

# 428E

## Backhoe Loader



<b>Cat® 3054C DIT Diesel Engine</b>	<b>Standard</b>	<b>Optional</b>	<b>Operating Weight</b>	<b>7570-10200 kg</b>
Gross Power (SAE J1995) at 2200 rpm	68.5 kW/93 hp	74.5 kW/101 hp	Backhoe Digging Depth	Standard Stick
Net Power (ISO 9249) at 2200 rpm	65 kW/89 hp	71 kW/97 hp	SAE Maximum	4243 mm
			Maximum	4858 mm
<b>Cat® C4.4 Turbocharged After cooled Engine</b>			Backhoe Digging Depth	Extendable Stick
Gross Power (SAE J1995) at 2200 rpm	70 kW/95 hp	74.5 kW/101 hp	SAE Maximum	5342 mm
Net Power (ISO 9249) at 2200 rpm	67 kW/91 hp	71 kW/97 hp	Maximum	5901 mm

# Cat® 428E Backhoe Loader

*The Caterpillar® E-Series Backhoe Loader – The Next Generation.*

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## Loader Versatility

The Cat Parallel Lift Loader.

- Divergent lift arms and low profile hood for maximum visibility to the tool
- Robust design reduces torsional flex when lifting heavy objects
- Return to Dig
- Excellent work tool versatility
- Standard self levelling

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## Operator Station

The E-Series Cab offers an improved operator environment, with increased visibility, ergonomics and comfort.

- Automotive style finish
- Stylish and functional curved glass maximizes space within the cab
- Excellent 360° visibility
- Improved HVAC performance
- Air Suspension seat
- Low effort, well placed controls
- Plenty of personal storage space
- Exceptional operator comfort
- Cab and Canopy options

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## Backhoe Versatility and Performance

- Excavator style backhoe reaches over obstacles, for easier, faster truck loading in confined spaces
- Industry leading 205° High Rotation Linkage gives excellent clamping and straight wall trenching
- New design E-Stick with extending outer section ensures maximum wear protection
- Optional Quick Coupler for maximum versatility

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## *Caterpillar's 428E – The Next Generation*

*Developed with over 20 years experience in the Backhoe Loader industry, the 428E is designed to exceed customer expectations.*

*More performance, versatility and comfort than ever before gives the 428E the edge needed in a harsh and competitive environment.*

*Along with you, it's up to the challenge.*

*See your Cat dealer and try out The Next Generation of Backhoe Loaders from Caterpillar.*



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## Powertrain

The 428E now has 40 kph roading speed as standard. The proven Cat engine is available in two optional variants. Coupled with the Power-Shuttle transmission, it provides all the performance needed.

- Standard 3054C DIT engine (68.5 kW) or Cat C4.4 engine (70 kW)
- Optional 3054C DIT engine (74.5 kW) or Cat C4.4 engine (74.5 kW)
- Engines meet EU directive 97/68/EC Stage II emissions regulations or EU directive 2004/26/EC Stage IIIA emissions regulations
- Durable gear driven water pump.
- Parts commonality with other Cat machines
- Single fuel filter/water separator for lower servicing costs
- Single location access to service refill points

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## Load Sensing, Flow-Sharing Hydraulic System

- Flow-sharing hydraulic valves give improved implement control exactly where it is needed
- Load-sensing hydraulics provide full implement force at any engine speed
- Cat exclusive high pressure XT hose
- O-ring face seals for reliability

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## Serviceability

- Improved fully opening hood provides greater access to engine compartment
- Wear Pad adjustment design on Stabilizers and E-Stick for quick, easy maintenance

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## Other Special Features

- Standard All Wheel Drive for maximum rim-pull and improved loader performance
- Differential Lock for improved traction in poor conditions
- Stackable counterweights provides optimal machine balance
- 160 liter fuel tank, for extended operating time
- Optional Ride Control System for improved ride stability
- All Wheel Braking feature is standard

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## Caterpillar Work Tools

Caterpillar work tools have been designed around the performance and demands of the whole E-Series range.

- Provides maximum versatility for all jobsite applications.
- All loader tools fully compatible with previous generation machines. Hoe tools are compatible with D-Series.

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## Complete Customer Support

Your Caterpillar dealer offers a complete machine aftercare service, such as Customer Support Agreements, and can tailor your purchase to exactly suit your needs. Your dealer can also offer competitive finance packages to ensure that you can plan everything to enable the best return on your new asset. **pg. 13**



## Features

*Customer driven improvements are designed into the 428E.*

### Lower Operating Costs

The 428E has improved Stabilizer and E-Stick wear pad adjustment. External wear pad adjustment ensures easy maintenance of the Stabilizer and E-Stick, lowering operating costs. This equates to less machine downtime and more convenience for the operator.

