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Excel Engines, LLC

Full Expansion Internal Combustion
Engine with Very High Fuel
Efficiency

Poster P-18

The Two-Stroke Full Expansion Engine

This engine concept saves a large amount of the energy that is normally lost to the cooling system. Energy that is normally lost with the exhaust gases is captured by extending the power stroke down to almost atmospheric pressures. The compression stroke starts when the piston position is at about one half of the normal compression stroke.

Advantages:

- * Very low fuel consumption. The sfc is less than 0.30.
- * A two-stroke engine with small size, light weight, low cost, and with full pressure lubrication.
- * Fuel flexibility. Can use many different types of fuel.