

416C / 416C IT

Backhoe Loader

CAT[®]

Cat[®] 3054 Diesel Engine

Gross power	78 HP	59 kW
Net power	75 HP	56 kW
Gross power (turbo)	84 HP	63 kW
Net power (turbo)	80 HP	60 kW
Operating weight (std.)	13,892 lbs	6300 kg

Backhoe digging depth

Standard stick	14' 6"	4420 mm
Extendible stick	18' 2"	5545 mm

Cat 416C Backhoe Loader

The new C-Series backhoe loaders begin a new era of performance, versatility, and operator comfort.

Loader versatility

The Cat® single-tilt loader continues to be the best in its class — with fast cycle times and large payloads. The optional integrated toolcarrier (IT) loader adds even more versatility with a parallel lift feature for better material handling.

- Maximum lift and breakout forces
- Divergent lift arms, a low-profile hood, and a single tilt cylinder for maximum visibility to the implement
- Large loader torque tube resists bending and twisting
- Self-leveling and return-to-dig systems for ease of operation

Operator station

A new level of comfort and visibility has been achieved in the newly-designed 416C cab. The operator has total machine control in a comfortable environment.

- Spacious operator station
- Convenient personal storage areas
- Large side windows open 180 degrees to maximize visibility and ventilation
- Low-effort controls placed within natural reach for operator comfort

Caterpillar 3054 engine

- Proven reliability
- Durable gear-driven water pump
- Thermal starting aid for easier cold-weather starting
- Parts commonality with other Cat machines
- Low cost-per-hour

The Cat 416C — More than a machine. A partner.

Once again Caterpillar is the benchmark for both ergonomics and performance. You'll load faster, dig deeper and lift higher, all in the comfort of the C-Series cab. You asked for comfort and visibility to match performance. Caterpillar answers with the 416C.

Your backhoe loader is ready when you are!



Standard Equipment

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

Air cleaner, dry type, radial seal with pre-cleaner and filter condition indicator	Front axle, pendulum mount	ROPS canopy
Alarm, backup	Front grill with bumpers	Seat belt, retractable (2 in./51 mm)
Alternator, 55-amp, 12-volt	Gauges: Coolant temperature, fuel level, tachometer, torque converter oil temperature, voltmeter	Seat, suspension with fabric or vinyl seat cover and armrests
Audible system fault alarm	Ground line fuel fill with 34 gal/128 liters capacity	Spin-on fuel, engine oil, hydraulic (10 micron), transmission oil filters, and water separator
Backhoe, 14 ft. 6 in./4420 mm dig depth center-pivot excavator-style backhoe 2 lever control	Grouser style stabilizer shoes	Starting system, thermal starting aid
Battery, maintenance free, 700 CCA	Hydraulic hose, XT-3	Storage compartment, internal
Boom transport lock	Hydraulic oil cooler	Stop and tail lights (2)
Brace, lift cylinder	Indicators: Air cleaner service, brake on, clock hour meter, engine coolant, hydraulic oil level sight gauge, oil pressure	Swing transport lock
Brakes, oil-disc with dual pedals & interlock	Instrument panel lights	Tires (see page 17)
Brake, secondary parking	Key start/stop system with auxiliary position	Tool box, external, lockable
Cat 3054 diesel engine	Lights, working (2 front, 2 rear)	Torque converter
Coat hook	Load sensing, variable flow system with 43 gpm/162 l/m axial piston pump	Throttles, hand and foot
Coolant/Antifreeze, extended life (to -34° Fahrenheit /-37°C)	Loader, self leveling with return-to-dig and transmission disconnect switch on single-lever control	Transmission, four-speed synchromesh
Counterweight, bumper (35 lb./16 kg)	Mirror, rearview	Transmission neutralizer switch
Differential lock	Power steering, hydrostatic	Transport tie-downs
Dome light		Warning horn, front, electric
Engine enclosure		
Face seals, O-ring		
Fan, suction, and fan guard		
Fast reversing shuttle, all gears		
Flashing hazard/signal lights		
Floor mat		
Foot rest, backhoe position		

Dimensions with Forks / Material Handling Arm

All dimensions are approximate.

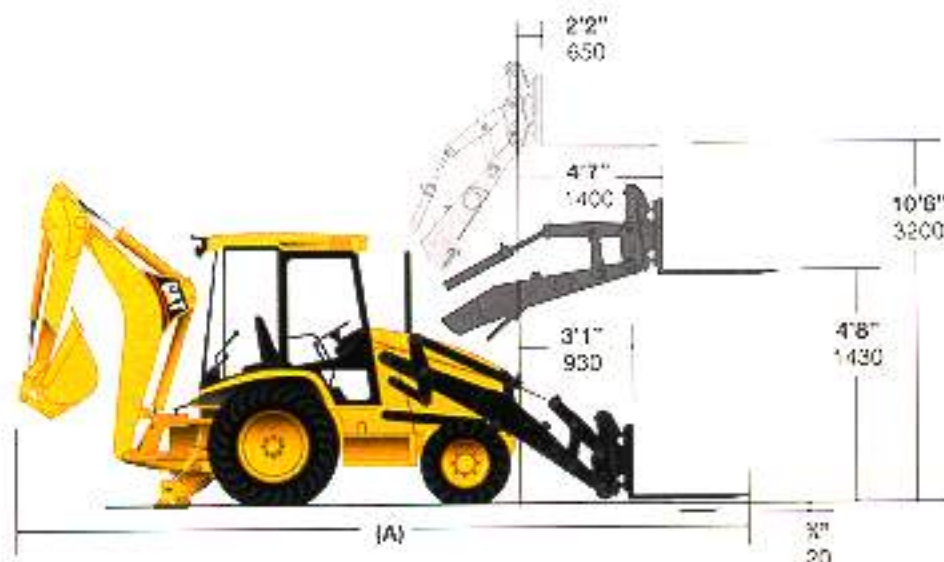
Cat 416C IT Operating Specifications with Forks

Fork Tine Length:	3 ft. 5 in. / 1050 mm	3 ft. 11 in. / 1200 mm	4 ft. 5 in. / 1350 mm
Operating load (SAE J1197 FEB91)	4,322 lb. / 1960 kg*	4,178 lb. / 1895 kg*	4,035 lb. / 1830 kg*
Operating load (CEN474 4 FEB96)	5,160 lb. / 2340 kg**	5,116 lb. / 2320 kg**	5,060 lb. / 2295 kg**
Overall length (A)	24 ft. 4 in. / 7405 mm	24 ft. 9 in. / 7555 mm	25 ft. 3 in. / 7705 mm
Load center	1 ft. 9 in. / 525 mm	2 ft. 0 in. / 600 mm	2 ft. 3 in. / 675 mm

*Tip limited. **Hydraulically limited.

