

CAT

235C

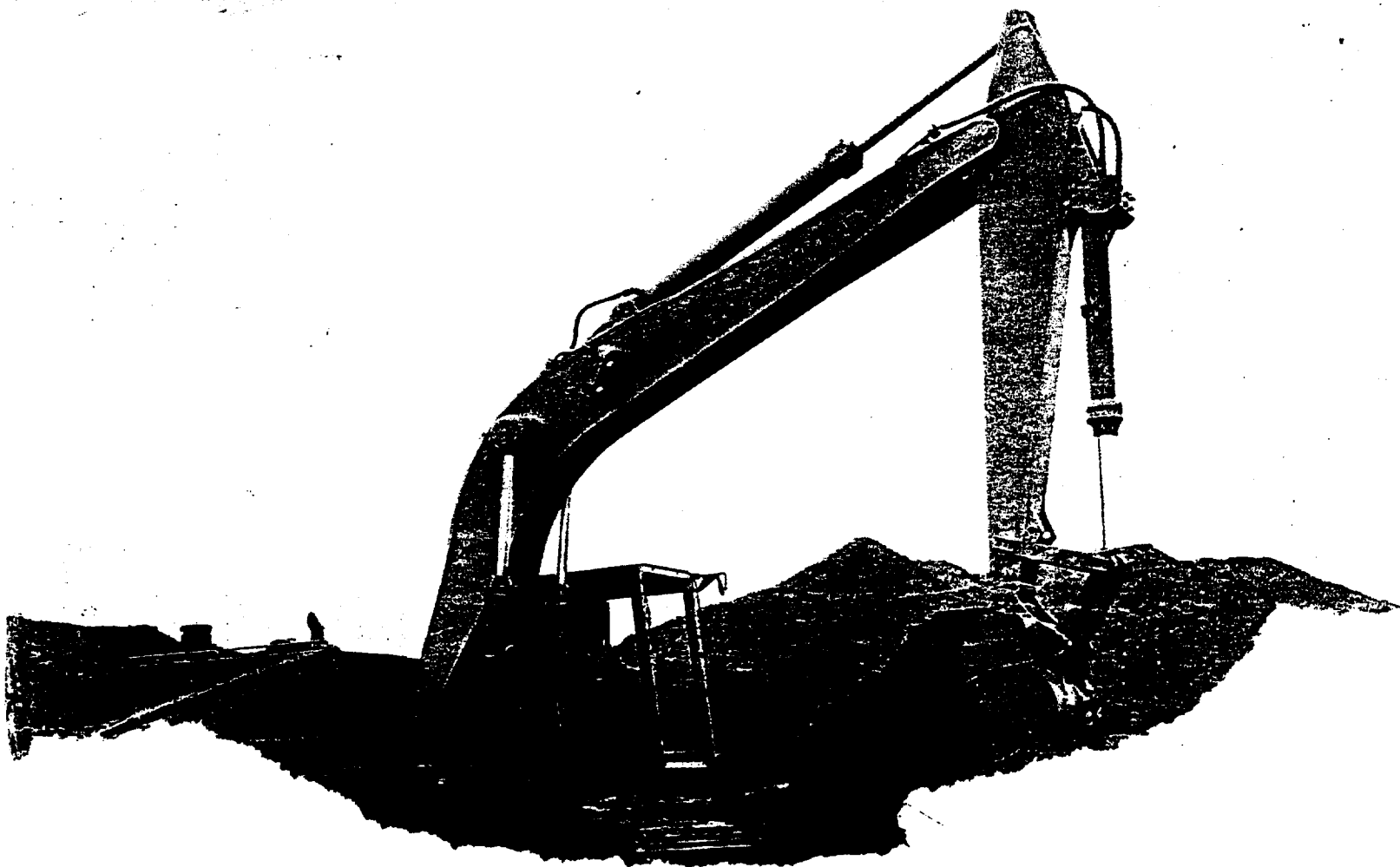
EXCAVATOR

Maximum:

