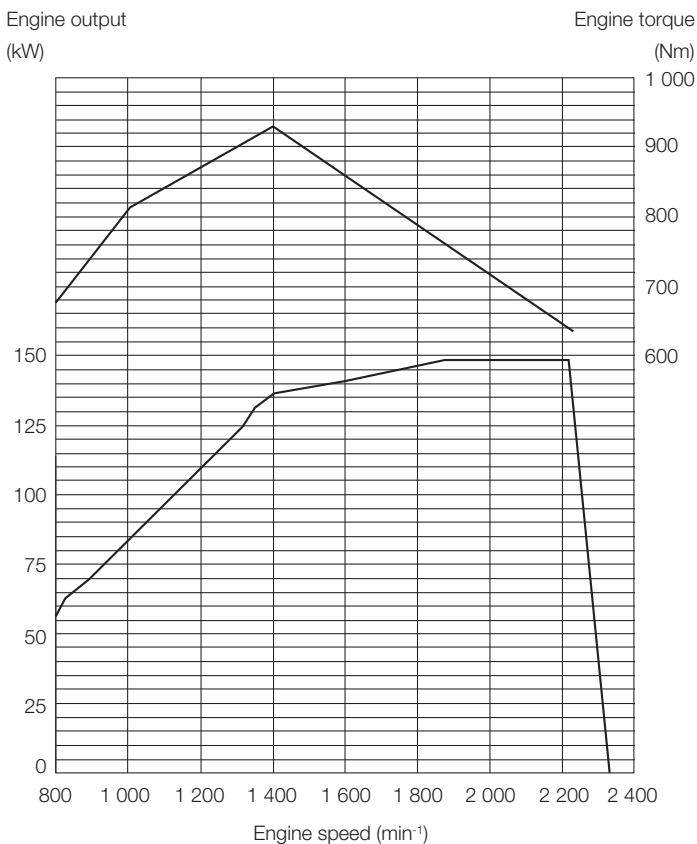


# ZW220 SPECIFICATIONS

## ENGINE

Model .....	CUMMINS QSB6.7
Type .....	4-cycle water-cooled, direct injection
Aspiration .....	Turbocharger and intercooled
Aftertreatment .....	Muffler filter
No. of cylinders .....	6
Maximum power	
Gross .....	149 kW (200 HP) at 1 900 min <sup>-1</sup> (rpm)
ISO 9249, net .....	145 kW (194 HP) at 1 900 min <sup>-1</sup> (rpm)
Maximum torque .....	929 Nm at 1 400 min <sup>-1</sup> (rpm)
Bore and stroke .....	107 mm X 124 mm
Piston displacement .....	6.690 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
Main clutch .....	Wet hydraulic, multi-disc type
Cooling method .....	Forced circulation type
Travel speed* Forward / Reverse	
1st .....	6.2 / 6.5 km/h (6.5 / 6.8 km/h)
2nd .....	10.6 / 11.1 km/h (11.1 / 11.7 km/h)
3rd .....	16.0 / 24.9 km/h (16.8 / 26.2 km/h)
4th .....	23.8 km/h (25.0 km/h)
5th .....	36.0 km/h (36.0 km/h)
*With 23.5 R25 (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 proportional differential
Oscillation angle .....	Total 24° (+12°, -12°)
Final drives .....	Heavy-duty planetary, mounted inboard

