

ZW series

HITACHI

ZW100
ZW120



WHEEL LOADER

- **Model Code:** ZW100 / ZW120
- **Operating Weight:** ZW100: 6 950-7 100 kg
ZW120: 7 980-8 640 kg
- **Bucket Capacity:** ISO Heaped: ZW100: 1.1-1.6 m³
ZW120: 1.3-1.8 m³
- **Engine power:** ZW100: 69 kW (93 HP)
ZW120: 73 kW (98 HP)

Leading-Edge Technology: Total Balance of Fuel Efficiency, Comforts and Control

ZW

The ZW100 and ZW120 are the models to the ZW series renowned as productive wheel loaders. It is packed with plenty of expertise, including low fuel consumption, green technology and advanced HST system, as well as light footwork, high maintainability and durability, operator comfort and ease of control.

- The engine complies with the Emission Regulations U.S EPA Tire3, and EU Stage III A





*Notes : The photos used in this brochure include optional equipment.
Some of the pictures in this brochure show an unmanned machine with attachments in an operating position. These were taken for demonstration purposes only and the actions shown are not recommended under normal operating conditions.*

Best Matching of Power and Fuel Economy

The ZW100 and ZW120 yield high production while keeping low fuel consumption, and high controllability and mobility.

Four work modes selectable to suit job needs



Work mode select switch

Four work modes are selectable according to job requirements and operator's preference. In each work mode, electronic matching control, originally developed by Hitachi, detects the pressure of the implement, and controls the torque of travel motor to best match traction force and breakout force. This increases production per unit of fuel.

Normal Operation (Work P, N and L Modes)

Efficient loading with optimum traction force to suit job needs

Snow Plowing (Work S Mode)

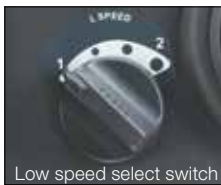
Efficient snow plowing with optimum traction force, reducing slippage on snow

Four Work Modes

Work Modes	Materials to Be Handled
P mode (Scooping up and crowding)	<ul style="list-style-type: none"> • Relatively large crushed stones • Concrete slag • Stone with large specific gravity, clayey soil
N mode (Normal operation)	<ul style="list-style-type: none"> • Small crushed stones • Gravel • Cobble
L mode (Loading and light excavation)	<ul style="list-style-type: none"> • Sand • Plastics, industrial wastes, chips
S mode (Snow plowing and swamp operation)	<ul style="list-style-type: none"> • Snow

Speed Selector for Efficient Loading and Operations in Confined Space

When the low speed range is selected, four travel speeds (7/9/11/13 km/h) can be further selected to suit job needs and jobsite conditions.



Low speed select switch

Inching Pedal for Easy Positioning in Confined Space

The operator can easily control travel speed with the inching pedal, regardless of the accelerator pedal, by adjusting the delivery flow from the hydraulic pump. This eases positioning in loading operation.



Ample Dumping Clearance and Reach

	Dumping Clearance	Dumping Reach
ZW100	2 710 mm	1 000 mm
ZW120	2 730 mm	980 mm

Fuel-Efficient • Powerful • Clean

Clean, Fuel-Efficient Engine



High power yet low fuel consumption... It's the engine that complies with the world emission regulations, and reduces sound and vibration for the operator and environment.

Max. Engine Output

ZW100 69 kW (93 HP)

ZW120 73 kW (98 HP)

Throttle Limit for Higher Fuel Efficiency



Throttle limit switch

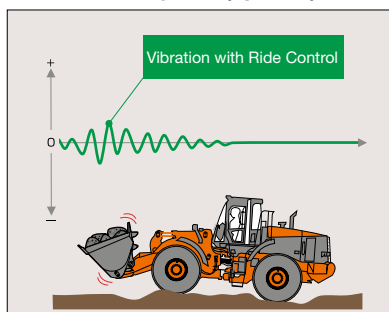
The throttle limit cuts maximum engine speed by 10% for higher fuel efficiency. For the HST system, maximum traction force is not reduced with the reduction in engine speed. Reduction in fuel consumption and noise reduction can be realized. *

*Varies depending on working conditions.



Easier Travel on Rough Terrain with Less Slippage and Pitching

■ Ride Control System (Optional)



The ride control reduces pitching and bouncing during traveling on rough terrain and snow road by automatic control of the implement. Shocks and vibration can be well suppressed for riding comfort.