### Improved Weight Distribution

The 428E has been designed with improved weight distribution. The new design coupled with a slightly longer wheel base ensures optimum balance and handling, particularly when roading. This is achieved with no loss in turning circle.

### Excavator Controls

The 428E is offered with a choice of excavator controls: Backhoe (SAE) Excavator (ISO) or universal controls (X Pattern). This ensures the 428E will suit any type of operator.

### 160 Liter Fuel Tank

Responding to customer needs, a large 160 liter fuel tank, along with the efficient Cat engine and hydraulic system, ensures longer periods between fill ups and less inconvenience.

### Caterpillar Immobilizer System

Machine theft has serious repercussions for your business, such as loss of business, higher insurance costs and inconvenience. The all new Cat Immobilizer System is a diesel engine immobilizer system, designed to provide theft protection. The system meets Thatcham approval and PTAG attack time requirements and a premium discount may be available from certain Insurance companies (see your Cat dealer for details). The system uses the same key but has a one touch pad for easy disarming.

### Electro-Deposition Coating

Your 428E has been protected by an undercoat of electro-deposited (E-Coat) primer, which completely seals each metallic component and offers a superior degree of protection from damage and corrosion. Coupled with the high solid polyurethane top coat, your 428E will stay looking good for longer, ensuring optimum resale value.



## Loader

*The 428E self-levelling loader now has even greater performance.*



### **Improved Loader Performance**

The 428E Parallel Lift Loader is available with either a General Purpose or Multi Purpose bucket, it can be matched to your needs precisely. The work tool visibility is excellent with the narrow sloping hood and divergent loader arms allowing a clear line of sight to the bucket edges. The large torque tube provides torsional stiffness, needed when picking up irregular shaped heavy objects, in the loader bucket, or grading with the loader.

### **Ride Control**

Caterpillar's proven Ride Control system is an option designed to reduce machine pitching and bouncing giving operators a smooth ride in all applications, including load and carry, roading, or simply moving around the jobsite. An accumulator acts as a shock absorber to reduce machine pitching and provide a smoother ride over rough terrain. The system is engaged by a switch on the front console.

### **Return to Dig**

Your 428E is equipped with a Return to Dig system. This system reduces loading cycle times by bringing the loader bucket back to the dig position with an easy pull of the lever. By the time the loader bucket is at ground level, the bucket is angled correctly for the next load or cut.

## Operator Station

*The E-Series cab. Comfort, Visibility, Style – Designed In!*



### **The 428E Cab is Designed with Today's Operator in Mind**

The E-Series cab is designed to provide maximum comfort, ease of operation, and overall style for today's demanding operator. The design incorporates curved glass for improved interior space and visibility, and the cab is widened for better performance when turning from one mode of operation to the other. Cab comfort is enhanced with the first-class Cat air suspension seat, reducing fatigue.

An easy to open single rear piece window provides the operator with excellent ventilation and superb visibility.

The rear wash/wipe unit cleans a large area of the new screen to ensure visibility of the working area when working in wet or dusty conditions.

Excellent ergonomics ensure that all controls are within easy reach of the operator, and tinted glass is standard in all cabs.

Other features such as remote stabilizer controls, large adjustable vents throughout the cab, and clear gauges provide the operator with an operating environment designed to maximize comfort and productivity.



### **Vibration**

Caterpillar understands that backhoe loaders work in some of the harshest environments. By controlling normal machine vibrations caused by these harsh conditions, operator efficiency and productivity are improved. The 428E has features, both standard and optional, that reduce vibration.

### **Operator Controls**

Optimal cab ergonomics are vital to assist the operator in their quest for best productivity. Pressure compensated, well placed levers ensure low efforts and good controllability.

### **HVAC System**

The 428E benefits from an optional, more powerful air conditioning system, which with its new improved ventilation flow to the operator, ensures the operator stays cool. The ventilation system also provides plenty of demisting/defrosting/heating capability.

### **Work Lights**

The 428E has adjustable front and rear work lights. This allows the operator to direct the light wherever needed, providing maximum illumination to the work area.

### **Cab Air Filter**

The 428E has an easy access cab air filter, situated within the RH rear fender. The cab air intake is positioned on the B post, high up to minimize dust intake into the air filter.

