

ENGINE

Model	Cummins QSM 11, Tier III Certified
Type	4-stroke, turbocharged and air-to-air cooled
Cylinders	6
Bore/Stroke	4.92 in x 5.79 in (125 mm x 147 mm)
Displacement	660 in ³ (10.8 L)
Fuel injection	Electronic
Fuel	#2 Diesel
Fuel filter	Replaceable, full flow spin-on cartridge
Fuel cooler	
Air filter	Dry type element w/warning restriction indicator
Fan – Hydraulic drive	
Style	6 blade pusher
Water pump	Integral
Engine oil	
Pump operating angles	
Side-to-side	45°
Fore and aft	45°
Oil filtration	Replaceable, full flow, spin-on cartridge
Engine speeds (rpm)	
Rated speed, full load	2100
Horsepower – Peak	
Max Power Range	
Gross	320 (239 kW) @ 1800 rpm
Net	297 (221 kW) @ 1800 rpm
Standard Power Range	
Gross	297 (221 kW) @ 1800 rpm
Net	274 (204 kW) @ 1800 rpm
Economy Power Range	
Gross	241 (179 kW) @ 1400 rpm
Net	229 (171 kW) @ 1400 rpm

NOTE: Gross horsepower and torque per SAE J1995.
Net horsepower and torque per SAE J1349.

ENGINE (CONTD.)

Torque – Peak	
Max Power Range	
Gross	1,090 lb-ft (1478 N-m) @ 1000 rpm
Net	1,066 lb-ft (1446 N-m) @ 1000 rpm
Standard Power Range	
Gross	1,013 lb-ft (1373 N-m) @ 900 rpm
Net	995 lb-ft (1349 N-m) @ 900 rpm
Economy Power Range	
Gross	1,013 lb-ft (1373 N-m) @ 1000 rpm
Net	995 lb-ft (1349 N-m) @ 1000 rpm
Torque rise	
Standard power	50.1%

DRIVETRAIN

Transmission	4F/3R Proportional w/Electronic Control Module torque sensing autoshift/manual shift and modulation	
Gears	Helical cut	
Gear ratios	Forward	Reverse
1st	3.712	3.712
2nd	2.062	2.062
3rd	1.064	1.064
4th	0.685	NA
Torque converter		
Stall ratio	2.985:1	
Differential	Limited slip w/30% transfer on front w/45% transfer on rear axles	
Rear axle oscillation	24° total	
Front and rear axle		
Differential ratio	3.89	
Planetary ratio	6.00	
Final axle ratio	23.33	
Planetaries	Outboard	
Service brakes	Hydraulically actuated, maintenance-free, multiple wet disc to all four wheels, w/accumulator for each axle	
Brake surface area		
Front	900 in ² per hub (0.58 m ²)	
Rear	713 in ² per hub (0.46 m ²)	
Parking brakes	Spring-applied hydraulic release disc on transmission output shaft	
Travel speeds – mph (km/h) w/26.5R25XHA Tires		
	Forward	Reverse
1st	5.0 (8.0)	5.0 (8.0)
2nd	8.2 (13.2)	8.7 (14.1)
3rd	16.1 (25.8)	16.1 (25.8)
4th	23.2 (37.4)	NA

NOTE: Travel speeds at full engine throttle.

