

LETTERING AND NUMBERING

GENERAL REQUIREMENTS AND METHODS

1. GENERAL

1.01 This section covers the general requirements and methods for lettering and numbering.

1.02 This section, previously numbered 460-560-201, is reissued to change the number, revise the title, and include information on the application of protective coatings.

1.03 Detailed requirements for designating specific pieces of apparatus and equipment are covered in the AA Series of the Bell System Practices.

2. TOOLS AND MATERIALS

2.01 Set, lettering and numbering, R-2315.

2.02 Set, shellac, AT-6182.

2.03 Cloth, KS-2423, or cheesecloth.

2.04 Trichloroethylene, stabilized, KS-8372.

2.05 Orange shellac.

2.06 White shellac.

2.07 Clear varnish.

2.08 Petrolatum.

2.09 Petroleum spirits, KS-7860.

2.10 Shellac solvent.

3. GENERAL REQUIREMENTS

A. Color and Sizes of Characters

3.01 The actual designations to be stenciled on any particular piece of equipment shall be those shown in the Bell System Practices, on drawings, or on circuit labels.

3.02 When it is necessary to provide additional stamping or to restamp existing equipment, the stamping of the original installation, if practicable, should be followed. Use the same color except that white shall be used instead of aluminum on all hard-rubber surfaces. White shall be used instead of yellow for fuse-capacity designations.

3.03 Use black ink on light surfaces and white ink on dark surfaces, depending on which gives the better contrast. Use white ink to designate the capacity of fuses.

3.04 Vermilion red is used for stamping caution notices.

3.05 Where stamping is required on transparent plastic surfaces, white ink shall be used.

3.06 Where the sizes of characters to be used for designating any equipment are not specified, in the Bell System Practices, on drawings, or on circuit labels, they shall agree as nearly as possible with the sizes shown on the equipment it most closely resembles.

3.07 It is ordinarily more important to use the proper size characters than to locate the stamped characters in the exact location indicated. It is, therefore, satisfactory to locate the characters slightly to the right or left, higher or lower than indicated in order to use the size of characters specified.

3.08 Where there is not sufficient space for the complete designation in the location specified, or in a slightly changed location, as outlined in 3.07, reduce the size of characters rather than change the designation. In this case, use the largest size of characters that will fit the space available.

3.09 Instructions may occasionally be encountered which show 1/2-inch characters; in such cases use the 3/8-inch size. Where 1/4-inch characters are specified, use the 3/16-inch size.

B. Quality of Rubber Stamped Characters

3.10 All stamped characters shall be relatively free from open spots in the printed portion of the characters, and the open portions of the characters shall not be filled with ink.

C. Spacing of Rubber Stamped Characters

3.11 Table A shows the average space required for 1 to 10 characters and for 1 to 3 spaces between words. When space permits, the space between adjacent lines of characters shall be approximately half the height of the larger characters involved. Recommended spacings may be reduced when space limitations dictate such procedure.

Caution: Care should be taken in using trichloroethylene to insure that the locality where it is being used is well ventilated.

4.03 Before designating slate panels, use trichloroethylene to clean the portion to be designated. After the designations are dry, re-finish the surface by rubbing with petrolatum.

4.04 On certain surfaces, a thin undercoating of orange shellac on the surface to be stamped is useful in preventing absorption of the ink and resultant blurred and feathery-edged characters. Undercoating on such surfaces also facilitates the removal of characters, should this be necessary. Ordinarily, undercoating is not necessary.

TABLE A —AVERAGE SPACE REQUIRED (INCHES) FOR RUBBER STAMP DESIGNATIONS					
NUMBER OF CHARACTERS OR SPACES	SIZE OF CHARACTERS				
	1/8 in.	3/16 in.	3/8 in.	3/4 in.	
C O N N E C T I O N	1	1/8	9/64	1/4	13/32
	2	1/4	9/32	1/2	51/64
	3	3/8	27/64	3/4	1-13/64
	4	1/2	37/64	1	1-19/32
	5	5/8	23/32	1-1/4	2
	6	3/4	55/64	1-1/2	2-13/32
	7	7/8	1	1-3/4	2-51/64
	8	1	1- 9/64	2	3-13/64
	9	1-1/8	1- 9/32	2-1/4	3-19/32
	10	1-1/4	1-27/64	2-1/2	4
	1	1/16	3/32	3/16	9/32
	2	1/8	3/16	3/8	9/16
	3	3/16	9/32	9/16	27/32

C. Preparing the Ink

4.05 Squeeze a small amount of ink on the R-1373 inking plate furnished in the lettering and numbering set. Clean ink from threads of tube and replace cap to prevent ink from drying.

4.06 With a putty knife, spread a portion of the ink into a thin even film about 2 inches square. When the ink film becomes too dry or uneven from use, push the ink film back into the fresh ink, mix, and spread out a new film.

4.07 If the ink in a tube becomes too thick for use, replace it with a fresh tube.

D. Stamping Designations

4.08 Ink the face of the rubber stamp by pressing it lightly against the ink film. Make sure an even coating of ink is obtained on the character.

4.09 Stamp the equipment, applying from light to heavier pressure, according to the size stamp used, in a slight circular motion.