Specifications include lubricants, full fuel tank, ROPS cab, 176 lb. (80 kg) operator, 790 lb. counterweight, standard tires, standard stick, 24-inch standard-duty bucket, 2WD.

Note: Machine stability is affected by machine options and backhoe attachments.



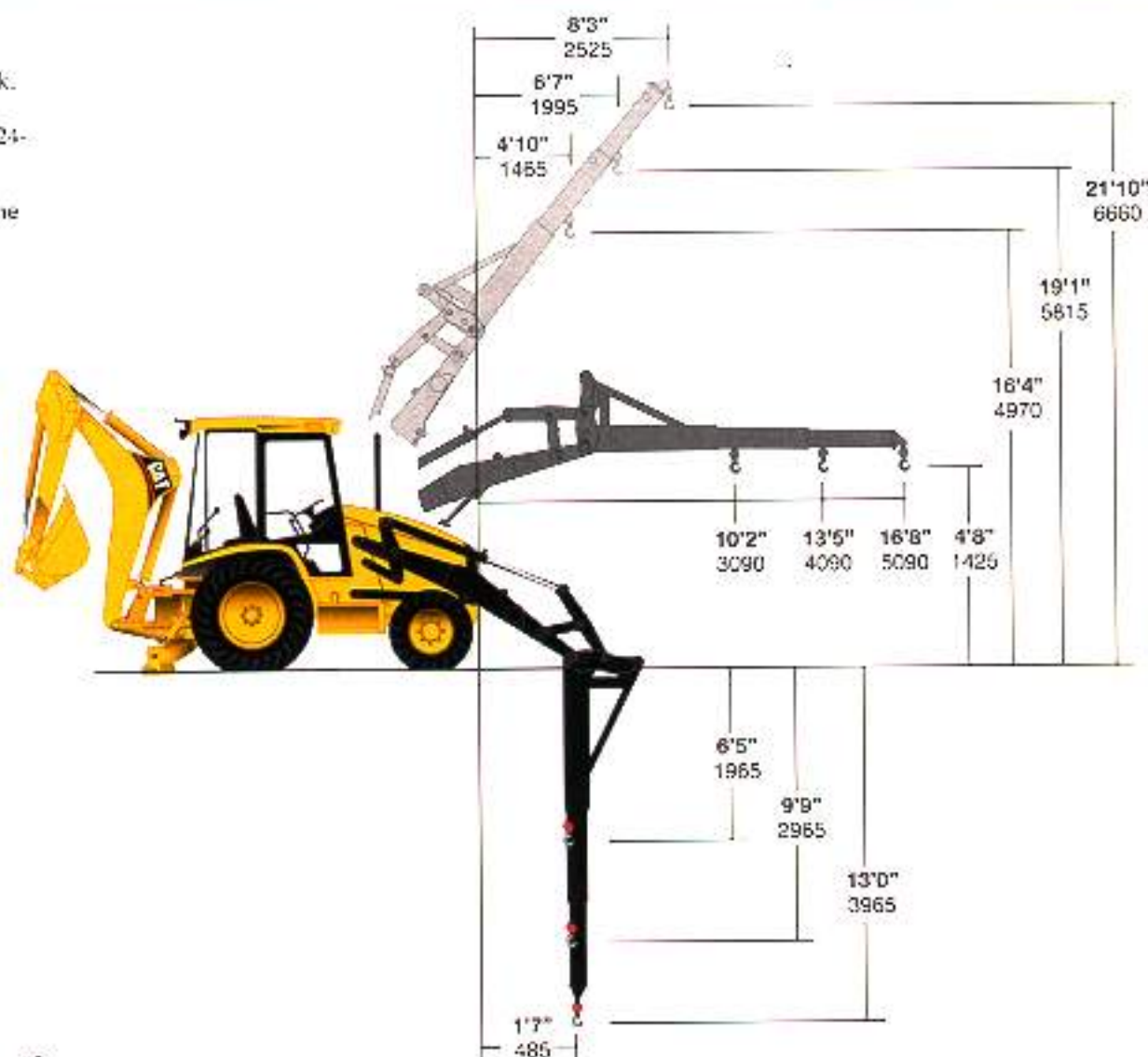
Cat 416C IT Operating Specifications with Material Handling Arm

Material Handling Arm Position:	Retracted	Mid-Position	Extended
Operating load (SAE J1197 FEB91 & CEN474 4 FEB96)	2,040 lb. / 925 kg**	1,279 lb. / 580 kg**	937 lb. / 425 kg**
Overall length, maximum	27 ft. 11 in. / 8515 mm	31 ft. 3 in. / 9515 mm	34 ft. 6 in. / 10515 mm

**Hydraulically limited

Specifications include lubricants, full fuel tank, ROPS cab, 176 lb. (80 kg) operator, 790 lb. counterweight, standard tires, standard stick, 24-inch standard-duty bucket, 2WD.

Note: Machine stability is affected by machine options and backhoe attachments.



IT Loader with Quick Coupler		
Multi Purpose (1.25 yd³)	General Purpose (1.25 yd³)	Multi Purpose (1.25 yd³)
22 ft. 8 in. / 6915 mm	23 ft. 0 in. / 7005 mm	22 ft. 10 in. / 6955 mm
22 ft. 8 in. / 6895 mm	22 ft. 11 in. / 6985 mm	22 ft. 9 in. / 6935 mm
11 ft. 9 in. / 3585 mm	11 ft. 9 in. / 3585 mm	11 ft. 9 in. / 3585 mm
11 ft. 9 in. / 3590 mm	11 ft. 9 in. / 3590 mm	11 ft. 9 in. / 3590 mm
7 ft. 9 in. / 2352 mm	7 ft. 9 in. / 2352 mm	7 ft. 9 in. / 2352 mm
9 ft. 4 in. / 2850 mm	9 ft. 4 in. / 2850 mm	9 ft. 4 in. / 2850 mm
8 ft. 9 in. / 2670 mm	8 ft. 9 in. / 2670 mm	8 ft. 9 in. / 2670 mm
1 ft. 10 in. / 560 mm	1 ft. 6 in. / 460 mm	1 ft. 8 in. / 505 mm
1 ft. 0 in. / 297 mm	1 ft. 0 in. / 297 mm	1 ft. 0 in. / 297 mm
8 ft. 9 in. / 2660 mm	8 ft. 9 in. / 2660 mm	8 ft. 9 in. / 2660 mm
5 ft. 10 in. / 1780 mm	5 ft. 10 in. / 1780 mm	5 ft. 10 in. / 1780 mm
5 ft. 8 in. / 1714 mm	5 ft. 8 in. / 1714 mm	5 ft. 8 in. / 1714 mm
6 ft. 11 in. / 2100 mm	6 ft. 11 in. / 2100 mm	6 ft. 11 in. / 2100 mm

