

Title (en)

Rotary vane hydraulic actuator.

Title (de)

Hydraulisches Schwenkflügelstellglied.

Title (fr)

Actionneur hydraulique à clapet oscillant.

Publication

EP 0248986 A1 19871216 (EN)

Application

EP 87104197 A 19870321

Priority

US 87194486 A 19860609

Abstract (en)

A rotary actuator for operation at fluid pressures in the order of 8000 psi utilizes a generally cylindrical housing (10) with top and bottom flat portions to enable operation along the hinge line of a control surface forming part of a thin section wing. An output shaft (18) passing through the housing (10) and supported in endcaps (12, 14) attached thereto is rotatable over a range of up to about +/- forty degrees and is moved by means of fluid pressure acting on a pair of diametrically opposed vanes (50, 52). A pair of elongated ribs (42, 44) are formed in the inside of the cylindrical housing (10) opposite the flat portions which ribs (42, 44) have arcuate surfaces (46, 48) supporting the shaft (18). Elongated dynamic seals (34, 36) are carried in the ribs (42, 44) which seal against the shaft (18). The vanes (50, 52) constitute relatively thick lobes with arcuate surfaces (54, 56) movable adjacent the inside walls of the housing (10). Elongated dynamic seals (66, 68) are carried in the internal housing walls and the endcaps (12, 14) which seal against the arcuate surfaces (54, 56) and the end surfaces of the vanes (50, 52). Other dynamic seals (105) are carried in the endcaps (12, 14) which seal against the shaft (18). An alternate embodiment (90) utilizes a single vane (100).

IPC 1-7

B64C 13/40; F15B 15/12

IPC 8 full level

B64C 13/40 (2006.01); **F15B 15/12** (2006.01)

CPC (source: EP)

F15B 15/12 (2013.01)

Citation (search report)

- [Y] US 2984221 A 19610516 - VOORHEES STANLEY VAN
- [Y] DE 3222982 A1 19831222 - SUEDHYDRAULIK KORK STEINBACH G [DE]
- [A] FR 2492908 A1 19820430 - RENAULT [FR]
- [A] GB 1036829 A 19660720 - HOUDAILLE INDUSTRIES INC

Cited by

EP3816456A4; ITBO20090194A1; DE4435491A1; US5580079A; CN109996503A; EP3563781A4; DE102006014018A1; US5573265A; EP0957270A3; US10093011B2; WO2016140959A1; DE102011118321A1; DE102011118321B4; US10072773B2; US11047506B2; WO2015031587A1; US9897114B2; US10359061B2; WO2015071204A1; WO2015071304A1

Designated contracting state (EPC)

DE FR GB IT

DOCDB simple family (publication)

EP 0248986 A1 19871216; EP 0248986 B1 19920304; DE 3776972 D1 19920409; JP S62292902 A 19871219

DOCDB simple family (application)

EP 87104197 A 19870321; DE 3776972 T 19870321; JP 13473587 A 19870529