

# CS-431C CS-433C CP-433C

Vibratory Soil  
Compactors



## Cat® 3054T Turbo-charged Diesel Engine

Gross Power	78 kW	105 hp
Compaction Width	1676 mm	66"
Centrifugal Force		
High	133,5 kN	30,000 lb
Low	66,8 kN	15,000 lb
Vibratory Frequency	31,9 Hz	1,915 vpm

## Operating Weight

CS-431C	6509 kg	14,349 lb
CS-433C	6773 kg	14,931 lb
CP-433C	7075 kg	15,597 lb



## 400 C-Series Soil Compactors

*The CS-433C, CP-433C and CS-431C Soil Compactors combine the perfect balance of power, productivity and reliability to ensure compaction and machine performance second to none.*

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### Engine

Caterpillar 3054T Turbo-charged Diesel Engine delivers 78 kW (105 hp) and is built for performance and reliability without sacrificing fuel economy.

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### Leveling Blade

The optional leveling blade increases machine utilization to tackle backfilling, material knockdown and light dozing applications.

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### Dual Propel Pumps

The exclusive dual pump propel system provides a separate balanced flow to both the rear drive axle and the front drum drive motor. This system enables the operator to achieve superior gradeability and maintain machine control while compacting on a grade. Dual pumps also minimize drum and wheel spin-out in loose underfoot conditions. Plus, there is plenty of tractive effort and power to utilize the optional leveling blade.

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### Vibratory System

Pod-style weight housing ensures peak vibratory performance and minimal service. Pod is replaceable and features bearing lubrication service intervals of 3 years/3,000 hours.

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## Performance and Reliability You Can Trust

*Caterpillar C-Series Soil Compactors have set the standard in the soil compaction industry for years. Durable Cat power train, field-proven hydraulic and vibratory system and the world's largest and most dedicated dealer support system ensure the 400 C-Series Soil Compactors will provide maximum uptime.*





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**Serviceability**

Wide opening, lockable side access doors and a swing down rear grill permit easy service access. The operator's station tilts forward to provide access to the hydraulic pumps.

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**Operator's Station**

C-Series Soil Compactors feature exceptional operator comfort and visibility. All controls, levers, switches and gauges are positioned to maximize operator productivity. Four heavy-duty isolation mounts minimize machine vibration transfer to the operator's station.

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**Pad Foot Shell Kit**

An optional two-piece pad foot shell kit expands the application range to work in either cohesive or semi-cohesive material. Simple shell kit changing procedure maximizes your work time.

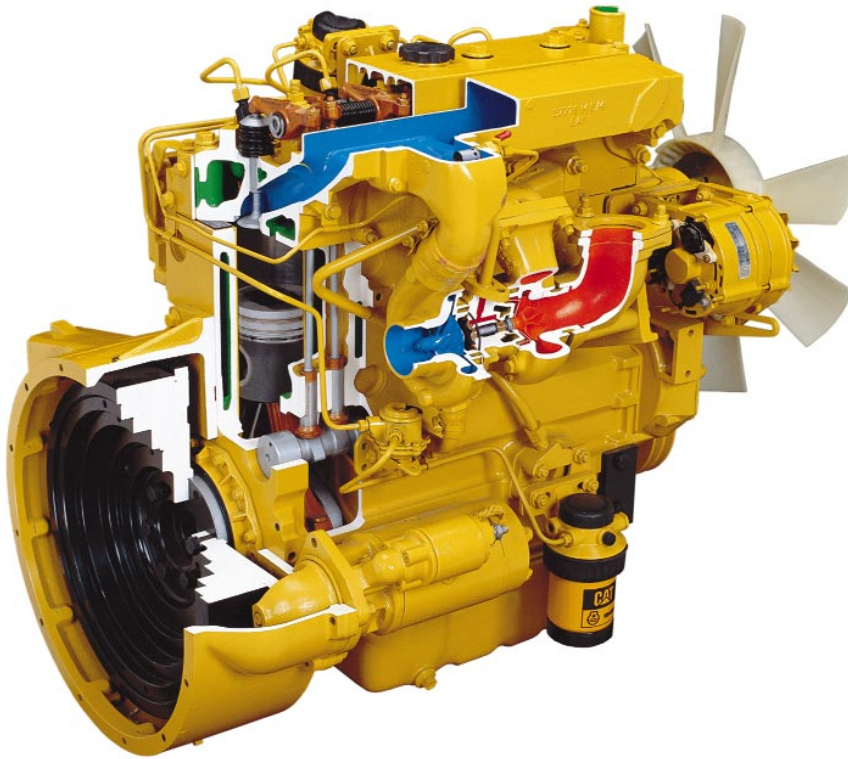
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**More Features, More Performance**

*Machine weight and vibratory performance are precisely engineered to provide peak compactive force. The new pod-style weight system provides exceptional reliability and performance, while greatly reducing maintenance and service time. The narrow yoke design with recessed bolts are ideal for trench applications and tight job site conditions. The optional leveling blade and pad foot shell kit greatly expand the application potential and increases machine utilization.*

## Caterpillar® 3054T Engine

*Industry-proven Caterpillar technology designed to provide performance, reliability and fuel economy.*



**Turbo-charged for top performance and efficiency** even at high altitudes with no derating required up to 2134 m (7,000 ft).

