



# Cat<sup>®</sup> 450

## BACKHOE LOADER

### FEATURES:

The Cat<sup>®</sup> 450 Backhoe Loader delivers improved machine performance, a superior hydraulic system, improved operator controls and ergonomics, and overall versatility. The 450 features the following:

- **Ergonomic Operator Station** – Adjustable Seat Mounted Controls improve ergonomics by increasing operator comfort and legroom. Operators have Loader and Backhoe Controls in the palm of their hands, whether they are facing the Loader, the Backhoe, or sitting off set. Variable Speed Steer reduces operator fatigue in applications, such as truck loading, by reducing the number of steering wheel rotations required to turn the machine. The new Spring Applied Hydraulically Released (SAHR) Parking Brake is controlled by simply pressing a button.
- **Advanced Hydraulics** – The Cat Backhoe Loader's load sensing piston pump provides full hydraulic lifting and digging forces at any engine speed. Variable flow pump matches hydraulic power to work demands. The advanced hydraulic system allows the operator to adjust Loader and Backhoe Auxiliary Flow matching attachment specifications, program Loader Bucket Kickout and Return to Dig, and Enable Parallel Lift.
- **Machine Performance** – The Cat C4.4 ACERT™ engine delivers solid performance and meets U.S. EPA Tier 4 Final/EU Stage IV emission standards by utilizing Selective Catalytic Reduction technology with a Diesel Oxidation Catalyst. The new Backhoe design and optimized Loader Linkage increases lift capacity and breakout forces on both ends of the machine. A redesigned Loader System provides superior machine balance and stability regardless of the ground conditions.
- **Machine Versatility** – The all new Integrated Tool Carrier (IT Coupler) for Single Tilt Loader Arm configurations are available from the factory or for simple field installation. The Cat Backhoe Loader with Integrated Tool Carrier (IT Coupler) will be the most versatile machine on the job site providing quick connection to a variety of Cat Attachments.
- **Cat Attachments** – A variety of Mechanical and Hydraulic Cat Backhoe Couplers are available from the factory or for field installation. Options include, but not limited to, Dual Lock Pin Grabber Couplers and Pin Lock Couplers. Redesigned General Purpose and Multi Purpose Loader Buckets increase digging performance and improve bucket durability for long term value.

## Specifications

### Engine

Engine Model	C4.4 ACERT 106 kW (143 hp) Electronic – Turbo Intercooled	
Ratings at 2,200 rpm		
Gross Power SAE J1995	109 kW	146 hp
Gross Power ISO 14396	106 kW	143 hp
Net Power Rating at 2,200 rpm		
SAE J1349	98 kW	131 hp
ISO 9249	98 kW	131 hp
Net Peak Power Rating		
SAE J1349	100 kW	134 hp
ISO 9249	100 kW	134 hp
Bore	105 mm	4.13 in
Stroke	127 mm	5 in
Displacement	4.4 L	268 in <sup>3</sup>
Torque Rise (Net) at 1,400 rpm	29%	
SAE J1349	540 N·m	400 lb-ft
Power Rating Conditions		
No De-Rating Required Up To	2286 m	7,500 ft

### Weights

Operating Weight – Estimated*	10 904 kg	24,039 lb
Operating Weight – Maximum (ROPS Capacity)	13 300 kg	29,321 lb
Counterweight	974 kg	2,147 lb
Cab, ROPS/FOPS	+243 kg	+536 lb
Loader Bucket		
1.53 m <sup>3</sup> (2.0 yd <sup>3</sup> ) GP (Pin-On)	+80 kg	+176 lb
1.34 m <sup>3</sup> (1.75 yd <sup>3</sup> ) MP HD (Pin-On)	+214 kg	+472 lb
1.34 m <sup>3</sup> (1.75 yd <sup>3</sup> ) MP ED (Pin-On)	+290 kg	+639 lb
1.34 m <sup>3</sup> (1.75 yd <sup>3</sup> ) GP (Hook-On)	–150 kg	–331 lb
1.53 m <sup>3</sup> (2.0 yd <sup>3</sup> ) GP (Hook-On)	–73 kg	–162 lb
1.34 m <sup>3</sup> (1.75 yd <sup>3</sup> ) MP HD (Hook-On)	+85 kg	+187 lb
1.34 m <sup>3</sup> (1.75 yd <sup>3</sup> ) MP ED (Hook-On)	+160 kg	+353 lb
Loader Quick Coupler	+250 kg	+551 lb
Backhoe Quick Coupler	+151 kg	+333 lb
Extendible Stick	+338 kg	+745 lb

