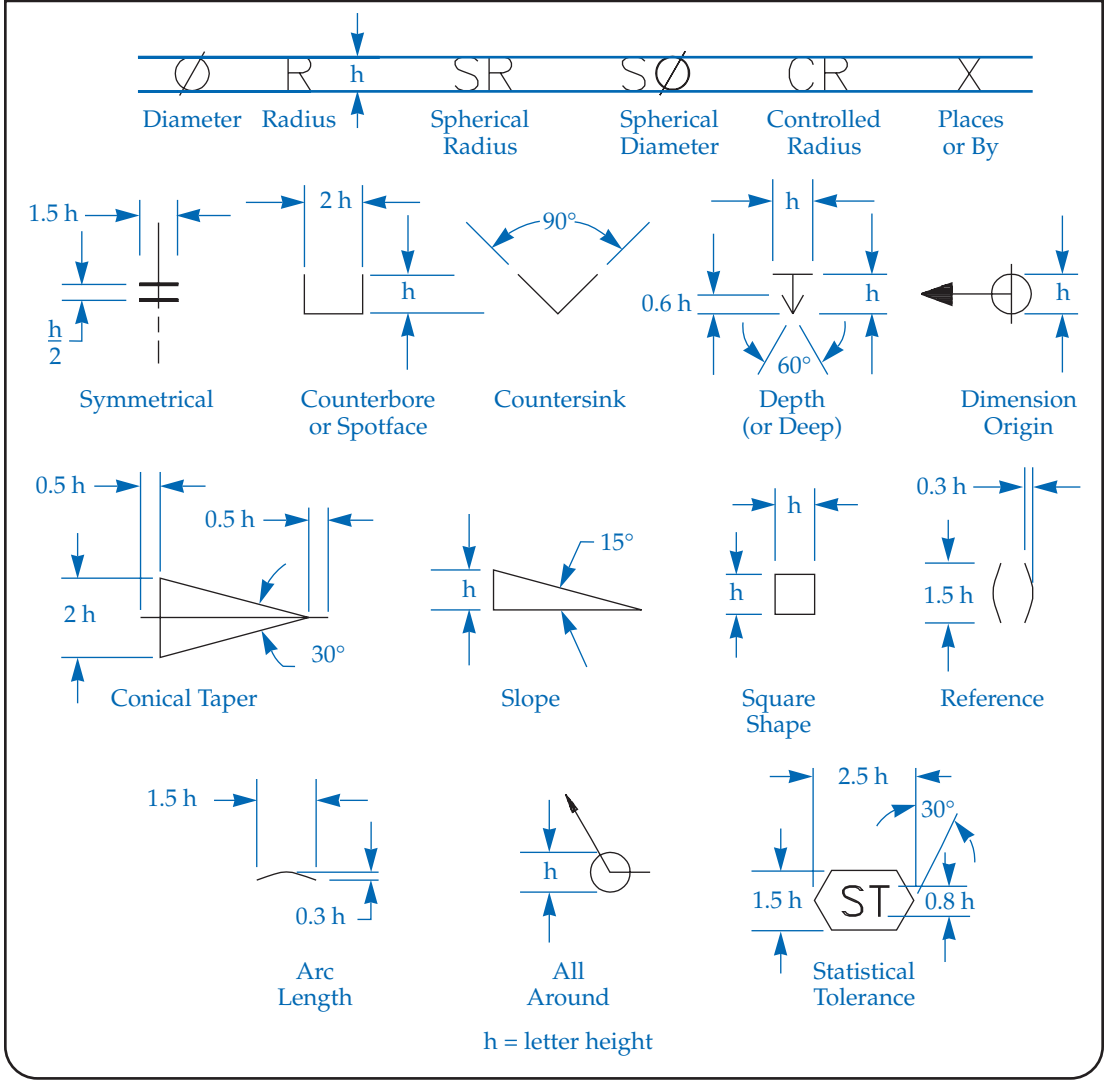
Drafting Symbols

Symbols provide a "common language" for drafters all over the world. However, symbols can be meaningful only if they are created according to the relevant standards or conventions. This document describes and illustrates common dimensioning, GD&T, architectural, piping, and electrical symbols.