### **Cab Mounts**

The cab shell is attached to the frame with resilient mounts, reducing vibration and sound.

### **Cat Suspension Seat**

The major interface between the machine and the operator is optimal, and the Cat suspension seat is an excellent asset to the new E-Series cab design.



## Backhoe Performance

*The E-Series Backhoe improves performance and serviceability.*



### **Excavator-style Backhoe**

The instantly recognizable Cat excavator boom has more than just good looks – it outperforms straight boom designs too. Whether close-up truck loading on a single road carriageway, or digging over obstacles such as walls, the excavator boom outperforms the rest. Combine this versatility with the powerful breakout forces, the controllability of the load-sensing, flow-sharing hydraulic system, and you have the best hoe in the industry. The boom is a narrow design, ensuring maximum visibility to the work tool.

### **Extendable Stick**

The 428E is available with an extendable stick, which provides the operator with increased dig depth and reach, which increases productivity. Redesigned with the sliding outer section, this design keeps the wear pads out of the dirt, extending adjustment intervals. When adjustment is necessary, the externally accessible wear pad design takes minutes to adjust, without the need to disassemble the E-Stick. The sliding outer E-Stick design allows excellent material clamping with the hoe bucket.

### **Slider Frame and Swing Frame**

The 428E is designed to make necessary maintenance easy to perform. The E-Series cast slider frame has exterior lock clamps, with no backhoe disassembly needed when servicing. The Swing Frame/Boom Foot pins have replaceable bushings in the bores.

### **Caterpillar Cushion Swing**

The 428E is equipped with Cat Cushion Swing, which enables very fast trenching by damping the boom oscillation down when returning to trench with the hoe.



## Caterpillar Work Tools

*Enhance the versatility of your 428E with a wide choice of tools on offer to suit your needs.*

### Backhoe Buckets

Cat offers a huge variety of hoe buckets to meet your requirements, including:

- Standard Duty Bucket. Used in easy to penetrate, low impact, moderately abrasive materials.
- Heavy Duty Bucket. Used for digging fragmented rock, frozen ground and highly abrasive materials.
- Extreme Service Bucket. Used in highly abrasive, high impact soil.
- High Capacity Bucket. Same durable construction as the HD bucket, but longer tip radius provides increased fill capacity.

### Durability

Caterpillar backhoe buckets offer superior durability with the following features:

- Thick cutting edges.
- DRS (Diagonal Retention System) ensures easier replacement of pin on teeth and greater strength.
- Thick wear material on the side plates for better reinforcement and less wear.
- ID plates on all buckets showing part number, GET sizes and machine compatibility.

### Sizes

Work tools are available in a full range of sizes, from a 9"/228 mm Cribbing bucket for cable trenching, a range of Ditch Cleaning buckets, right up to large capacity 36"/914 mm buckets for mass excavation.

### Quick Coupler

A Cat quick coupler is available for easy hoe bucket changes.

### Hydro-mechanical Work Tools

Caterpillar has designed a range of hydro-mechanical tools carefully matched to the machine for optimum performance, including:

- Hydraulic Hammers
- Vibratory Compactor
- Cold Planer
- Auger

Please see your Cat dealer for the full range of tools available for particular machine combination.



## Hydraulics

*New flow-sharing hydraulics give the 428E even greater control.*



### **Hydraulic Performance**

It's rare that you'll be working at full production 100% of the time, so why should the machine be working flat out, using more fuel, making more noise, and increasing wear? The 428E has a load-sensing, closed center hydraulic system, which closely matches power and flow to the demand needed by the implements. So whether you're in full trenching mode, or delicately digging around services, you are in control. In applications such as loading and carrying, speed is important. The system will match the flow needed to get the job done quickly and efficiently.

As there is minimal demand on the system unless needed, there are less parasitic hp losses and more power available for rimpull—meaning better loading and roading.

### **Flow Sharing Valves**

The 428E also features flow-sharing hydraulic valves, ensuring that the correct flow of oil reaches the implement cylinders, providing greater control and eliminating oil starvation when operating multiple functions, such as grading with the backhoe.

### **Hardware**

The 428E is equipped with a highly efficient variable displacement piston pump, Cat's XT hoses and O-ring face seal fittings, ensuring a robust system. XT hose is constructed from four over-lapping wire spiral wraps, ensuring excellent durability and resistance to damage from pressure spikes and hydraulic pulsing.