\*Machine equipped with 15-19.5 12 ply front and 21L-24 16 ply rear, AWD, OROPS, 1.34 m<sup>3</sup> (1.75 yd<sup>3</sup>) general purpose bucket with bolt-on cutting edge, standard stick, 610 mm (24") heavy-duty backhoe bucket.

GP = General Purpose

MP = Multi Purpose

HD = Heavy Duty

ED = Extreme Duty



# 450 Backhoe Loader

## Transmission

### Autoshift Transmission

Forward – 1st	6.0 km/h	3.7 mph
2nd	9.6 km/h	6.0 mph
3rd	12.5 km/h	7.8 mph
4th	19.8 km/h	12.3 mph
5th	27.2 km/h	16.9 mph
6th	40.6 km/h	25.2 mph
Reverse – 1st	6.0 km/h	3.7 mph
2nd	12.5 km/h	7.8 mph
3rd	27.2 km/h	16.9 mph

- Travel speeds of two wheel drive backhoe loader at full throttle, when equipped with 21×24 rear tires.

## Axle Ratings

### Front Axle, AWD

Static	22 936 kg	50,565 lb
Dynamic	9174 kg	20,225 lb

### Rear Axle

Static	21 662 kg	47,756 lb
Dynamic	8665 kg	19,103 lb

## Hydraulic System

Type	Closed Center	
Pump Type	Variable Flow, Axial Piston	
Pump Capacity @ 2,200 rpm	220 L/min	58.1 gal/min
System Pressure		
Backhoe	26 200 kPa	3,800 psi
Loader	26 200 kPa	3,800 psi

## Steering

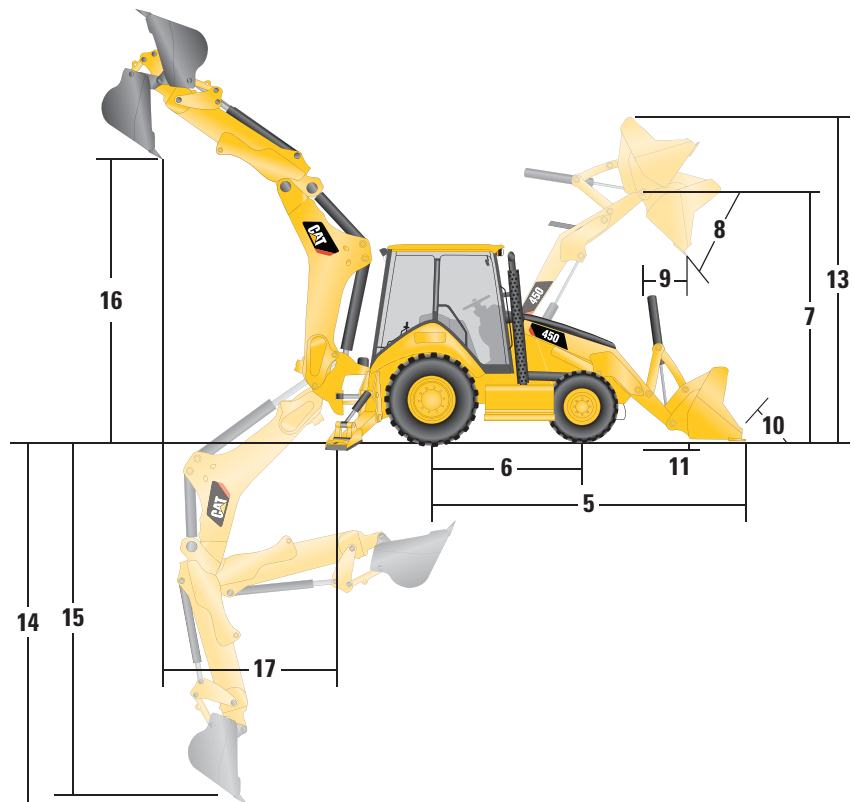
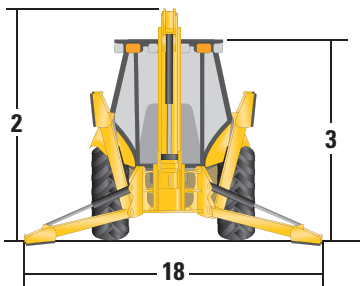
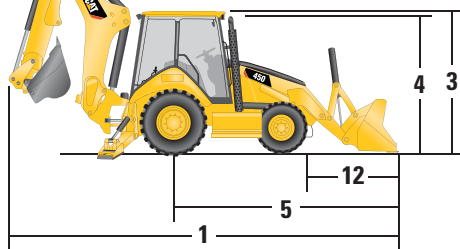
Type	Front Wheel	
Power Steering	Hydrostatic HMMU	
Bore	85 mm	3.35 in
Stroke	236 mm	9.29 in
Rod Diameter	42 mm	1.65 in
Axle Oscillation	11°	
Turning Circle – AWD (inner wheel not braked)		
Outside Front Wheels	8.396 m	27'7"
Outside Widest Loader Bucket	11.5 m	37'9"

