

416D

Backhoe Loader



Engine

Model	Cat® 3054B Diesel	
Model (Optional)	Cat 3054T Turbocharged Diesel	
Gross Power (Standard)	58 kW	77 hp
Gross Power (Optional)	62 kW	83 hp
Net Power (Standard)	55 kW	74 hp
Net Power (Optional)	59 kW	80 hp

Weights

Operating Weight (Nominal)	6900 kg	15,257 lb
Operating Weight (Maximum)	9800 kg	21,605 lb

Backhoe

Dig Depth (Standard)	4390 mm	14 ft 5 in
Dig Depth (Extended)	5510 mm	18 ft 1 in

416D Backhoe Loaders

The 416D Backhoe Loader is built to provide the most production in the most cost-effective way.

Power Train

- ✓ The Cat 3054B diesel engine and new fuel system minimize fuel consumption. Smooth performance comes from the Caterpillar® Power Shuttle transmission and optional Ride Control. A new mode selector switch on All Wheel Drive machines allows two wheel drive with all wheel braking. **pg. 4**

Backhoe Performance

- ✓ High rotation bucket linkage, excavator-style boom, improved bucket line and new Diagonal Retention System teeth work together for increased productivity. **pg. 5**

Work Tools

A wide range of Caterpillar Work Tools are available to meet the needs of your job site applications. **pg. 6**

Customer Support

Your Cat dealer offers a wide range of services that help you operate longer with lower costs. **pg. 11**

Designed for long hours of operation and low cost production, the 416D features rugged construction, a spacious work environment, a high rotation backhoe and easy maintenance. The new 416D provides everything you expect from a Caterpillar Backhoe Loader.



Hydraulics

The state-of-the-art closed-center, variable displacement pump and load-sensing hydraulic system provides high forces at any engine speed. **pg. 7**

Operator Station

- ✓ The 416D operator environment is ergonomically designed to create a comfortable work area with easy-to-use machine controls to help reduce fatigue. **pg. 8**

Additional Features

- ✓ Pilot operated stabilizer controls, counterweights and a flip-open hood contribute to the machine's overall success. **pg. 10**



Power Train

The 416D is designed for efficiency and a new fuel system increases lug performance.



3054B Engine. The Cat 3054B naturally aspirated 55 kW (74 hp) diesel engine includes a new fuel system that delivers reliable power with low emissions, excellent fuel economy and traditional Caterpillar durability. The Cat 3054T (turbocharged) 58 kW (80 hp) engine is optional. The new fuel system provides improved lug performance.

Direct Injection Fuel System. Individual unit fuel injectors deliver efficient, accurate fuel metering, reduced emissions, reliable power, high torque rise and responsive performance.

Air Cleaner. Dry-type, radial seal, two-stage filter incorporates air cleaner and precleaner functions into a single unit under the hood. Elimination of the hood-mounted precleaner increases the operator's viewing area.

Starting Aid. Standard thermal starting aid system for efficient cold weather starting down to -28°C (-20°F).

Transmission. The Caterpillar Power Shuttle transmission provides four speeds forward and reverse. Full synchromesh gears and hydraulically shifted forward and reverse shuttle clutches allow direction and travel speed to be changed on-the-go. A neutral start provision prevents starting while the shuttle is engaged.

Ride Control Option. Offers a smoother ride in all conditions and reduces machine loping while roading. It also provides better material retention during load and carry operations while increasing operator comfort. The system engages with the flip of a switch.

Two Wheel Drive. Heavy-duty rear axle with self-adjusting inboard brakes, differential lock and final drives.

All Wheel Drive (AWD) Option. Heavy-duty front drive axle can be engaged at any time by activating the switch on the front console. The switch can be activated while the machine is stopped or moving — with or without load. AWD features outboard planetary gear final drives and improves mobility and loader performance in poor traction conditions.

Brake Mode Selector Switch. The brake mode selector switch on AWD machines has three positions: two wheel drive, two wheel drive with all wheel braking and all wheel drive. The center position provides two wheel drive for better tire life while roading and engages the front axle when brakes are applied for improved

Courtesy of MachineMarket

Backhoe Performance

High rotation linkage and increased dig forces boost productivity.



High Rotation Backhoe Linkage. Single pin bucket linkage contributes to best-in-class rotation of 205 degrees for all applications, eliminating the need to change pin position when moving from loading trucks to vertical wall trenching.

Backhoe Boom. The excavator-style boom features box section fabrication with internal stiffeners for better balance and weight distribution. The curved design provides additional clearance over obstacles while digging a trench or truck loading. The narrow boom enhances the viewing area to the bucket and trench throughout the entire operating range.

Bucket Line. Expansion of the bucket line includes rock and coral bucket designs. All D-Series buckets are painted black and carry the Cat logo.

Bucket Improvements. The side profile has a scalloped edge, similar to an excavator bucket, for better fill factor characteristics and improved clamping ability.



