

# CLAMSHELL TELESCOPIC ARM

Rope type [Speed-first design]

**ZAXIS 225 USRLC**

**ZAXIS 330 LC**

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



**Model Code :** ZX225USRLC-3  
**Engine Rated Power :** 122 kW (164 HP)  
**Operating Weight :** 29 200 kg  
(with sliding cab)

**Model Code :** ZX330LC-3  
**Engine Rated Power :** 202 kW (271 HP)  
**Operating Weight :** 42 800 kg  
(with sliding cab)

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 colour and features.  
Please ensure you have read and understood the Operator's Manual to ensure correct operation of the equipment.



# Efficient, Productive Deep-Excavation with the Telescopic Arm

The Hitachi rope type clamshell telescopic arm gives quick, smooth telescopic clamshell operation with its new mechanism and hydraulic circuit

## ZAXIS 225USRLC

Bucket capacity **0.8 m<sup>3</sup>**

Digging depth **21.2 m**

## ZAXIS 330LC

Bucket capacity **1.3 m<sup>3</sup>**

Digging depth **25.0 m**



### Productivity

#### Dynamic Telescopic Actions

Efficient, productive excavation by dynamic telescopic actions, using the newly developed hydraulic system.



### Maintainability

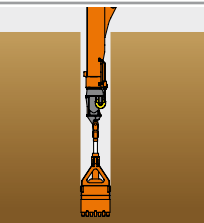
#### Openable Telescopic Arm Top

The telescopic arm top can be exposed to easily replace a pull-up rope.



#### Smooth Downhole Excavation

The telescopic arm is narrower than the bucket to reduce damage to the arm while it works in a downhole.



#### Extended Rope Life

The newly designed telescopic arm can significantly extend the service life of ropes.

■ **Rope replacement intervals: 1 800 hours**

Note; Rope replacement intervals vary according to operating conditions.

### Safety

#### Free-Fall Prevention Device

##### Holding Valve (Standard)

Free fall of the clamshell can be prevented thanks to the telescopic arm cylinder and holding valve at the boom cylinder, even if piping or hose punctures.

##### Free-Fall Prevention Device

Dual pull-up ropes and press-down ropes are utilized to prevent free-fall of the clamshell even if one of the dual ropes is broken.



#### Sliding Cab (standard)

The cab can slide back and forth through Hitachi's original hydraulic cylinders to let the operator look down with an unobstructed wide view for higher productivity. The long step and handrails are provided for easy access to the cab.

■ **Sliding distance: 1 300 mm**



#### Openable Bottom Window

The wide bottom window is openable to increase front-downward visibility with less blind area.



#### An Array of Safety Devices

##### ● Rope alarm



##### ● Warning lights



##### ● Guard



Pictures on this brochure may or may not include options and devices mounted by customers.



SPECIFICATIONS

ZX225USRLC-3

ENGINE	
Model.....	Isuzu AI-4HK1X
Type .....	4-cycle water-cooled, direct injection
Aspiration.....	Turbocharged, intercooled
No. of cylinders.....	4
Rated power	
ISO 9249, net .....	122 kW (164 HP) at 2 000 min <sup>-1</sup> (rpm)
EEC 80/1269, net...	122 kW (164 HP) at 2 000 min <sup>-1</sup> (rpm)
SAE J1349, net .....	122 kW (164 HP) at 2 000 min <sup>-1</sup> (rpm)
Maximum torque.....	655 N·m (67 kgf·m) at 1 500 min <sup>-1</sup> (rpm)
Piston displacement ..	5.193 L
Bore and stroke .....	115 mm x 125 mm
Batteries .....	2 x 12 V / 88 Ah

HYDRAULIC SYSTEM

- Work mode selector
  - Engine speed sensing system
- |                     |  |
|---------------------|--|
| Main pumps.....     | 2 variable displacement axial piston pumps |
| Maximum oil flow .. | 2 x 212 L/min                              |
| Pilot pump.....     | 1 gear pump                                |
| Maximum oil flow .. | 30 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 .....	34.3 MPa (350 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 .....	36.3 MPa (370 kgf/cm <sup>2</sup> )

