

Title (en)
Vertical centrifugal pump module.

Title (de)
Anordnung von vertikal orientierten Kreiselpumpen.

Title (fr)
Ensemble de pompe centrifuge verticale.

Publication
EP 0454529 A1 19911030 (FR)

Application
EP 91400981 A 19910412

Priority
FR 9005194 A 19900424

Abstract (en)
The vertical centrifugal pump module (1) comprises at least one removable canister for the centrifugal hydraulic assembly forming a unit clamped between two end plates (6, 7) with clip (9, 11) and mounted with vertical axis in a receiving bore of a pump body. <??>A flat, annular non-return valve 26 opening in the direction of the delivery of the pump is arranged at the bottom of the receiving bore 15 between the inside wall of the said bore and the outside wall 37 of a central intake connection 34. <??>Application on removable or interchangeable hydraulic canister centrifugal pumps. <IMAGE>

IPC 1-7
F04D 1/06; **F04D 15/00**; **F04D 15/02**

IPC 8 full level
F04D 1/06 (2006.01); **F04D 15/00** (2006.01); **F04D 15/02** (2006.01)

CPC (source: EP US)
F04D 1/066 (2013.01 - EP US); **F04D 15/0083** (2013.01 - EP US); **F04D 15/029** (2013.01 - EP US); **Y10T 137/789** (2015.04 - EP US); **Y10T 137/86163** (2015.04 - EP US)

Citation (search report)

- [A] FR 2105910 A5 19720428 - WORTHINGTON CORP
- [A] GB 1066594 A 19670426 - POMORSKA ODLEWNIA I EMALIERNIA
- [A] EP 0172102 A1 19860219 - ELECTRO HYDRAULIQUE SEH [FR]
- [A] US 4244675 A 19810113 - BOWER JOHN R
- [A] EP 0360697 A1 19900328 - OLAER IND SA [FR]
- [A] GB 1383467 A 19740212 - ROSENBAUER KG KONRAD

Designated contracting state (EPC)
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DOCDB simple family (publication)
EP 0454529 A1 19911030; **EP 0454529 B1 19940622**; AT E107742 T1 19940715; DE 69102580 D1 19940728; DE 69102580 T2 19941020; DK 0454529 T3 19940725; ES 2027944 T1 19920701; ES 2027944 T3 19941101; FR 2661218 A1 19911025; FR 2661218 B1 19920731; GR 920300021 T1 19920825; US 5201633 A 19930413

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