ELECTRICAL

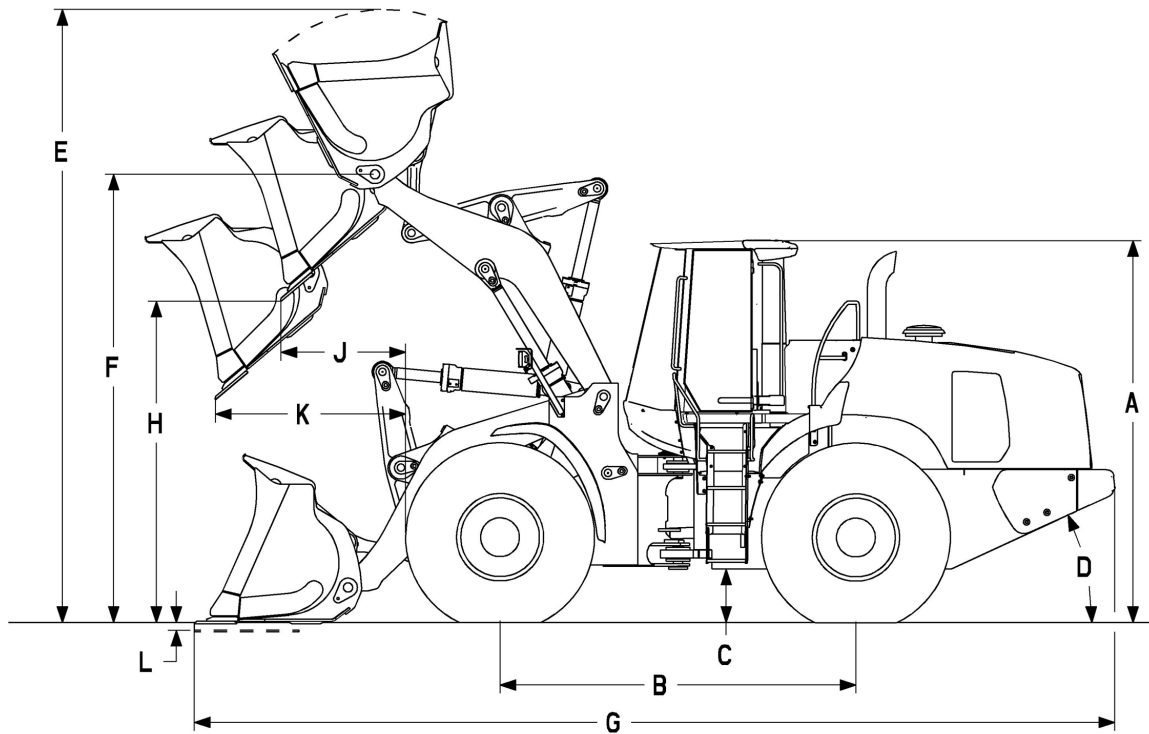
Voltage	24 Volts, negative ground
Alternator	95 amp
Batteries	(2) 12 volt

HYDRAULICS

Pump (steering/implement)	Closed centered pressure/flow compensated
Variable displacement (2)	5.19 in ³ /rev 42.8 gpm @ 2000 rpm @ 3600 psi (85 cc/rev. 162.1 L/min @ 2000 rpm @ 24 821 kPa)
Implement pump	Closed centered pressure/flow compensated
Loader control valve	Closed-center, sectional 2, 3 or 4-spool with pilot control for lift, tilt and auxiliary hydraulics, electromagnetic detents in float, raise and rollback
Loader auxiliary steering	Hydraulic orbital center-pivot articulating w/on-demand oil flow
High pressure standby	3625 psi (25 000 kPa)
Filtration	10-micron, full flow replaceable cartridges on return line, condition indicator light for filter

CYLINDERS

Lift cylinder	
Bore diameter	6.5 in (165.1 mm)
Rod diameter	4.0 in (101.6 mm)
Stroke	34.2 in (867.7 mm)
Dump cylinder	
Bore diameter	7.0 in (177.7 mm)
Rod diameter	4.0 in (101.6 mm)
Stroke	29.3 in (745.3 mm)



DIMENSIONS

Height to –		
A.	Top of ROPS cab	145.5 in (3.70 m)
	Drawbar	51.0 in (1.30 m)
B.	Wheelbase	134.0 in (3.40 m)
C.	Ground clearance	19.3 in (489 mm)
D.	Angle of departure	34°
Width –		
	Overall* w/o bucket	117.7 in (3.00 m)
	Centerline tread	88.6 in (2.25 m)
	Turning radius* – outside	270.3 in (6.87 m)
Turning angle –		
	From center	40°
	Total angle	80°
	Rear axle oscillation, total	24°

NOTE: *Dimensions taken with 26.5-25 XHAT tires. Additional dimensions on pages 3 and 4.

