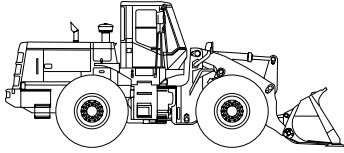
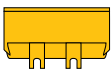
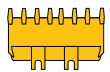
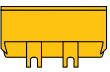
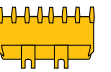

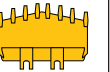
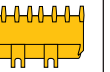
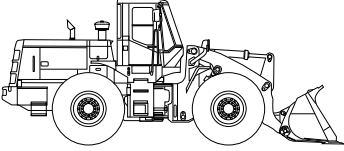
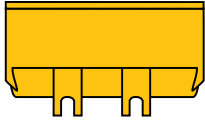
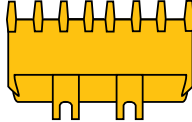
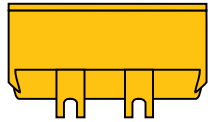


# 90Z<sup>IV</sup>-2 BUCKET DATA

			Standard Boom						
			General Purpose		Rock Straight		Rock-V-Edge		Material Handling
			Straight Edge With Bolt-on Cutting Edge	Straight Edge With Teeth	Straight Edge Without Teeth	Straight Edge With Teeth	Spade Nose Edge Without Teeth	Spade Nose With Teeth	Straight Edge With Bolt-on Cutting Edge
									
