

## Barcode Symbology Q & A

A barcode symbology is simply a way of arranging bars and spaces to represent numbers, letters or punctuation marks. Barcode symbologies read by Follett Software Company include Follett Classic (See list below), Generic Code 39(Code 3 of 9), Code 39 MOD 10 and Code 39 MOD 43. Follett recommends using Code 39 symbology for your barcodes.

### *What is a Follett Classic barcode?*

A family of barcode symbologies consisting of barcodes that contain 7 visible characters or fewer. These have no check digits. The Follett Classic family of symbologies includes:

- Generic Code 39 (Current Follett Classic)
- Interleaved 2 of 5
- Codabar
- LabelCode IV
- LabelCode V

### *What are the components of a 14-character (variable length) barcode?*

Example of a Code 39, Mod 10 barcode



3 1234 00045215 4

The following shows how this Code 39, Mod 10 barcode is broken down into its components:

<b>3</b>	<b>1234</b>	<b>00045215</b>	<b>4</b>
Type Indicator	Location Code	Item or Patron Number	Check Digit

**Type Indicator** (A.K.A. Item Type): one digit character that distinguishes the item type such as a textbook or library book from a patron. Often, schools choose to use 2 = patrons 3 = library books and 4 = textbooks. For Code 39 Mod 10, this character is numeric. For Code 39 Mod 43 this character is alphanumeric. For Follett Classic, the type identifier defaults to T = library books, X = textbooks, and P = patrons

**Location Code** (A.K.A. Institution Number): optional 4 digits that represent the school or district number for identification purposes. For example, a school may choose 0114 as their location code since their school number within the district is #114. For Mod 10 these characters are numeric. For Mod 43 these characters are alphanumeric. For

Generic Code 39 it is alphanumeric. \*\*Please note – Follett cannot assign a location code.

**Item, Textbook or Patron Number** — the unique sequential number assigned to an item, textbook or patron. These characters are numeric for all Follett barcodes.

**Check Digit** — the last character in a 14-digit Mod 10 or Mod 43 barcode used by the scanner to determine the validity of the previous characters in the barcode and the accuracy of the scan. The scanned digits (1 – 13) are run through a specific algorithm and the check digit (14) is computed. The mathematical answer must match the printed last character on the barcode before the scanned barcode number is read by the scanner and sent into the application. For Mod 10 this character is numeric (digits 0-9). For Mod 43 this character is alphanumeric (characters A-Z plus the symbols “-“, “.”, blank space, “\$”, “/”, “+”, “%”). Generic Code 39 and Follett Classic barcodes do not use a check digit.

#### *What do Mod 10 and Mod 43 stand for?*

Modulus 10 (Mod 10) and Modulus 43 (Mod 43) are methods that use check digits to ensure that a barcode is correctly decoded. They can be viewed as “insurance” that the barcode which appears in the software is the barcode scanned. Check digits prevent problems such as scanning barcode T123, but having it translate as barcode T789 due to an incorrect read from a scanner device.

Mod 10 and Mod 43 are named for the way in which they verify the barcode. Mod 10 can only verify the 10 numerals (0-9) so it can only be used for numeric barcodes. Mod 43 can check all 10 numerals (0-9), all 26 letters (A-Z), plus 7 punctuation characters. Mod 43 allows alphanumeric barcodes to be used, although numeric are more common.

#### *What is the inscription length on the barcode?*

Follett allows 30 characters for the inscription length, which is normally used to print the institution name on the barcode label. For textbooks especially, Follett recommends using your district’s name as opposed to the school name for the inscription.

## Barcode Reference Guide

8 to 14 Characters.

For sites just automating or converting from another symbology, Follett Software Company (FSC) recommends Standard Code 3 of 9, Mod 10, or Mod 43, 14 Characters.

Barcode Sample	Barcode Symbology	Type Indicator	Length	Numeric or Alphanumeric	Check Digit
 12345678901234	CODABAR	Yes	8 to 14 characters	Numeric - \$ : / . + and digits 0-9.	No
 12345678901237	CODABAR Mod 10	Yes	8 to 14 characters	Numeric	Yes
 12345678901234	Standard Interleaved 2 of 5	Yes	Even number of characters (8 to 14).	Numeric	No
 12345678901234	Standard Code 3 of 9	Yes	8 to 14 characters; majority are 14 characters	Alphanumeric Upper Case A-Z Zero through nine. - \$ + . % / space	No
 35555000100257	Standard Code 3 of 9, Mod 10	Yes	8 to 14 characters; majority are 14 characters	Numeric	Yes
 3CLSH000100253	Standard Code 3 of 9, Mod 43	Yes	8 to 14 characters; majority are 14 characters	Alphanumeric Upper Case A-Z Zero through nine. - \$ + . % / space	Yes

Recommended bar code symbology:

**Standard Code 3 of 9, Mod 43, 14 Characters meets the needs of most libraries:**

- Increases compatibility – supported by most library automation software, peripherals and barcode label suppliers.
- Reduces errors through a check-digit algorithm that provides a final check of the validity of the barcode content.
- Integrates seamlessly with Follett Software scanners and PHDs.
- Offers the most ease of use and flexibility – reading barcodes from left to right, right to left, or upside down.
- Mod 43 enables schools to incorporate an alphanumeric location code that may feature the library's initials.

Barcodes are not shown to scale.

## Barcode Reference Guide

### 7 Characters or Less.

For sites just automating or converting from another symbology, Follett Software Company (FSC) recommends Standard Code 3 of 9, Mod 10, or Mod 43, 14 Characters.

If shorter barcodes are desired, Follett Software Company (FSC) recommends Follett Classic Code 3 of 9, 7 characters or less with a Type Identifier Character 'P' for patrons and 'T' for Titles.

Barcode Sample	Barcode Symbology	Type Indicator	Length	Numeric or Alphanumeric	Check Digit
 T 12345	Standard CODABAR	No	1 to 6 characters	Numeric - \$ : / . + and digits 0-9. a-d are used as start and stop characters.	No
0 1 2 3 4 5 0 	Follett Proprietary CODABAR	Type ID is always shown.	7 characters	Numeric - \$ : / . + and digits 0-9. a-d are used as start and stop characters.	No
 01234567	Standard Interleaved 2 of 5	No	An even number of characters	Numeric	No
0123456020  T 0123456	Follett Proprietary Interleaved 2 of 5	Type ID may not always be shown.	10 Characters (only Type ID and up to 7 characters or less in eye-readable)	Numeric	Yes
 1234567	Standard Code 3 of 9	No	1 to 7 characters	Alphanumeric Upper Case A-Z Zero through nine. - \$ + . % / space	No
 T 1234567	Follett Classic Code 3 of 9	'T' and 'P' always be shown.	1 to 7 characters	Alphanumeric. Type ID of 'T', 'P', or 'X' only with remaining code numeric.	No
 3 1 7	LabelCode IV	No	Most have 3 to 5 characters	Numeric	No
 T 1000000	LabelCode V	Type ID may not always be shown.	1 to 7 characters	Numeric	No