WEIGHT ADJUSTMENTS

Select Options	Weight Adjustment	Tipping Load Adjustment Straight	Tipping Load Adjustment 40° Turn
26.5-25 L2 tires	-912 lb (-413 kg)	-746 lb (-338 kg)	-658 lb (-299 kg)
26.5-25 L4 tires	+704 lb (+320 kg)	+577 lb (+262 kg)	+508 lb (+230 kg)
26.5-25 L5 tires	+1,132 lb (+514 kg)	+927 lb (+420 kg)	+817 lb (+370 kg)
Rops Canopy	-295 lb (-134 kg)	-339 lb (-154 kg)	-314 lb (-142 kg)

NOTE: **Unit equipped with Z-Bar loader arms, 5.75 yd³ (4.4 m³) general purpose pin on bucket, 26.5-25 XHAT tires, ROPS cab with heater, counterweight, standard batteries, front and rear fenders, full fuel and 175 lb (79 kg) operator. Adjust select options from rated weight.

PERFORMANCE DATA

921E Z-Bar	5.75 yd ³ (4.4 m ³)	5.75 yd ³ (4.4 m ³)
	Bucket w/Bolt-on Edge	Bucket w/Teeth
SAE bucket capacity – struck	4.88 yd ³ (3.73 m ³)	4.88 yd ³ (3.73 m ³)
Heaped	5.78 yd ³ (4.42 m ³)	5.78 yd ³ (4.42 m ³)
Bucket width – outside	124.8 in (3.17 m)	126.2 in (3.21 m)
Inside	120.9 in (3.07 m)	120.9 in (3.07 m)
Bucket weight	4,955 lb (2248 kg)	5,185 lb (2352 kg)
E. Operating height – fully raised w/spillguard	230.2 in (5.85 m)	230.2 in (5.85 m)
F. Hinge pin height – fully raised	168.4 in (4.28 m)	168.4 in (4.78 m)
G. Overall length – bucket level on ground	346.3 in (8.80 m)	355.3 in (9.02 m)
Dump angle – fully raised	55°	55°
H. Dump height – fully raised, 45° dump	121.2 in (3.08 m)	115.3 in (2.93 m)
J. Bucket reach – fully raised, 45° dump	50.1 in (1.27 m)	56.2 in (1.43 m)
K. Bucket reach – 7 ft 0 in (2.13 m) height, 45° dump	74.6 in (1.90 m)	78.1 in (1.98 m)
Operating load – ISO	18,306 lb (8303 kg)	18,147 lb (8231 kg)
Maximum material density – ISO	3,166 lb/yd ³ (1879 kg/m ³)	3,139 lb/yd ³ (1863 kg/m ³)
Tipping load – ISO		
Straight	42,592 lb (19 319 kg)	42,274 lb (19 175 kg)
40° turn	36,612 lb (16 607 kg)	36,294 lb (16 463 kg)
Lift capacity –		
Full height	29,738 lb (13 489 kg)	29,537 lb (13 398 kg)
Maximum reach	41,906 lb (19 008 kg)	41,667 lb (18 900 kg)
Ground	49,607 lb (22 501 kg)	49,316 lb (22 370 kg)
Breakout force w/tilt cylinder	44,476 lb (20 174 kg)	38,030 lb (17 250 kg)
Maximum rollback –		
Ground	41°	42°
Carry position	43°	43°
@ Maximum reach	67°	67°
@ Full height	63°	63°
L. Dig depth	4.8 in (121 mm)	5.3 in (135 mm)
Maximum grading angle w/bucket – back dragging	62°	64°
Loader clearance circle	540.6 in (13.73 m)	547.5 in (13.91 m)

