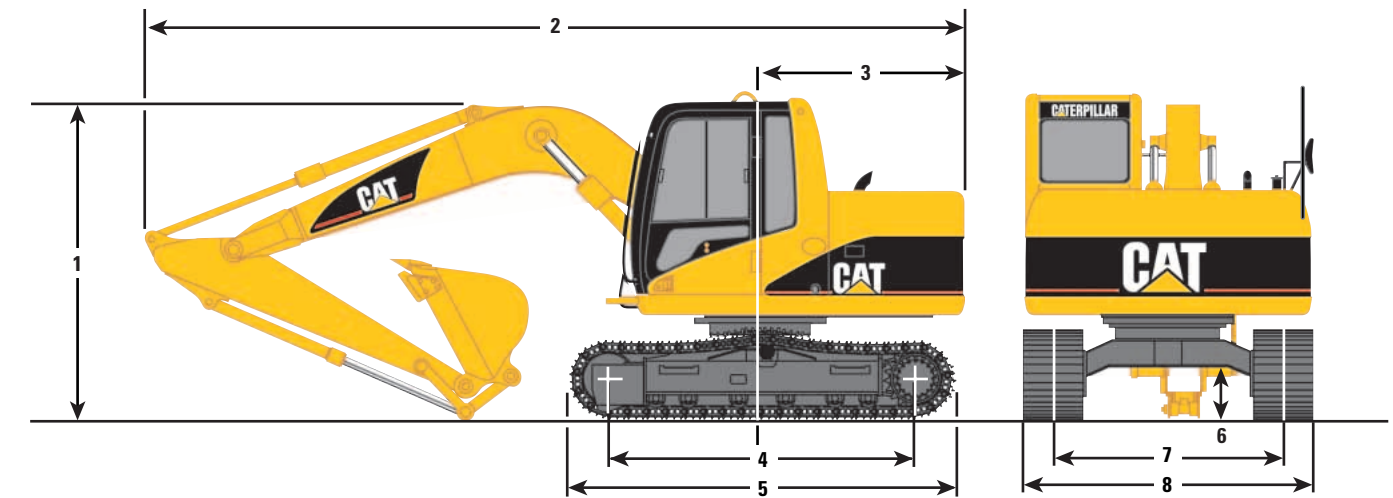


311C Utility Hydraulic Excavator

Dimensions

All dimensions are approximate.



Boom 4.3 m (14'1")			2250 mm (7'5") Stick	2800 mm (9'2") Stick
1	Shipping height		2770 mm (9'1")	2770 mm (9'1")
2	Shipping length		6910 mm (22'8")	6920 mm (22'8")
3	Tail swing radius		1750 mm (5'9")	1750 mm (5'9")
4	Length to centers of rollers		2610 mm (8'7")	2610 mm (8'7")
5	Track length		3320 mm (10'11")	3320 mm (10'11")
6	Ground clearance		445 mm (1'5")	445 mm (1'5")
7	Track gauge		1990 mm (6'6")	1990 mm (6'6")
8	Transport width	with 500 mm (20") 2490 mm (8'2")	with 600 mm (24") 2590 mm (8'6")	with 700 mm (28") 2690 mm (8'10")
				with 770 mm (30") 2760 mm (9'1")

