

ZW-7 series

HITACHI

Reliable Solutions

# ZW310



## WHEEL LOADER

Model code: ZW310-7

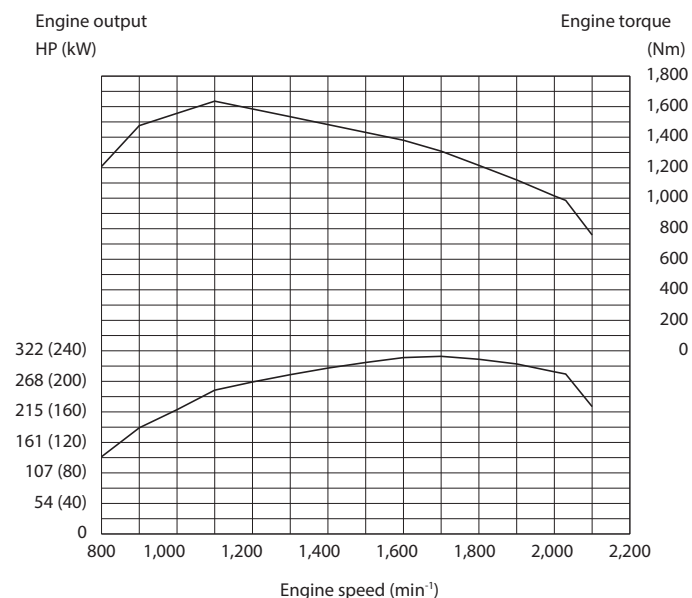
Engine maximum power: 312 HP (233 kW)

Operating weight: 54,190–54,851 lb. (24,580–24,880 kg)

Bucket capacity: 5.5–6.1 yd<sup>3</sup> (4.2–4.7 m<sup>3</sup>)

# SPECIFICATIONS

ENGINE	
Make & Model	CUMMINS L9 (Stage V)
Type	4 cycle water-cooled, direct injection
Aspiration	Waste-gate turbocharger and intercooled
Aftertreatment	DPF+SCR system
No. of cylinders	6
Maximum power	
ECE R120, gross	312 HP (233 kW) at 1,700 min <sup>-1</sup> (rpm)
ISO 9249: 2007, net	303 HP (226 kW) at 1,700 min <sup>-1</sup> (rpm)
Rated power	
ISO 14396: 2002, gross	286 HP (213 kW) at 2,000 min <sup>-1</sup> (rpm)
ISO 9249: 2007, net	274 HP (204 kW) at 2,000 min <sup>-1</sup> (rpm)
Maximum torque, gross	1,636 Nm at 1,100 min <sup>-1</sup> (rpm)
Bore and stroke	5.4" x 5.7" (137 mm x 146 mm)
Piston displacement	543.1 cu.in (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		
Torque converter	Three element, single stage, single phase with lock-up clutch		
Cooling method	Forced circulation type		
Travel speed* — Forward/Reverse			
Operating Mode	Standard Mode	Power Mode	Power+ Mode
1st mph(km/h)	4.2 (6.7)/3.7 (6.0)	4.2 (6.7)/4.2 (6.7)	4.3 (6.9)/4.3 (6.9)
2nd mph(km/h)	7.1 (11.4)/6.4 (10.3)	7.1 (11.4)/7.1 (11.4)	7.4 (11.9)/7.4 (11.9)
w/LU Conv. ON	7.1 (11.5)/6.5 (10.4)	7.1 (11.4)/7.1 (11.5)	7.4 (11.9)/7.4 (11.9)
3rd mph(km/h)	13.7 (22.1)/13.7 (22.1)	13.7 (22.1)/13.7 (22.1)	13.7 (22.1)/13.7 (22.1)
w/LU Conv. ON	14.0 (22.5)/14.0 (22.5)	14.0 (22.5)/14.0 (22.5)	14.0 (22.5)/14.0 (22.5)
4th mph(km/h)	22.4 (36.0)/22.4 (36.0)	22.4 (36.0)/22.4 (36.0)	22.4 (36.0)/22.4 (36.0)

\* With 26.5 R25 (L3) tires

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 torque proportional differential
Oscillation angle	Total 24° (+12°, -12°)
Final drives	Heavy-duty planetary, mounted inboard

TIRES	
Tire size	26.5R25 (L3)

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 3.3" x 19.6" (2 x 85 mm x 498 mm)