921E XR	5.75 yd ³ (4.4 m ³)	5.75 yd ³ (4.4 m ³)
	Bucket w/Bolt-on Edge	Bucket w/Teeth
E. Operating height – fully raised w/spillguard	253.5 in (6440 mm)	253.5 in (6440 mm)
F. Hinge pin height – fully raised	191.7 in (4870 mm)	191.7 in (4870 mm)
G. Overall length – bucket level on ground	365.4 in (9281 mm)	374.2 in (9505 mm)
Dump angle – fully raised	49°	49°
H. Dump height – fully raised, 45° dump	144.5 in (3670 mm)	138.6 in (3520 mm)
J. Bucket reach – fully raised, 45° dump	49.0 in (1246 mm)	55.2 in (1402 mm)
K. Bucket reach – 7 ft 0 in (2.13 m) height, 45° dump	91.8 in (2331 mm)	95.6 in (2429 mm)
Operating load – ISO	14,367 lb (6517 kg)	14,216 lb (6448 kg)
Maximum material density – ISO	2,485 lb/yd ³ (1475 kg/m ³)	2,459 lb/yd ³ (1459 kg/m ³)
Tipping load – ISO		
Straight	33,872 lb (15 364 kg)	33,569 lb (15 227 kg)
40° turn	28,735 lb (13 034 kg)	28,432 lb (12 897 kg)
Lift capacity –		
Full height	27,049 lb (12 269 kg)	26,843 lb (12 176 kg)
Maximum reach	35,885 lb (16 277 kg)	35,637 lb (16 165 kg)
Ground	39,793 lb (18 050 kg)	39,500 lb (17 917 kg)
Breakout force w/tilt cylinder	44,671 lb (20 262 kg)	38,215 lb (17 334 kg)
Maximum rollback –		
Ground	41°	42°
Carry position	43°	43°
@ Maximum reach	67°	67°
@ Full height	63°	63°
L. Dig depth	4.8 in (121 mm)	5.3 in (135 mm)
Maximum grading angle w/bucket – back dragging	62°	64°
Loader clearance circle	561.7 in (14 266 mm)	569.1 in (14 456 mm)

NOTE: Performance data unit equipped with 26.5-25 XHAT tires, ROPS cab w/heater and A/C, standard counterweight, standard batteries, wide front and rear fenders, full fuel and 175 lb (79 kg) operator. Specifications per SAE J732, J1234, J695, J742 and J818.

PERFORMANCE DATA

921E Z-Bar

	5.25 yd ³ (4.00 m ³) Bucket w/Bolt-on Edge	5.25 yd ³ (4.00 m ³) Bucket w/Teeth
SAE bucket capacity – struck	4.46 yd ³ (3.41 m ³)	252.9 yd ³ (6424 m ³)
Heaped	5.28 yd ³ (4.04 m ³)	191.7 yd ³ (4.04 m ³)
Bucket width – outside	118.9 in (3.02 m)	120.3 in (3.06 m)
Inside	115.0 in (2.92 m)	115.0 in (2.92 m)
Bucket weight	4,733 lb (2147 kg)	4,988 lb (2262 kg)
E. Operating height – fully raised w/spillguard	229.6 in (5.83 m)	229.6 in (5.83 m)
F. Hinge pin height – fully raised	168.4 in (4.28 m)	168.4 in (4.28 m)
G. Overall length – bucket level on ground	344.7 in (8.76 m)	353.7 in (8.98 m)
Dump angle – fully raised	55°	55°
H. Dump height – fully raised, 45° dump	122.4 in (3.11 m)	116.5 in (2.96 m)
J. Bucket reach – fully raised, 45° dump	49.8 in (1.26 m)	55.9 in (1.42 m)
K. Bucket reach – 7 ft 0 in (2.13 m) height, 45° dump	74.8 in (1.90 m)	78.4 in (1.99 m)
Operating load – ISO	18,571 lb (8424 kg)	18,396 lb (8344 kg)
Maximum material density – ISO	3,514 lb/yd ³ (2085 kg/m ³)	3,481 lb/yd ³ (2066 kg/m ³)
Tipping load – ISO		
Straight	43,165 lb (19 579 kg)	42,814 lb (19 420 kg)
40° turn	37,142 lb (16 847 kg)	36,791 lb (16 688 kg)
Lift capacity –		
Full height	29,875 lb (13 551 kg)	29,652 lb (13 450 kg)
Maximum reach	42,164 lb (19 125 kg)	41,899 lb (19 005 kg)
Ground	50,215 lb (27 777 kg)	49,890 lb (22 630 kg)
Breakout force w/tilt cylinder	45,712 lb (20 735 kg)	38,954 lb (17 669 kg)
Maximum rollback –		
Ground	41°	41°
Carry position	43°	43°
@ Maximum reach	67°	67°
@ Full height	63°	63°
L. Dig depth	4.0 in (102 mm)	4.6 in (116 mm)
Maximum grading angle w/bucket – back dragging	62°	64°
Loader clearance circle	534.2 in (13.57 m)	541.1 in (13.74 m)

