

HITACHI

ZW220-7

Preliminary
ZW-7 series

Reliable solutions



ZW220

WHEEL LOADER

Model code: ZW220-7

Engine maximum power: 210 hp (157 kW)

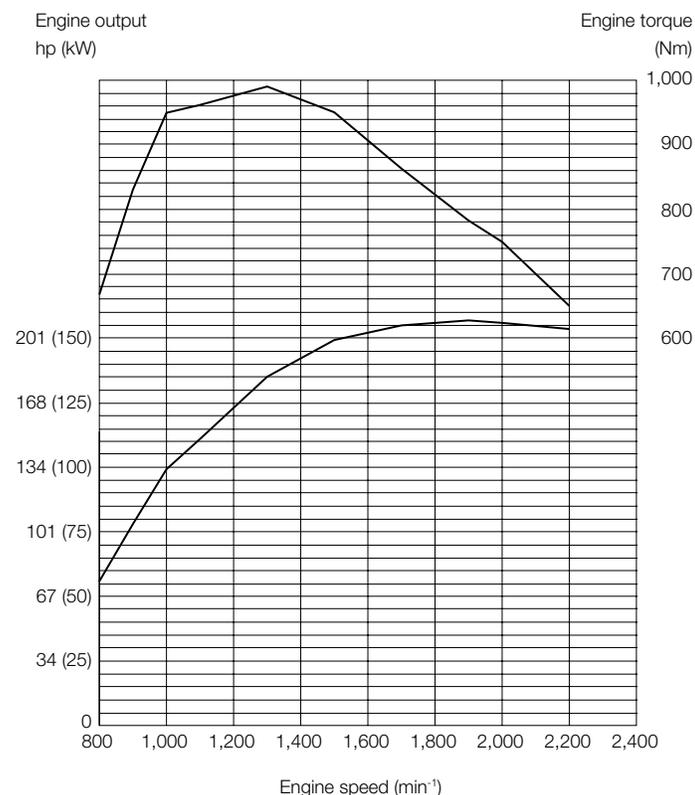
Operating weight: 40,109–41,035 lb. (18,190–18,610 kg)

Bucket capacity: 3.6–4.6 yd³ (2.8–3.5 m³)

* Shown with optional equipment that may not be available in all markets

SPECIFICATIONS

ENGINE	
Model	CUMMINS B6.7
Type	4 cycle water-cooled, direct injection
Aspiration	Turbocharger and intercooled
Aftertreatment	DPF+SCR system
No. of cylinders	6
Maximum power	
ECE R120, gross	210 hp (157 kW) at 1,900 min ⁻¹ (rpm)
ISO 9249: 2007, net	204 hp (152 kW) at 1,900 min ⁻¹ (rpm)
Rated power	
ISO 14396: 2002	200 hp (149 kW) at 2,200 min ⁻¹ (rpm)
ISO 9249: 2007	193 hp (144 kW) at 2,200 min ⁻¹ (rpm)
Maximum torque, gross	990 Nm at 1,300 min ⁻¹ (rpm)
Bore and stroke	4.2" x 4.9" (107 mm x 124 mm)
Piston displacement	410.1 cu.in (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	3.9/4.1 mph (6.3/6.6 km/h) [3.9/4.1 mph (6.3/6.7 km/h)]
2nd	6.8/7.1 mph (10.9/11.4 km/h) [7.1/7.5 mph (11.4/12.0 km/h)]
3rd	9.9/15.4 mph (16.0/24.8 km/h) [10.7/16.7 mph (17.3/26.9 km/h)]
4th	14.7 mph (23.7 km/h) [16.0 mph (25.7 km/h)]
5th	22.5 mph (36.3 km/h) [22.5 mph (36.3 km/h)]

*With 23.5R25 (L3) tires
[]: Data at Power Mode

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

TIRES	
Tire size	23.5R25 (L3)