## TIRES

Tire size .....	23.5 R25 (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

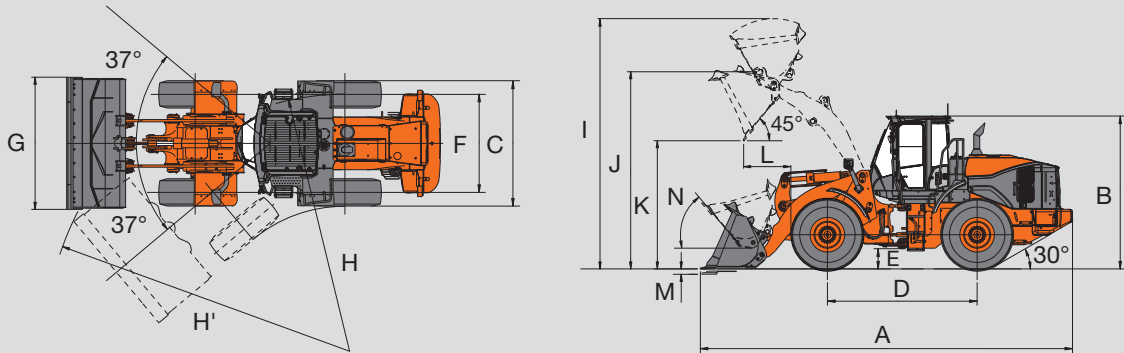
## HYDRAULIC SYSTEM

Arm and bucket are controlled by independent control 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 <sup>-1</sup> (rpm)
Maximum pressure ..	27.4 MPa
Fan pump	
.....	Fixed Displacement Gear Pump
Maximum flow .....	65.8 L/min at 2 200 min <sup>-1</sup> (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 15 micron return filter in reservoir
Hydraulic cycle times	
Lift arm raise .....	5.9 s (5.6 s)
Lift arm lower .....	3.3 s (3.3 s)
Bucket dump .....	1.6 s (1.5 s)
Total .....	10.8 s (10.4 s)
( ) : Data at Power Mode	

## SERVICE REFILL CAPACITIES

Fuel tank .....	255 L
Engine coolant .....	28 L
Engine oil .....	25 L
Torque convertor & transmission .....	40 L
Front axle differential & wheel hubs .....	32 L
Rear axle differential & wheel hubs .....	32 L
Hydraulic oil tank .....	114 L

## DIMENSIONS & SPECIFICATIONS



Bucket type			Standard arm		High lift arm
			General purpose		
			Bolt-on cutting edge	Bolt-on teeth	Bolt-on cutting edge
Bucket capacity	ISO heaped	m <sup>3</sup>	3.4	3.3	2.7
	ISO stuck	m <sup>3</sup>	2.9	2.8	2.3
A Overall length		mm	8 245	8 390	8 580
B Overall height		mm		3 370	
C Width over tires		mm		2 825	
D Wheel base		mm		3 300	
E Ground clearance		mm		450	
F Tread		mm		2 160	
G Bucket width		mm		2 910	
H Turning radius (Centerline of outside tire)		mm		6 020	
H' Loader clearance radius, bucket in carry position		mm	6 970	7 010	7 120
I Overall operating height		mm	5 520	5 520	5 760
J Height to bucket hinge pin, fully raised		mm		4 080	4 490
K Dumping clearance 45 degree, full height		mm	2 870	2 770	3 420
L Reach, 45 degree dump, full height		mm	1 150	1 240	1 170
M Digging depth (Horizontal digging angle)		mm	100	120	180
N Max. roll back at carry position		deg		50	
Static tipping load *	Straight	kg	15 090	15 330	12 190
	Full 37 degree turn	kg	13 350	13 570	10 750
Breakout force		kgf	14 590	15 810	15 550
		kN	143	155	153
Operating weight *		kg	18 190	18 100	18 270

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

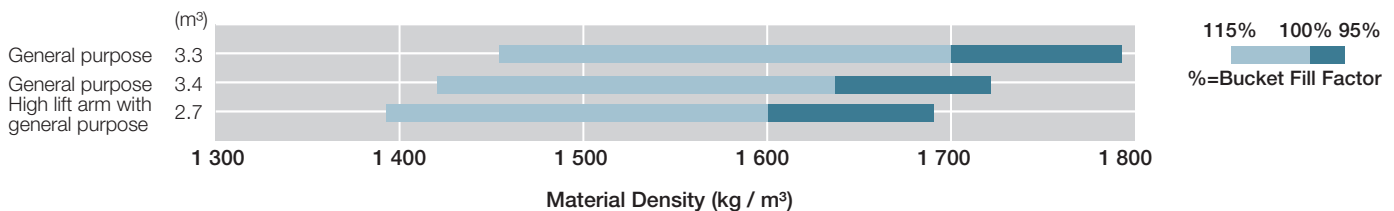
\*: Static tipping load and operating weight marked with\* include 23.5 R25 (L3) tires (No ballast) with lubricants, full fuel tank and operator.

