

Title (en)
Pressure-control system.

Title (de)
Druckregleinrichtung.

Title (fr)
Système de réglage de pression.

Publication
EP 0078861 A1 19830518 (DE)

Application
EP 81109581 A 19811110

Priority
EP 81109581 A 19811110

Abstract (en)
1. Pressure control device, which has a hydraulically acting servo-piston (23), the displacement of which leads to a change in the hydraulic flow to the consumer (22), with the following construction : (a) a pressure control valve (1) has a valve spring (14) in a spring chamber (13) and a spool (7) with two pressurised sides (7a, 7b), of which one side (7a) is connected to the pump line (21) and the other side (7b) to the spring chamber (13), and both sides (7a, 7b) are connected together hydraulically by a restrictor (25) ; (b) when there is an imbalance of forces at the spool (7), a pressure line (9) or a tank line (11) connects with a control line (10), which leads to and away from the servo-piston (23) ; characterized in that (c) the spring member (13) is connected to a supplementary volume (15), which produces a displacement flow by displacing fluid in an adequately large quantity through the restrictor (25) when there are increases in pump pressure, the rate of this displacement flow depending on the increase rate of the pump pressure, and which produces a pressure drop ($P_1 - P_2$) between the two sides (7a, 7b) of the spool, by which means a force imbalance well below the nominal pressure (P_n) develops at the spool (7), which leads to a premature (t_1) pressure limiting action.

Abstract (de)
Ein Druckregelventil (1) oder Kompensator ist auf der einen Seite (7a) mit Pumpendruck und auf der anderen Seite (7b) mit gedrosseltem Pumpendruck sowie mit der Ventilsfederkraft (14) beaufschlagt. Der gedrosselte Pumpendruck wird durch einen Verschiebestrom über die Drossel (25) erzeugt, indem die Kompressibilität der Hydraulikflüssigkeit in einem Zusatzvolumen (15) bzw. die Expansion dieses Zusatzvolumens (15) bei Druckanstieg ausgenutzt wird. Das Druckregelventil (1) spricht so auf die Druckanstiegsgeschwindigkeit an, wenn diese einen bestimmten Wert übersteigt.

IPC 1-7
F04B 49/08

IPC 8 full level
F04B 49/08 (2006.01)

CPC (source: EP)
F04B 49/08 (2013.01)

Citation (search report)
• [A] DE 2516765 A1 19761021 - REXROTH GMBH G L
• [A] DE 2419460 A1 19751106 - BOSCH GMBH ROBERT

Cited by
DE102007042207A1; US5183393A; EP0471166A1; US5586869A; US5190445A; WO9312342A1

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