Standard Dimensioning Symbols

The size of dimensioning symbols varies with text size, but it should be consistent with the height of the text. In the following illustration, h = text height.

Standard Dimensioning Symbols



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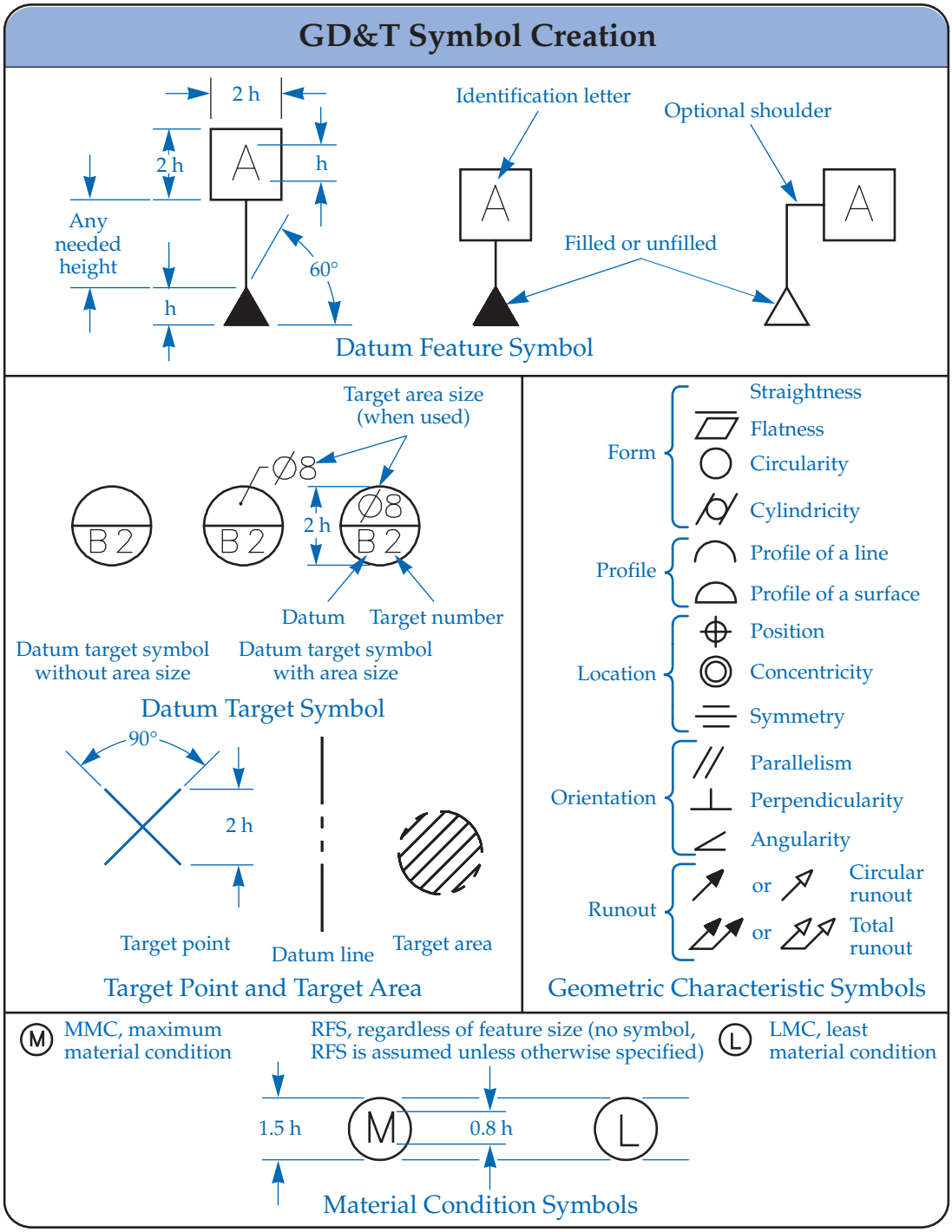
Geometric Dimensioning and Tolerancing Symbols

You can either create your own library of GD&T symbols, or use one of AutoCAD's GD&T fonts to insert the symbols as text. The following table shows how to construct the symbols.