**Adjustment-free direct injection fuel system** provides individually metered high-pressure, direct injection of fuel for maximum efficiency.

**High displacement-to-power ratio** ensures long life and exceptional reliability.

**Engine oil cooler** keeps the engine running cool and maintains the oil integrity.

**Low-mounted oil pump** for quicker start-up lubrication.

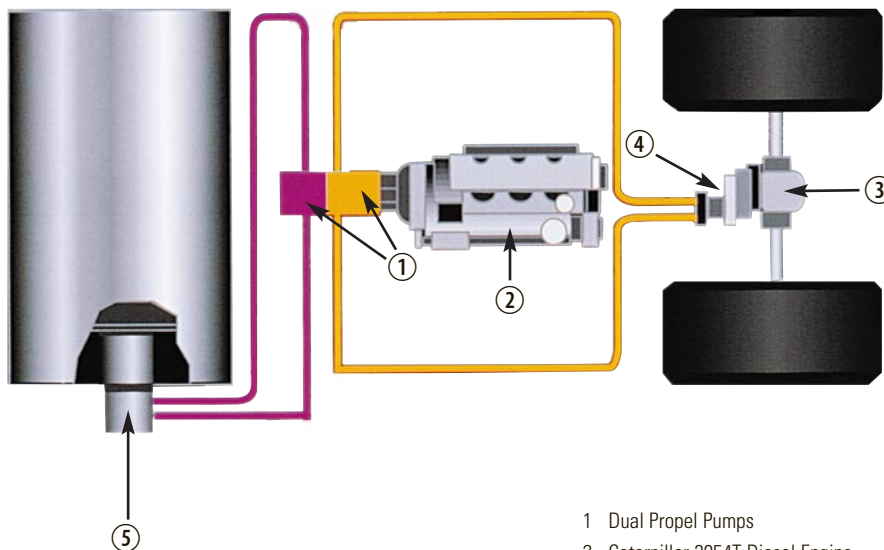
**Dual fuel filters and water separator** offer superior protection for the unit injection system.

**Air inlet heater** helps cold weather starting.

**Meets U.S. EPA emissions standards.**

## Dual Pump Propel System

*Superior tractive effort and gradeability for outstanding productivity and machine control in demanding environments.*



- 1 Dual Propel Pumps
- 2 Caterpillar 3054T Diesel Engine
- 3 No-Spin® Differential
- 4 Rear Wheel Drive Motor
- 5 Drum Drive Motor

**Dual propel pumps** (CS-433C and CP-433C) provide separate, balanced flow to the rear wheel axle and the drum drive motors. Provides superior gradeability and increases tractive effort in soft material. (CS-431C has hydrostatic two-speed rear wheel drive only)

**No-Spin® differential** provides balanced tractive effort to both rear wheels.

**Two speed ranges** for versatile operation. Low speed range for vibratory operation and maximum torque when grade climbing. High speed range moves machine quickly over longer distances.

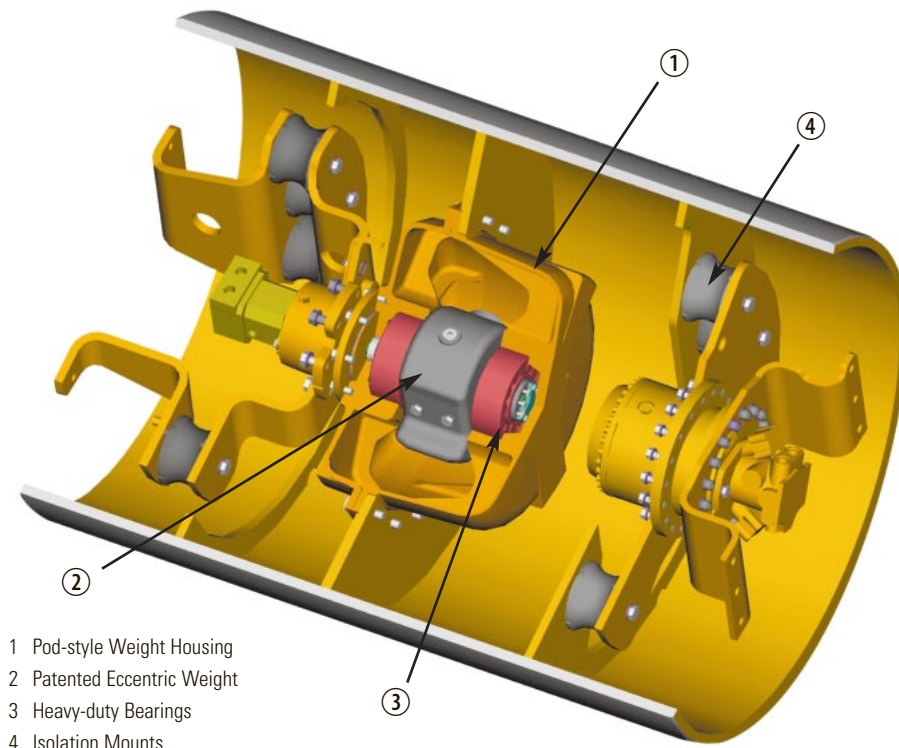
**Flushing valves** in each propel circuit helps keep hydraulic oil cool and clean.