Diagonal Retention System. Bucket teeth are attached with diagonal pins rather than horizontal pins for easy exchange of bucket teeth. The adapters are stronger as a result of this diagonal pinning and additional wear material on the bucket teeth increases durability.



Quick Couplers. Allow for quick attachment of buckets and other work tools. The D-Series High Rotation pin grabber design and a C-Series compatible pin grabber allow buckets to be changed without removing the bucket pin. Other manufacturers' buckets can be coupled with a pin puller coupler, one for Case and D-Series buckets and one for John Deere and D-Series buckets. D-Series Quick Couplers are painted black for easy identification.



Lift Eye. An integral lifting eye is a standard feature of the bucket linkage.

Work Tools

Choose from a wide variety of tools designed specifically for the backhoe loader.

416D Work Tools. Cat Work Tools for backhoe loaders extend the versatility of the machines. Built for performance and durability, these tools deliver high productivity, long service life and excellent value:

Backhoe Work Tools

- Standard Duty Bucket
- Heavy Duty Bucket
- Heavy Duty Rock Bucket
- High Capacity Bucket
- Coral Bucket
- Ditch Cleaning Bucket
- Hydraulic Hammer
- Vibratory Plate Compactor
- Ripper

Loader Work Tools

- General Purpose Bucket
- Multi Purpose Bucket
- Side Dump Bucket
- Light Material Bucket
- Penetration Bucket
- Loader Forks
- Broom
- Rake



Hydraulics

Load-sensing, closed-center system provides power where you need it, when you need it.

Hydraulic System. The load-sensing, variable flow hydraulic system senses work demand and adjusts flow and pressure to match. This allows full hydraulic forces at any engine speed for delicate jobs in tight areas.

Hydraulic Pump. Closed-center implement valves, with pressure compensation for reduced lever effort, signal hydraulic system requirements to a control valve located on the pump. This valve controls the pump to deliver the flow and pressure necessary to fulfill the work tool demands.

Dual Setting Torque Limiter. The variable displacement pump provides better performance in both backhoe and loader operations through a dual setting torque limiter. It automatically optimizes power to the hydraulic system during backhoe operations and manages the power balance between the loader hydraulic circuit and the drive train during front loader operations.

XT Hoses. Made of four overlapping, insulated wire spiral wraps bonded together for durability, XT-3 hoses exceed SAE certification standards. The hose routing protects them from work damage, and hose failure downtime is substantially reduced.



Couplings. XT-3 hoses are combined with Caterpillar couplings and O-ring face seal fittings to provide a leak-free system.

Clamps and Bushings. Metal clamps with rubber bushings are used at hose attachment points to eliminate metal-to-metal contact.

Courtesy of Machine.Market

Operator Station

Designed for ease of operation and to maximize efficiency and productivity.



Comfortable Work Environment.

The 416D operator station incorporates features for operator comfort and productivity. The open canopy is standard on the 416D.

Utility Cab. Includes a left side door, a standard heater and floor mats.



Utility Plus Cab. Includes two doors with opening glass, a radio ready headliner, 12-volt power supply, a left side storage console with drink holders, tilt steering wheel, heater and floor mats.

Seats. Three seat options are available: static vinyl, air suspension vinyl and air suspension fabric. All of these feature improved contour seat cushions. The air suspension seat includes an air adjustment mechanism that controls the seat height with the push of a button, providing greater range and superior ride.

HVAC System. The heating, ventilation and air conditioning system main components are located near the floor and significant improvements have been made in air circulation, providing added comfort and increased defrost capabilities in the Utility and Utility Plus cabs.



Machine Controls. Switches are relocated to operator level and the boom lock and pilot-operated stabilizer controls, which provide low effort and fine modulation, are within easy reach of the operator. New white-faced gauges are easy to read.

Backhoe Controls. Four mechanical control patterns are available: two-lever excavator, two-lever backhoe and three- or four-lever foot swing. A new linkage design reduces lever efforts, particularly with the foot swing control pattern.



Viewing Area. The narrow boom enhances the rear viewing area. The sloping front hood and divergent lift arms allow the operator to see more of the forward work area and loader attachments.

Additional Features

Pilot operated stabilizer controls and other benefits contribute to the 416D function and efficiency.



Stackable Counterweights. Allow easy adjustment of weight distribution without having to completely replace an existing counterweight.

Tool and Battery Box. Spacious, convenient and secure tool storage location.

Fuel Tank. Large capacity tank located on the frame's left side is lockable and includes a replaceable, bolt-on step.



Pilot Operated Stabilizer Controls. These provide low effort and fine modulation control. The stabilizer controls are within easy reach of the operator when operating the backhoe.



Flip-Open Hood. The flip-open hood opens easily and provides convenient access to all engine check points from the left side of the machine.

