

Title (en)
EXPANSION VALVE

Title (de)
EXPANSIONSVENTIL

Title (fr)
DÉTENDEUR

Publication
EP 3499150 A4 20200408 (EN)

Application
EP 17839188 A 20170721

Priority
• JP 2016156352 A 20160809
• JP 2017026432 W 20170721

Abstract (en)
[origin: EP3499150A1] This expansion valve is provided with a valve body including an inlet hole through which a refrigerant flows into a valve chamber, and a valve hole through which the refrigerant flows out from the valve chamber; a valve element configured to adjust an amount of the refrigerant flowing through the valve hole; a power element that is mounted to the valve body and configured to drive the valve element through a valve rod; a support member configured to support the valve element; a coil spring configured to press the valve element in a valve-closing direction through the support member; and a vibration isolation spring configured to prevent vibration of the valve element, wherein the vibration isolation spring is provided with an annular base portion disposed between the support member and the coil spring, and a plurality of leg portions that extend radially from the base portion, wherein the leg portions are bent toward the coil spring and are in contact with a side wall surface of the valve chamber on a valve hole side of the inlet hole.

IPC 8 full level
F25B 41/06 (2006.01); **F16K 31/68** (2006.01)

CPC (source: CN EP US)
F25B 41/31 (2021.01 - CN); **F25B 41/335** (2021.01 - EP US); **F25B 2341/063** (2013.01 - CN EP); **F25B 2500/12** (2013.01 - CN EP); **F25B 2500/13** (2013.01 - CN EP)

Citation (search report)
• [X] KR 20040040766 A 20040513 - HYUNDAI MOTOR CO LTD
• [X] WO 2016075872 A1 20160519 - SAGINOMIYA SEISAKUSHO INC [JP]
• [A] CN 102588669 A 20120718 - ZHEJIANG SANHUA AUTO PARTS CO LTD
• [AD] JP 2005156046 A 20050616 - FUJI KOKI KK
• [A] CN 101118020 A 20080206 - YONGLE WANG [CN]
• [A] KR 20070062318 A 20070615 - KIA MOTORS CORP [KR]
• See references of WO 2018030115A1

Designated contracting state (EPC)
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

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EP 3499150 A1 20190619; **EP 3499150 A4 20200408**; CN 109564042 A 20190402; CN 116336703 A 20230627; JP 2018025331 A 20180215; JP 6697975 B2 20200527; US 2019178542 A1 20190613; WO 2018030115 A1 20180215

DOCDB simple family (application)
EP 17839188 A 20170721; CN 201780048788 A 20170721; CN 202310468583 A 20170721; JP 2016156352 A 20160809; JP 2017026432 W 20170721; US 201716322961 A 20170721