BRAKES	
Service brakes	Inboard mounted fully hydraulic 4 wheel wet disc brake. Front and 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 2.8" x 17.4" (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	72.6 gal (275 L) /min at 2,200 min ⁻¹ (rpm)
Maximum pressure	3,974 psi (27.4 MPa)
Fan pump	
Fixed Displacement Gear Pump	
Maximum flow	17.4 gal (65.6 L) /min at 2,200 min ⁻¹ (rpm)
Maximum pressure	2,756 psi (19.0 MPa)
Hydraulic cylinders	
Type	Double acting type
No. x Bore x Stroke	Arm: 2 x 5.1" x 34.6" (2 x 130 mm x 880 mm)
	Bucket: 1 x 6.5" x 20.1" (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

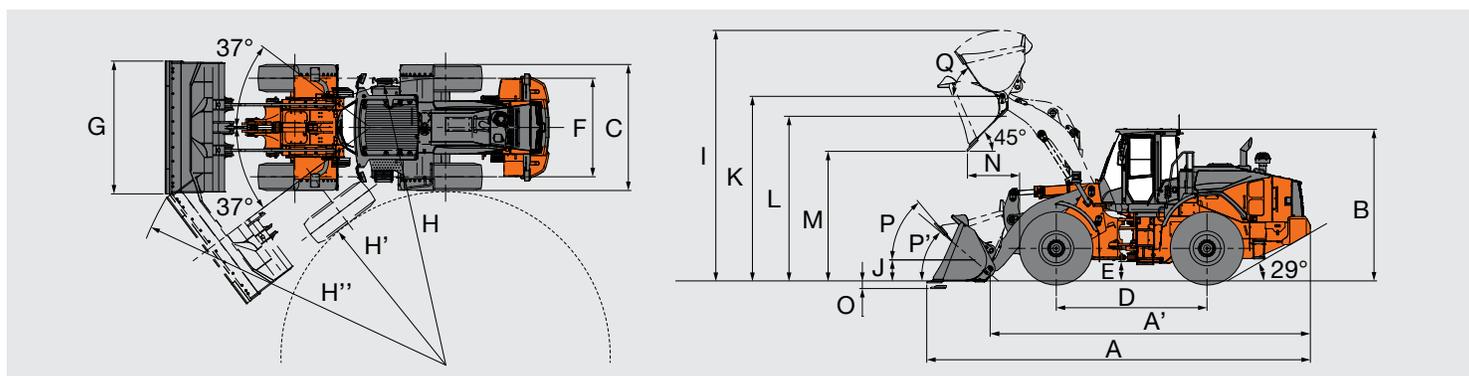
*Data at Power Mode

ENVIRONMENT	
Engine Emissions	
EPA Final Tier 4/EU stage V	
Sound level	
Sound level in cab according to ISO 6396: 2008	LpA 68 dB(A)
External sound level according to ISO 6395: 2008 and EU Directive 2000/14/EC	LwA 105 dB(A)

SERVICE REFILL CAPACITIES	
Fuel tank	67.3 gal (255 L)
Engine coolant	7.7 gal (29 L)
Engine oil	6.6 gal (25 L)
Torque converter and transmission	7.1 gal (27 L)
Front axle differential and wheel hubs	8.4 gal (32 L)
Rear axle differential and wheel hubs	8.4 gal (32 L)
Hydraulic oil tank	30.1 gal (114 L)
DEF/AdBlue® tank	6.6 gal (25 L)

