

## Title (en)

Device for inducing turbulence in refrigerant systems

## Title (de)

Vorrichtung zur Turbulenzerzeugung in Kühlmittelsystemen

## Title (fr)

Dispositif introduisant une turbulence dans des systèmes réfrigérants

## Publication

**EP 1122503 A1 20010808 (EN)**

## Application

**EP 01101196 A 20010124**

## Priority

US 49469500 A 20000131

## Abstract (en)

A refrigerant expansion device outlet port includes a generally annular body defining a flow path between an inlet and an outlet, with a mixing device interposed between the inlet and outlet to promote turbulent mixing of refrigerant as it passes through the port. In one embodiment, the mixing device is a screen inserted between the inlet and the outlet, preferably adjacent the outlet. In a second embodiment, the mixing device is provided as a set of concentric axially spaced annular shoulders formed on an inner circumference of the flow path between the inlet and outlet. In a third embodiment, the flow path includes a series of rifling grooves on an inner circumferential surface of the flow path for inducing turbulent flow. In a fourth embodiment, the flow path is formed from radially offset or mismatching inlet and outlet flow paths. <IMAGE>

## IPC 1-7

**F25B 39/02**; **F25B 41/06**; **B01F 5/06**

## IPC 8 full level

**F25B 41/00** (2006.01); **B01F 5/06** (2006.01); **F25B 39/02** (2006.01); **F25B 41/04** (2006.01); **F25B 41/06** (2006.01); **F25B 43/00** (2006.01); **B01F 13/10** (2006.01)

## CPC (source: EP US)

**B01F 25/433** (2022.01 - EP); **B01F 25/434** (2022.01 - EP); **B01F 25/45** (2022.01 - EP); **B01F 25/45231** (2022.01 - EP); **F25B 39/028** (2013.01 - EP US); **F25B 41/30** (2021.01 - EP US); **F25B 41/45** (2021.01 - EP US); **B01F 33/82** (2022.01 - EP); **F25B 2500/01** (2013.01 - EP)

## Citation (search report)

- [PX] US 6023940 A 20000215 - ABBOTT ALAN D [US], et al
- [XY] US 4543802 A 19851001 - INGELMANN HANS-JOACHIM [DE], et al
- [Y] US 5437784 A 19950801 - MEINECKE ALBRECHT [DE], et al
- [Y] DE 3328530 A1 19850221 - MITTER MATHIAS
- [Y] US 4410281 A 19831018 - CROOKES LEROY W [US]
- [Y] US 5894741 A 19990420 - DURHAM KENTON L [US], et al
- [A] US 5243838 A 19930914 - IDE SHINICHI [JP], et al
- [A] US 5104233 A 19920414 - KOJIMA HISAO [JP]

## Cited by

EP1707902A3; CN113648902A; US7600393B2; WO2021152464A3; WO02090847A1

## Designated contracting state (EPC)

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

## DOCDB simple family (publication)

**EP 1122503 A1 20010808**; AU 1643401 A 20010802; BR 0100406 A 20011030; CA 2332257 A1 20010731; JP 2001235257 A 20010831

## DOCDB simple family (application)

**EP 01101196 A 20010124**; AU 1643401 A 20010124; BR 0100406 A 20010131; CA 2332257 A 20010124; JP 2001020037 A 20010129