TELETYPESETTER®

SUPPLEMENT TO THE

PERFORATOR OPERATOR'S TRAINING AND REFERENCE MANUAL

STANDARD LIGHT TOUCH "1000" PERFORATOR

MULTIFACE LIGHT TOUCH "1035" PERFORATOR

FAIRCHILD
GRAPHIC EQUIPMENT
A DIVISION OF FAIRCHILD CAMERA AND INSTRUMENT CORPORATION

221 FAIRCHILD AVENUE, PLAINVIEW, L.I., N.Y.

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IMPORTANT

This manual is meant to supplement, not to replace the Perforator Operator's Training and Reference Manual.

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DESCRIPTION OF TELETYPESETTER MODEL 1000 STANDARD PERFORATOR

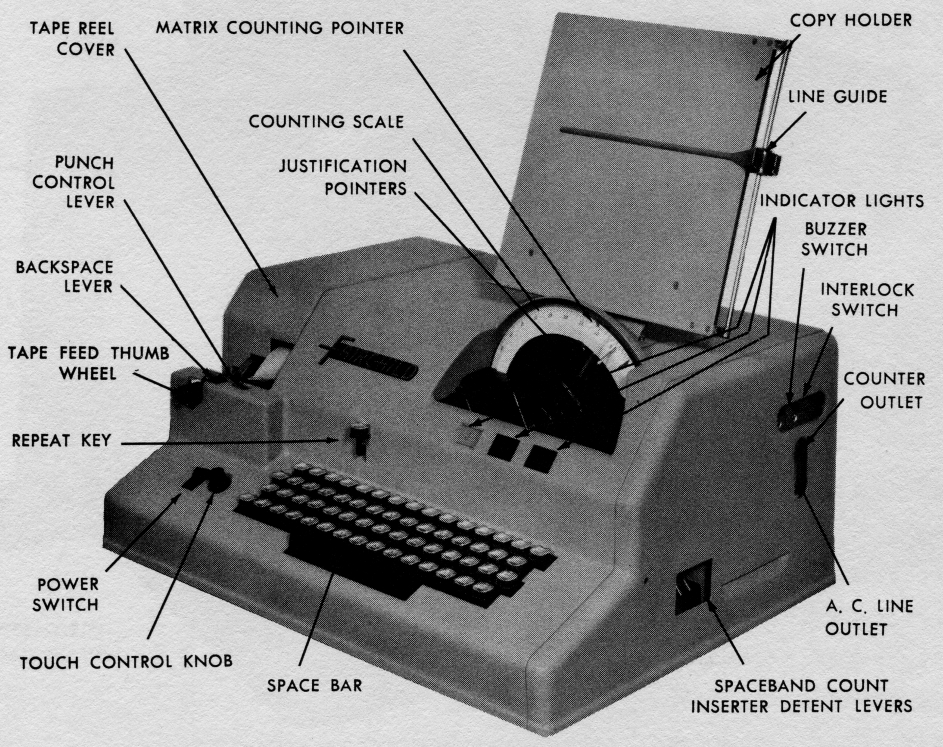
The Model 1000 Standard Perforator designated TPE 211, is designed for use with matrices cut on the unit system and is recommended for newspaper application. This Perforator contains a fixed counting mechanism. Tape may be prepared for setting all types of composition with unit font matrices from 5½ to 12 point.

The design of this new Perforator, while retaining the proven features of the widely used TELETYPESETTER Perforators, includes new advances that not only provide ease of operation, but maintenance as well.

It has an improved touch which minimizes operator fatigue. A control has also been provided by which the operator may adjust the touch to suit his individual preference. The keyboard speed has been increased and is capable of being operated at 1035 keystrokes per minute, which is equivalent to 172 wpm.

A new non-glare stationary scale has been provided to aid the operator in quickly locating the justification range at any time, since the justification area is always in a fixed position. A further aid to the operator is the add-thin space pointer which indicates, without any calculation, if the line will justify when a thin space is added with each spaceband.

In addition, the Perforator has conveniently located indicator lights to show the operator when the keyboard is in the "shift" or "upper rail" position and when the matrix counting pointer is approaching the justification area.



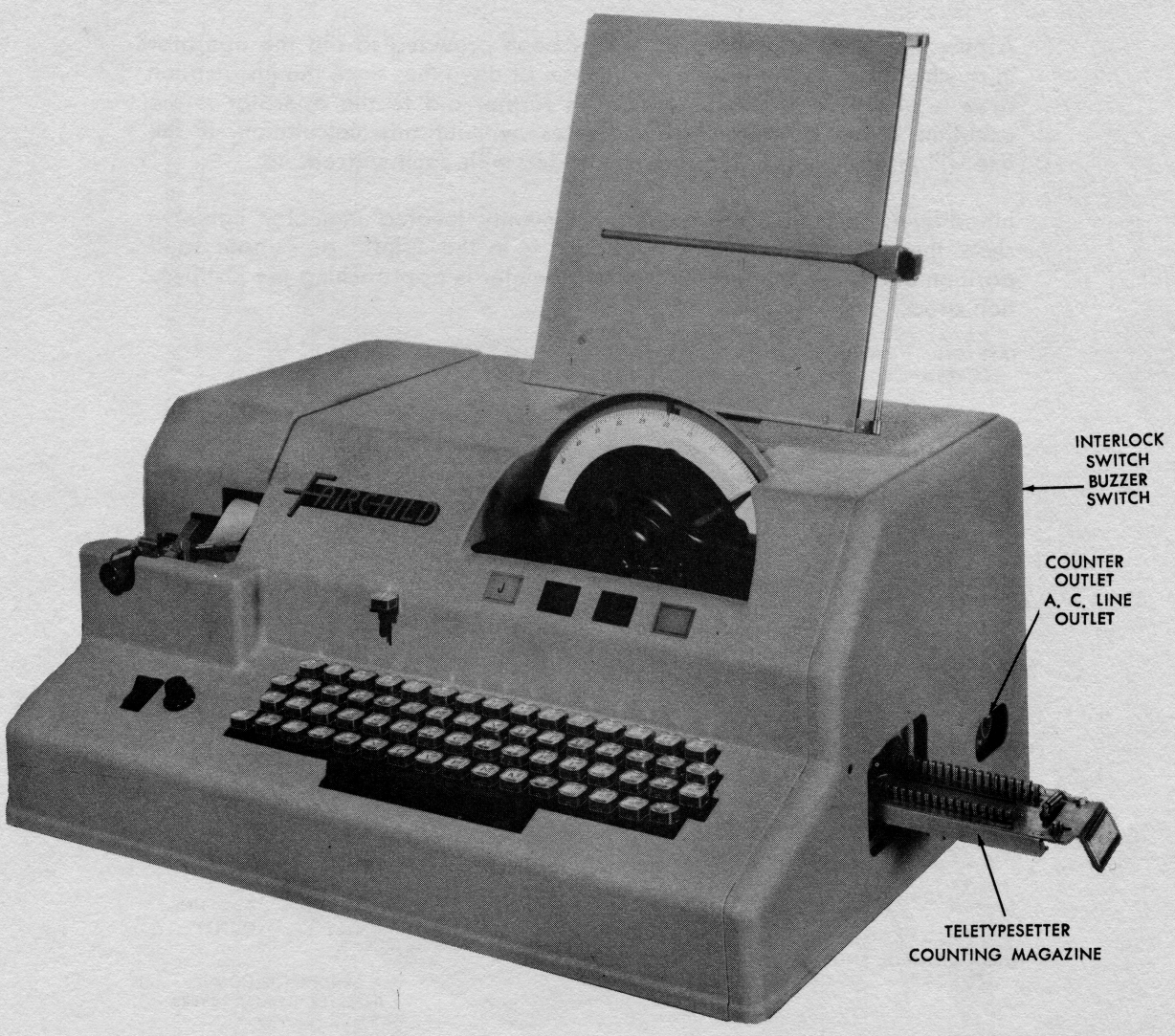
STANDARD PERFORATOR

DESCRIPTION OF TELETYPESETTER MODEL 1035 MULTIFACE PERFORATOR

The Model 1035 Multiface Perforator designated TPE 212 is designed for use where a variety of type faces is required. These matrices may be cut on either the unit or non-unit system and cover a range of 5½ to 14 point.

This flexibility is obtained by use of a removable Counting Magazine which is coded to count the specific font being used. TELETYPESETTER Counting Magazines can be quickly interchanged by the operator without the use of tools or special skills.

The Model 1035 Multiface Perforator contains all the new features and operator aids that are presently incorporated in the Model 1000 Standard Perforator.



MULTIFACE PERFORATOR

KEYBOARD ARRANGEMENT

The Keyboard arrangement of the Model 1000 Standard Perforator and the Model 1035 Multiface Perforator is based on the typewriter touch system. Besides the regular alphabetical and numerical keys, additional keys are provided to control the fixed spacing and various other functions of the linecasting machine. The Perforators' Contoured Keytops assure the operator of positive keyboarding.



STANDARD PERFORATOR KEYBOARD LAYOUT WHEN FRACTIONS ARE REQUIRED.



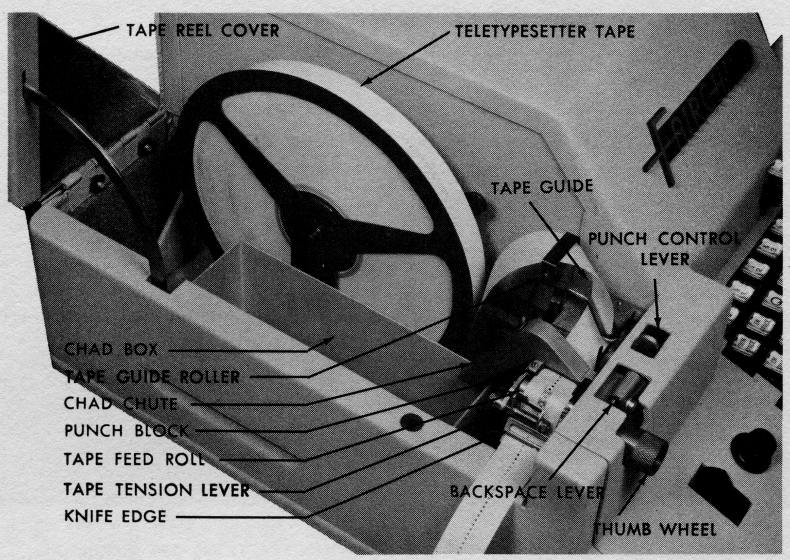
MULTIFACE PERFORATOR KEYBOARD LAYOUT WHEN SMALL CAPS ARE REQUIRED.

DESCRIPTION OF KEYS AND THEIR FUNCTIONS

Refer to pages 20 through 25 in the Perforator Operator's Training and Reference Manual for detailed explanation.

INSERTING A ROLL OF TAPE IN THE PERFORATOR

Lift the tape reel cover located on the left side of Perforator and remove the tape reel assembly from compartment. Place the new roll of TELETYPESETTER tape on reel so as to unwind in a counterclockwise position. Cut or sharply tear the end of tape diagonally to facilitate insertion in the punch block. Place the end of the tape over the tape guide roller, through the slot in the tape guide, and insert the end of the tape through the punch block.



Hold the tape tension lever away from the tape feed roll and feed the tape to the left until the end of the tape is in position between the tape feed roll and the tape tension lever. Holding the tape tension lever against the tape feed roll so that the pins in the tape feed roll grip the tape, depress the TAPE key a number of times until the tape feeds far enough to insure that the feed holes mesh properly with the feed pins in the feed roll. Now depress the TAPE key and the REPEAT key simultaneously until sufficient tape is advanced to insure uniform spacing between feed holes in the tape.

STARTING TO PERFORATE TAPE

With tape inserted in the punching unit and the tape control lever and the power switch both in the "on" position, the Perforator is ready for operation.

Before starting to perforate tape, the Operator should "condition" the Perforator as follows:

With the punch control lever in the left or "on" position, depress the RETURN, ELEV, and UNSHIFT keys. This assures the Operator that the pointers are at the starting position and the Perforator is in the unshift position.

Depress the TAPE key and REPEAT key simultaneously until all code perforations in the tape are advanced past the knife edge, then tear off this piece of tape by lifting and twisting. Feed out enough blank tape ("tape" combinations) to provide space for writing the name of the item, the size of type, or any other information desired.

