



231D 231D LC

EXCAVATOR

- **Cat 231D** — available with choice of short or long (standard) undercarriage configurations.
- **Fuel-efficient, powerful, field-proven 3208 Engine** — for maximum productivity and fuel efficiency.
- **Rugged Cat undercarriage** — designed and built by the world's leading producer of track-type machinery.
- **Reliable/durable equipment** — built to withstand severe working conditions.
- **Total Customer Support** — superior support that continues after the sale...unmatched in the industry.

Cat direct-injection, turbocharged

3208 Engine149 kW/200 HP

Operating Weight

231D35 230 kg/77,600 lb

231D LC.....35 470 kg/78,100 lb

Maximum Travel Speed

high speed5.5 km/h / 3.4 MPH

low speed.....2.5 km/h / 1.6 MPH

Bucket Capacities1119 to 1587 Liter/1.38 to 2.0 yd³

Featured machines may include additional equipment applicable only for special applications. See your authorized Caterpillar dealer for available options.



FEATURES

Caterpillar 231 Series D

The versatile 231D is a wise choice for your business plan!

■ Choice of standard LC or shorter undercarriage.

- Short undercarriage allows excellent maneuverability in tight quarters.
- LC undercarriage provides increased flotation.

■ Seven buckets available.

- Caterpillar-designed and built buckets have large torque tubes and transverse wear strips for excellent structural rigidity.

■ Heavy lift circuit standard.

- Circuit provides increased hydraulic pressure at the flip of a switch.

■ Hydraulic hammer installation group available for added versatility.



■ Two-speed travel motors.

- High speed for fast travel around or between job sites.
- Low speed for maximum drawbar pull.

■ Reliable, Cat 3208 Engine.

- Fuel-efficient, direct-injection powerplant for top productivity.

■ Automatic engine speed control standard for added fuel savings.

■ Cat's XT-3 and XT-5 hose and couplings for maximum durability and service life.

Cat® Track-type Undercarriage

Rugged undercarriage designed and built by Caterpillar, the world's leading producer of track-type undercarriages!

■ Large D6-size Sealed Track

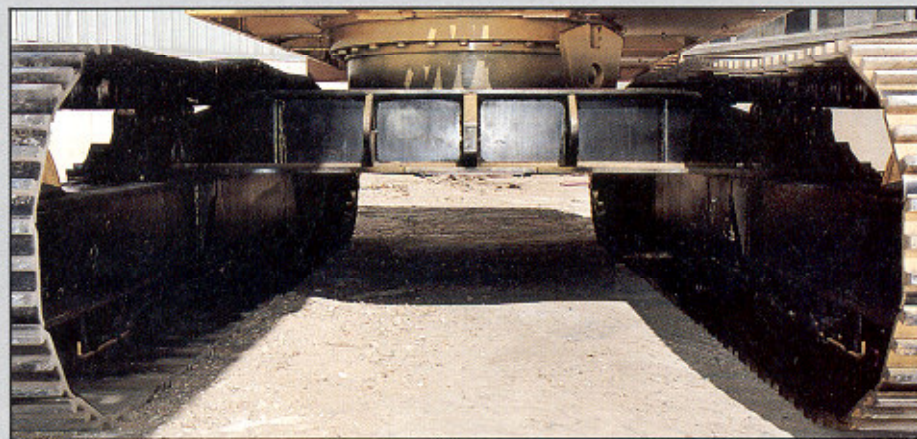
— on box-section track roller frames provide maximum rigidity and resistance to bending.

■ Lifetime Lubricated track rollers and idlers.

■ Purpose-built track rollers — specifically designed for excavator applications to provide long service life.

■ Oil-disc brakes — on final drive input shafts hold machine steady during the work cycle.

- Brakes automatically apply when travel controls are in neutral.
- Brakes automatically release when travel controls are activated.



■ Short or LC undercarriage.

- Short undercarriage offers excellent maneuverability in tight work areas and is well-suited for hard or rock underfoot conditions.

- LC undercarriage provides greater flotation in soft underfoot conditions.

■ Independent track motors — deliver smooth, stepless power to tracks and allow counter-rotation for spot turns and maneuvering in tight quarters.

Caterpillar® 3208 Engine

Reliable...durable...fuel-efficient...field-proven!

■ **Turbocharged for maximum performance and efficiency** — especially at high altitudes.

- No derating required up to 3000 meters/10,000 ft.

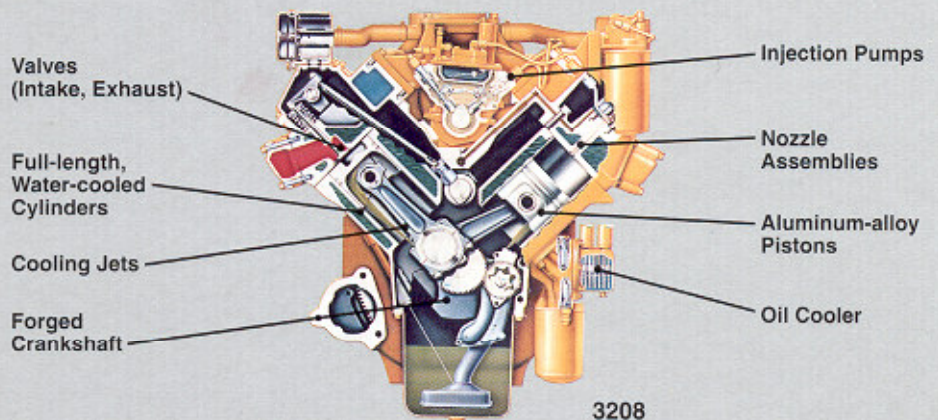
■ **Direct-injection fuel system.**

- Adjustment-free pumps and valves.
- Efficient, accurate fuel metering.

■ **Four-stroke-cycle design** — uses long, effective power strokes for more complete fuel combustion and greater efficiency.

■ **Automatic engine speed control standard.**

- Electronic governor control system automatically reduces engine speed when joysticks and travel controls are in neutral.



- Three-position operation — full power, economy and off... decreases fuel consumption and noise.
- Automatically returns engine to original operating RPM when joysticks or travel controls are activated.

■ **Key-type ignition and shut-off system.**

- **Field-proven** — used in other Caterpillar products, including excavators, paving products, logging machines and wheel tractor-scrappers, as well as on-highway trucks and marine applications.

FEATURES

Variable-flow Hydraulics

Variable-flow, high-pressure system delivers the proper flow/pressure balance, according to work cycle requirements.

■ Variable-flow, piston-type pumps.

- Fully utilize engine horsepower throughout the work cycle.

■ Power-proportioning system.

- Allows lifting, digging, dumping and traveling in any combination.
- Delivers power where it is most needed.

■ Cushion swing control.

- Provides smooth swing control for precise applications such as pipe setting, etc.
- Easily activated by a switch in the cab.