GD&T Symbol Creation



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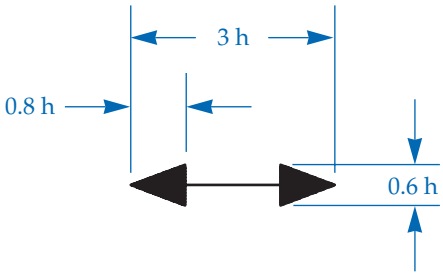
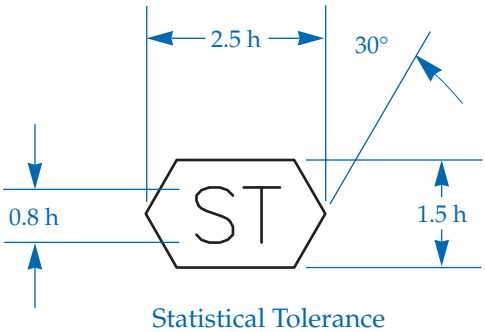
GD&T Symbol Creation *(continued)*

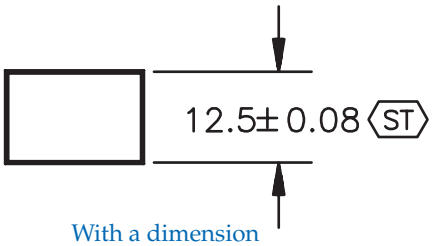
Free State | Tangent Plane | Projected Tolerance Zone



