METRIC
MIL-STD-2410(DMA)
31 JANUARY 1995
SUPERSEDING
MIL-STD-600005
30 AUGUST 1990
and
Standard Printing Screen Catalog
For MC&G Data and Related Products
April 1982

Note - The cover page of this standard has been changed for administrative reasons. There are no other changes to this document.

DEPARTMENT OF DEFENSE STANDARD PRACTICE

MAPPING, CHARTING & GEODESY REPRODUCTION AND PRINTING

AMSC N/A

AREA: MCGT

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

FOREWORD

1. This Interface Standard is approved for use by all Defense Mapping Agency, and is available for use by all Departments, and Agencies of the Department of Defense.

2. Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Director, Defense Mapping Agency, ATTN: TIJ, ST A-10, 8613 Lee Highway, Fairfax, VA 22031-2137 by using the Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

TABLE OF CONTENTS

PARAGRAPH	TITLE	PAGE
1.	SCOPE	1
1.1	Scope	1
1.2	Purpose	1
1.3	Applicability	1
1.4	Security	1
2	APPLICABLE DOCUMENTS	2
2.1	Government documents	2
2.1.1	Specifications, standards, and handbooks	2
2.1.2	Other Government documents, drawings, and publications	2
2.2	Non-Government publications	2
2.3	Order of precedence	2
3	DEFINITIONS	3
3.1	Area pattern screen	3
3.2	Line pattern	3
3.3	Lithography	3
3.4	Mask	3
3.5	Mechanical registration	3
3.6	Moiré	3
3.7	Posicut	3
3.8	Process color printing (lithography)	3
3.9	Register	3
3.10	Reproduction	3
3.11	Reproduction material (reproducible)	3
3.12	Screen angle (photography)	3
4	GENERAL REQUIREMENTS	4
4.1	Requirements for reproduction	4
4.2	Requirements for printing	4
4.3	Intended use for reproduction and printing standards	4
5	DETAILED REQUIREMENTS	5
5.1	Reproduction requirements	5
5.1.1	Paper	5
5.1.2	Registration of reproduction materials	5
5.1.3	Copy identification	5
5.1.4	Masking	6
5.1.4.1	General rules for feature masking	6
5.1.4.2	General rules for halo masking	7
5.2	Dot Tint (Round Dot) Screens	8
5.3	Biangle Screens	8
5.4	Line Patterns	9
5.5	Area Patterns	9
5.6	Posicuts	10
5.6.1	Posicut Engineering Drawings	10
5.7	Printing Colors	10
5.7.1	Standard Printing Colors (SPC)	10
5.7.2	Process Printing Colors	11

PARAGRAPH	TITLE	PAGE
5.8	Type Specifications	11
6	NOTES	12
6.1	Intended use	12
6.2	Issue of DODISS	12
6.3	Supersession	12
6.4	Subject term (key word) listing	12
6.5	Standardization agreements	12
6.5.1	International Standardization Agreements (STANAGs)	12
APPENDIX A	Dot Tint (Round Dot) Screens	13
APPENDIX B	Biangle Screens	19
APPENDIX C	Line Patterns	22
APPENDIX D	Area Patterns	28
APPENDIX E	Posicuts & Posicut Engineering Drawings	44
APPENDIX F	Type Specifications - Swiss 742	96
INDEX		104
CONCLUDING MATERIAL		106

1. SCOPE

1.1 Scope. This standard defines MC&G reproduction and printing and requirements for lithographic products produced by the Defense Mapping Agency (DMA). Included are detailed specifications for dot screens, area patterns (APs), line patterns (LPs), posicuts, and type styles.

1.2 Purpose. The purpose of this standard is to assure a uniformity of treatment among mapping, charting, and printing-reproduction elements, primarily DMA and its contractors, engaged in a coordinated production program for hardcopy lithographic products.

1.3 Applicability. This standard applies to both internal and contractual developmental efforts by the Defense Mapping Agency, and to all levels involved in the preparation and maintenance of lithographic MC&G products.

1.4 Security. This Military Standard is UNCLASSIFIED. The symbology and technical specifications presented herein may be used for classified graphic products where appropriate security provisions are added.

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications, standards and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issue of these documents are those listed in the current Department of Defense Index of Specifications and Standards (DODISS) and the supplement thereto, cited in the solicitation (see X.X).

MILITARY STANDARDS

MIL-STD-2402(DMA)	-	MC&G Symbology
MIL-STD-2408(DMA)	-	Glossary of MC&G Feature and Attribute Definitions

(Unless otherwise indicated, copies of federal and Military Specifications, standards, and handbooks are available from the Standardization Documents Order Desk, Bldg. 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094).

2.1.2 Other Government documents, drawings and publications. The following other Government documents and publications form a part of this standard to the extent specified herein.

a. DoD, DMA, Standard Printing Color Catalog for Mapping, Charting, Geodetic Data and Related Products.

b. DoD, DMA, Standard Printing Color Catalog (Process) for Mapping, Charting, Geodetic Data and Related Products.

c. DMA Standard Supporting Mark 90, Section 500 - Geographic Names

d. DMAINST 8152.1, Pin-Punch Registration for Small Format Material.

2.2 Non-Government publications.

This section is not applicable to this standard.

2.3 Order of precedence. In the event of a conflict between the text of this document and the references cited herein, the text of this document shall take precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. DEFINITIONS

3.1 Area pattern screen. A photographic negative or positive containing repetitively arranged small feature symbols, which have been designed to present a visual portrayal of a graphic feature (i.e., swamp, sand, etc.).

3.2 Line pattern. A photographic negative containing parallel lines of equal-sized widths, which are equally spaced. Line patterns are used for printing tones of color or to present a pattern of coverage for a graphic feature.

3.3 Lithography. A planographic method of printing based on the chemical repulsion between grease and water to separate the printing from the non-printing areas.

3.4 Mask. To block out an area by means of actinically opaque material, to prevent exposure in the part blocked out.

3.5 Mechanical registration. A pre-punch register system which is a system of precisely located holes punched in the margins of graphic materials, prior to their actual use.

3.6 Moiré. An interference pattern resulting from the overlaying or overprinting or halftones of tints whose screen angles are not sufficiently separated to make the pattern inconspicuous or to preclude a pattern accuracy.

3.7 Posicut. A unique graphic symbol with a fixed geometry and used primarily for point features.

3.8 Process color printing (lithography). A technique for the reproduction of a graphic in full color rendition, by combining tones of the subtractive primary colors (yellow, magenta, cyan) and black.

3.9 Register. The correct position of one component of a composite graphic image in relation to the other components, at each stage of reproduction.

3.10 Reproduction. The summation of all the processes in printing copies from an original drawing or a printed copy of an original drawing made by any of the processes of reproduction.

3.11 Reproduction material (reproducible). Any copy capable of being used as a master-to-be. May be either a negative or positive transparency.

3.12 Screen angle (photography). The angle which rows of halftone dots make with the vertical when right-reading. The angle is measured clockwise with 0 degrees at 12 o'clock.

4. GENERAL REQUIREMENTS

4.1 Requirements for reproduction. Reproduction of most of MC&G graphic products shall be by lithography. The final copy shall conform to the best lithographic standards with respect to clearness of copy, conformance to colors specified and accuracy of registration.

4.2 Requirements for printing. MC&G graphic products shall be printed on a good quality white lithographic finished map stock. Halftone negatives and other screened features shall be prepared with the specified screen angles to minimize the moiré pattern effect when features are overprinted. MC&G graphic products shall be printed using the screens, line and area patterns and colors as depicted in MIL-STD-2402. MC&G graphic products requiring the printing of more than five colors shall be printed using an approved five color process system. The process color printing system uses a known set of process printing colors and flat tint printing screens. Any process or modified process printing of MC&G graphic products is the responsibility of the producing agency. All printing in the U.S. Government is under the purview of the Joint Committee on Printing (JCP) of the U.S. Congress.

4.3 Intended use for reproduction and printing standards. The intended uses of MC&G graphic products typically fall into the following five categories: planning, navigation, target identification, gunfire support and target positioning. The users of these products require, in most instances, specific standards be met to assure mission goals are achieved.

5. DETAILED REQUIREMENTS

5.1 Reproduction requirements.

5.1.1 Paper. The JCP sets standards for paper that is produced by or for the U.S. Government. There are three basic types of paper used for the lithographic printing of most MC&G graphic products. They are as follows:

a. High Wet Strength Lithographic Map (JCP E-50) - used for all nautical graphic products including Combat Charts.

b. Offset Book Map, Lithographic Finish (JCP E-30) - used for aeronautical graphic products, City Graphics, and most book type graphic publications such as catalogs and trig lists.

c. Chemical Wood Map, Lithographic Finish (JCP E-40) - used for all topographic products such as the 1:50,000, 1:100,000, Joint Operations Graphic (Ground).

d. There are various other types of paper used for specific products. These will be identified in the assignment instructions. If a specified paper is not available in the needed size or quantity, substitutions of an appropriate quality paper may be made by the local authority.

5.1.2 Registration of reproduction materials. All reproduction materials shall be punch registered with hole and slot spacing in keeping with the size of the sheet formats.

a. Small format sheets shall be punch registered in accordance with DMA INST 8152.1, Pin-Punch Registration for Small Format Material, 3 April 1990.

b. Large format sheets shall be punch registered in accordance with the Universal pin-punch master.

5.1.3 Copy identification. Each piece of reproduction material shall be identified. The identification shall be located between the registration punch holes as negative see-through film emulsion images. The identification shall be 14 point Swiss 742 caps, or a reasonable equivalent, set on one line. If the terms exceed the space allowed between the punch holes, the security classification shall be extended beyond the second punch hole. The identification shall be comprised of the following items in the sequence listed:

a. Series number.

b. Sheet or key number for certain classified graphics.

c. Edition number.

d. Graphic feature.

e. Color.

f. Screen (when applicable).

g. Security classification.

Each piece of copy in the set of reproduction material for a classified sheet will show the security classification. The declassification note and restrictive dissemination notes are not included as part of the identification.

5.1.4 Masking. There are two primary types of masking:

a. Feature masking is a procedure to insure that inaccurate or undesirable overprints of one feature over another do not occur. A common example is the prevention of vegetation features from overprinting open water.

b. Halo Masking is a procedure that provides a 0.2 mm space or "halo" around type to prevent line work printed in the same color from coalescing with the type and causing reduced readability of the type.

5.1.4.1 General rules for feature masking. The following are general rules for feature masking:

a. All features are masked to prevent overprinting of route markers and airfields.

b. All woodland tint and vegetation patterns are masked to prevent overprinting of:

(1) Double-line streams and open water.

(2) Roads that are screened or printed in a color that has a daylight visual efficiency of less than 80% as listed on the color pages of the DoD, DMA Standard Printing Color Catalog for Mapping, Charting, Geodetic Data and Related Products.

(3) Horizontal control points.

(4) Populated place tints (except on City Graphics).

(5) Aeronautical symbols.

(6) Glacial areas.

c. Shaded relief and elevation tints are masked for:

(1) Populated place tints.

(2) Outlined airfield and aerodromes.

(3) Screened roads and roads printing in a color that have a daylight visual efficiency of less than 80% as listed on the color pages of the DoD, DMA Standard Printing Color Catalog for Mapping, Charting, Geodetic Data and Related Products.

(4) Drainage features such as intermittent lakes, dry lakes, mangroves, salt evaporators, Sabkha, Wadi, and wet sand.

(5) Permanent snow, ice, and glaciers (exception, shaded relief will not be masked for these features.

(6) Double line streams and open water.

(7) Relief Data Incomplete (RDI) areas.

d. Populated place tints are masked for roads.

e. On aeronautical products, the culture, projection, road and powerline features will be masked for:

(1) Aeronautical type.

(2) Vertical Obstruction(VO) symbol dot locators and type.

(3) Major airfields with runways.

(4) Special Use Air Space (SUAS) and Military Operations Area (MOA) type.

f. All drainage and open water are masked to prevent overprinting bridges.

Additional masking shall be performed to prevent undesirable or inaccurate overprinting of features due to unusual combinations of colors, symbols, screen, line and area patterns that result in a degradation of the readability of the product.

5.1.4.2 General rules for halo masking. The following are the general rules for halo masking:

a. On topographic and aeronautical graphic products and Combat Charts, a halo mask is required around all interior type printing in black that masks all culture line work and tree symbols. (The Terrain Analysis overlay products do not require this process.)

b. On City Graphics, a halo mask is required around street names that masks the three populated place tints.

c. On aeronautical products a halo mask is required around spot elevations that masks the shaded relief.

d. On features, grids and projections where the line identifier is positioned in the center of the line, such as grid ladder numbers and contour value numbers, a halo mask is required around the type to mask the linear feature. Additional halo masking shall be performed if unusual combinations of typography and features result in a degradation of the readability of the product.

5.2 Dot Tint (Round Dot) Screens. Dot screens are composed of parallel and perpendicular rows of equal-sized dots which are used to print tones of a different color. This SPS system involves the use of the 120-line and 240-line round dot screens. The identification of a dot screen relates to the screen's actual technical description; i.e., percent of tone (estimated area of ink coverage), line ruling, and the angle of orientation. Screen angles are measured clockwise, oriented from 0° at the 12 o'clock position. Dot screen angles range between 1° and 90°. Examples are as follows:

SCREEN DESCRIPTION	SPECIFICATION
12% tone, 120-line dot screen, oriented at 30°	12%-120D-30°
42% tone, 240-line dot screen, oriented at 30°	42%-240D-30°

The standards for these 120 and 240 dot screens are provided in terms of tolerances for the production negative quality and are provided in APPENDIX A, Table A-1 and A-2 of this standard. Use of the 100-Step Continuous Growth Scale, printed with the pages for the Standard Printing Color Catalog (See 2.1.2.a) is required for specifying the range of tone difference for the litho printed screens. Visual samples of the 120 and 240-line dot screens are provided in APPENDIX A, FIGURES A-1 and A-2. A screen generation chart (See APPENDIX A, FIGURE A-3), describes the conventional process flow from an original glass screen through a 3rd generation film production screen.

5.3 Biangle Screens. A biangle screen is a composite of two round dot screens of the same ruling with the angles oriented 30° apart. The biangle screens are used for screening thin line chart details and features to avoid loss of resolution when the detail and features are parallel with a normal angle-angle screen. The screens described herein are composites of two 240-line dot screens. Biangle screens are described in the same manner as dot tint screens, except that the two angles are shown. The screen angles are measured clockwise, oriented from 0° at the 12 o'clock position. The angles are identified between 1° and 90°. Examples of the biangle screen identification are as follows:

SCREEN DESCRIPTION	SPECIFICATION
31% tone, 240-line dot screen, oriented at 30° and 60°	31%-240D-30°/60°
42% tone, 240-line dot screen, oriented at 30° and 60°	42%-240D-30°/60°

The standards for these biangle screens are provided in terms of tolerances for the production negative quality and are provided in APPENDIX B, Table B-1 of this standard. Use of the 100-Step Continuous Growth Scale, printed with the pages for the Standard Printing Color Catalog is required for specifying the range of tone difference for the litho printed screens. Visual samples of the biangle screens are provided in APPENDIX B, FIGURE B-1.

5.4 Line Patterns. Line patterns are composed of parallel lines, consistently spaced and having the same line weight, which are used to print tones of a different color or to render a special effect over an area of a chart or map. Line pattern screens range from fine to very coarse lines. They are identified numerically with each number prefixed by the designation "LP". Example: LP-1 In addition to the LP identification, line patterns have a technical specification which defines the line pattern's percent of tone (estimated area of ink coverage), line ruling, and angle of the line orientation. The line pattern angles are measured clockwise, oriented from 0° at the 12 o'clock position. The angles of the patterns are identified between 1° and 180°. Examples are as follows:

SCREEN DESCRIPTION	SPECIFICATION
29% tone, 30-line ruling screen, oriented at 90°	29%-30L-90°
35% tone, 34-line ruling screen, oriented at 45° and 135°	35%-34L-45°/135°

The standards for these line pattern screens are provided in terms of line thickness variation allowed for the production negative quality and are provided in APPENDIX C, Table C-1 and C-2 of this standard. Visual samples of the line pattern screens are provided in APPENDIX C, FIGURE C-1.

5.5 Area Patterns. All small repetitively arranged feature symbol screens suitable for negative open window area application are area pattern screens. Area pattern screens are numerically identified with each number prefixed by the designation "AP". Example: AP-1. Most area patterns are prepared at a fixed angle, in which case the area pattern screen is marked "TOP" to enable proper alignment with the top of the printed sheet. All area pattern samples provided in APPENDIX D, FIGURE D-1 are shown in

the standard (default) orientation. Depending on the map or chart scale, projection and area feature size, some area patterns will require rotation to correctly portray the depicted features with ground truth. Example: AP-101 (Crescent Dunes) Computer generated area patterns shall be a direct equivalent of the master screens. Nongeometric random area patterns shall be a visual facsimile of the masters, modified to allow for edge matching of small "patch" or "tile" segments of the pattern to create large area patterns. Area patterns #150 through #158 are computer generated area patterns and are not available as standard film master screens.

5.6 Posicuts. Posicuts are standard (fixed geometry) graphic point symbols that may comprise a single symbol or may be used as components of a more complex symbology. Printed samples (actual size facsimiles) of the required posicuts are depicted in APPENDIX E, FIGURE E-1. Refer to MIL-STD-2402 for the specific use of posicuts with symbology.

5.6.1 Posicut Engineering Drawings. The Engineering Drawings provide the complete detailed specification (enlarged) graphics for all posicuts. In most cases the dimensions, radii, diameters and textual information provided is sufficient to fully specify the posicut. In those cases where a posicut has a very complex shape the complete specification cannot be effectively provided; in these cases a scaled grid is provided so that the dimensions can be derived by measuring directly from the drawing and scaling to the actual size. See APPENDIX E - Posicut Engineering Drawings.

5.7 Printing Colors. Printing colors specified for each symbol in MIL-STD-2402 are keyed to the Standard Printing Color Catalog (See 2.1.2.a). Exact color matches are required for all printing. Proofing color matches to the standard color will range in quality depending upon the process used and the functional purpose of the proof. The inks used in printing MC&G graphic products are formulated to provide a higher degree of fade resistance and other technical attributes than found in normal commercial inks. Ink procured from other than DMA sources must be formulated to provide the critical attributes of the colors in accordance with the Standard Printing Color Catalog (See 2.1.2.a) and Standard Printing Color Catalog (Process) (See 2.1.2.b) and shall meet a minimum of one year fade criteria.

5.7.1 Standard Printing Colors (SPC). The following list provides the primary range of standard printing colors used in printing MC&G graphic products. Refer to the Standard Printing Color Catalog (See 2.1.2.a) for printed samples of all standard printing colors.

SPC#	Color
44742	Violet
46351	Aero-Blue
48253	Cyan-Blue
52813	Green
57377	Yellow
57437	Yellow
58252	Brown
58753	Brown
58600	Black
60862	Red
61121	Red-Brown
90342	Magenta
95151	Purple
96532	Purple

5.7.2 Process Printing Colors. MC&G graphic products can be produced using different combinations of the SPC Process Printing Colors as necessary to avoid multiple printing press runs. The following process printing colors can be mixed/combined to obtain an acceptable equivalent to the required Standard Printing Color. Refer to the Standard Printing Color Catalog (Process) (See 2.1.2.b) for printed samples of process printing colors.

SPC#	Color (Process Printing)
58600	Black
48253	Cyan
90342	Magenta
57377	Yellow

5.8 Type Specifications. In the field of typography there is no standard method for measuring the point size of type. In addition, there are many variations of well known fonts, such as News Gothic and Univers. Therefore, it is necessary for DMA to adopt a specific commercial font type in order to standardize. The type adopted is the DMA standard for both letter form and point size. The list below specifies the required font, styles and sizes for this standard. The required Swiss 742 type fonts, styles and sizes are as follows:

Font	Style	Sizes
Swiss 742	Regular (Medium)	4 - 36 point
Swiss 742	Condensed	4 - 36 point
Swiss 742	Light Condensed	4 - 36 point
Swiss 742	Light Condensed Italic	4 - 36 point
Swiss 742	Italic	4 - 36 point
Swiss 742	Bold	4 - 36 point
Swiss 742	Bold Condensed	4 - 36 point

NOTE: The range specified (4-36 point) consists of the following font sizes: 4,5,6,7,8,9,10,12,14,16,18,20,24,30, and 36

6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use. This standard is intended to ensure reproduction and printing uniformity of product designers, producers and users.

6.2 Issue of DODISS. When this standard is used in acquisition, the applicable issue of DODISS must be cited in the solicitation (see 2.1)

6.3 Supersession. This standard supersedes MIL-STD-600005 dated 30 August 1990, and Standard Printing Screen Catalog for MC&G Data and Related Products dated April 1982.

6.4 Subject term (key word) listing.

Area pattern
Dot screen
Line pattern
Posicuts
Screen angle
Tint
Type style

6.5 Standardization agreements. Certain provisions of this standard are subject of international standardization agreement. When amendment, revision, or cancellation of this standard is proposed that will modify the international agreement concerned, the preparing activity will take appropriate action through international standardization channels, including departmental standardization offices, to change the agreement or make other appropriate accommodations.

6.5.1 International Standardization Agreements (STANAGs).

a. 1103 - Emergency Printing of Nautical Charts Published by NATO Country, Reprint by Another.

b. 3690 - Maximum Trimmed Paper Size of Maps for Use in the Field.

APPENDIX A

DOT TINT SCREENS

10. SCOPE

10.1 Scope. This APPENDIX provides the standards and tolerances for the 120 and 240-line round dot screens. This APPENDIX is a mandatory part of MIL-STD-2410 and the information contained herein is intended for compliance.

20. APPLICABLE DOCUMENTS

This section is not applicable to this APPENDIX.

30. REQUIREMENTS

30.1 The following pages provide the standards, tolerances and printed samples of the 120 and 240-line round dot screens used for printing for MC&G graphic products.

TABLE A-1:
120-LINE ROUND DOT SCREEN STANDARDS/TOLERANCES
(Bold type indicates the mean value)

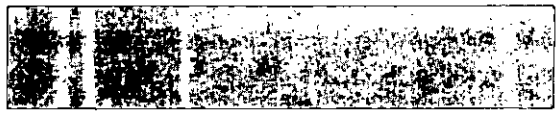
LITHO PRINT	FILM NEGATIVE			
SCREEN PERCENT[1] NAME/NUMBER	Dot Diameter Tolerance Range		Percent Tolerance Range	Optical Density[2] Tolerance Range
	Inches	Microns		
0	----- ----- -----	----- ----- -----	----- ----- -----	----- ----- -----
4	**0.00136** 0.00127 0.00145	**34.5** 32.3 36.8	**2.1** 1.8 2.4	**1.68** 1.62 1.74
7	**0.00199** 0.00188 0.00210	**50.6** 47.8 53.3	**4.5** 4.0 5.0	**1.35** 1.30 1.40
12	**0.00277** 0.00264 0.00290	**70.4** 67.1 73.7	**8.7** 7.9 9.5	**1.06** 1.02 1.10
21	**0.00375** 0.00360 0.00390	**95.3** 91.4 99.1	**15.9** 14.7 17.2	**0.80** 0.76 0.83
31	**0.00465** 0.00448 0.00482	**118.1** 113.8 122.4	**24.5** 22.7 26.3	**0.61** 0.58 0.64
42	**0.00542** 0.00524 0.00560	**137.7** 133.1 142.2	**33.2** 31.1 35.5	**0.48** 0.45 0.51
54	**0.00616** 0.00596 0.00636	**156.5** 151.4 161.5	**42.9** 40.2 45.8	**0.37** 0.34 0.39
67	**0.00629**[3] 0.00609 0.00649	**159.8**[3] 154.7 164.9	**55.2** 52.4 58.0	**0.26** 0.24 0.28
79	**0.00523**[3] 0.00505 0.00541	**132.8**[3] 128.3 137.4	**69.1** 66.9 71.2	**0.16** 0.15 0.17
91	**0.00388**[3] 0.00373 0.00403	**98.6**[3] 94.7 102.4	**83.0** 81.6 84.3	**0.08** 0.07 0.09
100	----- ----- -----	----- ----- -----	----- ----- -----	----- ----- -----

1. The Screen Percent Name/Number assigned is the estimated percentage of printed area covered for screens having values as indicated in the colunms to the right.

2. Optical density readings will be made at eight locations, equally spaced in a diagonal pattern. All eight readings will be within the established negative optical density tolerance range. The Calibration Step Wedge No. 1 is used as a calibration standard prior to making the transmission density readings. (See ACIC Technical Report No. 72-1 for details.) The standards listed above are readings minus the base plus fog density value.

3. Measurement is diameter of nonprint area

FIGURE A-1:
120-LINE ROUND DOT SCREEN SAMPLES
All master screens are 44 by 60 inches. Refer to the DoD Standard Printing Color Catalog for visual samples of the standard screens in the standard printing colors

PERCENT OF TONE	SCREEN ANGLES	VISUAL SAMPLE
4%	30° 45° 60°	
7%	15° 60° 30° 75° 45° 90°	
12%	15° 60° 30° 75° 45°	
21%	15° 60° 30° 75° 45°	
31%	15° 60° 30° 75° 45°	
42%	15° 60° 30° 75° 45°	
54%	15° 60° 30° 75° 45° 90°	
67%	15° 60° 30° 75° 45°	
79%	15° 60° 30° 75° 45°	
91%	30° 45°	

THIS PAGE INTENTIONALLY BLANK

TABLE A-2:
240-LINE ROUND DOT SCREEN STANDARDS/TOLERANCES
(Bold type indicates the mean value)

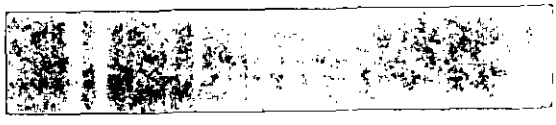
LITHO PRINT	FILM NEGATIVE			
SCREEN PERCENT[1] NAME/NUMBER	Dot Diameter Tolerance Range		Percent Tolerance Range	Optical Density[2] Tolerance Range
	Inches	Microns		
21	**0.00165** 0.00155 0.00175	**41.9** 39.4 44.5	**12.3** 10.9 13.8	**0.91** 0.86 0.96
31	**0.00199** 0.00189 0.00209	**50.6** 48.0 53.1	**17.9** 16.2 19.8	**0.75** 0.70 0.79
42	**0.00229** 0.00218 0.00240	**58.2** 55.4 61.0	**23.7** 21.5 26.1	**0.63** 0.58 0.67
54	**0.00273** 0.00260 0.00285	**69.3** 66.0 72.4	**33.7** 30.6 36.8	**0.47** 0.43 0.51

1. The Screen Percent Name/Number assigned is the estimated percentage of printed area covered for screens having values as indicated in the colunms to the right.

2. Optical density readings will be made at eight locations, equally spaced in a diagonal pattern. All eight readings will be within the established negative optical density tolerance range. The Calibration Step Wedge No. 1 is used as a calibration standard prior to making the transmission density readings. (See ACIC Technical Report No. 72-1 for details.) The standards listed above are readings minus the base plus fog density value.

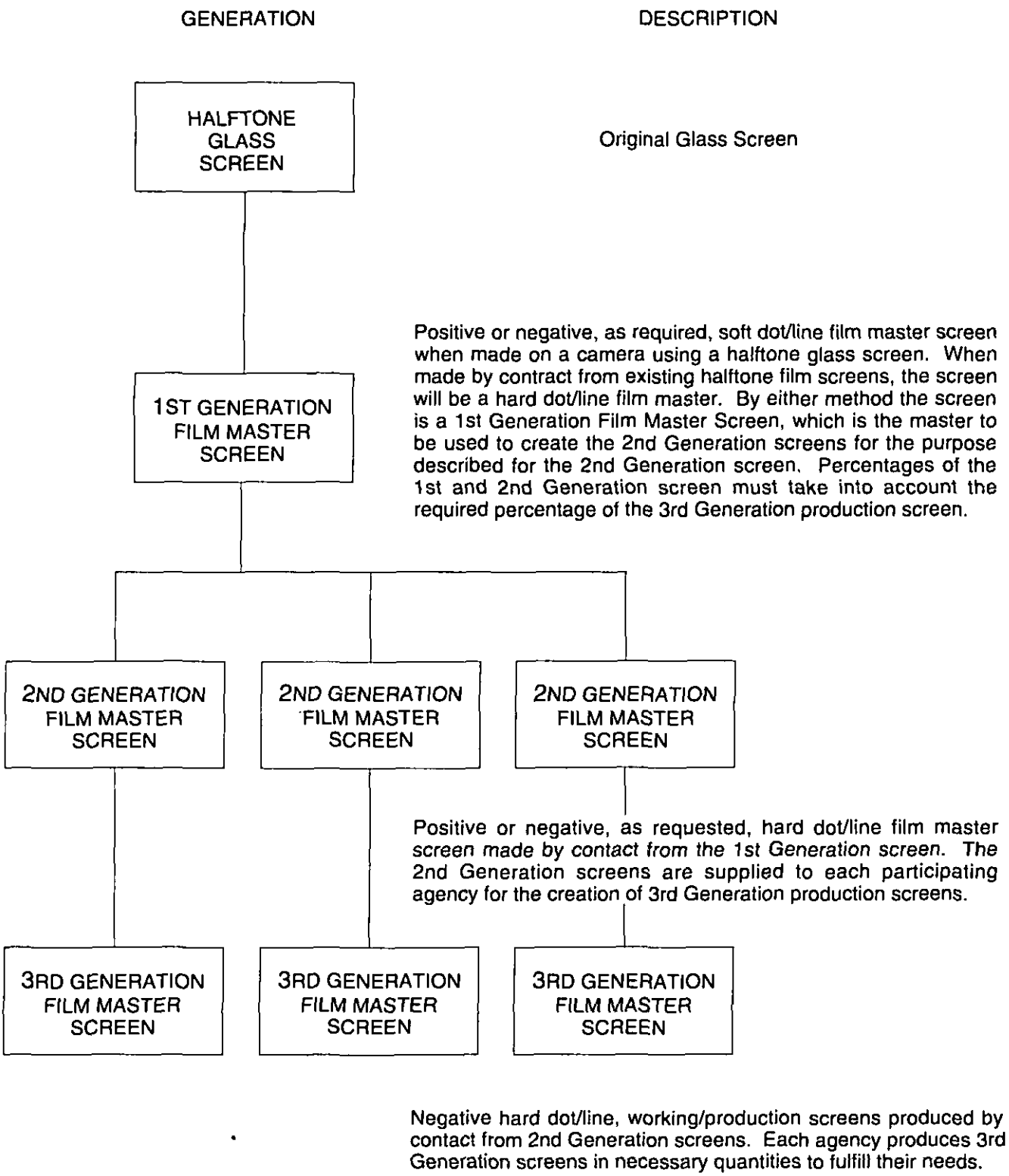
THIS PAGE INTENTIONALLY BLANK

FIGURE A-2:
240-LINE ROUND DOT SCREEN SAMPLES
All master screens are 44 by 60 inches.

PERCENT OF TONE	SCREEN ANGLES	VISUAL SAMPLE
21%	30° 75°	
31%	30° 75°	
42%	30° 75°	
54%	30° 75°	

THIS PAGE INTENTIONALLY BLANK

FIGURE A-3:
SCREEN GENERATION CHART



APPENDIX B

BIANGLE SCREENS

10. SCOPE

10.1 Scope. This APPENDIX provides the standards and tolerances for biangle screens. This APPENDIX is a mandatory part of MIL-STD-2410 and the information contained herein is intended for compliance.

20. APPLICABLE DOCUMENTS

This section is not applicable to this APPENDIX.

30. REQUIREMENTS

30.1 The following pages provide the standards, tolerances and printed samples of the 240-line round dot 30°/60° screens used for printing for MC&G graphic products.

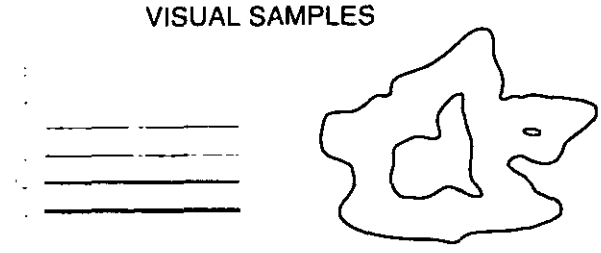
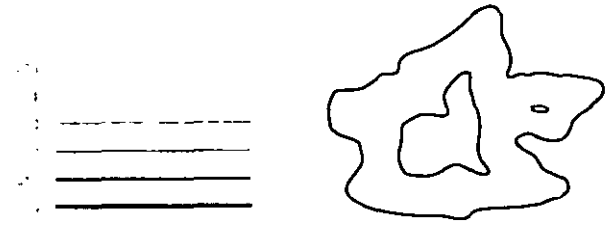
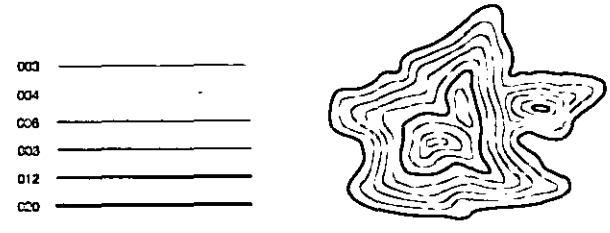
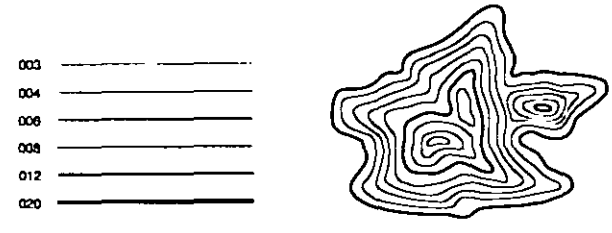
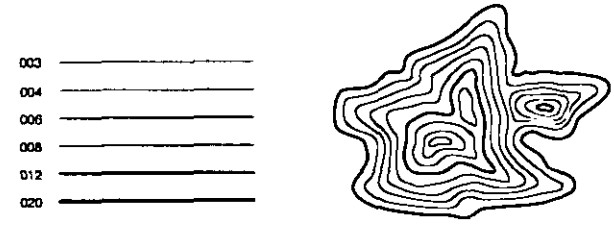
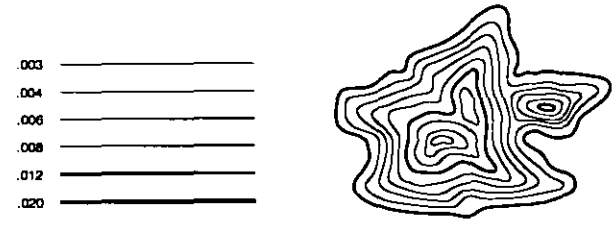
TABLE B-1:
BIANGLE WORKING SCREEN STANDARDS/TOLERANCES
(Bold type indicates the mean value)

Litho Print Screen Identification	Composite Negative Percent Tolerance Range	Composite Negative Optical Density Tolerance Range [1]
21%-240D-Biangle	**12.0** 10.0 14.0	**0.92** 0.85 1.00
31%-240D-Biangle	**17.2** 15.0 19.5	**0.76** 0.71 0.82
42%-240D-Biangle	**24.0** 21.0 27.0	**0.62** 0.57 0.68
54%-240D-Biangle	**35.0** 32.0 38.0	**0.46** 0.42 0.49
67%-240D-Biangle	**44.0** 40.0 48.0	**0.36** 0.32 0.40

1. Optical density readings will be made at eight locations, equally spaced in a diagonal pattern. All eight readings will be within the established negative optical density tolerance range. The Calibration Step Wedge No. 1 is used as a calibration standard prior to making the transmission density readings. (See ACIC Technical Report No. 72-1 for details.) The standards listed above are readings minus the base plus fog density value.