■ Torque Proportional Differential (Standard)

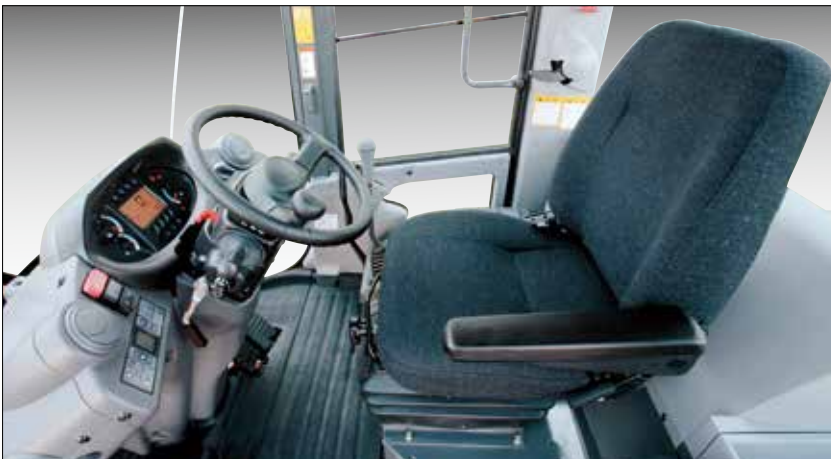
The torque proportional differential adjusts driving forces to both wheels. When road resistances under both wheels are different, this feature minimizes slippage of a wheel on softer ground, unlike conventional differentials. This feature enables the ZW series to get out of swamps or rough terrain easily.

■ Limited Slip Differential (Optional)

On snowy roads and rough terrain, the limited slip differential can work instead of the torque proportional differential. This delivers effective driving force to both wheels for enhanced grip and less slippage during travel.



Mechanical Suspension Seat (Standard)

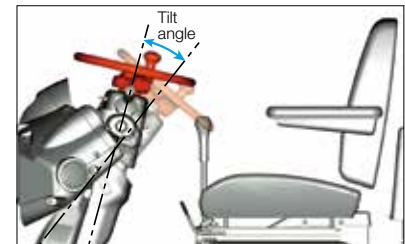


The mechanical suspension seat is provided standard to suppress vibration from the machine body for comfortable operation over long hours. The seat can be reclined, and adjusted horizontally to suit operator build for the optimum position. Seat cushion is also adjustable. An air suspension seat, associated with a headrest, lumbar support, seat height adjustment and seat heater, is optionally available for finer adjustments.

Functionally Grouped Controls

A cluster of controls are functionally grouped for ease of operation. The controls, used for prestart setting, are located on the right console to the seat, and those, handled during operation are on the front console.

Adjustable Steering Column



The steering wheel is tiltable and to suit operator of all builds for comfortable operation.

Fingertip Control with Pilot-Controlled Lever (Optional)

The pilot-controlled lever is optionally available for pleasant fingertip control.

Ergonomic Pedals

The brake pedal and accelerator pedal are ergonomically positioned for ease of control.



Enhanced Operator Comfort with Luxury Designs

Focusing on top-class operator comfort... riding comfort with less vibration and sound, and plenty of operator space... like large-sized models.



Panoramic Cab

The panoramic cab gives almost all-round visibility with the widened front glass window and pillarless cab rear corners. Front wheels are always in the operator's vision, enhancing safety and increasing loading efficiency.

Enhanced Upward Visibility

The front curved glass window gives good upward visibility, so the operator can directly see the movement of the bucket for safer loading.

ROPS / FOPS Cab

The ROPS / FOPS cab is provided to protect the operator from injury in an accident.

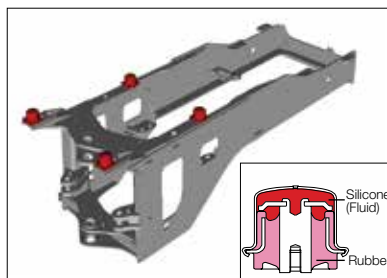
ROPS: Roll-Over Protective Structure: ISO3471

FOPS: Falling Object Protective Structure: ISO3449

Front / Rear Defrosters

With the front and rear defrosters, airflow comes out from three front air outlets and two rear outlets to protect respective windows from fogging, keeping clear vision even in rain and cold weather.