IT Loader with Quick Coupler		
Multi Purpose	General Purpose	Multi Purpose
1.25 yd³ / 0.96 m³	1.25 yd³ / 0.96 m³	1.25 yd³ / 0.96 m³
7 ft. 5 in. / 2262 mm	7 ft. 5 in. / 2262 mm	7 ft. 5 in. / 2262 mm
5,220 lb. / 2368 kg	6,240 lb. / 3250 kg	5,645 lb. / 2981 kg
9,490 lb. / 42.0 kN	9,530 lb. / 47.1 kN	9,690 lb. / 46.6 kN
10 ft. 10 in. / 3290 mm	10 ft. 10 in. / 3290 mm	10 ft. 10 in. / 3290 mm
43°	45°	45°
8 ft. 8 in. / 2640 mm	8 ft. 2 in. / 2495 mm	8 ft. 5 in. / 2560 mm
2 ft. 4 in. / 700 mm	2 ft. 9 in. / 840 mm	2 ft. 5 in. / 730 mm
40°	40°	41°
4 in. / 105 mm	4 in. / 105 mm	5 in. / 135 mm
110°	107°	111°
7 ft. 11 in. / 2406 mm	N/A	7 ft. 5 in. / 2262 mm
4 ft. 11 in. / 1490 mm	4 ft. 11 in. / 1500 mm	5 ft. 0 in. / 1530 mm
13 ft. 9 in. / 4200 mm	13 ft. 8 in. / 4170 mm	13 ft. 9 in. / 4200 mm
2 ft. 7 in. / 790 mm	N/A	2 ft. 7 in. / 790 mm
8,385 lb. / 37.3 kN	N/A	11,387 lb. / 50.7 kN
1,453 lb. / 659 kg	983 lb. / 446 kg	1,453 lb. / 659 kg

Extendible Stick Extended
18 ft. 2 in. / 5545 mm
18 ft. 1 in. / 5498 mm
25 ft. 6 in. / 7770 mm
21 ft. 11 in. / 6680 mm
19 ft. 5 in. / 5919 mm
13 ft. 10 in. / 4223 mm
8 ft. 11 in. / 2706 mm
180°
165°
10 ft. 7 in. / 3219 mm
12 ft. 1 in. / 3689 mm
7 ft. 9 in. / 2352 mm
12,065 lb. / 53.7 kN
5,635 lb. / 25.1 kN
14°

R) rear tires, ROPS canopy, standard stick with 24-inch standard-duty bucket, and 1.0 yd³ loader bucket and

Machine Dimensions (SAE J732 / SAE J49)

	Single-Tilt Loader		
	General Purpose (1.0 yd ³)	General Purpose (1.25 yd ³)	Multi Purpose (1.25 yd ³)
(A) Overall transport length (transport position)	22 ft. 7 in. / 6890 mm	22 ft. 10 in. / 6960 mm	22 ft. 8 in. / 6915 mm
Overall length (loader on ground)	22 ft. 6 in. / 6870 mm	22 ft. 9 in. / 6940 mm	22 ft. 8 in. / 6895 mm
(B) Overall transport height (standard stick)	11 ft. 9 in. / 3585 mm	11 ft. 9 in. / 3585 mm	11 ft. 9 in. / 3585 mm
Overall transport height (extendible stick)	11 ft. 9 in. / 3590 mm	11 ft. 9 in. / 3590 mm	11 ft. 9 in. / 3590 mm
Overall width, with bucket	7 ft. 9 in. / 2352 mm	7 ft. 9 in. / 2352 mm	7 ft. 9 in. / 2352 mm
(C) Height to top of cab / canopy	9 ft. 4 in. / 2850 mm	9 ft. 4 in. / 2850 mm	9 ft. 4 in. / 2850 mm
(D) Height to top of exhaust stack	8 ft. 9 in. / 2670 mm	8 ft. 9 in. / 2670 mm	8 ft. 9 in. / 2670 mm
Height to loader hinge pin (transport)	1 ft. 8 in. / 510 mm	1 ft. 8 in. / 510 mm	1 ft. 10 in. / 560 mm
Ground clearance (minimum)	1 ft. 0 in. / 297 mm	1 ft. 0 in. / 297 mm	1 ft. 0 in. / 297 mm
(E) Rear axle centerline to front grill	8 ft. 9 in. / 2660 mm	8 ft. 9 in. / 2660 mm	8 ft. 9 in. / 2660 mm
Front wheel tread gage	5 ft. 10 in. / 1780 mm	5 ft. 10 in. / 1780 mm	5 ft. 10 in. / 1780 mm
Rear wheel tread gage	5 ft. 8 in. / 1714 mm	5 ft. 8 in. / 1714 mm	5 ft. 8 in. / 1714 mm
(F) Wheel base - 2WD / AWD	6 ft. 11 in. / 2100 mm	6 ft. 11 in. / 2100 mm	6 ft. 11 in. / 2100 mm

