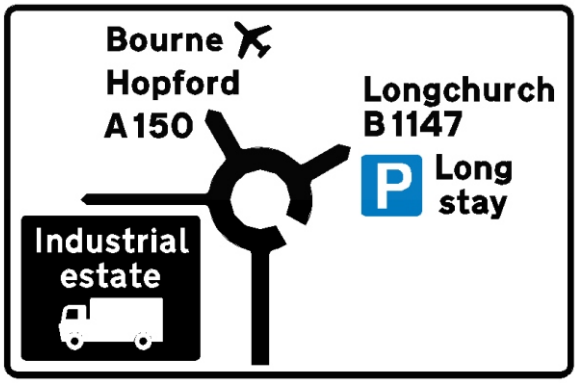
4 CHAPTER 7 SIGN DESIGN



VERSION 10

Chapter 7 Sign Design for CONE 10 (UK Version)

Contents

Typical range of signs for temporary and event signs – Transport Heavy – (Black text on yellow or white backgrounds) and Transport Medium (White text on red or blue backgrounds)

2701

2701.1

2703

2705

2705

2705 (variant)

2706

2716

2014

REGULATION 53

REGULATION 53

REGULATION 53

REGULATION 53

REGULATION 53

REGULATION 53

REGULATION 53

REGULATION 53

7002A

7002B

7002.1

7003.1

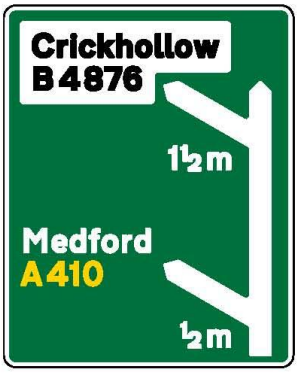
7004

7005 (variant)

Typical range of signs for permanent direction signs– Transport Heavy – (Black text on light backgrounds) and Transport Medium (White text on dark backgrounds)

2005

2103

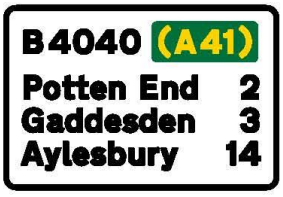


2013 (variant)

2903

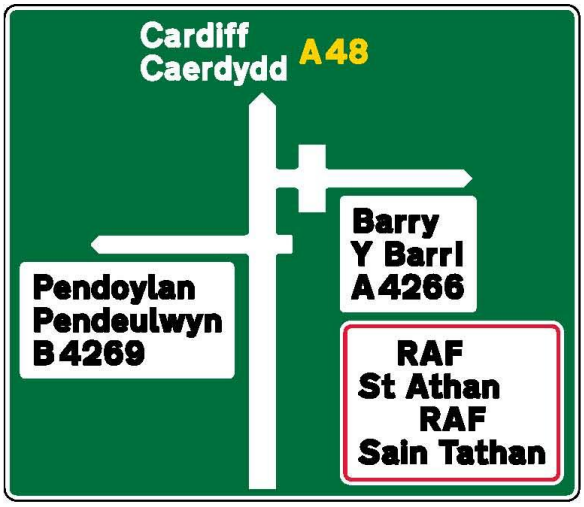
2019 (variant)

2215

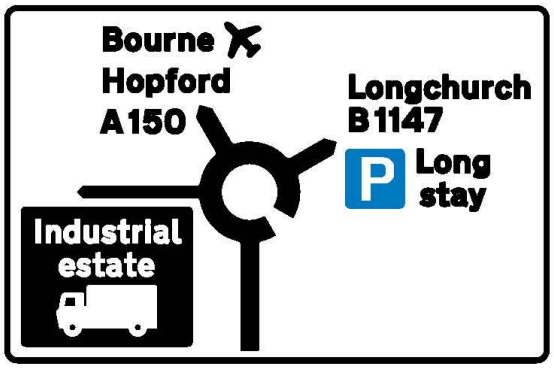


2805

2902 (vaiant)



WAG 2008



2805

2125

Introduction

For the first time "True" sign design utilising Transport Fonts is now available as part of CONE (v10) with some limitations (see below) which will be addressed in future versions.

The following sign types can be created in CONE 10:

Temporary signs for road works, route diversions etc. (see limitations)
Event Management Signs (with additional user defined symbols)
Permanent Directional Informatory Signs:
- Stack Type Advance Directions Signs
- Map Type Advance Direction Signs
- Dedicated Lane Advance Direction Signs
- Flag Type Direction Signs
- Route Confirmation Signs
- Motorway Signing

Current Limitations - As of version 10.2 (Aug 2013),
These limitations will be addressed in the order shown below, please refer to our website www.conesoftware.com/uk for the latest information and status

1. Quick Sign Wizards for Temporary and Event signs
2. Some Signs for Road works types (see TSRGD 2002 – Schedule 12 – Part 3 and Chapter 7: Section 13 pages 116 onwards)
3. Priority Left Turn Roundabouts
4. Grade Separated Roundabouts
5. Mini Roundabouts
6. Signs that include other signs (except 7001, 572, 636, 642, 645, 670 and 670 which are included)
7. Signs on stack type signs (see Chapter 7: pages 37 – 40)
8. Signs on map type signs (see Chapter 7: pages 60 – 70)

Cone Sign Design utilises the rules as documented in Chapter 7 of the Traffic Signs Manual – The Design of Traffic Signs 2003 and TSGRD2002

Traffic signs are created in CONE by firstly **placing and arranging** Text Legends, Symbols & Arrows, Route Arms, Roundabouts, Route Patches and Panels as required and then **finalising** the sign which adds the background plate in the appropriate colour and style along with other finishing options.

Cone Sign Design includes tools to help set the appropriate horizontal and vertical spacing and alignments, but **DOES NO**T check that they are correctly spaced or aligned at Sign Finalisation time.

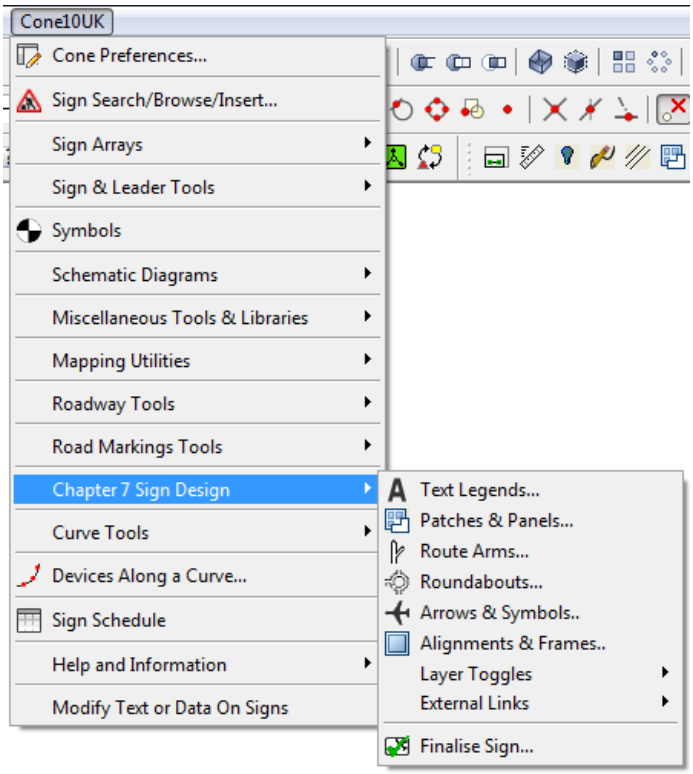
It is entirely possible for you to move objects out of alignment (see example below), so we recommend that whilst using Cone Sign Design you refer to Chapter 7 of the Traffic Signs Manual – The Design of Traffic Signs 2003 and the working drawings which can be found at:

http://www.gov.uk/working-drawings-for-traffic-signs

CORRECT

INCORRECT

Access to the Cone Sign Design Tools is via the main Cone10UK pull down menu or the Cone Sign Design toolbar



The sign design tool creates two types of sign: (You can create either or both as required)

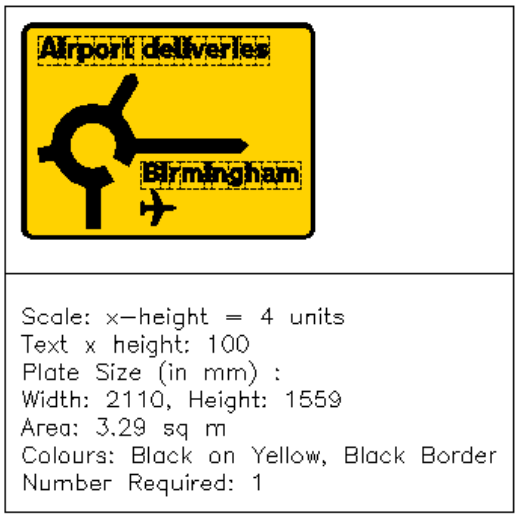
One for manufacturing purposes and another for subsequent insertion into a TM plan

The sign for manufacturing purposes is created in the same drawing as the various objects that make up the finished sign; the sign for subsequent insertion into a TM plan is saved as a separate file on your hard drive and can be inserted into a TM plan using the CONE **Sign/Browse/Insert** tool

Signs for TM purposes have frames and text tiles stripped out and are created at a size that is proportional to other TM signs in the CONE signs library.