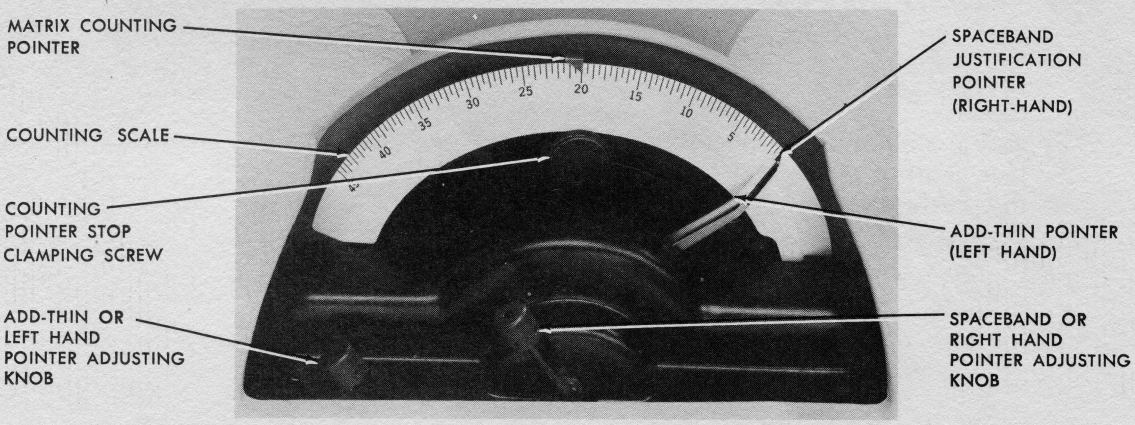
EXPLANATION OF THE MATRIX COUNTING POINTER SETTING

Each full scale division on the counting scale represents a thickness equivalent to the EM space for that particular font of type. One-half of a scale division represents an EN space which is one-half the width of the EM space.

The matrix counting pointer is arranged to move from left to right along the counting scale in varying amounts proportional to the width of the characters added to the line as the various keylevers are depressed. The starting point of the counting pointer is adjustable and should be positioned to conform to the column measure of the composition to be set. (Refer to Counting Pointer Setting Chart on Page 13.)

When using unit system matrices in conjunction with the Standard Perforator, the EM space has a count value of 18 units, and all other alphabet characters, figures, punctuation marks and special characters have a count value directly proportional to the EM space. When using the Multiface Perforator and non-unit system matrices, the EM space has a count value of 32 units, and the other characters with a counting value proportional to the EM space being used.

The counting pointer moves one full scale division on the counting scale for each 18 unit value (unit system matrices) or 32 unit value (non-unit system matrices). Accordingly, when the Perforator is used to count matrices with an EM space value of .1107", the counting pointer moves a full scale division for each .1107" of type. The theoretical counting pointer setting for any column measure is therefore determined by dividing the column width (measured in inches) by the EM space value (.1107"). Likewise, when the Perforator is used to count matrices with an EM space value of .100", the counting pointer setting can be calculated by dividing the column width (measured in inches) by .100".



MATRIX COUNTING POINTER SETTING

The counting pointer stop should be positioned by loosening its clamping screw and moving the stop to a position so that the counting pointer returns to the calculated point of the counting scale when the "RET" key is depressed. After the clamping screw has been tightened, recheck the setting and refine if necessary.

EXPLANATION OF THE MINIMUM SPACEBAND COUNT

When using the stationary counting scale the minimum thickness of the spaceband is counted in the line by the motion of the matrix counting pointer. This left to right motion replaces the scale motion used on the movable scale perforator.

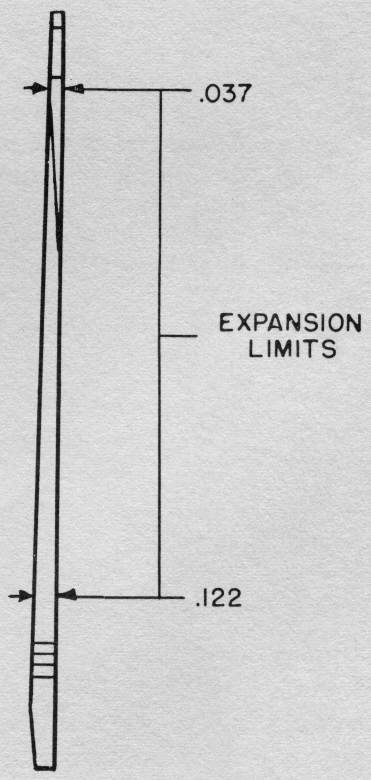
In the Model 1000 Standard Perforator this count is controlled by setting the Spaceband Count Inserter as explained under Operating Procedures. When Model 1035 Multiface Perforator is used, this count is controlled by inserting Count Code Blades in the TELETYPESETTER Counting Magazine as explained under operating procedures.

EXPLANATION OF THE SPACEBAND JUSTIFICATION POINTER SETTINGS

Spaceband Justification Pointer (Right Hand)

The motion of the spaceband justification pointers must be adjusted to agree with the font of type and also with the kind of spacebands being used. The minimum thickness of the spaceband most commonly used is .037" and the maximum thickness is .122" The difference between these two measurements is the total expansion of which the spaceband is capable. It is generally considered that 85% of this total expansion is usable.

When properly set, the Right Hand Justification Pointer moves from zero to the left; a distance proportional to the accumulated usable expansion of spacebands in the line. (See chart of settings for Model 1000 Standard Perforator and Model 1035 Multiface Perforator.)



EXPLANATION OF THE ADD-THIN POINTER SETTING

Add-Thin space pointer — (Left Hand)

The total distance between the Thin Space Pointer and the Spaceband Pointer is equal to the unit value of ten Thin Spaces of the font being used.

OPERATING PROCEDURES

POINTER SETTINGS

Matrix Counting Pointer Setting

Set matrix counting pointer to required column measure and EM Quad Size as determined by counting pointer setting chart (Page 13).

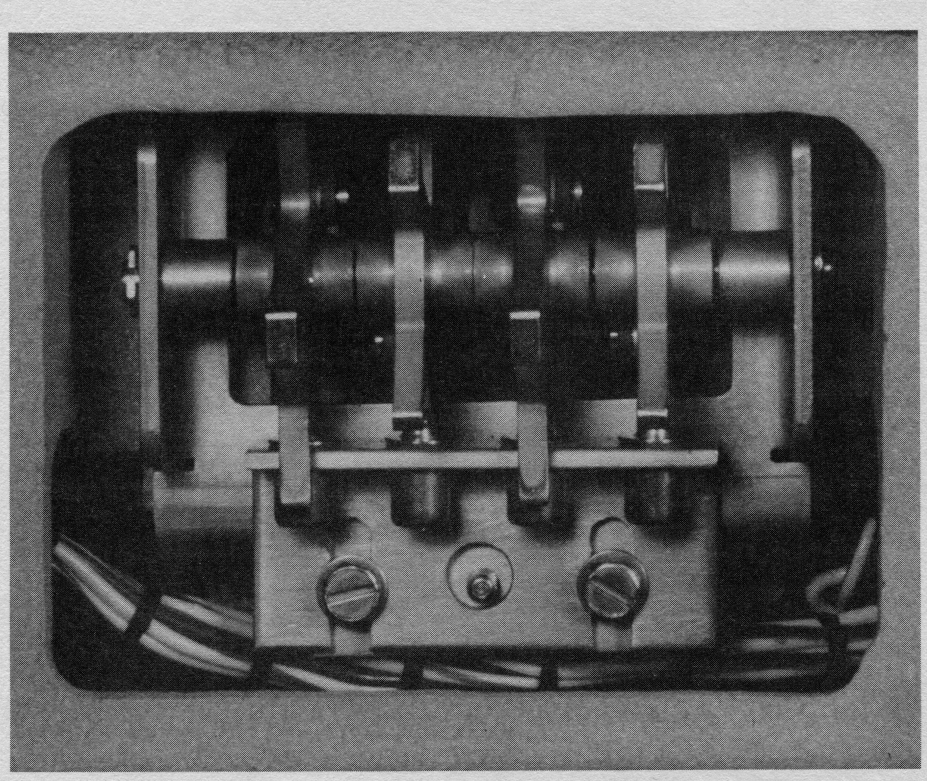
SETTING OF MINIMUM SPACEBAND THICKNESS COUNT

(a) Model 1000 Standard Perforator

The count value of the minimum thickness of the spaceband is controlled by the Spaceband Count Inserter Detent Levers. These levers are located at the right of the perforator.

When properly set the minimum thickness will be counted in the line by the matrix pointer. Refer to chart on page 14 for the proper setting for the spaceband being used.

An example of a typical setting is shown below.

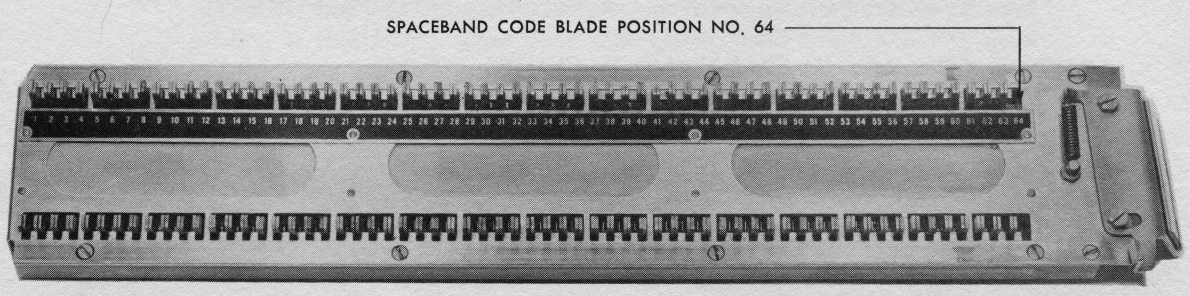


The detent levers are numbered from left to right. Levers #1 and 3 are shown in their down position. This setting gives the correct count for a band with a minimum thickness of .039 being used with a font of which the Em Quad size is .076.

OPERATING PROCEDURES (CONT.)

(b) Model 1035 Multiface Perforator

The count value of the minimum thickness of the space band is controlled by inserting Count Code Blades of the proper value in the spaceband, (No. 64) position of the TELETYPESETTER Counting Magazine. A counting code blade should be placed in **BOTH** shift and unshift positions.



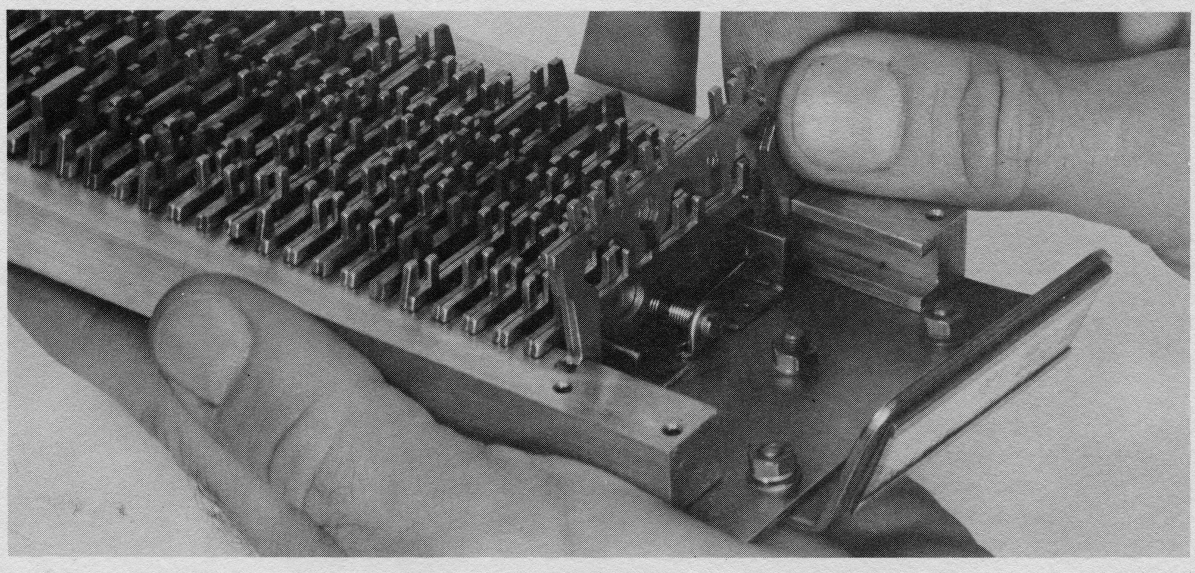
TELETYPESETTER COUNTING MAGAZINE

Refer to Pointer Setting Chart (pages 15 and 16) to ascertain proper count code blade value and follow procedure as outlined below:

Select the count code blade desired. If, for example, the value desired is 10-10, you would select a blade that has the 10 on the left side and the hole on the right. The shift value would have the hole on the left and the 10 on the right. The two blades can then be assembled together.