## Power Train

*428E has a 40 kph transmission as standard – less time on the road, more time on the job site.*

### Caterpillar Engine

The 428E is available with either the 3054C turbocharged engine that meets Stage II emission regulation EU Directive 97/68/EC or the C4.4 turbocharged After cooled engine that meets Stage IIIA EU emission Directive 2004/26/EC. A choice of power rating enables the performance of the machine to be matched to customer requirements. All engines are reliable 4 cylinder, 4 stroke direct injection diesel engines equipped with standard glow plug starting for optimum cold weather performance. This provides reliable starting performance down to -18 C. All engines feature a reliable gear driven water pump and a durable poly vee front end auxiliary drive belt that is automatically tensioned for longer life reducing operating costs.

### 40 kph Power-Shuttle Transmission

The 428E comes equipped with 40 kph Power-Shuttle transmission, improving roading speed and providing better spacing between gear ratios. It utilizes a constant mesh, synchronized, four speed system. The forward/reverse lever on the steering column is placed for easy direction changes on the move, and the gear selection is from the floor mounted shift lever.

### Axles and Brakes

The Caterpillar rear axle is an enclosed design with a wet multi-plate Kevlar braking system. This system is oil immersed and self adjusting, and allows operation in the harshest environments. The system has dual brake pedals for split braking in tight corners.

### High Ambient Cooling

The 428E is equipped with a High Ambient (HA) engine cooling package, allowing the machine to be operated in temperatures up to 50°C.

### Air Filter

A dry type axial seal air cleaner with automatic integrated dust ejection provides more efficient pre-separation. Rolled air filters allow consistent linear air flow with reduced installation space.



## Serviceability

*Lower operating costs mean a better return on your asset.*



### Reduced Maintenance

The 428E is equipped with a flip open hood, allowing access to all check/fill points, air cleaner, washer bottles, visual indicators etc. The E-Series carries on the tradition with sealed for life axial oscillation, driveshaft universal joints, trunnions etc. Daily maintenance, which can be a chore for the busy operator, is kept to a minimum on the 428E.

### Boom and Stick Design

The Boom and Stick design allows all wear adjustment to be done with Stick in-situ, using a simple wedge adjustment mechanism – no dismantling to shim the wear pads. The stabilizer legs are also externally adjustable, reducing machine down time and inconvenience.

### Cat Filters

All Cat filters are vertically mounted for spill free servicing and reduced oil contamination. They are also low micron filters, filtering even the tiny particles from the oil and keeping the engine, transmission and hydraulic system running smoothly for years.

### Scheduled Oil Sampling

Your Cat dealer will be able to provide the Caterpillar Scheduled Oil Sampling (S•O•S™) service. This enables your dealer to analyze wear before problems arise, so that premature failure can be avoided, and corrective action can take place to reduce costs and downtime.



## Complete Customer Support

*Lower operating costs with your dealer's excellent services and options.*



### **Customer Support Agreements (CSA's)**

Your Cat dealer can offer a comprehensive range of CSA's which can be individually tailored to suit your finances and requirements. Dealers can offer a range of options from a full Preventative Maintenance with SOS package to a Parts Only CSA. Protect your valuable investment and know exactly what your monthly payments will be to help you run your business.

### **Finance**

Have you explored the range of options available from your dealer to finance your machine? They can offer a selection of attractive packages tailored exactly to your requirements.

### **Machine Selection**

Your dealer can help guide you with your machine purchase decision, based on your requirements and help keep operating costs to a minimum. Is the machine you have in mind exactly the best for your job, or could other attachments be more suitable?

### **Operating Techniques**

Your dealer can advise operating techniques for your machine which will minimize wear and tear, maximize productivity, and lower owning and operating costs.

### **Remanufactured components (Reman)**

Sometimes, the most cost effective way to repair the machine is with remanufactured components. Reman components are rebuilt to original specification at Cat's Reman facility, using genuine parts and skilled technicians. Reman parts are guaranteed for 1 year.

# Engine

Caterpillar 3054C or C4.4 engine.

