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## Technical Bulletin

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### Topic: Wheel installation

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Improper installation of tire assemblies after a flat repair or tire replacement may lead to failure of the assembly and inadvertent separation of the wheel. It is the purpose of this bulletin to provide guidance on the proper procedure for wheel installation in the intermodal environment and actions to be taken when it is detected that a tire assembly has not been properly installed.

#### Wheel Installation

When changing tires or repairing flats the following procedures should be followed at all times:

**NOTE: Tires mounted on multi-piece rims must always be completely deflated prior to handling either on or off a vehicle. At no time should a fully inflated tire mounted on a multi-piece rim be installed or removed from a chassis or otherwise handled by any CCM personnel or associated repair vendor.**

Prior to Mounting (*Source – Accuride Manual*)

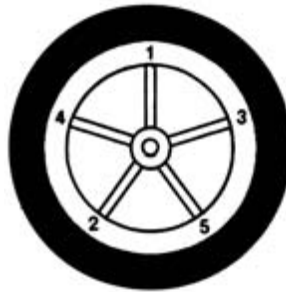
1. Inspect tire assembly to ensure that
  - a. Rim is not damaged
  - b. Rim and lock ring are properly matched (multi-piece rims only)
  - c. Lock ring is properly seated on rim (multi-piece rims only)
  - d. Tires are properly mated
2. Inspect condition of adjacent components
  - a. Ensure that mounting surfaces of cast spoke wheel are
    - i. Not damaged
    - ii. Not worn
    - iii. Not rusted
  - b. Inspect all studs and nuts to ensure they are not
    - i. Stripped
    - ii. Worn
    - iii. Same size and type
  - c. Inspect all cleats to ensure they are not worn and are of the same type, length, and are matched
  - d. Inspect spacers to ensure that they are of the proper width and are not distorted cut or cracked
3. Replace any damaged components. **DO NOT** bend, heat, weld, or braze on any of the components.

#### Mounting Dual Rear Assemblies

1. Place inside rim over spoke wheel and position as far back on the hub as possible ensuring that the valve stem locators are positioned between hub spokes
2. Place spacer band over hub and slide as far back as possible. Caution should be taken to ensure that the spacer is positioned evenly and is not cocked on the hub. When correctly positioned, the spacer ring

should be snug against the spokes and flush against the gutter edge of the inside tire rim all the way around.

3. Place the outer tire rim assembly in position ensuring that the valve stem locators are positioned between the hub spokes and is flush against the spacer band
4. Align valve stem locators between spokes and secure clamps and nuts evenly in position. **Snug** up all nuts in sequence shown in the following diagram. **NOTE: DO NOT** tighten nuts fully.



“Star” Pattern  
For Torquing Five hubs

5. After the tires have been properly centered on the spoke hub and the lugs and clamps are properly seated, tighten the nuts a quarter turn at a time using the “star” sequence until all nuts are tightened to 200-260 ft.-lbs. of torque. Installation in this manner will allow the rims to properly align themselves on the mounting surfaces of the cast spoke wheel. **DO NOT OVER TORQUE.**

## NOTES

1. There are two types of wheel clamps or cleats. They tighten completely differently and therefore should not be mixed on the same wheel.
  - a. Heel-less cleats do not contact the rim. These clamps should not be over-torqued to force them to contact the hub
  - b. Heel-type cleats are designed to contact the wheel hub when properly torqued. If the cleat touches the wheel hub before 80% of recommended torque is achieved, the assembly needs to be checked to ensure that the proper studs, clamps, and rim spacers are in use.
2. When checking tire/wheel installations attention should always be paid to the following
  - a. All camps are of the same type. Under no circumstances are heel-less and heel-type clamps to be used on the same wheel
  - b. All clamps are seated properly.
    - i. All heel-type clamps should be flush against the hub. If they are not all flush against the hub, the wheels need to be removed and reinstalled and the studs cleats and spacer need to be checked for damage , miss-match or wear
    - ii. All heel-less clamps are roughly the same distance from the wheel hub. If they are not the same distance , the wheels need to be removed and reinstalled and the studs cleats and spacer need to be checked for damage , miss-match or wear

3. Frozen lug nuts and sheared studs are indicative of over torqueing. This usually happens when one lug nut is tightened all the way down and then the rest of the lug nuts are tightened. When tightening the opposite lugs an over torque situation is placed on the first nut tightened. Where ever these conditions are identified the procedures of the previous tire vendors should be examined to ensure that they are properly torqueing the tires. If the vendors are not installing tires properly they should be billed for all stud/nut/clamp replacement as required.

Please direct any questions regarding this matter to the CCM Chassis Technical Services manager at one of the numbers provided