Customer Support

Cat dealer services help you operate longer with lower costs.

Machine Selection. Make detailed comparisons of the machines under consideration before purchase. Cat dealers can estimate component life, preventative maintenance cost and the true cost of lost production.

Purchase. Look past initial price. Consider the financing options available as well as day-to-day operating costs. Look at dealer services that can be included in the cost of the machine to yield lower equipment owning and operating costs over the long run.

Customer Support Agreements.

Cat dealers offer a variety of product support agreements and work with customers to develop a plan that best meets specific needs. These plans can cover the entire machine, including attachments, to help protect the customer's investment.

Product Support. You will find nearly all parts at our dealer parts counter. Cat dealers use a worldwide computer network to find in-stock parts to minimize machine downtime. Save money with genuine Cat Reman parts. You receive the same warranty and reliability as new products at cost savings of 40 to 70 percent.

Operation. Improving operating techniques can boost your profits. Your Cat dealer has training videotapes, literature and other ideas to help you increase productivity.



Maintenance Services. Choose from your dealer's range of maintenance services when you purchase your machine. Repair option programs guarantee the cost of repairs up front. Diagnostic programs such as S-O-SSM and Coolant Sampling and Technical Analysis help you avoid unscheduled repairs.

Replacement. Repair, rebuild or replace? Your Cat dealer can help you evaluate the cost involved so you can make the right choice.

Engine

Model	Cat 3054B Diesel	
Model (Optional)	Cat 3054T Turbocharged Diesel	
Gross Power (Standard)	58 kW	77 hp
Gross Power (Optional)	62 kW	83 hp
Net Power (Standard)	55 kW	74 hp
Net Power (Optional)	59 kW	80 hp
Net Power - SAE J1349	55 kW	73 hp
Net Power - ISO 9249	55 kW	74 hp
Net Power - ISO 1585	55 kW	74 hp
Net Power - EEC 80/1269	55 kW	74 hp
DIN 70020	77 PS	
Bore (3054B)	103 mm	4.06 in
Stroke	127 mm	5 in
Displacement	4.2 L	258 in ³
Bore (3054T)	100 mm	3.94 in
Stroke	127 mm	5 in
Displacement	4 L	243 in ³
Net Torque Rise @ 1400 rpm		
Standard	20.6%	
Net Torque Rise @ 1400 rpm		
Optional	29.7%	
Net Peak Torque @ 1400 rpm		
Standard	286 Nm	388 ft-lb
Net Peak Torque @ 1400 rpm		
Optional	330 Nm	447 ft-lb

- The net power ratings apply at 2200 rpm when tested under the specified conditions for the specified standard.
- Net Torque Rise meets SAE J1349.

Weights

Operating Weight - Nominal	6900 kg	15,257 lb
Operating Weight - Maximum	9800 kg	21,605 lb
Cab, ROPS/FOPS	225 kg	495 lb
All-Wheel Drive	106 kg	234 lb
MP Bucket 0.96 m ³ (1.25 yd ³) w/Fold-Over Fork	454 kg	1,000 lb
MP Bucket 0.96 m ³ (1.25 yd ³) w/o Fold-Over Fork	283 kg	625 lb
Extendible Stick (no weights)	237 kg	523 lb
Counterweights, Base	145 kg	320 lb
Counterweights, Stack (3), each	104 kg	230 lb
Counterweights, Stack (1)	213 kg	470 lb

- Bumper (16 kg/35 lb) is standard with all units.
- Total gross machine weight not to exceed 9800 kg (21,605 lb).

Backhoe

Dig Depth - Standard	4390 mm	14 ft 5 in
Dig Depth - E-Stick Extended	5510 mm	18 ft 1 in
Reach from Swing Pivot - Standard	5650 mm	18 ft 6 in
Reach from Swing Pivot - E-Stick Retracted	5705 mm	18 ft 9 in
Reach from Swing Pivot - E-Stick Extended	6675 mm	21 ft 11 in
Bucket Rotation	205°	
Bucket Dig Force - Standard	52 kN	11,702 lb
Bucket Dig Force - E-Stick Retracted	51.6 kN	11,599 lb
Bucket Dig Force - E-Stick Extended	51.6 kN	11,599 lb
Stick Dig Force - Standard	34.9 kN	7,841 lb
Stick Dig Force - E-Stick Retracted	34.2 kN	7,693 lb
Stick Dig Force - E-Stick Extended	25.2 kN	5,661 lb
Stick Lift @ 1219 mm (4 ft) - Standard	4448 kg	9,807 lb
Stick Lift @ 1219 mm (4 ft) - E-Stick Retracted	3436 kg	7,574 lb
Stick Lift @ 1219 mm (4 ft) - E-Stick Extended	1564 kg	3,448 lb
Dig Depth - E-Stick Retracted	4465 mm	14 ft 8 in
Loading Height	3613 mm	11ft 10 in
Loading Reach	1732 mm	5ft 8 in

Operating Specifications — Backhoe

Turning Circle: outside, front wheels	8.1 m	26 ft 9 in
Turning Circle: outside, widest loading bucket	10.7 m	35 ft

- ISO 5010 1992.
- 2WD, AWD (inner wheel not braked).

