

# CAT

## 219 219 LC

### EXCAVATOR

#### Maximum:

#### Reach At

Ground Level . . . . . 9280 mm/30' 5"

Digging Depth . . . . . 6240 mm/20' 6"

Travel Speeds (219) . . . . . 3.5 km/h/2.2 MPH  
(219 LC) . . . . . 2.9 km/h/1.8 MPH

#### Drawbar Pull

(219) . . . . . 15 090 kg/148 kN/33,250 lb.

(219 LC) . . . . . 18 700 kg/183 kN/41,200 lb.

- Flywheel Power . . . . . 97 kW/130 HP
- Operating Weight  
(219) . . . . . 21 587 kg/47,590 lb  
(219 LC) . . . . . 22 470 kg/49,536 lb
- General Purpose  
Bucket Capacity . . . . . (SAE) 425 to  
1010 liters/.56 to 1.32 yd<sup>3</sup>

Machine shown may have optional equipment.





# SPECIFICATIONS



## Engine

Flywheel power at 1800 RPM, 97 kW/130 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, 25°C/77°F and 100 kPa/29.61" Hg., using 35 API gravity fuel at 15.6°C/60°F. Power rating is adjusted for fan, air cleaner, fuel pump, water pump, lubricating oil pump, muffler and alternator. No derating is required up to 3000 m/10,000 ft. altitude.*

These additional ratings also apply at 1800 RPM

	kW	HP
ISO 1585	97	130
ISO 3046-1	95.5	128
EEC 80/1269	97	130

Cat four-stroke-cycle 3304 turbocharged diesel Engine, with four cylinders, 121 mm/4.75" bore, 152 mm/6.0" stroke and 7.0 liters/425 in<sup>3</sup> displacement.

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

Cam-ground and tapered, aluminum alloy pistons have three rings and are spray-cooled. Steel-backed, copper-bonded, aluminum bearings. Heat-treated 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 35-amp alternator and two 132 amp-hour batteries. Ether starting aid available.



## Drive

Fully hydrostatic. Each track is driven by a hydraulic motor. 219 LC has larger travel motors than 219 Excavator. Two travel pedals: when idlers are in front, 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.

### 219

Maximum drawbar pull . . . . . 15 090 kg/148 kN/33,250 lb

Maximum travel speed @ rated engine rpm . . . . . 3.5 km/h/2.2 mph

### 219 LC

Maximum drawbar pull . . . . . 18 700 kg/183 kN/41,200 lb

Maximum travel speed @ rated engine rpm . . . . . 2.9 km/h/1.8 mph



## 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.



## Hydraulic System

Two variable-flow, bent-axis piston pumps power the boom, stick, bucket, swing and travel circuits. Output of pumps at rated engine RPM and 6890 kPa/68.9 bar/1000 psi . . . 2 X 166.0 l/min/2 X 43.8 gpm.

A fixed-displacement gear pump powers the pilot control circuits. Output to pilot system @ rated engine RPM and 2310 kPa/23 bar/335 psi . . . . . 85.2 l/min/22.5 gpm.

Relief valve settings:

Implement circuits	28 960 kPa/290 bar/4200 psi
Travel circuits	32 410 kPa/324 bar/4700 psi
Swing circuit	13 790 kPa/138 bar/2000 psi
Pilot circuit	2310 kPa/23 bar/335 psi

Cylinders, bore and stroke:

Boom (2)	121 X 975 mm/4.75" X 38.4"
Stick (1)	140 X 1207 mm/5.5" X 47.5"
Bucket (1)	121 X 967 mm/4.75" X 38.1"

Easy-to-reach switch increases maximum implement pressure available from 28 960 kPa/290 bar/4200 psi to 32 410 kPa/324 bar/4700 psi and slows swing and implement speeds for precise control.



