

90ZIII



90ZIII

SUMMARY OF FEATURES

- The reliable, fuel efficient Cummins LTA-10 turbocharged engine supplies a big 256 HP.
- Z-type linkage for high breakout force and easy digging in tough materials.
- Dual bucket cylinders for excellent visibility to the bucket plus distribution of loads evenly across the torque tube.
- High tipping loads for excellent stability.
- Large 26.5 x 25 tire provides excellent flotation and high load capacity.
- Safety features include seat belt, separate brake systems front and rear, emergency brake, major component monitor system, reverse alarm, neutral start and optional emergency steering.
- Operator features include adjustable steering column, single twist grip transmission lever, wrist rest, fingertip hydraulic controls, isolated/sound suppressed cab, optional air conditioner/heater, suspension seat, bucket leveler and boom kickout.
- Service features include sealed linkage pins, remote mounted grease fittings, SAE hydraulic hoses, spin on engine and fuel filter, multiple use of common hoses, hinged hood/sides and special tool kit.
- Wet disc brakes offer protection from external contamination, longer life and excellent braking capacity.
- KLEW – Kawasaki Loaders Early Warning Oil Analysis program measures wear metals and contaminants in the oil to monitor wear rates of major components. This sophisticated test allows overhauls to be scheduled to reduce downtime and costs.

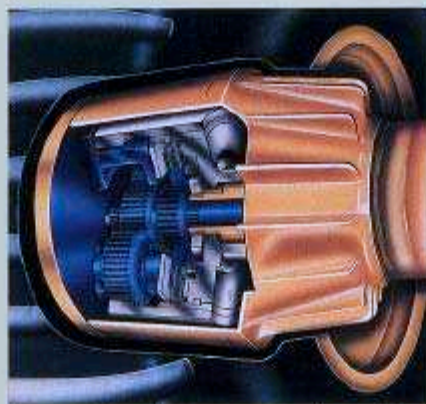


CUMMINS ENGINE

The state-of-the-art Cummins LTA-10 turbocharged diesel provides a big 256 flywheel horsepower. With outstanding torque characteristics; this engine also offers excellent fuel economy. The turbo-charger permits efficient operation at high altitude or high ambient conditions. Reliable Delco Remy electrical components make service easy. Ether cold start is standard. Resilient engine mounts reduce vibration and noise. Two stage Donaldson air cleaner protects the engine.

WET DISC BRAKES

The 90ZIII wet disc brakes offer excellent capacity, protection and long life. Mounted in each wheel are the multiple, sintered alloy clutches that offer excellent heat capacity and rotate to provide greater cooling. The clutches are



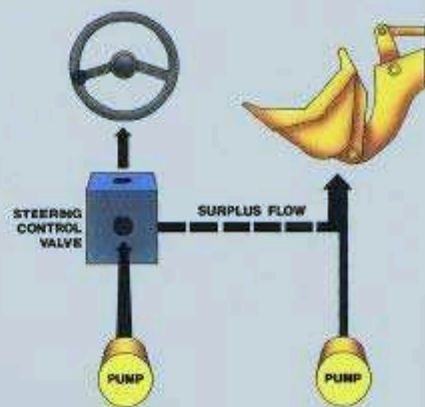
mounted on the low-torque, input side of the planetary. This permits the use of fewer parts and easier accessibility to reduce overhaul time.

PLANETARY TRANSMISSION WITH S.C.U.

The big four-speed transmission offers excellent performance and reliability. Speed selection is made easy by the Shift Control Unit (S.C.U.) which allows four options: Hold in First, Hold in Second, Automatic 1-2, Automatic 1-2-3-4. The single twist grip shift lever allows the operator to select the speed range best suited to the job. The S.C.U. insures proper shifting to protect the transmission and extend service life.

ENERGY EFFICIENT HYDRAULICS

The ZIII series loaders all incorporate energy efficient hydraulics. The unused steering fluid is utilized by the loading circuit. This gives excellent performance with low horsepower drain. The 90ZIII tank is pressurized to keep hydraulic oil cleaner, longer. The large system capacity reduces oil temperature and heat on hoses, seals and other components. This adds life, keeping the 90ZIII dry longer. To insure these high standards of quality, Kawasaki extensively tests each loader.