Capacity	Heaped	yd <sup>3</sup> (m <sup>3</sup> )	5.0 (3.8)	4.75 (3.6)	4.5 (3.5)	4.5 (3.5)	4.5 (3.5)	4.5 (3.5)	5.5 (4.2)
	Struck	yd <sup>3</sup> (m <sup>3</sup> )	4.25 (3.25)	4.0 (3.1)	3.9 (3.0)	3.9 (3.0)	3.9 (3.0)	3.9 (3.0)	4.85 (3.7)
Maximum dumping clearance		ft-in (mm)	9'10 <sup>7</sup> / <sub>8</sub> " (3020)	9'6 <sup>3</sup> / <sub>16</sub> " (2900)	10'2 <sup>13</sup> / <sub>16</sub> " (3120)	9'6 <sup>3</sup> / <sub>16</sub> " (2900)	9'9 <sup>5</sup> / <sub>16</sub> " (2980)	9'1 <sup>13</sup> / <sub>16</sub> " (2790)	9'7 <sup>3</sup> / <sub>4</sub> " (2940)
Dumping reach (to front of bucket edge or tooth)		ft-in (mm)	4 <sup>7</sup> / <sub>8</sub> " (1240)	4'4" (1320)	3'10 <sup>7</sup> / <sub>8</sub> " (1190)	4'4" (1320)	4'4 <sup>3</sup> / <sub>8</sub> " (1330)	4'8 <sup>5</sup> / <sub>16</sub> " (1430)	4'4" (1320)
Bucket hinge pin height		ft-in (mm)	13'11 <sup>11</sup> / <sub>16</sub> " (4260)	13'11 <sup>11</sup> / <sub>16</sub> " (4260)	13'11 <sup>11</sup> / <sub>16</sub> " (4260)	13'11 <sup>11</sup> / <sub>16</sub> " (4260)	13'11 <sup>11</sup> / <sub>16</sub> " (4260)	13'11 <sup>11</sup> / <sub>16</sub> " (4260)	13'11 <sup>11</sup> / <sub>16</sub> " (4260)
Digging depth		ft-in (mm)	2 <sup>9</sup> / <sub>16</sub> " (65)	3 <sup>3</sup> / <sub>4</sub> " (95)	1 <sup>1</sup> / <sub>8</sub> " (30)	3 <sup>3</sup> / <sub>4</sub> " (95)	1 <sup>1</sup> / <sub>8</sub> " (30)	3 <sup>3</sup> / <sub>4</sub> " (95)	2 <sup>9</sup> / <sub>16</sub> " (65)
Breakout force		lb (kg)	46,075 (20,900)	50,045 (22,700)	50,045 (22,700)	50,045 (22,700)	43,000 (19,500)	43,000 (19,500)	42,550 (19,300)
Bucket tilt-back angle	at ground level		43°	43°	43°	43°	43°	43°	43°
	at carry position		50°	50°	50°	50°	50°	50°	50°
Overall	Length	ft-in (mm)	27'4 <sup>1</sup> / <sub>8</sub> " (8335)	27'10 <sup>5</sup> / <sub>8</sub> " (8500)	26'10 <sup>3</sup> / <sub>4</sub> " (8200)	27'10 <sup>5</sup> / <sub>8</sub> " (8500)	27'6 <sup>7</sup> / <sub>8</sub> " (8450)	28'4 <sup>7</sup> / <sub>8</sub> " (8660)	27'8 <sup>3</sup> / <sub>4</sub> " (8445)
	Height	ft-in (mm)	11'7 <sup>3</sup> / <sub>16</sub> " (3535)	11'7 <sup>3</sup> / <sub>16</sub> " (3535)	11'7 <sup>3</sup> / <sub>16</sub> " (3530)	11'7 <sup>3</sup> / <sub>16</sub> " (3535)	11'7 <sup>3</sup> / <sub>16</sub> " (3535)	11'7 <sup>3</sup> / <sub>16</sub> " (3535)	11'7 <sup>3</sup> / <sub>16</sub> " (3535)
	Width (outside tire)	ft-in (mm)	9'7 <sup>3</sup> / <sub>8</sub> " (2930)	9'7 <sup>3</sup> / <sub>8</sub> " (2930)	9'7 <sup>3</sup> / <sub>8</sub> " (2930)	9'7 <sup>3</sup> / <sub>8</sub> " (2930)	9'7 <sup>3</sup> / <sub>8</sub> " (2930)	9'7 <sup>3</sup> / <sub>8</sub> " (2930)	9'7 <sup>3</sup> / <sub>8</sub> " (2930)
	Width (outside bucket)	ft-in (mm)	10'2 <sup>1</sup> / <sub>16</sub> " (3100)	10'2 <sup>13</sup> / <sub>16</sub> " (3120)	10'2 <sup>1</sup> / <sub>16</sub> " (3100)	10'2 <sup>13</sup> / <sub>16</sub> " (3120)	10'2 <sup>1</sup> / <sub>16</sub> " (3100)	10'2 <sup>13</sup> / <sub>16</sub> " (3120)	10'2 <sup>1</sup> / <sub>16</sub> " (3100)
Wheel base		ft-in (mm)	11'1 <sup>7</sup> / <sub>8</sub> " (3400)	11'1 <sup>7</sup> / <sub>8</sub> " (3400)	11'1 <sup>7</sup> / <sub>8</sub> " (3400)	11'1 <sup>7</sup> / <sub>8</sub> " (3400)	11'1 <sup>7</sup> / <sub>8</sub> " (3400)	11'1 <sup>7</sup> / <sub>8</sub> " (3400)	11'1 <sup>7</sup> / <sub>8</sub> " (3400)
Minimum turning radius	at outside bucket	ft-in (mm)	22'4 <sup>11</sup> / <sub>16</sub> " (6825)	22'6 <sup>7</sup> / <sub>8</sub> " (6880)	22'3 <sup>5</sup> / <sub>16</sub> " (6790)	22'6 <sup>7</sup> / <sub>8</sub> " (6880)	22'3 <sup>5</sup> / <sub>16</sub> " (6790)	22'6 <sup>7</sup> / <sub>8</sub> " (6880)	22'5 <sup>7</sup> / <sub>8</sub> " (6855)
	at center of outside tire	ft-in (mm)	19 <sup>3</sup> / <sub>8</sub> " (5800)	19 <sup>3</sup> / <sub>8</sub> " (5800)	19 <sup>3</sup> / <sub>8</sub> " (5800)	19 <sup>3</sup> / <sub>8</sub> " (5800)	19 <sup>3</sup> / <sub>8</sub> " (5800)	19 <sup>3</sup> / <sub>8</sub> " (5800)	19 <sup>3</sup> / <sub>8</sub> " (5800)
Minimum ground clearance		ft-in (mm)	20 <sup>1</sup> / <sub>4</sub> " (515)	20 <sup>1</sup> / <sub>4</sub> " (515)	20 <sup>1</sup> / <sub>4</sub> " (515)	20 <sup>1</sup> / <sub>4</sub> " (515)	20 <sup>1</sup> / <sub>4</sub> " (515)	20 <sup>1</sup> / <sub>4</sub> " (515)	20 <sup>1</sup> / <sub>4</sub> " (515)
Full articulation angle		degree	40°	40°	40°	40°	40°	40°	40°
Operating weight (with ROPS Cab)		lb (kg)	47,940 (21,790)	47,650 (21,660)	47,760 (21,710)	48,180 (21,900)	47,980 (21,810)	48,400 (22,000)	47,760 (21,710)
Static Tipping Load (with ROPS cab)	Straight	lb (kg)	34,300 (15,590)	34,915 (15,870)	34,825 (15,830)	34,275 (15,580)	34,365 (15,620)	33,814 (15,370)	33,945 (15,430)
	Full turn	lb (kg)	29,370 (13,350)	29,940 (13,610)	29,875 (13,580)	29,325 (13,330)	29,435 (13,380)	28,885 (13,130)	29,020 (13,190)