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 .....	2
Telescopic arm control pedal .....	1

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 <sup>-1</sup> (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

- Sliding cab  
Unique placement of hydraulic cylinder enables smooth extension / retraction of cab.
- |                       |          |
|-----------------------|----------|
| Extention length..... | 1 300 mm |
|-----------------------|----------|
- Lower window  
Better visibility of front / lower of machine

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 .....	8
Track shoes .....	49
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 5.5 km/h Low : 0 to 3.5 km/h
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Maximum traction force.	203 kN (20 700 kgf)
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Gradeability.....	26 % (15 degree)
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WEIGHTS AND GROUND PRESSURE

ZX225USRLC-3 :

Equipped with type S-TC200R-8 and 0.80 m<sup>3</sup> clamshell bucket (SAE,PCSA heaped).

Shoe type	Shoe width	Operating weight	Ground pressure
Triple grouser	600 mm	29 200 kg	61 kPa (0.62 kgf/cm <sup>2</sup> )

SERVICE REFILL CAPACITIES

Fuel tank .....	320.0 L
Engine coolant .....	26.0 L
Engine oil .....	23.0 L
Swing device .....	6.9 L
Travel device (each side) .....	6.8 L
Hydraulic system .....	230.0 L
Hydraulic oil tank .....	123.0 L

ZX330LC-3

ENGINE	
Model.....	Isuzu AH-6HK1X
Type .....	4-cycle water-cooled, direct injection
Aspiration.....	Turbocharged, intercooled
No. of cylinders.....	6
Rated power	
ISO 9249, net .....	202 kW (271 HP) at 1 900 min <sup>-1</sup> (rpm)
ECC 80/1269, net .....	202 kW (271 HP) at 1 900 min <sup>-1</sup> (rpm)
SAE J1349, net .....	202 kW (271 HP) at 1 900 min <sup>-1</sup> (rpm)
Maximum torque.....	1 080 N·m (110 kgf·m) at 1 500 min <sup>-1</sup> (rpm)
Piston displacement .....	7.790 L
Bore and stroke .....	115 mm x 125 mm
Batteries .....	2 x 12 V / 128 Ah

HYDRAULIC SYSTEM

- Work mode selector
  - Engine speed sensing system
- |                        |  |
|------------------------|--|
| Main pumps.....        | 2 variable displacement axial piston pumps |
| Maximum oil flow ..... | 2 x 288 L/min                              |
| Pilot pump.....        | 1 gear pump                                |
| Maximum oil flow ..... | 34 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.....	32.4 MPa (330 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.....	36.3 MPa (370 kgf/cm <sup>2</sup> )

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 .....	2
Telescopic arm control pedal .....	1

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 .....	10.7 min <sup>-1</sup> (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 good visibility. Openable front windows (upper and lower). Reclining seat with armrests; adjustable with or without control levers.

\* International Standardization Organization

- Sliding cab  
Unique placement of hydraulic cylinder enables smooth extension / retraction of cab.
- |                       |          |
|-----------------------|----------|
| Extention length..... | 1 300 mm |
|-----------------------|----------|
- Lower window  
Better visibility of front / lower of machine

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 .....	8
Track shoes .....	48
Track guard.....	3

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 5.0 km/h Low : 0 to 3.2 km/h
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Maximum traction force.....	298 kN (29 200 kgf)
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Gradeability.....	26 % (15 degree)
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WEIGHTS AND GROUND PRESSURE

ZX330LC-3:

Equipped with type S-TC300R-7 and 1.30 m<sup>3</sup> clamshell bucket (SAE,PCSA heaped).

