



CATERPILLAR

936 Wheel Loader

- Cat 3304 turbocharged diesel Engine 125 HP/93 kW
- Bucket capacities 2.9-3.0 yd³/2.0-2.3 m³

Machine shown may have optional equipment.



Caterpillar Engine

Flywheel power @ 2200 RPM 125 HP/93 kW
(Kilowatts (kW) is the International System of Units equivalent of horsepower.)

The net power at the flywheel of the vehicle engine operating under SAE J1349 standard conditions, 77°F/25°C and 29.61" Hg/100 kPa, using 35 API gravity fuel oil at 60°F/15.6°C, and after deductions for fan, air cleaner, water pump, lubricating oil pump, fuel pump, muffler and alternator. No derating required up to 10,000 ft/3000 m altitude.

Cat 4-stroke-cycle 3304 turbocharged diesel Engine with four cylinders, 4.75" (121 mm) bore, 6" (152 mm) stroke and 425 cu. in./7.0 liters displacement.

Direct injection Caterpillar fuel system with individual adjustment-free injection pumps and valves.

Cam-ground and tapered aluminum alloy pistons with 3-ring design are spray-cooled. Steel-backed aluminum bearings. Totally hardened crankshaft. Pressure lubrication with full-flow filtered and cooled oil. Dry-type air cleaner with primary and safety elements.

24-volt direct electric starting system with 50-amp alternator.



transmission

Power shift in four forward and four reverse speeds. Provides on-the-go shifting for greater operator efficiency and machine productivity.

Single lever on left side of steering column controls both speed and direction. Rotate the handle for forward and reverse speeds. Move the lever forward or back for directional change. Neutral start provision prevents starting machine in gear.

Single-stage, single-phase torque converter.

Maximum speeds with 17.5-25, 12 PR (L-2) tires:

	1st	2nd	3rd	4th
Forward, MPH:	4.6	8.1	13.9	21.4
km/h:	7.4	13.1	22.3	34.4
Reverse, MPH:	5.2	9.1	15.5	23.9
km/h:	8.3	14.6	24.9	38.4

Maximum speeds with 20.5-25 (L-2) tires:

Forward, MPH:	4.8	9.1	15.4	25.4
km/h:	7.7	14.6	24.8	40.9
Reverse, MPH:	5.3	10.2	17.2	26.6
km/h:	8.6	16.4	27.7	42.8



axles

Front axle fixed, rear axle oscillates ±15°, total of 30°, for greater machine stability. One rear wheel can drop or rise a total of 20" (508 mm) with all wheels remaining on the ground for maximum traction. Free-floating axle shafts carry torque, not machine weight, for long life. Axle shafts can be removed independently of wheels and planetaries for servicing ease.

Conventional differentials standard. Optional NoSPIN differential rear axles are recommended for slippery underfoot conditions.

Wheel Loader



final drives

All-wheel drive with planetary reduction in each wheel. Torque is developed at the wheel, putting less stress on axle shafts. Planetary units may be removed independently of wheels and brakes for servicing ease.



brakes

(System meets U.S. OSHA regulations)

Service — Caliper discs on all four wheels, air/hydraulic actuated. Fade-resistant, less affected by weather than drum-and-shoe brakes. Separate brake circuits for front and rear axles. Two brake pedals: right pedal brakes only; left pedal brakes while neutralizing transmission.

Parking — Spring applied — air released, dry drum and shoe. parking brake acts on main drive line. Operator applies manually. Audible alarm and red light warn operator if transmission is engaged while parking brake is applied.

Emergency — Uses parking brake on transfer gear case. If air pressure drops below 40 psi/2.76 bar/276 kPa when transmission is engaged, an audible alarm sounds, then brake automatically applies to bring machine to a controlled stop. Operator may also apply manually. A red light warns when pressure to parking brake drops and when brake is applied.



tires

Tubeless, nylon, loader-doezer design.

Choice of:

- 17.5-25, 12 PR (L-2) STD
- 17.5-25, 12 PR (L-3) Rock
- 17.5-25, Radial L-2 equivalent
- 20.5-25, 12 PR (L-2)
- 20.5-25, Radial L-2 equivalent



steering

Center-point frame articulation. Rear and front wheels track at all times, for greater operator efficiency, lower rolling resistance, reduced tire wear. Flow amplified hydraulic power for low-effort precise control steering. Full-flow filtering.