**High travel speed** up to 12,8 km/hr (8.0 mph).



## Vibratory System

*An advanced pod-style vibratory system delivers superior compactive force while offering serviceability advantages.*



**Pod-style weight housing** is assembled and sealed at the factory to ensure cleanliness, longer bearing life and easier field exchange or service with Cat reman components.

**Dual amplitude** works efficiently in a wider range of applications. Changeable from the operator's station.

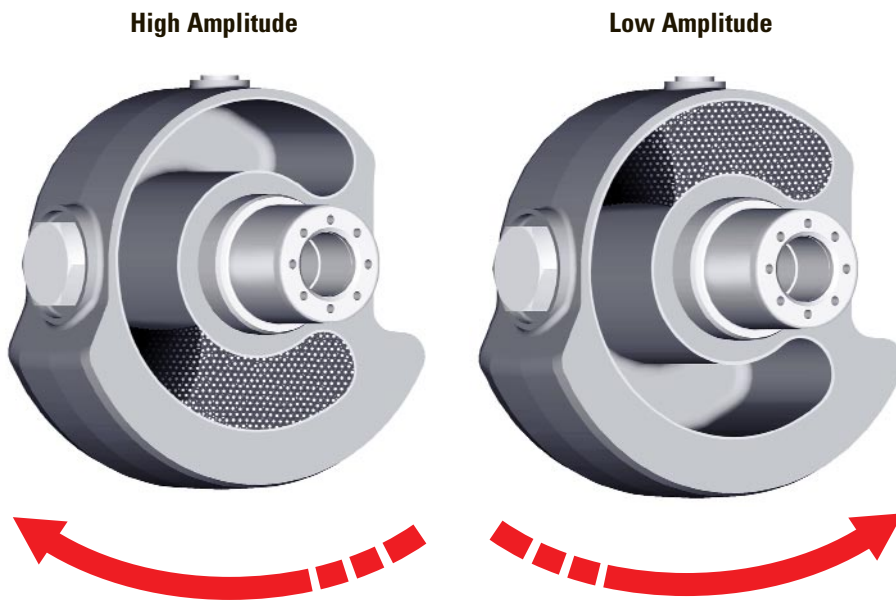
**Larger heavy-duty bearings** for the eccentric weight shaft allows higher frequency for greater force.

**3 year/3,000 hour** vibratory bearing lube service interval for reduced maintenance.

**Improved isolation mounts** allow more force to be transmitted to the ground and less vibration to the operator.

## Patented Eccentric Weights

*Reliable dual amplitude selection and innovative design ensure precise performance.*



**Positive amplitude selection** is accomplished when the spherical steel shot is repositioned inside the hollow eccentric weight. Direction of weight shaft rotation determines amplitude.

**Improved reliability** no chance of shot wedging together. System reliability is superior to swinging mechanical weights.

**Longer service life** no heavy weights to slam together, no metal fragments to contaminate the bearing system.

**Simplified control** from the operator's station with a selection switch on the operator's console.

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## Operator's Station

*Convenient and comfortable operation increases productivity.*



**Single lever control** for propel and vibratory on and off is conveniently located to the right of the operator for simple one-handed operation.

**Spacious and comfortable working environment** with all controls, levers, switches and gauges positioned to maximize productivity.

**Unrestricted visibility** to drum edges, side of the machine and to the rear of the sloped engine cover.

**Four heavy-duty isolation mounts** reduce machine vibration transmitted to the operator's station.

**Comfortable, durable and fully adjustable seat** with flip-up arm rests and a 76 mm (3") wide retractable seat belt.

**Vibratory tachometer option** provides easy-to-see frequency rate on panel behind steering wheel.

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## Cab Option

*Cab option can increase machine utilization in extreme environment conditions.*



**Sound suppressed cab** isolates operator from noise. 75 dBA at operator's ear.

**Excellent visibility** to drum edges, both sides of the machine and to the rear.

**Tinted safety glass** reduces glare and provides added security.

**Windshield wipers** on front and rear windows allow clear vision in adverse conditions.

**Slide-open side windows** for cross ventilation.

**Climate control** with standard heater and defroster for maximum operator comfort.

**Rubber floor mat** helps further isolate the operator from machine vibration and noise.



## Leveling Blade

*Blade option increases machine versatility and utilization, plus greatly enhances productivity.*



**Two-piece reversible and replaceable cutting edges** increase edge service life and reduce replacement costs.

**Expands machine versatility and utilization** for use in material knockdown, site leveling, trench backfilling and light dozing.