- AWD cylinder, one (1) double-acting.

## Service Refill Capacities

Cooling System with Cab Heater	22.5 L	6.0 gal
Fuel Tank	160.0 L	42.3 gal
Engine Oil with Filter	8.8 L	2.3 gal
Diesel Exhaust Fluid (DEF)	19.0 L	5.0 gal
Transmission (Autoshift) – AWD, Autoshift	18.0 L	4.8 gal
Rear Axle (Center Housing)	19.0 L	5.0 gal
Front Axle (Center Housing)	11.0 L	2.9 gal
Planetaries	0.7 L	0.2 gal
Hydraulic System (Minimum)	130.0 L	34.4 gal
Hydraulic Tank (Nominal)	54.0 L	14.3 gal

### Single Tilt Loader



## Machine Dimensions

### Single Tilt Loader

Bucket	GP (Pin-On)		GP (Pin-On)		MP HD (Pin-On)		MP ED (Pin-On)	
	(1.34 m <sup>3</sup> /1.75 yd <sup>3</sup> )		(1.53 m <sup>3</sup> /2.0 yd <sup>3</sup> )		(1.34 m <sup>3</sup> /1.75 yd <sup>3</sup> )		(1.34 m <sup>3</sup> /1.75 yd <sup>3</sup> )	
1 Overall Length (loader on ground) – Standard Stick	7969 mm	26'2"	8060 mm	26'5"	8011 mm	26'3"	7982 mm	26'2"
Overall Length (loader on ground) – Extendible Stick	7966 mm	26'2"	8056 mm	26'5"	8007 mm	26'3"	7978 mm	26'2"
Overall Transport Length – Standard Stick	7933 mm	26'0"	8001 mm	26'3"	7983 mm	26'2"	7961 mm	26'1"
Overall Transport Length – Extendible Stick	7929 mm	26'0"	7997 mm	26'3"	7979 mm	26'2"	7957 mm	26'1"
2 Overall Transport Height – Standard Stick	4208 mm	13'10"	4208 mm	13'10"	4208 mm	13'10"	4208 mm	13'10"
Overall Transport Height – Extendible Stick	4215 mm	13'10"	4215 mm	13'10"	4215 mm	13'10"	4215 mm	13'10"
Overall Width	2415 mm	7'11"	2415 mm	7'11"	2415 mm	7'11"	2415 mm	7'11"
3 Height to Top of Cab/Canopy	2767 mm	9'1"	2767 mm	9'1"	2767 mm	9'1"	2767 mm	9'1"
4 Height to Top of Exhaust Stack	2744 mm	9'0"	2744 mm	9'0"	2744 mm	9'0"	2744 mm	9'0"
Height to Loader Hinge Pin (transport)	388 mm	1'3"	393 mm	1'3"	440 mm	1'5"	440 mm	1'5"
Ground Clearance (LH step)	315 mm	1'0"	315 mm	1'0"	315 mm	1'0"	315 mm	1'0"
Ground Clearance (AWD guard)	319 mm	1'1"	319 mm	1'1"	319 mm	1'1"	319 mm	1'1"
Ground Clearance (counterweight)	306 mm	1'0"	306 mm	1'0"	306 mm	1'0"	306 mm	1'0"
5 Rear Axle Centerline to Front Grill	2841 mm	9'4"	2841 mm	9'4"	2841 mm	9'4"	2841 mm	9'4"
Front Wheel Tread Gauge (track width)	2016 mm	6'7"	2016 mm	6'7"	2016 mm	6'7"	2016 mm	6'7"
