416C / 416C IT Backhoe Loader

4160

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Tank Br

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13,892 lbs

mi<sup>||----||-|</sup>

Operating weight (std.)



4420 mm

5545 mm

### Cat\* 3054 Diesel Engine Backhoe digging depth 14'6" 59 kW Gross power 78 HP Standard stick 18'2" Extendible stick Net power 75 HP 56 kW Gross power (turbo) 84 HP 63 kW Net power (turbo) 80 HP 60 kW

6300 kg



**Cat Caterpillar 416c Backhoe Loader Service Repair Manual** in the technological know-how of archaeology. The man or woman sorts of excavation are regarded simply as digs to people who participate in, with this being an over literal description of the technique used. An excavation issues itself with a particular archaeological web page or associated collection of web sites, and can be carried on over a amount of years, thinking about that the paintings can normally instances typically be of a seasonal nature.

Inside of the enterprise of excavation, many lots greater strategies can be utilized, with each unmarried dig acquiring its very own precise traits which could necessitate variations of technique. Methods and different sensible problems do not permit archaeologists to carryout excavations each time and anyplace they choose, as many regarded web sites have additionally been intentionally.

At first, excavation requires the eliminating any topsoil this is found with the aid of using an excavator machine. What is dug up can be reviewed with the aid of using a metallic detector for stray unearths however except the excavation web page has persevered to be untouched for a prolonged duration of time, there's a tiny layer of present day fabric at the floor this is of constrained archaeological interest.

### 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 newlydesigned 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 coldweather starting
- Parts commonality with other Cat machines
- Low cost-per-hour

ATERPILLAR

### 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 precleaner and filter condition indicator Alarm, backup Alternator, 55-amp, 12-volt Audible system fault alarm Backhoe, 14 ft. 6 in./ 4420 mm dig depth center-pivot excavator-style backhoe 2 lever control Battery, maintenance free, 700 CCA Boom transport lock Brace, lift cylinder Brakes, oil-disc with dual pedals & interlock Brake, secondary parking Cat 3054 diesel engine Coat hook Coolant/Antifreeze, extended life (to -34° Fahrenheit /-37°C) Counterweight, bumper (35 lb./16 kg) Differential lock Dome light 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

Front axle, pendulum mount Front grill with bumpers Gauges: Coolant temperature, fuel level, tachometer, torque converter oil temperature, voltmeter Ground line fuel fill with 34 gal/128 liters capacity Grouser style stabilizer shoes Hydraulic hose, XT-3 Hydraulic oil cooler Indicators: Air cleaner service, brake on, clock hour meter, engine coolant. hydraulic oil level sight gauge. oil pressure Instrument panel lights Key start/stop system with auxiliary position Lights, working (2 front, 2 rear) Load sensing, variable flow system with 43 gpm/162 l/m axial piston pump Loader, self leveling with return-to-dig and transmission disconnect switch on single-lever control Mirror, rearview Power steering, hydrostatic

ROPS canopy Seat belt, retractable (2 in./51 mm) Seat, suspension with fabric or vinyl seat cover and armrests Spin-on fuel, engine oil, hydraulic (10 micron), transmission oil filters, and water separator Starting system, thermal starting aid Storage compartment, internal Stop and tail lights (2) Swing transport lock Tires (see page 17) Tool box, external, lockable Torque converter Throttles, hand and foot Transmission, four-speed synchromesh Transmission neutralizer switch Transport lie-downs Warning horn, front, electric

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# 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 19:B91)	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 77405 mm	24.0.9 in: / 7555 mm	25 ft. 3 m. / 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, 20PS cab, 176 (b. 180 kg) operator, 790 fb counterweight, standard tree, standard stick, 24in-ri-standard-duty backet, 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**	1.27946.7580 kg**	9374b. / 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		8'3" 2525	
specifications include labricants, full fuel tank. (OPS cab. 176 lb. (80 kg) operator, 790 lb. counterweight, standard tires, standard stick, 24- nch standard duty bucket, 2WD.		2525 	21'
tote: Machine stability is affected by machine actions and backhoe attachments.	*	2	19'1" 5615
			16'4" 4970 200 200 200 200 200 200 200 200 200 2
		6'5" 1965 9'9' 296!	
20 416C / 416C IT specifications		- 485 -	