Minimum turning radius (over tires) 17'11" / 5.660 m

Steering angle (each direction) 40°

Hydraulic system — Two 3.5"/89 mm bore, double-acting cylinders powered by vane-type pump. Pump sized for excellent steering response at all engine speeds.

Output @ 2200 engine RPM and
1000 psi/69 bar/6895 kPa 31.7 gpm/120 liters/min

Relief valve setting 2500 psi/172 bar/17 237 kPa



bucket controls

Lift circuit — Positions: raise, hold, lower and float. Automatic kickout at full lift height.

Tilt circuit — Positions: roll back, hold and dump. Automatic bucket positioner adjustable to desired loading angle.

No visual spotting required.



lift arms

Sealed pins in lift arms and bucket hinge points for longer pin and bushing life, lower maintenance costs. Grease once every 100 service meter units, except lower bucket hinge pins, which need grease every 50 SMU.



loader hydraulic system

Pump output @ 2200 engine RPM and 1000 psi/69 bar/6895 kPa, with
SAE No. 10 oil @ 150°F/66°C 48.6 gpm/185 liters/min

Relief valve setting 2500 psi/172 bar/17 237 kPa

Cylinders (double-acting):

Lift — bore and stroke 5.5" × 27.6"/139 × 700 mm

Tilt — bore and stroke 6.5" × 20.7"/165 × 527 mm

Hydraulic cycle time, rated load in bucket, in seconds (§):

Raise	Dump	Lower (empty, float down)	Total
6.6	1.8	3.2	11.6



service refill capacities

	U.S. Gallons	Liters
Cooling system	10.6	40
Crankcase	5.8	22
Transmission and torque converter	10.3	39
Differentials and final drives:		
Front	8.1	31
Rear	7.4	28
Hydraulic system	38.5	146
Hydraulic tank	19.0	72
Fuel tank	44.0	167

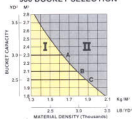


ROPS

ROPS cab is standard in U.S.A.

ROPS (Rollover Protective Structure) offered by Caterpillar for this machine meet ROPS criteria SAE J320a, SAE J1104c and ISO 3471. They also meet FOPS (Falling Object Protective Structure) criteria SAE J231 and ISO 3449. When properly installed and maintained, cab with doors and windows closed meets OSHA and MSHA requirements for operator sound exposure limits in effect at time of manufacture when tested according to ANSI/SAE J1166 SEP80.

936 BUCKET SELECTION



I — WORK RANGE
II — OVERLOAD ZONE

- A — 2.3m³ (3.0 yd³) General Purpose Loose Material Bucket (top edge)
- B — 2.1m³ (2.75 yd³) General Purpose Excavating Bucket (top edge)
- C — 2.1m³ (2.75 yd³) General Purpose Excavating Bucket (D4) on teeth and segments
- 2.1m³ (2.75 yd³) General Purpose Penetration Bucket (top on bush mounted teeth)
- 2.0m³ (2.5 yd³) General Purpose Excavating Bucket (top on teeth)

Operating Specifications

Bucket Type		General Purpose									
		Excavating						Loose Material		Penetration	
		Bolt-on Teeth		Bolt-on Cutting Edge		Teeth & Segments		Bolt-on Cutting Edge	Weld on Flush Teeth		
Capacity, heaped (§)	yd ³ m ³	2.5	2.0	2.75	2.1	2.75	2.1	3.0	2.3	2.75	2.1
Capacity, struck (§)	yd ³ m ³	2.2	1.89	2.18	1.77	2.18	1.77	2.57	1.96	2.4	1.89
Width (§)	in mm	104"	2647	104"	2647	104"	2647	105"	2664	107.5"	2731
Dump clearance @ full lift and 45° discharge (§)	ft/in mm	8'7"	2620	8'11.5"	2731	8'7"	2620	8'10"	2697	8'6.5"	2605
Reach at 45° discharge angle, 7'0" (2130 mm) clearance (§)	ft/in mm	4'8"	1432	4'7"	1402	4'8"	1432	4'8"	1418	4'10"	1474
Reach at full lift and 45° discharge (§)	ft/in mm	3'6"	1068	3'2"	976	3'6"	1068	3'4"	1010	3'8"	1118
Reach with arms horizontal and bucket level	ft/in mm	7'10"	2387	7'4.5"	2244	7'10"	2387	7'6"	2292	8'0"	2434
Digging depth (§)	in mm	3.8"	97	3.8"	97	3.8"	97	4.8"	122	3.8"	97
Overall length (§)	ft/in mm	23'3"	7091	22'9.5"	6947	23'3"	7091	22'11"	6995	23'5"	7137
Overall height (bucket @ full raise) (§)	ft/in mm	16'0"	4866	16'0"	4866	16'0"	4866	16'4.5"	4964	16'4.5"	4964
Loader clearance circle (bucket in carry position) (§)	ft/in m	39'2"	11940	38'11"	11868	39'2"	11940	39'2"	11928	39'7"	12062
Static tipping load**											
Straight (§)	lb kg	19,865	9010	19,564	8874	19,413	8866	19,397	8798	19,663	8919
Full 40° turn (§)	lb kg	17,621	7983	17,340	7865	17,189	7797	17,179	7792	17,429	7906
Breakout force* (§)	lb kg	30,555	13 860	28,095	12 745	28,095	12 745	26,802	12 160	29,023	13 165
Operating weight**	lb kg	26,546	12 040	26,639	12 080	26,764	12 140	26,749	12 130	26,737	12 128