■ Heavy lift circuit.

- Substantially increases lifting capacity, at the flip of an easy-to-reach switch, by increasing the maximum implement pressure.

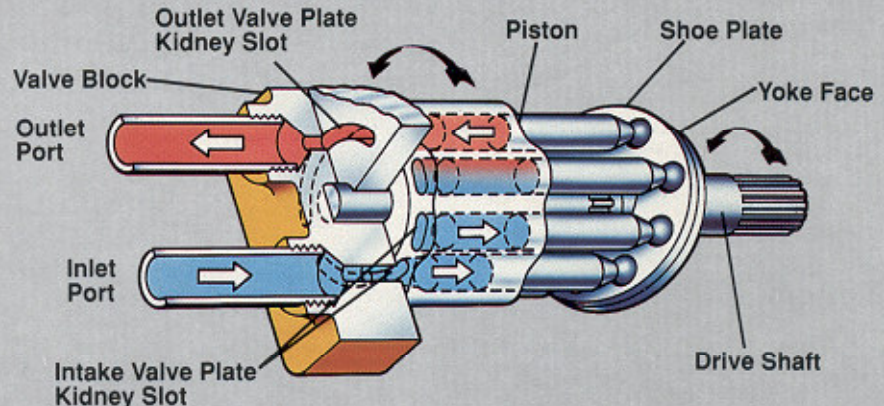
■ Boom and stick check valves available.

- Prevent uncontrolled lowering of boom and stick in the event of a line failure.

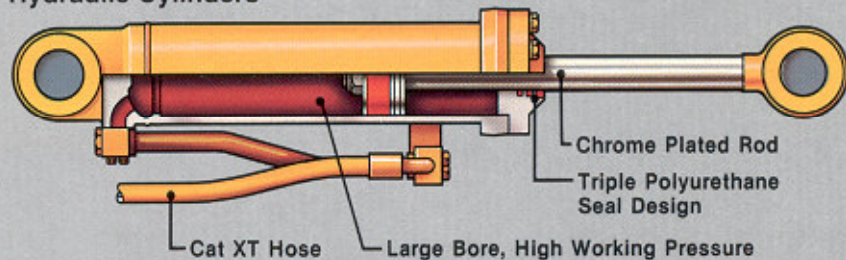
■ Oil-to-air cooler.

- Offers efficient heat rejection for excellent hydraulic system protection.

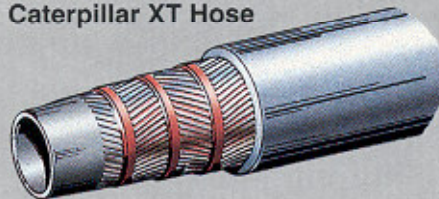
Variable-flow Piston Pump



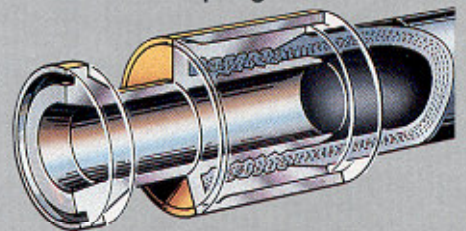
Hydraulic Cylinders



Caterpillar XT Hose



Reusable Couplings



■ Hydraulic cylinders.

- Seamless-steel tubes, honed to fine tolerances.
- Hardened, precision-ground, chrome-plated rods.
- Triple-polyurethane seals guard against contamination, leaks.
- Self-aligning, spherical bearings on all cylinders minimize twisting forces for excellent durability.

■ Cat's XT-3 and XT-5 hydraulic hose and reusable coupling system.

- Exceptional strength.
- Good hose flexibility.
- Superior service life.

Servicing Ease

Simplified servicing requires less time on maintenance, allows more time on the job.

■ Self-lubricating swing gear.

- Rides in an enclosed lubrication trough.
- Seals in lubricant; keeps contaminants out.
- Eliminates hand greasing.

■ Swing bearing — requires greasing only every 50 service meter hours through fitting in cab.

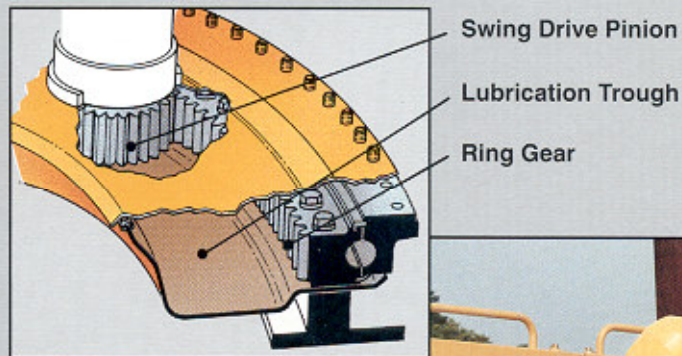
■ Easy accessible lube points.

■ Standard hydraulic track adjusters — require only a grease gun for track tension adjustments.

■ Radiator, engine oil, hydraulic oil levels — easily checked from convenient walkway.

■ Linkage pins use lip-type seals.

- Keep grease in, grit out.



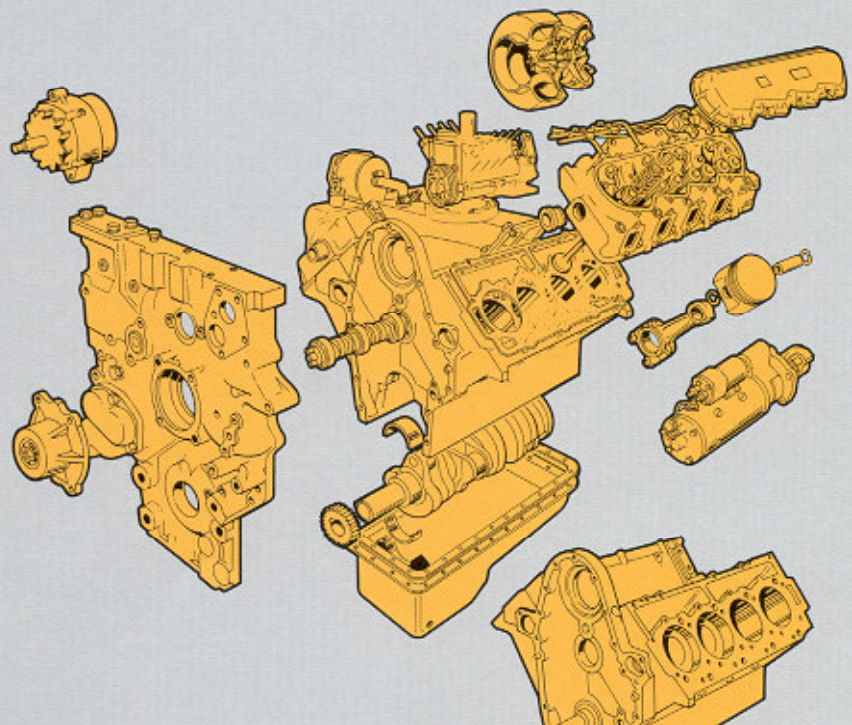
Caterpillar Remanufactured Products...offer an excellent means of lowering your owning and operating costs.

