428F

Backhoe Loader



Cat® 3054C DIT Diesel Engine*	Standard	Optional
Gross Power (ISO 14396) @ 2,200 rpm	68.5 kW (91 hp)	74.5 kW (101 hp)
Net Power (ISO 9249) @ 2,200 rpm	65 kW (87 hp)	71 kW (95 hp)
Cat C4.4 Turbocharged After Cooled Engine**	**Standard**	**Optional**
Gross Power (ISO 14396) @ 2,200 rpm	70 kW (94 hp)	74.5 kW (101 hp)
Net Power (ISO 9249) @ 2,200 rpm	66 kW (88 hp)	71 kW (95 hp)

*EU Stage II compliant meets EU Emission Directive 97/68/EC.
**EU Stage IIIA EU Emission Directive 2004/26/EC.

Weights	
Operating Weight	8436-10 269 kg
Backhoe Digging Depth	
Digging Depth, SAE Maximum	
Standard Stick	4278 mm
E-Stick Retracted – 4.26 m	4281 mm
E-Stick Extended – 4.26 m	5274 mm

Maximize your productivity and ensure high levels of efficiency with ease of operation and class leading performance.



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A highly productive Backhoe Loader developed with over 25 years experience in the Backhoe Loader industry, the 428F is designed to exceed customer expectations. More performance, versatility and comfort than ever before gives the 428F 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.

Designed with you in mind, the Cat Backhoe Loader is ready to get straight to work.

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

Improved Serviceability

The 428F now has a hinged cooling pack, an easy to open engine hood, and an easy to adjust Stabilizer and E-Stick wear pad system. This means less machine downtime and more convenience for the operator.

Boosted Braking

Boosted Braking is standard on all 428F Backhoe loaders. When driving in two wheel drive, applying the brakes engages four wheel drive. Releasing the brakes returns the transmission to two wheel drive. This effective system works well on hazardous, slippery or steep surfaces. Braking modes are controlled by an easily accessible All Wheel Drive Switch, improving braking effectiveness and reducing tire wear.

Excellent Weight Distribution

The 428F has been designed with a long wheel base to ensure optimum balance and handling, particularly when roading. This is achieved with no loss in turning circle.

Transmissions

A choice of either a manual or an auto-shift transmission provides the operator with the most convenient way in selecting the correct gear for the task at hand.

Lock-up Torque Converter

The 428F is now available with an optional lock-up torque converter, which reduces the amount of time traveling on the road as well as improving fuel consumption.

Excavator Controls

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







Features

Brand new features, designed with you in mind.



Large Non-Metallic Fuel Tank

A large 160 L non-metallic fuel tank in combination with the Cat engine and efficient hydraulic system ensures longer periods between fill ups and less inconvenience. Less condensation and no internal rusting maximizes up time.

Electro-Deposition Coating

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

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 for maximum 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 428F has features, both standard and optional, that reduce vibration.

Cat Air Suspension Seat (Only available on Cab)

The major interface between the machine and the operator is optimal, and the Cat air suspension seat provides the operator with a comfortable working platform to ensure high levels of productivity with the minimum of fatigue.

Cab Mounts

The cab is attached to the mainframe with resilient mounts, reducing vibration and sound providing the operator with an all round comfortable working environment.

Cab Air Filter

The 428F has an easy access cab air filter, situated within the right hand rear fender. The cab air intake is positioned high up to minimize dust intake into the air filter.

HVAC System

The 428F benefits from an optional, powerful air conditioning system, which provides good ventilation to the operator, ensuring the operator stays cool when working in warm temperatures. The ventilation system also provides plenty of demisting, defrosting and heating capability.

