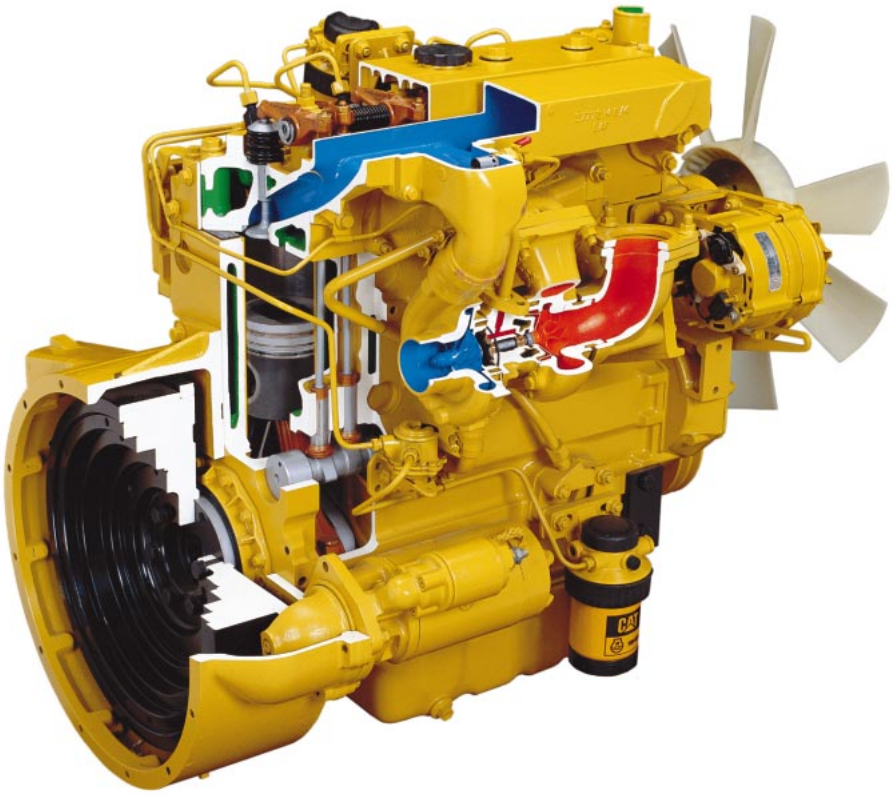
PS-300B
PF-300B
Pneumatic Tire Compactors

Cat® 3054T Engine		
Gross power	74 kW	99 hp
Maximum weight per wheel		
PS-300B/PF-300B	3000 kg	6,600 lb
PS-300B/PF-300B AW	3300 kg	7,260 lb

Maximum operating weight		
PS-300B/PF-300B	21 000 kg	46,200 lb
PS-300B/PF-300B AW	23 100 kg	50,820 lb

Caterpillar® 3054T Engine

Reliable and durable diesel engine for years of low maintenance operation.



Precise balance and optimum running speed for smooth operation and long engine life.

High torque rise for maintaining power under increased loads.

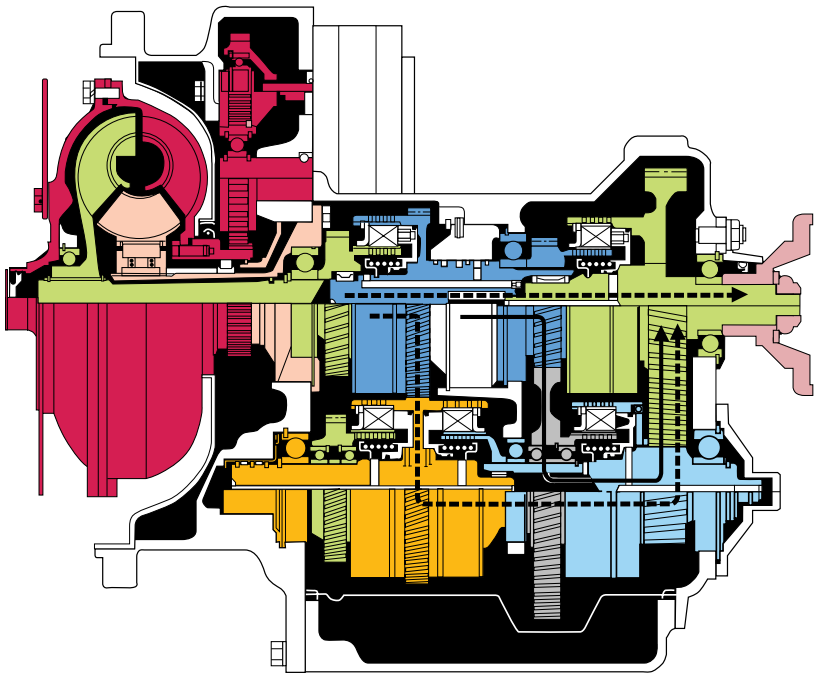
Adjustment-free direct injection fuel system keeps fuel consumption low.

