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(54) Hydraulic control apparatus

(57) A driving loss of a pump is avoided to reduce a load of an engine driving the pump. At least a first circuit group and a second circuit group, each including switching valves 11 to 19 to switch supply of operating oil to actuators, an auxiliary switching valve 16 disposed in the first circuit group to switch supply of the operating oil to an auxiliary actuator, and at least two pumps supplying the operating oil to each of the first circuit group and the second circuit group are provided. A convergence flow passage 40 to converge the operating oil from the second circuit group to the first circuit group, a drain flow passage 43 branched from the convergence flow passage 40 to release the operating oil to a side of a reservoir, and a control valve 42 interposed in the branched portion are provided, wherein the control valve 42 is operated to be switched in accordance with a difference in pressures between the first circuit group and the second circuit group, and introduces the operating oil of the first circuit group to the drain flow passage 43 when supply pressure of the first circuit group is higher than supply pressure of the second circuit group.

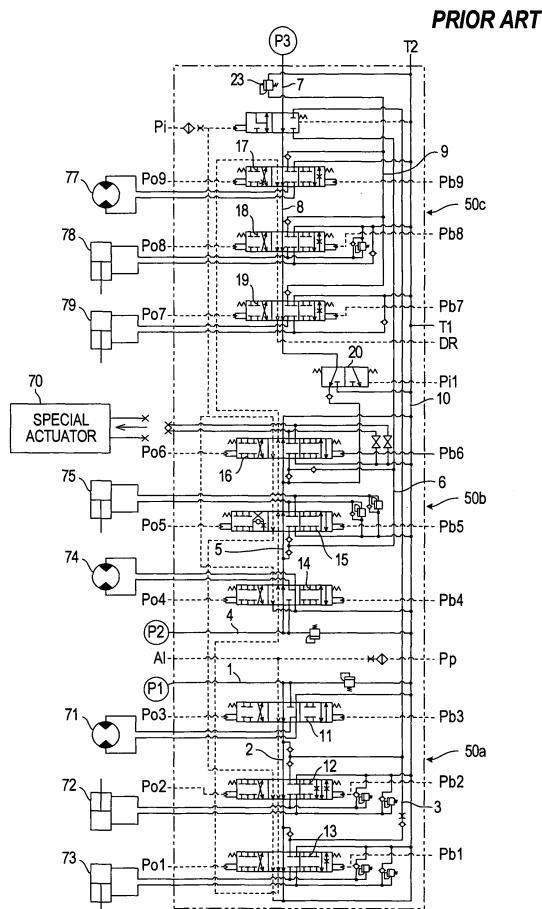


FIG.2



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A	US 2003/089106 A1 (IOKU KENSUKE ET AL) 15 May 2003 (2003-05-15) * paragraph [0058] *	1	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			F15B E02F
4 The present search report has been drawn up for all claims			
Place of search	Date of completion of the search		Examiner
Munich	18 October 2005		Toffolo, O
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document			
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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

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