

CATERPILLAR

PS-500 Pneumatic-Tyred Compactor

Machine shown may have optional equipment



19/35 metric ton pneumatic-tyred compactor

Summary of Features

The PS-500 is a pneumatic-tyred compactor with an operational weight of 35 metric tons with ballast. Characterized by a maximum wheel load of 5 metric tons, the PS-500 is designed for the compaction of earthworks, natural or stabilized subgrade and base materials.

Equipped with an integrated hydraulic suspension, which is rigorously isostatic, the PS-500 ensures high and uniform compaction without detriment to the cross-section thanks to the vertical oscillation of its wheels.

- 5 metric ton maximum wheel load
- Hydraulic suspension
- Vertical oscillation of wheels
- Large smooth or treaded tyres
- Powerful engine
- Powershift transmission
- On-the-run tyre inflation system
- Tyre watering system
- Large ballasting capacity
- Three driving positions

PS-500

Pneumatic-Tyred Compactor



engine

Flywheel power @ 2600 RPM 165 HP/123 kW

Caterpillar 3208 8-cylinder water cooled diesel engine. Dry type air filter with replaceable cartridges and prefilter. 24-volt direct electric starting system with 40 amp alternator.

The net power at the flywheel of the vehicle engine operating under SAE J1349 standard conditions, 25°C and 100 kPa, using 35 API gravity fuel oil at 15.6°C, and after deductions for fan, air cleaner, water pump, lubricating oil pump, fuel pump, alternator and muffler. No derating is required up to 3000 m altitude.



transmission

The power train consists of a hydraulic torque converter and powershift transmission in one package mounted directly to the engine.

The shift control valve assembly is pneumatically actuated with three speeds forward and reverse.

NoSPIN differential. Final drive by chains in oiltight casings.

Speed range, forward and reverse:

1st: 0 to 6 km/h – 2nd: 0 to 12 km/h – 3rd: 0 to 25 km/h.



frame

Rigid welded chassis of unit construction on which the engine and transmission are mounted which also serves as a ballast container.

Ballast containers offering a total volume of 10 cu.m located in the central and rear parts of the chassis.

Main driving position in the centre with comfortable upholstered seat; complete dashboard with waterproof instruments. Tropicalized design. Two auxiliary driving positions on the left and right for operation in the standing position with total lateral visibility. The main driving position is located in a compartment which can be tilted upwards giving particularly easy access to the mechanical components of the drive train.



steering

Hydraulic steering with angular relationship. Individual swivelling of front wheels with geometrical correction of the angle of lock of each wheel.



brakes

Service: dual braking circuits consisting of a disc brake fitted on each differential half shaft. Operated by air over two independent hydraulic brake cylinders. Brake pedals in each operating position.

Parking: disc type brake mounted on transmission output shaft; applied by spring force, released by air pressure.

Emergency stopping device: the parking brake can be used in the case of an emergency to stop the machine. If air pressure drops below 4.5 bar when machine is operating, the parking brake automatically applies to bring machine to a controlled stop.



service refill capacities

Fuel (gas-oil)	310 litres
Engine crankcase	12.5 litres
Water radiator	63 litres
Hydraulic fluid tank/circuit complete	10/23 litres
Tyre watering system	350 litres
Differential	21 litres
Powershift transmission	35 litres
Chain casings	20 litres



tyre watering

Large capacity water tank in reinforced polyester; electric pump with incorporated filter. Corrosion resistant system with header pipes and spray nozzles. Cleaner mats mounted on all wheels.



wheels

Wheels are fitted with smooth or treaded radial-ply tyres. Complete trackless overlapping of front and rear wheels. The three front wheels are each mounted on a hydraulic cylinder. The four rear driving wheels are each mounted on a transmission casing. The casings of the outside wheels are integral with the chassis; those of the inner wheels oscillate vertically and their movements are controlled by hydraulic cylinders intercommunicating with the front cylinders. This suspension provides a perfect isostatic arrangement and excellent transverse stability.

Tyres

Make and type: Michelin 15.00 R 24 X pilote smooth (17/80 R 24)

Gradeability

With maximum ballast, in forward or reverse.

During transfer/during compaction 40%/25%



weights (approximate)

Operating

Unballasted	19000 kg	
With maximum ballast	35000 kg	
Load per wheel	Unballasted	With max. ballast
Front	2700 kg	5000 kg
Rear	2700 kg	5000 kg

Shipping

Land shipment: compactor, cabin dismantled.

