

# Construction Machinery

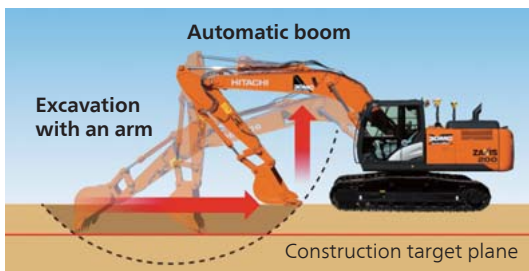
## 1 ICT Hydraulic Excavator ZX200X-5B

Hitachi Construction Machinery Co., Ltd. released the ZX200X-5B hydraulic excavator, which is equipped for construction assisted by information and communication technology (ICT), as a forerunner in the upcoming era of the Internet of Things (IoT).

In ICT-assisted construction with the use of a hydraulic excavator, operators are provided with guidance on the positional relationship between the machine and the construction target plane, and control is implemented to prevent the machine from intruding into the target plane. This excavator is equipped with a machine control function and a guidance function so that the machine, or its front part, will be semi-automatically controlled on a real-time basis based on the position and attitude information of the machine from the satellite positioning and attitude sensors and the three-dimensional (3D) design data on the construction target.

The main features are as follows.

(1) Equipped with a function that prevents excessive excavation beyond the target plane and with a machine



1 ZX200X-5B (top) and its machine control function to prevent excessive excavation (bottom)

control function that maintains the bucket angle for facilitating operations.

(2) Equipped with an original two-dimensional (2D) machine guidance system that is easy to introduce, even in small-scale construction work.

(3) Provides four different functions, namely 2D and 3D machine guidance and 2D and 3D machine control, in collaboration with an external 3D machine guidance system.

In the future, the company will expand its model lineup and promote it on the global market.

(Hitachi Construction Machinery Co., Ltd.)

## 2 Compact Excavator ZX20UR-5A

The ZX20UR-5A is a new compact excavator that complies with the third standards for ultra-low noise construction machinery and construction machinery with exhaust treatment formulated by the Ministry of Land, Infrastructure, Transport and Tourism. Incorporating a high-efficiency hydraulic system, it boasts fuel efficiency 9% higher than that of existing models.

The main features are as follows.

(1) High performance

For front lever operations, it utilizes the hydraulic pilot system, which ensures ease of operations. An optional four-way multi valve for changing the control lever operation pattern may be installed underneath the operator's seat. It is equipped with a sight window through which the interior can be viewed from outside.

(2) Cab comfort

A seat slider with a wrist-control operation lever that enables the seat position to be adjusted forwards or backwards is provided as standard.

(3) Ease of maintenance

The adoption of a vertically sliding engine cover and a wide open cover that provides a large opening facing the radiator has made it easier to reach the maintenance points and carry out daily inspections.

(4) ML crane model available as an option

A model equipped with a moment limiter (ML) with a maximum rated load of 600 kg is available as a domestic option.

(Hitachi Construction Machinery Co., Ltd.)



2 Canopy model (top) and ML crane model (bottom) of the ZX20UR-5A compact excavators

### 3 Wheel Loaders Compliant with Japan, Europe and USA Emission Standards ZW220-6/ZW310-6

Hitachi Construction Machinery Co., Ltd. has released the ZW220-6 and the ZW310-6 in Japan. They are wheel loaders featuring lower environmental impacts and superior workability and complying with the latest exhaust regulations in Europe, North America and Japan.

By tuning an active engine control system, utilized in the ZW-5B series to help reduce fuel consumption, according to the requirements of the individual classes, the ZW220-6's fuel consumption is approximately 4% lower and the ZW310-6's work capacity is nearly 20% higher than that of existing models. The exhaust gas post-treatment system introduces a new urea selective catalytic reduction (SCR) system without particulate matter (PM) filters and an air cleaner with a built-in pre-cleaner to help customers reduce maintenance costs.

Other features are as follows.

(1) A ride control system and a lift arm smooth stop mechanism that helps relieve operator fatigue provided as standard.



3 ZW220-6 wheel loader

- (2) High visibility of the surroundings secured with a wide panorama cab and a rear view monitor.
- (3) Temperature-sensing automatic reverse hydraulic cooling fan, which automatically removes dust deposited on the cooling unit, provided as standard.
- (4) Function to send regular reports on operation status and emergency reports in the event of emergency alarms.

(Hitachi Construction Machinery Co., Ltd.)

### 4 Hydraulic Excavator Compliant with EU Stage IV Emission Regulations ZAXIS-6 Series

ZAXIS-6 series hydraulic excavators are 12-33 ton class excavators that comply with the Tier 4 Final emission regulations introduced in North America in 2014, with the EU Stage IV emission regulations and with Japan's 2014 standards under the Act on Regulation, Etc. of Emissions from Non-Road Special Motor Vehicles.

The main features are as follows.

