

Title (en)

Two-stage vapor cycle compressor

Title (de)

Zweistufiger Dampfzyklus-Kompressor

Title (fr)

Compresseur à cycle de vapeur en deux phases

Publication

EP 1961972 A2 20080827 (EN)

Application

EP 08101772 A 20080219

Priority

US 67718907 A 20070221

Abstract (en)

A two-stage vapor cycle compressor (10) includes a first stage impeller (20), a second stage impeller (21) situated adjacent to the first stage impeller, an electric motor (30) running on a pair of foil bearings (18,19), a thrust disk (16) including two foil bearings (17) and being positioned between the second stage impeller and the electric motor, and a compressor housing (40) enclosing the first and second stage impeller and the electric motor. A refrigerant vapor (27) compressed by the first stage and second stage impeller flows through an internal passageway (26) formed by the compressor housing and cools the foil bearings (17,18,19) and the electric motor (30). The compressor may be a gravity insensitive, small, and lightweight machine that may be easily assembled at low manufacturing costs. The two-stage vapor cycle compressor may be suitable for, but not limited to, applications in vapor compression refrigeration systems, such as air-conditioning systems, for example, in the aircraft and aerospace industries.

IPC 8 full level

F04D 29/58 (2006.01)

CPC (source: EP US)

F04D 25/06 (2013.01 - EP US); **F04D 29/0513** (2013.01 - EP US); **F04D 29/057** (2013.01 - EP US); **F04D 29/5806** (2013.01 - EP US); **F04D 29/584** (2013.01 - EP US)

Citation (applicant)

- US 6564560 B2 20030520 - BUTTERWORTH ARTHUR L [US], et al
- US 5857348 A 19990112 - CONRY RONALD DAVID [AU]
- US 6997686 B2 20060214 - AGRAWAL GIRIDHARI L [US], et al
- US 2008098768 A1 20080501 - MASOUDIPOUR MIKE M [US], et al

Cited by

EP2375082A3; EP2061998B1

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MT NL NO PL PT RO SE SI SK TR

Designated extension state (EPC)

AL BA MK RS

DOCDB simple family (publication)

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DOCDB simple family (application)

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