322B L
Hydraulic Excavator

Operating weight		
5.9 m (19'4") boom 3.6 m (11'10") stick		
322B L (long) 800 mm (32") track	23 860 kg	52,600 lb

Travel Speed (maximum)	5.5 km/h	3.4 mph
Cat® 3116TA Diesel Engine		
Gross	120 kW	161 hp
Flywheel power	114 kW	153 hp

Hydraulics

Caterpillar hydraulics deliver power and control to keep material moving at high volume.

Dramatically increased control responsiveness aids operation and improves cycle time.

- Control movements better matched to hydraulic action for improved operator performance.
- Improved swing dampening restrains drift and improves positioning during finishing and lifting applications, reducing operator fatigue.

Full-time nine percent increase in hydraulic relief pressure increases boom, stick, and bucket forces for better productivity, an average of 11 percent higher lift capacity over the front, and a wider range of workable material.

Hydraulic cross-sensing system improves productivity with faster implement speeds and quicker, stronger pivot turns.

- 100 percent of engine horsepower deliverable as hydraulic power.
- Full power to a single motor for strong, fast turns. Balanced power to two pumps for straight travel.

Boom regeneration circuit diverts oil to lower the boom This allows pumps to have all pressure and flow available for other circuits.

Fine swing control cushions swing start and stop for better implement control.

Pump flow decreases when controls are in neutral for reduced fuel consumption and sound.

Auxiliary hydraulic valve is standard on the 322B L for use with optional hydraulic circuits.

Auxiliary hydraulic flow control system option provides up to four programmable flow presets to precisely match hydraulic tool requirements (i.e., hammers, shears, processors, brush cutters, etc.).

Hydraulic cylinder snubbers at rod-end of boom cylinders and both ends of stick cylinders cushion shocks, reduce sound and increase cylinder life.

Cat's XT hose and reusable couplings meet the critical flexibility and strength demands of the 322B L.

- O-ring face seal couplings provide positive sealing for reliable, leak-free connections.
- Hydraulic tank located closer to pumps for increased hydraulic efficiency.

Standard Equipment

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

- Alternator, 52-amp
- Automatic engine speed control
- Automatic swing brake
- Auxiliary hydraulic valve and auxiliary pump drive location
- Cab
  - Air conditioner, heater, defroster with automatic climate control
  - Ash tray with cigar lighter
  - Coat hook
  - Drink holder
  - Floor mat
  - Horn
  - Instrument panel with gauges
    - Gauges and indicator lights for fuel level, coolant temperature and hydraulic oil temperature
  - Light, interior
  - Literature compartment
  - Low fuel indicator light
  - Joysticks, pilot-operated
  - Positive filtered ventilation
  - Radio mounting
  - Seat belt, retractable
  - Seat, suspension, fully adjustable
  - Skylight, stationary
  - Storage compartment suitable for a lunch box cooler
  - Travel control pedals
    - Two-speed auto shift travel
  - Windshield wiper and washer
- Control, fine swing
- Counterweight (4460 kg, 9830 lb)
- Door locks and cap locks with Caterpillar one-key security system
- Hydraulic neutralizer lever for all controls
- Light, working
  - Frame mounted, one
  - Cab mounted, two
- Mirrors, frame and cab
- Muffler
- Pre-start monitoring system
- Power Mode Selector
- Power train
  - CAT 3116TA Diesel engine with 24-volt electric starting and air intake heater
- Water separator
- Work Mode Selector
- Undercarriage
  - Hydraulic track adjusters
  - Track-type sealed undercarriage
  - Idler and center section track guides
  - 322B L 800 mm (32") triple-grouser shoes

Optional Equipment

Optional equipment may vary. Consult your Caterpillar dealer for specifics.

- Air conditioner, with automatic climate control, omission
- Alarm, travel (required in U.S.)
- Booms (includes lights, both sides):
  - Reach 5.9 m (19'4")
  - Mass excavation 5.3 m (17'5")
- Buckets
- Bucket linkage:
  - B family
  - D family
  - S family
- Bucket sidecutters and tips
- Check valves
  - Boom lowering
- Cooling system, high ambient
- Easy shift control pattern changer
- Heater, for air conditioner removal
- Guards:
  - Falling Object, for cab
  - Full length track guiding
  - Sprocket guiding
  - Heavy-duty, bottom
  - Vandalism protection
  - Windshield Guard (mesh)
- Hydraulic arrangements, basic auxiliary:
  - one-way/two-way, includes two-pump flow
- Hydraulic lines, auxiliary for
  - Reach Boom and stick
- Hydraulic tank suction line shut-off valve
- Quick coupler
- Rubber bumper side impact protection
- Starting aid, cold weather
- Starting aid, ether
- Straight travel third pedal option
- Sticks:
  - Reach 5.9 m (19'4") Boom:
    - 3600 mm (11'10") R3.6B
    - 2950 mm (9'8") R2.9S
    - 2500 mm (8'2") R2.5S
  - Mass excavation 5.3 m (17'5")
    - Boom:
      - 2500 mm (8'2") M2.5D
- Sun screen
- Track:
  - 600 mm (24") double-grouser shoes
  - 700 mm (28") double-grouser shoes

Standard Equipment

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

- Alternator, 52-amp
- Automatic engine speed control
- Automatic swing brake
- Auxiliary hydraulic valve and auxiliary pump drive location
- Cab
  - Air conditioner, heater, defroster with automatic climate control
  - Ash tray with cigar lighter
  - Coat hook
  - Drink holder
  - Floor mat
  - Horn
  - Instrument panel with gauges
    - Gauges and indicator lights for fuel level, coolant temperature and hydraulic oil temperature
  - Light, interior
  - Literature compartment
  - Low fuel indicator light
  - Joysticks, pilot-operated
  - Positive filtered ventilation
  - Radio mounting
  - Seat belt, retractable
  - Seat, suspension, fully adjustable
  - Skylight, stationary
  - Storage compartment suitable for a lunch box cooler
  - Travel control pedals
    - Two-speed auto shift travel
  - Windshield wiper and washer
- Control, fine swing
- Counterweight (4460 kg, 9830 lb)
- Door locks and cap locks with Caterpillar one-key security system
- Hydraulic neutralizer lever for all controls
- Light, working
  - Frame mounted, one
  - Cab mounted, two
- Mirrors, frame and cab
- Muffler
- Pre-start monitoring system
- Power Mode Selector
- Power train
  - CAT 3116TA Diesel engine with 24-volt electric starting and air intake heater
- Water separator
- Work Mode Selector
- Undercarriage
  - Hydraulic track adjusters
  - Track-type sealed undercarriage
  - Idler and center section track guides
  - 322B L 800 mm (32") triple-grouser shoes

Optional Equipment

Optional equipment may vary. Consult your Caterpillar dealer for specifics.