■ Cat Remanufactured Engines...deliver the quality, reliability and performance you expect from Caterpillar.

- Engines are available off the shelf, fully assembled, dynamometer tested and ready to install.
- Exchange eliminates downtime required for rebuilding...gets the machine back to work fast.

■ Caterpillar Remanufactured cylinder heads, fuel injectors, oil pumps, connecting rods, crankshafts, turbochargers, water pumps and starters available...for fast, economical repairs.

■ Same-as-new warranty on all Caterpillar Remanufactured Products.



FEATURES

Operator's Station

Excellent visibility, logical control placement, excellent operator comfort for fast, confident machine operation.

- **Fabricated cab is about 50% heavier than competitive cabs for greater durability...** stays tight even after years of use.

- Isolation-mounted unit uses large rubber mounts and a heavy, lead-lined rubber mat to suppress noise.
- Spacious 926 mm/36" window-to-window inside width for excellent operator comfort.

- **Excellent, all-around visibility and ventilation** for confident machine operation.

- Two-section windshield is adjustable five-ways.
- Large side window and sliding rear window.
- Well-guarded mirrors are standard.

- **Four-way, adjustable suspension seat** for superior comfort.

- Joysticks and switches mounted on side consoles that move up and down with the seat, so they are always easy to reach.

- **Hydraulic-over-hydraulic pilot control system.**

- Easy, well-modulated lever movement without surging.
- Low lever efforts.



- **Full instrumentation is standard,** including engine oil level, engine oil pressure, coolant temperature and hydraulic oil temperature gauges.

- **Separate travel pedals for each direction,** forward and reverse, and steering lever.
 - Steering lever allows gradual and spot turns as well as counter-rotation.

Structure

Designed and built to withstand the toughest working conditions.

■ The 231D Excavator main frame.

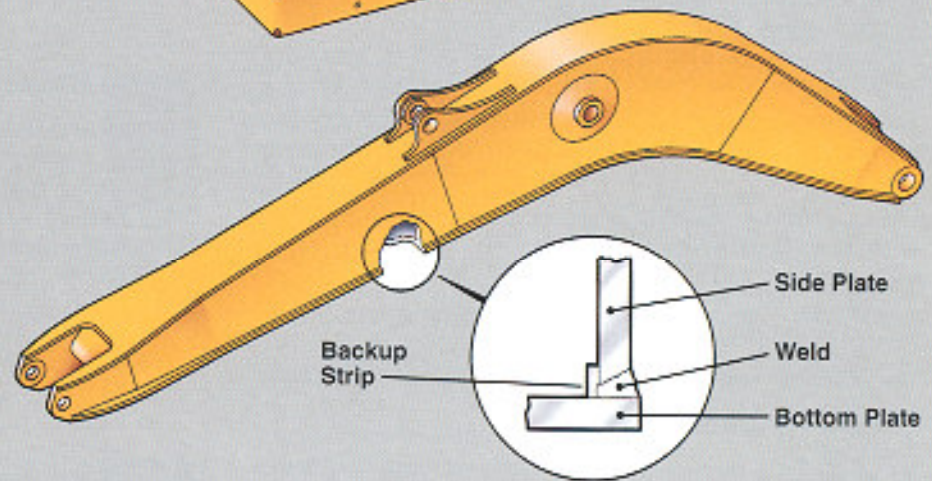
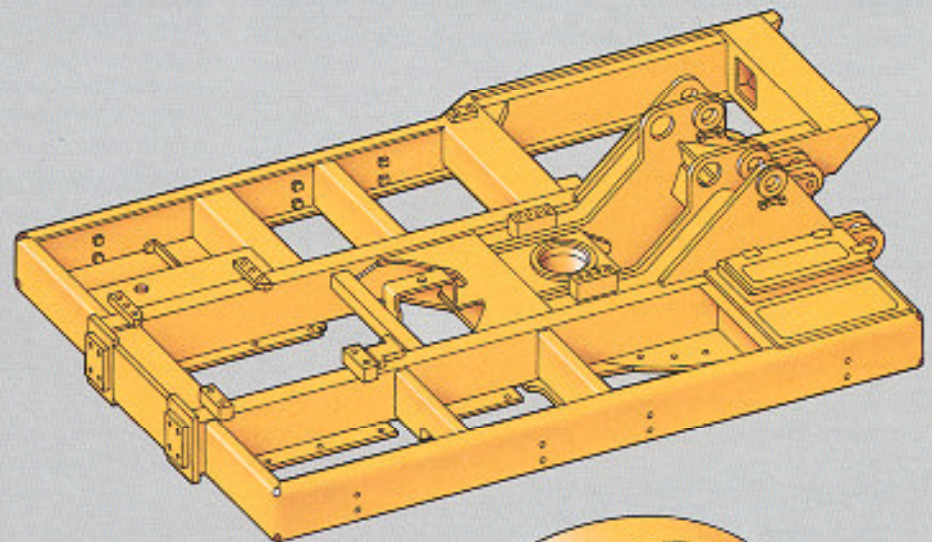
- Two longitudinal, box-section beams form the backbone of the main frame.
 - Beams support the boom, major drive train components, swing drive and counterweight.
- Two outside channel beams and channel cross beams support the operator's platform and hydraulic componentry.

■ Caterpillar booms and sticks — built for performance and long life.

- Box-section construction provides rigid, high-strength implement.
 - Backup strips are used on the inside corners.
 - Strips allow complete weld penetration to produce joints with superior strength.
 - Increased strength and reduced stress concentration at these critical areas enhance durability for a long service life.

■ Stress-relieving process — realigns grain of metal after welding booms and sticks.

- Process creates strong, durable front structure without the need for excessive weight.



SPECIFICATIONS



Caterpillar Engine

Flywheel power at
2200 RPM149 kW/200 HP

(Kilowatts (kW) is the International System of Units equivalent of horsepower.)

Net power at the flywheel of the vehicle engine is based on SAE J1349 standard conditions of 25°C/77°F and 100 kPa/29.61" Hg. Power is based on using 35° API (15.6°C/60°F) gravity fuel having an LHV of 42 780 kJ/kg / 18,390 Btu/lb when used at 29.4°C/85°F and with a density of 838.9 g/L / 7.001 lb/U.S. gal. Power rating is adjusted for vehicle equipped with fan, air cleaner, water pump, fuel pump, muffler and lubricating oil pump. No derating is required up to 3000 meters/10,000 ft.

Caterpillar four-stroke-cycle, 3208 turbocharged diesel engine with eight cylinders, 114 mm/4.5" bore, 127 mm/5" stroke and 10.4 liters/636 in³ displacement.