Work Lights

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



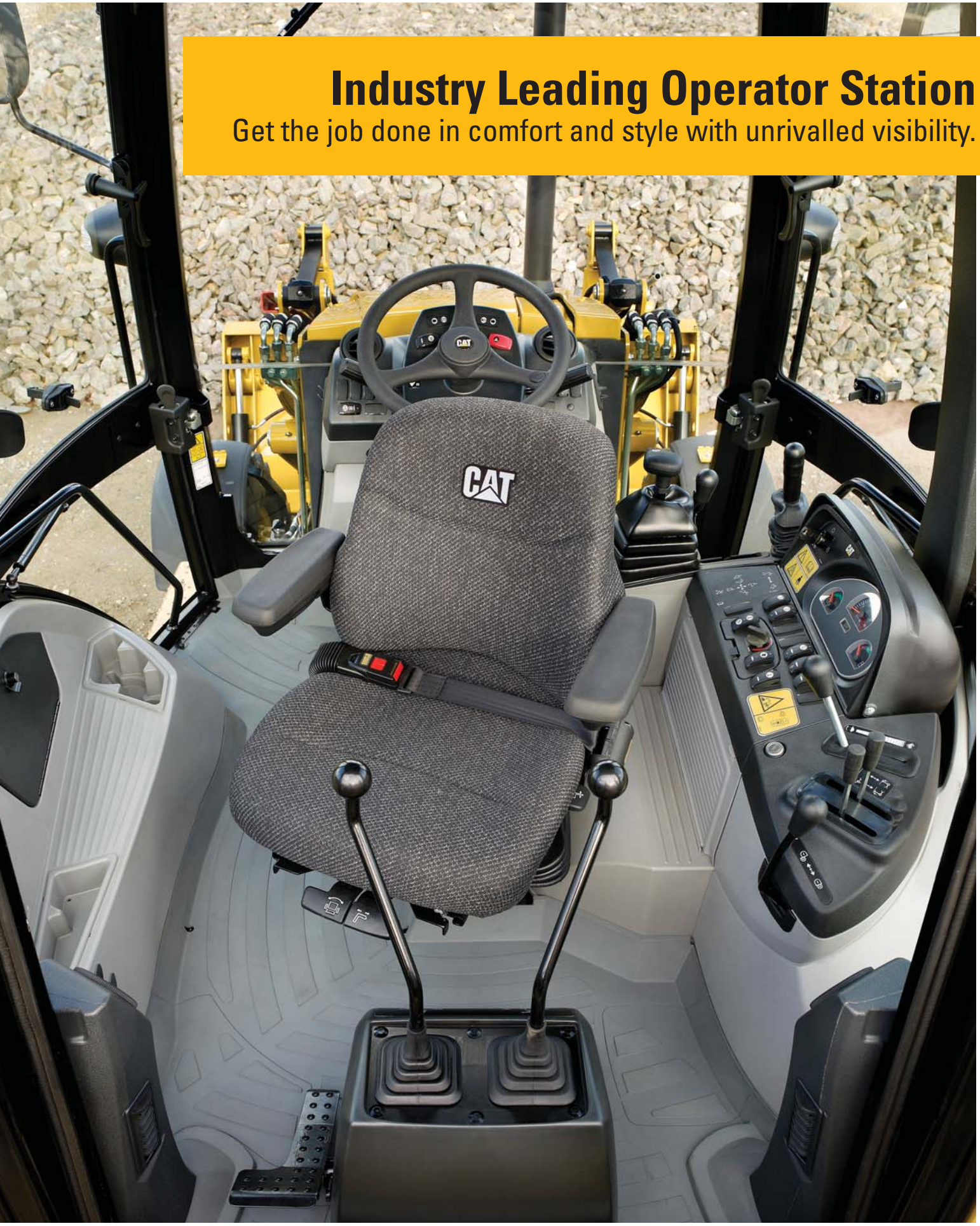
The 428F Cab is designed with today's operator in mind. The design provides maximum comfort, ease of operation and with modern styling, meets the requirements of today's demanding operator. The design incorporates curved glass for improved interior space and visibility. A wide cab provides a spacious environment for better performance when turning the seat 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 wiper easily cleans a large area of the rear screen to ensure excellent 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 a comfortable operating environment designed to reduce operator fatigue and increase productivity.





Industry Leading Operator Station

Get the job done in comfort and style with unrivalled visibility.



Loader

The parallel lift loader reaches new heights.

Loader Performance

Designed with performance in mind, the 428F has higher breakout forces, load over height and reach, making life easier for you when truck loading or shoveling. Parallel Lift Loader arms offer self-leveling as standard, providing safe lifting of any palletized load. Versatility is enhanced with the choice of a General Purpose or Multi Purpose bucket, and visibility is excellent with the lower hood line enabling a clear line of sight to the top of the bucket.