Turbo-charged for optimum performance even at high altitudes with no derating required up to 2134 meters (7,000 feet).

Low maximum engine rpm provides fuel efficiency.

Transmission

Smooth operation for the life of the machine.



Mechanical differential provides extra traction when needed.

Powershift transmission with three forward and reverse speed ranges helps operator match speed and torque requirements.

High travel speed allows machine to be moved around job sites quickly.

High tractive effort for working on thick lifts or loading on transport vehicles.

Visibility

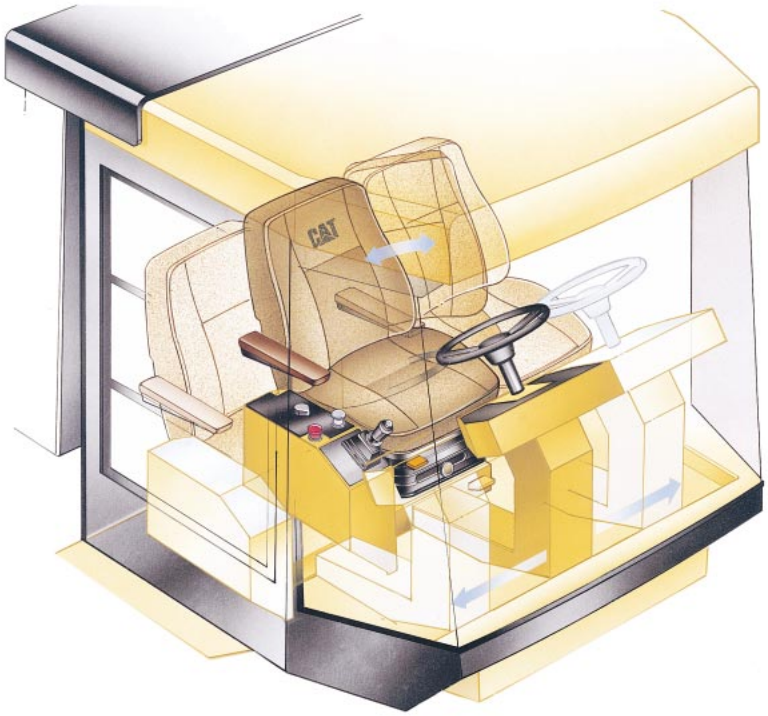
Excellent operator visibility increases production.

Provides excellent sight lines to ground personnel working near machine.

Visibility to objects 1 m (3.3') high and 1 m (3.3') in front or behind the machine.

Maximum Visibility Position Control Console

Excellent visibility means precise control & greater production.



Operator comfort is maximized with large operator's station and convenient location of controls.

Control console slides to four different positions, maximizing visibility.

Seat pivots 30 degrees clockwise for additional visibility to the rear.

Gauges and controls move with control console for easy operation.

Excellent visibility to sides of machine.

Operator's seat includes 76 mm (3") wide retractable seatbelt.

PS and PF Front Wheel Configuration

Vertical movement of wheels helps meet density specifications in the fewest passes.

Vertical movement of all wheels allows them to seek out and compact soft spots.

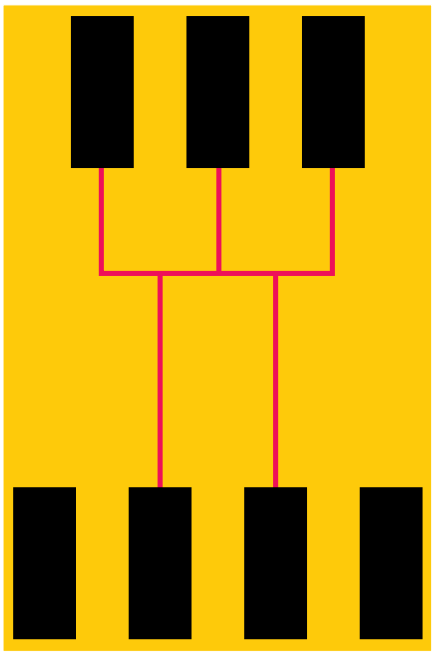
Hydraulically connected cylinders provide equal weight per wheel and consistent compactive effort.

Each wheel turns individually to produce true tracking through curves.

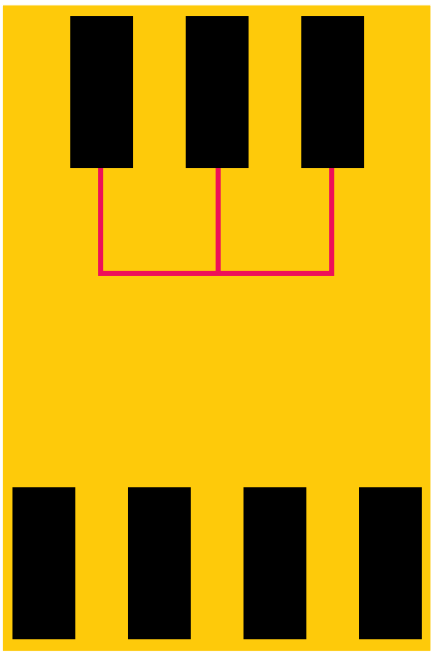
True tracking ensures tire overlap is consistent in turns, helping enhance quality.

