

ZAXIS GI series

HITACHI

Reliable solutions

# ZAXIS220LC



## HYDRAULIC EXCAVATOR

Model Code : ZX220LC-gi

Engine Rated Power : 125 kW (168 HP)

Operating Weight : 21 200 - 21 400 kg

Backhoe Bucket : ISO Heaped : 0.90 - 1.00 m<sup>3</sup>

# ZAXIS Empower your Vision.

A ZAXIS hallmark – industry-leading hydraulic technology, and performance no other can beat.

The New ZAXIS-GI Series Excavators provide reliable solutions: impressive fuel economy, swift front movements, and easy operation. Another highlight in the new Zaxis-GI series is the optimized hydraulic system and engine which is the result of Hitachi's technological prowess and expertise.

The New ZAXIS-GI Series features the key benefits of high quality, low fuel consumption, and high durability, all of which serve to ensure low running costs.



## More Production with Less Fuel

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- Reduction in fuel consumption
- Further fuel reduction in the ECO mode
- Swift front movements with HIOS III hydraulics
- Powerful lifting operation
- Enhanced power boost
- Easy-to-use attachments
- Recommended options

## Pursuits of Performance and Durability

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- State-of-the art R&D and quality control
- Durable, reliable engine
- Rock-solid, durable front attachment
- Strengthened undercarriage
- Proven upperstructure

## No Compromise on Operator Comfort

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# More Production with Less Fuel

## Reduction in Fuel Consumption

New ZAXIS-GI Series is a fuel-thrifty excavator that can reduce fuel consumption, thanks to the HIOS III hydraulic system and engine control system, thereby reducing CO2 emissions.

## More Fuel Reduction in the ECO mode

The ECO mode, a new economical mode, can further cut fuel consumption, compared to the PWR mode, without sacrificing digging speed by optimal matching of operations.

## Swift Front Movements with HIOS\* III Hydraulics

Operating speed increases without impacting the fuel consumption thanks to the HIOS III hydraulic system, developed by industry-leading hydraulic technologies and a wealth of experience. Actuators work quickly by boom weight, without needing a regenerative circuit and pressurised oil.

\*Human & Intelligent Operation System

## Rapid Arm Roll-in

Arm roll-in speed increases by combined flow from arm and boom cylinders through regenerative valves for productive excavation.

## Fast Arm Speed During Boom Lowering

Arm speed increases by boom weight during boom lowering, without needing pressurised oil from a pump. That is, arm circuit flow is increased for higher arm speed, allowing for quick loading of a dump truck and positioning of the front end attachment.



## Powerful Lifting Operation

The Auto Power Lift mode, which automatically increases the surge lifting force by 10% when needed, allows for powerful lifting of buried concrete pipes or sheathing sheets.

## Enhanced Power Boost

The Power Boost mode allows the operator to surge 10% more digging force for powerful excavation by pressing its button on the control lever.

## Recommended Options

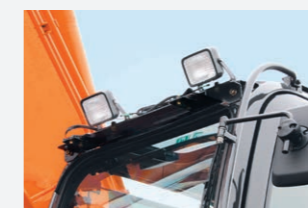
### Varied Jobs, Varied Options

Lower and upper cab front guard are provided for protection against debris, during breaker operation.

High-performance filters and in-line filters are available for tough job sites.



Attachment basic piping



Additional cab roof front lights



# Pursuits of Performance and Durability

## Prestige R&D and Quality Control

Hitachi has earned praise for technological prowess and product performance around the world.

R&D Division has a track record – including excellent design, stress analysis expertise using CAE system, and abundant production data base. What's more, a large-scale durability test field allows for a series of stringent testing of new machines.



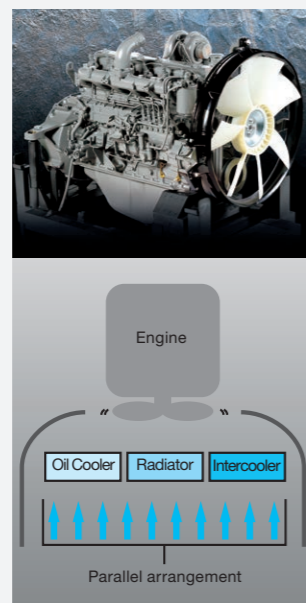
## Durable, Reliable Engine

This engine has a track record showing impressive durability at countless tough job sites around the world.

