

Title (en)  
HYDRAULIC CIRCUIT

Title (de)  
HYDRAULISCHE SCHALTUNG

Title (fr)  
CIRCUIT HYDRAULIQUE

Publication  
**EP 1092095 B2 20070418 (DE)**

Application  
**EP 99936360 A 19990531**

Priority  
• DE 9901591 W 19990531  
• DE 19828963 A 19980629

Abstract (en)  
[origin: DE19828963A1] The hydraulic switch system to control at least one low-load and one high-load operating unit (4,6), with a setting pump (2), has a bypass (32) which links the outlet from the measurement diaphragm through the pressure scales (16a) to at least one connection for the low-load operating unit (6). The measurement diaphragm (14a,14b) is formed by a proportional valve, so that the operating connections can be linked to the connections at the pump or tank. The bypass (32) is controlled according to the position of the valve slide at the proportional valve.

IPC 8 full level  
**F15B 11/16** (2006.01); **F15B 11/05** (2006.01)

CPC (source: EP KR US)  
**F15B 11/003** (2013.01 - EP US); **F15B 11/05** (2013.01 - EP KR US); **F15B 11/16** (2013.01 - EP US); **F15B 2211/20553** (2013.01 - EP US); **F15B 2211/253** (2013.01 - EP US); **F15B 2211/3054** (2013.01 - EP US); **F15B 2211/3144** (2013.01 - EP US); **F15B 2211/329** (2013.01 - EP US); **F15B 2211/50545** (2013.01 - EP US); **F15B 2211/6054** (2013.01 - EP US); **F15B 2211/71** (2013.01 - EP US); **F15B 2211/78** (2013.01 - EP US); **F15B 2211/88** (2013.01 - EP US)

Citation (opposition)  
Opponent :  
• US 5535663 A 19960716 - YAMASHITA KOJI [JP], et al  
• US 4198822 A 19800422 - MILLER WENDELL E [US]  
• US 5613519 A 19970325 - ISHIZAKI NAOKI [JP]

Cited by  
US8499552B2; US8281583B2; US8671824B2; EP3756435A1

Designated contracting state (EPC)  
DE FR GB IT SE

DOCDB simple family (publication)  
**DE 19828963 A1 19991230**; DE 59904746 D1 20030430; EP 1092095 A1 20010418; EP 1092095 B1 20030326; EP 1092095 B2 20070418; JP 2002519596 A 20020702; JP 4520041 B2 20100804; KR 100636863 B1 20061019; KR 20010071687 A 20010731; US 6367365 B1 20020409; WO 0000747 A1 20000106

DOCDB simple family (application)  
**DE 19828963 A 19980629**; DE 59904746 T 19990531; DE 9901591 W 19990531; EP 99936360 A 19990531; JP 2000557082 A 19990531; KR 20007015008 A 20001229; US 72048401 A 20010604