KOBELCO

SERVICE MANUAL

HYDRAULIC EXCAVATOR

SK220

SK220LC

S5LQ0104E 01

APPLICABLE:
LQ-2101~
LL-1801~

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SHOP MANUAL

model SK220 SK220LC

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GENERAL

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LQ01

SPECIFICATION

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4. FUNCTIONAL EXPLANATION OF HYDRAULIC CIRC

4.1 NEUTRAL CIRCUIT

(1) Pilot circuit (with lever unlocked)

1) Primary pilot circuit

The oil discharged from the OUT port of the gear pump passes through the line filter (15) and the relief valve and connects with the following components as primary pressure.

P port of pilot valve (11)

PG port of reducing valve (31)

Electromagnetic proportionate reducing valve (ports P1, P2 attached to the pump)

Port PO, PS of control valve (3)

2) Negative control signal circuit

This circuit is featured by reduced fuel consumption in which pump flow is minimized when the machine is not working, in order to save unnecessary power. The principle of this function is attained by a negative control method whereby the pump discharge rate is reduced as the pilot pressure Pi rises. A rise in the pilot pressure Pi results from all the pump flow at the neutral position that passes through the throttle in the low-pressure relief valve (611). The oil in the negative control line of the No.1 pump is admitted to port Pi1 of the pump by way of port Pi1 of the control valve and the independent travel valve. Likewise, the oil from the No.2 pump is admitted to port Pi2 of the pump by way of the control valve.

3) Negative control relief cut circuit

This circuit is featured by reduced fuel consumption in which the pump flow is minimized when the cylinder moves to the stroke end. The principle of this function is attained so that the pilot pressure Pi rises as the relief flow increases, the same way as mentioned above.

(2) Main circuit

The hydraulic oil cleaned by the strainer (19) in the tank is sucked in by the variable-displacement pump (1). The oil taken in by the variable displacement pump is discharged by two pumps and admitted to the control valve (3). The oil is discharged from the tank port T as the low-pressure relief valve in the control valve relieves oil. The discharged return oil enters the filter element (16) in the hydraulic tank via the oil cooler in order to clean the hydraulic oil.

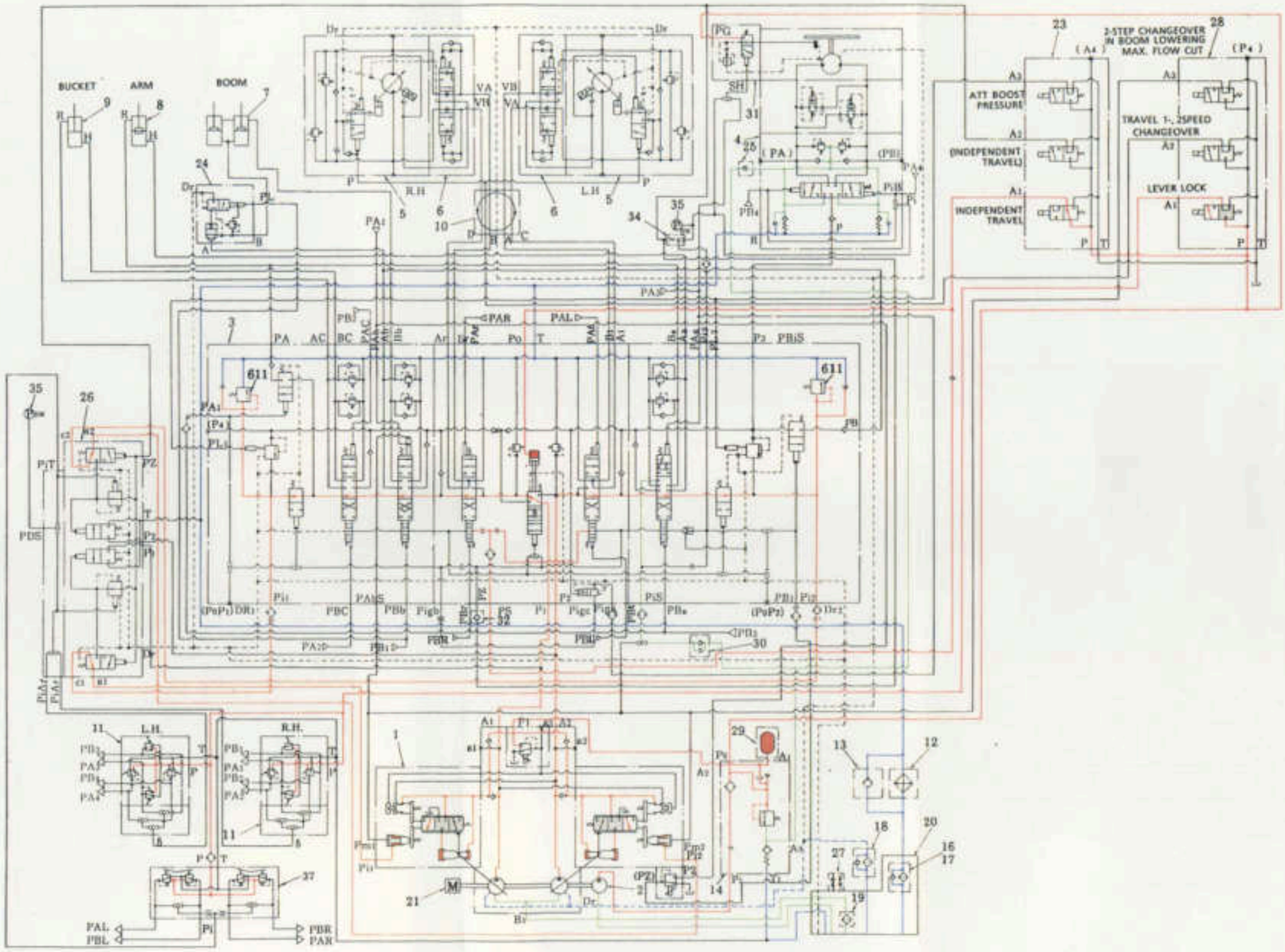


Fig. 3 Neutral circuit (with lever unlocked)

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