Ride Control

The Cat 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 job site. The system is engaged by a switch on the front console.

Return to Dig

The 428F is equipped with a standard Return to Dig system. This system reduces loading cycle times by bringing the loader bucket back to the dig position automatically when lowering the arms. By the time the loader arms have been lowered to ground level, the bucket is in the correct position ready for the next load.



Backhoe

Best-in-class performance and serviceability.

Excavator-Style Backhoe

Whether close-up truck loading on a single road carriageway, or digging over obstacles such as walls, the excavator boom outperforms the rest combining versatility with the powerful breakout forces, the controllability of the load sensing, flow sharing hydraulic system and the 428F is capable of producing high levels of productivity with the minimum of operator effort. The boom is a narrow design, ensuring maximum visibility to the work tool.

Extendible Stick

The 428F is available with an extendible stick that increases dig depth and reach capability increasing the machines versatility and utilization. A sliding inner section design keeps the wear pads out of the dirt, extending adjustment and replacement intervals. When wear pad adjustment is necessary the adjustment bolts are easy to access taking minutes to adjust, without the need to disassemble the E-Stick. Auxiliary lines, for operating work tools, have been routed so that they are protected from damage when working in the narrowest of trenches.

Slider Frame and Swing Frame

The F 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.

Cat Cushion Swing

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

Powered Side Shift Option

Provides a hydraulic service to enable the operator to easily position the backhoe across the full width of the H-frame without the need to place the bucket on the ground. Ideal for use in utility applications such as gas, electrical, telecoms, etc.



Hydraulics

Smooth and efficient operation.

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 428F has a load-sensing, closed center hydraulic system, which closely matches power and flow to the demand needed by the job in hand. So whether you're in full trenching mode, or delicately digging around services, you are in total control. In applications such as loading and carrying, speed is important, and 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 power losses enabling more power to be available for rimpull – providing better loading and roading performance.

Flow Sharing Valves

The 428F 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.

Hardware

The 428F is equipped with a highly efficient variable displacement piston pump. The reliable high performance hydraulic hose is constructed from two strong steel braided layers and O-Ring face seal fittings provides a robust system ensuring excellent durability and resistance to damage from pressure spikes and hydraulic pulsing.

Work Tools

Do more, be more.
With a range of versatile tools available.

Loader Buckets

General Purpose and hydraulic Multi Purpose buckets are either Pin-on mounted or attached to the quick coupler. They can be fitted with either cutting edge or bolt on teeth. MP buckets are optional with fold over pallet forks.

Backhoe Buckets

For different soil types and digging applications there are multiple bucket designs available, including; Standard Duty, Heavy Duty, High Capacity and Extreme Service (Rock) Buckets. Either bolt on teeth or weld on adapters with pin on teeth can be fitted. Ditch Cleaning, Cribbing and Trapezoidal Buckets are also available.

Auger

The Cat Auger is designed for drilling holes in the earth for a wide variety of applications. A wide variety of Auger bits and drive systems are available, to provide you with the best tool for the job.

Cold Planer

The Cat Cold Planer is designed for both asphalt and concrete planing work, having features like depth control and self-leveling.

Compactor Plate

The Cat Vibratory Plate Compactor can be used to compact soil, sand or gravel in trenching and sloping applications prior to pouring concrete or laying asphalt.

Hammer

Cat Hydraulic Hammers are designed to break up concrete, asphalt or rock and deliver constant power when operated. Silenced options are available to meet with local regulations.

Dual Lock Couplers

Enhance your machines' versatility with a mechanical or hydraulic quick coupler, for easy switching of work tools. Couplers maintain a tight fit throughout their lifetime due to an innovative wedge design.

Contact your Cat dealer for more information.













Power Train

Less time traveling, more time working.



40 km/h Power-Shuttle Transmission

The 428F comes equipped with 40 km/h 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.

Cat Engine

The 428F is available with either the Cat 3054C turbocharged engine that meets Stage II emission regulation EU Directive 97/68/ EC or the Cat 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 needs. All engines are reliable 4 cylinder, 4 stroke direct injection diesel engines equipped with standard glow plug 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.



High Ambient Cooling

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

Air Filter

A dry type axial air cleaner with an integral precleaner and automatic integrated dust ejection system extends the life of the air filter when working in dusty conditions, reducing service time and costs.