Shock-Dampened Cab



The cab rests on fluid-filled elastic mounts to absorb shocks and vibration, and reduce resonance.

Low Noise Design

The cab is well sealed, and the low-noise engine is utilized to reduce sound, along with the various noise reduction measures.

Bi-Level Auto Air Conditioner and Pressurized Cab



The bi-level air conditioner allows air conditioning at foot space and overhead simultaneously. Airflow direction can be freely adjusted with airflow volume automatically adjusting according to temperature setting. The pressurized cab shuts out dust and debris even in dusty environment.

An Array of Standard Accessories



Hot and cool box



Large tray and drink holder



Interior light interacting with cab door



Seatback pocket



AM / FM stereo radio



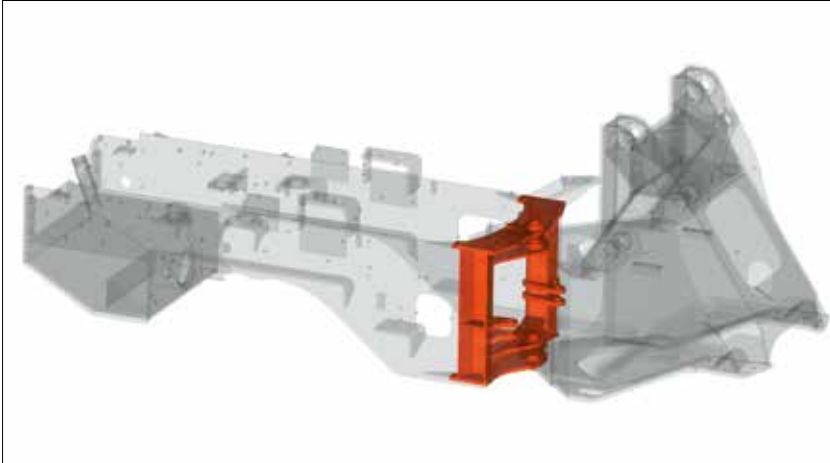
Coat hook

Robust Body with Strengthened Components

The machine body is thoroughly reinforced with strengthened components for higher durability in extended service life.

Improved Drive System for Higher Reliability and Maintainability

■ Robust Frame

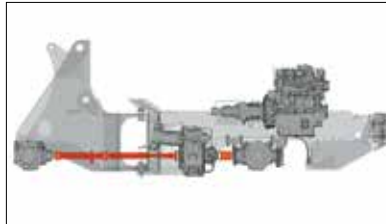


The box-section frame is thickened and strengthened to resist torsion and increase durability. Center pins are widely spaced for higher resistance to torsion.

■ Tough Engine

The Kubota engine, designed using leading-edge technologies including latest structural analysis, boosts reliability and durability. Miniaturized engine parts are functionally arranged to reduce vibration and sound.

■ Flat Arrangement of Propeller Shaft



Flat arrangement of the propeller shaft is achieved to reduce resistance at the joint and to increase durability.



LED Indicators and Instruments

On the indicators, monitors and alarms, many LEDs are utilized for longer service life resulting in less failure, enhancing the reliability.

HN Bushings



The HN bushing containing lubricant is provided at each joint to reduce grease consumption, extend lubrication

intervals (100 to 500 hours), and increase durability.

O-Ring Seal (ORS) Joints and Waterproof Electric Connectors



Numerous elaborate components are utilized for higher durability and reliability. The proven ORS joints and high-pressure hydraulic lines are utilized in the hydraulic system, and waterproof connectors in the electrical system.

Capacious Hydraulic Oil Cooler

The ample cooling capacity of the hydraulic oil cooler helps reduce oil temperature fluctuation, and extend service life of components.

Protected Fuel Tank



The large counterweight is arranged to protect the fuel tank from collisions with obstacles during operation.

Keeping the Machine in Good Conditions for Higher Safety

Plenty of maintenance expertise always keeps the machine in good conditions for enhanced safety and higher job efficiency.



Easy-to-Read Monitor



With the easy-to-read monitor, the operator can see instructions for scheduled servicing and maintenance.

Monitor Indication Items:

Service intervals, travel speed, mileage, hour meter

Replacement Alerting:

The indicators alert the operator for scheduled replacement intervals to ensure proper maintenance. Engine oil / filter, fuel filter, hydraulic oil / filter, transmission oil / filter, Axle oil.