Rear Wheel Tread Gauge (track width)	1814 mm	5'11"	1814 mm	5'11"	1814 mm	5'11"	1814 mm	5'11"
6 Wheelbase AWD	2215 mm	7'3"	2215 mm	7'3"	2215 mm	7'3"	2215 mm	7'3"

## Loader Bucket Dimensions and Performance

### Single Tilt Loader

Bucket	GP (Pin-On)		GP (Pin-On)		MP HD (Pin-On)		MP ED (Pin-On)	
	(1.34 m <sup>3</sup> /1.75 yd <sup>3</sup> )		(1.53 m <sup>3</sup> /2.0 yd <sup>3</sup> )		(1.34 m <sup>3</sup> /1.75 yd <sup>3</sup> )		(1.34 m <sup>3</sup> /1.75 yd <sup>3</sup> )	
Capacity (SAE rated)	1.34 m <sup>3</sup>	1.75 yd <sup>3</sup>	1.53 m <sup>3</sup>	2.00 yd <sup>3</sup>	1.34 m <sup>3</sup>	1.75 yd <sup>3</sup>	1.34 m <sup>3</sup>	1.75 yd <sup>3</sup>
Width	2450 mm	8'0"	2450 mm	8'0"	2450 mm	8'0"	2450 mm	8'0"
Lift Capacity at Maximum Height	4031 kg	8,886 lb	3984 kg	8,783 lb	3793 kg	8,362 lb	3754 kg	8,276 lb
Lift Breakout Force	52 397 N	11,779 lbf	50 273 N	11,301 lbf	49 986 N	11,237 lbf	49 791 N	11,193 lbf
Tilt Breakout Force	60 323 N	13,561 lbf	54 655 N	12,286 lbf	57 425 N	12,909 lbf	58 429 N	13,135 lbf
Tipping Load at Breakout Point	7399 kg	16,312 lb	7050 kg	15,543 lb	7102 kg	15,656 lb	7131 kg	15,720 lb
7 Maximum Hinge Pin Height	3649 mm	12'0"	3649 mm	12'0"	3649 mm	12'0"	3649 mm	12'0"
8 Dump Angle at Full Height	43°		43°		43°		43°	
Dump Height at Maximum Angle	2740 mm	9'0"	2679 mm	8'9"	2709 mm	8'11"	2730 mm	8'11"
9 Dump Reach at Maximum Angle	901 mm	2'11"	968 mm	3'2"	920 mm	3'0"	905 mm	3'0"
10 Maximum Bucket Rollback at Ground Level	41°		41°		43°		43°	
11 Digging Depth	133 mm	5"	132 mm	5"	143 mm	6"	138 mm	5"
Maximum Grading Angle	107°		105°		106°		107°	
Width of Dozer Cutting Edge	N/A		N/A		2438 mm	8'0"	2438 mm	8'0"
12 Grill to Bucket Cutting Edge, Carry Position	1753 mm	5'9"	1822 mm	6'0"	1802 mm	5'11"	1779 mm	5'10"
13 Maximum Operating Height	4753 mm	15'7"	4856 mm	15'11"	4758 mm	15'7"	4758 mm	15'7"
Jaw Opening Maximum	N/A		N/A		1019 mm	3'4"	1019 mm	3'4"
Bucket Jaw Clamping Force	N/A		N/A		36 635 N	8,236 lbf	36 635 N	8,236 lbf
Weight (does not include teeth or forks)	1010 kg	2,227 lb	1090 kg	2,403 lb	1224 kg	2,698 lb	1300 kg	2,866 lb