ORIGINAL SIGN DESIGN OBJECTS

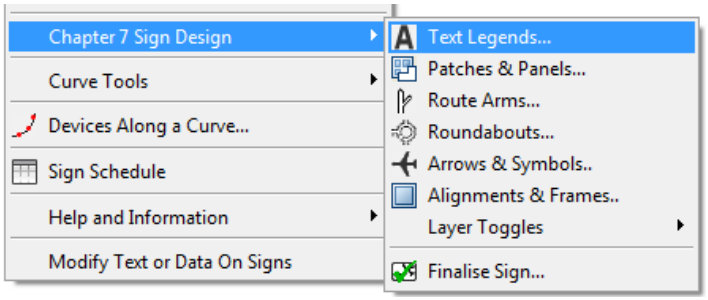
SIGN FOR TM PURPOSES



SIGN FOR MANUFACTURING PURPOSES

Text Legends

Operation:
CONE10UK pull down menu
Chapter 7 Sign Design -> Text Legends



Or select the **A** icon from the Cone Sign Design Toolbar

There are seven types of text legends

1. Text for temporary and event signs - Transport Heavy (Black text on yellow or white backgrounds)

2. Text for temporary and event signs - Transport Medium (White text on red or blue backgrounds)

3. Motorway route numbers - Transport Heavy or Medium (Black on yellow backgrounds or white on blue)

4. Text for permanent direction signs - Transport Heavy (Black text on white backgrounds)

5. Text for permanent direction signs - Transport Medium (White text on dark backgrounds)

6. Bilingual Mileage Legends

7. Bilingual Yardage Legends

Note: The Transport Heavy and Transport Medium types are interchangeable; you may use either to create the appropriate text for use on the appropriate background; however each tool has a different application as described in the following paragraphs.

The alphanumeric text characters used on traffic signs are based on the special transport alphabet font set (See Traffic Signs Manual: Chapter 7: Page 8 -9 and 147-148)

There are two font sets

Transport Heavy (Black characters on white or yellow backgrounds)
Transport Medium (White characters on green, red, blue, brown or black backgrounds)

In additions there are two special font sets for motorways signs

Motorway White (White characters on a blue background)
Motorway Black (Black characters on a yellow background)

It is important to note that these fonts are NOT standard systems fonts, you cannot use them in normal text editing (as you would for Arial or Verdana etc.)

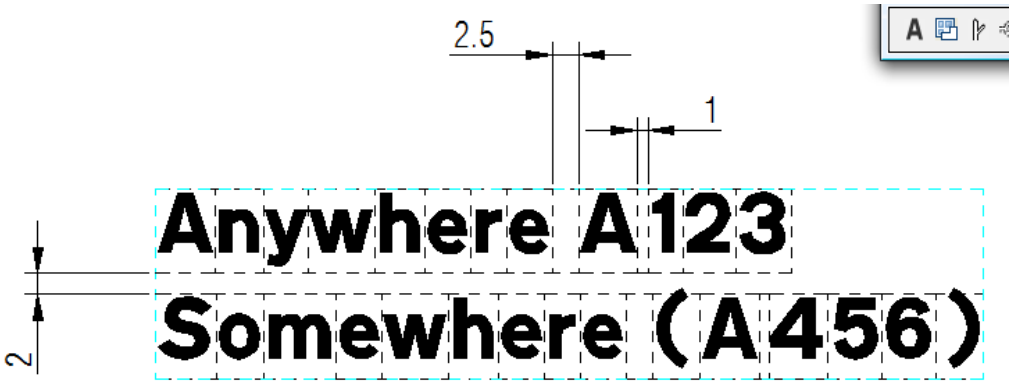
Cone Sign Design provides text legend entry tools for each of the above fonts; each individual character is contained within an 8 stroke width high tile block, the tool strings together the individual character blocks to make up text legend blocks

The horizontal character or word spacing and the vertical line/block spacing are governed by the rules as defined in Chapter 7 except for signs with their own special design rules.

These special signs are described in the form of working drawings which can be found at

https://www.gov.uk/working-drawings-for-traffic-signs

Examples of horizontal character/word and vertical line spacing



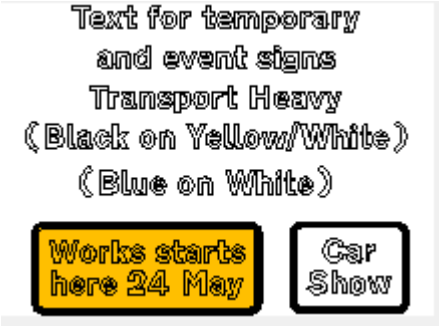
Text Legends for Temporary Road Works and Event Signs

Some examples of the types of signs created with this text legend entry dialog are on page 2

These types of temporary signs have in some cases slightly different vertical line spacing rules to permanent type signs, they do not normally contain route patches or distances and the text is generally centre justified

Both tools (Transport Heavy or Medium) for text legends for temporary road works and event signs are similar in operation; select the tool that is appropriate to the intended background colour of the finished sign

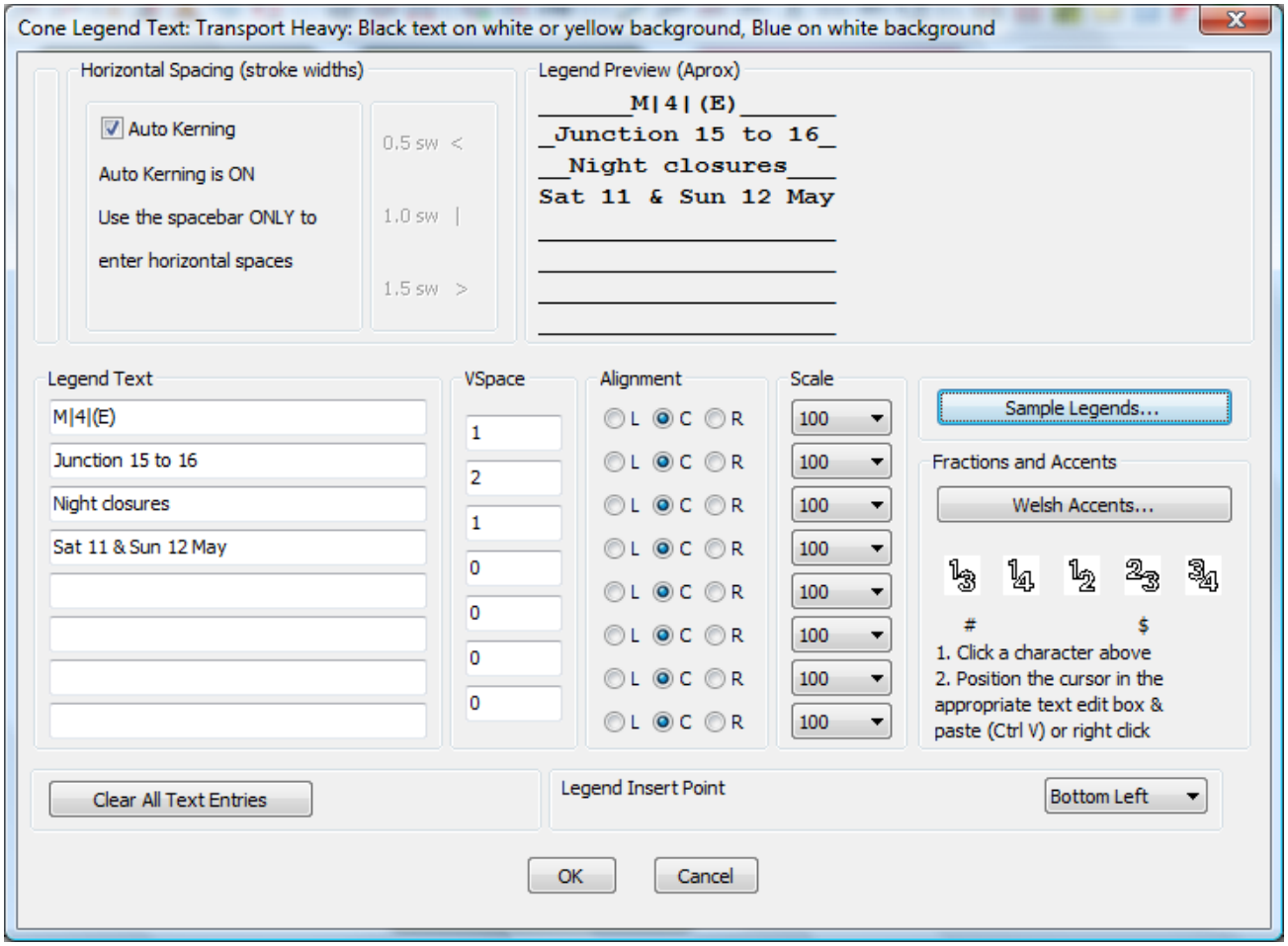
Transport Heavy
(Black characters on white or yellow backgrounds)