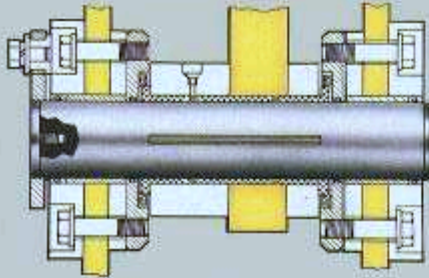
AUTO BRAKE

The S.C.U. also has an Auto Brake feature for protection against transmission overspeeding. If overspeeding conditions exist the Auto Brake senses the condition and partially applies the service brakes and shifts the transmission to neutral until a proper speed for the gear range is achieved.

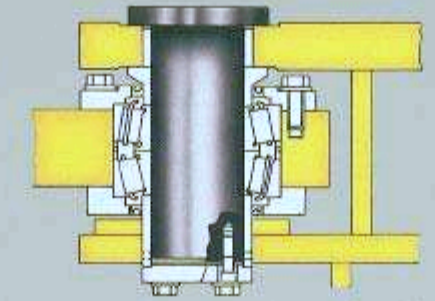


SEALED PINS

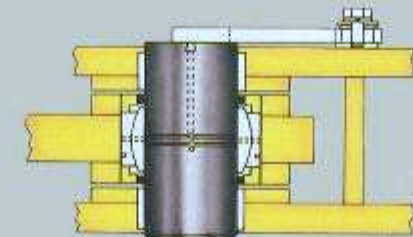
The lower bucket hinge pins use a patented design seal on each end of the pin to insure that dirt cannot enter. This pin uses grease as a lubricant rather than oil to provide greater durability and longer life. All other linkage pins use conventional lip type seals to retain grease and extend service life. Service interval for all pins is 100 hours.



Lower Bucket Hinge Pin



Upper Double-Tapered Roller Bearing Center Pin



Lower Spherical Bearing Center Pin



TOUGH STRUCTURES

The 90ZIII is built to handle the tough jobs. The solid lift arms are made from high strength alloy steel for excellent durability. The large center pins are supported by massive structures and use tapered roller bearings and spherical bearings to handle the load in this critical area. The rear frame is a heavy duty-box section frame to provide long, trouble-free service.



OPERATOR COMFORT

The roomy ROPS cab is rubber mounted, reducing both vibration and sound levels to 82 dBA. The cab is well equipped with tinted glass, sliding windows, front and rear wipers and washers, defroster fan, available floor mounted heater/air conditioner, and exterior and interior rear view mirrors. Operator comfort is further enhanced by a 3-way adjustable suspension seat, pilot operated fingertip hydraulic controls, wrist rest and adjustable steering column. Bucket cylinder design results in excellent bucket visibility, and the bucket leveler and boom kick-out reduce fatigue and quicken cycle time.



DUAL Z-LINKAGE

The Z-linkage provides high breakout force for digging tough material. The 50° bucket rollback permits carrying the full load without spillage. The dual tilt cylinders spread the load more evenly across the torque tube and provide a clear line of sight to the bucket.

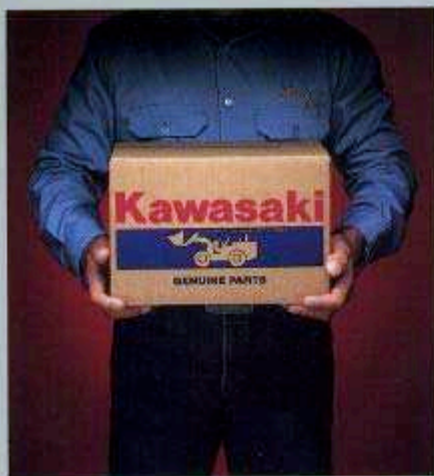


SERVICEABILITY FEATURES

To insure proper efficient servicing, the Kawasaki 90ZIII offers many features. All grease fittings are located for easy access. Convenient panels and hinged hoodsides along with spin-on engine, oil and fuel filters make routine service checks simple. All flange fittings use SAE threads for easy, convenient replacement. Most of the hoses are used in several locations, allowing a minimal stock of hoses to support the entire machine. A special tool kit is standard.