## Backhoe Dimensions and Performance

	Standard Stick		E-Stick Retracted		E-Stick Extended	
	14 Digging Depth, SAE (maximum)	5185 mm	17'0"	5185 mm	17'0"	6417 mm
15 Digging Depth, 2440 mm (8'0") Flat Bottom	4831 mm	15'10"	4831 mm	15'10"	6131 mm	20'1"
Digging Depth, 610 mm (2'0") Flat Bottom	5146 mm	16'11"	5146 mm	16'11"	6380 mm	20'11"
Reach from Rear Axle Centerline at Ground Line	7902 mm	25'11"	7902 mm	25'11"	9065 mm	29'9"
16 Reach from Swing Pivot at Ground Line	6651 mm	21'10"	6651 mm	21'10"	7814 mm	25'8"
Overall Operating Height	6462 mm	21'2"	6464 mm	21'2"	7217 mm	23'8"
Loading Height	4536 mm	14'11"	4518 mm	14'10"	5252 mm	17'3"
17 Loading Reach	2225 mm	7'4"	2239 mm	7'4"	3281 mm	10'9"
Swing Arc	175°		175°		175°	
Bucket Rotation	198°		198°		198°	
18 Stabilizer Spread, Operating Position (outside edge of pad)	4224 mm	13'10"	4224 mm	13'10"	4224 mm	13'10"
Stabilizer Spread, Transport Position	2245 mm	7'4"	2245 mm	7'4"	2245 mm	7'4"
Bucket Dig Force	79 108 N	17,784 lbf	79 116 N	17,786 lbf	79 116 N	17,786 lbf
Stick Dig Force	52 953 N	11,904 lbf	53 669 N	12,065 lbf	40 573 N	9,121 lbf