## Track

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

**3810 mm/12' 6" standard undercarriage:**

Shoes each side, 43. Ground contact area with 550 mm/22" shoes, 3.64 m<sup>2</sup>/5,638 sq. in. Gauge is 2180 mm/85.8". Distance from centerline sprocket to centerline idler is 3016 mm/118.7". Eight track rollers each side.

**4420 mm/14' 6" LC (long undercarriage) optional:**

Shoes each side, 49. Ground contact area with 550 mm/22" shoes, 4.33 m<sup>2</sup>/6706 in<sup>2</sup>. Gauge is 2180 mm/85.8". Distance from centerline sprocket to centerline idler is 3640 mm/143.4". Ten track rollers each side.



## 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 move stick out and in. Left and right to control swing direction.

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



## Brakes

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



## Swing Mechanism

Case-hardened drive gears are splash lubricated. Hydraulic motor provides high swing torque for fast acceleration. Shoe-type brake on swing gear case, manually applied, holds upperstructure steady on side slopes. Swing speed is 6.7 RPM at rated engine speed. Cushion swing control is standard.



## Service Refill Capacities

	Liters	U.S. Gallons
Fuel Tank . . . . .	266	71.3
Cooling System . . . . .	26.5	7.0
Lubrication:		
Engine Oil . . . . .	18.9	5.0
Swing Drive . . . . .	29	7.7
Final Drives (each) . . . . .	11.4	3.0
Hydraulic System (includes tank) . . . . .	300	79.3
Hydraulic Tank . . . . .	155	41.0



## Weight (approximate)

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

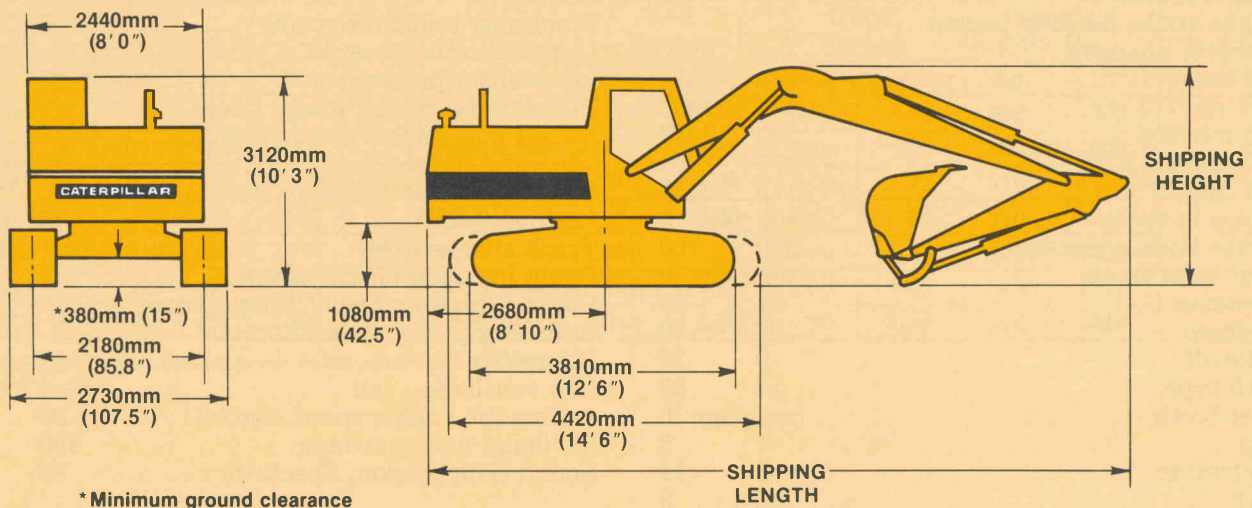
Triple Grouser Shoes	Kg	Lb
550 mm/22"	16 950	37,330
660 mm/26"	17 250	38,010
760 mm/30"	17 560	38,710