The weight and load figure includes optional counterweight, Enclosed ROPS Cab. 26.5x25 (L-3) tires. Full fuel tank and operator.

# 90Z<sup>IV</sup>-2 BUCKET DATA

			High Lift Boom		
			General Purpose		Material Handling
			With Bolt-on Cutting Edge	With Teeth	With Bolt-on Cutting Edge
					
Capacity	Heaped	yd <sup>3</sup> (m <sup>3</sup> )	4.25 (3.25)	4.0 (3.1)	5.0 (3.8)
	Struck	yd <sup>3</sup> (m <sup>3</sup> )	3.75 (2.8)	3.5 (2.7)	4.25 (3.25)
Maximum dumping clearance		ft-in (mm)	11'8 <sup>3</sup> / <sub>16</sub> " (3560)	11'3 <sup>7</sup> / <sub>8</sub> " (3440)	11'5 <sup>13</sup> / <sub>16</sub> " (3500)
Dumping reach (to front of bucket edge or tooth)		ft-in (mm)	3'11 <sup>5</sup> / <sub>8</sub> " (1210)	4'2 <sup>13</sup> / <sub>16</sub> " (1290)	4'2" (1270)
Bucket hinge pin height		ft-in (mm)	15'6 <sup>1</sup> / <sub>4</sub> " (4730)	15'6 <sup>1</sup> / <sub>4</sub> " (4730)	15'6 <sup>1</sup> / <sub>4</sub> " (4730)
Digging depth		ft-in (mm)	2' <sup>9</sup> / <sub>16</sub> " (65)	3' <sup>9</sup> / <sub>16</sub> " (90)	2' <sup>9</sup> / <sub>16</sub> " (65)
Breakout force		lb (kg)	49,385 (22,400)	53,790 (24,400)	46,075 (20,900)
Bucket tilt-back angle	at ground level		41°	41°	41°
	at carry position		48°	48°	48°
Overall	Length	ft-in (mm)	28'6 <sup>3</sup> / <sub>4</sub> " (8705)	29'1" (8865)	28'10 <sup>1</sup> / <sub>4</sub> " (8795)
	Height	ft-in (mm)	11'7 <sup>3</sup> / <sub>16</sub> " (3530)	11'7 <sup>3</sup> / <sub>16</sub> " (3530)	11'7 <sup>3</sup> / <sub>16</sub> " (3530)
	Width (outside tire)	ft-in (mm)	9'7 <sup>3</sup> / <sub>8</sub> " (2930)	9'7 <sup>3</sup> / <sub>8</sub> " (2930)	9'7 <sup>3</sup> / <sub>8</sub> " (2930)
	Width (outside bucket)	ft-in (mm)	10'2 <sup>1</sup> / <sub>16</sub> " (3100)	10'2 <sup>13</sup> / <sub>16</sub> " (3120)	10'2 <sup>1</sup> / <sub>16</sub> " (3100)
Wheel base		ft-in (mm)	11'1 <sup>7</sup> / <sub>8</sub> " (3400)	11'1 <sup>7</sup> / <sub>8</sub> " (3400)	11'1 <sup>7</sup> / <sub>8</sub> " (3400)
Minimum turning radius	at outside bucket	ft-in (mm)	22'11 <sup>3</sup> / <sub>8</sub> " (6995)	23'1 <sup>3</sup> / <sub>4</sub> " (7055)	23' <sup>3</sup> / <sub>8</sub> " (7020)
	at center of outside tire	ft-in (mm)	19' <sup>3</sup> / <sub>8</sub> " (5800)	19' <sup>3</sup> / <sub>8</sub> " (5800)	19' <sup>3</sup> / <sub>8</sub> " (5800)
Minimum ground clearance		ft-in (mm)	20' <sup>1</sup> / <sub>4</sub> " (515)	20' <sup>1</sup> / <sub>4</sub> " (515)	20' <sup>1</sup> / <sub>4</sub> " (515)
Full articulation angle		degree	40°	40°	40°
Operating weight (with ROPS Cab)		lb (kg)	48,270 (21,940)	47,980 (21,810)	48,380 (21,990)
Static Tipping Load (with ROPS cab)	Straight	lb (kg)	28,225 (12,830)	28,665 (13,030)	28,005 (12,730)
	Full turn	lb (kg)	23,890 (10,860)	24,330 (11,060)	23,670 (10,760)