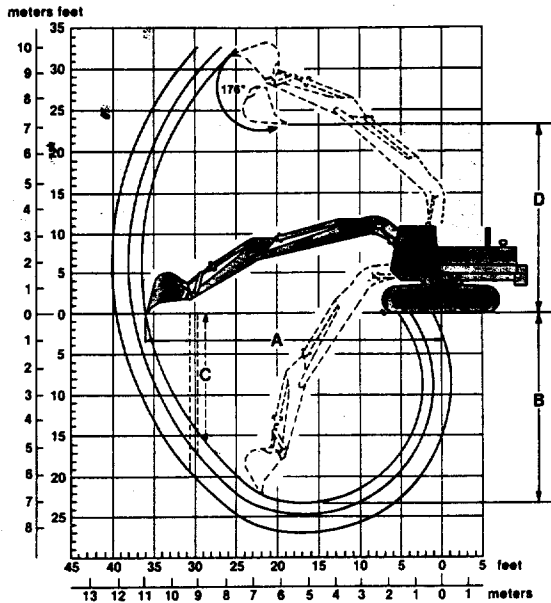
Reach At Ground Level 12.1 m/39' 8"
Digging Depth 8.3 m/27' 2"
Travel Speed 3.5 km/h/2.2 MPH
Drawbar Pull ... 32 000 kg/314 kN/70,500 lb

- Cat 3306 turbocharged diesel Engine
- Flywheel Power 186.5 kW/250 HP
- Operating Weight ... 44 060 kg/97,040 lb
- General Purpose
- Bucket Capacity (SAE) 960 to 2290 liters/1.25 to 3.00 yd³

Machine shown may have optional equipment.



Working Ranges



	Stick Length							
	*2440 mm/8'		*2900 mm/9'6"		*3660 mm/12'		**2900 mm/9'6"	
A Maximum reach at ground level	11.0 m	36'0"	11.4 m	37'5"	12.1 m	39'8"	11.4 m	37'5"
B Maximum digging depth	7.1 m	23'2"	7.5 m	24'8"	8.3 m	27'2"	7.5 m	24'8"
C Maximum vertical wall	4.8 m	15'11"	5.2 m	17'2"	5.9 m	19'5"	5.3 m	17'3"
D Maximum dump height	6.2 m	20'4"	6.35 m	20'10"	6.6 m	21'6"	6.35 m	20'10"

* Equipped with 1980 mm/78" tip radius bucket.

** 2900 mm/9'6" stick on special application boom and equipped with 1980 mm/78" tip radius bucket.

Lift Capacities

BOOM — One-piece

STICK — 3660 mm/12'

BUCKET — 1225 mm/48"

UNDERCARRIAGE — Trencher (standard)

HEAVY LIFT CIRCUIT — Activated

BUCKET HEIGHT	LOAD RADIUS												MAXIMUM LOAD RADIUS			
	10 ft.		15 ft.		20 ft.		25 ft.		30 ft.		35 ft.		OVER FRONT	OVER SIDE		
	OVER FRONT	OVER SIDE	OVER FRONT	OVER SIDE	OVER FRONT	OVER SIDE	OVER FRONT	OVER SIDE	OVER FRONT	OVER SIDE	OVER FRONT	OVER SIDE				
25.0 ft lb															*7100	*7100
20.0 ft lb									*14,900	13,700					*7000	7000
15.0 ft lb									*17,300	13,400					*7200	*7200
10.0 ft lb			*36,500	*36,500	*28,400	25,500	*21,400	17,700	*18,400	12,800	*9800	9400	*7500	*7500		
5.0 ft lb			*44,100	35,500	*30,300	23,400	*23,500	16,600	*19,400	12,200	*13,600	9100	*8100	7700		
0.0 ft lb			*35,000	33,500	*32,600	21,900	*24,900	15,700	19,000	11,700	*13,400	8900	*9000	7900		
-5.0 ft lb			*43,700	33,000	*32,700	21,100	24,800	15,100	18,600	11,300					*10,300	8500
-10.0 ft lb	*32,000	*32,000	*39,900	33,100	*31,000	20,900	*24,200	14,800	18,500	11,100					*12,400	9900
-15.0 ft lb	*40,700	*40,700	*34,100	33,600	*27,200	21,000	*21,200	14,900								
-20.0 ft lb			*25,300	*25,300	*20,500	20,500	*14,700	*14,700								

* Indicates the load is limited by hydraulic capacity rather than tipping.

Lift Capacity Ratings are based on SAE Standard J1097. Rated loads do not exceed 87% of hydraulic lifting capacity or 75% of tipping capacity.