The engine — associated with a rugged design, a direct fuel injection (non-common rail) system and an elaborate governor — goes green, and complies with EU Stage II and US EPA Tier 2 emissions regulations.

The cooling system well keeps the engine cool. The engine cover has a wider air suction area, and radiators are arranged in parallel for efficient cooling. This parallel arrangement also facilitates their cleaning.

The ample-capacity intercooler and turbocharger help yield a huge 168 HP (125 kW) output for higher production in shorter job schedule.



## Rock-Solid, Durable Front Attachment

The boom top foot is reinforced with thickened high-tensile steel brackets, which incorporate steel bushings to enhance durability. Arm cylinder and boom cylinders (rod extend ends) cushion shocks at stroke end to cut noise and extend service life.

Joint pins at the front attachment are tightly fit to reduce jolt and sound. The arm-bucket joint is protected by WC thermal spraying on its contact surfaces to reduce wear and jolt. A reinforced resin thrust plate, mounted on the bucket pin, helps reduce wearing noise.

## Strengthened Undercarriage

The X-beam frame is made monolithically with fewer welds for higher rigidity and durability. Track adjusters absorb impacts to crawlers. Front idlers and adjuster cylinders are integrated to increase durability. Idler brackets and travel motor brackets are both thickened for added durability.

## Proven Upperstructure

The upperstructure frame is reinforced with the proven D-section skirt to increase rigidity against damage by obstacles. A large door catch is added to reduce shocks and jolts of the cab and upperstructure.



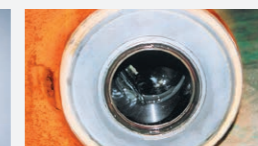
X-beam frame

Strengthened truck frame

Boom foot



Reinforced resin thrust plates



WC thermal spraying

## No Compromise on Operator Comfort



### Comfortable Operating Environment

The cabin is comfortable with plenty of leg space and excellent visibility. The new compact console gives more leg space. The new door pillar is shifted rearward by 70 mm to widen the entry space for easy access. A new room light, interlocked with the door, turns on when the door opens. The front window is easily removed and stored overhead using slide rails. The overhead, sunroof window can be opened for improved ventilation. Ample air conditioner vents are located strategically for uniform air circulation inside the cab. The control panel and control levers are arranged within easy reach of the operator. AM/FM radio with 2 speakers are available. All these designs focus on enhancing operator comfort and reduction in fatigue levels.

### Comfort-Designed Operator Seat

Ergonomically designed operator seat is fitted with a headrest and arm rests for operator comfort. The seat can be adjusted in multiple ways, sliding and reclining, to suit operator's size and preferences. The seat can slide rearward by 40 mm more for added leg space.

### Robust Cab

The robust cab, meeting the OPG (Top Guard Level 1), protects the operator from falling objects. The pilot control shut-off lever is provided with a neutral engine start system that permits engine starting only when the pilot control shut-off lever is in Lock position.



Monitor



Control panel



Large storage space

## Simplified Maintenance



### Dust-Proof Indoor Net

A dust-proof indoor net, provided at the front of radiator, can be easily removed and cleaned with compressed air. At the rear of the radiator, air blowing can be done through a one-touch open cover. The air condenser is openable for easy cleaning at its rear.

### Grouped Remote Inspection Points

Service points are concentrated inside left and right covers that are easily accessible from ground level for convenient inspection and servicing, including water draining from the fuel tank, replenishment of coolant, and replacement of filters. The fuel tank is anti-corrosion coated on its inside, and has a large cleaning port at the bottom. Handrails are provided at convenient locations for easy climbing on to the upperstructure. Slip-resistant plates are located strategically for added safety to the maintenance team.

### Attractive, Robust Body

Side frame tops of the undercarriage are sloped to let muck slide away. Track adjuster greasing ports are repositioned for easier lubrication, and well protected from muck packing.

### Life Cycle Costs

Service intervals are long enough to slash maintenance costs.