Hydraulic Suspension

Equal load per wheel regardless of ground conditions.



PS-300B Full Suspension



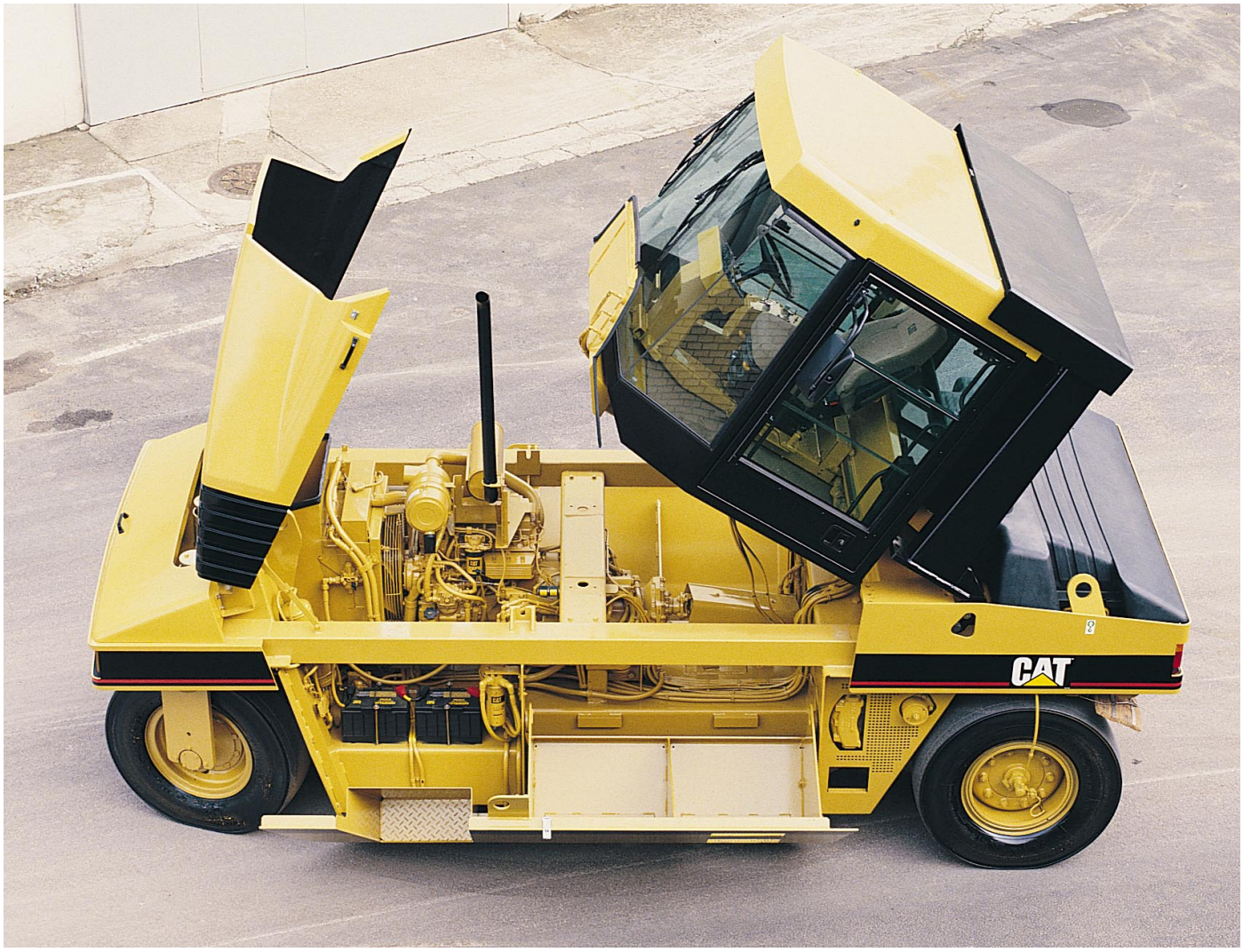
PF-300B Front Suspension

PS-300B three front and two inner rear wheels are hydraulically linked allowing the suspension to automatically correct to surface irregularities and maintain equal weight on all wheels.

PF-300B three front wheels are hydraulically linked allowing the suspension to automatically correct to surface irregularities and maintain equal weight on each front tire.

Serviceability

Less time on maintenance means more time on the job.



Routine maintenance points are grouped in engine compartment.

Ground level servicing simplifies maintenance.