Loader

Bucket Capacity - General Purpose	0.96 m ³	1.25 yd ³
Bucket Width - General Purpose	2262 mm	7.5 in
Dump Height @ Max Angle, Single-tilt	2544 mm	8 ft 4 in
Dump Reach @ Max Angle, Single-tilt	835 mm	2 ft 9 in
Dig Depth Single-tilt	135 mm	5 in
Lift Capacity @ Full Height Single-tilt	2400 kg	5,292 lb
Bucket Breakout Force - Single-tilt	37.9 kN	8,524 lb

Hydraulic System

Circuit Type	Load-sensing, closed-center	
Pump Capacity (@ 2200 rpm)	139 L/min	37 gal/min
System Pressure	20 685 kPa	3,000 psi
Pump Type	Variable flow, axial piston	
Steering Type	Front wheel	
Power Steering	Hydrostatic	
2WD Cylinder - Bore	70 mm	2.75 in
Stroke	224 mm	8.8 in
Rod Dia.	44 mm	1.75 in
AWD Cylinder - Bore	65 mm	2.56 in
Stroke	211 mm	8.3 in
Rod Dia.	36 mm	1.42 in
Brake System	Inboard/oil-immersed	

Brakes

- Inboard oil-immersed, hydraulically-actuated, multiple discs on final drive input shaft.
- Self-adjusting and completely enclosed and sealed.
- 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 an adjustable hand lever located on the right console.

Power Train

Power-Shuttle, Forward 1st	5.8 kph	3.6 mph
Forward 2nd	9.3 kph	5.8 mph
Forward 3rd	19.2 kph	12 mph
Forward 4th	32.8 kph	20.4 mph
Power-Shuttle, Reverse 1st	5.8 kph	3.6 mph
Reverse 2nd	9.3 kph	5.8 mph
Reverse 3rd	19.2 kph	12 mph
Reverse 4th	32.8 kph	20.4 mph

- Conveniently placed, hand operated lever provides instant direction changes between forward and reverse through power hydraulic clutches.
- Torque converter free-wheel clutch allows the converter stator to free-wheel during high speed, low torque conditions, such as roading.
- Single-stage, 2.63:1 stall ratio.
- Travel speeds of two wheel drive backhoe loader at full throttle, when equipped with 19.5x24 rear tires.

Service Refills

Cooling System, A/C	15.9 L	4.2 gal
Cooling System, High-Ambient	16.7 L	4.4 gal
Fuel Tank	128.7 L	34 gal
Engine Oil w/Filter	7.6 L	2 gal
Transmission, 2WD, Power Shuttle	15.1 L	4 gal
Transmission, AWD, Power Shuttle	18.2 L	4.8 gal
Rear Axle	24.2 L	6.4 gal
Front Axle, AWD	7.6 L	2 gal
Front Axle, Planetaries	0.8 L	0.2 gal
Hydraulic System	79 L	21 gal
Hydraulic Tank	38 L	10 gal

Axle Ratings

Front Axle, 2WD, Static	13 765 kg	30,319 lb
2WD, Dynamic	3170 kg	6,983 lb
Front Axle, AWD, Static	12 271 kg	27,029 lb
AWD, Dynamic	3170 kg	6,983 lb
Rear Axle, Static	27 800 kg	61,233 lb
Dynamic	9270 kg	20,418 lb

- 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.

Standards

Steering

- Steering system meets secondary system roading regulations including ISO 5010.

ROPS

- ROPS (Rollover Protective Structure) offered by Caterpillar for this machine meets ROPS criteria SAE J397, SAE J1040 MAY 1994 and ISO 3741 1994. FOPS (Falling Object Protective Structure) meets criteria SAE J231 JAN 1981 and ISO 3449 1992.

Cab

- When properly installed and maintained, the enclosed cab offered by Caterpillar meets OSHA and MSHA requirements for operator sound exposure limits in effect at the time of manufacture. When tested with doors and windows closed and measured according to ANSI/SAE J1166 OCT 98, the operator sound exposure Leq (equivalent sound pressure level) is 78.5 dB(A).
- The exterior sound pressure level for the standard machine measured at a distance specified in SAE J88 APR 95, mid-gear-moving operation is 73.0 dB(A).

Brakes

- Brakes meet the following standards: SAE J1473 OCT 90 and ISO 3450 96 requirements.

Engine Power Rating Conditions

- Based on standard air conditions of 25° C (77° F) and 99 kPa (29.32 in) 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) (reference a fuel density of 838.9 g/L [7.001 lb/gal]).
- 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 2286 m (7,500 ft).

