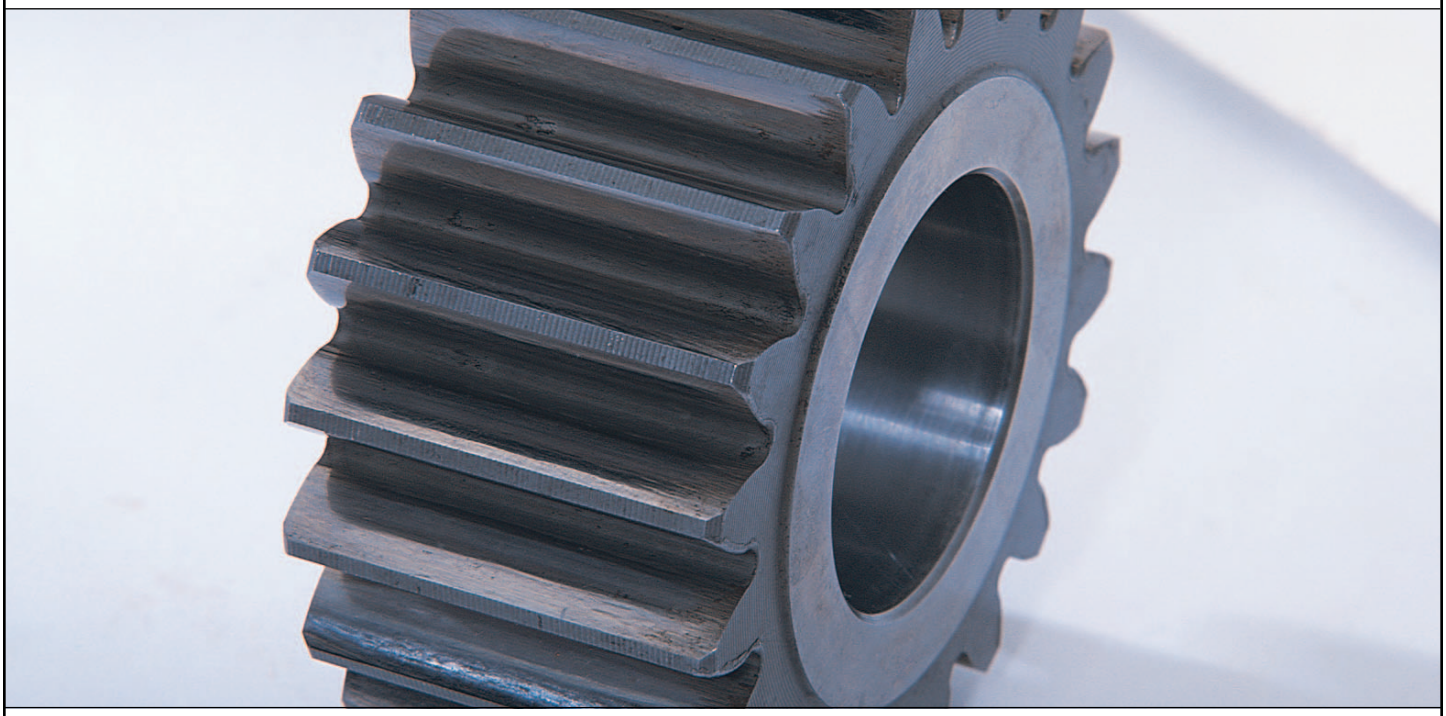
Cat® Gears



Total system design: built to Cat specs for Cat machines

- Different gears function differently. Transmission gears, for example, must provide long life and durability in high-speed environments, while final drive gears must withstand high torque loads at lower speeds for extended periods of time.
- Caterpillar engineers take these differences into account as they design drive train gears to exacting specifications that match the loads encountered in Cat machines. Each gear's design, metallurgy, and manufacturing are specific to machine function and application, ensuring all drive train parts work and wear together as a system.
- Other manufacturers don't have the product knowledge or capability to design and manufacture these special dimensional and metallurgical features into their gears. Instead, they must reverse-engineer in an attempt to meet Cat specs—increasing the chance for failure, downtime, and contingent damage to other components.

