

INSTALLATION

Mounting Distance

The correct setting or adjustment of the pinion at assembly is most important. Provision should be made for adjusting both the gear and pinion axially. It is advisable to first adjust the pinion to its correct mounting distance (See figure 28), determined by measurement or by a gage centered on the gear shaft or a "dummy" shaft made for this purpose. The gage may be arranged to measure from the center of the gear shaft to a flat on the extreme small end of the pinion teeth or to the back face of the pinion hub. After the pinion has been correctly positioned, the gear should then be adjusted to mesh with the pinion to obtain the desired amount of backlash.

The shims used in adjusting the gear and pinion location, and the bearing preload, should not be less than 0.015" thick and should preferably be on the stationary member of the bearing.

A means of inspecting the gears in mesh is desirable both from an assembly standpoint and for periodic check. An inspection hole and cover should be arranged so that the contact pattern can be observed on the teeth of both members of the gear set.

In storage or during shipment lapped gears should always be fastened together in pairs or sets, and they should not be separated until ready to assemble.

Backlash

Bevel gears should be manufactured and assembled to have a definite amount of backlash, which varies according to pitch and operating conditions. Backlash is necessary for safe operation. If gears are set too tight they will be noisy, wear excessively, and possibly scuff the tooth surfaces, or even break. Figure 27 shows the ratio at which the axial movement of either member affects the backlash.

Figure 26 suggests the recommended normal backlash at tightest point of mesh for gears assembled, ready to run. The backlash values etched on ARROW gears are derived from this table and apply to the tightest point of mesh. (See also Figure 29). In many instances, these limits will require modifications to suit the special conditions of operation.

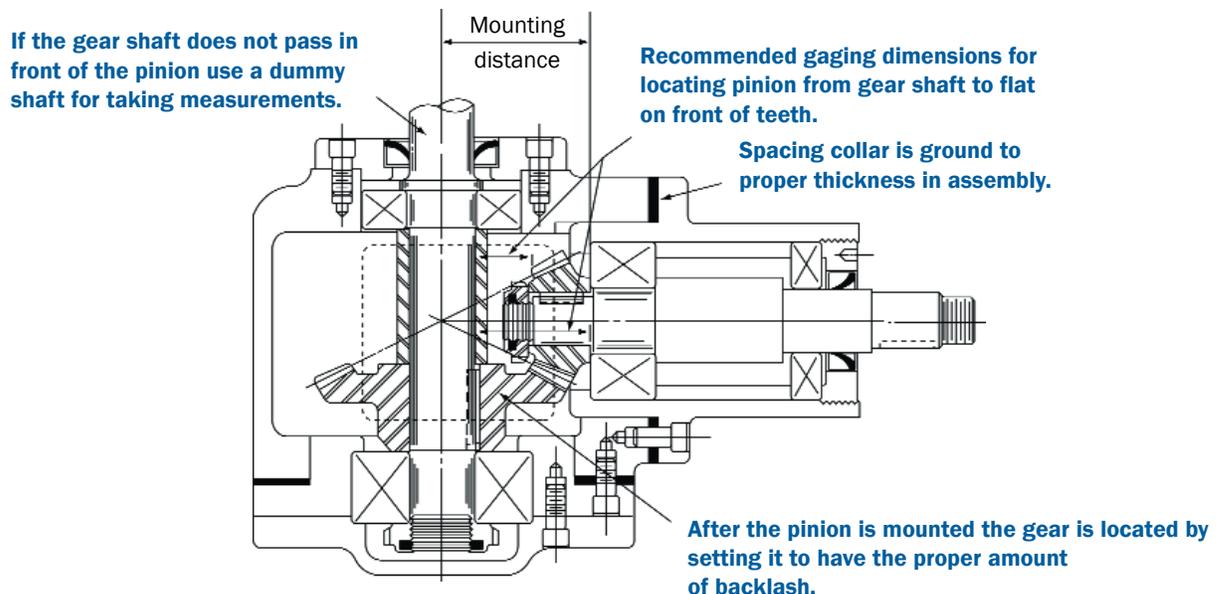


Fig. 28 - Measuring or gaging as shown is the recommended method for locating the pinion. Pinion should be set to mounting distance marked on pinion, and gear should be adjusted to give correct backlash.

Courtesy: The Gleason Works