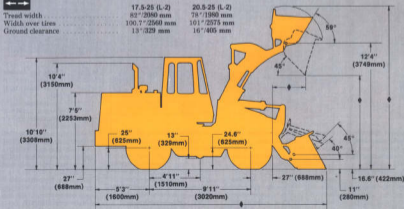
*Measured 4" (102 mm) behind lip of cutting edge with bucket hinge pin as pivot point in accordance with SAE J730c.

**Static tipping load and operating weight include lubricants, coolant, full fuel tank, 17.5-25, 12 PR (L-2) tires with 1152 lb (523 kg) ballast, ROPS cab and operator. Machine stability is affected by the tire size, tire ballast and attachments. For selected items add/subtract the following to machine operating weight and static tipping load.

	Change in Operating Weight		Change in Articulated Static Tipping Load	
	Lb	Kg	Lb	Kg
17.5-25, Radial (L-2 equivalent) with ballast	+569	+251	+481	+215
17.5-25, 12 PR (L-3) tires with ballast	+207	+94	+172	+78
20.5-25, 12 PR (L-3) tires & rims with ballast	+1318	+598	+1299	+589
20.5-25, Radial (L-2 equivalent) with ballast	+1944	+882	+1825	+828
Without ROPS cab	-778	-353	-738	-335
Canopy, ROPS	-333	-151	-315	-143
Counterweight (in lieu of ballast)	-387	-176	-	-



dimensions (approximate)



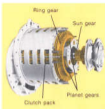
♦ SEE OPERATING SPECIFICATIONS

Reliable Cat power train — power you can depend on.

Advanced operator's compartment is designed for comfort and efficiency. Multiple-position tilt steering wheel and adjustable, contoured seat provide a comfortable work station. Single lever transmission control provides fast speed and direction changes. Dual braking uses left pedal to brake machine and neutralize transmission; right pedal brakes only. Electronic Monitoring System (EMS) checks important machine functions and informs operator where a problem is, severity of problem and action required.

The sound-suppressed integral ROPS cab is standard in the U.S. There's easy entry through the wide, 180°-opening door. Ten strategically placed outlets supply optimum air circulation throughout the cab. Rear hinged cab doors can be held in open position if more fresh air ventilation is desired. Cab features tinted glass, washer and wiper for front glass, dome light, cigar lighter, and two inside rearview mirrors. Options include air conditioner, heater/defroster and rear washer/wiper.

Platform and cab are resiliently mounted for noise and vibration isolation. Sound absorbing material in headliner and floor mat further reduces sound.



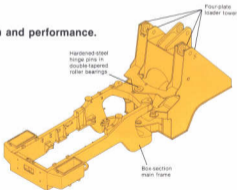
Direct injection fuel system on the Cat 3304 turbocharged diesel engine provides fuel economy and 125 flywheel horsepower/93 kW. That's real work power delivered at the flywheel — not a theoretical rating achieved only in a lab. High torque rise gives strong lugging ability for penetrating tough materials. Cam-ground and tapered aluminum alloy pistons expand during the heat of combustion to fit snugly in the cylinders for smooth, even power flow. The fully pressurized and filtered lubrication system means long engine life — and spin-on fuel and oil filters make maintenance easy.

Power shift transmission provides quick speed and direction changes. Torque loads are spread evenly through planetary gear sets. Big clutch packs surround each gear set and engage with hydraulic modulation for smooth, cushioned shifting. Clutch plates and gears are continuously cooled by oil for dependable performance and long life.