- Air conditioner, with automatic climate control, omission
- Alarm, travel (required in U.S.)
- Booms (includes lights, both sides):
  - Reach 5.9 m (19'4")
  - Mass excavation 5.3 m (17'5")
- Buckets
- Bucket linkage:
  - B family
  - D family
  - S family
- Bucket sidecutters and tips
- Check valves
  - Boom lowering
- Cooling system, high ambient
- Easy shift control pattern changer
- Heater, for air conditioner removal
- Guards:
  - Falling Object, for cab
  - Full length track guiding
  - Sprocket guiding
  - Heavy-duty, bottom
  - Vandalism protection
  - Windshield Guard (mesh)
- Hydraulic arrangements, basic auxiliary:
  - one-way/two-way, includes two-pump flow
- Hydraulic lines, auxiliary for Reach Boom and stick
- Hydraulic tank suction line shut-off valve
- Quick coupler
- Rubber bumper side impact protection
- Starting aid, cold weather
- Starting aid, ether
- Straight travel third pedal option
- Sticks:
  - Reach 5.9 m (19'4") Boom:
    - 3600 mm (11'10") R3.6B
    - 2950 mm (9'8") R2.9S
    - 2500 mm (8'2") R2.5S
  - Mass excavation 5.3 m (17'5")
    - Boom:
      - 2500 mm (8'2") M2.5D
- Sun screen
- Track:
  - 600 mm (24") double-grouser shoes
  - 700 mm (28") double-grouser shoes

322B Bucket Specifications and Compatibility

	Capacity*		Width		Tip Radius		Weight		Teeth	Reach			Mass
										3.6B	2.95S	2.5S	2.5D
	m^3	yd^3	mm	in	mm	in	kg	lb	Qty	(11'10")	(9'7")	(8'2")	(8'2")
D Buckets for Mass Ex. Linkage													
Heavy-Duty (HD)	0.7	1.0	775	30	1764	69.4	875	1,929	3	-	-	-	●
	0.9	1.25	925	36	1764	69.4	968	2,134	3	-	-	-	●
	1.2	1.5	1098	42	1764	69.4	1079	2,379	4	-	-	-	●
	1.4	1.88	1246	48	1764	69.4	1206	2,659	5	-	-	-	●
	1.5	2.0	1440	57	1695	66.7	1368	3,016	5	-	-	-	▼
	1.6	2.12	1400	55	1764	69.4	1306	2,880	5	-	-	-	▼
	1.8	2.5	1540	60	1764	69.4	1407	3,102	6	-	-	-	○
	2.0	2.75	1695	66	1764	69.4	1493	3,292	6	-	-	-	∴
	2.2	3.0	1820	72	1764	69.4	1620	3,572	7	-	-	-	∴
General Purpose (GP)	0.8	1.12	775	30	1854	73.0	953	2,101	3	-	-	-	●
	1.1	1.5	925	36	1854	73.0	1043	2,300	3	-	-	-	●
	1.4	1.88	1098	42	1854	73.0	1122	2,474	5	-	-	-	●
	1.7	2.25	1246	48	1854	73.0	1202	2,650	5	-	-	-	▼
	2.0	2.62	1400	55	1854	73.0	1315	2,900	5	-	-	-	○
	2.2	3.0	1540	60	1854	73.0	1400	3,087	6	-	-	-	∴
Heavy-Duty Rock (HDR)	1.2	1.5	1098	42	1764	69.4	1293	2,851	4	-	-	-	●
	1.4	1.88	1246	48	1764	69.4	1436	3,166	5	-	-	-	▼
	1.6	2.12	1400	55	1764	69.4	1552	3,422	5	-	-	-	○
Ditch Cleaning (DC)	1.7	2.25	1676	66	1410	55.5	1188	2,620	-	-	-	-	●
	1.8	2.38	1829	72	1410	55.5	1247	2,750	-	-	-	-	○
Rock Ripping (RR)	0.7	0.88	900	35	1746	69.0	1123	2471	5	-	-	-	●

Assumptions for maximum material density rating:
1. Front linkage fully extended at ground line
2. Bucket curled
3. 100% bucket fill factor

* Based on SAE J296, some calculations of capacity specs fall on borderlines. Rounding may allow two buckets to have the same English rating, but different metric ratings.

● 2,000 kg/m³ (3,400 lbs/yd³) max material density
▼ 1,800 kg/m³ (3,000 lbs/yd³) max material density
○ 1,500 kg/m³ (2,500 lbs/yd³) max material density
∴ 1,200 kg/m³ (2,000 lbs/yd³) max material density
— Not Available

