

SUPER LONG FRONT

ZAXIS 160LC/210LC/225USRLC/250LC/280LC/350LC

A P P L I C A T I O N & A T T A C H M E N T

Model Code: ZX160LC-3
Engine Rated Power: 90.2 kW (121 HP)
Operating Weight: 17 200 - 18 100 kg

Model Code: ZX210LC-3 / ZX210LCN-3
Engine Rated Power: 122 kW (164 HP)
Operating Weight: 21 500 - 22 300 kg

Model Code: ZX225USRLC-3
Engine Rated Power: 122 kW (164 HP)
Operating Weight: 23 000 - 24 100 kg

Model Code: ZX250LC-3 / ZX250LCN-3
Engine Rated Power: 132 kW (177 HP)
Operating Weight: 25 600 - 26 800 kg

Model Code: ZX280LC-3 / ZX280LCN-3
Engine Rated Power: 140 kW (188 HP)
Operating Weight: 28 900 - 30 100 kg

Model Code: ZX350LC-3 / ZX350LCN-3
Engine Rated Power: 202 kW (271 HP)
Operating Weight: 33 200 - 36 100 kg



The Super Long Front in Action

Extending Working Ranges Remarkably

The Hitachi long front makes possible efficient, productive excavation in wide working ranges, backed up with a lot of features, including smoothly combined operations, high stability and easy folding for transport.

Smoothly Combined Operations

Simultaneous actions of the boom and arm are quick and smooth thanks to flow rate control valves built in boom and arm cylinder circuits, which eliminate sudden actions of the front.

Rugged Front Attachment

The front structure is built ruggedly, using high-tensile steel plates whose thicknesses are optimally determined by model.

Low Folding for Easy Transport

The super long front can be folded low for the convenience of transport.

Stable Actions

The super long front can move stably with an extra counterweight added.

Eco- and Environment-Friendly Design

The long front features an economical and environment-friendly design. Benefits include low fuel consumption and carbon emissions per the current global emission regulations, through the OHC 4-valve engine, common rail type fuel injection system and cooled EGR* system.

**Exhaust Gas Recirculation*





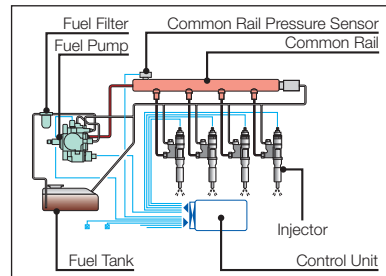
ZAXIS
210LC

Boosted Productivity

A combination of the new hydraulic system and new engine allows the efficient use of hydraulic pressure to increase speeds of actuators and boost production with higher fuel efficiency.

Common Rail Type Fuel Injection System

Electronic control common rail type fuel injection system drives an integrated fuel pump at an ultrahigh pressure to distribute fuel to each injector per cylinder through a common rail. This enables optimum combustion to generate big horsepower, and reduce PM* (diesel plume) and fuel consumption.

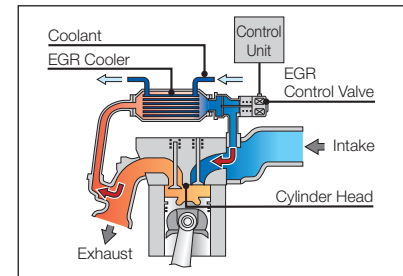


Cooled EGR** System

Exhaust gas is partially mixed with intake air to lower combustion temperature for reducing NOx and fuel consumption. What's more, the EGR cooler cools down exhaust gas to increase air concentration for complete combustion, reducing PM* (diesel plume).

*Particulate Matter

**Exhaust Gas Recirculation



A New Standard in Operator Comfort

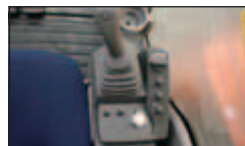


The ZAXIS-3 series cab has been redesigned to meet demands of customers. From the operator's seat the operator has an excellent view of the jobsite. On the widescreen color LCD monitor the operator can see machine conditions and with the rear view camera, what is behind the machine. Ample legroom, short stroke levers and a suspension seat with heating ensure optimum working conditions. The seat features horizontal, vertical adjustments and has a backrest contoured for comfort, with a HITACHI logo.

