

ZW-7 series

HITACHI

Reliable solutions

ZW220



WHEEL LOADER

Model code : ZW220-7

Engine maximum power : 157 kW / 210 hp (ISO14396)

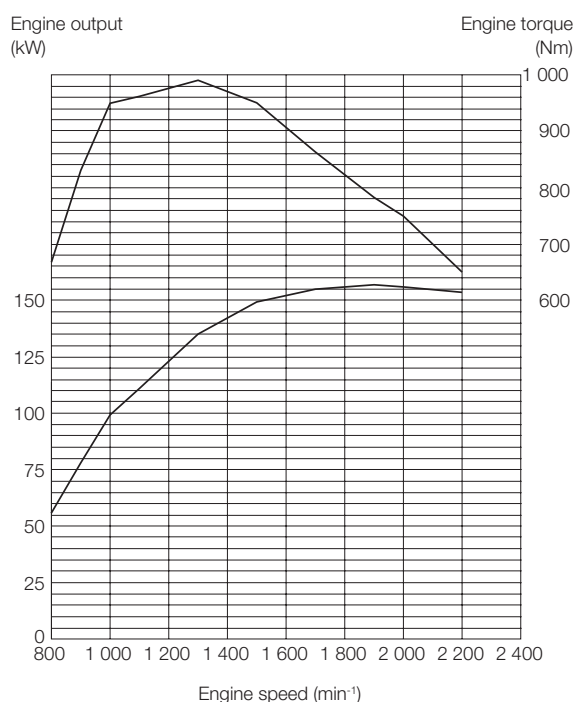
Operating weight : 18 190 – 19 450 kg

Bucket ISO heaped : 2.8 – 10.0 m³

SPECIFICATIONS

ENGINE

Model	CUMMINS B6.7
Type	4 cycle water-cooled, direct injection
Aspiration	Turbocharger and intercooled
Aftertreatment	DPF and SCR system
No. of cylinders	6
Maximum power	
ISO 14396	157 kW (210 hp) at 1 900 min ⁻¹ (rpm)
ISO 9249, net	152 kW (204 hp) at 1 900 min ⁻¹ (rpm)
Rated power	
ISO 14396	149 kW (200 hp) at 2 200 min ⁻¹ (rpm)
ISO 9249, net	144 kW (193 hp) at 2 200 min ⁻¹ (rpm)
Maximum torque, gross	990 Nm at 1 300 min ⁻¹ (rpm)
Bore and stroke	107 mm X 124 mm
Piston displacement	6.69 L
Batteries	2 x 12 V
Air cleaner	Two element dry type with restriction indicator



POWER TRAIN

Transmission	Torque convertershaft type powershift with computer-controlled automatic shift and manual shift features included.
Torque converter	Three element, single stage, single phase
Main clutch	Wet hydraulic, multi-disc type
Cooling method	Forced circulation type
Travel speed* Forward / Reverse	
1st	6.3 / 6.6 km/h (6.3 / 6.7 km/h)
2nd	10.9 / 11.4 km/h (11.4 / 12.0 km/h)
3rd	16.0 / 24.8 km/h (17.3 / 26.9 km/h)
4th	23.7 km/h (25.7 km/h)
5th	36.3 km/h (36.3 km/h)
*With 23.5R25 (L3) tires	
() : 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	23.5R25 (L3)
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, dry disc type with external output shaft

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 70 mm x 442 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 Displacement Axial Plunger Pump
Maximum flow	275 L/min at 2 200 min ⁻¹ (rpm)
Maximum pressure ...	27.4 MPa
Fan pump	Fixed Displacement Gear Pump
Maximum flow	65.8 L/min at 2 200 min ⁻¹ (rpm)
Maximum pressure ...	19.0 MPa
Hydraulic cylinders	
Type	Double acting type
No. x Bore x Stroke ...	Arm: 2 x 130 mm x 880 mm Bucket: 1 x 165 mm x 510 mm
Filters	Full-flow 9 micron return filter in reservoir
Hydraulic cycle times	
Lift arm raise	5.6 s
Lift arm lower	3.3 s
Bucket dump	1.5 s
Total	10.4 s
*Data at Power Mode	

ENVIRONMENT

Engine Emissions

EU Stage V

Sound level

Sound level in cab according to ISO 6396 LpA 68 dB(A)

External sound level according to ISO 6395 and

EU Directive 2000/14/EC LwA 105 dB(A)