THIS PAGE INTENTIONALLY BLANK

FIGURE B-1:
BIANGLE SCREEN SAMPLES

SPECIFICATION	SIZE (Inches)	VISUAL SAMPLES
21%-240D-30°/60°	42 x 60	
31%-240D-30°/60°	42 x 60	
42%-240D-30°/60°	42 x 60	
54%-240D-30°/60°	42 x 60	
67%-240D-30°/60°	42 x 60	
SOLID	- - -	

THIS PAGE INTENTIONALLY BLANK

APPENDIX C

LINE PATTERNS

10. SCOPE

10.1 Scope. This APPENDIX provides the detailed specifications and printed samples for all line patterns. This APPENDIX is a mandatory part of MIL-STD-2410 and the information contained herein is intended for compliance.

20. APPLICABLE DOCUMENTS

This section is not applicable to this APPENDIX.

30. REQUIREMENTS

30.1 The following pages provide the standards and printed samples of the line patterns used for printing for MC&G graphic products.

TABLE C-1:
LINE PATTERN INDEX

NUMBER	SPECIFICATION	SIZE in. (cm)	
LP-1	14%-16L-90°	25 x 36	(63.5 x 91.44)
LP-2	34%-60L-90°	36 x 28	(91.44 x 71.12)
LP-3	35%-40L-135°	36 x 27	(91.44 x 68.58)
LP-4	28%-30L-90°	44 x 60	(111.76 x 152.4)
LP-5	46%-60L-45°	39 x 25	(99.06 x 63.5)
LP-6	38%-34L-45°/135°	30 x 40	(76.2 x 101.6)
LP-7	38%-57L-45°	40 x 58	(101.6 x 147.32)
LP-8	38%-57L-135°	40 x 58	(101.6 x 147.32)
LP-9	41%-67L-45°	44 x 60	(111.76 x 152.4)
LP-10	41%-67L-135°	44 x 60	(111.76 x 152.4)
LP-11	41%-40L-90°	24 x 30	(60.96 x 76.2)
LP-12	67%-60L-135°	34 x 25	(86.36 x 63.5)
LP-13	65%-66L-135°	35 x 30	(88.9 x 76.2)
LP-14	76%-67L-135°	44 x 60	(111.76 x 152.4)
LP-15	35%-40L-45°	36 x 27	(91.44 x 68.58)
LP-16	49%-133L-45°	30 x 40	(76.2 x 101.6)
LP-17	64%-133L-45°	30 x 40	(76.2 x 101.6)
LP-18	9%-50L-90°	13 x 19	(33.02 x 48.26)
LP-19	25%-30L-90°	40 x 60	(101.6 x 152.4)
LP-20	25%-30L-45°	40 x 60	(101.6 x 152.4)
LP-21	25%-30L-0°	40 x 60	(101.6 x 152.4)
LP-22	63%-20L-135°	40 x 60	(101.6 x 152.4)

TABLE C-2:
LINE PATTERN STANDARDS/TOLERANCES
(Bold type indicates the mean value)

SCREEN SPECIFICATION	NUMBER	NEGATIVE			LITHO PRINT	
		Line Width Tolerance Range	Percent Tolerance Range	Density[1] Tolerance Range	Image[2] Line Width	Non-image Line Width
14%-16L-90°	LP-1	**0.00759** 0.00519 0.00999	**12.1** 08.3 16.0	**0.92** 0.80 1.08	0.00857	0.05393
34%-60L-90°	LP-2	**0.00498** 0.00428 0.00568	**29.2** 25.7 34.1	**0.53** 0.47 0.59	0.00572	0.01094
35%-40L-135°	LP-3	**0.00776** 0.00726 0.00826	**31.0** 29.0 33.0	**0.51** 0.48 0.54	0.00875	0.01625
28%-30L-90°	LP-4	**0.00827** 0.00747 0.00907	**24.8** 22.4 27.2	**0.61** 0.57 0.65	0.00930	0.02403
46%-60L-45°	LP-5	**0.00676** 0.00616 0.00736	**40.6** 37.0 44.2	**0.39** 0.35 0.43	0.00776	0.00900
38%-34L-45°/135°	LP-6	**0.00479** 0.00419 0.00539	**29.9** 26.5 33.3	**0.52** 0.47 0.58	0.00551	0.02390
38%-57L-45°	LP-7	**0.00591** 0.00561 0.00621	**33.6** 31.9 35.4	**0.47** 0.45 050	0.00674	0.01080
38%-57L-135°	LP-8	**0.00591** 0.00561 0.00621	**33.6** 31.9 35.4	**0.47** 0.45 0.50	0.00674	0.01080
41%-67L-45°	LP-9	**0.00538** 0.00498 0.00578	**36.0** 33.3 38.7	**0.44** 0.41 0.48	0.00618	0.00874
41%-67L-135°	LP-10	**0.00538** 0.00498 0.00578	**36.0** 33.3 38.7	**0.44** 0.41 0.48	0.00618	0.00874
41%-40L-90°	LP-11	**0.00958** 0.00908 0.01008	**38.3** 36.3 40.3	**0.42** 0.39 0.44	0.01017	0.01483
67%-60L-135°	LP-12	**0.00992** 0.00922 0.01062	**59.5** 55.3 63.7	**0.23** 0.20 0.26	0.01110	0.00556
65%-66L-135°	LP-13	**0.00882** 0.00852 0.00912	**58.2** 56.2 60.2	**0.23** 0.22 0.25	0.00990	0.00625

1. Optical density readings will be made at eight locations, equally spaced in a diagonal pattern. All eight readings will be within the established negative optical density tolerance range. The Calibration Step Wedge No. 1 is used as a calibration standard prior to making the transmission density readings. (See ACIC Technical Report No. 72-1 for details.) The standards listed above are readings minus the base plus fog density value.

2. All measurements are of the line print area.

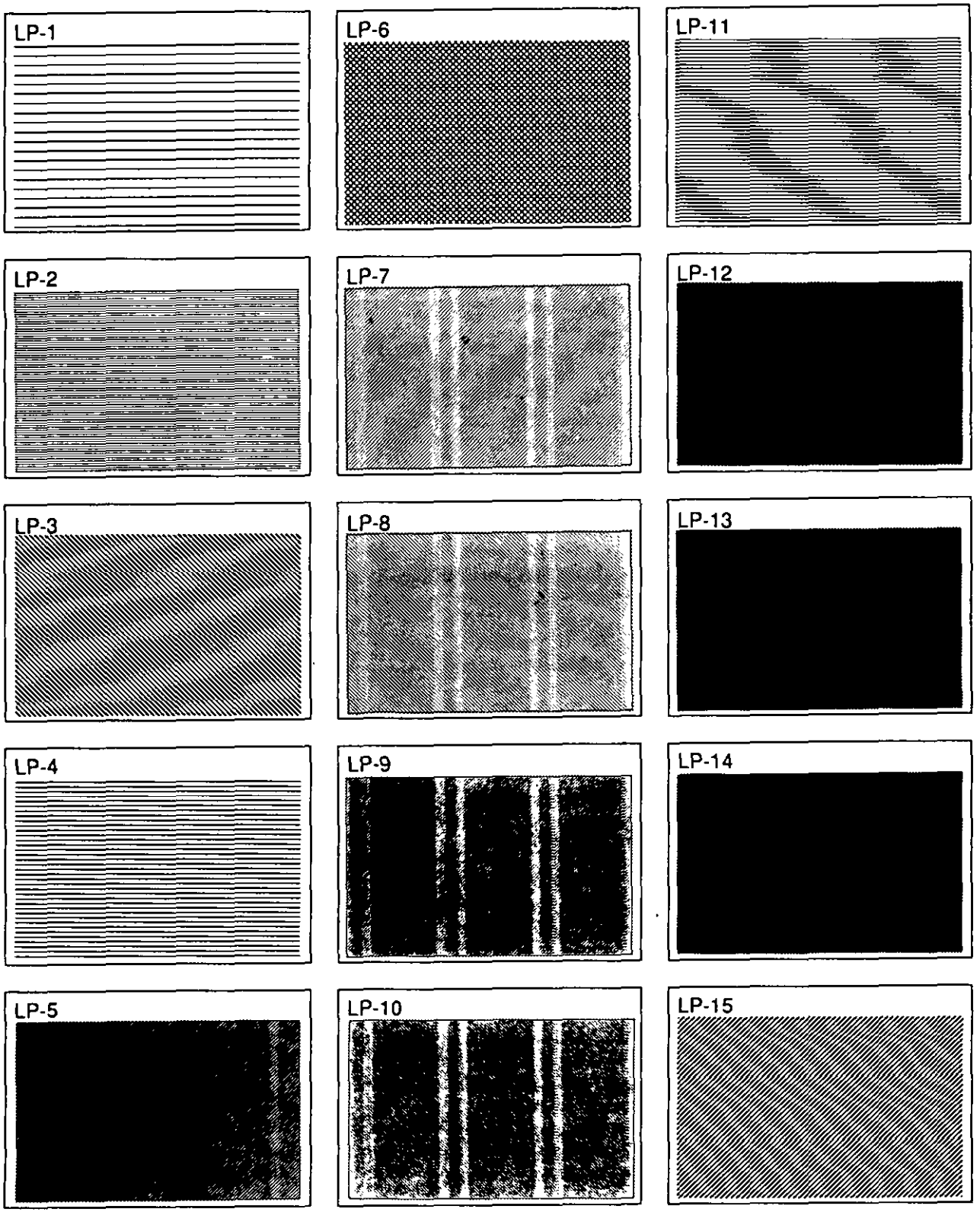
TABLE C-2:
LINE PATTERN STANDARDS/TOLERANCES
(Bold type indicates the mean value)

SCREEN SPECIFICATION	NUMBER	NEGATIVE			LITHO PRINT	
		Line Width Tolerance Range	Percent Tolerance Range	Density [1] Tolerance Range	Image [2] Line Width	Non-image Line Width
76%-67L-135°	LP-14	**0.01026** 0.00966 0.01086	**68.7** 64.7 72.7	**0.17** 0.14 0.19	0.01136	0.00356
35%-40L-45°	LP-15	**0.00776** 0.00726 0.00826	**31.0** 29.0 33.0	**0.51** 0.48 0.54	0.00875	0.01625
49%-133L-45°	LP-16	**0.00325** 0.00300 0.00350	**36.0** 32.0 38.0	**0.47** 0.41 0.52	0.00370	0.00380
64%-133L-45°	LP-17	**0.00412** 0.00400 0.00425	**48.0** 47.0 50.0	**0.32** 0.30 0.33	0.00480	0.00270
9%-50L-90°	LP-18	**0.00200** 0.00175 0.00225	**13.0** 12.5 13.5	**0.92** 0.89 0.95	0.00250	0.01900
25%-30L-90°	LP-19	**0.00800** 0.00750 0.00850	**22.0** 20.0 24.0	**0.65** 0.61 0.69	0.00900	0.02450
25%-30L-45°	LP-20	**0.00800** 0.00750 0.00850	**22.0** 20.0 24.0	**0.65** 0.61 0.69	0.00900	0.02450
25%-30L-0°	LP-21	**0.00800** 0.00750 0.00850	**22.0** 20.0 24.0	**0.65** 0.61 0.69	0.00900	0.02450
63%-20L-135°	LP-22	**0.02900** 0.02700 0.03100	**62.0** 59.0 65.0	**0.225** 0.190 0.260	0.03400	0.01950

1. Optical density readings will be made at eight locations, equally spaced in a diagonal pattern. All eight readings will be within the established negative optical density tolerance range. The Calibration Step Wedge No. 1 is used as a calibration standard prior to making the transmission density readings. (See ACIC Technical Report No. 72-1 for details.) The standards listed above are readings minus the base plus fog density value.

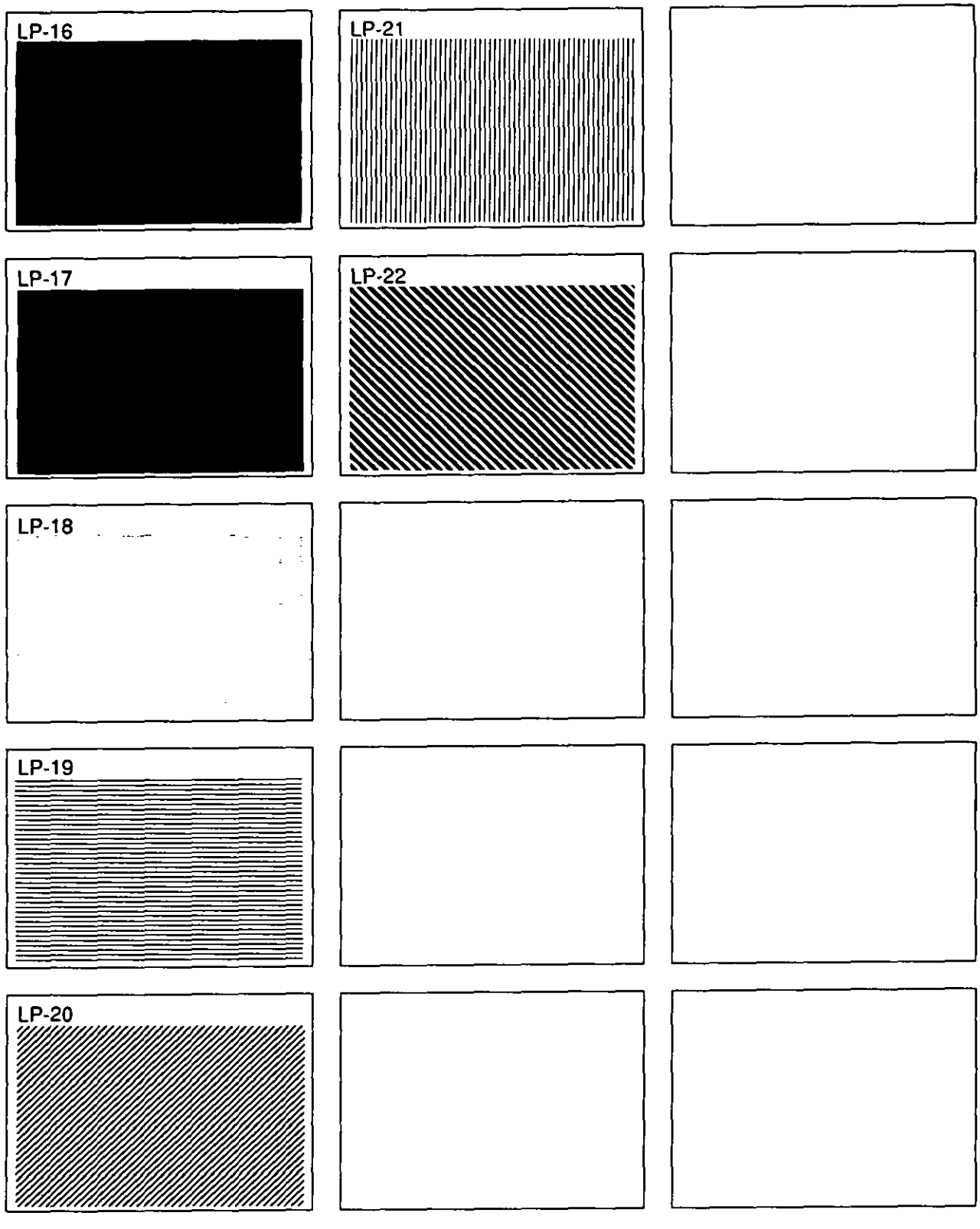
2. All measurements are of the line print area.

FIGURE C-1:
LINE PATTERN SAMPLES



THIS PAGE INTENTIONALLY BLANK

FIGURE C-1:
LINE PATTERN SAMPLES



THIS PAGE INTENTIONALLY BLANK

APPENDIX D

AREA PATTERNS

10. SCOPE

10.1 Scope. This APPENDIX provides the detailed specifications and printed samples for all area patterns. This APPENDIX is a mandatory part of MIL-STD-2410 and the information contained herein is intended for compliance.

20. APPLICABLE DOCUMENTS

This section is not applicable to this APPENDIX.

30. REQUIREMENTS

30.1 The following pages provide the standards and printed samples of the area patterns used for printing for MC&G graphic products.

TABLE D-1:
AREA PATTERN INDEX

NUMBER	GENERAL USE	SIZE in. (cm)	
AP-1	Rice Garden	28 x 39	(71.12 x 99.06)
AP-2	Rice (subdued)	28 x 39	(71.12 x 99.06)
AP-3	Rice (small)	42 x 58	(106.68 x 147.32)
AP-4	Rice	28 x 35	(71.12 x 88.9)
AP-5	Rice (large)	42 x 58	(106.68 x 147.32)
AP-6	Tidal Flats	29 x 35	(73.66 x 88.9)
AP-7	Nipa	24 x 39	(60.96 x 99.06)
AP-8	Mangrove	24 x 36	(60.96 x 91.44)
AP-9	Flood Areas (small)	42 x 58	(106.68 x 147.32)
AP-10	Flood Areas	29 x 37	(73.66 x 93.98)
AP-11	Flood Areas (large)	24 x 30	(60.96 x 76.2)
AP-12	Swamp (small)	42 x 58	(106.68 x 147.32)
AP-13	Swamp (large)	24 x 30	(60.96 x 76.2)
AP-14	Swamp	3 x 4	(7.62 x 10.16)
AP-15	Rushes and Meadows (large)	6 x 4	(15.24 x 10.16)
AP-16	Rushes and Meadows (small)	6 x 4	(15.24 x 10.16)
AP-17	Swamp and Meadow (small)	6 x 4	(15.24 x 10.16)
AP-18	Swamp and Meadow (large)	6 x 4	(15.24 x 10.16)
AP-19	Swamp and Reeds (small)	6 x 4	(15.24 x 10.16)
AP-20	Swamp and Reeds (large)	6 x 4	(15.24 x 10.16)
AP-21	Swamp and Rushes (small)	6 x 4	(15.24 x 10.16)
AP-22	Swamp and Rushes (large)	6 x 4	(15.24 x 10.16)
AP-23	Rushes (small)	6 x 4	(15.24 x 10.16)
AP-24	Rushes (large)	6 x 4	(15.24 x 10.16)
AP-25	Rushes Inundated (small)	6 x 4	(15.24 x 10.16)
AP-26	Rushes Inundated (large)	6 x 4	(15.24 x 10.16)
AP-27	Swamp and Marsh (small)	6 x 4	(15.24 x 10.16)
AP-28	Swamp and Marsh (large)	6 x 4	(15.24 x 10.16)
AP-29	Natural Grassland	24 x 30	(60.96 x 76.2)
AP-30	Meadow Inundated	5 x 9	(12.7 x 22.86)
AP-31	Meadows (small)	6 x 4	(15.24 x 10.16)
AP-32	Meadows (large)	6 x 4	(15.24 x 10.16)

TABLE D-1:
AREA PATTERN INDEX

NUMBER	GENERAL USE	SIZE in. (cm)	
AP-33	Reeds (small)	6 x 4	(15.24 x 10.16)
AP-34	Reeds (large)	6 x 4	(15.24 x 10.16)
AP-35	Reeds Inundated (small)	24 x 30	(60.96 x 76.2)
AP-36	Reeds Inundated (large)	6 x 4	(15.24 x 10.16)
AP-37	Reeds and Rushes	6 x 4	(15.24 x 10.16)
AP-38	Meadow and Reeds (small)	6 x 4	(15.24 x 10.16)
AP-39	Meadow and Reeds (large)	6 x 4	(15.24 x 10.16)
AP-40	Ice Pack	42 x 58	(106.68 x 147.32)
AP-41	Salt Pans	5 x 7	(12.7 x 17.78)
AP-42	Woods (reduced)	30 x 40	(76.2 x 101.6)
AP-43	Woods (reduced)	29 x 39	(73.66 x 99.06)
AP-44	Scattered Trees	28 x 32	(71.12 x 81.28)
AP-45	Isolated Trees	6 x 4	(15.24 x 10.16)
AP-46	Hardwood Forest	29 x 39	(73.66 x 99.06)
AP-47	Broadleaf Forest	24 x 30	(60.96 x 76.2)
AP-48	Other Culture Trees	24 x 30	(60.96 x 76.2)
AP-49	Isolated Trees	24 x 30	(60.96 x 76.2)
AP-50	Deciduous Trees	4 x 8	(10.16 x 20.32)
AP-51	Coniferous & Deciduous Trees	5 x 7	(12.7 x 17.78)
AP-52	Brushwood & Deciduous Trees	24 x 30	(60.96 x 76.2)
AP-53	Deciduous Trees (large)	24 x 30	(60.96 x 76.2)
AP-54	Deciduous Trees (small)	6 x 4	(15.24 x 10.16)
AP-55	Odd Deciduous Trees	6 x 4	(15.24 x 10.16)
AP-56	Odd Deciduous Trees	6 x 8	(15.24 x 20.32)
AP-57	Coniferous Forest	24 x 30	(60.96 x 76.2)
AP-58	Coniferous Trees	5 x 7	(12.7 x 17.78)
AP-59	Brushwood & Coniferous Trees	24 x 30	(60.96 x 76.2)
AP-60	Coniferous Trees (small)	6 x 4	(15.24 x 10.16)
AP-61	Coniferous Trees (large)	24 x 30	(60.96 x 76.2)
AP-62	Brushwood, Coniferous & Deciduous Trees	24 x 30	(60.96 x 76.2)

TABLE D-1:
AREA PATTERN INDEX

NUMBER	GENERAL USE	SIZE in. (cm)	
AP-63	Deciduous & Coniferous Trees (small)	6 x 4	(15.24 x 10.16)
AP-64	Deciduous & Coniferous Trees (large)	24 x 30	(60.96 x 76.2)
AP-65	Woods/Brushwood	42 x 58	(106.68 x 147.32)
AP-66	Tropical Grass	29 x 39	(73.66 x 99.06)
AP-67	Meadow	6 x 8	(15.24 x 20.32)
AP-68	Vegetation	29 x 39	(73.66 x 99.06)
AP-69	Brushwood (small)	24 x 30	(60.96 x 76.2)
AP-70	Brushwood (large)	24 x 30	(60.96 x 76.2)
AP-71	Scrub Pine	24 x 30	(60.96 x 76.2)
AP-72	Scrub	25 x 37	(63.5 x 93.98)
AP-73	Scrub	29 x 39	(73.66 x 99.06)
AP-74	Orchard	29 x 37	(73.66 x 93.98)
AP-75	Orchard (small)	6 x 4	(15.24 x 10.16)
AP-76	Orchard (large)	6 x 4	(15.24 x 10.16)
AP-77	Vineyard	26 x 34	(66.04 x 86.36)
AP-78	Orchard/Vineyard	26 x 38	(66.04 x 96.52)
AP-79	Vineyard (small)	6 x 4	(15.24 x 10.16)
AP-80	Vineyard (large)	6 x 4	(15.24 x 10.16)
AP-81	Sugar Cane	26 x 35	(66.04 x 88.9)
AP-82	Nut Tree	6 x 4	(15.24 x 10.16)
AP-83	Palm	29 x 39	(73.66 x 99.06)
AP-84	Palm Trees	24 x 30	(60.96 x 76.2)
AP-85	Bamboo Forest	26 x 39	(66.04 x 99.06)
AP-86	Bamboo Thicket	24 x 30	(60.96 x 76.2)
AP-87	Tea	30 x 40	(76.2 x 101.6)
AP-88	Tea Plantation	24 x 30	(60.96 x 76.2)
AP-89	Olive Grove (large)	6 x 4	(15.24 x 10.16)
AP-90	Olive Grove (small)	6 x 4	(15.24 x 10.16)
AP-91	Mulberry	24 x 30	(60.96 x 76.2)
AP-92	Nursery	6 x 4	(15.24 x 10.16)

TABLE D-1:
AREA PATTERN INDEX

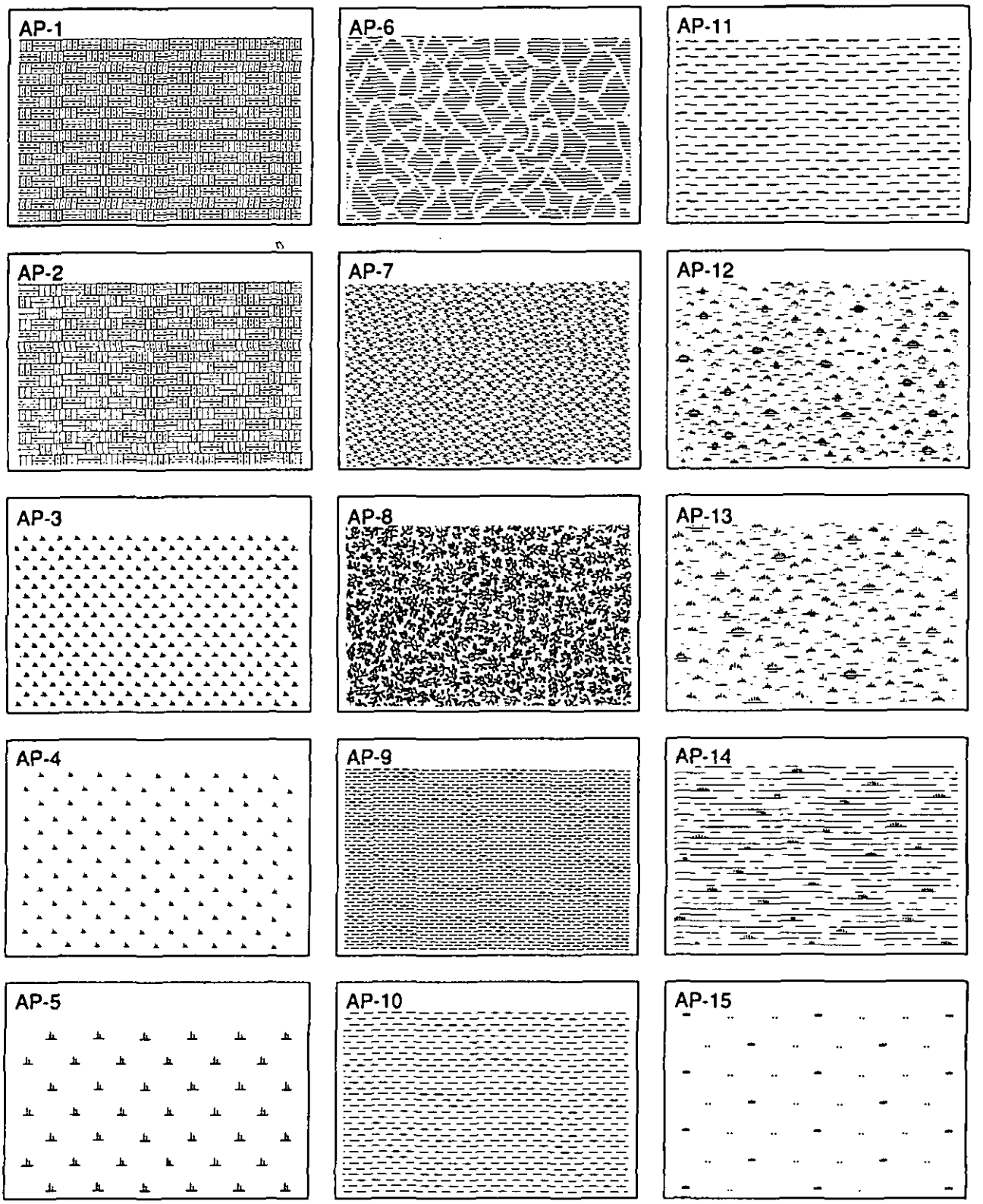
NUMBER	GENERAL USE	SIZE in. (cm)	
AP-93	Cultivated Fields	24 x 36	(60.96 x 91.44)
AP-94	Sand	42 x 58	(106.68 x 147.32)
AP-95	Sand	30 x 40	(76.2 x 101.6)
AP-96	Sand Ridge	24 x 30	(60.96 x 76.2)
AP-97	Sand-Water Areas	24 x 30	(60.96 x 76.2)
AP-98	ADIZ/Buffer Zone	30 x 40	(76.2 x 101.6)
AP-99	Gravel	29 x 37	(73.66 x 93.98)
AP-100	Crescent Dunes	5 x 7	(12.7 x 17.78)
AP-101	Crescent Dunes	24 x 30	(60.96 x 76.2)
AP-102	Distorted Surface	42 x 58	(106.68 x 147.32)
AP-103	Distorted Surface	29 x 39	(73.66 x 99.06)
AP-104	Distorted Surface (modified)	42 x 58	(106.68 x 147.32)
AP-105	Terraces	23 x 32	(58.42 x 81.28)
AP-106	Terraces (subdued)	23 x 32	(58.42 x 81.28)
AP-107	Crescent Dunes	6 x 8	(15.24 x 20.32)
AP-108	Crescent Dunes (with sand)	5 x 8	(12.7 x 20.32)
AP-109	Crescent Dunes	6 x 8	(15.24 x 20.32)
AP-110	Crescent Dunes (with sand)	24 x 30	(60.96 x 76.2)
AP-111	Ripple Dunes	6 x 9	(15.24 x 22.86)
AP-112	Ripple Dunes (with sand)	5 x 8	(12.7 x 20.32)
AP-113	Ripple Dunes	24 x 30	(60.96 x 76.2)
AP-114	Ripple Dunes (with sand)	5 x 8	(12.7 x 20.32)
AP-115	Longitudinal or Lateral Dunes	6 x 8	(15.24 x 20.32)
AP-116	Longitudinal or Lateral Dunes (with sand)	5 x 8	(12.7 x 20.32)
AP-117	Longitudinal or lateral Dunes	4 x 9	(10.16 x 22.86)
AP-118	Longitudinal or Lateral Dunes (with sand)	4 x 8	(10.16 x 20.32)
AP-119	Star Dunes (small)	6 x 8	(15.24 x 20.32)
AP-120	Star Dunes (with sand) (small)	5 x 8	(12.7 x 20.32)
AP-121	Star Dunes (large)	6 x 9	(15.24 x 22.86)
AP-122	Star Dunes (with sand) (large)	5 x 8	(12.7 x 20.32)

TABLE D-1:
AREA PATTERN INDEX

NUMBER	GENERAL USE	SIZE in. (cm)	
AP-123	Sand Mounds (small)	6 x 8	(15.24 x 20.32)
AP-124	Sand Mounds (with sand) (small)	5 x 8	(12.7 x 20.32)
AP-125	Sand Mounds (large)	5 x 8	(12.7 x 20.32)
AP-126	Sand Mounds (with sand) (large)	5 x 8	(12.7 x 20.32)
AP-127	Transverse Dunes No. 1 (large)	4 x 6	(10.16 x 15.24)
AP-128	Transverse Dunes No. 1 (small)	5 x 8	(12.7 x 20.32)
AP-129	Peat Cuttings	5 x 7	(12.7 x 17.78)
AP-130	Boundary Overprint	29 x 29	(73.66 x 73.66)
AP-131	Shanty Town	6 x 12	(15.24 x 30.48)
AP-132	Shanty Town (subdued)	6 x 12	(15.24 x 30.48)
AP-133	Cemetery	4 x 5	(10.16 x 12.7)
AP-134	Stony Ground	6 x 9	(15.24 x 22.86)
AP-135	Urban Area	21 x 28	(53.34 x 71.12)
AP-136	Ice Pack	44 x 60	(111.76 x 152.4)
AP-137	Town Pattern	6 x 9	(15.24 x 22.86)
AP-150	Dump	(1)	
AP-151	Eucalyptus	(1)	
AP-152	Casurina	(1)	
AP-153	Filao	(1)	
AP-154	Coniferous	(1)	
AP-155	Nipa Palm	(1)	
AP-156	Palm	(1)	
AP-157	Evergreen	(1)	
AP-158	Deciduous	(1)	

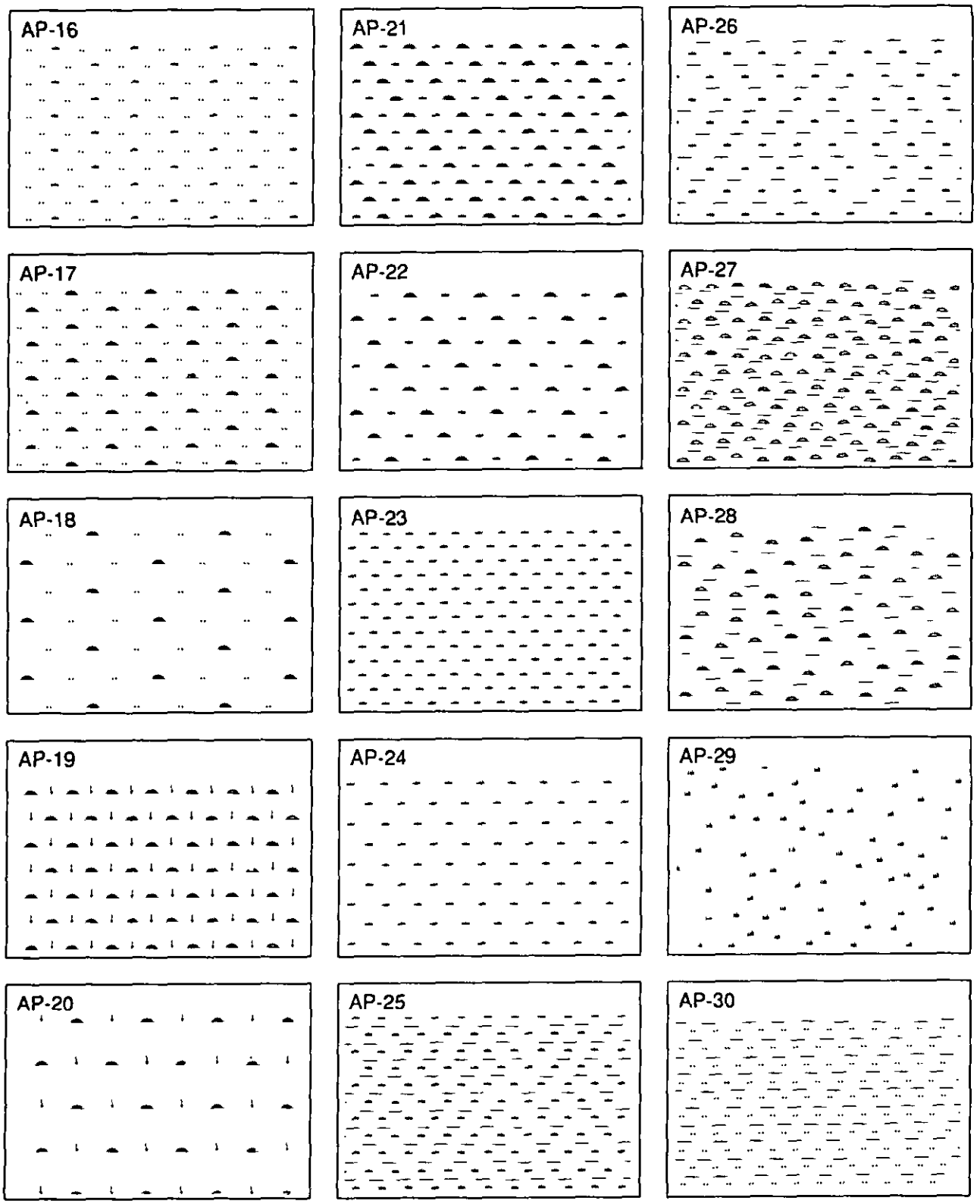
(1). These area patterns are computer generated and not available as standard film master screens.