Visual restriction indicators for hydraulic oil filter and air filter.

Simplified access to power train through pivot-up operator's platform and large hood.

Color-coded and numbered wires wrapped in nylon braid ensure system integrity and help simplify troubleshooting.

Grouped pressure taps with quick connect fittings simplify troubleshooting.

O-ring face seal fittings help ensure integrity of hydraulic system.

Remote lubrication fittings decrease maintenance time.

Engine

Four-stroke cycle, four cylinder Cat® 3054T direct injection turbo-charged, diesel engine.

Ratings at	RPM	kW	hp
Gross power	2,200	74	99

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 air cleaner, muffler and alternator. No derating required up to 2134 m (7,000').

The following ratings apply at 2,200 RPM when tested under the specified standard conditions for the specified standard:

Net Power	kW	hp
EEC80/1269	63	85
ISO 9249	63	85
SAE J1349 JAN90	63	85

Dimensions		
Bore	100 mm	3.937"
Stroke	127 mm	5"
Displacement	4 L	243 cu. in.

Electrical System

The 24-volt electrical system includes 2 maintenance-free Cat batteries, color-coded and numbered wiring wrapped in nylon braid. The system includes a 75-amp alternator.

Transmission

Hydraulic torque convertor and powershift transmission are mounted directly to the engine. The shift control valve is electrically actuated. Mechanical differential controlled from the operator's station. Final drive to rear wheels by low-maintenance, heavy-duty chains in oil-tight casings.

Speeds (forward and reverse):

1st	0 - 6 kmph	0 - 3.7 mph
2nd	0 - 12,7 kmph	0 - 7.9 mph
3rd	0 - 19 kmph	0 - 11.8 mph

Steering

The automotive-type steering wheel and column are integral with the operator's sliding platform and allow steering from multiple positions. Priority-demand hydraulic power-assist steering system provides smooth, firm handling.

Each front wheel individually turns to produce true tracking through turns.

Minimum turning radius:

Outside edge	7700 mm	25' 3"
Inside edge	5800 mm	19'

Suspension

PS-300B

Three front wheels and two inner rear wheels are mounted on hydraulic cylinders. Two outer rear wheels are rigidly fixed to the frame.

PF-300B

Three front wheels are mounted on hydraulic cylinders and four rear wheels are rigidly fixed to the frame.

Brakes

Primary brake features

- Two independent, dynamic, hydraulically applied caliper disk brakes located on rear differential shaft to wheels. Primary brakes are actuated by the foot pedal at the control console.

Secondary brake features

- Two spring-applied/hydraulically released caliper disc brakes located on opposite side of primary brakes on the rear differential shaft to wheels. Separate circuit than the primary brakes. Secondary brakes are actuated by a push-button switch on the control console or automatically when the engine is shut off or if pressure is lost in the brake circuit.

Brake systems meet SAEJ1472 practice and EN500 requirement.

Frame

The chassis is a rigid welded frame that supports the engine, transmission and sheet metal. Frame is designed to evenly distribute the machine weight between the front and rear axles.

Wheels

Wheels are fitted with either smooth or treaded radial-ply tires. Tires overlap to provide a smooth trackless surface.

Tires

Michelin 13/80 R x 20 Pilote X Smooth (E20)

Service Refill Capacities

	Liters	U.S. Gallons
Fuel Tank	215	50
Engine Crankcase	7	1.8
Hydraulic Tank	10	2.6
Cooling System	28	7.2
Differential	7	1.8
Transmission	22	4.8
Chain Casings	9	2.4
Tire Watering System	460	118

Instrumentation

Transmission Oil Temperature Gauge, Speedometer, Horn, Brake Pressure Warning Light, Secondary Brake Warning Light, Suspension Pressure Gauge (PS), Engine Oil Pressure Gauge, Fuel Gauge, Engine Coolant Temperature, Hour Meter, Alternator Light, Tire Pressure Gauge (option), Turn Signal Indicator (option), Clutch Pressure Gauge.

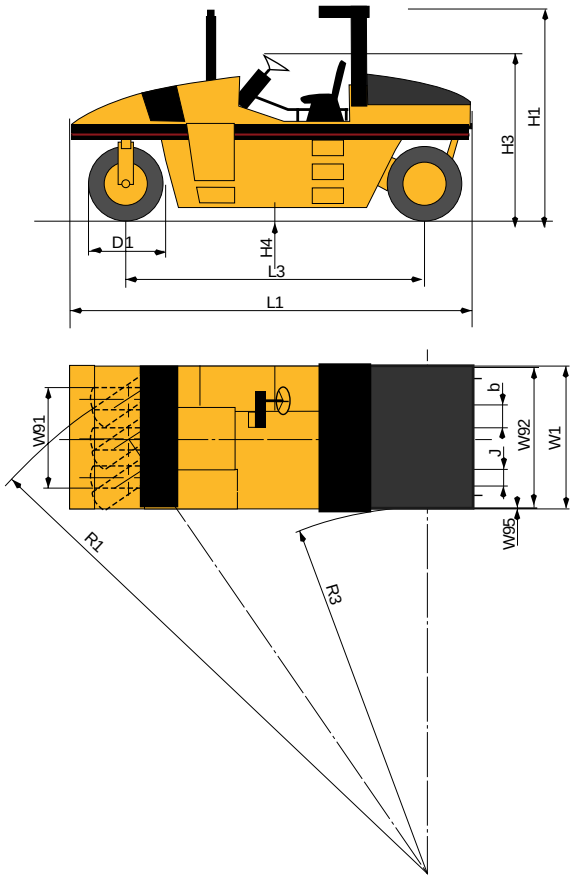
Ballast Considerations and Ground Contact Pressures