\*The weight and load figure includes optional counterweight, Enclosed ROPS Cab, 26.5x25 (L-3) tires. Measured in accordance with SAEJ732C & J742

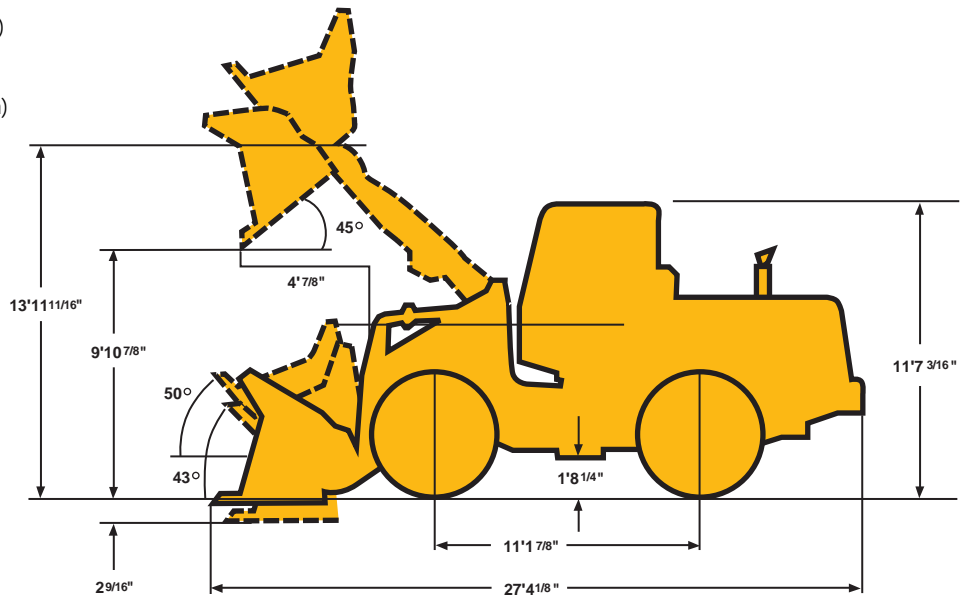
# 90Z<sup>II</sup>-2 OPERATING SPECIFICATIONS