Full auto air conditioner/
AM/FM radio



Easy-to-control switches
panel



Drink holder



Drink holder / Hot & cool box



Personal storage space



Generous storage space



Wide adjustable armrests and a retractable seat belt are included. Three switches on the lever (optional) can be set to operate attachments other than buckets. The cab is pressurized to keep out dust. Noise and vibrations are kept to a minimum due to the elastic mounts, filled with silicone oil, the cab rests on. Visibility is improved especially for the right downward view. A flat floor allows for easy cleaning. Ergonomic controls and switches, fully automatic air conditioner and a radio complete the package.

Additional features

Cab right bars



Evacuation hammer



Pilot control shut-off lever



Embedded Information Technology

The ZAXIS-3 series is equipped with a widescreen color LCD monitor with adjustable contrast for day and night shifts. With the monitor the operator can check maintenance intervals, select work modes, monitor fuel consumption, and connect to the rear-view camera. A theft deterrent system and multi-12 languages selection are also available.



Maintenance support



Attachment support system



Multi-language selection

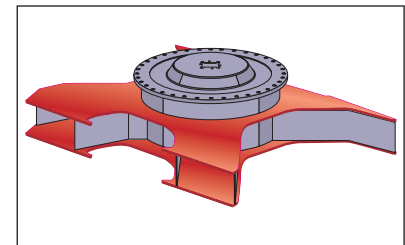


A Solid Base for a Long Life

HITACHI's technology is built on a wealth of experience and know-how from limestone sites and quarries around the world. The undercarriage of the ZAXIS-3 has become much stronger. Improved construction and enlarged box sections, a track undercover plate that protects the center joint and hydraulic hoses make this machine more durable.

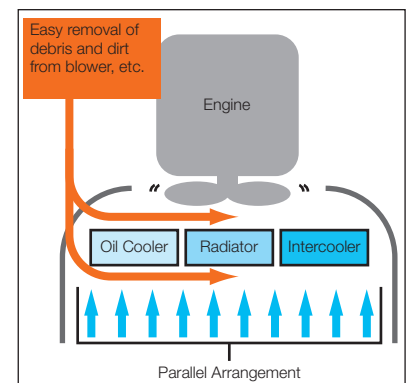
Upper and lower rollers and upper roller brackets are increased in size for higher durability. Track links are thickened and reshaped for higher durability and rigidity.

The X-beam is strengthened by the improved construction and enlarged box sections.



Simplified Maintenance

The ZAXIS-3 series meet customer demands for simplified maintenance. Regular maintenance is the key for keeping equipment in top condition, which can help to prevent costly downtime. In addition, a regularly serviced machine has higher residual value. There are many service features to be found on the ZAXIS-3 series.



The oil cooler, radiator and intercooler are laid out in a parallel arrangement, instead of the conventional in-line arrangement. This parallel arrangement is significantly easier to clean around the engine. The air conditioner condenser can be opened for easy cleaning of the condenser and the radiator located behind.

SPECIFICATIONS

ZX160LC-3

ENGINE

Model	Isuzu AI-4JJ1X
Type	4-cycle water-cooled, direct injection
Aspiration	Turbocharged, intercooled
No. of cylinders	4
Rated power	
ISO 9249, net	90.2 kW (121 HP) at 2 200 min ⁻¹ (rpm)
EEC 80/1269, net ..	90.2 kW (121 HP) at 2 200 min ⁻¹ (rpm)
SAE J1349, net	90.2 kW (121 HP) at 2 200 min ⁻¹ (rpm)
Maximum torque	402 N·m (41 kgf·m) at 1 800 min ⁻¹ (rpm)
Piston displacement ..	2.999 L
Bore and stroke	95.4 mm x 104.9 mm
Batteries	2 x 12 V / 70 Ah

HYDRAULIC SYSTEM

- Work mode selector
Digging mode / Attachment mode
 - Engine speed sensing system
- | | |
|---------------------|--|
| Main pumps | 2 variable displacement axial piston pumps |
| Maximum oil flow .. | 2 x 191 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 ²)
Swing circuit	29.3 MPa (299 kgf/cm ²)
Travel circuit	34.3 MPa (350 kgf/cm ²)
Pilot circuit	3.9 MPa (40 kgf/cm ²)
Power boost	36.3 MPa (370 kgf/cm ²)

Hydraulic Cylinders

High-strength piston rods and tubes. Cylinder cushion mechanisms provided in boom and arm cylinders to absorb shock at stroke ends.

Hydraulic Filters

Hydraulic circuits use high-quality hydraulic filters. A suction filter is incorporated in the suction line, and full-flow filters in the return line and swing/travel motor drain lines.

CONTROLS

Pilot controls. Hitachi's original shockless valve.

