

Title (en)  
Hydraulic control system for a press.

Title (de)  
Hydraulische Steuereinrichtung für eine Presse.

Title (fr)  
Dispositif de commande hydraulique pour une presse.

Publication  
**EP 0311779 B1 19931027 (DE)**

Application  
**EP 88114159 A 19880831**

Priority  
DE 3734329 A 19871010

Abstract (en)  
[origin: EP0311779A2] A hydraulic control system (10) for a press having a rapid-motion cylinder (11) and a pressing cylinder (12) is proposed which, in combination with a high number of strokes and with cylinders (11, 12) operated in closed hydraulic circuits (34, 35), keeps the energy losses, and thus the oil heating, as low as possible. For this purpose, cylinders (11, 12), whose respective piston surfaces (15, 16, 17, 18) are the same size, are used of which at least the rapid-motion cylinder (11) is operated in a closed hydraulic circuit (34) having a highly dynamic, reversible control pump (24) as the actuating member, so that structural elements which produce energy losses, such as accumulators and servo valves, are dispensed with in the power circuit. Oil in the closed circuit (35) of the pressing cylinder (12), which is prestressed to a high system pressure, is circulated upwards and downwards during rapid feed movements and the lower piston chamber (23) in the pressing cylinder (12) is relaxed in a controlled manner via a pressure-limiting valve (48) only during pressing, energy from the decompression operation being used for the build-up of pressing power which is carried out by the control pump (24) in that the two cylinders (11, 12) are connected in parallel during pressing by means of a reversed directional control valve (36). Heat due to energy losses is removed as a result of oil exchange controlled by throttle valves (75, 87).  
<IMAGE>

IPC 1-7  
**B30B 15/16**

IPC 8 full level  
**B30B 15/16** (2006.01)

CPC (source: EP)  
**B30B 15/161** (2013.01)

Cited by  
DE4412224A1; US5460084A; EP0972631A1; CN108136707A; US6128987A; EP0867271A3; DE4436666A1; US5852933A; EP2952750A1; CN106471262A; DE102014218887B3; CN105443478A; EP2316639A3; DE102019103158A1; DE102017129618A1; AT520708A3; AT520708B1; DE102017129618B4; US10626889B2; US9771957B2; DE102018222425A1; US10662976B2; WO2018065130A1; WO2017081202A1; WO2015185644A1; WO2021244723A1; WO9611796A1; DE102010049482B4; DE102019103158B4; EP3115190A1; US10479040B2

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