

Title (en)
SINGLE-STAGE CENTRIFUGAL PUMPING UNIT

Title (de)
EINSTUFIGE ZENTRIFUGALKREISELPUMPE

Title (fr)
ÉQUIPEMENT DE POMPE CENTRIFUGE À ÉTAGE UNIQUE

Publication
EP 3486500 A1 20190522 (EN)

Application
EP 17828042 A 20170707

Priority
• RU 2016128485 A 20160713
• RU 2017000500 W 20170707

Abstract (en)
The invention relates to mechanical engineering, namely to pumping installations designed for pumping water, water solutions, as well as oil, oil products and the like through the main, process and auxiliary pipelines, and is directed toward providing a single-stage centrifugal pumping unit which demonstrates peak efficiency in non-nominal modes while having a simplified design and being universal in nature. To this end, a single-stage centrifugal pumping unit comprises a centrifugal single-stage double entry pump, an electric drive motor, a coupling, connecting their shafts, a support frame for mounting the pump housing and the electric motor thereon, a housing, which consists of a base and a cover, inlet and outlet manifolds, a rotor with an impeller mounted thereon, the rotor being installed in support bearings, and a volute configured according to the invention in the form of a separate, independent component, and parts of the outside surface thereof, which are intended to be accommodated in cradles provided for this purpose in the cover and the housing, correspond to the shape of the surfaces of said cradles. The impeller and the volute are replaceable as a pair, the parameters of the impeller and the volute in each pair are calculated to provide maximum efficiency while ensuring the requisite feed and pressure. The replaceable volutes are made as an integrated cast component and comprise a baffle separating the fluid flow during the movement.

IPC 8 full level
F04D 29/22 (2006.01); **F04D 29/42** (2006.01); **F04D 29/62** (2006.01)

CPC (source: EA EP RU US)
F04D 1/006 (2013.01 - EA EP); **F04D 13/06** (2013.01 - EA EP); **F04D 29/22** (2013.01 - EA EP US); **F04D 29/2222** (2013.01 - US); **F04D 29/2238** (2013.01 - EA US); **F04D 29/42** (2013.01 - EA EP US); **F04D 29/426** (2013.01 - EP); **F04D 29/62** (2013.01 - EA EP US); **F04D 29/628** (2013.01 - EP); **F04D 29/2222** (2013.01 - EA RU); **F04D 29/426** (2013.01 - EA RU); **F04D 29/628** (2013.01 - EA RU); **F05D 2230/61** (2013.01 - EA EP)

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 3486500 A1 20190522; **EP 3486500 A4 20200311**; AU 2017295552 A 20190307; AU 2020273342 A 20201217; BR 112019000595 A2 20190424; CA 3036362 A1 20180118; CL 2019000088 A1 20190830; EA 035529 B1 20200630; EA 201900061 A1 20190628; JP 2019521282 A 20190725; JP 6810240 B2 20210106; MX 2019000518 A 20190816; NZ 750655 A 20200626; RU 2616328 C1 20170414; US 2019242401 A1 20190808; WO 2018013010 A1 20180118

DOCDB simple family (application)
EP 17828042 A 20170707; AU 2017295552 A 20170707; AU 2020273342 A 20201120; BR 112019000595 A 20170707; CA 3036362 A 20170707; CL 2019000088 A 20190111; EA 201900061 A 20170707; JP 2019501616 A 20170707; MX 2019000518 A 20170707; NZ 75065517 A 20170707; RU 2016128485 A 20160713; RU 2017000500 W 20170707; US 201716317562 A 20170707