

## Risk of injury when striking hardened steel



### Background

Many steel tools have hardened steel parts. Bending, twisting, sudden impact against another hardened surface or applying extreme force can result in sharp metal fragments (shards) being ejected at very high speed. Similar incidents from Australia has recorded shards being embedded in eyes and chest organs.

### The incident - what happened?

While using a sledge hammer to loosen a part on an excavator, a worker received shard of harden steel embedded into their leg, requiring removal and stitches at a medical centre.

### Probable causes

- Unaware of the hazards associated with striking hardened steel
- The manufacturer's procedures to remove a component was not followed
- Not wearing appropriate PPE to manage the risk of possible injury.

### Preventable measures

- Workers need to be aware of the hazards when striking hardened surfaces with hardened steel. Ensure a proper hazard identification and risk assessment is conducted. If the risk cannot be eliminated, ensure it has been minimised so far as reasonably practical
- Always wear appropriate Personal Protective Equipment (PPE), such as eye protection, face mask, arms covered, and leather apron to protect your entire body from possible flying metal fragments
- Chisels, wedges or similar tools should be regularly inspected for wear. If they show signs of dents, cracks, chops, mushrooming (splaying) or excessive wear, they should be discarded (and not repaired)
- Where a hardened steel component requires an impact to loosen or dislodge it, use the correct tool;
  - *Portable hydraulic track press to dislodge track press to remove an excavator track pin*
  - *Use a hammer with a softer material (like copper, wood, plastic or rawhide) head*
  - *Softer piece of metal between two pieces of hardened steel*
  - *A slide hammer prevents direct impact between two hardened metal surfaces*
  - *Ball-peen hammers for striking cold chisels, punches, and straightening unhardened metal.*
- For further information: [https://www.safework.sa.gov.au/uploaded\\_files/haHardenedSteelTools.pdf](https://www.safework.sa.gov.au/uploaded_files/haHardenedSteelTools.pdf)