SPECIFICATIONS

DIMENSIONS AND SPECIFICATIONS



Bucket type		Standard arm					High-lift arm	
		General purpose				Rock bucket	General purpose	
		Weld-on teeth	Bolt-on cutting edge	Weld-on teeth	Bolt-on cutting edge	Weld-on teeth / segment edge	Bolt-on cutting edge	
Bucket capacity	ISO 7546: 1983 Heaped yd ³ (m ³)	4.3 (3.3)	4.3 (3.3)	4.6 (3.5)	4.6 (3.5)	3.6 (2.8)	4.3 (3.3)	4.6 (3.5)
	ISO 7546: 1983 Struck yd ³ (m ³)	3.7 (2.8)	3.7 (2.8)	3.9 (3.0)	3.9 (3.0)	3.1 (2.4)	3.7 (2.8)	3.9 (3.0)
A	Overall length..... ft-in (mm)	27' 11" (8,520)	27' 6" (8,380)	28' 2" (8,590)	27' 9" (8,450)	28' 8" (8,750)	29' 2" (8,880)	29' 4" (8,950)
A'	Overall length (without bucket)..... ft-in (mm)	23' 4" (7,110)	23' 4" (7,110)	23' 4" (7,110)	23' 4" (7,110)	23' 4" (7,110)	24' 12" (7,610)	24' 12" (7,610)
B	Overall height up to cab top.....ft-in (mm)	11' 1" (3,370)	11' 1" (3,370)	11' 1" (3,370)	11' 1" (3,370)	11' 1" (3,370)	11' 1" (3,370)	11' 1" (3,370)
C	Width over tires outside tire.....ft-in (mm)	9' 3" (2,825)	9' 3" (2,825)	9' 3" (2,825)	9' 3" (2,825)	9' 3" (2,825)	9' 3" (2,825)	9' 3" (2,825)
D	Wheel base ft-in (mm)	10' 10" (3,300)	10' 10" (3,300)	10' 10" (3,300)	10' 10" (3,300)	10' 10" (3,300)	10' 10" (3,300)	10' 10" (3,300)
E	Ground clearance Minimumft-in (mm)	1' 6" (430)	1' 6" (430)	1' 6" (430)	1' 6" (430)	1' 6" (430)	1' 6" (430)	1' 6" (430)
F	Tread ft-in (mm)	7' 1" (2,160)	7' 1" (2,160)	7' 1" (2,160)	7' 1" (2,160)	7' 1" (2,160)	7' 1" (2,160)	7' 1" (2,160)
G	Bucket width ft-in (mm)	9' 7" (2,910)	9' 7" (2,910)	9' 7" (2,910)	9' 7" (2,910)	9' 7" (2,910)	9' 7" (2,910)	9' 7" (2,910)
H	Turning radius (centerline of outside tire) ft-in (mm)	19' 9" (6,010)	19' 9" (6,010)	19' 9" (6,010)	19' 9" (6,010)	19' 9" (6,010)	19' 9" (6,010)	19' 9" (6,010)
H'	Turning radius to inside of tires..... ft-in (mm)	11' 7" (3,530)	11' 7" (3,530)	11' 7" (3,530)	11' 7" (3,530)	11' 7" (3,530)	11' 7" (3,530)	11' 7" (3,530)
H''	Loader clearance radius, bucket in carry position ft-in (mm)	22' 11" (6,980)	22' 9" (6,940)	22' 12" (7,000)	22' 10" (6,960)	23' 2" (7,050)	23' 5" (7,150)	23' 6" (7,170)
I	Overall operating height bucket full raiseft-in (mm)	18' 1" (5,500)	18' 1" (5,500)	18' 3" (5,570)	18' 3" (5,570)	17' 9" (5,420)	19' 5" (5,910)	19' 7" (5,980)
J	Carry height of bucket pin at carry positionft-in (mm)	1' 5" (430)	1' 5" (430)	1' 5" (430)	1' 5" (430)	1' 5" (430)	1' 5" (430)	1' 5" (430)
K	Height to bucket hinge pin, fully raised..... ft-in (mm)	13' 5" (4,080)	13' 5" (4,080)	13' 5" (4,080)	13' 5" (4,080)	13' 5" (4,080)	14' 9" (4,490)	14' 9" (4,490)
L	Lift arm clearance at max lift ft-in (mm)	12' 4" (3,770)	12' 4" (3,770)	12' 4" (3,770)	12' 4" (3,770)	12' 4" (3,770)	13' 9" (4,180)	13' 9" (4,180)
M	Dumping clearance 45 degree, full height ft-in (mm)	9' 2" (2,800)	9' 6" (2,900)	8' 12" (2,740)	9' 4" (2,850)	8' 8" (2,630)	10' 10" (3,310)	10' 8" (3,260)
N	Reach, 45 degree dump, full height ft-in (mm)	4' 0" (1,220)	3' 8" (1,110)	4' 2" (1,270)	3' 10" (1,170)	4' 5" (1,340)	4' 2" (1,270)	4' 4" (1,320)
O	Digging depth (horizontal digging angle)..... ft-in (mm)	0' 4" (110)	0' 4" (110)	0' 4" (110)	0' 4" (110)	0' 6" (140)	0' 7" (190)	0' 7" (190)
P	Max. roll back at carry position deg	47	47	47	47	47	46	46
P'	Max. roll back at ground level deg	43	43	43	43	43	44	44
Q	Roll back angle at full height deg	60	60	60	60	60	52	52

