

ZW-7 series

HITACHI

Reliable solutions

ZW310



WHEEL LOADER

Model code : ZW310-7

Engine maximum power : 233 kW / 312 hp

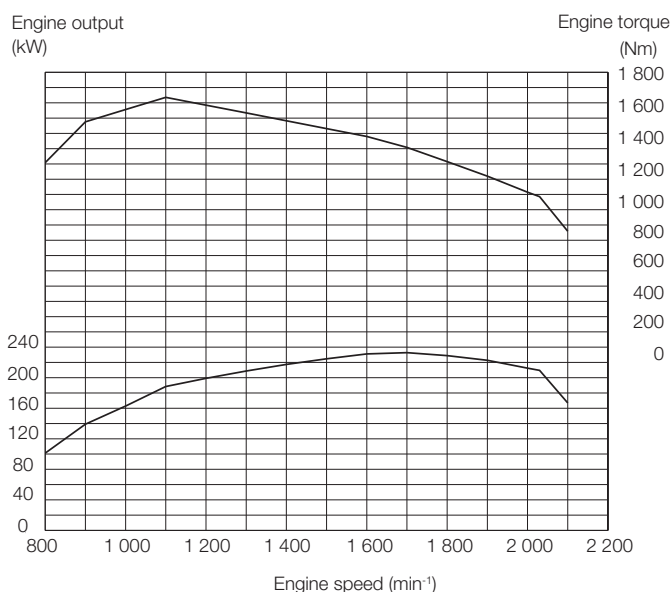
Operating weight : 24 260 – 24 710 kg

Bucket capacity (heaped) : 3.2 – 4.5 m³

SPECIFICATIONS

ENGINE

Model	CUMMINS L9
Type	4-cycle water-cooled, direct injection
Aspiration	Waste-gate turbocharger and intercooled
Aftertreatment	DPF and SCR system
No. of cylinders	6
Maximum power	
ECE R120, gross	233 kW (312 hp) at 1 700 min ⁻¹ (rpm)
ISO9249: 2007, net	226 kW (303 hp) at 1 700 min ⁻¹ (rpm)
Rated power	
ISO14396: 2002, gross	213 kW (286 hp) at 2 000 min ⁻¹ (rpm)
ISO9249: 2007, net	204 kW (274 hp) at 2 000 min ⁻¹ (rpm)
Maximum torque, gross	1 636 Nm at 1 100 min ⁻¹ (rpm)
Bore and stroke	137 mm X 146 mm
Piston displacement	8.9 L
Batteries	2 x 12 V
Air cleaner	Two element dry type with restriction indicator



POWER TRAIN

Transmission	Torque converter, countershaft type powershift with computer-controlled automatic shift and manual shift features included
Torque converter	Three element, single stage, single phase with lock-up clutch
Main clutch	Wet hydraulic, multi-disc type
Cooling method	Forced circulation type
Travel speed* Forward / Reverse	
1st	6.7 [6.7] {6.9} / 6.0 [6.7] {6.9} km/h
2nd	11.4 (11.5) [11.4 (11.5)] {11.9 (11.9)} / 10.3 (10.4) [11.4 (11.5)] {11.9 (11.9)} km/h
3rd	22.1 (22.5) [22.1 (22.5)] {22.1 (22.5)} / 22.1 (22.5) [22.1 (22.5)] {22.1 (22.5)} km/h
4th	36.0 (36.0) [36.0 (36.0)] {36.0 (36.0)} / 36.0 (36.0) [36.0 (36.0)] {36.0 (36.0)} km/h

*With 26.5R25(L3) tires

(): Data at Lock-up clutch ON

[]: Data at Power Mode

{ } : Data at Power+ Mode

AXLE AND FINAL DRIVE

Drive system	Four-wheel drive system
Front & rear axle	Semi-floating
Front	Fixed to the front frame
Rear	Trunnion support
Reduction and differential gear	Two stage reduction with torque proportioning differential
Oscillation angle	Total 24° (+12°, -12°)
Final drives	Heavy-duty planetary, mounted inboard

TIRES

Tire size	26.5R25(L3)XHA2
Optional	Refer to standard & optional equipment list

BRAKES

Service brakes	Inboard mounted fully hydraulic 4 wheel wet disc brake. Front & rear independent brake circuit
Parking brakes	Spring applied, hydraulically released, located in transmission.