# 450 Backhoe Loader

## STANDARD EQUIPMENT

- 5185 mm (17 ft) center pivot excavator style backhoe
- Adjustable auxiliary flow controls, loader and backhoe
- Air cleaner
- Alarm, back-up
- Alternator, 150 amp
- Audible system fault alarm
- Automatic Engine Speed Control (AESC)
- Autoshift transmission with six (6) forward and three (3) reverse gears and neutral safety switch
- Backhoe Safety Manual
- Battery Box, external, lockable
- Battery disconnect switch
- Battery, maintenance-free, 1,000 CCA
- Boom transport lock
- Brace, lift cylinder
- Brake, SAHR secondary parking
- Brakes, hydraulically boosted, oil disc, dual pedals, interlocking
- Canopy, ROPS/FOPS
- Cat cushion swing system
- CD-ROM Parts Manual
- Coat restraint
- Coolant/antifreeze, extended life
- Counterweight, bumper, 974 kg (2,147 lb)
- Diagnostic port for engine, machine and gauge cluster Electronic Control Modules
- Differential lock, loader joystick
- Dome light (cab only)
- Engine enclosure, sound suppression removal panels
- Engine, Cat C4.4 ACERT (Direct Injection Turbocharged), meets Tier 4 Final/Stage IV emission standards, selective catalyst reduction, diesel oxidation catalyst (DOC)
- Face seals, O-ring
- Fan, suction and guard
- Fast reversing shuttle, all gears
- Fenders, rear
- Filters, bowl and cartridge: fuel, hydraulic fluid
- Filters, spin-on: engine oil, transmission oil, water separator
- Flashing hazards/signal lights
- Floor mat
- Four Wheel Drive/Brake Mode Selector
- Fuel tank, fully enclosed
- Fully hinged front grill for cooling package cleaning access
- Ground level fuel fill and DEF fill
- Guard, boom protection plate
- Guards, stabilizer, rock
- Hammer cup
- High ambient cooling package
- Hood lock, inside cab
- Hydraulic hose, XT™
- Hydraulic oil cooler
- Hydraulic oil level sight gauge
- Hydraulic valves, backhoe six (6) function
- Hydraulic valves, loader three (3) function
- Hydraulics, load sensing with variable displacement piston pump and flow sharing valve
- Indicator lights: hydraulic implement lockout, hydraulic filter bypass, water in fuel, operator presence, remote dial throttle active, air filter blocked, engine warning, machine locked (if equipped), warning lamp, emissions module malfunction, low battery/charging system warning, high hydraulic oil temperature; LCD warnings: engine oil pressure, service due, high coolant temperature, auto idle shutdown, high torque converter temperature
- Instrument panel lights
- Joystick controls: electrohydraulic controls with pattern changer valve
- Key start/stop system
- LCD operator screen
- Lights, working (four [4] front, four [4] rear)
- Loader joystick, self-leveling, return-to-dig, transmission disconnect switch, Forward/Neutral/Reverse Switch, MP Auxiliary roller
- Loader, single tilt
- Machine Security System integrated into LCD operator display
- Mirror, rearview
- One-touch low idle
- Open circuit breather
- Operations and Maintenance Manual
- Pattern changer, in cab
- Power receptacle, 12 volt, one (1) internal + one (1) USB, two (2) external
- Product Link™
- Radio ready (Cab)
- Ride Control
- Rubber impact strips on radiator guards
- Seat belt, retractable, 51 mm (2 in)
- Seat mounted controls
- Seat, air suspension with armrest
- Stabilizer shoes, reversible
- Stabilizers, electrohydraulic, auto-up function
- Starting system, glow plugs
- Steering knob
- Steering, hydrostatic
- Stop and tail lights
- Storage compartment (Cab/Canopy), lockable
- Storage tray, electronics and miscellaneous items
- Swing transport lock
- Throttle, hand and foot, electronic
- Tilt steering wheel (Canopy), Tilt/telescoping (Cab)
- Tire Valve Stem Protection
- Tires
- Torque converter
- Transmission neutralizer switch
- Transport tie-downs
- Vandalism locks, four (4)
- Vandalism protection, gauge cover (Canopy)
- Warning horn, electric

## OPTIONAL EQUIPMENT

- Battery, additional, 1,000 CCA
- Cab, deluxe with air conditioning
- Cold weather fuel (-30° C/-22° F)
- Cold weather package, including additional battery, engine block heater, radiator antifreeze, cold weather fuel (-30° C/-22° F) and mounting for an ether bottle
- Fenders, front with integral steps
- Guard, stabilizer, stab leg bottom
- Hydraulic lines, combined function auxiliary
- Hydraulic valves, loader quick coupler
- Lights, LED work lights, wide and spot
- Loader, Quick Coupler
- Quick Coupler, backhoe, hydraulic, dual lock
- Radio and CD player, Bluetooth®
- Rotating beacon, magnetic mount
- Seat belt, 75 mm (3 in)
- Seat, heated
- Stick, extendible
- Work Tool Attachments such as buckets, flip over forks, hammers and vibratory plate compactors. See your Cat dealer for more information.

For more complete information on Cat products, dealer services, and industry solutions, visit us on the web at [www.cat.com](http://www.cat.com)

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AEHQ8168 (10-2018)  
Build Number: 07A  
(North America)