	IT Loader with Quick Coupler		
Multi Purpose (1.25 yd)	General Purpose [1.25 yd <sup>3</sup> ]	Multi Purpose (1.25 yd*)	
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 R. 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 m. / 1714 mm	5 ft. 8 in. / 1714 mm	5 ft. 8 in. / 1714 mm	
6 ft. 11 in. / 2100 mm	6 ft. 11 m. / 2100 mm	6 ft. 11 in. / 2100 mm	

	IT Loader with Quick Coupler		
Multi Purpose	General Purpose	Multi Purpose	
1.25 yd <sup>2</sup> / 0.96 m <sup>2</sup>	1.25 yd <sup>9</sup> / 0.96 m <sup>9</sup>	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°

() rear tires, ROPS canopy, standard stick with 24-inch standard-duty bucket, and 1.0 yd² loader bucket and

## Machine Dimensions (SAE J732 / SAE J49)

	Single-Tilt Loader		
	General Purpose (1.0 yd <sup>2</sup> )	General Purpose (1.25 yd²)	Multi Purpose (1.25 yd²)
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
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
) Height to top of cab / canopy	9 ft. 4 in. / 2850 mm	9 ft, 4 in. / 2850 mm	9 ft. 4 in. / 2850 mm
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 min	1 ft. 8 in. / 510 mm	1 ft. 10 in. / 560 mm
Ground clearance (minimum)	1 ft. 0 m. / 297 mm	1 ft. 0 in. / 297 mm	1 ft. 0 in. / 297 mm
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
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)

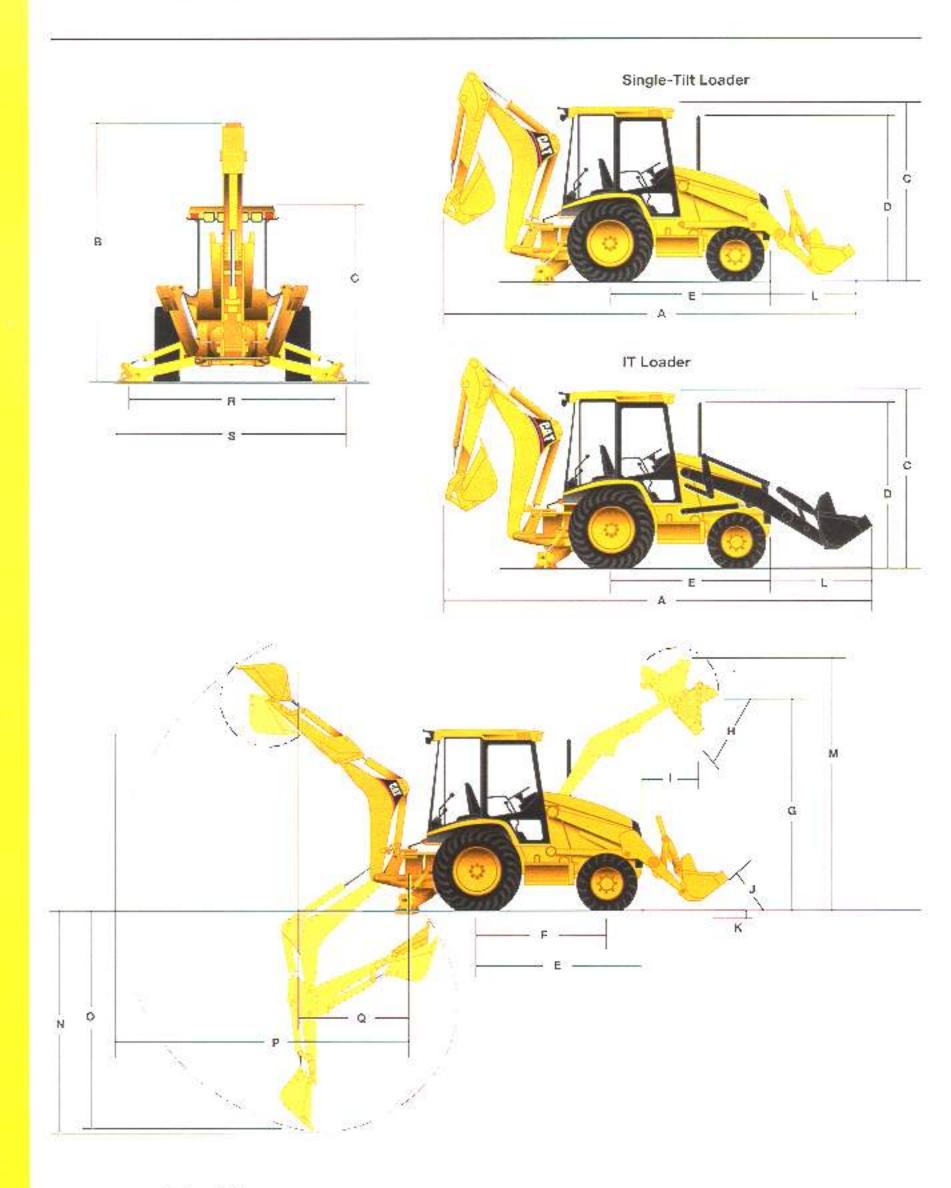
	Single-Tilt Loader		
	General Purpose	General Purpose	Multi Purpose
Capacity (SAE) rated	1.0 yd' / 0.76 m <sup>1</sup>	1.25 yd' / 0.96 m"	1.25 yd <sup>3</sup> / 0.96 m <sup>3</sup>
Width	7 ft. 5 in. / 2262 mm	7 ft. 5 in. / 2262 mm	7 ft. 5 in. / 2262 mm
Lift capacity at maximum height	5,780 lb. / 2622 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
Maximum hinge pin height	10 ft. 10 in. / 3290 mm	10 ft. 10 in. / 3290 mm	10 ft. 10 in. / 3290 mm
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
) Dump reach at maximum angle	2 ft. 5 in. / 730 mm	2 ft. 8 in. / 810 mm	2 ft. 4 in. / 700 mm
) Maximum bucket rollback at ground level	40°	40°	40°
1 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
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
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
<ol> <li>Digging depth, 2 ft. flat bottom</li> </ol>	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. / \$639 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
)) 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 rutation position 1 and 2	170°	165°	165°
<ol> <li>Stabilizer spread – operating position (center of pad)</li> </ol>	10 ft. 7 in. / 3219 mm	10 ft. 7 in. / 3219 mm	10 ft. 7 in. / 3219 mm
5) 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 vertic	al cut) 14º	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 stic standard equipment unless otherwise specified.