STEERING SYSTEM

Type	Articulated frame steering
Steering angle	Each direction 37° ; total 74°
Cylinders	Double-acting piston type
No. x Bore x Stroke	2 x 85 mm x 498 mm

HYDRAULIC SYSTEM

Arm and bucket are controlled by multifunction lever	
Arm controls	Four position valve; Raise, hold, lower, float
Bucket controls with automatic bucket return-to-dig control	Three position valve ; Roll back, hold, dump
Main pump (Serve as steering pump)	Variable piston type
Maximum flow	300 L/min at 2 000 min ⁻¹ (rpm)
Maximum pressure ..	31.4 MPa
Fan pump	Gear type
Maximum flow	85 L/min at 2 000 min ⁻¹ (rpm)
Maximum pressure ..	16.5 MPa
Hydraulic cylinders	
Type	Double acting type
No. x Bore x Stroke ...	Arm : 2 x 145 mm x 884 mm Bucket : 1 x 180 mm x 525 mm
Filters	Full-flow 15 micron return filter in reservoir
Hydraulic cycle times	
Lift arm raise	5.6 s (5.5 s)
Lift arm lower	4.1 s (4.1 s)
Bucket dump	1.2 s (1.2 s)
Total	10.9 s (10.8 s)

*Data at Power+ Mode

ENVIROMENT

Engine Emissions

EU Stage V

Sound level

Sound level in cab according to ISO 6396: 2008 LpA 69 dB(A)

External sound level according to ISO 6395: 2008 and

EU Directive 2000/14/EC LwA 107 dB(A)

Air Conditioning System

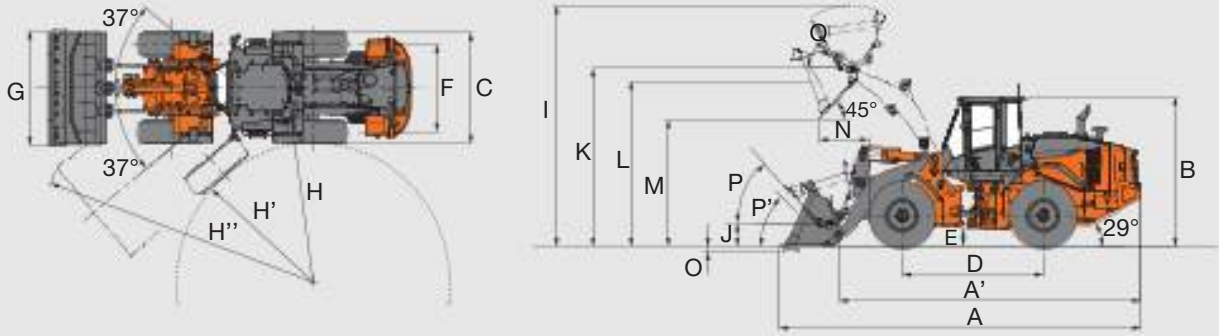
The air conditioning system contains fluorinated greenhouse gases.

Refrigerant type: HFC-134a, GWP: 1430, Amount: 0.75 kg, CO₂e: 1.07 ton.

SERVICE REFILL CAPACITIES

Fuel tank	379 L
Engine coolant	37 L
Engine oil	33 L
Torque converter & transmission	51 L
Front axle differential & wheel hubs	48 L
Rear axle differential & wheel hubs	48 L
Hydraulic oil tank	139 L
DEF/AdBlue® tank	48 L