KAWASAKI ZIII SUPPORT



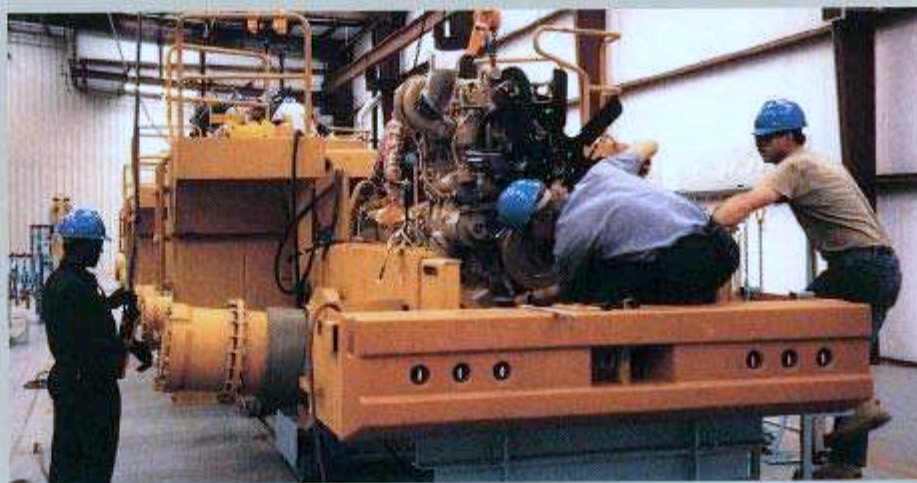
KAWASAKI'S PDO

Kawasaki understands the need for timely delivery of parts to any of its users. To provide an unsurpassed level of service in this area, Kawasaki maintains an extremely high level of parts availability and fast response from our parts distribution network and dealers.



KAWASAKI LOADERS MANUFACTURING CORP., USA

The Kawasaki commitment has been further demonstrated with the establishment of Kawasaki Loaders Manufacturing Corp., USA (KLMC). This new factory, located southwest of Atlanta, is dedicated to providing the same high quality product Kawasaki has become known for. The outstanding support we offer through dedicated independent dealers completes this commitment to you.



KAWASAKI HISTORY

The dependable Kawasaki loader is manufactured by Kawasaki Heavy Industries. Kawasaki is a large industrial manufacturer of ships, aircraft, locomotives, robots, plants, hydraulic components, and motorcycles, as well as a variety of construction equipment. The first Kawasaki articulated loader was manufactured in 1962, making Kawasaki a true pioneer in the loader market. Kawasaki loaders are sold in over 100 countries and Kawasaki is one of the largest loader manufacturers in the world today.

OPERATING SPECIFICATIONS

90ZIII

ENGINE

Make/Model/Fuel type	CUMMINS/LTA-10-C290/Diesel
Type	4 cycle, watercooled, turbo-charged, & after cooled, direct injection
Net flywheel horsepower	256 HP/2100 rpm
Max Torque	832 lb. ft. (115 kg.m.)/1300 rpm
Number of cylinders	6
Bore and stroke	4.921" × 5.354" (125mm × 136mm)
Total Displacement	611 in ³ (10.014cm ³)
Alternator	AC24V - 1,800 W (75 AMP)
Starting motor	24V - 7.3KW (9.8HP)
Battery	12V - 150 Ah, 2 units
Governor	all speed, mechanical type

TORQUE CONVERTER AND TRANSMISSION SPECIFICATIONS

Torque converter	three elements, single stage, 1-phase
Torque stall ratio	3.22:1
Main clutch	wet hydraulic, multi-disk type
Cooling method	forced circulation type
Transmission	full power shift, 4 forward, 4 reverse
Forward Speeds	1st: 4.2 MPH (6.8 km/hr) 2nd: 7.2 MPH (11.5 km/hr) 3rd: 12.1 MPH (19.4 km/hr) 4th: 20.5 MPH (33.0 km/hr)
Reverse Speeds	1st: 4.4 MPH (7.0 km/hr) 2nd: 7.3 MPH (11.8 km/hr) 3rd: 12.4 MPH (20.0 km/hr) 4th: 20.8 MPH (33.5 km/hr)

SERVICE REFILL CAPACITY

LOCATION	CAPACITY Gal	[Lit]
Engine (Coolant)	14.8	(56)
Fuel Tank	81.9	(310)
Engine (oil pan)	11.6	(44)
Front axle	14.5	(55)
Rear axle	14.5	(55)
Torque converter and transmission	15.9	(60)
Hydraulic system (including tank)	43.6	(165)
Brake oil tank	0.9	(3.5)