Caterpillar direct-injection fuel system with individual, adjustment-free, injection pumps and valves. Cam-turned and tapered, aluminum-alloy pistons have two rings each and are cooled by oil spray.

Forged, alloy-steel crankshaft is induction hardened and statically and dynamically balanced and is supported by steel-backed, copper-bonded bearings.

Easy-to-change, spin-on oil and fuel filters and dry-type air cleaner. Water pump, fuel pump and service meter standard.

Direct-current, 24-volt starting and charging system with two, 92-amp-hour, 12-volt batteries and 50-amp alternator.



Hydraulic System

Two variable-displacement piston pumps power the boom, stick, bucket, swing and travel circuits.

Output of each pump @ rated engine speed and 6895 kPa/1,000 psi ...2 x 229 liters/min / 2 x 60.5 GPM

A fixed-displacement gear pump powers the pilot control circuit.

Output to pilot system @ rated engine speed and 1900 kPa/275 psi85 liters/min / 22.6 GPM

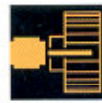
Oil-to-air hydraulic cooler is mounted in front of engine radiator.

Relief valve settings:

Implement circuits29 660 kPa/4,300 psi
Heavy lift circuit33 100 kPa/4,800 psi
Travel circuits33 100 kPa/4,800 psi
Pilot circuit2310 kPa/335 psi

Cylinders, bore x stroke:

Boom (2)152 x 1321 mm/6.0 x 52.0"
Stick (1)165 x 1638 mm/6.5 x 64.5"
Bucket (1)152 x 1156 mm/6.0 x 45.5"



Drive

Fully hydraulic; each track is driven by an independent, two-speed hydraulic motor. Speed is controlled by an electrical switch on the console. Two travel pedals: right pedal gives forward movement; the left, reverse. Triple-reduction, spur-gear final drive, fully enclosed and splash lubricated. Duo-Cone Floating Ring Seals on output shafts.

Maximum drawbar pull:

Low speed300 kN/67,300 lb
High speed126 kN/28,400 lb

Maximum travel speed at 2200 engine RPM forward and reverse:

Low speed2.5 km/h / 1.6 MPH
High speed5.5 km/h / 3.4 MPH



Brakes

Two oil-disc brakes on final drive input shafts. Spring-applied, hydraulically released. When machine is stationary, brakes are set automatically. Depressing either travel pedal simultaneously disengages brakes.



Steering

A lever mounted between the travel pedals provides gradual pivot and counter-rotation steering. (1) Depressing the forward or reverse pedal and move the lever right or left. This drives one track while slowing the other to turn the machine in the direction the lever was moved. (2) Move the lever farther, into contact with a "resistance" bumper spring, for a pivot turn with one track locked and the other driving. (3) Push the lever beyond the bumper spring to reverse the locked track for counter-rotation and a spot turn.



Swing Mechanism

Case-hardened drive gears are splash lubricated. Swing gear and pinion run in a trough of lubricant. No daily maintenance required. Hydraulic motor provides high swing torque for fast acceleration. No mechanical braking required. Releasing control cuts off oil flow to swing motor and stops rotation. A manual shoe-type brake locks the upperstructure during lifting applications on side slopes.

Smooth, modulated deceleration occurs when swing control lever is released, assuring accurate positioning for next work cycle.

Swing speed7.2 RPM

Cushion swing control standard:

An operator-controlled switch on the instrument panel activates the circuit to provide smoother, softer swing control for precision applications like pipe setting, etc.



Controls

Two joystick hand levers actuate boom, stick, bucket and swing.

Right lever: Move forward and backward to lower and raise boom. Right and left to control bucket curl and dump.

Left lever: Move forward and backward to move stick out and in. Left and right to control swing direction.

Oblique movement of either lever operates any two functions simultaneously. Manually applied lever on the left console completely neutralizes the control system.



Track

Cat designed and built track-type undercarriage. Reinforced box-section, track roller frame. Sealed Track. Lifetime Lubricated rollers and idlers, hydraulic track adjusters and triple grouser shoes are standard.



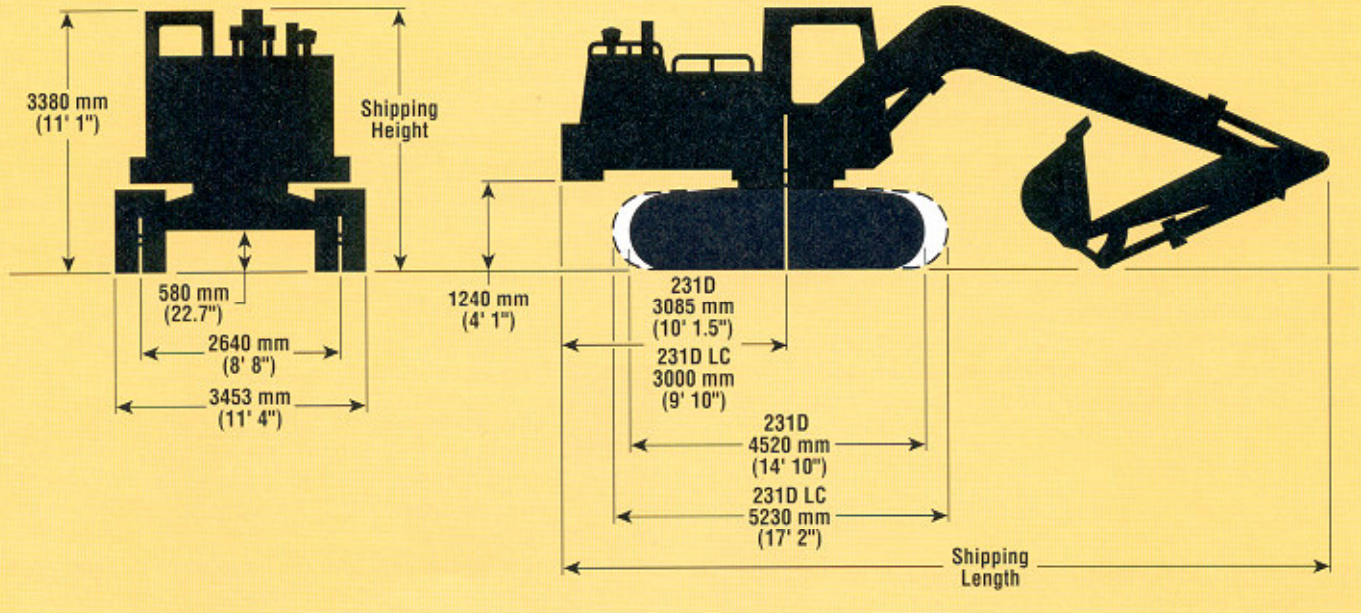
Service Refill Capacities

	Liters	U.S. Gallons
Fuel Tank	400	106
Cooling System	38	10
Lubrication:		
Engine oil	13.3	3.5
Swing drive	28	7.4
Final drives (each)	53	14
Hydraulic System	575	152
Hydraulic Tank	303	80