Grouped remote filters and inspection points



Utility space and radiators

Engine Oil : 500 h  
 Engine Oil Filter : 500 h  
 Hydraulic Oil : 5 000 h  
 Hydraulic Oil Filter : 1 000 h  
 Fuel Filter : 500 h



Consumables

Note: Periodic inspection is required to check oil contamination.

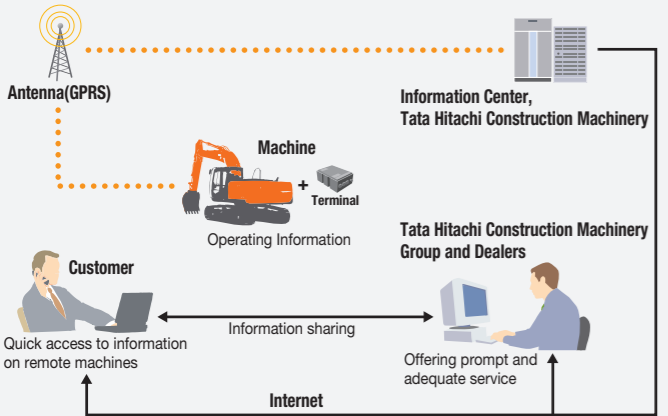
# Global e-Service



## Remote Fleet Management with Global e-Service

### Easy Access to On-Site Machines through the Internet

This on-line fleet management system allows you to access each on-site machine from a PC in your office. You can get its operating information and location to increase productivity of the fleet and reduce downtime. Operating data and log are sent to a Hitachi server for processing, and then to customer and dealers around the world. This system is available 24 hours a day, all the year around.



Note: In Some Regions, Global e-Service may not be Available due to Local Regulations.

### Main Features of Global e-Service

#### Functions

Global e-Service provides easy access to a machine on site, conveying operating information and log, including daily operating hours, fuel level, temperatures, pressures, and likes.



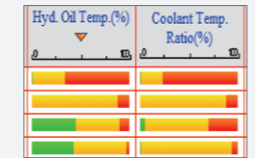
**Operation**  
\*Working site of customer machine can be determined.  
\*Route to working site of customer machine can be determined also.

Country/region	Alarm code	Engine code	Alarm content	Countermeasures
GERMANY	20101-2	ECM-CM1	Engine Alarm	1
GERMANY	20101-2	ECM-CM1	Engine Alarm	1
GERMANY	20101-2	ECM-CM1	Engine Alarm	1
GERMANY	20101-2	ECM-CM1	Engine Alarm	1
GERMANY	20101-2	ECM-CM1	Engine Alarm	1
GERMANY	20101-2	ECM-CM1	Engine Alarm	1
GERMANY	20101-2	ECM-CM1	Engine Alarm	1
GERMANY	20101-2	ECM-CM1	Engine Alarm	1
GERMANY	20101-2	ECM-CM1	Engine Alarm	1
GERMANY	20101-2	ECM-CM1	Engine Alarm	1

**Alarm function**  
Information of alarms as causes of machine failures can be received in real time.

Operation Start	Operation End	Operation Hours	Remaining Fuel
08:00	12:00	4.0	80%
13:00	17:00	4.0	70%
18:00	22:00	4.0	60%
23:00	03:00	4.0	50%
04:00	08:00	4.0	40%
09:00	13:00	4.0	30%
14:00	18:00	4.0	20%
19:00	23:00	4.0	10%
24:00	00:00	4.0	0%

**Hour meter / Daily report**  
Daily machine operation hours and remaining fuel can be determined.



**Operation information**  
Hydraulic oil temperature, swing hours and other data are determined.

# SPECIFICATIONS

## ENGINE

Model	Isuzu CC-6BG1T
Type	4-cycle water-cooled, direct injection
Aspiration	Turbocharged, intercooled
No. of cylinders	6
Rated power	
ISO 9249, net	125 kW (168 HP) at 2 100 min <sup>-1</sup> (rpm)
SAE J1349, net	125 kW (168 HP) at 2 100 min <sup>-1</sup> (rpm)
Maximum torque	637 Nm (65 kgfm) at 1 800 min <sup>-1</sup> (rpm)
Piston displacement	6.494 L
Bore and stroke	105 mm x 125 mm
Batteries	2 x 12 V / 88 Ah