Transport Medium (White characters red or blue)

Picking either of the icons will load the appropriate text entry dialog which is explained in detail in the following pages:

Text Entry Dialog (text for temporary signs)



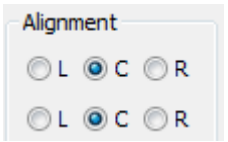
Horizontal Spacing (stroke widths): If the Auto Kerning checkbox is enabled the legend tool auto inserts the correct horizontal character and word spacing. If left un-checked then spaces need to be manually input as follows:

0.5 sw use the < key
1.0 sw use the | key
1.5 sw use the > key
2.5 sw use the spacebar

Note: See Traffic Signs Manual Chapter 7 pages 10 and 11 for horizontal spacing rules

Text entry: Up to 8 lines of text may be entered (no spell checking is provided)

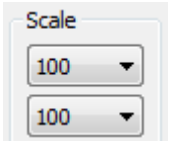
Alignment: The line alignment: Left, Centre or Right justified, (normally centre for temporary signs)



However some Welsh/English signs have left justified text see working drawings at:

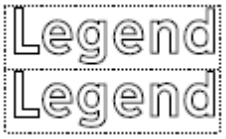
http://www.traffic-wales.com/traffic_signs.aspx

Scale: The line scale as a percentage of the x-height (normally 100%)



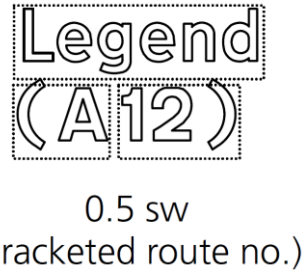
Vspace: (Vertical Line Spacing): The vertical spacing between each pair of lines.

If the vertical spacing is 0 (zero) then each line of text will be butted together vertically with no gap.



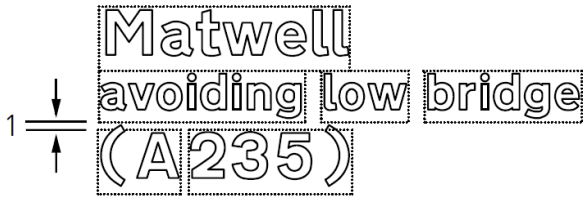
There is however three circumstances where the legend tool will automatically insert a 0.5 or a 1.0sw vertical space.

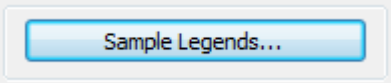
Bracketed route number below:



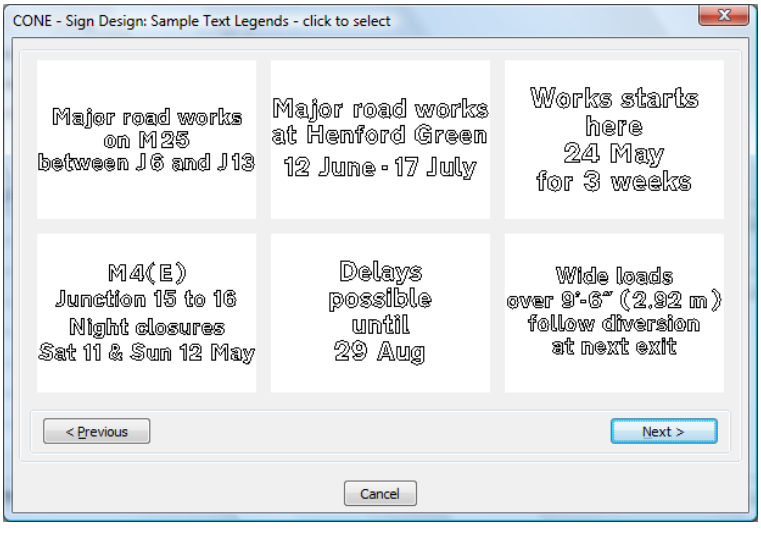
Reduced text height:

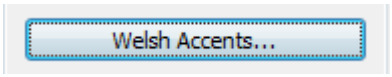
Reduced text height and bracketed route number below:





Sample Legends: Select this button to open a sub-dialog window and choose from a range of pre-defined text legends (Pick the desired icon to select) which will be inserted into the main dialog text entry boxes, any current text entries, vertical spacing and scale settings will be reset to suit the sample legend selected.

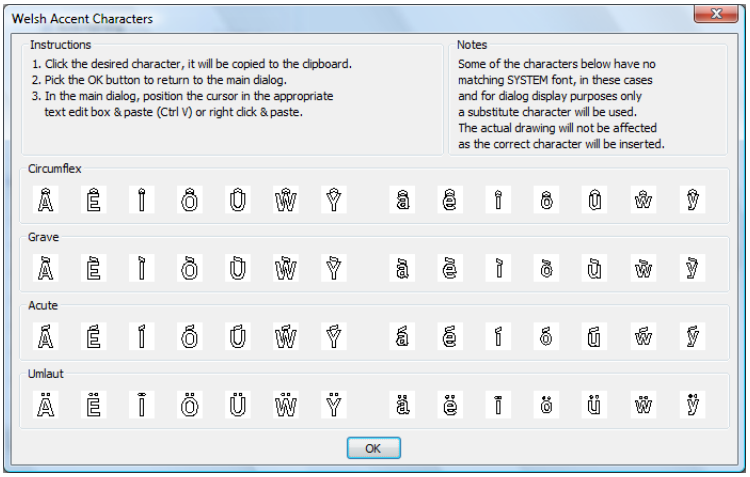




Welsh Accents: Pick this button to open a sub-dialog window and choose from a range of special welsh language accent characters.

Pick the desired character icon as required. This action will copy the character to the clipboard ready for pasting.

Select the **OK** button to return to the main dialog window.



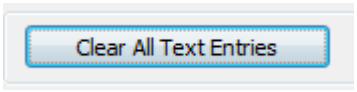
Position the cursor in the desired position in the text entry box and either press (Ctrl + V) or right click and select paste from the menu that appears.

Note: Some of the Welsh accent characters have no matching operating system font, in these cases a substitute character will be shown in the text entry dialog; the actual legend when positioned on the drawing will show the real character.

Fractions:
Pick the desired fraction icon as required.
This action will copy the character to the clipboard ready for pasting.

Position the cursor in the desired position in the text entry box and either press (Ctrl + V) or right click and select paste from the menu that appears.

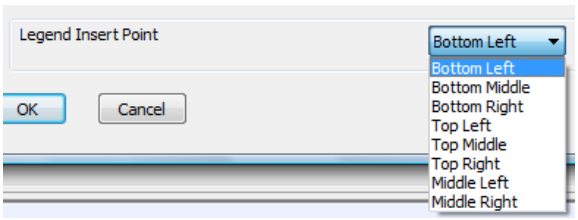
Note: The 1/3rd and 2/3rds characters have no matching operating system font, in these cases a substitute character will be shown in the text entry dialog, the actual legend when positioned on the drawing will show the real character.



Clear All Text Entries: Pick this button to clear all current text entries and reset the Vertical Space, Scale and Alignment values to their default values.

Legend Insert Point:

Choose the block reference point when positioning the text legend on the drawing from this pop-up list.



Insert the text legend: Pick the **OK** button to create the text legend block and place on your drawing, or pick **Cancel** to discard.

The **OK** button saves the current legend entry settings and these will become the default setting the next time you use the tool in the current drawing session.