322B Bucket Specifications and Compatibility

	Capacity*		Width		Tip Radius		Weight		Teeth	Reach			Mass
										3.6B	2.95S	2.5S	2.5D
	m³	yd³	mm	in	mm	in	kg	lb	Qty	(11'10")	(9'7")	(8'2")	(8'2")
B Buckets for Reach Linkage													
Heavy-Duty (HD)	0.5	0.62	625	24	1563	61.5	578	1,274	3	●	–	–	–
	0.6	0.75	775	30	1563	61.5	656	1,446	4	●	–	–	–
	0.8	1.0	932	36	1563	61.5	748	1,649	5	●	–	–	–
	1.0	1.25	1082	42	1563	61.5	811	1,788	5	●	–	–	–
	1.2	1.5	1230	48	1551	61.0	910	2,007	6	◒	–	–	–
	1.4	1.75	1377	54	1551	61.0	969	2,137	7	○	–	–	–
	1.5	2.0	1507	60	1551	61.0	1025	2,260	7	○	–	–	–
General Purpose (GP)	0.7	0.88	775	30	1626	64.0	665	1,466	4	●	–	–	–
	0.9	1.12	932	36	1626	64.0	741	1,634	5	●	–	–	–
	1.1	1.5	1082	42	1626	64.0	777	1,713	5	●	–	–	–
	1.3	1.75	1230	48	1626	64.0	906	1,998	6	○	–	–	–
Heavy-Duty Rock (HDR)	0.6	0.75	775	30	1563	61.5	759	1,674	4	●	–	–	–
	0.8	1.0	932	36	1563	61.5	863	1,903	5	●	–	–	–
	1.0	1.25	1082	42	1563	61.5	949	2,093	5	●	–	–	–
Ditch Cleaning (DC)	0.9	1.12	1422	60	1143	45.0	681	1,502	–	●	–	–	–
	1.1	1.5	1727	72	1143	45.0	786	1,733	–	●	–	–	–
S Buckets for Reach Linkage													
Heavy-Duty (HD)	0.5	0.62	625	24	1551	61.0	609	1,343	3	–	●	●	–
	0.7	0.88	775	30	1638	64.5	781	1,722	3	–	●	●	–
	0.9	1.25	948	36	1638	64.5	876	1,932	4	–	●	●	–
	1.1	1.5	1098	42	1638	64.5	956	2,108	5	–	●	●	–
	1.2	1.5	1378	54	1518	60.0	1088	2,399	5	–	●	●	–
	1.3	1.75	1248	48	1638	64.5	1034	2,280	5	–	◒	●	–
	1.5	2.0	1395	54	1638	64.5	1114	2,456	6	–	○	◒	–
	1.7	2.25	1522	60	1638	64.5	1189	2,622	7	–	○	○	–
General Purpose (GP)	0.6	0.75	625	24	1778	70.0	691	1,524	3	–	●	●	–
	0.8	1.12	775	30	1778	70.0	807	1,779	3	–	●	●	–
	1.1	1.5	948	36	1778	70.0	909	2,004	5	–	●	●	–
	1.3	1.75	1098	42	1778	70.0	966	2,130	5	–	●	●	–
	1.6	2.12	1248	48	1778	70.0	1052	2,320	6	–	○	◒	–
	1.9	2.5	1395	54	1778	70.0	1138	2,509	7	–	∴	○	–
Heavy-Duty Rock (HDR)	0.9	1.25	948	36	1638	64.5	988	2,179	4	–	●	●	–
	1.1	1.5	1098	42	1638	64.5	1084	2,390	5	–	●	●	–
	1.3	1.75	1248	48	1638	64.5	1165	2,569	5	–	◒	●	–
Ditch Cleaning (DC)	1.0	1.38	1575	60	1130	44.5	739	1,629	–	–	●	●	–
	1.2	1.62	1829	72	1130	44.5	857	1,890	–	–	●	●	–

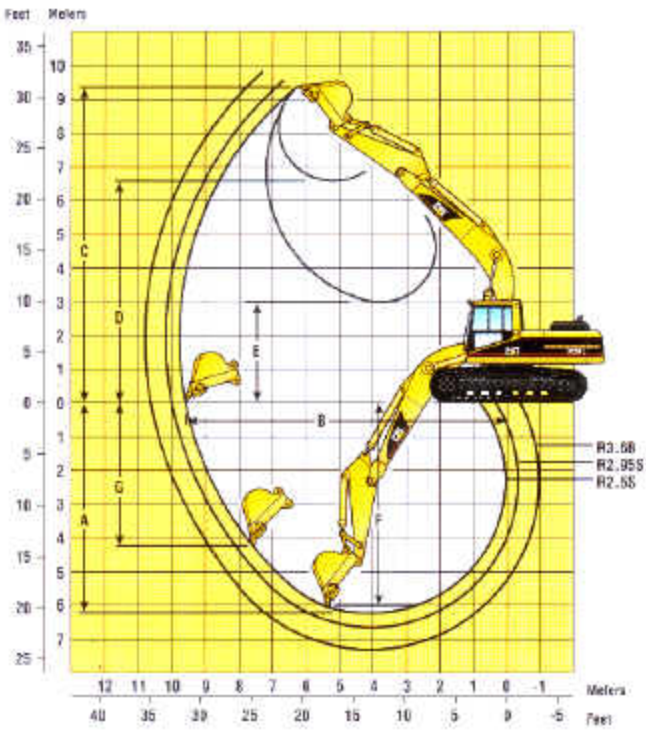
Assumptions for maximum material density rating:
1. Front linkage fully extended at ground line
2. Bucket curled
3. 100% bucket fill factor

* Based on SAE J296, some calculations of capacity specs fall on borderlines. Rounding may allow two buckets to have the same English rating, but different metric ratings.

● 2,000 kg/m³ (3,400 lbs/yd³) max material density
◒ 1,800 kg/m³ (3,000 lbs/yd³) max material density
○ 1,500 kg/m³ (2,500 lbs/yd³) max material density
∴ 1,200 kg/m³ (2,000 lbs/yd³) max material density
– Not Available

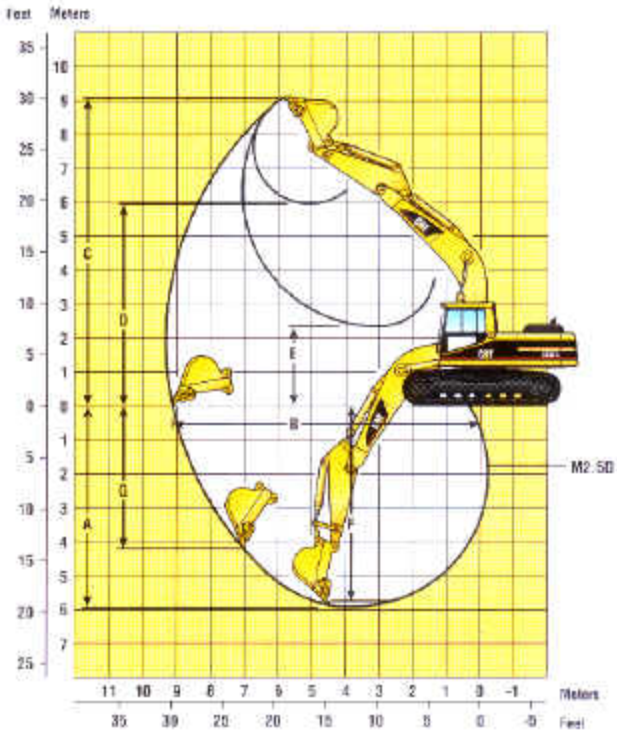
Reach Excavator Working Ranges

Reach (R) Boom configuration



Mass Excavator Working Ranges

Mass (M) Boom configuration



Stick Length	R3.6B (11'10")*	R2.95S (9'8")**	R2.5S (8'2")**	M2.5D (8'2")***
A Maximum Digging Depth	7.34 m (24'1")	6.66 m (21'10")	6.21 m (20'5")	5.95 m (19'6")
B Maximum Reach at Ground Level	10.60 m (34'9")	9.97 m (32'9")	9.56 m (31'4")	9.15 m (30'0")
C Maximum Cutting Height	9.82 m (32'3")	9.56 m (31'4")	9.36 m (30'9")	9.07 m (29'9")
D Maximum Loading Height	7.04 m (23'1")	6.78 m (22'3")	6.58 m (21'7")	5.94 m (19'6")
E Minimum Loading Height	1.87 m (6'2")	2.55 m (8'4")	3.00 m (9'10")	2.33 m (7'8")
F Maximum Depth Cut for 2440 mm (8') Level Bottom	7.18 m (23'7")	6.48 m (21'3")	6.00 m (19'8")	5.75 m (18'11")
G Maximum Vertical Wall Digging Depth	5.09 m (16'8")	4.65 m (15'3")	4.23 m (13'11")	4.19 m (13'9")
Bucket Digging Force (SAE)	130 kN (29,200 lb)	162 kN (36,500 lb)	161 kN (36,300 lb)	195 kN (43,800 lb)
Stick Digging Force (SAE)	102 kN (22,900 lb)	118 kN (26,400 lb)	137 kN (30,900 lb)	132 kN (29,600 lb)

