



ACCIDENT/INCIDENT ALERT

No. 25 April 2007

Operator Loses Finger in Log Splitter Accident



The hand-operated control lever in the forward position



The broken spring that caused the lever to flick past neutral into the forward position resulting in a "fail to danger"

Incident

A worker lost his index finger when the cutting wedge of the log splitter he was using failed to stop once it had returned to its resting position.

Circumstances

The worker was splitting firewood using a 10-year-old hydraulic 20-tonne log splitter in a horizontal position. The splitter had been working fine earlier in the morning. In this instance, the operator had his back to the cutting wedge and control lever while putting the next log on the machine. He did not notice that the wedge had failed to stop at its set position. The cutting wedge caught his right index finger just as he was placing the log onto the splitter. The finger was amputated from the bottom knuckle.

Investigation

The cutting wedge was manually operated by pushing a lever into a forward or back position and would stop if the lever was in the neutral (centre) position. The lever was designed to automatically flick back to neutral, effectively stopping the hydraulic ram, once the wedge has returned to its starting position. On this day, however, instead of returning to the centre the lever flicked past centre into the forward position, sending the ram and cutting wedge on a return cycle.

An independent assessment of the hydraulic control valve showed a broken spring and guide which, it was determined, could have happened at any time. Corrosion or metal deterioration of the spring would have been difficult to spot during standard plant maintenance, as it was housed inside the lever control valve.

Recommendations

This accident occurred through the mechanical failure of a spring and guide inside a hydraulic lever.

The following recommendations are given to avoid a recurrence of this accident.

- Current log splitters are designed with “hold to run” or “dead man” control levers. This ensures that the cutting wedge will not run forward without an operator’s hand pressure on the lever.
- Be aware of the potential for splitters without this “hold to run” control feature to “fail to danger”.
- Ensure hydraulic log splitters are regularly serviced by a hydraulic specialist trained to identify potential failures.
- Users of the plant should assess operational hazards, be informed of safe operating practice with the specific type of machine to be used, and undertake a complete cycle check before its operational use.
- Employers should ensure suitable personal protective clothing is provided and worn during the plant’s operation.