

Title (en)  
Drain Pump

Title (de)  
Entleerungspumpe

Title (fr)  
Pompe de vidange

Publication  
**EP 1030063 B1 20020306 (EN)**

Application  
**EP 99125699 A 19991223**

Priority  
JP 4114699 A 19990219

Abstract (en)  
[origin: EP1030063A2] A drain pump 10 comprises a housing 20 of a pump body, and a rotary vane 30 placed inside the housing 20. A penetrating hole 24 is formed to the center of a lid 22 mounted to the upper portion of the housing 20, and a shaft 32 of the rotary vane 30 penetrates through the hole 24 and protrudes to the upper portion of the lid 22. A rotor 54 is equipped inside a bracket 52 of a motor 50, which rotates a driving shaft 60 of the motor. The driving shaft 60 is supported through bearings 70 and 80 to the motor bracket 52. The driving shaft 60 of the motor protrudes from the motor bracket 52, and is press-fitted to the hole 34 with a bottom formed to the shaft 32 of the rotary vane 30, so as to drive the rotary vane 30. The collar 100 comprises a cylindrical portion 105 and a disk-shaped flange 110, wherein the flange 110 positioned above the penetrating hole 24 prevents a deflector disk from moving upwards. The flange 110 also prevents the drain water leaking out from the hole 24 of the lid 22 from splashing on the motor. A lubricant oil collect area is formed between the upper surface 120 of the cylindrical portion 105 and the bearing 80.  
<IMAGE>

IPC 1-7  
**F04D 29/10**

IPC 8 full level  
**F04D 29/08** (2006.01); **F04D 1/14** (2006.01); **F04D 11/00** (2006.01); **F04D 13/06** (2006.01); **F04D 29/10** (2006.01)

CPC (source: EP KR)  
**F04D 11/00** (2013.01 - KR); **F04D 13/06** (2013.01 - EP); **F04D 29/106** (2013.01 - EP); **F05B 2240/70** (2013.01 - EP)

Cited by  
EP2113669A3; JP2014107893A

Designated contracting state (EPC)  
DE ES FR GB IT NL

DOCDB simple family (publication)  
**EP 1030063 A2 20000823**; **EP 1030063 A3 20001004**; **EP 1030063 B1 20020306**; CN 1120938 C 20030910; CN 1263996 A 20000823; DE 69900973 D1 20020411; DE 69900973 T2 20021121; ES 2173699 T3 20021016; JP 2000240581 A 20000905; JP 4294143 B2 20090708; KR 20000057773 A 20000925; TW 445349 B 20010711

DOCDB simple family (application)  
**EP 99125699 A 19991223**; CN 00101026 A 20000106; DE 69900973 T 19991223; ES 99125699 T 19991223; JP 4114699 A 19990219; KR 20000002386 A 20000119; TW 88121963 A 19991215