# Machine Dimensions



### Tires

Tubeless, nylon, loader design tires,

é.		Ply
Туре	Size	Rating
Front, Standard		
2WD (F3)	11L x 16	10
AWD* (SGL)	12.5/80 x 18	10
From, Optional		
2WD (E3)	11L x 16	12
AWD* (SGL)	12.5/80 x 18	10
AWD* (1T510)	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 (IT5	25) 19.5L x 24	8
2WD/AWD (IT5	25) 19.5L x 24	10
AWD (1T510)	19.5L x R24	R

Туре	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 <sup>+</sup> (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 tin /eumt	Capacities SAE (ff/liters)	Weight (lb./kg)	No. of Teeth
12/305	2.5 / 70	243/110	3
187457	4.57127	287/130	4
247610	7.07198	331/150	5
30/762	9.5 / 255	364 / 165	5
367914	11.57311	397/180	6

### **Heavy-Duty Buckets**

With weld-on adapters and pin-on teeth

Width (in./mm)	Capacities SAE (ft/fliters)	Weight (lb./kg)	No. of Teeth
12/305	2.5/70	265 / 120	3
167400	3.5/100	2917132	4
18/457	4.57127	3317150	4
24/610	7.07198	386/175	5
30/762	9.57255	4307195	5
36/914	11.5/311	463/210	6

### **High-Capacity Buckets**

With weld-on adapters and pin-on teeth

Width	Capacities SAE	Weight	No, of
(in./mm)	(ft?liters)	(lb./kg)	Teeth
18/457	6.5 / 184	342/155	4
24/610	9.07255	397/180	5
30/762	11.07311	441/200	5
367914	14.07396	474/215	6

## **Extreme-Service Buckets**

With weld-on adapters and pin-on teeth

Width	Capacities SAE	Weight	No. of
(in./mm)	(ft'/liters)	(lb./kg)	Teeth
18/457	4.0799	320/145	4
24/610	6.0/156	364/165	4

Note: Additional GET tips available through Caterpillar Parts.

