# Section XI
# Model 23
# Loader and Backhoe

## Service Manual

9-70011H

CASE CONSTRUCTION

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# SECTION XI

# MODEL "23" LOADER AND BACKHOE

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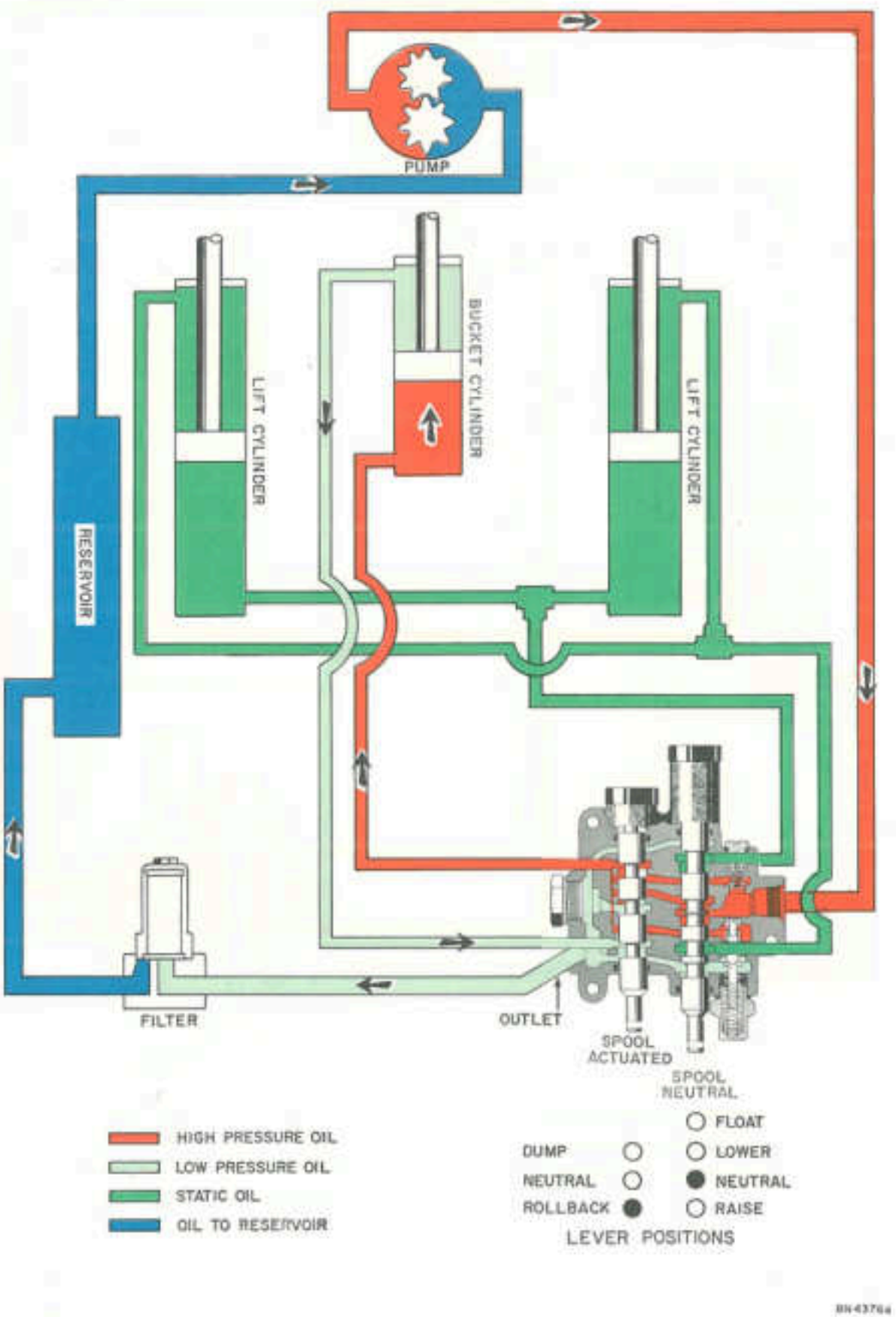



Figure 38 - Oil Flow Through Valve - Rolling Bucket Back



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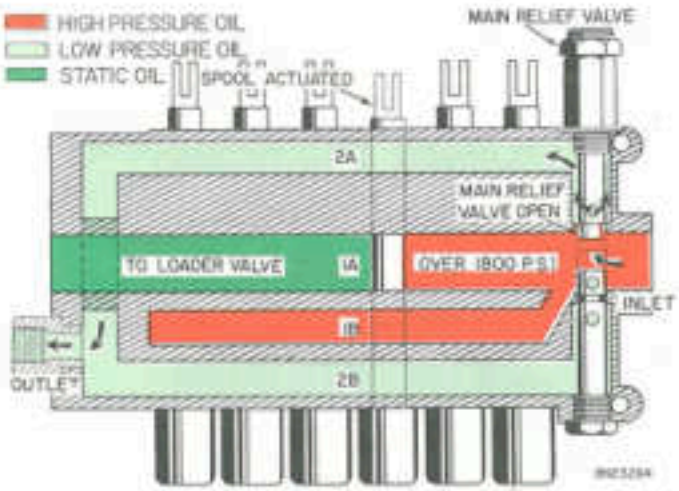