**Single lever blade control** provides simple, one-handed operation.

**High mounting point** provides good curb and obstruction clearance.

**Dual propel pumps provide plenty of power and tractive effort** for effective blade use in tough material.

**No special permits for transporting** with a blade width of 2108 mm (6' 11"). Blade cutting depth is 76 mm (3").

## Shell Kit

*Optional shell kit expands the application range of the CS-431C and CS-433C to work in either cohesive or semi-cohesive material.*



**Two-piece shell kit** features 90 mm (3.5") pad height. Each half of the shell kit weighs 453 kg (1,000 lb).

**Expands machine application range** to work effectively in either cohesive or semi-cohesive material.

**Meets compaction specification quickly** with no loss in compactive performance in semi-cohesive material.

**Kit can be quickly and easily removed or installed** for adaptation to specific job conditions with no special tooling required.

**Bumper allows blade option installation** and provides a secure area to store smooth drum scraper plates when not in use.

## CS-431C Asphalt Version

*Features and benefits designed specifically for asphalt compaction.*



**Long-life water pump** is self priming and pressure regulating to provide optimum spray and flow.

**Triple water filtration** reduces machine downtime caused by system clogs.

**Three-amplitude vibratory system** works efficiently in a wide range of applications allowing the operator to easily tailor compactive effort to specific job requirements.

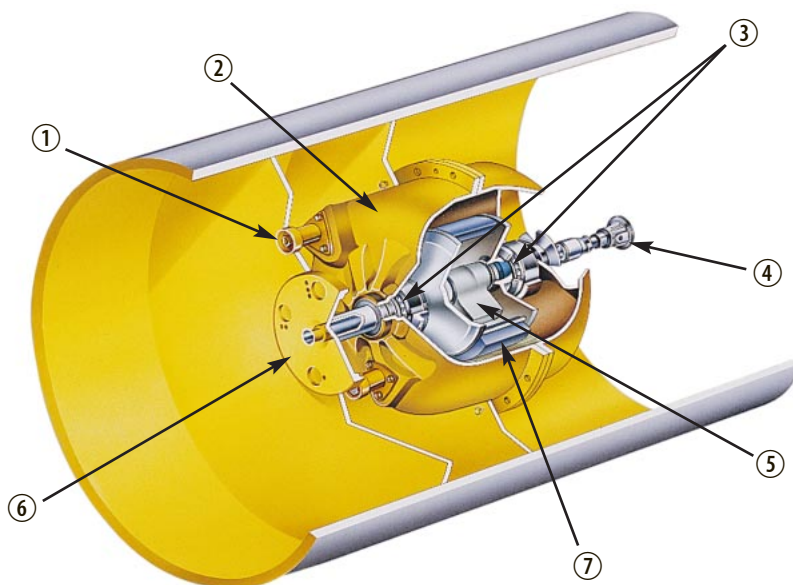
**Plastic water tank** provides excellent forward visibility and resists corrosion. 475 L (132 gal) capacity.

**Smooth rear tires** keep mat quality high and offer better seam compaction.

**Emulsion tire spray system** reduces tire sticking and has a separate tank and spray nozzles.

## CS-431C Asphalt Version Vibratory System

*Specially designed asphalt vibratory system delivers optimum compactive force.*



- 1 Oil level sight gauge
- 2 Pod-style weight housing
- 3 Heavy-duty bearings
- 4 Weight drive shaft to motor

- 5 Three-position counterweight
- 6 Amplitude selection wheel
- 7 Fixed eccentric weight

**Three amplitude selections** for working more efficiently in a wider range of applications.

**Positive weight locking system** ensures position of variable amplitude setting.

**Automatic matching of eccentric weight and drum rotation direction** improves mat quality.

**Automatic vibration start-up and shut-off** helps produce smooth, flawless mats. Manual control possible for joint compaction.

**Long bearing life** is due to the fact that moving vibratory parts are separated from lubricating oil helping to keep bearing lubrication oil clean.



## Reliability and Serviceability

*Reliability and serviceability are integrated into every Caterpillar machine. These important features keep your machine investment profitable.*

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**Convenient ground level access** to all daily maintenance checks and fuel fill.

**Visual indicators** for the hydraulic oil tank and filter, and the air restriction indicator.

**Swing-open service doors** provide simple access to all major engine components.

**Operator's station tilts forward** to allow convenient access to the hydraulic pumps.

**3 year/3,000 hour** vibratory bearing lube service interval for reduced maintenance.

**Quick connect hydraulic test ports** simplify system diagnostics.

**Electrical wiring** is color-coded and numbered to simplify troubleshooting.

**Nylon braided wrap and all-weather connectors** ensure electrical system integrity.

**Maintenance-free Caterpillar batteries** are mounted in the rear of the machine and are accessible through the swing down rear grill. Cat batteries are specifically designed for maximum cranking power and protection against vibration.