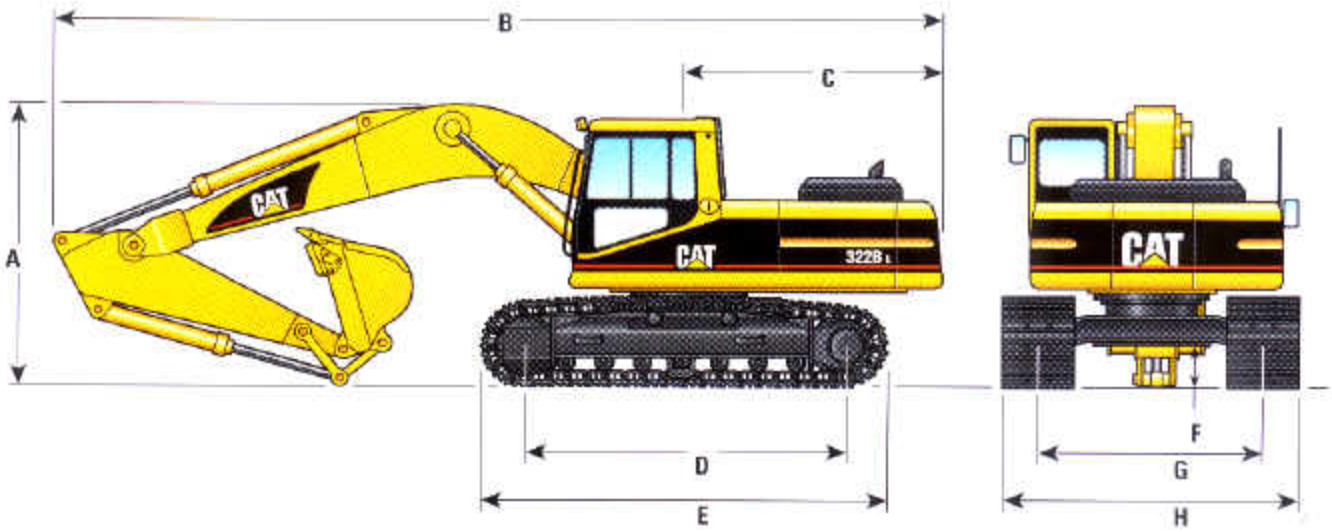
* - Measurements shown are for machines equipped with the 1.2 m³ (1.6 yd³) bucket

** - Measurements shown are for machines equipped with the 1.2 m³ (1.5 yd³) bucket

*** - Measurements shown are for machines equipped with the 1.5 m³ (2.0 yd³) bucket

Dimensions and Weights

All dimensions are approximate.



Reach Boom 5.9 m (19'4")	R3.6B m (11'10") Stick	R2.95S m (9'8") Stick	R2.5S m (8'2") Stick
A Shipping height	3410 mm (11'2")	3120 mm (10'3")	3280 mm (10'9")
B Shipping length	9970 mm (32'8")	9960 mm (32'8")	10 010 mm (32'10")
C Tail swing radius (Reach and Mass Boom)	2900 mm (9'6")	2900 mm (9'6")	2900 mm (9'6")
D Length to centers of rollers (Reach and Mass Boom) Long	3830 mm (12'7")	3830 mm (12'7")	3830 mm (12'7")
E Track length (Reach and Mass Boom) Long	4640 mm (15'3")	4640 mm (15'3")	4640 mm (15'3")
F Ground clearance (Reach and Mass Boom)	470 mm (1'7")	470 mm (1'7")	470 mm (1'7")
G Track gauge (Reach and Mass Boom) Long	2590 mm (8'6")	2590 mm (8'6")	2590 mm (8'6")
H Transport width (Reach and Mass Boom)	**800 mm (32") shoes**	**600 mm (24") shoes**	**700 mm (28") shoes**
Long	3390 mm (11'1")	3190 mm (10'6")	3290 mm (10'10")

Mass Boom 5.3 m (17'5")	M2.5D m (8'2") Stick
A Shipping height	3450 mm (11'4")
B Shipping length	9400 mm (30'10")

Operating Weight	600 mm (24") Shoes		700 mm (28") Shoes		800 mm (32") Shoes	
Reach Boom 5.9 m (19'4")	kg	lb	kg	lb	kg	lb
Sticks:						
3.6 m (11'2")	23 570	51,900	23 810	52,400	23 860	52,600
2.95 m (9'7")	23 440	51,600	23 670	52,100	23 730	52,300
2.5 m (8'2")	23 470	51,700	23 700	52,200	23 760	52,300
Mass Boom 5.3 m (17'5")						
Sticks:						
2.5 m (8'2")	24 060	53,000	24 300	53,500	24 350	53,600
Ground Pressure: Reach Boom, 2.95 m (9'7") Stick						
	46.5 kPa	6.8 psi	40.2 kPa	5.8 psi	35.3 kPa	5.1 psi

Steering

Two rocker pedals with detachable hand levers control steering and travel functions.

Controls

- controls are pilot-operated for reduced efforts
- left pedal and lever control left track; right pedal and lever control right track
- when idlers are in front, pushing both pedals or levers forward moves the excavator straight ahead
- when the idlers are in front, rocking both pedals or pulling both levers backward moves the excavator straight back
- moving one pedal or lever more than the other, either forward or backward, results in a gradual turn
- moving one pedal or lever forward and the other pedal or lever backward counter-rotates the tracks for spot turns
- optional straight travel third pedal drives both tracks forward or reverse at the same speed. Steering adjustments can be made by simultaneously pressing right or left pedal.

Brakes

Meets the following standards: SAE J1026 APR90.

