Title (en)

Electro-hydraulic lifting control device for industrial use vehicles

Title (de)

Elektrohydraulische Hubsteuervorrichtung für Flurförderfahrzeuge

Title (fr)

Dispositif électro-hydraulique de commande de levage pour véhicules de manutention

Publication

EP 1369598 B2 20150819 (DE)

Application

EP 03002659 A 20030211

Priority

DE 20208577 U 20020603

Abstract (en)

[origin: EP1369598A1] The device has a lifting branch with a three way flow regulator (R1) that is provided between a pressure source and a hydraulic cylinder to lift control. A lowering branch with a two-way flow regulator (R2) has a proportional magnet and a pressure balance (10). A redundancy-switching unit provided between the pilot pressure circuits of the regulators and a reservoir is actively operated between the closed and open positions.

IPC 8 full level

F15B 20/00 (2006.01); **B66F 9/22** (2006.01); **F15B 11/00** (2006.01); **F15B 11/05** (2006.01)

CPC (source: EP US)

B66F 9/22 (2013.01 - EP US); **F15B 11/003** (2013.01 - EP US); **F15B 20/008** (2013.01 - EP US); F15B 2211/20538 (2013.01 - EP US); F15B 2211/3116 (2013.01 - EP US); F15B 2211/40576 (2013.01 - EP US); F15B 2211/413 (2013.01 - EP US); F15B 2211/4159 (2013.01 - EP US); F15B 2211/426 (2013.01 - EP US); F15B 2211/428 (2013.01 - EP US); F15B 2211/465 (2013.01 - EP US); F15B 2211/5059 (2013.01 - EP US)

Citation (opposition)

Opponent :

- DE 10045232 A1 20020328 - BOSCH GMBH ROBERT [DE]
- DE 10224731 A1 20030116 - LINDE AG [DE]

Cited by

EP2236452A1; EP2985473A1; EP3037678A1; DE10357631B4; DE102019111295A1; DE102016003972A1; EP1754682A1; DE10303385B4; DE102016209509A1; US10962031B2; DE102007034746A1; DE102007034746B4

Designated contracting state (EPC)

DE FR IT SE

DOCDB simple family (publication)

EP 1369598 A1 20031210; **EP 1369598 B1 20070926**; **EP 1369598 B2 20150819**; DE 20208577 U1 20031211; DE 50308262 D1 20071108; JP 2004044795 A 20040212; JP 3785159 B2 20060614; US 2003221548 A1 20031204; US 6837045 B2 20050104

DOCDB simple family (application)

EP 03002659 A 20030211; DE 20208577 U 20020603; DE 50308262 T 20030211; JP 2003157986 A 20030603; US 44866603 A 20030530