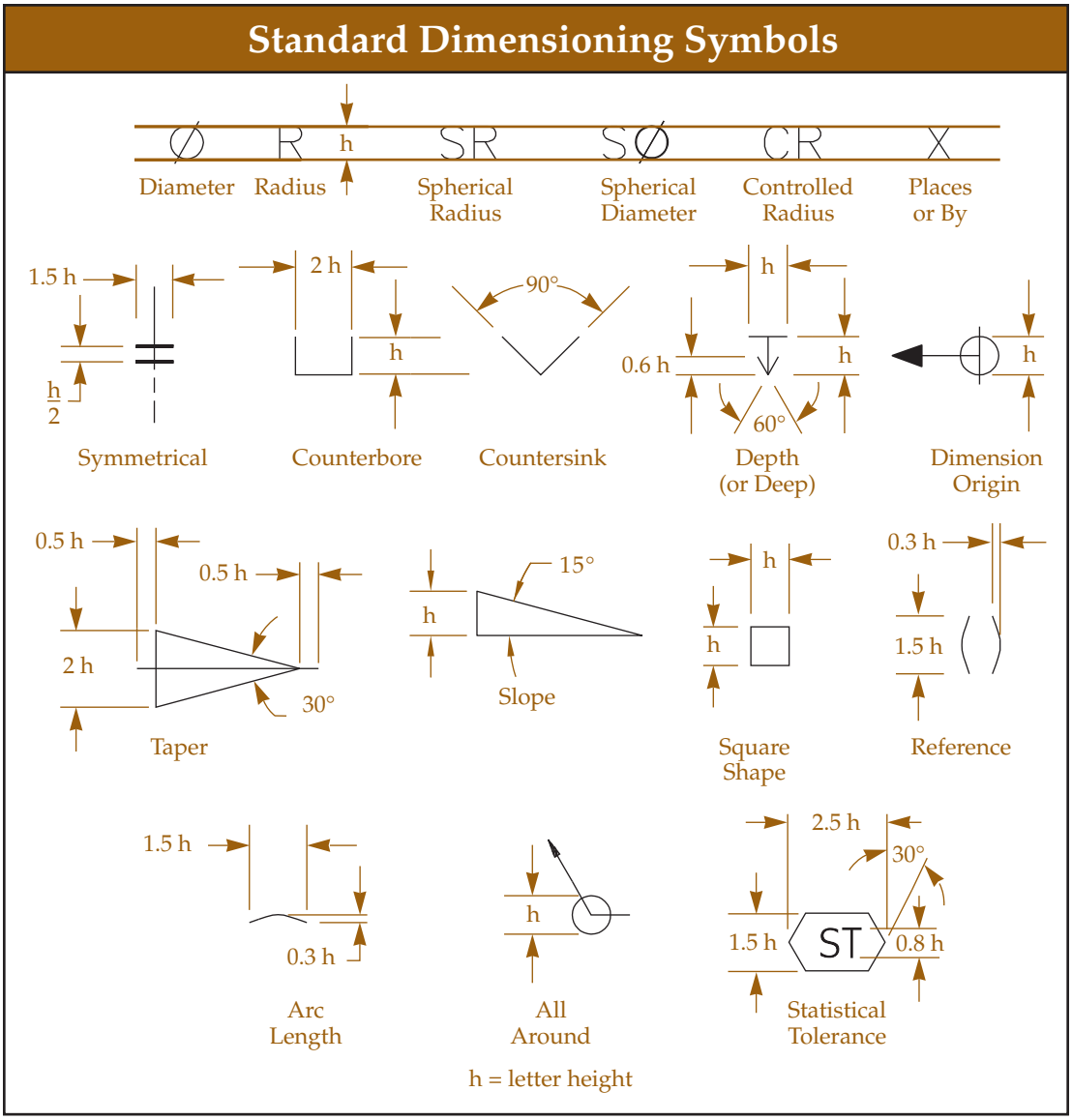
Drafting Symbols

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.