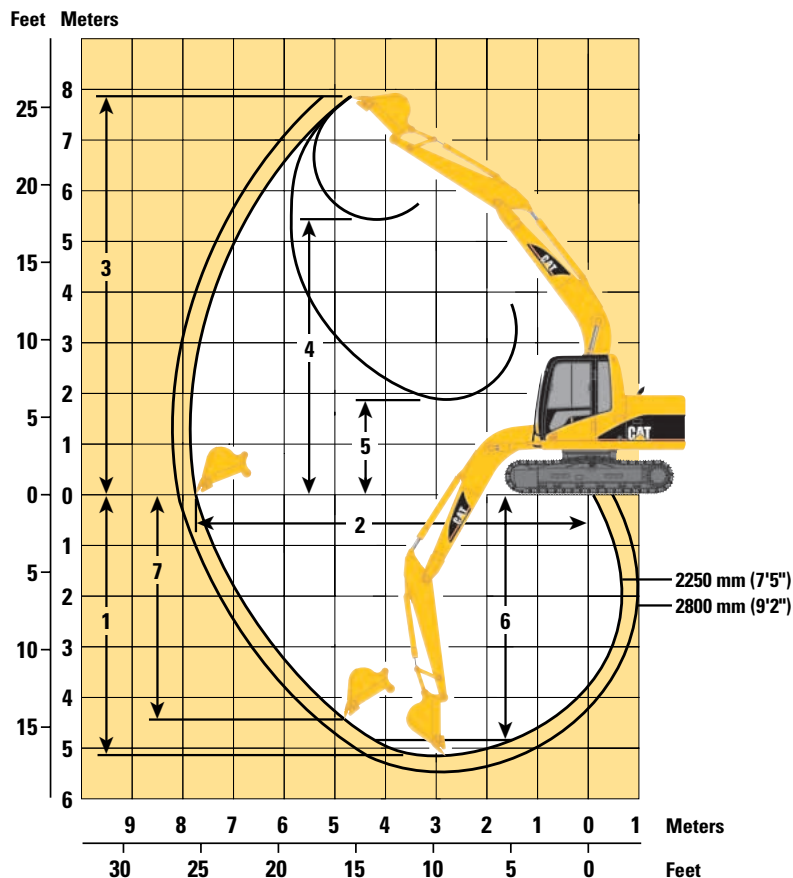
Operating Weights

Caterpillar designed and built track-type undercarriage.

Track width		Operating Weight (medium stick)		Operating Weight (long stick)	
standard	500 mm (20") triple grouser	11 940 kg	(26,325 lb)	11 980 kg	(26,410 lb)
optional	600 mm (24") triple grouser	12 160 kg	(26,810 lb)	12 200 kg	(26,900 lb)
	700 mm (28") triple grouser	12 390 kg	(27,315 lb)	12 430 kg	(27,405 lb)
	770 mm (30") triple grouser	12 510 kg	(27,580 lb)	12 550 kg	(27,670 lb)
Blade: add		830 kg	(1830 lb)		

311C Utility Hydraulic Excavator

Working Ranges



Stick Length	2250 mm (7'5")*	2800 mm (9'2")**
1 Maximum Digging Depth	5040 mm (16'6")	5590 mm (18'4")
2 Maximum Reach at Ground Level	7570 mm (24'10")	8100 mm (26'7")
3 Maximum Cutting Height	7805 mm (25'7")	8125 mm (26'8")
4 Maximum Loading Height	5450 mm (17'11")	5770 mm (18'11")
5 Minimum Loading Height	1880 mm (6'2")	1340 mm (4'5")
6 Maximum Depth Cut for 2440 mm (8') Level Bottom	4815 mm (15'10")	5440 mm (17'10")
7 Maximum Vertical Wall Digging Depth	4425 mm (14'6")	4940 mm (16'2")
Stick Digging Force (SAE)	58 kN (13,000 lb)	50 kN (11,000 lb)
Bucket Digging Force (SAE)	80 kN (18,000 lb)	80 kN (18,000 lb)

* – Measurements shown are for machines equipped with the 0.40 m³ (0.53 yd³) bucket

** – Measurements shown are for machines equipped with the 0.30 m³ (0.39 yd³) bucket

311C Utility Hydraulic Excavator

Buckets

Buckets have tapered sides, angled corner teeth, dual radius curvature, horizontal wear strips, and holes for optional side cutters.

Recommended Maximum Material Density							
Width		Capacity		Medium Stick		Long Stick	
mm	in	m ³	yd ³	kg/m ³	lbs/yd ³	kg/m ³	lbs/yd ³
610	24	0.30	0.39	1800	3000	1800	3000
760	30	0.40	0.53	1800	3000	1800	3000
910	36	0.52	0.68	1800	3000	1500	2500
1070	42	0.63	0.82	1500	2500	1200	2000
1220	48	0.74	0.97	1200	2000	900	1500

Material Densities

Material	kg/m ³ *	lbs/yd ³ **	Material	kg/m ³ *	lbs/yd ³ **
Clay, dry	1480	2500	Gravel, pit run	1930	3250
Clay, wet	1660	2800	Rock/dirt, 50%	1720	2900
Earth, dry	1510	2550	Sand, dry	1420	2400
Earth, wet	1600	2700	Sand, wet	1840	3100
Loam	1250	2100	Sand & Clay	1600	2700
Gravel, dry	1510	2550	Stone, crushed	1600	2700
Gravel, wet	2020	3400	Top soil	950	1600

* - kilograms per loose cubic meter
** - pounds per loose cubic yard
For densities of other materials see Caterpillar Performance Handbook

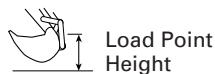
Undercarriage

Caterpillar designed and built track-type undercarriage.