HYDRAULIC AND STEERING SYSTEM

Type	articulated frame steering	
Steering Mechanism	hydraulic power steering unit pilot operated type	
Lift (boom) cylinder	two (2) double-acting piston type: ϕ 6.69" × 33.46" (ϕ 170mm × 850mm)	
Tilt (bucket) cylinder	two (2) double-acting piston type: ϕ 5.51" × 24.37" (ϕ 140mm × 619mm)	
Steering cylinder	two (2) double-acting piston type: ϕ 3.94" × 17.72" (ϕ 100mm × 450mm)	
Steering oil pump	gear type: 58 GPM/1000psi @ 2540 rpm (220 LPM/70 kg/cm ² @ 2540 rpm)	
Main pump	gear type: 37 GPM/1000psi @ 2540 rpm (140 LPM/70 kg/cm ² @ 2540 rpm)	
Relief set pressure	Loading	3000 psi (210 kg/cm ²)
	Steering	3000 psi (210 kg/cm ²)
HYDRAULIC CYCLE TIME*		
Lifting time (at full load)	6.1 sec	
Lowering time (empty)	3.0 sec	
Bucket dumping time	1.6 sec	
TOTAL	10.7 sec	
*Measured in accordance with SAE J732C.		

AXLE SYSTEM

Drive system	4-wheel drive	
Front and rear axle	full floating banjo type	
Tires	Standard	26.5-25-20PR (L3)
	Optional	26.5-25-20PR (L2, L4, L5) 26.5-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
Parking brake	spring applied air released type, located in front drive shaft
Emergency brake	same as parking, applied on failure in air or brake fluid line

