



Reference Number	Bulletin 01 – 2018
Affected Product	All Caterpillar Off-Highway Trucks (OHT)
Risks Identified	Potential separation of wheel and/or final drive (larger OHT with double reduction planetary final drives – 785 to 797 only)
Release Date	February 15 2018

Background

Hastings Deering receive repeated queries regarding wheel retention on OHT. The most common enquiries relate to the following subjects:

- Continued operation with a reduced number of wheel fasteners (all models).
- Non-operational movement of Large OHT or final drive wheel hubs (785 - 797) with outer rear rims and adapters, positions 3 or 6 removed.

Discussion

Continued operation with a reduced number of wheel fasteners – all OHT

Whilst there is a degree of redundancy included in most designs, particularly where there are direct safety implications, Caterpillar's position on OHT wheel retention is that all fasteners are to be utilized as per the original design.

Importantly - Operating an OHT with a reduced number of bolts, studs, clamps or nuts will reduce the margin of safety incorporated in the design.

Temporary non-operational movement of large OHT (785 - 797F) final drive wheel hubs with outer rims and adapters removed (position 3 & 6).

Larger OHT – models 785 to 797F, utilise the outer wheel rim adaptor retaining fasteners to secure the final drive and transmit drive to the wheel. With the outer wheel and adapter removed the final drive is secured by three small bolts on 785-793 and nine bolts on 795 and 797. These bolts are sufficient to secure the final drive when the final drive/wheel hubs are in a static condition only.

Engine power must **never** be used to move the truck or rotate the wheel and final drive with only the final drive retaining bolts installed – even if the truck is supported by stands with no weight on remaining rear wheels. Due to the mass and resistance to movement of the wheel and final drive the small final drive retaining bolts can shear, resulting in the final drive falling from the wheel. Refer notice from Service Manual below.

NOTICE

Do not attempt to use the machine to rotate the wheel and final drive with the rim adapters removed. The retaining bolts can shear and the final drive can fall from the wheel causing severe personal injury or death.

Recommended Actions

- Always read and observe the relevant procedures, and specific and general warnings (refer Figure 4) in the appropriate Caterpillar service manual before undertaking any task. The Caterpillar web based Service Information System (WebSIS) always contains the most current information.
- Always install all wheel fasteners and tighten to specified torques following the procedure for the individual truck model.
NB. Some models require dry assembly of wheel nuts/bolts (light engine oil is permissible), others require a specific anti-seize product.
- Inspect for missing or loose wheel fasteners as per the daily inspection procedure outlined in the Operation section of the Caterpillar Operator and Maintenance manual (OMM). Rectify any defects found.
- Large OHT with double reduction planetary final drives (785-797) - If the truck is to be moved, or the rear wheels rotated by engine power, with the outer rear rims and adapters removed, install a full complement of shorter bolts with the standard hardened flat washers, to secure final drive – refer figure 1. Standard bolts with suitable machined spacers* with parallel end faces and a similar inside and outside diameter to the hardened flat washers are an acceptable option.
Figure 2 shows incorrect procedure.
NB. The adapters on 795 and 797 can be left in place when rear outer rims are removed, unless inner rims also require removal - refer Figure 3.
- If a truck is moved with rear outer wheels removed, the stability of the truck will be reduced. Travel at low speeds and minimize travel distance.

* To compensate for the thickness of the removed adapter/rim flange.



Figure 1 - Shows correct installation of shorter bolts with hardened flat washer, typical of 785 - 793. (793F shown)



Figure 2 - Shows insufficient bolts with unsuitable spacers – requires installation of all bolts with spacers similar ID and OD as flat washers with parallel (machined) end faces. (793F shown)

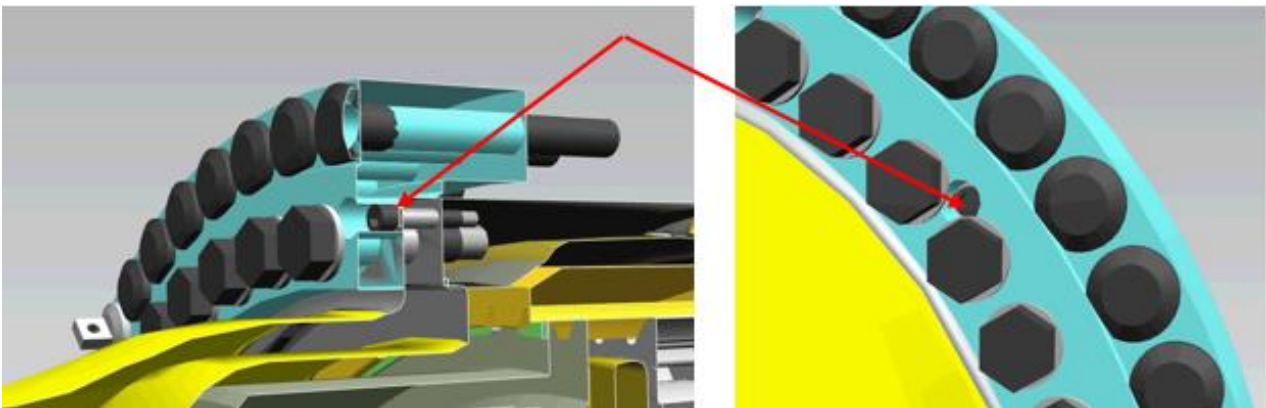


Figure 3. 797 rim adapters mounted in split halves on inner face of outer final drive flange. Final drive retainer bolts arrowed. Adapters can be left in place if outer rim only is to be removed.

 **WARNING**

Do not operate or work on this product unless you have read and understood the instruction and warnings in the relevant Operation and Maintenance Manuals and relevant service literature. Failure to follow the instructions or heed the warnings could result in injury or death. Proper care is your responsibility.

Figure 4 - Generic warning found in most Caterpillar service literature.

If you have any queries regarding the contents of this bulletin, please contact your Hastings Deering Mining or Product Support Representative.

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