**Operating** — See Track Shoes chart on page 5.



## Dimensions (approximate)

	With 1800 mm/ 5' 11" Stick	With 2200 mm/ 7' 3" Stick	With 2800 mm/ 9' 2" Stick
<b>With 5190 mm/17' 0" one-piece boom:</b>			
Shipping height	3220 mm/10' 7"	3220 mm/10' 7"	3400 mm/11' 2"
Shipping length	8990 mm/29' 6"	9000 mm/29' 6"	9030 mm/29' 8"
<b>With two-piece boom, extended position, lower pinhole:</b>			
Shipping height	3320 mm/10' 11"	3240 mm/10' 8"	3400 mm/11' 2"
Shipping length	8970 mm/29' 5"	8970 mm/29' 5"	9010 mm/29' 7"
<b>With two-piece boom, center position, lower pinhole:</b>			
Shipping height	3470 mm/11' 5"	3370 mm/11' 1"	3450 mm/11' 4"
Shipping length	8330 mm/27' 4"	8330 mm/27' 4"	8370 mm/27' 6"
<b>With two-piece boom, retracted position, lower pinhole:</b>			
Shipping height	3680 mm/12' 1"	3630 mm/11' 11"	3650 mm/12' 0"
Shipping length	7680 mm/25' 2"	7640 mm/25' 1"	7660 mm/25' 2"





# SPECIFICATIONS



## Standard Equipment

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

- Alternator (35-amp).
- Cab, all-weather with:
  - Air cleaner service indicator.
  - Armrests.
  - Break-resistant tinted LEXAN sheet in non-opening rear window and clear LEXAN sheet in non-opening skylight.
  - Cigar lighter.
  - Defroster fan.
  - Dome and dash lights.
  - Dual windshield wipers and washer.
  - Electric clock hour meter.
  - Engine coolant temperature gauge.
  - Engine oil pressure gauge and flashing warning light.
- Floor mat.
- Hydraulic oil filter service indicator.
- Hydraulic oil temperature gauge.
- Side consoles.
- Suspension seat.
- Two-section windshield with tinted, laminated glass in top; clear, laminated glass in bottom.
- Voltmeter.
- Cushion swing control.
- 2755 kg/6069 lb counterweight.
- Dry-type air cleaner.
- Electric horns, front and rear.
- Front track guiding guards.
- Governor control, two-position.
- Heavy duty recoil mechanism.
- Heavy lift circuit.
- Hydraulic track adjusters.
- Lifetime Lubricated rollers and idlers.
- Mirrors, left and right.
- Muffler.
- Sealed linkage pins.
- Sealed Track.
- 550 mm/22" triple grouser shoes.
- Tow eyes.
- Track motor guards.
- Travel alarm.
- 3810 mm/12' 6" undercarriage.
- Vandalism protection locks.



## Optional Equipment

(approximate change in operating weight)

	Kg	Lb		Kg	Lb
5190 mm/17' 0" one-piece boom with stick cylinder, pins	1890	4160	Operator station heater	11	24
*5600 mm/18' 4" one-piece boom with stick cylinder, pins	1940	4265	Low temperature starting system (includes two 252-amp heavy duty batteries)	34	75
Two-piece stub boom with lines, pins	738	1625	Ether starting aid	2	4
Two-piece foreboom with stick cylinder, lines, pins	1083	2385	Lighting systems:		
50-amp alternator	5	11	Upperstructure	6	13
Backhoe sticks (include bucket cylinders, linkage):			Boom	9	20
1800 mm/5' 11"	734	1616	Precleaner and Prescreener	6	13
2200 mm/7' 3"	771	1699	Upperstructure guards,		
2800 mm/9' 2"	900	1983	vandalism protection	16	35
*3400 mm/11' 2"	1015	2235	Bottom of upperstructure guard	21	46
*4000 mm/13' 1"	1115	2455	Swivel guard (provides hydraulic line protection)	51	112
Backhoe buckets	(see page 5)		Full-length track guiding guards and segments	376	828
Backhoe bucket linkage	320	700	Track shoe options	(see page 5)	
Bucket sidecutters	(see page 6)		Boom lowering check valves	45	100
Extension	37	82	Cooling, high ambient temperature	15	33
One-piece	27	60	Refueling pump with automatic shutoff	12	26
Strike-off	9	20	Cab ventilating fan	1	2
Tooth-type	14	30	Automatic engine speed control	23	50
Bucket teeth	(see page 6)		LC (long) undercarriage	830	1825
Long	4	9	Sound Suppression, Spectator	88	194
Penetration	5	11			
Short	4	9			
Wide	5	11			

\*Available through Custom Machine Products.