Implement levers	2
Travel levers with pedals	2

UPPERSTRUCTURE

Revolving Frame

Welded sturdy box construction, using heavy-gauge steel plates for ruggedness. D-section frame for resistance to deformation.

Swing Device

Axial piston motor with planetary reduction gear is bathed in oil. Swing circle is single-row, shear-type ball bearing with induction-hardened internal gear. Internal gear and pinion gear are immersed in lubricant. Swing parking brake is spring-set/hydraulic-released disc type.

Swing speed	13.3 min ⁻¹ (rpm)
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Operator's Cab

Independent spacious cab, 1 005 mm wide by 1 675 mm high, conforming to ISO* Standards. Reinforced glass windows on 4 sides for visibility. Front windows (upper and lower) can be opened. Reclining seat with armrests; adjustable with or without control levers.

* International Standardization Organization

UNDERCARRIAGE

Tracks

Tractor-type undercarriage. Welded track frame using selected materials. Side frame welded to track frame. Lubricated track rollers, idlers, and sprockets with floating seals.

Track shoes with triple grousers made of induction-hardened rolled alloy. 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	7
Track shoes	43
Track guard	1

Travel Device

Each track driven by 2-speed axial piston motor through planetary reduction gear for counterrotation of the tracks. Sprockets are replaceable.

Parking brake is spring-set/hydraulic-released disc type. Travel shockless relief valve built in travel motor absorbs shocks when stopping travel.

Automatic transmission system: High-Low.

Travel speeds	High: 0 to 5.3 km/h
	Low: 0 to 3.4 km/h

Maximum traction force	169 kN (17 250 kgf)
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Gradeability	70% (35 degree) continuous
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WEIGHTS AND GROUND PRESSURE

ZX160LC-3 TYPE H13 SUPER LONG FRONT:

Equipped with 7.00 m monoblock boom, 5.00 m arm and 0.34 m³ bucket (SAE, PCSA heaped), 4 000 kg counterweight.

Shoe type	Shoe width	Operating weight	Ground pressure
Triple grouser	500 mm	17 200 kg	49.7 kPa (0.51 kgf/cm ²)
	600 mm	17 500 kg	41.7 kPa (0.43 kgf/cm ²)
	700 mm	17 700 kg	36.2 kPa (0.37 kgf/cm ²)
	800 mm	18 100 kg	32.2 kPa (0.33 kgf/cm ²)

SERVICE REFILL CAPACITIES

Fuel tank	320.0 L
Engine coolant	18.0 L
Engine oil	17.0 L
Swing device	6.2 L
Travel device	6.8 L
(each side)	
Hydraulic system	210.0 L
Hydraulic oil tank	125.0 L

BACKHOE ATTACHMENTS

Boom and arms are of welded, box-section design.