## HYDRAULIC SYSTEM

**Hydraulic Pumps**

Main pumps	2 variable displacement axial piston pumps
Maximum oil flow	2 x 212 L/min
Pilot pump	1 gear pump
Maximum oil flow	33.6 L/min

**Hydraulic Motors**

Travel	2 variable displacement axial piston motors
Swing	1 axial piston motor

**Relief Valve Settings**

Implement circuit	34.3 MPa (350 kgf/cm <sup>2</sup> )
Swing circuit	30.4 MPa (310 kgf/cm <sup>2</sup> )
Travel circuit	34.3 MPa (350 kgf/cm <sup>2</sup> )
Pilot circuit	3.9 MPa (40 kgf/cm <sup>2</sup> )
Power boost	38.0 MPa (388 kgf/cm <sup>2</sup> )

## Hydraulic Cylinders

	Quantity	Bore	Rod diameter
Boom	2	120 mm	85 mm
Arm	1	135 mm	95 mm
Bucket	1	115 mm	80 mm

## UPPERSTRUCTURE

**Revolving Frame**  
D-section frame skirt for resistance to deformation.

**Swing Device**  
Axial piston motor with planetary reduction gear is bathed in oil. Swing circle is single-row. Swing parking brake is spring-set/hydraulic-released disc type.

Swing speed	13.3 min <sup>-1</sup> (rpm)
Swing torque	61 kNm (6 200 kgfm)

**Operator's Cab**  
Independent spacious cab, 1 005 mm wide by 1 675 mm high, conforming to ISO\* Standards.  
\* International Organization for Standardization

## UNDERCARRIAGE

**Tracks**  
Heat-treated connecting pins with dirt seals. Hydraulic (grease) track adjusters with shock-absorbing recoil springs.

**Numbers of Rollers and Shoes on Each Side**

Upper rollers	2
Lower rollers	8
Track shoes	49
Track guards	2

**Travel Device**  
Each track driven by 2-speed axial piston motor. Parking brake is spring-set/hydraulic-released disc type. Automatic transmission system: High-Low.

Travel speeds	High : 0 to 5.5 km/h
	Low : 0 to 3.6 km/h

Maximum traction force .. 184 kN (18 800 kgf)

Gradeability ..... 70% (35 degree) continuous

## SERVICE REFILL CAPACITIES

Fuel tank	400.0 L
Engine coolant	23.0 L
Engine oil	25.0 L
Swing device	6.2 L
Travel device (each side)	6.8 L
Hydraulic system	240.0 L
Hydraulic oil tank	135.0 L

# SPECIFICATIONS

## WEIGHTS AND GROUND PRESSURE

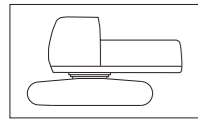
### Operating weight and Ground pressure

			ZX220LC-GI	
Shoe type	Shoe width	Arm length	kg	kPa (kgf/cm <sup>2</sup> )
Triple grouser	600 mm	2.42 m	21 200	44 (0.45)
		2.91 m	21 400	44 (0.45)

\* Including 1.00 m<sup>3</sup> (ISO heaped) bucket weight (STD: 804 kg) and counterweight (4 600 kg).

## WEIGHT: BASIC MACHINE and COMPONENTS

### Basic Machine Weight and Overall width



Excluding front-end attachment, fuel, hydraulic oil, coolant, etc., and including counterweight.

ZX220LC-GI		
Shoe width	Weight	Overall width
600 mm	16 500 kg	2 990 mm

### Component weights

	ZX220LC-GI
Counterweight	4 600 kg
Boom (with boom and arm cylinder)	2 180 kg
2.42 m arm (with bucket cylinder)	791 kg
2.91 m arm (with bucket cylinder)	947 kg
1.00 m <sup>3</sup> bucket	857 kg
0.90 m <sup>3</sup> bucket	745 kg

## BUCKET AND ARM DIGGING FORCES

Arm length	2.42 m	2.91 m
Bucket digging force* ISO	158 kN (16 100 kgf)	158 kN (16 100 kgf)
Bucket digging force* SAE : PCSA	139 kN (14 200 kgf)	139 kN (14 200 kgf)
Arm crowd force* ISO	139 kN (14 200 kgf)	114 kN (11 600 kgf)
Arm crowd force* SAE : PCSA	133 kN (13 600 kgf)	110 kN (11 200 kgf)