Engine 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 with an integral dust lip.
- Heat resistant, silicone-chrome steel intake and STELLITE-faced exhaust valves provide 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 precleaner.
- 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.

Tires

Tubeless, nylon, loader-design tires.

Type	Size	Ply Rating
2WD Bias		
Front	11L x 16	12
Rear	19.5 x 24	10
4WD Bias		
Front	12.5/80 x 18	10
Rear	19.5 x 24	10
4WD Radial		
Front	340/80 x R18	radial
Rear	19.5 x 24	radial
4WD Combination		
Front	340/80 x R18	radial
Rear	19.5 x 24	10

Standard Duty Buckets

With weld-on adapters and pin-on teeth.

Width (mm/in)	Capacities SAE (liters/ft ³)	Weight (kg/lb)	No. of Teeth
305/12	78/2.8	97/213	3
457/18	118/4.2	115/253	4
610/24	175/6.2	132/290	5
762/30	233/8.2	147/323	5
914/36	292/10.3	165/363	6

Heavy Duty Buckets

With weld-on adapters and pin-on teeth.

Width (mm/in)	Capacities SAE (liters/ft ³)	Weight (kg/lb)	No. of Teeth
305/12	78/2.8	105/231	3
406/16	105/3.7	127/279	3
457/18	118/4.2	129/284	4
610/24	175/6.2	151/332	5
762/30	233/8.2	167/367	5
914/36	292/10.3	189/416	6

High Capacity Buckets

With weld-on adapters and pin-on teeth.

Width (mm/in)	Capacities SAE (liters/ft ³)	Weight (kg/lb)	No. of Teeth
457/18	180/6.4	146/321	4
610/24	240/8.5	171/376	5
762/30	320/11.3	195/429	5
914/36	380/13.4	214/471	6

Heavy Duty Rock Buckets

With weld-on adapters and pin-on teeth.

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

Counterweights

Minimum Counterweight Recommendations — Standard Stick

Loader Bucket	Power Train	kg	lb
GP	2WD	355	780
GP	AWD	250	550
MP	2WD/AWD	bumper	bumper
MP with fold-over forks	2WD/AWD	bumper	bumper

Minimum Counterweight Recommendations — Extendible Stick

Loader Bucket	Power Train	kg	lb
GP	2WD	570	1,250
GP	AWD	570	1,250
MP	2WD	250	550
MP	AWD	145	320
MP with fold-over forks	2WD	bumper	bumper
MP with fold-over forks	AWD	bumper	bumper

Total gross vehicle weight not to exceed 9800 kg/21,605 lb.

