KOBELCO

SERVICEMAN'S HANDBOOK AND TRAINING MANUAL

Mark IV

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6. SWING CIRCUIT

The following are explained in this section :

1) Swing pilot circuit
2) Parking auto brake for swing
3) Delay brake by reducing valve
4) Anti-cavitation circuit to dampen inertia force in swing action
5) Swing flasher lights in swing action
6) Prevention of reaction by the swing-reractionless valve

6.1 SWING PILOT CIRCUIT

Function ; If swing action is taken, the secondary proportionate pilot pressure PA4 or PB4 comes out of the pilot valve (11) and actuates the swing spool.

6.2 AUTO SWING PARKING BRAKE

Objective ; To prevent swing drift when operation is neutral.

Principle ; When swing action is performed, the spring action is released by primary pilot pressure.

Function ; In both the swing action and the arm digging, the secondary pilot pressure enters port SH of the reducing valve and changes over the spool. Then the primary pilot pressure releases the parking brake by way of port PG1.

6.3 DELAY BRAKE BY REDUCING VALVE

Objective ; To prevent the parking brake when swing inertia occurs.

Principle ; The release oil is throttled to delay braking.

Function ; If operation is brought to neutral, the oil returned from the brake release cylinder is delayed 6~8 seconds afterwards.

6.4 ANTI-CAVITATION CIRCUIT WHEN SWING INERTIA OCCURS

Objective ; To prevent anti-cavitation when swing action is decelerated of stopped.

Principle ; If the operating lever is at deceleration or at neutral when swing inertia occurs, the relieved pilot pump oil is replenished to prevent anti-cavitation.

Function ; The boost oil of 7kg/cm² (100 psi) comes out of port A3 of the manifold block, passes through the check valve (25) and enters port C of the swing control valve to replenish oil.

6.5 LIGHTING OF SWING FLASHER AT SWING ACTION

Objective ; To warn around the swing action is being performed.

Principle ; The selected secondary proportionate pilot pressure causes the swing flasher to flash alternately during swing action.

Function ; If the pressure switch PSW.a is turned on by secondary swing proportionate pilot pressure, the oscillator in the flasher unit is turned on which turns on the swing flasher.

6.6 PREVENTION OF SWING REACTION BY SWING-REACTIONLESS VALVE

Objective ; To prevent swing reaction within 1 time after swing action stops.

Principle ; While the motor is being reversed, high pressure oil is bypassed from A to B and visa versa, thereby preventing reversing pressure from occurring.

Function ; Reversing prevention is performed in the swing-reactionless valve of the swing motor.

Fig.10 Swing (LH) circuit at preventing swing reaction

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