

Frequently Used Drawing Symbols¹

The GD&T practitioner must be very familiar with most GD&T symbols and know how to use them. It is best to commit them to memory. Can you imagine trying to read a book or write a composition without knowing the alphabet, without a good vocabulary, and without a working knowledge of how a sentence is constructed? A little memorization up front will save time and reduce frustration in the future. There are some must know symbols and other symbols that are of lesser importance.

The must know symbols are:

1. The 14 geometric characteristic symbols
2. The datum feature symbol
3. The feature control frame
4. Material condition modifier symbols (The circle M and circle L)

In addition, there are some drawing symbols that engineers use on a daily basis and other symbols that are infrequently used. The 12 symbols in Fig. 3-11A are common symbols that engineers should commit to memory.

All Around		Dimension, Basic	1.000
Between		Dimension, Reference	(60)
Counterbore		Number of Places	X
Countersink		Projected Tolerance Zone	Ⓟ
Depth/Deep		Radius	R
Diameter		Spotface	SF

Figure 3-11A Frequently used drawing symbols

¹Cogorno, Gene R., *Geometric Dimensioning and Tolerancing for Mechanical Design, Second Edition*, McGraw-Hill, New York, 2011, p. 17.

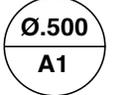
All Over		Radius, Controlled	CR
Free State		Spherical Radius	SR
Independency		Spherical Diameter	SØ
Tangent Plane		Square	
Unequally Disposed Profile		Continuous Feature	
Dimension Not To Scale		Statistical Tolerance	
Dimension Origin		Datum Target	
Translation		Movable Datum Target	
Arc Length		Target Point	
Conical Taper		Slope	

Figure 3-11B Other symbols occasionally used on prints

Engineers should be familiar with the symbols in Fig. 3-11B, but they don't need to commit them to memory. In most cases, these symbols are not very common and are only used in rare applications.