To prevent the two count code blades from separating, install two spring clips, Part No. 132913, on each pair of code blades.

To insert new code blades in the shift and unshift positions, merely release spring tension on the respective blades, lift blades out and snap proper blades back into position.



SETTING OF JUSTIFICATION POINTERS

Refer to Pointer Setting Chart for justification pointer positions listed for the Em Quad Size and spacebands being used. Set pointers according to instructions below:

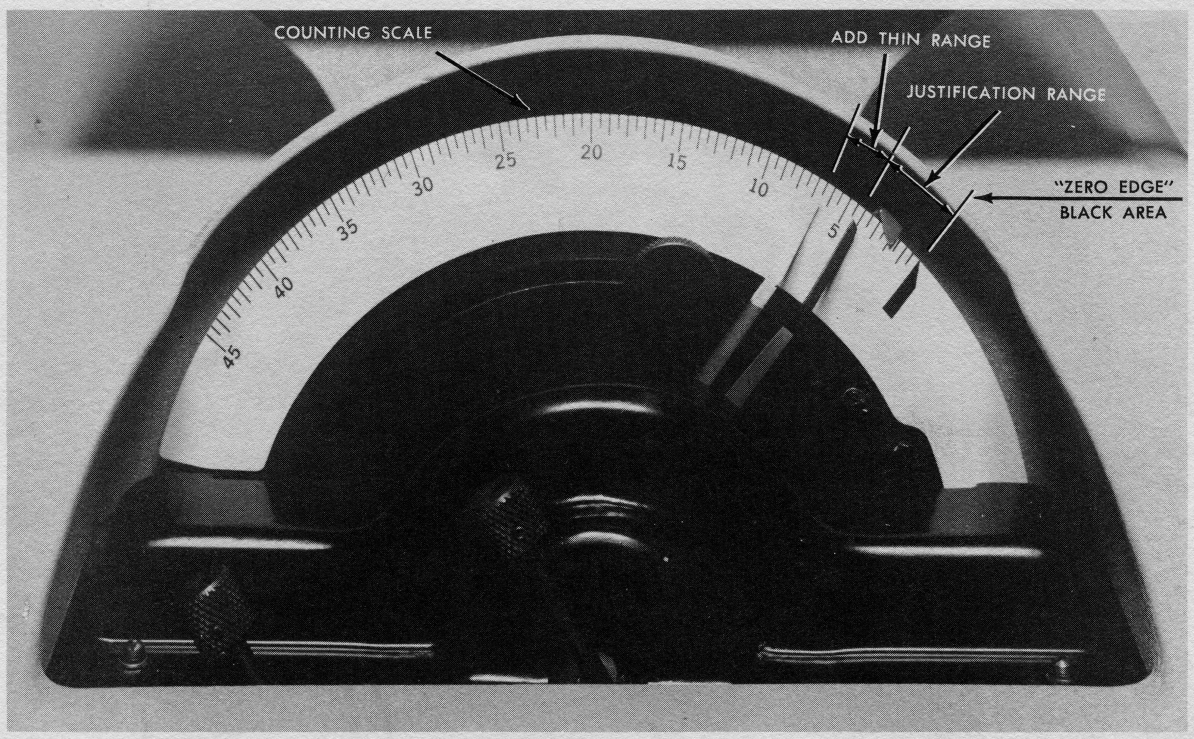
1. Depress space bar 10 times.

2. Use right knurled knob to move Spaceband Justification Pointer (right hand) to pre-calculated position on the indicator scale.

3. Use left knurled knob to move Add-Thin Pointer (left hand) to pre-calculated position on the scale.

LINE JUSTIFICATION

When the red matrix pointer is between the black pointer and the zero edge of the black area on the scale, the line will justify and may be terminated at this point.

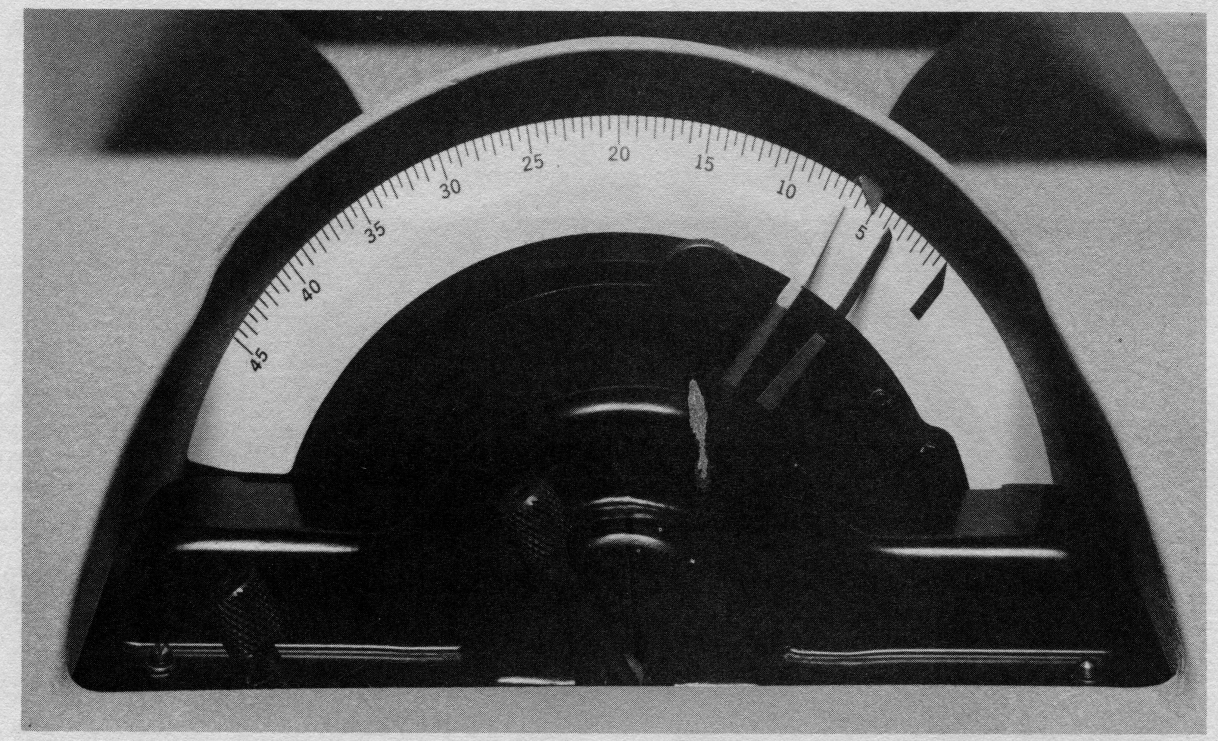


EXAMPLE OF JUSTIFIED LINE

LINES REQUIRING ADD-THIN SPACING

In the composition of printed matter, it is not uncommon for a line to end so that the last word or division of a word will make the line too long, while the line without this word or division of a word would be too short to justify. In this case add-thin spacing may be used without calculation by observing the following:

> When the red matrix pointer is between the yellow and black pointer adding a thin space over each spaceband, will bring the line into "justification range".

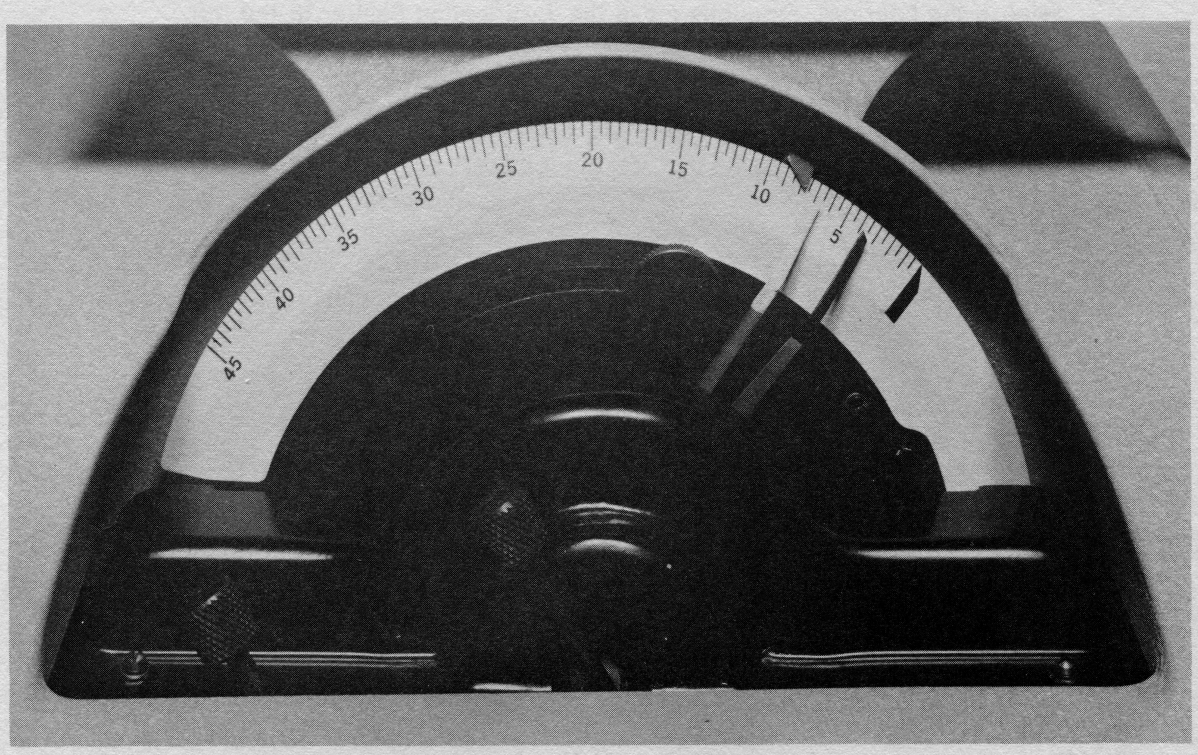


EXAMPLE OF A LINE THAT CAN BE JUSTIFIED BY ADDING A THIN SPACE TO EACH SPACEBAND.

NOTE: Where non add-thin TELETYPESETTER Operating Units are used in conjunction with these Perforators, the above instruction does not apply. In this case all lines must be justified.

IMPROPER OPERATING PROCEDURES

If the line is ended before the red matrix pointer is between the yellow and the black pointers, the line cannot be justified and if allowed to stand will result in a "loose" line at the linecasting machine.



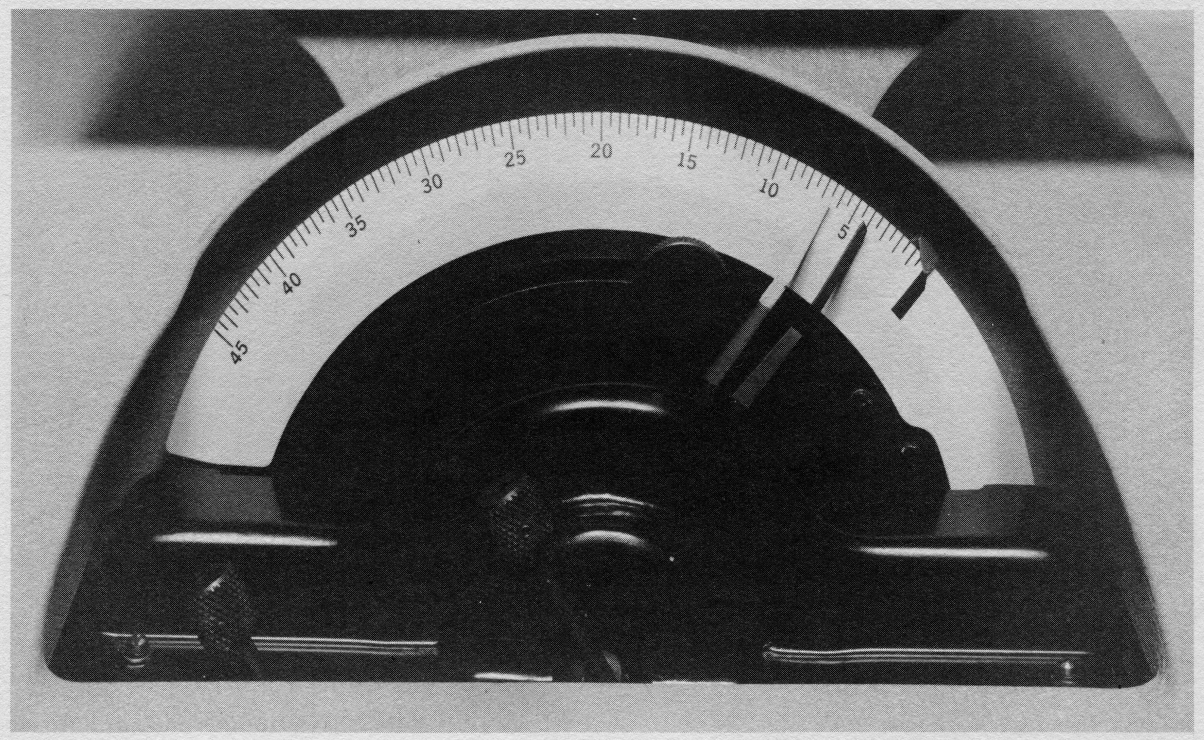
EXAMPLE OF LOOSE LINE.

