Worm Gearing Mesh Patterns

The mesh pattern of a worm and worm gear set is critical. A clear mesh pattern indicates the position of the worm gear in relation to the worm. By adding or removing shims from one side to the other side of the worm gear bearing covers, the mesh pattern can be adjusted to the recommended position.

The mesh can be checked by first wiping the worm and worm gear free of oil and giving the worm a light coating of Prussian bluing. Have all of the bearing covers and housing covers bolts tightened in the correct sequence and torqued to the recommended amounts.

The worm is rotated by hand in the normal direction of rotation while the worm gear is partially snubbed. A bluing mark should transfer to the worm gear. The marking on the worm gear teeth should be close to centered on the gear teeth and inclining slightly to the leaving side. This is indicated in **Figure 33**.

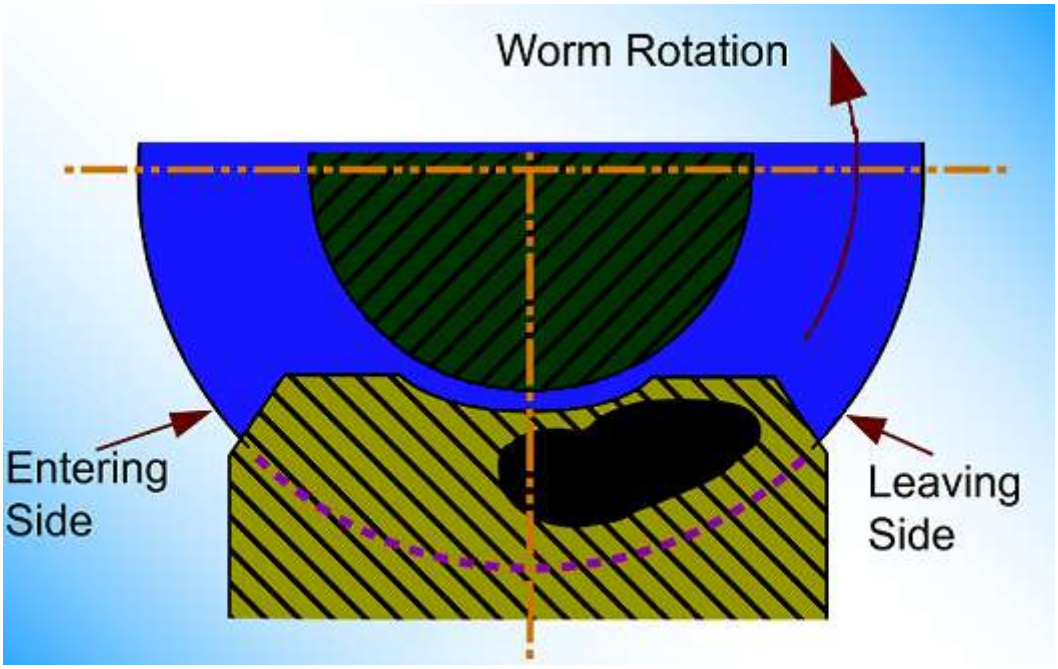

Figure 33: Worm Gearing Mesh

Worm gear sets used on reversing drive applications should have the contact area from the center of the worm gear tooth to the leaving side on both faces as indicated in **Figure 34.**