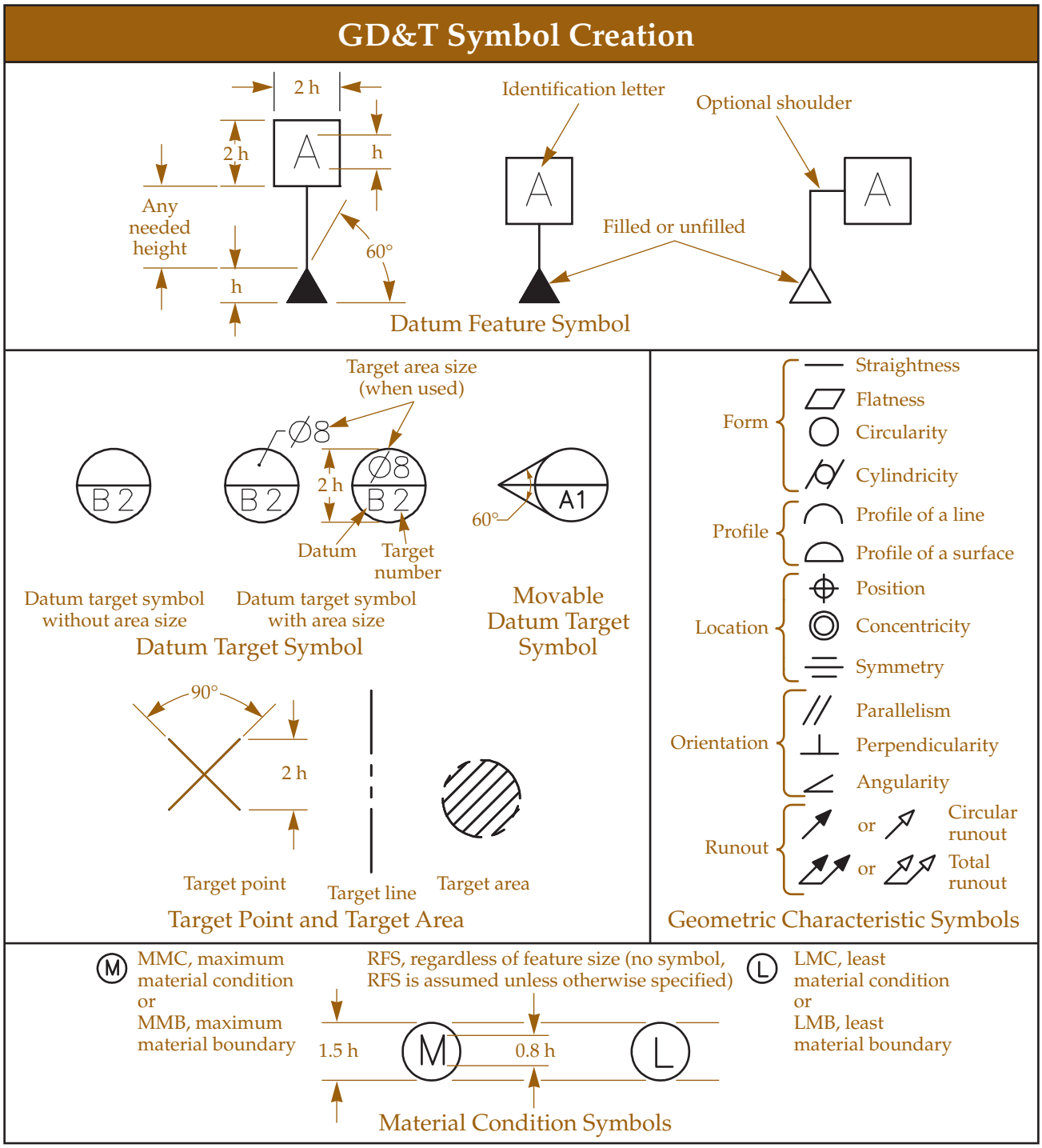
Standard Dimensioning Symbols



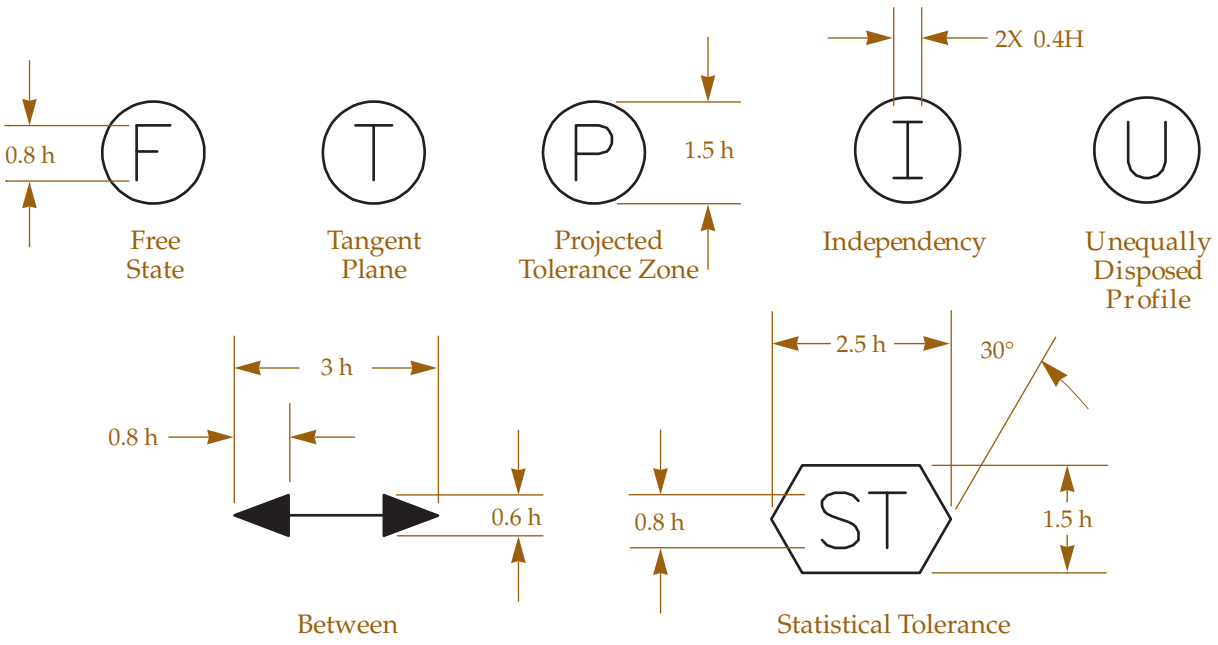
Geometric Dimensioning and Tolerancing Symbols

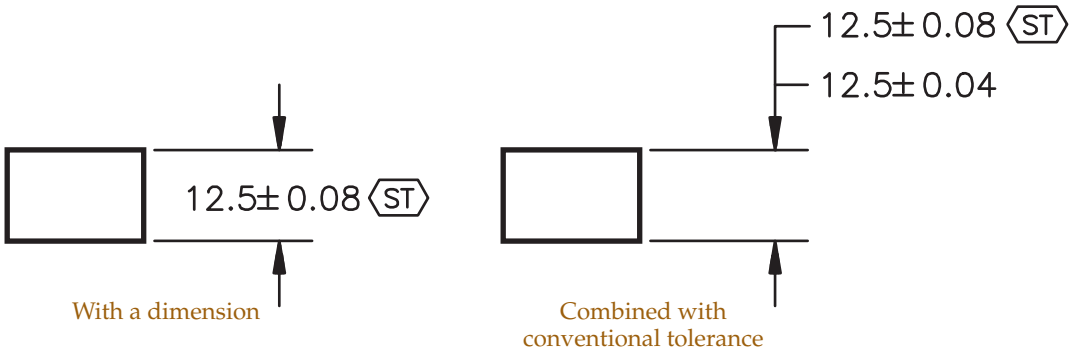
You can either create your own library of GD&T symbols, or use one of AutoCAD's GD&T fonts to insert the symbols as text. The following tables show how to construct the symbols.