The most common method of changing ground contact pressure is to vary the tire pressure. Another means to change ground contact pressure is to alter the ballast.

The location of the ballast blocks provides a low center of gravity, resulting in excellent stability.

The PS-300B and PF-300B can be ballasted with optional steel blocks and an Added Weight option. The optional ballast configurations allow the machine to be tailored to specific requirements.

Dimensions



L1	Operating length	5300 mm	209"
L3	Wheel base	4030 mm	159"
D1	Tire diameter	1050 mm	41"
H1	Operating height with ROPS	3000 mm	118"
H3	Shipping height	2300 mm	91"
H4	Ground clearance	250 mm	10"

W1	Maximum width	1960 mm	77"
W91	Rolling width, front	1380 mm	54"
W92	Rolling width, rear	1920 mm	76"
W95	Side clearance (lateral overhang)	20 mm	0.8"
R1	Turning radius outside	7700 mm	303"
R3	Turning radius inside	5800 mm	228"
b	Tire width	300 mm	11.8"
J	Width between two rear wheels	240 mm	9.4"
Vertical movement of front wheels		120 mm	5"
Vertical movement of rear wheels*		120 mm	5"
Tire overlap		30 mm	1.2"

* PS-300B Only

Weights (approximate)

Operating weight includes lubricants, coolant, 79 kg (175 lb) operator, full fuel tank, and full hydraulic system.

Operating Weights

Model	Condition	Total Weight	Weight Per Wheel	Force Across Rolling Width
PS-300B/PF-300B				
	Shipping	14 000 kg	—	—
		30,860 lb	—	—
	With 2 ballast blocks*	17 500 kg	2500 kg	92 kg/lin/cm
		38,500 lb	5,500 lb	513 lb/lin/in
	With 4 ballast blocks	21 000 kg	3000 kg	111 kg/lin/cm
		46,200 lb	6,600 lb	616 lb/lin/in
PS-300B/PF-300B with Added Weight (AW) option				
	Shipping	16 100 kg	—	—
		35,500 lb	—	—
	With 2 ballast blocks*	19 600 kg	2800 kg	103 kg/lin/cm
		43,120 lb	6,160 lb	575 lb/lin/in
	With 4 ballast blocks	23 100 kg	3300 kg	122 kg/lin/cm
		50,820 lb	7,260 lb	678 lb/lin/in

Optional Equipment Weights

ROPS	500 kg	1,100 lb
Cab	250 kg	550 lb
One Ballast Block*	1750 kg	3,850 lb

* Steel Ballast Block option is a quantity of four.

PS-300B and PF-300B Productivity and Performance Recommendations

Features	Applications
• 1920 mm (76") compaction width	• Provides full coverage with two side-by-side passes on mat widths up to 3,7 m (12').
• 300 mm (11.8") wide tires with 30 mm (1.2") wide tire overlap	• Wide tires and overlap minimize rutting.
• Radial tires	• Tend to reduce asphalt pick up.
• Actual GCP up to 1000 kPa (145 psi) – see attached charts	• High compaction on thick lifts or on harsh mixes.
• Air-on-the-run tire inflation system option	• Enhances versatility of machine by allowing the tire air pressure to be easily changed depending on job conditions.
• Transmission provides three gear ratios	• Work gears are 1st and 2nd. 1st gear has a speed range of 0 to 6 kmph (3.7 mph), and 2nd gear has a range of 0 to 12,7 kmph (7.9 mph). • Travel gear is 3rd and has a speed range of 0 to 19 kmph (11.8 mph). No more than 90 minutes of continuous operation at top speed is recommended.
• PS-300B hydraulically linked suspension	• The suspension automatically corrects to surface irregularities and maintains equal weight on all wheels due to the hydraulic link between the three front wheels and two inner rear wheels.
• PF-300B suspension	• Front suspension automatically corrects to surface irregularities and maintains equal weight on each front tire.

Average Ground Contact Pressures

Average Ground Contact Pressures are computed by dividing the footprint area into the wheel load.

