

ZW-7 series

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New Options for the ZW-7 Wheel Loaders

Digging operation assist | 360 Aerial Angle | RCDMA



Options overview

	Digging operation assist	360 Aerial Angle	RCDMA
ZW160-7	-	●	-
ZW180-7	●	●	●
ZW220-7	●	●	●
ZW250-7	●	●	●
ZW310-7	-	●	-

● Available | - Not available

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Digging Operation Assist



What is Digging Operation Assist

When detecting the load on the wheel loader during digging, the system automatically initiates control, operating the 'arm' and 'bucket' until the bucket reaches a full tilt. Also, the timing of automatic digging start and end will be notified to the operator by sound. During the operation of Digging Operation Assist, the operator only needs to operate the accelerator, and control lever operation is not necessary. Furthermore, we have prepared an "AUTO" mode for automatic digging and a "SEMI-AUTO" mode where the operator can choose the digging start time, which can be used by a wide range of operators from inexperienced to experienced. Digging Operation Assist contributes to achieving stable soil volumes, improving productivity and reducing fatigue.

Advantages

For Less Experienced Operators

Regardless of the operator's proficiency, Digging Operation Assist can help achieve stable soil volumes and improve productivity, and you can expect to reduce fuel consumption through appropriate excavation control.

For Skilled Operators

Since control lever operation is not required during digging, it reduces fatigue while maintaining productivity at the same level as normal operation.

For the machine body

Achieving stable soil volumes and optimal digging control is expected to reduce tire load, minimize wear, decrease machine strain, and contribute to fuel efficiency by preventing overloading.



Simple mode selection and SEMI-AUTO



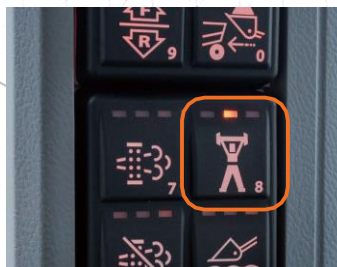
Simple Mode Selection

You can choose from two simple modes (Light digging mode, Heavy digging mode) according to the target object. Also, you can switch ON and OFF according to the work situation and the operator's preference.

*Each mode target object (recommended size)

Light digging mode (Crushed stone 20-30mm (0.8-1.2") or less)
1.6 ton/m³ (100 lb/ft³)

Heavy digging mode (Crushed stone 20-30 mm (0.8 -1.2") or more)
1.8 ton/m³ (112 lb/ft³)



* Switches in conjunction with ON/OFF switching of Power mode.

SEMI-AUTO

The 'SEMI-AUTO' mode is for operators who are used to operating and can easily use it. When you turn on the SEMI-AUTO switch next to the control lever, you can start the Digging Operation Assist at your preferred timing*.



* By pressing the DSS switch, you can start automatic digging.