Swing Mechanism

Case-hardened drive gears are splash lubricated. Hydraulic motor provides fast rotational speed. Shoe-type brake on swing gear case, manually applied, holds upperstructure steady on side slopes. Smooth, modulated deceleration occurs when swing control lever is released, helping to assure accurate positioning for next work cycle.



Steering

A lever mounted between the travel pedals provides gradual pivot and counter-rotation steering. (1) Depress 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.



Brakes

Two oil-disc brakes, 178 mm/7" diameter, on final drive input shafts. Spring-applied, hydraulically released. Depressing a travel pedal simultaneously disengages brakes. When pedal is released, brakes automatically apply.



Service Refill Capacities

	Liters	U.S. Gallons
Fuel Tank	492	130
Cooling System	46.2	12.2
Lubrication:		
Engine Oil	27.4	7.25
Pump Drive	6.6	1.75
Swing Drive	34.0	9
Final Drives (each)	53	14
Hydraulic System	719	190
Hydraulic Tank	329	87



Weight (approximate)

Bare machine — includes lubricants, coolant, 10% fuel, no front equipment:

	Kg	Lb
Standard undercarriage		
762 mm/30" Triple Grouser ...	31 990	70,460
914 mm/36" Triple Grouser ...	32 750	72,150
457 mm/18" Double Grouser ..	30 040	66,170
610 mm/24" Double Grouser ..	30 800	67,840
Trencher undercarriage (standard)		
762 mm/30" Triple Grouser ...	34 950	76,980
914 mm/36" Triple Grouser ...	35 710	78,665
Trencher undercarriage (wide gauge)		
762 mm/30" Triple Grouser ...	36 050	79,400
914 mm/36" Triple Grouser ...	36 810	81,080

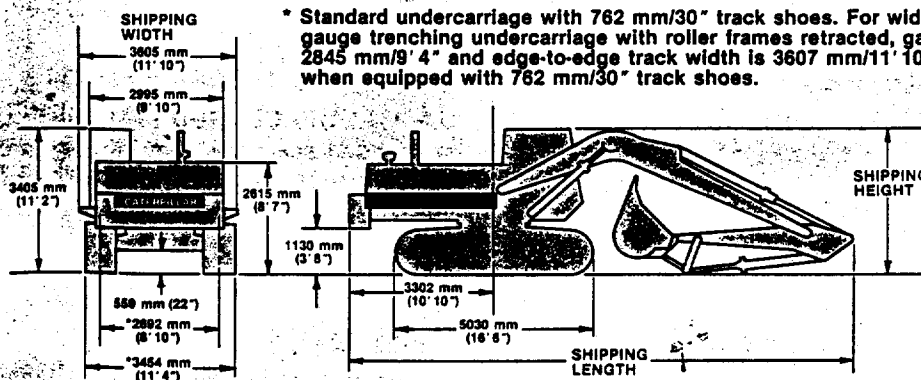
Operating — See Track Shoes chart — page 6.

NOTE: add 1080 kg/2380 lb for fully equipped, fully guarded machine.



Dimensions (approximate)

	With 2440 mm/ 8' Stick	With 2900 mm/ 9'6" Stick	With 3660 mm/ 12' Stick
With one-piece boom:			
Shipping height	3404 mm/11'2"	3404 mm/11'2"	3480 mm/11'5"
Shipping length	11 400 mm/37'5"	11 400 mm/37'5"	11 460 mm/37'7"
Shipping length (trencher)	11 530 mm/37'10"	11 530 mm/37'10"	11 580 mm/38'0"
With two-piece boom, foreboom extended:			
Shipping height	3555 mm/11'8"	3555 mm/11'8"	3580 mm/11'9"
Shipping length	11 400 mm/37'5"	11 400 mm/37'5"	11 460 mm/37'7"



235C EXCAVATOR

Lift Capacities

BOOM — One-piece

STICK — 3660 mm/12'

BUCKET — 1225 mm/48"