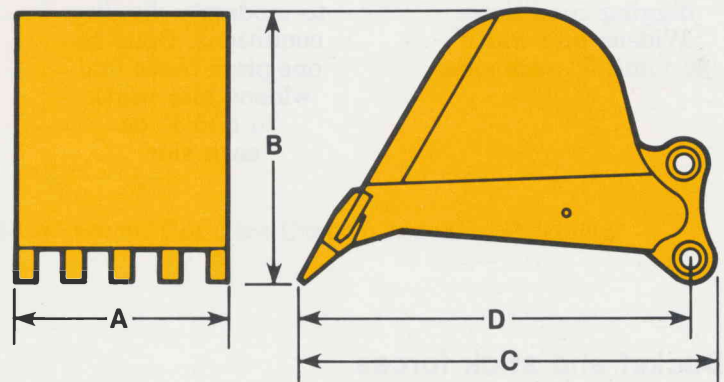
## Track Shoes

Triple Grouser			
Standard Undercarriage			
Shoe Width	550 mm/22"	660 mm/26"	760 mm/30"
Ground Pressure	56.3 kPa/0.58 kg/cm <sup>2</sup> /8.2 psi	47.7 kPa/0.49 kg/cm <sup>2</sup> /6.9 psi	42.1 kPa/0.43 kg/cm <sup>2</sup> /6.0 psi
Operating Weight*	20 955 kg/46,196 lb	21 258 kg/46,866 lb	21 587 kg/47,590 lb
Long Undercarriage			
Ground Pressure	49.3 kPa/0.51 kg/cm <sup>2</sup> /7.1 psi	—	36.8 kPa/0.38 kg/cm <sup>2</sup> /5.4 psi
Operating Weight*	21 780 kg/48,016 lb	—	22 470 kg/49,536 lb

\* Operating weights include 50% full fuel tank, operator, 5190 mm/17' 0" boom, 2800 mm/9' 2" stick, 1070 mm/42" bucket, bottom guard, swivel guard, full-length track guiding guards, heater, lights and precleaner.

## Bucket Specifications

Caterpillar buckets curl 174° 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 in self-cleaning.



A		B		C		D		SAE Heaped		CECE Heaped		Weight With Tips		Number of Teeth
mm	in.	mm	in.	mm	in.	mm	in.	Liter	yd <sup>3</sup>	Liter	yd <sup>3</sup>	Kg	Lb	
610	24	1070	42	1600	63	*1405	*55	425	.56	430	.56	390	960	3
760	30	1070	42	1600	63	*1405	*55	570	.75	570	.75	450	990	4
910	36	1070	42	1600	63	1356	53	760	1.00	570	.75	510	1124	5
1070	42	970	38	1560	61	1356	53	760	1.00	680	.89	520	1146	5
**1070	42	1010	40	1475	58	1245	49	620	.81	580	.76	600	1320	5
1220	48	970	38	1560	61	1356	53	870	1.14	800	1.05	570	1257	6
1370	54	970	38	1560	61	1356	53	1010	1.32	920	1.20	615	1356	6

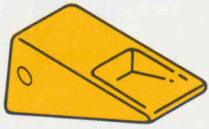
\* Long tip radius buckets, all other short tip radius.

\*\* Rock bucket

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

# SPECIFICATIONS

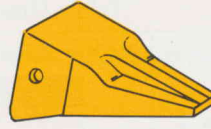
## Teeth



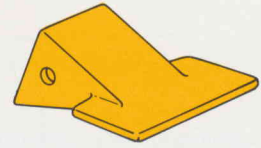
Short (severe)...  
for tough digging.