IMPROPER OPERATING PROCEDURES

If the red matrix pointer is beyond the zero edge of the black area on the scale, a "tight" line will result at the linecasting machine. Proper attention should be given to the "tight-line" buzzer that operates when this condition occurs. This buzzer is incorporated as standard equipment on these Perforators.

These Perforators also contain a standard feature, called the "Interlock" which can be employed, if desired, to make it impossible to operate the keyboard the instant a line is beyond the justifiable range.

When an over-justified line is set, the Interlock locks the keyboard. To release the Interlock, manually move the Justification Pointer to the left.



EXAMPLE OF TIGHT LINE.

IMPORTANT

Either tight or loose lines can cause damage to the linecasting machine, spacebands or matrices. OR OPERATORS.

Red - Counting pointer

COUNTING POINTER SETTINGS

FOR ALL STANDARD AND MULTIFACE PERFORATORS

8pt

Column Width in Picas	EM QUAD SIZES .083	.0845	.0864	.0882	.090	.092	.094	.097	.100	.1038	.1060	.1084	.1107	.112	.115	.1176	.118	.120	.1245	.126	.128	.1314	.133	.136	.1383	.140	.144	.148	.1522	.154	.163	.166	.178	.1798	.182	.1937	.2075	.2213 EM QUAD SIZES
4	7.8	7.7	7.5	7.3	7.2	7.0	6.8	6.6	6.4	6.2	6.0	5.9	5.8	5.7	5.6	5.4	5.4	5.3	5.1	5.1	5.0	4.9	4.8	4.7													
5	9.8	9.6	9.4	9.2	9.0	8.8	8.6	8.4	8.1	7.8	7.6	7.4	7.3	7.2	7.0	6.9	6.9	6.7	6.5	6.4	6.3	6.1	6.0	5.9	5.8	5.7	5.6	5.4									
6	11.8	11.6	11.3	11.1	10.9	10.6	10.4	10.1	9.8	9.4	9.2	9.0	8.8	8.7	8.5	8.3	8.3	8.1	7.8	7.7	7.6	7.4	7.3	7.1	7.0	6.9	6.7	6.5	6.3	6.3	5.9	5.8	5.4	5.3	5.3	4.9	4.6	4.3
7	13.8	13.6	13.2	13.0	12.7	12.4	12.2	11.8	11.4	11.0	10.8	10.5	10.3	10.2	9.9	9.7	9.7	9.5	9.1	9.0	8.9	8.6	8.5	8.3	8.2	8.1	7.9	7.7	7.4	7.3	6.9	6.8	6.3	6.3	6.2	5.8	5.4	5.1
8	15.8	15.5	15.2	14.9	14.6	14.2	13.9	13.5	13.1	12.6	12.3	12.1	11.8	11.7	11.3	11.1	11.1	10.9	10.4	10.3	10.1	9.9	9.8	9.5	9.4	9.3	9.0	8.8	8.5	8.4	7.9	7.8	7.3	7.2	7.1	6.7	6.2	5.8
9	17.8	17.5	17.1	16.7	16.4	16.0	15.7	15.2	14.7	14.2	13.9	13.6	13.3	13.1	12.8	12.5	12.5	12.3	11.8	11.7	11.5	11.1	11.0	10.7	10.6	10.5	10.2	9.9	9.6	9.5	9.0	8.8	8.2	8.1	8.0	7.5	7.0	6.6
10	19.8	19.4	19.0	18.6	18.2	17.8	17.5	16.9	16.4	15.8	15.5	15.1	14.8	14.6	14.2	13.9	13.9	13.6	13.1	13.0	12.8	12.4	12.3	12.0	11.8	11.6	11.3	11.0	10.7	10.6	10.0	9.8	9.1	9.0	8.9	8.4	7.8	7.3
10½	20.8	20.4	20.0	19.5	19.1	18.7	18.3	17.7	17.2	16.6	16.2	15.9	15.5	15.3	14.9	14.6	14.6	14.3	13.8	13.6	13.4	13.0	12.9	12.6	12.4	12.2	11.9	11.6	11.2	11.1	10.5	10.3	9.6	9.5	9.4	8.8	8.2	7.7
11	21.8	21.4	20.9	20.5	20.0	19.6	19.2	18.6	18.1	17.4	17.0	16.6	16.3	16.1	15.7	15.3	15.3	15.0	14.5	14.3	14.0	13.7	13.5	13.2	13.0	12.8	12.3	12.1	11.8	11.7	11.0	10.8	10.1	10.0	9.8	9.2	8.6	8.1
11½	22.8	22.4	21.9	21.4	21.0	20.6	20.1	19.5	18.9	18.2	17.8	17.4	17.0	16.8	16.4	16.0	16.0	15.7	15.1	15.0	14.7	14.3	14.2	13.8	13.6	13.4	13.0	12.7	12.3	12.2	11.5	11.3	10.5	10.4	10.3	9.5	9.0	8.4
11-9 Pts.	23.3	22.9	22.4	21.9	21.4	21.0	20.6	19.9	19.3	18.6	18.2	17.8	17.4	17.2	16.8	16.4	16.3	16.1	15.5	15.3	15.0	14.6	14.5	14.1	13.9	13.7	13.3	13.0	12.6	12.5	11.8	11.6	10.8	10.7	10.5	9.8	9.2	8.6
12	23.8	23.4	22.8	22.4	21.9	21.4	21.0	20.3	19.7	19.0	18.6	18.2	17.8	17.6	17.1	16.7	16.7	16.4½	15.8	15.6	15.3	14.9	14.8	14.4	14.2	14.0	13.7	13.3	12.9	12.7	12.1	11.8	11.0	10.8	10.8	10.1	9.4	8.8
13	25.8	25.3	24.8	24.3	23.8	23.2	22.8	22.0	21.4	20.6	20.2	19.7	19.3	19.0	18.5	18.2	18.1	17.8	17.1	16.9	16.6	16.2	16.0	15.6	15.4	15.2	14.8	14.4	14.0	13.8	13.1	12.8	11.9	11.8	11.7	10.9	10.2	9.6
14	27.8	27.3	26.7	26.2	25.6	25.0	24.5	23.8	23.0	22.2	21.7	21.2	20.8	20.5	20.0	19.6	19.5	19.2	18.5	18.2	17.9	17.5	17.3	16.8	16.6	16.4	15.9	15.5	15.1	14.9	14.1	13.8	12.9	12.7	12.6	11.8	11.0	10.3
15	29.8	29.3	28.6	28.0	27.4	26.8	26.3	25.5	24.7	23.8	23.2	22.8	22.3	22.0	21.4	21.0	21.0	20.5	19.8	19.5	19.2	18.7	18.5	18.1	17.8	17.6	17.1	16.6	16.2	16.0	15.1	14.8	13.8	13.6	13.5	12.7	11.8	11.0
15½	30.8	30.2	29.6	28.9	28.4	27.7	27.2	26.3	25.5	24.6	24.1	23.5	23.0	22.8	22.2	21.7	21.6	21.2	20.5	20.2	19.9	19.4	19.1	18.7	18.4	18.2	17.7	17.2	16.7	16.5	15.6	15.3	14.3	14.1	13.9	13.1	12.2	11.4
16	31.8	31.2	30.5	29.9	29.3	28.6	28.1	27.2	26.4	25.4	24.8	24.3	23.8	23.5	22.9	22.4	22.4	21.9	21.1	20.9	20.5	20.0	19.8	19.3	19.0	18.8	18.2	17.7	17.3	17.0	16.1	15.8	14.7	14.6	14.4	13.5	12.6	11.8
17	33.8	33.2	32.4	31.8	31.1	30.4	29.8	28.9	28.0	27.0	26.4	25.8	25.3	25.0	24.3	23.8	23.8	23.3	22.4	22.2	21.8	21.3	21.0	20.5	20.2	19.9	19.4	18.9	18.4	18.1	17.1	16.8	15.7	15.5	15.3	14.3	13.4	12.6
17½	34.8	34.2	33.4	32.7	32.0	31.3	30.7	29.7	28.8	27.8	27.2	26.6	26.0	25.7	25.0	24.5	24.4	24.0	23.1	22.8	22.5	21.9	21.6	21.2	20.8	20.5	19.9	19.4	18.9	18.7	17.6	17.3	16.1	16.0	15.8	14.8	13.8	12.9
18	35.8	35.2	34.4	33.7	33.0	32.2	31.6	30.6	29.7	28.6	28.0	27.4	26.8	26.5	25.8	25.2	25.2	24.7	23.8	23.5	23.1	22.5	22.3	21.8	21.4	21.1	20.5	20.0	19.5	19.2	18.1	17.8	16.6	16.4	16.2	15.2	14.2	13.3
18½	36.8	36.1	35.3	34.6	33.9	33.2	32.5	31.4	30.5	29.4	28.8	28.1	27.5	27.2	26.5	25.9	25.8	25.4	24.4	24.2	23.8	23.2	22.9	22.3	22.0	21.7	21.1	20.6	20.0	19.7	18.6	18.3	17.1	16.9	16.7	15.7	14.6	13.7
19	37.8	37.1	36.3	35.5	34.8	34.1	33.3	32.3	31.3	30.2	29.3	28.9	28.3	27.9	27.2	26.6	26.6	26.1	25.1	24.8	24.4	23.8	23.5	22.9	22.6	22.3	21.7	21.1	20.6	20.3	19.1	18.8	17.5	17.3	17.1	16.1	15.0	14.1
20	39.8	39.1	38.2	37.4	36.7	35.8	35.1	34.0	33.0	31.8	31.2	30.4	29.8	29.4	28.7	28.0	28.0	27.5	26.4	26.2	25.7	25.1	24.8	24.2	23.8	23.5	22.8	22.2	21.6	21.4	20.1	19.8	18.5	18.3	18.0	16.9	15.8	14.8
21	41.8	41.1	40.2	39.3	38.5	37.7	36.9	35.7	34.7	33.4	32.7	32.0	31.3	30.9	30.1	29.4	29.4	28.8	27.8	27.5	27.0	26.3	26.0	25.4	25.0	24.7	24.0	23.4	22.7	22.4	21.1	20.8	19.4	19.2	19.0	17.8	16.6	15.6
22	43.8	43.0	42.0	41.2	40.4	39.5	38.6	37.5	36.3	35.0	34.2	33.5	32.8	32.4	31.5	30.8	30.8	30.2	29.1	28.8	28.3	27.6	27.3	26.5	26.0	25.9	25.2	24.5	23.8	23.5	22.1	21.8	20.3	20.1	19.9	18.6	17.4	16.3
23		44.9	44.0	43.1	42.2	41.3	40.2	39.2	38.0	36.6	35.8	35.0	34.3	33.8	33.0	32.2	32.2	31.6	30.5	30.1	29.6	28.8	28.5	27.9	27.4	27.1	26.3	25.6	24.9	24.6	23.1	22.8	21.2	21.0	20.8	19.5	18.2	17.1
23½					43.1	42.2	41.3	40.0	38.8	37.4	36.6	35.8	35.0	34.6	33.7	33.0	32.9	32.3	31.1	30.8	30.2	29.5	29.1	28.4	28.0	27.7	27.0	26.2	25.4	25.1	23.6	23.3	21.7	21.5	21.2	19.9	18.6	17.4
24					44.0	43.1	42.2	40.8	39.6	38.2	37.4	36.6	35.8	35.4	34.4	33.7	33.6	33.0	31.8	31.4	30.9	30.1	29.8	29.1	28.6	28.2	27.5	26.7	26.0	25.7	24.1	23.8	22.2	21.9	21.7	20.4	19.0	17.8
24½						44.0	43.0	41.7	40.5	39.0	38.2	37.3	36.5	36.1	35.2	34.4	34.3	33.7	32.4	32.1	31.6	30.7	30.3	29.6	29.2	28.8	28.1	27.3	26.5	26.2	24.6	24.3	22.6	22.4	22.1	20.9	19.4	18.2
25							43.9	42.6	41.3	39.8	39.0	38.1	37.3	36.9	35.9	35.1	35.1	34.4	33.1	32.8	32.2	31.4	31.0	30.3	29.8	29.4	28.6	27.9	27.1	26.8	25.1	24.8	23.1	22.9	22.6	21.2	19.8	18.6
26								44.3	43.0	41.4	40.5	39.6	38.8	38.3	37.3	36.5	36.5	35.8	34.4	34.1	33.5	32.6	32.3	31.5	31.0	30.6	29.8	28.9	28.2	27.8	26.1	25.8	24.0	23.8	23.5	22.1	20.6	19.3
27									44.6	43.0	42.1	41.1	40.3	39.8	38.8	37.9	37.8	37.1	35.8	35.4	34.8	33.9	33.5	32.7	32.2	31.8	31.0	30.1	29.3	28.9	27.1	26.8	25.0	24.7	24.4	22.9	21.4	20.0
28										44.6	43.6	42.6	41.8	41.3	40.2	39.3	39.2	38.5	37.1	36.7	36.1	35.2	34.7	33.9	33.4	33.0	32.1	31.2	30.4	29.9	28.1	27.8	25.9	25.6	25.3	23.8	22.2	20.8
29											45.2	44.2	43.3	42.8	41.6	40.7	40.6	39.9	38.4	38.0	37.4	36.4	36.0	35.2	34.6	34.2	33.2	32.3	31.5	31.1	29.3	28.8	26.8	26.6	26.3	24.7	23.0	21.6
30													44.8	44.2	43.1	42.1	42.0	41.3	39.8	39.3	38.7	37.7	37.2	36.4	35.8	35.4	34.4	33.4	32.6	32.3	30.4	29.8	27.8	27.5	27.2	25.5	23.8	22.3

