CEP
Capital Equipment Parts

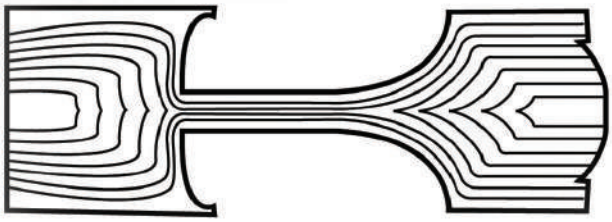
STEEL PISTON

FORGED VS. CAST

Forged and cast steel pistons look similar but have vast differences in their manufacturing processes which affect their durablity and performance.

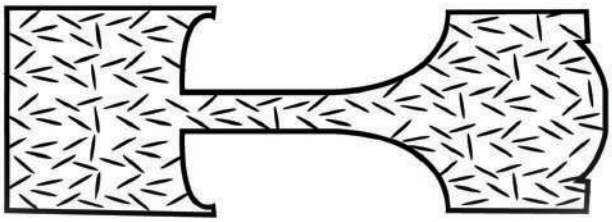
FORGED

Thermal and mechanical energy delivered with a hammer or a die into steel billets or ingots to cause the material to change shape while in a solid state.



CAST

Heated steel in a molten or liquid state, then poured into a mold or vessel to create a desired shape.



DIRECTIONAL STRENGTH GRAIN FLOW

• Generally stronger and more reliable due to grain flows being altered, conforming to the parts shape.
• Thermal cycle and deformation process result in:
- Metallurgical recrystallization
- Grain refinement
- Uniformity of composition
- Reinforced integrity

• Finished steel product is enhanced

LITTLE OR NO GRAIN FLOW

• Cannot obtain strengthening effects of hot and cold working due to the single step process of the molten pour.
• Has neither grain flow nor directional strength.
• Does not prevent certain metallurgical defects which include:
- Impurities being trapped below the surface
- Vapor bubbles
- Micro fractures

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