Axles and Differential Lock

The heavy duty Cat axles fitted to the 428F have been designed to be used in the most arduous of conditions and the rear axle Differential Lock ensures that traction is maintained in all types of ground conditions.

Dual Brakes

The rear axle is an enclosed design with a wet multiplate 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.

Auto-shift Transmission (Optional)

The optional auto-shift transmission provides automatic shifting between the five forward and three reverse gears and ensures that the correct gear is selected for the task in hand. Hydraulic clutch pack modulation provides smooth take up providing the operator with a more comfortable drive over all types of terrain. With auto-shift there is no floor mounted shift lever, so the operator has more floor space and better access through the right hand door.

Lock-up Torque Converter (Optional)

If traveling from one site to another is an important part of your daily routine then the optional lock-up torque converter (available on the auto-shift transmission only) will enable you to maintain higher speeds, using less fuel, increasing machine productivity, saving you both time and money.

Serviceability

Increase your productivity with reduced maintenance.



Reduced Maintenance

The easy to open engine cover allows access to all check/fill points, air cleaner, washer bottles, visual indicators, etc. We have also introduced a hinged cooling pack making regular maintenance even more convenient for the operator. The F Series continues to provide sealed for life axle oscillation, driveshaft universal joints, trunnions, etc. Daily maintenance, which can be a chore for the busy operator, is kept to a minimum on the 428F.

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. The stabilizer legs are also externally adjustable, reducing machine downtime and inconvenience.

Storage

Having somewhere to keep your tools is important on any machine and that is why on the 428F we have increased the storage area in the large non-metallic storage box.

Cat Filters

All Cat filters are vertically mounted for spill free servicing and reduced oil contamination, Cat filters 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 S·O·S℠. 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.

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 S·O·S℠ 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 suit 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 there be a more suitable solution?

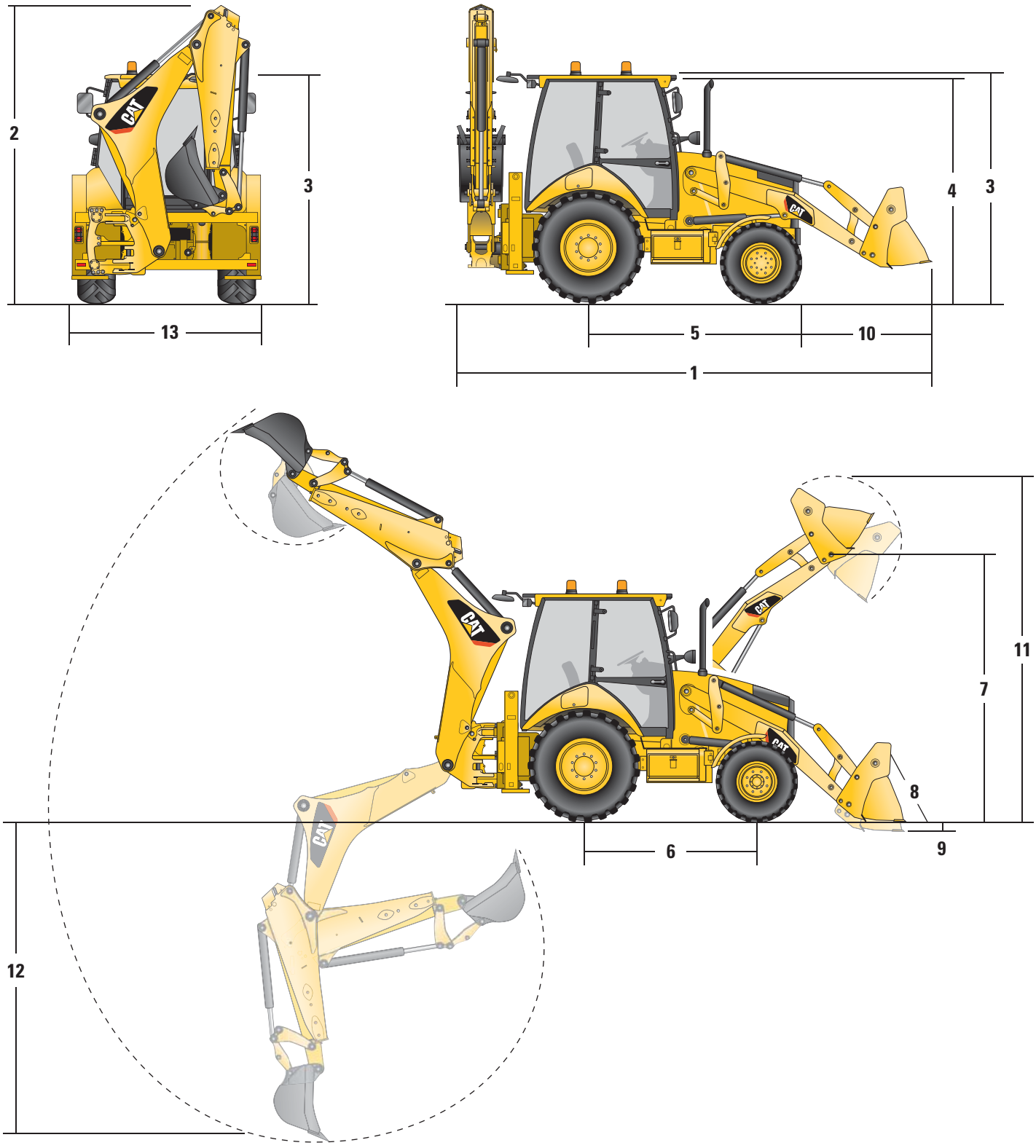
Your dealer can also advise on operating techniques for your machine which will minimize wear and tear, maximize productivity, and lower owning and operating costs.



