

Autonumbering in FrameMaker

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1 How Autonumbers are Defined

FrameMaker's autonumbering capability is quite versatile, allowing it to be used for many purposes. But versatility has a price—complexity. You must understand how autonumber formats are defined, and what their components are.

Autonumbers are defined as part of a paragraph format

The Numbering Properties panel of the Paragraph Designer is where you define an autonumber format.

Components of an Autonumber Format

An autonumber format can have any or all of the following components:

Series Label

A series label, if it is used, must be entered as the first component in the autonumber format text box of the Numbering Properties panel in the Paragraph Designer. The purpose of the series label is to differentiate different types of autonumber series within the same text flow. A series label consists of a single letter, followed by a colon. Here's an example of a series label:

H:

The series label does not appear in the displayed autonumber.



Note: Series labels are not required for unordered lists (e.g., bulleted lists), because sequential numbering is not involved

Any paragraph's autonumber within the same series is based on the previous numbered paragraph within that series. However, the same series can be used over and over again (e.g., numbered lists) within the same text flow, provided the first paragraph in each usage re-initializes the series numbering.

Counter Chain

A counter chain consists of one or more counters, where each counter produces either nothing or a single number or letter in the number series.

Counter

A counter is a placeholder that FrameMaker replaces with a single number or letter in a sequence. It is represented by opening and closing angle brackets (< >). A counter consists of one of the following building blocks:

<n=1> - Set the counter to a value of 1.

<n+> - Increment the counter by 1.

< =0> - Reset the counter to a value of 0, but do not display the value of 0 in the number of the paragraph.

<n> - Display the number of the most recent preceding paragraph in which the counter was incremented, set to 1, or set to 0.

< > - Ignore the value in this counter (i.e., do not include it in the number of the paragraph).

The letter that appears within the counter specifies the type of numbering, as follows:

- n = arabic numbering
- a = lowercase letters (a to z)
- A = uppercase letters (A to Z)
- r = lowercase roman numerals
- R = uppercase roman numerals.

Text, tabs, spaces, and punctuation

An autonumber can also include text, spaces, punctuation, or tabs anywhere in the autonumber format. Note that an autonumber format does not have to include a counter chain or a series label. That is, it can consist solely of text, tabs, spaces, and punctuation.



Note: When you use hyphens in autonumber formats it is advisable to specify a nonbreaking hyphen (dialog box code \+). This will prevent the number from being split at the hyphen in cross-references.

By the way...

When you specify `paranumonly` in a running header/footer variable, a cross-reference format, or a list specification flow, text, tabs, spaces, and punctuation appearing before or after the counter chain in the autonumber format do not appear in the header/footer, cross-reference, or generated list.

For example if you specify `paranumonly` in a cross-reference, here's what you'll get for the autonumber formats shown below:



Note: The dialog box code "\+" in the formats shown below specifies a nonbreaking hyphen..

FORMAT

THE CROSS-REFERENCE WILL CONTAIN:

Figure <n>\+<n+>: **1-1** (the word Figure followed by a space at the beginning, and the colon and space at the end are excluded)

<n>\+< ><n+>: < > **1-1:** (the empty counters are excluded, but the colon and space following the third counter are included because they are within the counter chain)

<n>\+< ><n+>< >: **1-1** (the empty counters are excluded. Also, the colon and space at the end are excluded, because they are outside the counter chain)

Character Format

The Numbering Properties panel of the Paragraph Designer allows you to specify any character format in the character catalog for formatting the autonumber (default value is Default ¶ Font).

Position

The Numbering Properties panel of the Paragraph Designer allows you to specify that the autonumber appear at either the beginning or end of the paragraph (default is Start of Paragraph).

2 Aut numbering in Books

An autonumber format that has a Series Label can span all files of a book.

In other words, a series that begins in one file of a book can continue through succeeding files of the same book. For example, an autonumber series that specifies (among other things) the chapter number will number the chapters consecutively throughout the book. To get this behavior, proceed as follows:

- Step 1. Open the book file.
- Step 2. Select a file in the book where autonumbering is to be continued.
- Step 3. Choose File > Set Up File. In the Set Up File dialog:
 - a. Set Paragraph Numbering to "Continue".
 - b. If page numbering restarts at 1 within each chapter:
 1. If the file is the first file in a chapter, set Page Numbering to "Restart at 1", OR
 2. If the file continues a chapter that began in a preceding file, set Page Numbering to "Continue".
 - c. If page numbers are to be prefixed with the chapter number followed by a hyphen in generated lists and indexes, enter "n-" in the Prefix text box, where n = the number of the chapter.
- Step 4. Repeat steps 2 and 3 for each file in the book.

With the setup made in step 2a, all paragraph number restart actions (e.g., restarting level 1 head numbering at 1 within each numbered chapter) are accomplished by resetting counters (i.e., <=0) in the counter chain.

3 Advantages of Using FrameMaker+SGML

FrameMaker+SGML can be used to create structured, as well as unstructured documents. In structured documents, an Element Definition Document (EDD) defines both the document's structure and its formatting. The formatting information in the EDD can include all of the autonumber formats. This document was created as a structured document in which the EDD specifies all autonumbering formats.