Track width	(with triple grouser shoes)	Ground Pressure (Average)
standard	500 mm (20")	41.0 kPa (5.95 psi)
optional	600 mm (24") triple grouser	34.8 kPa (5.05 psi)
	700 mm (28") triple grouser	30.4 kPa (4.41 psi)
	770 mm (30") triple grouser	27.9 kPa (4.05 psi)

311C Utility Hydraulic Excavator

Reach Boom Lift Capacities



Load at
Maximum Reach



Load Radius
Over Front



Load Radius
Over Side

R2.25 STICK – 2250 mm (7'5")
BUCKET – 0.40 m³ (0.53 yd³)

UNDERCARRIAGE – Standard
SHOES – 500 mm (20") triple grouser

BOOM – 4300 mm (14'1")
BLADE – Up

		1.5 m (5.0 ft)		3.0 m (10.0 ft)		4.5 m (15.0 ft)		6.0 m (20.0 ft)				m ft
												
6.0 m 20.0 ft	kg lb					*2500 *5000	*2500 *5000			*1050 *2350	*1050 *2350	5.87 18.96
4.5 m 15.0 ft	kg lb					*2650 *5750	*2650 *5750			*1000 *2150	*1000 *2150	6.86 22.41
3.0 m 10.0 ft	kg lb			*4150 *8900	*4150 *8900	*3200 *6900	2950 6350	2250 4750	1800 3850	*1000 *2150	*1000 *2150	7.34 24.04
1.5 m 5.0 ft	kg lb			*6200 *13,350	5200 11,150	3450 7450	2750 5900	2150 4600	1750 3700	*1050 *2300	*1050 *2300	7.41 24.31
Ground Line	kg lb			6450 13,800	4850 10,350	3300 7050	2600 5550	2100 4450	1650 3550	*1200 *2650	*1200 *2650	7.10 23.29
-1.5 m -5.0 ft	kg lb	*4900 *10,950	*4900 *10,950	6400 13,600	4750 10,200	3200 6900	2550 5400			*1550 *3350	1550 3350	6.34 20.76
-3.0 m -10.0 ft	kg lb	*8600 *19,350	*8600 *19,350	*6150 *13,200	4850 10,450	3250 7000	2600 5550			*2350 *5250	*2350 *5250	4.91 15.91

* Limited by hydraulic capacity rather than tipping load. The above loads are in compliance with SAE hydraulic excavator lift capacity rating standard J1097. They do not exceed 87% of hydraulic lifting capacity or 75% of tipping capacity. Weight of all lifting accessories must be deducted from the above lifting capacities.

R2.25 STICK – 2250 mm (7'5")
BUCKET – 0.40 m³ (0.53 yd³)

UNDERCARRIAGE – Standard
SHOES – 500 mm (20") triple grouser

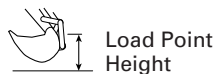
BOOM – 4300 mm (14'1")
BLADE – Down

		1.5 m (5.0 ft)		3.0 m (10.0 ft)		4.5 m (15.0 ft)		6.0 m (20.0 ft)				m ft
												
6.0 m 20.0 ft	kg lb					*2500 *5000	*2500 *5000			*1050 *2350	*1050 *2350	5.87 18.96
4.5 m 15.0 ft	kg lb					*2650 *5750	*2650 *5750			*1000 *2150	*1000 *2150	6.86 22.41
3.0 m 10.0 ft	kg lb			*4150 *8900	*4150 *8900	*3200 *6900	2950 6350	*2850 *6050	1800 3850	*1000 *2150	*1000 *2150	7.34 24.04
1.5 m 5.0 ft	kg lb			*6200 *13,350	5200 11,150	*3950 *8550	2750 5900	*3100 *6750	1750 3700	*1050 *2300	*1050 *2300	7.41 24.31
Ground Line	kg lb			*7250 *15,700	4850 10,350	*4550 *9800	2600 5550	*3350 *7250	1650 3550	*1200 *2650	*1200 *2650	7.10 23.29
-1.5 m -5.0 ft	kg lb	*4900 *10,950	*4900 *10,950	*7150 *15,500	4750 10,200	*4650 *10,050	2550 5400			*1550 *3350	1550 3350	6.34 20.76
-3.0 m -10.0 ft	kg lb	*8600 *19,350	*8600 *19,350	*6150 *13,200	4850 10,450	*3950 *8400	2600 5550			*2350 *5250	*2350 *5250	4.91 15.91

* Limited by hydraulic capacity rather than tipping load. The above loads are in compliance with SAE hydraulic excavator lift capacity rating standard J1097. They do not exceed 87% of hydraulic lifting capacity or 75% of tipping capacity. Weight of all lifting accessories must be deducted from the above lifting capacities.