Customer Support

World class customer support services.

428F Backhoe Loader Specifications



Measurements based on: Sure Grip Lug 12.5/80-18 14PR (Front) and Industrial Sure Grip 16.9-28 12PR R4 (Rear)

Machine Dimensions

		GP	MP	MP with forks
	Overall length (loader on ground) S-Stick	7398 mm	7353 mm	7353 mm
	Overall length (loader on ground) E-Stick	7398 mm	7352 mm	7352 mm
1	Overall length in roading position	5744 mm	5714 mm	5714 mm
	Overall transport length	5750 mm	5704 mm	5704 mm
2	Overall transport height S-Stick	3779 mm	3779 mm	3779 mm
	Overall transport height E-Stick	3771 mm	3771 mm	3771 mm
	Overall width (machine, not including bucket)	2352 mm	2352 mm	2352 mm
3	Height to top of cab/canopy	2897 mm	2897 mm	2897 mm
4	Height to top of exhaust stack	2744 mm	2744 mm	2744 mm
	Height to loader hinge pin (transport)	371 mm	326 mm	326 mm
	Ground clearance (minimum)	320 mm	320 mm	320 mm
5	Rear axle centerline to front grill	2705 mm	2705 mm	2705 mm
	Front wheel tread gauge	1895 mm	1895 mm	1895 mm
	Rear wheel tread gauge	1714 mm	1714 mm	1714 mm
6	Wheelbase 2WD/AWD	2200 mm	2200 mm	2200 mm

Dimensions and Performance – Loader

	GP	MP	MP with forks
Capacity (SAE rated)	1.00 m^3	1.03 m^3	1.03 m^3
Width	2406 mm	2406 mm	2406 mm
Lift breakout force	54.8 kN	53.4 kN	51.7 kN
Tilt breakout force	54.8 kN	60.4 kN	59.5 kN
Lift capacity at maximum height	3817 kg	3580 kg	3402 kg
Tipping load at breakout point	6699 kg	6682 kg	6533 kg
Dump height at maximum angle	2796 mm	2823 mm	2823 mm
Dump reach at maximum angle	805 mm	731 mm	731 mm
Dump angle at full height	46°	46°	46°
7 Maximum hinge pin height	3497 mm	3497 mm	3497 mm
8 Maximum bucket rollback at ground level	38°	39°	39°
9 Digging depth	61 mm	94 mm	94 mm
Maximum grading angle	113°	116°	116°
Width of dozer cutting edge	—	2406 mm	2406 mm
10 Grill to bucket cutting edge, carry position	1471 mm	1423 mm	1423 mm
11 Maximum operating height	4394 mm	4427 mm	4883 mm
Jaw opening maximum	—	790 mm	790 mm
Bucket jaw clamping force	—	61 kN	61 kN
Weight (does not include teeth or forks)	428 kg	611 kg	705 kg

