KOMATSU
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FACILITY

Oyama Plant

Komatsu's Manufacturing Structure for Assuring Superior Product Quality and Reliability
[Part 4: Oyama Plant]

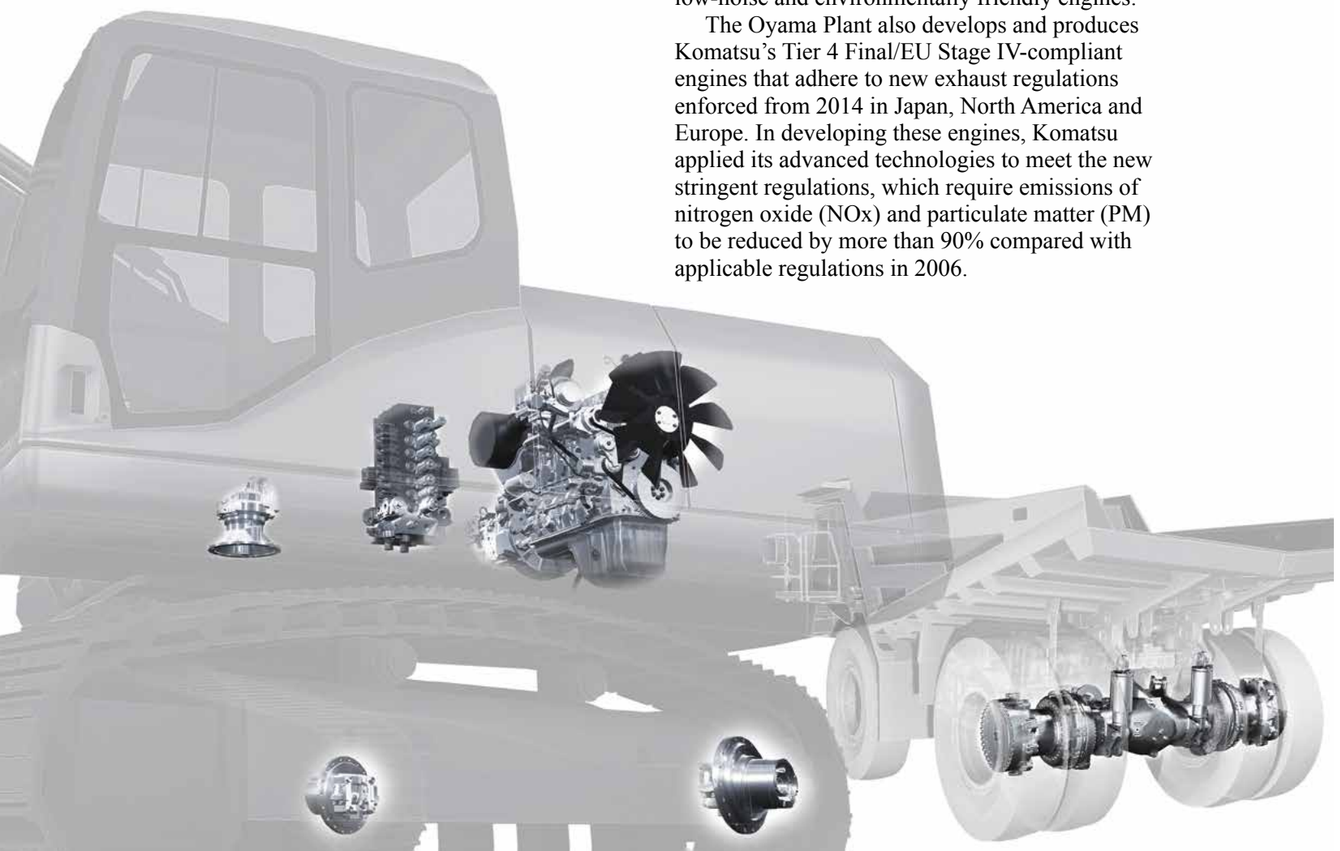
New engine designed to meet the latest emissions regulations in Japan, North America and Europe (photo created via computer graphics)

Commemorating the shipment of the first Tier 4 Final/EU Stage IV-compliant engine

The Oyama Plant carries out comprehensive operations ranging from research and development to production of diesel engines, which serve as "the heart" of construction and mining equipment; hydraulic components, which function as "the muscles"; and axles that transfer engine power to the tires. These components are supplied to Komatsu's body assembly plants around the world.

Situated 60 km (37 mi) north of Tokyo in Oyama, Tochigi Prefecture, the Oyama Plant is easily accessed in just 40 minutes by the Shinkansen bullet train. Having marked its 50th anniversary in 2012, the Oyama Plant boasts the third longest history among Komatsu's production sites after the Awazu Plant and the Osaka Plant. Built in December 1962 as a plant for manufacturing casting components for engines*, the Oyama Plant subsequently began producing diesel engines in 1969, hydraulic components in 1990 and medium- and large-sized axles in 2009 to form its current production structure.

* In 2010, production was transferred to the Himi Plant of Komatsu Castex Ltd.