GD&T Symbol Creation



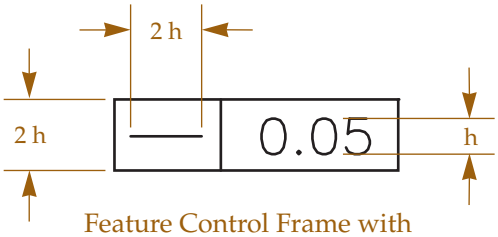
GD&T Symbol Creation





In the feature control frame

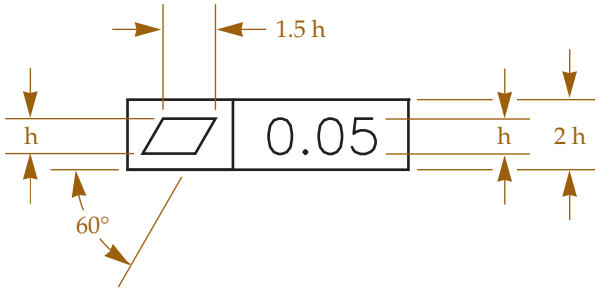
Statistical Tolerancing Methods



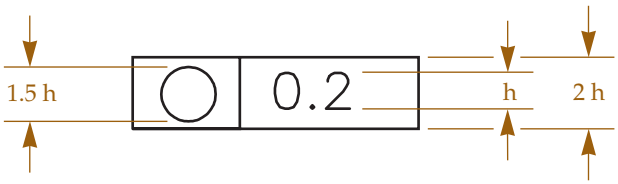
Feature Control Frame with Straightness Geometric Symbol

h = lettering height

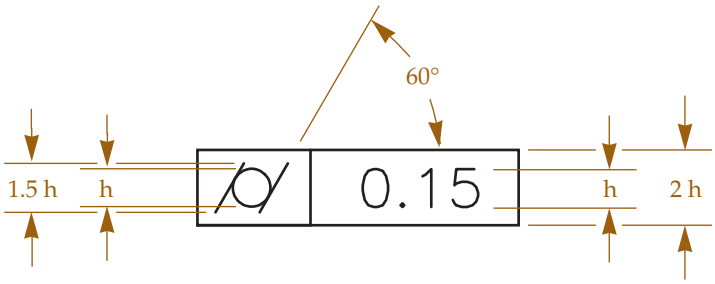
GD&T Symbol Creation



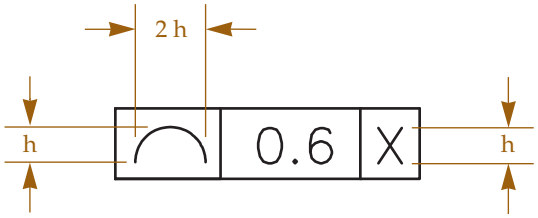
Feature Control Frame with Flatness Geometric Characteristic Symbol



Feature Control Frame with Circularity Geometric Characteristic Symbol



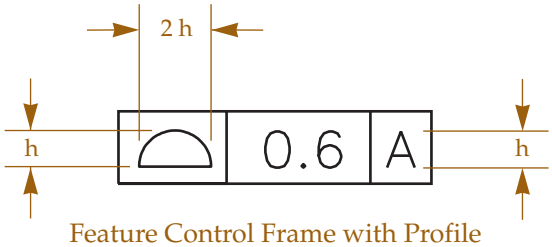
Feature Control Frame with Cylindricity Geometric Characteristic Symbol



