Bell Housing Alignment Procedure

When swapping a clutch, bell housing or transmission it is highly recommended you check the alignment of the bell housing to the engine block/crankshaft and to the transmission input shaft/output shaft. Think of this as a theoretical straight line running through the crankshaft, through the input shaft of the transmission and the output shaft of the transmission. Misalignment along this path can lead to leaks, poor clutch release, premature wear of components and excessively noisy operation. This inspection can be performed with a few common measuring devices and some time. Manufacturer's tolerances of engine/crankshaft alignment can vary especially if the engine block has been modified throughout its lifetime or if you are performing a bell housing and/or transmission swap. If you find excess misalignment on your engine/bell housing you can correct the problem with off-set dowel pins. (Lakewood Industries offers Offset dowel Pins to correct misalignment conditions). You will need a dial indicator with a magnetic base along with some typical hand tools to perform this inspection. It is critical you pay close attention to detail when performing this inspection in order to achieve accurate assembly results.

1) Install flywheel onto crankshaft, using proper bolts and torque to factory setting.
2) Be certain the engine block dowel pins stick out of the rear of the engine block at least 3/8" for proper bell housing engagement. Check the rear surface of the engine block at this time to be certain it is free of nicks or burrs that will prevent the bell housing from seating against the block.
3) Install just the bell housing and hold in place with a few bolts. Install dial indicator base onto crank flange or flywheel face and adjust plunger to contact the register bore of the bell housing. Rotate the crankshaft and note the indicator reading as you sweep the register bore of the bell housing.
4) Misalignment can be determined by dividing the change in the indicator by 2. Maximum allowable runout is .005".
5) If your reading exceeds .005" off set dowel pins must be used to correct the misalignment. Lakewood Industries offers such dowel pins in several sizes.

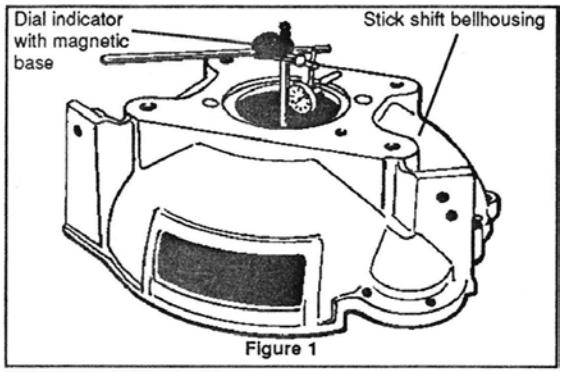

Figure 1

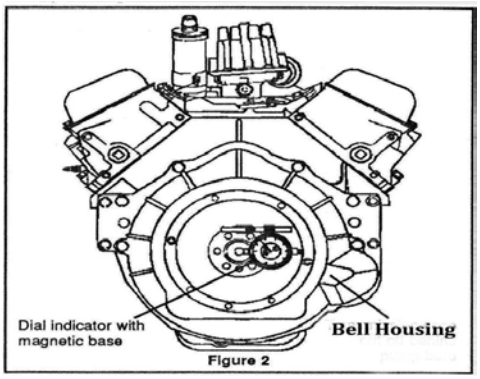

Figure 2

This alignment procedure will eliminate premature wear on many of the transmission and clutch related components and will provide smoother operation. **I0020**