Service and parking brake features

- wet, multiple-disc brakes are used on the final drive input shafts
- spring-applied, hydraulically released
- actuating a travel control simultaneously releases the brakes
- when the controls are released, the brakes automatically apply

Track

Caterpillar designed and built track-type undercarriage.

Track width

322B L	800 mm (32") triple grouser
Optional	
	600 mm (24") double grouser
	700 mm (28") double grouser
Ground clearance	470 mm (17")

Swing Mechanism

Hydrostatic with independent planetary reduction.

Ratings

Swing Torque	70 kN·m (51,850 lb ft)
Maximum Swing Speed	10.0 rpm

Features

- the swing mechanism is driven by a pinion gear sealed in a grease bath through a double-reduction planetary gear set.

Service Refill Capacities

	L	U.S. Gallons
Fuel Tank	340	90
Cooling System	31.5	8.3
Engine Oil	21.5	5.7
Swing Drive	10	2.6
Final Drive (each)	10	2.6
Hydraulic System (including tank)	265	70
Hydraulic Tank	141	37

Implement Controls

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

Boom/Bucket Controls (Right Joystick)

- move forward and backward to lower and raise boom
- move left and right to control bucket curl and dump
- button on top is one-touch low idle

Stick/Swing Controls (Left Joystick)

- move forward and backward to move stick out and in
- move left and right to control direction of swing
- button on top controls horn

Other Features

- oblique movement of either lever operates two functions simultaneously
- manually applied lever on left console cuts off pilot pressure for joysticks and travel controls and electrical power for engine starting circuit
- optional hand control pattern changer allows easy change-over between SAE and backhoe loader patterns

Major Component Weights

Booms: including lines, boom cylinders, stick cylinders

	kg	lb
Reach	2280	5020
Mass	2350	5180

Sticks: including bucket cylinder and bucket linkage

	kg	lb
R3.6B	1230	2710
R2.95S	1130	2480
R2.5S	1160	2550
M2.5D	1440	3170
Counterweight	4460	9830

Engine

Caterpillar four-cycle 3116TA quad turbo-charged and aftercooled, diesel engine.

Ratings at 1950 rpm*	kW	hp
Gross power	120	161
Net power	114	153

The following ratings apply at 1950 rpm when tested under the specified standard conditions for the specified standard:

Net power	kW	hp	PS
Caterpillar	114	153	---
ISO 9249	114	153	---
SAE J1349	114	153	---
EEC 80/1269	114	153	---
DIN 70020	---	---	158.5

Dimensions

Bore	105 mm	4.13 in
Stroke	127 mm	5.0 in
Displacement	6.6 liters	403 in³

***Power rating conditions**

- based on standard air conditions of 25°C (77°F) and 99 kPa (29.32 in Hg) dry barometer
- used 35° API gravity fuel having an LHV of 42 780 kJ/kg (18,390 Btu/lb) when used at 30°C (86°F) [ref. a fuel density of 838.9 g/L (7.001 lb/ U.S. gal)]
- net power advertised is the power available at the flywheel when the engine is equipped with fan, air cleaner, muffler, and alternator
- no engine derating required below 2300m (7,550 ft) altitude

Drive

Drive system is fully hydrostatic.

Ratings		
Maximum drawbar pull	194 kN	(43,650 lb)
Maximum travel speed	5.5 kph	(3.4 mph)
Maximum gradeability (based on engine performance)		70%

Features

- each track is driven by one independent, automatic shifting, two-speed axial piston motor via integral planetary final drives
- multiple disc brakes have increased braking capacity, are spring-engaged and pressure released
- each drive module is well integrated into the roller frame for total protection

Hydraulic System

Two variable displacement, axial-piston pumps power the boom, stick, swing, bucket, auxiliary and travel circuits. One single-section, gear-type pump powers the pilot circuit.

Main Implement System	
Maximum flow	2 x 205 liters/min (2 x 54.2 gpm)
Maximum pressure	
Implements	34 300 kPa (4980 psi)
Travel	34 300 kPa (4980 psi)
Swing	27 500 kPa (3980 psi)

Pilot System	
Maximum flow	39 liters/min (10.3 gpm)
Maximum pressure	4100 kPa (600 psi)

Cylinders, Bore and Stroke	
Boom (2)	130 x 1305 mm (5.1" x 51.4")
Stick (1)	140 x 1660 mm (5.5" x 65.4")
Bucket (1)	
B family	120 x 1030 mm (4.7" x 40.6")
S family	130 x 1115 mm (5.1" x 43.9")
D family	150 x 1156 mm (5.9" x 45.5")

Features

- main hydraulic pumps are electronically controlled and dependent on engine speed
- power modes match hydraulic output to application severity
- XT hose and reusable couplings

Cab/FOGS

Bolt-on Falling Object Guard System (FOGS) is available as an attachment.

Cab Certifications

- Optional Falling Object Guard System is designed to protect the operator from falling objects, and is certified under SAE J1356 FEB88 and ISO 3449-1984 specifications. The front guard is also certified under SAE J1356 FEB88.

NOTE:
When properly installed and maintained, the cab offered by Caterpillar, when tested with doors and windows closed according to ANSI/SAE J1166 MAY90, meets OSHA and MSHA requirements for operator sound exposure limits in effect at time of manufacture.

Buckets

Increased offerings of buckets help optimize machine performance.

Caterpillar buckets provide increased service life with reduced repair costs. All buckets except ditch cleaning have the following features:

- Dual Radius design for increased heel clearance and reduced wear.
- Robot welding of hinge assembly (Cat and Balderson) and other critical areas (Cat only) for increased weld penetration and longer life.
- High strength and heat treated steel in high wear areas.