Shoe type	Shoe width	Operating weight	Ground pressure
Triple grouser	600 mm	42 800 kg	81 kPa (0.83 kgf/cm <sup>2</sup> )

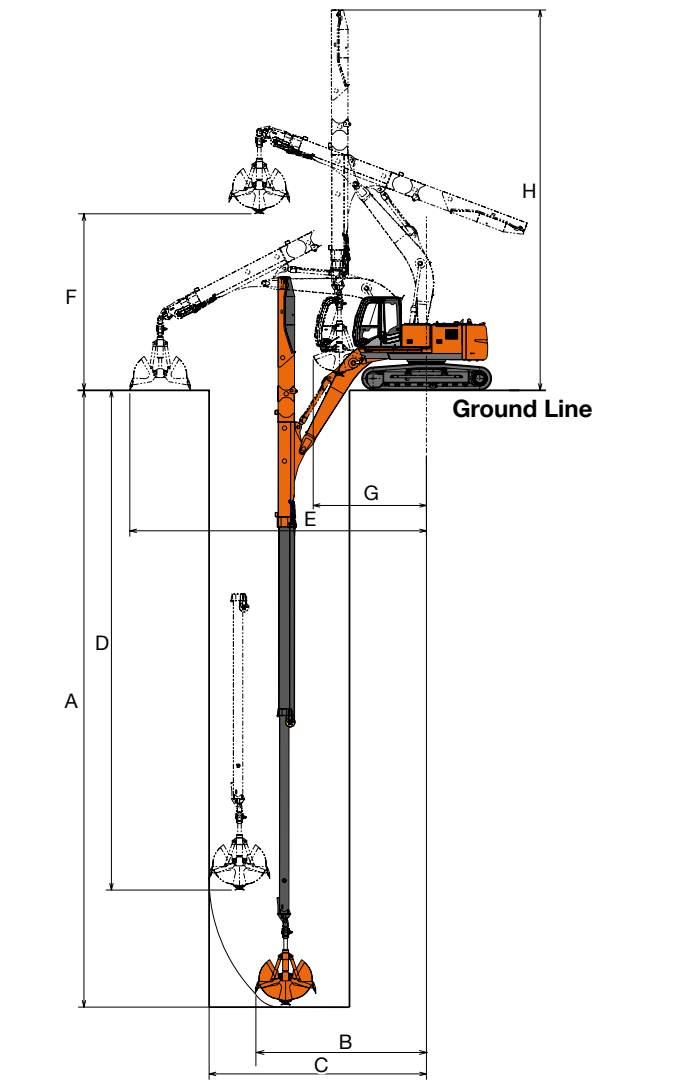
SERVICE REFILL CAPACITIES

Fuel tank .....	630.0 L
Engine coolant .....	32.0 L
Engine oil .....	41.0 L
Swing device .....	17.0 L
Travel device .....	9.2 L
(each side)	
Hydraulic system .....	374.0 L
Hydraulic oil tank .....	180.0 L

SPECIFICATIONS

ZX225USRLC-3

WORKING RANGES

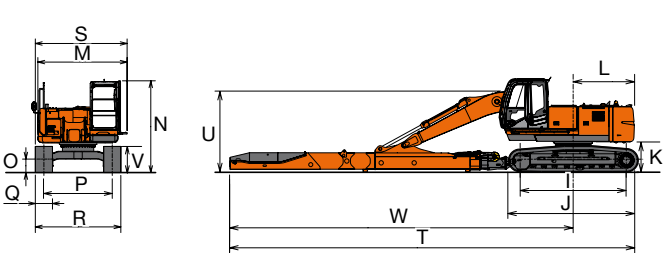


	ZX225USRLC-3
Telescopic arm type	S-TC200R-8
Telescopic arm system	Hydraulic cylinder + wire rope
Operating weight (With sliding cab)	kg 29 200
Bucket capacity	m³ 0.80
A Max. vertical digging depth	mm 21 150
B Radius at max. vertical digging depth	mm 5 880
C Max. vertical digging radius	mm 7 450
D Depth at max. vertical digging radius	mm 17 140
E Max. working radius	mm 10 170
F Max. dumping height	mm 6 050
G Min. front swing radius	mm 3 880
H Height at min. front swing radius	mm 13 040