**Secure hose routing** with poly blocks to reduce rubbing and increase service life.

**Scheduled Oil Sampling (S•O•S) ports** allow for simple fluid collection.

**Factory Reman parts** are a cost-effective and reliable solution to keep your machines productive. Caterpillar offers a large choice of Reman components including vibratory drum pods.

# Vibratory System

	CS-433C	CP-433C	CS-431C	CS-431C Asphalt
Drum diameters				
Over drum	1221 mm 48"	— —	1221 mm 48"	1300 mm 51"
Over pads	— —	1227 mm 48"	— —	— —
Drum width				
	1676 mm 66"	1676 mm 66"	1676 mm 66"	1700 mm 67"
Drum shell thickness				
	25 mm 1"	25 mm 1"	25 mm 1"	18 mm .71"
Pads				
Number of pads	—	108	—	—
Pad height	— —	90 mm 3.5"	— —	— —
Pad face area	— —	90 sq cm 14 sq in	— —	— —
Number of pads/chevron	—	9	—	—
Number of chevrons	—	12	—	—
Eccentric weight drive				Hydrostatic, direct
Bearing lubrication				Oil bath
Hydraulic filtration				15 micron absolute
Maximum centrifugal force				
High amplitude	133,5 kN 30,000 lb	133,5 kN 30,000 lb	133,5 kN 30,000 lb	107,2 kN 24,081 lb
Middle amplitude	— —	— —	— —	79,3 kN 17,816 lb
Low amplitude	66,8 kN 15,000 lb	66,8 kN 15,000 lb	66,8 kN 15,000 lb	35,8 kN 8041 lb
Frequency				
	31,9 Hz 1,915 vpm	31,9 Hz 1,915 vpm	31,9 Hz 1,915 vpm	40 Hz 2,400 vpm
Amplitude, nominal				
High range	1,67 mm 0.066"	1,55 mm 0.061"	1,67 mm 0.066"	1,05 mm 0.043"
Mid range	— —	— —	— —	0,80 mm 0.031"
Low range	0,84 mm 0.033"	0,78 mm 0.031"	0,84 mm 0.033"	0,36 mm 0.014"
Weight at drum (with ROPS)				
	3401 kg 7,497 lb	3550 kg 7,826 lb	3278 kg 7,226 lb	3455 kg 7,600 lb
PLI (with ROPS)				
Static	20,2 kg/cm 114 lb/in		19,6 kg/cm 109 lb/in	19,9 kg/cm 113.4 lb/in
Centrifugal	81,2 kg/cm 455 lb/in		81,2 kg/cm 455 lb/in	64,3 kg/cm 359 lb/in
PSI (w/blade and ROPS)				
Static	— —	18,1 kg/cm <sup>2</sup> 257 lb/in <sup>2</sup>	— —	— —
Centrifugal	— —	60,5 kg/cm <sup>2</sup> 861 lb/in <sup>2</sup>	— —	— —



## Weight (approximate)

Operating weight includes lubricants, coolant, 79 kg (175 lb) operator, ROPS structure, full fuel tank and full hydraulic system. (CS-431C Asphalt includes 1/2 tank of water)

	<b>CS-433C</b>	<b>CP-433C</b>	<b>CS-431C</b>	<b>CS-431C Asphalt</b>
Operating (Std)	6773 kg 14,931 lb	7075 kg 15,597 lb	6509 kg 14,349 lb	6839 kg 15,077 lb
Operating (Opt Cab)	6977 kg 15,381 lb	7279 kg 16,047 lb	6713 kg 14,799 lb	7043 kg 15,526 lb
Operating (Opt Blade)	7178 kg 15,825 lb	7354 kg 16,212 lb	— —	— —
Weight at drum (Std)	3401 kg 7,497 lb	3550 kg 7,826 lb	3278 kg 7,226 lb	3455 kg 7,616 lb
Weight at drum (Opt Cab)	3469 kg 7,647 lb	3618 kg 7,976 lb	3346 kg 7,376 lb	3523 kg 7,766 lb
Weight at drum (Opt Blade)	3948 kg 8,704 lb	4070 kg 8,972 lb	— —	— —

## Value Analysis

### Gradeability

- Unique dual pump propel system provides field-proven and industry-leading grade climbing, machine control and tractive power for effective use of the leveling blade option.
- Drum and wheel drive results in excellent tractive effort.
- Separate propel systems outperform flow-dividers.

### Productivity

- Pod-style vibratory system provides high compactive effort and features numerous serviceability advantages to keep the machine productive.
- The Cat 3054T engine is matched to machine weight and application demands.
- High dynamic force helps get density in the fewest passes.
- Large pad face area and pad height on the CP-433C and CS-433C shell kit get density deeper in the lift.
- High working speed increases productivity.

### Serviceability

- The side engine compartments and rear radiator compartment covers open wide for easy access to daily maintenance points.
- Parts commonality makes servicing easier.
- 3 year/3,000 hour vibratory bearing lube service interval keeps maintenance to a minimum and maximizes production.
- Daily check points are accessible from the ground.
- The operator's station tilts forward for better hydraulic component access.

