Title (en)

CYCLIC SPEED CONTROL APPARATUS IN VARIABLE STROKE MACHINES

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Application

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Priority

US 8501997 W 19851010

Abstract (en)

[origin: WO8702423A1] A free piston engine includes speed control means which provide a wide range of engine speed control for selective connection and use of the engine with any one of a number of different types of energy absorbing devices. The desired control is achieved by use of two bounce chambers (18p and 18n) and a double-acting bounce piston unit (16) specifically located at an intermediate position along the axis of reciprocation of the piston rod assembly of such an engine, i.e. between a power piston (15) at one end of the piston rod and a connecting means at the other piston rod end for driving connection of the piston rod assembly with a movable member (e.g. reciprocating compressor piston (34) or reciprocating electric generator member) of the selected energy absorbing device. The control means further includes at least one pair of variably adjustable bounce chamber pressure control valves (23 and 24), one for each bounce chamber. Each control valve of such one pair provides for and controls a direct connection of its respective bounce chamber to ambient atmospheric air outside the bounce chamber. The controls further include sensing means (37) responsive to changes in demands on or operation of the selected energy absorbing device for variably and substantially simultaneously adjusting each control valve of such one pair and thereby similarly changing (i.e. both upwardly or both downwardly) the respective bounce chamber working pressures. Other bounce pressure control features are also described.

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