Dimensions and Performance – Backhoe

	Standard	E-stick Retracted	E-stick Extended
Digging depth, SAE maximum	4278 mm	4281 mm	5274 mm
Digging depth, manufacturer's maximum	4775 mm	4813 mm	5730 mm
Digging depth, 2440 mm flat bottom	3893 mm	3897 mm	4966 mm
12 Digging depth, 610 mm flat bottom	4235 mm	4239 mm	5235 mm
Reach from rear axle centerline at ground line	6740 mm	6745 mm	7671 mm
Reach from swing pivot at ground line	5650 mm	5655 mm	6581 mm
Maximum operating height	5691 mm	5692 mm	6297 mm
Loading height	4016 mm	4025 mm	4630 mm
Loading reach	1669 mm	1617 mm	2475 mm
Swing arc	180°	180°	180°
Bucket rotation	205°	205°	205°
13 Stabilizer (overall width)	2352 mm	2352 mm	2352 mm
Bucket dig force	63.5 kN	63.4 kN	63.4 kN
Stick dig force	35.4 kN	36 kN	26.4 kN

428F Backhoe Loader Specifications

Engine

Engine Model	Cat 3054C*	Cat C4.4**
Rated Power (standard)	2,200 rpm	2,200 rpm
Gross – ISO 14396	68.5 kW/91 hp	70 kW/94 hp
Net – ISO 9249	65 kW/87 hp	66 kW/88 hp
Net – 80/1269/EEC	65 kW/87 hp	66 kW/89 hp
Rated Power (optional)	2,200 rpm	2,200 rpm
Gross – ISO 14396	74.5 kW/101 hp	74.5 kW/101 hp
Net – ISO 9249	71 kW/95 hp	71 kW/95 hp
Net – 80/1269/EEC	71 kW/95 hp	71 kW/95 hp
Net Torque Rise @ 1,400 rpm		
68.5 kW/91 hp	38%	—
70 kW/94 hp	—	36%
74.5 kW/101 hp	31%	32%
Peak Torque Rise @ 1,400 rpm		
68.5 kW/91 hp	384 N·m	—
70 kW/94 hp	—	384 N·m
74.5 kW/101 hp	397 N·m	399 N·m
Bore	105 mm	105 mm
Stroke	127 mm	127 mm
Displacement	4.4 L	4.4 L

- All power ratings are to the nearest kW/hp (no decimal places).
- All engine horsepower (hp) are metric including front page.
- Net power advertised is the power available at the flywheel when the engine is equipped with fan, air cleaner, muffler and alternator.
- Can be operated at altitudes up to 3000 m.

*Stage II EU Emission Directive 97/68/EC.
**Stage IIIA EU Emission Directive 2004/26/EC.

Features

- Three ring pistons made of lightweight silicon/aluminum 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.

Axles

Standard All Wheel Drive.

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 maneuverability.

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.

Steering	
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 (AWD)	
Outside Front Wheels	8180 mm
Outside Widest Loader Bucket	10 970 mm

Brakes

Fully enclosed boosted, hydraulic, multiple discs.

Features

- Inboard oil-immersed, hydraulically actuated multiple Kevlar discs on final drive input shaft.
- Completely enclosed and sealed.
- Self-adjusting.
- Dual foot-operated boosted 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 ISO 3450:1996 requirements.

Weights

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

Weights	
Operating Weight (Range)	8436-10 269 kg
Auto-shift	27 kg
Air Conditioning	39 kg
Ride Control	25 kg
Multi Purpose Bucket	1.03 m^3
with Fold-Over Forks	871 kg
without Fold-Over Forks	611 kg
Extendible Stick (Excludes Front Counterweight)	299 kg
Counterweights	
Light	115 kg
Medium	250 kg
Heavy	485 kg

Minimum Counterweight Recommendations:

Standard Stick (Power Train AWD)	
General Purpose	115 kg
Multi Purpose	None
Extendible Stick (Power Train AWD)	
General Purpose	485 kg
Multi Purpose	None