Highly Reliable Dual-Line Brake System

The dual-line hydraulic brake system is utilized: even if one line fails, the other can work for braking. The brake is an enclosed wet single-plate type for reliable braking.

Emergency Steering System (Optional)

The emergency electric pump delivers the necessary oil pressure for power steering even in the case of an emergency. This allows normal steering at all times even if the engine fails.

Conveniently Located Filters

Fuel filter, fuel pre-filter with sedimentary function and engine oil filter are strategically located for the convenient daily inspection and servicing.



Easy-to-Replace Air Conditioning Filters



The fresh air filter can easily be replaced from the cab, and circulation air filter also replaced by detaching the drink holder.

Extended Filter Replacement Intervals (Up from 250 to 500 Hours)

Engine oil capacity and filter capacity are increased for longer filter replacement intervals, reducing maintenance time and downtime.

Other Safety Features



Inclined Ladder



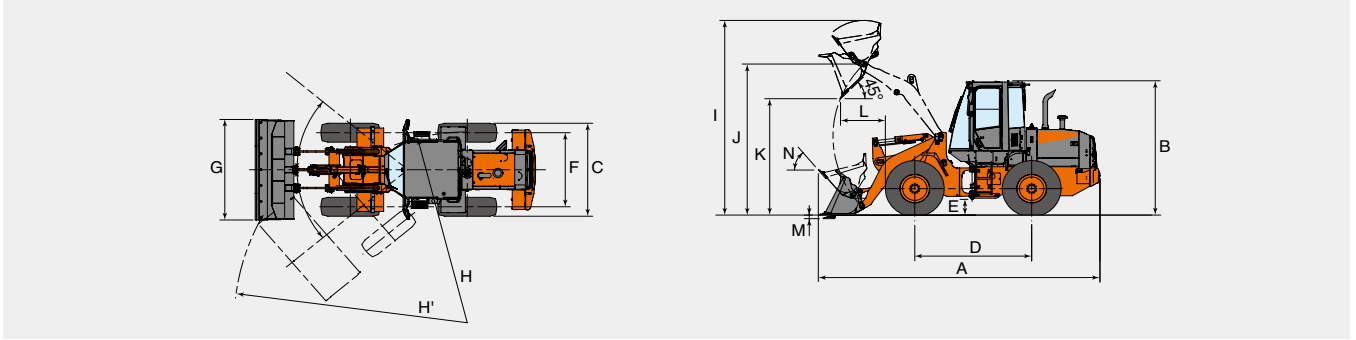
Retractable Seat Belt

Aluminum Radiator and Oil Cooler

The radiator and oil cooler are made of aluminum instead of conventional steel or copper for corrosion prevention. Furthermore, the parallel arrangement of the radiator and oil cooler improves cooling capability and accessibility for maintenance.

SPECIFICATION

DIMENSIONS & SPECIFICATIONS



Bucket type	ZW100						ZW120			
	Standard Lift Arm			High Lift Arm			Standard Lift Arm		High Lift Arm	
	General purpose with bolt-on cutting edges						General purpose with bolt-on cutting edges			
Bucket capacity	ISO heaped	m ³	1.3	1.6	1.1	1.3	1.5	1.8	1.3	1.5
	ISO struck	m ³	1.1	1.3	0.9	1.1	1.2	1.5	1.1	1.2
A Overall length	mm		6 250	6 380	6 665	6 735	6 375	6 500	6 880	6 960
B Overall height, bucket on ground (with ROPS/FOPS cab)	mm		3 115				3 195			
C Width over tires	mm		2 140				2 260			
D Wheel base	mm		2 600				2 725			
E Ground clearance	mm		350				365			
F Tread	mm		1 725				1 820			
G Bucket width	mm		2 340				2 480			
H Turning radius (centerline of outside tire)	mm		4 420				4 660			
H' Loader clearance circle, bucket in carry position	mm		5 205	5 235	5 375	5 395	5 435	5 465	5 595	5 615
I Overall operating height	mm		4 515	4 590	4 585	4 730	4 645	4 725	4 900	4 985
J Height to hinge pin, fully raised	mm		3 500		3 710		3 555		3 895	
K Dump clearance 45 degree, full height	mm		2 695	2 605	2 950	2 900	2 725	2 640	3 125	3 065
L Reach, 45 degree dump, full height	mm		1 015	1 100	1 275	1 325	990	1 075	1 105	1 165
M Digging depth (horizontal digging angle)	mm		65		275		65		215	
N Max. roll back at carry position	deg		50				49			
Static tipping load*	straight	kgf	5 170	5 080	4 110	4 090	5 900	5 810	5 610	5 530
	Full 40 degree turn	kgf	4 460	4 370	3 520	3 500	5 090	5 000	4 820	4 760
Breakout force	kN(kgf)		61 (6 222)	53 (5 406)	63 (6 426)	58 (5 916)	79 (8 058)	68 (6 936)	86 (8 772)	78 (7 956)
Operating weight (with ROPS/FOPS cab)*	kg		6 890	6 930	7 010	7 040	7 970	8 060	8600	8630