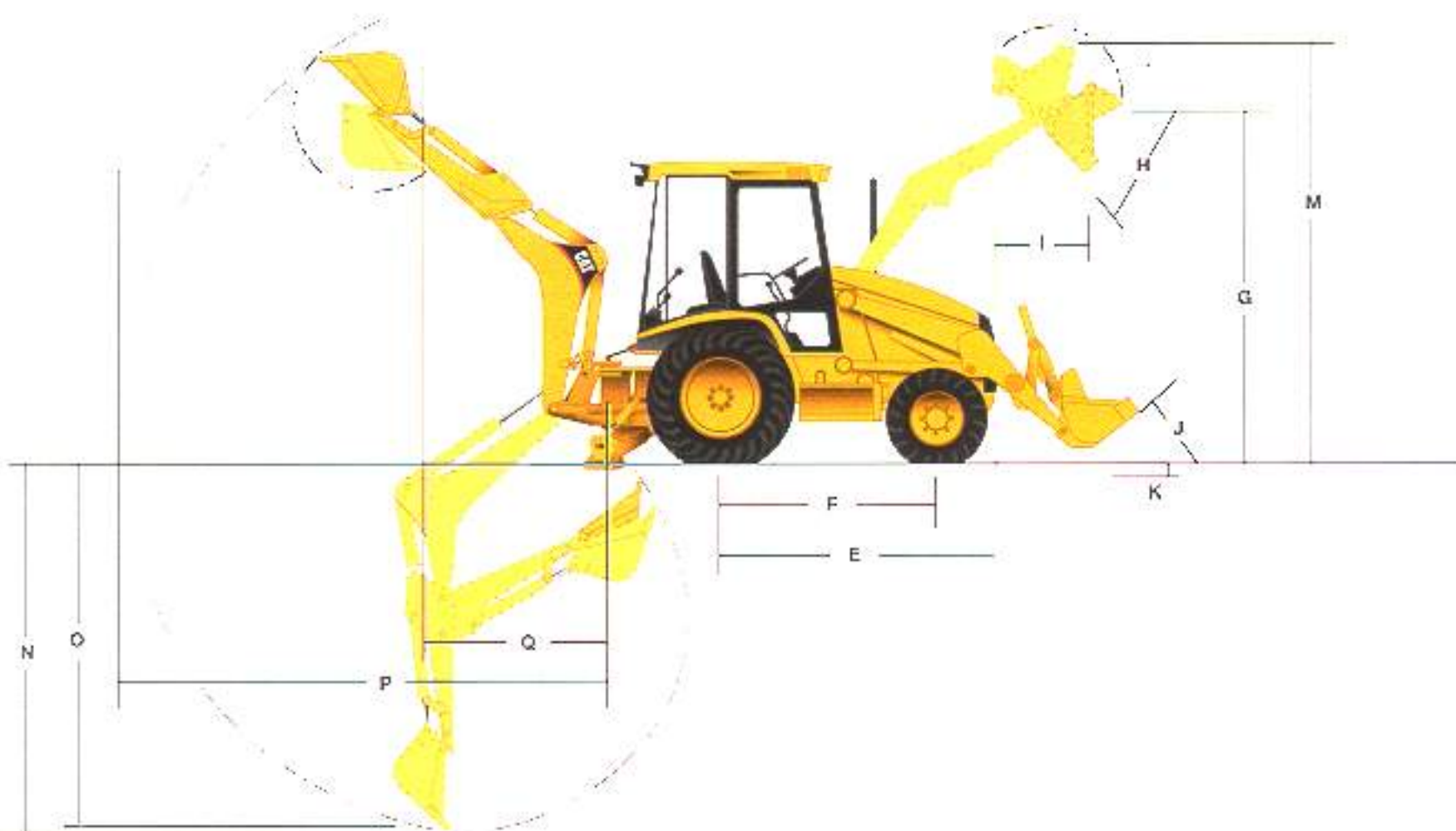
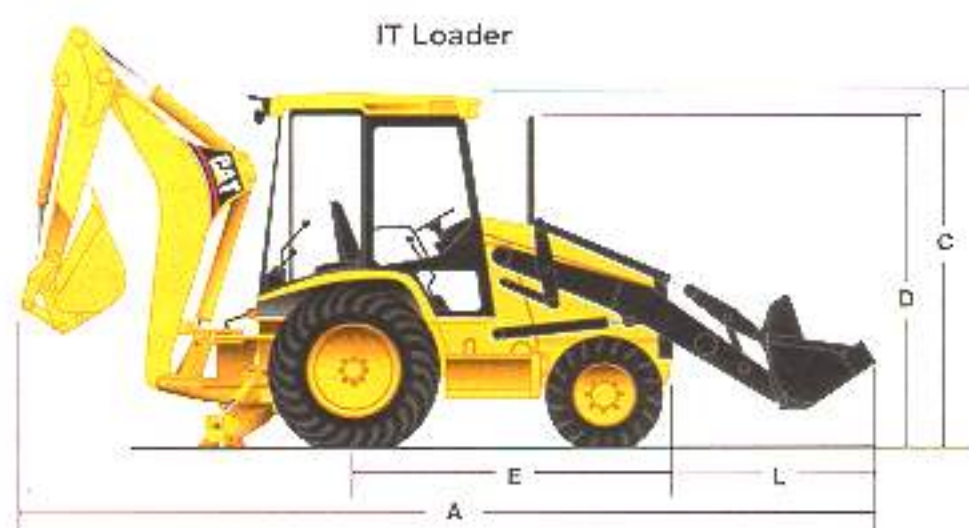
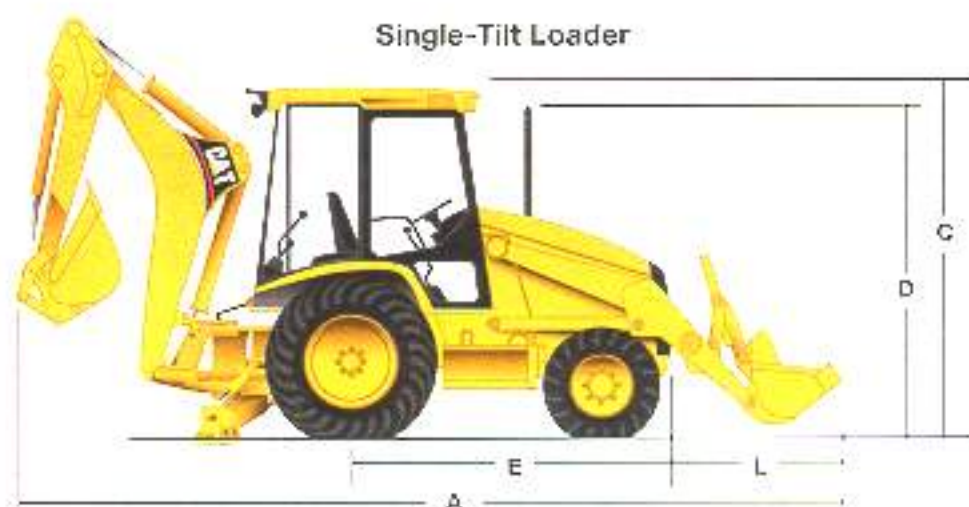
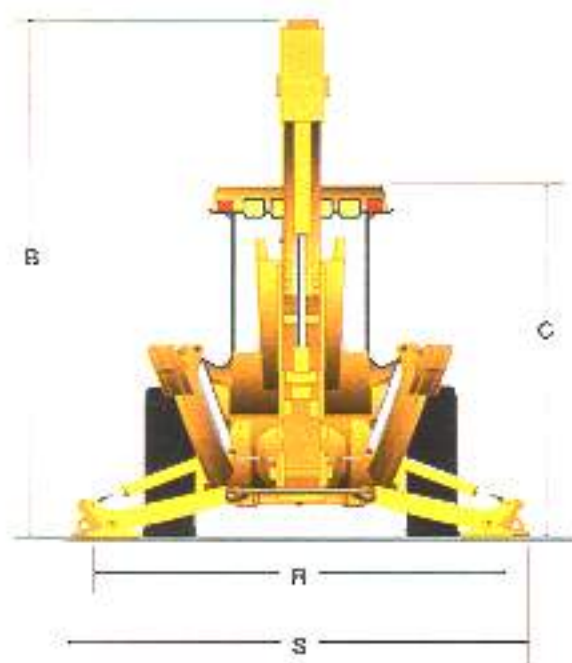
Loader Bucket Dimensions and Performance (SAE J732)