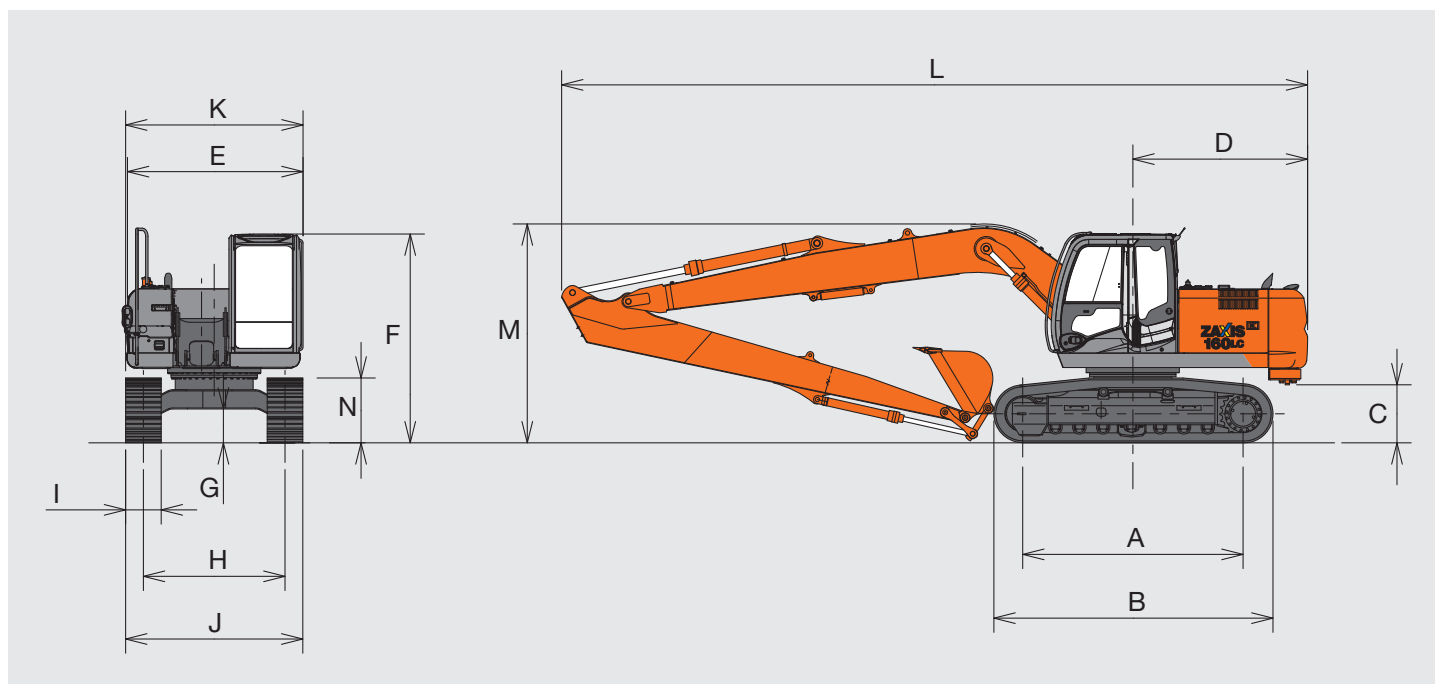
BUCKET

Capacity SAE, PCSA heaped	Width without side cutters	Weight
0.34 m ³	660 mm	262 kg