HYDRAULIC SYSTEM	
<b>Arm and bucket are controlled by multifunction lever</b>	
Arm controls	Four position valve; Raise, hold, lower, float
<b>Bucket controls with automatic bucket return-to-dig control</b>	
Three position valve; Roll back, hold, dump	
<b>Main pump (Serve as steering pump)</b>	
Variable piston type	
Maximum flow	79.3 gal (300 L) /min at 2,000 min <sup>-1</sup> (rpm)
Maximum pressure	4 554 psi (31.4 MPa)
<b>Fan pump</b>	
Gear type	
Maximum flow	22.5 gal (85.0 L) /min at 2,000 min <sup>-1</sup> (rpm)
Maximum pressure	2,393 psi (16.5 MPa)
<b>Hydraulic cylinders</b>	
Type	Double acting type
No. x Bore x Stroke	Arm: 2 x 5.7" x 34.8" (2 x 145 mm x 884 mm)
	Bucket: 1 x 7.1" x 20.7" (1 x 180 mm x 525 mm)
Filters	Full-flow 15 micron return filter in reservoir
<b>Hydraulic cycle times</b>	
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)

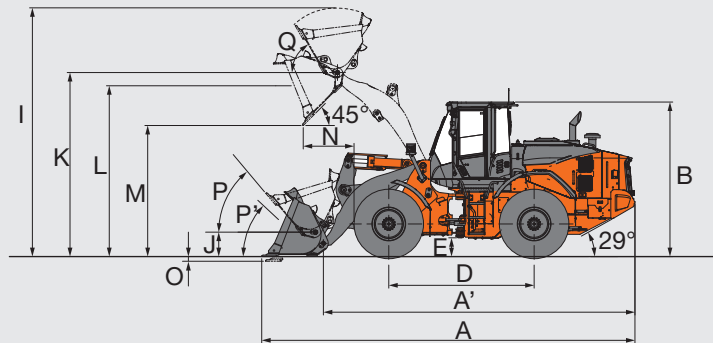
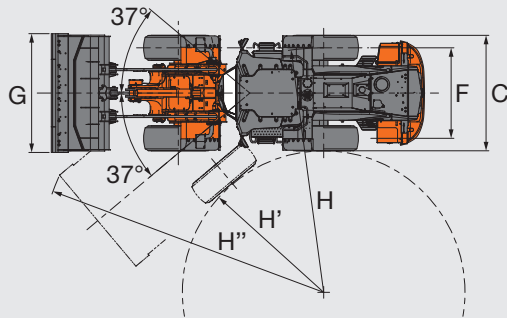
\*( ): Data at Power + Mode





ENVIRONMENT	
<b>Engine Emissions</b>	
EPA Final Tier 4/EU stage V	
<b>Sound level</b>	
Sound level in cabin according to ISO 6396: 2008	69 LpA dB(A)
External sound level according To ISO 6395: 2008 and EU Directive 2000/14/EC	108 LwA dB(A)

SERVICE REFILL CAPACITIES	
Fuel tank	100 gal (379 L)
Engine coolant	9.8 gal (37 L)
Engine oil (Including oil pan)	8.7 gal (33 L)
Torque converter & transmission	13 gal (51 L)
Front axle differential and wheel hubs	13 gal (48 L)
Rear axle differential and wheel hubs	13 gal (48 L)
Hydraulic oil tank	37 gal (139 L)
DEF/AdBlue® tank	13 gal (48 L)

