

Title (en)  
CENTRIFUGAL PUMP STAGE, CENTRIFUGAL PUMP AND USE OF A PUMP

Title (de)  
KREISELPUMPENSTUFE, KREISELPUMPE SOWIE VERWENDUNG EINER PUMPE

Title (fr)  
ÉTAGE DE POMPE CENTRIFUGE, POMPE CENTRIFUGE ET UTILISATION D'UNE POMPE

Publication  
**EP 3123031 A1 20170201 (EN)**

Application  
**EP 14721501 A 20140324**

Priority  
IB 2014060106 W 20140324

Abstract (en)  
[origin: WO2015145196A1] The pump stage for a centrifugal pump comprises an impeller unit (10) having an axial hub and a diffuser unit (20) extended at a first face of said impeller unit (10). The impeller unit (10) is supported floating inside the diffuser unit (20). A shim ring (40) is associated with the impeller unit (10) and is sustained in sliding support on a washer (27) housed in a fixed position in a correspondent seat (26) of the diffuser unit (20) of an adjacent pump stage.

IPC 8 full level  
**F04D 1/06** (2006.01); **F04D 7/04** (2006.01); **F04D 13/08** (2006.01); **F04D 29/041** (2006.01); **F04D 29/16** (2006.01); **F04D 29/22** (2006.01)

CPC (source: EP RU US)  
**F04D 1/06** (2013.01 - RU US); **F04D 1/063** (2013.01 - EP US); **F04D 7/04** (2013.01 - RU); **F04D 13/086** (2013.01 - RU); **F04D 15/02** (2013.01 - US); **F04D 29/0413** (2013.01 - EP US); **F04D 29/042** (2013.01 - RU); **F04D 29/167** (2013.01 - EP RU US); **F04D 29/22** (2013.01 - US); **F04D 29/2266** (2013.01 - EP US); **F04D 29/445** (2013.01 - US); **F04D 7/04** (2013.01 - EP US); **F04D 13/08** (2013.01 - EP US); **F05D 2230/51** (2013.01 - EP US)

Cited by  
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Designated extension state (EPC)  
BA ME

DOCDB simple family (publication)  
**WO 2015145196 A1 20151001**; CN 106133325 A 20161116; EP 3123031 A1 20170201; EP 3123031 B1 20181212; ES 2714830 T3 20190530; MX 2016012266 A 20170106; RU 2016141422 A 20180424; RU 2662848 C2 20180731; US 2017107990 A1 20170420

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