FIGURE D-1:
AREA PATTERN SAMPLES



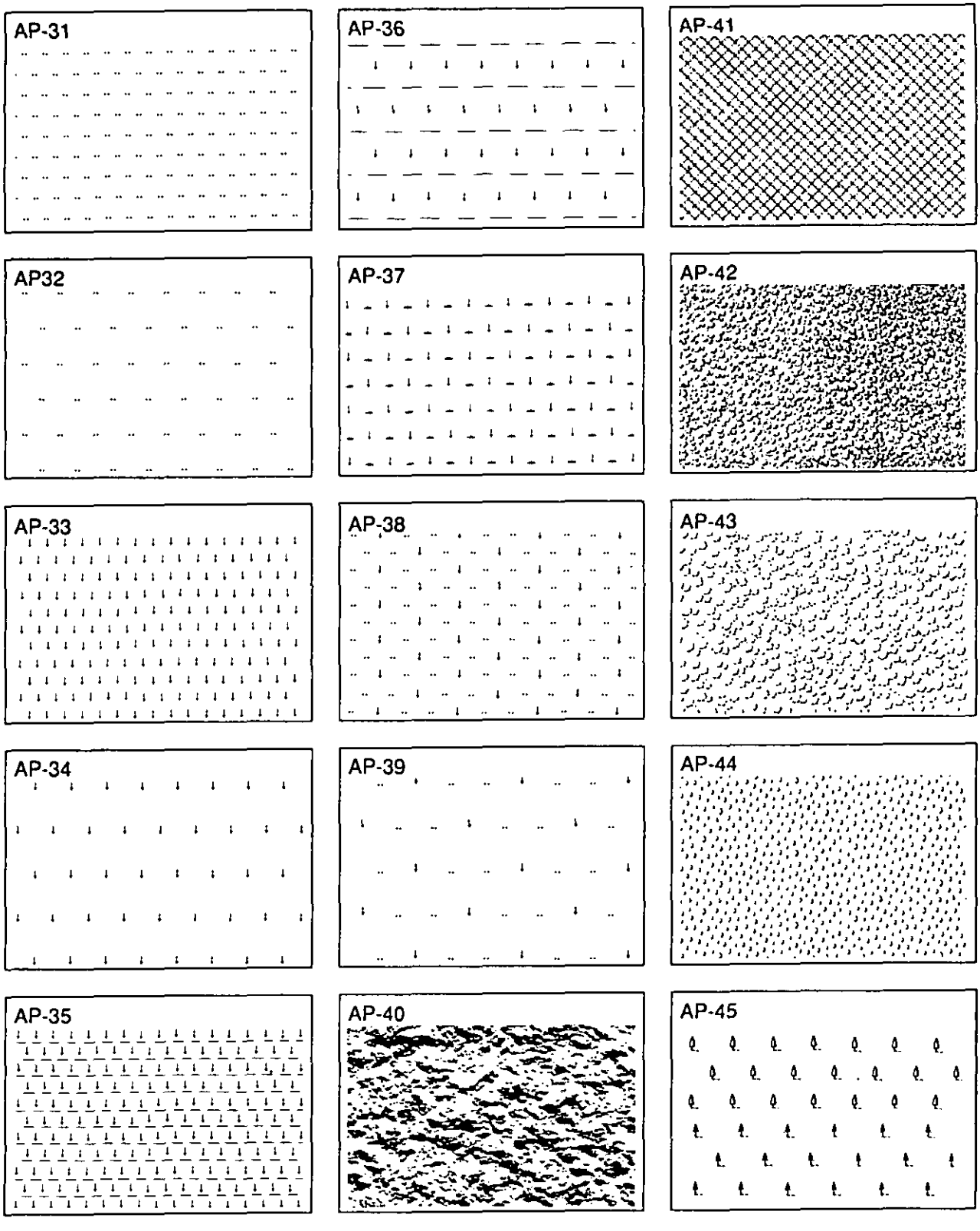
THIS PAGE INTENTIONALLY BLANK

FIGURE D-1:
AREA PATTERN SAMPLES



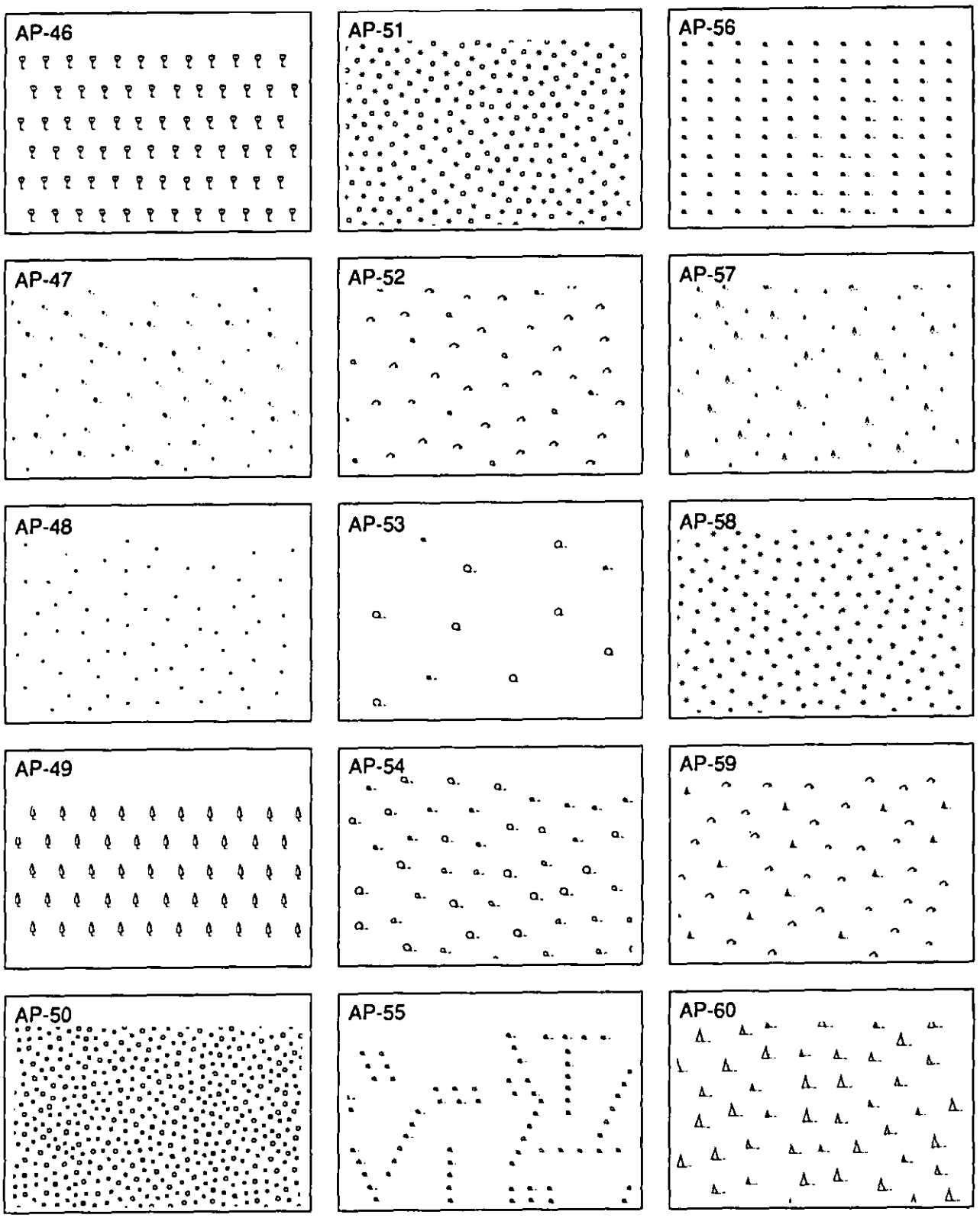
THIS PAGE INTENTIONALLY BLANK

FIGURE D-1:
AREA PATTERN SAMPLES



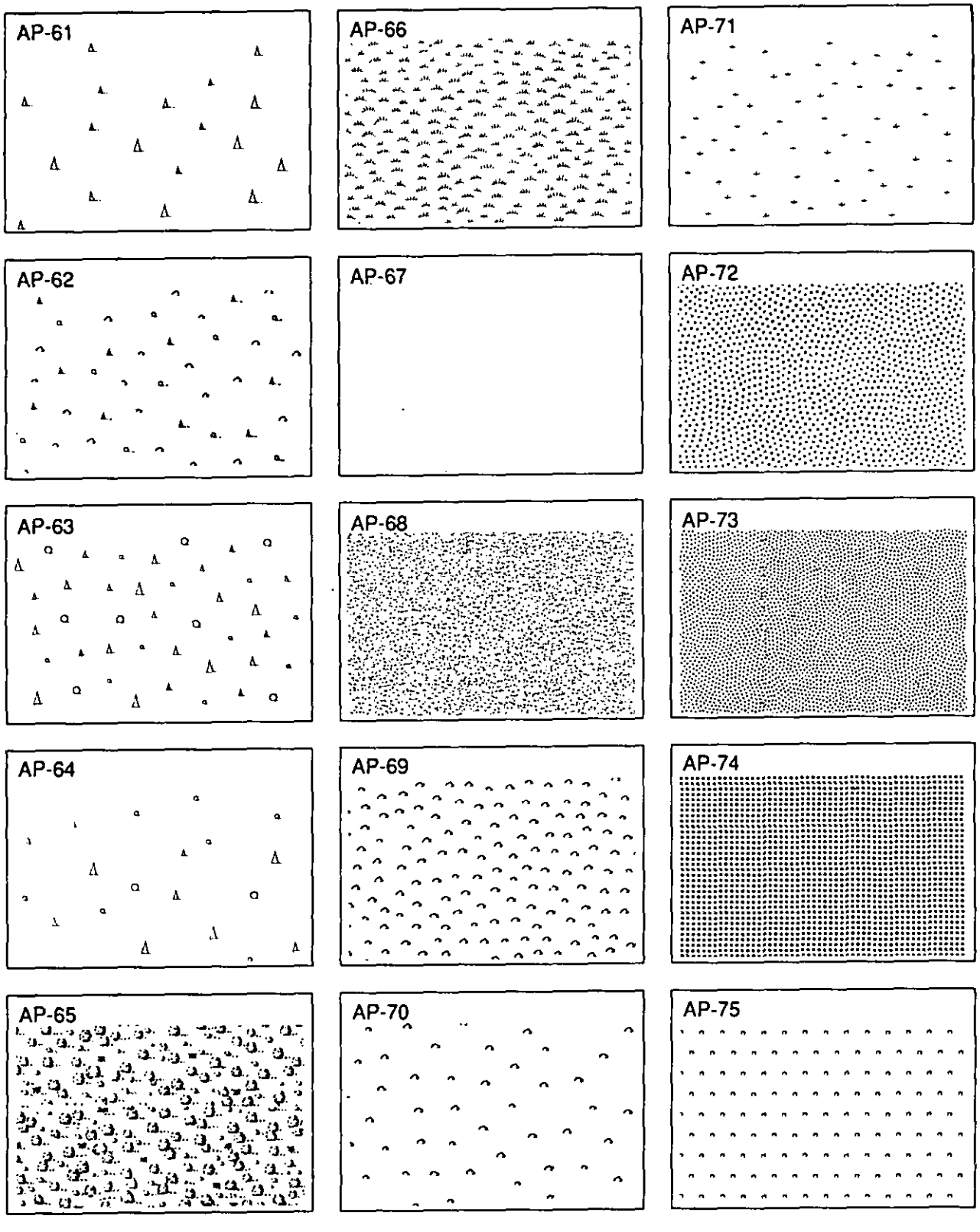
THIS PAGE INTENTIONALLY BLANK

FIGURE D-1:
AREA PATTERN SAMPLES



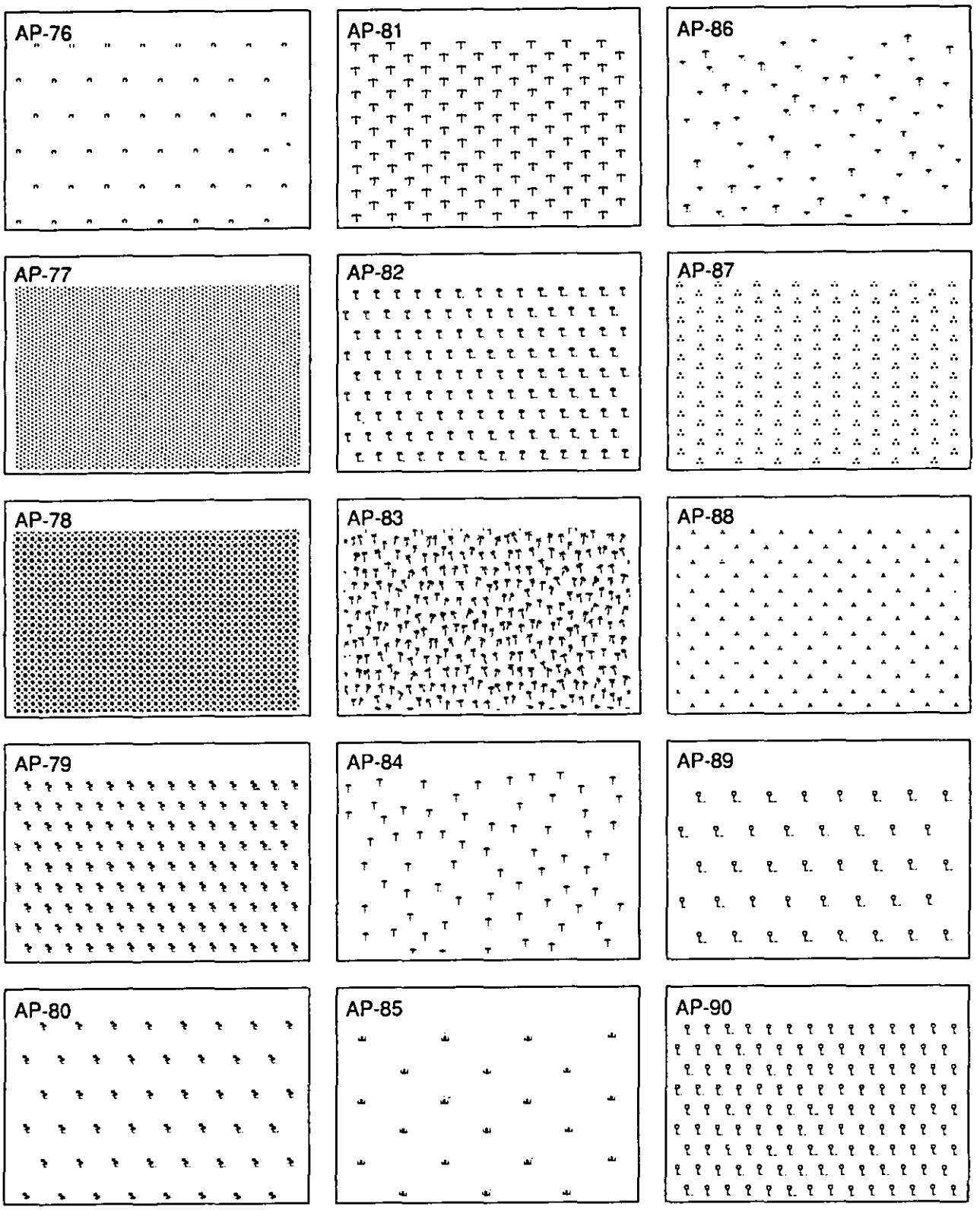
THIS PAGE INTENTIONALLY BLANK

FIGURE D-1:
AREA PATTERN SAMPLES



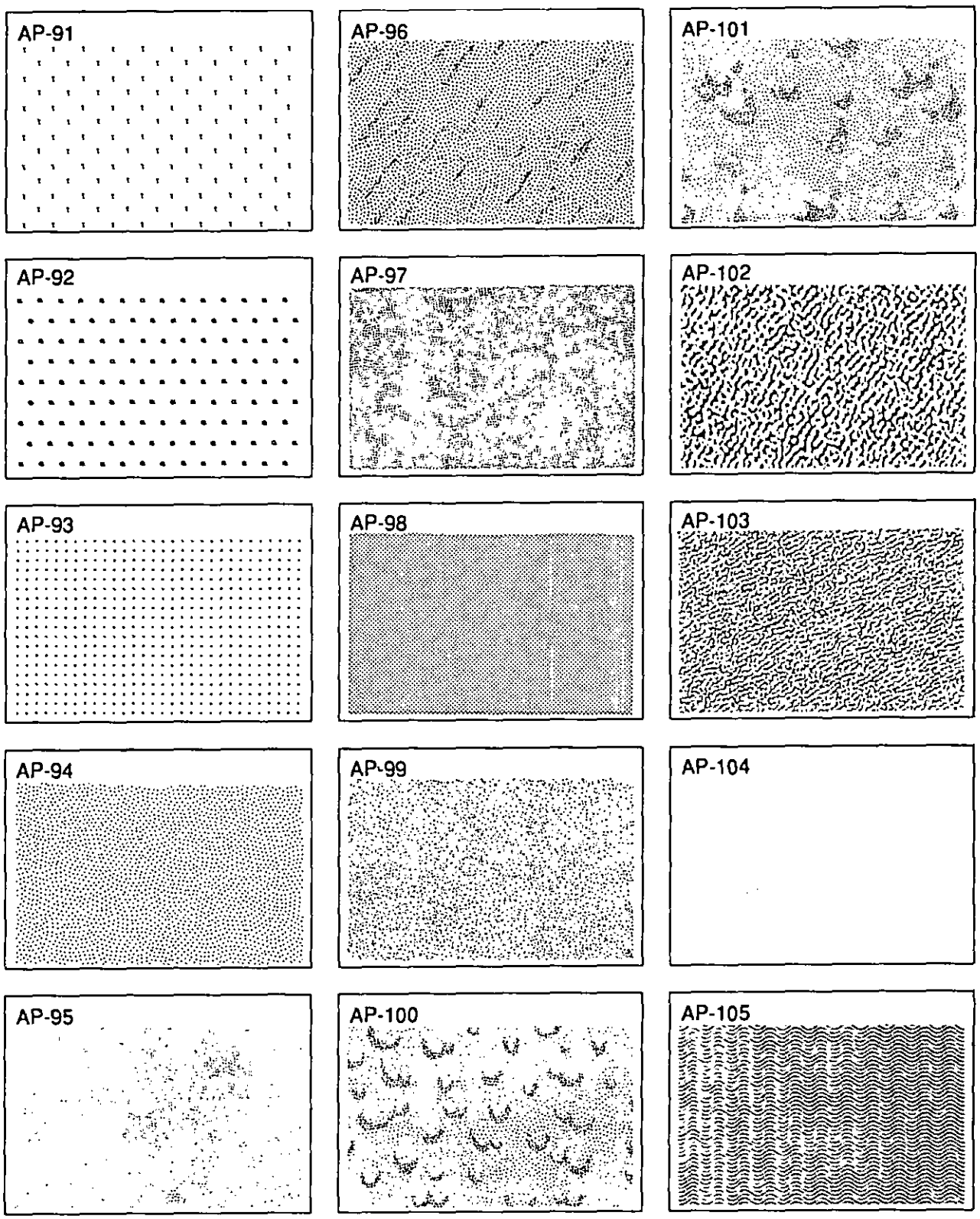
THIS PAGE INTENTIONALLY BLANK

FIGURE D-1:
AREA PATTERN SAMPLES



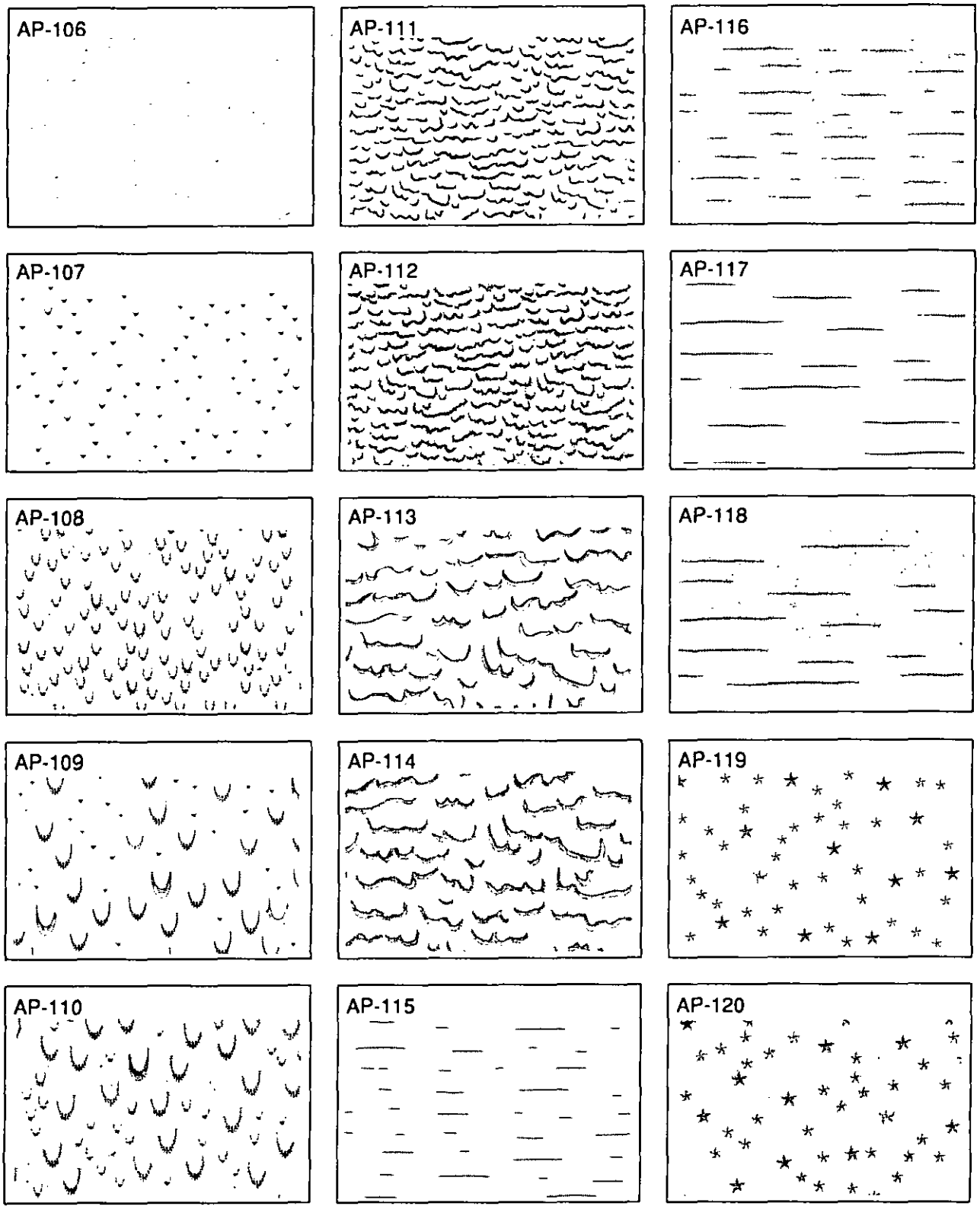
THIS PAGE INTENTIONALLY BLANK

FIGURE D-1:
AREA PATTERN SAMPLES



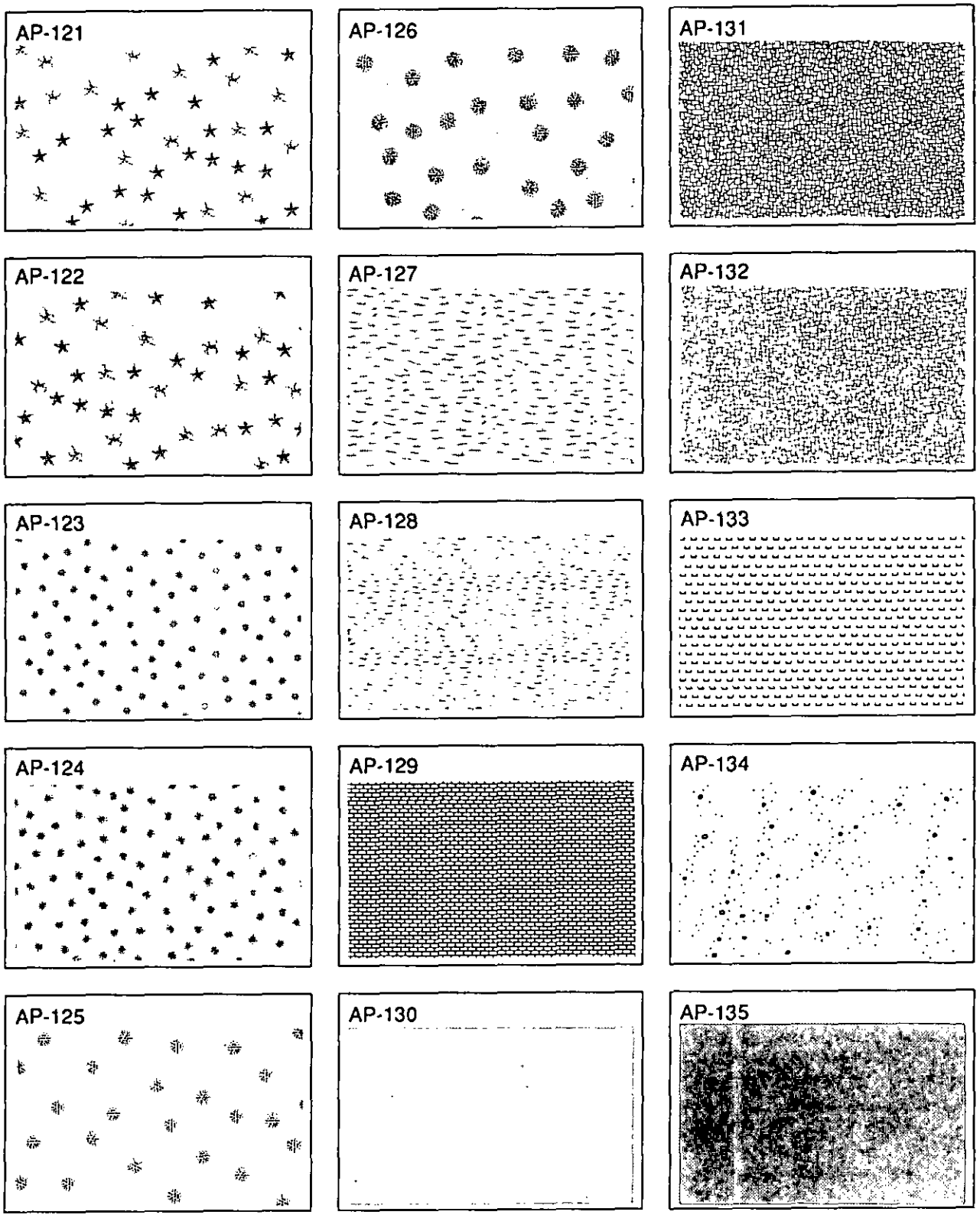
THIS PAGE INTENTIONALLY BLANK

FIGURE D-1:
AREA PATTERN SAMPLES



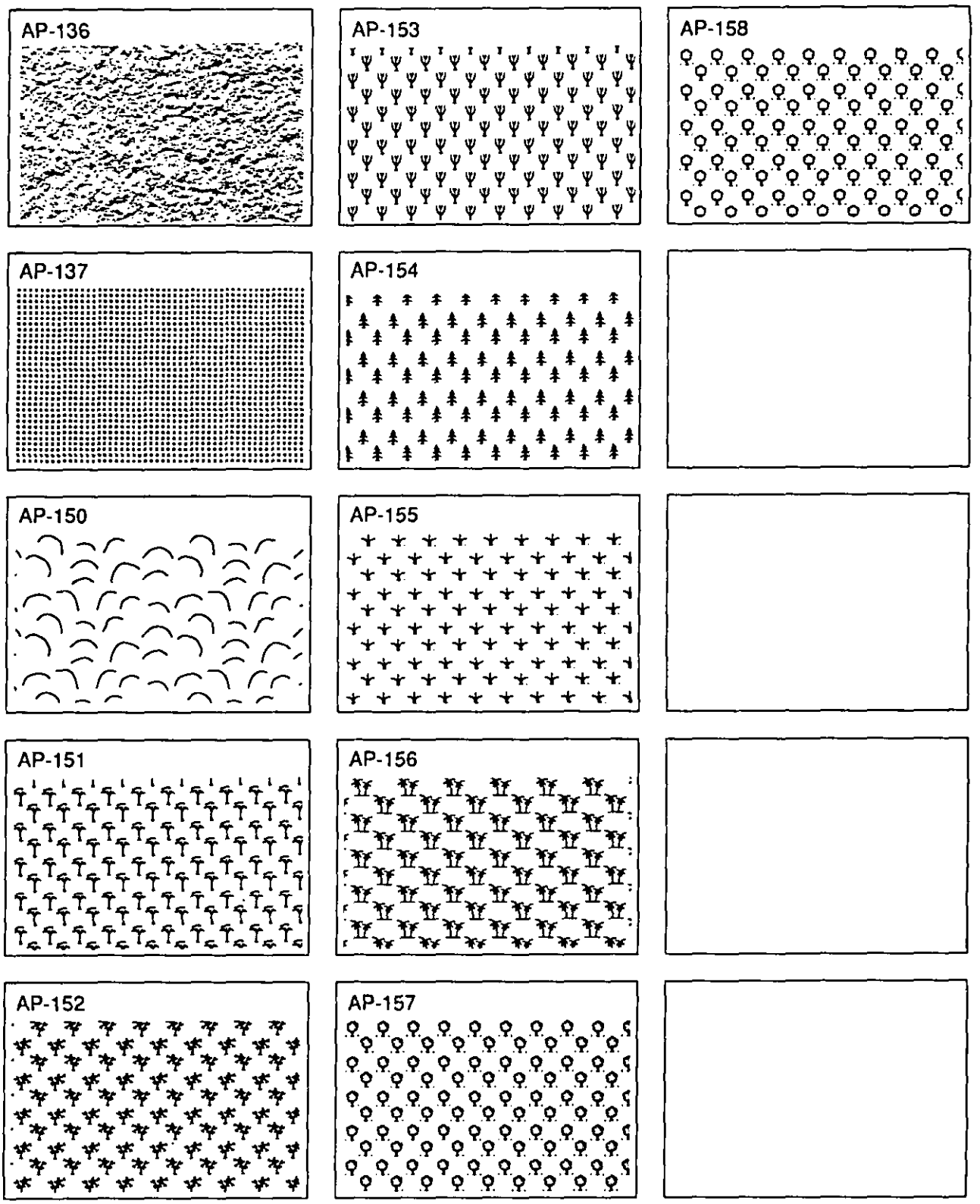
THIS PAGE INTENTIONALLY BLANK

FIGURE D-1:
AREA PATTERN SAMPLES



THIS PAGE INTENTIONALLY BLANK

FIGURE D-1:
AREA PATTERN SAMPLES



THIS PAGE INTENTIONALLY BLANK

APPENDIX E

POSICUTS
AND
POSICUT ENGINEERING DRAWINGS

10. SCOPE

10.1 Scope. This APPENDIX provides the detailed specifications for the design and format for all MC&G Posicuts in the form of engineering drawings. This APPENDIX is a mandatory part of MIL-STD-2410 and the information contained herein is intended for compliance.

20. APPLICABLE DOCUMENTS

This section is not applicable to this APPENDIX.

30. REQUIREMENTS

30.1 Posicuts. TABLE E-1 provides printed samples for all posicuts used for MC&G graphic product symbology.

30.2 Posicut Engineering Drawings. The pages following TABLE E-1 provide printed samples and the detailed specifications for all posicuts used for MC&G graphic product symbology.

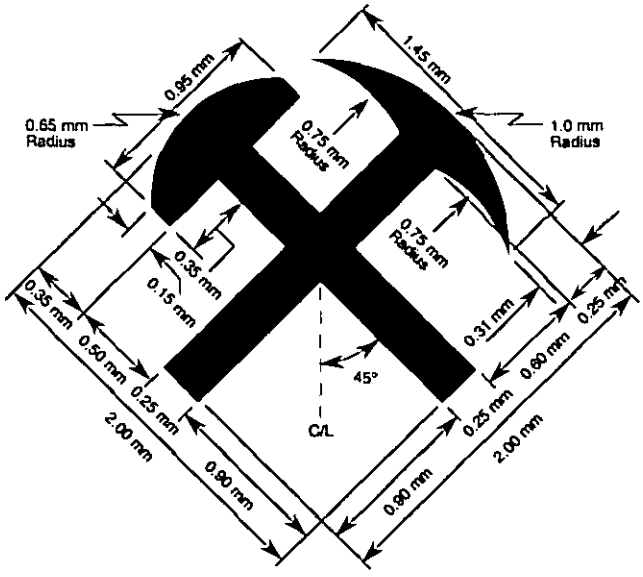
THIS PAGE INTENTIONALLY BLANK

TABLE E-1: POSICUTS

1	44	98	150	193
2	45	99	151	194
3	46	100	152	195
4	49	101	153	199
5	50	102	154	200
6	51	104	155	201
7	52	106	156	210
8	53	107	157	211
9	55	108	158	212
10	56	109	159	213
11	59	110	160	214
12	60	113	161	215
13	61	114	162	216
14	62	116	163	217
15	63	117	164	218
16	64	118	165	219
17	66	119	167	220
18	68	120	168	221
19	69	121	169	222
20	70	122	170	223
21	75	123	171	224
22	76	124	172	225
23	77	125	173	226
24	78	126	174	227
25	79	129	175	228
26	80	130	176	229
27	81	131	177	230
28	82	132	178	231
29	85	133	179	232
30	86	134	180	233
31	92	135	181	234
32	93	136	182	235
33	94	137	183	236
34	95	138	184	237
35	96	139	185	238
36	97	140	186	239
38		142	187	
39			188	
40			189	
41			190	
42			191	
			192	

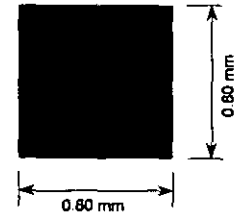
The following posicuts are obsolete and no longer required for MC&G graphic products : 37, 43, 47, 48, 54, 57, 58, 65, 67, 71-74, 83, 84, 87-91, 103, 105, 111, 112, 115, 127, 128, 141, 143-149, 166, 196-198, 202-209

POSICUT # 1



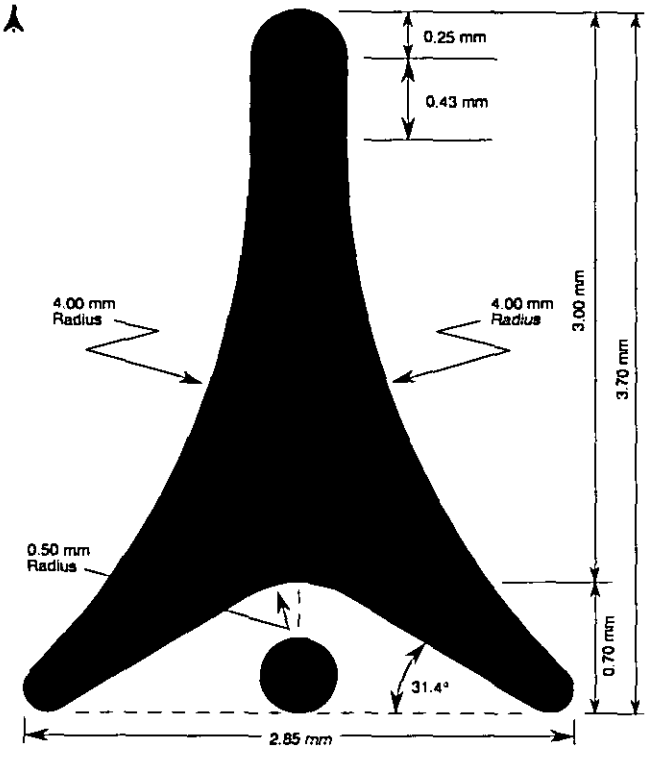
Lineweights : 0.25 mm
Origin : Intersection of handles

POSICUT # 2



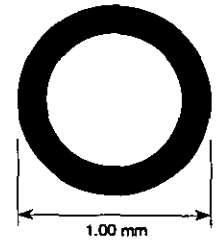
Origin : Center of Square

POSICUT # 3



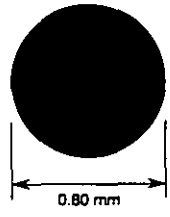
Base Dot : 0.40 mm diameter centered between legs
Base Leg End Radii : 0.125 mm. Tip Radius : 0.25 mm
Origin : Center of base dot.