311C Utility Hydraulic Excavator

Reach Boom Lift Capacities



Load Point
Height



Load at
Maximum Reach



Load Radius
Over Front



Load Radius
Over Side

R2.25 STICK – 2250 mm (7'5")

BUCKET – 0.40 m³ (0.53 yd³)

UNDERCARRIAGE – Standard

SHOES – 700 mm (28") triple grouser

BOOM – 4300 mm (14'1")

BLADE – Up

		1.5 m (5.0 ft)		3.0 m (10.0 ft)		4.5 m (15.0 ft)		6.0 m (20.0 ft)				m ft
6.0 m 20.0 ft	kg lb					*2500 *5000	*2500 *5000			*1050 *2350	*1050 *2350	5.87 18.96
4.5 m 15.0 ft	kg lb					*2650 *5750	*2650 *5750			*1000 *2150	*1000 *2150	6.86 22.41
3.0 m 10.0 ft	kg lb			*4150 *8900	*4150 *8900	*3200 *6900	3050 6600	2300 4950	1850 4000	*1000 *2150	*1000 *2150	7.34 24.04
1.5 m 5.0 ft	kg lb			*6200 *13,350	5400 11,550	3600 7700	2850 6150	2250 4800	1800 3850	*1050 *2300	*1050 *2300	7.41 24.31
Ground Line	kg lb			6700 14,300	5000 10,750	3400 7300	2700 5800	2150 4650	1750 3700	*1200 *2650	*1200 *2650	7.10 23.29
-1.5 m -5.0 ft	kg lb	*4900 *10,950	*4900 *10,950	6600 14,150	4950 10,600	3350 7150	2650 5650			*1550 *3350	*1550 *3350	6.34 20.76
-3.0 m -10.0 ft	kg lb	*8600 *19,350	*8600 *19,350	*6150 *13,200	5050 10,800	3400 7300	2700 5750			*2350 *5250	*2350 *5250	4.91 15.91

* Limited by hydraulic capacity rather than tipping load. The above loads are in compliance with SAE hydraulic excavator lift capacity rating standard J1097. They do not exceed 87% of hydraulic lifting capacity or 75% of tipping capacity. Weight of all lifting accessories must be deducted from the above lifting capacities.

R2.25 STICK – 2250 mm (7'5")

BUCKET – 0.40 m³ (0.53 yd³)

UNDERCARRIAGE – Standard

SHOES – 700 mm (28") triple grouser

BOOM – 4300 mm (14'1")

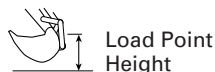
BLADE – Down

		1.5 m (5.0 ft)		3.0 m (10.0 ft)		4.5 m (15.0 ft)		6.0 m (20.0 ft)				m ft
6.0 m 20.0 ft	kg lb					*2500 *5000	*2500 *5000			*1050 *2350	*1050 *2350	5.87 18.96
4.5 m 15.0 ft	kg lb					*2650 *5750	*2650 *5750			*1000 *2150	*1000 *2150	6.86 22.41
3.0 m 10.0 ft	kg lb			*4150 *8900	*4150 *8900	*3200 *6900	3050 6600	*2850 *6050	1850 4000	*1000 *2150	*1000 *2150	7.34 24.04
1.5 m 5.0 ft	kg lb			*6200 *13,350	5400 11,550	*3950 *8550	2850 6150	*3100 *6750	1800 3850	*1050 *2300	*1050 *2300	7.41 24.31
Ground Line	kg lb			*7250 *15,700	5000 10,750	*4550 *9800	2700 5800	*3350 *7250	1750 3700	*1200 *2650	*1200 *2650	7.10 23.29
-1.5 m -5.0 ft	kg lb	*4900 *10,950	*4900 *10,950	*7150 *15,500	4950 10,600	*4650 *10,050	2650 5650			*1550 *3350	*1550 *3350	6.34 20.76
-3.0 m -10.0 ft	kg lb	*8600 *19,350	*8600 *19,350	*6150 *13,200	5050 10,800	*3950 *8400	2700 5750			*2350 *5250	*2350 *5250	4.91 15.91

* Limited by hydraulic capacity rather than tipping load. The above loads are in compliance with SAE hydraulic excavator lift capacity rating standard J1097. They do not exceed 87% of hydraulic lifting capacity or 75% of tipping capacity. Weight of all lifting accessories must be deducted from the above lifting capacities.

