

Title (en)  
Variable valve timing control device

Title (de)  
Variable Ventilsteuerzeit-Steuervorrichtung

Title (fr)  
Dispositif de commande de distribution variable

Publication  
**EP 2843201 A1 20150304 (EN)**

Application  
**EP 14182160 A 20140825**

Priority  
JP 2013177121 A 20130828

Abstract (en)  
A variable valve timing control device includes a driving side rotation member (1), a driven side rotation member (2), a fluid pressure chamber (4, 41, 42), a first flow path (43) and a second flow path (44) allowing a flow of an operation fluid into and out of the fluid pressure chamber (4, 41, 42), an intermediate member (6) being provided between an inner circumferential surface of the driven side rotation member (2) and an outer circumferential surface of a camshaft (10), and a contact portion (A) where the intermediate member (6) and the driven side rotation member (2) come in contact with each other at a position between the first flow path (43) and the second flow path (44) when mounting the intermediate member (6) to the camshaft (10).

IPC 8 full level  
**F01L 1/344** (2006.01)

CPC (source: EP US)  
**F01L 1/3442** (2013.01 - EP US); **F01L 2001/34423** (2013.01 - EP US); **F01L 2001/34426** (2013.01 - EP US); **F01L 2001/34433** (2013.01 - EP US); **F01L 2001/3445** (2013.01 - US); **F01L 2001/34453** (2013.01 - EP US); **F01L 2001/34483** (2013.01 - EP US); **F01L 2303/00** (2020.05 - EP US)

Citation (applicant)  
JP 2012057578 A 20120322 - AISIN SEIKI

Citation (search report)  
• [XDY] EP 2428656 A1 20120314 - AISIN SEIKI [JP] & JP 2012057578 A 20120322 - AISIN SEIKI  
• [Y] WO 2012111388 A1 20120823 - AISIN SEIKI [JP], et al

Cited by  
EP3399163A4; CN108474274A; EP3399162A4; US10533462B2; US10858966B2

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 2843201 A1 20150304**; CN 104420918 A 20150318; JP 2015045282 A 20150312; US 2015059670 A1 20150305

DOCDB simple family (application)  
**EP 14182160 A 20140825**; CN 201410433388 A 20140828; JP 2013177121 A 20130828; US 201414459766 A 20140814