

Dale Danner

From: Keeney, Mike
Sent: 09/09/2000 04:32:36 PM
To: Zajk, Joseph J; Golemboski, Matt R.
CC: Danner, Dale
BCC:
Subject: Rec. Insert Tolerance

Joe/Matt,

Went back through my notes and calculations on the hole positions, theoretically you were correct with tolerance calculations. The formula is (Min hole dia minus the Max screw diameter)/2 equals the positional tolerance for both holes. If you run the numbers this way it would be $(.169-.163)/2 = .003$ positional tolerance for both holes. The numbers I used for the calculations were $.175-.163/2 = .006$ positional tolerance. The reason for the .175 dia which corresponds to the max hole diameter in the rec. insert support, knowing it is to be a stamping, the punch would be made to the max dia to allow for wear but based on the small volumes of the M710 it will be along time before we wear punches. Therefore, I figured the parts would be toward the max side of the tolerance. The other note I had was that typically screws are nominal to min on the major diameter, so that would provide extra clearance as well. The last note I had was that the clearance in the safety pin and sear retaining pin would allow for additional tolerance in the rec insert support fit up, thus the .008 positional tolerance for the screw hole in the receiver.

so you are correct, if you assume an .008 positional tolerance for both of the holes, the hole dia in the insert should be $.182 \pm .003$, which would give us $.185-.157 = .028$ diametral clearance, which would be excessive? If we tighten up the positional tolerances, or hole diameter tolerances, we can officially mate in all instances. We'll talk monday.