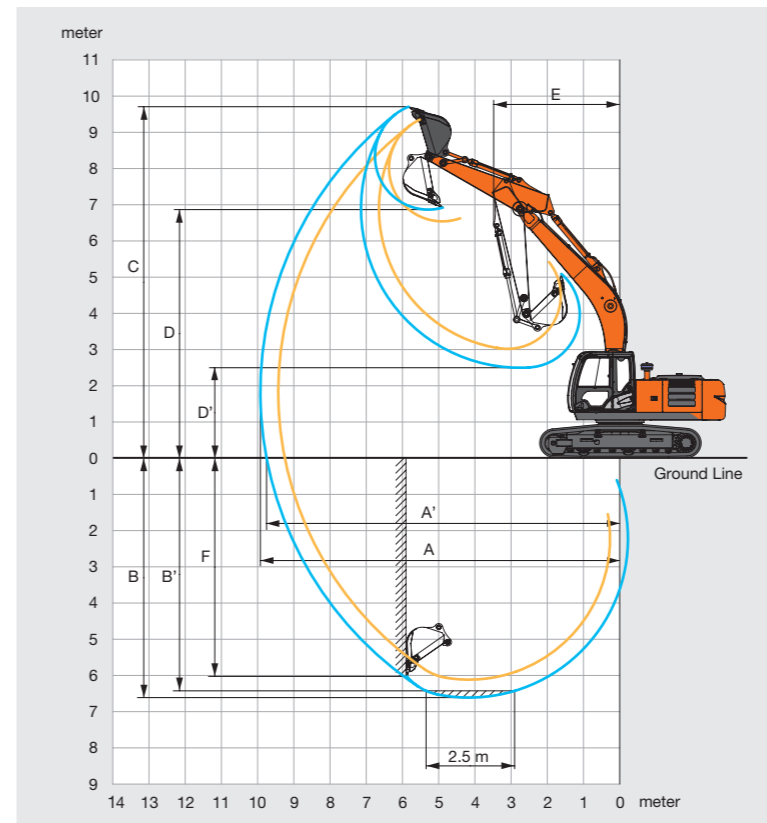
\* At power boost

## BACKHOE ATTACHMENTS

Capacity	Width		No. of teeth	Weight	Recommendation	
	With side cutters	Without side cutters			ZX220LC-GI	
ISO heaped					2.42 m arm	2.91 m arm
1.00 m <sup>3</sup>	1 340 mm	1 230 mm	6	857 kg	○	○
0.90 m <sup>3</sup> (GP)	1 240 mm	1 130 mm	5	745 kg	◎	◎

◎ Suitable for materials with density of 2 000 kg/m<sup>3</sup> or less  
○ Suitable for materials with density of 1 800 kg/m<sup>3</sup> or less  
GP: General purpose