POSICUT # 4



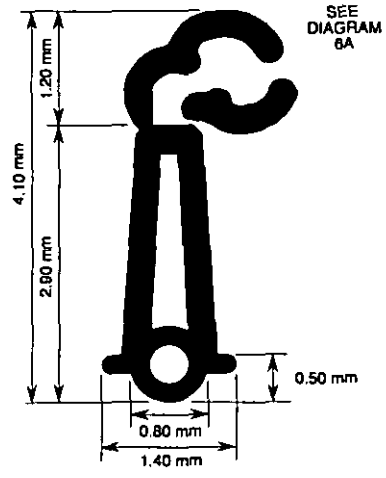
Lineweight : 0.15 mm
Origin : Center of Ring

POSICUT # 5



Origin : Center of circle

POSICUT # 6



Circle is centered on Base.
Base and Circle lineweight : 0.20 mm
Chimney lineweight : 0.30 mm
Chimney tapers from 0.75 to 1.00 mm
Chimney top bevels : 0.10 x 0.10 mm x 45°
Origin : Center of base circle

SCALE : 1.00 inch = 2.00 mm

POSICUT # 6 (continued)

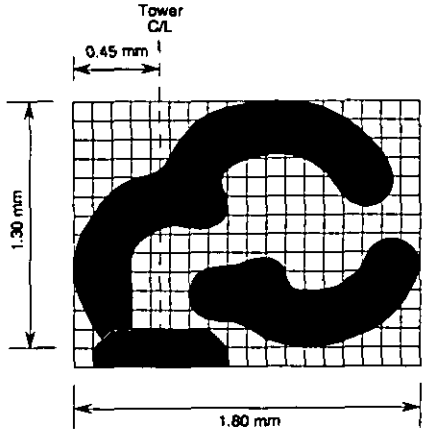
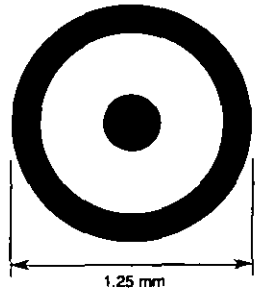


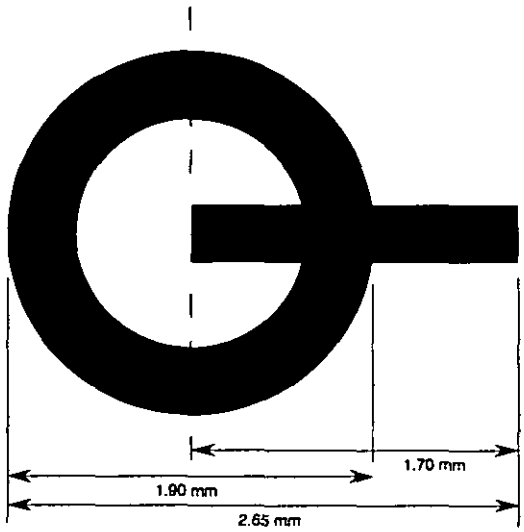
DIAGRAM 6A: "Smoke Clouds" should closely approximate the shapes as indicated above.
Grid squares: 0.10 x 0.10 mm

POSICUT # 7



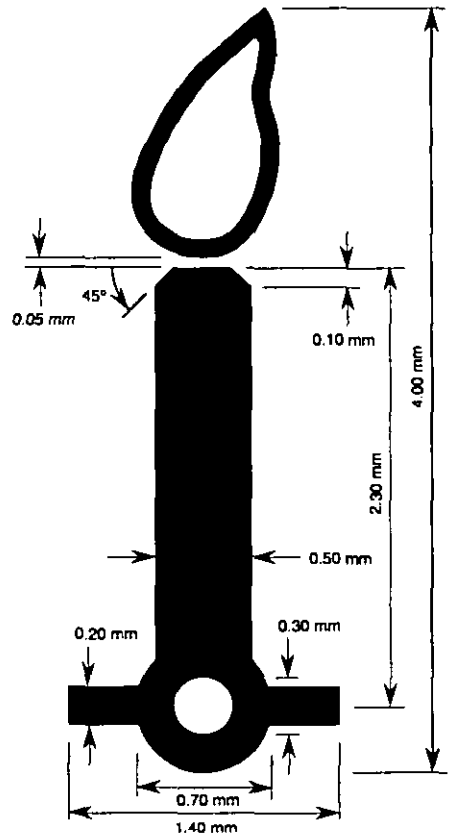
Circle Lineweight : 0.15 mm
Dot Diameter : 0.30 mm
Origin : Center of dot

POSICUT # 8

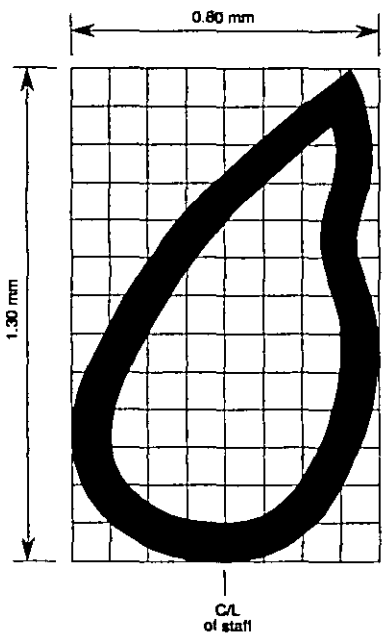


Circle lineweight : 0.35 mm
Bar lineweight : 0.30 mm
Bar aligned to circle center
Origin : Center of circle

POSICUT # 9



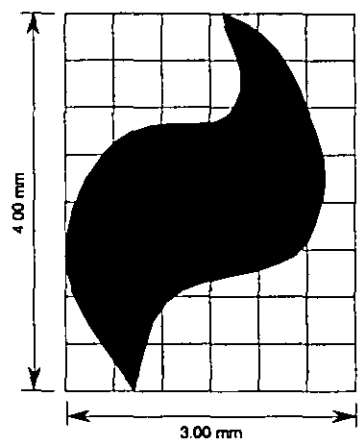
POSICUT # 9 (continued)



Flame lineweight : 0.10 mm
Flame should closely approximate the shape as indicated above. Grid Squares : 0.10 x 0.10 mm
Origin : Center of base circle

SCALE : 1.00 inch = 0.5 mm

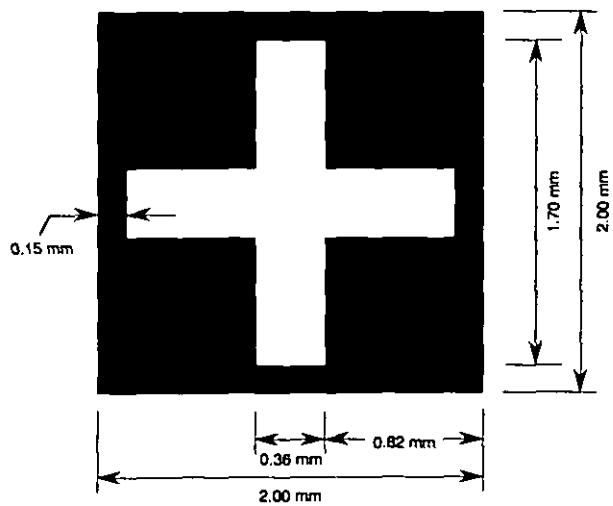
POSICUT # 10



"Flare" should closely approximate the shape as indicated above.
Symbol overall dimensions : 2.67 mm x 4.00 mm.
Grid Squares : 0.50 x 0.50 mm
Origin : Lower tip of flare

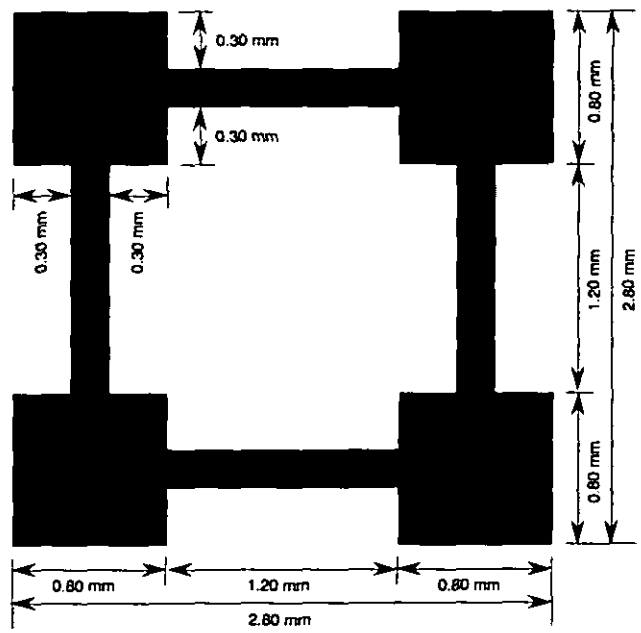
SCALE : 1.00 inch = 2.00 mm

POSICUT # 11



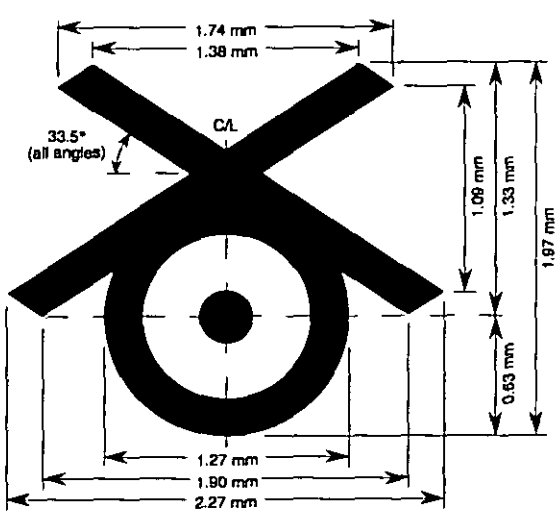
Origin : Center of cross

POSICUT # 12



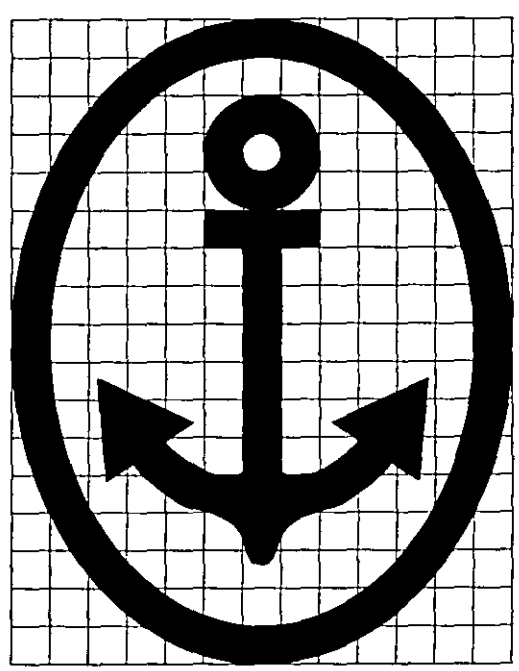
Large square lineweight : 0.20 mm
Origin : Center of large square

POSICUT # 13



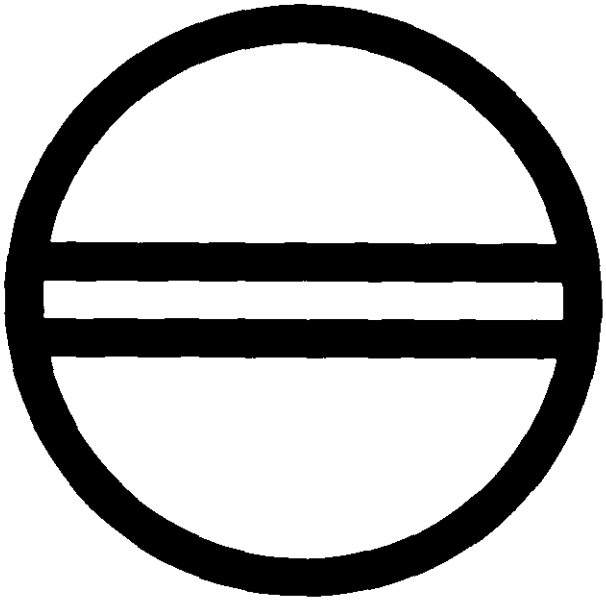
Circle and "X" Lineweight : 0.20 mm
Center dot diameter : 0.28 mm
Outside diameter of circle intersects the "X" at its centerline.
All angles measured from the horizontal.
Origin : Center of dot

POSICUT # 14



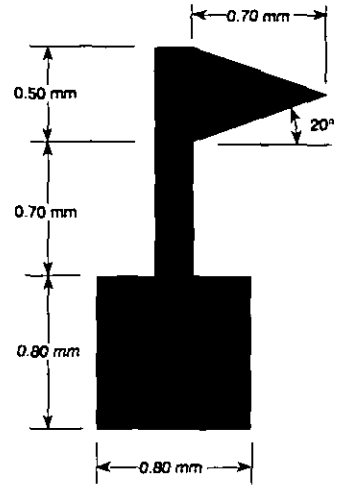
Symbol should closely approximate the shape as indicated above. Flukes : 0.55 mm sides (equilateral triangles)
Symbol overall dimensions : 2.60 x 3.40 mm
All lineweights : 0.20 mm Grid squares: 0.20 x 0.20 mm
Origin : Center of Ellipse

POSICUT # 15



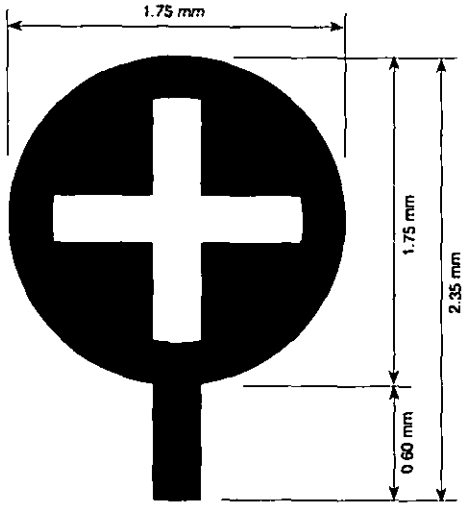
All lineweights : 0.20 mm
Circle outer diameter : 3.10 mm
Horizontal bars centered in circle
and spaced 0.20 mm apart
Origin : Center of Circle

POSICUT # 16



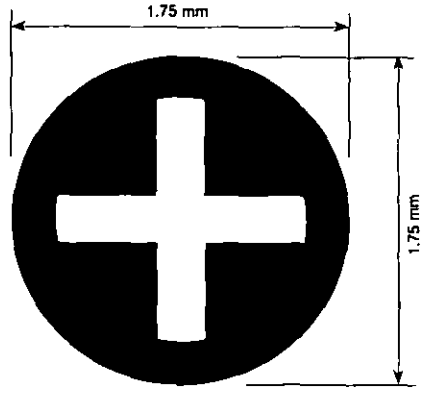
Staff lineweight : 0.20 mm
Staff centered on box
Origin : Center of box

POSICUT # 17



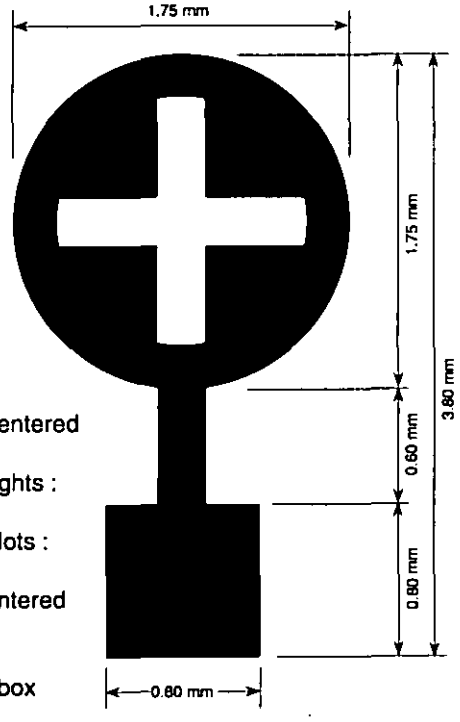
Cross is centered in circle
All lineweights : 0.25 mm
Width of slots : 0.25 mm
Origin : Bottom center of staff

POSICUT # 18



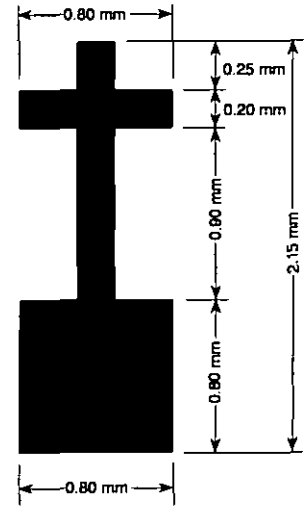
Cross is centered in circle
All lineweights : 0.25 mm
Width of slots : 0.25 mm
Origin : Bottom center of staff

POSICUT # 19



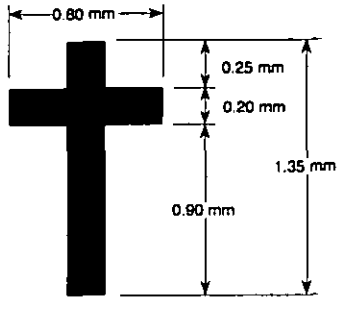
Cross is centered in circle
All lineweights : 0.25 mm
Width of slots : 0.25 mm
Staff is centered on box
Origin : Center of box

POSICUT # 20



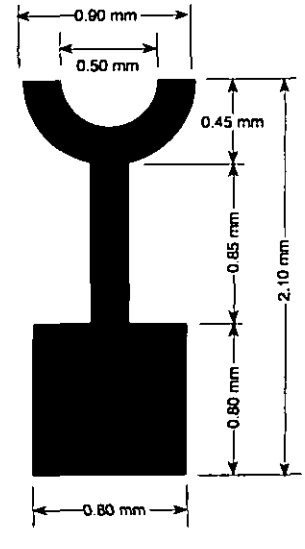
Cross lineweights : 0.20 mm
Staff is centered on box
Origin : Center of box

POSICUT # 21



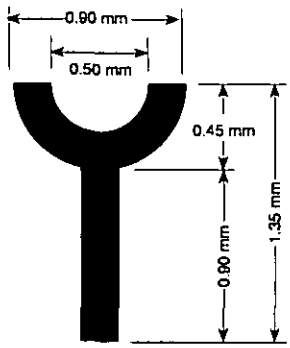
Cross lineweights : 0.20 mm
Origin : Base of cross

POSICUT # 22



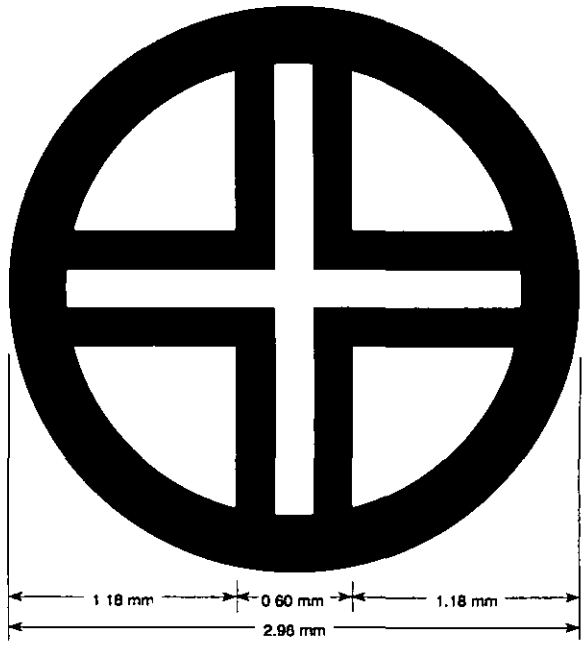
All lineweights : 0.20 mm
Staff is centered on box
Origin : Center of box

POSICUT # 23



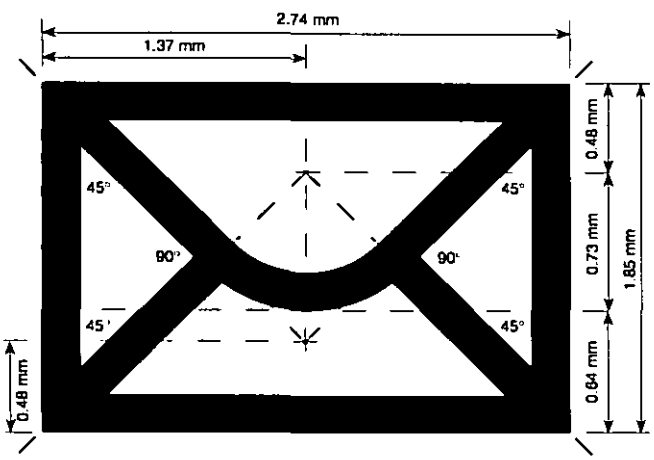
All Lineweights : 0.20 mm
Half circle is centered on staff
Origin : Base of staff

POSICUT # 24



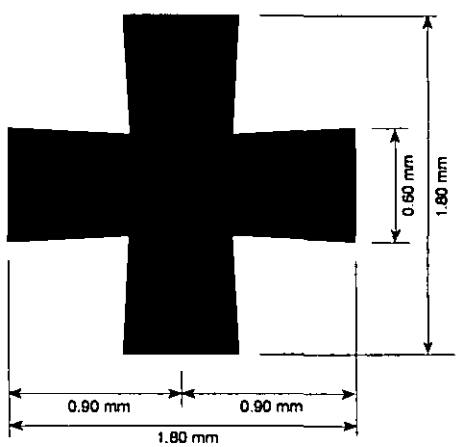
Cross is centered in circle
Cross lineweights : 0.20 mm
Cross spaces : 0.20 mm
Circle lineweight : 0.30 mm
Origin : Center of circle

POSICUT # 25



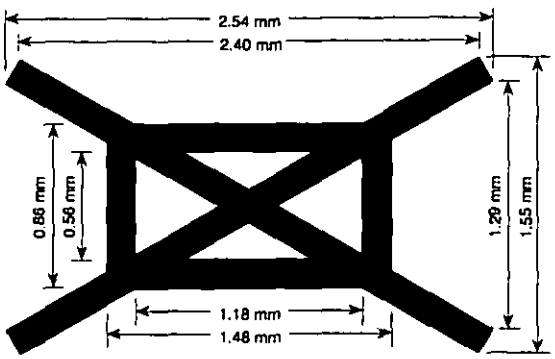
All lineweights : 0.20 mm
Arc radius (inner) : 0.53 mm
(outer) : 0.73 mm
Origin : Center of rectangle
Interior lines (centerlines) intersect at the outer rectangle corners as shown.

POSICUT # 26



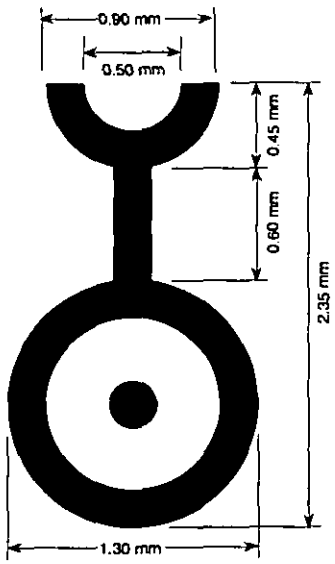
Both cross bars taper from 0.60 mm at the outside edges to 0.50 mm at the intersection with the inner centerlines.
Origin : Center of cross

POSICUT # 27



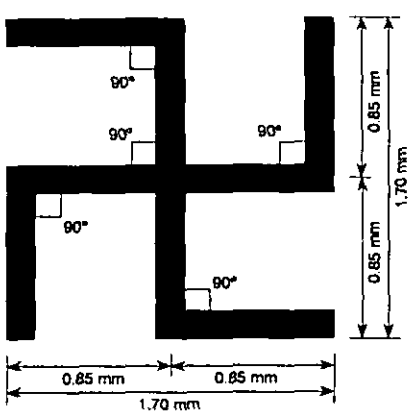
All lineweights : 0.15 mm
"X" bar length : 2.84 mm
"X" bar centerlines intersect the box centerlines at the outside corners.
Origin : Center of box

POSICUT # 28



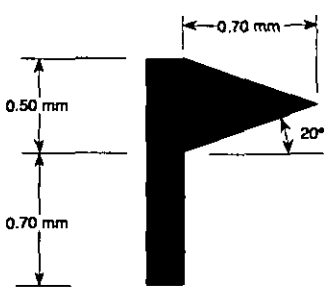
Arc and staff lineweight : 0.20 mm
Circle lineweight : 0.20 mm
Dot diameter : 0.25 mm
Origin : Center of dot

POSICUT # 29



All lineweights : 0.15 mm
Origin : Center of symbol

POSICUT # 30

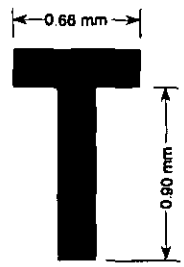


Staff lineweight : 0.20 mm
Origin : Bottom - center of staff

POSICUT # 31

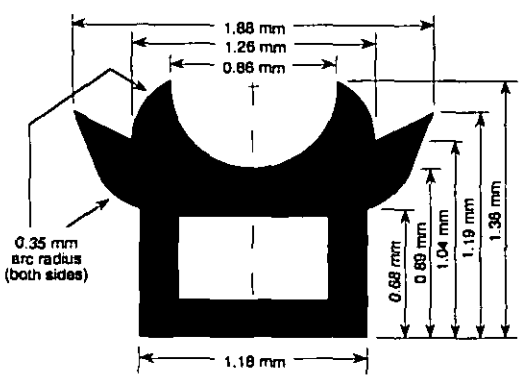
"T" lineweight : 0.20 mm
"T" is centered above box.
Origin : Center of box

POSICUT # 32



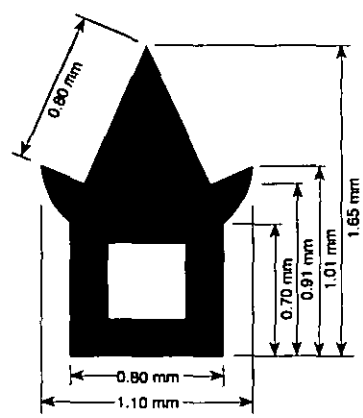
Lineweights : 0.20 mm
Bar is centered on staff
Origin : Bottom center of staff

POSICUT # 33



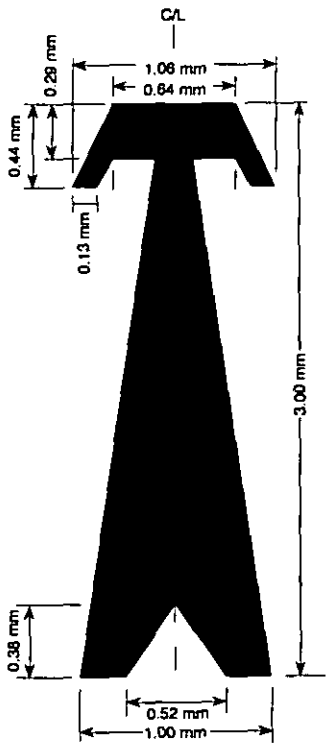
Box lineweight : 0.20 mm
Small arc radii : 0.35 mm
Large arc radius : 0.43 mm
Top is horizontally symetrical
Origin : Center of open rectangle

POSICUT # 34



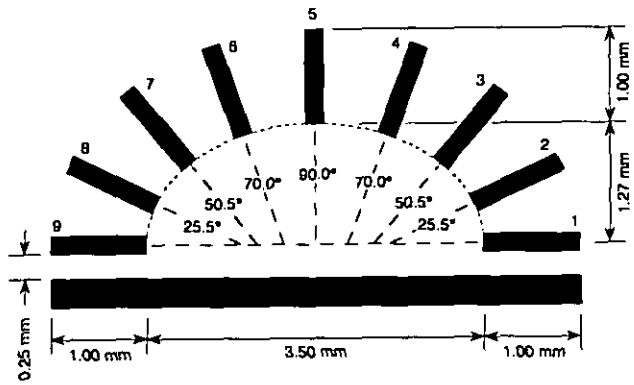
Box lineweight : 0.20 mm
Arc radii : 0.44 mm
Top is horizontally symetrical
Origin : Center of open square

POSICUT # 35



Origin : Bottom center of pylon

POSICUT # 36



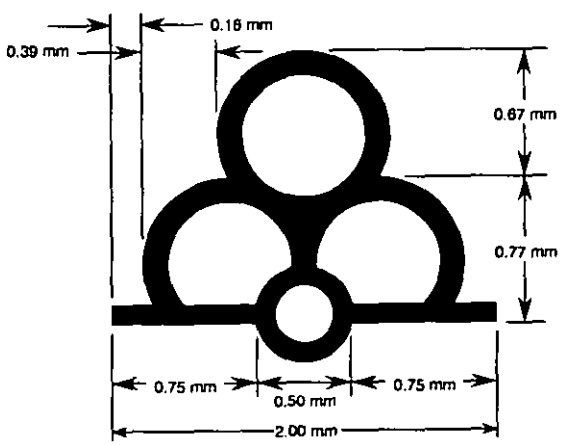
Ticks are arranged perpendicular to the ellipse.
Symbol is horizontally symmetrical.
Tick Spacing (intersecting the ellipse) :

1 -2 : 0.45 mm	5 -6 : 0.75 mm
2 -3 : 0.55 mm	6 -7 : 0.65 mm
3 -4 : 0.65 mm	7 -8 : 0.55 mm
4 -5 : 0.75 mm	8 -9 : 0.45 mm

Tick lineweight : 0.20 mm
Basebar lineweight : 0.30 mm
Origin : Center of basebar

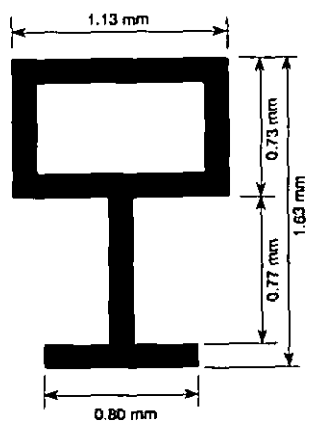
SCALE : 1.00 inch = 2.00 mm

POSICUT # 38



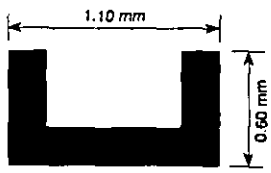
Large circle lineweight : 0.13 mm
diameter : 0.90 mm
Small circle lineweight : 0.10 mm
diameter : 0.50 mm
Base lineweight : 0.10 mm;
Small circle is centered on base.
Symbol is horizontally symetrical.
Origin : center of small circle

POSICUT # 39



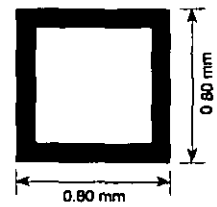
Box and baseline are centered on vertical staff.
All lineweights : 0.13 mm
Origin : Center of baseline

POSICUT # 40



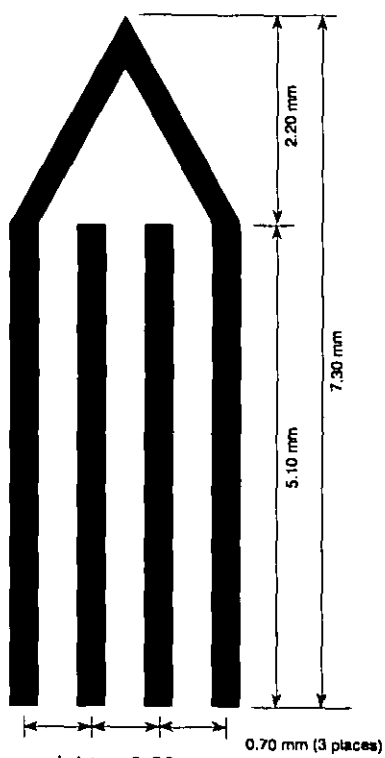
Lineweights : 0.20 mm
Origin : Center of base

POSICUT # 41



Lineweight : 0.10 mm
Origin : Center of box

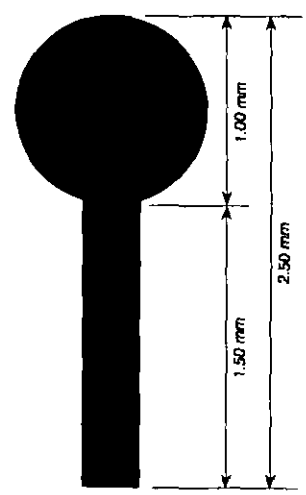
POSICUT # 42



All lineweights : 0.30 mm
Origin : bottom center of symbol

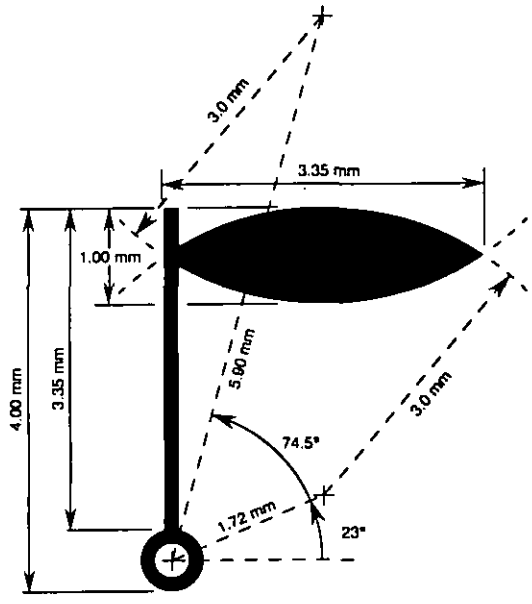
SCALE : 1.00 inch = 2.00 mm

POSICUT # 44



Staff lineweight : 0.20 mm
Dot diameter : 1.00 mm
Origin : Bottom center of staff

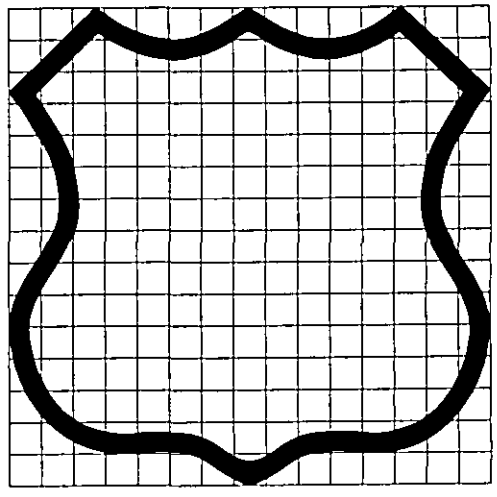
POSICUT # 45



Staff and circle lineweight : 0.15 mm
Circle diameter : 0.65 mm
Origin : center of small circle

SCALE : 1.00 inch = 2.00 mm

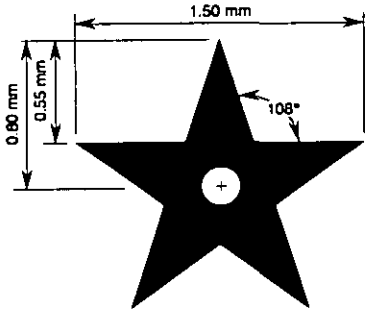
POSICUT # 46



Symbol is horizontally symetrical and should closely approximate the shape as indicated above.
Grid squares : 0.25 x 0.25 mm
Lineweight : 0.15 mm
Symbol overall dimensions : 3.75 x 3.75 mm
Origin : Center of symbol

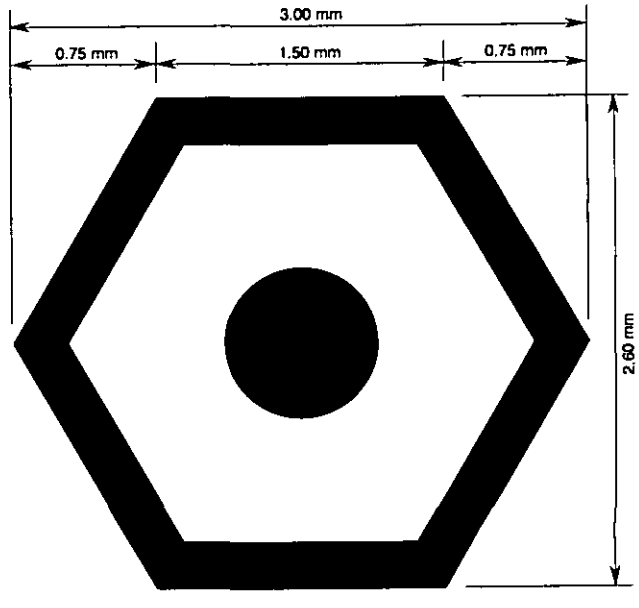
SCALE : 1.00 inch = 1.50 mm

POSICUT # 49



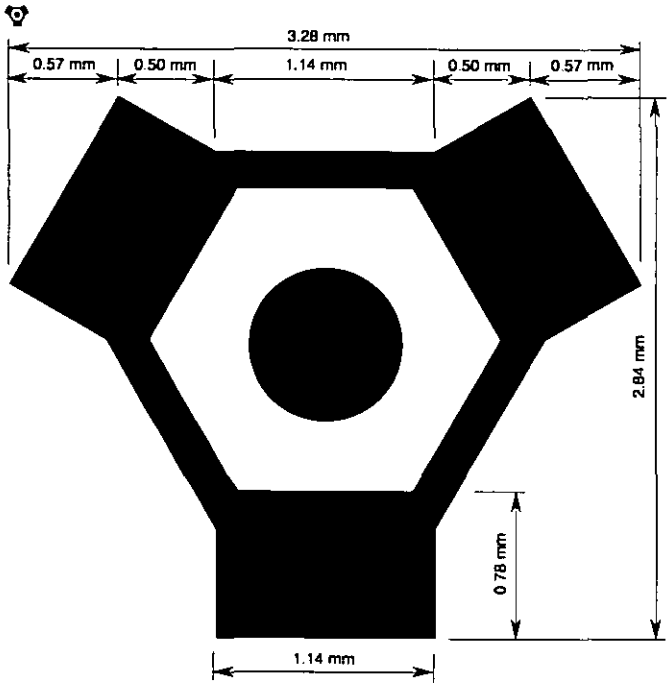
Symbol is horizontally symetrical
Open circle diameter : 0.25 mm
Origin : Center of circle

