

The Virtues of Limit Gaging

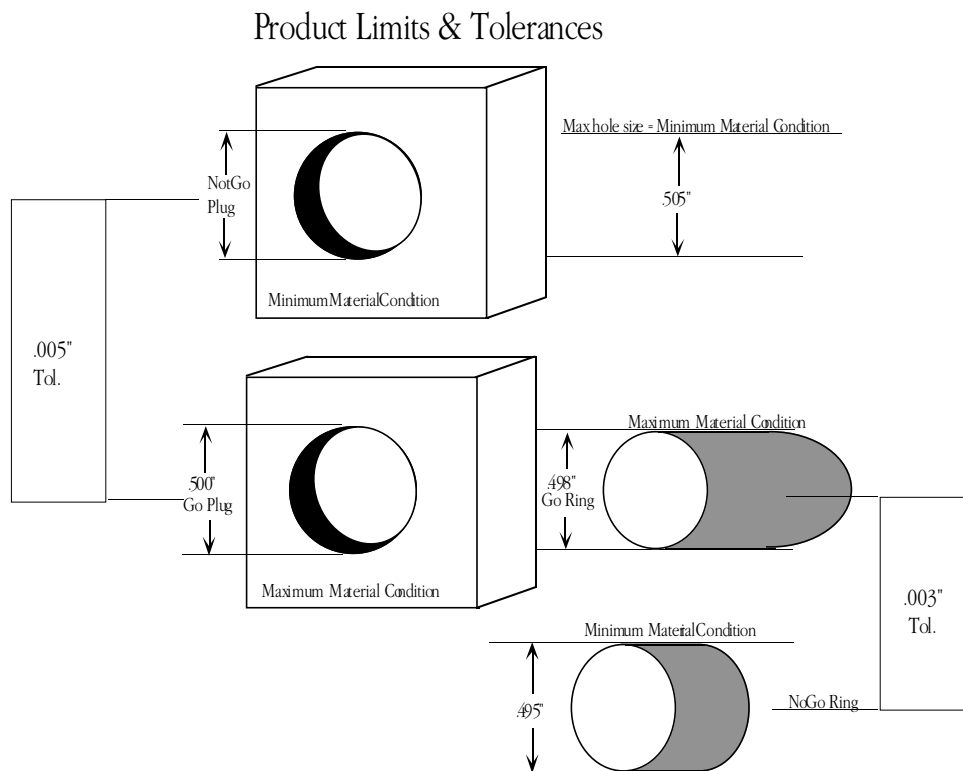
The purpose of limit gaging is to establish whether a particular feature size is functionally in tolerance.

Go gages, if they pass through the feature, assure us that we have not exceeded a maximum material condition. For example: Imagine a perfect 1 inch cube of steel through which we must drill one hole of $.500 +.005 /-.000$. If the Go plug gage fits, the hole could not be smaller than .500. If it does not fit, it indicates the hole is too small leaving our cube with too much material. The mating part could be a 2" long shaft with an outside diameter of $.498 +.000 /-.003$. This time, a Go cylindrical ring gage would be used. If you could pass the shaft through this gage, you are assured the shaft isn't larger than .498 and the maximum material condition has not been exceeded. These two parts would assemble with a minimum clearance between them of .002, assuming they are each at maximum material condition.

NoGo gages provide assurance we have not dropped below the minimum material condition specified for our part. In the case of our cube, if our NoGo plug gage does not fit, this indicates our hole is not larger than .505. If it did fit, we know our hole is too large and our cube now has too little material left. Referring to the mating shaft, our NoGo ring gage will not fit as long as the shaft is at least .495. If it does fit, we know our shaft is undersize. Hence, with one set of Go and NoGo plug gages to check the hole in the cube and one set of Go and NoGo ring gages to check the shaft, you can easily determine the limits of your product tolerances and their maximum and minimum material conditions. Go and NoGo thread gages provide the same determination of product limits and tolerances for threaded parts.

No other gaging system offers the functional assurance of assembleability between mating parts and product tolerances at such an economical cost.

It is because of this that HEMCO will continue to offer the best value for your limit gaging dollar.



Generally speaking, when ordering gages, one must keep two things in mind:

- 1.) Do not allow the tolerance of the Go and NoGo gages to consume more than 10% of your product tolerance.
In most cases the 10% is divided equally 5% to the Go gage and 5% to the NoGo gage.
- 2.) Higher precision gages will accept slightly more product but with less wear life and greater expense.