Designed and manufactured for maximum durability

- Power density, or the amount of power a gear can transmit relative to its size, is a key indicator of durability. Cat gears have the industry's highest power density. They're more durable to help keep your overall machine operating costs down.
- To resist failure caused by bending or pitting, all Cat gears are manufactured using special, and in some cases proprietary, heat treat processes—including case carburizing, nitriding, and induction hardening.

Caterpillar. The difference counts.™

Cat Dealers define world-class product support. We offer you the right parts and service solutions, when and where you need them.

The Cat Dealer network of highly trained experts keeps your entire fleet up and running to maximize your equipment investments.

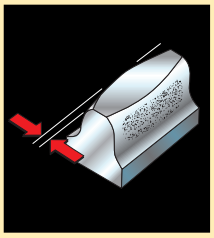
CATERPILLAR®

Cat Gears—Genuinely Better

Caterpillar® gears have key quality differences that most other gear manufacturers cannot match, including:

Tooth crowning

Cat gear teeth feature a special barrel shape called crowning that redistributes loads away from edges, protecting them from cracking and providing proper pitting and bending resistance. The result is longer life and less chance of breakage and contingent damage.

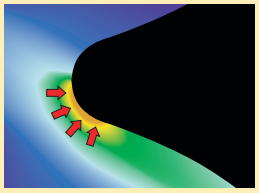


Smooth surface finish

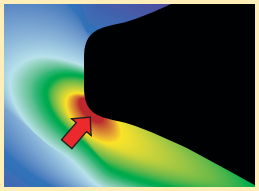
Cat gears have a smooth surface finish to resist pitting and scoring, prevent excess contact stresses on mating teeth, and distribute loads evenly across gear teeth. The result is proper lubrication, less noise, and longer life.

Large tooth fillet radius

Cat gears feature a large tooth fillet radius to significantly reduce stress concentrations at the tooth root and prevent cracks and breaks during high impact loads. The result is longer life, better wear, and higher parts reuse.



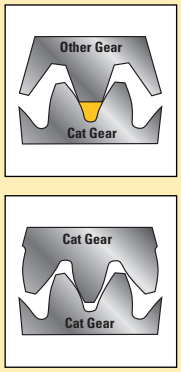
Cat Gear



Other Gear

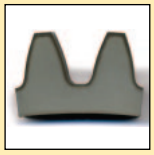
Proper tip land profile

Cat gears are manufactured to strict size and hardness tolerances. This uniformity allows them to mesh together smoothly for more even force distribution on each tooth. The result is longer life, less wear, less frequent repair, and less noise during operation.

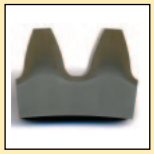


Proprietary heat treatments

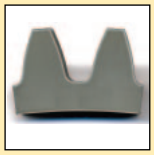
Cat heat treatment processes are tailored to the specific function and application of the gear within the drive train. The right process means longer life.



Case-hardening for a hard, wear-resistant outer shell and softer, shock-absorbing core



Through-hardening for superior bending strength



Nitride-hardening for high hardness and minimum distortion during heat treat

Unique metallurgy and heat treat for top performance and life

All Cat gears have unique metallurgy compositions tailored to specific applications, with special steel formulas that improve impact resistance and ensure uniformity and proper load transfer. Some Cat gears also undergo proprietary heat treat processes to improve surface, bore, and core hardness. New case carburization processes, for example, create a higher optimized surface hardness to better withstand contact stress, while induction hardening provides superior bending strength. The result is greater durability, which means longer life and better performance.

Continually updated designs for longer life and lower costs

Cat engineers continually make improvements to design, materials, metallurgy, manufacturing, heat treatment, and quality control. Designs are updated when necessary to provide service life improvements. Only by choosing a Cat gear do you get a product that's built to perform and last in your machine—and one that includes all the latest engineering updates. Plus, Cat gears are designed to be reusable at first overhaul, minimizing replacement time and costs.

For more information about Caterpillar gears and our complete line of drive train components for all Cat machines and applications, give us a call.

CATERPILLAR®

PEHJ0033 www.CAT.com Printed in the U.S.A.
© 2003 Caterpillar