### Weights

cket, 24 in /			s — Standard Stic	
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)		Powertrain	Single Tilt	IT Loader w/QC
		2WD	550 lb. / 250 kg	Bumper
		AWD	320 lh. / 145 kg	Bumper
		2WD/AWD	Bumper	Bumper
6300-9700 ko	MP with fold-over forks	2WD/AWD	Bumper	N/A
	Forks / Material handling arm	2WD/AWD	N/A	Bumper
,99 lb. / 45 kg	na seco antes es			
34 lb. / 106 kg	Minimum Counterweight Re	commendation	s — Extendible St	ick
	Laader Bucket	Powertrain	Single Til:	IT Loader w/QC
	GP	2WD	1,250 lb. / 570 kg	780 lb. / 355 kg
	GP	AWD	1,250 lb. / 870 kg	850 lb. / 250 kg
15 lb. / 279 kg	MP	2WD	32046. / 145 kg	Bumper
front	MP	AWD	Bumper	Bumper
23 lb. / 237 kg	MP with fold-over forks	2WD	320 lb. / 145 kg	N/A
20 lb, / 145 kg	MP with fold-over forks	AWD	Bumper	N/A
	Forks / Material handling arm	2WD/AWD	N/Å	780 lb. / 355 kg
	fuel tank. 6300-9700 kg 73 lb. / 260 kg 99 lb. / 45 kg 84 lb. / 106 kg 41 lb. / 336 kg m <sup>3</sup> ) 22 lb. / 450 kg 15 lb. / 279 kg front 23 lb. / 237 kg	fuel tank. $OP$ 6300-9700 kgMP with fold-over forks73 lb. / 260 kgForks / Material handling arm99 lb. / 45 kgForks / Material handling arm99 lb. / 45 kgMinimum Counterweight Re41 lb. / 336 kgLander Bucketm'iGP02 lb. / 450 kgGP15 lb. / 279 kgMPfrontMP23 lb. / 237 kgMP with fold-over forks20 lb. / 145 kgMP with fold-over forks30 lb. / 105 kgForks / Material handling arm	fuel tank.GPAwD6300-9700 kgMP with fold-over forks2WD/AWD6300-9700 kgMP with fold-over forks2WD/AWD73 lb. / 260 kgForks / Material handling arm2WD/AWD99 lb. / 45 kgMinimum Counterweight Recommendation41 lb. / 336 kgLoader BucketPowertrainm')GP2WD02 lb. / 450 kgGPAWD15 lb. / 279 kgMP2WDfrontMPAWD23 lb. / 237 kgMP with fold-over forks2WD30 lb. / 145 kgMP with fold-over forksAWD30 lb. / 105 kgForks / Material handling arm2WD/AWD	fuel tank.GPAwD320 lb. / 145 kg6300-9700 kgMP with fold-over forks2WD/AWDBumper73 lb. / 260 kgMP with fold-over forks2WD/AWDBumper99 lb. / 45 kgForks / Material handling arm2WD/AWDN/A99 lb. / 45 kgMinimum Counterweight Recommendations — Extendible St41 lb. / 336 kgLoader BucketPowertrainSingle Tilt10')GP2WD1.250 lb. / 570 kg10')GP2WD1.250 lb. / 570 kg10 lb. / 450 kgGPAWD1.250 lb. / 570 kg15 lb. / 279 kgMP2WD320 lb. / 145 kg15 lb. / 237 kgMP with fold-over forks2WD320 lb. / 145 kg20 lb. / 145 kgMP with fold-over forks2WD320 lb. / 145 kg30 lb. / 105 kgForks / Material handling arm2WD/AWDN/A

Note: Bumper (35 lb. / 16 kg) is standard with all units. Total gross vehicle weight not to exceed 21.389 lb. / 9700 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 selfadjusting 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 doubleacting 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-v	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, loadsensing system provides full hydraulic force to cutting edges at all engine speeds. Provides low fuel consumption and low effort controls.