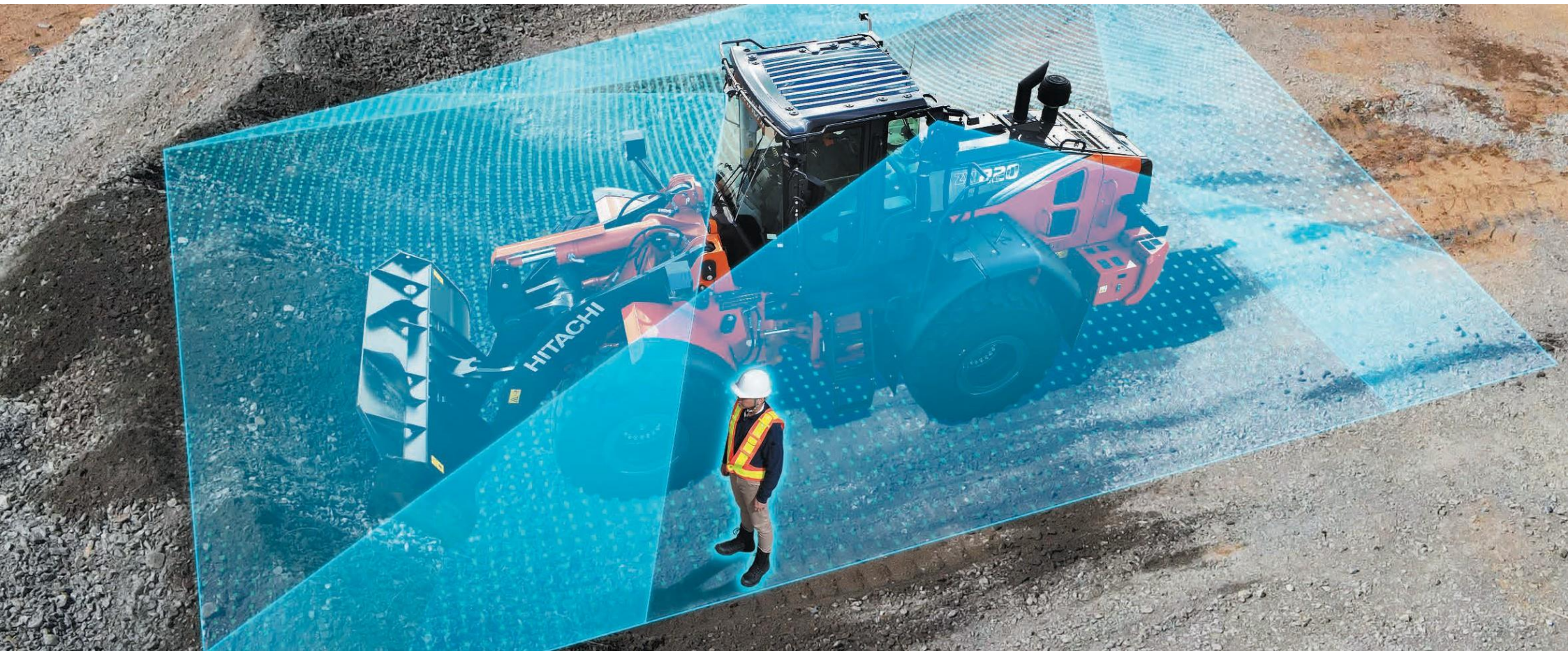
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AERIAL ANGLE (360°)



AERIAL ANGLE (360°)

Displays a seamless image, as if looking down from above, on a single screen.
Assists the operator in checking all around on the monitor screen.



The newly equipped AERIAL ANGLE (360°) uses four cameras on the front, back and both sides of the machine body and displays a seamless bird's-eye view image on the sub-monitor as if looking down from above.

Allowing the surroundings to be seen in real time at a glance both assists the operator with visual inspection and improves their field of view.

Furthermore, by adding a front camera to the conventional AERIAL ANGLE (270°), the visibility in the forward direction has been improved.

Cautions

- The range that the camera can capture is limited.
Do not over trust the camera view, and always confirm the safety around the machine before operating.
- Because each camera image is composited and displayed, there are areas where the clarity of the image decreases.

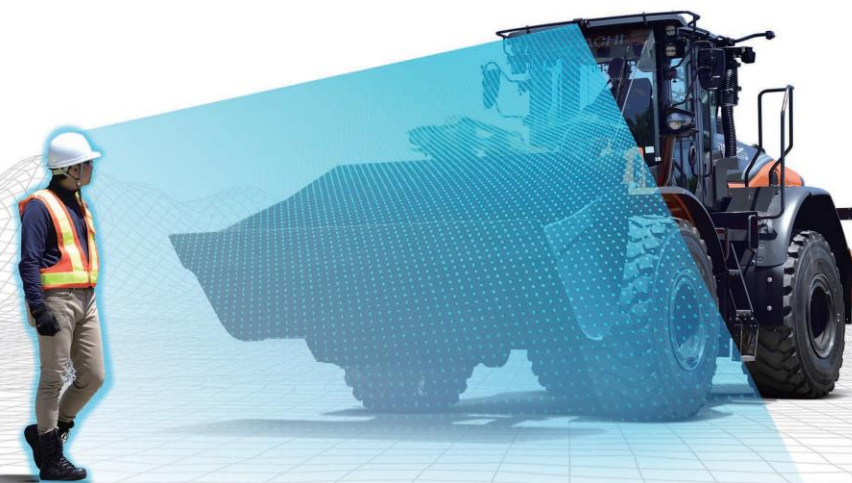


Changeable camera view

Four types of images can be displayed on the sub-monitor, and the display can be easily switched with the multi-function controller according to the operator's preference.



The advantages of the front camera



The front camera is installed at the top of the cab and captures the front from a higher position than the operator.

