

Title (en)

METHOD AND DEVICE FOR CONTROLLING A LIFT CYLINDER, ESPECIALLY OF WORKING MACHINES

Title (de)

VERFAHREN UND VORRICHTUNG ZUR STEUERUNG EINES HUBZYLINDERS, INSBESONDERE VON ARBEITSMASCHINEN

Title (fr)

PROCEDE ET DISPOSITIF DE COMMANDE D'UN VERIN HYDRAULIQUE NOTAMMENT D'ENGINS DE TRAVAIL

Publication

**EP 1252449 B1 20040825 (DE)**

Application

**EP 01902390 A 20010202**

Priority

- DE 10004905 A 20000204
- EP 0101121 W 20010202

Abstract (en)

[origin: WO0157405A1] The invention relates to a method and device for controlling a lift cylinder (2) of working machines, whereby as the lift cylinder lowers, the hydraulic oil is forced out of the pressure cylinder space (12) via a control element (3) into the suction cylinder space (11) by means of an external force. The aim of the invention is to enable an automatic switching over to the normal operation and into an operational state that permits an additional force to be exerted in a vertical direction. This is achieved, in particular, in that with a first predetermined force, the hydraulic oil coming from the pressure space (12) is forced via a check valve (15) into the control element (3) via the distribution channel (5) subjected to the action of the hydraulic pump (7) and is forced via said distribution channel into the suction cylinder space (11). The inflow of the hydraulic pump (7) is closed by a pressure-controlled stop valve (8), whereby this stop valve (8) opens during a fall in pressure and closes the check valve (15) in order to be able to exert an additional force onto the suction cylinder space (11) by means of the pump (7).

IPC 1-7

**F15B 13/02**; **F15B 11/024**

IPC 8 full level

**E02F 9/22** (2006.01); **F15B 11/024** (2006.01); **F15B 11/028** (2006.01); **F15B 13/02** (2006.01); **F15B 13/043** (2006.01)

CPC (source: EP KR US)

**F15B 11/024** (2013.01 - EP US); **F15B 13/02** (2013.01 - KR); **F15B 13/021** (2013.01 - EP US); **F15B 2011/0243** (2013.01 - EP US); **F15B 2211/20546** (2013.01 - EP US); **F15B 2211/30505** (2013.01 - EP US); **F15B 2211/30525** (2013.01 - EP US); **F15B 2211/353** (2013.01 - EP US); **F15B 2211/76** (2013.01 - EP US); **F15B 2211/775** (2013.01 - EP US); **F15B 2211/88** (2013.01 - EP US)

Designated contracting state (EPC)

BE DE FR GB IT SE

DOCDB simple family (publication)

**WO 0157405 A1 20010809**; DE 10004905 A1 20010816; DE 10004905 C2 20021024; DE 50103395 D1 20040930; EP 1252449 A1 20021030; EP 1252449 B1 20040825; JP 2003521652 A 20030715; JP 4652655 B2 20110316; KR 20020080338 A 20021023; US 2003000373 A1 20030102; US 6701823 B2 20040309

DOCDB simple family (application)

**EP 0101121 W 20010202**; DE 10004905 A 20000204; DE 50103395 T 20010202; EP 01902390 A 20010202; JP 2001556018 A 20010202; KR 20027006536 A 20020522; US 18268802 A 20020730