Some examples of the types of signs created with this text legend entry dialog are on page 3

These types of signs have in some cases slightly different vertical line spacing rules to temporary type signs; they may also contain route patches and distances

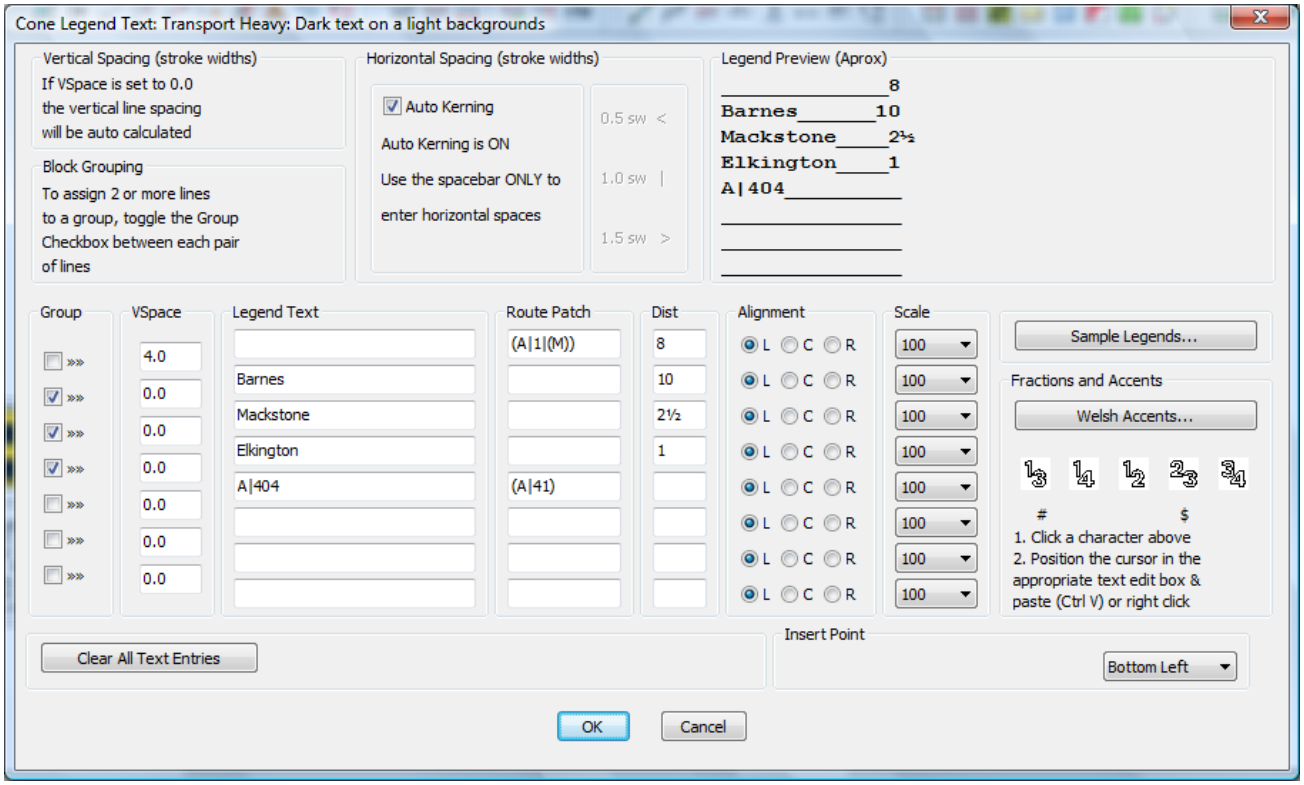
Both tools for text legends for permanent signs are similar in operation; select the tool that is appropriate to the intended background colour of the finished sign

Transport Heavy
(Black characters on white backgrounds)

Transport Medium (White characters green, red, brown, blue or black)

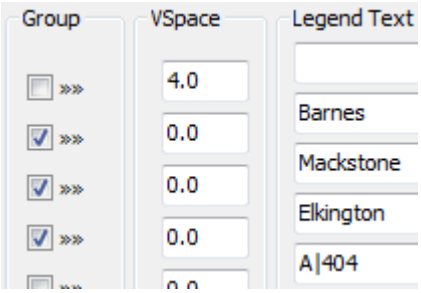
Picking either of the icons will load the appropriate text entry dialog which is explained in detail in the following pages:

Text Entry Dialog for Permanent Direction Signs & Panels



Grouping and Vertical Line Spacing

The **Group** checkbox assigns two or more lines to a group (usually a single destination spread over two or more lines)



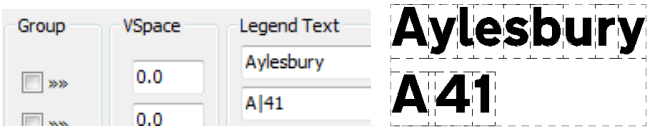
Vspace: (Vertical Line Spacing):
The vertical spacing between each pair of lines.

If the vertical spacing is 0 (zero) then the vertical line spacing is auto calculated for vertical block spacing.

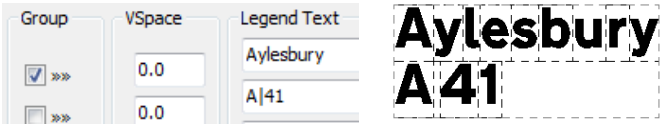
If the vertical spacing is greater than zero the space you enter is created between each line

Example 1:

Aylesbury and **A|41** are entered in the legend text boxes. Vspace is set to zero (auto calculate vertical block spacing mode) & the two lines are not grouped.
This results in a vertical space of 2sw between the lines which is correct for vertical block spacing but not what is required



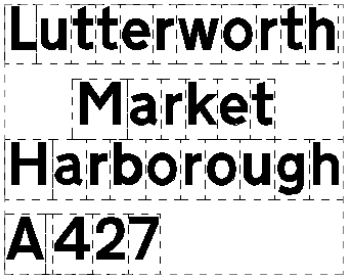
Here the only difference is that the grouping checkbox for the two lines is set to ON
The tool now treats the two lines as a single destination, this results in a zero vertical space between the lines which is correct



Example 2:

Lutterworth, Market, Harborough and **A427** are entered in the legend text, **Market Harborough** is a single destination and as such those two lines of text should be centre justified to each other

By grouping the lines **Market** and **Harborough** and setting the justification of **Market** to centre tells the legend tool that **Market** and **Harborough** are a single destination and that **Market** is centre justified with respect to **Harborough** (because Harborough is the longest text in the group) **Harborough** itself is left justified, vertical spacing is set to zero (auto calculate vertical block spacing mode)



Horizontal Spacing (stroke widths): If the Auto Kerning checkbox is enabled the legend tool auto inserts the correct horizontal character and word spacing. If left un-checked then spaces need to be manually input as follows:

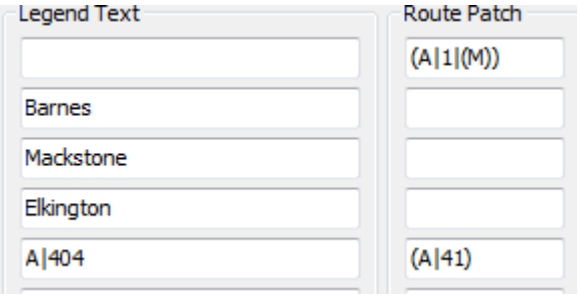
0.5 sw use the < key
1.0 sw use the | key
1.5 sw use the > key
2.5 sw use the spacebar

Note: See Traffic Signs Manual Chapter 7 pages 10 and 11 for horizontal spacing rules

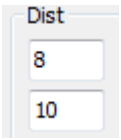
Legend Text: Up to 8 lines of text may be entered (no spell checking is provided)

Route Patch: Adds a route patch at the end of a text entry line. To create a route patch on a line by itself leave the associated text entry box blank.

