

Bellhousing Alignment Dowel Pins Installation Instructions

1. **IMPORTANT:** These offset dowels are longer than stock dowels. In some cases, this means that the portion of the dowels that extends from the engine block must be shortened. The dowels are not hardened so they can be cut off with a hack saw. Be sure to deburr and chamfer the dowels after shortening.
2. After using a dial indicator to determine the direction and amount the bellhousing needs to move, remove the bellhousing and existing dowel pins from your engine block. There are tool companies that make dowel pin pullers, and they are highly recommended. However, in some cases, it is possible to drive the existing dowel pins out of the block from the front side using a blunt punch and a hammer. If the front of the pins cannot be accessed, the pins can sometimes be removed by twisting and pulling with vice grips. If this fails, the pins can sometimes be removed by drilling and tapping the ends of the pins and using a slide hammer (it may be necessary to grind the end of the pin prior to tapping to remove the hardened surface). Tack welding a nut to the end of the dowel may also work.
3. Before inserting the pins into the block, make sure the allen screws in the pins are not tight or the pins will not slip into the block. Insert the pins into the block (the slit end of the pin goes into the block). The dowels should be a slip fit (or perhaps a very light press fit) into the block. If the pins do not slip in, check for burrs on the pins and/or in the holes in the block. Insert the pins into the block until the offset prevents the pins from going any further.
4. Rotate the pins so that the offset of the pins is pointing in the desired direction. Note that the two flats machined into the pins are parallel with the pin's offset. If necessary, an open end wrench can be used to turn the pins. The flats on the two pins must be parallel to one another (i.e. the pins must be rotated to the same angle) or the bellhousing will not fit over the pins. Tighten the allen head screws in the pins lightly (just enough so the pins won't move accidentally while installing the bellhousing).
5. Re-install the bellhousing and check for alignment using your dial indicator. If the bellhousing is still not within specification (.010" TIR), remove the bellhousing and rotate the dowels using an open end wrench. Re-install the bellhousing and recheck the alignment.
6. Once the bellhousing is concentric to the crankshaft within .005" (.010" TIR), use an open end wrench to prevent the pins from rotating and tighten the allen head screws to secure the dowels. Do not over tighten the allen head screws (48 in-lbs of torque *maximum*). If the dowel pins need to be turned again, the screws can be loosened and the pins can be turned to a new angle.
7. If it is not possible to achieve proper alignment, pins with a different amount of offset may be required.