CLAMSHELL BUCKET

	ZX225USRLC-3
Bucket capacity	m³ 0.8
Max. digging force	kN (kgf) 59.0 (6 020)
Max. height	mm 2 495
Opend max. height	mm 2 105
Closed width	mm 1 795
Opend width	mm 2 080
Bucket width	mm 910
Teeth number	7
Weight	kg 1 240

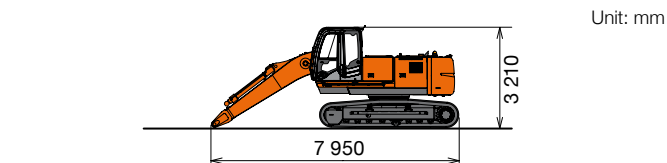
DIMENSIONS



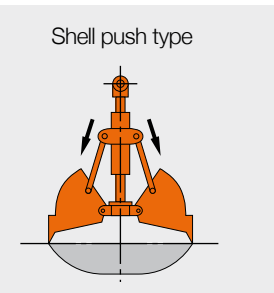
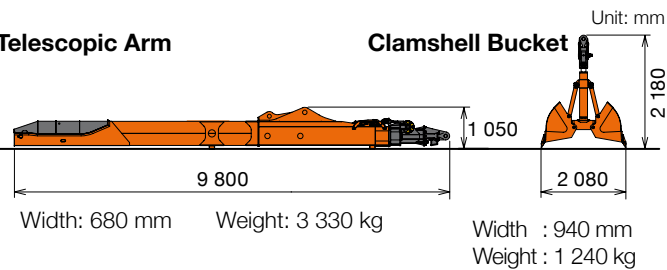
	ZX225USRLC-3
I Distance between tumblers	3 660
J Undercarriage length	4 460
*K Counterweight clearance	1 000
L Rear-end swing radius	2 100
M Overall width of upperstructure	3 120
N Overall height of cab	3 210
*O Min. ground clearance	450
P Track gauge	2 390
Q Track shoe width	G 600
R Undercarriage width	2 990
S Overall width	3 210
T Overall length	14 000
U Overall height of boom	2 830
V Track height with triple grouser shoes	920
W Swing centre to front distance	11 760