Туре	Closed-center
Pump type	
	Variable-flow, axial-piston
Pump capac	ity
	3 gpm/162 l/m at 2,200 rpm

3,000 psi / 20700 kPa

### Brakes

Fully enclosed, hydraulic, multiple discs,

#### Features

- Inboard oil-immersed, hydraulicallyactuated, multiple discs on final drive input shaft.
- Completely enclosed and scaled.
- 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	3	

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:

Net Power at 2200	HENNI:	50 10/10/02/9	
Naturally Aspirated	HP I	kW.	PS
Caterpillar	75	56	-
SAE J1349	74	55	
ISO 9249	75	56	
ISO 1585	75	56	-72
EEC 80/1269	75	56	
DIN 70020	1		78
Turbocharged lopti	onal)		
Caterpillar	80	60	23
SAE 11349	79	59	120
(SO 9249	80	60	$\rightarrow$
ISO 1585	80	60	÷.
EEC 80/1269	80	60	-
DIN 70020	-	177	83
Dimensions			
Bore	3.94	in./1	00mm
Stroke	5	5 in. / 1	27mm
Displacement	243 cu	. in. / 4	0 liter
Percent Torque Ris	e (net)		
Naturally aspirated		1	15.2
Turbocharged		1	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 pressfit, dry-type cast-iron liners.
- Cylinder head is high-strength, castiron alloy construction with extraduty 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-scal, two-stage air cleaner improves visibility by climinating hood-mounted precleaner.
- 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	0.032			
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 tour 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-wheeldrive (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. Selflubricated, non-metallic, shim-adjustable wear pads are used for low maintenance, minimal wear and ease of adjustment.

9

### **Power Train/Chassis** Designed for strength, performance, and versatility.

Caterpillar 3054 engine. The 3054 engine is available in either a naturallyaspirated or optional turbocharged version (3054T). The 3054 is a 4cylinder, 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 climinates the bood-mounted precleaner.

Axles and brakes. The rear axle is an enclosed design that allows extended operation even in the harshest environments. Multi-dise, hydraulie brakes are oil-immersed and selfadjusting. Hydraulies. 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.

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### Loader

The II 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 <u>parallel</u> 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 toolearriers. 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 <u>faster truck loading</u>.

#### 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 scal 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



3

### **Optional Equipment**

With approximate change in operating weight.

16-21-	
lbs / k Air conditioning	
Alternator, 90 amp	
Attachments, front loader (single tilt)	0
General-purpose buckets:	
1.0 yd <sup>1</sup> /0.76 m <sup>1</sup>	
1.25 yd <sup>1</sup> /0.96 m <sup>1</sup> 106 / 4	ð
Multi-purpose bucket:	į,
1.25 yd'/0.96 m'615 / 27'	
1.25 yd/0.96 m' w/forks .992 / 45	0
Attachments, front loader (IT)	
General-purpose bucket:	
1.25 yd '/0.96 m'146 / 6	6
Multi-purpose bucket:	
1.25 yd ½0.96 m <sup>3</sup> 615 / 27	9
Forks (for use with IT loader):	
43 in./1,043 mm589 / -26	7
48 in./1,220 mm551 / -25	0
53 in./1,346 mm523 / -23	7
Carriage, fork1397-6	3
Material handling arm143 / -6	5
Attachments, backhoe:	
Buckets	)
Quick Coupler (backhoe):	
Mechanical	5
Axle, front:	
All-wheel-drive	6
Backhoe controls:	
Excavator pattern	4
Foot swing, 3 or 4 lever	
Four lever	
Battery, additional	
Cab - ROPS	

Coolant, additional protection Counterweights: Stackable: Cutting edge, bolt-on: Guards: High ambient cooling package ..... 4 / 2 Hydraulic valves, loader: 3rd valve for GP, MP or Hydraulic valves, backhoe: Auxiliary valve Auxiliary valve Hydraulic lines: Auxiliary, low flow use Universal, high flow use Quick disconnects ..... 4/2 Lights: Working, additional (2 front, 2 rear) ......7/3

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

lbs/kg

tool us
Radio installation kit
Receptacle, 12 volt
Internal
External
Rotating beacon 11/5
Seat belt - 3 in./75mm0/0
Stabilizers
Street pads, rubber (set of 4) . 82/37
Reversible pads
Stick, extendible
Teeth, loader bucket
Tilt steering wheel
Tires
Turbocharger, engine
Vandalism protection
Gauge cover
Padlocks
Hood Lock

lbs/kg

\* Included in base machine weight

In farm areas, any form of archaeological attributes need to be apparent underneath the floor. With city areas, they'll be thick layers of human deposits and simplest the uppermost may be seen to the bare eye. With both case, the first actual project is drawing a scaled web page plan which could display the rims of the excavation. This approach may be composed the usage of tape measures, or as it is greater not unusual place those days, an digital general station. A grid is normally set up, to divide the web page.