UNDERCARRIAGE — Standard

HEAVY LIFT CIRCUIT — Activated

BUCKET HEIGHT	OVER FRONT	OVER SIDE	OVER FRONT	OVER SIDE	OVER FRONT	OVER SIDE	OVER FRONT	OVER SIDE	OVER FRONT	OVER SIDE	OVER FRONT	OVER SIDE	OVER FRONT	OVER SIDE
25.0 ft lb													*7100	*7100
20.0 ft lb									*14,900	11,200			*7000	*7000
15.0 ft lb									*17,300	10,900			*7200	6400
10.0 ft lb			*36,500	*33,800	*26,400	21,300	*21,400	14,800	17,200	10,300	*9800	7300	*7500	5900
5.0 ft lb			*44,100	29,300	*30,300	19,300	22,500	13,500	16,500	9700	12,500	7000	*8100	5800
0.0 ft lb			*35,000	27,300	30,700	17,800	21,500	12,500	15,900	9100	12,200	6800	*9000	5900
-5.0 ft lb			*43,700	26,800	29,800	17,000	20,800	11,900	15,500	8800			*10,300	6500
-10.0 ft lb	*32,000	*32,000	*39,900	26,900	29,600	16,700	20,500	11,700	15,400	8600			*12,400	7600
-15.0 ft lb	*40,700	*40,700	*34,100	27,400	*27,200	16,900	20,600	11,700						
-20.0 ft lb			*25,300	*25,300	*20,500	17,500	*14,700	*12,300						

* Indicates the load is limited by hydraulic capacity rather than tipping.

Lift Capacity Ratings are based on SAE Standard J1097. Rated loads do not exceed 87% of hydraulic lifting capacity or 75% of tipping capacity.

Custom Machine Products

In addition to the standard range of optional equipment, special attachments and machine configurations to suit particular customer applications can be made. Contact your Caterpillar dealer for details on matching the Caterpillar product to your special applications.

CATERPILLAR®

SPECIFICATIONS

Caterpillar Engine

Flywheel power at 2000 RPM 186.5 kW/250 HP
(Kilowatts (kW) is the International System of Units equivalent to 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 2300 m/7,500 ft. altitude.

These additional ratings also apply at 2000 RPM

	kW	HP
ISO 1585	186.5	250.0
ISO 3046-1	184.7	247.7
EEC 80/1269	186.5	250.0

Turbocharged and aftercooled, Caterpillar four-stroke cycle, 3306 diesel Engine with six cylinders, 121 mm/4.75" bore, 152 mm/6.0" stroke and 10.5 liters/638 in³ displacement.

Direct-injection, Caterpillar fuel system with individual, adjustment-free injection pumps and valves. Stellite-faced exhaust valves, hard alloy-steel seats, valve rotators. Cam-ground and tapered, aluminum-alloy pistons have three rings and are cooled by oil spray. Steel-backed, copper-bonded, aluminum bearings; hardened crankshaft journals.

Dry-type air cleaner with primary and secondary elements. Direct electric, 24-volt starting system, with two 12-volt, 172 amp-hour batteries.

Hydraulic System

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

Output of pumps at rated engine RPM and 6897 kPa/68.9 bar/1000 psi 2 X 360 liters/min/2 X 95 gpm

A double-section gear pump powers the swing and pilot circuits. Output to swing and pilot circuits at rated engine RPM and 6897 kPa/68.9 bar/1000 psi:

Swing circuit 223 liters/min/58 gpm
Pilot circuit 76 liters/min/20 gpm

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

Relief valve settings:

Implement circuits ... 27 660 kPa/276.6 bar/4300 psi
Travel circuits 33 100 kPa/331 bar/4800 psi
Swing circuit 16 203 kPa/162 bar/2350 psi
Pilot circuit 2310 kPa/23.1 bar/335 psi

Cylinders, bore and stroke:

Boom (2) 178 X 1245 mm/7.0" X 49"
Stick (1) 197 X 1753 mm/7.75" X 69.0"
Bucket (1) 165 X 1359 mm/6.5" X 53.5"

Three abrasion-resistant, polyurethane seals work together to seal cylinder rod ends.

Easy-to-reach switch activates heavy lift circuit, increasing implement pressures from 27 660 kPa/276.6 bar/4300 psi to 33 100 kPa/331 bar/4800 psi and slows swing and implement speeds for precise control.

Drive

Fully hydrostatic. Each track is driven by an independent hydraulic motor. Two travel pedals: when idlers are in front, right pedal gives forward movement... the left, reverse. Triple-reduction, spur-gear final drive, fully enclosed, splash lubricated. Duo-Cone Floating Ring Seals on output shaft.