Bucket type		Standard arm					High-lift arm	
		General purpose				Rock bucket	General purpose	
		Weld-on teeth	Bolt-on cutting edge	Weld-on teeth	Bolt-on cutting edge	Weld-on teeth/segment edge	Bolt-on cutting edge	
Static tipping load *	Straight lb (kg)	33,582 (15,230)	33,009 (14,970)	33,494 (15,190)	32,921 (14,930)	32,678 (14,820)	26,151 (11,860)	25,975 (11,780)
	Full 37 degree turn lb (kg)	29,745 (13,490)	33,009 (13,220)	33,494 (13,440)	29,062 (13,180)	13,070 (28,819)	22,976 (10,420)	22,800 (10,340)
Breakout force kN	156	145	145	136	132	132	124
 lbf (kgf)	35,060 (15,900)	32,414 (14,700)	32,634 (14,800)	30,429 (13,800)	29,547 (13,400)	29,547 (13,400)	27,783 (12,600)
Operating weight * lb (kg)		40,109 (18,190)	40,572 (18,400)	40,241 (18,250)	40,704 (18,460)	40,748 (18,480)	40,925 (18,560)	41,035 (18,610)

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

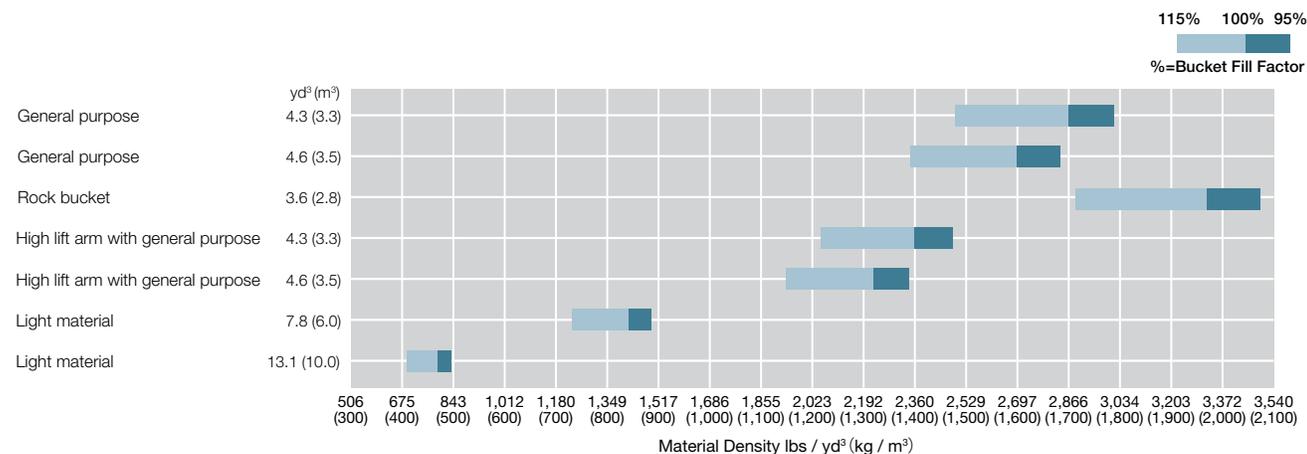
: Static tipping load and operating weight marked with include 23.5 R25 (L3) tires (No ballast) with lubricants, full fuel tank and operator.

