

CS-563D CP-563D

Vibratory Soil
Compactors



Cat® 3116 Turbo-charged Diesel Engine

Gross Power	114 kW/153 hp
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Compaction Width	2134 mm
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Operating Weight (with ROPS Cab)

CS-563D	11 160 kg
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CP-563D	11 560 kg
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Centrifugal Force

High	266 kN
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Low	133 kN
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Reliability, Serviceability and Comfort in a Durable Package

The CS-563D and CP-563D Soil Compactors have been designed to offer enhanced production capabilities, simplified service and exceptional operator comfort.

Engine

Cat 3116 T turbo-charged diesel engine delivers 114 kW (153 hp) and is built for performance and reliability without sacrificing fuel economy. Meets regulatory emission requirements worldwide. **pg. 4**

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. **pg. 4**

Setting industry standards... again.

Based upon the industry-proven reputation of the Caterpillar C-Series Soil Compactors, the new D-Series establishes new standards for productivity, comfort and serviceability in the soil compaction industry.





Vibratory System

Pod-style weight housings ensure peak vibratory performance and minimal service. Pods are replaceable and feature bearing lubrication change intervals of 3 years/3000 hours. **pg. 5**

Serviceability

Simple ground level access to all daily maintenance points and the fuel fill through a convenient side access door. The new rearward tilting one-piece fiberglass hood allows complete engine access. The operator's station tilts forward to provides access to the hydraulic pumps. **pg. 7**

Operator's Station

Based on the successful Cat® G-Series Wheel Loader operator's station, the D-Series Soil Compactors feature excellent operator comfort and visibility. A tilting steering column, propel lever wrist rest, grouped control gauges and conveniently located control switches enhance operator productivity and reduce fatigue. Four heavy-duty isolation mounts provide a smooth ride. **pg. 6**

Cab

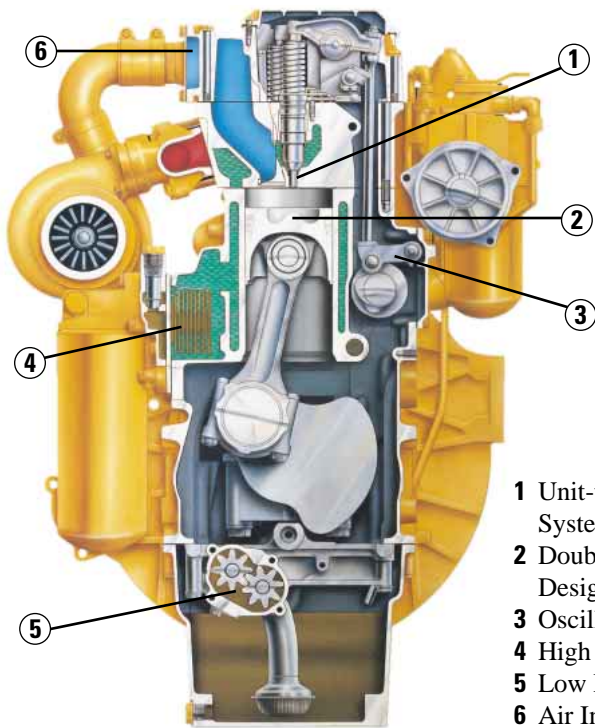
The cab option on the D-Series Soil Compactors is engineered to provide the operator unparalleled viewing area and comfort. Integrated, factory installed air conditioning is also an option. **pg. 6**

Leveling Blade

The optional leveling blade provides increased utilization opportunities to tackle numerous backfilling, leveling and light dozing applications. Available for the CS-563D and CP-563D. **pg. 6**

Caterpillar® 3116 T Engine

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



- 1 Unit-type Direct Injection Fuel System
- 2 Double Iron Ring Band Piston Design
- 3 Oscillating Roller Cam Follower
- 4 High Capacity Oil Cooler
- 5 Low Mounted Oil Pump
- 6 Air Inlet Heater

Turbocharged for top performance and efficiency especially at high altitudes – up to 2500 meters without derating.