Designed for strength and performance.



Z-bar linkage geometry provides high breakout force, fast dump speed while decreasing bucket dump velocity near the end of the dump motion. The results are large loads, coupled with excellent rack back angle increases material retention and reduces spillage over the back of the bucket. Single tilt cylinder and Z-bar design allow 50% fewer linkage parts and fewer maintenance points.



Four-plate loader tower and box-section main frame resist twisting and bending on rough ground. Two hardened-steel pins couple the front and rear frames. Both pins ride in double-tapered roller bearings. Bucket lift arm pins and hydraulic cylinder mounting pins are supported on both ends by steel plates in the loader tower rather than on a single end as with cantilever mounting.

40° articulated steering provides quick, efficient maneuvering, which is particularly useful in close-quartered utility work. The 936 can load, maneuver and dump in less than two machine lengths. With exact center-point articulation, the front and rear wheels always track, reducing tire wear and rolling resistance.

Built in protection and efficiency.



Electronic Monitoring System (EMS) shows status of important machine systems with three levels of warning.

- I Operator Awareness:** LED light on instrument panel indicates a potential but not yet critical problem.
- II Operator Response Required:** Main warning light in front of operator indicates continued operation could cause eventual component failure.
- III Immediate Operator Shutdown Required:** Flashing light and horn warn that continued operation will cause immediate failure of a component. A circuit test switch verifies system reliability.

936 VALUE ANALYSIS

Cat 936

- Power for outstanding productivity.
- Fuel efficient direct injection.
- 25% torque rise for tough loading applications.
- Folded core radiator, with individual modules, provides efficient cooling while reducing plugging.

Z-bar Loader Linkage

- High breakout force.
- Fast dump speeds.
- Few lubrication points.
- Reduced dump shock.

Operator's Compartment

- Resiliently mounted to reduce vibration and noise.
- Precise, low-effort controls.
- Planetary power shift transmission for smooth, on-the-go shifting.
- Comprehensive Electronic Monitoring System for machine protection.
- Sound suppressed, climate controlled cab with excellent ventilation.
- Integral ROPS structure.

Routine Maintenance

- Easy access to daily service areas.
- Long lubrication intervals.
- Grouped lubrication points.
- Ground level lubrication and fueling.

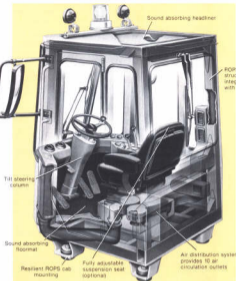
Repairs and Servicing

- Quick connect hydraulic test fittings.
- "Stacked"-design implement valves.
- Individual radiator modules for easy servicing and repair.
- Diagnostic connector for fast checking of starting and charging circuits.

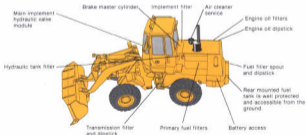
Durability

- Four-plate loader tower and box-section main frame.
- Corner guard system for reduced bucket wear.
- Cast hinge center beam bucket with shell-tine construction.
- Increased capacity differentials and planetary final drives.

936 OPERATOR'S COMPARTMENT



Easy servicing means increased time on the job.

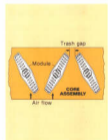


Servicing ease is designed into the 936. Engine compartment access is provided by hinged doors on either side. On the right side are the engine oil filler, dipstick, filter, and air cleaner indicator, grease fitting manifold, and electrical disconnect switch. Left side has fuel filters, main electrical box, and electrical diagnostic connector.

- A lockable service door behind the operator's compartment opens for access to the hydraulic brake reservoirs and master cylinders. Hydraulic filters are located in the top of the hydraulic tank, which has sight gauge for fast fluid level check. Fuel filler and dipstick are accessible from the ground behind rear grille. Main implement control valves are located under the cab for easy ground level access.

- Grease fittings are grouped to save time and are all accessible from ground level.
- Batteries are located on each side of rear bumper.

Serviceability — less time on maintenance, easier repair.



Folded Core Radiator provides efficient cooling, reduced maintenance, and quick module replacement. Canted tubes direct maximum air volume while deflecting debris and plug resistant angled or folded core assemblies channel debris through wide trash gaps.

Easy servicing and repair of the individual modules, anywhere, without special tools.

Buckets

936 buckets provide flexibility in matching the machine to job conditions. All are welded construction with abrasion-resistant steel cutting edges. Excavating and Loose Material buckets have cast lift hinges with integral, machined rock and dump stops, plus center beam construction on bucket back for improved structural strength and life.