NOTE: Allowance of .2 divisions has been made in the above settings.

FORMULA: Length of line multiplied by .166 divided by quad size, minus .2, equals Counting Pointer Setting

Below 16.4

Less space bands

JUSTIFICATION POINTERS AND SPACEBAND COUNT INSERTER SETTINGS

FOR STANDARD PERFORATORS WITH STATIONARY COUNTING SCALES

IMPORTANT
The following ** numbers indicate the DOWN position of the Count Inserter Detent Levers. The remaining levers must be placed in the UP position. Levers are numbered from front to rear of the Perforator.

8 pt

Spaceband Expansion			EM QUAD SIZES																																										EM QUAD SIZES
Min.	Max.		.076	.083	.0845	.0864	.0882	.090	.092	.094	.097	.100	.1038	.1060	.1084	.1107	.112	.115	.1176	.118	.120	.1245	.126	.128	.1314	.133	.136	.1383	.140	.144	.148	.1522	.154	.163	.166	.178	.1798	.182	.1937	.2075	.2213
.028	.092	**Levers	12--	1---	1---	1---	1---	1---	1---	1---	1234	1234	1234	1234	1234	1234	1234	1234	---4	---4	---4	---4	---4	---4	---4	---4																			
		R.H.	6.3	5.7	5.6	5.5	5.4	5.2	5.1	5.0	4.8	4.6	4.4	4.3	4.2	4.1	4.0	3.9	3.8	3.8	3.7	3.5	3.5	3.4	3.3																			
		L.H.	9.7	9.0	8.9	8.8	8.7	8.5	8.4	8.3	8.1	7.9	7.7	7.6	7.5	7.4	7.3	7.2	7.1	7.1	7.0	6.9	6.8	6.7	6.6																			
.028	.0925	**Levers	12--	1---	1---	1---	1---	1---	1---	1---	1234	1234	1234	1234	1234	1234	1234	1234	---4	---4	---4	---4	---4	---4	---4	---4																			
		R.H.	6.4	5.8	5.7	5.5	5.4	5.3	5.1	5.0	4.8	4.6	4.4	4.3	4.2	4.1	4.1	4.0	3.8	3.8	3.7	3.6	3.5	3.4	3.3	3.3																			
		L.H.	9.7	9.1	9.0	8.8	8.7	8.6	8.5	8.4	8.1	8.0	7.8	7.6	7.5	7.4	7.4	7.3	7.2	7.1	7.1	6.9	6.8	6.8	6.7	6.6																			
.028	.0943	**Levers	12--	1---	1---	1---	1---	1---	1---	1---	1234	1234	1234	1234	1234	1234	1234	1234	---4	---4	---4	---4	---4	---4	---4	---4	---4																			
		R.H.	6.6	6.0	5.8	5.7	5.6	5.4	5.3	5.2	5.0	4.8	4.6	4.5	4.4	4.3	4.2	4.1	4.0	4.0	3.9	3.7	3.6	3.6	3.5	3.4	3.3																			
		L.H.	9.9	9.3	9.2	9.0	8.9	8.8	8.6	8.5	8.3	8.1	7.9	7.8	7.7	7.6	7.5	7.4	7.3	7.3	7.2	7.0	7.0	6.9	6.8	6.7	6.6																			
.032	.096	**Levers	123-	12--	12--	12--	12--	12--	1---	1---	1---	1---	1---	1---	1234	1234	1234	1234	1234	1234	1234	1234	1234	1234	1234																					
		R.H.	6.3	5.7	5.6	5.5	5.4	5.2	5.1	5.0	4.8	4.6	4.4	4.3	4.2	4.1	4.0	3.9	3.8	3.8	3.7	3.5	3.5	3.4	3.3																					
		L.H.	9.7	9.0	8.9	8.8	8.7	8.5	8.4	8.3	8.1	7.9	7.7	7.6	7.5	7.4	7.3	7.2	7.1	7.1	7.0	6.9	6.8	6.7	6.6																					
.033	.1185	**Levers	123-	12--	12--	12--	12--	12--	1---	1---	1---	1---	1---	1---	1---	1---	1234	1234	1234	1234	1234	1234	1234	1234	1234	1234	1234	---4	---4	---4	---4	---4	---4	---4	---4									
		R.H.	8.7	8.0	7.8	7.6	7.4	7.2	7.1	6.9	6.7	6.4	6.2	6.0	5.9	5.7	5.7	5.5	5.4	5.4	5.3	5.0	4.9	4.8	4.7	4.6	4.5	4.4	4.4	4.2	4.1	3.9	3.9	3.6	3.5							
		L.H.	12.1	11.2	11.1	10.9	10.7	10.5	10.4	10.2	10.0	9.8	9.5	9.3	9.2	9.0	9.0	8.8	8.7	8.7	8.6	8.3	8.2	8.1	8.0	7.9	7.8	7.7	7.7	7.5	7.4	7.2	7.2	6.9	6.8							
.0345	.1194	**Levers	123-	123-	123-	12--	12--	12--	12--	12--	12--	1---	1---	1---	1---	1---	1---	1---	1234	1234	1234	1234	1234	1234	1234	1234	1234	1234	1234	---4	---4	---4	---4	---4	---4								
		R.H.	8.7	7.9	7.7	7.5	7.3	7.2	7.0	6.8	6.6	6.4	6.1	6.0	5.8	5.7	5.6	5.4	5.3	5.3	5.2	5.0	4.9	4.8	4.7	4.6	4.5	4.4	4.3	4.2	4.0	3.9	3.8	3.6	3.5							
		L.H.	12.0	11.2	11.0	10.8	10.7	10.5	10.3	10.2	9.9	9.7	9.4	9.3	9.2	9.0	8.9	8.8	8.6	8.6	8.5	8.3	8.2	8.1	8.0	7.9	7.8	7.7	7.6	7.5	7.3	7.2	7.1	6.9	6.8							
.0345	.121	**Levers	123-	123-	123-	12--	12--	12--	12--	12--	12--	1---	1---	1---	1---	1---	1---	1---	1234	1234	1234	1234	1234	1234	1234	1234	1234	1234	1234	---4	---4	---4	---4	---4	---4	---4	---4	---4				
		R.H.	8.8	8.0	7.9	7.7	7.5	7.3	7.2	7.0	6.7	6.5	6.2	6.1	5.9	5.8	5.7	5.6	5.4	5.4	5.3	5.1	5.0	4.9	4.8	4.7	4.6	4.5	4.4	4.3	4.1	4.0	3.9	3.7	3.6	3.3	3.3				
		L.H.	12.2	11.3	11.2	11.0	10.8	10.7	10.5	10.3	10.1	9.8	9.6	9.4	9.3	9.1	9.1	8.9	8.7	8.7	8.6	8.4	8.3	8.2	8.1	8.0	7.9	7.8	7.7	7.6	7.4	7.3	7.2	7.0	6.9	6.6	6.6				
.0369	.1219	**Levers	1-3-	123-	123-	123-	123-	123-	12--	12--	12--	12--	12--	1---	1---	1---	1---	1---	1---	1---	1---	1---	1234	1234	1234	1234	1234	1234	1234	1234	1234	---4	---4	---4								
		R.H.	8.7	7.9	7.7	7.5	7.4	7.2	7.0	6.8	6.6	6.4	6.1	6.0	5.8	5.7	5.6	5.4	5.3	5.3	5.2	5.0	4.9	4.8	4.7	4.6	4.5	4.4	4.3	4.2	4.0	3.9	3.9	3.6	3.5							
		L.H.	12.0	11.2	11.0	10.8	10.7	10.5	10.3	10.1	9.9	9.7	9.4	9.3	9.1	9.0	8.9	8.7	8.6	8.6	8.5	8.3	8.2	8.1	8.0	7.9	7.8	7.7	7.6	7.5	7.3	7.2	7.2	6.9	6.8							
.037	.1225	**Levers	1-3-	123-	123-	123-	123-	123-	12--	12--	12--	12--	12--	1---	1---	1---	1---	1---	1---	1---	1---	1---	1234	1234	1234	1234	1234	1234	1234	1234	1234	---4	---4	---4								
		R.H.	8.7	8.0	7.8	7.6	7.4	7.2	7.1	6.9	6.7	6.4	6.2	6.0	5.9	5.7	5.7	5.5	5.4	5.4	5.3	5.0	4.9	4.8	4.7	4.6	4.5	4.4	4.4	4.2	4.1	3.9	3.9	3.6	3.5							
		L.H.	12.1	11.2	11.1	10.9	10.7	10.5	10.4	10.2	10.0	9.8	9.5	9.3	9.2	9.0	9.0	8.8	8.7	8.7	8.6	8.3	8.2	8.1	8.0	7.9	7.8	7.7	7.7	7.5	7.4	7.2	7.2	6.9	6.8							
.037	.124	**Levers	1-3-	123-	123-	123-	123-	123-	12--	12--	12--	12--	12--	1---	1---	1---	1---	1---	1---	1---	1---	1---	1234	1234	1234	1234	1234	1234	1234	1234	1234	---4	---4	---4	---4	---4						
		R.H.	8.9	8.1	7.9	7.7	7.5	7.4	7.2	7.0	6.8	6.6	6.3	6.1	6.0	5.8	5.8	5.6	5.5	5.4	5.3	5.1	5.0	4.9	4.8	4.7	4.6	4.5	4.5	4.3	4.2	4.0	4.0	3.7	3.6	3.3	3.3				
		L.H.	12.2	11.4	11.2	11.1	10.9	10.7	10.5	10.4	10.1	9.9	9.6	9.5	9.3	9.2	9.1	8.9	8.8	8.8	8.7	8.4	8.4	8.3	8.1	8.1	7.9	7.8	7.7	7.6	7.5	7.3	7.3	7.0	6.9	6.6	6.6				
.0375	.1015	**Levers	1-3-	123-	123-	123-	123-	123-	123-	12--	12--	12--	12--	12--	1---	1---	1---	1---	1---	1---	1---	1---	1---	1---	1234	1234																			
		R.H.	6.3	5.7	5.6	5.5	5.4	5.2	5.1	5.0	4.8	4.6	4.4	4.3	4.2	4.1	4.0	3.9	3.8	3.8	3.7	3.5	3.5	3.4	3.3																			
		L.H.	9.7	9.0	8.9	8.8	8.7	8.5	8.4	8.3	8.1	7.9	7.7	7.6	7.5	7.4	7.3	7.2	7.1	7.1	7.0	6.9	6.8	6.7	6.6																			
.0375	.1035	**Levers	1-3-	123-	123-	123-	123-	123-	123-	12--	12--	12--	12--	12--	1---	1---	1---	1---	1---	1---	1---	1---	1---	1234	1234	1234	1234																			
		R.H.	6.5	5.9	5.8	5.6	5.5	5.4	5.3	5.1	5.0	4.8	4.6	4.5	4.3	4.2	4.2	4.0	4.0	3.9	3.8	3.7	3.6	3.5	3.4	3.4	3.3																			
		L.H.	9.9	9.2	9.1	9.0	8.8	8.7	8.6	8.5	8.3	8.1	7.9	7.8	7.7	7.6	7.5	7.4	7.3	7.2	7.2	7.0	7.0	6.9	6.8	6.7	6.6																			
.039	.103	**Levers	1-3-	1-3-	123-	123-	123-	123-	123-	123-	12--	12--	12--	12--	12--	12--	1---	1---	1---	1---	1---	1---	1---	1234	1234																			
		R.H.	6.3	5.7	5.6	5.5	5.4	5.2	5.1	5.0	4.8	4.6	4.4	4.3	4.2	4.1	4.0	3.9	3.8	3.8	3.7	3.5	3.5	3.4	3.3																			
		L.H.	9.7	9.0	8.9	8.8	8.7	8.5	8.4	8.3	8.1	7.9	7.7	7.6	7.5	7.4	7.3	7.2	7.1	7.1	7.0	6.9	6.8	6.7	6.6																			
.039	.126	**Levers	1-3-	1-3-	123-	123-	123-	123-	123-	123-	12--	12--	12--	12--	12--	12--	1---	1---	1---	1---	1---	1---	1---	1234	1234	1234	1234	1234	1234	1234	1234	---4	---4	---4	---4							
		R.H.	8.9	8.1	7.9	7.7	7.5	7.4	7.2	7.0	6.8	6.6	6.3	6.1	6.0	5.8	5.8	5.6	5.5	5.4	5.3	5.1	5.0	4.9	4.8	4.7	4.6	4.5	4.5	4.3	4.2	4.0	4.0	3.7	3.6	3.3	3.3				
		L.H.	12.2	11.4	11.2	11.1	10.9	10.7	10.5	10.4	10.1	9.9	9.6	9.5	9.3	9.2	9.1	8.9	8.8	8.8	8.7	8.4	8.4	8.3	8.1	8.1	7.9	7.8	7.7	7.6	7.5	7.3	7.3	7.0	6.9	6.6	6.6				
.046	.146	**Levers			-2--	-2--	-2--	1-3-	1-3-	1-3-	1-3-	123-	123-	123-	123-	123-	123-	12--	12--	12--	12--	12--	12--	12--	12--	1---	1---	1---	1---	1---	1---	1---	1---	1234	1234	1234	1234	1234	---4	---4		
		R.H.			9.2	9.0	8.8	8.6	8.4	8.2	7.9	7.7	7.3	7.2	7.0	6.8	6.7	6.6	6.4	6.4	6.2	6.0	5.9	5.8	5.6	5.6	5.4	5.3	5.2	5.1	4.9	4.7	4.7	4.4	4.3	3.9	3.9	3.8	3.5	3.3	
		L.H.			12.5	12.3	12.1	11.9	11.7	11.5	11.2	11.0	10.6	10.5	10.3	10.1	10.0	9.9	9.7	9.7	9.5	9.3	9.2	9.1	8.9	8.9	8.7	8.6	8.5	8.4	8.2	8.0	8.0	7.7	7.6	7.2	7.2	7.1	6.8	6.6	
.047	.143	**Levers		-2--	-2--	-2--	-2--	-2--	1-3-	1-3-	1-3-	1-3-	123-	123-	123-	123-	123-	12--	12--	12--	12--	12--	12--	12--	12--	12--	1---	1---	1---	1---	1---	1---	1---	1234	1234	1234	1234	1234	1234			
		R.H.		9.0	8.8	8.6	8.4	8.2	8.0	7.8	7.6	7.3	7.0	6.9	6.7	6.5	6.4	6.3	6.1	6.1	6.0	5.7	5.6	5.5	5.4	5.3	5.2	5.1	5.0	4.8	4.7	4.5	4.5	4.2	3.7	3.7	3.6	3.4			
		L.H.		12.3	12.1	11.9	11.7	11.5	11.3	11.1	10.9	10.6	10.3	10.2	10.2	9.8	9.7	9.6	9.4	9.4	9.3	9.0	8.9	8.8	8.7	8.6	8.5	8.4	8.3	8.1	8.0	7.8	7.8	7.5	7.4	7.0	7.0	6.9	6.7		
.048	.144	**Levers		-3-	-3-	-2--	-2--	-2--	-2--	1-3-	1-3-	1-3-	1-3-	123-	123-	123-	123-	123-	123-	12--	12--	12--	12--	12--	12--	12--	12--	12--	1---	1---	1---	1---	1---	1---	1234	1234	1234	1234	1234			
		R.H.		9.0	8.8	8.6	8.4	8.2	8.0	7.8	7.6	7.3	7.0	6.9	6.7	6.5	6.4	6.3	6.1	6.1	6.0	5.7	5.6	5.5	5.4	5.3	5.2	5.1	5.0	4.8	4.7	4.5	4.5	4.2	4.1	3.7	3.7	3.6	3.4		
		L.H.		12.3	12.1	11.9	11.7	11.5	11.3	11.1	10.9	10.6	10.3	10.2	10.2	9.8	9.7	9.6	9.4	9.4	9.3	9.0	8.9	8.8	8.7	8.6	8.5	8.4	8.3	8.1	8.0	7.8	7.8	7.5	7.4	7.0	7.0	6.9	6.7		