Unit injector system provides individually metered high-pressure, direct-injection of fuel for maximum efficiency.

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

Large oil cooler reduces oil deterioration and varnishing of internal parts.

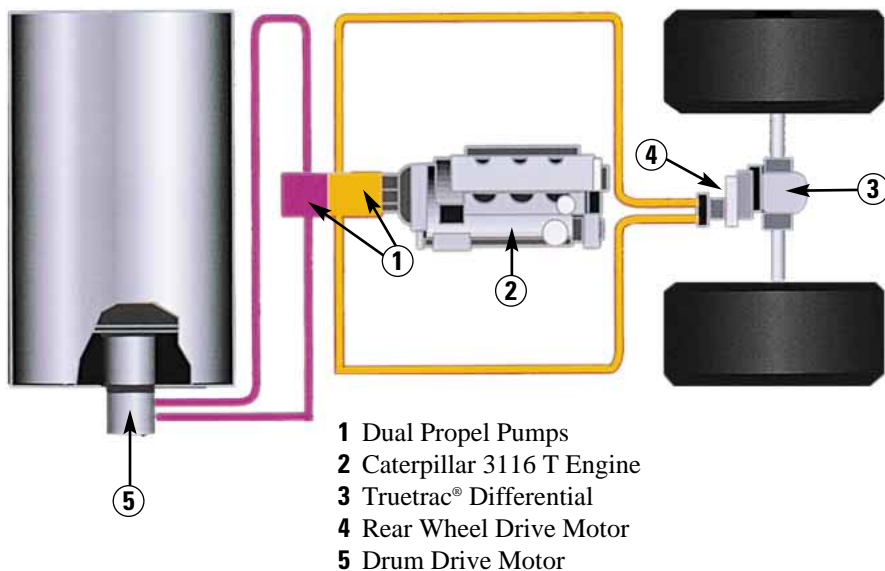
Low-mounted oil pump for quicker start-up lubrication.

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

Air inlet heater helps cold weather starting.

Dual Pump Propel System

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



- 1 Dual Propel Pumps
- 2 Caterpillar 3116 T Engine
- 3 Truetrac® Differential
- 4 Rear Wheel Drive Motor
- 5 Drum Drive Motor

Dual propel pumps provide separate, balanced flow to the rear wheel axle and the drum drive motors to help prevent spin-out in soft material; improves gradeability.

Truetrac® limited slip differential provides balanced tractive effort to both rear wheels.

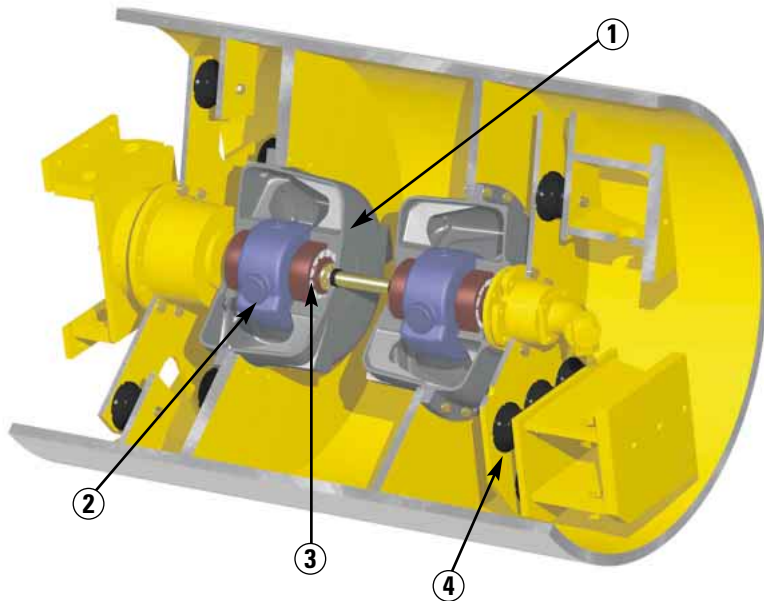
Two speed ranges for versatile operation. Low speed range for vibratory operation and maximum torque when grade climbing. High speed range moves machine quickly over longer distances.

