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Komatsu's 363 tonne capacity 980E-4: its largest-ever haul truck

Komatsu Australia has announced the release of the 980E-4 electric-drive haul truck – its largestever – with a payload capacity of 363 tonnes (400 US tons).

Power for the 980E-4 comes from a Komatsu SSDA18V170 Tier 2 engine, rated at 2611 kW which in combination with its GE Mining dual IGBT electric drive system provides a top speed of 60 km/h.

According to Scott Harrington, Komatsu Australia's National Product Manager, Mining, this engine provides one of the lowest brake-specific fuel consumption (BSFC) in this truck class.

Applications for this truck include iron ore, coal and other resources requiring bulk material movement when matched to large loading tools, to deliver the lowest possible cost-per-tonne.

As with other trucks in Komatsu's ultra class electric drive haul trucks range, the 980E-4 was designed, developed and manufactured by Komatsu America Corp at its Peoria operation in Illinois for customers around the world.

"Komatsu was the first to introduce AC drive systems for ultra-class mining trucks in 1996, and has ever since continued to demonstrate to our customers in Australia and globally the incomparable performance and reliability that Komatsu trucks provide," Harrington said.

"The 980E-4 is based on the proven high quality Komatsu design that will deliver exceptional productivity and outstanding availability over the whole life of the asset, to provide our customers with the lowest cost per tonnage haulage option."

"In addition to the its fuel-efficient engine and Invertex II AC control group, the 980E-4 features multiple disc oil -cooled (wet disc) brake design, Payload Meter 4 and frame castings in high stress areas continuing Komatsu's commitment to unsurpassed life and structural integrity of the main chassis," he said.

A number of major components on the 980E-4 are common to Komatsu's successful and well proven 960E-2 truck. These include the engine, radiator, alternator, retarder and cab.

Other key components have been developed specifically for the new 980E-4, engineered to meet the demands of its 363 tonne rated payload.

These major component changes include larger wheel motors and hydraulic components.

The new GDY108C wheel motors, based on GE Mining's proven GDY108B design, are longer to accommodate the 980E-4's 44 inch rims and incorporate a number of gearing and bearing design changes.

"With the new truck's hydraulic components, Komatsu's approach has always been to have a simple and reliable hydraulic system, and the 980E-4 continues that design philosophy," said Harrington.

"Hoist cylinders, steering cylinders and suspension cylinders have all increased in capacity, ensuring that with these trucks we can maintain a known rated hydraulic system pressure and Komatsu component design life targets."

Harrington said that while increasing the size of equipment can deliver economies of scale for reduced cost per tonne, this can only be realised by customers if the equipment continues to provide the highest levels of availability, enabling high equipment utilisation.

"Komatsu ultra class mining trucks – including the new 980E-4 – will continue to provide industry leading availability performance.

"This outstanding reliability allows our customers to maximise and maintain productivity targets through optimum use of loading tools, consistent planning of maintenance activities and efficient use of labour personnel," he said.

"An interesting metric now being monitored by a number of our customers is the labour-hour-tomachine-operating-hour ratio.

"The reliability features and maintenance-friendly design of Komatsu electric drive trucks is providing our customers with lower labour-hour-to-machine-operating-hour ratios than many of our competitors."

Harrington said that with the 980E-4, Komatsu has continued this maintenance-friendly approach through such design features as:

- Removable power modules
- Simple hydraulic systems with a single common tank
- Removable pump subframe
- Oil-cooled multiple disc brakes for reduced brake wear and maintenance requirements compared with dry disc brakes, less
- Less lubricants than similar class trucks
- Advanced machine diagnostics including Komatsu's KOMTRAX Plus remote monitoring satellite communication system.

The 980E-4 can also be fully integrated with management systems such as Modular Mining's Dispatch and MineCare products.

The new truck's cab also brings the same comfort features and operator controls used in Komatsu's other Ultra-Class trucks, including air-ride seats, easy-to-use instrument panel with automatic retard speed control and fully adjustable climate controls.

"The first commercial fleet of the new 980E-4 has now begun delivery at an overseas mining operation with an initial fleet size of 30 plus units to be delivered this year," said Harrington.

"We are also working closely with a number of Australian customers for the introduction of this new model in the near future."

Brief specs of the 980E-4 are: Payload, 363 tonnes (400 US tons); fully loaded weigth, 625 tonnes (689 US tons); body capacity, by design; engine, Komatsu SSDA18V170 QSK78 rated at 2611 kW; maximum loaded speed, 60km/h; braking system, 4476 kW electric dynamic retarder plus wet disc brakes front and rear; tyre size, 59/80R63(standard); overall height, 8 m.

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