\* Excluding track shoe lug G: Triple grouser shoe

TRANSPORTATION

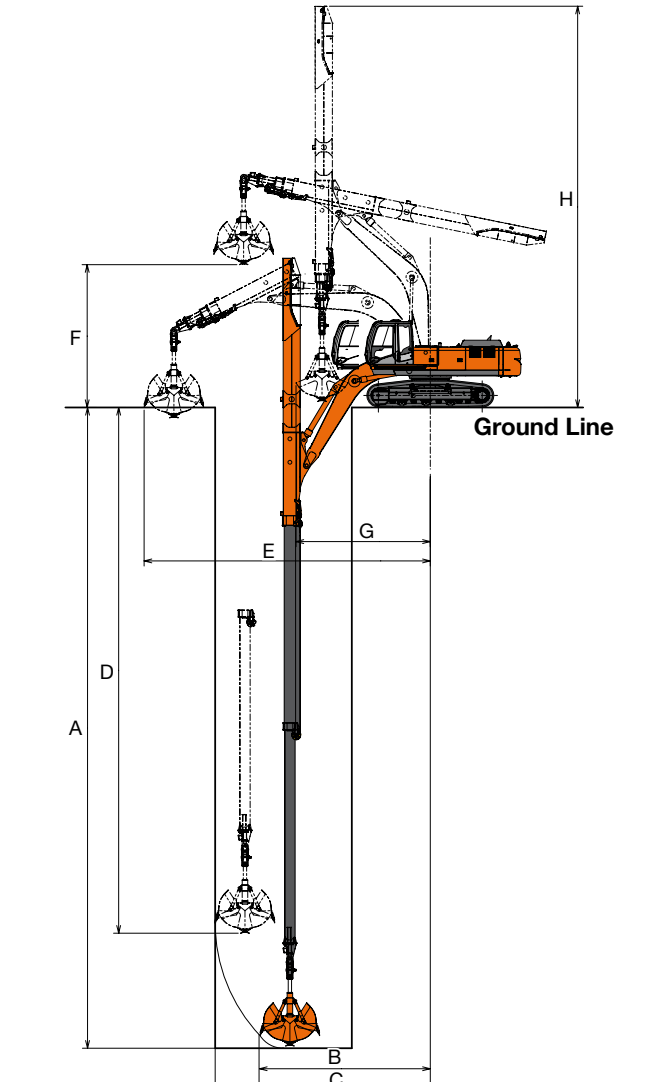


Width (without Sidewalk) : 3 020 mm Weight (with Sliding cab) : 24 640 kg



ZX330LC-3

WORKING RANGES

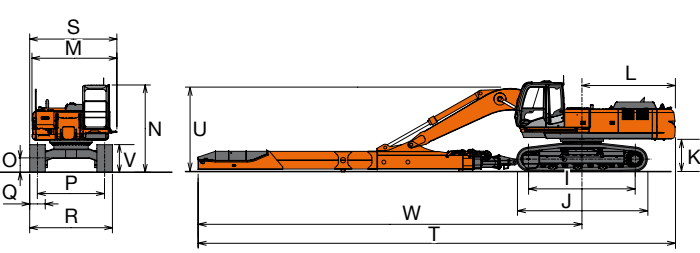


	ZX330LC-3
Telescopic arm type	S-TC300R-7
Telescopic arm system	Hydraulic cylinder + wire rope
Operating weight (With sliding cab)	kg 42 800
Bucket capacity	m³ 1.30
A Max. vertical digging depth	mm 25 000
B Radius at max. vertical digging depth	mm 6 630
C Max. vertical digging radius	mm 8 400
D Depth at max. vertical digging radius	mm 20 510
E Max. working radius	mm 11 170
F Max. dumping height	mm 5 570
G Min. front swing radius	mm 5 300
H Height at min. front swing radius	mm 15 660

CLAMSHELL BUCKET

	ZX330LC-3
Bucket capacity	m³ 1.3
Max. digging force	kN (kgf) 79.4 (8 100)
Max. height	mm 2 960
Opend max. height	mm 2 560
Closed width	mm 2 030
Opend width	mm 2 320
Bucket width	mm 1 200
Teeth number	9
Weight	kg 1 960

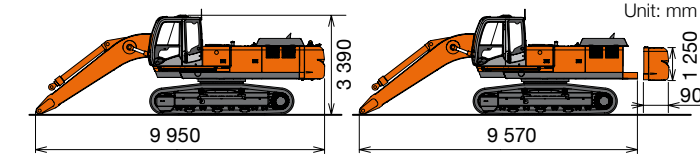
DIMENSIONS



	ZX330LC-3
I Distance between tumblers	4 050
J Undercarriage length	4 940
*K Counterweight clearance	1 190
L Rear-end swing radius	3 540
M Overall width of upperstructure	3 190
N Overall height of cab	3 390
*O Min. ground clearance	500
P Track gauge	2 590
Q Track shoe width	G 600
R Undercarriage width	3 190
S Overall width	3 370
T Overall length	18 110
U Overall height of boom	3 250
V Track height with triple grouser shoes	1 070
W Swing centre to front distance	14 570

\* Excluding track shoe lug G: Triple grouser shoe

TRANSPORTATION



Width : 3 190 mm Weight (with Sliding cab) : 35 370 kg Counterweight Width : 2 950 mm Weight : 10 800 kg