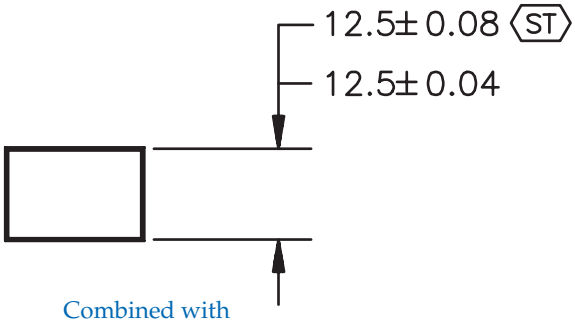
Between



Statistical Tolerance



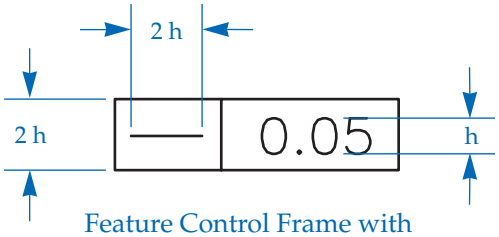
With a dimension



Combined with conventional tolerance

In the feature control frame

Statistical Tolerancing Methods



Feature Control Frame with Straightness Geometric Symbol

h = lettering height

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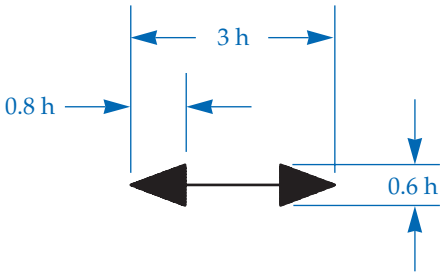
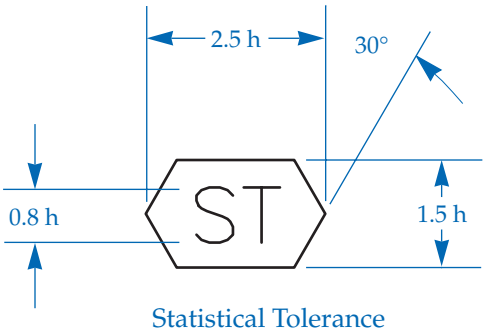
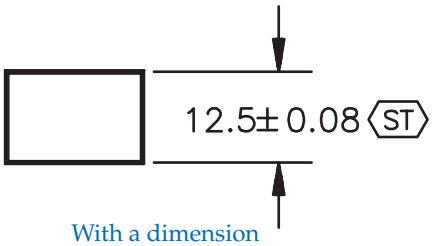
GD&T Symbol Creation *(continued)*



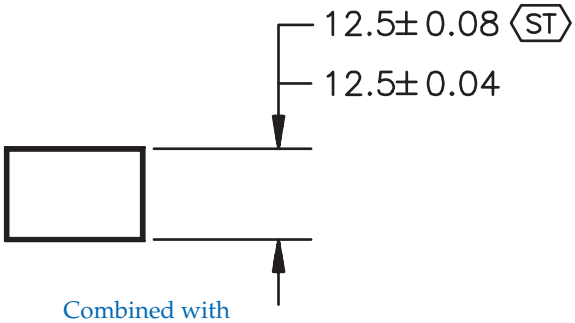
Between



Statistical Tolerance



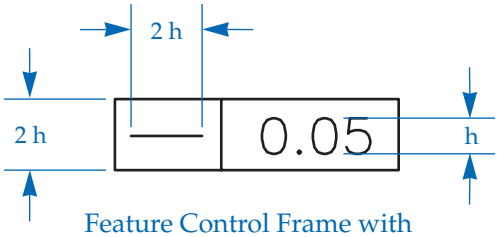
With a dimension



Combined with conventional tolerance

In the feature control frame

Statistical Tolerancing Methods



Feature Control Frame with Straightness Geometric Symbol

h = lettering height

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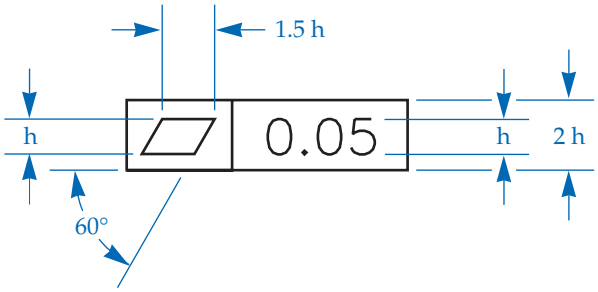
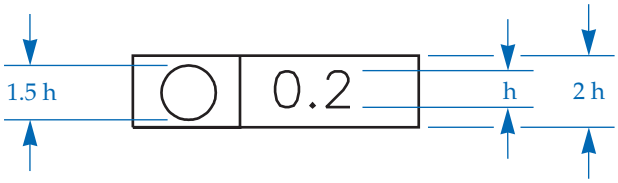
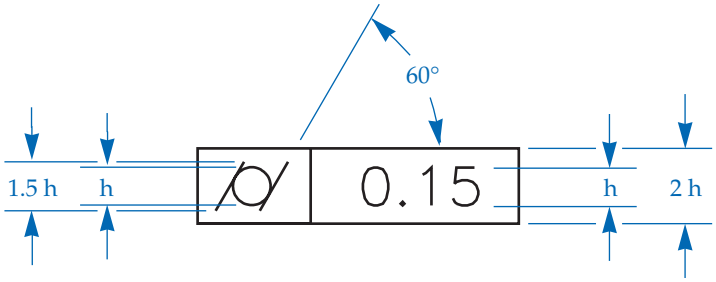
GD&T Symbol Creation *(continued)*