Figure 8 - Main Relief Valve Bypassing

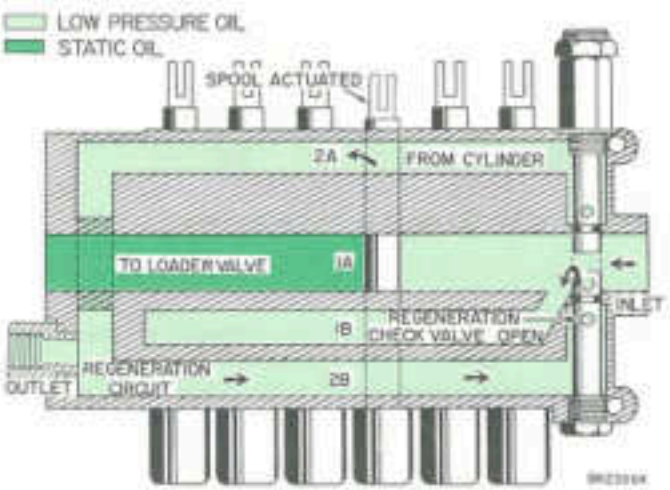



Figure 9 - Regeneration Check Valve Open

REFERRING TO FIGURE 9: Oil from the cylinder is returned via circuits 2A or 2B; If cylinder movement is faster than the pump can supply oil for, a void is created.

This condition occurs when a weight on the end of the cylinder rather than oil from the pump causes the piston to move. This condition is further complicated when the engine is running slowly because the pump output is in direct proportion to engine speed.

To prevent voids from slowing Backhoe operation, the valve contains a regeneration circuit.

A low pressure relief valve, set at 125 P.S.I., is located in the outlet end of the valve. Oil returning from the cylinders in excess of this pressure flows back to the reservoirs through the valve.

The remaining oil is available, if needed, to "regenerate" the high pressure circuits 1A and 1B. When a weight on the end of a cylinder causes the piston to move rather than the applied oil (such as quickly lowering a heavy load) the pump may not be able to keep up and the pressure drops in circuit 1A and 1B.

Due to "back pressure" in the regeneration circuit 2B created by the 125 P.S.I. relief valve, oil returning from the cylinders flows through the one-way regeneration check valve into circuit 1A. This oil augments the pump output and eliminates voids.

## HIGH PRESSURE SECONDARY RELIEF VALVES FOR DIGGING CYLINDERS

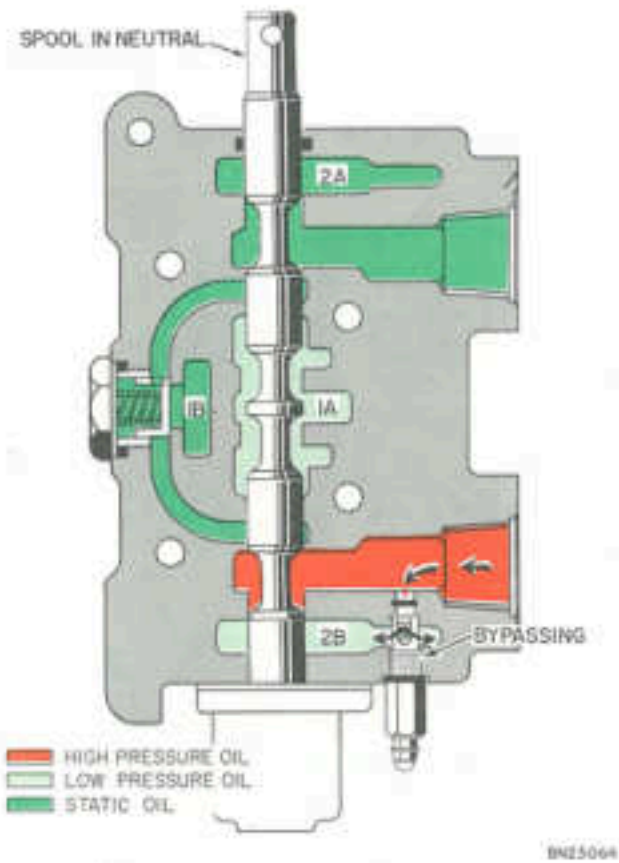



Figure 10 - High Pressure Secondary Relief Valve Bypassing

REFERRING TO FIGURE 10: When one of the digging cylinders (boom, crowd, or bucket) is actuated when digging, "mechanical" pressure may be built up against one or both



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