Title (en)
   POWER UNIT

Publication
   EP 0419810 B1 19930922 (DE)

Application
   EP 90114822 A 19900802

Priority
   DE 3932354 A 19890928

Abstract (en)
   [origin: EP0419810A1] A power unit essentially consisting of a pump (2) and a cylinder (1) for driving a tool has a high-pressure space (1a) and
   two low-pressure spaces. The high-pressure space (1a) and the first low-pressure space (1b) are separated from one another by a piston (10). The
   second low-pressure space serves solely as a compensating volume (1c), the volume of the compensating space (1c) corresponding to at least the
   sum of the displacement volume of the piston rod (11) moved fully into the cylinder housing (15), the compression volume of the hydraulic fluid, and
   the stroke volume of the pump (2). <??>This design can provide an entire compact unit which requires no additional accumulator for the hydraulic
   medium but in which it is nonetheless ensured that even a simple construction of the pump (2) feeding the cylinder can draw in hydraulic fluid in any
   position of the unit. <??>Furthermore, a hydraulic circuit for controlling the power unit is described in which the low-pressure line (7') branches in
   front of the reversing valve (3) and is taken up to the compensating space (1c). <IMAGE>

IPC 1-7
   F15B 15/18

IPC 8 full level
   B23D 15/14 (2006.01); **B23D 29/02** (2006.01); **B25B 1/18** (2006.01); **B25B 7/00** (2006.01); **B25B 28/00** (2006.01); **B66F 1/08** (2006.01);
   F15B 7/00 (2006.01); **F15B 15/18** (2006.01)

CPC (source: EP KR US)
   F15B 15/18 (2013.01 - EP KR US)

Cited by
   DE102006013615A1; DE102011009044B4; NL1014253C2; DE202015009638U1; DE102011009044A1; DE102013108776A1;
   DE102004037697A1; DE102004037697B4; EP3434331A3; WO2007068234A1; WO9934119A1; DE202015009395U1; WO2016119819A1;
   EP3434331A2; US10293192B2; US10589135B2

Designated contracting state (EPC)
   DE FR GB IT NL

DOCDB simple family (publication)
   EP 0419810 A1 19910403; **EP 0419810 B1 19930922**; CN 1022946 C 19931201; CN 1050595 A 19910410; DE 59002832 D1 19931028;
   JP 2736336 B2 19980402; JP H03121714 A 19910523; KR 0180720 B1 19990415; KR 910006625 A 19910429; PL 164839 B1 19941031;
   RU 1838229 C 19930830; US 5105622 A 19920421

DOCDB simple family (application)
   EP 90114822 A 19900802; CN 90107402 A 19900829; DE 59002832 T 19900802; JP 24765890 A 19900919; KR 900014072 A 19900906;
   PL 28699690 A 19900921; SU 4831344 A 19900928; US 58836690 A 19900926