	Stage II EU Emission Directive 97/68/EC*	Stage IIIA EU Emission Directive 2004/26/EC**
<b>Engine</b>	<b>CAT 3054C Turbocharged</b>	<b>C4.4 Turbocharged after cooled</b>
Rated Power (standard)	2200 rpm	2200 rpm
Gross – SAE J1995	68.5 kW/93 hp	70 kW/95 hp
Net – ISO 9249	65 kW/89 hp	67 kW/91 hp
Net – 80/1269/EEC	65 kW/89 hp	67 kW/91 hp
Rated Power (optional)	2200 rpm	2200 rpm
Gross – SAE J1995	74.5 kW/101 hp	74.5 kW/101 hp
Net – ISO 9249	71 kW/97 hp	71 kW/97 hp
Net – 80/1269/EEC	71 kW/97 hp	71 kW/97 hp
Net Torque Rise at 1400 rpm		
70 kW/95 hp	–	30%
68.5 kW/93 hp	33%	–
74.5 kW/101 hp	26%	23%
Peak Torque Rise at 1400 rpm		
70 kW/95 hp	–	395 Nm
68.5 kW/93 hp	395 Nm	–
74.5 kW/101 hp	408 Nm	400 Nm
Bore	105 mm	105 mm
Stroke	127 mm	127 mm
Displacement	4.4 liter	4.4 liter

- All engine horsepower (hp) are metric including front page.
- Net power advertised is the power available at the fly wheel when the engine is equipped with fan, air cleaner, muffler and alternator.
- Can be operated up to a maximum altitude of 3000 m.

## Features

- Three ring pistons made of lightweight silicon/aluminium alloy for strength and maximum thermal conductivity.
- Forged, chrome/molybdenum-steel crankshaft with nitro-carbonized journals.
- Front and rear crankshaft oil seals are ‘lip’ type Viton and PTFE designs featuring an integral dust lip.

- Heat resistant silicon-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.
- Poly vee front end and auxiliary drive belt that is automatically tensioned for long life reducing operating costs.
- Cylinder head is high strength, cast iron alloy construction with extra duty wall and head thickness. Intake and exhaust ports are precision cast to promote optimum gas flow.
- Direct injection fuel system provides accurate fuel delivery. Self priming electric lift pump for improved cold start capability. One filter fuel system for reduced maintenance costs.
- High torque at low engine speeds for better machine performance.
- Dry type, axial seal air cleaner with automatic, integrated dust ejection providing more efficient pre-separation.
- Direct electric 12 volt starting and charging system with 750 CCA group 31 maintenance free battery.

\* For less regulated countries

\*\* For regulated countries

## 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 125 lpm at 2200 rpm

System pressure 227 bar

## Brakes

Fully enclosed, hydraulic, multiple discs.

### Features

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

Meets ISO 3450:1996 requirements.

## Operator Station

ROPS/FOPS is standard.

ROPS (Roll Over Protective Structure) offered by Caterpillar for this machine meets ROPS criteria ISO 3471:1994 and FOPS (Falling Objects Protective Structure) criteria ISO 3449:1992.

## Steering

Full hydrostatic steering.

Full hydrostatic steering controlled by a hand-metering unit. Secondary steering system available to meet roading regulations in various countries and to meet ISO 5010.

Type	Front wheel
Power Steering	Hydrostatic
Cylinder, one (1) double-acting (AWD)	
Bore	65 mm
Stroke	120 mm
Rod diameter	36 mm

### Turning Circle

Inner wheel not braked 4WD	
Outside front wheels	8180 mm
Outside widest loader bucket	10 800 mm

## Axles

All Wheel Drive is standard.

### Features

- Heavy-duty rear axle with self-adjusting inboard brakes, differential lock and final drives.
- All Wheel Drive (AWD) is engaged by front console panel switch or by brake pedal during all-wheel-braking operation. AWD can be engaged on-the-go, under load, in any gear, forward or reverse. AWD has outer final drives for easy maintenance.
- AWD front axle is pendulum mounted and permanently sealed and lubricated, requiring no daily maintenance. Also features double-acting steering cylinder with 52° steering angle for increased manoeuvrability.

## Transmission

Caterpillar Power-Shuttle

The standard Power-Shuttle transmission provides four speed forward and reverse, 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 while shuttle is engaged. Torque convertor free-wheel clutch allows the convertor 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 when in the loading cycle.

### Forward/Reverse electric power shuttle

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

### Torque convertor

Single stage, 2.64 stall ratio.

### Travel Speeds

Travel speeds of All Wheel Drive backhoe loader at full throttle, when equipped with 16.9 x 28 rear tires.