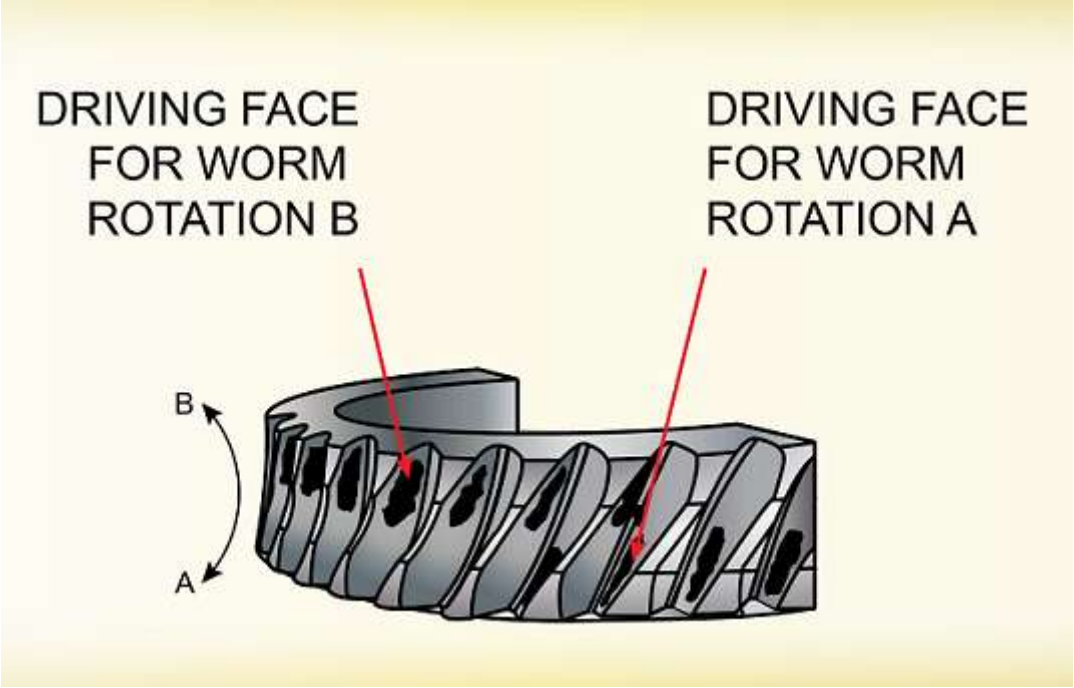

Figure 34: Worm Gear Mesh

Figure 35 indicates the direction necessary to move the worm gear to obtain the correct mesh pattern on the worm.

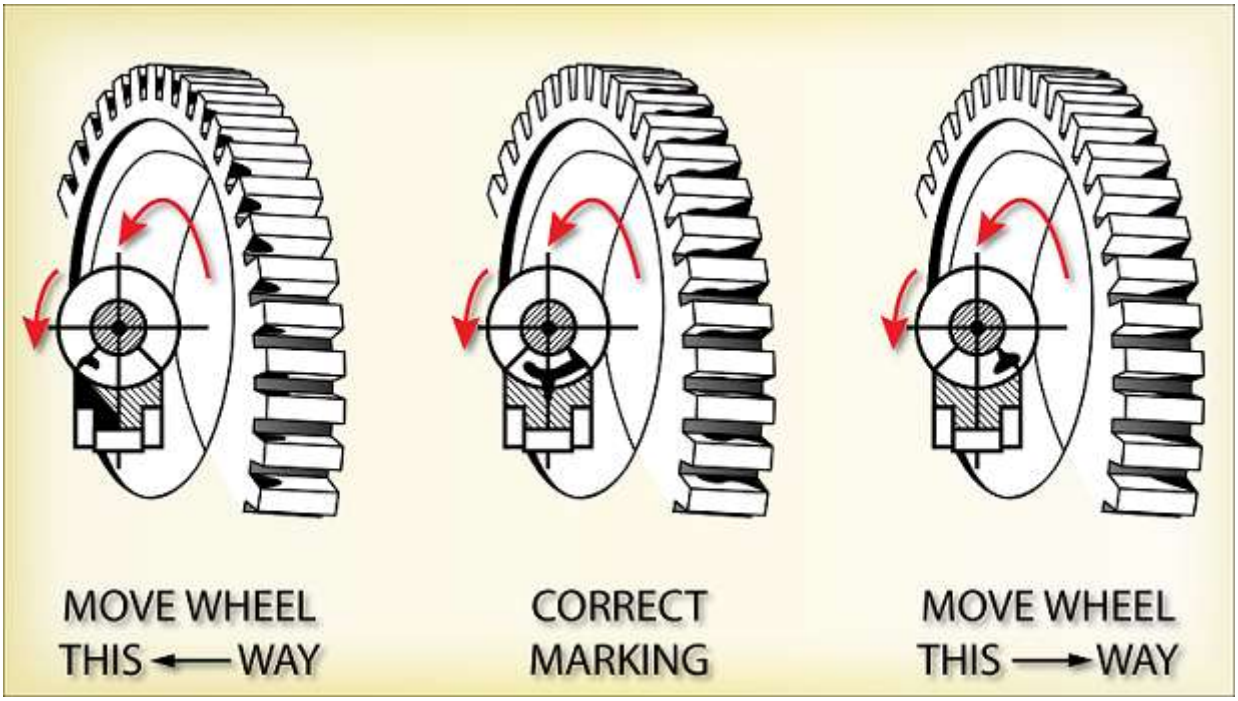

Figure 35: Moving the Worm Gear

Upon initial assembly of worm gear units, a number of shims are installed behind the bearing cover plates of the worm gear shaft. By removing shims from one side and adding them to the opposite side of the cover, the mesh pattern is shifted to a new location. Changing the position of the shims changes the position of the worm gear in relation to the worm. This does not change the clearance in the bearings if all of the shims in the original shim pack provided by the manufacturer of the unit are used.