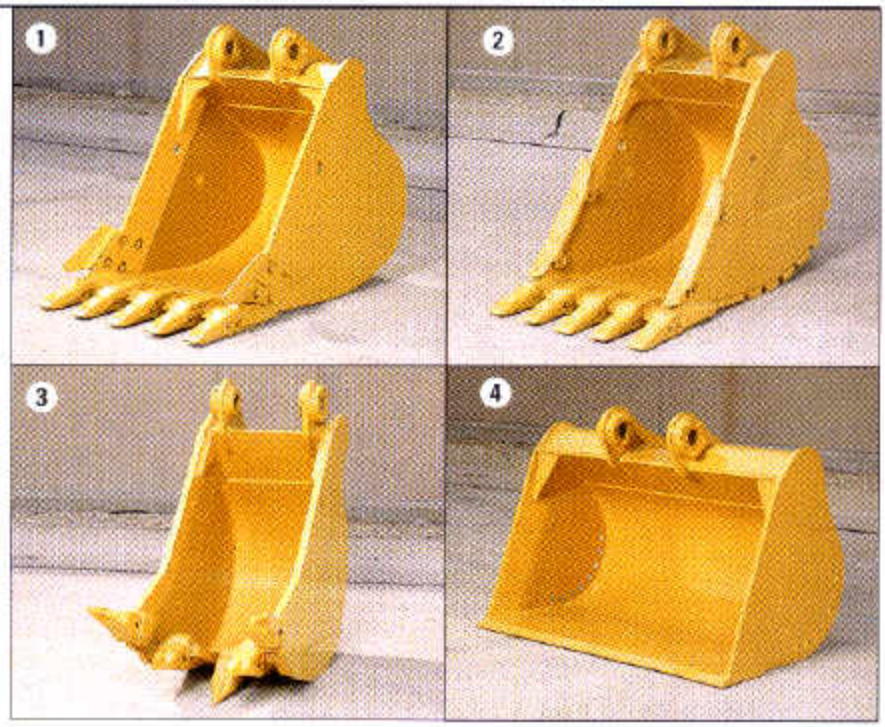
1 Heavy-Duty (HD) Buckets for digging in moderate to hard abrasive materials. Differences from GP buckets are as follows:

- Larger Ground Engaging Tools (GET).
- Thicker cutting edges.
- Thicker bottom and side wear plates.

General Purpose (GP) Buckets (from Balderson) are best for digging in soft to hard ground with low to moderate abrasive materials.

2 Heavy-Duty Rock (HDR) Buckets perform best when digging fragmented rock, frozen ground, caliche and highly abrasive materials. Differences from HD buckets are as follows:

- Additional, thicker wear plates extend beyond side plates for corner and rear dent protection and improved durability.
- Larger side plates provide additional dent protection.
- Sidebar protectors decrease sidebar wear.



3 Heavy-Duty Rock Ripping (RR) Buckets (D family only) dig hard rock and work in areas where material is virgin or poorly prepared. Differences from HDR buckets are as follows:

- Stepped tooth design allows one or two tip penetration for higher break-out forces and keeps the trench floor flat.
- Thicker side wear plates and cutting edges mean additional wear life.

4 Ditch Cleaning (DC) Buckets (from Balderson) are wide shallow buckets for bank forming, ditch cleaning and finishing.

Mechanical quick coupler speeds attachment changes.

- Actuator mechanism is sealed, lubricated and has high strength, heat-treated steel wear surfaces for use in severe applications.
- The quick coupler allows buckets and attachments from the 320 through the 330 to be interchanged.

Booms, Sticks and Attachments

The 322B L has designed-in flexibility to help bring higher production and efficiency to your jobs.

Select the right combination for the job with your Cat dealer and you'll help ensure top production from the start.

Caterpillar excavator booms and sticks are built for performance and long service life.

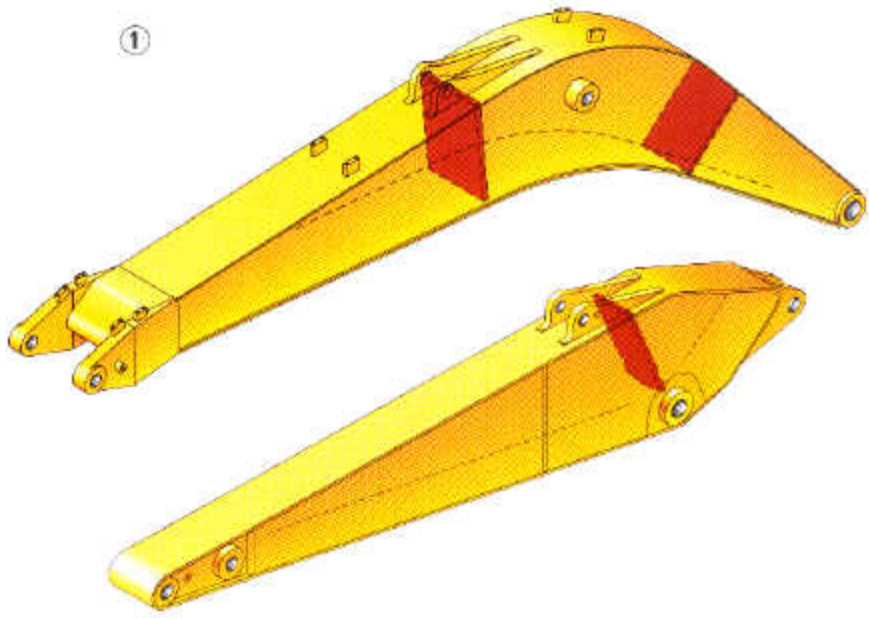
- Castings and forgings are used at high stress areas such as boom nose, boom foot, boom cylinder and stick foot.
- Large, welded, box-section structures with thick, multi-plate fabrications in high-stress areas.
- Construction allows structures to flex and dissipate stresses.

The choice of two booms and four sticks, plus a wide selection of buckets and attachments, means the 322B L offers a large combination of reach and digging forces for optimum versatility.

1 All Caterpillar booms and sticks have internal baffles which give the structures extra strength and durability to better withstand torsional loads.

The Reach Boom (R) 5.9 m (19'4") features an optimum design that maximizes digging envelopes with three stick choices.

- The R3.6B stick gives the largest working envelope.
- The R2.95S uses higher capacity buckets and is best suited for trenching, excavation and general construction applications.
- The R2.5S stick provides a good digging envelope with large buckets and stability for hammer work.



The Mass Excavation (M) Boom 5.3 m (17'5") maximizes productivity. The M version offers significantly higher digging forces to allow use of larger buckets.

- The M2.5D stick has been specifically designed for large earth moving applications. Allows large bucket use with high digging forces.

Choose from a variety of work tools such as hammers, shears, rotators, grapples or crushers. Ask your Cat dealer for information on attachments or special configurations.

2 Caterpillar side impact protection (optional) bumpers help protect machines from damage, reducing repair and service time. Rubber is bonded to high-strength steel plates and bolted to the upper frame.

Undercarriage

Durable undercarriage absorbs stresses and provides excellent stability.

Precision robotic welding helps ensure quality welds. These welds increase rigidity, reduce internal stresses and enhance durability for the chassis and track roller frames.

Heavy-duty, X-shaped chassis design. Cat undercarriage components are purposely oversized to offer heavy-duty performance and durability.

Strutted track links are sealed for longer life. Track rollers, carrier rollers and idlers are also sealed and lubricated for excellent service life.