E. Placing Stripes

4.10 Stripes may be made by using the letter I of the size which will make a stripe of the required width. Hold the stamp in a vertical position and draw it back and forth along a guide. Thinning the ink with a few drops of trichloroethylene may be desirable.

4. METHOD OF PLACING DESIGNATIONS

A. Stamping Operations in Relation to Mounting, Wiring, Adjusting, and Testing

4.01 In determining when to apply designations, give consideration to the economies which may be realized by placing the designations prior to mounting, wiring, adjusting, and testing.

B. Preparing Surface

4.02 With a small piece of cloth moistened with trichloroethylene, clean any oily deposit or other foreign matter from the surface to be stamped.

F. Horizontal and Vertical Alignment of Stamped Characters

4.11 Alignment of characters may be accomplished by any method which will produce good results. Where it is necessary to place guide lines on finished surfaces, a standard red pencil should be used. These markings can be wiped off easily with a damp cloth after the ink has dried. *Do not use a lead pencil for drawing guide lines, as such markings cannot be removed without impairing the finish.*

G. Applying Protective Coatings

4.12 A protective coating may be applied to any designations as required, except that a protective coating shall not be applied over designations on gray enameled, zinc plated, or similar light finished surfaces, or on switchboard and desk woodwork exposed to view, unless otherwise specified.

4.13 Clear varnish should be used for the protective coating where sufficient time can be allowed for complete drying of the ink before the varnish coating is applied.

4.14 Where a protective coating is required for stamped characters on exposed metal surfaces over which no wiring paths are run, such as on the front and rear faces of die castings for carrier plug-in units, a coat of fresh white shellac may be applied.

4.15 When used on molded plastic terminal strips, orange shellac has a tendency to discolor the designations. For this reason, clear varnish should be used exclusively for this type of terminal strip.

4.16 The protective coating should be applied uniformly and only to an area slightly larger than the designation which it covers. Use care to avoid excessive brushing as this may blur the ink.

H. Removing Rubber Stamped Designations

Fresh Ink Designations

4.17 Fresh ink designations may be wiped off with a small piece of cloth moistened with trichloroethylene. Confine the wiping to as small an area as possible to avoid an extensive retouching job.

4.18 The small brush, which is a part of the lettering and numbering set, or a piece of cloth wrapped around the end of the handle of the brush, dampened with trichloroethylene, may be found useful for removing individual characters from a group.

Hardened and Lacquer Ink Designations

4.19 When removing hardened ink from cellulose acetate butyrate (transparent plastic) surfaces, KS-7860 petroleum spirits should be used.

4.20 Lacquer ink designations and other stamped ink designations, which have become so hardened as to make their removal with trichloroethylene impracticable, may be removed with R-2121 multiple marking remover, furnished in the lettering and numbering set.

Caution: Use care not to get multiple marking remover on other equipment, cable, wiring, or clothing.

4.21 Dip the small brush into the bottle of multiple marking remover and thoroughly remove the excess from the bristles by wiping the brush on the edge of the bottle. With the brush, trace the designations to be removed several times.

4.22 The time required for the multiple marking remover to soften the ink will vary with the hardness of the ink, but ordinarily only a few seconds are required. Being careful to apply the solvent only to the designations to be removed and not leaving it on top too long, will minimize the possibility of the finish being impaired. Wipe off the softened ink with a clean cloth and then clean the surface with a cloth moistened with trichloroethylene.

Designations with a Protective Coating

4.23 Designations which have been shellacked or varnished may be removed by rubbing with a cloth moistened with shellac solvent. Use a clean cloth to wipe off all traces of the shellac or varnish before it dries. The surface may be cleaned further with trichloroethylene, if necessary.

Impaired Finish of Stamping Surface

4.24 If the finish has been impaired, retouch with the standard paint or enamel which matches the color of the background upon which the designations appear.

4.25 Rub slate panels with petrolatum after designations have been removed. If new designations are to be placed, rub panel with petrolatum after these designations have dried.

4.26 Do not use petrolatum on asbestos composition panels, as the finish will be damaged. Remove any oil from these panels with KS-7860 petroleum spirits.

I. Maintenance of Tools

Condition of Rubber Stamps

4.27 Check that rubber stamp sets are complete, that the stamps are clean and firm on the wooden sticks, and that the edges of the characters are not excessively rounded.

Cleaning Tools

4.28 Clean the stamps as often as necessary to secure clear designations and before replacing them in the carrying case. To clean stamps, use felt dauber wet with trichloroethylene and lightly tap stamps against wet dauber. Dry stamps by pressing against a clean cloth. If ink has hardened on stamps, apply R-2121 multiple marking remover with a small brush, allow to remain a few seconds, then clean with trichloroethylene as above.

4.29 The trichloroethylene in the bottle can be used for a considerable time after it has become discolored. The presence of diluted ink on the dauber will not destroy its effectiveness in cleaning the rubber stamps.

4.30 Clean the ink from the threads of the ink tube and the cap before closing the tube for any length of time and screw the cap on tight. This will make the tube easy to open.

4.31 Clean the ink from the plate with trichloroethylene before the ink dries, and wipe with a clean cloth.

4.32 Clean and wipe off the putty knife.