JUSTIFICATION POINTERS AND SPACEBAND VALUE SETTINGS

FOR MULTIFACE PERFORATOR WITH STATIONARY COUNTING SCALES USING NON-UNIT FONTS

IMPORTANT
The following numbers * indicate the value of the Count Code Blade to be inserted in the Spaceband position, No. 64, of the Multiface Counting Magazine.

Spaceband Expansion			EM QUAD SIZES																																								
Min.	Max.		.076	.083	.0845	.0864	.0882	.090	.092	.094	.097	.100	.1038	.1060	.1084	.1107	.112	.115	.1176	.118	.120	.1245	.126	.128	.1314	.133	.136	.1383	.140	.144	.148	.1522	.154	.163	.166	.178	.1798	.182	.1937	.2075	.2213
.028	.092	*Spaceband Value	12	11	11	11	10	10	10	10	9	9	9	9	8	8	8	8	8	8	8	8	7	7	7	7	7	7	7	6	6	6	6	6									
		R.H.	6.3	5.7	5.6	5.5	5.4	5.2	5.1	5.0	4.8	4.6	4.4	4.3	4.2	4.1	4.0	3.9	3.8	3.8	3.7	3.5	3.5	3.4	3.3	3.2	3.2	3.1	3.0	2.9	2.8	2.7	2.7	2.5									
		L.H.	8.8	8.2	8.1	8.0	7.9	7.7	7.6	7.5	7.3	7.1	6.9	6.8	6.7	6.6	6.5	6.4	6.3	6.3	6.2	6.0	6.0	5.9	5.8	5.7	5.7	5.6	5.5	5.4	5.3	5.2	5.2	5.0									
.028	.0925	*Spaceband Value	12	11	11	11	10	10	10	10	9	9	9	9	8	8	8	8	8	8	8	7	7	7	7	7	7	7	7	6	6	6	6	6	6								
		R.H.	6.4	5.8	5.7	5.5	5.4	5.3	5.1	5.0	4.8	4.6	4.4	4.3	4.2	4.1	4.1	4.0	3.8	3.8	3.7	3.6	3.5	3.4	3.3	3.3	3.2	3.1	3.1	3.0	2.9	2.8	2.7	2.5	2.5								
		L.H.	8.9	8.3	8.2	8.0	7.9	7.8	7.6	7.5	7.3	7.1	6.9	6.8	*6.7	6.6	6.6	6.4	6.3	6.3	6.2	6.1	6.0	5.9	5.8	5.8	5.7	5.6	5.6	5.5	5.4	5.3	5.2	5.0	5.0								
.028	.0943	*Spaceband Value	12	11	11	11	10	10	10	10	9	9	9	9	8	8	8	8	8	8	8	8	7	7	7	7	7	7	7	6	6	6	6	6	6								
		R.H.	6.6	6.0	5.8	5.7	5.6	5.4	5.3	5.2	5.0	4.8	4.6	4.5	4.4	4.3	4.2	4.1	4.0	4.0	3.9	3.7	3.6	3.6	3.5	3.4	3.3	3.2	3.2	3.1	3.0	2.9	2.8	2.6	2.6								
		L.H.	9.1	8.5	8.3	8.2	8.1	8.0	7.8	7.7	7.5	7.3	7.1	7.0	6.9	6.8	6.7	6.6	6.5	6.4	6.3	6.2	6.1	6.1	6.0	5.9	5.8	5.7	5.7	5.6	5.5	5.4	5.3	5.1	5.1								
.032	.096	*Spaceband Value	14	13	12	12	12	12	11	11	11	10	10	10	10	9	9	9	9	9	9	8	8	8	8	8	8	8	8	7	7	7	7	7	6								
		R.H.	6.3	5.7	5.6	5.5	5.4	5.2	5.1	5.0	4.8	4.6	4.4	4.3	4.2	4.1	4.0	3.9	3.8	3.8	3.7	3.5	3.5	3.4	3.3	3.2	3.2	3.1	3.0	2.9	2.8	2.7	2.7	2.5									
		L.H.	8.8	8.2	8.1	8.0	7.9	7.7	7.6	7.5	7.3	7.1	6.9	6.8	6.7	* 6.6	6.5	6.4	6.3	6.3	6.2	6.0	6.0	5.9	5.8	5.7	5.7	5.6	5.5	5.4	5.3	5.2	5.2	5.0									
.033	.1185	*Spaceband Value	14	13	13	12	12	12	12	11	11	11	10	10	10	10	10	9	9	9	9	9	9	8	8	8	8	8	8	8	7	7	7	7	7	6	6	6	6	6	5		
		R.H.	8.7	8.0	7.8	7.6	7.4	7.2	7.1	6.9	6.7	6.4	6.2	6.0	5.9	5.7	5.7	5.5	5.4	5.4	5.3	5.0	4.9	4.8	4.7	4.6	4.5	4.4	4.4	4.2	4.1	3.9	3.9	3.6	3.5	3.2	3.2	3.2	2.9	2.7		
		L.H.	11.2	10.4	10.3	10.1	9.9	9.7	9.6	9.4	9.2	8.9	8.7	8.5	8.4	8.2	8.2	8.0	7.9	7.9	7.8	7.5	7.4	7.3	7.2	7.1	7.0	6.9	6.9	6.7	6.6	6.4	6.4	6.1	6.0	5.7	5.7	5.7	5.4	5.2		
.0345	.1194	*Spaceband Value	15	13	13	13	12	12	12	12	12	11	11	11	10	10	10	10	9	9	9	9	9	9	9	8	8	8	8	8	8	8	7	7	7	6	6	6	6	6	5		
		R.H.	8.7	7.9	7.7	7.5	7.3	7.2	7.0	6.8	6.6	6.4	6.1	6.0	5.8	5.7	5.6	5.4	5.3	5.3	5.2	5.0	4.9	4.8	4.7	4.6	4.5	4.4	4.3	4.2	4.0	3.9	3.8	3.6	3.5	3.2	3.2	3.1	2.9	2.6		
		L.H.	11.2	10.4	10.2	10.0	9.8	9.7	9.5	9.3	9.1	8.9	8.6	8.5	8.3	8.2	8.1	7.9	7.8	7.8	7.7	7.5	7.4	7.3	7.2	7.1	7.0	6.9	6.8	6.7	6.5	6.4	6.3	6.1	6.0	5.7	5.7	5.6	5.4	5.1		
.0345	.121	*Spaceband Value	15	13	13	13	12	12	12	12	12	11	11	11	10	10	10	10	9	9	9	9	9	9	9	8	8	8	8	8	8	7	7	7	7	6	6	6	6	6	5	5	
		R.H.	8.8	8.0	7.9	7.7	7.5	7.3	7.2	7.0	6.7	6.5	6.2	6.1	5.9	5.8	5.7	5.6	5.4	5.4	5.3	5.1	5.0	4.9	4.8	4.7	4.6	4.5	4.4	4.3	4.1	4.0	3.9	3.7	3.6	3.3	3.3	3.2	3.0	2.7	2.5	
		L.H.	11.3	10.5	10.4	10.2	10.0	9.8	9.7	9.5	9.2	9.0	8.7	8.6	8.4	8.3	8.2	8.1	7.9	7.9	7.8	7.6	7.5	7.4	7.3	7.2	7.1	7.0	6.9	6.8	6.6	6.5	6.4	6.2	6.1	5.8	5.8	5.7	5.5	5.2	5.0	
.0369	.1219	*Spaceband Value	16	15	14	14	14	13	13	13	12	12	12	11	11	11	11	11	10	10	10	10	10	10	9	9	9	9	9	9	8	8	8	8	7	7	7	7	7	6	6		
		R.H.	8.7	7.9	7.7	7.5	7.4	7.2	7.0	6.8	6.6	6.4	6.1	6.0	5.8	5.7	5.6	5.4	5.3	5.3	5.2	5.0	4.9	4.8	4.7	4.6	4.5	4.4	4.3	4.2	4.0	3.9	3.9	3.6	3.5	3.2	3.2	3.1	2.9	2.6		
		L.H.	11.2	10.4	10.2	10.0	9.9	9.7	9.5	9.3	9.1	8.9	8.6	8.5	8.3	8.2	8.1	7.9	7.8	7.8	7.7	7.5	7.4	7.3	7.2	7.1	7.0	6.9	6.8	6.7	6.5	6.4	6.4	6.1	6.0	5.7	5.7	5.6	5.4	5.1		
.037	.1225	*Spaceband Value	16	15	14	14	13	13	13	13	12	12	12	11	11	11	11	11	10	10	10	10	10	9	9	9	9	9	9	8	8	8	8	7	7	7	7	7	6	6		