DIMENSIONS & SPECIFICATIONS



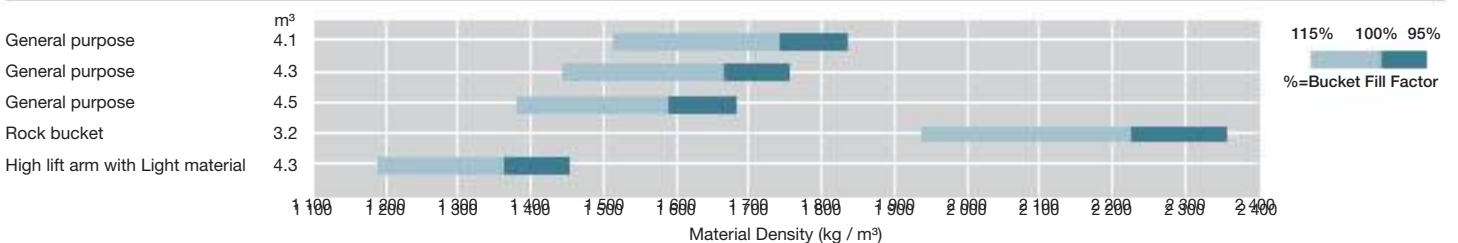
Bucket type		Standard arm					Rock bucket	High lift arm Light material Round bottom	
		Round bottom		General purpose					
		Bolt-on cutting edge	Weld-on adapter & teeth	Bolt-on cutting edge	Flat bottom Bolt-on cutting edge	Weld-on adapter & teeth	Weld-on adapter & teeth	Bolt-on cutting edge	
Bucket capacity	ISO 7546: 1983 Heaped	m ³	4.3	4.1	4.3	4.5	4.1	3.2	4.3
Bucket capacity	ISO 7546: 1983 Struck	m ³	3.7	3.5	3.7	3.9	3.5	2.7	3.7
A Overall length		mm	9 015	9 175	9 015	9 065	9 175	9 090	9 465
A' Overall length (without bucket)		mm	7 450						7 900
B Overall height	up to cab top	mm				3 530			
C Width over tires	outside tire	mm				2 930			
D Wheel base		mm				3 540			
E Ground clearance	Minimum	mm				500			
F Tread		mm				2 230			
G Bucket width		mm				2 980			
H Turning radius (Centerline of outside tire)		mm				6 420			
H' Turning radius to inside of tires		mm				3 870			
H'' Loader clearance radius, bucket in carry position		mm	7 385	7 420	7 385	7 400	7 420	7 365	7 615
I Overall operating height	bucket full raise	mm		6 020		6 050	6 020	5 745	6 435
J Carry height of bucket pin	at carry position	mm				435			
K Height to bucket hinge pin, fully raised		mm			4 425				4 860
L Lift arm clearance at max lift		mm				3 870			
M Dumping clearance 45 degree, full height		mm	3 090	2 995	3 090	3 060	2 995	3 055	3 530
N Reach, 45 degree dump, full height		mm	1 305	1 440	1 305	1 355	1 440	1 380	1 370
O Digging depth (Horizontal digging angle)		mm	120	95	120	115	95	95	120
P Max. roll back at carry position		deg			45				44
P' Max. roll back at ground level		deg				41			
Q Roll back angle at full height		deg				61			
Static tipping load ISO 14397-1:	Straight	kg	18 830	19 160	18 700	18 650	19 040	18 670	15 720
2007(Section 1-5) *	Full 37 degree turn	kg	16 040	16 320	15 930	15 880	16 220	15 900	13400
Breakout force		kN	189	203	189	183	203	223	190
		kgf	19 290	20 710	19 290	18 670	20 710	22 760	19 390
Operating weight *		kg	24 390	24 260	24 520	24 520	24 380	24 380	24 710
Articulate angle		deg				37			
Departure angle		deg				30			
Operating load		kg			7 140				5 880

: Static tipping load and operating weight marked with include 26.5R25(L3) tires (No ballast) with lubricants, full fuel tank and operator. Machine stability and operating weight depend on counterweight, tire size and other attachments.

WEIGHT CHANGE

Option item	Operating weight (kg)	Tipping load (kg)		Overall width (mm) (outside tire)	Overall height (mm)	Overall length (mm)
		Straight	Full turn			
Tire	26.5R25(L3) XHA2	± 0	± 0	± 0	± 0	± 0
	26.5R25(L5) XLDD2A	+660	+500	+440	+15	+35
	26.5R25(L5) XMINED2 PRO	+ 1 190	+870	+760	+45	+60
Belly guard	+240	+140	+130	± 0	± 0	± 0

BUCKET SELECTION GUIDE



EQUIPMENT

● Standard equipment

○ Optional equipment

ENGINE

Aftertreatment device	●
Aftertreatment manual regeneration inhibit switch	●
Aftertreatment manual regeneration switch	●
Air filter double elements	●
Air intake	
Pre-cleaner (Sy-Klone)	●
Pre-cleaner (Turbo II)	○
Anti-clogging radiator (Wide fin pitch radiator)	●
Automatic reversible cooling fan with heat sensing	●
Cartridge-type engine oil filter	●
Cartridge-type fuel main filter	●
Cartridge-type fuel pre-filter	●
Coolant reservoir sight gauge	●
DEF/AdBlue® tank extension filler	●
DEF/AdBlue® tank with ISO magnet adapter	●
Engine auto shut-down control system	●
Engine oil remote drain	●
Fan guard	●

BRAKE SYSTEM

Front and rear independent brake circuit	●
Inboard mounted fully hydraulic 4 wheel wet disc	●
Spring-applied/Hydraulic-released parking brake	●

HYDRAULIC SYSTEM

Bucket auto leveler (Automatic return to dig control)	●
Control lever	
for 2 spools control valve	
MF lever	○
2 levers	●
for 3rd spools control valve	
MF lever & AUX lever for 3rd function	○
2 levers & AUX lever for 3rd function - Inside layout pattern (3rd - bucket - liftarm)	○
Control lever lock switch	●
Dual lift arm auto leveler	●
Hydraulic filters	●
Lift arm float system	●
Reservoir sight gauge	●
Ride control system (OFF-AUTO type)	●
Work mode selector	●

