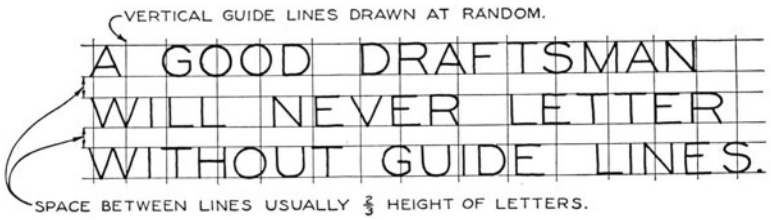
Draw Letters and Numbers Using Single-Stroke Gothic Font

IN A TECHNICAL DRAWING, the information communicated with text is critical. Producing clear and consistent letters can be time-consuming. Over the years, the industry developed a standard so you can quickly produce high-quality lettering. It is based on a single-stroke technique. This method divides all letters and numbers into a series of straight or curved strokes. The overall composition allows for easy reading.



Objective:

Describe vertical freehand lettering and single-stroke Gothic lettering.

Key Terms:

Ames Lettering Guide
composition
font
guidelines
single stroke

Vertical Freehand and Single-Stroke Gothic Lettering

Vertical freehand lettering is the standard style in the drafting industry because it is important to quickly produce high-quality lettering. However, single-stroke Gothic lettering is the standard for engineering drawings. Many employers require entry-level drafters to have good lettering skills. There are basically four main areas of importance in vertical lettering: capital letters, numbers, composition, and guidelines.

CAPITAL (UPPERCASE) LETTERS

Capital (uppercase) letters are used the majority of the time. There are essentially two line types used in vertical lettering: straight and curved. The following letters are composed of

straight lines: A, E, F, H, I, K, L, M, N, T, V, W, X, Y, and Z. Drafting students should become familiar with these letter forms and the strokes needed to produce them. Because these letters are made of single-stroke elements, it is important not to combine the strokes. Combined strokes can result in curved lines where straight lines should be used. It is good practice to develop a technique in terms of which lines to produce first. For instance, some drafters produce the horizontal lines first, then the verticals, and then the diagonals. Following this method for each letter helps to keep the lengths constant and the letters parallel.

FIGURE 1. Straight lines are used to produce letters such as V, W, X, Y, and Z.

The following letters contain curved lines (arcs): B, C, D, G, J, O, P, Q, R, S, and U. There are only a few different sizes of arcs or circles. It is recommended that you develop a technique for small arcs and larger circles. They should be produced in a series of single strokes. For example, the O should be two large arcs—one for each side. It is easier to produce a consistent round arc than a circle. The same stroke is then used for the D, C, and Q. As with the straight line letters, a system should be developed where the vertical lines are produced first and then the arcs.

FIGURE 2. Letters such as B, C, and D are developed using curved lines.

NUMBERS

The same steps used to produce the two letter types can also be used for numbering. On structural and architectural drawings, fractions are common. Typically, fraction numbers should be the same size or slightly shorter than the other numbers used in the drawing. The fraction bar should be drawn horizontally. In some cases, a diagonal may be used. The fraction bar can be drawn horizontally or diagonally, but it should not come in contact with the fraction numbers. A space of 0.6 in. (1.5 mm) between the numbers is recommended. The placement of the decimal in a decimal dimension is important. If the decimal point is too light or too close to the surrounding numbers, it may not be visible. Consequently, the dimensions may be incorrect, resulting in major problems down the line. Therefore, make the decimal point dark and bold. Also, allow enough space between the numbers so the decimal point can be seen clearly.

COMPOSITION

Composition is the process of placing letters within words and words within sentences in a unified and artistic manner. It allows for easy reading and clarity. As a general rule, curved

FURTHER EXPLORATION...

ONLINE CONNECTION: Freehand Lettering and Composition

Learning freehand lettering can be a long process. However, practice can make you quick and accurate. It is important for the lettering to be clear and to be done quickly. Many books exist to help people learn and practice lettering. Some of these books are now available free through Google books. You can browse through them online and learn techniques and efficient ways to practice perfect lettering.

To access these books, go to the Web site below:

http://books.google.com/books?q=freehand+lettering+composition

letters should be placed closer together. Meanwhile, straight letters should be placed farther apart. Good lettering composition is achieved when all the letters in a word appear to have the same amount of space between them.

GUIDELINES

To draw letters consistently, guidelines are used. **Guidelines** are very lightly drawn horizontal lines equal to the height of letters in distance apart. They are used to draw letters of a consistent height. When using guidelines, you must extend each letter directly to the guidelines. If a letter or two goes beyond or falls short of the guideline, it creates an uneven look. This can make it difficult to read. The **Ames Lettering Guide** is commonly used to make guidelines; it is a lettering aid for drafting.

SINGLE-STROKE GOTHIC LETTERING

Single-stroke Gothic lettering is the standard style of lettering for engineering drawings. It is used to convey information (e.g., notes and titles). Almost all technical drawings have a combination of drawing and lettering to convey information.

Single-stroke Gothic lettering is a modified form of the Gothic letter font. A **font** is a complete set of letters and numbers in a particular style. If the lettering is a **single-stroke**, each letter consists of a single, straight, or curved line element. This makes it easy to draw and to read. Vertical uppercase Gothic letters have become the industry standard. However, inclined and lowercase Gothic letters are also used.

Standards

The American National Standards Institute (ANSI) established the standard for lettering in 1935. The standard is now conveyed by the American Society of Mechanical Engineers (ASME). It is located in its document *Line Conventions and Lettering*.

The minimum recommended lettering size on engineering drawings is 0.12 in. (3 mm). All notes, dimension numerals, and other lettered information should be the same height, except for titles, drawing numbers, section and view letters, and other captions. Their height should be 0.24 in. (6 mm).

Summary:

Vertical freehand lettering is the standard style of lettering in the drafting industry. It is important to quickly produce high-quality lettering. There are basically four main areas of importance in vertical lettering: capital letters (uppercase), numbers, composition, and guidelines. Composition is important in lettering because it allows for easy reading and clarity. Guidelines are also necessary to achieve a consistent height.

The standard style for engineering drawings is single-stroke Gothic lettering. The American National Standards Institute (ANSI) established this standard. With a single stroke, each letter consists of a single, straight, or curved line element.

Checking Your Knowledge:

1. What are the two line types used in freehand lettering?
2. What is composition?
3. For what reason are guidelines used?
4. What is the standard style of lettering used in engineering drawings?
5. What is a font?

Expanding Your Knowledge:

Experienced drafters can create freehand lettering quickly. In fact, most of them do all of their writing in the same style. A great way to practice and improve your freehand lettering is to start writing everything in this manner, such as your notes in other classes. At first, it may take you longer to write things down, but it will certainly improve your skills and speed.

Web Links:

American Design and Drafting Association
http://www.adda.org/

Guidelines
http://fedohills.net/new/wp-content/uploads/basic-draughting-guidelines.pdf

Technical and Engineering Drawing
http://drawsketch.about.com/od/technicaldrawing/Technical_Drawing_Engineering_Drawing.htm

Mechanical Lettering
http://www.tpub.com/engbas/3-35.htm