POSICUT # 50



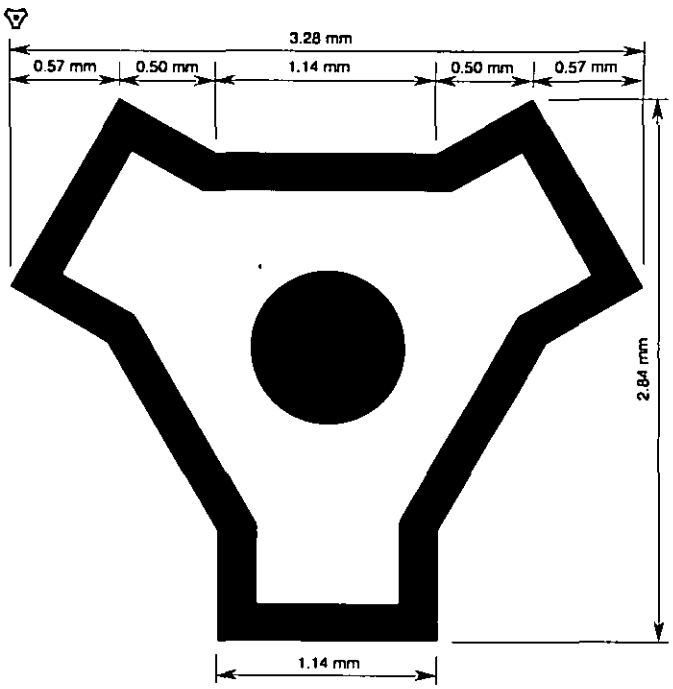
All interior angles : 120°
Inner dot diameter : 0.80 mm
Hexagon lineweight : 0.20 mm
Origin : Center of dot

POSICUT # 51



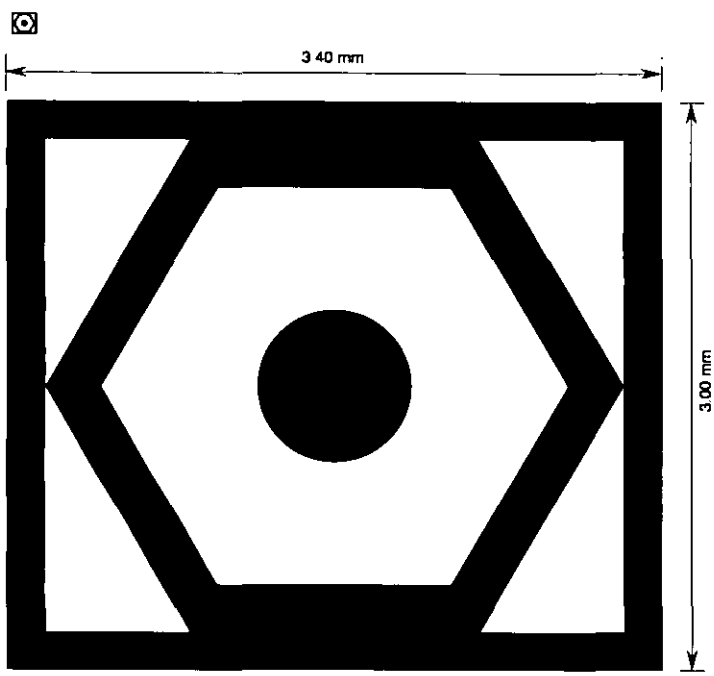
Posicut is equilaterally symetrical.
All interior angles : 120°
Inner dot diameter : 0.80 mm
Hexagon lineweight : 0.20 mm
Origin : Center of dot

POSICUT # 52



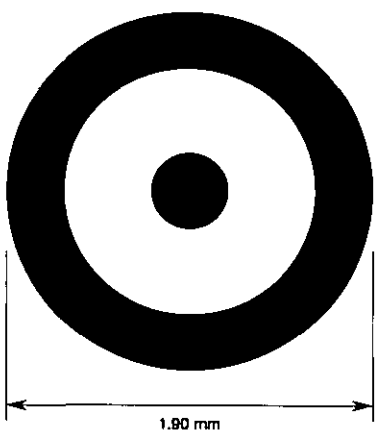
Posicut is equilaterally symetrical.
All interior angles : 120°
Inner dot diameter : 0.80 mm
Hexagon lineweight : 0.20 mm
Origin : Center of dot

POSICUT # 53



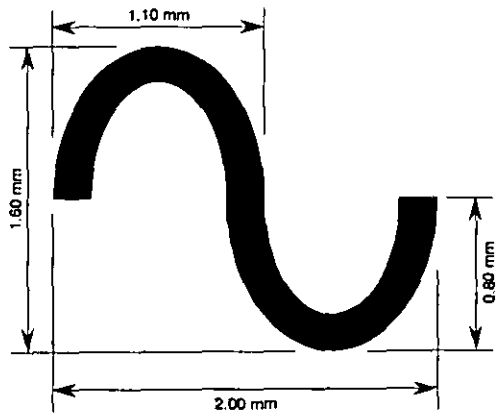
Hexagon/dot dimensions same as Posicut 50.
Inner edge of rectangle is tangent with outer hexagon perimeter.
All lineweights : 0.20 mm
Origin : Center of dot

POSICUT # 55



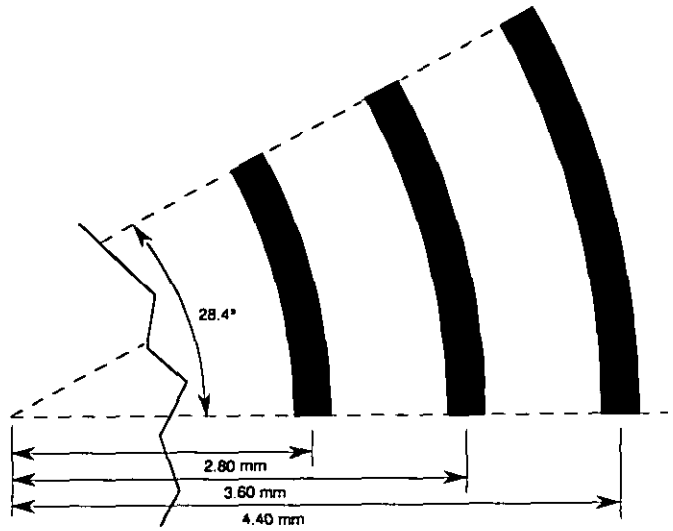
Circle lineweight : 0.30 mm
Dot centered in circle.
Dot diameter : 0.40 mm
Origin : Center of dot

POSICUT # 56



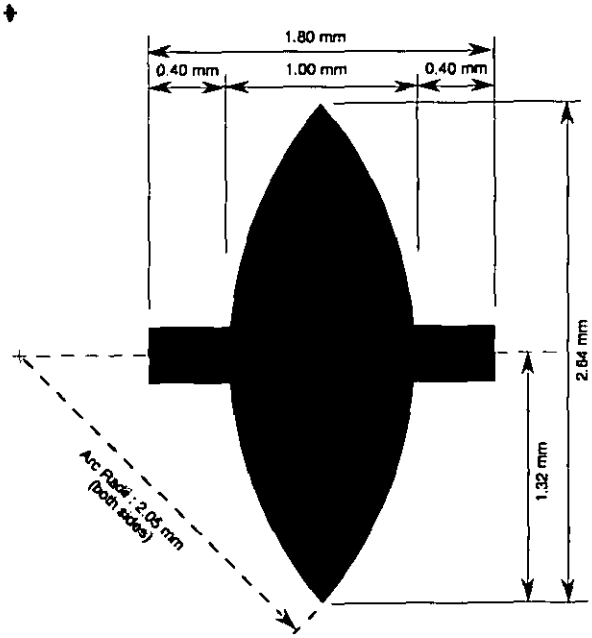
Lineweight : 0.20 mm
Posicut is formed by dividing ellipse in half and shifting the lower half to the right.
Origin : Centerline of posicut at the intersection of the upper and lower half.

POSICUT # 59



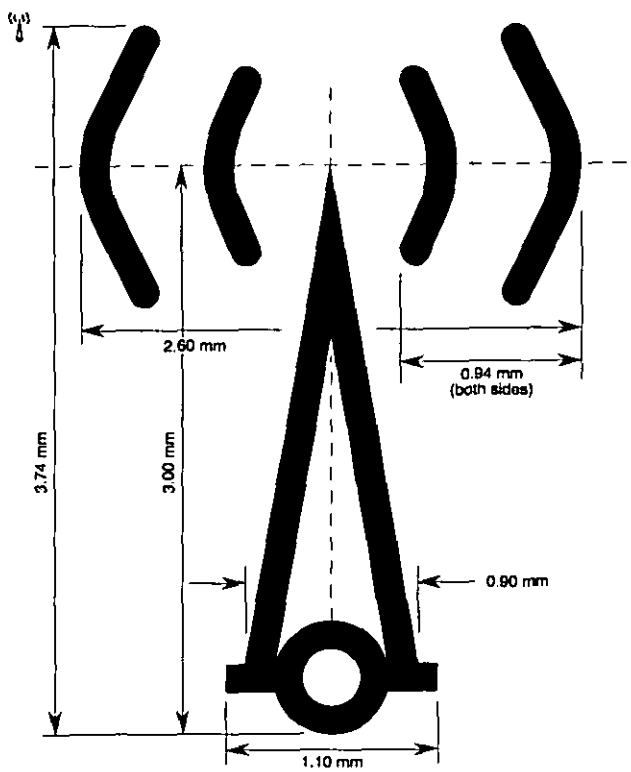
Lineweight : 0.20 mm
Posicut is formed by (3) arcs originating at the same focus.
Origin : On the centerline and in the middle of the center arc.

POSICUT # 60



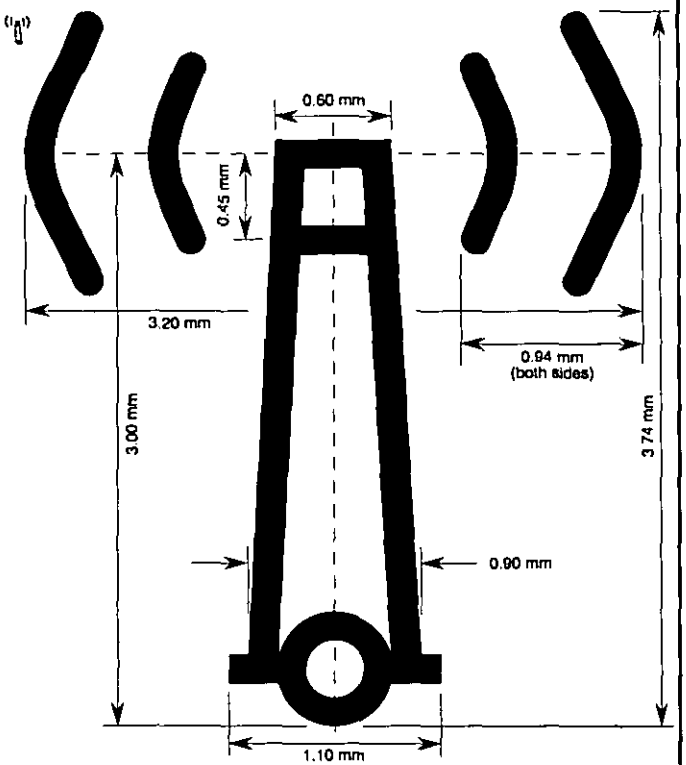
Bar lineweight : 0.30 mm
Symbol is horizontally symmetrical.
Origin : Middle centerline of bar.

POSICUT # 61



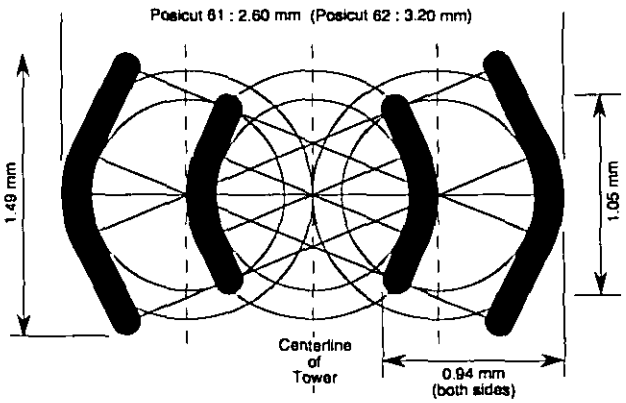
All lineweights : 0.15 mm. Circle diameter : 0.60 mm
Origin : center of circle centered on base

POSICUT # 62



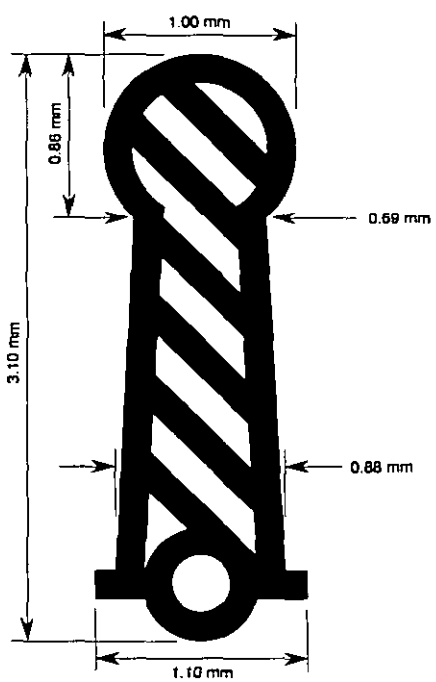
All lineweights : 0.15 mm.
Circle diameter : 0.60 mm
Origin : Center of circle

Radar Waves for POSICUT # 61/62



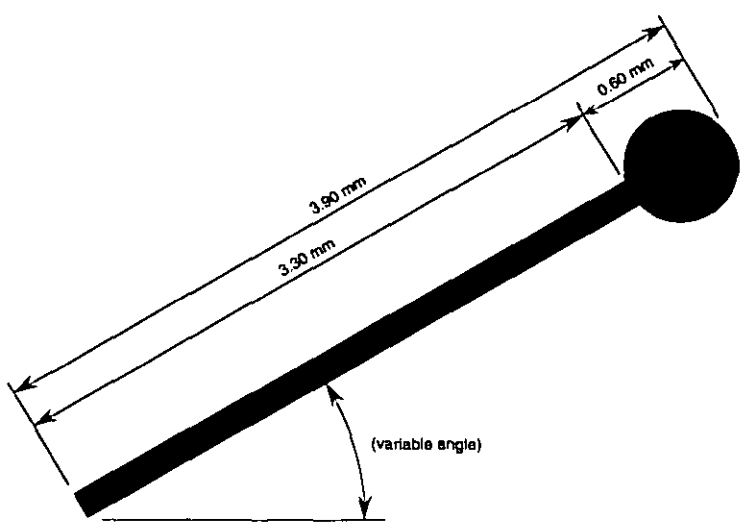
"Radar Waves" are formed as follows:
(3) large circles (1.30 mm diameter) are alligned, tangent to *adjacent centers, and form outside radii of "radar waves".*
(3) medium circles (1.00 mm diameter) are alligned and form inside radii of "radar waves".
(8) small circles (0.15 mm diameter) form the tips of the "radar waves".
All projection lines are 22.5° from the horrizontal; long lines connect (2) small circle centers with the opposite medium circle center as shown. The long line endpoints form the breakpoint between the radii and the flat of the "radar wave".
"Radar wave" lineweight : 0.15 mm

POSICUT # 63



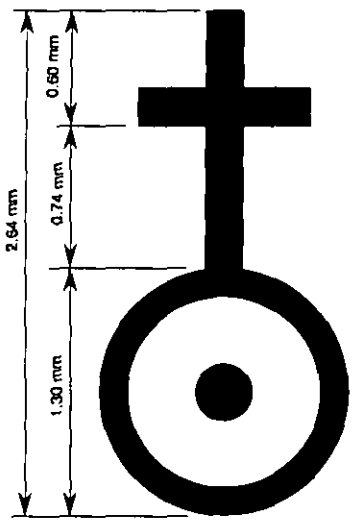
All lineweights : 0.15 mm.
Diagonal spaces : 0.15 mm
Diagonal lines : -45°
Circle diameter : 0.60 mm
Origin : Center of circle

POSICUT # 64



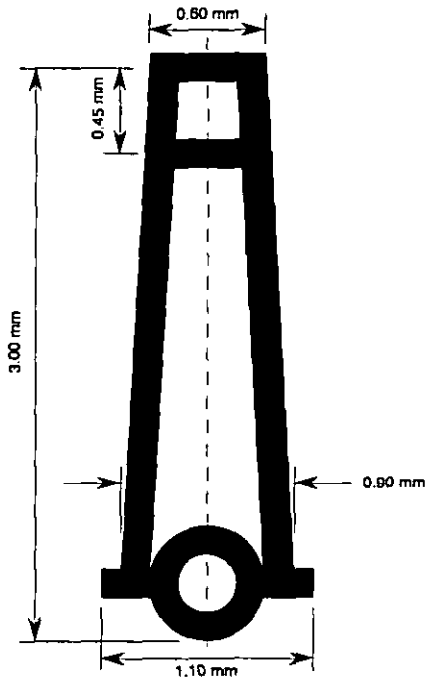
Staff lineweight : 0.15 mm
Origin : Bottom center of staff

POSICUT # 66



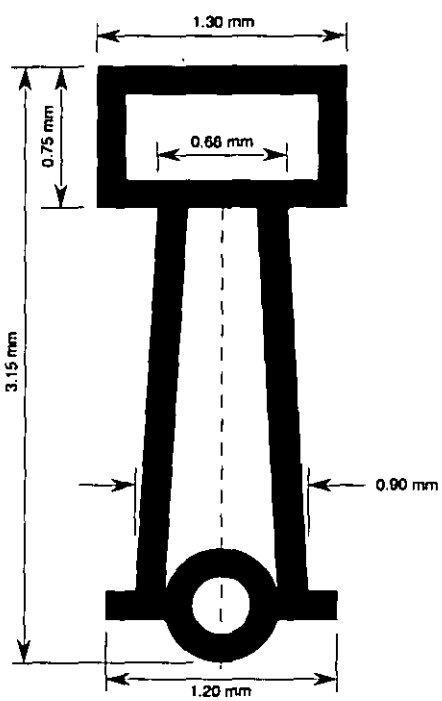
Cross lineweights : 0.20 mm
Circle lineweight : 0.15 mm
Dot diameter : 0.30 mm
Dot is centered in circle.
Origin : Center of dot

POSICUT # 68



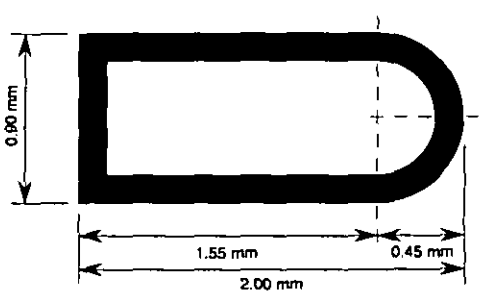
Circle is centered on base. Circle diameter : 0.60 mm
All lineweights : 0.15 mm. Origin : Center of circle

POSICUT # 69



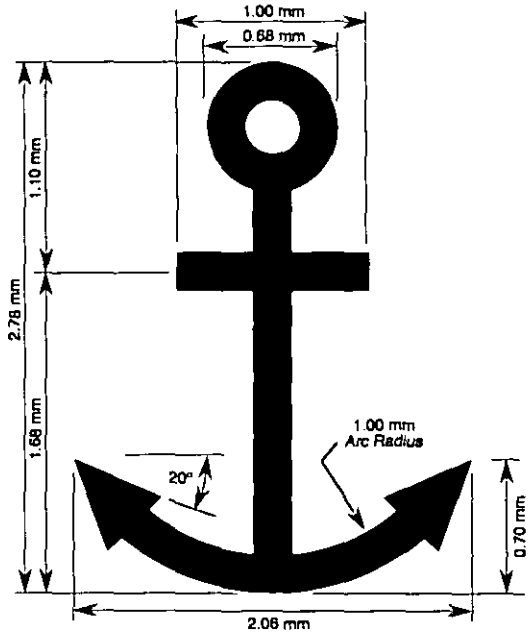
Circle is centered on base. Circle diameter : 0.60 mm
All lineweights : 0.15 mm. Origin : Center of circle

POSICUT # 70



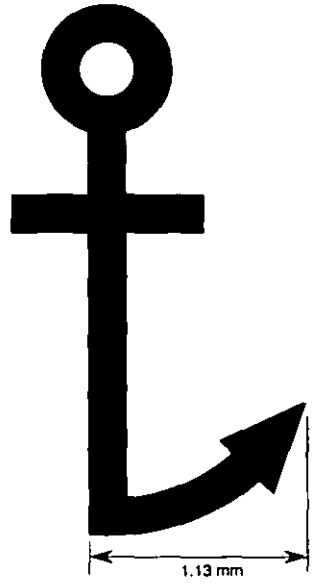
All lineweights : 0.15 mm.
Origin : Center of symbol

POSICUT # 75



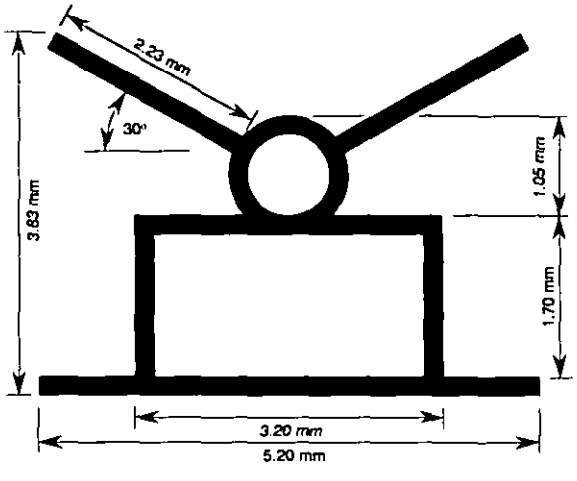
Anchor fluke tips are isosoles right triangles:
0.50 mm x 0.40 mm x 0.50 mm.
Symbol is horizontally symetrical.
All lineweights : 0.20 mm Origin : Center of symbol

POSICUT # 76



Symbol is dimensioned identical to Posicut # 75 with the left anchor fluke deleted.
Origin : Center of vertical staff

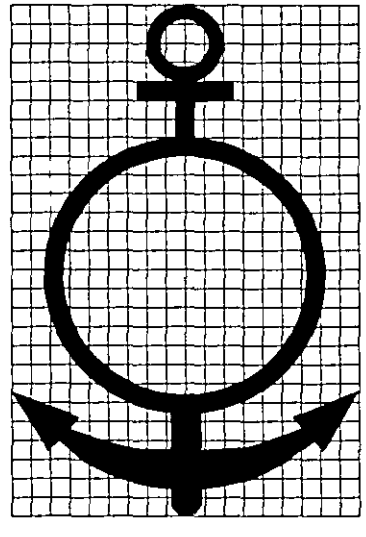
POSICUT # 77



All lineweights : 0.20 mm
Symbol is horizontally symetrical.
Circle outside diameter : 1.25 mm
Origin : Center of base line

SCALE : 1.00 inch = 2.00 mm

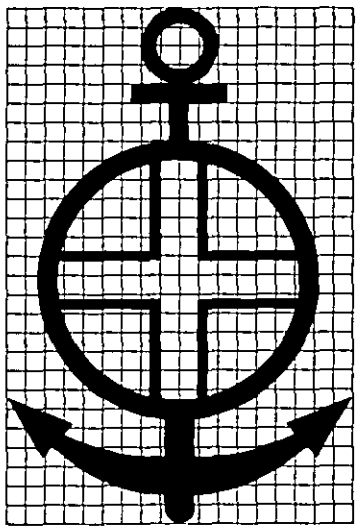
POSICUT # 78



Symbol overall dimensions :
Height : 5.40 mm Width : 3.60 mm
Symbol should closely approximate the shape as indicated above.
Grid squares : 0.20 mm x 0.20 mm
Origin : Center of large circle

SCALE : 1.00 inch = 2.00 mm

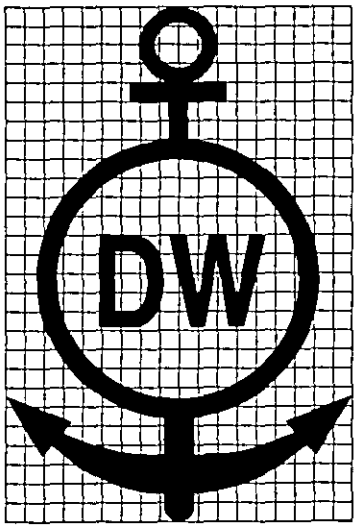
POSICUT # 79



Symbol overall dimensions :
Height : 5.40 mm Width : 3.60 mm
Symbol should closely approximate the shape as indicated above.
Grid squares : 0.20 mm x 0.20 mm
Origin : Center of large circle

SCALE : 1.00 inch = 2.00 mm

POSICUT # 80



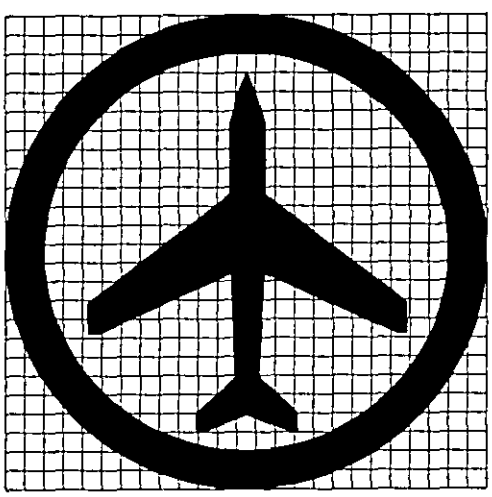
Symbol overall dimensions :
Height : 5.40 mm Width : 3.60 mm
Symbol should closely approximate the shape as indicated above.
Grid squares : 0.20 mm x 0.20 mm
Origin : Center of large circle

SCALE : 1.00 inch = 2.00 mm

POSICUT # 81

Anchor symbology is identical to Posicut # 75
"X" bars oriented at 45°
"X" bar length : 3.25 width : 0.15
Origin : Center of "X"

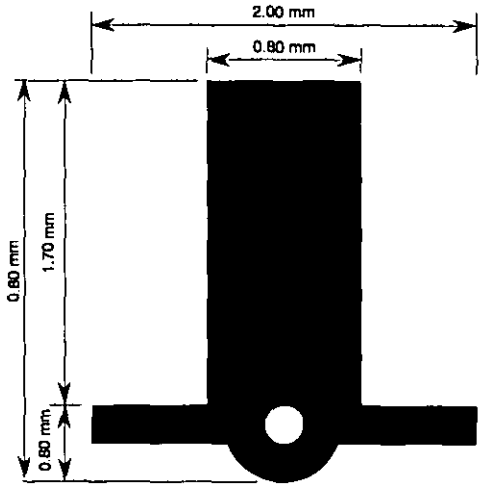
POSICUT # 82



Symbol overall dimensions :
Height : 5.00 mm Width : 5.00 mm
Symbol should closely approximate the shape as indicated above.
Grid squares : 0.20 mm x 0.20 mm
Origin : Center of circle

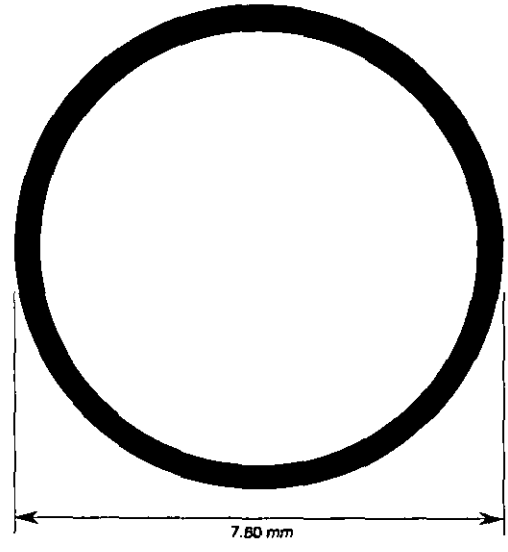
SCALE : 1.00 inch = 2.00 mm

POSICUT # 85



Base lineweight : 0.20 mm
Circle is centered on base.
Circle outside diameter : 0.60 mm
Symbol is horizontally symetrical.
Origin : Center of open circle

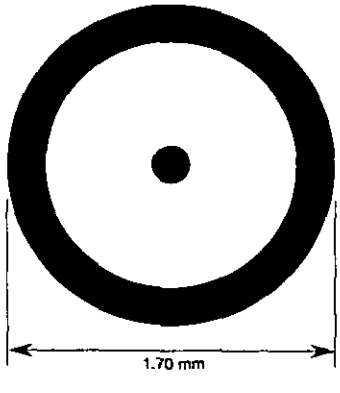
POSICUT # 86



Lineweight : 0.40 mm
Origin : Center of circle

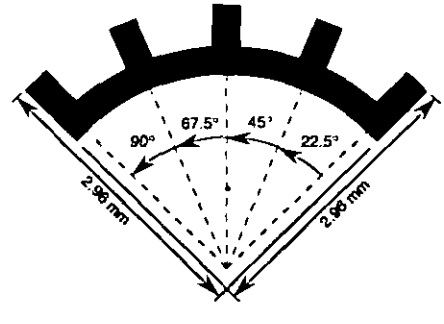
SCALE : 1.00 inch = 3.00 mm

POSICUT # 92



Lineweight : 0.20 mm
Center dot diameter : 0.20 mm
Origin : Center of dot

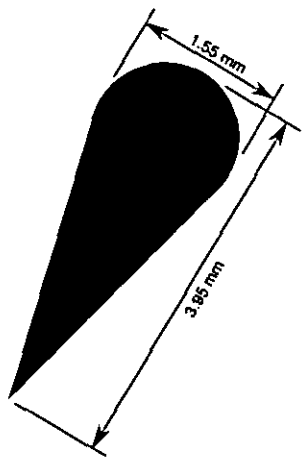
POSICUT # 93



All lineweights : 0.30 mm
All angles : 22.5°
Arc radii (inner) : 2.20 mm
Ticks : 0.30 x 0.60 mm and perpendicular to the tangent of the inner arc radii.
Symbol is horizontally symetrical.
Origin : 1.10 mm below center tick

SCALE : 1.00 inch = 2.00 mm

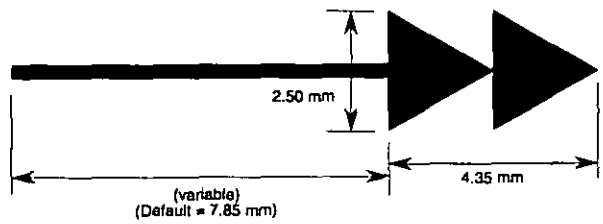
POSICUT # 94



Cone is an isoceles right triangle (3.08 x 1.50 x 3.08 mm) tangent with circle as shown.
Origin : Pointed tip of cone
Angle of Orientation : variable

SCALE : 1.00 inch = 2.00 mm

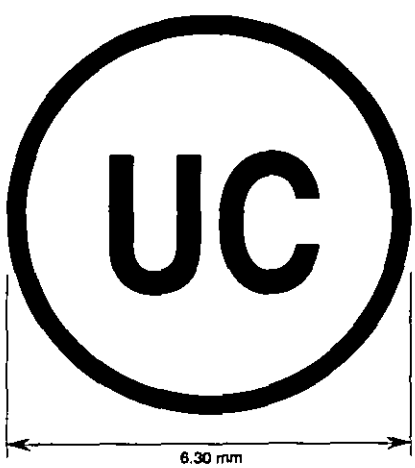
POSICUT # 95



Tail lineweight : 0.30 mm
Equilateral Triangles : Side lengths : 2.50 mm
Triangle centers and tail are alligned
Origin : Tip of triangle

SCALE : 1.00 inch = 4.00 mm

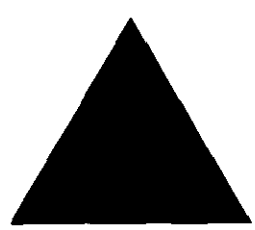
POSICUT # 96



Lineweight : 0.30 mm
Type : Swiss 742, 8 point bold condenced, centered in circle
Origin : Center of circle

SCALE : 1.00 inch = 3.00 mm

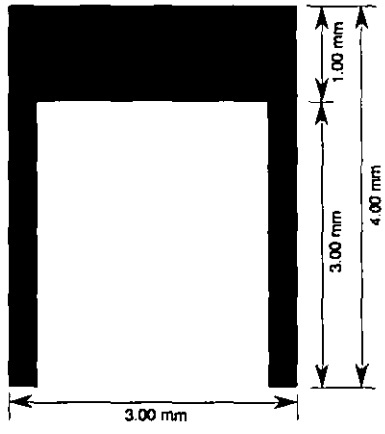
POSICUT # 97



Equilateral Triangle
(2.50 mm sides)
Origin : Center of triangle

SCALE : 1.00 inch = 2.00 mm

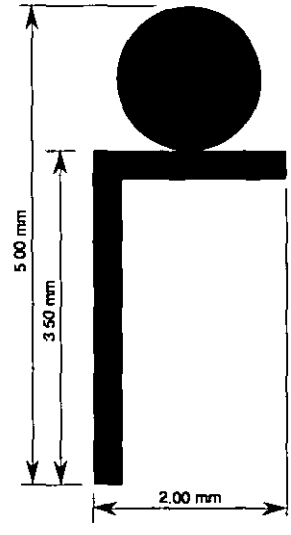
POSICUT # 98



Leg lineweight : 0.30 mm
Origin : Bottom center of symbol

SCALE : 1.00 inch = 2.00 mm

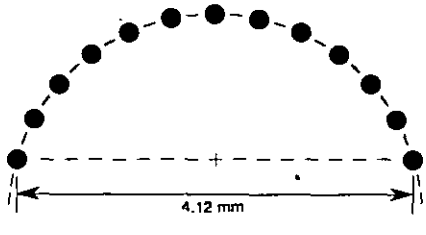
POSICUT # 99



Lineweights : 0.30 mm
Dot diameter : 1.50 mm
Dot is centered and tangent to the top of the crosspiece.
Origin : Bottom center of vertical staff

SCALE : 1.00 inch = 2.00 mm

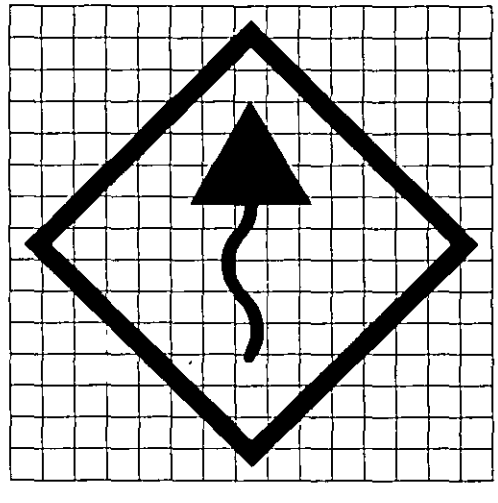
POSICUT # 100



Dots centered on an arc with 2.15 mm arc radius and 5.45 mm arc length.
Dot diameter : 0.20 mm Dot spacing : 0.26 mm
Origin : Bottom center of symbol