Notes: 1. All dimensions, weight and performance data based on ISO 6746-1:1987, ISO 7131:1997 and ISO 7546:1983
 2. Static tipping load and operating weight marked with * include 16.9-24-10PR(L2);ZW100, 18.4-24-10PR(L2);ZW120 tires (no ballast) with lubricants, coolant, full fuel tank and operator. Machine stability and operating weight depend on counterweight, tire size and other attachments.

BUCKET SELECTION GUIDE

%=Bucket Fill Factor 115% 100% 95%

ZW100 : General purpose bucket with bolt-on cutting edges	Bucket Capacity m ³	Material density kg/m ³					
		800	1 000	1 200	1 400	1 600	1 800
Standard lift arm	1.3						
	1.6						
High lift arm	1.1						
	1.3						

ZW120 : General purpose bucket with bolt-on cutting edges	Bucket Capacity m ³	Material density kg/m ³					
		800	1 000	1 200	1 400	1 600	1 800
Standard lift arm	1.5						
	1.8						
High lift arm	1.3						
	1.5						

ENGINE		ZW100	ZW120
Model		KUBOTA V3800-T-CRS	KUBOTA V3800-TI-CRS
Type		4-cycle water-cooled,direct injection	
Aspiration		Turbo charger	
No. of cylinders		4	
Maximum power	SAE J1349/ISO 9249, net	69 kW (93 HP) at 2 100 min ⁻¹ (rpm)	73 kW (98 HP) at 2 100 min ⁻¹ (rpm)
Bore and stroke		100 mm x 120 mm	
Piston displacement		3.769 L	
Batteries		12V× 662 CCA, 159-min.rated reserve	
Air cleaner		Double stage dry type	

POWER TRAIN		ZW100	ZW120
Transmission controls		Hydrostatic (HST) transmission automatically controls power and 2-speed	
Travel speed : Forward & Reverse		34.5 km/h with 15.5-25-8PR tires	34.5 km/h with 17.5-25-12PR tires

AXLE AND FINAL DRIVE		ZW100	ZW120
Drive system		Four-wheel drive system	
Front & rear axle		Semi-floating	
	Front	Fixed to the front frame	
	Rear	Center pivot	
Oscillation angle		total 24° (±12°)	
Final drives		Heavy-duty, planetary final drive	

TIRES (tubeless, nylon body)		ZW100	ZW120
Standard		15.5-25-8PR (L2)	17.5-25-12PR (L2)

BRAKES		ZW100	ZW120
Service brakes		Inboard mounted fully hydraulic wet disk	
Parking brake		Spring applied hydraulic released wet disk	

STEERING SYSTEM		ZW100	ZW120
Type		Articulated frame steering	
Steering mechanism		Full hydraulic power steering with orbitrol®	
Steering angle		Each direction 40°; total 80°	
Cylinders		Double-acting piston type	
No. x Bore x Stroke		2 × 60 mm × 395 mm	2 × 60 mm × 395 mm
Minimum turning radius at the centerline of outside tire		4 440 mm	4 690 mm