	231D	231D LC
Number of shoes, each side	47	54
Width of standard shoes.....	813 mm/ 32"	813 mm/ 32"
Number of track rollers, each side.....	8	10
Overall track length	4520 mm/ 14'10"	5230 mm/ 17'2"
Track gauge.....	2640 mm/ 8'8"	2640 mm/ 8'8"
Ground contact area by shoe size,		
710 mm/28"	5.49 m ² / 8,510 in ²	—
813 mm/32"	6.27 m ² / 9,727 in ²	7.43 m ² / 11,520 in ²
914 mm/36"	7.06 m ² / 10,940 in ²	8.36 m ² / 12,960 in ²



Dimensions (approximate)



Stick	2900 mm/9'6"	3500 mm/11'6"
Shipping height.....	3470 mm/11'5"	3480 mm/11'5"
Shipping length*	10 830 mm/35'6"	10 830 mm/35'6"

*Subtract 85 mm/3.5" for 231D LC.



Operating Weights

Shoe Width	Single Grouser 710 mm/28"	Triple Grouser 813 mm/32"	Triple Grouser 914 mm/36"
231D Excavator*			
with 2900 mm/9'6" stick	34 610 kg/76,200 lb	35 230 kg/77,600 lb	35 520 kg/78,200 lb
Ground pressure.....	61.7 kPa/9.0 psi	55.0 kPa/8.0 psi	49.3 kPa/7.2 psi
with 3500 mm/11'6" stick	34 720 kg/76,500 lb	35 330 kg/77,800 lb	35 630 kg/78,500 lb
231D LC Excavator*			
with 2900 mm/9'6" stick	—	35 470 kg/78,100 lb	35 810 kg/78,900 lb
Ground pressure.....	—	46.7 kPa/6.8 psi	41.9 kPa/6.1 psi
with 3500 mm/11'6" stick	—	35 570 kg/78,400 lb	35 910 kg/79,100 lb

*Machine is equipped with 1375 mm/54" bucket.

Shipping weights: Subtract 75 kg/165 lb for operator, 305 kg/670 lb for 10% fuel.

Standard Equipment

Note: Standard and optional equipment may vary. Consult your Caterpillar dealer for specifics.

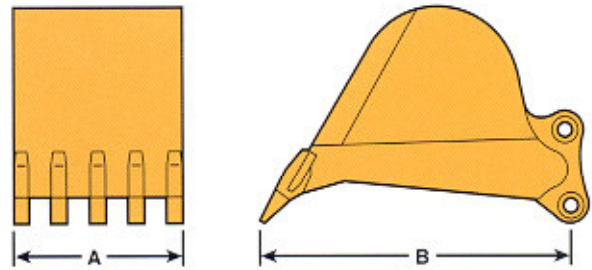
Air cleaner, dry-type.	High-speed travel indicator.	Guards:
Alarm, travel.	Fuel tank level.	Idler recoil.
Alternator, 50-amp.	Lights, dome and dash.	Track guiding, front and rear.
Automatic Engine Speed Control.	Seat, four-way adjustable, suspended with armrests and side consoles.	Track motor.
Cab, all-weather, sound- suppressed, including:	Seat belt.	Swivel.
Cigar lighter.	Windows, side, tinted	Lifetime Lubricated rollers and idlers.
Fans:	LEXAN glass.	Linkage pins, sealed.
Defroster.	Windows, sliding rear, tinted with friction lock.	Locks, vandalism protection.
Circulating.	Windshield, two-section retractable with tinted, laminated glass top and clear, tempered glass in bottom.	Lights, working, basic machine.
Floor mat.	Windshield wipers, dual with washer.	Lubrication points, centralized.
Heater, cab.	Counterweight:	Mirrors, rear view.
Horns, electric, front and rear.	231D, 5688 kg/ 12,540 lb.	Muffler.
Hour meter, electric.	231D LC, 4781 kg/ 10,540 lb.	Pump, pilot with through shaft for auxiliary unit.
Instrumentation:	Enclosures, louvered door and engine.	Tow eyes, front and rear.
Engine oil pressure gauge.		Track adjusters, hydraulic.
Coolant temperature gauge.		Track, Sealed with 813 mm/ 32" triple grouser shoes.
Hydraulic oil temperature gauge.		Undercarriage:
Voltmeter.		231D, 4520 mm/ 14'10" .
Hydraulic oil filter service light.		231D LC, 5230 mm/ 17'2" .
Flashing warning light.		Walkway and handrails.

Optional Equipment

Air conditioner with heater and defroster.	Hydraulic hammer arrangement.
Boom, one-piece, includes one stick and two boom cylinders.	Pump, hydraulic, high capacity.
Buckets (see page 12).	Precleaner with prescreener.
Bucket linkage, includes cylinder.	Seat, adjustable and tilting suspension.
Bucket sidecutters.	Starting aids:
Bucket tips.	Ether.
Check valves, boom and stick.	Low temperature system.
Cooling system, high ambient temperature.	Sticks:
Guards:	2900 mm/ 9'6" .
Bottom.	3500 mm/ 11'6" .
Pilot lines.	Track (see page 9).
Track guiding, full-length, 388 kg/ 855 lb.	Working lights, boom.
Windshield vandalism.	
Hydraulics, auxiliary.	

Bucket Specifications

Caterpillar buckets curl 174° for excellent load retention and easy digging under obstructions. High-strength, heat-treated steel is used in the primary wear areas.



Bucket Selection

(equipped with long tips with tip adapters)

Type	A Bite Width		B Tip Radius		SAE & PCSA Heaped Capacity		Weight With Tips		Number of Teeth
	mm	in	mm	in	liter	yd ³	kg	lb	
Trenching.....	1050	41	1730	68.1	1119	1.38	956	2,105	4
Excavation.....	1200	47	1660	65.4	1200	1.50	1035	2,280	5
Excavation.....	1345	53	1660	65.4	1387	1.75	1108	2,440	5
Excavation.....	1420	56	1660	65.4	1486	1.88	1147	2,525	5
Excavation*.....	1375	54	1570	61.8	1351	1.75	1007	2,218	5
Excavation*.....	1531	60	1570	61.8	1531	2.0	1071	2,358	6
Loose Material Excavation.....	1675	66	1311	51.6	1587	2.0	995	2,190	—

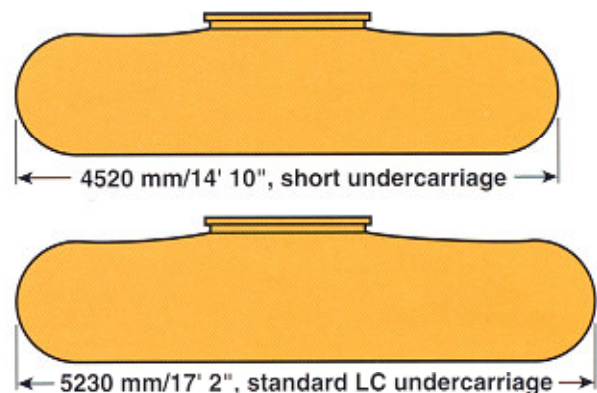
*Not intended for use in rocky soil.