921E XR

	5.25 yd ³ (4.00 m ³) Bucket w/Bolt-on Edge	5.25 yd ³ (4.00 m ³) Bucket w/Teeth
E. Operating height – fully raised w/spillguard	252.9 in (6424 mm)	252.9 in (6424 mm)
F. Hinge pin height – fully raised	191.8 in (4871 mm)	191.7 in (4870 mm)
G. Overall length – bucket level on ground	363.9 in (9242 mm)	372.7 in (9467 mm)
Dump angle – fully raised	49°	49°
H. Dump height – fully raised, 45° dump	145.8 in (3703 mm)	139.9 in (3552 mm)
J. Bucket reach – fully raised, 45° dump	48.7 in (1237 mm)	54.9 in (1394 mm)
K. Bucket reach – 7 ft 0 in (2.13 m) height, 45° dump	91.9 in (2334 mm)	95.8 in (2435 mm)
Operating load – ISO	14,583 lb (6615 kg)	14,416 lb (6539 kg)
Maximum material density – ISO	2,760 lb/yd ³ (1638 kg/m ³)	2,728 lb/yd ³ (1619 kg/m ³)
Tipping load – ISO		
Straight	34,335 lb (15 574 kg)	34,001 lb (15 422 kg)
40° turn	29,167 lb (13 230 kg)	28,833 lb (13 078 kg)
Lift capacity –		
Full height	27,210 lb (12 342 kg)	26,980 lb (12 238 kg)
Maximum reach	36,169 lb (16 406 kg)	35,895 lb (16 282 kg)
Ground	40,289 lb (18 275 kg)	39,964 lb (18 127 kg)
Breakout force w/tilt cylinder	45,888 lb (20 814 kg)	39,120 lb (17 745 kg)
Maximum rollback –		
Ground	41°	41°
Carry position	43°	43°
@ Maximum reach	67°	67°
@ Full height	63°	63°
L. Dig depth	4.0 in (102 mm)	4.6 in (116 mm)
Maximum grading angle w/bucket – back dragging	62°	64°
Loader clearance circle	555.2 in (14 103 mm)	562.7 in (14 294 mm)

INSTRUMENTATION

Electronic Information Center	
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Displays/Gauges –	
Speedometer	
Tachometer	
Direction selected F/N/R	
Transmission modes – Auto shift/Manual shift	
Gear position	
Engine coolant temperature	
Fuel level	
Transmission oil temperature	
Hydraulic oil temperature	
Hourmeter	
Power mode	
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Indicator lights –	
Low fuel	
Turn signals	
High beam lights	
Brake pressure	
Master indicator	
Auxiliary steering*	
Parking brake	
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Audible alarms –	
Caution alarm	
Critical alarm	
Backup alarm	
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Horn	
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NOTE: *If equipped with option.

OPERATOR ENVIRONMENT

ROPS cab w/ heat	
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Key start	
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Articulated power steering w/tilt column	
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Fully adjustable, suspension seat	
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Foot throttle	
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Single lever 2-spool loader control w/wrist rest	
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Cup holder	
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Coat hook	
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(1) Interior rearview mirror	
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2 in (51 mm) retractable seat belt	
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Storage tray behind seat	
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Cooled lunch box	
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Single brake pedal	
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F/N/R shuttle switch	
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External rear view mirrors	
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Lock box	
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Pressurized air filtering	
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Anti-glare window strip	
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Defroster	
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Side window, partial/fully open	
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Dome light	
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Wipers, rear and intermittent front	
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Windshield washers, front and rear	
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Rubber floor mat	
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Sunscreen	
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LOADER

Z-bar loader linkage	
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Single control for lift and tilt	
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Positive hold float	
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Automatic return-to-dig	
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Automatic height control	
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Automatic return-to-travel	
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Brake pedal transmission disconnect	
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Bucket position indicator on bucket	
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CYCLE TIME

Raise w/rated bucket load	6.2 sec
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Dump w/rated bucket load	3.6 sec
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Lower (empty)	
Power down	3.0 sec
Float down	1.2 sec
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SERVICE CAPACITIES

