# **HITACHI**

Reliable solutions

# za/is33U



### **HYDRAULIC EXCAVATOR**

Model Code: ZX33U-5A

Engine Rated Power: 21.2 kW (28.4 HP)

Operating Weight: Canopy 3 130 - 3 540 kg

Cab 3 310 - 3 720 kg

Backhoe Bucket: ISO Heaped: 0.08 m³





Shown equipped with 1.52 m arm, extra piping, additional counterweight, and rear view mirror.

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

# HIGH PERFORMANCE

#### **Agility Stands for Efficiency**

#### **Swift Actions in Narrow Work Place**

Short rear-end swing design allows for safe, confident operation in tight work areas.



Shown equipped with 1.52 m arm, extra piping and additional counterweight.

### **Excellent Controllability**

The Hitachi pilot control system is impressive. The control lever provides excellent fine control and low-effort handling to reduce operator fatigue. It is ergonomically positioned for easy operation. The multi-monitor allows selection of ECO and PWR modes to control the motion speed. With the engine control dial, you can also adjust engine speed with ease. The auto speed change system shifts down travel speed when the load exceeds a certain limit (for instance, when going downhill), and shifts up when the load is less.







Shown equipped with auxiliary function lever.

ECO / PWR mode selector switch

- Engine control dial







#### **Reduced Fuel Consumption**

A new engine has an electronic governor that is a clue to low fuel consumption. With an electronic accelerator, you can achieve precision engine control for fuel economy. To conserve fuel, select ECO mode, and to get more power, select PWR mode. In short, you can choose an optimum mode according to job needs.

The Auto Idle helps save fuel consumption, too. When moving the control lever to neutral, the Auto Idle automatically reduces engine speed to idling level four seconds later, reducing fuel consumption.

## **OPERATOR COMFORT**

# **Comfortable Operator Stations to Yield High Production**





#### **Pleasant Operator Environment**

Hitachi cabs and canopies have been traditionally praised for operator comfort. They are spacious with ample leg room. The console and seat are designed ergonomically, standing for operator comfort.

When sitting in the operator station, the operator will not feel resticted. Cab door width increases by 80 mm for easy access and a better view of work place. The front windshield is enlarged for higher visibility. The foot step is lowered for easy access. A host of devices, including arm rests, drink holder and seat back box, enhance operator comfort.

# Sturdy Operator Stations by Rigorous Safety Standards

The rugged cab and 4-pillar canopy well protect the operator in case of tipping. They are ruggedly designed by the ROPS\* standard. All the models are protected with the OPG\*\* top guard against falling objects.

A seat belt, pilot control shut-off lever, swing parking brake and travel parking brake are all standard. The neutral engine start system further enhances safe operation, disabling engine starting unless the lever is in lock position.

\*Roll-Over Protection Structure

\*\*Operator Protection Guard





#### **Easy-to-Read Multi-Monitor**

The multi-monitor is bright, informative and easy-to-read, displaying machine conditions, settings and warnings. A clock is newly added.

- 1 Menu/Return Switch
- 2 Auto-Idle Selector Switch
- 3 ECO/PWR Mode Selector Switch

#### Items

- Coolant Temperature Gauge
- · Fuel Gauge
- · Hour Meter
- · Clock
- · Travel Mode Indicator
- · Work Light Indicator
- · Overheat Indicator
- Engine Oil Pressure Indicator
- Preheat Indicator
- · Fuel Level Indicator





# SIMPLIFIED MAINTENANCE

Easy Servicing, Day-in Day-out

#### **Open-Wide Covers for Easy Maintenance**

All covers are wide-opening for direct access to service points, allowing for quick daily inspection and replacement. A cover adjacent to the radiator extends vertically to easily clean the radiator. A refueling port is placed inside the cover to avoid dirt entry and fuel theft.

A new tank cover is lightweight and wide-opening for easy refueling.



- 1 Reserve tank
- 4 Air filter
- 2 Water separator
- 5 Engine oil filter
- 3 Fuel filter
- 6 Fuel tank



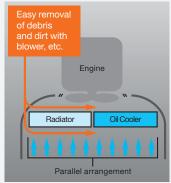


#### **Easy-to-Clean Cab Floor**

The radiator and oil cooler are arranged in parallel, instead of conventional in-line arrangement, to promote easy, efficient cleaning and cooling. Their wavy fins can be easily cleaned by air blowing.

Dust-proof indoor nets provide for easy removal of debris and dirt. A split-type floor mat can easily be removed at a seam between foot pedals and cab floor, and its surface patterns allow for quick sweeping.