SPECIFICATIONS

ZX160LC-3 TYPE H13 SUPER LONG FRONT

DIMENSIONS



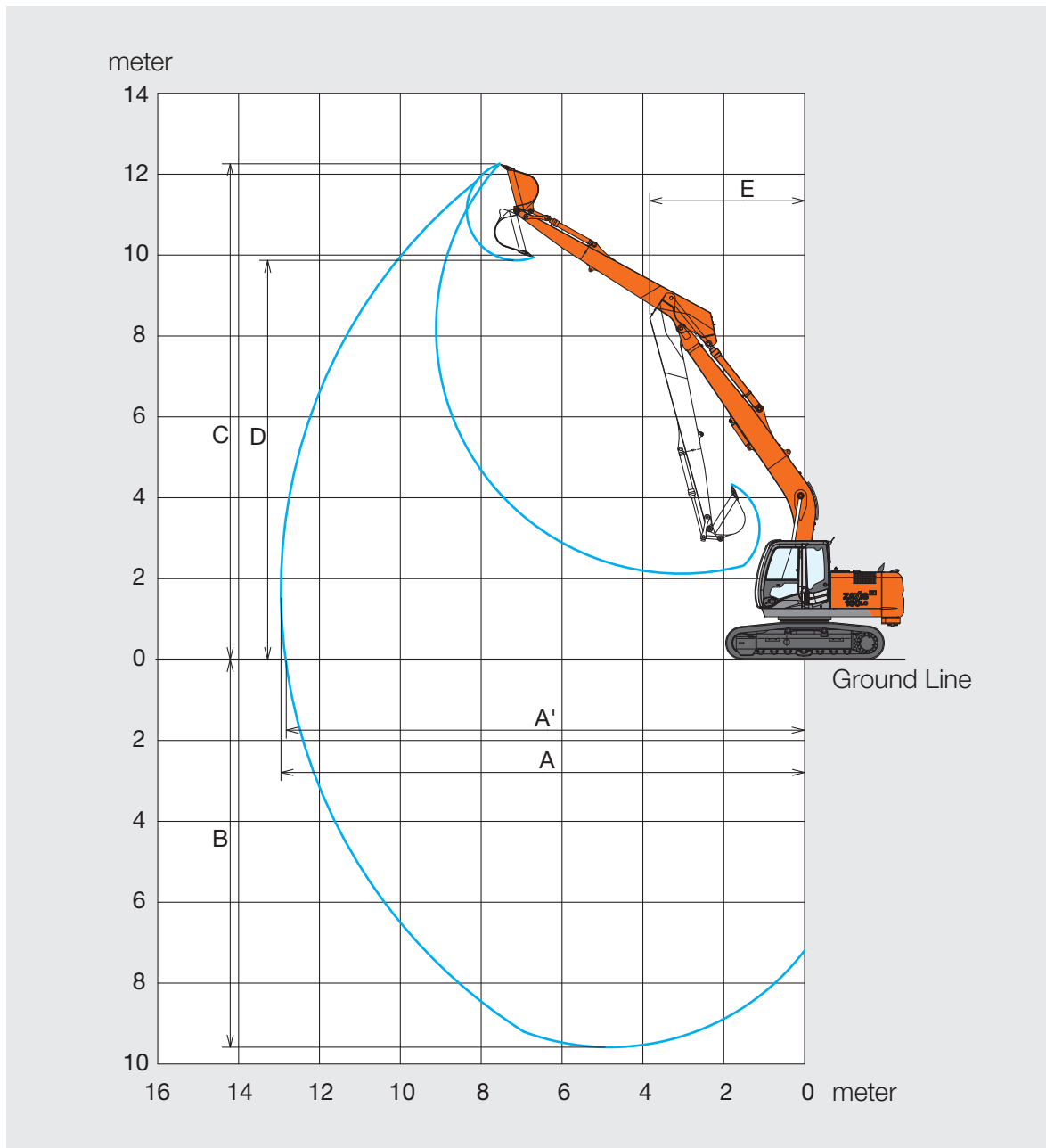
Unit: mm

	ZX160LC-3
A Distance between tumbler	3 100
B Undercarriage length	3 920
*C Counterweight clearance	885
D Rear-end swing radius	2 490
E Overall width of upperstructure	2 480
F Overall height of cab	2 950
**G Min. ground clearance	470
H Track gauge	1 990
I Track shoe width	G 500
J Undercarriage width	2 490
K Overall width	2 500
L Overall length	10 500
M Overall height of boom	3 080
N Track height with triple grouser shoes	920

• * : Excluding track shoe lug

• **: Triple grouser shoe

WORKING RANGES



Unit: mm

	ZX160LC-3
A Max. digging reach	12 970
A' Max. digging reach (on ground)	12 860
B Max. digging depth	9 580
C Max. cutting height	12 260
D Max. dumping height	9 830
E Min. swing radius	3 700
Bucket digging force** ISO	83.7 kN (8 540 kgf)
Arm crowd force** ISO	49.2 kN (5 020 kgf)

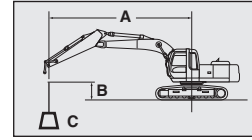
- Excluding track shoe lug
- ** At power boost

LIFTING CAPACITIES

ZX160LC-3

Metric measure

- Notes: 1. Ratings are based on ISO 10567.
 2. Lifting capacity of the ZAXIS Series does not exceed 75% of tipping load with the machine on firm, level ground or 87% of 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.



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

ZX160LC-3 TYPE H13 SUPER LONG FRONT



Rating over-front



Rating over-side or 360 degrees

Unit: 1 000 kg

Conditions	Load point height	Load radius										At max. reach		
		4 m		6 m		8 m		10 m		11 m		Meters		
Boom: 7.00 m Arm: 5.00 m Shoe: 500 mm Counterweight: 4 000 kg	10 m					*1.71	*1.71					*1.32	*1.32	8.3
	9 m					*1.80	*1.80					*1.23	*1.23	9.2
	8 m					*1.76	*1.76					*1.17	*1.17	9.9
	7 m					*1.80	*1.80	*1.84	1.63			*1.13	*1.13	10.5
	6 m					*1.89	*1.89	*1.97	1.62			*1.11	*1.11	10.9
	5 m					*2.04	*2.04	*2.03	1.59	*1.62	1.31	*1.10	*1.10	11.3
	4 m			*2.48	*2.48	*2.23	*2.23	*2.12	1.55	*2.00	1.29	*1.11	*1.11	11.5
	3 m	*4.08	*4.08	*2.93	*2.93	*2.45	2.18	*2.23	1.50	1.98	1.26	*1.12	1.12	11.7
	2 m	*5.23	*5.23	*3.39	3.16	*2.69	2.08	2.27	1.46	1.95	1.23	*1.15	1.09	11.7
	1 m	*6.22	5.08	*3.84	2.97	*2.92	1.99	2.22	1.41	1.92	1.20	*1.19	1.07	11.7
	0 m	*5.65	4.78	*4.22	2.81	3.00	1.90	2.18	1.37	1.89	1.17	*1.25	1.07	11.6
	-1 m	*5.49	4.61	4.37	2.70	2.93	1.83	2.14	1.33	1.87	1.15	*1.32	1.09	11.4
	-2 m	*5.92	4.54	4.29	2.62	2.88	1.78	2.11	1.31	*1.82	1.14	*1.42	1.13	11.1
	-3 m	*6.68	4.52	4.24	2.58	2.84	1.76	2.10	1.30			*1.55	1.19	10.7
	-4 m	*7.40	4.54	4.23	2.57	2.84	1.75	2.12	1.31			*1.73	1.28	10.2
	-5 m	*7.14	4.60	4.25	2.59	2.85	1.76					*1.98	1.41	9.6
	-6 m	*6.70	4.70	4.31	2.64	2.90	1.81					*2.39	1.62	8.8
-7 m	*6.04	4.85	*4.09	2.72							*2.85	1.96	7.8	
-8 m	*5.03	*5.03	*3.30	2.88							*2.89	2.61	6.5	