		R.H.	8.7	8.0	7.8	7.6	7.4	7.2	7.1	6.9	6.7	6.4	6.2	6.0	5.9	5.7	5.7	5.5	5.4	5.4	5.3	5.0	4.9	4.8	4.7	4.6	4.5	4.4	4.4	4.2	4.1	3.9	3.9	3.6	3.5	3.2	3.2	3.2	2.9	2.7		
		L.H.	11.2	10.4	10.3	10.1	9.9	9.7	9.6	9.4	9.2	8.9	8.7	8.5	8.4	8.2	8.2	8.0	7.9	7.9	7.8	7.5	7.4	7.3	7.2	7.1	7.0	6.9	6.9	6.7	6.6	6.4	6.4	6.1	6.0	5.7	5.7	5.7	5.4	5.2		
.037	.124	*Spaceband Value	16	15	14	14	14	13	13	13	12	12	12	11	11	11	11	11	10	10	10	10	10	10	9	9	9	9	9	9	8	8	8	8	7	7	7	7	7	6	6	6	
		R.H.	8.9	8.1	7.9	7.7	7.5	7.4	7.2	7.0	6.8	6.6	6.3	6.1	6.0	5.8	5.8	5.6	5.5	5.4	5.3	5.1	5.0	4.9	4.8	4.7	4.6	4.5	4.5	4.3	4.2	4.0	4.0	3.7	3.6	3.3	3.3	3.2	3.0	2.7	2.5	
		L.H.	11.4	10.6	10.4	10.2	10.0	9.9	9.7	9.5	9.3	9.1	8.8	8.6	8.5	8.3	8.3	8.1	8.0	7.9	7.8	7.6	7.5	7.4	7.3	7.2	7.1	7.0	6.9	6.8	6.7	6.5	6.5	6.2	6.1	5.8	5.8	5.7	5.5	5.2	5.0	
.0375	.1015	*Spaceband Value	16	15	14	14	14	14	13	13	13	12	12	11	11	11	11	11	10	10	10	10	10	10	9	9	9	9	9	8	8	8	8	8									
		R.H.	6.3	5.7	5.6	5.5	5.4	5.2	5.1	5.0	4.8	4.6	4.4	4.3	4.2	4.1	4.0	3.9	3.8	3.8	3.7	3.5	3.5	3.4	3.3	3.2	3.2	3.1	3.0	2.9	2.8	2.7	2.7	2.5									
		L.H.	8.8	8.2	8.1	8.0	7.9	7.7	7.6	7.5	7.3	7.1	6.9	6.8	6.7	6.6	6.5	6.4	6.3	6.3	6.2	6.0	6.0	5.9	5.8	5.7	5.7	5.6	5.5	5.4	5.3	5.2	5.2	5.0									
.0375	.1035	*Spaceband Value	16	15	14	14	14	14	13	13	13	12	12	11	11	11	11	11	10	10	10	10	10	10	9	9	9	9	9	9	8	8	8	8	7								
		R.H.	6.5	5.9	5.8	5.6	5.5	5.4	5.3	5.1	5.0	4.8	4.6	4.5	4.3	4.2	4.2	4.0	4.0	3.9	3.8	3.7	3.6	3.5	3.4	3.4	3.3	3.2	3.2	3.1	3.0	2.8	2.8	2.6	2.5								
		L.H.	9.0	8.4	8.3	8.1	8.0	7.9	7.8	7.6	7.5	7.3	7.1	7.0	6.8	6.7	6.7	6.5	6.5	6.4	6.3	6.2	6.1	6.0	6.0	5.9	5.8	5.7	5.7	5.6	5.5	5.3	5.3	5.1	5.0								
.039	.103	*Spaceband Value	17	15	15	14	14	14	14	13	13	13	12	12	12	11	11	11	11	11	11	10	10	10	10	9	9	9	9	9	8	8	8										
		R.H.	6.3	5.7	5.6	5.5	5.4	5.2	5.1	5.0	4.8	4.6	4.4	4.3	4.2	4.1	4.0	3.9	3.8	3.8	3.7	3.5	3.5	3.4	3.3	3.2	3.2	3.1	3.0	2.9	2.8	2.7	2.7	2.5									
		L.H.	8.8	8.2	8.1	8.0	7.9	7.7	7.6	7.5	7.3	7.1	6.9	6.8	6.7	6.6	6.5	6.4	6.3	6.3	6.2	6.0	6.0	5.9	5.8	5.7	5.7	5.6	5.5	5.4	5.3	5.2	5.2	5.0									
.039	.126	*Spaceband Value	17	15	15	14	14	14	14	13	13	13	12	12	12	11	11	11	11	11	11	10	10	10	10	9	9	9	9	9	9	8	8	8	8	7	7	7	7	6	6	
		R.H.	8.9	8.1	7.9	7.7	7.5	7.4	7.2	7.0	6.8	6.6	6.3	6.1	6.0	5.8	5.8	5.6	5.5	5.4	5.3	5.1	5.0	4.9	4.8	4.7	4.6	4.5	4.5	4.3	4.2	4.0	4.0	3.7	3.6	3.3	3.3	3.2	3.0	2.7	2.5	
		L.H.	11.4	10.6	10.4	10.2	10.0	9.9	9.7	9.5	9.3	9.1	8.8	8.6	8.5	8.3	8.3	8.1	8.0	7.9	7.8	7.6	7.5	7.4	7.3	7.2	7.1	7.0	6.9	6.8	6.7	6.5	6.5	6.2	6.1	5.8	5.8	5.7	5.5	5.2	5.0	
.046	.146	*Spaceband Value	19	18	18	17	17	17	16	16	15	15	14	14	14	13	13	13	13	13	13	12	12	12	11	11	11	11	11	10	10	10	10	9	9	9	8	8	8	8	7	7	
		R.H.	10.3	9.4	9.2	9.0	8.8	8.6	8.4	8.2	7.9	7.7	7.3	7.2	7.0	6.8	6.7	6.6	6.4	6.4	6.2	6.0	5.9	5.8	5.6	5.6	5.4	5.3	5.2	5.1	4.9	4.7	4.7	4.4	4.3	3.9	3.9	3.8	3.5	3.3	3.0	
		L.H	12.8	11.9	11.7	11.5	11.3	11.1	10.9	10.7	10.4	10.2	9.8	9.7	9.5	9.3	9.2	9.1	8.9	8.9	8.7	8.5	8.4	8.3	8.1	8.1	7.9	7.8	7.7	7.6	7.4	7.2	7.2	6.9	6.8	6.4	6.4	6.3	6.0	5.8	5.5	
.047	.143	*Spaceband Value	20	18	18	18	17	17	16	16	16	15	15	14	14	14	14	13	13	13	13	12	12	12	12	11	11	11	11	11	10	10	10	9	9	9	9	8	8	7	7		
		R.H.	9.9	9.0	8.8	8.6	8.4	8.2	8.0	7.8	7.6	7.3	7.0	6.9	6.7	6.5	6.4	6.3	6.1	6.1	6.0	5.7	5.6	5.5	5.4	5.3	5.2	5.1	5.0	4.8	4.7	4.5	4.5	4.2	4.1	3.7	3.7	3.6	3.4	3.1	2.8	
		L.H.	12.4	11.5	11.3	11.1	10.9	10.7	10.5	10.3	10.1	9.8	9.5	9.4	9.2	9.0	8.9	8.8	8.6	8.6	8.5	8.2	8.1	8.0	7.9	7.8	7.7	7.6	7.5	7.3	7.2	7.0	7.0	6.7	6.6	6.2	6.2	6.1	5.9	5.6	5.3		
.048	.144	*Spaceband Value	20	19	18	18	18	17	17	16	16	16	15	15	14	13	13	13	13	13	13	12	12	12	12	12	12	11	11	11	11	10	10	10	9	9	9	9	8	8	7		
		R.H.	9.9	9.0	8.8	8.6	8.4	8.2	8.0	7.8	7.6	7.3	7.0	6.9	6.7	6.5	6.4	6.3	6.1	6.1	6.0	5.7	5.6	5.5	5.4	5.3	5.2	5.1	5.0	4.8	4.7	4.5	4.5	4.2	4.1	3.7	3.7	3.6	3.4	3.1	2.8		
		L.H.	12.4	11.5	11.3	11.1	10.9	10.7	10.5	10.3	10.1	9.8	9.5	9.4	9.2	9.0	8.9	8.8	8.6	8.6	8.5	8.2	8.1	8.0	7.9	7.8	7.7	7.6	7.5	7.3	7.2	7.0	7.0	6.7	6.6	6.2	6.2	6.1	5.9	5.6	5.3		

JUSTIFICATION POINTERS AND SPACEBAND VALUE SETTINGS

FOR MULTIFACE PERFORATOR WITH STATIONARY COUNTING SCALES USING UNIT FONTS

IMPORTANT
The following numbers * indicate the value of the Count Code Blade to be inserted in the Spaceband position, No. 64, of the Multiface Counting Magazine.