Smooth Tires

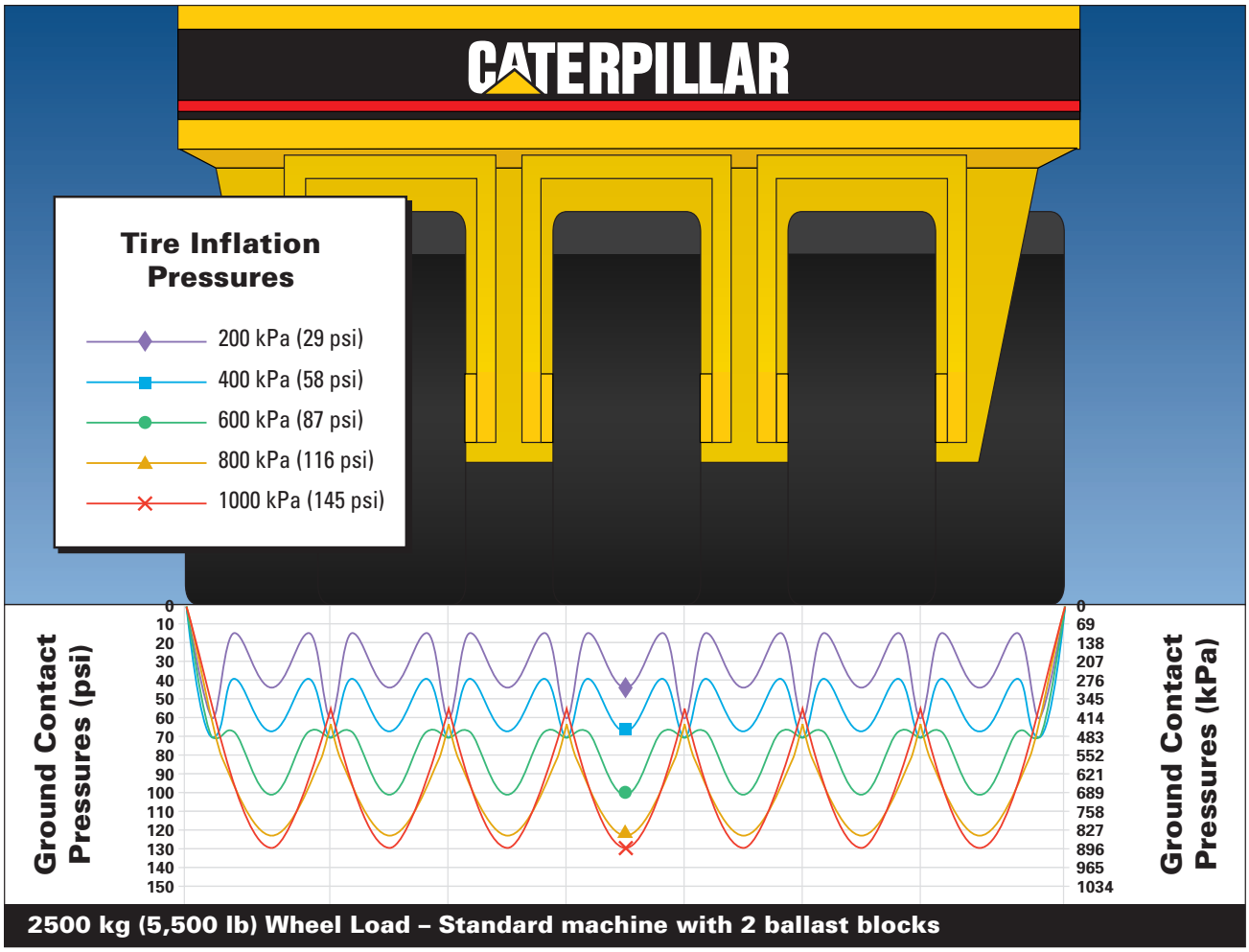
Tire pressure	Wheel load 2500 kg 5,500 lb	Wheel load 2800 kg 6,160 lb	Wheel load 3000 kg 6,600 lb	Wheel load 3300 kg 7,260 lb
300 kPa	—	—	—	—
44 psi	—	—	—	—
350 kPa	—	—	—	—
51 psi	—	—	—	—
400 kPa	395 kPa	—	—	—
58 psi	57 psi	—	—	—
450 kPa	425 kPa	435 kPa	—	—
65 psi	62 psi	63 psi	—	—
500 kPa	455 kPa	460 kPa	465 kPa	475 kPa
73 psi	66 psi	67 psi	67 psi	69 psi
550 kPa	490 kPa	495 kPa	500 kPa	505 kPa
80 psi	71 psi	72 psi	73 psi	73 psi
600 kPa	525 kPa	530 kPa	530 kPa	545 kPa
87 psi	76 psi	77 psi	77 psi	79 psi
650 kPa	540 kPa	550 kPa	555 kPa	560 kPa
94 psi	78 psi	80 psi	80 psi	81 psi
700 kPa	560 kPa	570 kPa	580 kPa	580 kPa
102 psi	81 psi	83 psi	84 psi	84 psi
750 kPa	585 kPa	590 kPa	605 kPa	610 kPa
109 psi	85 psi	86 psi	88 psi	88 psi
800 kPa	610 kPa	625 kPa	630 kPa	640 kPa
116 psi	88 psi	91 psi	91 psi	93 psi
850 kPa	630 kPa	650 kPa	650 kPa	670 kPa
123 psi	91 psi	94 psi	94 psi	97 psi
900 kPa	650 kPa	670 kPa	665 kPa	685 kPa
131 psi	94 psi	97 psi	96 psi	99 psi
950 kPa	670 kPa	680 kPa	685 kPa	695 kPa
138 psi	97 psi	98 psi	99 psi	101 psi
1000 kPa	690 kPa	690 kPa	705 kPa	720 kPa
145 psi	100 psi	100 psi	102 psi	104 psi