OPERATING SPECIFICATIONS / BUCKET DATA

90ZIII STANDARD BOOM




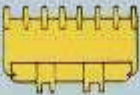

			General Purpose		Rock Straight		Rock-V-Edge		Mat Handling
			Straight Edge With Bolt-on Cutting Edge	Straight Edge With Teeth	Straight Edge Without Teeth	Straight Edge With Teeth	Spade Nose Edge Without Teeth	Spade Nose With Teeth	Straight Edge With Bolt-on Cutting Edge
Capacity	Heaped	yd ³ (m ³)	5.0 (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 ³ (m ³)	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 ³ / ₈ " (3020)	9'6 ³ / ₈ " (2900)	10'2 ³ / ₁₆ " (3120)	9'6 ³ / ₈ " (2900)	9'9 ³ / ₈ " (2980)	9'11 ³ / ₈ " (2790)	9'7 ³ / ₄ " (2940)
Dumping Reach (to front of bucket edge or teeth)		ft-in (mm)	4'7 ³ / ₈ " (1240)	4'4" (1320)	3'10 ³ / ₈ " (1190)	4'4" (1320)	4'4 ³ / ₈ " (1330)	4'8 ³ / ₈ " (1430)	4'4" (1320)
Bucket Hinge Pin Height		ft-in (mm)	13'11 ¹ / ₁₆ " (4260)	13'11 ¹ / ₁₆ " (4260)	13'11 ¹ / ₁₆ " (4260)	13'11 ¹ / ₁₆ " (4260)	13'11 ¹ / ₁₆ " (4260)	13'11 ¹ / ₁₆ " (4260)	13'11 ¹ / ₁₆ " (4260)
Digging Depth		ft-in (mm)	2 ⁹ / ₁₆ " (65)	3 ³ / ₄ " (95)	1 ¹ / ₈ " (30)	3 ³ / ₄ " (95)	1 ¹ / ₈ " (30)	3 ³ / ₄ " (95)	2 ⁷ / ₁₆ " (65)
Breakout Force		lb (kg)	43870 (19900)	47620 (21600)	47620 (21600)	47620 (21600)	41006 (18600)	41006 (18600)	40565 (18400)
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)	27'5 ¹ / ₂ " (8370)	28'1 ¹ / ₁₆ " (8535)	27'3 ¹ / ₁₆ " (8235)	28'1 ¹ / ₁₆ " (8535)	27'8 ⁵ / ₁₆ " (8440)	28'6 ⁵ / ₁₆ " (8695)	27'9 ³ / ₈ " (8480)
	Height	ft-in (mm)	11'7" (3530)	11'7" (3530)	11'7" (3530)	11'7" (3530)	11'7" (3530)	11'7" (3530)	11'7" (3530)
	Width (Outside Tire)	ft-in (mm)	9'7 ³ / ₈ " (2930)	9'7 ³ / ₈ " (2930)	9'7 ³ / ₈ " (2930)	9'7 ³ / ₈ " (2930)	9'7 ³ / ₈ " (2930)	9'7 ³ / ₈ " (2930)	9'7 ³ / ₈ " (2930)
	Width (Outside Bucket)	ft-in (mm)	10'2 ¹ / ₁₆ " (3100)	10'2 ³ / ₁₆ " (3120)	10'2 ¹ / ₁₆ " (3100)	10'2 ³ / ₁₆ " (3120)	10'2 ¹ / ₁₆ " (3100)	10'2 ³ / ₁₆ " (3120)	10'2 ¹ / ₁₆ " (3100)
Wheel Base		ft-in (mm)	11'1 ⁷ / ₈ " (3400)	11'1 ⁷ / ₈ " (3400)	11'1 ⁷ / ₈ " (3400)	11'1 ⁷ / ₈ " (3400)	11'1 ⁷ / ₈ " (3400)	11'1 ⁷ / ₈ " (3400)	11'1 ⁷ / ₈ " (3400)
Min. Turning Radius	at outside bucket	ft-in (mm)	22'4 ¹ / ₁₆ " (6825)	22'6 ⁷ / ₈ " (6880)	22'3 ¹ / ₁₆ " (6790)	22'6 ⁷ / ₈ " (6880)	22'3 ¹ / ₁₆ " (6790)	22'6 ⁷ / ₈ " (6880)	22'5 ⁷ / ₈ " (6855)
	at center of outside tire	ft-in (mm)	19 ³ / ₈ " (5800)	19 ³ / ₈ " (5800)	19 ³ / ₈ " (5800)	19 ³ / ₈ " (5800)	19 ³ / ₈ " (5800)	19 ³ / ₈ " (5800)	19 ³ / ₈ " (5800)
Minimum Ground Clearance		ft-in (mm)	20 ¹ / ₄ " (515)	20 ¹ / ₄ " (515)	20 ¹ / ₄ " (515)	20 ¹ / ₄ " (515)	20 ¹ / ₄ " (515)	20 ¹ / ₄ " (515)	20 ¹ / ₄ " (515)
Full Articulation Angle		degree	40°	40°	40°	40°	40°	40°	40°
Operating Weight (with ROPS cab)		lb (kg)	47994 (21770)	47708 (21640)	47820 (21690)	48237 (21880)	48038 (21790)	48457 (21980)	47820 (21690)
Static Tipping Load (with ROPS Cab)	Straight	lb (kg)	35270 (16000)	35930 (16300)	35715 (16200)	35274 (16000)	35274 (16000)	34833 (15800)	35270 (16000)
	Full Turn	lb (kg)	30200 (13700)	30860 (14000)	30644 (13900)	30203 (13700)	30203 (13700)	29762 (13500)	30200 (13700)

The Weight and Load figure include Enclosed ROPS Cab, 26.5-25-20PR (L-3) Tires, full fuel tank and operator. Measured in accordance with SAE J732C and J742C.

OPERATING SPECIFICATIONS / BUCKET DATA

90ZIII HIGH LIFT BOOM



			General Purpose		Material Handling
			With Bolt-on Cutting Edge	With Teeth	With Bolt-on Cutting Edge
					
