

### **For Immediate Release:**

I want to share with you the permanent fix that I have come up with for the RV front axle spacer problems. We have seen everything from gouging of outer yokes to the bearing spinning on the axle due to the loss of bearing pre-load. This new design is for the RV-10, but is being offered for the RV6/7/8/9 nose gear as well.

I decided to take a close look at the system to see what the root problem is and I found that the spacers provided with the kit, both the steel ones delivered with the kit initially and the Aluminum ones sent out as a fix do not interface with the bearing properly. This is due to two issues.

The first is that the mating surface on the bearing for the spacer is curved. I contacted Timken Bearing and they sent me the dimensioned cross section of that bearing which showed that the curved mating surface was a compound curve that melded two radii.

The second issue was that of the wall thickness of the aluminum spacers set out by Van's to replace the initial steel ones. The wall thickness of these aluminum spacers is 0.250in. The mating surface of the bearing is approx. 0.187in. This is the steel contact area inside of the rubber bearing seal. This meant that the spacer was pre-loading on the rubber bearing seal instead of the steel portion of the bearing. In many cases this has resulted in the loss of the pre-load as the rubber deteriorates. Consequently, there were bearings spinning, yokes being gouged and loose wheels which add to bearing wear and shimmy.

I initially thought that I would take the same approach as Ross Farnham and machine profiles on the end of new steel spacers so that the interface between them and the bearing was close to identical. I called Ross and talked it over with him and he said that if he had more time to put into it he would have made one of the spacers adjustable. I asked him if I could run with that and he agreed it would be the best fix.

So, what I have designed is a system where there is a perfect interface between the spacers and the bearings by utilizing the Timken specifications and the accuracy of CNC machining. I have also designed a robust and accurate adjustment mechanism into one of the spacers so that the pre-load can be adjusted without having to take the wheel apart.

Integrated into the spacer design are notches that accept the heads of 10-24 socket-head cap screws installed on the inner face of the yoke. These restrict the spacers from being able to spin on the axle. As well, you will now be able to accurately torque the front wheel bolt because it no longer has any relationship to the pre-load of the bearings.

The screw adjustment ring is locked in place by two 1/4-20 socket-head cap screws that have drilled heads so they can be safety wired.

I have finished installing a set in my front wheel assembly and it goes together and adjusts very easily. All of these new components including the hardware are stainless steel for durability and corrosion resistance. The kits include all hardware, instructions, and the drill guide used to locate the anti-rotation screws.

I feel as though I have a permanent fix to this problem and I hope that if you are interested in the kit you will go and visit the Cleaveland Tools site at: [www.CleavelandToolStore.com](http://www.CleavelandToolStore.com)

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