

Title (en)  
PUMP CONTROL DEVICE

Title (de)  
PUMPENSTEUERUNGSVORRICHTUNG

Title (fr)  
DISPOSITIF DE COMMANDE DE POMPE

Publication  
**EP 2878816 A4 20160504 (EN)**

Application  
**EP 14773145 A 20140224**

Priority  
• JP 2013066851 A 20130327  
• JP 2014054303 W 20140224

Abstract (en)  
[origin: EP2878816A1] A pump control apparatus includes an actuator that varies a discharge capacity of a pump, and a regulator that regulates a control pressure led to the actuator. The regulator includes: a driving pressure port to which an average discharge pressure is led; a source pressure port to which a high pressure side discharge pressure is led; a signal pressure port to which a signal pressure is led; and a spool that regulates the control pressure using the high pressure side discharge pressure as a source pressure by moving upon reception of the average discharge pressure and the signal pressure. A driving pressure receiving surface that receives the average discharge pressure is formed inside the spool, and a signal pressure receiving surface that receives the signal pressure is formed in an outer peripheral step portion of the spool.

IPC 8 full level  
**F04B 1/26** (2006.01); **F04B 1/32** (2006.01); **F04B 49/00** (2006.01)

CPC (source: EP KR US)  
**F04B 1/306** (2013.01 - KR); **F04B 1/324** (2013.01 - EP KR US); **F04B 49/002** (2013.01 - EP KR US); **F04B 49/08** (2013.01 - EP KR US); **F04B 49/22** (2013.01 - US)

Citation (search report)  
• [YA] JP 2008280942 A 20081120 - KAYABA INDUSTRY CO LTD  
• [YDA] JP 2008240518 A 20081009 - KAYABA INDUSTRY CO LTD  
• [AD] JP 2008291732 A 20081204 - KAYABA INDUSTRY CO LTD  
• [A] JP 2008291913 A 20081204 - KAYABA INDUSTRY CO LTD  
• [A] WO 8201048 A1 19820401 - CATERPILLAR TRACTOR CO [US], et al  
• [A] FR 2234472 A1 19750117 - CLERK ROBERT [GB]  
• See references of WO 2014156415A1

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 2878816 A1 20150603; EP 2878816 A4 20160504; EP 2878816 B1 20180418**; CN 104302910 A 20150121; CN 104302910 B 20160525; JP 2014190255 A 20141006; JP 6075866 B2 20170208; KR 101675659 B1 20161122; KR 20150002840 A 20150107; US 2015139824 A1 20150521; WO 2014156415 A1 20141002

DOCDB simple family (application)  
**EP 14773145 A 20140224**; CN 201480001233 A 20140224; JP 2013066851 A 20130327; JP 2014054303 W 20140224; KR 20147032165 A 20140224; US 201414407989 A 20140224