Capacity	Heaped	yd ³ (m ³)	4.25 (3.25)	4.0 (3.1)	5.0 (3.8)
	Struck	yd ³ (m ³)	3.75 (2.8)	3.50 (2.7)	4.25 (3.25)
Maximum Dumping Clearance		ft-in (mm)	11'8 ¹ / ₁₆ " (3560)	11'3 ¹ / ₁₆ " (3440)	11'5 ¹³ / ₁₆ " (3500)
Dumping Reach (to front of bucket edge or teeth)		ft-in (mm)	3'11 ¹ / ₈ " (1210)	4'2 ¹ / ₁₆ " (1290)	4'2" (1270)
Bucket Hinge Pin Height		ft-in (mm)	15'6 ¹ / ₄ " (4730)	15'6 ¹ / ₄ " (4730)	15'6 ¹ / ₄ " (4730)
Digging Depth		ft-in (mm)	2 ⁷ / ₁₆ " (65)	3 ⁷ / ₁₆ " (90)	2 ⁷ / ₁₆ " (65)
Breakout Force		lb (kg)	46,970 (21,300)	51,380 (23,300)	43,880 (19,900)
Bucket tilt-back angle	{at ground level}		43°	43°	43°
	{at carry position}		50°	50°	50°
Overall	Length	ft-in (mm)	28'8 ¹ / ₈ " (8740)	29'2 ¹ / ₈ " (8900)	28'11 ³ / ₈ " (8830)
	Height	ft-in (mm)	11'7" (3530)	11'7" (3530)	11'7" (3530)
	Width (Outside Tire)	ft-in (mm)	9'7 ¹ / ₈ " (2930)	9'7 ¹ / ₈ " (2930)	9'7 ¹ / ₈ " (2930)
	Width (Outside Bucket)	ft-in (mm)	10'2 ¹ / ₁₆ " (3100)	10'2 ¹ / ₁₆ " (3120)	10'2 ¹ / ₁₆ " (3100)
Wheel Base		ft-in (mm)	11'1 ¹ / ₈ " (3400)	11'1 ¹ / ₈ " (3400)	11'1 ¹ / ₈ " (3400)
Min. Turning Radius	at outside bucket	ft-in (mm)	22'11 ¹ / ₄ " (6995)	23'1 ¹ / ₄ " (7055)	23' ¹ / ₈ " (7020)
	at center of outside tire	ft-in (mm)	19' ¹ / ₈ " (5800)	19' ¹ / ₈ " (5800)	19' ¹ / ₈ " (5800)
Minimum Ground Clearance		ft-in (mm)	20' ¹ / ₄ " (515)	20' ¹ / ₄ " (515)	20' ¹ / ₄ " (515)
Full Articulation Angle		degree	40°	40°	40°
Operating Weight (with ROPS cab)		lb (kg)	48,330 (21,920)	48,050 (21,790)	48,440 (21,970)
Static Tipping Load (with ROPS cab)	Straight	lb (kg)	29,110 (13,200)	29,550 (13,400)	28,890 (13,100)
	Full Turn	lb (kg)	24,700 (11,200)	25,140 (11,400)	24,480 (11,100)

The Weight and Load figure include Enclosed ROPS Cab, 26.5-25-20PR (L-3) tires, full fuel tank and operator. Measured in accordance with SAE J732 and SAE742.

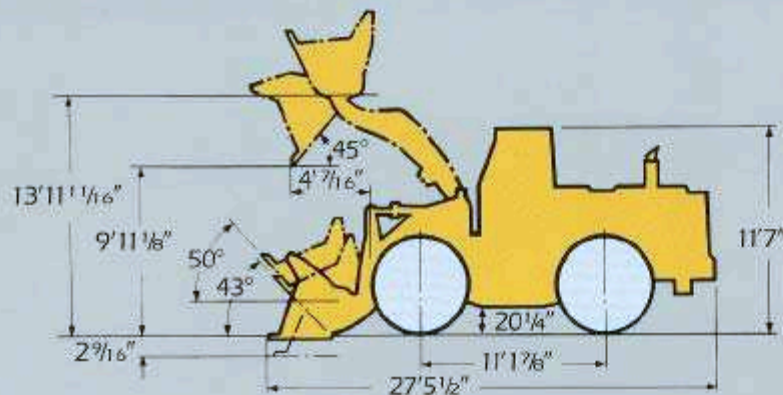
WEIGHTS AND DIMENSIONS (SUPPLEMENTAL DATA)

		Operating Weight	Tipping Load		Overall Width (Outside Tire)	Tread	Vertical Dimension	Overall Length
			Straight	Full Turn				
ROPS Canopy (Instead of ROPS Cab)	lb (kg)	-705 (-320)	-635 (-288)	-610 (-277)	in (mm)			
Remove ROPS Canopy and Cab	lb (kg)	-1480 (-670)	-1345 (-610)	-1300 (-590)	in (mm)			
Tires: 26.5-25-20PR(L-2)	lb (kg)	-397 (-180)	-309 (-140)	-265 (-120)	in (mm)			
26.5-25-20PR(L-4)	lb (kg)	+617 (+280)	+465 (+210)	+400 (+180)	in (mm)			
26.5-25-20PR(L-5)	lb (kg)	+2230 (+1010)	+1676 (+760)	+1477 (+670)	in (mm)			
26.5-25 (75% CaCl ₂)	lb (kg)	+3220 (+1460)	+4830 (+2190)	+4255 (+1930)	in (mm)			
Air Conditioner	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: 26.5-25-20PR (L-3) tires.