Excavation is moreover beneficial for digging out homes and ditchs. When clearing dust out for roads or sub divisions, excavation is what looks after matters. Even aleven though there are some means, the time period excavation is used each time that the earth or dust is disturbed. Heavy equipment is likewise very not unusual place with excavation, consisting of excavator machines or backhoes. Excavating crews run the system and dig up soil and rocks for regardless of the cause can be. Excavator machines are the maximum normally used equipment, as they could flow some of dust in a touch little bit of time.

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volvo

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front end loader small heavy equipment volvo volvo heavy equipment heavy equipment dealer near me heavy equipment dealers near me mini volvo excavator volvo mini excavators wheel loaders volvo volvo wheel loader wheel loader volvo volvo wheel loaders volvo wheeled loaders volvo equipment dealership volvo equipment dealer volvo equipment dealers volvo 750 swecon asphalt compactors asphalt compactor volvo mini excavator mini excavator volvo volvo a40g 750 excavator volvo a 40g volvo ec 750e volvo ec750e volvo vdn compactors asphalt samsung excavators

samsung excavator

scat trak

volvo ecr 88

volvo ecr88

ecr88 volvo

volvo equipment dealer near me

volvo equipment dealers near me

volvo equipment dealership near me

volvo construction

volvo constructions

volvo ce

front end loader volvo

volvo backhoes

a60h volvo

volvo a60h

volvo excavator 480

excavator volvo 480

480 volvo excavator

volvo 700 excavator

volvo excavator 700

volvo haul truck

volvo shippensburg pa

volvo shippensburg pennsylvania

volvo front end loader

vantage equipment

volvo ec750e price

mini front end loader

volvo 750 excavator price

pipelayer

55c

45c

scat track

volvo 190

rock truck volvo

volvo rock truck

volvo dealer network

volvo articulated dump truck

articulated dump truck volvo

terex trucks

volvo 140 excavator

backhoe volvo

blaw knox

volvo 480 excavator

volvo backhoe

ingersoll rand roller

volvo 750 excavator specs

volvo articulated dump trucks

volvo excavator 140

volvooceanrace

articulating trucks

road pavers

electric excavator

wheel excavators

dump truck volvo

electric excavators

guins

letsdig18

volvo construction equipment parts

champion motor graders shippensburg volvo volvo off road truck volvo oils volvo construction equipment dealer volvo off road trucks savage stone volvo construction equipment dealers volvo dozers volvo I70 h blaw knox pavers volvo I70h volvo 220 volvo 750 excavator specifications volvo dozer volvo machine blaw knox paver volvo a40 volvo machinery big loaders construction equipment supplier scat trak skid steer volvo ec140el volvo I90 h volvo a25g a40f volvo volvo a30g volvo a40d wheeled mini excavator

volvo a45g volvo heavy equipment dealers a30g volvo champion graders articulated truck volvo wheeled mini excavators champion grader volvo construction equipment dealer near me volvo 160 a25g volvo volvo ecr88 specs volvo heavy equipment dealer is chris guins married michigan loader volvo I90h volvo I 90h ec 750 volvo volvo heavy equipment dealership volvo 750 excavator weight volvo articulating truck articulating truck construction excavator volvo dealer locator volvo coolant ex factor excavadoras construction equipment suppliers turner mining group volvo I 70

quarry aggregates

excavator bucket types

volvo 170

volvo roller

volvo 250

volvo 350

volvo equipment parts near me

190 volvo specs

motor grader volvo

motor graders volvo

nearest volvo dealer

ecr 88d volvo

volvo excavator 220

volvo rollers

volvo ecr38

volvo rental equipment

a30d volvo

volvo I90 specs

gold rush excavator

volvo ec750e specs

volvo 290

volvo motor grader

volvo articulated truck

dd 24

vantage wear

roller volvo

volvo 160 excavator

volvo a40g specs

volvo equipment rental

volvo track hoe volvo a60 volvo pavers volvo 540 volvo motor graders volvo 220 excavator volvo equipment rentals volvo graders volvo paver ecr88d volvo volvo construction equipment usa volvo l60 h volvo shippensburg volvo grader conexpo las vegas volvo articulated trucks graders mini front end loaders pacwest machinery hwy equipment pipelayers front end loaders equipment dealer near me volvo dump truck equipment dealerships romco equipment equipment dealers near me doosan mega 300v doosan mega 300v specs

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