

**TECHNICAL SERVICE BULLETIN**  
**RAFNA RAILGEAR**

**RAFNA REPLACEMENT R-085 WHEEL STUD**

**ISSUE DATE:** November 12, 2004

**TSB NUMBER:** TSB-162 Rev 1

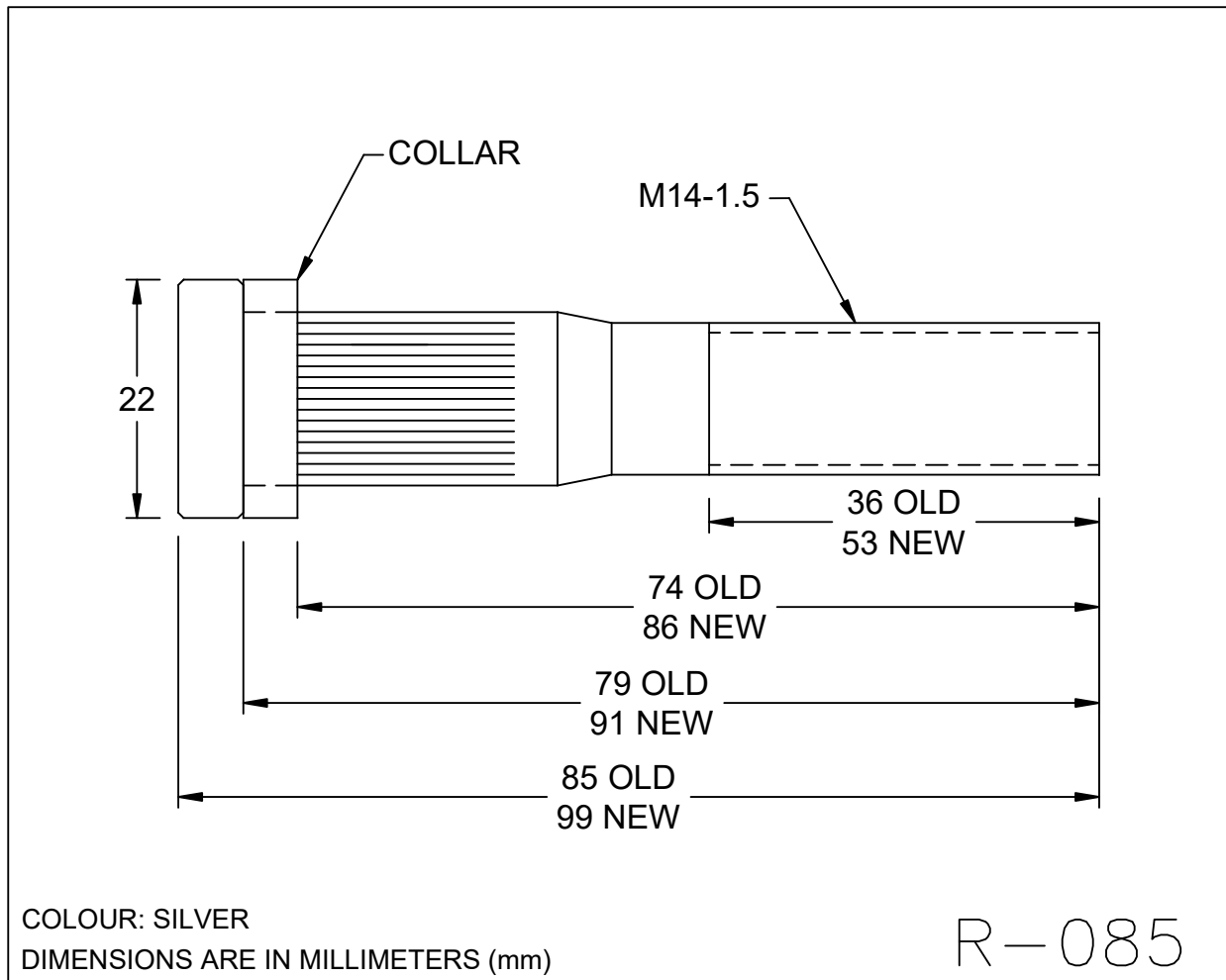
<b>HAZARD / URGENCY RATING</b>		
<b>X</b>	<b>DANGER</b>	<b>An operating procedure, practice or condition which may result in injury or death, if not carefully observed or followed.</b>
	<b>WARNING</b>	<b>An operating procedure, practice or condition which may result in damage to equipment, if not carefully observed or followed.</b>
	<b>CAUTION</b>	<b>As essential issue effecting operating procedure/s, practice/s or condition/s.</b>
	<b>INFORMATIONAL</b>	<b>An advisory which may be of interest.</b>

**APPLICABLE EQUIPMENT:**

The following vehicles may be affected by this Technical Service Bulletin: 1996 – 2004 GMC / Chevy 2500, 2500HD and 3500 pick-up trucks and Suburban / Yukon vehicles equipped with Rafna R-250HD or R-290 railgear and /or Rafna wheel modification kits using R-075 or R-075O wheels and R-085 replacement wheel studs. Note that several different wheel kits were used on these vehicles and not all of them use the R-085 wheel stud. Refer to Technical Service Bulletin #160 in order to determine which wheel kits use the R-085 wheel stud and if your vehicle is affected or not.