Bucket and Stick Forces

Bucket Tip Radius		Bucket Curling Forces		Stick Crowd Forces			
mm	in	kN	lb	2900 mm/9'6" Stick		3500 mm/11'6" Stick	
				kN	lb	kN	lb
1311	51.6	214.9	48,300	140.6	31,600	122.9	27,600
1570	61.8	179.3	40,300	135.3	30,400	118.6	26,700
1660	65.4	169.5	38,100	131.4	29,500	115.7	26,000
1730	68.1	162.9	36,500	129.3	29,100	114.1	25,600

Track Length

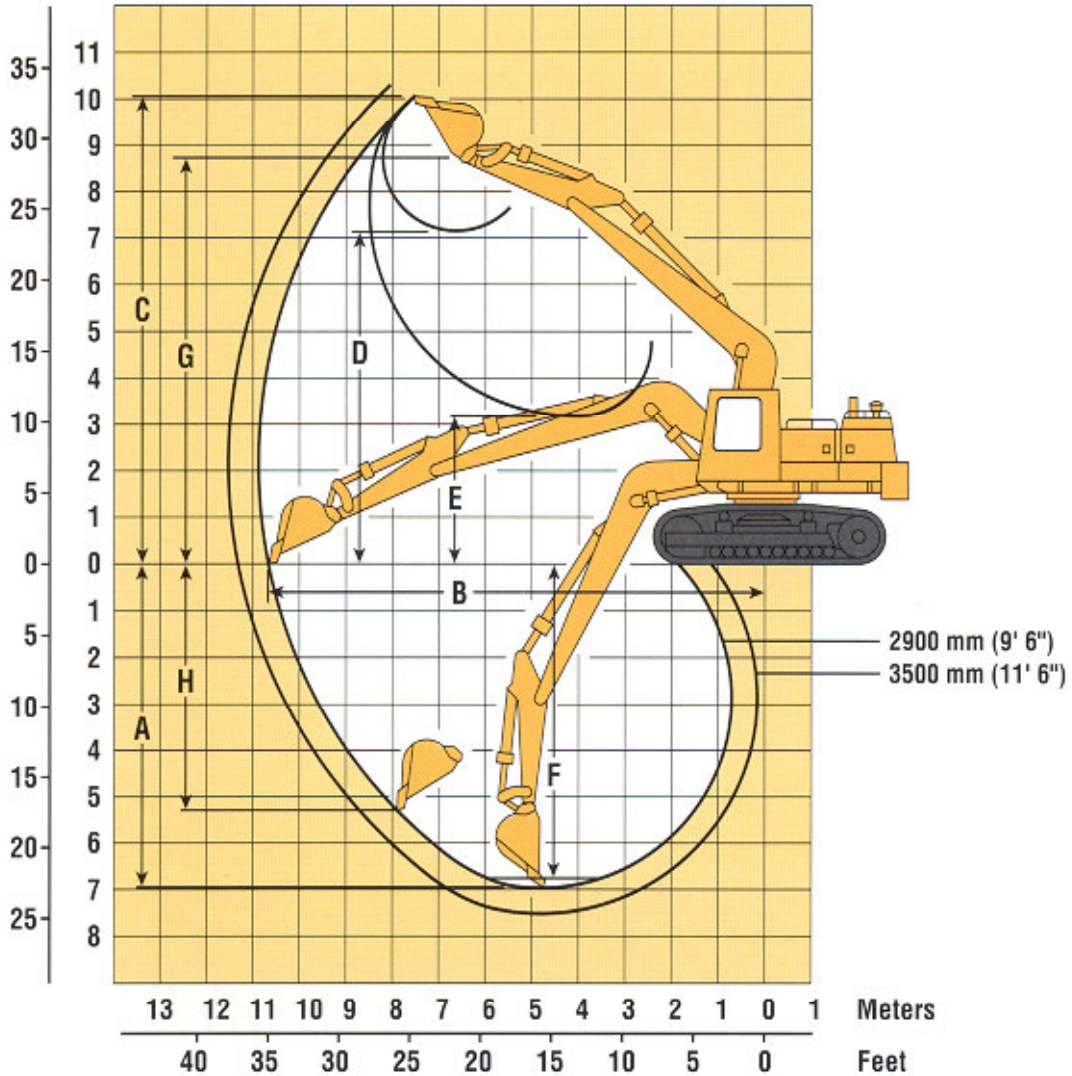
The standard undercarriage length is 5230 mm/17'2"; the shorter undercarriage, 4520 mm/14'10". The shorter undercarriage provides a stable work platform, yet works well in tight quarters. It is well-suited for hard or rock underfoot conditions. The standard undercarriage provides greater flotation and stability than the shorter undercarriage. The standard undercarriage is an excellent choice for applications in soft underfoot conditions.



Working Ranges

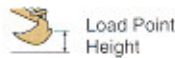
231D Digging Envelope, One-Piece Boom

Feet Meters



Stick Length	2900 mm/9'6"	3500 mm/11'6"
A Maximum digging depth	6940 mm/22'9"	7540 mm/24'9"
B Maximum reach at ground level	10 640 mm/34'11"	11 200 mm/36'9"
C Maximum cutting height.....	10 080 mm/33'1"	10 350 mm/33'11"
D Maximum loading height	7160 mm/23'6"	7400 mm/24'3"
E Minimum loading height	3120 mm/10'3"	2520 mm/8'3"
F Maximum digging depth at 2440 mm/8' level bottom	6750 mm/22'2"	7370 mm/24'2"
G Maximum bucket hinge pin height.....	8730 mm/28'8"	8970 mm/29'5"
H Maximum vertical wall digging depth	5290 mm/17'4"	6130 mm/20'1"

Lift Capacities



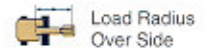
Load Point Height



Load at Maximum Reach



Load Radius Over Front



Load Radius Over Side

231D Excavator

STICK – 2900 mm/9'6"
BUCKET – 1375 mm/54"
BOOM – One-piece

UNDERCARRIAGE – 4520 mm/14'10"
TRACK SHOE – 813 mm/32"
HEAVY LIFT CIRCUIT – Activated