311C Utility Hydraulic Excavator

Reach Boom Lift Capacities



Load Point
Height



Load at
Maximum Reach



Load Radius
Over Front



Load Radius
Over Side

R2.8 STICK – 2800 mm (9'2")

BUCKET – 0.30 m³ (0.39 yd³)

UNDERCARRIAGE – Standard

SHOES – 500 mm (20") triple grouser

BOOM – 4300 mm (14'1")

BLADE – Up

		1.5 m (5.0 ft)		3.0 m (10.0 ft)		4.5 m (15.0 ft)		6.0 m (20.0 ft)				m ft
												
6.0 m 20.0 ft	kg lb									*850 *1900	*850 *1900	6.55 21.22
4.5 m 15.0 ft	kg lb							*2100 *4200	1900 4000	*800 *1750	*800 *1750	7.43 24.28
3.0 m 10.0 ft	kg lb					*2800 *6050	*2800 *6050	2300 4850	1850 3950	*800 *1750	*800 *1750	7.86 25.77
1.5 m 5.0 ft	kg lb			*5450 *11,750	5400 11,550	3550 7550	2800 6050	2200 4650	1750 3750	*850 *1850	*850 *1850	7.93 26.02
Ground Line	kg lb			6550 14,000	4900 10,500	3300 7100	2600 5600	2100 4450	1650 3550	*1000 *2100	*1000 *2100	7.65 25.09
-1.5 m -5.0 ft	kg lb	*4250 *9500	*4250 *9500	6350 13,550	4750 10,150	3200 6850	2500 5350	2050 4350	1600 3450	*1200 *2650	*1200 *2650	6.97 22.81
-3.0 m -10.0 ft	kg lb	*7000 *15,700	*7000 *15,700	6400 13,650	4750 10,200	3200 6850	2500 5400			*1750 *3900	*1750 *3900	5.72 18.60
-4.5 m -15.0 ft	kg lb			*4600	*4600					*3400	*3400	3.78

* Limited by hydraulic capacity rather than tipping load. The above loads are in compliance with SAE hydraulic excavator lift capacity rating standard J1097. They do not exceed 87% of hydraulic lifting capacity or 75% of tipping capacity. Weight of all lifting accessories must be deducted from the above lifting capacities.

R2.8 STICK – 2800 mm (9'2")

BUCKET – 0.30 m³ (0.39 yd³)

UNDERCARRIAGE – Standard

SHOES – 500 mm (20") triple grouser

BOOM – 4300 mm (14'1")

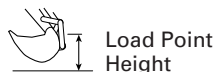
BLADE – Down

		1.5 m (5.0 ft)		3.0 m (10.0 ft)		4.5 m (15.0 ft)		6.0 m (20.0 ft)				m ft
												
6.0 m 20.0 ft	kg lb									*850 *1900	*850 *1900	6.55 21.22
4.5 m 15.0 ft	kg lb							*2100 *4200	1900 4000	*800 *1750	*800 *1750	7.43 24.28
3.0 m 10.0 ft	kg lb					*2800 *6050	*2800 *6050	*2550 *5550	1850 3950	*800 *1750	*800 *1750	7.86 25.77
1.5 m 5.0 ft	kg lb			*5450 *11,750	5400 11,550	*3650 *7850	2800 6050	*2900 *6300	1750 3750	*850 *1850	*850 *1850	7.93 26.02
Ground Line	kg lb			*6950 *15,050	4900 10,500	*4350 *9400	2600 5600	*3250 *7000	1650 3550	*1000 *2100	*1000 *2100	7.55 25.09
-1.5 m -5.0 ft	kg lb	*4250 *9500	*4250 *9500	*7300 *15,750	4750 10,150	*4650 *10,050	2500 5350	*3350 *7150	1600 3450	*1200 *2650	*1200 *2650	6.97 22.81
-3.0 m -10.0 ft	kg lb	*7000 *15,700	*7000 *15,700	*6650 *14,350	4750 10,200	*4300 *9250	2500 5400			*1750 *3900	*1750 *3900	5.72 18.60
-4.5 m -15.0 ft	kg lb			*4600	*4600					*3400	*3400	3.78

* Limited by hydraulic capacity rather than tipping load. The above loads are in compliance with SAE hydraulic excavator lift capacity rating standard J1097. They do not exceed 87% of hydraulic lifting capacity or 75% of tipping capacity. Weight of all lifting accessories must be deducted from the above lifting capacities.

