

LINEAR MOTOR DRIVEN FREE PISTON MECHANISM

The Linear-motor-driven Free Piston System is not only ideal for upgrading existing systems but can also be used for future design improvement. Compact, quiet, and vibration free, the extremely reliable Free Piston Pump will enhance your system performance and extend its operating life.

The Electro-magnet and return spring alternatively drive the piston inside the cylinder, the mechanical resonance of which is synchronized with the input current cycle. In a single mechanism, the piston combines the functions of two normally independent devices; a pump and a motor.

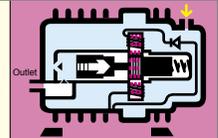
Compact integrated design

This unique system enables the mechanical resonance of a single part. An incredibly compact, lightweight design is achieved by combining what are entirely independent functions in conventional pumps - the motor and the compressor - into a superior single, unified structure.

A silicon diode in between the coils converts the full-wave input current into half-rectified current. In turn this activates and deactivates the electro-magnet, producing a smooth mechanically resonating action.

Operating Principle

A. The energised electro-magnet attracts the piston, compresses the return spring, and draws air into the cylinder through the opened inlet valve.



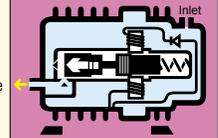
Current



No Current

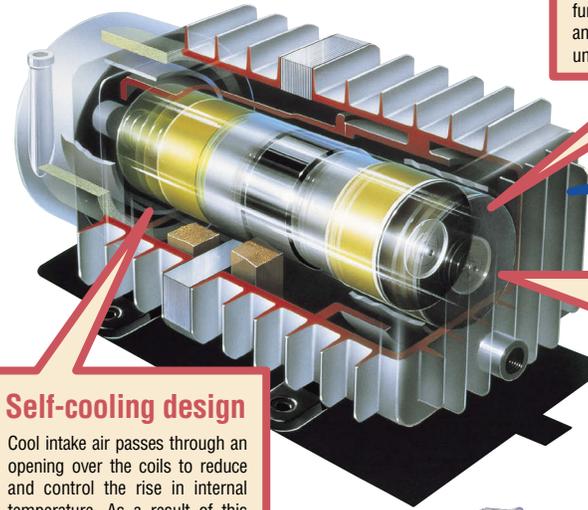


B. When the electro-magnet is de-energized, the return spring pushes the piston back, forcing the compressed air out of the cylinder through the now opened outlet valve.



Fewer components

This uniquely simple and reliable design has no complicated transmission components such as crankshafts, connecting rods, ball bearings, etc. typically found in conventional pump designs. Fewer parts means fewer problems.



Self-cooling design

Cool intake air passes through an opening over the coils to reduce and control the rise in internal temperature. As a result of this feature, it is possible to almost completely seal the unit, thus improving the suppression of internal operating noise.

Hyper pressure control mechanism

Should the output pressure exceed the rated value, the piston will automatically adjust to a shorter stroke. Additionally, power consumption will automatically reduce, guarding against possible temperature overloads.



Air Compressors & Vacuum Pumps



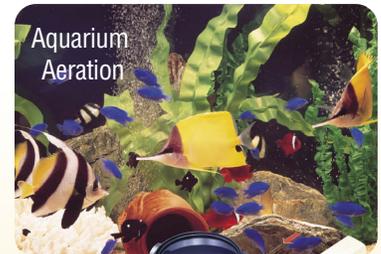
Air Brush



Soldering Fume Remover



Muscular Electro-Therapy Unit



Aquarium Aeration

Our Valued Customers & Applications



Coffee Maker



Pap smear Tester



Nebulizers



Sewage Treatment Aeration