Top Quality and Trustworthy *Mono-dzukuri* (Manufacturing)

Wide-Ranging Engine Lineup

Utilizing the latest technologies, the Oyama Plant manufactures high-powered, fuel-efficient, low-noise and environmentally friendly engines.

The Oyama Plant also develops and produces Komatsu's Tier 4 Final/EU Stage IV-compliant engines that adhere to new exhaust regulations enforced from 2014 in Japan, North America and Europe. In developing these engines, Komatsu applied its advanced technologies to meet the new stringent regulations, which require emissions of nitrogen oxide (NOx) and particulate matter (PM) to be reduced by more than 90% compared with applicable regulations in 2006.

Engine Lineup

Displacement (ℓ)	Main Applicable Models
3.26	PC78–138 hydraulic excavators PW98 wheel excavators D31–39 bulldozers WA80–150 wheel loaders FH40–50/FD60–80 forklift trucks
4.46	PC160/170 hydraulic excavators HB205 hybrid excavators D39/51 bulldozers WA200 wheel loaders
6.69	PC200–290 hydraulic excavators D61 bulldozers WA270–380 wheel loaders
8.27/8.85	PC300–390 hydraulic excavators HB335 hybrid excavators D65 bulldozers WA430 wheel loaders
11.0	PC400–490 hydraulic excavators D85 bulldozers WA470–480 wheel loaders HM300 articulated dump trucks
15.2	PC600–850 hydraulic excavators D155–275 bulldozers WA500 wheel loaders HD325–405 rigid dump trucks HM400 articulated dump trucks
23.1	PC1250 hydraulic excavators D375 bulldozers WA600–700 wheel loaders HD465–605 rigid dump trucks
30.4	PC2000 hydraulic excavators D475 bulldozers WA800–900 wheel loaders HD785 rigid dump trucks
46.3	D575 bulldozers

Notes:
Besides engines for construction and mining equipment, the plant also manufactures engines for generators, marine vessels and rail cars.
The above information is as of March 2014. Not all models are provided, and applicable models vary depending on the countries.

Hydraulic Components that Combine Strength with Subtlety

Hydraulic components function as the linchpin of the operating performance of construction and mining equipment. Rugged worksite conditions require outstanding durability and precise performance for controlling fine amounts of hydraulic oil. The Oyama Plant primarily produces such hydraulic components as piston pumps, control valves and turning/drive motors for 20-tonne (22-U.S.-ton) class hydraulic excavators as well as hydrostatic transmission (HST) pumps and HST motors for bulldozers, wheel loaders and forklift trucks.

Axles for Reliably Transmitting Power

Axles are high-quality components that combine precision and toughness for fully transmitting engine power to 20-to-570-tonne (22-to-628-U.S.-ton) construction and mining equipment. The Oyama Plant manufactures medium- and large-sized axles used in dump trucks, wheel loaders and forklift trucks equipped with tires.

Assembly workshop for control valves, which send oil to hydraulic components

A child experiences how to tighten a torque on the annual open day.

Production line for large-sized axles

Environmental Protection and CSR Activities

The Oyama Plant manufactures products by pursuing quality and reliability and leveraging the high-level integration of humans with technology. Besides manufacturing, the Oyama Plant actively promotes initiatives for safety education (safety first), environmental protection and social contributions.

Pursuing Reman Business

Komatsu engages in the Reman (remanufacturing) business and actively promotes the reuse and recycling of components. Currently, Komatsu operates a total of 11 Reman factories and centers worldwide, restoring such used components as engines and transmissions to the same high quality as components that are as good as new condition and supplying them to the market. As a Mother Plant that possesses functions for both development and production of engines, hydraulic components and axles, the Oyama Plant takes the lead in the cultivation, dispatch and assignment of professional staff. By doing so, the Oyama Plant is assuming responsibility for safety, legal compliance, quality, delivery and cost (SLQDC) at overseas Reman Child Plants, while carrying out life cycle cost (LLC) reduction activities to ensure customer satisfaction.

SEEK activities carried out by plant manager

SEEK Activities Originating at the Oyama Plant

Komatsu undertakes quality control (QC) involving *kaizen* (continuous improvement) activities throughout the world. The Oyama Plant is carrying out its own independent *kaizen* activities, namely SEEK (Shimotsuke* ecology & economy *kaizen*) activities, which aim for eco-conscious, safe and excellent-quality production at low cost.

Commenced in 1999, SEEK activities involve presenting improvement examples at monthly assessment meetings. Excellent cases are applied at other production sites with the overall goal of vitalizing workplaces. To date, a cumulative total of 12,000 improvement proposals have been made, whose effects have amounted to more than ¥3.1 billion.

* Shimotsuke: Former name of Tochigi Prefecture

Contributing to Society

The Oyama Plant was quick to commence activities for energy conservation and recycling industrial and other waste and became the first plant to achieve zero emissions among manufacturers of construction equipment in Japan in 2001. Based on the know-how nurtured through these activities, the Oyama Plant provides guidance outside the company and serves as an environmental advisor in Tochigi Prefecture. The plant also strives to interact with members of the community through various events and holds the annual open day as an opportunity to provide the community with a deeper understanding of Komatsu and the Oyama Plant.

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