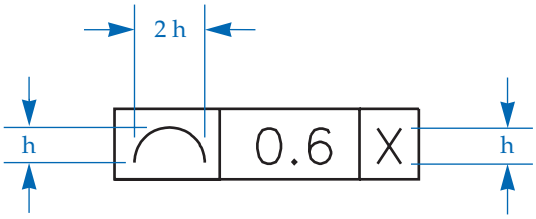
Feature Control Frame with the Flatness Geometric Characteristic Symbol



Feature Control Frame with Circularity Geometric Characteristic Symbol



Feature Control Frame with Cylindricity Geometric Characteristic Symbol



Feature Control Frame with Profile of a Line Geometric Characteristic Symbol and a Datum Reference

h = lettering height

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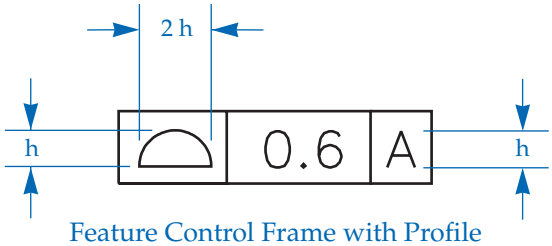
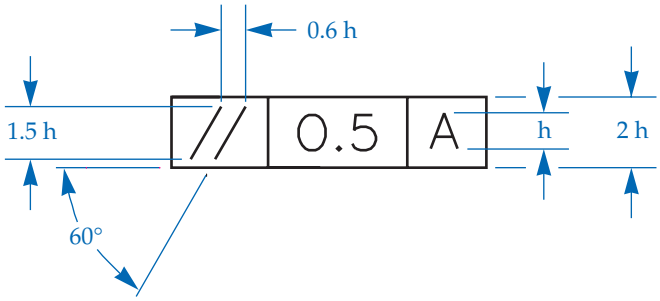
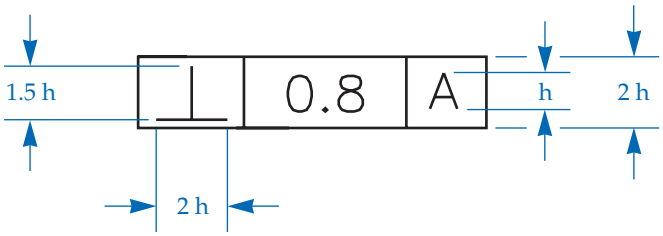
GD&T Symbol Creation *(continued)*



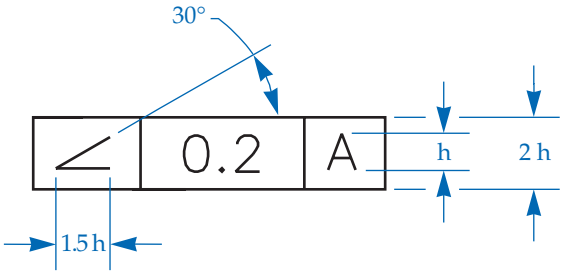
Feature Control Frame with Profile of a Surface Geometric Characteristic Symbol and a Datum Reference



Feature Control Frame with Parallelism Geometric Characteristic Symbol and a Datum Reference



Feature Control Frame with Perpendicularity Geometric Characteristic Symbol and a Datum Reference



Feature Control Frame with Angularity Geometric Characteristic Symbol and a Datum Reference