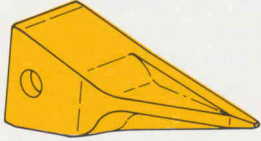
Long  
(general purpose)...  
for most digging  
applications.



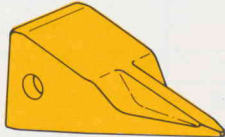
Penetration...  
self-sharpening for  
digging in tough,  
compacted material.



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



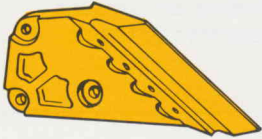
Sharp (corner)



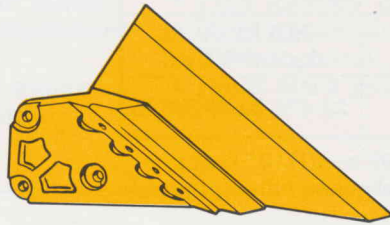
Sharp (center)

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.

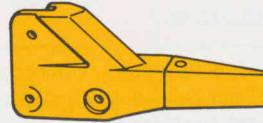
## Sidecutters



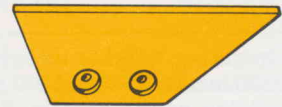
One-piece blade...  
effective in average  
digging conditions.  
Widens bite width  
38 mm/1.5" each side.



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.



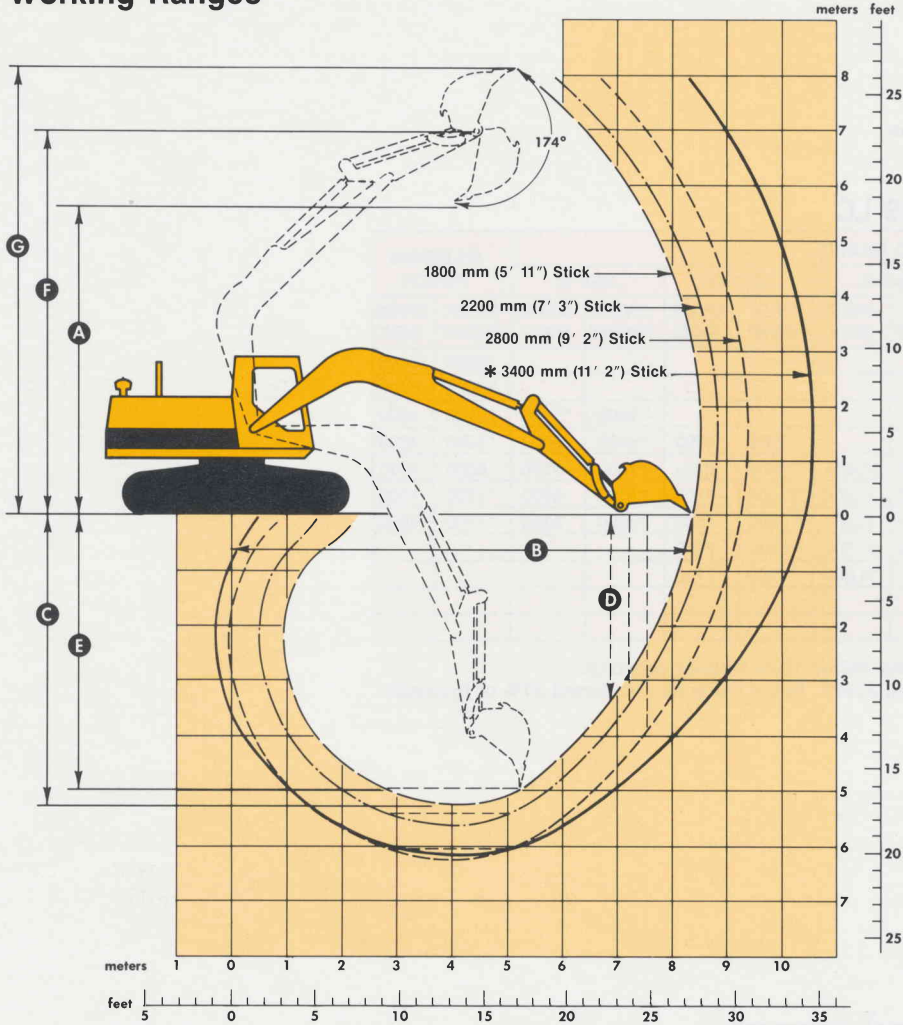
Strike-off...  
protects bucket  
corners from wear.  
Does not widen bite  
width.