Courtesy of Machine.Market

Machine Dimensions

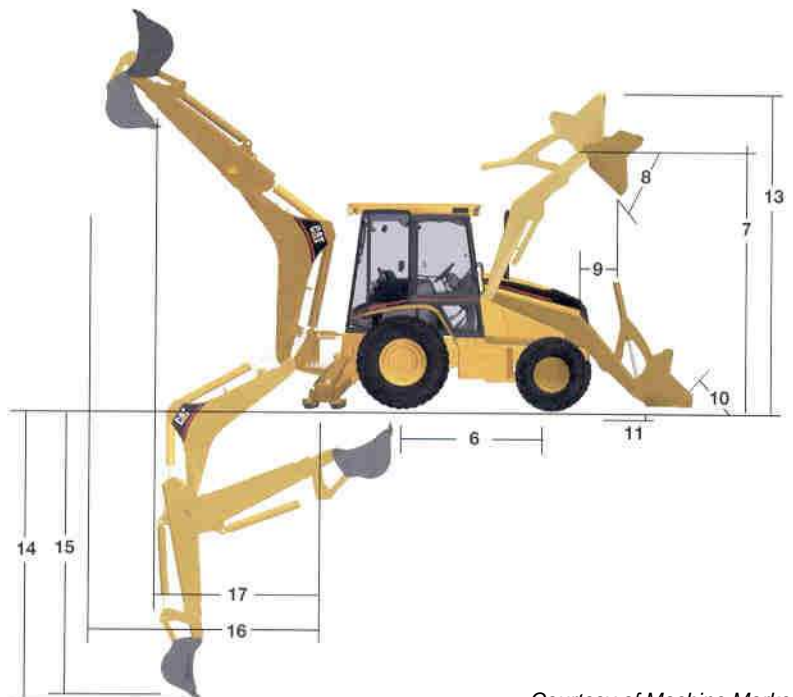
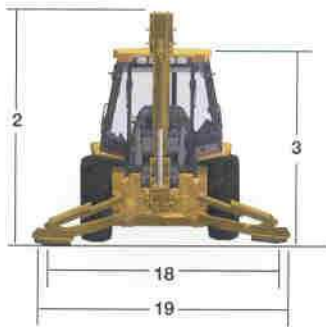
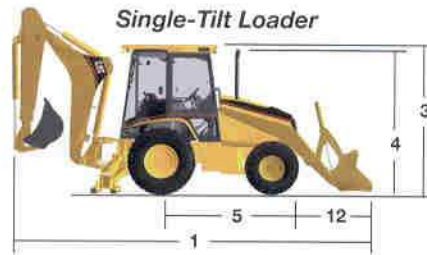
	Single-Tilt Loader		
	General Purpose (0.76 m ³ /1.0 yd ³)	General Purpose (0.96 m ³ /1.25 yd ³)	Multi Purpose (0.96 m ³ /1.25 yd ³)
(1) Overall transport length	6949 mm/22 ft 10 in	7019 mm/23 ft 0 in	6974 mm/22 ft 11 in
Overall length (loader on ground)	6929 mm/22 ft 9 in	6999 mm/23 ft 0 in	6954 mm/22 ft 10 in
(2) Overall transport height (standard stick)	3585 mm/11 ft 9 in	3585 mm/11 ft 9 in	3585 mm/11 ft 9 in
Overall transport height (extendible stick)	3590 mm/11 ft 9 in	3590 mm/11 ft 9 in	3590 mm/11 ft 9 in
Overall width	2352 mm/7 ft 9 in	2352 mm/7 ft 9 in	2352 mm/7 ft 9 in
(3) Height to top of cab/canopy	2770 mm/9 ft 1 in	2770 mm/9 ft 1 in	2770 mm/9 ft 1 in
(4) Height to top of exhaust stack	2670 mm/8 ft 9 in	2670 mm/8 ft 9 in	2670 mm/8 ft 9 in
Height to loader hinge pin (transport)	510 mm/1 ft 8 in	510 mm/1 ft 8 in	510 mm/1 ft 8 in
Ground clearance (minimum)	297 mm/1 ft 0 in	297 mm/1 ft 0 in	297 mm/1 ft 0 in
(5) Rear axle centerline to front grill	2660 mm/8 ft 9 in	2660 mm/8 ft 9 in	2660 mm/8 ft 9 in
Front wheel tread gauge	1871 mm/6 ft 2 in	1871 mm/6 ft 2 in	1871 mm/6 ft 2 in
Rear wheel tread gauge	1714 mm/5 ft 8 in	1714 mm/5 ft 8 in	1714 mm/5 ft 8 in
(6) Wheelbase 2WD/AWD	2100 mm/6 ft 11 in	2100 mm/6 ft 11 in	2100 mm/6 ft 11 in

Loader Bucket Dimensions and Performance

	Single-Tilt Loader		
	General Purpose (0.76 m ³ /1.0 yd ³)	General Purpose (0.96 m ³ /1.25 yd ³)	Multi Purpose (0.96 m ³ /1.25 yd ³)
Capacity (SAE) rated	0.76 m ³ /1.0 yd ³	0.96 m ³ /1.25 yd ³	0.96 m ³ /1.25 yd ³
Width	2262 mm/7 ft 5 in	2262 mm/7 ft 5 in	2262 mm/7 ft 5 in
Lift capacity at maximum height	2473 kg/5,453 lb	2400 kg/5,292 lb	2240 kg/4,938 lb
Breakout force	40.0 kN/8,980 lb	37.9 kN/8,524 lb	37.5 kN/8,429 lb
(7) Maximum hinge pin height	3266 mm/10 ft 9 in	3266 mm/10 ft 9 in	3266 mm/10 ft 9 in
(8) Dump angle at full height	43°	43°	43°
Dump height at maximum angle	2621 mm/8 ft 7 in	2544 mm/8 ft 4 in	2609 mm/8 ft 7 in
(9) Dump reach at maximum angle	753 mm/2 ft 6 in	835 mm/2 ft 9 in	721 mm/2 ft 4 in
(10) Maximum bucket rollback at ground level	40°	40°	40°
(11) Digging depth	135 mm/5 in	135 mm/5 in	166 mm/6 in
Maximum grading angle	110°	106°	110°
Width of dozer cutting edge	N/A	N/A	2406 mm/7 ft 11 in
(12) Grill to bucket cutting edge, carry position	1474 mm/4 ft 10 in	1548 mm/5 ft 1 in	1501 mm/4 ft 11 in
(13) Maximum operating height	3996 mm/13 ft 1 in	4146 mm/13 ft 7 in	4174 mm/13 ft 8 in
Jaw opening maximum	N/A	N/A	790 mm/2 ft 7 in
Bucket jaw clamping force	N/A	N/A	50.6 kN/11,385 lb
Weight (does not include teeth or forks)	380 kg/838 lb	428 kg/944 lb	659 kg/1,453 lb