EQUIPMENT

STANDARD EQUIPMENT

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

ENGINE

- H/P mode control
- E mode control
- 50 A alternator
- Dry-type air filter with evacuator valve (with air filter restriction indicator)
- Cartridge-type engine oil filter
- Cartridge-type fuel double filters
- Air cleaner double filters
- Radiator, oil cooler and intercooler with dust protective net
- Radiator reserve tank
- Fan guard
- Isolation-mounted engine
- Auto-idle system
- Fuel cooler
- Electrical fuel feed pump
- Engine oil drain coupler

HYDRAULIC SYSTEM

- Work mode selector
- Power boost
- Auto power lift
- Control valve with main relief valve
- Extra port for control valve
- Suction filter
- Full-flow filter
- Pilot filter
- Swing dampener valve

CAB

- CRES II (Center pillar reinforced structure) cab
- OPG top guard fitted Level I (ISO 10262) compliant cab
- All-weather sound suppressed steel cab
- Equipped with reinforced, tinted (green color) glass windows
- 4 fluid-filled elastic mountings
- Front windows on upper, lower and left side can be opened
- Intermittent windshield wipers
- Front window washer
- Adjustable reclining seat with adjustable armrests
- Footrest
- Electric double horn
- AM-FM radio with digital clock
- Seat belt
- Drink holder
- Cigarette lighter
- Ashtray
- Storage box
- Glove compartment
- Fire extinguisher bracket
- Floor mat
- Short wrist control levers
- Pilot control shut-off lever
- Engine shut-off switch
- Auto control air conditioner
- Transparent roof with roller curtain
- Mechanical suspension seat with heater

MONITORING SYSTEM

- Display of meters: water temperature, hour, fuel rate, clock
- Other displays: work mode, auto-idle, glow, rearview monitor, operating conditions, etc
- Alarms: overheat, engine warning, engine oil pressure, alternator, minimum fuel level, hydraulic filter restriction, air filter restriction, work mode, overload, etc
- Alarm buzzers: overheating, engine oil pressure, overload

LIGHTS

- 2 working lights

UPPERSTRUCTURE

- Undercover
- Counterweight (total)
ZAXIS 160LC: 4 000 kg
- Fuel level float
- Electric fuel refilling pump with auto stop
- Rear-view camera
- 70 Ah batteries
- Hydraulic oil level gauge
- Tool box
- Utility space
- Rear-view mirror (right & left side)
- Swing parking brake

UNDERCARRIAGE

- Travel parking brake
- Travel motor covers
- 1 track guard (each side) and hydraulic track adjuster
- Bolt-on sprocket
- Upper and lower rollers
- Reinforced track links with pin seals
- 4 tie-down hooks

FRONT ATTACHMENTS

- HN bushing
- Reinforced resin thrust plate
- Casted bucket link A
- Centralized lubrication system
- Dirt seal on all bucket pins

MISCELLANEOUS

- Standard tool kit
- Lockable machine covers
- Lockable fuel refilling cap
- Skid-resistant tapes, plates and handrails
- Travel direction mark on track frame
- Onboard information controller

OPTIONAL EQUIPMENT

Optional equipment may vary by country, so please consult your Hitachi dealer for details.

CAB

- Laminated round glass window
- FOPS guard
- Air suspension seat with heater
- Rain guard
- Sun visor
- 12 V power source

LIGHTS

- Additional cab roof front lights
- Additional cab roof rear lights
- Rotating lamp
- Additional boom light with cover

UNDERCARRIAGE

- 2 track guards
- Track undercover

ATTACHMENTS

- Additional pump (30 L/min)
- High mesh full flow filter with restriction indicator
- Pilot accumulator

OTHERS

- Hose rupture valves for boom cylinders
- Overload warning device
- Pre-cleaner
- Biodegradable oil