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

## WEIGHT CHANGE

Option item		Operating weight (kg)	Tipping load (kg)		Overall width (mm) (outside tire)	Overall height (mm)	Overall length (mm)
			Straight	Full turn			
Tire	23.5R25(L3)	±0	±0	±0	±0	±0	±0
	23.5R25(L5)	+440	+370	+330	+35	+20	-15

## BUCKET SELECTION GUIDE



# EQUIPMENT

## OPERATOR'S STATION

Adjustable steering column with POP-UP	●
Air suspension seat with 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	●
AM/FM radio with AUX for digital audio player	●
Ashtray, cigar lighter	●
Auto control air conditioner with double intake filter	●
Coat hook	●
Front/Rear defroster	●
Rear view camera & monitor	●
Rear view mirrors	
Inside (2)	●
Outside (2)	●
Outside (Heated, 2)	○
Retractable seat belt, 50 mm	●
Retractable seat belt, 75 mm	○
ROPS (ISO3471), FOPS Level II (ISO3449) compliant cab: multi-plane isolation mounted for noise, vibration reduction	●
Rubber floor mat	●
Storage	
Cup holder	●
Digital audio player holder	●
Document holder	●
Glove compartment	●
Hot & cool box	●
Seatback pocket	●
Sun visor	●
Textured steering wheel with spinner knob	●
Tinted safety glass: others : tempered, windshield : laminated	●
Windshield washer front and rear	●
Windshield wipers front and rear	●

## ELECTRICAL SYSTEM

Backup alarm	●
Batteries	
Standard batteries (120AH-760A)	●
Large capacity batteries (155AH-900A)	○
Battery disconnect switch	●
Engine auto shut-down control system	○
12 V power outlet	●

## COOLING SYSTEM

Automatic reversible cooling fan with heat sensing	●
Fan guard	●
Radiator	
Standard fin pitch radiator	●
Wide fin pitch radiator	○

● ..... Standard equipment

○ ..... Optional equipment

## LIGHTS

Brake & tail lights	●
Clearance lights	●
Headlights	●
Rotating beacon	●
Turn signals with hazard switch	●
Work lights	
Front lights on cab (2)	●
Rear lights on rear grille side cover (2)	●
Additional front lights on cab (2)	●
Rear lights on cab (2)	●

## POWER TRAIN

Automatic transmission with load sensing system	●
Clutch cut position switch	●
Differential	
TPD (Torque Proportioning Differential, front and rear)	●
LSD (Limited Slip Differential, front and rear)	○
DSS (Down Shift Switch)	●
Forward/Reverse lever	●
Forward/Reverse selector switch (MF lever)	●
Power mode switch	●
Quick power switch	●
Travel mode selector (Auto1-Auto2)	●
1st speed fixed switch	●

## ENGINE

Air filter double elements	●
Cartridge-type engine oil filter	●
Cartridge-type fuel pre-filter	●
Cartridge-type fuel main filter	●
Engine oil remote drain	●
Pre-cleaner (Sy-Klone)	●





## MONITORING SYSTEM

Gauge: coolant temperature, fuel	●
Indicator lights: clearance lights, control lever lock, fuel level, high beam, parking brake, preheat, turn signals, work lights	●
Indicator on multifunction monitor: air conditioner display, auto shut-down, brake oil pressure gauge, clock, clutch cut off indicator, dual lift arm auto leveler, ECO indicator, fan reverse indicator, F-N-R/Shift position, forward/reverse selector switch indicator, hold display, hour meter, muffler filter, odometer, power mode indicator, ride control indicator, seat belt, speedometer, tachometer, transmission auto-shifting indicator, transmission oil temperature	●
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	●

## BRAKE SYSTEM

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

## HYDRAULIC SYSTEM

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

## TIRES

23.5 R25 (L3)	●
23.5 R25 (L5)	○

## MISCELLANEOUS

Articulation lock bar	●
Belly guard (Bolt on type)	●
Bucket cylinder guard	●
Counterweight, built-in	●
Drawbar with locking pin	●
Emergency steering	●
Fenders (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	
Battery cover with locking bracket	●
Lockable engine cover	●
Lockable fuel refilling cap	●