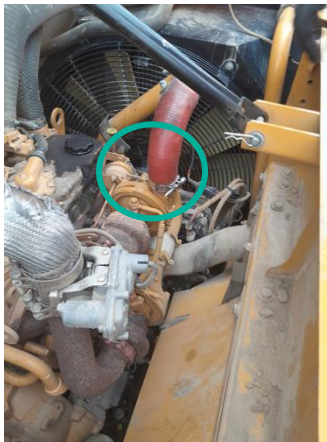


## RIDDOR SPECIFIED INJURY: FRACTURED RIB FROM UNCONTROLLED LOWERING OF ENGINE HOOD

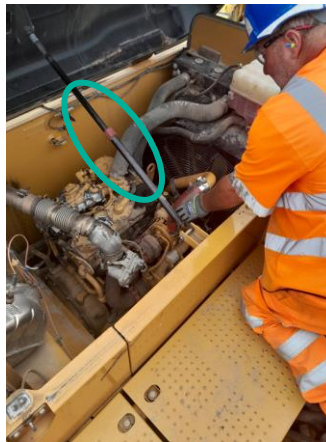
### The incident

During the reattachment of a turbo hose within the engine bay of a CAT 320 FL excavator, a Mechanical Foreman sustained a closed fracture to their rib when the engine hood lowered in an uncontrolled manner.

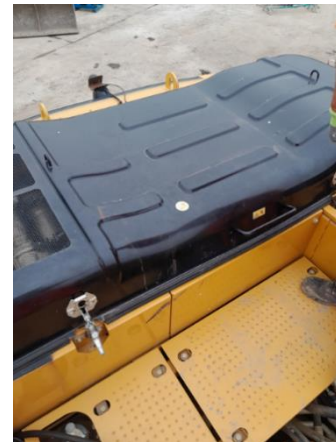
He was working inside the engine bay of the excavator with the engine bay hood in the open position. The gas strut support had fully extended, and it was assumed that this would hold the hood open however, during the task the hood lowered and impacted his side.



Location of turbo hose being reattached



Position of Mechanical Foreman during task and gas strut highlighted



Engine hood in closed position

### Main findings

- The gas strut included an automatic locking mechanism however, the gas strut was found to have no pressure within the cylinder rendering the locking mechanism and strut defective
- There was no catastrophic failure which indicates a gradual loss of pressure over time and although the timeframe hasn't been determined the investigation concluded this would have likely been over weeks or days, rather than hours
- The gradual loss and/or total loss of pressure hadn't been identified during daily or periodical inspections however, the requirement for a check wasn't specifically requested as part of the PPM process and solely relied on operator / fitter knowledge of the gas strut mechanism.



### Lessons learned

- Include a requirement for gas strut inspections and a functionality check as part of the daily and periodical maintenance programmes
- Where gas struts are installed to support a load, hood or cover ensure a functionality check is undertaken prior to working underneath the arrangement.

### Recommendations

- Gas strut mechanisms are widely used on variety non-operated plant, operated plant and vehicles throughout the UK. Consider carrying out conditions review to ensure they are functioning correctly.