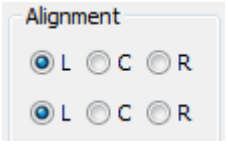
Route patches that include a capital M are assumed to be motorway route numbers (white on blue)



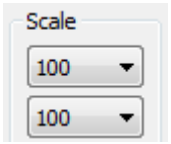
Distance: Adds a distance at the end of text entry line

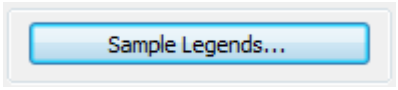


Alignment: The line alignment: Left, Centre or Right justified,

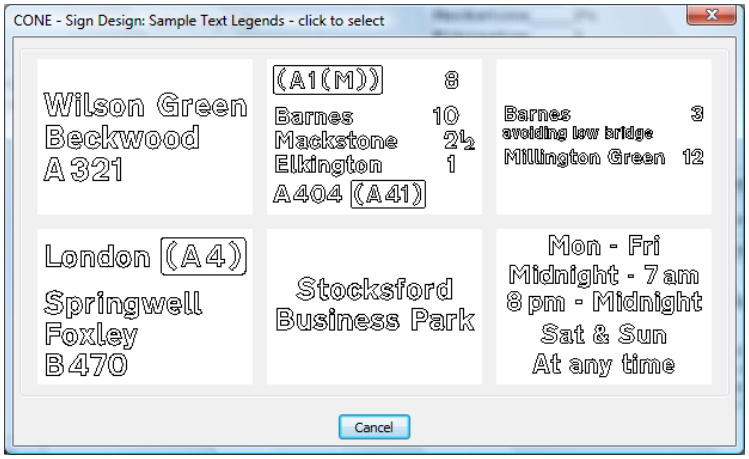


Scale: The line scale as a percentage of the x-height (normally 100%)





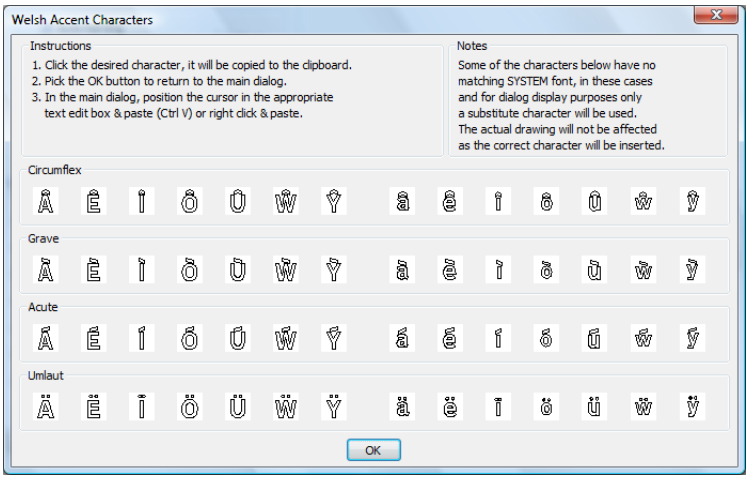
Sample Legends: Select this button to open a sub-dialog window and choose from a range of pre-defined text legends (Pick the desired icon to select) which will be inserted into the main dialog text entry boxes. All current text entries, vertical spacing, grouping, distance and scale settings will be reset to suit the sample legend selected.



Welsh Accents: Pick this button to open a sub-dialog window and choose from a range of special welsh language accent characters.

Pick the desired character icon as required. This action will copy the character to the clipboard ready for pasting.

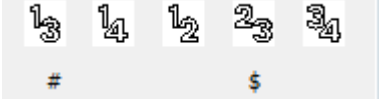
Select the **OK** button to return to the main dialog window.



Position the cursor in the desired position in the text entry box and either press (Ctrl + V) or right click and select **paste** from the menu that appears.

Note: Some of the Welsh accent characters have no matching operating system font, in these cases a substitute character will be shown in the text entry dialog; the actual legend when positioned on the drawing will show the real character.

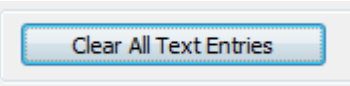
Fractions:



Click the desired fraction icon as required.
This action will copy the character to the clipboard ready for pasting.

Position the cursor in the desired position in the text entry box and either press (Ctrl + V) or right click and select paste from the menu that appears.

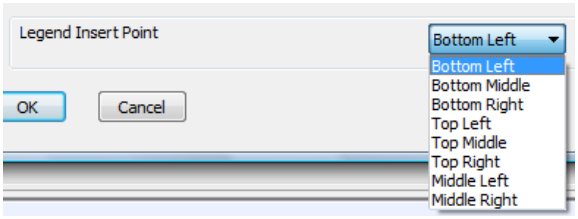
Note: The 1/3rd and 2/3rds characters have no matching operating system font, in these cases a substitute character will be shown in the text entry dialog, the actual legend when positioned on the drawing will show the real character.



Clear All Text Entries: Select this button to clear all current text entries and reset the Vertical Space, Scale and Alignment values to their default values.

Legend Insert Point:

Choose the block reference point when positioning the text legend on the drawing from this pop-up list.



Insert the text legend: Pick the **OK** button to create the text legend block and place on your drawing, or pick **Cancel** to discard.

The **OK** button saves the current legend entry settings and these will become the default setting the next time you use the tool in the current drawing session.

Other Text Legends

Motorway Route Numbers

Bilingual Mileage Legends

Bilingual Yardage Legends

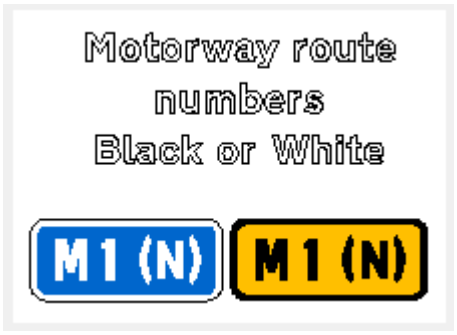
Operation:
CONE10UK pull down menu
Chapter 7 Sign Design -> Text Legends

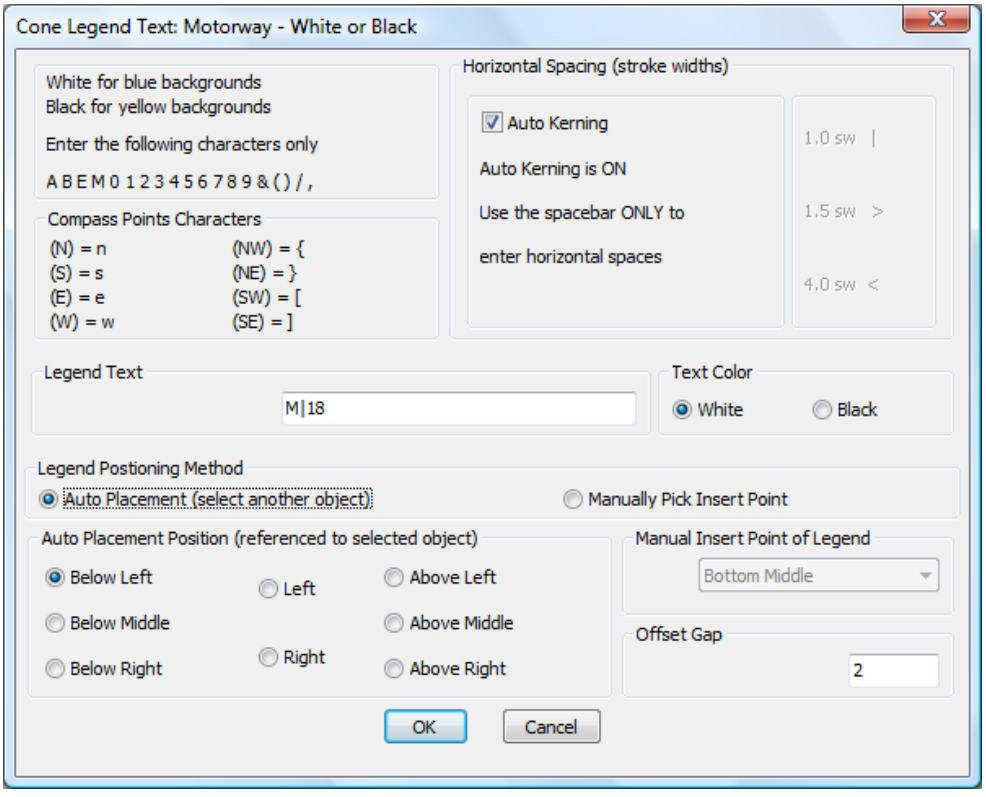
Or select the **A** icon from the Cone Sign Design Toolbar

Motorway Route Numbers:

To add a motorway route number pick the **Motorway route numbers** icon

The dialog shown below will be displayed





General Operation:

Enter the route number values as appropriate in the **Legend Text** entry box

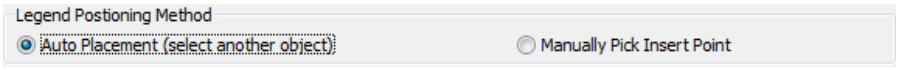
Select the **Text Colour:** (White for blue backgrounds, black for yellow backgrounds)