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

High travel speed up to 13.2 km/h.

Vibratory System

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



- 1 Pod-style Weight Housings
- 2 Patented Eccentric Weights
- 3 Heavy-duty Bearings
- 4 Isolation Mounts

Pod-style weight housings are 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.

Frequency increased to 31.9 Hz for maximum compaction results.

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

3 year/3000 hour vibratory bearing lube service interval for reduced maintenance.

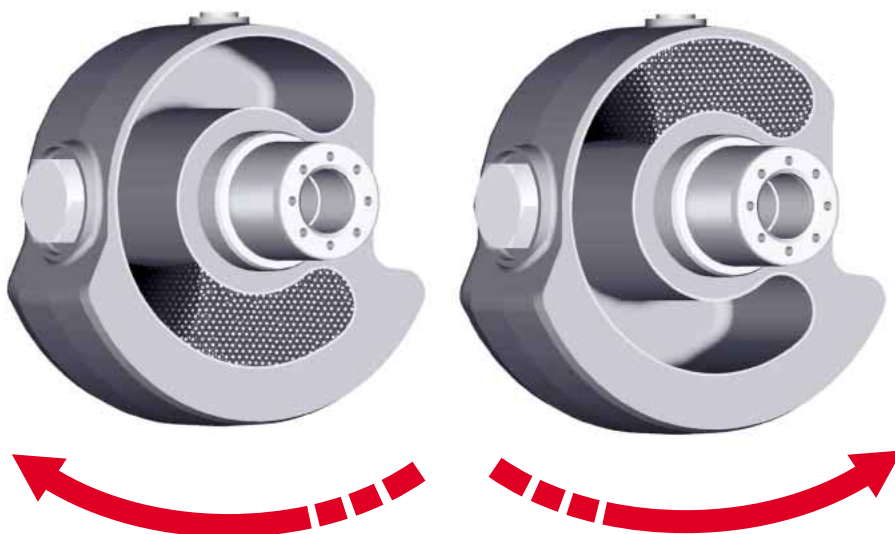
Improved isolation mounts allow more force to be transmitted to the ground and less vibration to the operator.

Patented Eccentric Weights

Reliable dual amplitude selection and innovative design ensure precise performance.

High Amplitude

Low Amplitude



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

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.

Operator's Station

Ergonomically designed for maximum operator productivity. Optional cab offers excellent visibility and unmatched comfort.



Single lever control for propel and vibratory On/Off provides simple and low effort operation.

Padded adjustable wrist rest helps reduce operator fatigue.

Steering console and operational gauges are infinitely adjustable within the tilt range to the desired position of the operator. Entire console tilts for simple entrance and exit.

Exceptional visibility to the drum, rear tires and the rear of the machine due to the sloped engine hood.

Comfortable and durable seat fully adjustable with flip-up arm rests and 76 mm wide retractable seat belt.

Isolated operator's station with four heavy-duty rubber mounts reduce machine vibration transmitted to the operator.

Padded Drum and Leveling Blade

Increased versatility and utilization can be achieved with the optional leveling blade or pad foot shell kit.



Tapered pad design reduces fluffing of soil at top of lift.

Pad face surface area and depth are calculated to provide optimum contact and compaction force.

Chevron pattern concentrates full compactive effort on two and a half pads at a time for maximum compaction.

Independently adjustable scraper teeth set for bi-directional operation. Can be positioned and replaced individually.

Single lever blade control provides simple operation for leveling, backfilling and light dozing applications.

Blade width of 2.43 m provides simple transport with no need for special permits. Blade cut depth of 76 mm combined with the high tractive effort increases blade usefulness.