	Single-Tilt Loader		
	General Purpose	General Purpose	Multi Purpose
Capacity (SAE) rated	1.0 yd ³ / 0.76 m ³	1.25 yd ³ / 0.96 m ³	1.25 yd ³ / 0.96 m ³
Width	7 ft. 5 in. / 2262 mm	7 ft. 5 in. / 2262 mm	7 ft. 5 in. / 2262 mm
Load capacity at maximum height	5,780 lb. / 2622 kg	5,480 lb. / 2486 kg	5,220 lb. / 2368 kg
Breakout force	9,030 lb. / 40.0 kN	8,606 lb. / 38.3 kN	9,490 lb. / 42.0 kN
(G) Maximum hinge pin height	10 ft. 10 in. / 3290 mm	10 ft. 10 in. / 3290 mm	10 ft. 10 in. / 3290 mm
(H) Dump angle at full height	43°	43°	43°
Dump height at maximum angle	8 ft. 8 in. / 2650 mm	8 ft. 5 in. / 2575 mm	8 ft. 8 in. / 2640 mm
(I) Dump reach at maximum angle	2 ft. 5 in. / 730 mm	2 ft. 8 in. / 810 mm	2 ft. 4 in. / 700 mm
(J) Maximum bucket rollback at ground level	40°	40°	40°
(K) Digging depth	4 in. / 105 mm	4 in. / 105 mm	4 in. / 105 mm
Maximum grading angle	110°	106°	110°
Width of dozer cutting edge	N/A	N/A	7 ft. 11 in. / 2406 mm
(L) Grill to bucket cutting edge (carry position)	4 ft. 10 in. / 1465 mm	5 ft. 0 in. / 1535 mm	4 ft. 11 in. / 1490 mm
(M) Maximum operating height	13 ft. 2 in. / 4020 mm	13 ft. 8 in. / 4170 mm	13 ft. 9 in. / 4200 mm
Jaw opening maximum	N/A	N/A	2 ft. 7 in. / 790 mm
Bucket jaw clamping force	N/A	N/A	8,385 lb. / 37.3 kN
Weight (does not include teeth or forks)	838 lb. / 380 kg	944 lb. / 428 kg	1,453 lb. / 659 kg

Backhoe Dimensions and Performance (SAE J49)

	Standard Stick	Extendible Stick Retracted	Extendible Stick Extended
(N) Digging depth, SAE (max)	14 ft. 6 in. / 4420 mm	14 ft. 9 in. / 4498 mm	18 ft. 2 in. / 5545 mm
(O) Digging depth, 2 ft. flat bottom	14 ft. 4 in. / 4379 mm	14 ft. 7 in. / 4446 mm	18 ft. 1 in. / 5498 mm
Reach from rear axle centerline at ground line	22 ft. 1 in. / 6729 mm	22 ft. 3 in. / 6772 mm	25 ft. 6 in. / 7770 mm
(P) Reach from swing pivot at ground line	18 ft. 6 in. / 5639 mm	18 ft. 8 in. / 5682 mm	21 ft. 11 in. / 6680 mm
Maximum operating height	17 ft. 3 in. / 5269 mm	17 ft. 2 in. / 5240 mm	19 ft. 5 in. / 5919 mm
Loading height	11 ft. 5 in. / 3483 mm	12 ft. 0 in. / 3654 mm	13 ft. 10 in. / 4223 mm
(Q) Loading reach	5 ft. 10 in. / 1764 mm	5 ft. 11 in. / 1804 mm	8 ft. 11 in. / 2706 mm
Swing arc	180°	180°	180°
Bucket rotation position 1 and 2	170°	165°	165°
(R) Stabilizer spread – operating position (center of pad)	10 ft. 7 in. / 3219 mm	10 ft. 7 in. / 3219 mm	10 ft. 7 in. / 3219 mm
(S) Stabilizer spread – operating position (outside edge of pad)	12 ft. 1 in. / 3689 mm	12 ft. 1 in. / 3689 mm	12 ft. 1 in. / 3689 mm
Stabilizer spread – transport position	7 ft. 9 in. / 2352 mm	7 ft. 9 in. / 2352 mm	7 ft. 9 in. / 2352 mm
Bucket dig force	11,700 lb. / 52.0 kN	12,065 lb. / 53.7 kN	12,065 lb. / 53.7 kN
Stick dig force	7,704 lb. / 34.3 kN	7,836 lb. / 34.9 kN	5,635 lb. / 25.1 kN
Leveling angle (max. slope on which machine will make vertical cut)	14°	14°	14°

Note: Dimensions and performance specifications shown are for machines equipped with 11L x 16 (10 PR) front tires, 16.9 x 24 (8 PR) rear tires, ROPS canopy, standard stick, standard equipment unless otherwise specified.



Tires

Tubeless, nylon, loader design tires.