Because the operator has difficulty seeing the bucket and front tire during start-up and while in travel position, obstacles near the tip and front of the bucket and front tire are displayed on the monitor to support the operator's safety check.



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Rear Collision Damage Mitigation Assist (RCDMA)



Rear Collision Damage Mitigation Assist

While reversing, when an object is detected within the detection range, the operator is alerted via a buzzer and monitor to avoid collision.

Ultimately, by activating the brake at a time corresponding to the travel speed, it supports collision damage reduction*.

The system additionally alerts surrounding workers through an external alarm buzzer and flashing lamp, prompting them to take evasive action.**.

* Brake control does not operate at machine speeds of 12km/h or more.

** An external flashing lamp is additional optional equipment.



Applicable models

ZW180-7 / ZW220-7

Alert to Operator

When an object is detected, it warns the operator in multiple ways and prompts him/her to take evacuating action, such as braking.

For the operator

A warning is displayed on the sub-monitor gauge indicating that the operator is approaching the target object.



“Stop” and “Not move”

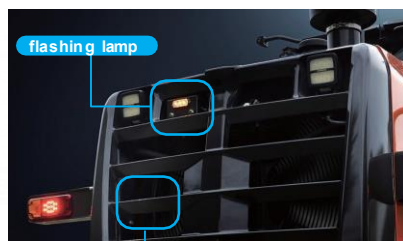
If the system determines that there is a risk of collision based on the travel speed and the distance to the object, the service brake will be activated.

The system automatically starts decelerating and eventually stops the machine to avoid collisions and reduce damage. If an object is detected while the machine is stopped, it prevents the machine from starting even if it is operated in reverse.

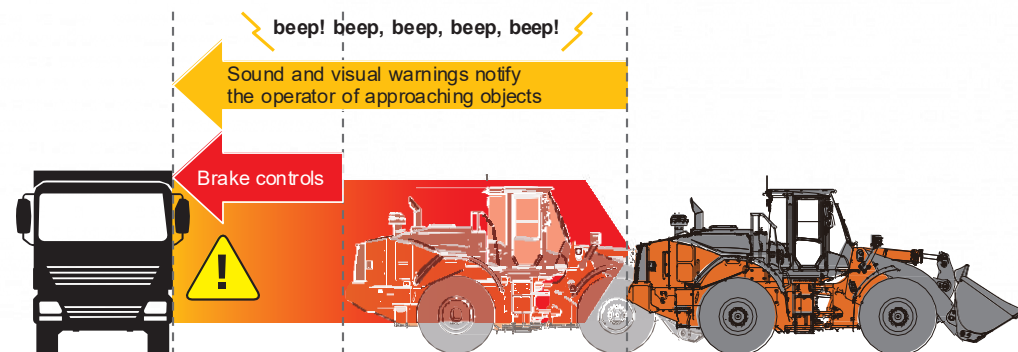
For the surrounding workers

An external warning sound and flashing lamp* alert the surrounding workers when an object is approaching in the direction the wheel loader is moving.

* The flashing lamp is an optional equipment.



external warning



* The detection range above is a sample.

Object Detection Specialized for Wheel Loader

The detection range and detection method are selected to suit the operation and job-site environment of the wheel loader. The travel speed and inclination are reflected in the detection range settings and control range, and objects are identified using an object detection sensor installed in the rear grille.

Detection range

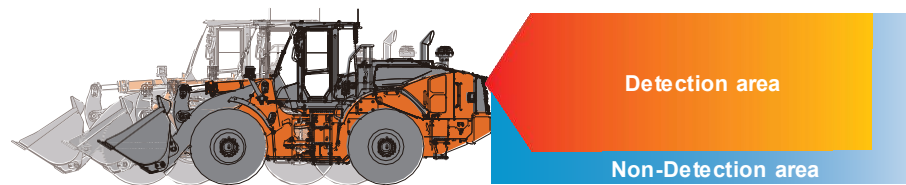
The detection and non-detection areas are set specifically for the working environment of the wheel loaders, and the detection range is limited to pursue ease of use.

Detection range is limited to the rear area.



By limiting the object detection range to the width of the machine behind, it is now possible to reverse along walls or in aisles.

Set the area near the ground as a non-detection area



* The detection range above is a sample.

In order to avoid detecting unevenness in the road surface or objects such as stones that do not impede driving, the object detection range is limited and the area near the ground is designated a non-detection area.

