Title (en)

Starting load reducing device for refrigerant compressor

Title (de)

Vorrichtung zur Reduzierung der Startlast für Kältemittelverdichter

Title (fr)

Dispositif de réduction de la charge de démarrage pour compresseur de réfrigérant

Publication

EP 0797000 B1 20010530 (EN)

Application

EP 97301697 A 19970313

Priority

JP 6444896 A 19960321

Abstract (en)

[origin: EP0797000A1] A device for reducing the starting load which occurs when starting up the compressor for automotive air conditioning system, is disclosed. The starting load reducing device is composed of a piston, a cap like member, and a tension coil spring made of shape-memory alloy disposed between them. In the actual refrigerant circuit, the starting load reducing device may be disposed anywhere between the outlet of evaporator and inlet port of compressor. When starting up the compressor, the flow of refrigerant gas from evaporator to suction chamber of the compressor is restricted to minimum value by the device. So the starting load of the compressor is suppressed effectively. After some time has lapsed, the temperature of refrigerant from the outlet of evaporator will gradually decreases to the transformation temperature of coil spring made of shape-memory alloy, due to small amount of continued operation of compressor. Temperature decrease in the refrigerant in the device will cause the martensitic transformation of the coil spring to occur, so that at this moment a full communication between the outlet of the evaporator and the suction chamber is realized . And stationary operation of the compressor enters with this elastically soft state of coil spring in the starting load reducing device. Thus, the purpose of eliminating an uncomfortable drive feeling due to the torque shock by suppressing the starting load of a compressor is attained. <IMAGE>

IPC 1-7

F04B 49/22; F25B 41/04; F04B 49/03

IPC 8 full level

F04B 49/06 (2006.01); **F04B 27/14** (2006.01); **F04B 27/18** (2006.01); **F04B 49/03** (2006.01); **F04B 49/22** (2006.01); **F25B 41/04** (2006.01)

CPC (source: EP US)

F04B 27/1804 (2013.01 - EP US); **F04B 49/03** (2013.01 - EP); **F04B 49/225** (2013.01 - EP); **F25B 41/22** (2021.01 - EP US); F04B 2205/10 (2013.01 - EP); F25B 2500/26 (2013.01 - EP)

Cited by

EP1586774A4; FR2807115A1; FR2938050A1; EP1001170A3; US9791175B2

Designated contracting state (EPC)

DE FR GB IT SE

DOCDB simple family (publication)

EP 0797000 A1 19970924; **EP 0797000 B1 20010530**; DE 69704977 D1 20010705; DE 69704977 T2 20020404; JP H09256958 A 19970930

DOCDB simple family (application)

EP 97301697 A 19970313; DE 69704977 T 19970313; JP 6444896 A 19960321