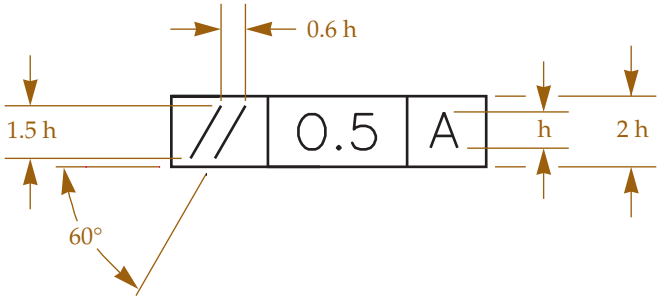
Feature Control Frame with Profile of a Line Geometric Characteristic Symbol and a Datum Reference

h = lettering height

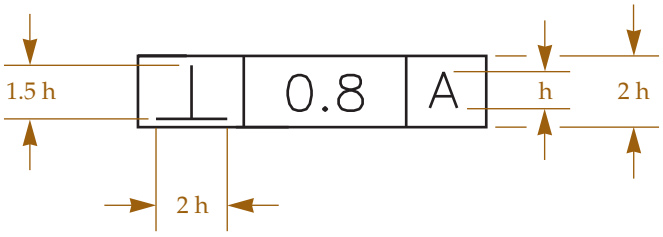
GD&T Symbol Creation



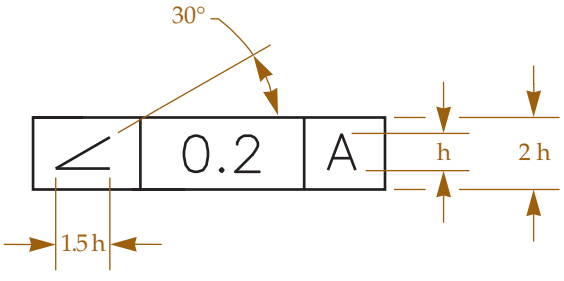
Feature Control Frame with Profile of a Surface Geometric Characteristic Symbol and a Datum Reference



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



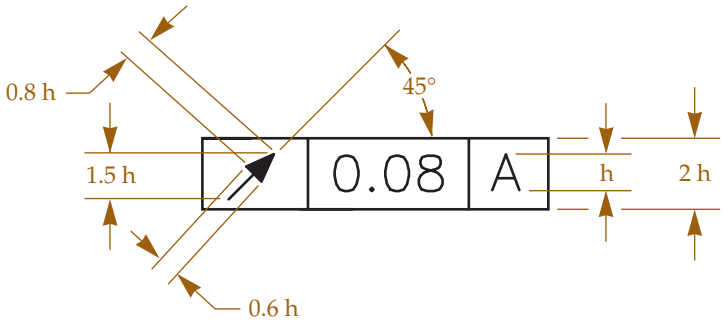
Feature Control Frame with Perpendicularity Geometric Characteristic Symbol and a Datum Reference



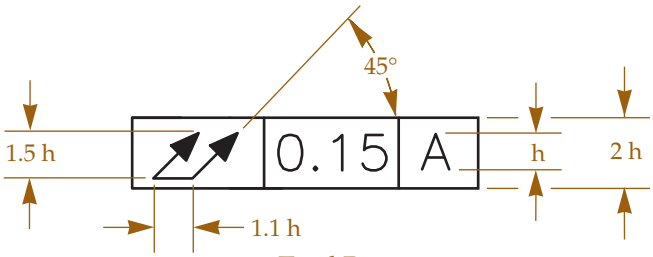
Feature Control Frame with Angularity Geometric Characteristic Symbol and a Datum Reference

