

Title (en)  
Valve timing changing device

Title (de)  
Vorrichtung zur Änderung der Ventilsteuerzeit

Title (fr)  
Dispositif de changement de temporisation de soupape

Publication  
**EP 2434111 A1 20120328 (EN)**

Application  
**EP 11182341 A 20110922**

Priority  
JP 2010211659 A 20100922

Abstract (en)  
A valve timing changing device is provided with a housing rotor (30) which is rotated on an axis line of a cam shaft as being interlocked with rotation of a crank shaft, a vane rotor (20) which is accommodated in an accommodation room (A1) of the housing rotor (30) as being relatively rotatable in a predetermined angle range and which is rotated integrally with the cam shaft, and a lock mechanism which locks the vane rotor (20) against the housing rotor (30) at a specified position in the predetermined angle range. Here, the housing rotor (30) defines an isolation room (A2) isolated from the accommodation room (A1) which accommodates the vane rotor (20), and the lock mechanism is arranged in the isolation room (A2).

IPC 8 full level  
**F01L 1/344** (2006.01); **F01L 9/10** (2021.01)

CPC (source: EP)  
**F01L 1/3442** (2013.01); **F01L 2001/34423** (2013.01); **F01L 2001/34426** (2013.01); **F01L 2001/34453** (2013.01); **F01L 2001/34466** (2013.01); **F01L 2820/035** (2013.01)

Citation (applicant)  
• JP 3146956 B2 20010319  
• JP 4320903 B2 20090826

Citation (search report)  
• [X] US 6079382 A 20000627 - SCHAFER JENS [DE], et al  
• [XA] US 2001011534 A1 20010809 - SUGAWARA MASAFUMI [JP], et al  
• [X] EP 1087107 A1 20010328 - AISIN SEIKI [JP]  
• [A] JP 2006312888 A 20061116 - HITACHI LTD  
• [A] JP 2007255258 A 20071004 - HITACHI LTD  
• [A] JP 2007120317 A 20070517 - AISIN SEIKI

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

Designated extension state (EPC)  
BA ME

DOCDB simple family (publication)  
**EP 2434111 A1 20120328**; **EP 2434111 B1 20130807**; CN 102410057 A 20120411; CN 102410057 B 20151021; JP 2012067644 A 20120405; JP 5615114 B2 20141029

DOCDB simple family (application)  
**EP 11182341 A 20110922**; CN 201110383187 A 20110921; JP 2010211659 A 20100922