

Title (en)
RECIPROCATING INTERNAL COMBUSTION ENGINE AND ITS OPERATING METHOD

Title (de)
HUBKOLBENBRENNKRAFTMASCHINE UND IHRE ARBEITSWEISE

Title (fr)
MOTEUR ALTERNATIF A COMBUSTION INTERNE ET SON PROCEDE D'EXPLOITATION

Publication
EP 1344925 A4 20100915 (EN)

Application
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Abstract (en)
[origin: EP1344925A1] A method of operating a reciprocating internal combustion engine reduces friction power loss in an indicated power to increase net power and to reduce brake specific fuel consumption. A reciprocating internal combustion engine having an output characteristic to generate a maximum indicated power (PM) at a first set engine speed (N1) is provided with a power reducing unit (26). The power reducing unit (26) reduces the output power of the reciprocating internal combustion engine when the engine speed exceeds a second set engine speed lower than the first set engine speed (N2) lower than the first set engine speed (N1) so that the reciprocating internal combustion engine generates a necessary indicate power (PS) at the second set engine speed (N2). A high engine speed range in an engine speed range (R) in which the engine speed of the reciprocating internal combustion engine varies is lower than an engine speed (N3) at which an equivalent conventional reciprocating internal combustion engine generates a necessary indicated power (PS) (Maximum indicated power (Pm). Friction power loss (PL) in an indicated power of the reciprocating internal combustion engine is smaller than that in the same indicated power of the equivalent conventional reciprocating internal combustion engine. So that net power is increased and brake specific fuel consumption is reduced. <IMAGE>

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Citation (search report)
• [E] EP 1174610 A2 20020123 - HONDA MOTOR CO LTD [JP]
• [X] US 5445121 A 19950829 - KAI MANABU [JP]
• [X] US 6148777 A 20001121 - MOTOSE HITOSHI [JP], et al
• [X] US 5559703 A 19960924 - IWATA TORU [JP], et al
• [X] GB 2279111 A 19941221 - DELCO ELECTRONICS CORP [US], et al
• See references of WO 02052140A1

Cited by
US11326533B2; US11578672B2; US11187162B2; US11578673B2

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