Enter the desired gap in the **Offset Gap** entry box

Choose the desired **Legend Positioning Method**

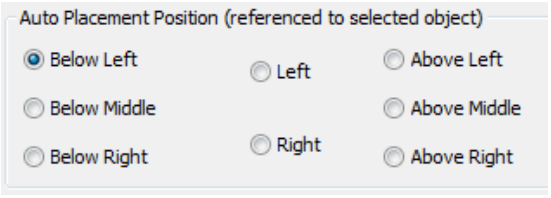
Select the **OK** button to place the patch on your drawing

Legend Positioning Method:



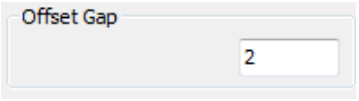
Legends can be placed on a drawing manually (you pick the legend insert point on the drawing) or can be auto placed (you select a object on your drawing)

Auto Placement:
First select **Auto Placement** as the legend positioning method



Then choose the desired position (with reference to the object on the drawing that you will select) from the list of radio buttons:

Enter the desired gap in the **Offset Gap** entry box

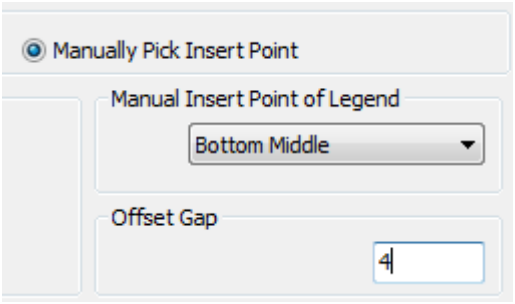


Example: To auto position a route number 2sw from the bottom left of a text legend, pick the **Bottom Left** radio button and then pick the **OK** button, the tool will respond thus:

Command: UKTLEGENDS
Select object to align legend to:

Select the object to align the legend text to

Manually Pick Insert Point:

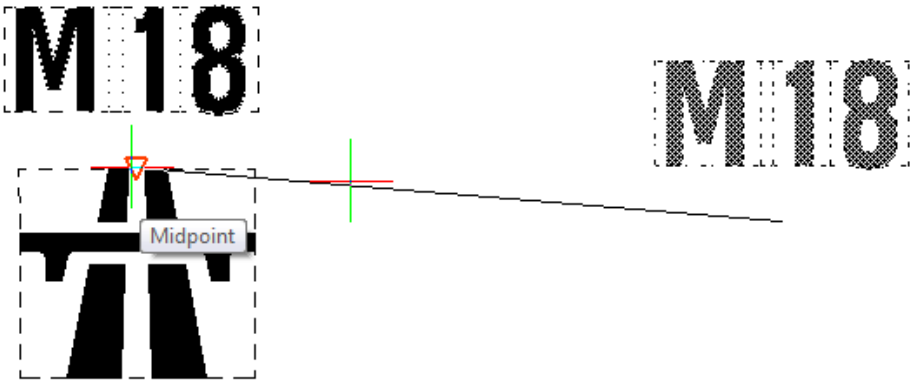


To manually position a text legend

First select **Manually Pick Insert Point** as the positioning method

Then pick an insert point option from the pop up list of insert points then enter the desired **Offset Gap**

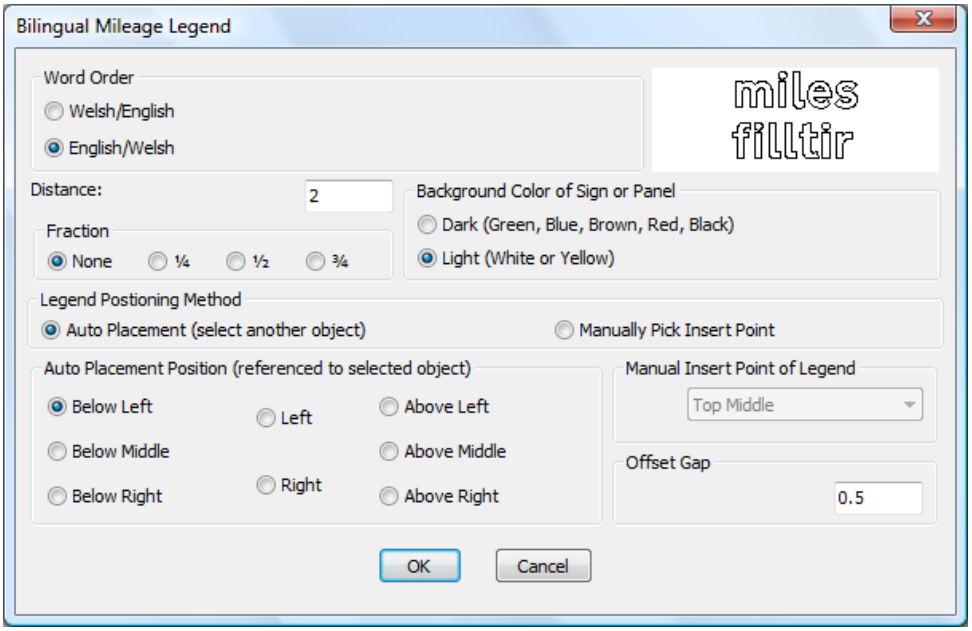
Example: Insert point offset 4sw from the Bottom Middle of the text legend



Bilingual Mileage Legends:

To add a Bilingual Mileage Legend pick the **Bilingual Mileage Legends** icon

The dialog shown below will be displayed



General Operation:

Select the **Word Order** Welsh or English first

Enter a whole number value in the **Distance** entry box

Choose a **Fraction** or none

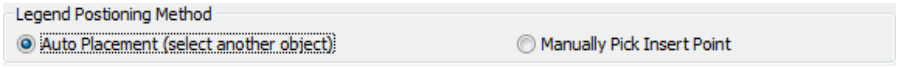
Select the **Background Colour of Sign or Panel:**

Choose the desired **Legend Positioning Method**

Enter the desired gap in the **Offset Gap** entry box

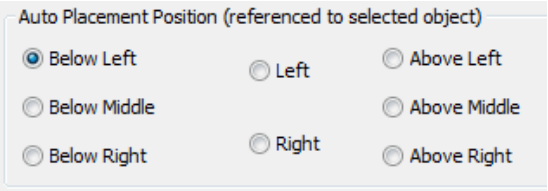
Select the **OK** button to place the legend on your drawing

Legend Positioning Method:



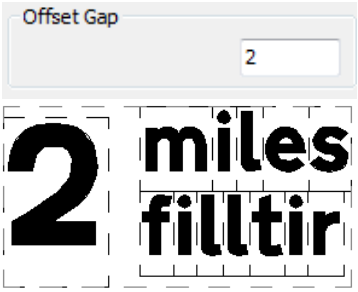
Legends can be placed on a drawing manually (you pick the legend insert point on the drawing) or can be auto placed (you select a object on your drawing)

Auto Placement:
First select **Auto Placement** as the legend positioning method



Then choose the desired position (with reference to the object on the drawing that you will select) from the list of radio buttons:

Enter the desired gap in the **Offset Gap** entry box



Command: UKTLEGENDS
Select object to align legend to:

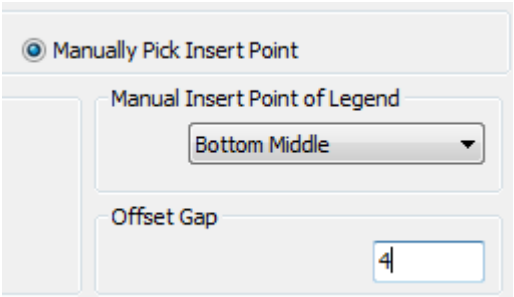
Select the object to align the legend text to

Manually Pick Insert Point:

To manually position a text legend

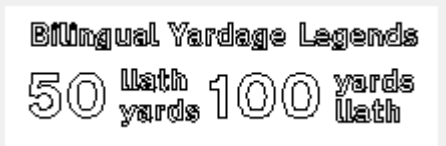
First select **Manually Pick Insert Point** as the positioning method

Then pick an insert point option from the pop up list of insert points then enter the desired **Offset Gap**