	3.0 m/10.0 ft		4.5 m/15.0 ft		6.0 m/20.0 ft		7.5 m/25.0 ft		9.0 m/30.0 ft				m ft	
9.0 m 30.0 ft	kg lb											*3950 *8800	*3950 *8800	7.9 25.4
7.5 m 25.0 ft	kg lb						*5260 *11,700	*5260 *11,700				*3710 *8200	*3710 *8200	9.2 29.8
6.0 m 20.0 ft	kg lb						*5440 *11,900	*5440 *11,900				*3660 *8100	3620 8100	10.0 32.5
4.5 m 15.0 ft	kg lb		*8940 *19,100	*8940 *19,100	*6990 *15,100	*6990 *15,100	*6070 *13,200	5770 12,400	*5680 *12,500	4100 8700	*3740 *8200	3220 7100	10.4 34.1	
3.0 m 10.0 ft	kg lb		*12,290 *26,200	12,220 *26,200	*8560 *18,400	7880 17,000	*6910 *15,000	5510 11,800	5760 12,300	4000 8500	*3930 *8600	3040 6700	10.6 34.6	
1.5 m 5.0 ft	kg lb		*13,540 *31,700	11,280 24,300	*9990 *21,500	7400 15,900	7550 16,200	5250 11,300	5630 12,100	3870 8300	*4250 *9400	3020 6600	10.5 34.3	
Ground Line	kg lb		*14,480 *33,800	10,940 23,500	10,360 22,300	7100 15,300	7350 15,800	5060 10,900	5530 11,900	3780 8100	4680 10,300	3180 7000	10.1 33.0	
-1.5 m -5.0 ft	kg lb	*9740 *22,000	*9740 *22,000	*15,690 *33,900	10,900 23,400	10,230 22,000	6980 15,000	7260 15,600	4980 10,700		5250 11,600	3590 7900	9.4 30.7	
-3.0 m -10.0 ft	kg lb	*16,010 *36,200	*16,010 *36,200	*14,900 *32,200	11,050 23,700	10,280 22,100	7020 15,100	7310 15,700	5020 10,800		*4940 *10,700	4470 9900	8.3 27.0	
-4.5 m -15.0 ft	kg lb	*18,610 *40,000	*18,610 *40,000	*13,050 *28,000	11,380 24,500	*9530 *20,300	7250 15,600							

STICK – 3500 mm/11'6"
BUCKET – 1375 mm/54"
BOOM – One-piece

UNDERCARRIAGE – 4520 mm/14'10"
TRACK SHOE – 813 mm/32"
HEAVY LIFT CIRCUIT – Activated

	1.5 m/5.0 ft		3.0 m/10.0 ft		4.5 m/15.0 ft		6.0 m/20.0 ft		7.5 m/25.0 ft		9.0 m/30.0 ft				m ft	
9.0 m 30.0 ft	kg lb													*3170 *7000	*3170 *7000	8.7 28.0
7.5 m 25.0 ft	kg lb								*4480 *9900	*4480 *9900				*2990 *6600	*2990 *6600	9.8 32.0
6.0 m 20.0 ft	kg lb								*4790 *10,500	*4790 *10,500	*4860 *10,000	4220 9000	*2950 *6500	*2950 *6500	10.5 34.5	
4.5 m 15.0 ft	kg lb						*6170 *13,300	*6170 *13,300	*5480 *11,900	*5480 *11,900	*5150 *11,300	4150 8900	*3010 *6600	2900 6400	11.0 35.9	
3.0 m 10.0 ft	kg lb				*10,890 *23,300	*10,890 *23,300	*7810 *16,800	*7810 *16,800	*6380 *13,800	5560 11,900	*5630 *12,300	4020 8600	*3160 *7000	2740 6000	11.1 36.4	
1.5 m 5.0 ft	kg lb				*13,760 *29,600	11,560 24,900	*9380 *20,200	7500 16,100	*7300 *15,800	5280 11,300	5630 12,100	3860 8300	*3430 *7500	2710 6000	11.0 36.1	
Ground Line	kg lb		*5040 *11,500	*5040 *11,500	*15,300 *33,000	11,020 23,700	10,390 22,300	7120 15,300	7350 15,800	5050 10,800	5500 11,800	3740 8000	*3840 *8500	2830 6200	10.6 34.9	
-1.5 m -5.0 ft	kg lb	*6350 *14,200	*6350 *14,200	*9030 *20,400	*9030 *20,400	*15,730 *34,000	10,850 23,300	10,190 21,900	6940 14,900	7210 15,500	4920 10,600	5430 3680	*4510 *10,000	3150 7000	10.0 32.8	
-3.0 m -10.0 ft	kg lb	*10,260 *23,000	*10,260 *23,000	*13,810 *31,200	*13,810 *31,200	*15,320 *33,100	10,910 23,400	10,170 21,800	6920 14,900	7190 15,500	4910 10,600		5570 12,400	3810 8500	9.0 29.4	
-4.5 m -15.0 ft	kg lb			*20,310 *44,300	*20,310 *44,300	*13,960 *30,000	11,160 24,000	*10,180 *21,800	7060 15,200	7350 15,200	5060					















* Indicates that the load is limited by hydraulic capacity rather than tipping capacity.
 Lift Capacity Ratings are based on SAE Standard J1097.

Lift Capacities

231D LC Excavator
















STICK – 2900 mm/9'6"
 BUCKET – 1375 mm/54"
 BOOM – One-piece

UNDERCARRIAGE – 5230 mm/17'2"
 TRACK SHOE – 813 mm/32"
 HEAVY LIFT CIRCUIT – Activated

	3.0 m/10.0 ft		4.5 m/15.0 ft		6.0 m/20.0 ft		7.5 m/25.0 ft		9.0 m/30.0 ft				m ft	
														
9.0 m 30.0 ft	kg lb											*3950 *8800	*3950 *8800	7.9 25.4
7.5 m 25.0 ft	kg lb						*5260 *11,700	*5260 *11,700				*3710 *8200	*3710 *8200	9.2 29.8
6.0 m 20.0 ft	kg lb						*5440 *11,900	*5440 *11,900				*3660 *8100	3410 7600	10.0 32.5
4.5 m 15.0 ft	kg lb			*8940 *19,100	*8940 *19,100	*6990 *15,100	*6990 *15,100	*6070 *13,200	5480 11,800	*5680 *12,500	3870 8200	*3740 *8200	3030 6700	10.4 34.1
3.0 m 10.0 ft	kg lb			*12 290 *26,200	11 620 25,100	*8560 *18,400	7490 16,100	*6910 *15,000	5220 11,200	*6070 *13,200	3760 8000	*3930 *8600	2840 6300	10.6 34.6
1.5 m 5.0 ft	kg lb			*13 540 *31,700	10 700 23,100	*9990 *21,500	7010 15,100	*7730 *16,700	4960 10,700	*6510 *14,100	3640 7800	*4250 *9400	2820 6200	10.5 34.3
Ground Line	kg lb			*14 480 *33,800	10 360 22,300	*10 920 *23,600	6710 14,400	*8350 *18,100	4770 10,200	*6830 *14,800	3540 7600	*4770 *10,500	2970 6500	10.1 33.0
-1.5 m -5.0 ft	kg lb	*9740 *22,000	*9740 *22,000	*15 890 *33,900	10 320 22,200	*11 250 *24,300	6590 14,200	*8610 *18,600	4690 10,100			*5610 *12,400	3360 7400	9.4 30.7
-3.0 m -10.0 ft	kg lb	*16 010 *36,200	*16 010 *36,200	*14 900 *32,200	10 470 22,500	*10 920 *23,600	6630 14,300	*8270 *17,700	4730 10,200			*4940 *10,700	4210 9400	8.3 27.0
-4.5 m -15.0 ft	kg lb	*18 610 *40,000	*18 610 *40,000	*13 050 *28,000	10 810 23,200	*9530 *20,300	6860 14,800							