## WEIGHTS AND DIMENSIONS (SUPPLEMENTAL DATA)

		Operating Weight	Tipping Load			Overall Width (Outside Tire)	Tread	Vertical Dimensions	Overall Length
			Straight	Full Turn					
ROPS Canopy (Instead of ROPS Cab)	lb (kg)	-440 (-200)	-175 (-385)	-170 (-375)	in (mm)				
Remove ROPS Canopy and Cab (for transport only)	lb (kg)	-1145 (-520)			in (mm)			no change	
Tires: 26.5-25-20PR (L-2)	lb (kg)	-397 (-180)	-390 (-140)	-265 (-120)	in (mm)	no change		no change	no change
26.5-25-20PR (L-4)	lb (kg)	+617 (+280)	+465 (+210)	+400 (+180)	in (mm)	no change		no change	no change
26.5-25-20PR (L-5)	lb (kg)	+2230 (+1010)	+1676 (+760)	+1477 (+670)	in (mm)	no change		no change	no change
26.5-25 (75% CaCl <sub>2</sub> )	lb (kg)	+3220 (+1460)	+4830 (+2190)	+4255 (+1930)	in (mm)	no change		no change	no change
Air conditioner/Heater	lb (kg)	+220 (+100)	+243 (+110)	+220 (+100)	in (mm)				
Belly Guard (rear frame)	lb (kg)	+243 (+110)	+243 (+110)	+243 (+110)	in (mm)				

Base Tire 26.5-25-20PR (L-3)

Tread .....7'3<sup>13</sup>/<sub>16</sub>" (2230mm)  
 Width (outside tire) .....9'7<sup>3</sup>/<sub>8</sub>" (2930mm)  
 Width (outside bucket) .....10'2<sup>1</sup>/<sub>16</sub>" (3100mm)  
 Equipped with GSC bucket with  
 bolt on cutting edge  
 26.5-25-20PR (L-3) Tire and ROPS Cab



# 90Z<sup>IV</sup>-2 OPERATING SPECIFICATIONS

## ENGINE

Make/Model/Fuel Type	Cummins M11-C Diesel
Type	4-cycle, watercooled, turbocharged and after cooled, direct injection
Net flywheel horsepower	256HP/2100 RPM
Maximum torque	832 ft/lb @ 1300 RPM
Number of cylinders	6
Bore and stroke	4.921" x 5.787" (125mm x 136mm)
Total displacement	660 in3 (10,817 cm3)
Alternator	AC24V - 1800W (75 amp)
Starting motor	24V - 7.3kw (9.8HP)
Battery	12V - 150AH, 2 units BCI# 4D
Governor	All-speed, mechanical type

## TORQUE CONVERTER AND TRANSMISSION

Torque converter	3 elements, single stage, 1-phase
Torque stall ratio	3.42:1
Main clutches	Wet hydraulic, multi-disk type
Cooling method	Forced circulation type
Transmission	Full powershift, 4 forward, 4 reverse with automatic mode (2nd - 4th) with downshift switch for 2nd - 1st downshifting. Autobrake protects from overspeeding
Speeds	Forward
	1st: 4.8 MPH (7.7 km/hr) 2nd: 8.0 MPH (12.8 km/hr) 3rd: 13.6 MPH (21.9 km/hr) 4th: 19.3 MPH (31.0 km/hr)
Speeds	Reverse
	1st: 4.9 MPH (7.9 km/hr) 2nd: 8.1 MPH (13.1 km/hr) 3rd: 13.4 MPH (21.5 km/hr) 4th: 19.5 MPH (31.4 km/hr)

## SERVICE REFILL CAPACITY

LOCATION	CAPACITY:	Gallons	Liters
Engine (coolant)		14.8	(56)
Fuel tank (diesel fuel)		84.5	(320)
Engine oil (oil pan)		9.7	(37)
Front axle (gear oil)		19.8	(75)
Rear axle (gear oil)		21.1	(80)
Torque converter and transmission (engine oil)		15.9	(60)
Hydraulic system (including tank hydraulic oil)		71.3	(270)
Brake oil tank (engine oil)		0.7	(2.5)

