

CHASSIS

ENGINE

DRIVELINE



SPECIFICATIONS

Powder Metal Forged Connecting Rod

Metaldyne offers the latest technology in connecting rods manufacturing, supplying finished machined and assembled fracture-split Powder Metal Connecting Rods. This eliminates significant investment costs for the OEM while delivering a lighter, stronger forging with superior quality.

FEATURE

DESIGN

Design Optimization

TECHNOLOGY

*Net Shape Forming
and Machining*

PROCESS

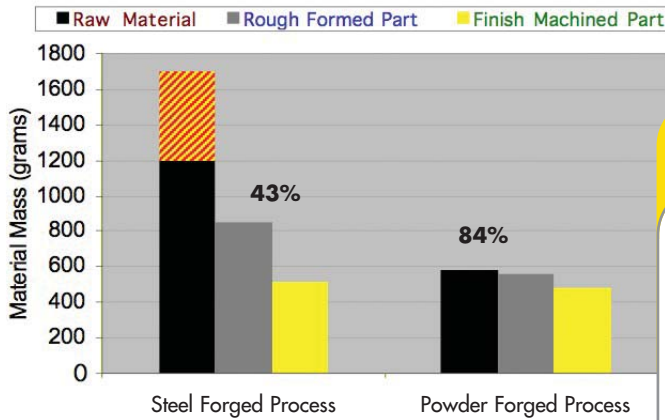
Powder Forge

BENEFITS

- Product has both gasoline and diesel applications
 - I-beam geometry designed to maximize stiffness and bending strength, optimizing strength to weight ratio
 - Reduces reciprocating and rotating mass, improving engine fuel efficiency
 - Improved fatigue strength through elimination of trim lines and draft angles
 - Robust design due to small piece-to-piece variation
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- Improves material utilization by 40% compared to conventional forged steel
 - Exceptional split weight balance capability over forged steel, avoiding weight grading and weight correction
 - Multiple engine plant machining operations are eliminated
 - Zero capital investment for pre-assembly machining costs
 - Minimizes customer inventory and WIP, opening plant floor space
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- Meets or exceeds the ultimate tensile and yield strength of forged steel
 - Requires less machining, reducing OEM cost
 - Up to four times tool life improvement in machining
 - Fracture-splitting can be accomplished with a simple mechanical broach versus an expensive laser notch
 - Optimal fracture-split properties that result in minimal crank-bore distortion

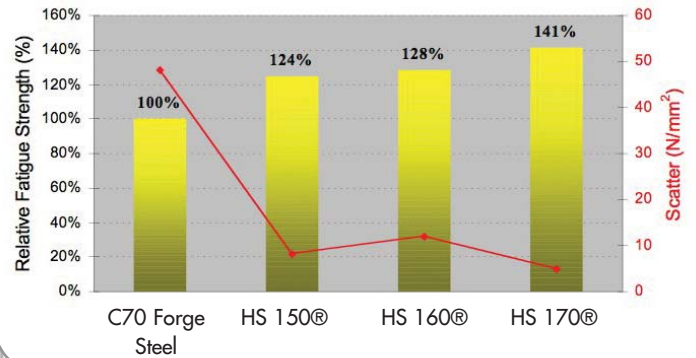
Material Utilization

Typical Raw Material Utilization Efficiency

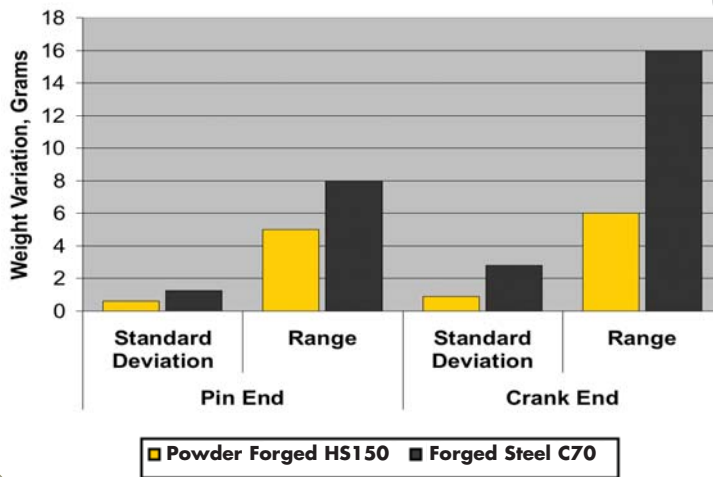


Dynamic Properties

Fatigue Limits at 90% SR, R=-2, 10⁷ Cycles

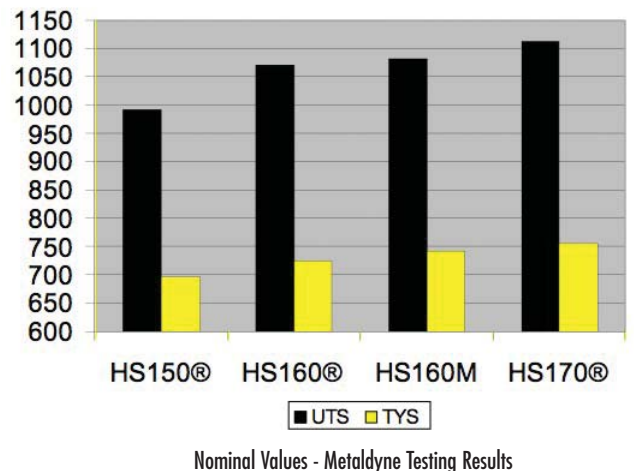


Mass Variation



Material Strength

Mechanical Properties



HS 150® - in production
 HS 160® - prototype phase (Patent Pending)
 HS 170® - prototype phase (Patent Pending)

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