h = lettering height

GD&T Symbol Creation

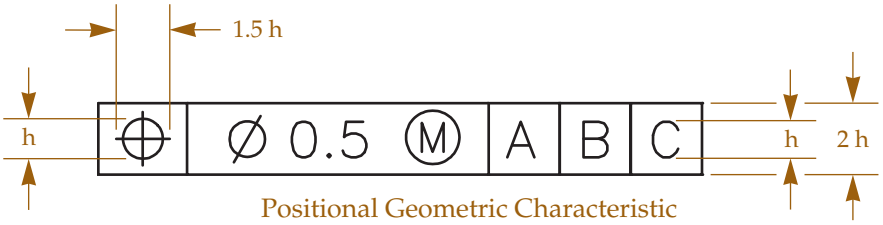


Circular Runout

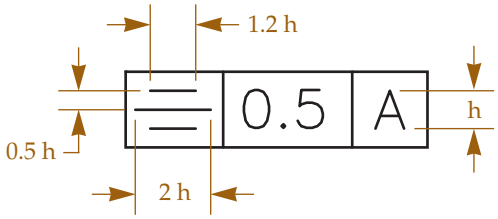


Total Runout

Runout symbols may be drawn open or filled



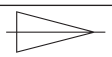
Positional Geometric Characteristic
Symbol and Tolerance in a Feature Control
Frame with Three Datum References



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

h = lettering height

To create GD&T symbols as text, create a style using the gdt.shx 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	

Common Architectural Symbols


Exterior Door


Interior Door


Pocket Door


Bifold Door


Bypass Door


Window


Lighting Outlet


Recessed Lighting Outlet


Wall Lighting Outlet

Fluorescent Light Fixture


Single Receptacle Outlet


Duplex Convenience Outlet


Triplex Receptacle Outlet


Special Outlet


Floor Single Receptacle Outlet


Floor Duplex Receptacle Outlet

Single Pole Switch

3-Way Switch


Toilet

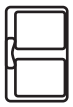

Wall Hung Toilet


Urinal


Oval Vanity Sink


Rectangular Vanity Sink


Single Kitchen Sink


Double Kitchen Sink

220V Outlet

Weatherproof Outlet

Thermostat

Doorbell

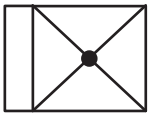
Fan Hanger Receptacle

Clock Hanger Receptacle

TV Outlet

Water Heater


Shower


Shower w/ Seat


Tub


Washer/Dryer

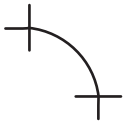
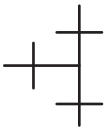
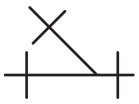
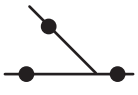

Range


Refrigerator

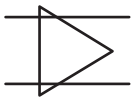

Fan

Conduit

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						

Common Symbols for Electrical Diagrams

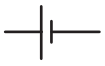

Amplifier

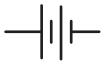

Antenna, General


Antenna, Dipole


Antenna, Dipole


Antenna, Counterpoise


Battery, Long Line Positive


Multicell Battery


Capacitor, General

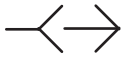

Capacitor, Variable


Capacitor, Polarized


Circuit Breaker

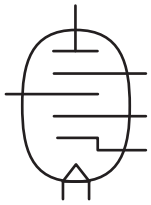

Ground

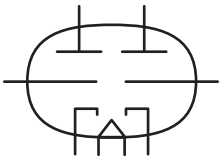

Chassis Ground

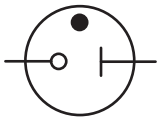

Connectors, Jack and Plug

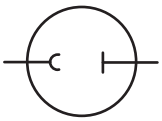

Engaged Connectors


Triode with Directly Heated Cathode and Envelope Connection to Base Terminal


Pentode Using Elongated Envelope


Twin Triode Using Elongated Envelope


Voltage Regulator, also, Glow Lamp


Phototube


Inductor, Winding, Reactor, General


Magnetic Core Inductor


Adjustable Inductor

Ballast Lamp


Fluorescent, 2-Terminal Lamp


Incandescent Lamp

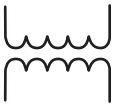

Microphone


Receiver, Earphone


Resistor, General


Resistor, Adjustable


Resistor, Variable


Transformer, General


Transformer, Magnetic Core


Shielded Transformer, Magnetic Core


Auto-Transformer, Adjustable