



## TOLERANCE TESTING OF PRODUCE SIZING RINGS

To establish uniformity in the procedures used to determine tolerance verification of sizing rings, Division policy is as follows:

### Type of Material

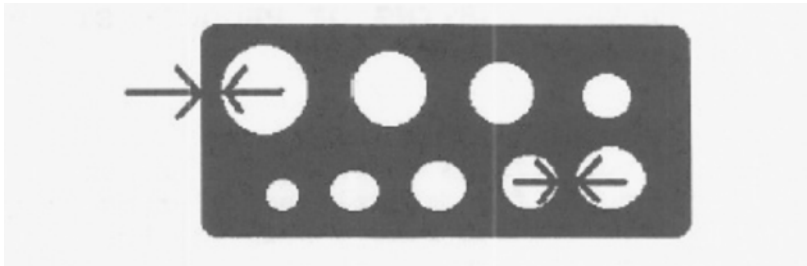
1. **Plastic or plastic composite** materials for openings up to 1-3/8 inches providing the material is a minimum of 1/18 of an inch thick (.055). Other materials that absorb moisture are not approved for official product sizing and certification. There is no tolerance for sizing blades under the minimum thickness.
2. **Aluminum or aluminum alloy** for all diameters providing the blade is .06 of an inch thick. There is no tolerance for sizing blades under the minimum thickness. This is an increase from the original .04 specifications. Sizing blades previously purchased with .04 thickness will remain acceptable as long as the individual size openings meet the variations set forth in this document.

### Acceptable Variation for Specified Round Openings

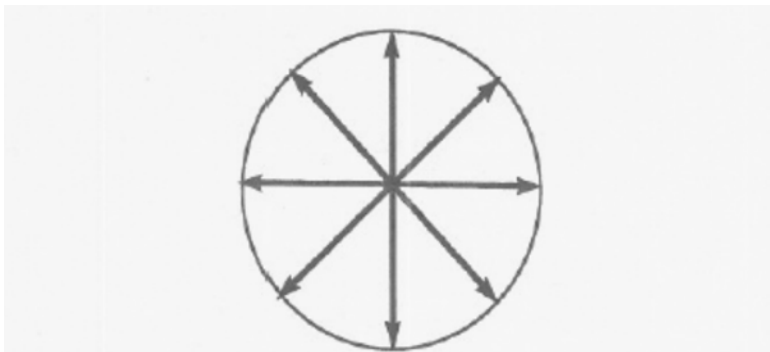
1. For openings up to 2-1/2 inches in diameter, no more than .005 of an inch (5 thousandths) larger or smaller.
2. For openings 2-1/2 inches or larger in diameter, no more than .008 of an inch (8 thousandths) larger or smaller.

Width of Material at Narrowest Point between Round Openings and From Round Opening to the Edge on Same Blade.

The minimum distance between openings or to the edge on the same sizing blade is .30 of an inch (30 hundredths).



Using a micrometer or caliper capable of measuring to the thousandths of an inch, the above tolerances on the respective size openings will be applied. Two perpendicular measurements of the opening will be made. If the readings are within tolerance, verification is achieved. If both readings are out of tolerance the blade shall be taken out of use. If one of these readings is found to be out of tolerance, two more perpendicular readings shall be taken with the four readings averaged and compared to the applicable tolerance. If the averaged tolerance is met, the respective size on that sizing blade shall be considered to be in tolerance. If tolerance is not met, then the sizing blade shall be taken out of use. **Do not take more than four readings to achieve compliance with the specified tolerance.**



Note: *These requirements do not apply to nut sizing rings.*

#### Customer Specifications and Tolerances for Metric Sizers

Many calipers used to verify sizers in metric terms do not measure thousandths of a millimeter. When verifying the size of an opening in metric terms, it shall be sufficient to measure the opening to the hundredth of a millimeter.

For openings up to 63.5 mm, the variation shall be no more than 0.13 mm.

For openings 63.5 mm and larger, the variation shall be no more than 0.20 mm.

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