

Thema Textattribute, dynamische Texte, Control charakter

HBB Engineering, Walter Hogger, 05.02.2009

In the Drafting Application, you can use control characters and blockfont characters to generate symbols that are not available using a standard keyboard. These symbols can be used in notes, labels, dimensions, ID symbols etc.




















A control character is a sequence of alphanumeric and special characters in the format <string>. In addition to creating symbols, you can also use control characters to format text in a note or label.





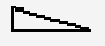



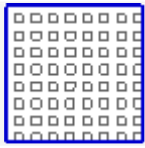


Blockfont is a character font supplied with the software that contains special characters you can use to create various drafting symbols. Blockfont characters consist of a dollar sign (\$) and an alphanumeric character.

Control and Blockfont characters can be entered into several areas in the Drafting application including:

- The Append Text field in the Dimensions and Ordinate Dimensions dialog.
- The Text Editor dialog box
- The upper and lower text fields in the ID Symbols dialog

The following table shows the symbols that can be created and their corresponding keystrokes.

| Symbol For: | Symbol | Control Character | Blockfont Character |
|----------------------------|---|-------------------|---------------------|
| Straightness |  | <&1> | \$b |
| Flatness |  | <&2> | \$a |
| Circularity |  | <&3> | \$c |
| Cylindricity |  | <&4> | \$d |
| Profile Line |  | <&5> | \$e |
| Profile Surface |  | <&6> | \$f |
| Angularity |  | <&7> | \$j |
| Perpendicularity |  | <&8> | \$i |
| Parallelism |  | <&9> | \$h |
| Position |  | <&10> | \$g |
| Concentricity |  | <&11> | \$l |
| Symmetry |  | <&12> | \$m |
| Circular Runout |  | <&13> | \$k |
| Total Runout |  | <&15> | None |
| Maximum Material Condition |  | <M> | \$o |
| Least Material Condition |  | <E> | None |
| Regardless of Feature Size |  | <S> | \$q |
| Projected Tolerance Zone |  | <P> | \$p |
| Statistical Tolerance |  | <&S> | None |

| | | | |
|---------------------------------------|---|----------------|------|
| Tangent Plane |  | <&T> | None |
| Free State |  | <&F> | None |
| Start of Composite GD&T Symbol | | <&60> | None |
| Start of Non-Composite GD&T Symbol | | <&70> | None |
| Vertical Line in GD&T Symbol | | <+> | None |
| Return (for 2 lines in a GD&T symbol) | | <&80> | None |
| End of GD&T Symbol | | <&90> | None |
| Micro Symbol | μ | None | \$1 |
| Ohm Symbol | Ω | None | \$2 |
| Farad Symbol | f | None | \$3 |
| Dollar Sign | \$ | None | \$\$ |
| Less Than | < | None | \$< |
| Greater Than | > | None | \$> |
| Diameter | \varnothing | <O> | \$r |
| Centerline |  | None | \$u |
| Reference Dimension | (.500) | <(>.500<)> | None |
| Conical Taper |  | <#e> or <#E> | None |
| Slope |  | <#g> or <#G> | None |
| Counterbore/Spotface |  | <#b> or <#B> | None |
| Countersink |  | <#c> or <#C> | None |
| Depth/Deep |  | <#d> or <#D> | None |
| Square (shape) |  | <#f> or <#F> | None |
| Number of Times/Places | \times | <#a8> or <#A8> | None |
| Spherical Diameter | $S \varnothing$ | S<O> | S\$r |
| Radius | R | None | R |
| Spherical Radius | SR | None | SR |
| Plus and Minus | \pm | <\$t> | \$t |
| Degree | | <\$s> | \$s |
| User-Defined Symbol | | <%symbol> | None |
| Copyright Symbol |  | None | \$y |
| Registered Trademark Symbol |  | None | \$z |

The following control characters are used to format text.

Blank Space

You can insert a blank space in the text string. The value assigned to the variable "r" makes one blank space "r" times the blank character of the current font.



Line Spacing

<Zr>

You can vary the spacing between lines of text by assigning a value to the variable "r". The distance from one line of text to the next is "r" times the line spacing defined for the current font. To reset spacing to the default values, enter <Z> .

Gap

<Gr>

You can assign a value to the variable "r" to make the spacing between text characters "r" times the character spacing of the current font. To reset, enter G .

Character Size

<Cr>

You can change the character size by assigning a value to the "r" variable. The new character size is "r" times the character size of the current font. To reset the size to the original font, enter <C>.

Note:

Always perform a reset when using Character Size control character along with other control characters (e.g. Underline, Font, etc) within a text string. Failure to do so may produce unsatisfactory results.

Font

<Fn>

You can assign a value to the "n" variable to change the current font. "n" is a number between 1 and 14 corresponding to the font list for the part. Enter an <F> to reset to the original font.

Character Line Width

<Dn>

Use the "Dn" control character to change the line width of the text. "n" can be a 1, 2, or 3 and corresponds to normal, thick, or thin, respectively.

Above Line, Over Line

<A>

You can draw a straight line above the usual text line. Enter <A> at the beginning of the text to start the over line and <A> at the end of the text to terminate the over line.

Underline

<U>

You can draw a straight line below the usual text line. Enter <U> at the beginning of the text to start the underline and <U> at the end of the text to terminate the underline.