Parallel arrangement of radiator and oil cooler

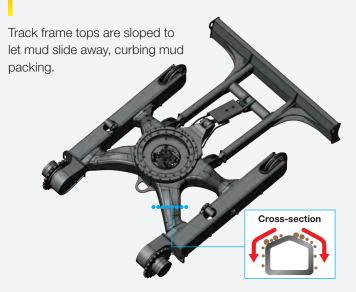


Split-type floor mat



Dust-proof indoor net (optional)

### Sloped Track Frame Tops for Easy Mud Removal



## **DURABILITY**

# **Technological Prowess and Stringent Quality Control**

#### A Line of Hitachi Quality Products

Hitachi has been acclaimed worldwide for technological prowess and high-performance products since the launch of its first hydraulic excavator in 1949. Its Design Division has adopted the 3D-CAD system for applied analysis and data crunching to churn out quality products and slash lead time in development.

Newly developed products have been vigorously tested in multiple ways, such as long-hours durability test and evaluation test, at a Hitachi vast 427 hectares test field under critical operating conditions – for instance, tropical or freezing weather -- before unveiling new products.

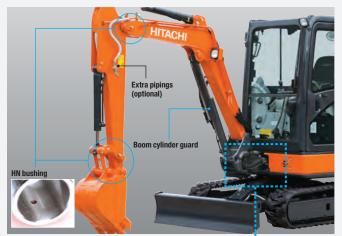




#### **Strong Front Attachment**

Front pins are jointed with a tight fit to reduce jerking and noise significantly, enhancing durability. Those pins are lubricated with HN bushings having an abundant grease-retaining capacity, extending greasing intervals up to 500 hours.

Main hoses are sheathed with hose protectors at the swing post. The bottom side of the boom cylinder is protected with a V-shaped boom cylinder guard. The four-side reinforced arm is sturdy with high rigidity.







### **Rugged Box-Section Blade**

The blade is box-section structure for higher ruggedness, and its stays have openings for easy flow-out of mud.

### **Sturdy Upperstructure**

The upperstructure frame is reinforced with job-proven D-section skirts whose height is increased for larger cross section to boost durability against obstacles.



## **SPECIFICATIONS**

Piston displacement ..... 1.642 L

#### HYDRAULIC SYSTEM

#### **Hydraulic Pumps**

ENGINE

#### **Hydraulic Motors**

Relief Valve Settings

 Implement circuit
 24.5 MPa (250 kgf/cm²)

 Swing circuit
 16.7 MPa (170 kgf/cm²)

 Travel circuit
 24.5 MPa (250 kgf/cm²)

 Pilot circuit
 3.9 MPa (40 kgf/cm²)

#### **Hydraulic Cylinders**

	Quantity	Bore	Rod diameter	Stroke
Boom (canopy)	1	80 mm	45 mm	579 mm
Boom (cab)	1	80 mm	45 mm	563 mm
Arm	1	70 mm	40 mm	546 mm
Bucket	1	65 mm	40 mm	435 mm
Blade	1	85 mm	45 mm	135 mm
Boom swing	1	85 mm	45 mm	525 mm

#### UPPERSTRUCTURE

#### **Revolving Frame**

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. Swing parking brake is spring-set/hydraulic-released disc type.

#### Operator's Cab

Independent spacious cab, 1 049 mm wide by 1 611 mm high, conforming to ISO\* Standards. Reinforced glass windows on 4 sides for visibility. Front windows (upper and lower) can be opened. Reclining seat.

<sup>\*</sup> International Organization for Standarization

#### UNDERCARRIAGE

#### **Tracks**

Tractor-type undercarriage. Welded track frame using selected materials. Side frame welded to track frame.

#### **Numbers of Rollers on Each Side**

Upper roller	1
Lower rollers	4

#### **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 4.3 km/h

Low: 0 to 2.8 km/h

Maximum traction force 27 kN (2 750 kgf)

Gradeability ...... 58% (30 degree) continuous

#### **SERVICE REFILL CAPACITIES**

Fuel tank	42.0 L
Engine coolant	3.9 L
Engine oil	7.2 L
Travel device (each side)	
Hydraulic system	
Hydraulic oil tank	32.0 L

#### **WEIGHTS AND GROUND PRESSURE**

#### **Operating Weight and Ground Pressure**

4-PILLAR CANOPY

- 1 122 (1 O) (1 O) 1										
Shoe type	Shoe width	kg	kPa (kgf/cm²)							
Dudala an ala a	000	1.17 m	3 130	28 (0.29)						
Rubber shoe	300 mm	1.52 m	3 330*	30 (0.31)*						
Over least above	200	1.17 m	3 270	29 (0.30)						
Grouser shoe	300 mm	1.52 m	3 470*	31 (0.32)*						
Pad crawler	000	1.17 m	3 340	30 (0.31)						
shoe	300 mm	1.52 m	3 540*	32 (0.32)*						

Including 0.08 m³ (ISO heaped), bucket weight (67 kg).