Serviceability

Simplified service access, extended service intervals and convenient daily inspection area minimizes maintenance time and increases work time.



Convenient ground level service door allows access to all daily maintenance checks and fuel fill.

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

One piece fiberglass hood tilts rearward with an electronic actuator for complete access to the engine and cooling system.

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

Sealed-for-life bearings in the articulation hitch never need to be greased.

3 year/3000 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 protected by bolt-on covers in the rear of the machine on either side. Caterpillar batteries are specifically designed for maximum cranking power and protection against vibration.

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.



The fuel fill, engine oil dip stick, hydraulic tank site gauge, air restriction indicator, radiator level site gauge and electrical disconnect are all accessible for easy daily service from the lockable ground level service door.

Engine

Four-stroke cycle, six cylinder Caterpillar® 3116 turbo-charged diesel engine.

Ratings at 2200 rpm	kW	hp
Gross power	114	153

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 2500 m altitude.

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

Net power	kW	hp
EEC 80/1269	108	145
ISO 9249	108	145

Dimensions

Bore	105 mm
Stroke	127 mm
Displacement	6.6 liters

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

Frame

Fabricated from heavy gauge steel plate and rolled sections and joined to the drum yoke at the articulation pivot. Articulation area is structurally reinforced and joined by hardened steel pins. Two vertical pins provide a steering angle of $\pm 35^\circ$ and a horizontal pin allows frame oscillation of $\pm 15^\circ$. Sealed-for-life hitch bearings never need greasing or shimming.

Transmission

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 additional pressure to provide added 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.

Speeds (forward and reverse):

Low Range	
CS-563D	6.4 km/h
CP-563D	6.5 km/h
High Range	
CS-563D	12.7 km/h
CP-563D	13.2 km/h

Gradeability
with or without vibration 57%
(subject to underfoot conditions)

Electrical

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

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.

Weights*

Operating weights include lubricants, coolant, 80 kg operator, full fuel tank and hydraulic system.

	CS-563D	CP-563D
Operating weight		
open platform	10 670 kg	11 070 kg
with ROPS/FOPS Canopy	10 880 kg	11 280 kg
with ROPS Cab	11 160 kg	11 560 kg
Weight at drum	5780 kg	5960 kg

* All weights are approximate

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	
Inside	3.53 m
Outside	5.66 m
Steering angle	
(each direction)	± 35°
Oscillation angle	
(each direction)	± 15°
Hydraulic system	
Two 76 mm bore, double-acting cylinders powered by a gear-type pump.	

Operator Environment

Seat belt – 76 mm wide seat belt is standard.

Service Refill Capacities

	Liters
Fuel tank	265
Cooling system	30
Crankcase	20
Vibratory bearing lube	21
Differential and final drives	28
Hydraulic system	80
Filtration system (pressure type)	
Propel	15 micron absolute
Vibratory	15 micron absolute

Final Drives and Axle

Final drive is hydrostatic with gear reducer to the drum and hydrostatic with differential and planetary gear reduction to each wheel.

Tires

CS-563D	
587 mm x 660 mm	
23.1 x 26 – 8-ply flotation	
CP-563D	
587 mm x 660 mm	
23.1 x 26 – 8-ply traction	

Axle

Heavy-duty fixed rear axle with a Truetrac® limited slip differential for smooth and quiet torque transfer.

Axle width	1.67 m
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Brakes

Meets SAE J1472 JUN87

Service brake features

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

Secondary brake features*

- Spring-applied/hydraulically-released multiple disc type brake mounted on the drum drive gear reducer. Secondary brakes are 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.

