

ABSTRACT

LINEAR COMPRESSOR CONTROLLER

A free-piston linear compressor (1) controlled to achieve high volumetric efficiency by a controller including an algorithm (116) for ramping up input power until piston-cylinder head collisions are detected using a detection algorithm (117/118) which then decrements power input whereupon input power is again ramped up by algorithm (116). Non-damaging low energy collisions are achieved by the controller including a perturbation algorithm (119) which perturbrates the input power ramp with periodic transient pulses of power to ensure piston collisions are provoked during the transient power pulses.

(Figure 6)