#### CAB

Shoe type	Shoe width	Arm length	kg	kPa (kgf/cm²)	
Dubbarabaa	200	1.17 m	3 310	30 (0.30)	
Rubber shoe	300 mm	1.52 m	3 510*	32 (0.32)*	
0	000	1.17 m	3 450	31 (0.32)	
Grouser shoe	300 mm	1.52 m	3 650*	33 (0.33)*	
Pad crawler	000	1.17 m	3 520	32 (0.32)	
shoe	300 mm	1.52 m	3 720*	33 (0.34)*	

Including 0.08 m³ (ISO heaped), bucket weight (67 kg).

#### **BUCKET AND ARM DIGGING FORCE**

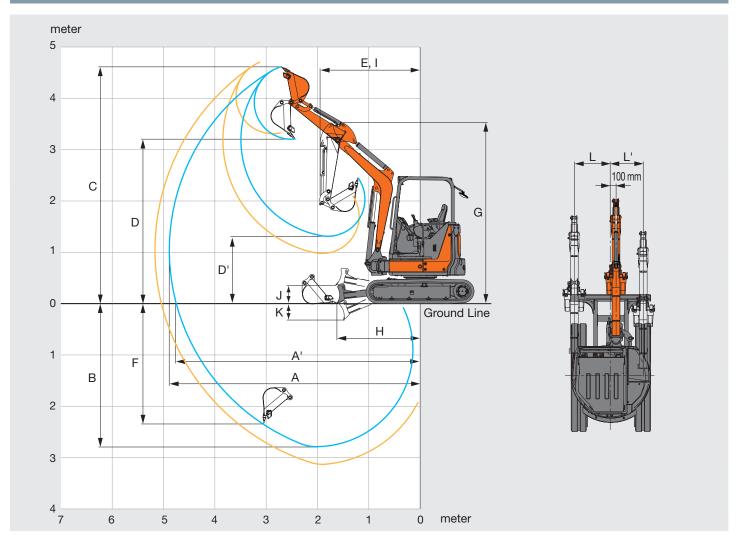
Arm length	1.17 m	1.52 m				
Bucket digging force ISO	27.2 kN (2	2 770 kgf)				
Bucket digging force SAE: PCSA	22.9 kN (2 340 kgf)					
Arm crowd force ISO	16.9 kN (1 720 kgf)	14.6 kN (1 490 kgf)				
Arm crowd force SAE : PCSA	15.8 kN (1 610 kgf)	13.9 kN (1 420 kgf)				

 $<sup>^{\</sup>ast}$  Including 0.08  $\rm m^3$  (ISO heaped), bucket weight (67 kg), additional counterweight (190 kg).

 $<sup>^{\</sup>ast}$  Including 0.08 m³ (ISO heaped), bucket weight (67 kg), additional counterweight (190 kg).