Spaceband Expansion Min.	Max.		EM QUAD SIZES .076	.083	.0845	.0864	.0882	.090	.092	.094	.097	.100	.1038	.1060	.1084	.1107	.112	.115	.1176	.118	.120	.1245	.126	.128	.1314	.133	.136	.1383	.140	.144	.148	.1522	.154	.163	.166	.178	.1798	.182	.1937	.2075	.2213
.028	.092	*Spaceband Value	12	11	11	11	10	10	10	10	9	9	9	9	8	8	8	8	8	8	8	8	7	7	7	7														
		R.H.	6.3	5.7	5.6	5.5	5.4	5.2	5.1	5.0	4.8	4.6	4.4	4.3	4.2	4.1	4.0	3.9	3.8	3.8	3.7	3.5	3.5	3.4	3.3															
		L.H.	9.7	9.0	8.9	8.8	8.7	8.5	8.4	8.3	8.1	7.9	7.7	7.6	7.5	7.4	7.3	7.2	7.1	7.1	7.0	6.9	6.8	6.7	6.6															
.028	.0925	*Spaceband Value	12	11	11	11	10	10	10	10	9	9	9	9	8	8	8	8	8	8	8	7	7	7	7	7															
		R.H.	6.4	5.8	5.7	5.5	5.4	5.3	5.1	5.0	4.8	4.6	4.4	4.3	4.2	4.1	4.1	4.0	3.8	3.8	3.7	3.6	3.5	3.4	3.3	3.3															
		L.H.	9.7	9.1	9.0	8.8	8.7	8.6	8.5	8.4	8.1	8.0	7.8	7.6	7.5	7.4	7.4	7.3	7.2	7.1	7.1	6.9	6.8	6.8	6.7	6.6															
.028	.0943	*Spaceband Value	12	11	11	11	10	10	10	10	9	9	9	9	8	8	8	8	8	8	8	7	7	7	7	7	7														
		R.H.	6.6	6.0	5.8	5.7	5.6	5.4	5.3	5.2	5.0	4.8	4.6	4.5	4.4	4.3	4.2	4.1	4.0	4.0	3.9	3.7	3.6	3.6	3.5	3.4	3.3														
		L.H.	9.9	9.3	9.2	9.0	8.9	8.8	8.6	8.5	8.3	8.1	7.9	7.8	7.7	7.6	7.5	7.4	7.3	7.3	7.2	7.0	7.0	6.9	6.8	6.7	6.6														
.032	.096	*Spaceband Value	14	13	12	12	12	12	11	11	11	10	10	10	10	9	9	9	9	9	9	8	8	8	8															
		R.H.	6.3	5.7	5.6	5.5	5.4	5.2	5.1	5.0	4.8	4.6	4.4	4.3	4.2	4.1	4.0	3.9	3.8	3.8	3.7	3.5	3.5	3.4	3.3															
		L.H.	9.7	9.0	8.9	8.8	8.7	8.5	8.4	8.3	8.1	7.9	7.7	7.6	7.5	7.4	7.3	7.2	7.1	7.1	7.0	6.9	6.8	6.7	6.6															
.033	.1185	*Spaceband Value	14	13	13	12	12	12	12	11	11	11	10	10	10	10	10	9	9	9	9	9	9	8	8	8	8	8	8	8	7	7	7	7	7					
		R.H.	8.7	8.0	7.8	7.6	7.4	7.2	7.1	6.9	6.7	6.4	6.2	6.0	5.9	5.7	5.7	5.5	5.4	5.4	5.3	5.0	4.9	4.8	4.7	4.6	4.5	4.4	4.4	4.2	4.1	3.9	3.9	3.6	3.5					
		L.H.	12.1	11.2	11.1	10.9	10.7	10.5	10.4	10.2	10.0	9.8	9.5	9.3	9.2	9.0	9.0	8.8	8.7	8.7	8.6	8.3	8.2	8.1	8.0	7.9	7.8	7.7	7.7	7.5	7.4	7.2	7.2	6.9	6.8					
.0345	.1194	*Spaceband Value	15	13	13	13	12	12	12	12	12	11	11	11	10	10	10	10	9	9	9	9	9	9	9	8	8	8	8	8	8	7	7	7	7					
		R.H.	8.7	7.9	7.7	7.5	7.3	7.2	7.0	6.8	6.6	6.4	6.1	6.0	5.8	5.7	5.6	5.4	5.3	5.3	5.2	5.0	4.9	4.8	4.7	4.6	4.5	4.4	4.3	4.2	4.0	3.9	3.8	3.6	3.5					
		L.H.	12.0	11.2	11.0	10.8	10.7	10.5	10.3	10.2	9.9	9.7	9.4	9.3	9.2	9.0	8.9	8.8	8.6	8.6	8.5	8.3	8.2	8.1	8.0	7.9	7.8	7.7	7.6	7.5	7.3	7.2	7.1	6.9	6.8					
.0345	.121	*Spaceband Value	15	13	13	13	12	12	12	12	12	11	11	11	10	10	10	10	9	9	9	9	9	9	9	8	8	8	8	8	8	7	7	7	7	6	6			
		R.H.	8.8	8.0	7.9	7.7	7.5	7.3	7.2	7.0	6.7	6.5	6.2	6.1	5.9	5.8	5.7	5.6	5.4	5.4	5.3	5.1	5.0	4.9	4.8	4.7	4.6	4.5	4.4	4.3	4.1	4.0	3.9	3.7	3.6	3.3	3.3			
		L.H.	12.2	11.3	11.2	11.0	10.8	10.7	10.5	10.3	10.1	9.8	9.6	9.4	9.3	9.1	9.1	8.9	8.7	8.7	8.6	8.4	8.3	8.2	8.1	8.0	7.9	7.8	7.7	7.6	7.4	7.3	7.2	7.0	6.9	6.6	6.6			
.0369	.1219	*Spaceband Value	16	15	14	14	14	13	13	13	12	12	12	11	11	11	11	11	10	10	10	10	10	9	9	9	9	9	8	8	8	8	7	7						
		R.H.	8.7	7.9	7.7	7.5	7.4	7.2	7.0	6.8	6.6	6.4	6.1	6.0	5.8	5.7	5.6	5.4	5.3	5.3	5.2	5.0	4.9	4.8	4.7	4.6	4.5	4.4	4.3	4.2	4.0	3.9	3.9	3.6	3.5					
		L.H.	12.0	11.2	11.0	10.8	10.7	10.5	10.3	10.1	9.9	9.7	9.4	9.3	9.1	9.0	8.9	8.7	8.6	8.6	8.5	8.3	8.2	8.1	8.0	7.9	7.8	7.7	7.6	7.5	7.3	7.2	7.2	6.9	6.8					
.037	.1225	*Spaceband Value	16	15	14	14	13	13	13	13	12	12	12	11	11	11	11	11	10	10	10	10	10	9	9	9	9	9	9	8	8	8	8	7	7					
		R.H.	8.7	8.0	7.8	7.6	7.4	7.2	7.1	6.9	6.7	6.4	6.2	6.0	5.9	5.7	5.7	5.5	5.4	5.4	5.3	5.0	4.9	4.8	4.7	4.6	4.5	4.4	4.4	4.2	4.1	3.9	3.9	3.6	3.5					
		L.H.	12.1	11.2	11.1	10.9	10.7	10.5	10.4	10.2	10.0	9.8	9.5	9.3	9.2	9.0	9.0	8.8	8.7	8.7	8.6	8.3	8.2	8.1	8.0	7.9	7.8	7.7	7.7	7.5	7.4	7.2	7.2	6.9	6.8					
.037	.124	*Spaceband Value	16	15	14	14	14	13	13	13	12	12	12	11	11	11	11	11	10	10	10	10	10	9	9	9	9	9	8	8	8	8	7	7	7	7				
		R.H.	8.9	8.1	7.9	7.7	7.5	7.4	7.2	7.0	6.8	6.6	6.3	6.1	6.0	5.8	5.8	5.6	5.5	5.4	5.3	5.1	5.0	4.9	4.8	4.7	4.6	4.5	4.5	4.3	4.2	4.0	4.0	3.7	3.6	3.3	3.3			
		L.H.	12.2	11.4	11.2	11.1	10.9	10.7	10.5	10.4	10.1	9.9	9.6	9.5	9.3	9.2	9.1	8.9	8.8	8.8	8.7	8.4	8.4	8.3	8.1	8.1	7.9	7.8	7.7	7.6	7.5	7.3	7.3	7.0	6.9	6.6	6.6			
.0375	.1015	*Spaceband Value	16	15	14	14	14	14	13	13	13	12	12	11	11	11	11	11	10	10	10	10	10	10	9															
		R.H.	6.3	5.7	5.6	5.5	5.4	5.2	5.1	5.0	4.8	4.6	4.4	4.3	4.2	4.1	4.0	3.9	3.8	3.8	3.7	3.5	3.5	3.4	3.3															
		L.H.	9.7	9.0	8.9	8.8	8.7	8.5	8.4	8.3	8.1	7.9	7.7	7.6	7.5	7.4	7.3	7.2	7.1	7.1	7.0	6.9	6.8	6.7	6.6															
.0375	.1035	*Spaceband Value	16	15	14	14	14	14	13	13	13	12	12	11	11	11	11	11	10	10	10	10	10	10	9	9	9														
		R.H.	6.5	5.9	5.8	5.6	5.5	5.4	5.3	5.1	5.0	4.8	4.6	4.5	4.3	4.2	4.2	4.0	4.0	3.9	3.8	3.7	3.6	3.5	3.4	3.4	3.3														
		L.H.	9.9	9.2	9.1	9.0	8.8	8.7	8.6	8.5	8.3	8.1	7.9	7.8	7.7	7.6	7.5	7.4	7.3	7.2	7.2	7.0	7.0	6.9	6.8	6.7	6.6														
.039	.103	*Spaceband Value	17	15	15	14	14	14	14	13	13	13	12	12	12	11	11	11	11	11	11	10	10	10	10															
		R.H.	6.3	5.7	5.6	5.5	5.4	5.2	5.1	5.0	4.8	4.6	4.4	4.3	4.2	4.1	4.0	3.9	3.8	3.8	3.7	3.5	3.5	3.4	3.3															
		L.H.	9.7	9.0	8.9	8.8	8.7	8.5	8.4	8.3	8.1	7.9	7.7	7.6	7.5	7.4	7.3	7.2	7.1	7.1	7.0	6.9	6.8	6.7	6.6															
.039	.126	*Spaceband Value	17	15	15	14	14	14	14	13	13	13	12	12	12	11	11	11	11	11	11	10	10	10	10	9	9	9	9	9	9	8	8	8	8	7	7			
		R.H.	8.9	8.1	7.9	7.7	7.5	7.4	7.2	7.0	6.8	6.6	6.3	6.1	6.0	5.8	5.8	5.6	5.5	5.4	5.3	5.1	5.0	4.9	4.8	4.7	4.6	4.5	4.5	4.3	4.2	4.0	4.0	3.7	3.6	3.3	3.3			
		L.H.	12.2	11.4	11.2	11.1	10.9	10.7	10.5	10.4	10.1	9.9	9.6	9.5	9.3	9.2	9.1	8.9	8.8	8.8	8.7	8.4	8.4	8.3	8.1	8.1	7.9	7.8	7.7	7.6	7.5	7.3	7.3	7.0	6.9	6.6	6.6			
.046	.146	*Spaceband Value			18	17	17	17	16	16	15	15	14	14	14	13	13	13	13	13	13	12	12	12	11	11	11	11	10	10	10	10	9	9	8	8	8	8	7	
		R.H.			9.2	9.0	8.8	8.6	8.4	8.2	7.9	7.7	7.3	7.2	7.0	6.8	6.7	6.6	6.4	6.4	6.2	6.0	5.9	5.8	5.6	5.6	5.4	5.3	5.2	5.1	4.9	4.7	4.7	4.4	4.3	3.9	3.9	3.8	3.5	3.3
		L.H.			12.5	12.3	12.1	11.9	11.7	11.5	11.2	11.0	10.6	10.5	10.3	10.1	10.0	9.9	9.7	9.7	9.5	9.3	9.2	9.1	8.9	8.9	8.7	8.6	8.5	8.4	8.2	8.0	8.0	7.7	7.6	7.2	7.2	7.1	6.8	6.6
.047	.143	*Spaceband Value		18	18	18	17	17	16	16	16	15	15	14	14	14	14	14	13	13	13	13	12	12	12	12	11	11	11	11	10	10	10	9	9	9	9	8	8	
		R.H.		9.0	8.8	8.6	8.4	8.2	8.0	7.8	7.6	7.3	7.0	6.9	6.7	6.5	6.4	6.3	6.1	6.1	6.0	5.7	5.6	5.5	5.4	5.3	5.2	5.1	5.0	4.8	4.7	4.5	4.5	4.2	4.1	3.7	3.7	3.6	3.4	
		L.H.		12.3	12.1	11.9	11.7	11.5	11.3	11.1	10.9	10.6	10.3	10.2	10.2	9.8	9.7	9.6	9.4	9.4	9.3	9.0	8.9	8.8	8.7	8.6	8.5	8.4	8.3	8.1	8.0	7.8	7.8	7.5	7.4	7.0	7.0	6.9	6.7	
.048	.144	*Spaceband Value		19	18	18	18	17	17	16	16	16	15	15	14	13	13	13	13	13	13	12	12	12	12	12	12	11	11	11	11	10	10	10	9	9	9	9	8	
		R.H.		9.0	8.8	8.6	8.4	8.2	8.0	7.8	7.6	7.3	7.0	6.9	6.7	6.5	6.4	6.3	6.1	6.1	6.0	5.7	5.6	5.5	5.4	5.3	5.2	5.1	5.0	4.8	4.7	4.5	4.5	4.2	4.1	3.7	3.7	3.6	3.4	
		L.H.		12.3	12.1	11.9	11.7	11.5	11.3	11.1	10.9	10.6	10.3	10.2	10.2	9.8	9.7	9.6	9.4	9.4	9.3	9.0	8.9	8.8	8.7	8.6	8.5	8.4	8.3	8.1	8.0	7.8	7.8	7.5	7.4	7.0	7.0	6.9	6.7	

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