CASE

REPAIR MANUAL

Hydraulic Excavator

CX14

6-49190

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3.3 TRAVEL OPERATING CIRCUIT

The operation is conducted by a lever, which operate link mechanism to operate valve.
(Refer to item 3.10 Travel / Dozer Combined Operating Circuit regarding the travel straight function.)

3.3.1 2nd Speed Operating Circuit

(Independent-forward travel)

(1) Pilot Circuit

1) Shifting signal for 2nd speed travel

When the "Rabbit and Tortoise" mark (at the power cut-off, it automatically takes back for 1st speed) on the nob of travel right lever is pushed down, it actuates the 1st and 2nd speed travel shifting valve of solenoid valve (13). The pressurized oil signal for 2nd speed is discharged from the A2 port of solenoid valve(13), and led to the PP port on travel motor (5) through swivel joint (6), and shifts the 2-speed shifting valve (404).

(2) Main Circuit

1) Circuit up to Travel Motor (5)

When shifting the travel lever to forward, it shifts the travel valve spool of control valve (1) through the link mechanism. The discharged oil from variable pump enters into the P1 and P2 ports of control valve, and led to the A4 and A7 ports through the travel valve. Then it is led to the B and A ports on right and left travel motors through the swivel joint.

2) Travel Motor

- The pressurized oil supplied to the travel motor shifts the spool in counter balance valve (405), and opens the return oil line that is being closed by the check valve, then rotates the travel motor. When the 2nd speed signal is given, the pressurized oil passed through the 2-speed shifting valve (404) shifts shuttle valve (403) to high pressure, and actuates 2-speed shifting piston (401), and then makes the motor high speed with low torque.
- When the motor reaches near to a self-running condition (over-running) at going down a slope and so on, the oil pressure of supply side gets down to lower pressure, and the counter balance valve spool moves to the neutral position with the spring force. As the results, the passage in return oil side is throttled, and the motor speed is suppressed by a back-pressure, then the motor is controlled to the speed corresponding to the supplied oil volume of the pump.
- The counter balance valve spool is so designed that it is gradually shifted by a throttle effect to stop or start the motor resulting shock absorption at the start and stop of the machine.

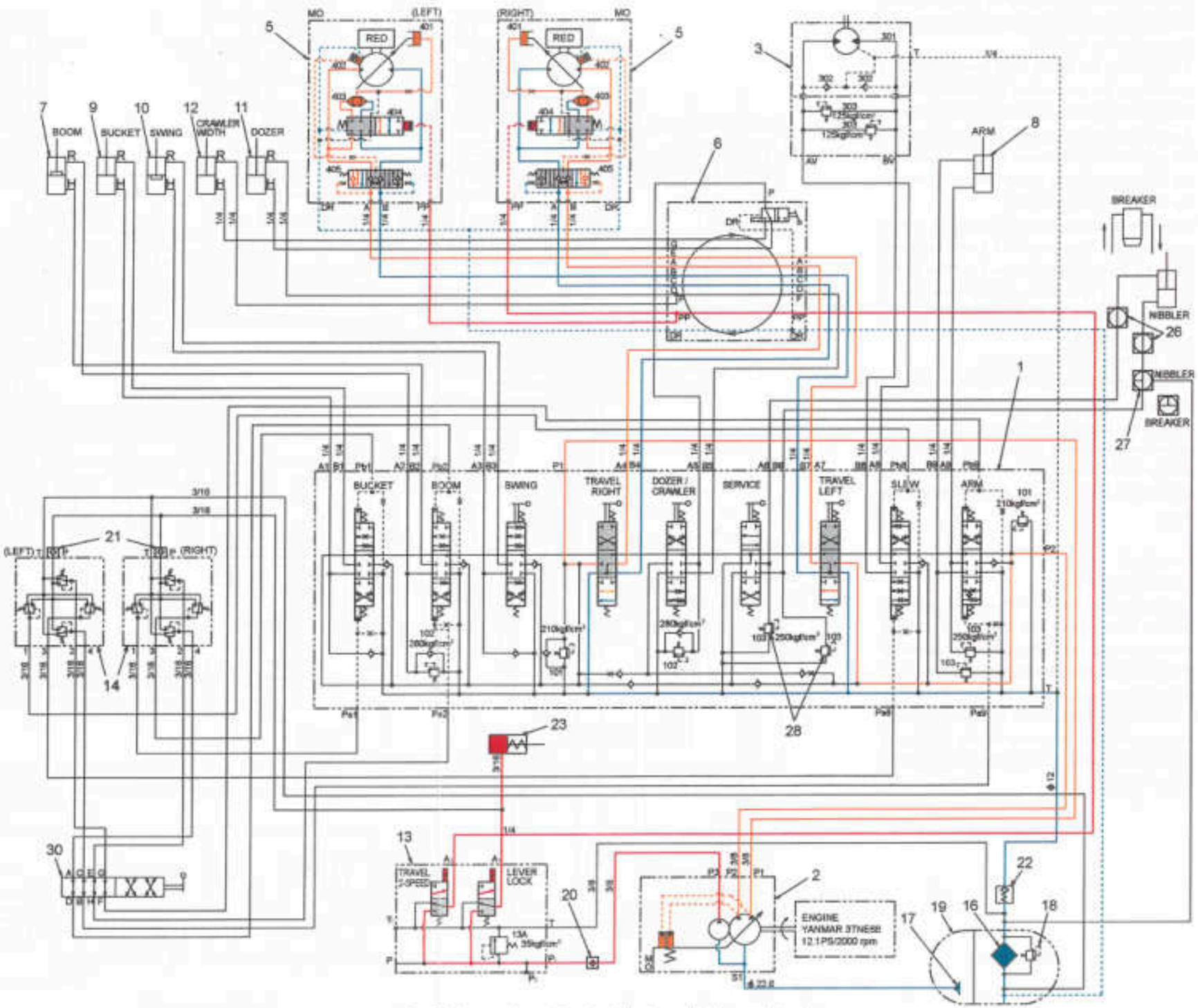


Fig.6 2nd speed operating circuit (Independent-forward travel)

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