The advantages of defining autonumber formats in the EDD include:

- Autonumbering is not tied to particular paragraph tags in the paragraph catalog. Instead, autonumber formats are tied to structural elements. The format rules for any such element can specify any required paragraph tag to be used for that element in each context. Other format rules for the same element can specify (usually via format change lists) the autonumbering format, if any, to be applied to the specified paragraph tag in each element context.
- In addition to structural context, format rules can specify the autonumbering format of an element based on attribute values in the same element, or in an antecedent element. Consequently, the autonumbering format applied to each element can be determined by a combination of structural context and attribute values.

What this all means is that any tag in the paragraph catalog can have applied to it any EDD-format-rule-specified autonumber format.

4 Some Examples

4.1 Aut numbering of chapters, headings, figures, tables, and equations

A single aut numbering series (series label H) can be used for this purpose, which prefixes headings, figures, tables and equations with the chapter number. Table 1 below shows the counter chain for each paragraph tag.

Table 1. Aut numbering format for the H series

Para Tag	Counter							Comments
	Chapter ^{abc}	Head 1	Head 2	Head 3	Figure No.	Table No.	Egn No.	
ChapTitle	H:CHAPTER <n+>	<=0>	<=0>	<=0>	<=0>	<=0>	<=0>	Increments Chapter counter, and resets all other counters to 0
Heading1	H:<n>\+	<n+>	<=0>	<=0>	<>	<>	<>	Increments Head1 counter and resets Head2 and Head3 counters to 0
Heading2	H:<n>\+	<n.>	<n+>	<=0>	<>	<>	<>	Increments Head2 counter and resets Head3 counter to 0
Heading3	H:<n>\+	<n.>	<n.>	<n+>	<>	<>	<>	Increments Head3 counter
FigCaption	H:Figure <n>\+	<>	<>	<>	<n+>	<>	<>.	Increments Figure No. counter. Note that the period that follows the figure number appears after the empty Eqn No. counter, so that it will be excluded when <code>paranumonly</code> is used in header/footer variables, cross references, and list specification flows.
TblCaption	H:Table <n>\+	<>	<>	<>	<>	<n+>	<>.	Increments Table No. counter Note that the period that follows the figure number appears after the empty Eqn No. counter, so that it will be excluded when <code>paranumonly</code> is used in header/footer variables, cross references, and list specification flows.
EqnCaption	H:Eqn <n>\+	<>	<>	<>	<>	<>	<n+>.	Increments Eqn No. counter
ChapNum	H:Chapter <n>\+	<>	<>	<>	<>	<>	<>	If chapters span two or more files, this tag is inserted in each file and used to create the chapter number prefix in the current page number variable (<code>paranumonly</code> is used in the variable definition to exclude the Chapter prefix). It can also be used in cross-references (in this case, <code>paranum</code> is used in the cross-reference format so as to include the Chapter prefix). The format for paragraph tag ChapNum specifies a default font of 2 pts, with color matching the background color, so it will be invisible.

a. H: is the Series label.

b. Note that the words Chapter, Figure, Table, and Eqn (and their following space character) are outside the counter chain, thus they are excluded when `paranumonly` is used in header/footer variables, cross references, and list specification flows.

c. The dialog box code "\+" produces a nonbreaking hyphen.

4.2 Outline-Style Aut numbering

Table 2 below shows the aut numbering series (series O) for creating out-line-style aut numbering. Five levels are shown.

Table 2. Aut numbering for the O series

Para Tag ^a	Counter					Comments
	Level 1 ^b	Level 2	Level 3	Level 4	Level 5	
Level1	O:<A+>.	<=0>	<=0>	<=0>	<=0>	Increments Level1 counter, and resets all other counters to 0
Level2	O:< >	<n+>.	<=0>	<=0>	<=0>	Increments Level2 counter, and resets all lower-level counters to 0
Level3	O:< >	< >	<a+>.	<=0>	<=0>	Increments Level3 counter, and resets all lower-level counters to 0
Level4	O:< >	< >	< >	<n+>)	<=0>	Increments Level4 counter, and resets all lower-level counters to 0
Level5	O:< >	< >	< >	< >	<a+>)	Increments Level5 counter

- a. The paragraph formats for the Level2 thru Level5 tags have their First and Left indents set up to produce the desired amount of indentation for each level.
 b. O is the series label.

4.3 A Short Centered Line

A short centered line can be created with the following aut numbering format specified for the CenteredLine paragraph tag:

\t\t

Where \t is the tab stop building block, and the tab stops are set in the CenteredLine paragraph format as follows:

Tab Stop 1 = TFW/2 - L/2 (a left-aligned tab stop).

Tab Stop 2 = TS1 + L (this left-aligned tab stop specifies a custom leader that uses the underline character).

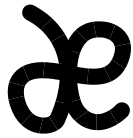
Where:

TFW = the text frame width

L = the length of the line to be drawn

TS1 = the position of Tab Stop 1.

This produces the 1.375" centered line shown below:

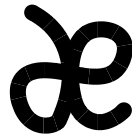


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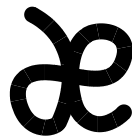


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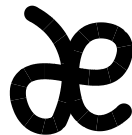


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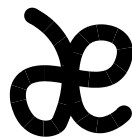


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