Dimensions/gross weight 6.27 × 2.50 × 2.85 m/18 790 kg

Cabin 2.22 × 1.12 × 1.26 m/210 kg

Sea shipment: compactor packed, cabin dismantled.

Dimensions/gross weight 6.27 × 2.50 × 2.70 m/18 790 kg

Cabin 2.30 × 1.25 × 1.40 m/410 kg

utilization

The following table gives, as a guide, the utilization possibilities of the equipment on different types of materials. The symbols and values given correspond to the following cases: ● equipment well suited to this utilization – current utilization: 0.30/0.80 the top figure indicates the minimum rational thickness in metres; the bottom figure indicates the thickness capable of yielding a maximum output – ▲ possible but not current utilization.

roadworks

surface dressing	▲
wearing course (bituminous mixes)	≥ 0.03
base course	0.15 0.40
sub-base	0.15 0.40
sub-grade	●

earthworks: coarse grained soils

rock D > 250 mm	
shot rock D ≤ 250 mm	▲
well graded gravel GW	0.15 0.60
poorly graded gravel GP	0.20 0.50
silty gravel GF	0.15 0.60
clayey gravel GC	0.20 0.50
well graded sand SW	0.15 0.60
poorly graded sand SP	0.20 0.50
silty sand SF	0.15 0.60
clayey sand SC	0.15 0.50

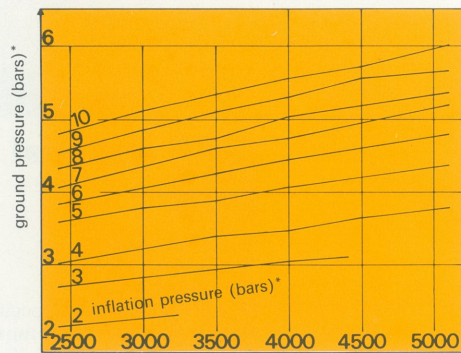
earthworks: fine grained soils

low plasticity silt ML	0.20 0.70
low plasticity clay CL	0.20 0.50
high plasticity silt MH	0.15 0.30
high plasticity clay CH	0.15 0.30
lime stabilized fine soils	0.20 0.40
limestone	0.15 0.40

nomograms of ground pressure

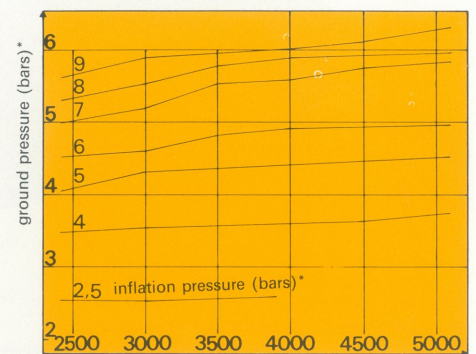
These nomograms make it possible to determine the pressure exerted on the ground under a wheel as a function of its load and of the tyre inflation pressure. Ground pressure values are theoretical because they result from prints obtained on an indeformable ground.

treadless tyres
15.00–24 X (17/80–24) Michelin



load per wheel (kg)

treaded tyres
16.00–20 XS Michelin



load per wheel (kg)

* 1 bar = 1.02 kgf/cm²

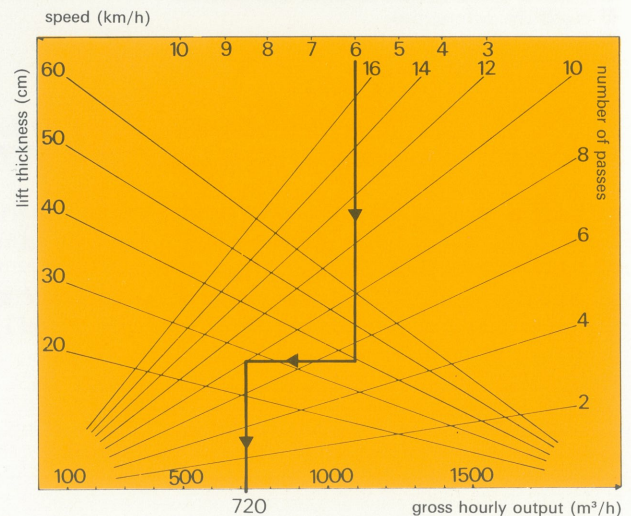
nomogram of hourly output

The gross hourly output of the equipment is given by the formula:
 $Q (m^3/h) = V.H.L/N$

where V is the working speed in metres/hour; H is the thickness of the compacted layer in metres; L is the compacted width in metres; N is the number of passes.