Smoother auto shifting two-speed travel motors offer plenty of pull on slopes and turns.

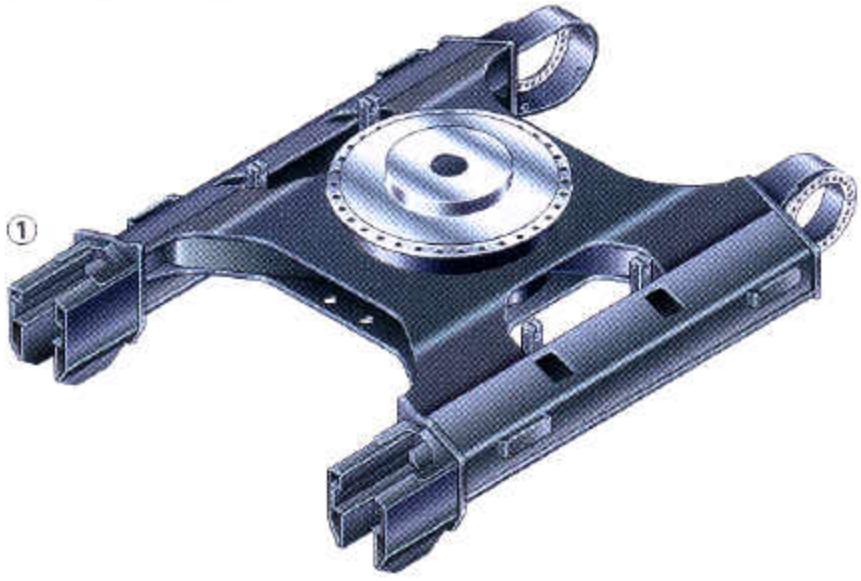
Long (L) undercarriage maximizes stability and lifting capacity. Long, wide and sturdy undercarriage offers a very stable work platform.

Steeper track roller frame design and the elimination of a ledge at carbody and roller frame juncture reduces material build-up and makes digging out easier.

Standard idler guards and center track guides maintain track alignment. Optional sprocket guiding guards or full length track guiding guards are available for additional protection on steep side slopes.

Structures

The 322B L structural components are the backbone of the machine's durability.



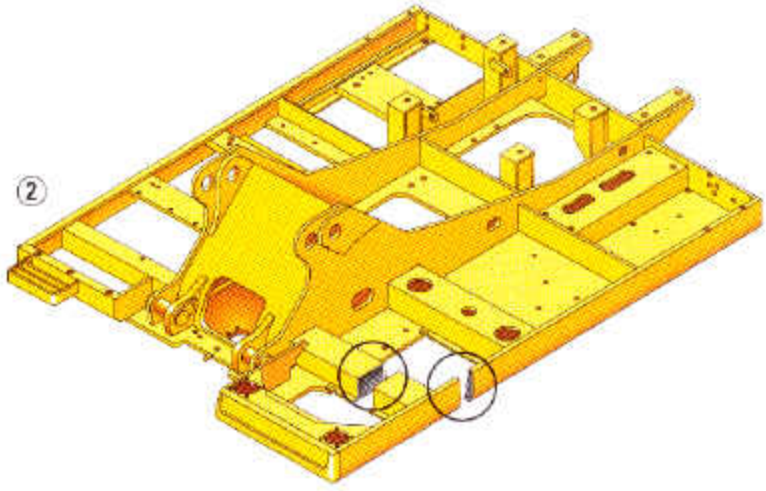
1 Advanced carbody design stands up in the toughest applications.

- Modified X-shaped, box-section carbody provides excellent resistance to torsional bending.
- Upper structure weight and stresses are distributed evenly across the full length of the track roller frame.
- Smooth transitions and long welds reduce stresses at the carbody-to-roller frame junctions for excellent durability.
- Robotic welding helps ensure consistent, high-quality welds throughout the manufacturing process.

Robot-welded track roller frames are press-formed, pentagonal units to deliver exceptional strength and service life.

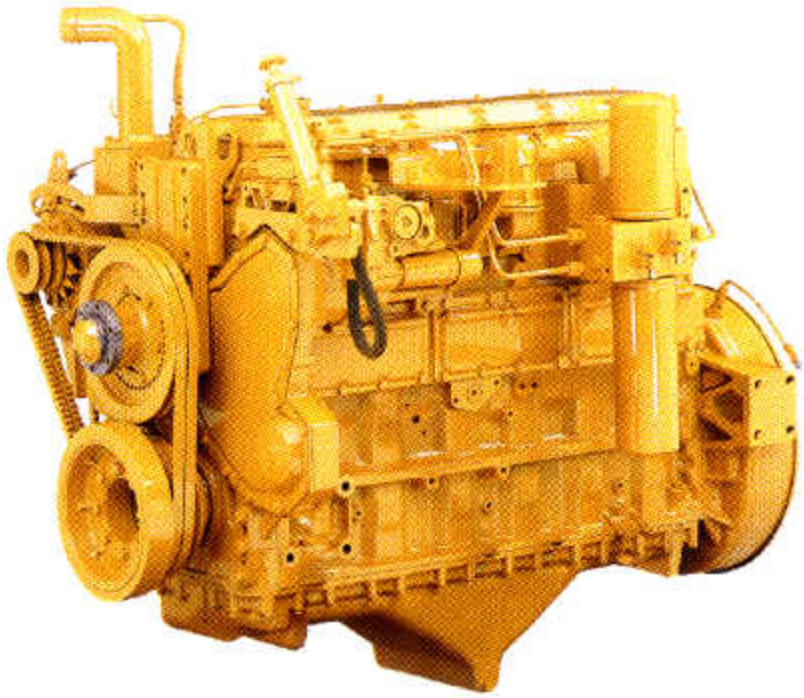
2 Rugged main frame is designed for maximum durability and efficient use of materials.

- Outer frame utilizes curved side rails, which are die-formed, for excellent uniformity and strength throughout the length.
- Box section channels improve upper frame rigidity under the cab.
- Inverted U-channels span the width of the main frame and are formed, rather than fabricated, for superior strength and reduced weight.
- Boom tower and main rails are constructed of solid, high-tensile strength steel plates.
- Boom foot and engine mount areas are reinforced for additional strength.
- Sheet metal supporting structure is improved by integrating the mounting into upper frame structure.



Cat 3116TA Engine

The six cylinder turbo-charged and aftercooled engine is built for power, reliability, economy and low emissions.



Automatic Engine Control with convenient one-touch command. Three-stage control maximizes fuel efficiency and reduces sound levels.

