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HiSpec Wheel Offers RV and Specialty Trailer Manufacturers Five Best Practices to Avoid Costly Wheel Separation Incidents and Product Recalls

Mishawaka, Ind.— [HiSpec Wheel & Tire, Inc.](http://www.hispec.com), engineers of the original “Safety Wheel,” offers OEMs five best practices to prevent dangerous wheel separations and expensive product recalls.

HiSpec Wheel and Tire, Inc. is a supplier of quality aluminum and steel wheels to the RV, cargo, marine and specialty trailer industries.

Wheel separations are a serious and potentially fatal occurrence for manufacturers and consumers in the RV and trailer industries, often resulting in multi-million dollar court settlements and expensive, time consuming recalls for manufacturers.

“At HiSpec Wheel and Tire, we continue to innovate and manufacture wheels that exceed the standards set by the Trailer Safety Industry Coalition (TSIC),” states Ron Williams, HiSpec general manager and chief engineer.

Williams is a former board member of the TSIC and was instrumental in moving forward the new industry safety standards accepted by the National Highway Transportation and Safety Administration (NHTSA) in 2006, at which time NHTSA deemed that wheel joint security is the responsibility of the manufacturer.

“The Safety Wheel is our assurance to manufacturers that their exposure to wheel separation from defective wheels will be eliminated and lower the incidence of expensive recalls from defective wheels. Here are five ‘Best Practices’ we strongly suggest to all our customers.”

Best Practices Suggested by HiSpec, the Manufacturer of “The Safety Wheel”

1. Required Thread Engagement— Aluminum wheels are typically thicker than their steel counterparts which can lead to inadequate thread engagement. A ½ - 20 inch stud needs a minimum of 10 full threads, or ½ inch, engaged. Remember, the first thread is typically incomplete. The engineers at HiSpec Wheel recommend engagement of 11 full threads or more— all HiSpec wheels exceed this requirement.

2. Adequate Lug Nut and Socket Clearance— The torque applied to tighten the wheel is intended to generate clamp load in the studs, however, some of the applied torque is used in friction. Typically there are two torque robbers – one at the thread interface between the nut and the stud and the other at the interface of the conical seat and the nut. Some aluminum wheels have deep lug nut recesses that make it nearly impossible to avoid contact of the socket and the wheel. This adds another factor where friction between the socket and the wheel steal some of the applied torque leaving even less of the torque to generate clamp load in the stud. HiSpec “[Clean Line Designs™](#)” have addressed this issue to maximize socket clearance and ensure the applied torque goes where it is intended – to generate clamp load!

3. Proper Torque and Tension Testing On the Assembly Line— Ask your wheel supplier about the clamp loads requirements. Be aware of the torque that should be used with your wheel

and lug nut combination. Check this information against the industry standard torque levels needed to achieve adequate clamp load. It may be critical for a field audit from your wheel supplier.

HiSpec Wheel has degreed engineers on staff available to perform field audits and discuss clamp load variation factors and torque level issues. HiSpec recommendations with zinc plated stainless steel capped lug nut are as follows:

- ½ - 20 60° conical lug nut 90-120 ft-lb (120 ft-lb max)
- 9/16 – 18 60 ° conical lug nut 120-140 ft-lb (150 ft-lb max)
- 5/8 - 18 2 pc HWT lug nut 150 ft-lb (200 ft-lb max)

4. Component Compatibility— There are often misfits between components. Obtain confirmation from each component manufacturer that its components are appropriate for the application and meet the component guidelines compatible with the other components in the wheel system.

HiSpec recommends using high quality zinc plated lug nuts and stainless steel center caps to assure the proper fit with wheels. HiSpec engineers are available to consult when there is doubt of compatibility.

5. Compliance with TSIC Recommended Practices— Adhere strictly to [TSIC Recommended Practices](#) including the compatibility of components, maintaining clean wheel & hub surfaces, training of personnel and conducting regular wheel audits.

Ask for “The Safety Wheel” with Improved Clamp Force Technology (ICF™)

The HiSpec Safety Wheel has the proprietary [Improved Clamp Force Technology](#) (ICF™) that includes the following safety benefits:

1. Reduced stud-to-stud clamp variation
2. Significant increase in average clamp load
3. Reduced clamp load relaxation variation

When properly installed using industry standard methods, ICF creates a bullet proof joint between the HiSpec Safety Wheel and the mounting hub, adding increased safety to your wheel & tire program.

To learn more or to schedule a field audit with the HiSpec engineering team, contact Jim Guibert at 574-807-8588

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