### Versatility

- Standard dual amplitude expands the compactor's application range.
- The large spread between high and low centrifugal force makes it easier to tailor the compactive effort to density specifications.
- The high traction propel system means the machine can go more places and push more material with the optional blade.
- The optional pad foot shell kit makes the CS-433C an extremely adaptable machine to either cohesive or semi-cohesive material.

### Reliability

- The patented eccentric weight system is completely sealed.
- The absence of swinging counterweights eliminates the chance for metal chips to contaminate the system or for heavy weights to wedge together.
- The ORFS hydraulic connections reduce system leaks.
- The hydraulic hoses are carefully designed and protected by polyurethane blocks to prevent rubbing.
- The Cat electrical system includes two Caterpillar batteries and color-coded and numbered wires protected by nylon braid wrap.

## Engine

Four-stroke cycle, four cylinder  
Caterpillar® 3054T Turbo-charged, after-cooled Diesel Engine. Meets EPA and CARB emissions engine regulations.

Ratings at	RPM	kW	hp
Gross power	2200	78	105

Ratings of Caterpillar machine engines are based on standard air conditions of 25°C (77°F) and 99 kPa (29.32" Hg) dry barometer. Power is based on using 35° API gravity fuel having an LHV of 42,780 kJ/kg (18,390 Btu/lb) when used at 30°C (86°F) [ref. a fuel density of 838.9 g/L (7.001 lb/U.S. 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 2134 m (7,000') altitude.

The following ratings apply at 2200 RPM when tested under the specified standard conditions:

Net Power	kW	hp
EEC80/1269	73	98
ISO 9249	73	98
SAE J1349 JAN90	73	97

### Dimensions

Bore	100 mm	3.93"
Stroke	127 mm	5"
Displacement	4 L	243 cu. in.

Dual-element, dry-type air cleaner with visual restriction indicator.

## Electrical

The 24-volt electrical system consists of two maintenance-free Caterpillar batteries, color-coded and numbered wiring wrapped in nylon braid. The starting system provides 750 cold cranking amps (cca). The system includes a 55-amp alternator.

## Service Refill Capacities

	Liters	U.S. Gallons
Fuel tank	158	41.4
Cooling system	11	2.9
Crankcase	6,8	1.8
Vibratory bearing lube	12	3.2
Differential	8,3	2.2
Final drives (planetaries)	3,2	0.8
Hydraulic system	71	18.7
Drum drive gearbox	3,2	0.8
Filtration system (pressure type)		
Propel	15 micron absolute	
Vibratory	15 micron absolute	

## Operator and Machine Protective Equipment

### Roll Over Protection Structure / Falling Object Protective Structure (ROPS/FOPS)

is a two-post type that bolts onto flanges integral with the operator platform. The structure meets SAE recommended practice J1040 May94 for Roll Over Protection Structure.

**Backup Alarm**—112 dB(A) alarm sounds whenever the machine is in reverse. The backup alarm has three sound levels that can be changed with a switch located on the alarm.

**Seat Belt**—76 mm (3") wide seat belt is standard.

## Steering

A priority-demand hydraulic power-assist steering system provides smooth low-effort steering. The system always receives the power it needs regardless of other hydraulic functions.

### Minimum turning radius: CS-431C, CS-433C and CP-433C

Inside	3,00 m	(9' 10")
Outside	4,68 m	(15' 4")

### CS-431C Asphalt version

Inside	2,86 m	(9' 4")
Outside	4,71 m	(15' 5")

### Steering angle:

(each direction) ± 37°

### Oscillation angle:

(each direction) ± 15°

### Hydraulic system:

Two 76 mm (3") bore, double-acting cylinders powered by a gear-type pump.

## Instrumentation

Alternator Light, Hour Meter, Fuel Gauge, Horn, Audible Warning Horn for the: Engine Oil Pressure Light, Engine Water Temperature Light, Hydraulic Oil Temperature Light, Low Charge Pressure Light.



## Transmission

### CS-431C

Variable displacement piston pump supplies pressure flow to a two-speed piston motor driving the rear axle.

### CS-433C and CP-433C

Two variable displacement piston pumps supply pressurized flow to two dual displacement piston motors. One pump and motor drives the drum propel system while the other pump and motor drives the rear wheels. The two-pump system ensures equal flow to the drive motors regardless of the operating conditions. In case the drum or wheels lose traction, the other motor can still build the required pressure to provide torque.

The drive motors have two swashplate positions allowing operation at either maximum torque for compaction and gradeability or greater speed for moving around the job site. A toggle switch at the operators console triggers an electric over hydraulic control to change speed ranges. Speed changes can be made without stopping. A single propel lever located on the control console provides smooth hydrostatic control of the machine's infinitely variable speeds in both forward and reverse.