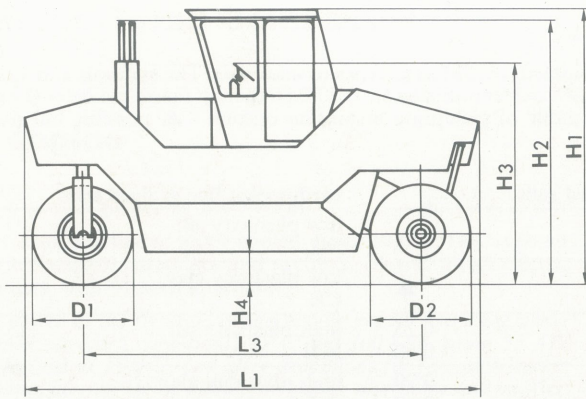
The facing nomogram makes it possible to determine the gross hourly output of the equipment without calculation: on the basis of the chosen working speed, draw a vertical line; where it intersects with the "layer thickness" line selected, draw a horizontal line; where this horizontal intersects with the "number of passes" line adopted, draw a vertical which gives directly the value of the gross hourly output in m³/h.

The net output is obtained by multiplying the gross value by a coefficient depending on jobsite conditions:
– easy: 0.8 – normal: 0.7 – difficult: 0.6.

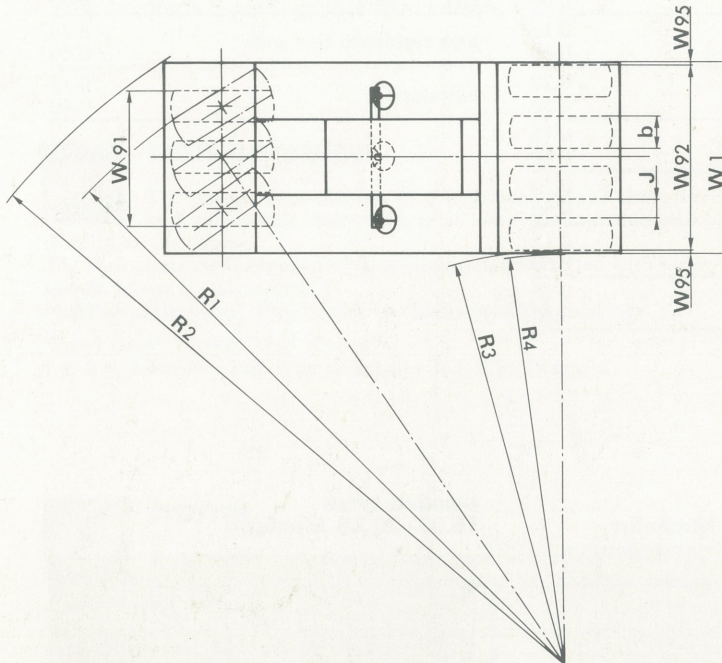




dimensions (approximate)



L1	operating length	6270 mm
L3	wheel base	4465 mm
D1	front wheel diameter	1340 mm
D2	rear wheel diameter	1340 mm
H1	operating height with cab	3630 mm
H2	operating height without cab	3600 mm
H3	shipping height	2850 mm
H4	ground clearance	360 mm



W1	maximum width	2500 mm
W91	rolling width, front	1740 mm
W92	rolling width, rear	2420 mm
W95	side clearance (lateral overhang)	35 mm
R1	turning radius outside	8550 mm
R2	machine clearance radius outside	9250 mm
R3	turning radius inside	5150 mm
R4	machine clearance radius inside	5150 mm
b	tyre width	410 mm
J	width between two rear wheels	270 mm
vertical oscillation of front wheels		230 mm
vertical oscillation of rear wheels		300 mm



standard equipment

- Electric starting.
- Dry type air filter.
- Three operator positions.
- Sound proofing.
- Individual chain drive on rear wheels.
- Hydraulic suspension on front wheels interconnected to rear inner wheels.
- Full powershift transmission.
- 3 travel speed ranges forward and reverse.
- NoSPIN differential.
- Smooth tyres.
- Power steering.
- Front and rear electric lighting.
- Towing points fitted front and rear.



optional equipment

- Standard cabin.
- Standard canopy.
- Cabin heater.
- Air conditioning (special request).
- Machine operation monitoring and recording module.
- Treaded tyres 16.00-20 XS.
- Edge compacting device ("Side Roll").
- Tyre wind shield.
- Spare wheel (smooth or treaded).
- Tyre watering device (spray system).
- "Variobar", on-the-run tyre inflation device.

Materials and specifications are subject to change without notice.