

Hydraulic Circuit

Note: Circuit and description are for ISO Machines.

Note: The annotations relate to the Hydraulic Schematic.

The hydraulic circuit is fed from a hydraulic oil tank **T**, located to the right of the operator's cab.

The system is powered by a three section pump **P**, connected directly to the engine crankshaft.

Sections **P1** and **P2** are constant horsepower variable displacement pumps, section **P3** is a fixed displacement gear pump.

When the engine is running, the pump draws fluid from the tank and routes it through the main control valve block **1**.

Pump section **P1** supplies the control valve sections for:

- 1A** Track Right
- 1B** Dipper Ram
- 1G** Boom Boost

Pump section **P2** supplies the control valve sections for:

- 1N** Track Left
- 1M** Boom Ram
- 1L** Bucket Ram

Pump section **P3** supplies the control valve sections for:

- 1D** Aux.
- 1E** Dipper Boost
- 1G** Slew
- 1H** Dozer Ram
- 1J** Swing Ram

Supply from all three pumps is also directed to the Pressure Maintenance Valve **13**, fitted with a single adjustable pressure reducing valve **13A**, Servo Isolation Solenoid Valve **13C** and Two Speed Tracking Solenoid **13D**. Supply from the pumps is via a servo signal hose directed into shuttle valves **13B**.

Main relief valves (M.R.V.) **1K**, **1R** and **1S** are fitted in the main control valve blocks to vent hydraulic pressure, venting excess flow to tank **T**.

Auxiliary relief valves (A.R.V.) **1P** are fitted to protect the dipper, boom, head side only on the dozer ram and rod side only on the bucket from damage that might be generated through over-pressure conditions during operation.

When the A.R.V.'s are open, over pressure fluid is routed to the control valve exhaust chamber and back to tank **T**.

The service lines to the dozer ram, the track motors and the pilot line from the high speed selector to the track motors are routed through a rotary coupling **18**. This device allows the machine upper structure to turn without damaging hoses connected to services mounted on the undercarriage.

The remaining service lines connect directly to their relevant devices. Return fluid from services or from the neutral pressure circuit is routed back to tank through an exhaust line and return filter **15**.

Neutral Pressure Circuit

With the engine running, but no service selected, the pump flows are routed from pump sections **P1**, **P2** and **P3** to their respective sections of the control valve.

The valve spools are spring loaded to the neutral position, allowing fluid to pass through the valve's neutral circuit and returned to tank through the return line.

Excess pressure in the selected circuit opens the M.R.V. associated with the valve section supplied and vents excess pressure back to tank **T**.