SCALE : 1.00 inch = 2.00 mm

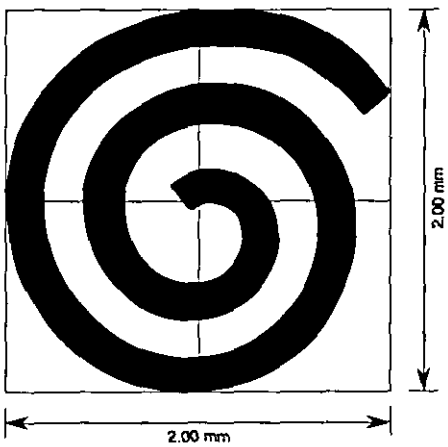
POSICUT # 101



Symbol should closely approximate the shape as indicated above. Diamond sides : 4.70 x 4.70 mm (centerline)
Diamond lineweight : 0.30 mm
Triangle and tail should closely approximate the size and position shown. Triangle is : 1.50 mm equilateral. Tail lineweight : 0.20 mm Grid Squares : 0.25 x 0.25 mm
Origin : Center of symbol or end of leaderline (when used)

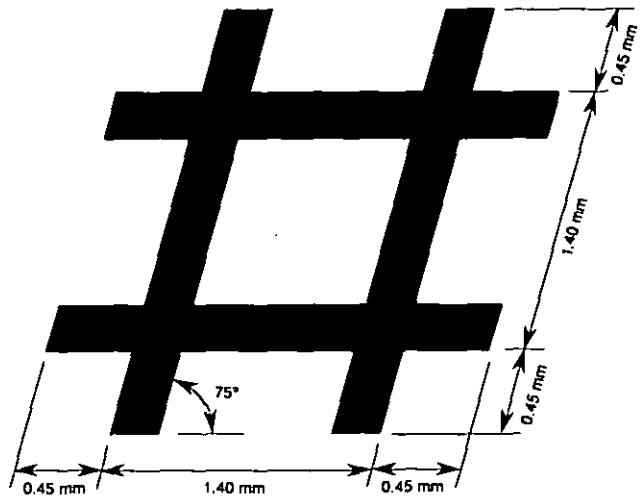
SCALE : 1.00 inch = 3.00 mm

POSICUT # 102



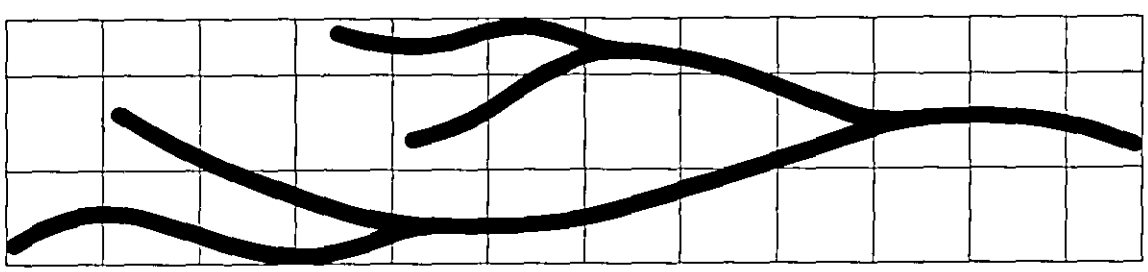
Symbol should closely match the spiral as shown on the 2.00 x 2.00 mm grid above.
Lineweight : 0.20 mm
Origin : Center of symbol

POSICUT # 104



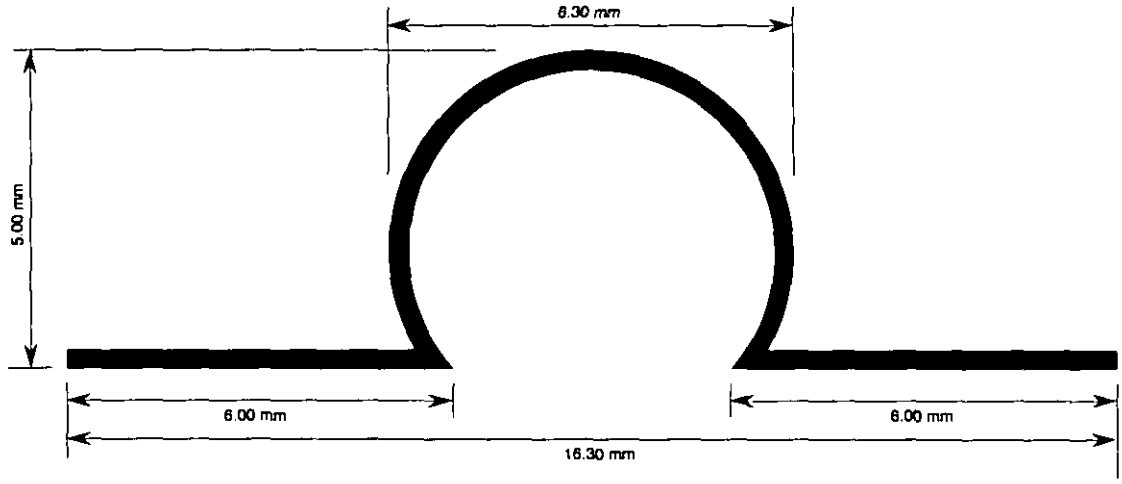
All lineweights : 0.25 mm
Origin : Center of symbol

POSICUT # 106



Symbol should closely match the free-form line pattern indicated above.
Symbol overall Length: 5.90 Width : 1.30 mm
Grid squares : 0.50 x 0.50 mm
Lineweight : 0.15 mm
Origin : Center of symbol

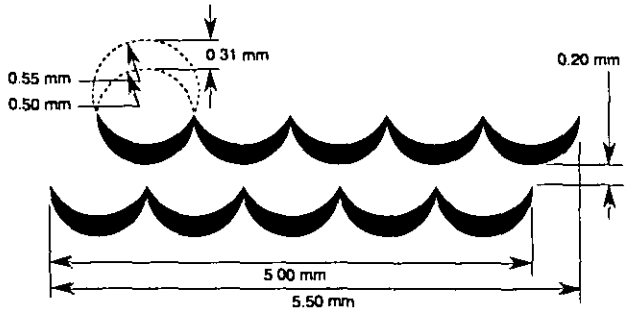
POSICUT # 107



All lineweights : 0.30 mm
Origin : *Center of circle*

SCALE : 1.00 inch = 3.00 mm

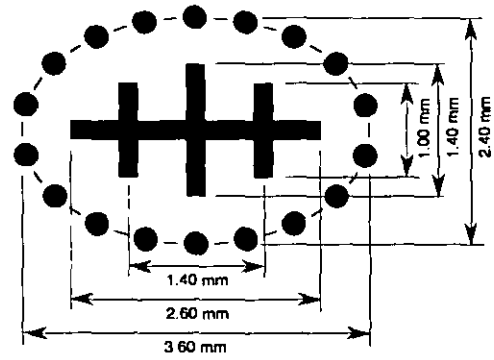
POSICUT # 108



Each "wave" is formed by the intersection of the upper arc radius (0.55 mm) with the lower arc radius (0.50 mm).
Each "wave" intersects at the tangent of the 0.50 mm radius.
Origin : Center of symbol

SCALE : 1.00 inch = 2.00 mm

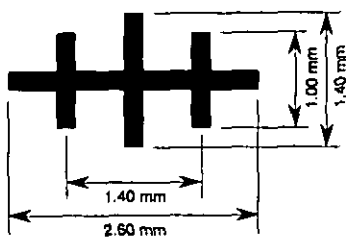
POSICUT # 109



All lineweights : 0.20 mm
Dot diameter : 0.25 mm, Dot spacing : 0.275 mm
Dots are centered on an ellipse with
semimajor axis = 3.60 mm and semiminor axis = 2.40 mm
Symbol is horizontally and vertically symetrical .
Origin : Center of symbol

SCALE : 1.00 inch = 2.00 mm

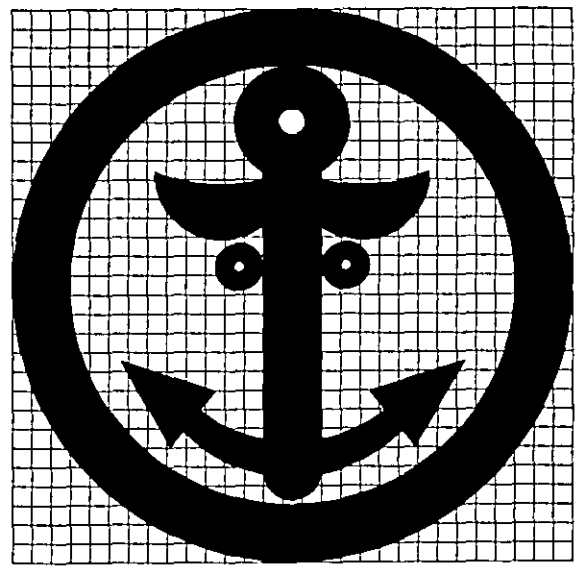
POSICUT # 110



All lineweights : 0.20 mm
Symbol is horizontally and vertically symetrical .
Origin : Center of symbol

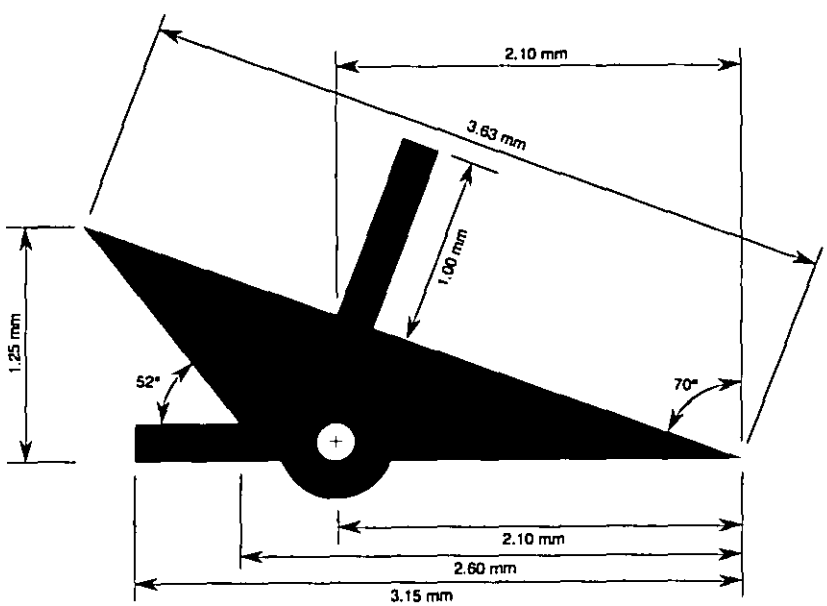
SCALE : 1.00 inch = 2.00 mm

POSICUT # 113



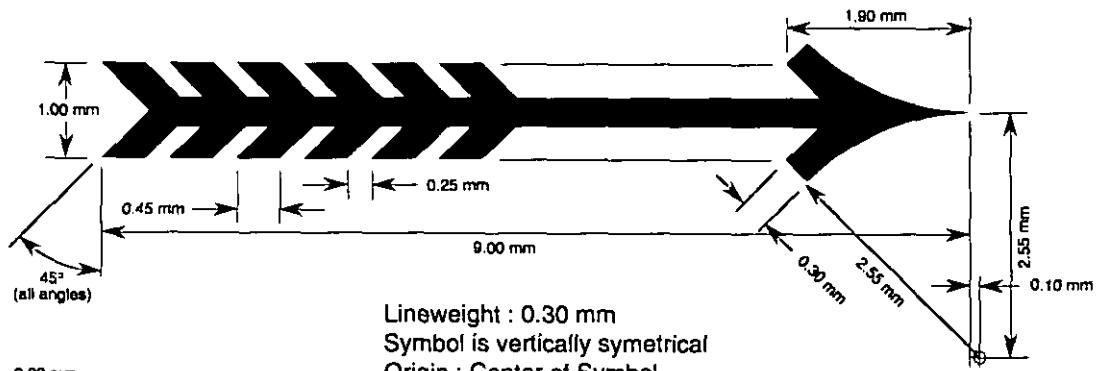
Symbol overall dimensions :
Height : 2.90 mm Width : 2.90 mm
Symbol should closely approximate the shape as indicated above.
Grid squares : 0.10 mm x 0.10 mm
Origin : Center of large circle

POSICUT # 114



All lineweights : 0.20 mm
Hole diameter : 0.20 mm
Hole is alligned to the centerline of the base bar
Origin : Center of circle

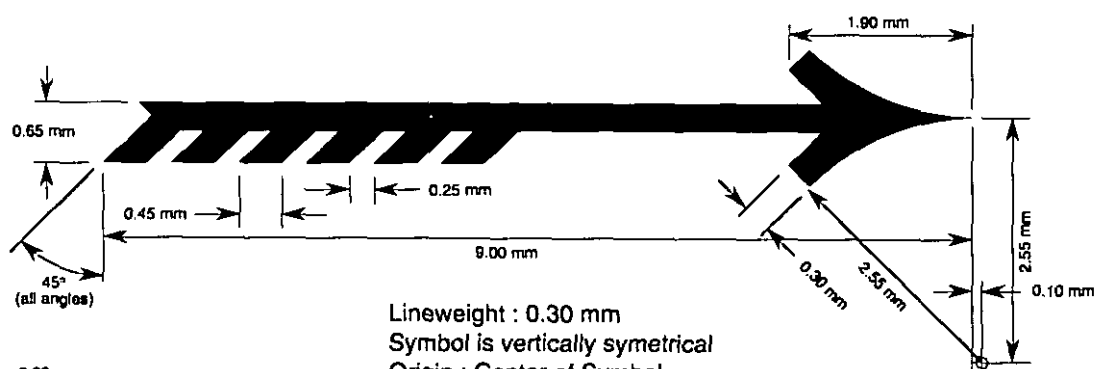
POSICUT # 116



Lineweight : 0.30 mm
Symbol is vertically symetrical
Origin : Center of Symbol

Scale : 1.00 inch = 2.00 mm

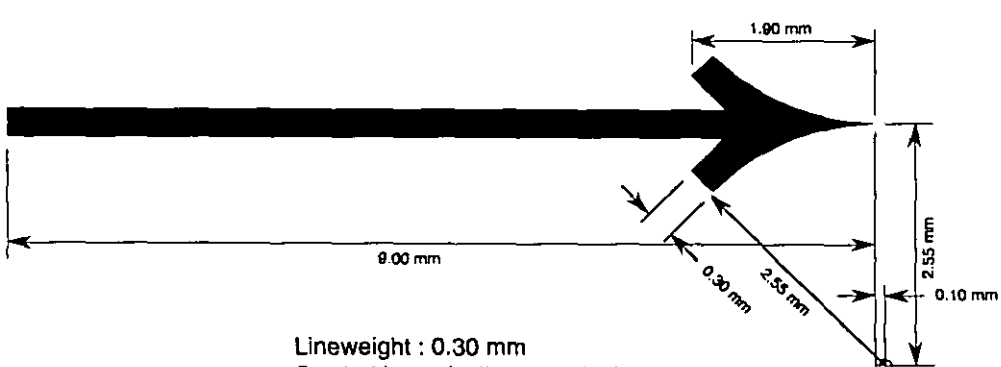
POSICUT # 117



Lineweight : 0.30 mm
Symbol is vertically symetrical
Origin : Center of Symbol

Scale : 1.00 inch = 2.00 mm

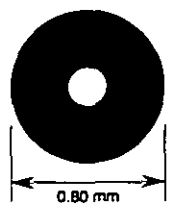
POSICUT # 118



Lineweight : 0.30 mm
Symbol is vertically symetrical
Origin : Center of Symbol

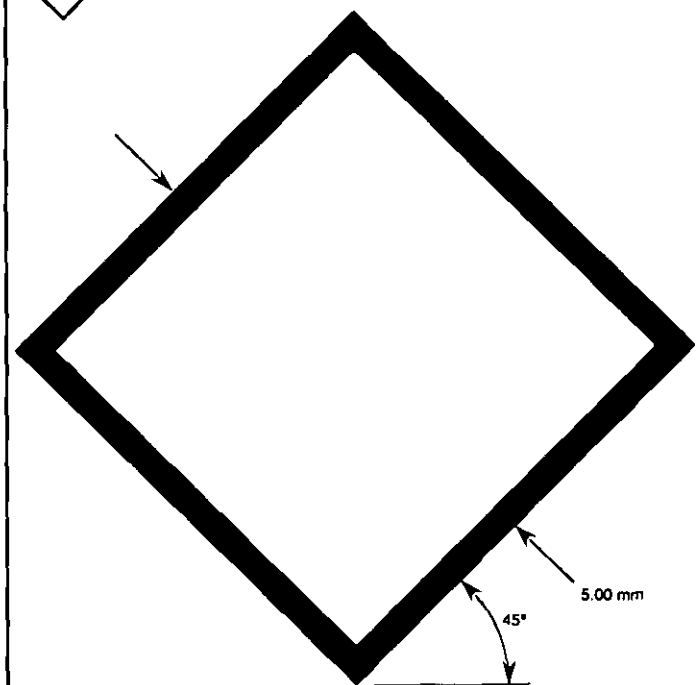
Scale : 1.00 inch = 2.00 mm

POSICUT # 119



Circle lineweight : 0.30 mm
Origin : Center of open circle

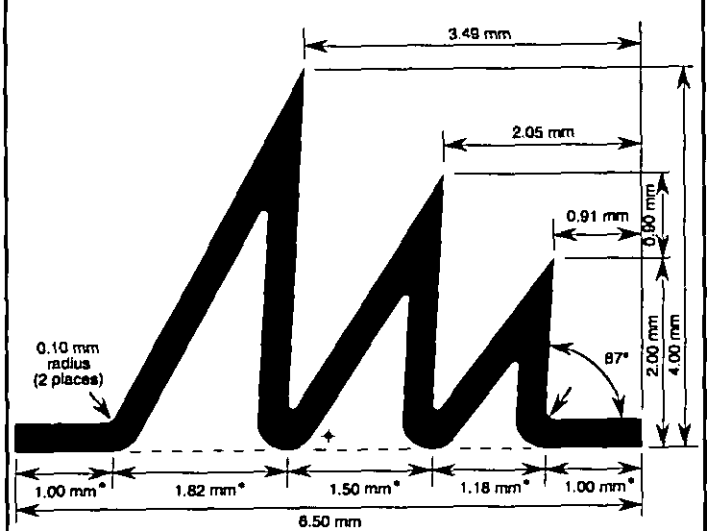
POSICUT # 120



Lineweight : 0.30 mm
Origin : Center of square

Scale : 1.00 inch = 2.00 mm

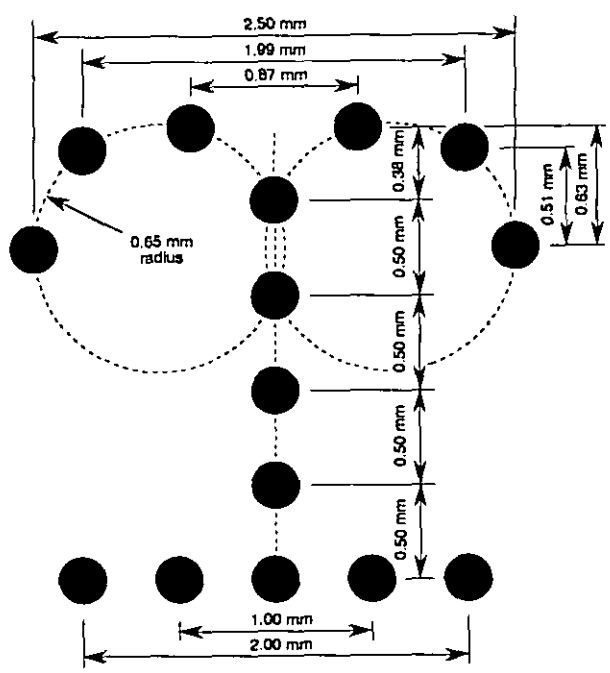
POSICUT # 121



Lineweights : 0.30 mm
Inside corner radii : 0.05 mm (5 places)
Outside corner radii : 0.30 mm (4 places)
Measured to outside radii centers : •
Origin : Bottom center of symbol indicated by : +

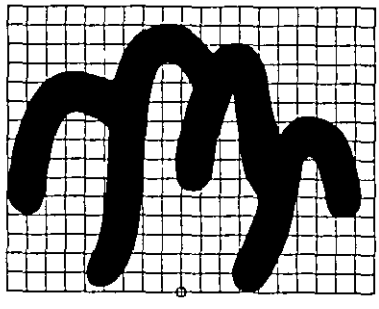
Scale : 1.00 inch = 2.00 mm

POSICUT # 122



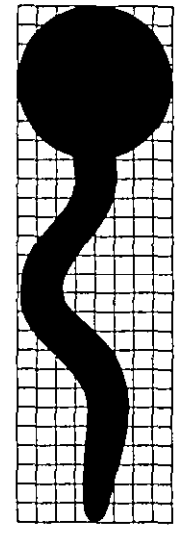
Dot diameters : 0.25 mm
Dots are centered along the
0.65 mm arc radii as shown.
Symbol is horizontally symmetrical.
Origin : Center of center base dot

POSICUT # 123



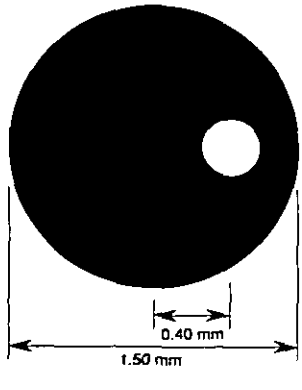
Symbol overall dimensions :
Height : 1.41 mm Width : 1.83 mm
Symbol should closely approximate the free-form shape as indicated above.
Grid squares : 0.10 mm x 0.10 mm
Origin indicated by : ⊕

POSICUT # 124



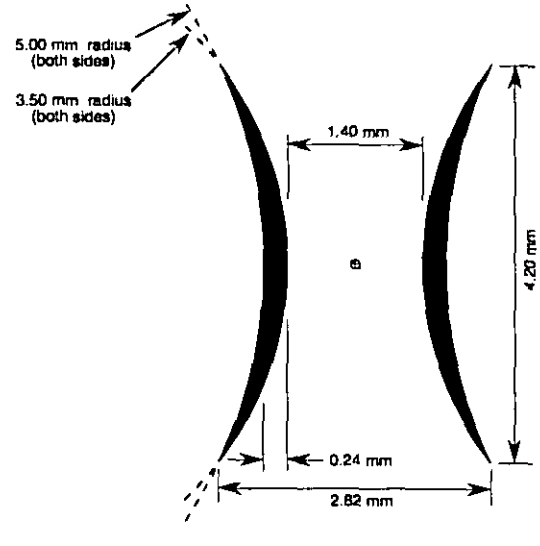
Symbol overall dimensions :
Height : 2.70 mm Width : 0.80 mm
Symbol 's tail should closely approximate the free-form shape as indicated above.
Grid squares : 0.10 mm x 0.10 mm
Origin : center of dot

POSICUT # 125



Open circle diameter : 0.35 mm
Open circle is offset 0.40 mm
to the right of symbol center.
Origin : Center of symbol

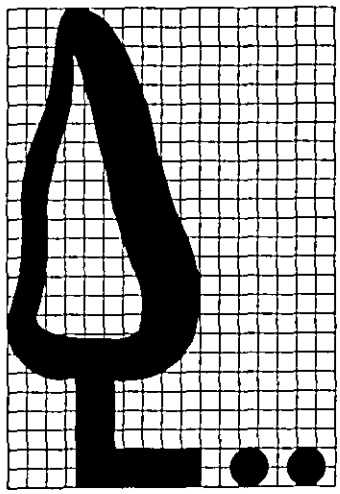
POSICUT # 126



Space between inner and outer arc radii forms the symbol.
Inner arc radii : 3.50 mm Outer arc radii : 5.00 mm
Symbol is horizontally and vertically symmetrical.
Origin : Center of symbol, indicated by : ⊕

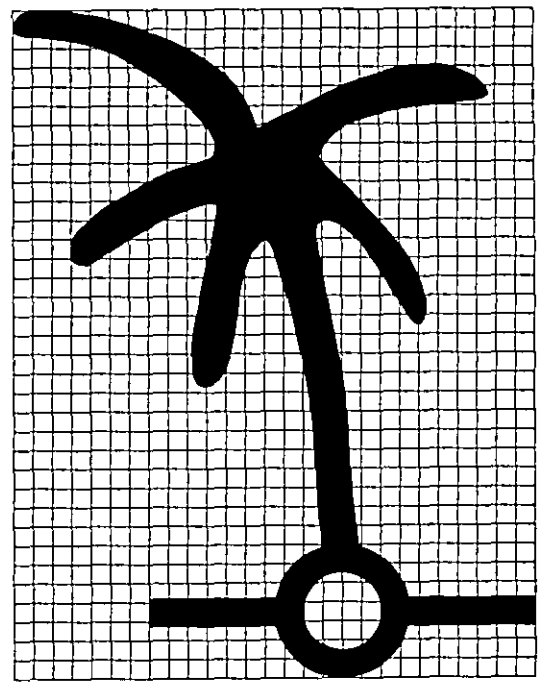
Scale : 1.00 inch = 2.00 mm

POSICUT # 129



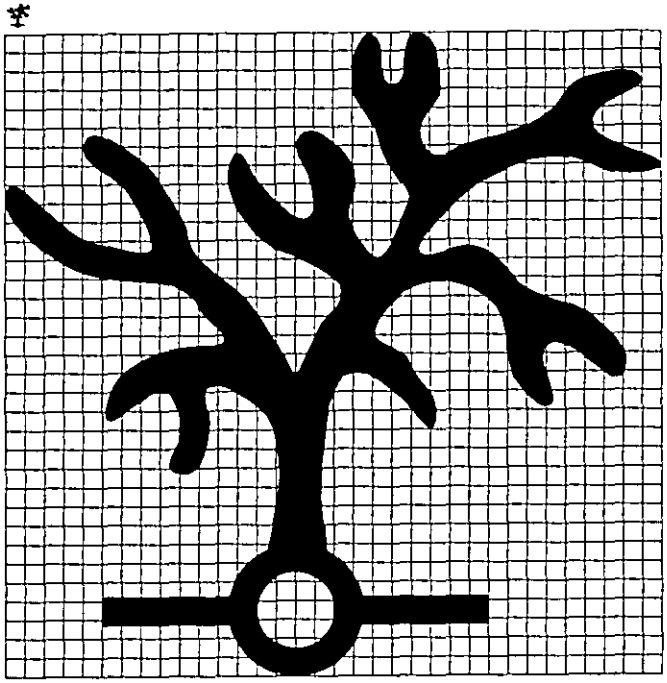
Base/Trunk lineweights : 0.20 mm
Dot diameter : 0.20 mm
Symbol overall dimensions : Height : 2.50 mm
Width : 1.65 mm. Symbol should closely approximate the free-form shape as indicated above. Grid squares : 0.10 mm x 0.10 mm
Origin : Centerline intersection of trunk and base

POSICUT # 130



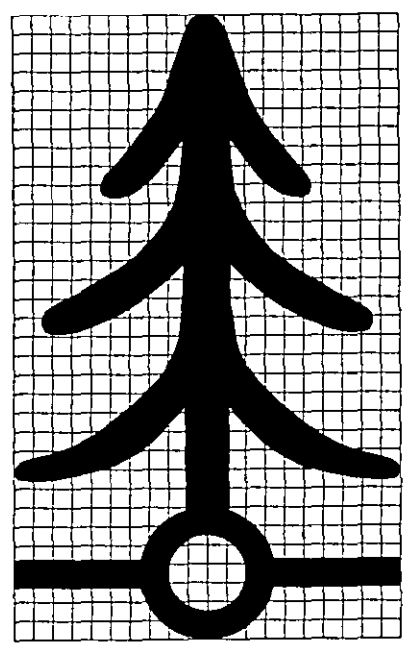
Base bar / circle lineweights : 0.15 mm. Symbol overall dimensions : Height : 3.50 mm Width : 2.70 mm
Symbol should closely approximate the free-form shape as indicated above. Grid squares : 0.10 mm x 0.10 mm
Origin : Center of base circle

POSICUT # 131



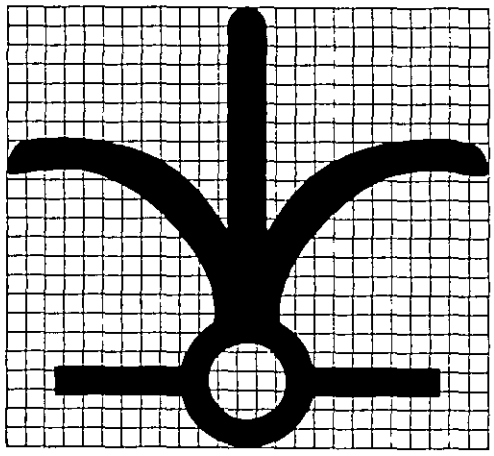
Base bar / circle lineweights : 0.15 mm. Symbol overall dimensions : Height : 3.40 mm Width : 3.40 mm
Symbol should closely approximate the free-form shape as indicated above. Grid squares : 0.10 mm x 0.10 mm
Origin : Center of base circle

POSICUT # 132



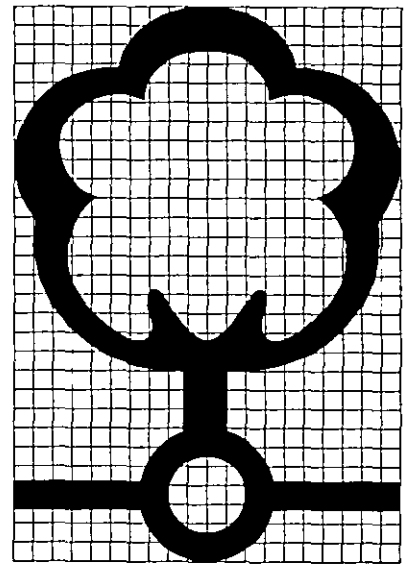
Base bar / circle lineweights : 0.15 mm. Symbol overall dimensions : Height : 3.30 mm Width : 2.00 mm
Symbol should closely approximate the free-form shape as indicated above. Grid squares : 0.10 mm x 0.10 mm
Origin : Center of base circle

POSICUT # 133



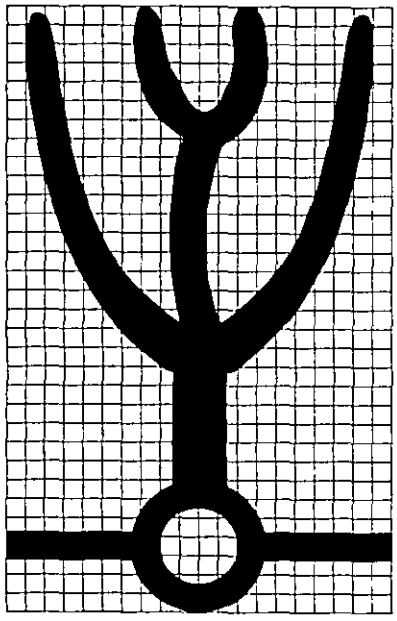
Base bar / circle lineweights : 0.15 mm. Symbol overall dimensions : Height : 2.30 mm Width : 2.50 mm
Symbol should closely approximate the free-form shape as indicated above. Grid squares : 0.10 mm x 0.10 mm
Origin : Center of base circle

POSICUT # 134



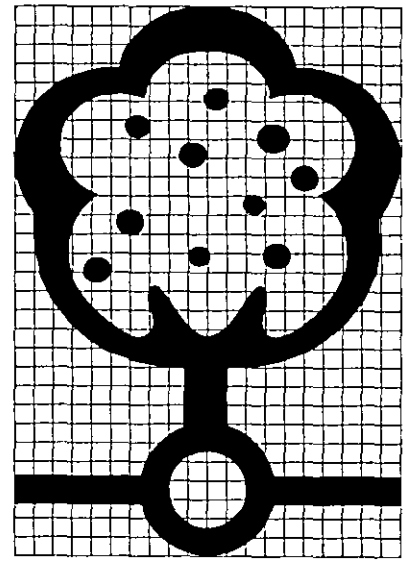
Base bar / circle lineweights : 0.15 mm. Symbol overall dimensions : Height : 2.90 mm Width : 2.00 mm
Symbol should closely approximate the free-form shape as indicated above. Grid squares : 0.10 mm x 0.10 mm
Origin : Center of base circle

POSICUT # 135



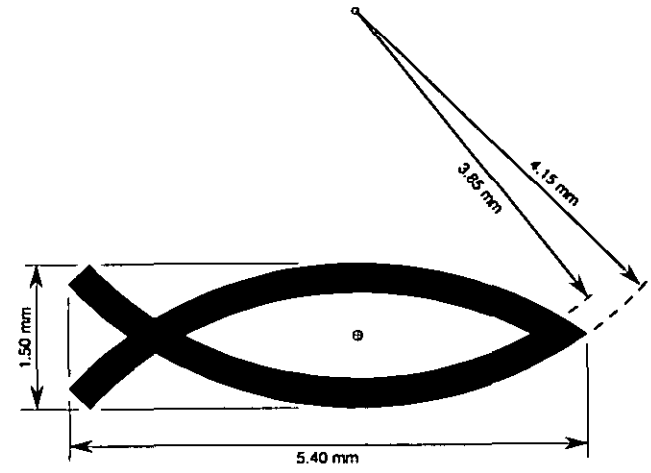
Base bar / circle lineweights : 0.15 mm. Symbol overall dimensions : Height : 3.20 mm Width : 2.00 mm
Symbol should closely approximate the free-form shape as indicated above. Grid squares : 0.10 mm x 0.10 mm
Origin : Center of base circle

POSICUT # 136



Base bar / circle lineweights : 0.15 mm. Symbol overall dimensions : Height : 2.90 mm Width : 2.00 mm
Symbol should closely approximate the free-form shape as indicated above. Grid squares : 0.10 mm x 0.10 mm
Origin : Center of base circle

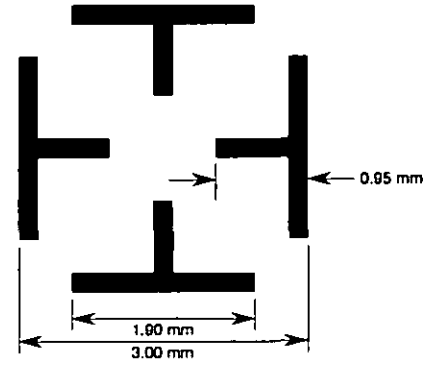
POSICUT # 137



Lineweights : 0.30 mm
Symbol is formed by two intercecting arcs with radius : 4.00 mm
Symbol is vertically symmetrical.
Origin : Indicated by : ⊕

Scale : 1 inch = 2 mm

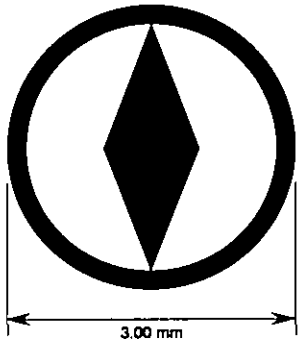
POSICUT # 138



Lineweights : 0.20 mm
Symbol is horizontally and vertically symmetrical.
Origin : Center of symbol

Scale : 1 inch = 2 mm

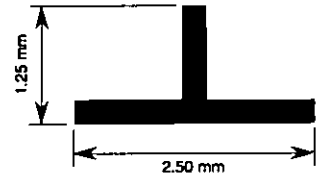
POSICUT # 139



Circle lineweight : 0.20 mm
Diamond is centered in circle.
Diamond : 1.00 mm width x 2.60 mm height
Origin : Center of symbol

