Title (en)

VANE TYPE PHASING DEVICE WITH HYDRAULIC CONTROL VALVE

Title (de)

SCHWENKMOTORVERSTELLER MIT EINEM HYDRAULIKVENTIL

Title (fr)

DEPHASEUR À AILETTES OSCILLANTES AVEC VANNE DE COMMANDE HYDRAULIQUE

Publication

EP 2870327 A1 20150513 (DE)

Application

EP 13734995 A 20130702

Priority

- DE 102012106096 A 20120706
- EP 2013063954 W 20130702

Abstract (en)

[origin: WO2014006056A1] The invention relates to an oscillating motor adjuster (14) with a hydraulic valve (12). Said hydraulic valve has a stepped bore (28) with working connections (A, B) outgoing therefrom. A pressure-equalised hollow piston (32) is axially movable within the bore (28). With a first outer diameter (D3), said hollow piston can be moved within a bore section (71) so as to have a toleranced sealing ability. Following this first outer diameter, the hollow piston (32) has - an adjacent lateral surface (47) with a large outer diameter (67) in the axial regions of the one working connection (A) and - a lateral surface (48) with a small outer diameter (D1) in the region of the other working connection (B). A leading edge (41 or 44) and a trailing edge (42 or 43) exit each of the two lateral surfaces (47, 48). The two leading edges (41, 44) face away from each other. The trailing edges (42, 43) face towards each other, and therefore a supply pressure admitted into a hollow space (80) of the hollow piston (32) is present on one side on a projected circular surface (60). Said circular surface (60) is formed from the small outer diameter (D1), and therefore a force (F1) is effective in an axial direction. In contrast, the supply pressure on the other side is present on a projected ring surface (61). Said ring surface is formed from the large outer diameter (67) minus the first outer diameter (D3). The hollow piston (32) is pressure-equalised due to the circular surface (60) being equal to the ring surface (61).

IPC 8 full level

F01L 1/344 (2006.01); **F01L 1/047** (2006.01)

CPC (source: EP US)

F01L 1/3442 (2013.01 - EP US); **F15B 15/12** (2013.01 - US); F01L 2001/0475 (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)

Citation (search report)

See references of WO 2014006056A1

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)

WO 2014006056 A1 20140109; CN 103527279 A 20140122; CN 103527279 B 20170329; DE 102012106096 B3 20140515; EP 2870327 A1 20150513; EP 2870327 B1 20160406; JP 2014016031 A 20140130; JP 6176656 B2 20170809; US 2014157980 A1 20140612; US 9322418 B2 20160426

DOCDB simple family (application)

EP 2013063954 W 20130702; CN 201310280869 A 20130705; DE 102012106096 A 20120706; EP 13734995 A 20130702; JP 2013141060 A 20130704; US 201313917095 A 20130613