- When placed in the "OFF" mode, if a no-load condition or light-load condition continues more than three seconds, the automatic engine control reduces engine speed by 100 rpm.
- When placed in the "ON" mode, if a no-load condition or light-load condition continues more than three seconds, the automatic engine control reduces engine speed from high idle to 1300 rpm.
- At any time, the operator can activate a switch on the top of the right control lever to reduce the engine speed to 1000 rpm. This feature, referred to as one-touch idle, can be used both to conserve fuel and to reduce engine sound levels. Activate switch again to return to previous level.

High displacement, low rpm rating and conservative HP rating mean longer service hours with less downtime for maintenance and repair.

Turbo-charged and aftercooled to increase engine power by burning fuel with greater efficiency.

Two-piece pistons are used for high durability, good fuel efficiency and low vibration. These pistons better withstand higher internal cylinder pressure.

Meets all current and proposed worldwide emissions standards up to the year 2001.

Scheduled Oil Sampling valve allows faster sampling and maintenance time, speeding machines back to production.

Air intake heating is standard on the 322B L for easier cold starts. When coolant temperature is above 10° C (50° F) the air intake heater does not operate. Below that temperature the length of the heating period automatically adjusts to the temperature.

Fuel tank capacity allows 13 hours of continuous operation under normal load.

Reach Boom Lift Capacities

Load Point Height — Load at Maximum Reach — Load Radius Over Front — Load Radius Over Side

2.5S STICK – 2500 mm (8'2") **BUCKET** – 948 mm, 1.1 m³ (36", 1.5 yd³) **UNDERCARRIAGE** – Long **SHOES** – 800 mm (32") triple grouser **BOOM** – 5900 mm (19'4")

Load Point Height		1.5 m (5.0 ft) Over Front	1.5 m (5.0 ft) Over Side	3.0 m (10.0 ft) Over Front	3.0 m (10.0 ft) Over Side	4.5 m (15.0 ft) Over Front	4.5 m (15.0 ft) Over Side	6.0 m (20.0 ft) Over Front	6.0 m (20.0 ft) Over Side	7.5 m (25.0 ft) Over Front	7.5 m (25.0 ft) Over Side	Max Reach Over Front	Max Reach Over Side	m / ft
7.5 m	kg							*5450	*5450			*3950	*3950	7.6
25.0 ft	lb											*8,900	*8,900	23.7
6.0 m	kg							*5480	*5480			*3830	3110	8.6
20.0 ft	lb							*12,600	*12,000			*8,500	7,300	27.5
4.5 m	kg					*7450	*7450	*6150	5650	*5520	3780	*3860	2760	9.2
15.0 ft	lb					*16,000	*16,000	*13,300	12,100	*12,100	8,100	*8,500	6,100	29.8
3.0 m	kg					*9080	8520	*7120	5370	5850	3680	3970	2460	9.5
10.0 ft	lb					*20,000	18,400	*15,400	11,500	12,500	7,900	*8,700	5,500	30.9
1.5 m	kg					*11 350	7820	*8060	5090	5710	3550	3930	2400	9.4
5.0 ft	lb					*24,400	17,000	*17,400	11,000	12,300	7,600	8,600	5,300	31.1
0.0 m	kg					*12 000	7620	8040	4900	5600	3450	4140	2500	9.1
0.0 ft	lb					*26,100	16,400	17,300	10,500	12,000	7,400	8,900	5,400	30.2
-1.5 m	kg			*9330	*9330	*11 890	7580	7960	4830	5570	3420	4600	2850	8.4
-5.0 ft	lb			*21,300	*21,300	*25,800	16,200	17,100	10,400	12,000	7,400	9,800	6,000	28.4
-3.0 m	kg			*15 120	*15 120	*10 870	7690	*7980	4990			*3640	*3640	7.7
-10.0 ft	lb			*32,800	*32,800	*23,500	16,500	*17,200	10,600			*8500	7500	25.3
-4.5 m	kg			*11 680	*11 680	*8630	7970							
-15.0 ft	lb					*18,100	17,100							

* – Indicates that 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.

Mass Boom Lift Capacities

2.5D STICK – 2500 mm (8'2") **BUCKET** – 1098 mm, 1.4 m³ (48", 1.88 yd³) **UNDERCARRIAGE** – Long **SHOES** – 800 mm (32") triple grouser **BOOM** – 5300 mm (17'5")

Load Point Height		1.5 m (5.0 ft) Over Front	1.5 m (5.0 ft) Over Side	3.0 m (10.0 ft) Over Front	3.0 m (10.0 ft) Over Side	4.5 m (15.0 ft) Over Front	4.5 m (15.0 ft) Over Side	6.0 m (20.0 ft) Over Front	6.0 m (20.0 ft) Over Side	7.5 m (25.0 ft) Over Front	7.5 m (25.0 ft) Over Side	Max Reach Over Front	Max Reach Over Side	m / ft
7.5 m	kg											*3570	*3570	6.8
25.0 ft	lb											*8,100	*8,100	20.9
6.0 m	kg							*5200	5620			*3360	3330	8.0
20.0 ft	lb							*12,200	11,900			*7,500	*7,500	25.3
4.5 m	kg					*6840	*6840	*5970	5420			*3380	2750	8.6
15.0 ft	lb					*14,900	*14,900	*13,000	11,600			*7,400	6,400	27.8
3.0 m	kg					*8850	8480	*6330	5170	5070	3060	*3510	2400	8.8
10.0 ft	lb					*19,000	18,300	*14,300	11,1900	11,500	7,200	*7,800	5,600	29.0
1.5 m	kg					*10 710	7630	*7740	4880	5460	3240	*3820	2440	8.8
5.0 ft	lb					*23,100	16,800	*16,700	10,500	11,700	7,000	*8,100	5,400	29.2
0.0 m	kg					*11 690	7460	7840	4680	5370	3200	*4210	2610	8.6
0.0 ft	lb					*25,300	16,000	16,800	10,000	11,500	6,800	*9,100	6,500	28.3
-1.5 m	kg	*7770	*7770	*13 900	*13 900	*11 610	7350	7760	4690			5210	3120	7.7
-5.0 ft	lb	*17,400	*17,400	*21,900	*21,900	*25,100	15,800	16,600	9,900			10,700	6,200	25.3
-3.0 m	kg			*14 990	*14 990	*10 380	7480	*7200	4700					
-10.0 ft	lb			*32,400	*32,400	*22,300	16,100	*15,200	10,100			*11,290	8,300	22.7
-4.5 m	kg					*6640	*6640							
-15.0 ft	lb													

* – Indicates that 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.