Maximum drawbar pull 32 000 kg/70,500 lb
Maximum travel speed at rated engine RPM 3.5 km/h/2.2 MPH

Track

Cat designed and built, track-type undercarriage. Reinforced, box-section track roller frame. Sealed Track. Lifetime Lubricated rollers, idlers. Hydraulic track adjusters standard.

Undercarriage	Standard	Trenching (Standard)	Trenching (Wide)
Overall Length	5030 mm/ 16' 6"	5030 mm/ 16' 6"	5030 mm/ 16' 6"
Track Gauge			
Variable	NO	NO	YES
Standard	2692 mm 8' 10"	2692 mm 8' 10"	3302 mm 10' 10"
Narrow	—	—	2845 mm 9' 4"
Track rollers (each side)	9	9	9
Track Shoe Options	457 mm/18" 610 mm/24" 762 mm/30" 914 mm/36"	762 mm/30" 914 mm/36"	762 mm/30" 914 mm/36"
Track Shoes (each side)	49	49	49
Ground Pressure	See Track Shoes chart — pg. 6		
Ground Clearance	559 mm/22"	559 mm/22"	559 mm/22"

Controls

Two joystick hand levers actuate boom, stick, bucket and swing. (SAE pattern.)

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 control stick movement. Left and right to control swing direction.

Oblique movement of either lever operates two functions simultaneously. Foot pedal combines flow from both piston pumps to increase boom-raise or stick-out speeds (for faster cycle times). Manually applied lever on the left console completely neutralizes the control system.

SPECIFICATIONS



Standard Equipment

NOTE: Standard and optional equipment may vary. Consult your Caterpillar Dealer for specifics.

- Alternator, 35-amp.
- All-weather cab with:
 - Cigar lighter.
 - Defroster fan.
 - Dual windshield wipers with washer.
 - Electric clock hour meter.
 - Floor mat.
 - Instrumentation (engine oil pressure gauge, coolant temperature gauge, hydraulic oil temperature gauge, voltmeter, low hydraulic oil level light, air filter service light, hydraulic oil filter service light and flashing warning light).
- Lights, dome and dash.
- Mirror, rear view.
- Sliding rear window with friction lock.
- Seat, four-way adjustable with armrests and side consoles.
- Two-section windshield with tinted, laminated glass in top and clear, tempered glass in bottom.
- Counterweight, 5443 kg/12,000 lb.
- Dry-type air cleaner.
- Electric horns, front and rear.
- Heavy lift circuit.
- Hydraulic track adjusters.
- Idler track guiding guard segment.
- Lifetime Lubricated rollers and idlers.
- Lockable house and cab.
- Lockable tool compartment.
- Muffler.
- Oil-disc track brakes.
- Sealed linkage pins.
- Sealed track.
- Tow eyes, front and rear.
- Track motor guards.
- Travel alarm (standard in U.S.A.).
- Walkway and handrails.
- Working lights, basic machine.

U.S. MANUFACTURED MACHINE has tinted glass in windshield and LEXAN sheet in windows and non-opening skylight; Sealed track with 762 mm/30" triple grouser shoes; Seat belts. Travel alarm.

EUROPEAN MANUFACTURED MACHINE has tinted glass in windows and non-opening skylight; 610 mm/24" double grouser shoes; Suspended seat.




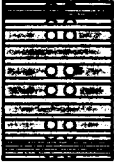
Optional Equipment

- Alternator, 50-amp.
- Air conditioner/heater.
- Automatic engine speed control.
- Auxiliary AEM hydraulic outlets.
- Backhoe sticks.
- Buckets (see page 5).
- Bucket sidecutters (see page 6).
- Bucket teeth (see page 6).
- Booms, one- and two-piece.
- Cab heater.
- Counterweight removal device.
- Ether starting aid.
- Fire extinguisher.
- FOPS-mounted working lights.
- Full-length track guiding guard.
- Guards (hydraulic pump and lines, pilot line, swivel FOPS).
- Low temperature starting system.
- Pre-cleaner with pre-screener.
- Storage rack.
- Tool kit.
- Track shoes.
- Travel alarm.
- Windshield vandalism guard.

U.S. MANUFACTURED MACHINE: tilttable suspended seat; track guiding guard segments; double grouser track shoe 457 mm/18".

