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# TSC Ferrite International

## Ordering Gapped Cores

Gapped Cores can be ordered 3 ways:

1. To a mechanical dimension.
2. Two gapped cores mated together to yield a specific AL value.
3. One gapped core mated with one ungapped core to yield a specific AL value.

When ordering cores to an AL value, it is important to specify whether 2 gapped cores are mated together or if 1 gapped core is mated with 1 ungapped core. It is also helpful if each customer supplies us with their coil to avoid differences in fringing flux that would result in a difference in AL measurements between the customer and the manufacturer. On our throughput grinder, we are capable of holding mechanical gap tolerances of  $\pm .0007$ ". Because the relationship between AL and gap depth is a decaying exponential, the AL tolerance we are capable of is dependent upon the depth of the gap (larger gaps yield smaller AL values with tighter tolerances than do smaller gaps).

## Tolerances

Problems periodically arise concerning magnetic and mechanical tolerances of ferrites. The nominal and spread of a sample lot is not always indicative of production lots. As an example, toroids are supplied to a nominal AL value based on material grade, and a tolerance of  $\pm 25\%$ . The nominal AL value for a large number of production lots is considered to be at 0.0%, then the total spread of a large number of shipments will be  $\pm 25\%$  around this nominal.

Sample parts with given characteristics positioned at some desired point within the normal spread cannot be easily produced because chemical processes cannot be controlled this closely. For this reason, it is difficult to fill requests for "maximum" and "minimum" samples. Every TSC Ferrite International sample is supplied with data showing our measured values on each sample compared to the specification upper and lower limits.

