

New High Performance Circle for Cat[®] motor graders improve machine performance, efficiency and uptime

- New fully sealed bearing design reduces operator touchpoints and extends service intervals
- Delivers increased circle torque, performance and improved durability
- Applies to the most recent design for the Cat[®] 140 JOY, 150 JOY and 160 JOY motor graders

IRVING, Texas, August 11, 2025—The new High Performance Circle (HPC) design available for today's Cat[®] 140 JOY, 150 JOY and 160 JOY motor graders helps to eliminate hours of monthly planned maintenance for frequent inspection, wear strip replacement and circle shoe adjustments associated with conventional circle designs. The new HPC improves machine performance, efficiency and uptime availability compared to the previous Cat motor grader series in earthmoving and road building applications.

"Our new HPC provides more hours-of-service life, to significantly reduce planned maintenance. Caterpillar's industry-leading machining capabilities, designed to tight tolerances, help ensure high-precision alignment of the drawbar, drives and circle, so it requires no adjustments for the life of the grader," says Pablo dos Santos, Caterpillar global product application specialist for motor graders.

Proven design

Adopted from the Cat excavator swing drive and 14 motor grader worm drive, the HPC features a fully sealed bearing design. It replaces the previous open circle and drawbar, reducing operator touchpoints, extending service intervals and improving machine uptime. Additionally, the HPC provides smooth, effortless blade rotation and assists in meeting jobsite and road design elevation tolerance.

Reduced maintenance, improved safety

The new HPC maintains the same machine connection interface as the standard drawbar/circle/moldboard. An innovative pinion gear shape with a large shaft diameter delivers durable operation and allows the drive to be removed vertically without drive adjustments. Dowel locators precisely position motors for simplified servicing, optimal tooth contact and long pinion life. Its new design improves component reliability to reduce downtime and maintenance costs.

The new design significantly increases wear life between the circle and drawbar, and it reduces the likelihood of excessive clearance between the circle and drawbar surface. Its centrally located grease bank offers quick and easy servicing, while the easily accessible ring gear provides quicker inspection and maintenance.

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Product Update

Beyond lowering total cost of ownership, less required circle maintenance reduces component handling to properly maintain the machine, which improves safety for service technicians. If the circle teeth have reached their wear limit, they can be rotated 180 degrees to double the component's service life.

More information on the new HPC design for 140 JOY, 150 JOY and 160 JOY motor grader models can be found by contacting a Cat dealer or visiting cat.com.

Cat® High-Performance Circle Specifications

Circle	
Diameter – mm (in)	1530 (60.2)
Height – mm (in)	139 (5.5)
Blade Beam Thickness – mm (in)	90 (3.5)
Drawbar	
Height – mm (in)	154,4 (6.0)
Thickness – mm (in)	12,7 (0.5)
Circle Speed (rpm)	1.22

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Product Update

NOTE TO EDITORS

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