Backhoe Dimensions and Performance

	Standard Stick	Extendible Stick Retracted	Extendible Stick Extended
(14) Digging depth, SAE (max)	4390 mm/14 ft 5 in	4465 mm/14 ft 8 in	5510 mm/18 ft 1 in
(15) Digging depth, 2 ft flat bottom	4362 mm/14 ft 4 in	4432 mm/14 ft 7 in	5474 mm/18 ft 0 in
Reach from rear axle centerline at ground line	6740 mm/22 ft 1 in	6795 mm/22 ft 4 in	7765 mm/25 ft 6 in
(16) Reach from swing pivot at ground line	5650 mm/18 ft 6 in	5705 mm/18 ft 9 in	6675 mm/21 ft 11 in
Maximum operating height	5450 mm/17 ft 11 in	5470 mm/17 ft 11 in	6140 mm/20 ft 2 in
Loading height	3613 mm/11 ft 10 in	3630 mm/11 ft 11 in	4175 mm/13 ft 8 in
(17) Loading reach	1732 mm/5 ft 8 in	1819 mm/6 ft 0 in	2736 mm/9 ft 0 in
Swing arc	180°	180°	180°
Bucket rotation	205°	205°	205°
(18) Stabilizer spread, operating position (center of pad)	3219 mm/10 ft 7 in	3219 mm/10 ft 7 in	3219 mm/10 ft 7 in
(19) Stabilizer spread, operating position (outside edge of pad)	3689 mm/12 ft 1 in	3689 mm/12 ft 1 in	3689 mm/12 ft 1 in
Stabilizer spread, transport position	2352 mm/7 ft 9 in	2352 mm/7 ft 9 in	2352 mm/7 ft 9 in
Bucket dig force	52.0 kN/11,702 lb	51.6 kN/11,599 lb	51.6 kN/11,599 lb
Stick dig force	34.9 kN/7,841 lb	34.2 kN/7,693 lb	25.2 kN/5,661 lb



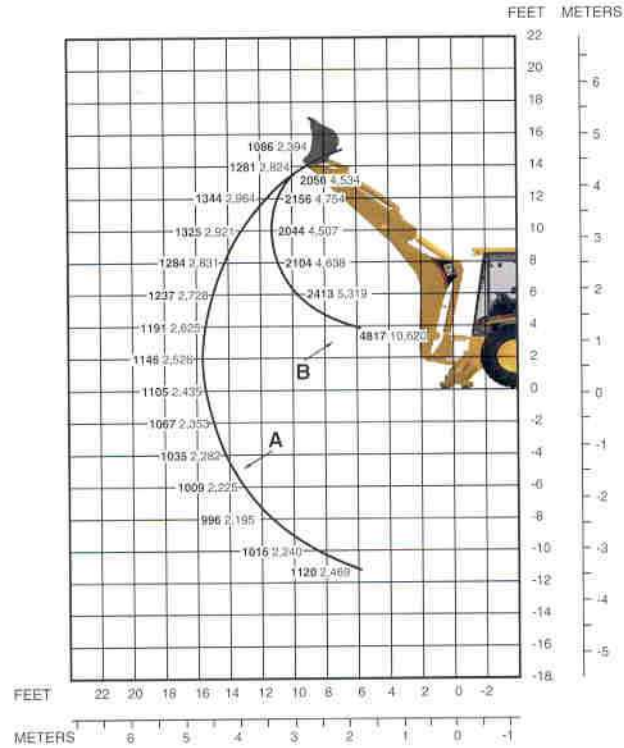
Dimensions and performance specifications shown are for machines equipped with 11L x 16 (10 PR) front tires, 19.5 x 24 (10 PR) rear tires, ROPS canopy, standard stick with 24-inch standard-duty bucket, and 1.0 yd³ loader bucket and standard equipment unless otherwise specified.