## HYDRAULIC AND STEERING SYSTEM

Steering type	Articulated frame steering
Steering mechanism	Hydraulic power steering unit
Lift (boom) cylinder	Two (2) double-acting piston type: 6.69" x 33.46" (170mm x 850mm)
Tilt (bucket) cylinder	Two (2) double-acting piston type: 5.51" x 24.37" (140mm x 619mm)
Steering cylinder	Two (2) double-acting piston type: 3.54" x 17.72" (90mm x 450mm)
Steering oil pump	Gear type: 62.9 GPM @ 2100 RPM (238 LPM @ 2100 RPM)
Main oil pump	Gear type: 37.5 GPM @ 2100 RPM (142 LPM @ 2100 RPM)
Pilot oil pump	Gear type: 17.4 GPM @ 2100 RPM (66 LPM @ 2100 RPM)
Relief valve set pressure	Loading 3000 psi (210 kg/cm2) Steering 3000 psi (210 kg/cm2)
HYDRAULIC CYCLE TIME*	
Lifting time (at full load)	6.1 sec.
Lowering time (empty)	3.0 sec.
Bucket dumping time	1.5 sec.
TOTAL	10.6 sec.

\* Measured in accordance with SAE J732C

## AXLE SYSTEM

Drive system	4-wheel drive
Front and rear axle	Full floating banjo type
Tires	Standard 26.5 x 25-20PR (L-3) Optional 26.5 x 25-20PR (L-2) (L-4) (L-5) 26.5 x R25 (Radial)
Reduction and differential gear	Spiral bevel/gear, 1 stage reduction torque proportioning
Final reduction gear	Outboard mounted, internal planetary gear
Oscillation angle	±12° (total 24°)

## BRAKE SYSTEM

Service brakes	4 wheel, adjustment free, wet type multiple disk, controlled by air over hydraulic dual circuit
Parking/Emergency brake	Spring applied air released and oil applied accumulator type, located in front driveline.

# 90Z<sup>IV</sup>-2 EQUIPMENT DATA

## STANDARD EQUIPMENT

Adjustable Steering Column Air Cleaner (Double Element Donaldson with Precleaner) Air Conditioner (R134 Refrigerant) Alarms (Audible): Air Pressure Air Master Overstroke Auto Brake Brake Oil Level Engine Oil Pressure Alarms (Visual): Air Filter Air Master Overstroke Air Pressure Auto Brake Battery Discharge Brake Oil Level Converter Oil Temperature Engine Oil Pressure Engine Coolant Temperature Parking Brake Alternator (75 amp) AM/FM Cassette	Auto Brake Brake Line Protection (Front) Brake (Parking) Spring applied; Air released, Drum type Brakes (Service) Oil/Air Actuation Enclosed Wet Disc Dual System Bucket Control Lever (Dual, Pilot Assisted) Bucket Leveler Boom Kickout Coat Hook Cold Start Aid Cup Holder Downshift Button Drawbar Electrical System (24 volt) Fan (Blower) Fenders (Front and Rear)	Gauges: Air Pressure Converter Oil Temperature Engine Coolant Temperature Fuel Level Hour Meter Hydraulic Oil Level Tachometer Heater/Pressurizer (40,000 BTU) Hoodsides (Hinged) Horn (Electric) Indicators: High Beam Parking Brake Transmission Declutch Transmission Shift Monitor Working Light Linkage (Dual Z-type, Sealed) Lights: 4 Front 2 Rear 2 Stop/Tail Muffler Neutral Safety Start	Operator's Manual Box Radiator: Heavy Duty Plate Fin Type Radiator Grille, Hinged Reverse Alarm ROPS Cab: Enclosed cab with sound suppression, front lights, front and rear wipers and washers, one rear view and two side mirrors, tinted glass, and sliding side windows Safety Articulation Locking Bar Seat (Super Deluxe, Adjustable, Suspension) Seat Belt, Retractable, 3" wide Shift Control Unit for Automatic Shift Torque Proportioning Differential Transmission Declutch Selector Switch Vandalism Protection Wrist Rest, Adjustable
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## OPTIONAL EQUIPMENT

Air Dryer Belly Guard Bolt-On Cutting Edge Segments	Counterweight Cushion Dump Valve Emergency Steering High Lift Arm	Hydraulic System, 3-Spool Valve Lighting System No Spin Differential	ROPS Canopy Turn Signal w/4 way flasher
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