SPECIFICATIONS

Track Shoes

Triple Grouser		
		
Shoe Width	762 mm/30"	914 mm/36"
Standard Undercarriage		
Ground Pressure	60.7 kPa/.61 bar/8.8 psi	51.5 kPa/.52 bar/7.5 psi
Operating Weight*	41 000 kg/90,520 lb	41 860 kg/92,210 lb
Trenching Undercarriage (standard)		
Ground Pressure	65.0 kPa/.65 bar/9.4 psi	55.1 kPa/.65 bar/8.0 psi
Operating Weight*	44 060 kg/97,040 lb	44 820 kg/98,720 lb
Trenching Undercarriage (wide)		
Ground Pressure	66.6 kPa/.67 bar/9.6 psi	56.5 kPa/.56 bar/8.2 psi
Operating Weight*	45 150 kg/99,450 lb	45 920 kg/101,140 lb

* Includes lubricants, coolant, 50% full fuel tank, operator, one-piece boom, 3660 mm/12' stick and 1225 mm/48" bucket with teeth.

Teeth



Short (severe)...
for tough digging.



Long
(general purpose)...
for most digging
applications.



Penetration...
self-sharpening for
digging in tough,
compacted material.



Wide (spade)...
easy digging materials
for load retention
and clean-up grading.



Sharp (corner)



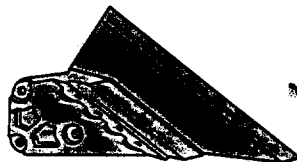
Sharp (center)

Sharp Tip...a special application ground engaging tool, designed to provide maximum penetration. It is recommended only when maximum penetration is the most important tip selection criterion — more important than wear life and strength.

Sidecutters



One-piece blade...
effective in average
digging conditions.
Widens bite width
38 mm/1.5" each side.



Blade with
extension...for light
to moderate digging
conditions. Bolts to
one-piece blade and
widens bite width
76 mm/3" on
each side.



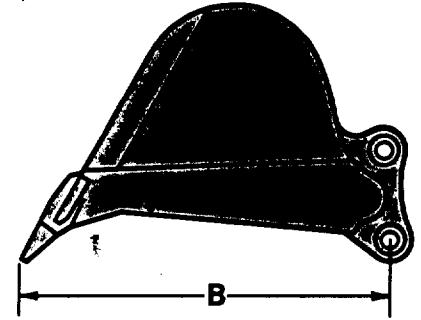
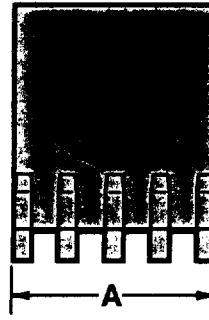
Tooth-type...
for severe digging
applications. Widens
bite width 76 mm/3"
on each side.



Strike-off...
protects bucket
corners from wear.
Does not widen bite
width.

Bucket Specifications

Caterpillar buckets curl 176° for excellent load retention and easy digging under obstructions. High-strength, heat-treated steel used in the primary wear areas. Side plates angled inward to reduce bucket drag and aid self-cleaning.



Type	A Bite Width		B Tip Radius		SAE Heaped Capacity		Weight With Tips		Number of Teeth
	mm	In	mm	In	liter	yd ³	kg	lb	
Trenching	775	30	*1980	*78	960	1.25	1110	2,450	3
Trenching	925	36	*1980	*78	1250	1.63	1270	2,800	4
Trenching	1075	42	*1980	*78	1530	2.0	1410	3,110	5
Excavating	1225	48	1883	74	1620	2.13	1430	3,150	5
Excavating	1375	54	1883	74	1910	2.5	1560	3,440	6
Excavating	1800	71	1608	63	2100	2.75	1855	4,090	6
Loose Material	1770	69	1596	63	2290	3.0	1520	3,350	—

* Long tip radius buckets, all other short tip radius.

Bucket and Stick Forces

General Purpose Buckets	Bucket Curling Forces						Stick Crowd Forces					
	2440 mm/8'		2900 mm/9'6"		3680 mm/12'		2440 mm/8'		2900 mm/9'6"		3680 mm/12'	
	kN	Lb	kN	Lb	kN	Lb	kN	Lb	kN	Lb	kN	Lb
Short Tip Radius	200	44,980	201	45,120	211	47,410	190	42,610	163	36,700		
Long Tip Radius	190	42,780	191	42,910	206	46,360	186	41,760	161	36,070		

NOTE: All dimensions, both British and metric measures, have been rounded.