### Speeds (forward and reverse):

Low range	6,0 km/hr – 4.0 mph
High range	12,8 km/hr – 8.0 mph

## Brakes

### Service brake features

Closed-loop hydrostatic drive system provides dynamic braking during machine operation.

### Secondary brake features

Spring-applied/hydraulically-released.

### CS-431C

Wet disc brakes are installed in each wheel end.

### CS-433C and CP-433C

Secondary brake is part of the drum drive gearbox. It is activated by: button on the operator's console; loss of hydraulic pressure in the brake circuit; or when the engine is shut down. A brake interlock system helps prevent driving through the secondary brake.

*\*Braking system meets SAE J1472 JUN87*

## Frame and Drum Yoke

Fabricated from structural steel plate and joined at the articulation pivot. The articulation area is structurally reinforced and joined by hardened steel pins. Two vertical pins provide a steering angle of  $\pm 37^\circ$  and a horizontal pin allows frame oscillation of  $\pm 15^\circ$ .

## Final Drives and Tires

### CS-431C

Final drive is hydrostatic through input gear reduction, differential and planetary gear reduction in each wheel.

### CS-433C and CP-433C

Drum final drive is hydrostatic through planetary gearbox. Axle drive through input gear reduction, differential and planetary gear reduction in each wheel.

### Tires:

#### CS-431C/CS-433C

378 mm (14.9") x 610 mm (24")  
6-ply flotation

#### CP-433C

378 mm (14.9") x 610 mm (24")  
6-ply traction

#### CS-431C Asphalt

10 x 24 GR  
10-ply smooth

## Axle

Heavy-duty fixed rear axle with gear reducer and No-Spin® differential.

Axle width	1270 mm	50"
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## Total Customer Support System

**Parts availability** — most parts on dealer's shelf when you need them. Computer-controlled, emergency search system backup.

**Parts stock lists** — dealer helps you plan on-site parts stock to minimize your parts investment while maximizing machine availability.

**Machine management services** — effective preventive maintenance programs, cost-effective repair options, customer meetings, operator and mechanic training.

**Remanufactured parts** — vibratory pods, pumps and motors, engines, fuel system and charging system components available from dealer at 20-50% of new part cost.

**Service capability** — dealer's shop or fast field service by trained technicians using latest tools and technology.

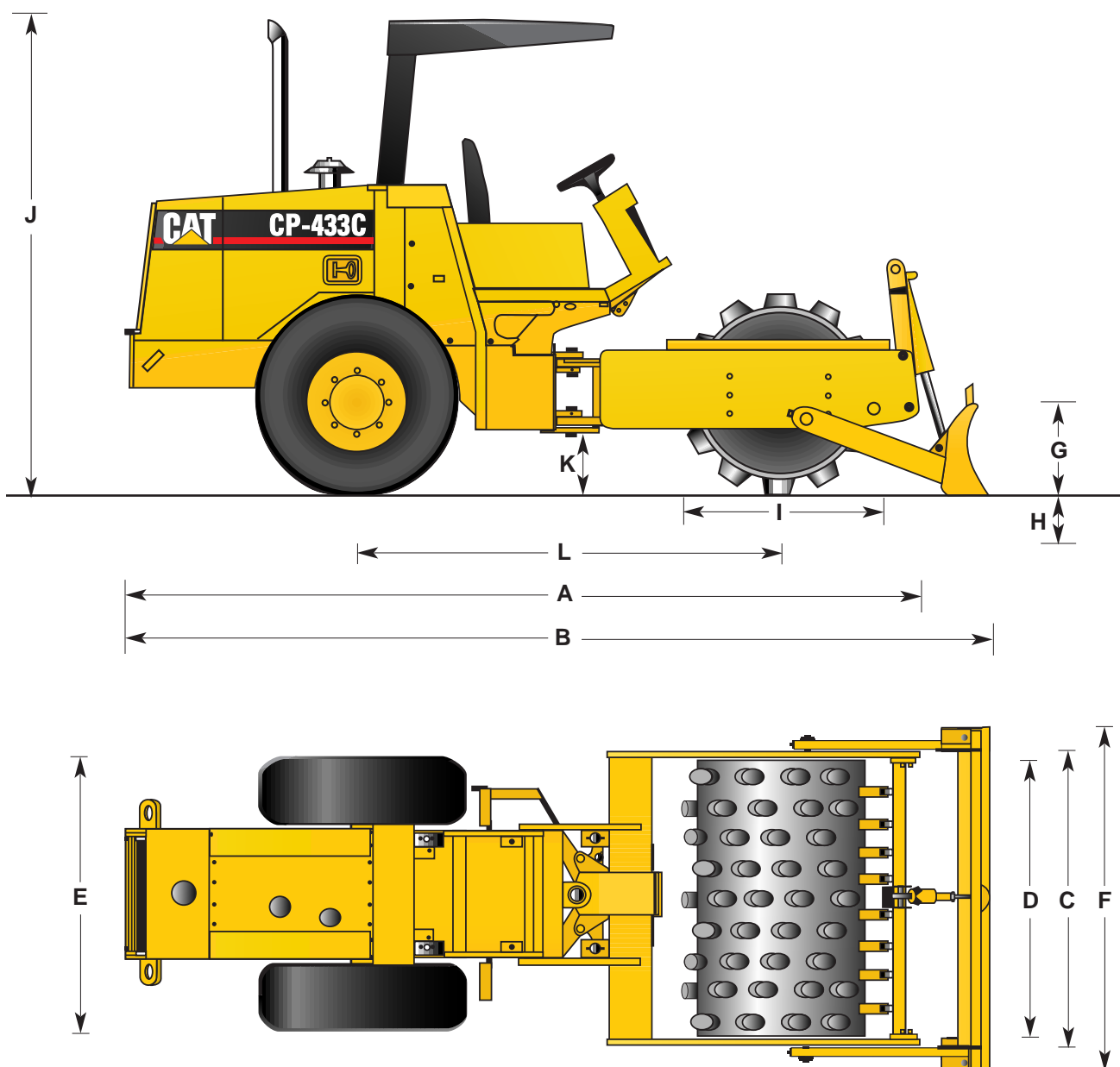
**Literature support** — easy-to-use parts books, operation and maintenance manuals, and service manuals help you get maximum value from equipment.