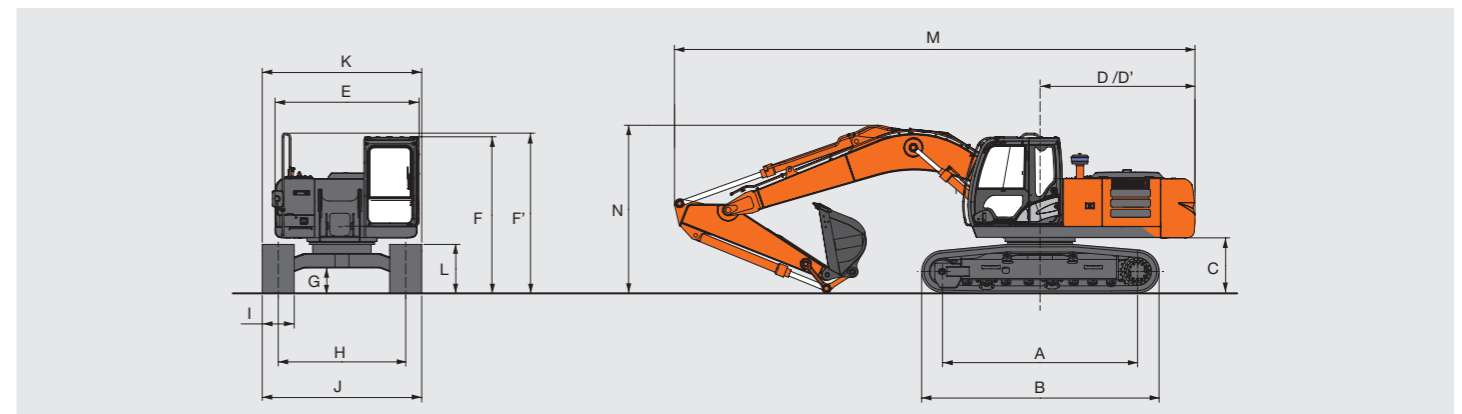
## WORKING RANGES



	Unit: mm	
Arm length	2.42 m	2.91 m
A Max. digging reach	9 430	9 920
A' Max. digging reach (on ground)	9 250	9 750
B Max. digging depth	6 120	6 610
B' Max. digging depth (2.5 m level)	5 890	6 420
C Max. cutting height	9 330	9 680
D Max. dumping height	6 520	6 850
D' Min. dumping height	3 010	2 490
E Min. swing radius	3 520	3 490
F Max. vertical wall digging depth	5 620	6 030

Excluding track shoe lug

## DIMENSIONS

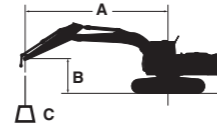


	ZX220LC-GI	ZX220LC-GI	ZX220LC-GI
A Distance between tumbler	3 660	J Undercarriage width	2 990
B Undercarriage length	4 460	K Overall width	2 990
* C Counterweight clearance	1 040	* L Track height with triple grouser shoes	920
D Rear-end swing radius	2 910	M Overall length With 2.22 m arm	9 760
D' Rear-end length	2 910	With 2.42 m arm	9 680
E Overall width of upperstructure	2 700	With 2.91 m arm	9 680
F Overall height of cab	2 940	N Overall height of boom With 2.22 m arm	3 150
F' Overall height of upperstructure	3 010	With 2.42 m arm	3 050
* G Min. ground clearance	450	With 2.91 m arm	3 010
H Track gauge	2 390	* Excluding track shoe lug G: Triple grouser shoe	
I Track shoe width	600		

# LIFTING CAPACITIES (Without Bucket)

- Notes: 1. Ratings are based on ISO 10567.  
 2. Lifting capacity does not exceed 75% of tipping load with the machine on firm, level ground or 87% full hydraulic capacity.  
 3. The load point is the center-line of the bucket pivot mounting pin on the arm.  
 4. \*Indicates load limited by hydraulic capacity.  
 5. 0 m = Ground.

For lifting capacities, subtract bucket and quick hitch weight from lifting capacities without bucket.



- A: Load radius  
 B: Load point height  
 C: Lifting capacity

## ZX220LC-GI

Rating over-front Rating over-side or 360 degrees Unit : kg

Conditions	Load point height m	Load radius										At max. reach				
		1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		meter				
Boom 5.68 m	6.0															
Arm 2.42 m	4.5															
Counterweight 4 600 kg	3.0															
	1.5															
Shoe 600 mm	0 (Ground)															
	-1.5															
	-3.0															
	-4.5															
Boom 5.68 m	6.0															
Arm 2.91 m	4.5															
Counterweight 4 600 kg	3.0															
	1.5															
Shoe 600 mm	0 (Ground)															
	-1.5															
	-3.0															
	-4.5															

# EQUIPMENT

Standard and optional equipment may vary by country, so please consult your Hitachi dealer for details.