Scale : 1 inch = 2 mm

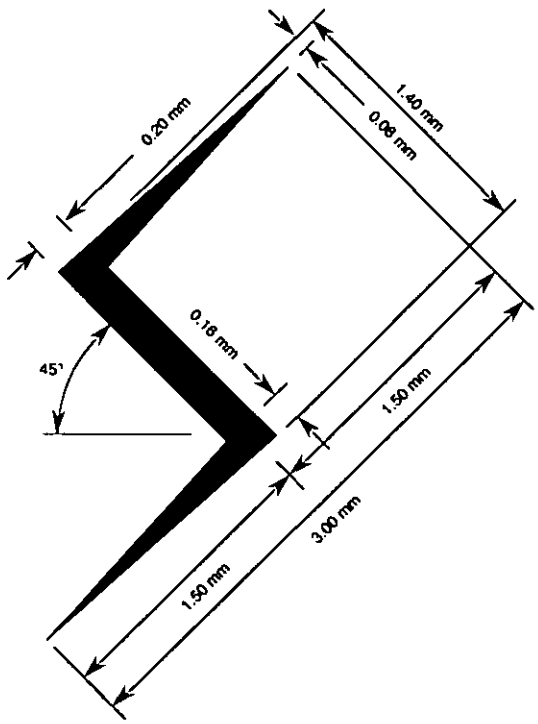
POSICUT # 140



Lineweights : 0.25 mm
Origin : Intersection of centerlines

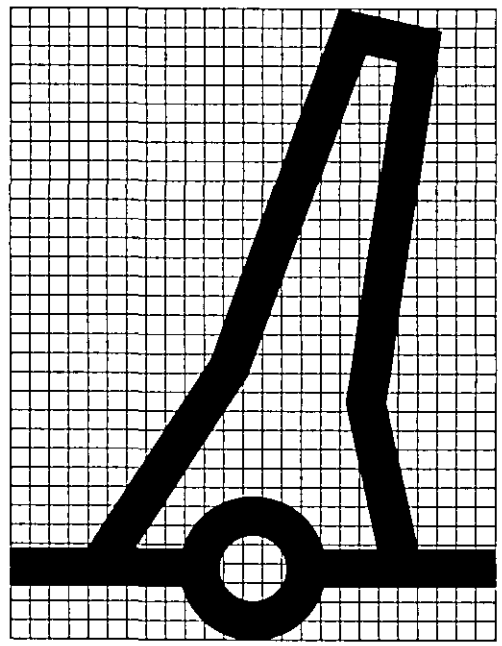
Scale : 1 inch = 2 mm

POSICUT # 142



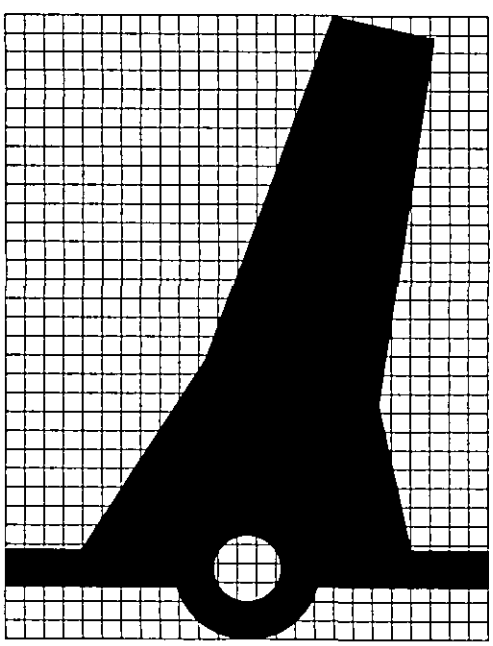
Origin : Center of Symbol

POSICUT # 150



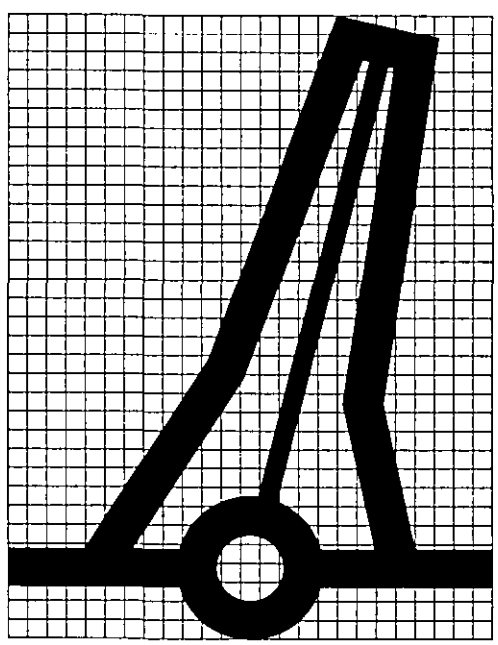
Lineweights : 0.20 mm Symbol overall dimensions :
Height : 3.25 mm Width : 2.50 mm
Symbol should closely approximate the shape as indicated.
Grid squares : 0.10 mm x 0.10 mm
Origin : Center of circle

POSICUT # 151



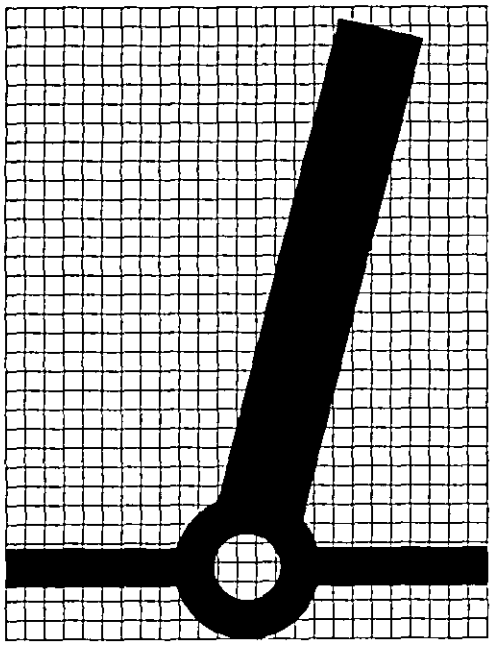
Base/Circle lineweight : 0.20 mm
Symbol overall dimensions :
Height : 3.25 mm Width : 2.50 mm
Symbol should closely approximate the shape as indicated.
Grid squares : 0.10 mm x 0.10 mm
Origin : Center of circle

POSICUT # 152



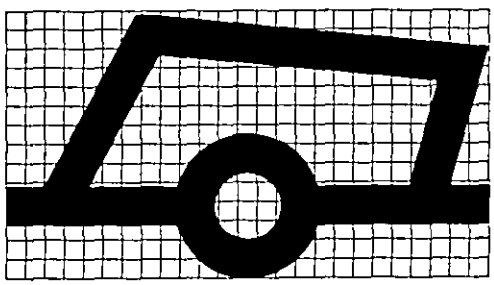
Lineweights : 0.20 mm Centerbar lineweight : 0.10 mm
Symbol overall dimensions :
Height : 3.25 mm Width : 2.50 mm
Symbol should closely approximate the shape as indicated.
Grid squares : 0.10 mm x 0.10 mm
Origin : Center of circle

POSICUT # 153



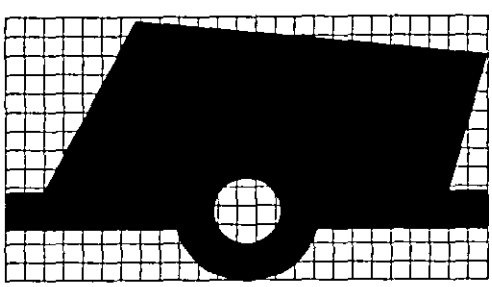
Lineweights : 0.20 mm (base/circle), 0.45 mm (angle bar)
Symbol overall dimensions :
Height : 3.24 mm Width : 2.50 mm
Symbol should closely approximate the shape as indicated.
Grid squares : 0.10 mm x 0.10 mm
Origin : Center of circle

POSICUT # 154



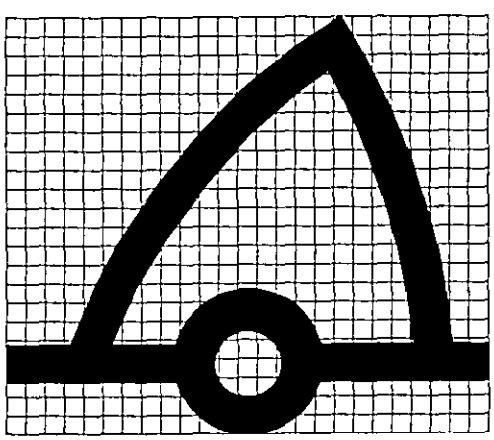
Lineweights : 0.20 mm
Symbol overall dimensions :
Height : 1.38 mm Width : 2.50 mm
Symbol should closely approximate the shape as indicated.
Grid squares : 0.10 mm x 0.10 mm
Origin : Center of circle

POSICUT # 155



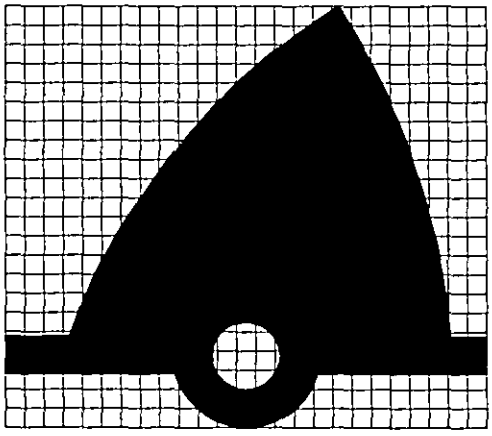
Lineweights : 0.20 mm
Symbol overall dimensions :
Height : 1.38 mm Width : 2.50 mm
Symbol should closely approximate the shape as indicated.
Grid squares : 0.10 mm x 0.10 mm
Origin : Center of circle

POSICUT # 156



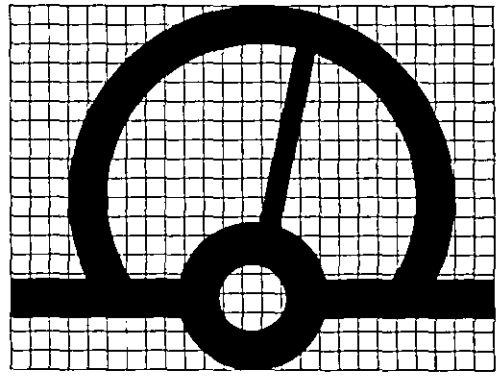
Lineweights : 0.20 mm
Symbol overall dimensions :
Height : 2.20 mm Width : 2.50 mm
Symbol should closely approximate the shape as indicated.
Grid squares : 0.10 mm x 0.10 mm
Origin : Center of circle

POSICUT # 157



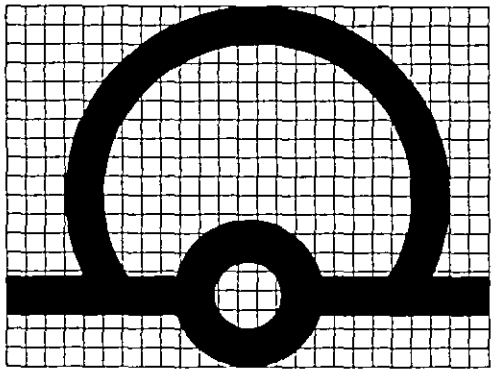
Lineweights : 0.20 mm
Symbol overall dimensions :
Height : 2.20 mm Width : 2.50 mm
Symbol should closely approximate the shape as indicated.
Grid squares : 0.10 mm x 0.10 mm
Origin : Center of circle

POSICUT # 158



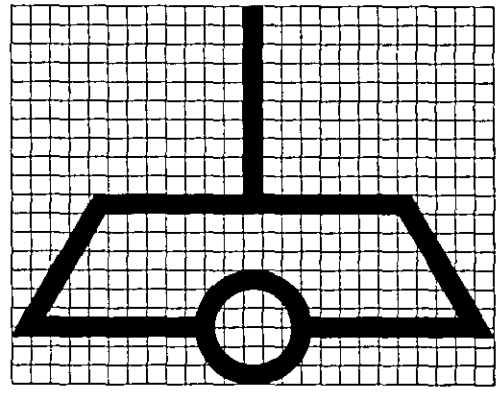
Lineweights : 0.20 mm
Angle bar lineweight : 0.10 mm
Symbol overall dimensions :
Height : 1.90 mm Width : 2.50 mm
Symbol should closely approximate the shape as indicated.
Grid squares : 0.10 mm x 0.10 mm
Origin : Center of circle

POSICUT # 159



Lineweights : 0.20 mm
Symbol overall dimensions :
Height : 1.90 mm Width : 2.50 mm
Symbol should closely approximate the shape as indicated.
Grid squares : 0.10 mm x 0.10 mm
Origin : Center of circle

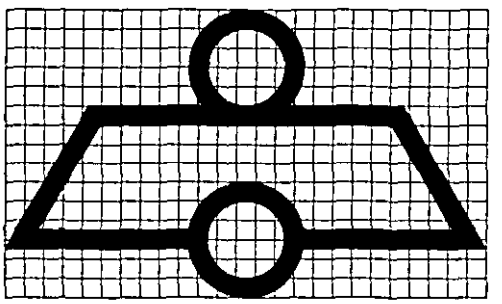
POSICUT # 160



Lineweights : 0.20 mm
Symbol overall dimensions :
Height : 4.00 mm Width : 5.00 mm
Symbol should closely approximate the shape as indicated.
Grid squares : 0.20 mm x 0.20 mm
Origin : Center of circle

Scale : 1.00 inch = 2.00 mm

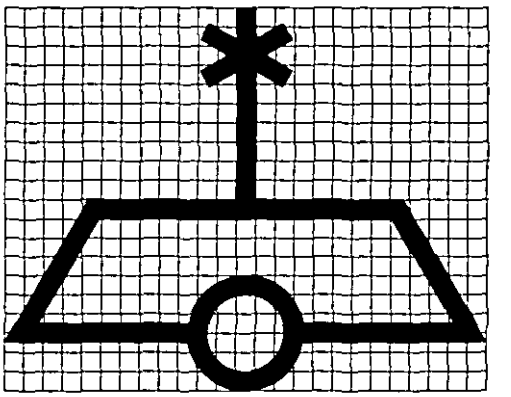
POSICUT # 161



Lineweights : 0.20 mm
Symbol overall dimensions :
Height : 3.00 mm Width : 5.00 mm
Symbol should closely approximate the shape as indicated.
Grid squares : 0.20 mm x 0.20 mm
Origin : Center of bottom circle

Scale : 1.00 inch = 2.00 mm

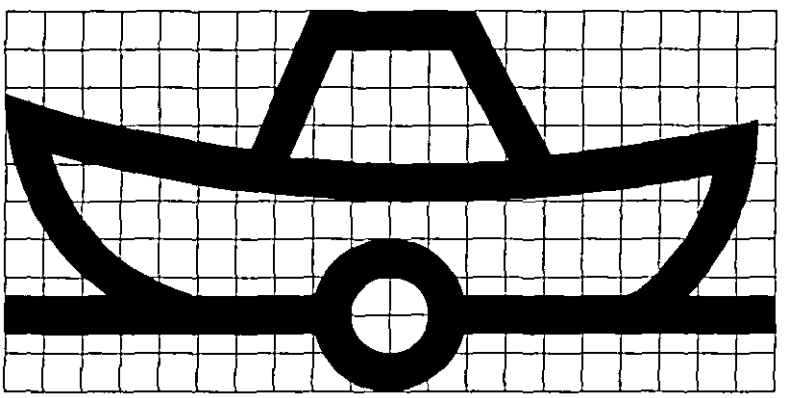
POSICUT # 162



Lineweights : 0.20 mm
Symbol overall dimensions :
Height : 4.00 mm Width : 5.00 mm
Symbol should closely approximate the shape as indicated.
Grid squares : 0.20 mm x 0.20 mm
Origin : Center of circle

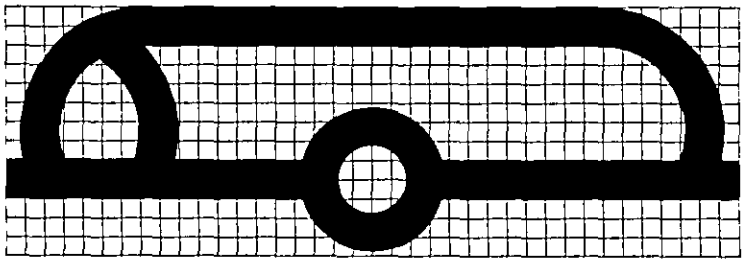
Scale : 1.00 inch = 2.00 mm

POSICUT # 163



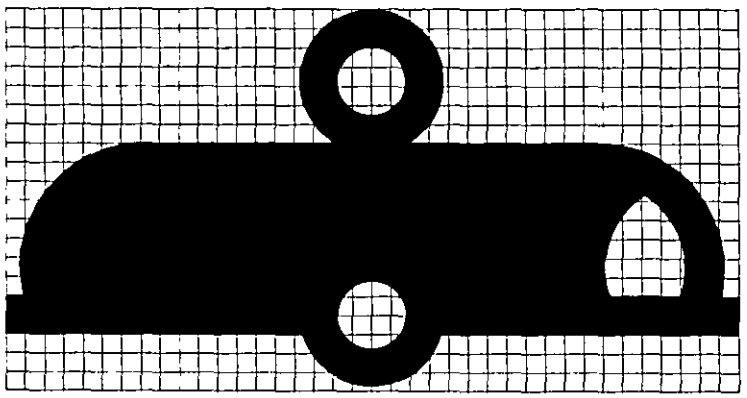
Lineweights : 0.20 mm
Arc Centerline Radii : Large : 7.00 mm Small : 2.40 mm
Symbol overall dimensions :
Height : 2.00 mm Width : 4.00 mm
Symbol should closely approximate the shape as indicated.
Grid squares : 0.20 mm x 0.20 mm
Origin : Center of circle

POSICUT # 164



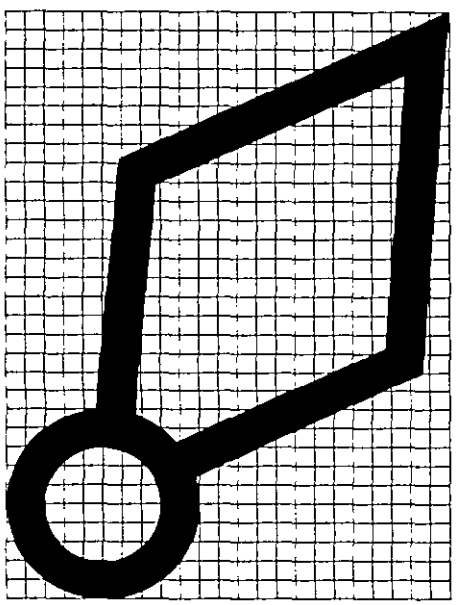
Lineweights : 0.20 mm Circle centerline diameter : 0.65 mm Arc centerline radii : 0.55 mm
Symbol overall dimensions : Height : 1.275 mm, Width : 3.80 mm Origin : Center of circle
Symbol should closely approximate the shape as indicated. Grid squares : 0.10 mm x 0.10 mm

POSICUT # 165



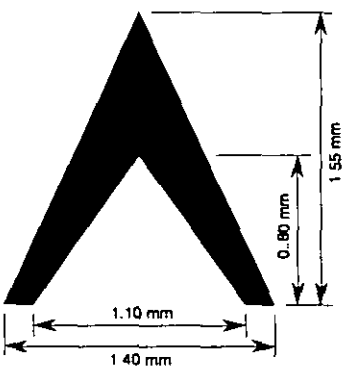
Lineweights : 0.20 mm Circle centerline diameters : 0.65 mm Arc centerline radii : 0.55 mm
Symbol overall dimensions : Height : 1.975 mm, Width : 3.80 mm Origin : Center of circle
Symbol should closely approximate the shape as indicated. Grid squares : 0.10 mm x 0.10 mm

POSICUT # 167



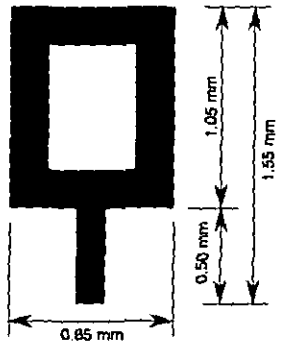
Lineweights : 0.20 mm Symbol overall dimensions :
Height : 3.10 mm, Width : 2.30 mm
Symbol should closely approximate the shape as indicated.
Origin : Center of circle Grid squares : 0.10 mm x 0.10 mm

POSICUT # 168



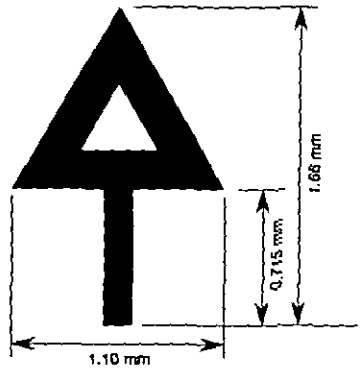
Symbol is horizontally symmetrical
Origin : Bottom center of symbol

POSICUT # 169



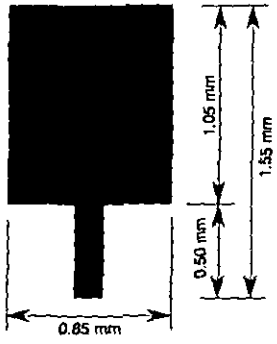
Rectangle lineweight : 0.20 mm
Staff lineweight : 0.15 mm
Rectangle is centered on staff.
Origin : bottom center of staff

POSICUT # 170



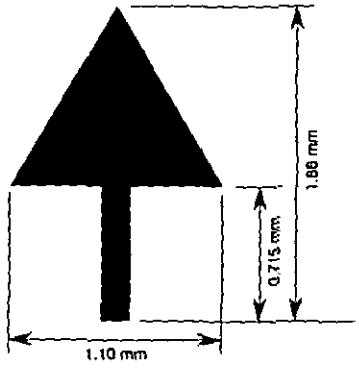
Equilateral triangle lineweight : 0.20 mm
Staff lineweight : 0.15 mm
Equilateral triangle is centered on staff.
Origin : bottom center of staff

POSICUT # 171



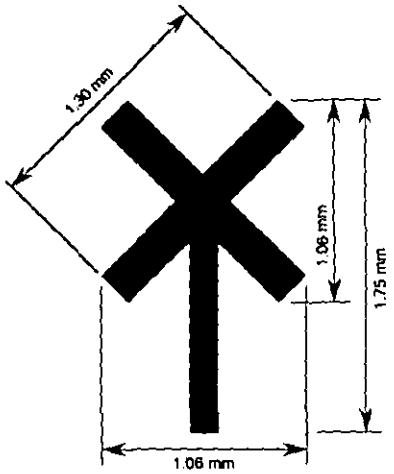
Staff lineweight : 0.15 mm
Rectangle is centered on staff.
Origin : bottom center of staff

POSICUT # 172



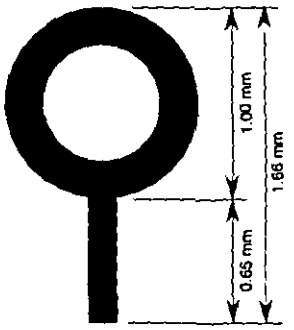
Staff lineweight : 0.15 mm
Equilateral triangle is centered on staff.
Origin : bottom center of staff

POSICUT # 173



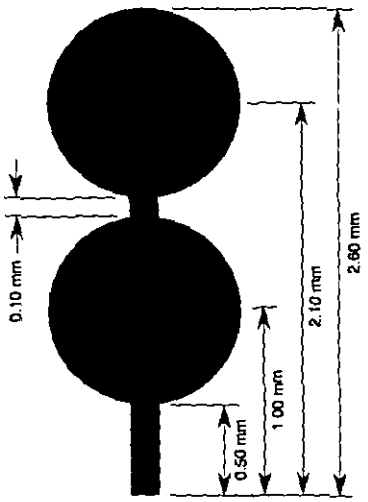
Staff lineweight : 0.15 mm
Crossbar lineweights : 0.20 mm
Cross is centered on staff.
Origin : bottom center of staff

POSICUT # 174



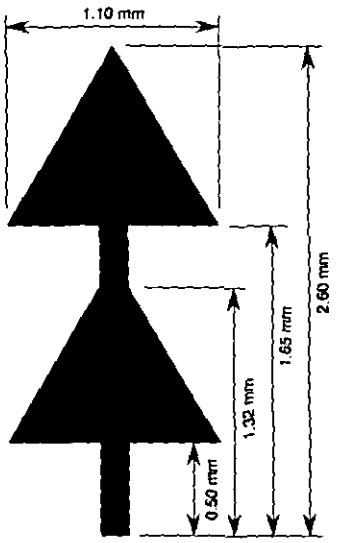
Staff lineweight : 0.15 mm
Circle lineweight : 0.20 mm
Circle is centered on staff.
Origin : bottom center of staff

POSICUT # 175



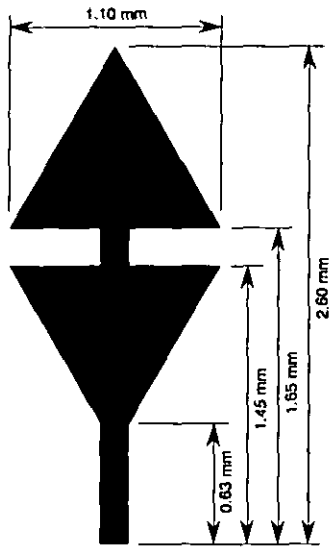
Staff lineweight : 0.15 mm
Circle diameters : 1.00 mm
Circles are centered on staff.
Origin : bottom center of staff

POSICUT # 176



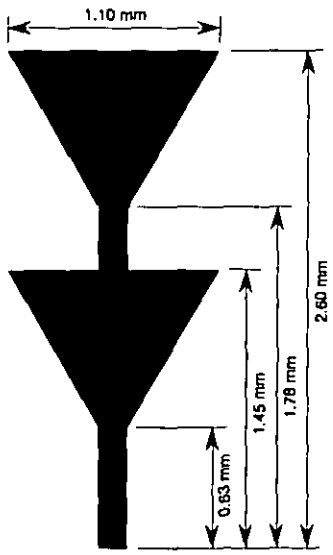
Staff lineweight : 0.15 mm
Equilateral triangles are centered on staff.
Origin : bottom center of staff

POSICUT # 177



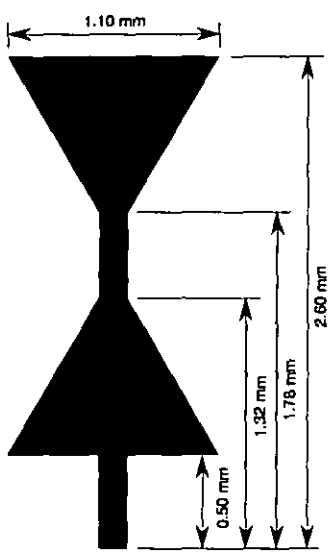
Staff lineweight : 0.15 mm
Equilateral triangles are centered on staff.
Origin : bottom center of staff

POSICUT # 178



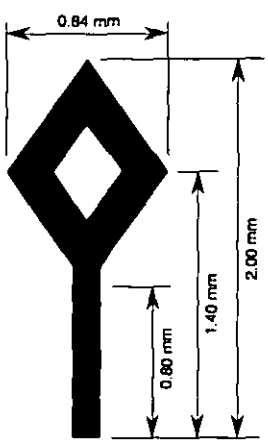
Staff lineweight : 0.15 mm
Equilateral triangles are centered on staff.
Origin : bottom center of staff

POSICUT # 179



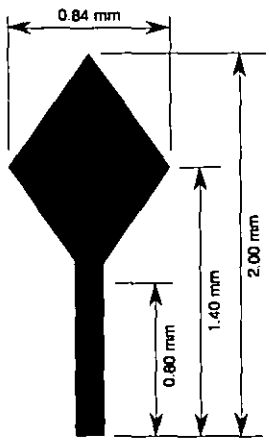
Staff lineweight : 0.15 mm
Equilateral triangles are centered on staff.
Origin : bottom center of staff

POSICUT # 180



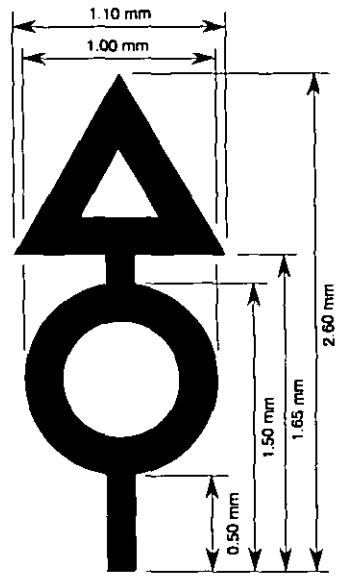
Staff lineweight : 0.15 mm
Diamond lineweight : 0.20 mm
Diamond is centered on staff.
Origin : bottom center of staff

POSICUT # 181



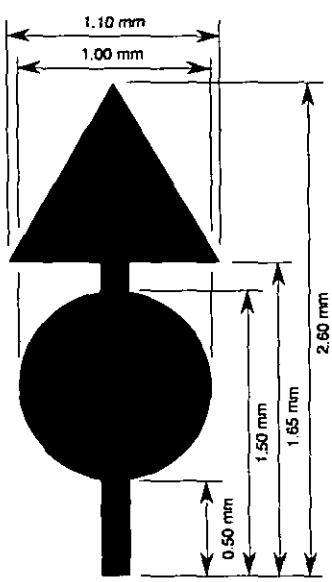
Staff lineweight : 0.15 mm
Diamond is centered on staff.
Origin : bottom center of staff

POSICUT # 182



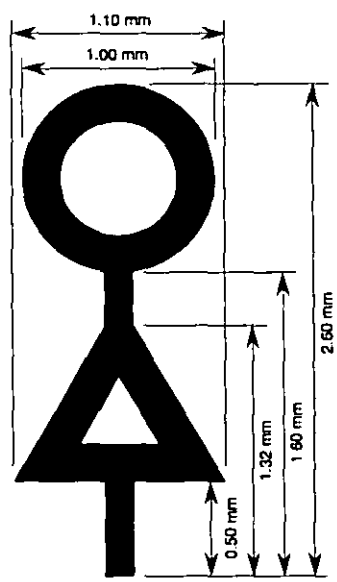
Staff lineweight : 0.15 mm
Triangle and circle lineweight : 0.20 mm
Equilateral triangle and circle are centered on staff.
Origin : bottom center of staff

POSICUT # 183



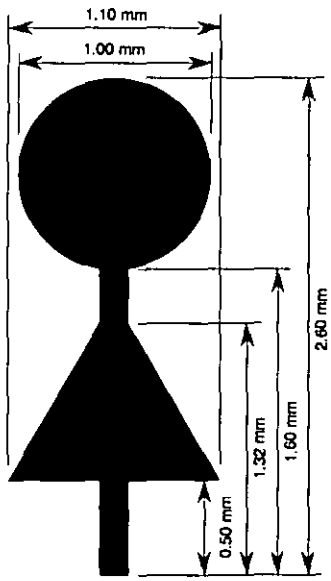
Staff lineweight : 0.15 mm
Equilateral triangle and circle are centered on staff.
Origin : bottom center of staff

POSICUT # 184



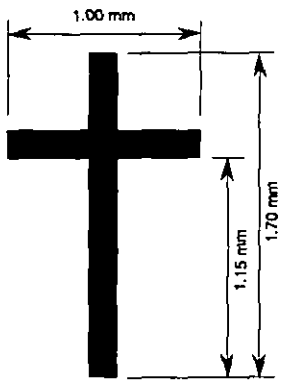
Staff lineweight : 0.15 mm
Triangle and circle lineweight : 0.20 mm
Equilateral triangle and circle are centered on staff.
Origin : bottom center of staff

POSICUT # 185



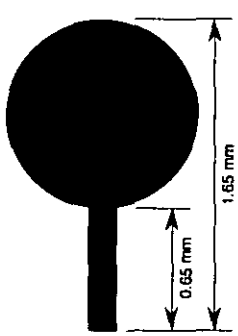
Staff lineweight : 0.15 mm
Equilateral triangle and circle are centered on staff.
Origin : bottom center of staff

POSICUT # 186



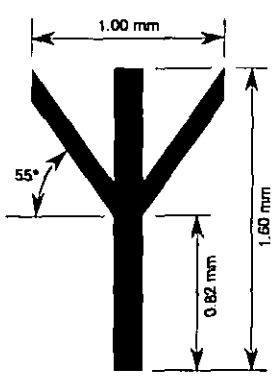
Staff and crossbar lineweight : 0.15 mm
Crossbar is centered on staff.
Origin : bottom center of staff

POSICUT # 187



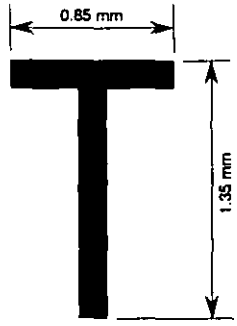
Staff lineweight : 0.15 mm
Circle is centered on staff.
Origin : bottom center of staff

POSICUT # 188



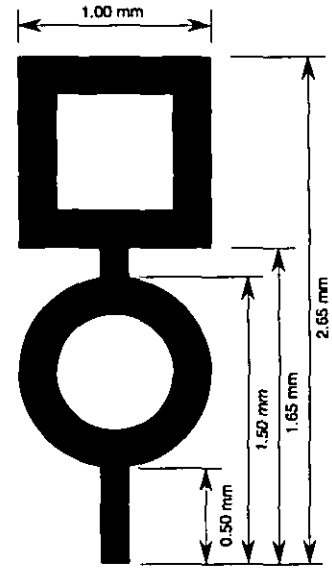
Staff lineweight : 0.15 mm
Wing lineweight : 0.10 mm
Origin : bottom center of staff

POSICUT # 189



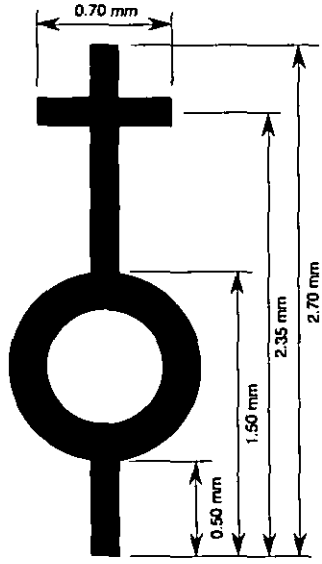
Lineweights : 0.15 mm
Crossbar is centered on staff.
Origin : bottom center of staff

POSICUT # 190



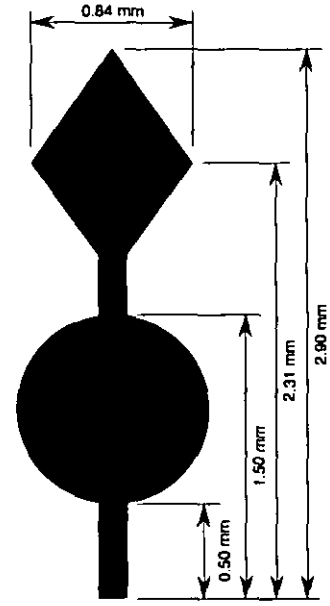
Staff lineweight : 0.15 mm
Square and circle lineweight : 0.20 mm
Square and circle are centered on staff.
Origin : bottom center of staff

POSICUT # 191



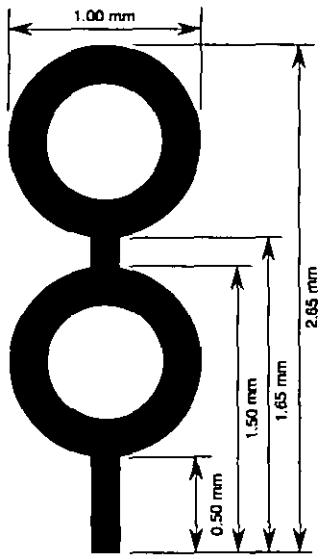
Staff and Crossbar lineweight : 0.15 mm
Circle lineweight : 0.20 mm
Crossbar and circle are centered on staff.
Origin : bottom center of staff

