

Title (en)
Hydraulic control system

Title (de)
Hydrauliksteuersystem

Title (fr)
Système hydraulique de contrôle

Publication
EP 0623754 B1 19970625 (DE)

Application
EP 94104714 A 19940324

Priority
US 4305993 A 19930405

Abstract (en)
[origin: US5331882A] A pilot operated directional control valve communicates fluid between a hydraulic actuator, a pump and a reservoir. A lockout valve is connected between each main control valve work port and a corresponding cylinder port, and operates to reduce fluid leakage therefrom. Each lockout valve includes a pressure responsive poppet valve member which is exposed to fluid pressure in a lockout chamber. A vent control valve is connected between each lockout valve and a corresponding one of the pilot valves. Each vent control valve includes a vent check valve which controls fluid venting from the lockout chamber and a vent piston which is biased to urge the vent check valve to a closed position thereby trapping fluid in the lockout chamber. When both pilot valves are energized, both lockout valves are vented and a float valve moves to a position wherein both cylinder ports are communicated, via the lockout valves and the float valve, with each other and with the reservoir. The float function is obtained without the requirement of additional solenoids or by compromising the available modulation range of the main control valve.

IPC 1-7
F15B 13/02

IPC 8 full level
F15B 11/08 (2006.01); **F15B 11/00** (2006.01); **F15B 11/024** (2006.01); **F15B 13/02** (2006.01)

CPC (source: EP US)
F15B 11/003 (2013.01 - EP US); **F15B 11/024** (2013.01 - EP US); **F15B 13/02** (2013.01 - EP US); **F15B 13/021** (2013.01 - EP US); **F15B 2211/20576** (2013.01 - EP US); **F15B 2211/3051** (2013.01 - EP US); **F15B 2211/30525** (2013.01 - EP US); **F15B 2211/3111** (2013.01 - EP US); **F15B 2211/3144** (2013.01 - EP US); **F15B 2211/31576** (2013.01 - EP US); **F15B 2211/329** (2013.01 - EP US)

Cited by
DE112014004214B4; CN109322865A; FR2813926A1; FR2796106A1; WO0246621A3

Designated contracting state (EPC)
DE ES FR GB IT

DOCDB simple family (publication)
US 5331882 A 19940726; BR 9401332 A 19941018; CA 2119616 A1 19941006; CA 2119616 C 19980901; DE 59403208 D1 19970731; EP 0623754 A2 19941109; EP 0623754 A3 19950301; EP 0623754 B1 19970625; EP 0756089 A2 19970129; EP 0756089 A3 19980325; ES 2103514 T3 19970916; JP 3476533 B2 20031210; JP H074403 A 19950110

DOCDB simple family (application)
US 4305993 A 19930405; BR 9401332 A 19940329; CA 2119616 A 19940322; DE 59403208 T 19940324; EP 94104714 A 19940324; EP 96117035 A 19940324; ES 94104714 T 19940324; JP 5590394 A 19940325