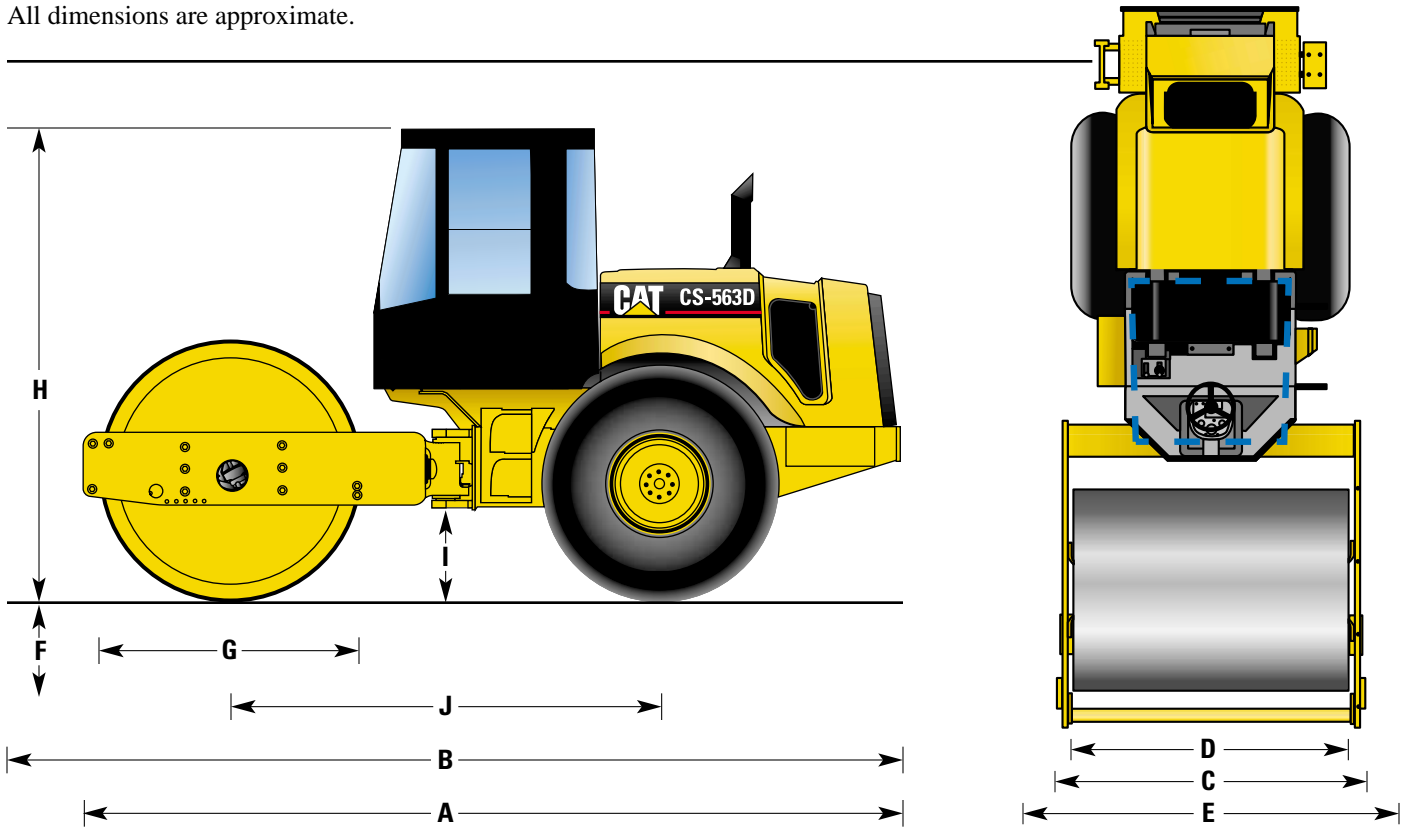
* Machines sold within the European Union are also equipped with rear axle brakes meeting EN500