(1) Environmental response

A new technology, namely the urea SCR system, has been introduced to meet the engine exhaust emission regulations. This system sprays urea water into exhaust



4 ZX225USRLC-6

gas to cause a reaction between ammonia and nitrogen oxide (NOx), thereby detoxifying NOx.

(2) Improved fuel efficiency

To further improve fuel efficiency, efforts have been made to improve the existing energy-efficient hydraulic system and the human and intelligent operation system (HIOS). An electromagnetic valve that controls pump flow rate has been added and the spool opening has been optimized. In addition, the optimal control of different operational situations has significantly heightened fuel efficiency while retaining a work capacity equivalent to that of existing models. For example, the fuel efficiency of the ZX200-6 is 22% higher than that of the ZX200-3 and 6% higher than that of the ZX200-5B.

(3) Enhanced safety

Handrails on the platform walkway and a battery disconnection switch are provided as standard to improve safety during maintenance work.

(Hitachi Construction Machinery Co., Ltd.)

## 5 Crawler Crane SCX3500-3

In response to growing demand for large crawler cranes, Hitachi Sumitomo Heavy Industries Construction Crane Co., Ltd. has developed the SCX3500-3 350-ton crawler crane. It is the smallest size\* in its class, meeting requirements at worksites that are becoming less and less spacious.

The main features are as follows.

(1) A short tail swing radius design with the live mast tail not exceeding the rear-end radius of the counterweight for operation in confined spaces and a standard design suited to large sites with the rear-end radius extended for higher-performance lifting capacity are integrated into a single machine.

(2) An optionally available mechanism for the self-installation/removal of the heavy side frames and the boom base and a mechanism for the self-erection of the rear post are utilized for safe and easy assembly and disassembly.

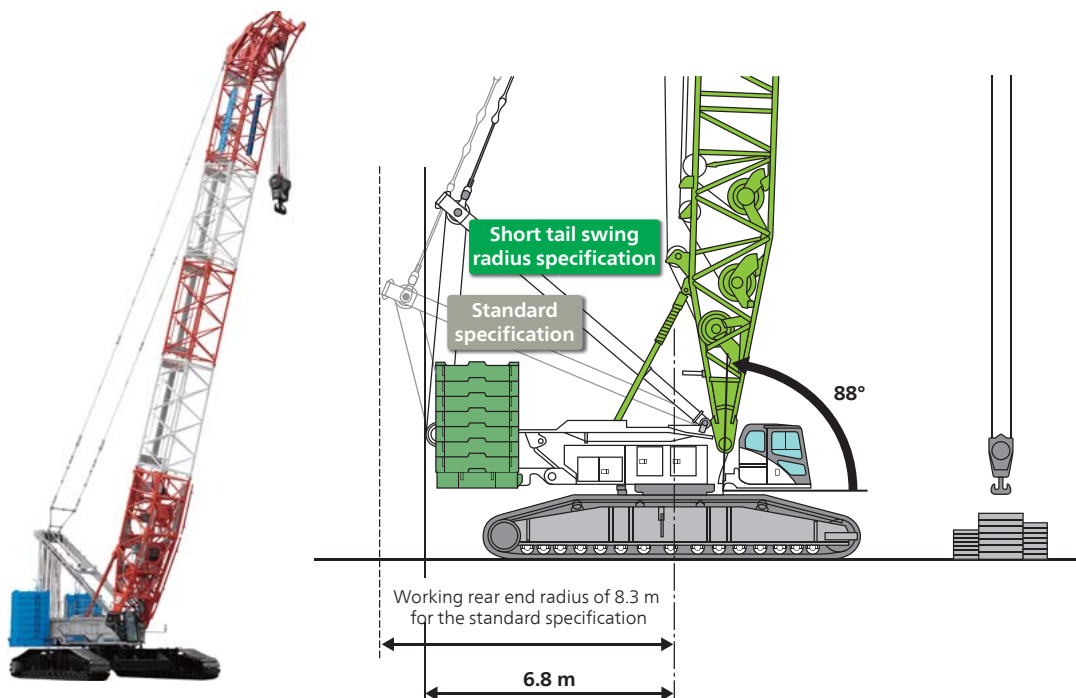
(3) The upper structure can be separated into the front and rear sections. The body transport weight has been reduced to less than 32 tons and the transport width to 2.99 meters or less. It therefore supports transport methods in consideration of the transport regulations in different countries.

(4) The engine conforms to the 2014 standards pursuant to Japan's Act on Regulation, Etc. of Emissions from Non-Road Special Motor Vehicles and has an ECO (environmentally conscious) mode, an auto start stop function and other features to achieve high fuel efficiency.

(5) It is equipped with a moment limiter with an easily viewable large screen display, an anti-two block, a swing restriction unit and other devices to increase its safety.

(Hitachi Sumitomo Heavy Industries Construction Crane Co., Ltd.)

\* As of November 2016 according to the study undertaken by Hitachi Sumitomo Heavy Industries Construction Crane Co., Ltd.



5 SCX3500-3 350-ton crawler crane (left) and an overview of the short tail swing radius specification (right)