



Model: See Affected Product Lines

Serial #: N/A

Jun. 4, 2021

Product Bulletin # TDS-232 Rev 1

Alert



Broken Counterbalance Cylinder Cap Screw

Issue

In a recent dropped object incident, a cap screw used in the clevis ends of the top drive counterbalance cylinders broke and dropped to the rig floor. The cap screw broke in half at the root of the thread and fell to the floor. The failure is attributed to the use of cap screws that were too short. The length of the cap screws was such that it was loaded on the threaded section, rather than the unthreaded shank of the cap screw. A longer cap screw would have the unthreaded shank area of the cap screw contacting both sides of the clevis ends of the counterbalance cylinders.

Affected Product Lines

Canrig Top Drive models:

- 500/600-HCI/S-750/1205
- 500/600/750-ECI/S-900/1350
- 150/250-HXI-700

Note: Not all HCI/S and ECI/S top drives will use a counterbalance system. Only HCI/S and ECI/S top drives that use a counterbalance system are affected.

Background

Canrig model top drives listed above, feature an automatic thread feed compensation (counterbalance system) to prevent thread damages during make up and break out operations.

- For the HCI/S and ECI/S top drives, this counterbalance floats the swivel bails off the hook/becket when no additional weight is suspended from the top drive quill.
- For the HXI top drives, this counterbalance floats the swivel links off the yoke pins when no additional weight is suspended from the top drive quill.

This float action is achieved with a pair of cylinders connected to a hydraulic accumulator.

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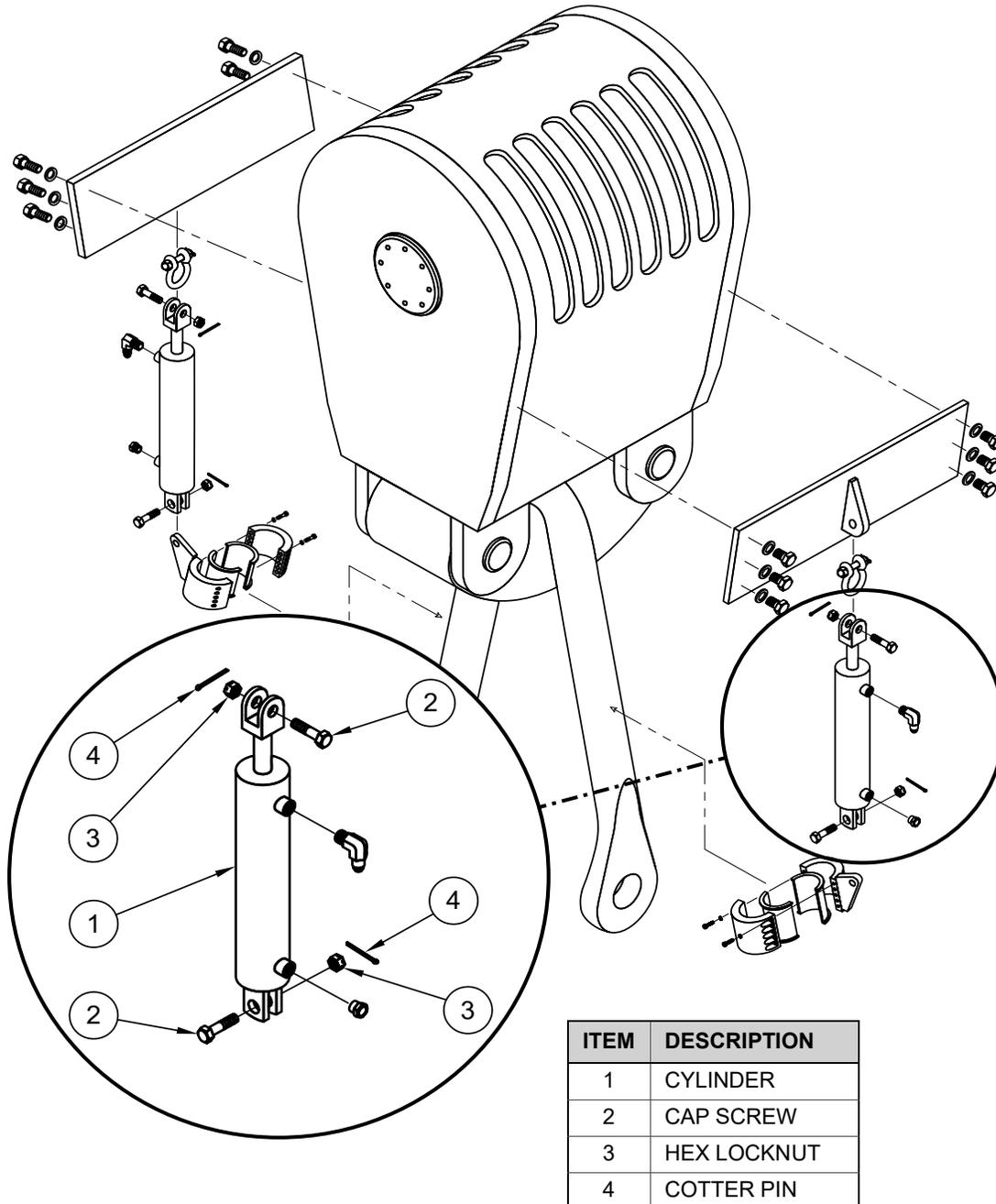