# **SPECIFICATIONS**

### **WORKING RANGES**

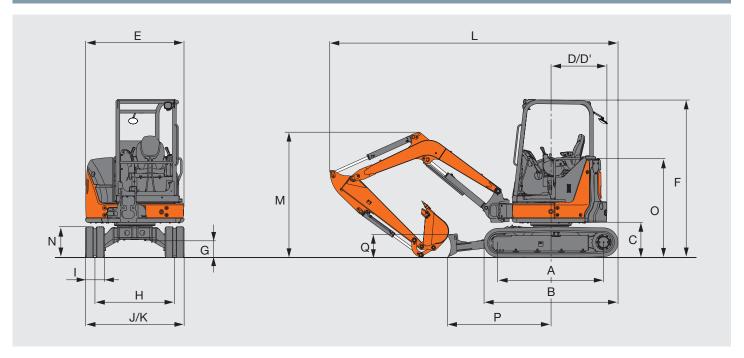


U	ni	t:	m	٦r	1

Arm length	1.1	7 m	1.52 m		
	4-Pillar Canopy	Cab	4-Pillar Canopy	Cab	
A Max. digging reach	4 8	390	5 1	70	
A' Max. digging reach (on ground)	4	750	5 (	)40	
B Max. digging depth	2	790	3 1	30	
C Max. cutting height	4 620	4 420	4 700	4 470	
D Max. dumping height	3 200	3 030	3 310	3 100	
D' Min. dumping height	1 310	1 220	980	870	
E Min. swing radius	1 970	2 150	2 090	2 180	
F Max. vertical wall digging depth	23	330	2 530		
G Front height at Min. swing radius	3 530	3 440	3 560	3 460	
H Min. level crowding distance	1 (	1 610		80	
I Working radius at Min. swing radius (Max. boom-swing angle)	1 580	1 820	1 680	1 860	
J Blade bottom highest position above ground		360	360		
K Blade bottom lowest position above ground		320	3	320	
L/L' Offset distance	610 / 735	610 / 700	610 / 735	610 / 700	
with hose rupture valve	520 / 735	520 / 700	520 / 735	520 / 700	
with assist pipes	450 / 700	450 / 700	450 / 700	450 / 700	
Max. boom-swing angle (deg.)	72 / 62	62 / 62	72 / 62	62 / 62	
with hose rupture valve (deg.)	72 / 52	62 / 52	72 / 52	62 / 52	
with assist pipes (deg.)	62 / 45	62 / 45	62 / 45	62 / 45	

Excluding track shoe lug.

### DIMENSIONS



Unit: mm

	Oil.	t. IIII
	ZX33U-5A	
A Distance between tumblers	1 660 (1 670)	
B Undercarriage length	2 110 (2 130)	
* C Counterweight clearance	550 (540)	
D Rear-end swing radius	875	
D' Rear-end length	875	
E Overall width of upperstructure	1 550	
F Overall height of cab	2 480 (2470)	
* G Min. ground clearance	280 (270)	
H Track gauge	1 250	
I Track shoe width	300	
J Undercarriage width	1 550	
K Overall width (Blade width)	1 550	
L Overall length		
With 1.17 m arm	4 450	
With 1.52 m arm	4 530	
M Overall height of boom		
With 1.17 m arm	1 510	
With 1.52 m arm	1 950	
N Track height	480 (470)	
O Engine cover-height	1 530 (1 520)	
P Horizontal distance to blade	1 620	
Q Blade height	360	

 $<sup>^{\</sup>star}$  Excluding track shoe lug  $\,\,$  Data in ( ) are dimensions of grouser shoe.

# **LIFTING CAPACITIES (Without bucket)**

ZX33U-5A 4-Pillar Canopy Version, Blade above Ground								g over-front (	Rating ov	er-side or 36	0 degrees L	Jnit: 1 000 kg
	Load				Load	radius						
Conditions	point height	1.0	) m	2.0	m	3.0	0 m 4.0 m			,	At max. reach	1
	m	Ů	<b>©</b>	Ů		Ů	<b>©</b>	Ů	<b>©</b>	Ů	<b>©</b>	meter
Boom 2.28 m	3									0.53	0.41	3.97
Arm 1.52 m	2					0.82	0.63	0.52	0.40	0.45	0.34	4.39
Additional	1					0.77	0.58	0.50	0.39	0.42	0.32	4.50
counterweight 190 kg	0 (Ground)			1.40	0.99	0.74	0.55	0.49	0.37	0.44	0.33	4.33
Rubber shoe	-1	*1.47	*1.47	1.40	0.99	0.73	0.55			0.52	0.39	3.84

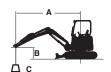
ZX33U-5A 4-Pillar Canopy Version, Blade on Ground							💾 Rating	Rating over-front Rating over-side or 360 degrees Unit: 1 000 kg				
	Load				Load	radius					Λ+ maay μαααh	
Conditions	point height	1.0	m	2.0	m	3.0	) m	4.0	) m	,	At max. reach	
	m	ů	<b>©</b>	Ů		Ů	<b>©</b>	Ů	<b>©</b>	Ů	<b>-</b>	meter
Boom 2.28 m	3									*0.62	0.41	3.97
Arm 1.52 m	2					*0.86	0.63	*0.78	0.40	*0.60	0.34	4.39
Additional	1					*1.19	0.58	*0.89	0.39	*0.64	0.32	4.50
counterweight 190 kg	0 (Ground)			*1.48	0.99	*1.40	0.55	*0.96	0.37	*0.75	0.33	4.33
Rubber shoe	-1	*1.47	*1.47	*2.38	0.99	*1.35	0.55			*0.90	0.39	3.84
300 mm	-2			*1.51	1.03					*0.90	0.63	2.80