## Bucket and stick forces

General Purpose Buckets	Bucket Curling Forces		Stick Crowd Forces					
			1800 mm/5' 11"		2200 mm/7' 3"		2800 mm/9' 2"	
	kN	Lb	kN	Lb	kN	Lb	kN	Lb
Short Tip Radius	108	24,280	104	23,470	93	20,790	79	17,700
Long Tip Radius	104	23,430	103	23,130	91	20,530	78	17,510
Rock Bucket	118	26,450	109	24,450	96	21,560	81	18,260



## Working Ranges



\*Range shown for 3400 mm/11' 2" stick on 5600 mm/18' 4" boom. Both are Custom Machine Products attachments.

## Working Ranges

One-Piece Boom Length	5190 mm/17' 0"						*5600 mm/18' 4"	
	1800 mm/5' 11"		2200 mm/7' 3"		2800 mm/9' 2"		*3400 mm/11' 2"	
Stick Length	mm	ft	mm	ft	mm	ft	mm	ft
A Maximum loading height bucket with teeth	5560	18' 3"	5560	18' 3"	5810	19' 1"	7870	25' 10"
B Maximum reach at ground level	8420	27' 8"	8720	28' 7"	9280	30' 5"	10 390	34' 1"
C Maximum digging depth	5240	17' 2"	5640	18' 6"	6240	20' 6"	6180	20' 3"
D Maximum vertical wall	3330	10' 11"	3370	11' 1"	3870	12' 8"	5070	16' 8"
E Maximum depth of cut for 2440 mm (8') level bottom	4990	16' 5"	5400	17' 9"	6040	19' 10"	6030	19' 9"
F Maximum bucket hinge pin height	6970	22' 11"	6970	22' 11"	7220	23' 8"	9280	30' 5"
G Maximum height to bucket teeth at highest arc	8130	26' 8"	8070	26' 6"	8320	27' 4"	10 600	34' 9"

\*Custom Machine Products attachment.

## Lift Capacities

BOOM — One-piece 5190 mm/17' 0"

STICK — 2800 mm/9' 2"

BUCKET — 910 mm/36"

UNDERCARRIAGE — LC with 550 mm/22" shoes

HEAVY LIFT CIRCUIT — Activated

### 219 LC

BUCKET HEIGHT	LOAD RADIUS										MAXIMUM REACH	
	5.0 ft.		10.0 ft.		15.0 ft.		20.0 ft.		25.0 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		
25.0 ft.											*5300	*5300
20.0 ft.											*5600	5400
15.0 ft.									*5900	*5900	*5700	4600
10.0 ft.							*7000	*7000	*6400	5900	*5900	4200
5.0 ft.					*12,500	12,400	*8800	8100	*7300	5700	*6300	4100
0.0 ft.					*15,300	11,600	*10,400	7700	*8100	5500	*7100	4300
-5.0 ft.					*16,100	11,400	*11,300	7500	*8600	5300	*7700	4900
-10.0 ft.			*14,300	*14,300	*15,400	11,500	*11,100	7400				
-15.0 ft.			*18,500	*18,500	*13,100	11,800	*9100	7700				
-20.0 ft.												
-25.0 ft.												

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

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 application.



*Helping you get more done*

Materials and specifications are subject to change without notice.