Tread 7'3 1/8" (2230mm)
 Width (Outside Tire) 9'7 3/8"
 (2930mm)
 Width (Outside Bucket) . . . 10'2 1/8"
 (3100mm)

Equipped with GSC bucket
 with bolt on cutting edge
 26.5-25-20PR (L-3) TIRE, and
 ROPS cab.



STANDARD EQUIPMENT

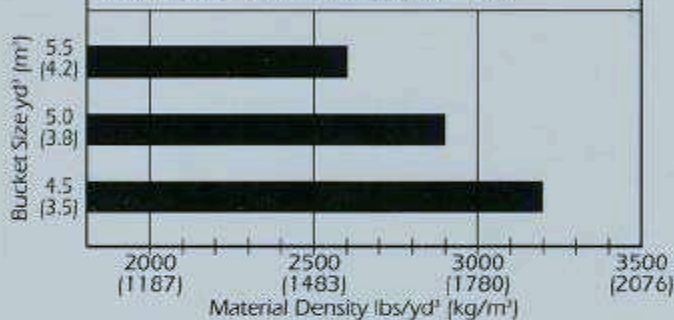
Adjustable steering column Air cleaner (Donaldson: double element 2 stage type) Air compressor Alarms, audible: air pressure brake oil level parking brake w/transmission engaged (neutral check) engine oil pressure engine water temperature transmission oil temperature emergency brake Alarms, visual: air filter air pressure battery discharge brake oil level	engine oil pressure engine water temperature transmission oil temperature transmission control system parking brake Alternator-24V, 75 amp Auto Brake Batteries two (2)-12V-150 Ah Boom lift kick out Bucket positioner Cold start ether system Draw bar Emergency brake Engine side panel Fan guard Fenders (front and rear) Filtration system (replaceable elements)	Frame lock Gauges: air pressure converter oil temperature engine water temperature fuel level hour meter Horn (electric) Indicator lights: cold start, working light high beam, transmission cutoff, neutral, 1st, 2nd, low, high Ladder (access at both sides) Lights: two (2) headlights, two (2) stop & tail lights, two (2) rear working lights Neutral safety start Parking brake (spring applied air released type)	Pilot assisted hydraulic control Reverse alarm ROPS cab, enclosed with sound suppression, front and rear windshield wiper and washer, front working lights, defroster fan and rear view mirrors Seat belt Seat (adjustable suspension type) Special tool kit Switches: cold start, headlight, rear working light, starter, parking, transmission cut-off, wiper Tires: four (4) 26.5-25-20PR (L-3) Torque proportioning differential Tire inflation kit Vandalism protection
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OPTIONAL EQUIPMENT

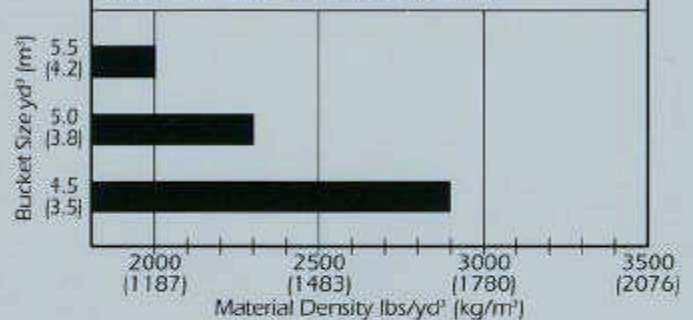
Air conditioner with heater and defroster Air Dryer Belly guard Bolt-on cutting edges	Bolt-on segmented edges Bucket (see data chart) Emergency steering (special option) Heater High lift arm kit	Hydraulic system – three spool valve, control lever, linkage and lines (special option) ROPS canopy Seat (deluxe)	Teeth, weld-on, bolt-on type Tires (set of four): 26.5-25-20PR (L-2), (L-4), (L-5) 26.5-R25 (Radial)
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Specifications are subject to change without notice.

BUCKET SELECTION GUIDE STANDARD BUCKETS



BUCKET SELECTION GUIDE HIGH LIFT BUCKETS





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