● : Standard equipment ○ : Optional equipment

	ZX220LC-GI
<b>ENGINE</b>	
Air cleaner double filters	●
Auto idle system	●
Cartridge-type engine oil filter	●
Cartridge-type fuel pre-filter	●
Cartridge-type fuel main filter	●
Dry-type air filter with evacuator valve (with air filter restriction indicator)	●
Dust-Proof indoor net	●
ECO/PWR mode control	●
Fan guard	●
Pre-cleaner	●
Radiator reserve tank	●
Water separator	●
50 A alternator	●
<b>HYDRAULIC SYSTEM</b>	
Auto power lift	●
Control valve with main relief valve	●
Extra port for control valve	●
Full-flow filter	●
High mesh full flow filter with restriction indicator	○
Pilot filter	●
Power boost	●
Suction filter	●
Work mode selector	●
<b>CAB</b>	
All-weather sound suppressed steel cab	●
AM-FM radio with 2 speakers	●
Ashtray	●
Auto control air conditioner	●
Drink holder	●
Drink holder with hot & cool	●
Electric horn	●
Engine shut-off lever	●
Evacuation hammer	●
Floor mat	●
Footrest	●
Front window washer	●
Front windows on upper, lower and left side can be opened	●
Hot & cool box	●
Intermittent windshield wipers	●
Lower cab front guard	○
OPG top guard Level 1 (Equivalent to ISO10262) cab	●
Pilot control shut-off lever	●
Rear tray	●
Room light	●
Rubber radio antenna	●
Seat adjustment : backrest, armrest, height and angle, slide forward / back	●
Seat belt	●
Seat : Fabric seat	●
Seat : Mechanical suspension seat	○
Short wrist control levers	●
Upper cab front guard	○
4 fluid-filled elastic mounts	●
24V cigarette lighter	●
<b>MONITOR SYSTEM</b>	
Alarm buzzers : Engine overheat	●
Meters : Hour meter, trip-meter, engine coolant temperature gauge and fuel gauge	●
Pilot lamps : Engine preheat, auto-idle, and attachment mode	●
Warning lamps : Alternator charge, engine oil pressure, engine overheat, air filter restriction and minimum fuel level	●

	ZX220LC-GI
<b>LIGHTS</b>	
Additional boom light with cover (right side)	○
Additional cab roof front lights	○
2 working lights (boom left side, tool box)	●
<b>UPPER STRUCTURE</b>	
Fuel level float	●
Hydraulic oil level gauge	●
Rear view mirror (right & left side)	●
Swing parking brake	●
Tool box	●
Undercover	●
Utility space (behind cabin)	●
<b>UNDERCARRIAGE</b>	
Bolt-on sprocket	●
Reinforced idler bracket	●
Reinforced track links with pin seals	●
Track guard (each side) and hydraulic track adjuster	●
Travel motor covers	●
Travel parking brake	●
Upper and lower rollers	●
2 track guards	●
3 track guards	○
600 mm triple grouser shoes	●
<b>FRONT ATTACHMENTS</b>	
Arm length 2.42 m	●
Arm length 2.91 m	○
Bucket 0.90 m³ (ISO heaped)	○
Bucket 1.00 m³ (ISO heaped)	●
Centralized lubrication system	●
Dirt seal on all bucket pins	●
Flanged pin	●
Reinforced link B	●
Seat screws for breaker attachment	●
WC (tungsten-carbide) thermal spraying	●
<b>ATTACHMENTS</b>	
Attachment basic piping	○
Breaker piping	○
High mesh full flow filter with restriction indicator	○
Line filter	○
Parts for breaker	○
<b>MISCELLANEOUS</b>	
Global e-Service	●
Lockable fuel refilling cap	●
Lockable machine covers	●
Onboard information controller	●
Skid-resistant tapes, plates and handrails	●
Standard tool kit	●
Travel direction mark on track frame	●





**Built on the foundation of superb technological capabilities, Hitachi Construction Machinery is committed to providing leading-edge solutions and services to contribute as a reliable partner to the business of customers worldwide.**

## Hitachi Environmental Vision 2025

The Hitachi Group released the Environmental Vision 2025 to curb annual carbon dioxide emissions. The Group is committed to global production while reducing environmental impact in life cycles of all products, and realizing a sustainable society by tackling three goals — prevention of global warming, conservation of resources, and preservation of ecosystem.

### Reducing Environmental Impact by New ZAXIS

Hitachi makes a green way to cut carbon emissions for global warming prevention according to LCA\*. New ZAXIS utilizes lots of technological advances, including the new ECO mode, and Isochronous Control. Hitachi has long been committed to recycling of components, such as aluminum parts in radiators and oil cooler. Resin parts are marked for recycling.

\*Life Cycle Assessment – ISO 14040

These specifications are subject to change without notice. Illustrations and photos show the standard models, and may or may not include optional equipment, accessories, and all standard equipment with some differences in color and features. Before use, read and understand the Operator's Manual for proper operation.