Title (en)

Hydraulic drawing system in a press

Title (de)

Hydraulische Zieheinrichtung in einer Presse

Title (fr)

Dispositif d'étirage hydraulique dans une presse

Publication

EP 0573830 B1 19961023 (DE)

Application

EP 93108242 A 19930521

Priority

DE 4218914 A 19920610

Abstract (en)

[origin: EP0573830A1] 2.1. As is known, each drawing stage in a drawing apparatus contains a cylinder unit secured in the press table and consisting in each case of a drawing cylinder and an ejector cylinder. The pressures in the cylinders can be adjusted by means of proportional valves. This solution suffers from the problem of leaking oil. The task is to design the hydraulic circuit for controlling the force and displacement in a drawing system so that it is free from leaking oil and thereby to eliminate unwanted dangerous stroke movements of the cushion plate in both directions of movement and guarantee pressure maintenance in the event of an interruption to the drawing process with or without a return stroke of the ram. 2.2. According to the invention, a switchable non-return valve (6) is arranged in series between the pressure space of the displacement cylinder (2) and the proportional valve (8) and a switchable non-return valve (7) is arranged in parallel with the first-mentioned non-return valve, one port of the non-return valve (7) being operatively connected to a non-return valve (12) and the non-return valves (6, 7) having a common control circuit, and, furthermore, the pressure space of the locking cylinder (3) is operatively connected to one port of the non-return valve (7) of the sheet-holding control circuit firstly via series-connected, travel-controlled switchable non-return valves (9) and (11), secondly via series-connected, travel-controlled switchable non-return valves (9) and (12) and thirdly via the non-return valve (9) and a travel-controlled control valve (10), connected in series with the latter, via an interposed pressure-compensating unit, and the control port of the non-return valves (9), (11) and (12) is in each case connected into the line (37) between the locking cylinder (3) and the non-return valve (9), and a pressure switch (28) for the automatic detection and switchover from a pressure regulating circuit into a bearing regulating circuit upon the return stroke of the ram after holding in the drawing region is arranged in the line (37) between the non-return valve (9) and the locking cylinder. <IMAGE>

IPC 1-7

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IPC 8 full level

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