

MACHINE
DRIVE POWER

CAT® COMPACTION CONTROL



WHAT IS MDP?

MDP (Machine Drive Power) is an innovative new soil compaction measurement technology that helps operators determine when the load bearing strength of the soil they are compacting meets specification, allowing them to move on to the next area.

WHY
IS IT BETTER?

MDP is less variable than other soil compactor measurement technologies because it is a more direct means of assessing load bearing strength, providing confidence that the materials will support the load

MDP measures what matters, making it more relevant and useful on the job site. MDP measures at a depth that is closer to the thickness of a typical lift, meaning you are measuring the material you are compacting.

MDP is more versatile, making it usable on a wider range of applications

- MDP works in all soil types: granular, semi-cohesive and cohesive
- MDP works on all machine configurations: padfoot, smooth drum or padfoot shell kit
- MDP works with vibratory system on or off, making it useful in static drum situations







HOW DOES IT WORK?

MDP works on the principle of rolling resistance.

Imagine pushing a loaded wheelbarrow over a concrete sidewalk, and then through some soft garden soil. Minimal effort is required to push the wheelbarrow on the concrete, but a lot of effort is needed to push it through the garden soil.

This is because the concrete is stiffer and has higher load bearing strength, supporting the wheel firmly rather than sagging under its weight.

MDP measures the amount of power required for the soil compactor to propel over the soil, providing an indication of the load bearing strength.



The wheelbarrow tire rolls easily on the smooth, stiff concrete.



The wheelbarrow tire sinks into loose soil, requiring greater effort to push it through.



HOW DO YOU USE IT?

1 SET UP A COMPACTION VALUE

Roll a lift in a test section until the value changes less than three units each additional pass.

- Note the MDP value on the LCD screen.

OR

Roll an area proven to meet the compaction specification.

- Note the MDP value on the LCD screen.



Constructing a test section.



2 ROLL

Compact the soil with vibratory system active, using the MDP value as your target.

Make passes until the MDP reading reaches ±2 units of MDP value you established as the target.

Be alert for localized areas of lower MDP readings. The lower readings can indicate a need to adjust water content or the presence of soil issues below the surface.

3 VALIDATE

- Deactivate the vibratory system.
- Roll at speeds below 3 km/h (2 mph).
- Roll in low propel range.
- Measure while traveling in forward direction.

It is recommended to establish a pattern to stay consistent and ensure full coverage.





As the soil becomes stiffer, the MDP value increases.

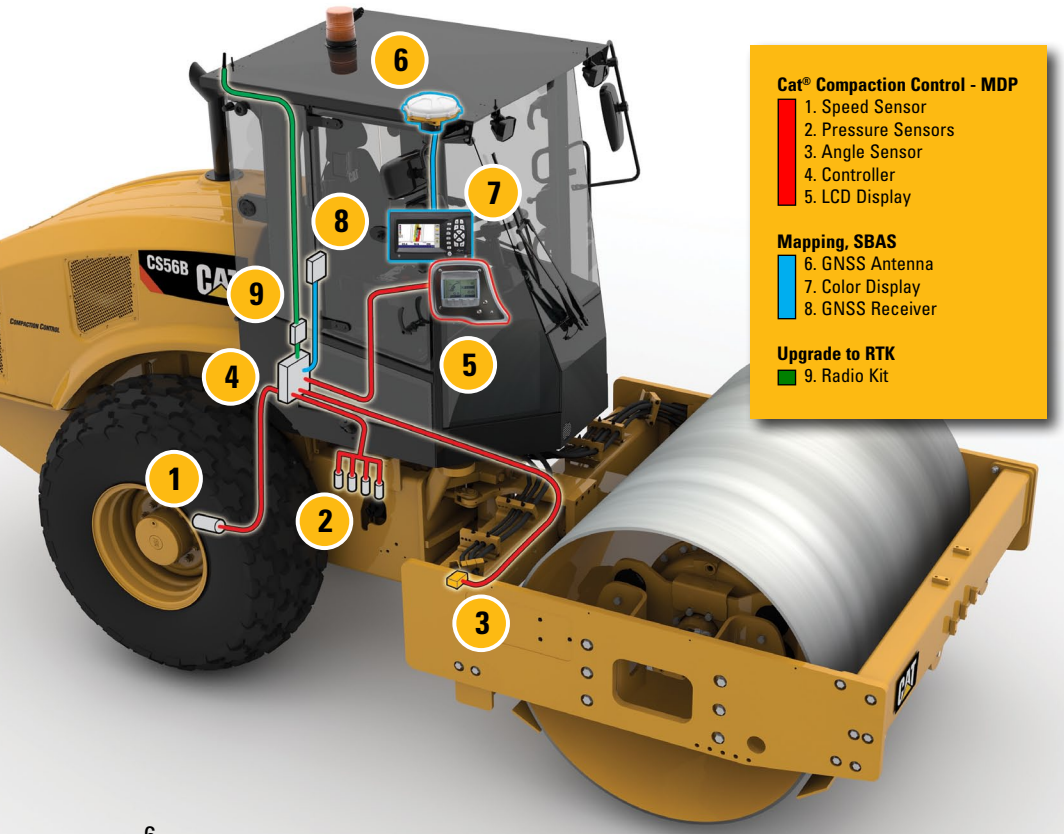
ADD MORE CAPABILITY AS YOU NEED IT.

MDP is a component of Cat® Compaction Control, a compaction measurement system that is scalable to meet a wide range of needs. This allows you to start out basic, and add more capability as your needs grow.

The basic measurement system includes MDP measurement technology. You can then add mapping capability, with two levels of accuracy available.

There are also office software solutions that can help you get the most out of the data you collect.

*An **intelligent compaction (IC)** system is composed of a measurement system (MDP), mapping capability (SBAS or RTK) and the ability to store and analyze the data. Cat Compaction Control gives you the capability of starting out with a simple measurement system and scaling up to a full intelligent compaction system with the addition of mapping capability and software solutions.*



Cat® Compaction Control - MDP
1. Speed Sensor
2. Pressure Sensors
3. Angle Sensor
4. Controller
5. LCD Display

Mapping, SBAS
6. GNSS Antenna
7. Color Display
8. GNSS Receiver

Upgrade to RTK
9. Radio Kit







UNDERNEATH IT ALL
CONFIDENCE

Measuring soil compaction with an accelerometer-based system works well for some applications, but you might be missing the mark.

Machine Drive Power (MDP) is a new, innovative soil compaction measurement technology available only from Caterpillar.

MDP measures closer to the depth of the lift with less variability than accelerometer-based systems, even on cohesive soils. It also works on a wider range of applications.

Ask your local Cat dealer about rental and purchase options for your next soil compaction job.

Feature	Machine Drive Power (MDP)	Accelerometer-based Compaction Measurement
Measurement Depth*	30 - 60 cm (12 - 24 in)	1 - 1.2 m (3.3 - 4 ft)
Correlates well with portable measurement devices (plate load)	✓	
Usable with smooth drum, padfoot, or padfoot shell kit	✓	
Usable on granular or cohesive material	✓	
Measures with vibratory system on or off	✓	
Exclusive Cat technology	✓	

* Dependent on soil type, moisture and other factors.

UNDERNEATH IT ALL:
PRODUCTIVITY
CONFIDENCE
INNOVATION
EXCELLENCE

B-SERIES VIBRATORY SOIL COMPACTORS



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