Subscript

<L>

You can use a subscript to place a half-size character below the bottom line of the text. Use <L> at the start and at the end of the characters to be subscripted.

Inclination (italics)

<In>

Enter the text control <In> immediately before a word(s) you wish to incline (or italicize), with "n" as the number of degrees for the angle of inclination. 20 is a common value to enter with values greater than 70 rendering the characters unreadable. To turn the inclination off, follow the inclined word(s) with <l>.

Superscript

<H>

You can use a superscript to place a half-size character above the top line of the text. Use <H> at the start and at the end of the characters to be superscripted.



Text Continuation

<N>

Placing an <N> at the end of a line indicates that the next line is a continuation of the current line. The carriage return at the end of the first line is ignored and the second line is displayed after the first one. This can be used to overcome the 132 characters per line limit.

Common Fraction

<Rn!d>

A common fraction is displayed by assigning values to "n" and "d". "n" is the numerator and "d" the denominator. "!" is the separation character. No control characters can be nested inside the brackets.

Three-Quarter Size Fraction

<Qn!d>

A three-quarter size fraction is displayed when you use these control characters. Values assigned to "n" and "d" defines the numerator and denominator respectively. "!" is the separation character. No control characters can be nested inside the brackets.

Full-Size Fraction

<Vn!d>

A full-size fraction is displayed when you use these control characters. Values assigned to "n" and "d" defines the numerator and denominator respectively. "!" is the separation character. No control characters can be nested inside the brackets.

Two Lines Of Text

<Tr!s>

"r" and "s" are two lines of text displayed one line over the other, usually positive, real numbers that cannot contain any control characters except <Rn!d> or <Qn!d> to insert fractions.

Expression Value

<Xm.n@exp_name>

Where "X" indicates a reference to an expression.

Where "m" indicates the minimum field width. If required, the expression value is padded with blank spaces on the left to fill the field width. If m=0 the leading zero is suppressed.

Where "n" indicates the maximum number of digits after the decimal point of the expression value. If n=0 the value displays as a whole number. The m and n can be separated by a comma or a period depending on the decimal point separator desired.

Note:

If the text is part of a dimension, "m.n" can be omitted. If it is omitted, the number of decimal places used for the dimension is also used for the expression value.

Where "exp_name" indicates the expression name. The expression name is case sensitive. An expression from a part that is not the current work part can also be referenced by specifying the following provided that the interpart expressions customer default is turned ON.

<part name>::<exp_name>

Expression Assignment

<XA@exp_name>

Where "A" indicates that the expression assignment statement is displayed rather than the expression value.

Where "exp_name" indicates the expression name. The expression name is case sensitive.

Example:

For the expression "p1=if(p0<2)3 else 2*p0", the <XA@p1> control character text displays as follows:

p1=if(p0<2)3 else 2*p0

Part Attribute

<W&@attr_title>

Where "W" indicates a reference to a part attribute.

Where "&" is an optional control character that specifies that the part attribute value is to be interpreted such that control character sequences display as their corresponding symbols. If the & is not present, the part attribute value displays exactly as entered.

For example, a reference to an attribute titled ANGLE can be displayed in either of two ways as follows:

| Attribute Reference | Annotation Display |
|----------------------|------------------------------------|
| <W&@ANGLE> | 45 |
| <W@ANGLE> | 45<\$s> |
| <W&COMPONENT1@ANGLE> | 45 (attribute from component) |
| <WCOMPONENT1@ANGLE> | 45<\$s> (attribute from component) |

The Text Editor dialog box does not currently provide any automatic means of inserting the ampersand character (&). Therefore, you must manually insert the & after the W. Nested attribute references are not supported.

Where "attr_title" indicates the referenced attribute title.

Object Attribute Identifier

<W!obj_id@attr_title>

Where "obj_id" indicates the unique identifier of the object the attribute is associated to. This "obj_id" is not the ID number found when doing Information → Object.

Object Attribute

<W&obj_name@attr_title>

Where "obj_name" indicates the object which the object attribute has been assigned to. It is important to note that if multiple objects have the same name, the first object found is selected. Therefore, it is recommended that unique object names be used when object attributes are assigned.

For an explanation of the & see the [Part Attribute](#) section above.

Drawing Sheet Attributes

<W@\$attr_title>

The following is a list of valid control character strings for part drawing sheet attributes.

| Control string | Description |
|----------------------------------|--|
| <W@\$SH_SHEET_NUMBER> | Sheet number of the current sheet |
| <W@\$SH_NUMBER_OF_SHEETS> | Number of sheets in the current part |
| <W@\$SH_SHEET_SCALE_NUMERATOR> | Numerator of the sheet scale |
| <W@\$SH_SHEET_SCALE_DENOMINATOR> | Denominator of the sheet scale |
| <W@\$SH_SHEET_SIZE> | Size of the current sheet |
| <W@\$SH_SHEET_UNITS> | Units of the current sheet |
| <W@\$SH_SHEET_PROJECTION_ANGLE> | Projection angle symbol of the current sheet |
| <W@\$SH_MASTER_PART_NAME> | Master Model drawing sheet part name |
| <W@\$SH_PART_NAME> | Sheet part name |