h = lettering height

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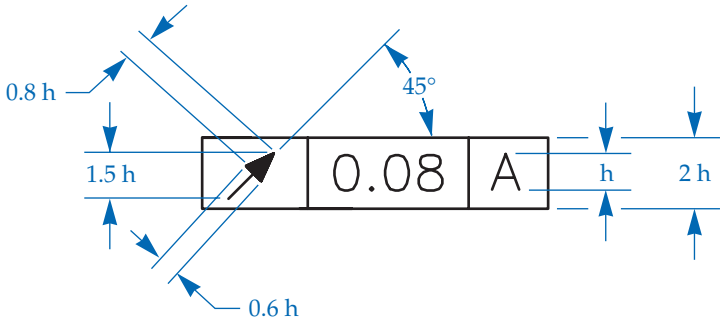
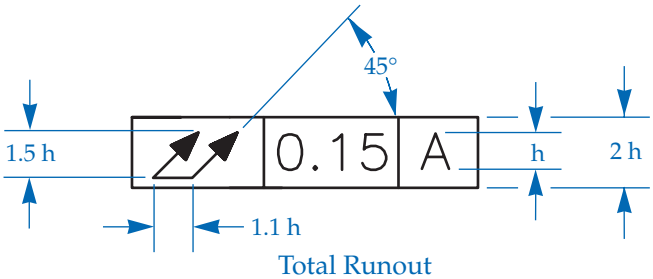
GD&T Symbol Creation *(continued)*

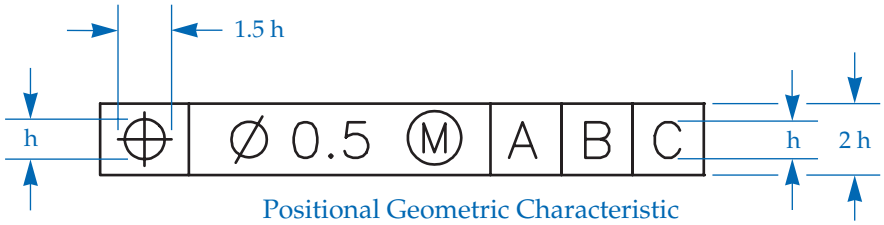


Circular Runout

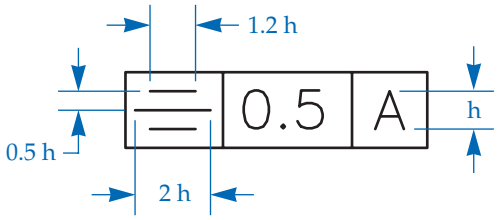


Total Runout

Runout symbols may be drawn open or filled



Positional Geometric Characteristic
Symbol and Tolerance in a Feature Control
Frame with Three Datum References



Feature Control Frame with Symmetry
Geometric Characteristic
Symbol and a Datum Reference

h = lettering height

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To create GD&T symbols as text, create a style using the gdt.shx, GDT_IV25, or GDT_IV50 font. Then use the lowercase alphabet to type the symbols. The following table shows the symbol produced by each lowercase letter.

Lowercase Letter	Symbol Produced
a	∠
b	⊥
c	⏥
d	⌓
e	○
f	//
g	⌭
h	↗
i	⌯
j	⌖
k	⌒
l	⌶
m	Ⓜ
n	∅
o	□
p	Ⓟ
q	⌀
r	◎
s	Ⓢ
t	⌰
u	—
v	⌴
w	∨
x	⌵
y	⌲
z	⏤

