

Title (en)

ELECTROMAGNETICALLY ACTUATED RECIPROCATING COMPRESSOR DRIVER.

Title (de)

ELEKTROMAGNETISCH BETAETIGTER ANTRIEB FUER EINEN KOLBENKOMPRESSOR.

Title (fr)

ORGANE DE COMMANDE ELECTROMAGNETIQUE DE COMPRESSEUR A DEPLACEMENT ALTERNATIF.

Publication

EP 0638199 A4 19950614 (EN)

Application

EP 94907388 A 19940131

Priority

- US 9401123 W 19940131
- US 1518293 A 19930201

Abstract (en)

[origin: WO9418681A1] Compressor (50) has electromagnetic actuator (52) for driving the piston (58) in compression cylinder (56). Electromagnetic element (76) has core (77) and coil (80). The core has surface (104) and channel (90). The coil is disposed in the channel. Axially reciprocating armature element (78) is interconnected with the piston, defining an axial stroke having a stroke midpoint and stroke peak. The armature element has surface (94) dimensioned to align with the electromagnet surface at the stroke peak. Primary spring (84) disposed on one end of the armature element biases the armature from axial movement. Secondary spring (86) disposed on the opposing end of the armature element biases the armature from movement in an opposite axial direction. The springs bias the armature to resonate at a pre-determined frequency. Applied current at stroke midpoint continues the resonating frequency, and allows the armature surface to overcome friction losses and compression forces. Two actuators placed back-to-back creates a dual piston compressor.

IPC 1-7

H01F 3/00; **H01F 7/12**; **F16K 31/02**

IPC 8 full level

F04B 17/04 (2006.01); **H01F 7/16** (2006.01); **H02K 33/10** (2006.01)

CPC (source: EP KR)

H01F 3/00 (2013.01 - KR); **H01F 7/1638** (2013.01 - EP); **H02K 33/10** (2013.01 - EP)

Citation (search report)

- [A] US 3312842 A 19670404 - HEUCHLING THEODORE P, et al
- [A] CH 664708 A5 19880331 - HEINRICH BLASER
- [A] US 4150924 A 19790424 - TOYODA AKIRA [JP]
- See references of WO 9418681A1

Designated contracting state (EPC)

AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE

DOCDB simple family (publication)

WO 9418681 A1 19940818; AU 6099294 A 19940829; AU 669614 B2 19960613; CA 2133094 A1 19940818; CA 2133094 C 19980428; EP 0638199 A1 19950215; EP 0638199 A4 19950614; JP H07505746 A 19950622; KR 100239979 B1 20000115; KR 950701129 A 19950220

DOCDB simple family (application)

US 9401123 W 19940131; AU 6099294 A 19940131; CA 2133094 A 19940131; EP 94907388 A 19940131; JP 51814494 A 19940131; KR 19940703423 A 19940930