

# TECH TIP

## H6 SERIES COMPRESSOR BODY LEAKS

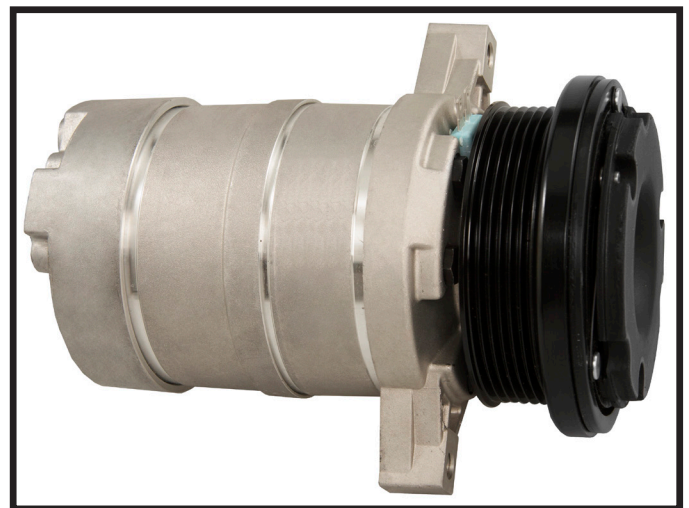
The Harrison 6 cylinder compressors, in particular the DA6, HR6, HD6 and the HT6 have been known for their body leaks. Each of these compressors consists of four separate housings. Upon assembly these four housings are held together with six through bolts that pass from the front nose plate and thread into the rear head plate. Most compressors with horizontal pumping pistons are aligned through the use of a dowel pin that aligns the housings while these are not. It is important to remember this point as you read on.

These compressors may be mounted on the vehicle in one of two fashions; the compressor could fit into a single mounting bracket that holds the compressor at four points. There also could be two separate brackets, one for the front of the compressor and one for the rear of the compressor.

### Why Are These Compressor Mounts Causing So Much Trouble?

- **Single solid bracket** –Typically used with the HT6 – There have been some stories of these brackets warping. Most of these brackets are of cast aluminum so warping would be difficult. However, if the bolts are improperly torqued, as the bracket material is heated and cooled in the engine compartment, the bracket and the compressor would conform (twist or warp) to each other. If the bolsters or pads of the cradle that the compressor sits on are not 100% square and if the compressor does not lay flat on all four pads, a twisting or rocking action could present a problem even if the compressor is properly torqued. If the compressor does not sit solidly on all four positions, and the compressor is torqued down into the mounting cradle, the non-doweled compressor body will twist and invariably leak or make noise.

To assure a solid fit, place the compressor in the cradle and try to rock it. If the compressor rocks back and forth, place a shim or standard washer between the compressor and the bracket. Torque the four bolts evenly and alternately but make sure the compressor does not rock in the cradle before the bolts are torqued.

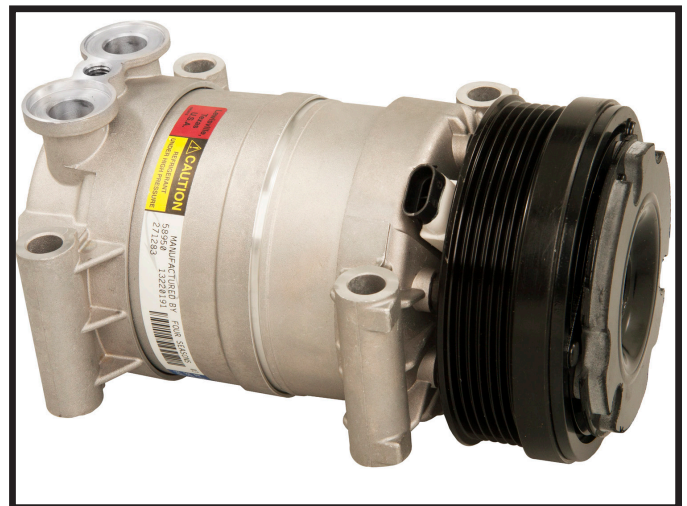


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- **Dual bracket** – used with DA6, HD6 and HR6 – Most installers will start the four compressor mounting bolts and then use an air ratchet to tighten them down. If there is any alignment variation between the two brackets, the tightening process will twist the case and create a body leak or noise. To assure that the brackets conform to the compressor and not the compressor to the brackets, loosen the brackets from the engine block. Snug down the compressor mounting bolts. Tighten the bracket to engine bolts then torque the compressor mounting bolts.

Not only will the above procedures prevent body seal leaks but will also obviously increase the compressor life span, plus reduce vibration and noise. Any major amount of twisting of the compressor housings will cause the cylinders to be out of alignment. This alignment condition may not be enough to see with the naked eye but will cause decreased performance and decrease the life of the compressor. This compressor family was designed without an alignment dowel pin, allowing for a small amount of case twisting to occur. Possibly the OEM designer removed the pin for easier assembly purposes, since they did not consider it to be critical to this particular family of compressors. However, a moderate amount of case twisting will typically lead to a case leak, and if not quickly detected, it will possibly cause compressor failure.



Any amount of case twisting could be considered one of the causes for premature piston wear, noisy operation, and eventual compressor failure.

Always keep in mind that over tightening, under tightening or any compressor mounting misalignment will cause premature wear and noise. This is especially true since most compressors are now made of aluminum and are very susceptible to this twisting problem.