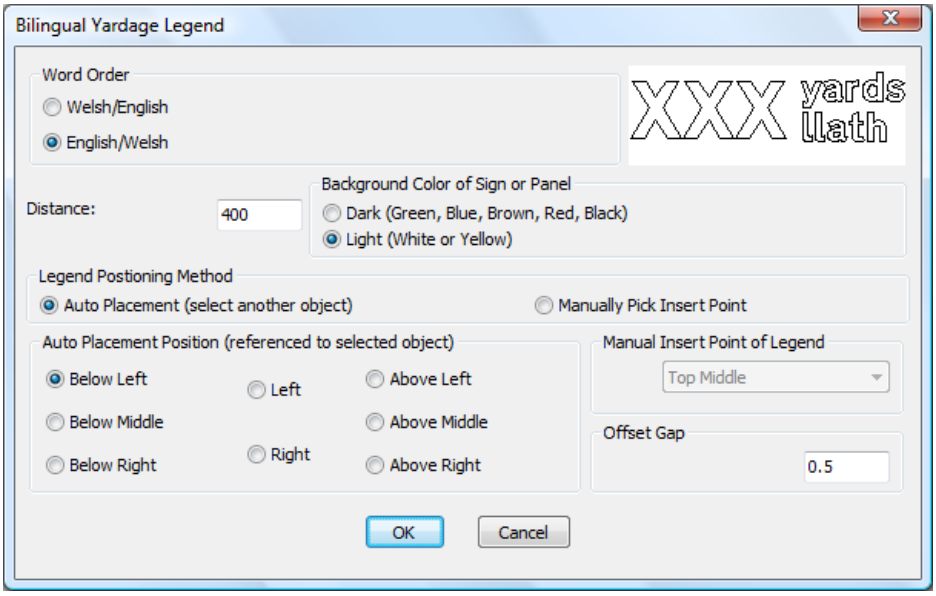
Command: UKTLEGENDS
Pick legend insert point:

Bilingual Yardage Legends:



To add a Bilingual Yardage Legend spick the **Bilingual Yardage Legends** icon

The dialog shown below will be displayed



General Operation:

Select the **Word Order** Welsh or English first

Enter the whole number value in the **Distance** entry box

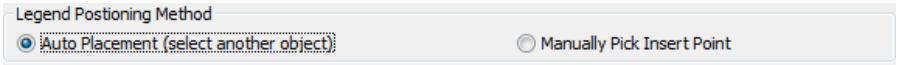
Select the **Background Colour of Sign or Panel:**

Choose the desired **Legend Positioning Method**

Enter the desired gap in the **Offset Gap** entry box

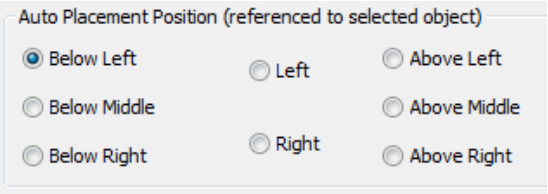
Select the **OK** button to place the legend on your drawing

Legend Positioning Method:



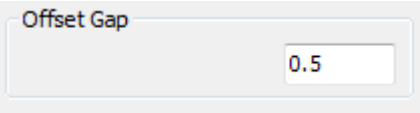
Legends can be placed on a drawing manually (you pick the legend insert point on the drawing) or can be auto placed (you select a object on your drawing)

Auto Placement:
First select **Auto Placement** as the legend positioning method



Then choose the desired position (with reference to the object on the drawing that you will select) from the list of radio buttons:

Enter the desired gap in the **Offset Gap** entry box



Example: To auto position a legend number 0.5sw from the bottom middle of a text legend, pick the **Bottom Middle** radio button and then pick the **OK** button, the tool will respond thus:

Command: UKTLEGENDS
Select object to align legend to:

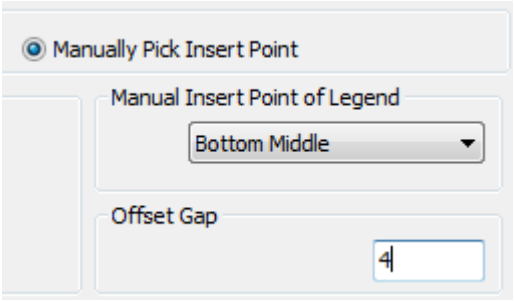
Select the object to align the legend text to

Manually Pick Insert Point:

To manually position a text legend

First select **Manually Pick Insert Point** as the positioning method

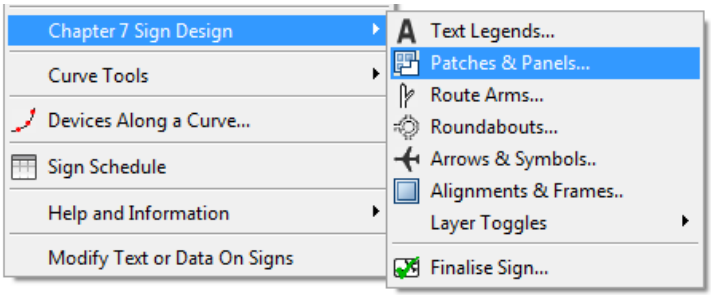
Then pick an insert point option from the pop up list of insert points then enter the desired **Offset Gap**



Command: UKTLEGENDS
Pick legend insert point:

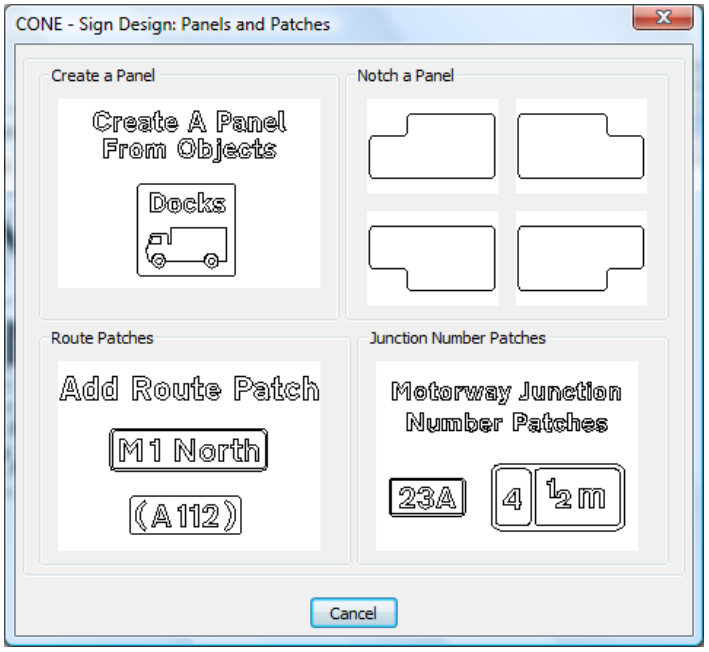
Patches & Panels

Operation:
CONE10UK pull down menu
Chapter 7 Sign Design -> Patches & Panels



Or select the icon from the Cone Sign Design Toolbar

The following dialog will load



There are seven tools in Panels and Patches:

Create a panel from objects you have already added to your drawing (Text legends, symbols, arrows, patches etc.)

Four notch a panel tools (Top left, top right bottom left and bottom right)

Add a route number patch

Add a motorway junction number patch

Create a panel from objects:

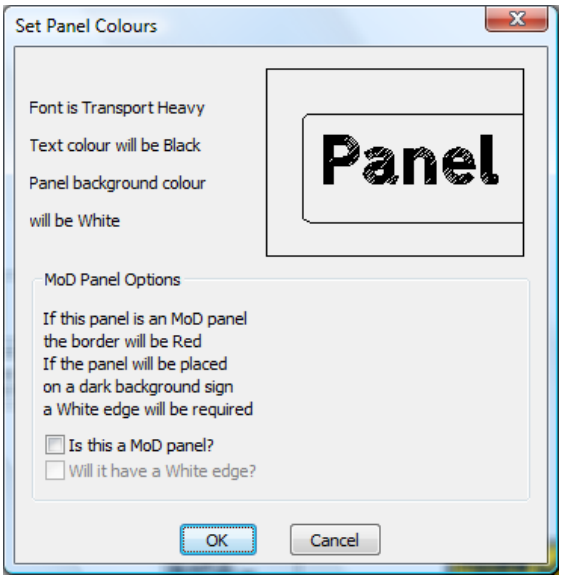
Pick the Create a Panel from Objects icon