Treaded Tires

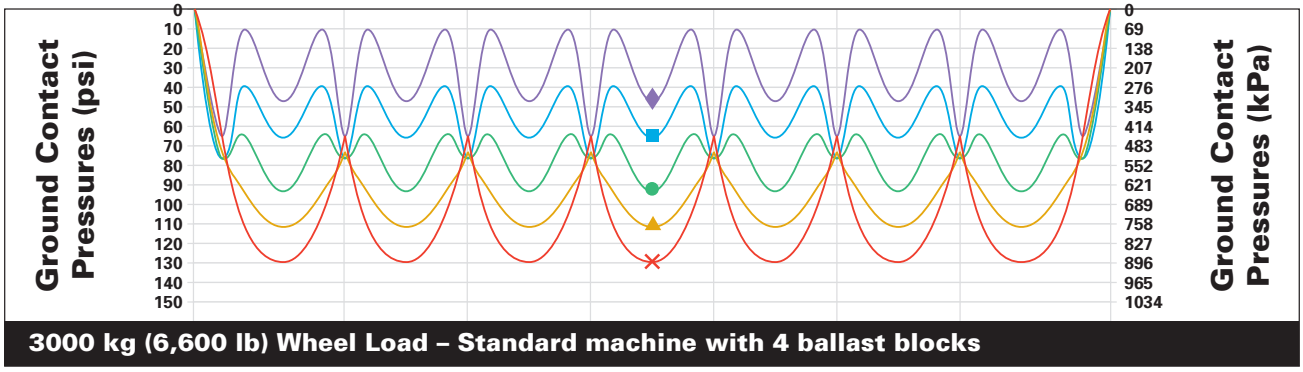
Tire pressure	Wheel load 2500 kg 5,500 lb	Wheel load 2800 kg 6,160 lb	Wheel load 3000 kg 6,600 lb	Wheel load 3300 kg 7,260 lb
300 kPa	—	—	—	—
44 psi	—	—	—	—
350 kPa	—	—	—	—
51 psi	—	—	—	—
400 kPa	395 kPa	400 kPa	400 kPa	415 kPa
58 psi	57 psi	58 psi	58 psi	60 psi
450 kPa	453 kPa	435 kPa	450 kPa	450 kPa
65 psi	66 psi	63 psi	65 psi	65 psi
500 kPa	470 kPa	470 kPa	480 kPa	480 kPa
73 psi	68 psi	68 psi	70 psi	69 psi
550 kPa	500 kPa	510 kPa	510 kPa	520 kPa
80 psi	73 psi	73 psi	74 psi	75 psi
600 kPa	525 kPa	550 kPa	535 kPa	560 kPa
87 psi	76 psi	79psi	78 psi	81 psi
650 kPa	560 kPa	575 kPa	570 kPa	585 kPa
94 psi	81 psi	83 psi	83 psi	84 psi
700 kPa	595 kPa	600 kPa	605 kPa	610 kPa
102 psi	86 psi	87 psi	88 psi	88 psi
750 kPa	620 kPa	625 kPa	630 kPa	635 kPa
109 psi	90 psi	89 psi	91 psi	91 psi
800 kPa	640 kPa	650 kPa	650 kPa	660 kPa
116 psi	93 psi	94 psi	94 psi	95 psi
850 kPa	660 kPa	670 kPa	675 kPa	680 kPa
123 psi	96 psi	96 psi	98 psi	98 psi
900 kPa	680 kPa	690 kPa	700 kPa	700 kPa
131 psi	98 psi	99 psi	102 psi	101 psi
950 kPa	715 kPa	720 kPa	720 kPa	730 kPa
138 psi	104 psi	104 psi	104 psi	105 psi
1000 kPa	745 kPa	750 kPa	745 kPa	760 kPa
145 psi	108 psi	107 psi	108 psi	108 psi