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

WEIGHT CHANGE

Option item		Operating weight lb (kg)	Tipping load lb (kg)		Overall width in (mm) (outside tire)	Overall height in (mm)	Overall length in (mm)
			Straight	Full turn			
Tire	23.5R25(L3) VJT	+ 132 (60)	+198 (90)	+176 (80)	±0	±0	±0
Belly guard		+375 (170)	+309 (140)	+287 (130)	-	-	-

BUCKET SELECTION GUIDE



EQUIPMENT

●: Standard equipment ○: Optional equipment

ENGINE	ZW220-7
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)	○
Air filter double elements	●
Anti-clogging radiator (wide fin pitch)	●
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	ZW220-7
Front and rear independent brake circuit	●
Inboard mounted fully hydraulic 4 wheel wet disc	●
Spring-applied/Hydraulic-released parking brake	●

HYDRAULIC SYSTEM	ZW220-7
Bucket auto leveler (automatic return to dig control)	●
Electric control lever	
for 3 spools control valve	
MF lever and Proportional switch for 3rd function	●
2 levers and AUX lever for 3rd function – Inside layout pattern (3rd – bucket – liftarm)	○
Control lever lock switch	●
Dual lift arm auto leveler and kickout system	●
Hydraulic filters	●
Lift arm float system	●
Quick coupler piping and switch	●
Reservoir sight gauge	●
Ride control system (OFF-AUTO type)	●
Work mode selector	●

CAB	ZW220-7
Adjustable steering column with POP-UP	●
Auto control air conditioner	
Pre-cleaner for air conditioner	○
with double intake filter	●
Bluetooth® integrated DAB+radio, hands-free calling	●
Camera and monitor	
AERIAL ANGLE (Side and rear view camera)	○
Rear view camera and 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	
Inside (1)	●
Standard outside mirrors	●
Premium Outside (heated, 2) electrical adjustment retractable mirror stay	●
Retractable seat belt, 2.0 in (50 mm)	●
ROPS (ISO 3471: 2008), FOPS (ISO 3449: 2008 LEVEL II): 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	
Wheel steering	●
Storage	
Cup holder	●
Document holder	●
Hot and cool box	●
Seatback pocket	●
Smartphone and Tablet device holder	●
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	●

●: Standard equipment ○: Optional equipment

MONITORING SYSTEM	ZW220-7
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	ZW220-7
Alternator (95 A)	●
Backup alarm	●
Battery disconnect switch	●
Large capacity batteries	●
Power outlet 12 V and 24 V	●

LIGHTS	ZW220-7
Clearance lights	●
LED brake and tail lights	●
LED headlights	●
Rotating lamp	○
Turn signals with hazard switch	●
Work lights	
4 front, 2 rear on cab and 2 rear LED working lights (high brightness)	●

POWER TRAIN	ZW220-7
Approach speed control	●
Automatic transmission with load sensing system	●
Clutch cut position switch	●
Differential	
LSD (limited slip differential, front and rear)	●
Driving speed limiter (12.4 mph (20 km/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)	●

TIRES	ZW220-7
23.5R25 (L3) VJT	●

MISCELLANEOUS	ZW220-7
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	●
Drawbar with locking pin	●
Emergency steering	●
Fenders	
for 23.5R25 (front and half covered rear fenders with mud flaps)	●
for 23.5R25 (front and full covered rear fenders with mud flaps)	○
Global e-Service	●
Lift and tie down hooks	●
Lift arm	
Standard lift arm	●
High lift arm	○
On board information controller	●
Vandal Protection	
Battery cover with locking bracket	●
Lockable engine cover	●
Lockable fuel refilling cap	●
Radiator dust protection screen	○
Standard tool kit	●
Tool box	●



HITACHI

Reliable solutions



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