Air Conditioning System

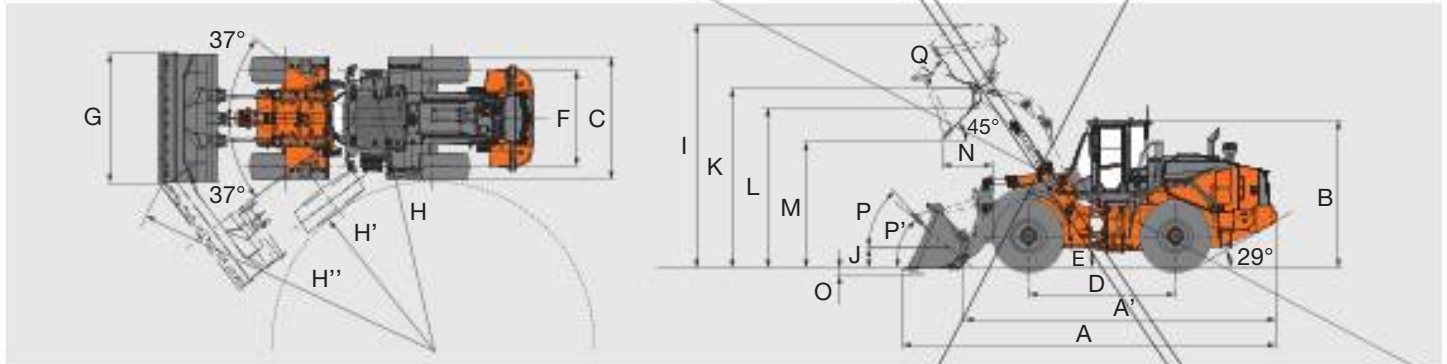
The air conditioning system contains fluorinated greenhouse gases.

Refrigerant type: HFC-134a, GWP: 1430, Amount: 0.80±0.05kg, CO₂e: 1.14±0.07ton.

SERVICE REFILL CAPACITIES

Fuel tank	255 L
Engine coolant	29 L
Engine oil	25 L
Torque converter & transmission	27 L
Front axle differential & wheel hubs	32 L
Rear axle differential & wheel hubs	32 L
Hydraulic oil tank	114 L
DEF/AdBlue® tank	25 L

DIMENSIONS & SPECIFICATIONS



Bucket type			Standard arm									
			General purpose				Rock bucket	High volume**		High-lift arm		
			Weld-on teeth	Bolt-on cutting edge	Weld-on teeth	Bolt-on cutting edge	Weld-on teeth / segment edge	Bolt-on cutting edge	Bolt-on cutting edge	General purpose	Bolt-on cutting edge	
Bucket capacity	ISO heaped	m³	3.3	3.3	3.5	3.5	2.8	6.0	10.0	3.3	3.5	
A Overall length		mm	8 520	8 380	8 590	8 450	8 750	8 450	9 220	8 880	8 950	
A' Overall length (without bucket)		mm	7 110								7 610	
B Overall height	up to cab top	mm									3 370	
C Width over tires	outside tire	mm									2 825	
D Wheel base		mm									3 300	
E Ground clearance	Minimum	mm									450	
F Tread		mm									2 160	
G Bucket width		mm	2 910	2 910	2 910	2 910	2 910	3 050	3 400	2 910	2 910	
H Turning radius (Centerline of outside tire)		mm									6 010	
H' Turning radius to inside of tires		mm									3 530	
H'' Loader clearance radius, bucket in carry position		mm	6 980	6 940	7 000	6 960	7 050	7 030	7 410	7 150	7 170	
I Overall operating height	bucket full raise	mm	5 500	5 500	5 570	5 570	5 420	6 120	6 640	5 910	5 980	
J Carry height of bucket pin	at carry position	mm									430	
K Height to bucket hinge pin, fully raised		mm									4 080	
L Lift arm clearance at max lift		mm									3 770	
M Dumping clearance 45 degree, full height		mm	2 800	2 900	2 740	2 850	2 630	2 850	2 300	3 310	3 260	
N Reach, 45 degree dump, full height		mm	1 220	1 110	1 270	1 170	1 340	1 170	1 710	1 270	1 320	
O Digging depth (Horizontal digging angle)		mm	110	110	110	110	140	110	110	190	190	
P Max. roll back at carry position		deg									47	
P' Max. roll back at ground level		deg									43	
Q Roll back angle at full height		deg									60	
Static tipping load *	Straight	kg	15 230	14 970	15 190	14 930	14 820	14 470	13 670	11 860	11 780	
	Full 37 degree turn	kg	13 490	13 220	13 440	13 180	13 070	12 730	11 940	10 420	10 340	
Breakout force		kN	156	145	145	136	132	131	94	132	124	
		kgf	15 900	14 700	14 800	13 800	13 400			13 400	12 600	
Operating weight *		kg	18 190	18 400	18 250	18 460	18 480	18 770	19 450	18 560	18 610	

Note: All dimensions, weight and performance data based on ISO 6746-1:1987, ISO 7131:2009 and ISO 7546:1983

: Static tipping load and operating weight marked with include 23.5 R25 (L3) tires (No ballast) with lubricants, full fuel tank and operator.