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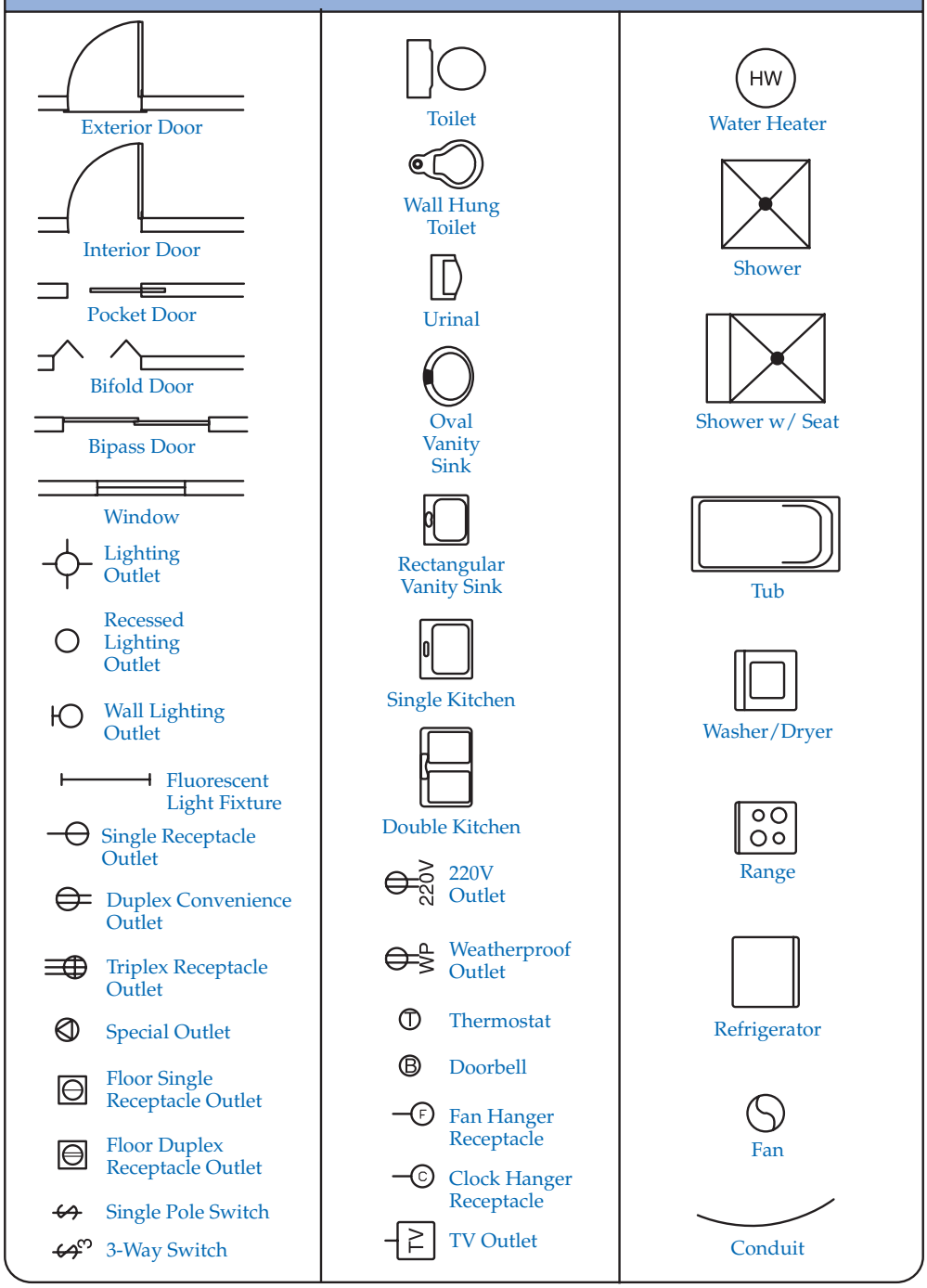
Other Symbols

Various industries have their own sets of standard symbols. The following tables show typical symbols for the architectural, piping, and electrical industries.

Common Architectural Symbols



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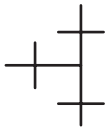
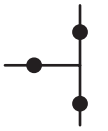
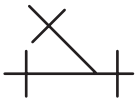
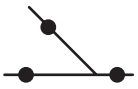
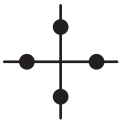
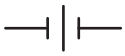
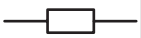
Single-Line Piping Symbols

	Screwed			Buttwelded		
Name	Left Side	Front	Right Side	Left Side	Front	Right Side
90° Elbow						
45° Elbow						
Tee						
45° Lateral						
Cross						
Cap						
Concentric Reducer						
Eccentric Reducer						
Union						
Coupling						