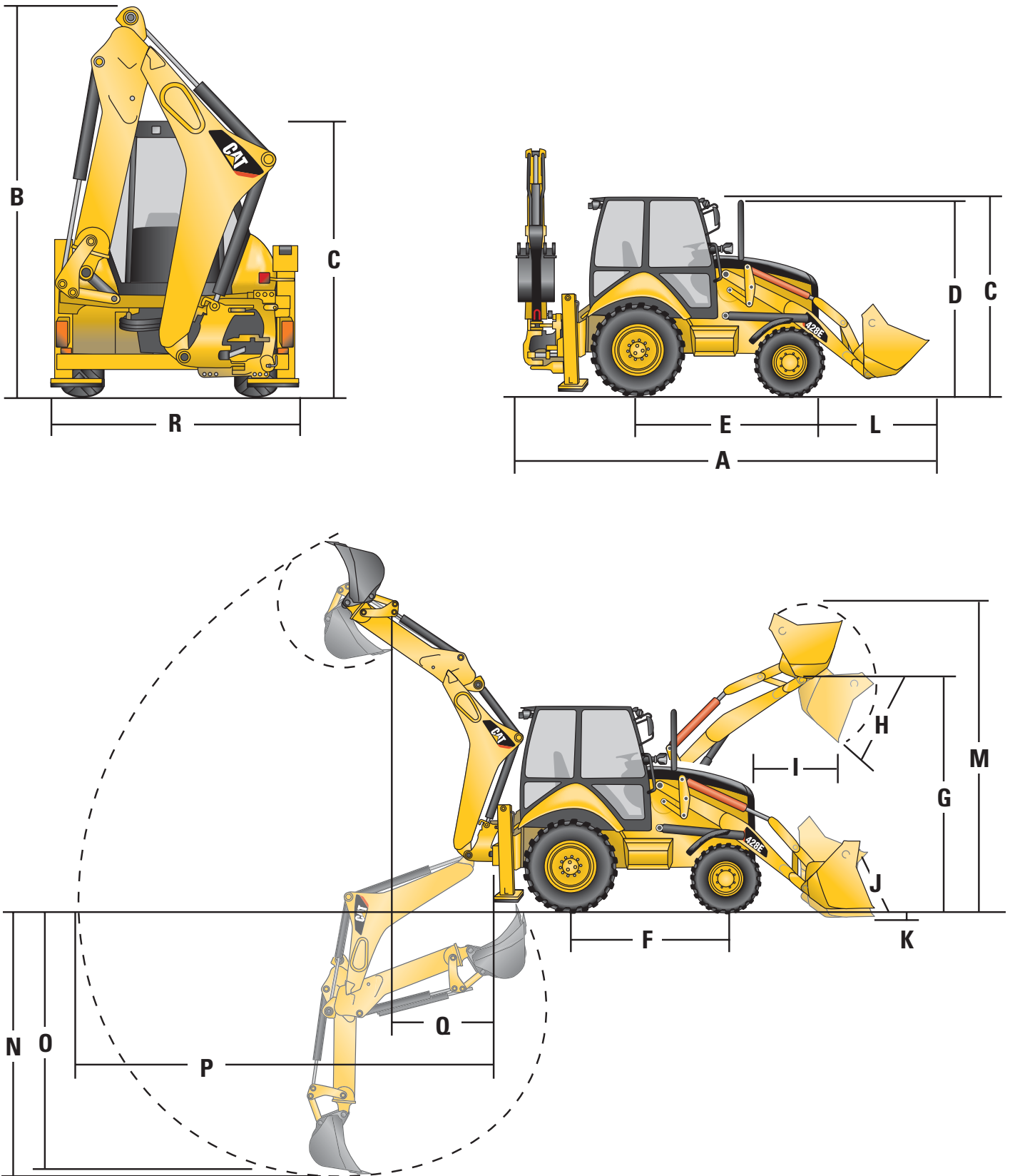
Forward	kph
1st	6
2nd	10
3rd	20
4th	40
Reverse	
1st	6
2nd	10
3rd	20
4th	40

## Service Refill Capacities

	Liters
Cooling System	
without heater	22.0
with heater	24.0
Fuel tank	160.0
Engine with oil filter	7.6
Transmission (Power Shuttle)	
AWD	18.5
Transmission (Powershift)	
AWD	19.0

	Liters
Rear Axle (Rigid)	
Center Housing	16.5
Center Housing Additive	0.5
Wheel End/Final Drive (volume per side)	1.7
Front Axle AWD	
Center Housing	11.0
Wheel End/Final Drive (volume per side)	0.7
Hydraulic System (min/max)	79/99
Hydraulic Tank	38