Vibratory System Specifications

	CS-563D	CP-563D
Drum diameter (over drum)	1524 mm	1295 mm
Drum diameter (over pads)	–	1549 mm
Drum width	2134 mm	2134 mm
Drum shell thickness	30 mm	25 mm
Pads (CP-563D only)		
Number of pads	–	140
Pad height	–	127 mm
Pad face area	–	8942 mm ²
Number of chevrons	–	14
Eccentric weight drive	Hydrostatic drive	Hydrostatic drive
Frequency	31.9 Hz	31.9 Hz
Nominal Amplitude		
High	1.70 mm	1.70 mm
Low	0.85 mm	0.85 mm
Centrifugal Force at 31.9 Hz		
Maximum	266 kN	266 kN
Minimum	133 kN	133 kN
Static Linear Force	27.5 kg/cm	26 kg/cm ²

Dimensions

All dimensions are approximate.



	CS-563D	CP-563D
A Operating length	5.51m	5.51m
B Length with blade	6.04 m	6.04 m
C Max. machine width	2.29 m	2.29 m
Outside turning radius	5.66 m	5.66 m
Inside turning radius	3.53 m	3.53 m
D Compaction width	2.13 m	2.13 m

	CS-563D	CP-563D
E Blade width	2.43 m	2.43 m
F Blade cutting depth	76 mm	76 mm
G Drum diameter	1524 mm	–
Drum diameter over pads	–	1549 mm
H Height at ROPS cab	3.02 m	3.10 m
I Ground clearance	483 mm	543 mm
J Wheelbase	2.90 m	2.90 m

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.

Optional Equipment

Leveling Blade is designed to bolt onto the drum yoke. Complete unit includes heavy-duty blade, push arms, field removable bolt-on connectors, reversible/replaceable cutting edges, replaceable wear plates, a heavy-duty hydraulic lift cylinder and control valve. Moldboard is constructed of multiple box sections. Blade measures 2.43 m wide and 660 mm high. Maximum depth of cut is 76 mm

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, interior dome light, and coat hook. Cab is fully EROPS rated and meets ISO 3471:1994.

Air Conditioning integral system provides operator comfort for cab configurations working in higher ambient temperatures.

Roll Over Protective Structure/Falling Object Protective Structure (ROPS/FOPS) is a two-post structure that bolts directly onto flanges welded to the operator platform. The ROPS/FOPS meets ISO 3471:1994 and ISO 3449:1998.

Smooth Drum Conversion Kit (for CP-563D only) is interchangeable with the padded drum and includes all internal components plus external drum cleaner bars. It does not include hydraulic motors. Drum dimensions and performance are the same as on the CS-563D.

Operator Platform or Cab Lift Cylinder provides a hydraulic cylinder to raise and lower operator platform or Cab.

Padded Drum Conversion Kit (for CS-563D only) is interchangeable with the smooth drum. Kit includes all internal components plus external drum cleaner teeth. It does not include hydraulic motors. Padded drum dimensions and performance are the same as CP-563D.

Two-piece Pad Foot Shell Kit bolts onto the smooth drum CS-563D and features 90 mm high pads. Includes special bumper.

Variable Frequency, Independent of Engine rpm electronic displacement control on vibratory pump is controlled by frequency dial on the operator's station. Engine rpm remain unchanged for maximum hydraulic pump flow and torque to drive motors. Frequency range from 23.3-31.9 Hz makes it easier to match frequency, amplitude and working speed to job conditions.

Transmission Guard consists of a heavy plate which covers the rear axle, axle drive motor and input gearbox.

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

Urethane Drum Scrapers for CS-563D provides front and rear scrapers for continuous contact with the drum surface and replaces the standard steel scraper.

Padded Drum Rear Scrapers help keep material from building up on the drum.

Working Light Package 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. Cannot be used with ROPS Cab.

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

Compaction Indicator is available as a Custom Shop Order (CSO). Provides a visual gauge for reading material density.

Backup Alarm – 112 db(A) alarm sound whenever the machine is in reverse.

CS-563D and CP-563D Vibratory Soil Compactors

HEHG9609 (05/2000) hr

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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