# SPECIFICATIONS

## DIMENSIONS AND SPECIFICATIONS ZW310-7



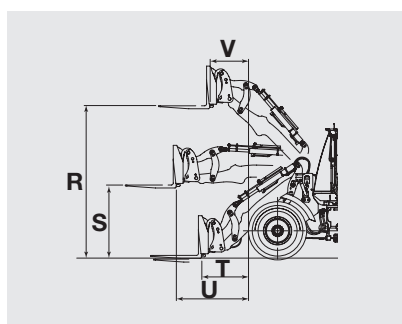
Bucket type			Standard arm			High-lift arm
			General purpose	Light material	Quick Coupler w/General purpose	Light material
			Bolt-on cutting edge 	Bolt-on cutting edge 	Bolt-on cutting edge 	Bolt-on cutting edge 
Bucket capacity	ISO 7546: 1983 Heaped	yd <sup>3</sup> (m <sup>3</sup> )	5.5 (4.2)	6.1 (4.7)	5.1 (3.9)	5.5 (4.2)
	ISO 7546: 1983 Struck	yd <sup>3</sup> (m <sup>3</sup> )	4.8 (3.7)	5.4 (4.1)	4.4 (3.4)	4.8 (3.7)
A Overall length		ft-in (mm)	29' 7" (9,020)	29' 11" (9,140)	30' 2" (9,220)	31' 0" (9,470)
A' Overall length (without bucket)		ft-in (mm)	24' 5" (7,450)			25' 11" (7,900)
B Overall height	up to cab top	ft-in (mm)	11' 6" (3,530)			
C Width over tires	outside tire	ft-in (mm)	9' 7" (2,930)			
D Wheel base		ft-in (mm)	11' 7" (3,540)			
E Ground clearance	Minimum	ft-in (mm)	1' 7" (500)			
F Tread		ft-in (mm)	7' 3" (2,230)			
G Bucket width		ft-in (mm)	10' 2" (3,100)			
H Turning radius (centerline of outside tire)		ft-in (mm)	21' 0" (6,420)			
H' Turning radius to inside of tires		ft-in (mm)	12' 8" (3,870)			
H'' Loader clearance radius, bucket in carry position		ft-in (mm)	24' 6" (7,485)	24' 7" (7,500)	24' 5" (7,725)	25' 1" (7,670)
I Overall operating height	bucket full raise	ft-in (mm)	19' 1" (6,050)	19' 9" (6,020)	20' 5" (6,240)	20' 8" (6,310)
J Carry height of bucket pin	at carry position	ft-in (mm)	1' 5" (435)			
K Height to bucket hinge pin, fully raised		ft-in (mm)	14' 6" (4,425)			15' 11" (4,860)
L Lift arm clearance at max lift		ft-in (mm)	12' 8" (3,870)			
M Dumping clearance 45 degree, full height		ft-in (mm)	10' 2" (3,100)	9' 1" (3,010)	9' 8" (2,970)	11' 7" (3,535)
N Reach, 45 degree dump, full height		ft-in (mm)	4' 3" (1,320)	4' 7" (1,410)	4' 10" (1,480)	4' 5" (1,370)
O Digging depth (horizontal digging angle)		ft-in (mm)	0.4" (115)			
P Max. roll back at carry position		deg	45			
P' Max. roll back at ground level		deg	41			
Q Roll back angle at full height		deg	61			

Bucket type			Standard arm			High-lift arm
			General purpose	Light material	Quick Coupler w/General purpose	Light material
			Bolt-on cutting edge	Bolt-on cutting edge	Bolt-on cutting edge	Bolt-on cutting edge
Static tipping load ISO 14397-1: 2007 (Section 1-5) *	Straight	lb (kg)	40,675 (18,450)	39,375 (17,860)	38,228 (17,340)	33 841 (15 350)
	Full turn	lb (kg)	35,384 (16,050)	34,238 (15,530)	33,246 (15,080)	29 432 (13 350)
Breakout force		kN	199	186	164	199
		lbf (kgf)	44,776 (20,310)	41,844 (18,980)	36,927 (16,750)	44 776 (20 310)
Operating weight *	(With ROPS/FOPS Cab)	lb (kg)	54,190 (24,580)	54,829 (24,870)	55,336 (25,100)	54 851 (24 880)
Articulate angle		deg	37			
Departure angle		deg	30			

Note: All dimensions, weight and performance data based on ISO 6746-1: 1987, ISO 7137: 2009 and ISO 7546: 1983

\*: 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.