Single-Tilt

Type	Size	Ply Rating
Front, Standard		
2WD (F3)	11L x 16	10
AWD* (SGL)	12.5/80 x 18	10
Front, Optional		
2WD (F3)	11L x 16	12
AWD* (SGL)	12.5/80 x 18	10
AWD* (IT510)	340/80 x R18	R
Rear, Standard		
2WD (ISG)	16.9 x 24	8
2WD (ISG)	16.9 x 24	10
Rear, Optional		
2WD/AWD (IT525)	19.5L x 24	8
2WD/AWD (IT525)	19.5L x 24	10
AWD (IT510)	19.5L x R24	R

IT Loader

Type	Size	Ply Rating
Front, Standard		
2WD (F3)	11L x 16	12
AWD* (SGL)	12.5/80 x 18	10
Front, Optional		
AWD* (IT510)	340/80 x R18	R
Rear, Standard		
2WD/AWD (ISG)	16.9 x 24	8
Rear, Optional		
2WD/AWD (ISG)	16.9 x 24	10
2WD/AWD (IT525)	19.5L x 24	8
2WD/AWD (IT525)	19.5L x 24	10
AWD (IT510)	19.5L x R24	R

*Valve stem protection (VSP) included

*Not for use with extendible stick

**Standard with extendible stick

Service Refill Capacities

	US Gal	Liters
Cooling System		
naturally aspirated/non-a/c	5.0	18.9
turbocharged / a/c	5.7	21.6
Fuel Tank	34.0	128.0
Engine Oil with Filter	2.0	7.3
Transmission		
two wheel drive	4.0	15.0
all wheel drive	4.8	18.0
Rear Axle	6.4	24.0
Front Axle (AWD)	2.0	7.5
planetaries	0.2	0.75
Hydraulic System	21.0	79.0
Hydraulic Tank	10.0	38.0

Standard-Duty Buckets

With weld-on adapters and pin-on teeth

Width (in./mm)	Capacities SAE (ft ³ /liters)	Weight (lb./kg)	No. of Teeth
12 / 305	2.5 / 70	243 / 110	3
18 / 457	4.5 / 127	287 / 130	4
24 / 610	7.0 / 198	331 / 150	5
30 / 762	9.5 / 255	364 / 165	5
36 / 914	11.5 / 311	397 / 180	6

Heavy-Duty Buckets

With weld-on adapters and pin-on teeth

Width (in./mm)	Capacities SAE (ft ³ /liters)	Weight (lb./kg)	No. of Teeth
12 / 305	2.5 / 70	265 / 120	3
16 / 400	3.5 / 100	291 / 132	4
18 / 457	4.5 / 127	331 / 150	4
24 / 610	7.0 / 198	386 / 175	5
30 / 762	9.5 / 255	430 / 195	5
36 / 914	11.5 / 311	463 / 210	6

High-Capacity Buckets

With weld-on adapters and pin-on teeth

Width (in./mm)	Capacities SAE (ft ³ /liters)	Weight (lb./kg)	No. of Teeth
18 / 457	6.5 / 184	342 / 155	4
24 / 610	9.0 / 255	397 / 180	5
30 / 762	11.0 / 311	441 / 200	5
36 / 914	14.0 / 396	474 / 215	6

Extreme-Service Buckets

With weld-on adapters and pin-on teeth

Width (in./mm)	Capacities SAE (ft ³ /liters)	Weight (lb./kg)	No. of Teeth
18 / 457	4.0 / 99	320 / 145	4
24 / 610	6.0 / 156	364 / 165	4

Note: Additional GET tips available through Caterpillar Parts.

Weights

Standard machine with 1.0 yd³/0.76 m³ general purpose loader bucket, 24 in./610 mm standard-duty backhoe bucket, 550 lb./250 kg counterweight, 176 lb./80 kg operator, and full fuel tank.

Operating weight (range)

13,892-21,389 lb. / 6,300-9,700 kg

ROPS cab 573 lb. / 260 kg

Air conditioning 99 lb. / 45 kg

All wheel drive 234 lb. / 106 kg

Loader, IT w/QC 741 lb. / 336 kg

MP bucket (1.25 yd³ / 0.96 m³)

with fold-over forks 992 lb. / 450 kg

w/o fold-over forks 615 lb. / 279 kg

Extendible stick (excludes front

counterweight) 523 lb. / 237 kg

Counterweights, base 320 lb. / 145 kg

stackable, three, rear 230 lb. / 105 kg

stackable, one 470 lb. / 215 kg

Minimum Counterweight Recommendations — Standard Stick

Loader Bucket	Powertrain	Single Tilt	IT Loader w/QC
GP	2WD	550 lb. / 250 kg	Bumper
GP	AWD	320 lb. / 145 kg	Bumper
MP	2WD/AWD	Bumper	Bumper
MP with fold-over forks	2WD/AWD	Bumper	N/A
Forks / Material handling arm	2WD/AWD	N/A	Bumper

Minimum Counterweight Recommendations — Extendible Stick

Loader Bucket	Powertrain	Single Tilt	IT Loader w/QC
GP	2WD	1,250 lb. / 570 kg	780 lb. / 355 kg
GP	AWD	1,250 lb. / 570 kg	550 lb. / 250 kg
MP	2WD	320 lb. / 145 kg	Bumper
MP	AWD	Bumper	Bumper
MP with fold-over forks	2WD	320 lb. / 145 kg	N/A
MP with fold-over forks	AWD	Bumper	N/A
Forks / Material handling arm	2WD/AWD	N/A	780 lb. / 355 kg

Note: Bumper (35 lb. / 16 kg) is standard with all units.

Total gross vehicle weight not to exceed 21,389 lb. / 9,700 kg

Steering

Full hydrostatic steering.

Full hydrostatic steering controlled by a hand metering unit. Steering unit provides secondary steering capability in case of power failure.

Type	Front wheel
Power steering	Hydrostatic
2WD cylinder, one (1) double-acting	
Bore	3 in. / 76 mm
Stroke	8.8 in. / 224 mm
Rod diameter	1.9 in. / 48 mm
AWD cylinder, one (1) double-acting	
Bore	3 in. / 76 mm
Stroke	8.3 in. / 210 mm
Rod diameter	1.4 in. / 36 mm

Turning Circle

2WD/AWD (Inner wheel not braked)

Outside front wheels

26 ft. 9 in. / 8.1 m

Outside widest loader bucket

35 ft. 0 in. / 10.7 m

(SAE J695)

Axles

Choice of standard two-wheel-drive or all-wheel-drive.