STICK – 3500 mm/11'6"
 BUCKET – 1375 mm/54"
 BOOM – One-piece

UNDERCARRIAGE – 5230 mm/17'2"
 TRACK SHOE – 813 mm/32"
 HEAVY LIFT CIRCUIT – Activated

	1.5 m/5.0 ft		3.0 m/10.0 ft		4.5 m/15.0 ft		6.0 m/20.0 ft		7.5 m/25.0 ft		9.0 m/30.0 ft				m ft	
																
9.0 m 30.0 ft	kg lb													*3170 *7000	*3170 *7000	8.7 28.0
7.5 m 25.0 ft	kg lb									*4480 *9900	*4480 *9900			*2990 *6600	*2990 *6600	9.8 32.0
6.0 m 20.0 ft	kg lb									*4790 *10,500	*4790 *10,500	*4860 *10,000	3990 8500	*2950 *6500	*2950 *6500	10.5 34.5
4.5 m 15.0 ft	kg lb							*6170 *13,300	*6170 *13,300	*5480 *11,900	*5480 *11,900	*5150 *11,300	3920 8400	*3010 *6600	2720 6000	11.0 35.9
3.0 m 10.0 ft	kg lb					*10 890 *23,300	*10 890 *23,300	*7810 *16,800	7640 16,400	*6380 *13,800	5270 11,300	*5630 *12,300	3780 8100	*3160 *7000	2550 5600	11.1 36.4
1.5 m 5.0 ft	kg lb					*13 760 *29,600	10 990 23,700	*9380 *20,200	7110 15,300	*7300 *15,800	4980 10,700	*6150 *13,400	3630 7800	*3430 *7500	2520 5600	11.0 36.1
Ground Line	kg lb			*5040 *11,500	*5040 *11,500	*15 300 *33,000	10 440 22,400	*10 530 *22,700	6730 14,500	*8040 *17,400	4760 10,200	*6590 *14,300	3500 7500	*3840 *8500	2640 5800	10.6 34.9
-1.5 m -5.0 ft	kg lb	*6350 *14,200	*6350 *14,200	*9030 *20,400	*9030 *20,400	*15 730 *34,000	10 270 22,000	*11 110 *24,000	6550 14,100	*8470 *18,300	4630 9900	*6780 *15,000	3440 7500	*4510 *10,000	2940 6500	10.0 32.8
-3.0 m -10.0 ft	kg lb	*10 260 *23,000	*10 260 *23,000	*13 810 *31,200	*13 810 *31,200	*15 320 *33,100	10 330 22,200	*11 060 *23,900	6530 14,000	*8420 *18,100	4610 9900			*5650 *12,600	3580 7900	9.0 29.4
-4.5 m -15.0 ft	kg lb			*20 310 *44,300	*20 310 *44,300	*13 960 *30,000	10 580 22,700	*10 180 *21,800	6670 14,400	*7400 *16,000	4760					

* Indicates that the load is limited by hydraulic capacity rather than tipping capacity.
 Lift Capacity Ratings are based on SAE Standard J1097.

Benefits Summary

149 kW/200 HP Cat Turbocharged Diesel Engine... provides fast cycles and high productivity. A tough, durable engine...field-proven in many applications.

Two-speed track motors... high speed for fast travel around and between job sites...low speed for maximum drawbar pull and maneuvering in poor underfoot conditions.

Automatic Engine Speed Control... automatically selects one of three engine RPM settings, according to load...contributes up to 20% fuel savings.

High 29 660 kPa/4,300 psi hydraulic working pressure... for aggressive digging capability when working in tough-ground conditions.

New-design track rollers specifically for excavators... deliver maximum durability in high impact applications.

Constant-horsepower hydraulic system... with variable-displacement piston pumps and hydraulic power proportioning, coupled to Cat's XT-5 hose, makes the 231D Excavator fuel efficient and very reliable.

Human-engineered cab... the sound-suppressed cab features heavy duty construction with 11-gauge sheet steel and a box-section frame. The 926 mm/36" inside cab width provides extra room for shift-long operator comfort. The 231D's two-section windshield adjusts to five different visibility/ventilation combinations to maximize operator comfort and productivity. It has tinted, laminated glass in the upper window and clear, tempered glass in the lower window. Tinted side and rear windows enhance visibility. The four-way adjustable seat has joysticks and switches mounted on side consoles, placing the controls within comfortable reach. An angled gauge panel allows the operator to monitor selected machine systems with a glance. A cab heater is standard.

Controls respond smoothly and easily for precise work... boosted by a hydraulic-over-hydraulic pilot system for easy, well-modulated lever movement. Prevents surges common to air-over-hydraulic controls, and reduces high lever efforts common to mechanically controlled systems. Hand control boosts boom-raise and stick-out speeds.

Track-type undercarriage designed and built by Caterpillar, the world's most experienced manufacturer of track-type vehicles...delivers rugged performance and long life with a minimum of undercarriage service. Outstanding drawbar pull helps the 231D maneuver and travel in poor underfoot conditions and on steep slopes. Track pins and bushings are sealed with metal-to-metal discs...the rollers and idlers, with Caterpillar's Duo-Cone Seals. Hydraulic track adjusters and heavy duty recoil springs are standard equipment. The track roller frames use box-beam construction. Bolt-on track shoes are available in several widths.

Powerful, dependable hydraulic components... deliver high flows for rapid lift, swing and dump functions or high pressure for maximum digging forces. Major components are Cat turbocharged 3208 Engine; twin, variable-displacement piston pumps; single-section, fixed-displacement, gear pump; piston-type track motors; Cat's XT-5 hose and couplings; heavy steel tubing and pilot control valves; Cat hydraulic cylinders; and hydraulic tank.

Remote, centralized grease fittings... allow easy lubrication of hard-to-reach lube points.

The Caterpillar logo consists of the word "CATERPILLAR" in a bold, black, sans-serif font. Above the letter "A" is a stylized yellow triangle representing a mountain peak.