# Dimensions – Parallel Lift Loader





Machine Dimensions		General Purpose		Multi Purpose	Multi Purpose with forks
<b>A</b>	Overall length (loader on ground) S-Stick	mm	5855	5799	5799
	Overall length (loader on ground) E-Stick	mm	5855	5799	5799
	Overall transport length S-Stick	mm	5881	5856	5856
	Overall transport length E-Stick	mm	5881	5856	5856
<b>B</b>	Overall transport height S-Stick	mm	3736	3736	3736
	Overall transport height E-Stick	mm	3759	3759	3759
	Overall Width (Standard)	mm	2368	2368	2368
	Overall Width (Narrow)	mm	2242	2242	2242
<b>C</b>	Height to top of cab/canopy	mm	2863	2863	2863
<b>D</b>	Height to top of exhaust stack	mm	2779	2779	2779
	Height to loader hinge pin (transport)	mm	403	429	429
	Ground clearance (minimum)	mm	358	358	358
<b>E</b>	Rear axle centerline to front grill	mm	2704	2704	2704
	Front wheel tread gauge	mm	1915	1915	1915
	Rear wheel tread gauge	mm	1713	1713	1713
<b>F</b>	Wheel based (AWD)	mm	2200	2200	2200

Dimensions and Performance – Loader Bucket		General Purpose		Multi Purpose	Multi Purpose with forks
	Capacity (SAE rated)	m <sup>3</sup>	0.96	1.0	1.03
	Width	mm	2262	2406	2406
	Lift capacity at maximum height	kg	3395	3389	3219
	Breakout force	kN	51	51	55
	Tipping load at bucket load point	kg	6108	6249	6192
<b>G</b>	Maximum hinge pin height	mm	3340	3340	3340
<b>H</b>	Dump angle at full height		45°	45°	45°
	Dump height at maximum angle	mm	2602	2634	2668
<b>I</b>	Dump reach at maximum angle	mm	827	795	724
<b>J</b>	Maximum bucket rollback at ground level		39°	39°	39°
<b>K</b>	Digging depth	mm	91	91	118
	Maximum grading angle		111°	112°	115°
	Width of dozer cutting edge	mm	–	–	2406
<b>L</b>	Grill to bucket cutting edge, carry position	mm	1538	1505	1480
<b>M</b>	Maximum operating height	mm	4242	4238	4264
	Jaw open maximum	mm	–	–	790
	Bucket jaw clamping force	kN	–	–	56
	Weight (not including teeth)	kg	417	428	611

Dimensions and Performance – Backhoe		Extendable Stick			
		Standard Stick	Retracted	Extended	
<b>N</b>	Digging depth, SAE maximum	mm	4243	4285	5342
	Digging depth, maximum	mm	4858	4898	5901
<b>O</b>	Digging depth, 610 mm flat bottom, SAE maximum	mm	4205	4248	5342
	Digging depth, 610 mm flat bottom, maximum	mm	4822	4863	5879
<b>P</b>	Reach from swing pivot at ground line	mm	5588	5628	6639
	Loading height	mm	3743	3684	4252
<b>Q</b>	Loading reach	mm	1710	1810	2713
	Swing arc		180°	180°	180°
	Bucket rotation		205°	205°	205°
<b>R</b>	Stabilizer width	mm	2368	2368	2368
	Bucket dig force	kN	52	51	51
	Stick dig force	kN	32	32	23
	Total side shift travel	mm	1258	1258	1258

## Weights

Standard parallel lift loader, with  
1.0 m<sup>3</sup> general purpose loader bucket,  
610 mm standard duty backhoe bucket,  
80 kg operator and a full fuel tank.

	kg
Operating weight (range)	7570-10200
Standard machine weight	7807
ROPS canopy	-260
Air conditioning	48
Multi-purpose bucket 1.03 m <sup>3</sup>	
With fold-over forks	755
Without fold-over forks	700
Extendable stick (excludes front counterweight)	229
Counterweights	
Base	115
Stackables – One	235
Stackables – Max	485

### Minimum Counterweight

#### Recommendations:

Standard Stick (power train AWD)	
General Purpose	145
Multi Purpose	Base
Multi purpose with fold-over forks	Base
Extendable Stick (power train AWD)	
General Purpose	460
Multi Purpose	235
Multi Purpose with fold-over forks	115