CAB

Adjustable steering column with POP-UP	●
Auto control air conditioner	
with double intake filter	●
Pre-cleaner for air conditioner	○
Bluetooth® integrated DAB+radio, hands-free calling	●
Camera & monitor	
Aerial Angle® (Side and rear view camera)	○
Rear view camera & monitor	●
Coat hook	●
Evacuation hammer	●
Front/Rear defroster	●
Glove compartment	●
LED room light	●
Payload checker with tip-off function	●
Rear obstacle detection system	○
Rear view mirrors	
Rear view mirrors	●
Outside (Heated, 2) electrical adjustment retractable mirror stay	●
ROPS (ISO3471: 2008), FOPS (ISO3449: 2008 LEVEL II): multi-plane isolation mounted for noise	●
Rubber floor mat	●
Seat	
Heavy duty air suspension seat equipped with horizontal suspension headrest and heater: fabric, high back, adjustable for damper, inclination of the seat, seat depth, weight-height, fore-aft position, reclining angle, armrest angle, headrest height and angle, lumbar support	●
Seat belt reminder	●
Steering system	
Joystick steering (with wheel steering)	○
Wheel steering	●
Storage	
Cup holder	●
Document holder	●
Hot & cool box	●
Seatback pocket	●
Smartphone and Tablet device holder	●
Sun shade film on front windshield	○
Sunscreen roller type	●
Tinted safety glass	
Front windshield: laminated	●
Others: tempered	●
USB power supply	●
Windshield washer front and rear	●
2 speakers	●
8 inch sub monitor	●

MONITORING SYSTEM

Gauge: coolant temperature, fuel level, transmission oil temperature	●
Indicator lights : clearance lights, control lever lock, fuel level, high beam, parking brake, preheat, turn signals, work lights, fan reverse indicator, seat belt indicator	
Indicator on multifunction monitor: F-N-R shift position, gear shift position, clock, DEF alarm indicator, DEF level gauge, ECO indicator, forward/reverse selector switch indicator, hold display, hour meter, joystick steering indicator (optional), odometer, battery volt, speedometer, tachometer, transmission autoshifting indicator, Warning lights: air filter restriction, brake oil low pressure, communication system error, discharge warning, engine oil low pressure, engine warning, hydraulic oil level, low steering oil pressure, overheat, transmission warning	●
Indicator on sub monitor : payload checker, dual auto-leveler indicator rear obstacle detection and warning system (optional)	●
38 languages selection	●

ELECTRICAL SYSTEM

Alternator (95A)	●
Backup alarm	●
Battery disconnect switch	●
Large capacity batteries	●
Power outlet 12 V & 24 V	●

LIGHTS

Clearance lights	●
LED brake & tail lights	●
LED headlights	●
Rotating lamp	○
Turn signals with hazard switch	●
Work lights	
2 front on cab & 2 rear LED working lights	●
2 front on cab & 2 rear LED working lights (High brightness)	○
4 front, 2 rear on cab & 2 rear LED working lights	○
4 front, 2 rear on cab & 2 rear LED working lights (High brightness)	○

POWER TRAIN

Approach speed control	●
Automatic transmission with load sensing system	●
Clutch cut position switch	●
Differential	
LSD (Limited Slip Differential, front and rear)	○
TPD (Torque Proportioning Differential, front and rear)	●
DSS (Down Shift Switch)	●
Forward/Reverse lever	●
Forward/Reverse selector switch	●
Lock-up clutch (torque converter)	●
Maximum gear limited switch	●
Power mode switch	●
Quick power switch	●
Travel mode selector (Auto1-Auto2)	●

TIRES

26.5R25(L3) XHA2	●
26.5R25(L5) XLDD2A	○
26.5R25(L5) XMINED2 PRO	○

MISCELLANEOUS

Articulation lock bar	●
Auto lubrication system	○
Belly guard (Bolt on type) (front / rear)	○
Bucket cylinder guard	○
Cab top rail	
Front rail on the cab top	●
Rear rail on the cab top	●
Cab window cleaning foot plate	●
Counterweight, built-in	●
Cutting edge protection	○
Drawbar with locking plate	●
Emergency steering	●
Fenders	
for 26.5R25 (Front and full covered rear fenders with mud flaps)	●
Front windshield guard	○
Global e-Service	●
Lift arm	
High lift arm	○
Standard lift arm	●
Lift & tie down hooks	●
On board information controller	●
Pilfer proof	
Battery cover with locking bracket	○
Lockable engine cover	●
Lockable fuel refilling cap	○
Standard tool kit	●
Tool box	●
Under cover (Bolt on type) (rear x2)	●
Wheel blocks	○