Cab Features

Fully Glazed	✓
RH Opening Door with Opening Window	✓
LH Opening Door with Opening Window	✓
2 Rear Side Fixed Windows	✓
Air Suspension Seat	✓
8 Working Lights (4 front, 4 rear)	✓
Floor Mat	✓
LH Storage Console	✓
Tilt Steering Column	✓
Exterior Rearview Mirror	✓
Beacon Socket (2)	✓
Internal Power Socket	✓
Radio Ready Headliner	✓
Instrument Cluster Display Gauge	✓
Sun Visor	✓
Steering Wheel Knob	✓
Vandal Guard	✓
Cab Heater	✓
Seat Belt (50 mm)	✓
Cab Air Conditioning	optional

Canopy Features

Glazed Front Screen and Wiper	✓
LH Storage Console (4 front, 4 rear)	✓
8 Working Lights	✓
Basic Suspension Seat	✓
Floor Mat	✓
Tilt Steering Column	✓
Vandal Guard	✓
Rearview Mirror	✓
Seat Belt (50 mm)	✓

428F Backhoe Loader Specifications

Service Refill Capacities

Cooling System	
with Heater	22 L
Fuel Tank	160 L
Engine with Oil Filter	8.8 L
Transmission	
Power Shuttle AWD	18 L
Rear Axle (Rigid/Steerable)	
Center Housing	16.5 L
Wheel End/Final Drive (Volume per Side)	1.7 L
Front Axle AWD	
Center Housing	11 L
Wheel End/Final Drive (Volume per Side)	0.7 L
Hydraulic System	95 L
Hydraulic Tank	40 L

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 L/m @ 2,200 rpm
System Pressure	
Backhoe	250 bar
Loader	250 bar

Transmission

The standard power-shuttle transmission provides four speed forward and reverse, full synchromesh in all gears. The optional auto-shift transmission can be operated in automatic or manual mode.

	Power-shuttle	Auto-shift
Forward		
1st	6 km/h	6 km/h
2nd	9.7 km/h	9.6 km/h
3rd	20 km/h	20 km/h
4th	40 km/h	27 km/h
5th	—	40 km/h
Reverse		
1st	6 km/h	6 km/h
2nd	9.7 km/h	13 km/h
3rd	20 km/h	27 km/h
4th	40 km/h	—
5th	—	—

Lock-up Torque Converter

The optional lock-up torque converter is automatically selected dependent on ground speed and enables speed to be maintained longer over all types of terrain.

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.

Standard Equipment

Standard equipment may vary. Consult your Cat dealer for details.

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

*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.

428F Optional Equipment

Optional Equipment

Optional equipment may vary. Consult your Cat dealer for details.

- Air conditioning
- Attachments, front loader
  - General purpose bucket 1.0 m^3
  - Multi purpose bucket 1.03 m^3 or 1.03 m^3 with forks
- Attachments, backhoe work tools
  - Quick Coupler (mechanical)
- Auto-shift transmission
- Battery, additional
- Battery, jump-start connection
- Cat 3054C DIT* (74.5 kW) engine
- Cat C4.4** (74.5 kW) engine
- Counterweights
  - 115 kg
  - 250 kg
  - 485 kg
- Cutting edge, bolt on
  - Single piece
  - Two piece
- Fenders, front, All Wheel Drive
- Guards
  - AWD driveshaft
  - Teeth (GP/MP)
  - Rear lights, roading
- Hydraulic valves, loader
  - 3rd valve for GP/MP
- Hydraulic valves (auxiliary)
  - Extendible stick
- Hydraulic lines
  - Hammer lines to stick
  - Quick disconnects
- Lights
  - Number plate, rear
  - Roading
- Lock-up torque converter (only available with the Auto-shift transmission)
- Mirror, exterior rearview, large
- Object handling installation, including lifting eye, boom and stick locks, audible and visual warning system
- Operator station
  - Canopy
- Powered side shift
- Ride control
- Rotating beacon
- Stabilizer street pads
- Stick, extendible
- Tilt steering wheel
- Transport locks
- Vandalism protection
- Visor cab

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**Standard for regulated countries, meets Stage IIIA EU Emission Directive 2004/26/EC.

Notes

428F Backhoe Loader

For more complete information on Cat products, dealer services, and industry solutions, visit us on the web at **www.cat.com**

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

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