**WITH QUICK COUPLER AND FORK ATTACHMENT**

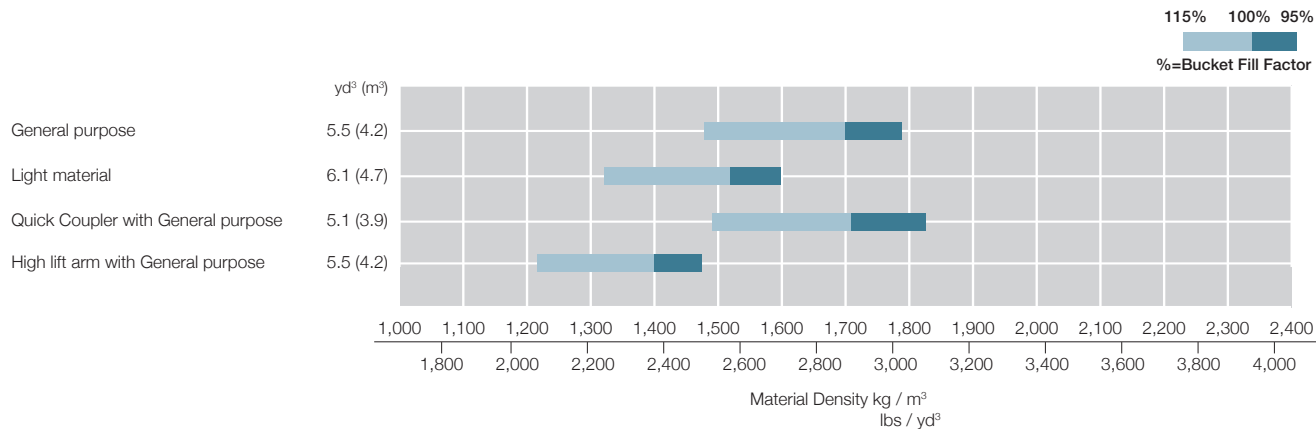


R	Max. stacking height	ft-in (mm)	13' 11" (4,260)
S	Height of fork at maximum reach	ft-in (mm)	6' 11" (2,110)
T	Reach at ground level	ft-in (mm)	4' 1" (1,270)
U	Max. reach	ft-in (mm)	6' 7" (2,020)
V	Reach at max. stacking height	ft-in (mm)	3' 8" (1,130)
Static tipping load	Straight	lb (kg)	23,410 (10,619)
	Full 40 degree turn	lb (kg)	20,414 (9,260)
Max. payload per EN 474-3, 80%		lb (kg)	16,331 (7,408)
Max. payload per EN 474-3, 60%		lb (kg)	12,248 (5,556)
Fork tine length		in (mm)	72 (1,828)
Operating weight *		lb (kg)	54,078 (24,530)

**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			
Belly guard	+595 (+270)	+419 (+190)	+353 (+160)	±0	±0	±0

**BUCKET SELECTION GUIDE**



# EQUIPMENT

●: Standard equipment ○: Optional equipment

ENGINE	ZW310-7
Aftertreatment device	●
Aftertreatment manual regeneration inhibit switch	●
Aftertreatment manual regeneration switch	●
Air filter double elements	●
Air intake	
Pre-cleaner (sy-klone type)	●
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	ZW310-7
Front and rear independent brake circuit	●
Inboard mounted fully hydraulic 4 wheel wet disc	●
Spring-applied/Hydraulic-released parking brake	●

HYDRAULIC SYSTEM	ZW310-7
Bucket auto leveler (automatic return to dig control)	●
Electric control lever	
for 3 spools control valve	
MF lever and AUX lever 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	●
Hydraulic filters	●
Lift arm float system	●
Reservoir sight gauge	●
Ride control system (OFF-AUTO type)	●
Work mode selector	●

CAB	ZW310-7
Adjustable steering column with POP-UP	●
Auto control air conditioner	
with double intake filter	●
Pre-cleaner for air conditioner	○
Bluetooth® integrated FM/AM+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	
Rear view mirrors	●
Outside (Heated, 2) electrical adjustment retractable mirror stay	○
Retractable seat belt, 3.0 in (76 mm)	●
ROPS (ISO 3471: 2008), FOPS (ISO 3449: 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 and cool box	●
Seatback pocket	●
Smartphone and Tablet device holder	●
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	●

●: Standard equipment ○: Optional equipment

MONITORING SYSTEM		ZW310-7
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 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		ZW310-7
Alternator (95 A)	●	
Backup alarm	●	
Battery disconnect switch	●	
Large capacity batteries	●	
Power outlet 12 V and 24 V	●	

LIGHTS		ZW310-7
Clearance lights	●	
LED brake and tail lights	●	
LED headlights	●	
Turn signals with hazard switch	●	
Work lights		
4 front, 2 rear on cab and 2 rear LED working lights	●	

POWER TRAIN		ZW310-7
Approach speed control	●	
Automatic transmission with load sensing system	●	
Clutch cut position switch	●	
Differential		
LSD (limited slip differential, front and rear)	●	
DSS (Down Shift Switch)	●	
Forward/Reverse lever	●	
Forward/Reverse selector switch	●	
Lock-up clutch (torque converter)	●	
Power mode switch	●	
Quick power switch	●	
Travel mode selector (Auto1-Auto2)	●	

TIRES		ZW310-7
26.5R25(L3) Bridgestone (VJT)	●	

MISCELLANEOUS		ZW310-7
Articulation lock bar	●	
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 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	●	

Prior to operating this machine, including satellite communication system, in a country other than a country of its intended use, it may be necessary to make modifications to it so that it complies with the local regulatory standards (including safety standards) and legal requirements of that particular country. Please do not export or operate this machine outside the country of its intended use until such compliance has been confirmed. Please contact authorized dealer in case of questions about compliance.

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