311C Utility Hydraulic Excavator

Reach Boom Lift Capacities



Load Point
Height



Load at
Maximum Reach



Load Radius
Over Front



Load Radius
Over Side

R2.8 STICK – 2800 mm (9'2")

BUCKET – 0.30 m³ (0.39 yd³)

UNDERCARRIAGE – Standard

SHOES – 700 mm (28") triple grouser

BOOM – 4300 mm (14'1")

BLADE – Up

		1.5 m (5.0 ft)		3.0 m (10.0 ft)		4.5 m (15.0 ft)		6.0 m (20.0 ft)				m ft
												
6.0 m 20.0 ft	kg lb									*850 *1900	*850 *1900	6.55 21.22
4.5 m 15.0 ft	kg lb							*2100 *4200	1950 4150	*800 *1750	*800 *1750	7.43 24.28
3.0 m 10.0 ft	kg lb					*2800 *6050	*2800 *6050	2350 5050	1900 4100	*800 *1750	*800 *1750	7.86 25.77
1.5 m 5.0 ft	kg lb			*5450 *11,750	*5450 *11,750	*3650 7850	2900 6250	2250 4850	1850 3900	*850 *1850	*850 *1850	7.93 26.02
Ground Line	kg lb			6800 14,500	5100 10,900	3450 7350	2700 5800	2200 4650	1750 3700	*1000 *2100	*1000 *2100	7.65 25.09
-1.5 m -5.0 ft	kg lb	*4250 *9500	*4250 *9500	6600 14,050	4900 10,550	3300 7100	2600 5600	2150 4550	1700 3600	*1200 *2650	*1200 *2650	6.97 22.81
-3.0 m -10.0 ft	kg lb	*7000 *15,700	*7000 *15,700	6650 14,150	4950 10,600	3350 7150	2600 5600			*1750 *3900	*1750 *3900	5.72 18.60
-4.5 m -15.0 ft	kg lb			*4600	*4600					*3400	*3400	3.78

* Limited by hydraulic capacity rather than tipping load. The above loads are in compliance with SAE hydraulic excavator lift capacity rating standard J1097. They do not exceed 87% of hydraulic lifting capacity or 75% of tipping capacity. Weight of all lifting accessories must be deducted from the above lifting capacities.

R2.8 STICK – 2800 mm (9'2")

BUCKET – 0.30 m³ (0.39 yd³)

UNDERCARRIAGE – Standard

SHOES – 700 mm (28") triple grouser

BOOM – 4300 mm (14'1")

BLADE – Down

		1.5 m (5.0 ft)		3.0 m (10.0 ft)		4.5 m (15.0 ft)		6.0 m (20.0 ft)				m ft
												
6.0 m 20.0 ft	kg lb									*850 *1900	*850 *1900	6.55 21.22
4.5 m 15.0 ft	kg lb							*2100 *4200	1950 4150	*800 *1750	*800 *1750	7.43 24.28
3.0 m 10.0 ft	kg lb					*2800 *6050	*2800 *6050	*2550 *5550	1900 4100	*800 *1750	*800 *1750	7.86 25.77
1.5 m 5.0 ft	kg lb			*5450 *11,750	*5450 *11,750	*3650 7850	2900 6250	*2900 *6300	1850 3900	*850 *1850	*850 *1850	7.93 26.02
Ground Line	kg lb			*6950 *15,050	5100 10,900	*4350 *9400	2700 5800	*3250 *7000	1750 3700	*1000 *2100	*1000 *2100	7.65 25.09
-1.5 m -5.0 ft	kg lb	*4250 *9500	*4250 *9500	*7300 *15,750	4900 10,550	*4650 *10,050	2600 5600	*3350 *7150	1700 3600	*1200 *2650	*1200 *2650	6.97 22.81
-3.0 m -10.0 ft	kg lb	*7000 *15,700	*7000 *15,700	*6650 *14,350	4950 10,600	*4300 *9250	2600 5600			*1750 *3900	*1750 *3900	5.72 18.60
-4.5 m -15.0 ft	kg lb			*4600	*4600					*3400	*3400	3.78

* Limited by hydraulic capacity rather than tipping load. The above loads are in compliance with SAE hydraulic excavator lift capacity rating standard J1097. They do not exceed 87% of hydraulic lifting capacity or 75% of tipping capacity. Weight of all lifting accessories must be deducted from the above lifting capacities.