**Flexible financing** — your dealer can arrange attractive financing on the entire line of Caterpillar equipment. Terms structured to meet cash flow requirements. See how easy it is to own, lease or rent Cat equipment.

## Dimensions

All dimension are approximate.

	<b>CS-431C CS/CP-433C</b>	<b>CS-431C Asphalt</b>
A Operating length	4876 mm (15' 11")	4788 mm (15' 8")
B Length with blade	5299 mm (17' 4")	— —
C Yoke width	1800 mm (5' 10")	1850 mm (6' 0")
D Drum width	1676 mm (66")	1700 (67")
E Width at tires	1650 mm (65")	1650 mm (65")
F Blade width	2108 mm (6' 11")	— —
G Blade height	559 mm (22")	— —
H Blade cutting depth	76 mm (3")	— —
I Drum diameter	1221 mm (48")	1221 mm (48")
Drum diameter over pads	1227 mm (48.3")	— —
J Height at ROPS	2900 mm (9' 6")	2900 mm (9' 6")
K Ground clearance	381 mm (15")	381 mm (15")
L Wheelbase	2583 mm (8' 5")	2583 mm (8' 5")
Inside turning radius	3008 mm (9' 10")	2864 mm (9' 4")
Outside turning radius	4684 mm (15' 4")	4714 mm (15' 5")





## Optional Equipment

**Leveling Blade** is designed to bolt onto the drum yoke. Complete unit includes heavy-duty blade, push arms, reversible/replaceable cutting edges, replaceable wear plates, a heavy-duty hydraulic lift cylinder and control valve. Moldboard is constructed of heavy-duty steel. Blade measures 2,10 m (6' 11") wide and 571 mm (22.5") high. Maximum depth of cut is 76 mm (3").

**Two-piece Pad Foot Shell Kit** bolts onto the smooth drum CS-433C or CS-431C. Features 90 mm (3.5") high pads. Each shell half weights 453 kg (1,000 lb). Includes special bumper.

**ROPS Cab** includes one access door, tinted safety glass windows, electric wipers front and rear, heater/defroster, two vertically sliding side windows for ventilation, two exterior rear view mirrors, front and rear working lights, cab lift cylinder, interior dome light and coat hook.

*Cab is fully EROPS rated and meets SAE J1040 MAY94*

**Roll Over Protective Structure (ROPS)** is a two-post structure that bolts directly onto flanges welded to the main frame. The ROPS meets SAE standards.

**Variable Frequency, Independent of Engine rpm** electronic displacement control on vibratory pump is controlled by frequency dial on the operator's station. Engine rpm remains unchanged for maximum hydraulic pump flow and torque to drive motors. Frequency range from 23,3 - 31,9 Hz (1,400 – 1,915 vpm) makes it easier to match frequency, amplitude and working speed to the job.

**Vibratory Tachometer** displays actual vibratory system frequency on console in front of the operator. Most useful when ordering variable frequency option.

**Rear Scraper Teeth** on the CP-433C help to eliminate material build up between the pads.

**Urethane Drum Scrapers** provides front and rear scrapers for continuous contact with the drum surface. They replace the standard steel scrapers and are available for the CS-431C and CS-433C.

**Working Light Package** for ROPS or ROPS/FOPS machines. Illuminates immediate work area under dim or dark conditions. Four flood lights are positioned two forward and two back.

*This system is intended for use under working conditions and not for highway transport purposes.*

**Rotating Beacon** includes an amber beacon and mount that can be attached to machines with ROPS, ROPS/FOPS or ROPS/cab.

**Compaction Indicator** is available as a Custom Shop Order (CSO). Provides a visual gauge for monitoring compaction.

QEHQ9779 (4/00)  
Replaces QEHQ9231-01

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