



Safety Alert

From the International Association of Drilling Contractors

ALERT 98-02

Kelly Wear and Damage

While making a connection in the mousehole to continue drilling, the driller was spinning the kelly to make up a joint. The hold-down nuts broke loose, allowing the kelly bushing housing to open. One of the hold-down nuts dropped onto a floorman, hitting him in the back of the head and neck. The floorman was treated for a contusion and released.

It was found that the hold-down nuts had failed due to corrosion.

The contractor recommended regular maintenance and inspection of kelly units to avoid recurrences. This should include:

- Check driving surface of rollers. Maximum allowable wear is 1/16" on hex kelly rollers and 1/8" on square kelly rollers. (NOTE: these dimensions were specific to the kelly units used by this contractor -- check manufacturer's recommendations.)
- If rollers show maximum wear, take bushing apart, take rollers out and turn 180 degrees so new driving surface of roller will contact the driving edge (1") of the kelly. (NOTE: these dimensions were specific to the kelly units used by this contractor -- check manufacturer's recommendations.)
- Be sure hold-down nuts are tight. Place a bar under the rollers and pry upward. Maximum allowable movement is 1/8". If movement is over 1/8" this indicates worn journals, bearings, roller pins or thrust washers. (NOTE: these dimensions were specific to the kelly units used by this contractor -- check manufacturer's recommendations.)
- Replace lock pins on thrust washers when worn or broken (to keep thrust washers from turning and wearing out roller pins and inside journal area of kelly bushing body).
- Replace worn or broken "O" rings on thrust washers. (Prevents mud from entering bearings.)
- Replace kelly wiper rubber when it fails to clean kelly.

Good maintenance and replacement of worn parts as required will eliminate kelly wear and damage.

The Corrective Actions stated in this alert are one company's attempts to address the incident, and do not necessarily reflect the position of IADC or the IADC HSE Committee.

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