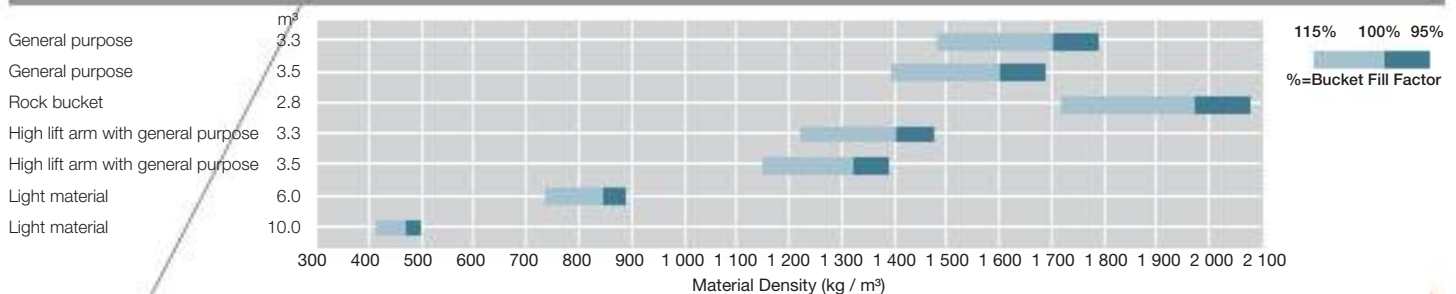
Machine stability and operating weight depend on counterweight, tire size and other attachments.

** High volume buckets do not meet Road Homologation requirements.

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	23.5R25(L3) XHA2	±0	±0	±0	±0	±0
	23.5R25(L5) XLDD2A	+600	+520	+470	+15	+30
	23.5R25(L5) XMINED2	+710	+620	+560	+10	+25
	23.5R25(L2) XSNOPUS	±0	±0	±0	+5	±0
	23.5R25(L3) VJT	+60	+90	+80	±0	±0
Belly guard	+170	+140	+130	-	-	-

BUCKET SELECTION GUIDE



EQUIPMENT

● Standard equipment

○ Optional equipment

ENGINE	
Aftertreatment device	●
Air intake	
Pre-cleaner (Sy-Klone)	●
Pre-cleaner (Turbo II)	○
Air filter double elements	●
Anti-clogging radiator (Wide fin pitch radiator)	●
Automatic reversible cooling fan with heat sensing	●
Cartridge-type engine oil filter	●
Cartridge-type fuel pre-filter	●
Cartridge-type fuel main 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 & 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)	●
Electric control lever	
for 3 spools control valve	
MF lever & Proportional switch for 3rd function	○
2 levers & AUX lever for 3rd function - Inside layout pattern (3rd - bucket - liftarm)	●
for 4 spools control valve	
MF lever & 2 Proportional switches for 3rd & 4th function	○
2 levers & AUX lever for 3rd function & Proportional switch for 4th function - Inside layout pattern (4th - 3rd -bucket - liftarm)	○
Control lever lock switch	●
Dual lift arm auto leveler and kickout system	●
Hydraulic filters	●
Lift arm float system	●
Reservoir sight gauge	●
Ride control system (OFF-AUTO type)	●
Quick coupler piping and switch	○
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	
Rear view camera & monitor	●
Aerial Angle® (Side and rear view camera)	○
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	
Inside (1)	●
Outside (Heated, 2) electrical adjustment retractable mirror stay	●
Retractable seat belt, 50mm	●
ROPS (ISO3471), FOPS (ISO3449): multi-plane isolation mounted for noise, vibration reduction	●
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	●
Smartphone and Tablet device holder	●
Seatback pocket	●
Sun shade film on front windshield	○
Sunscreen roller type	●
Textured steering wheel with spinner knob	●
Tinted safety glass	
Front windshield: laminated	●
Others: tempered	●
USB power supply	●
Windshield washer front and rear	●
Windshield wipers 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 auto-shifting 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)	●
Driving speed limiter (20km/h)	○
DSS (Down Shift Switch)	●
Forward/Reverse lever	●
Forward/Reverse selector switch	●
Maximum gear limited switch	●
Power mode switch	●
Quick power switch	●
Travel mode selector (Auto1-Auto2)	●
Aftertreatment manual regeneration switch	●
Aftertreatment manual regeneration inhibit switch	●

TIRES

23.5R25 (L3) XHA2	●
23.5R25 (L3) VJT	○
23.5R25 (L5) XLDD2A	○
23.5R25 (L5) XMINED2 PRO	○
23.5R25 (L2) XSNOPLUS	○

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 pin	●
Emergency steering	●
Fenders	
for 23.5R25 (Front & full covered rear fenders with mud flaps)	●
Global e-Service	●
Lift arm	
Standard lift arm	●
High lift arm	○
Lift & tie down hooks	●
On board information controller	●
Pilfer proof	
Lockable battery cover	●
Lockable engine cover	●
Lockable fuel refilling cap	●
Radiator dust protection screen	○
Rear license plate bracket	○
Road homologation	
German road homologation kit: rear license plate bracket, reflective sticker, wheel blocks	○
Italian road homologation kit: cab lights, cutting edge protection, link stopper, rear license plate bracket, reflective sticker, rotating lamp	○
Spanish road homologation kit: rear license plate bracket, rotating lamp	○
Standard tool kit	●
Tool box	●
Wheel blocks	●