Actual Ground Contact Pressures

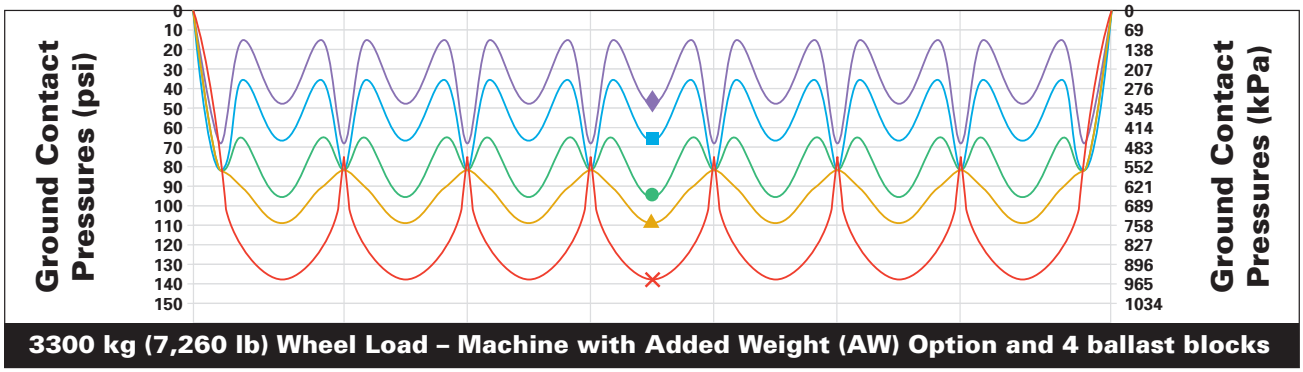
Actual Ground Contact Pressures are measured across the width of the tire. The charts include wheel path overlap.



2500 kg (5,500 lb) Wheel Load – Standard machine with 2 ballast blocks



3000 kg (6,600 lb) Wheel Load – Standard machine with 4 ballast blocks



3300 kg (7,260 lb) Wheel Load – Machine with Added Weight (AW) Option and 4 ballast blocks

Optional Equipment

Note: Standard and optional equipment may vary. Consult your Caterpillar dealer for specifics.

Ballast Blocks increase vehicle weight by adding steel blocks to the ballast chamber in a quantity of four. Blocks can be removed in sets of two to increase machine versatility. A single ballast block weighs 1750 kg (3,850 lb).

Added Weight (AW) increases vehicle weight by 7000 kg (15,400 lb).

Tire Wind Shields trap heat and keep tires warm, helping to prevent tires from picking up asphalt.

Treaded Tires are Michelin F20 (14/80 R20).

Spare Wheel.

Air-on-the-Run allows tire pressure to be regulated from the operator's station.Water-cooled compressor for long service life.

Tire Spray System is constructed of highly reliable components. An electric motor drives the water pump that provides either continuous or intermittent spray. Two spray nozzles per tire are easily removed for replacement or cleaning without tools. The large capacity water tank is constructed of reinforced polyethylene. A water level gauge is located on top of the tank, within easy sight of the operator. Cocoa mats are also included.

Working Light Package illuminates the work area under dim or dark conditions. It consists of four variable adjustment flood lights, with two positioned forward and two rearward.

Roading and Working Light Package includes directional turn indicators, high and low beam lights, and parking lights, in addition to the four working lights described above.

ROPS Canopy is a two-post type that bolts to the frame. The structure meets SAEJ1040f and ISO3164 recommended practice for ROPS.

ROPS Cab is fully enclosed operator's compartment with heater/defroster, sliding windows, tinted safety glass, and windshield washer and wiper. Includes ROPS Canopy described above. Available as a **Custom Shop Modification** only. Longer lead times typically are required for a Custom Shop Modification.

Value Analysis

Application Flexibility

- For compaction of sub-base, base course and surface course materials.
- For compaction of any hot or cold bituminous mix.
- Variable tire pressure.
- Steel ballast provides a choice of three weight per wheel configurations to meet job applications.

High Productivity

- Large tire overlap helps to eliminate tire marks.
- Variable load per wheel helps to meet job specifications.
- Hydraulic wheel suspension for uniform compaction.

Easy Operation

- Sliding operator's station.
- Hydraulic power assist steering.
- Single lever control for forward and reverse.
- Torque converter and powershift transmission provide smooth direction and speed changes.

Operator and machine safety

- Independent dual caliper service brakes.
- Automatic dual secondary brakes.
- Engine cannot be started if lever is in gear.
- Parking brake disengagement only possible with hydraulic pressure in the system.
- Steel ballast system provides low machine center of gravity.

Easy Service

- Engine hood tilts, providing access to diesel engine.
- Grouped test ports.
- Routine service points grouped into one location.
- Spray system nozzles and filters are easily removed and cleaned without the need for tools.
- Pivoting operator's station provides additional service access.

QEHQ9147-03 (6-01)
(Replaces QEHQ9147-02)

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