Features

- Heavy-duty rear axle with self-adjusting inboard brakes, differential lock, and final drives.
- Optional all-wheel-drive (AWD) engaged by front console panel switch, on-the-go, under load, in any gear, forward and reverse. Features outboard planetary gear final drives.

- AWD and 2WD axles are pendulum mounted and permanently sealed and lubricated, requiring no daily maintenance. Also features double-acting steering cylinder with 50° steering angle for increased maneuverability. Oscillation 11° each direction from centerline.

Axle Ratings

Front axle, two-wheel drive

Static	30,319 lb.	13750 kg
Dynamic	6,983 lb.	3167 kg

Front axle, all-wheel drive

Static	27,029 lb.	12258 kg
Dynamic	6,983 lb.	3167 kg

Rear axle

Static	61,233 lb.	27770 kg
Dynamic	20,418 lb.	9260 kg

Hydraulic System

Load-sensing, closed-center system.

Variable-flow, closed-center, load-sensing system provides full hydraulic force to cutting edges at all engine speeds. Provides low fuel consumption and low effort controls.

Type	Closed-center
Pump type	Variable-flow, axial-piston
Pump capacity	43 gpm/162 l/m at 2,200 rpm
System pressure	3,000 psi / 20700 kPa

Brakes

Fully enclosed, hydraulic, multiple discs.

Features

- Inboard oil-immersed, hydraulically-actuated, multiple discs on final drive input shaft.
- Completely enclosed and sealed.
- Self-adjusting
- Foot-operated brake pedals can be interlocked for roading.
- Parking/secondary brakes are independent of the service brake system. Parking brake is mechanically applied through a hand lever located in the right side console.

Meets SAE J1473 October 1990 and ISO 3450 1985 requirements.

Cab

ROPS cab is standard.

When properly installed and maintained, the cab offered by Caterpillar, when tested with doors and windows closed as per work cycle procedures specified in ANSI/SAE J1166 May 90, results in an operator sound exposure Leq (equivalent sound pressure level) of 82 dB(A). This A-weighted sound exposure level can be used in conjunction with OSHA, MSHA, and EEC Occupational Noise Exposure Criteria. Also, when tested as per the static specifications of 86/662/EEC, the respective sound pressure levels are as follows:

Naturally Aspirated	dB(A)	dB(A)*
Exterior (ISO 6393)	105	105
In the cab (ISO 6394)	80	83

Turbocharged

Exterior (ISO 6393)	104	106
In the cab (ISO 6394)	81	83

*with air conditioning

ROPS (Roll Over Protective Structure) offered by Caterpillar for this machine meets ROPS criteria SAE J394, SAE J1040 May 1994, and ISO 3471 1994. It also meets FOPS (Falling Object Protective Structure) criteria SAE January 1981 and ISO 3449 1992.

Engine

Caterpillar 3054 direct injection, four-cylinder diesel engine.

Ratings at 2200 RPM	HP	kW
Gross Power	78	59
Net Power	75	56
Gross Power (turbo)	84	63
Net Power (turbo)	80	60

The following ratings apply at 2200 RPM when tested under the specified conditions for the specified standard:

Net Power at 2200 RPM:

Naturally Aspirated	HP	kW	PS
Caterpillar	75	56	—
SAE J1349	74	55	—
ISO 9249	75	56	—
ISO 1585	75	56	—
EEC 80/1269	75	56	—
DIN 70020	—	—	78

Turbocharged (optional)

Caterpillar	80	60	—
SAE J1349	79	59	—
ISO 9249	80	60	—
ISO 1585	80	60	—
EEC 80/1269	80	60	—
DIN 70020	—	—	83

Dimensions

Bore	3.94 in. / 100mm
Stroke	5 in. / 127mm
Displacement	243 cu. in. / 4.0 liter

Percent Torque Rise (net)

Naturally aspirated	15.2
Turbocharged	24.0

Power Rating Conditions

- Based on standard air conditions of 77°F (25°C) and 29.32 in. (99 kPa) dry barometer.
- Used 35° API gravity fuel having an LHV of 18,390 Btu/lb (42,780 kJ/kg) when used at 86°F (30°C) (reference a fuel density of 7.001 lb./gal (838.9 g/L)).
- Net power advertised is the power available at the flywheel when the engine is equipped with fan, air cleaner, muffler, and alternator.
- No derating required up to 5,000 ft. (1500 m) altitude for n/a. 7,500 ft. (2286 m) for turbocharged.

Features

- Controlled-expansion, three-ring pistons made of lightweight, silicon/aluminum alloy for strength and maximum thermal conductivity.
- Forged, chrome/molybdenum-steel crankshaft with tuffride hardened journals.
- Front and rear crankshaft oil seals are "lip" type Viton design featuring an integral dust lip.
- Heat-resistant, silicone-chrome steel intake and STELLITE-faced exhaust valves are used for long engine life.

- Cylinder block is high strength cast iron alloy of deep-skirt, monobloc design for increased strength and long life. Uses replaceable flanged press-fit, dry-type cast-iron liners.
- Cylinder head is high-strength, cast-iron alloy construction with extra-duty wall and deck thickness. Intake and exhaust ports are fully machined.
- Direct-injection fuel system provides accurate fuel delivery. Injectors are easily accessible.
- Dry-type, radial-seal, two-stage air cleaner improves visibility by eliminating hood-mounted pre-cleaner.
- Optional turbocharging available.
- Direct-electric 12-volt starting and charging system with 700 CCA Group 31 maintenance-free battery.
- Standard thermal starting aid system for efficient cold weather starting.

Transmission

Caterpillar countershaft four-speed transmission with electric forward and reverse shuttle.

Four speeds forward and reverse power shuttle — full synchromesh in all gears. Constant mesh gears on all ratios permit on-the-go shifting of all gears — up or down. Neutral start provision prevents starting machine while shuttle is engaged.

Torque converter free-wheel clutch allows the converter stator to free-wheel during high-speed, low-load conditions such as roading.

Transmission Disconnect

Hand-operated power disconnect for easy, on-the-go shifting and full engine rpm for faster cycle times.

Torque Converter

Single-stage, 2.63:1 stall ratio.

Forward/Reverse Electric Power Shuttle

Conveniently placed, hand-operated lever provides instant, on-the-go direction changes between forward and reverse through power hydraulic clutches.