Figure 1: HCI/S and ECI/S top drives counterbalance cylinder cap screws

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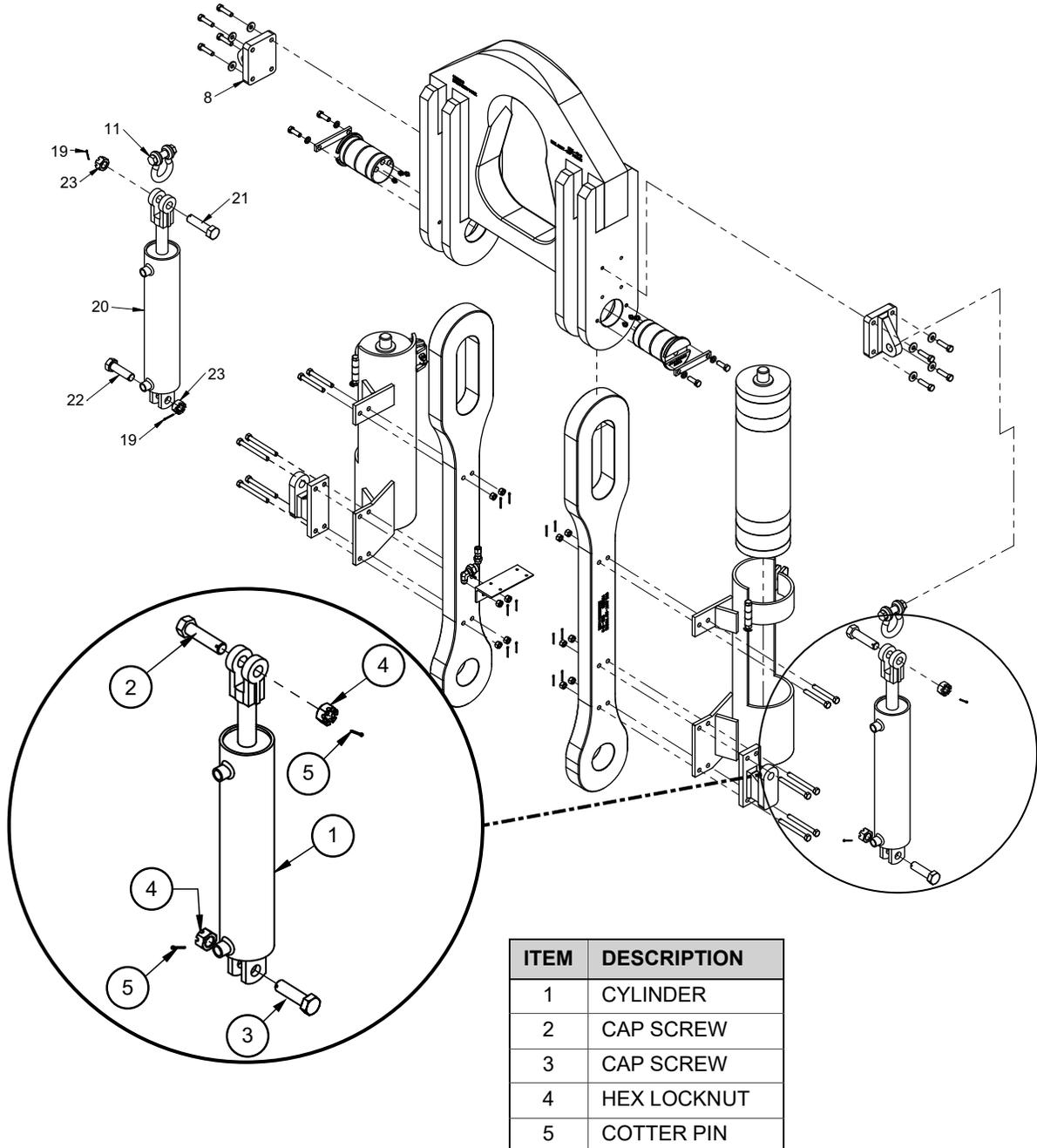


Figure 2: HXI top drives counterbalance cap screws



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Recommended Action

- Ensure that no thread of the cap screws is visible on the inside of the counterbalance cylinder clevis ends.

No thread of
the cap screws
should be visible



- Replace existing fasteners with correct length fasteners. Contact RIGLINE 24/7™ to order these parts.
 - For HCI/S and ECI/S, purchase upgrade fastener kit Canrig Part # 5102283.
 - For HXI, purchase upgrade fastener kit Canrig Part # 5102284.
- Perform detailed visual inspection of these fasteners, to look for damage/cracks on the cylinders cap screws every 60 days. Replace if damage is suspected.
- Replace cylinder fasteners at every 250 day inspection.