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# NO WORRIES *with the* ALLISON 1000/2000/2400 CONVERTERS

**For years torque converter shops have routinely rebuilt the Allison 545 converters. The converters were popular because of their wide usage in school buses and other 1-ton and up gross vehicle weight (GVW) vehicles. The converters were very similar in appearance to the standard GM 13", 3- and 6-pad converters, with the flanged impeller hub being the main visual give-away that it was something different. For torque converter shops, the 545 Allison converter was treated like just another converter.**

**In model year 2000, Allison introduced the 1000/2000/2400 series 5-speed transmission. Along with this new transmission came a new torque converter equipped with a lockup clutch. This new converter looked like a larger version of some existing GM converters, so there was not much fear of the unknown. Most torque converter shops viewed the Allison 1000/2000/2400 converter as just another job, but unfortunately this did not prove to be the case.**

**The luckier shops had the converter come in with a leak. In these cases the leak was found to be in a crack around one of the mounting pads and the converter was deemed unsalvageable (see Figure 1). Of course, the estimate given to the customer was off by the amount spent for the new factory converter. This led to an unhappy customer, but did not cost the shop any money.**

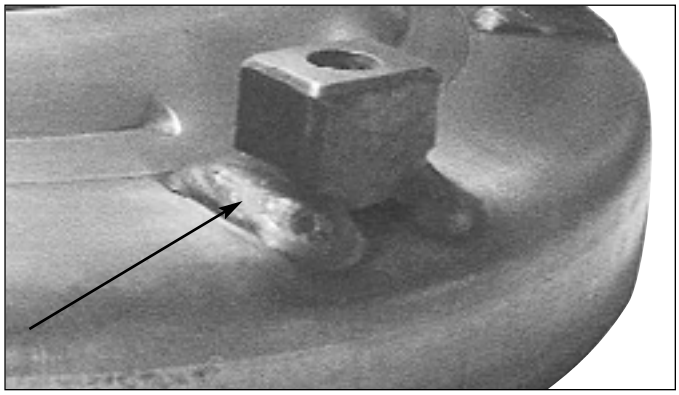

Figure 1

**Unluckier shops received the converter without a leak problem. In these cases the converter was rebuilt in the normal fashion, only to return in the near future with a warranty leak problem — a cracked cover at the pads. (This was especially problematic after the clutch surface was remachined.) The comeback became the problem of the converter shop and was very expensive. Even if the leak was caught before any damage was done to the transmission, the cost of the R&R and the replacement converter was substantial. To make things worse, the replacement converters weren't any better than the originals until model year 2006. For this reason, many shops decided**

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not to rebuild the Allison 1000/2000/2400 converters.

When Sonnax came out with the **AL-CC-1** and **AL-CC-2** billet covers, all of the leak problems went away. In addition, when LuK took over the manufacturing of the Allison 1000/2000/2400 converters in model year 2006, the OEM leak problems also went away.

Unfortunately, this was not the end of problems with the early Allison 1000/2000/2400 converters. One problem was that there were no replacement bearings available. This seemed like a big enough problem, until the root cause of the bearing failures was finally diagnosed. The bearing failures were the result of the bearings running off of the centerline of the converter. The piloting area of both the stator and the stator cap were being worn by the bearing races (see Figures 2 and 3).

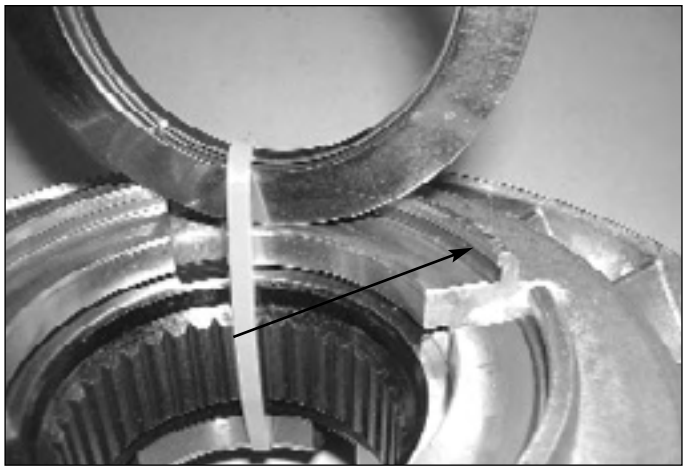

Figure 2

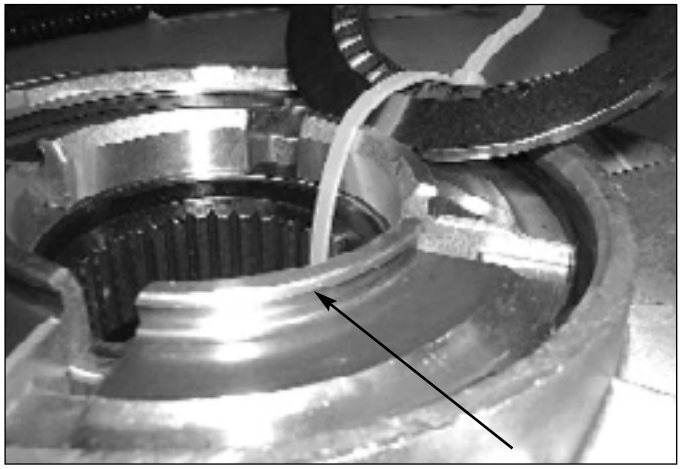

Figure 3

***The luckier shops had the converter come in with a leak. In these cases the leak was found to be in a crack around one of the mounting pads and the converter was deemed unsalvageable. Unluckier shops received the converter without a leak problem. In these cases the converter was rebuilt in the normal fashion, only to return in the near future with a warranty leak problem that became the problem of the converter shop.***

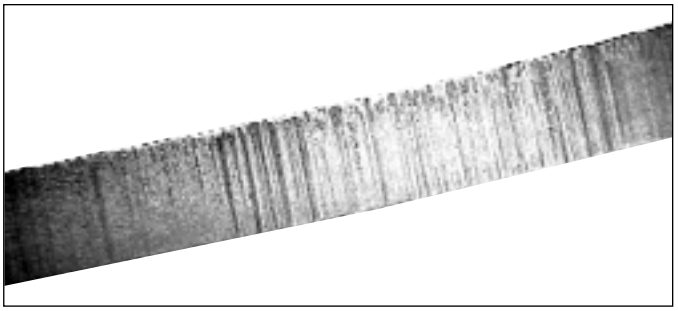

Figure 4

One reason for this wear is that the bearing races are separate from the bearings and are free to rotate on the stator and stator cap. Another reason for this wear is the lack of a machined surface on the I.D. and O.D. of the bearing races (see Figure 4). The I.D. and O.D. surfaces of the bearing races are similar to a water jet cut. This jagged edge reacts like a saw blade against the stator and stator cap.

The Sonnax **AL-WS-1** or **AL-WS-3** (stator bearing spacer) and **AL-WA-2** (stator cap/bearing adapter) address all of the bearing issues of the early Allison 1000/2000/2400 converters. These parts make it possible to use the readily available **AL-N-1** and **AL-N-2** fully enclosed bearings that are used in the late-model Allison converters. These parts also address the wear issue by adding tangs to both the **AL-WS-1 (**or alternate version, **AL-WS-3)** and **AL-WA-2** to prevent them from rotating against their mating parts.

If you use a Sonnax billet cover and update the bearing with these Sonnax parts, you should now have no worries when rebuilding the early Allison 1000/2000/2400 converters.