HYDRAULIC SYSTEM		ZW100	ZW120
Arm and bucket are controlled by mechanical single control lever			
Arm controls		Four position valve; Raise, hold, lower, float	
Bucket controls		Two position valve; Roll back, dump	
Main pump	(Load & steer)	Gear type 108 L/min 2 100 min ⁻¹ (rpm) at 20.6 MPa (210 kgf/cm ²)	Gear type 117 L/min 2 100 min ⁻¹ (rpm) at 20.6 MPa (210 kgf/cm ²)
Relief pressure setting		20.6 MPa (210 kgf/cm ²)	
Hydraulic cylinders	Type	Two arm and one bucket, double acting type	
	No. x Bore x Stroke	Arm: 2 × 90 mm × 760 mm Bucket : 1 × 110 mm × 421 mm	Arm: 2 × 105 mm × 710 mm Bucket : 1 × 125 mm × 445 mm
Filters		Full-flow 10 micron return filter before reservoir	
Hydraulic cycle times	Arm raise	5.0 s	5.7 s
	Arm lower	3.0 s	2.7 s
	Bucket dump	1.0 s	1.2 s

SERVICE REFILL CAPACITIES		ZW100	ZW120
Fuel tank		130 L	150 L
Engine coolant		14 L	
Engine oil		18 L	
Front axle differential & wheel hubs		10 L	14 L
Rear axle differential & wheel hubs		10 L	14 L
Hydraulic reservoir tank		75 L	80 L

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STANDARD AND OPTIONAL EQUIPMENT

○: Standard equipment ●: Optional equipment ×: No setting

Section	Components	ZW100	ZW120
Cabs			
	ROPS/FOPS cab	○	○
Front attachments			
	High lift arm	●	●
	Quick coupler (hydraulic/mechanical)	●	●
	Lift arm kickout	●	●
	Bucket cylinder rod guard	●	●
Forks			
	Lumber fork (pin/coupler)	●	●
	Lumber fork (pin) for high lift arm	●	●
Undercarriage			
	Torque proportioning differential (TPD)	○	○
	Limited slip differential (LSD)	●	●
	Electric parking brake	○	○
	Emergency steering system	●	●
	Underguard	●	●
	Ride control	●	●
Miscellaneous			
	Wide fin radiator	●	●
	Suction fan & radiator dust screen	●	●
	Precleaner	●	●
	Backup buzzer	○	○
	Loud backup buzzer	●	●
	Rear under-mirror	●	●
	Anti-corrosive paint (pipes & electric wiring connectors)	●	●
	Double fuel filters	○	○
	Air cleaner for double elements	○	○
	Lifting lugs	●	●
	Full rear fender	●	●
	Large capacity alternator	○	○
	Air condenser dust screen	●	●

Section	Components	ROPS/FOPS Cab
Operator station		
	Matching control	
	Speed selector (at low speed)	○
	Throttle limiter	
	Full auto air conditioner	○
	Seat belt (2 inches)*	○
	Seat belt (3 inches)*	●
	Tilttable steering column	○
	Sun visor	○
	AM/FM stereo radio	○
	Ashtray, cigar lighter	×
	Drink holder	○
	Large tray	○
	Hot & cool box	○
	Front windshield wiper (2-speed, intermittent) w/washer	○
	Rear windshield wiper w/washer	○
	Floor mat	○
	Quick shift switch (QSS)	○
	Implement lever lock	○
	Forward/rearward lever lock	○
	Hazard lamp	○
	Working light switch	○
	Door locks (inside/out)	○
	Room mirrors (2)	○
	Outer mirror	○
	12-V PTO (power take off)	●
	Immobilizer	●
Operator seat		
	Mechanical suspension seat (cloth-covered)	○
	Mechanical suspension seat (vinyl-covered)	●
	Air suspension seat w/headrest	●
	Fixed seat (vinyl-covered)	●
Lights		
	Headlights	○
	Rear combination lamps	○
	Backup light	○
	Front working lights (2)	○
	Extra front working lights (2) mounted on cab	●
	Rear working lights (2) built in rear grille	○
	Extra rear working lights (2) mounted on cab	●
Valves, levers (cable-operated)		
	2-spool valve w/mono lever	○
	3-spool valve w/mono lever + 1 lever	●
	4-spool valve w/mono lever + 1 lever	●
Valves, levers (pilot-controlled)		
	2-spool valve w/mono lever	●
	3-spool valve w/mono lever + 1 lever	●
	4-spool valve w/mono lever + 1 lever	●
	Global e-service	●

*Retractable type at suspension seat

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.

Before use, read and understand the Operator's Manual for proper operation.