Fuel tank	104 gal (393.7 L)
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Hydraulic system	
Total	64.0 gal (242 L)
Reservoir	34.0 gal (130 L)
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Transmission	
Service w/filter	10.5 gal (39.7 L)
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Front and rear axle w/o coolers	
Front	12.5 gal (47.3 L)
Rear	12.5 gal (47.3 L)
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Engine oil w/filter	39 qt (36.9 L)
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Cooling system	15.0 gal (56.8 L)
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OPERATING WEIGHTS

Z-Bar

Unit equipped with ROPS cab with heater and A/C, counterweight, 26.5R25 XHA tires, wide front and rear fenders, 5.75 yd³ (4.4 m³) general purpose loader bucket, full fuel, 175 lb (79 kg) operator

50,622 lb (22 962 kg)

XR

Unit equipped with ROPS cab with heater and A/C, counterweight, 26.5R25 XHA tires, wide front and rear fenders, 5.75 yd³ (4.4 m³) general purpose loader bucket, full fuel, 175 lb (79 kg) operator

52,714 lb (23 911 kg)

STANDARD EQUIPMENT

OPERATOR ENVIRONMENT

See page 5

ENGINE

Cummins QSM 11
Tier III certified
Selectable work modes
 Max power
 Auto power
 Standard power
 Economy power
Turbocharger
Charge air cooling
Automatic fan belt tensioner
Integral engine oil cooling
Fuel filter w/water trap
Dual element air cleaner
95 amp alternator
(2) 900 CCA 12-volt batteries
Liquid-cooled radiator
Non spark-arresting muffler
Common rail electronic fuel injection

LOADER

See page 5

DRIVETRAIN

4-wheel drive
Axle coolers
4F/3R Selectable autoshift/manual shift transmission
Electronic Control Module – Programmable, computer controlled proportional shifting with programmable gear selection
Onboard diagnostics
Single lever electronic shift control
F/N/R switch in loader control handle
Downshift button
Torque converter
Outboard planetary axles
Limited-slip differentials
Transmission oil cooler
Brake pedal transmission disconnect
Hydraulic wet disc brakes
Spring-applied hydraulic release parking brake
Limp-Home Mode
Lubed-for-life drive shaft

HYDRAULICS

Single lever 2-spool loader control valve
Low-effort steering
Hydraulic driven fan
(8) Diagnostic quick couplers

OTHER

Electric hood lift
Front and rear fenders
Lights –
 (2) Front driving headlights (high/low beam)
 (2) Front flood
 (2) Stop/tail lights
 (2) Rear flood
 Front and rear turn signal/flash
Standard counterweight
Drawbar hitch
Articulation locking bar
Lift arm locking bar
Lift and tie-down points – front/rear
Backup alarm
RH steps and platform

OPTIONAL EQUIPMENT

OPERATOR COMPARTMENT

Cloth-covered air-suspension seat
Cab air-conditioning w/heater
Radio
Radio-ready (12 or 24-volt)
Auxiliary power (12-volt)
Cab convenience package
Rotating beacon
Second brake pedal
Open ROPS
Joystick steering

ENGINE

Cold weather package
 Heavy-duty batteries
 Fuel heater
 Hydraulic oil cooler bypass
 Low temperature hydraulic oil
 Ether

LOADER

Hydraulic attachment coupler
Attachment auxiliary hydraulics
Buckets (see page 3 & 4)

HYDRAULICS

Auxiliary hydraulics
Ride Control
Secondary steering
3 or 4-spool loader valves with 2 or 3-lever loader control
Hydraulic temperature controlled reversing fan
Hydraulic cooler

TIRES

26.5 x 25 L3 Bias
26.5 R 25 L2 Radial
26.5 R 25 L3 Radial

OTHER

Special paint
Full coverage fenders
Belly pan
Tool box
Sound Shield noise suppression package
Spark arresting muffler

NOTE: All specifications are stated in accordance with SAE Standards or Recommended Practices, where applicable.

NOTE: All engines meet current EPA emissions requirements.

IMPORTANT: Case Construction Equipment Inc. reserves the right to change these specifications without notice and without incurring any obligation relating to such change. Case Construction Equipment Inc. does not warrant the safety or reliability of attachments from other manufacturers.

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