Excavating bucket is designed for use in natural bed materials that require high breakout forces or results in high impact forces to obtain full loads. Cutting edge can be equipped with bolt-on teeth, bolt-on reversible cutting edge system, or bolt-on teeth and segments.



Loose material bucket is designed for handling stockpiled aggregates or other easy to load loose material that requires moderate breakout and impact forces. Bolt-on cutting edge system is standard and consists of two reversible center sections and two reversible corner segments.



Penetration bucket is designed for use where moderate breakout and impact forces are required. Long flat floor aids bucket loading, and provides a smooth level cut for final grading or stripping top soil. Sharpened cutting edges and sidebase for maximum penetration. Cutting edge equipped with weld-on flush mounted teeth with integral corner tooth.



standard equipment

NOTE: Standard and optional equipment may vary outside U.S.A. Consult your Caterpillar Dealer for specifics.

Alternator, 50 amp.
Electric starting.
Blower fan.
Fuel priming pump.
Muffler.
Fenders (front & rear).
Diagnostic connector.

Power shift transmission.
Torque converter.
Hydraulically boosted 4-wheel brakes.

ROPS cab (U.S.A.)
Adjustable seat.
Seat belt.
Front and rear working lights.
Stop and tail lights.

Dry-type air cleaner.
Drawbar hitch.
Warning horn front/rear.
Engine enclosures.
Windshield washer & wiper (front).
17.5-25, 12 PR (L-2) tires.

Indicators: Air cleaner service.
Clock hour meter. Hydraulic oil level sight gauge. Fuel level gauge.

Functions monitored by EMS —
LEVEL I — Alternator.
LEVEL II — Coolant temperature. Transmission oil temperature.
LEVEL III — Engine oil pressure. Brake oil pressure. Parking brake applied. Brake air pressure.

Critical functions have both audible and visible warning systems.



optional equipment

(with approximate change in operating weights)

	Lb	Kg
Air conditioning/heating system	247	112
Air dryer, brake system	50	23
Alternator, 35-amp	-12	-5
General Purpose Buckets:		
2.75 yd ³ /2.1 m ³ includes bolt-on teeth and segments	2379	1079
2.75 yd ³ /2.1 m ³ includes bolt-on cutting edge	2253	1022
2.5 yd ³ /2.0 m ³ includes bolt-on teeth	2160	980
Loose material includes bolt-on edge	2300	1084
Penetration includes weld-on flush mounted teeth, long tips	2345	1064
Cab, ROPS, (removed)	-780	-353
Canopy, ROPS	-333	-151
Control lever lock	2	1
Converter for radio	7	3
Counterweight (for use without CaCl ₂)	776	352
Differential NoSPIN (rear only)	5	2
Fenders, roading	440	199
Gauge group	2	1
Guard:		
Crankcase	118	54
Power train	190	86
Heater, cab, includes defroster	121	55
Horn, front warning (electric)	-3	-1
Hydraulic arrangement:		
3rd valve	40	18
Separate control lever	3	1
Wobble stick (for use with 3rd valve)	20	9
Lighting system, two front lights	19	8

Logging arrangements:

	Lb	Kg
All include counterweight, 3rd hydraulic valve and hydraulic lines and choice of 17.5-25 16 PR tires and rims (with ballast)	1013	459
20.5-25, 16 PR tires and rims (with ballast)	2325	1055
Mirrors, outside mounted	39	17
Rotating beacon	10	5
Starting aids:		
Engine coolant heater	2	1
Ether (no canister)	3	1
Heavy duty batteries & large starting motor	108	49
Starting receptacle	8	4
Supplemental steering	120	54
Suspension seat, adjustable	46	21
Seat covers, fabric	2	1
Tires:		
17.5-25 Radial (without ballast)	290	132
17.5-25, 12 PR (L-3) (without ballast)	152	69
20.5-25, 12 PR (L-2) (without ballast)	666	302
20.5-25, 12 PR (L-3) (without ballast)	1079	489
20.5-25, Radial (without ballast)	1123	509
Tool box	40	18
Tool kit	19	9
Turning signals	14	7
Vandalism protection:		
Instrument panel guard (for use without cab)	3	1.4
Locks for:		
Hydraulic tank, transmission filler for all access doors	5	2
Windshield wiper and washer (for rear window)	11	6

Materials and specifications are subject to change without notice.