Travel Speeds

Travel speeds of two-wheel-drive backhoe loader at full throttle, when equipped with 16.9 x 24 rear tires.

	1st	2nd	3rd	4th
Forward				
MPH	3.6	5.8	11.1	21.1
Km/H	5.8	9.3	17.9	34.0
Reverse				
MPH	3.6	5.8	11.1	21.1
Km/H	5.8	9.3	17.9	34.0

Power-Shuttle transmission.

Built rugged for tough applications. The Power-Shuttle transmission provides four speed selections in a constant mesh synchronized arrangement, coupled with hydraulically shifted forward and reverse shuttle clutches. Direction and travel speed can be changed on-the-go.

A rocker switch engages all-wheel-drive (AWD) on-the-go, under load. A new torque converter is used to efficiently apply engine power for maximum fuel efficiency and performance. An improved second gear ratio increases machine rimpull to match loader performance.

The Cat extendible stick increases versatility by extending dig depth and reach by approximately four feet. Self-lubricated, non-metallic, shim-adjustable wear pads are used for low maintenance, minimal wear and ease of adjustment.



Power Train/Chassis

Designed for strength, performance, and versatility.

Caterpillar 3054 engine. The 3054 engine is available in either a naturally-aspirated or optional turbocharged version (3054T). The 3054 is a 4-cylinder, 4-stroke, direct-injection design. The thermal starting aid is standard equipment, providing reliable starting down to -20° F. The Cat 3054 also features a gear-driven water pump, providing better reliability than a conventional belt-driven design. A dry-type, radial-seal air filter has been designed specifically for this engine. This two-stage filter incorporates the function of the air cleaner and precleaner into a single unit, which eliminates the hood-mounted precleaner.

Axles and brakes. The rear axle is an enclosed design that allows extended operation even in the harshest environments. Multi-disc, hydraulic brakes are oil-immersed and self-adjusting.

Hydraulics. You don't work at full capacity all the time — and the Caterpillar variable-flow system senses the work demand and adjusts flow and pressure to match it. And Cat XT hoses virtually eliminate downtime from hose failure. If a hose does need replacing, it's fast, easy and requires no special tools.

Caterpillar couplings are equipped with O-ring face seal fittings for long life and less maintenance.

Stackable counterweights allow easy adjustment of weight distribution without having to completely replace an existing counterweight.

Spacious, lockable tool and battery box provides secure tool storage.



Loader

The IT loader means business — more versatility, more breakout force, more lift capacity.



Loader. An optional IT front loader is available for the C Series machines. The IT loader provides maximum lift and breakout forces, and parallel lift for efficient loading and material handling. A return-to-dig system makes operation easy, and improves cycle times. The hydraulic Quick Coupler provides versatility and allows quick connection

to selected attachments available for the Cat family of integrated toolcarriers. Most attachments can be changed in less than 30 seconds, from the comfort of the operator's compartment. The low-profile hood and divergent lift arms enhance visibility to the attachments and forward work area. An improved second-gear

ratio creates an excellent match between the loader hydraulic system and the machine rimpull for faster truck loading.

Excavator-style backhoe

- Ability to reach over obstacles
- Faster, easier truck loading
- Enhanced visibility

Load-sensing hydraulic system

- Power where you need it, when you need it, at any engine speed
- Cat exclusive, high-pressure XT hose
- O-ring face seal fittings for reliability

Other special features

- Single location access to service refill points
- Stackable counterweights allow easy adjustment of weight distribution
- Spacious, lockable tool and battery box provides secure tool storage
- Large 34-gallon fuel tank extends operating intervals



Optional Equipment

With approximate change in operating weight.

	lbs / kg		lbs / kg		lbs / kg
Air conditioning	99 / 45	Coolant, additional protection (-58° F/-50° C)	0 / 0	Radio installation kit	7 / 3
Alternator, 90 amp	18 / 8	Counterweights:		Receptacle, 12 volt	
Attachments, front loader (single tilt)		Base	320 / 145	Internal	1 / 0.2
General-purpose buckets:		Stackable:		External	1 / 0.2
1.0 yd ³ /0.76 m ³	n/a*	three (each)	230 / 105	Rotating beacon	11 / 5
1.25 yd ³ /0.96 m ³	106 / 48	one	470 / 215	Seat belt - 3 in./75mm	0 / 0
Multi-purpose bucket:		Cutting edge, bolt-on:		Stabilizers	
1.25 yd ³ /0.96 m ³	615 / 279	Two piece	154 / 70	Street pads, rubber (set of 4)	82 / 37
1.25 yd ³ /0.96 m ³ w/forks	992 / 450	Guards:		Reversible pads	84 / 38
Attachments, front loader (IT)		AWD driveshaft	64 / 29	Stick, extendible	540 / 245
General-purpose bucket:		Stabilizer, rock	130 / 59	Teeth, loader bucket	99 / 45
1.25 yd ³ /0.96 m ³	146 / 66	High ambient cooling package	4 / 2	Tilt steering wheel	8 / 4
Multi-purpose bucket:		Hydraulic valves, loader:		Tires	(see page 17)
1.25 yd ³ /0.96 m ³	615 / 279	3rd valve for GP, MP or		Turbocharger, engine	18 / 8
Forks (for use with IT loader):		quick coupler	27 / 12	Vandalism protection	
43 in./1,043 mm	589 / -267	Hydraulic valves, backhoe:		Gauge cover	2 / 1
48 in./1,220 mm	551 / -250	Auxiliary valve		Padlocks	2 / 1
53 in./1,346 mm	523 / -237	(standard stick)	11 / 5	Hood Lock	0 / 0
Carriage, fork	139 / -63	Auxiliary valve			
Material handling arm	143 / -65	(extendible stick)	11 / 5		
Attachments, backhoe:		Hydraulic lines:			
Buckets	(see page 17)	Auxiliary, low flow use			
Quick Coupler (backhoe):		(to boom)	22 / 10		
Mechanical	165 / 75	Universal, high flow use			
Axle, front:		(to stick)	99 / 45		
All-wheel-drive	234 / 106	Quick disconnects	4 / 2		
Backhoe controls:		Lights:			
Excavator pattern	9 / 4	Working, additional			
Foot swing, 3 or 4 lever	26 / 12	(2 front, 2 rear)	7 / 3		
Four lever	9 / 4	Loader, IT w/ QC	741 / 336		
Battery, additional	60 / 27				
Cab - ROPS	573 / 260				

* Included in base machine weight