Object detection sensor

By adopting an infrared depth sensor that detects objects using infrared rays, compared to image processing methods*, the following features unique to wheel loaders can be achieved.

Detection accuracy has been improved even in work environments.

* comparison of our products.

An infrared depth sensor



Dusty jobsite

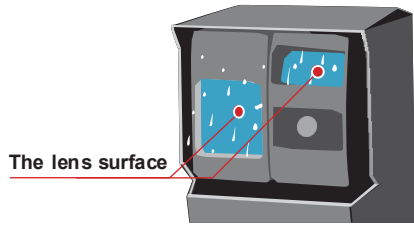


Dark places and nighttime work site

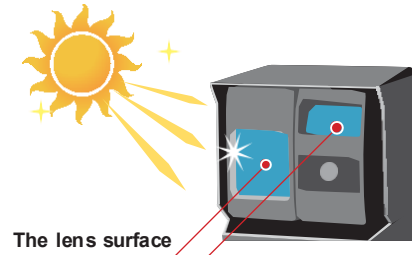


This system may not function properly in the following situations:

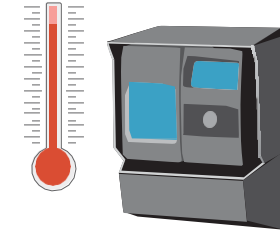
- 1 When the lens surface is not clear**
(sand, dust, mud, water droplets, snow, frost, etc.)



- 2 When intense light (backlight, reflection, etc.) is hitting the lens surface**



- 3 When used under blazing sun or in a high temperature environment**



Important This product is made of plastic molded products.
Please wipe gently with a clean cloth soaked in water when cleaning.
Please do not use organic solvents.

- 4 When the detection target (object / reflector) is as follows**

- Small size
- When it is difficult to recognize with the sensor due to the direction or size of the reflector, or dirt or deterioration caused by aging or deterioration due to aging
- When it is a color that is difficult to detect
Example: Black object (black), sand mountain (brown), net fence / sludge (gray), fence (pipe), etc.

- This system has its limitations. Depending on the detection target, surrounding environment, and situation, it may not function accurately or may stop suddenly without intending to. There is a possibility of causing a serious failure (property damage, personal injury). Do not rely solely on this system for the operation of the aircraft.
- When using this system, fully understand the contents of this brochure and the Operator's Manual, and provide a thorough explanation to the machine operator and surrounding workers.
- Do not modify this system without permission.
It can cause a serious failure (property damage, personal injury) or failure, and can cause a decrease in function or lifespan.
- This system is a device to assist in operation. Emergency stop and collision avoidance operations should be performed by the operator him/herself.
- External flashing lamp is additional optional equipment.

- When reversing on an incline, the system may sense the ground, depending on the its conditions.
- Hitachi Construction Machinery authorized dealers should provide a thorough explanation to customers considering purchasing, using this brochure and the operator's manual.
- This system has the function of detecting objects, so it may detect the following targets.
Flying objects (rain, snow, etc.), floating objects (fog, dust, leaves, garbage, etc.)
Walls, trees, embankments, accumulated snow, materials, other machines, etc.
- The contents listed in this book may be changed without notice.
- The color of the machine and the interior color may look different from the actual color due to photography and printing ink.
- The photos shown may differ slightly from the sales specifications. Also, it may include options.
- The brake control of this device does not operate at travel speeds of 12km/h or more.

Notes & Disclaimers

General operation

- Optional systems support operation but do not guarantee machine performance or work capacity.
- Before use, read and fully understand the Operator's Manual and ensure safe operation around the machine.
- System behavior may vary depending on operating conditions, usage situation, and attachments. In some cases, system operation should be stopped and the machine operated manually.

Camera & visibility

- Camera coverage is limited. Do not rely solely on camera images and always visually confirm safety around the machine.
- As multiple camera images are composited, image clarity may be reduced in certain areas.

Availability & compliance

- Availability and functionality depend on model, specifications, and market. Please refer to the relevant product brochure or Operator's Manual.
- Machines equipped with communication or monitoring systems may require compliance with local regulations when used outside their intended market. Contact an authorized dealer for confirmation.

Specifications & visuals

- Specifications are subject to change without notice.
- Images and illustrations may show optional equipment.
- Machine and interior colors may differ due to photography or printing.