ZX33U-5A 4-Pillar Canopy Version, Blade above Ground								Rating over-front Rating over-side or 360 degrees Unit: 1 000 kg					
	Load	Load Load radius											
Conditions	point 1.0 m		) m	2.0	) m	3.0	) m	4.0	) m	,	At max. reach	1	
	m	ů	<b>@</b>	Ů	<b>-</b>	Ů	<b>©</b>	Ů	<b>-</b>	Ů	<b>@</b>	meter	
Boom 2.28 m	3												
Arm 1.17 m	2			1.40	1.01	0.71	0.54	0.45	0.34	0.44	0.34	4.03	
Rubber shoe	1					0.67	0.50	0.43	0.33	0.41	0.31	4.17	
300 mm	0 (Ground)			1.22	0.86	0.64	0.48			0.43	0.32	4.00	
	-1	*1.86	*1.86	1.24	0.87	0.64	0.48			0.52	0.40	3.47	
	-2			*0.98	0.92					*0.84	0.80	2.19	

ZX33U-5A 4-Pillar Canopy Version, Blade on Ground							💾 Rating	Rating over-front Rating over-side or 360 degrees Unit: 1 000 kg					
	Load		Load radius										
Conditions	point height	1.0	) m	2.0 m 3.			) m	4.0 m		At max. reach			
	m	Ů	<b>©</b>	Ů	<b>@</b>	Ů	<b>@</b>	Ů	<b>©</b>	ů	<b>©</b>	meter	
Boom 2.28 m	3												
Arm 1.17 m	2			*1.48	1.01	*1.00	0.54	*0.88	0.34	*0.82	0.34	4.03	
Rubber shoe	1					*1.30	0.50	*0.95	0.33	*0.89	0.31	4.17	
300 mm	0 (Ground)			*1.44	0.86	*1.44	0.48			*0.95	0.32	4.00	
	-1	*1.86	*1.86	*2.16	0.87	*1.28	0.48			*0.99	0.40	3.47	
	-2			*0.98	0.92					*0.84	0.79	2.19	

- 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

Bating over-front Rating over-side or 360 degrees. Unit: 1,000 kg

ZX33U-5A Cab Version, Blade above Ground 🗓 Rating over-front 😂 Rating of								Rating ov	ver-side or 360 degrees Unit: 1 000 kg				
	Load				Load	radius					۸ <b>۱</b> سمعید سمعه		
Conditions	point height	1.0	) m	2.0 m 3.0			) m	4.0	4.0 m		At max. reach		
	m	ů	<b>©</b>	Ů	<b>©</b>	Ů	<b>©</b>	Ů	<b>-</b>	Ů	<b>©</b>	meter	
Boom 2.28 m	3									0.57	0.44	3.97	
Arm 1.52 m	2					*0.86	0.67	0.55	0.43	0.48	0.37	4.39	
Additional	1					0.82	0.62	0.53	0.41	0.45	0.34	4.50	
counterweight 190 kg	0 (Ground)			*1.48	1.06	0.78	0.59	0.52	0.40	0.47	0.36	4.33	
Rubber shoe	-1	*1.47	*1.47	1.49	1.06	0.78	0.58			0.55	0.42	3.84	
300 mm	-2			*1.51	1.10					0.89	0.67	2.80	

ZX33U-5A Cab Version, Blade on Ground							ating over-front Rating over-side or 360 degrees Unit: 1 000 kg						
	Load	Load Load radius											
Conditions	point height	1.0	) m	2.0 m		3.0	3.0 m		4.0 m		At max. reach		
	m	ů	<b>©</b>	ů		Ů	<b>©</b>	Ů	<b>-</b>	Ů	<b>©</b>	meter	
Boom 2.28 m	3									*0.62	0.44	3.97	
Arm 1.52 m	2					*0.86	0.66	*0.78	0.43	*0.60	0.37	4.39	
Additional	1					*1.19	0.62	*0.89	0.41	*0.64	0.34	4.50	
counterweight 190 kg	0 (Ground)			*1.48	1.06	*1.40	0.59	*0.96	0.40	*0.75	0.36	4.33	
Rubber shoe	-1	*1.47	*1.47	*2.38	1.06	*1.35	0.58			*0.90	0.42	3.84	
300 mm	-2			*1.51	1.10					*0.90	0.67	2.80	