## Cab Features

RH opening door with opening window	✓
LH opening door with opening window	✓
2 rear side fixed windows	✓
Standard air suspension seat	✓
8 working lights	✓
Floor mat	✓
LH storage console	✓
Tilt steering column	✓
Exterior rear view mirror	✓
Beacon socket (2)	✓
Internal power socket	✓
Radio ready headliner	✓
Individual display gauges	✓
Sun visor	✓
Steering wheel knob	✓
Vandal guard	✓
Cab heater	✓
Cab air conditioning	optional
Seat belt (50 mm)	✓

## Canopy Features

Glazed front screen and wiper	✓
LH storage console	✓
8 working lights	✓
Standard air suspension seat	✓
Floor mat	✓
Tilt steering column	✓
Vandal guard	✓
Rear view mirror	✓
Individual display gauges	✓
Seat belt (50 mm)	✓

## Standard Equipment

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

Air cleaner, dry type, axial seal with pre-cleaner and filter condition indicator	Front axle, pendulum mount	Mirrors, external (2)
All Wheel Drive	Front grill with bumpers	Power receptacle, 12 V (2)
Alternator, 120-amp, 12 volt	Front headlights	Power steering, hydrostatic
Antifreeze (to -37°C)	Gauges: Coolant temperature, fuel level, tachometer, hour meter, torque convertor, oil temperature	ROPS cab with heater, defroster, pressurizer and cab recirculating fan
Audible system fault alarm	Ground line fuel fill with 160 liters capacity	Seat belt, retractable (50 mm)
Backhoe, 4243 mm dig depth, side-shift, excavator-style backhoe 2 lever control	Grouser style stabilizer shoes	Seat, air suspension with fabric or vinyl seat cover
Battery, maintenance free, 750 CCA	High ambient cooler package	Self canceling directional indicator
Boom, transport lock	Hydraulic oil cooler	Spin-on fuel, engine, hydraulic and transmission oil filters
Brace, lift cylinder	Indicators: Air cleaner service, brake on, engine coolant, hydraulic oil level sight gauge, oil pressure	Starting system, thermal aid
Brakes, Kevlar disc, oil disc	Intermittent front and rear wash/wipe, Instrument panel lights	Stop and tail lights (2)
Cable stabilizer controls	Key start/stop system with auxiliary position	Swing transport lock
Caterpillar 3054C* (68.5 kW) engine or Caterpillar C4.4** (70 kW) engine	Left side door with lock	Tires (2 front, 2 rear)
Coat hook	Lifting eye, backhoe	Torque convertor
Electro-hydraulic slide frame lock	Lights, working (2 front, 2 rear)	Throttles, hand and foot
Engine enclosure	Load sensing, variable flow system with axial piston pump	Transmission, four-speed synchromesh
Fan, cooling and fan guard		Transmission neutralizer switch
Fast reversing shuttle, all gears		Warning horn, front electric
Flashing hazard/signal lights		Water separator
Floor mat, rubber		

\* Standard for less regulated countries, meets stage II EU Emission Directive 97/68/EC.

\*\* Standard for regulated countries, meets stage IIIA EU Emission Directive 2004/26/EC

## Optional Equipment

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

Air conditioning	Fenders, front, All Wheel Drive	Mirror, exterior rearview, large
Alarm, back up	Guards	Operators station
Attachments, front loader	AWD driveshaft	Canopy
General purpose bucket 1.0 m <sup>3</sup>	Teeth (GP/MP)	Ride control
Multi purpose bucket 1.03 m <sup>3</sup>	Rear lights, roading	Rotating beacon
1.03 m <sup>3</sup> with forks	Hydraulic valves, loader	Seat belt 75 mm
Attachments, hoe work tools see pg. 9	3rd valve for GP/MP	Stabilizer street pads
Quick Coupler (mechanical)	Hydraulic valves (auxiliary)	Stick, extendable
Battery, additional	Standard stick	Tilt steering wheel
Caterpillar 3054C DIT* (74.5 kW) engine	Extendable stick	Tool box, external
Caterpillar C4.4** (74.5 kW) engine	Hydraulic lines	Transport locks
Counterweights	Hammer lines to stick	Vandalism protection
Bumper	Quick disconnects	Visor cab
Base	Lights	
Stackables	Number plate, rear	
Cutting edge, bolt on	Roading	
Single piece	Working, 8 lights	
Two piece		

\* Standard for less regulated countries, meets stage II EU Emission Directive 97/68/EC.

\*\* Standard for regulated countries, meets stage IIIA EU Emission Directive 2004/26/EC

# 428E Backhoe Loader

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)

Materials and specifications are subject to change without notice. Featured machines in photos may include additional equipment. See your Caterpillar dealer for available options.

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