Backhoe Lift Capacity

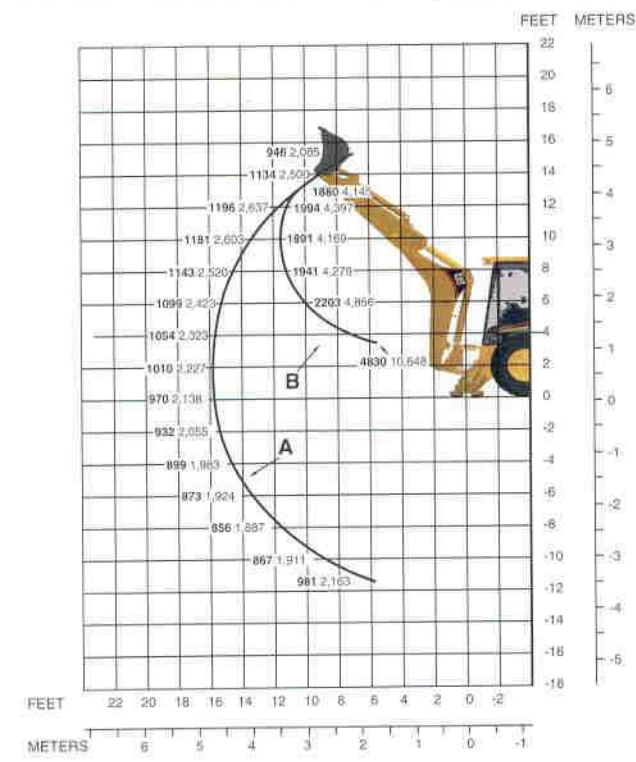
Cat 416D Standard Stick

KEY

- A — Boom lift kg lb
- B — Stick lift kg lb



Cat 416D Extendible Stick — Retracted



Standard Equipment

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

Air cleaner	Grill, front with bumpers
Alarm, back-up	Ground line fuel fill
Alarm, audible system fault	Hydraulic hose, XT-3
Alternator, 55-amp, 12-volt	Hydraulic oil cooler
Axle, pendulum mount (front)	Indicators
Backhoe, center pivot, excavator-style with two lever mechanical controls	air cleaner service, brake on, engine coolant, hydraulic oil level sight gauge, oil pressure
Battery, maintenance-free, 700 CCA	Instrument panel lights
Boom transport lock	Key start/stop system
Brace, lift cylinder	Lights, working (2 front, 2 rear)
Brake, secondary parking	Loader, self-leveling, return-to-dig and transmission disconnect switch
Brakes, oil disk, dual pedals, interlock	Mirror, rearview
Bucket level indicator	Power steering, hydrostatic
Canopy, ROPS/FOPS	Seat belt, retractable (51 mm/2 in)
Coat hook	Seat, see page 9
Coolant/Antifreeze, extended life	Stabilizers, pilot operated
Counterweight, bumper	Stabilizer shoes, grouser style
Differential lock	Starting system, thermal starting aid
Engine, Cat 3054B diesel	Stop and tail lights (2)
Engine enclosure	Swing transport lock
Face seals, O-ring	Tires, see page 14
Fan, suction and guard	Toolbox, external, lockable
Fast reversing shuttle, all gears	Torque converter
Filters, spin-on	Throttles, hand and foot
fuel, engine oil, transmission oil, water separator, hydraulic fluid	Transmission, four speed, syncromesh
Flashing hazard/signal lights	Transmission neutralizer switch
Floor mat	Transport tie-downs
Gauges	Warning horn, electric
coolant temperature, fuel level, tachometer, hour meter, torque converter oil temperature	

Optional Equipment

With approximate change in operating weight (kg/lb).

Alternator, 90 amp	8/18	Cat 3054T diesel engine (optional 80 HP net)	5/10	Lights: Working, additional (2 front, 2 rear)	3/7
Attachments, front loader (single tilt) General-purpose buckets: 0.76 m ³ /1.0 yd ³*		Coolant, additional protection (-50° C/-58° F)	0/0	Receptacle, 12 volt: Internal	0.2/1
0.96 m ³ /1.25 yd ³	48/106	Counterweights: Base	145/320	External	0.2/1
Multi-purpose bucket: 0.96 m ³ /1.25 yd ³	279/615	Stackable: three (each)	105/230	Ride Control	25/55
0.96 m ³ /1.25 yd ³ w/forks	450/992	one	215/470	Rotating beacon: Fixed mounted	5/11
Attachments, backhoe: Buckets (see page 15)		Cutting edge, bolt-on: Two piece	70/154	Magnetic mounted	5/11
Mechanical Quick Coupler : D - Series buckets	75/165	Guards: AWD driveshaft	29/64	Seat, air suspension with fabric or vinyl seat cover and armrests	2/5
C - Series buckets	75/165	Stabilizer, rock	30/65	Stabilizers: Street pads, rubber (set of 4)	37/82
D and Deere buckets	75/165	High ambient cooling package	2/4	Reversible pads	38/84
D and Case buckets	80/176	Hydraulic valves, loader: 3rd valve for MP	27/60	Stick, extendible	245/540
Axle, front: All-wheel drive	106/234	Hydraulic valves, backhoe: Auxiliary valve (standard stick)	5/11	Teeth, loader bucket	45/99
Backhoe controls: Excavator pattern	4/9	Auxiliary valve (extendible stick)	5/11	Tires (see page 14)	
Foot swing, 3 or 4 lever	12/26	Hydraulic lines: Auxiliary, two-way (to boom)	10/22	Vandalism protection: Gauge cover	1/2
Battery, additional	27/60	Universal, one-way (to stick)	45/99	Padlocks	1/2
Cab, Utility	225/495	Quick disconnects	2/4	Hood lock	0/0
Cab, Utility Plus	279/614				
Includes radio-ready headliner, storage console, right side door, internal and external power receptacles, and tilt steering wheel					

*Included in base machine weight