<b>ZX33U-5A Cab Version, Blade above Ground</b> Pating over-front Rating over-front Pating over-side or 360 degrees Unit: 1									Jnit: 1 000 kg			
	Load				Load	radius					۸ ±	
Conditions	point height	1.0	m	2.0	m	3.0	) m	4.0	) m	At max. reach		
	m	Ů	<b>©</b>	Ů		Ů	<b>©</b>	Ů	<b>-</b>	Ů	<b>@</b>	meter
Boom 2.28 m	3											
Arm 1.17 m	2			*1.48	1.08	0.46	0.58	0.48	0.37	0.47	0.36	4.03
Rubber shoe	1					0.71	0.54	0.47	0.36	0.44	0.33	4.17
300 mm	0 (Ground)			1.31	0.92	0.69	0.51			0.46	0.35	4.00
	-1	*1.86	*1.86	1.33	0.94	0.69	0.51			0.56	0.43	3.47
	-2			*0.98	0.98					*0.84	*0.84	2.19

ZX33U-5A Cab Version, Blade on Ground Pating over-front Rating over-front Rating over-front								er-side or 36	0 degrees L	Jnit: 1 000 kg		
	Load		Load radius									
Conditions	point height	1.0	) m	2.0	m	3.0	) m	4.0	) m	At max. reach		
	m	Ů	<b>©</b>	Ů	<b>©</b>	Ů	<b>@</b>	Ů	<b>©</b>	ů	<b>@</b>	meter
Boom 2.28 m	3											
Arm 1.17 m	2			*1.48	1.08	*1.00	0.58	*0.88	0.37	*0.82	0.36	4.03
Rubber shoe	1					*1.30	0.54	*0.95	0.36	*0.89	0.33	4.17
300 mm	0 (Ground)			*1.44	0.92	*1.44	0.51			*0.95	0.35	4.00
	-1	*1.86	*1.86	*2.16	0.94	*1.28	0.51			*0.99	0.43	3.47
	-2			*0.98	*0.98					*0.84	*0.84	2.19

# **EQUIPMENT**

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

• : Standard equipment

O : Optional equipment

ENGINE	
Auto idle system	•
Cartridge-type engine oil filter	•
Dust-Proof indoor net	0
Electrical fuel feed pump	•
Fuel main filter	•
Radiator reserve tank	•
Water-separator for engine fuel	•

4-PILLAR CANOPY	
Anti-slip plate	•
Armrests	•
Auxiliary function lever (AFL)	0
Drink holder	•
Electric horn	•
Floor mat	•
Reclining seat	•
Retractable seat belt	•
ROPS/OPG canopy	•
Spare power supply	•
Suspension seat	•

UPPERSTRUCTURE	
Auxiliary overload relief valve	0
Pilot accumulator	0
Rear view mirror	•
Stack muffler	0
190 kg additional counterweight	0

300 mm rubber shoe

FRONT ATTACHMEN	ITS
Assist piping	0
Extra piping	0
HN bushing	•
1.17 m arm	0
1.52 m arm	•

HYDRAULIC SYSTEM	
Boom anti-drift valve	•
Full-flow filter	•
Hose rupture valve	0
Hydraulic pilot type control levers	•

Boom anti-drift valve	•
Full-flow filter	•
Hose rupture valve	0
Hydraulic pilot type control levers	•
Pilot control shut-off lever with neutral engine start system	•
Pilot filter	•
Suction filter	•
Swing parking brake	•
Travel parking brake	•
Two-speed travel system	•
Valve for extra piping	•

CAB	
Air conditioner	•
AM/FM radio	•
Anti-slip plate	•
Armrests	•
Auxiliary function lever (AFL)	0
Defroster	•
Drink holder	•
Electric horn	•
Floor mat	•
Heater	0
Reclining seat	•
Retractable seat belt	•
ROPS/OPG cab	•
Spare power supply	•
Suspension seat	•
Window washer	•
Wiper	•

UNDERCARRIAGE		MISCELLANEOUS	
300 mm grouser shoe	0	Theft deterrent system*	0
300 mm pad crawler shoe	0		

 $<sup>^{\</sup>star}$  Hitachi Construction Machinery cannot be held liable for theft, any system will just minimize the risk of theft.

# **MEMO**



#### **Hitachi Environmental Vision 2025**

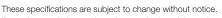
The Hitachi Group released the Environmental Vision 2025 to curb annual carbon dioxide emissions. The Group is committed to global production while reducing environmental impact in life cycles of all products, and realizing a sustainable society by tackling three goals — prevention of global warming,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





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.

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