POSICUT # 192



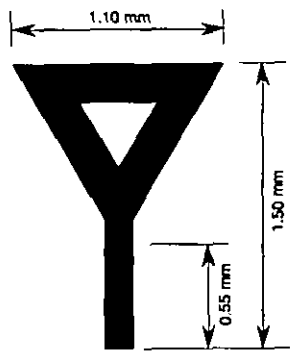
Staff lineweight : 0.15 mm
Diamond and circle are centered on staff.
Origin : bottom center of staff

POSICUT # 193



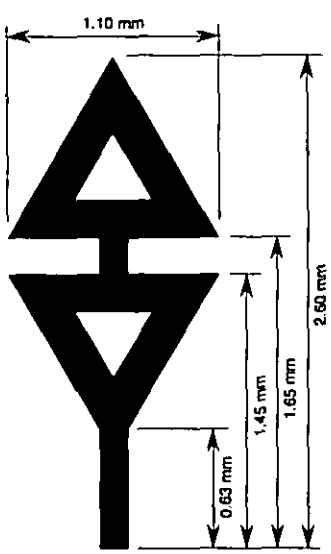
Staff lineweight : 0.15 mm
Circle lineweights : 0.20 mm
Circles are centered on staff.
Origin : bottom center of staff

POSICUT # 194



Staff lineweight : 0.15 mm
Equilateral triangle lineweight : 0.20 mm
Equilateral triangle is centered on staff.
Origin : bottom center of staff

POSICUT # 195

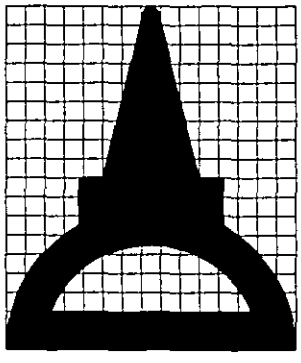


Staff lineweight : 0.15 mm
Equilateral triangle lineweights: 0.20 mm
Equilateral triangles are centered on staff.
Origin : bottom center of staff

POSICUT # 199

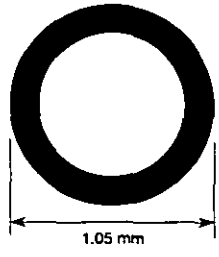
Origin : center of dot

POSICUT # 200



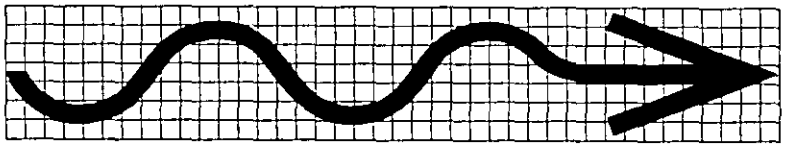
Semi-circle and base lineweights : 0.20 mm
Steeple top radius : 0.04 mm
Symbol overall dimensions :
Height : 1.80 mm, Width : 1.50 mm
Symbol should closely approximate the shape as indicated.
Grid squares : 0.10 mm x 0.10 mm
Origin : Center of circle

POSICUT # 201



Lineweight : 0.15 mm
Origin : Center of Ring

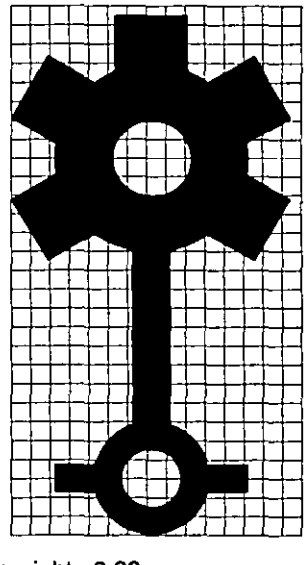
POSICUT # 210



All lineweights : 0.20 mm
Symbol overall dimensions :
Height : 1.30 mm, Width : 8.00 mm
Arc centerline radii : 0.70 mm
Symbol should closely approximate the shape as indicated.
Grid squares : 0.20 mm x 0.20 mm
Origin : Center of symbol

Scale : 1.00 inch = 2.00 mm

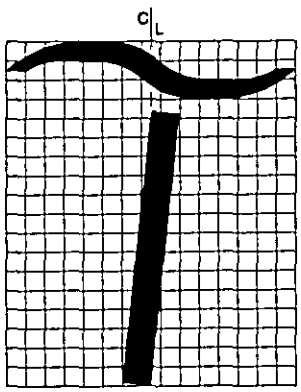
POSICUT # 211



Staff lineweight : 0.20 mm
Base and small circle lineweight : 0.15 mm
Symbol overall dimensions :
Height : 2.75 mm, Width : 1.45 mm
Symbol should closely approximate the shape as indicated.
Grid squares : 0.10 mm x 0.10 mm
Origin : Center of small circle

POSICUT # 212

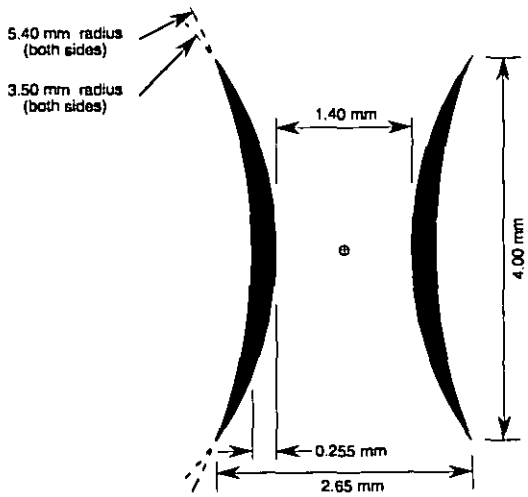
T



Leaderline lineweight : 0.10 mm
Symbol overall dimensions :
Height : 1.80 mm, Width : 1.50 mm
Symbol should closely approximate the shape as indicated.
Grid squares : 0.10 mm x 0.10 mm
Origin : bottom center of leaderline

POSICUT # 213

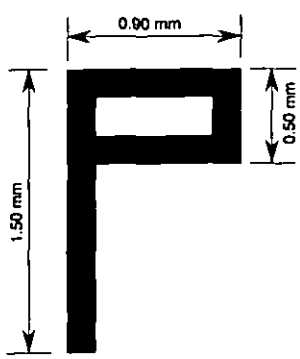
)(



Space between inner and outer arc radii forms the symbol.
Inner arc radii : 3.50 mm Outer arc radii : 5.40 mm
Symbol is horizontally and vertically symmetrical.
Origin : Center of symbol, indicated by : ⊕

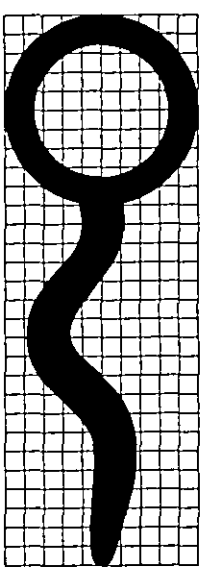
Scale : 1.00 inch = 2.00 mm

POSICUT # 214



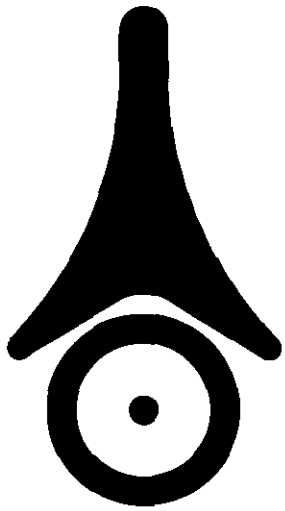
Lineweights : 0.15 mm
Origin : bottom center of staff

POSICUT # 215



Symbol overall dimensions :
Height : 2.90 mm Width : 1.00 mm
Symbol 's tail should closely approximate the free-form shape as indicated above.
Grid squares : 0.10 mm x 0.10 mm
Origin : center of circle

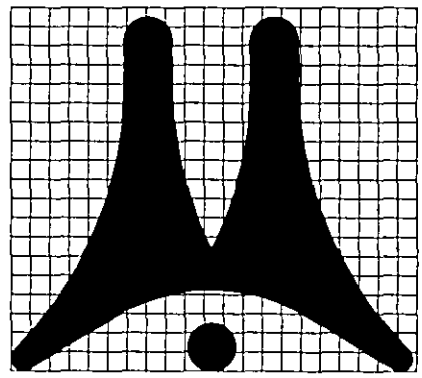
POSICUT # 216



Circle lineweight : 0.30 mm
Dot diameter : 0.30 mm
Circle centerline diameter : 1.70 mm
Dot is centered in circle. Dot and circle are centered on the vertical centerline of the upper "VO" symbol.
The upper "VO" symbology is identical to Posicut #3 and spaced 0.10 mm above the edge of the circle.
Origin : center of dot

Scale : 1.00 inch = 2.00 mm

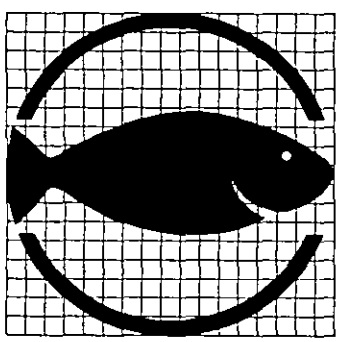
POSICUT # 217



Dot diameter : 0.50 mm
Bottom arc radius : 1.85 mm
Symbol overall dimensions :
Height : 3.70 mm, Width : 4.16
Symbol should closely approximate the shape as indicated. Dot is alligned to vertical centerline. Symbol is horizontally symmetrical.
Grid squares : 0.20 mm x 0.20 mm
Origin : center of dot

Scale : 1.00 inch = 2.00 mm

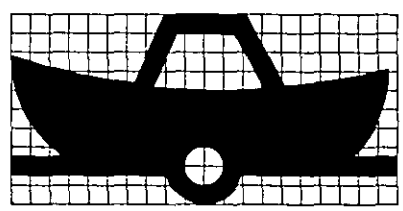
POSICUT # 218



Circle lineweight : 0.15 mm
Mask height : 1.20 mm
Symbol overall dimensions :
Height : 3.40 mm Width : 3.40 mm
Symbol should closely approximate the shape as indicated.
Grid squares : 0.20 mm x 0.20 mm
Origin : Center of circle

Scale : 1.00 inch = 2.00 mm

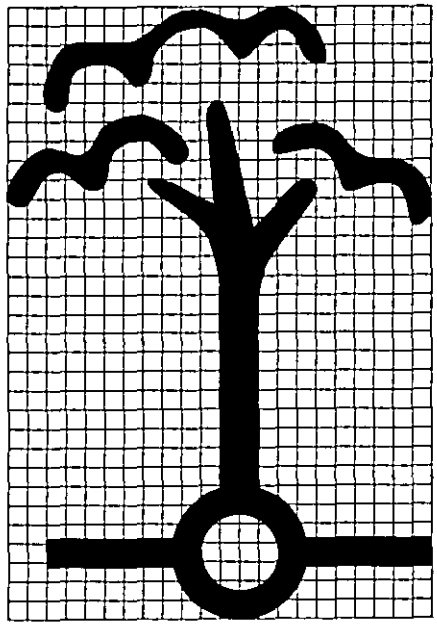
POSICUT # 219



Symbol dimensions are identical to Posicut # 163
Symbol overall dimensions :
Height : 2.00 mm Width : 4.00 mm
Symbol should closely approximate the shape as indicated.
Grid squares : 0.20 mm x 0.20 mm
Origin : Center of circle

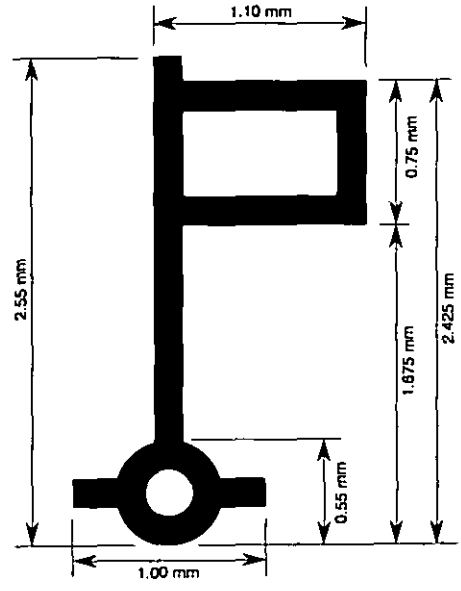
Scale : 1.00 inch = 2.00 mm

POSICUT # 220



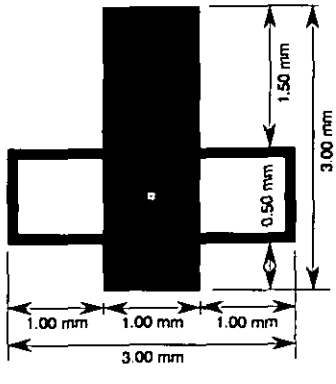
Base bar and circle lineweights : 0.15 mm.
Symbol overall dimensions :
Height : 3.20 mm Width : 2.20 mm
Symbol should closely approximate the free-form shape as indicated above. Grid squares : 0.10 mm x 0.10 mm
Origin : Center of base circle

POSICUT # 221



All lineweights : 0.15 mm
Origin : center of circle

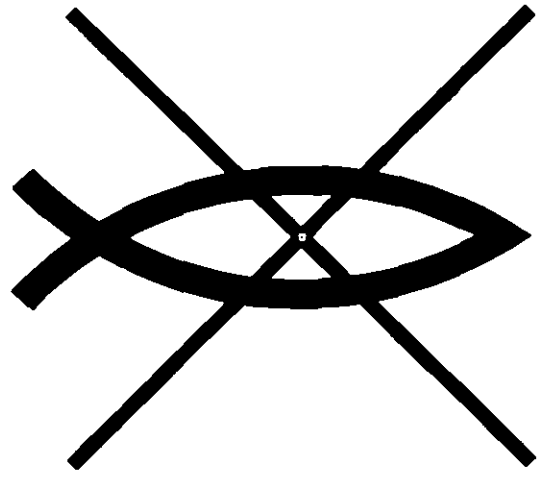
POSICUT # 222



Lineweight : 0.10 mm.
Origin : Indicated by : ⊕

Scale : 1.00 inch = 2.00 mm

POSICUT # 223

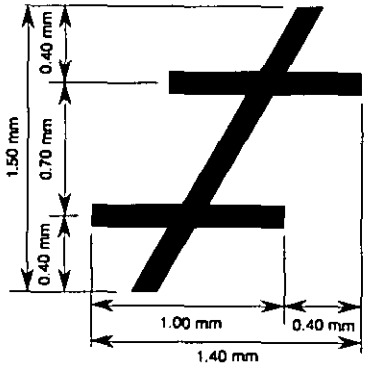


"X" lineweights : 0.15 mm
"X" lines are perpendicular.
"X" line length; 6.75 mm and centered on symbol origin.
Fish symbol is identical to Posicut # 137
Origin : Indicated by : ⊕

Scale : 1.00 inch = 2.00 mm

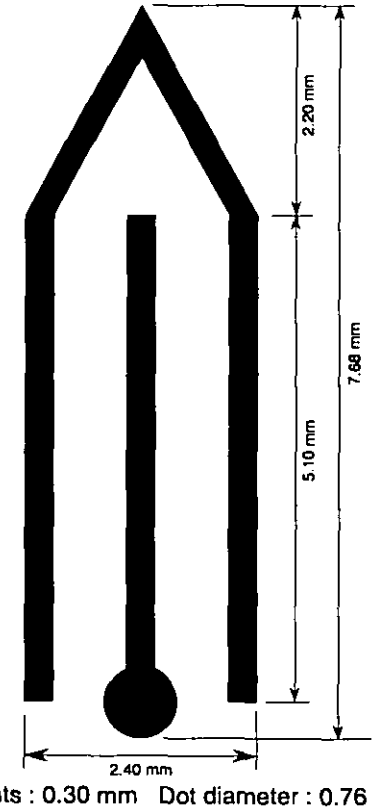
POSICUT # 224

≠



Lineweight : 0.12 mm
Origin : Center of symbol

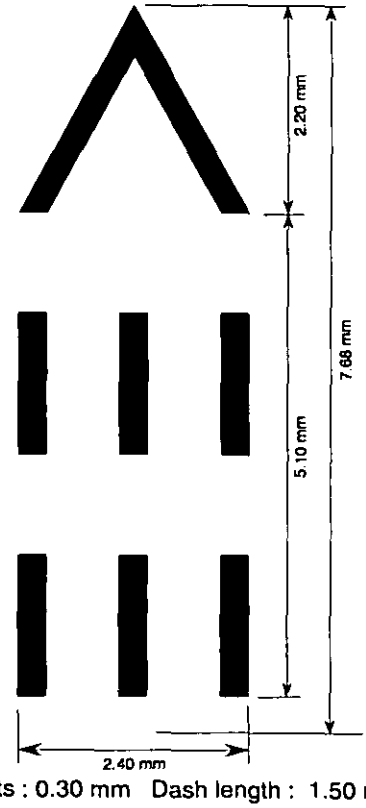
POSICUT # 225



All lineweights : 0.30 mm Dot diameter : 0.76 mm
Dot centered on vertical centerbar.
Spaces between vertical bars : 0.75 mm
Origin : Center of dot

Scale : 1.00 inch = 2.00 mm

POSICUT # 226

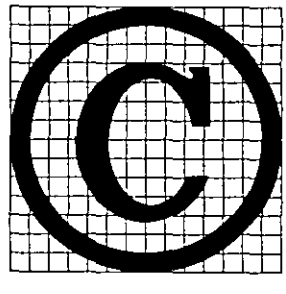


All lineweights : 0.30 mm Dash length : 1.50 mm
Dash space length : 1.05 mm
Spaces between vertical bars : 0.75 mm
Origin : Bottom center of symbol

Scale : 1.00 inch = 2.00 mm

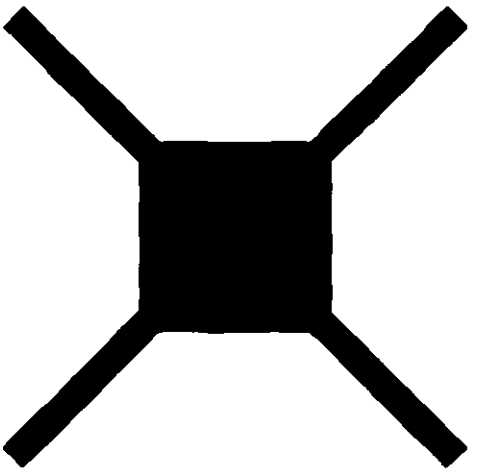
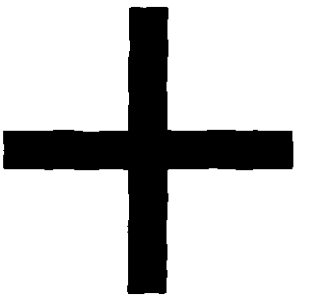
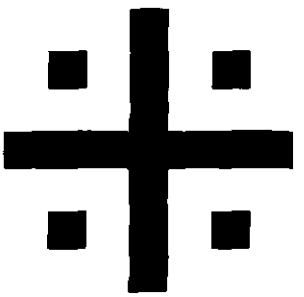
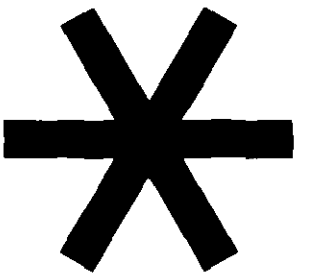
POSICUT # 227

©

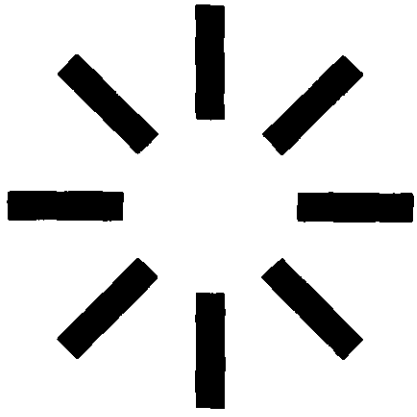


Circle lineweight : 0.20 mm
Symbol overall dimensions :
Height : 2.80 mm, Width : 2.80 mm
Symbol should closely approximate the shape as indicated. Grid squares : 0.20 mm x 0.20 mm
Origin : Center of symbol

Scale : 1.00 inch = 2.00 mm

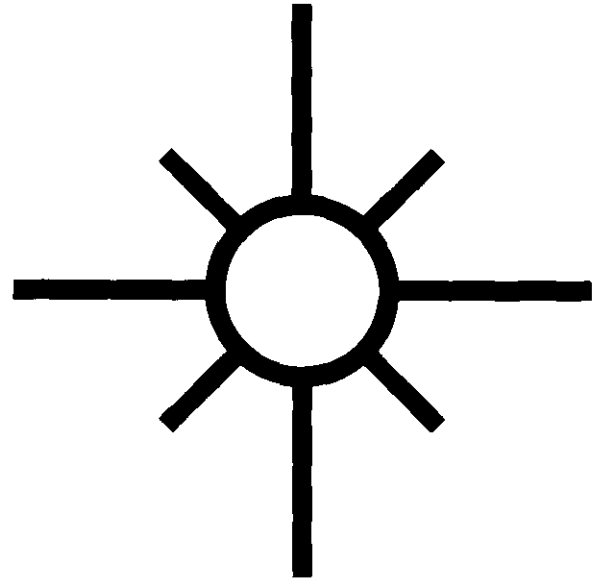
POSICUT # 228	POSICUT # 229
×  Wingtick lineweight : 0.15 mm Wingtick length 1.00 mm Wingticks oriented 45° from the box corners Box : 0.80 mm x 0.80 mm Origin : Center of box	+  Cross lineweights : 0.20 mm Cross bars are centered to each other Origin : Center of cross
POSICUT # 230	**POSICUT # 231**
#  Cross lineweights : 0.20 mm Cross bars are centered to each other. Squares are centered in each cross quaduant. SquareS : 0.20 mm x 0.20 mm Origin : Center of cross	*  Bar lineweights : 0.20 mm Bar lengths : 1.50 mm Bars are all centered to each other and angled 60°. Origin : Center of cross

POSICUT # 232



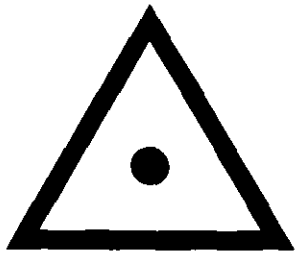
Bar lineweights : 0.20 mm
Bar lengths : 0.60 mm
Space between opposite bars : 0.90 mm
Bars oriented 45° apart
Symbol overall dimensions :
Height : 2.10 mm Width : 2.10 mm
Origin : Center of symbol

POSICUT # 233



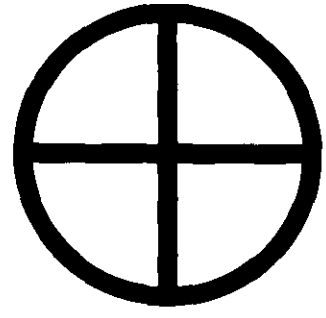
Bar and circle lineweights : 0.10 mm
Bar lengths : 0.50 mm and 1.00 mm
Bars oriented 45° apart
Circle outside diameter : 1.00 mm
Symbol overall dimensions :
Height : 3.00 mm Width : 3.00 mm
Origin : Center of circle

POSICUT # 234



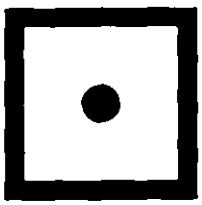
Triangle lineweight : 0.10 mm
Dot diameter : 0.20 mm
Equilateral triangle : 1.50 mm side lengths
Dot is centered in triangle.
Origin : Center of dot

POSICUT # 235



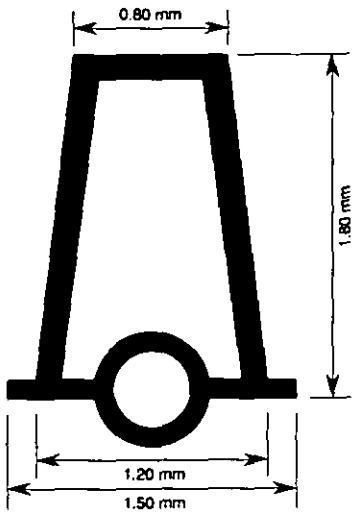
All lineweights : 0.10 mm
Circle outside diameter : 1.60 mm
Cross is centered in circle
Origin : Center of cross

POSICUT # 236



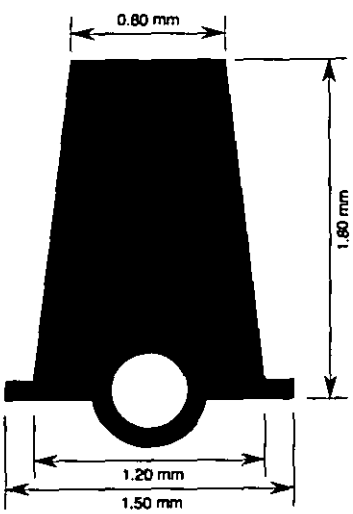
Square lineweight : 0.10 mm
Dot diameter : 0.20 mm
Square dimensions : 1.00 mm x 1.00 mm
Dot is centered in square.
Origin : Center of dot

POSICUT # 237



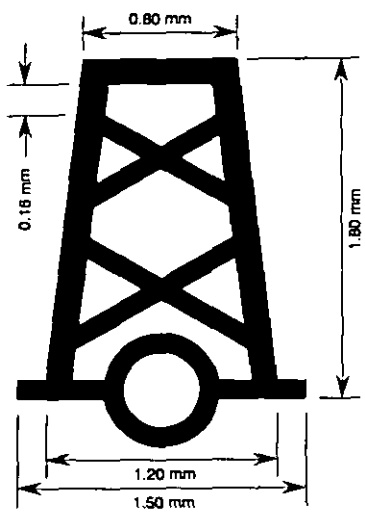
Lineweight (top/sides) : 0.13 mm
Lineweight (base/circle) : 0.10 mm
Circle outside diameter : 0.60 mm
Circle is centered on base.
Symbol is horizontally symmetrical.
Origin : center of circle

POSICUT # 238



Lineweight (base/circle) : 0.10 mm
Circle outside diameter : 0.60 mm
Circle is centered on base.
Symbol is horizontally symmetrical.
Origin : center of circle

POSICUT # 239



Lineweight (top/sides) : 0.13 mm
Lineweight (base/circle/"X's") : 0.10 mm
Circle outside diameter : 0.60 mm
Circle is centered on base. "X's" are equally spaced (0.16 mm) and angled to 30°
Symbol is horizontally symmetrical.
Origin : center of circle

APPENDIX F

TYPE SPECIFICATIONS - SWISS 742

10. SCOPE

10.1 Scope. This APPENDIX provides samples of the format and design for all SWISS 742 TYPE uses on MC&G graphic products. This APPENDIX is a mandatory part of MIL-STD-2410 and the information contained herein is intended for compliance.

20. APPLICABLE DOCUMENTS

This section is not applicable to this APPENDIX.

30. REQUIREMENTS

30.1 Type Specifications - Swiss 742. The following pages provide specific printed samples for all Swiss 742 used for MC&G graphic product.

FIGURE F-1: SWISS 742 - Regular (Medium)

4 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ1234567890

5 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ1234567890

6 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ1234567890

7 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ1234567890

8 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ1234567890

9 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ1234567890

10 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ1234567890

12 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ1234567890

14 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ12345
67890

16 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVW
XYZ1234567890

18 POINT

abcdefghijklmnopqrstuvwxyzABCEDFGHIJKLMNOPQRS
TUVWXYZ1234567890

20 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNO
PQRSTUVWXYZ1234567890

24 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJ
KLMNOPQRSTUVWXYZ1234567890

30 POINT

abcdefghijklmnopqrstuvwxyzABC
DEFGHIJKLMNOPQRSTUVWXYZ
1234567890

36 POINT

abcdefghijklmnopqrstuvwxy
zABCDEFGHIJKLMNOPQRS
TUVWXYZ1234567890

THIS PAGE INTENTIONALLY BLANK

FIGURE F-2: SWISS 742 - Condensed

4 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ1234567890

5 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ1234567890

6 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ1234567890

7 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ1234567890

8 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ1234567890

9 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ1234567890

10 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ1234567890

12 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ1234567890

14 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ1234567890

16 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ1234567890

18 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ123
4567890

20 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVW
XYZ1234567890

24 POINT

abcdefghijklmnopqrstuvwxyzABCEDFGHIJKLMNOP
QRSTUVWXYZ1234567890

30 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHI
JKLMNOPQRSTUVWXYZ1234567890

36 POINT

abcdefghijklmnopqrstuvwxyzABCD
EFGHIJKLMNOPQRSTUVWXYZ123
4567890

THIS PAGE INTENTIONALLY BLANK

FIGURE F-3: SWISS 742 - Light Condensed

4 POINT

5 POINT

6 POINT

7 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ1234567890

8 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ1234567890

9 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ1234567890

10 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ1234567890

12 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ1234567890

14 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ1234567890

16 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ1234567890

18 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ123456
7890

20 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ
1234567890

24 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRS
TUVWXYZ1234567890

30 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJK
LMNOPQRSTUVWXYZ1234567890

36 POINT

abcdefghijklmnopqrstuvwxyzABCDE
FGHIJKLMNOPQRSTUVWXYZ12345
67890

THIS PAGE INTENTIONALLY BLANK

FIGURE F-4: SWISS 742 - Light Condensed Italic

4 POINT

5 POINT

6 POINT

7 POINT

8 POINT

9 POINT

10 POINT

12 POINT

14 POINT

16 POINT

18 POINT

20 POINT

24 POINT

30 POINT

36 POINT

THIS PAGE INTENTIONALLY BLANK

FIGURE F-5: SWISS 742 - Italic

4 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ1234567890

5 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ1234567890

6 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ1234567890

7 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ1234567890

8 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ1234567890

9 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ1234567890

10 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ1234567890

12 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ1234567890

14 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ12345
67890

16 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWX
YZ1234567890

18 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRS
TUVWXYZ1234567890

20 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNO
PQRSTUVWXYZ1234567890

24 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJ
KLMNOPQRSTUVWXYZ1234567890

30 POINT

abcdefghijklmnopqrstuvwxyzABC
DEFGHIJKLMNOPQRSTUVWXYZ1
234567890

36 POINT

abcdefghijklmnopqrstuvwxy
zABCDEFGHIJKLMNOPQRS
TUVWXYZ1234567890

THIS PAGE INTENTIONALLY BLANK

FIGURE F-6: SWISS 742 - Bold

4 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ1234567890

5 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ1234567890

6 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ1234567890

7 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ1234567890

8 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ1234567890

9 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ1234567890

10 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ1234567890

12 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ1234567890

14 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ
1234567890

16 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUV
WXYZ1234567890

18 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQR
STUVWXYZ1234567890

20 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMN
OPQRSTUVWXYZ1234567890

24 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHI
JKLMNOPQRSTUVWXYZ1234567890

30 POINT

abcdefghijklmnopqrstuvwxyzAB
CDEFGHIJKLMNOPQRSTUVWXY
Z1234567890

36 POINT

abcdefghijklmnopqrstuvwx
yzABCDEFGHIJKLMNOPQR
STUVWXYZ1234567890

THIS PAGE INTENTIONALLY BLANK

FIGURE F-7: SWISS 742 - Bold Condensed

4 POINT

5 POINT

6 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ1234567890

7 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ1234567890

8 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ1234567890

9 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ1234567890

10 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ1234567890

12 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ1234567890

14 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ1234567890

16 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ12345
67890

18 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXY
Z1234567890

20 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTU
VWXYZ1234567890

24 POINT

abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMN
OPQRSTUVWXYZ1234567890

30 POINT

abcdefghijklmnopqrstuvwxyzABCDEFG
HIJKLMNOPQRSTUVWXYZ1234567890

36 POINT

abcdefghijklmnopqrstuvwxyzAB
CDEFGHIJKLMNOPQRSTUVWXY
Z1234567890

THIS PAGE INTENTIONALLY BLANK

INDEX

TITLE	PARAGRAPH	PAGE
APPENDIX A - Dot Tint (Round Dot) Screens	-	13
APPENDIX B - Biangle Screens	-	19
APPENDIX C - Line Patterns	-	22
APPENDIX D - Area Patterns	-	28
APPENDIX E - Posicuts/Posicut Engineering Drawings	-	44
APPENDIX F - Type Specifications - Swiss 742	-	96
Applicability	1.3	1
APPLICABLE DOCUMENTS	2	2
Area pattern screen	3.1	3
Area Patterns	5.5	9
Biangle Screens	5.3	8
Concluding Materials	-	106
Copy identification	5.1.3	5
DEFINITIONS	3	3
DETAILED REQUIREMENTS	5	5
Dot Tint (Round Dot) Screens	5.2	8
GENERAL REQUIREMENTS	4	4
General rules for feature masking	5.1.4.1	6
General rules for halo masking	5.1.4.2	7
Government documents	2.1	2
Intended use	6.1	12
Intended use for reproduction and printing standards	4.3	4
International Standardization Agreements (STANAGs)	6.5.1	12
Issue of DODISS	6.2	12
Line pattern	3.2	3
Line Patterns	5.4	9
Lithography	3.3	3
Mask	3.4	3
Masking	5.1.4	6
Mechanical registration	3.5	3
Moiré	3.6	3
Non-Government publications	2.2	2
Notes	6	12
Order of precedence	2.3	2
Other Government documents, drawings and publications	2.1.2	2
Paper	5.1.1	5
Posicut	3.7	3
Posicut Engineering Drawings	5.6.1	10
Posicuts	5.6	10
Process color printing (lithography)	3.8	3
Process Printing Colors	5.7.2	11
Purpose	1.2	1
Printing Colors	5.7	10

TITLE	PARAGRAPH	PAGE
Register	3.9	3
Registration of reproduction materials	5.1.2	5
Reproduction	3.10	3
Reproduction material (reproducible)	3.11	3
Reproduction requirements	5.1	5
Requirements for printing	4.2	4
Requirements for reproduction	4.1	4
SCOPE, Scope	1, 1.1	1
Screen angle (photography)	3.12	3
Security	1.4	1
Specifications, standards, and handbooks	2.1.1	2
Standard Printing Colors (SPC)	5.7.1	10
Standardization agreements	6.5	12
Subject term (keyword) listing	6.4	12
Supersession	6.3	12
Type Specifications	5.8	11

CONCLUDING MATERIAL

Custodians:

DMA-MP

Review activities:

DMA-MP

Preparing activity:

DMA-MP

(Project MCGT-0118)

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

INSTRUCTIONS

1. The preparing activity must complete blocks 1, 2 3, and 8. In block 1, both the document number and revision letter should be given.
2. The submitter of this form must complete blocks 4, 5, 6, and 7.
3. The preparing anivity must provide a reply within 30 days from receipt of the form.

NOTE: This form may not be used to request copies of documents, nor to request waivers, or clarification of requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

I RECOMMEND A CHANGE:	1. DOCUMENT NUMBER MIL-STD-2410	2. DOCUMENT DATE (YYMMDD) 95/01/31

3. DOCUMENT TITLE Military Standard for MC&G Reproduction and Printing

4. NATURE OF CHANGE *(Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed)*

5. REASON FOR RECOMMENDATION

6. SUBMITTER

a. NAME *(Last, First, Middle Initial)*	b. ORGANIZATION	
c. ADDRESS *(Include Zip Code)*	d. TELEPHONE *(Include Area Code)* (1) Commercial (2) AUTOVON *(if applicable)*	7. DATE SUBMITTED *(YYMMDD)*

8. PREPARING ACTIVITY

a. NAME Defense Mapping Agency ATTN: PR, ST A-13	b. TELEPHONE *(Include Area Code)* (1) Commercial (703) 285-9238	(2) AUTOVON 356-9238
c. ADDRESS *(Include Zip Code)* 8613 Lee Highway Fairfax, VA 22031-2137	**IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT:** Defense Quality and Standardization Office 5203 Leesburg Pike, Suite 1403, Falls Church, VA. 22041-3466 Telephone (703) 756-2340 AUTOVON 289-2340	

DD Form 1426, OCT 89 *Previous editions are obsolete.* 198-290