# **NEAR-NET PRECISION-FORGED GEARS**

Cummins-Meritor is a global leader in the design and manufacture of precisionforged gears. These near-net forged gear teeth offer significant advantages over conventional cut-tooth gears such as:

- Increased strength, providing longer life and improved power density
- Reduced manufacturing costs
- Reduced raw material costs

Cummins-Meritor's precision-forged gears are used in the majority of Class 5 through Class 8 commercial vehicles manufactured in North America and worldwide for a wide range of demanding applications, including:

- On-highway linehaul
- Bus and coach
- Logging
- Fire and emergency
- Military
- Construction, agricultural, mining and other vocational applications
- Automotive, sport utility vehicles (SUVs) and pick-up trucks

With more than 100 years of industrial and commercial vehicle axle manufacturing expertise, Cummins-Meritor is a proven gear solutions provider. By partnering with Cummins-Meritor, your company will enjoy economies of scale, proven process design methodology and the flexibility to accommodate your application needs.

### FEATURES AND BENEFITS

- Hot-forged controlled grain flow resulting in increased impact strength and longer life
- Increased tool life
- Reduced machine cycle time
- Increased cutting machine capacity
- Reduced raw material cost
- Customized for your specific application needs





## **NEAR-NET FORGED GEAR TEETH**

#### MANUFACTURING CAPABILITIES

- Leverage high-volume purchases of bar material cut to precision billet length
- State-of-the-art CNC controls on induction heating equipment
- Mechanical and hydraulic forging presses
  - Press size range: 1,000 tons to 4,000 tons
- Fully internal and on-site heat treat
  - Carburize, quench and temper
- Machining
  - Full CNC turning, broaching and hard turning in cellular and traditional layouts
  - Automation, including in-cell robotic deburring
- Tooling
  - Designed and manufactured in-house
  - EDM and 5 axis CNC die milling
  - Forging process simulation
- Materials
  - SBQ: 4140, 4120, 4184 and many others
  - Automated in-line inspection

#### Product sizes

Bevel gears	Straight or spiral/hypoid
Cylindrical gears	Spur or helical
Sizes	<ul> <li>1 in – 10 in OD</li> <li>Up to 13 in (length)</li> <li>Up to 50 lbs</li> </ul>
Near-net forged gear quality	<ul><li>AGMA Classes 8-9</li><li>DIN Classes 8-9</li></ul>
Features	<ul><li>Weight saving pockets</li><li>Splines: internal or external</li><li>Driver dogs</li></ul>
Tooth profile	Unrestricted

#### MANUFACTURING FACILITIES



#### **NEAR-NET TOOTH GRAIN FLOW**



Contoured grain flow at the root enables higher fatigue life



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