**SUMMARY:**

Due to many factors including over-torquing of wheel nuts, overloading of vehicles, corrosion, etc, Rafna's R-085 Wheel Studs have been found to crack in certain cases. This cracking can lead to stud failure and / or the possibility of wheels separating from the vehicle during road or rail travel. Rafna now has available a new version of the R-085 wheel stud which is significantly stronger and will last longer under these adverse and out-of-spec conditions. This new R-085 Wheel Stud will be made available at the same price as the current version. Refer to the attached figure for dimensions which help differentiate between the new version and the old version.



### IMPACT:

If the current R-085 Wheel Stud is used under adverse and out-of-spec conditions such as being subjected to over-torquing and overloading, it may be over-stressed, leading to stud failure and / or wheels separating from the vehicle. Although Rafna does not approve nor condone subjecting any component to adverse and out-of-spec conditions, the new version of the R-085 Wheel Stud will last longer than the current version. It is recommended that all R-085 Wheel Studs which have not yet been replaced with the new version be removed and replaced as soon as possible with the new version.

**ACTION:**

Following are some general recommended measures to avoid problems with wheels, wheel nuts, and wheel studs:

1. When mounting the wheels, ensure that the mounting faces of the wheel, the hub, the spacer (if applicable), the wheel nuts, and the studs are clean and free from any dirt, rust, paint build up, or other residue, etc. Any of these can lead to wheel nuts loosening when these contaminants “squeeze out” from the contacting faces.
2. Ensure the wheel nuts are tightened in stages to the correct dry torque value according to the correct tightening sequence using a good, recently calibrated torque wrench. **DO NOT USE AIR TOOLS** to tighten wheel nuts. **DO NOT USE ANTI-SEIZE OR LUBRICANT** on wheel nuts, studs or mounting faces. If the correct tightening sequence is not used, the wheel could be misaligned on the hub causing it to wobble, the wheel nuts to come loose, or the wheel to crack. If the wheel nuts are not tightened to the correct torque value, the wheel nuts could come loose, leading to wheels cracking or separating from the vehicle.
3. Never over-tighten wheel nuts. Wheel studs which have been subjected to over-tightening could break leading to wheels separating from the vehicle. If any wheel nuts have been over-tightened, remove and replace all affected wheel nuts and wheel studs with new components as per the Rafna Operation, Service and Parts manual. Do not purchase aftermarket replacement parts as they may not meet the design specifications.
4. Never operate a vehicle with vibrations caused by imbalanced and / or out-of-round tires and wheels. Imbalance and out-of-round can cause undue cyclic loading of the wheels and wheel components, which could cause the wheels to develop cracks or the wheel studs to break leading to wheels separating from the vehicle. There are several causes for wheel imbalance and out-of-round such as loss of wheel balance weights, inconsistent tire pressure, dirt accumulations, defective tires, bent wheels, etc. Ensure that the tires and wheels are clean, balanced, and round. They should not cause any vehicle vibrations.
5. Never operate the vehicle if the Gross Vehicle Weight Rating (GVWR), Gross Axle Weight Rating Front or Rear (GAWR), or the wheel or tire load ratings are exceeded. Over loading the vehicle, the axles, the tires, and / or the wheels could lead to catastrophic failure of any of the components including cracking and separation of the wheels from the vehicle.
6. Wheel nuts must be rechecked for correct torque value following the first 62 Miles (100km) after the wheels are installed or re-installed following a wheel service. The wheel nuts must also be rechecked for correct torque value every week. During the weekly wheel nut inspection, the wheels should also be inspected for cleanliness, presence of all balance weights, correct tire pressure, and development of cracks.

7. When installing wheel studs into hubs or spacers, always use a press. Do not use any type of pulling device (such as air impact tools) to pull the studs into place. This could overstress the studs and lead to future failures.
8. If ever one or more wheel studs are found broken, the vehicle should not be operated until all wheel studs on the respective wheel hub are replaced with new components.

To replace the studs with the new version of the R-085:

1. Call Rafna Industries for information on ordering new R-085 Wheel Studs.
2. Refer to the applicable Operation, Service, and Parts manual, Installation manual, and / or Rafna Technical Service Bulletin #160 in order to determine where the R-085 Wheel Studs are used on your vehicle.
3. Remove the necessary wheel kit components in order to remove the R-085 Wheel Studs.
4. Replace all R-085 Wheel Studs with only new R-085 Wheel Studs from Rafna Industries. Do not purchase “equivalent” studs from parts suppliers such as auto parts stores as they may not meet the design requirements.
5. Re-install the wheel kit as per the Installation manual.