on other recent sport models. An additional feature, KQS\*\*\* (which enables upshifting without operating the clutch), makes riding more fun on city streets and winding roads.

In terms of styling, various sections including the front and tail cowling have been updated. While the overall appearance

matches that of other Ninja models, the unique look and feel make the ZX-6R stand out in its class. New LED bulbs in the head and tail lamps improve visibility during night riding and contribute to the bikes' high-grade appearance.



\* Kawasaki Traction Control  
\*\* Kawasaki Intelligent anti-lock Brake System  
\*\*\* Kawasaki Quick Shifter

## First Order Received for New BK117 Firefighting and Disaster Relief Helicopter

Kawasaki has received an order for its leading-edge H145//BK117 D-2 helicopter (D-2) from Saga Prefecture. This is the first time Kawasaki has received a D-2 order for firefighting and disaster relief applications, and is the first such application of a helicopter by Saga Prefecture.

The D-2 was developed jointly with the European company Airbus SE, and is the latest model in the BK117 line. This new model retains the features offered by the previous BK117 C-2 that earned it high marks, such as the wide clamshell doors at the rear which enable easy loading and unloading of stretchers, and a design that is compact overall while offering a spacious interior cabin to facilitate medical procedures. The D-2 offers some novel features,

including a new computer-controlled engine, cutting-edge integrated instruments, and a new ducted-fan design for the tail rotor, which boost high-altitude performance, reduce pilot workload, and enable the quietest operation in this helicopter's class.

The BK117 is a medium-sized, twin-engine helicopter used for various purposes, including emergency medical services, firefighting, disaster relief, law enforcement, broadcasting, and personnel and cargo transport. Following delivery of the first model in 1983, this domestically produced helicopter has been continually improved over the years, and thanks to the aircraft's outstanding technological

strengths and high reliability, Kawasaki has successfully delivered 178 units as of November 22, 2018. Until today, a total of more than 1,500 BK117/EC145 helicopters have been delivered worldwide, combining deliveries made by Airbus, Kawasaki's development and manufacturing partner.



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