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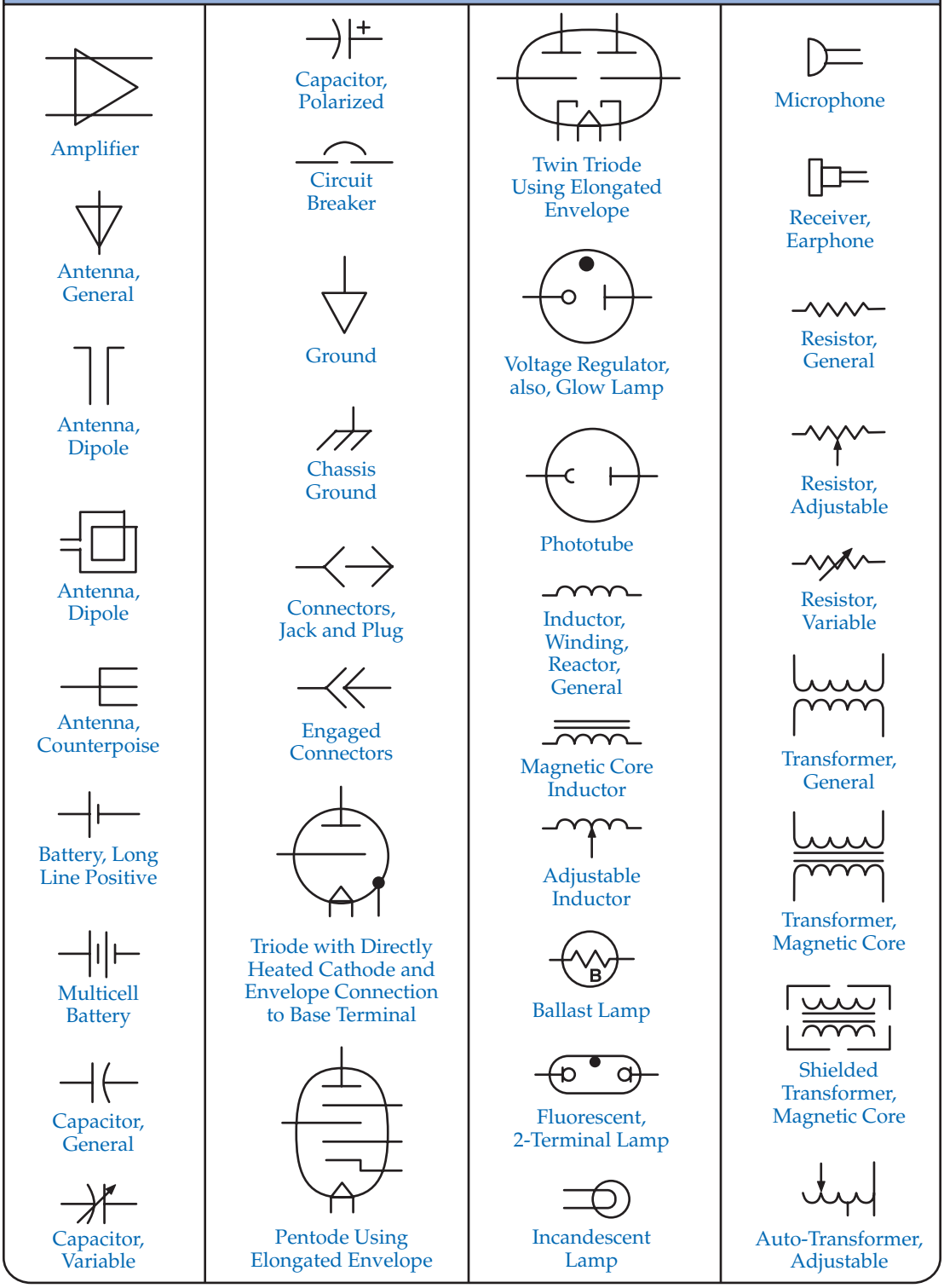
Common Symbols for Electrical Diagrams



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