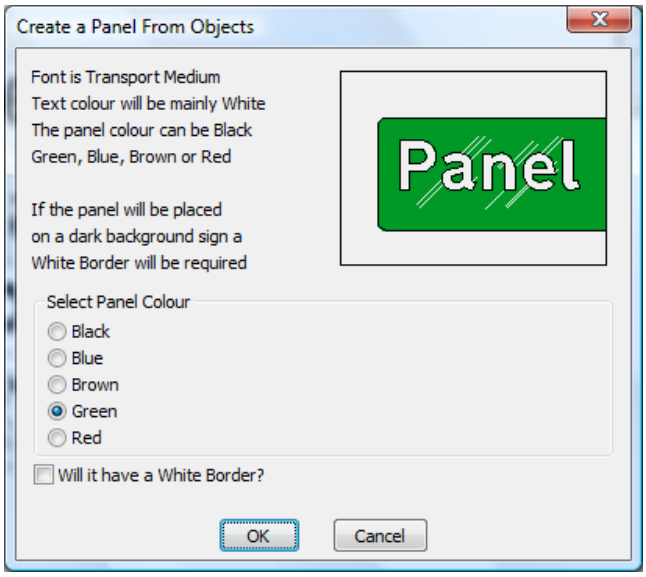
The tool will respond thus:

Command: *CPANELS*
CREATE A PANEL: Select all objects to include in the panel
Select entities:

Use normal CAD selection methods to select all the objects to include in the panel and press the enter key when done selecting

Depending on the primary font of the objects selected; the tool will next display one of the following dialogs



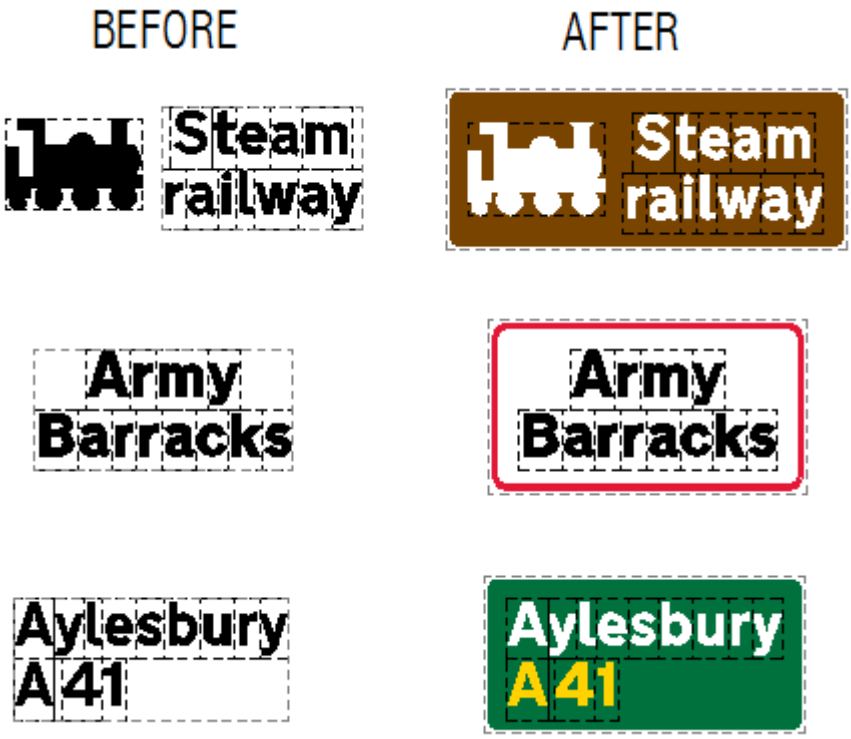


If the primary font is **Transport Heavy** the only options are MoD Panel options i.e. Is it a MoD panel (red border) and if so will it have a white edge (will the panel be placed on a dark background sign)

If the primary font is **Transport Medium** then you need to select the panel background colour and choose whether the panel will have a white border (will the panel be placed on a dark background sign)

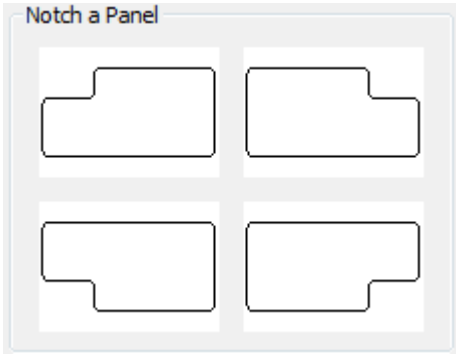
Select the **OK** button to convert the objects selected to a panel

Examples:



Notch a Panel:

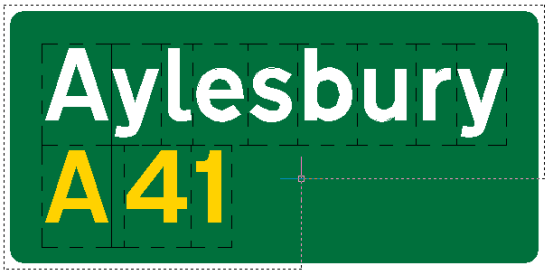
Pick one of the four **Notch a Panel** icons (example: bottom right)

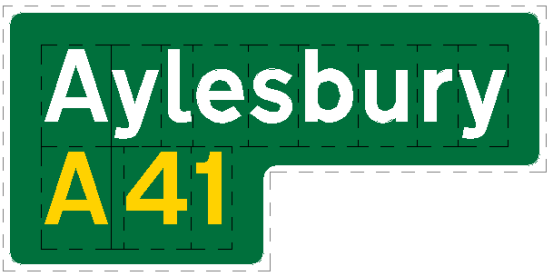


The tool will respond thus:

Command: *CPANELS*
Select an existing panel to add bottom right cut-out
Drag mouse to indicate notch position, pick point to finish

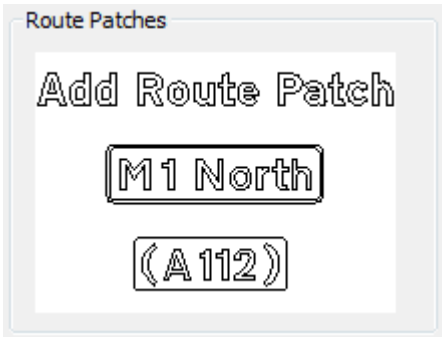
Select a panel and move your mouse, the cut out will be shown as a dotted line
Pick a point to finish



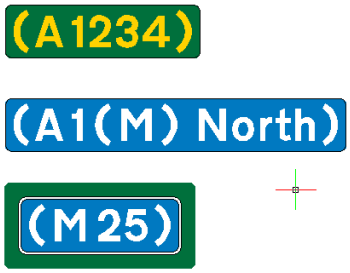


Note: Only one notch per panel is allowed, if you make a mistake simply select the notch a panel tool again The existing notch will be deleted and the new notch created

Route Patches:



To create a route patch pick the **Add a Route Patch** icon

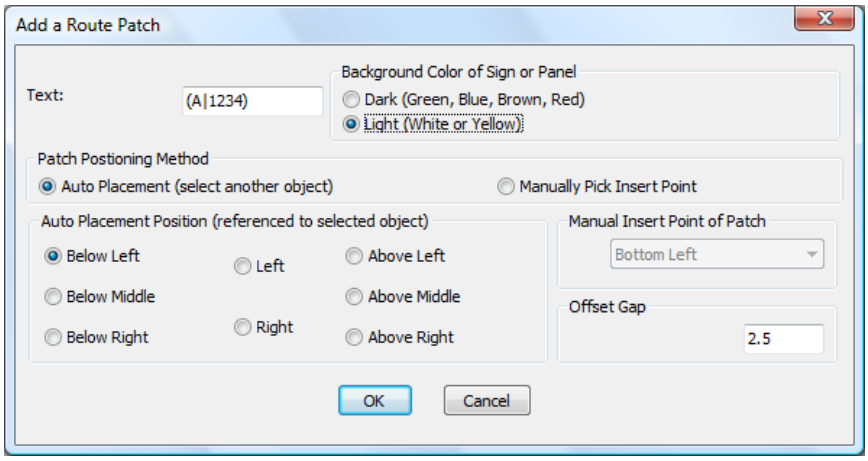


Enter the desired route number in the **Text** entry box

Choose the **Background Colour** of the sign or panel the route patch will be part of

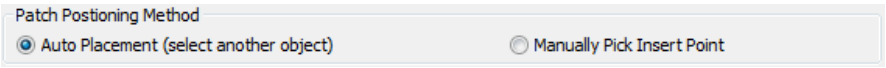
Enter the desired gap in the **Offset Gap** entry box

Choose the desired **Patch Positioning Method**



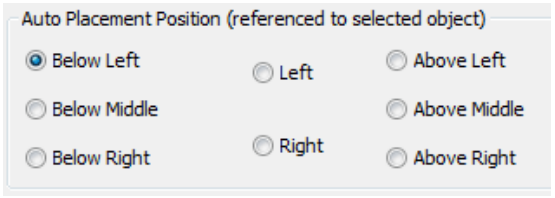
Select the **OK** button to place the patch on your drawing

Patch Positioning Method:

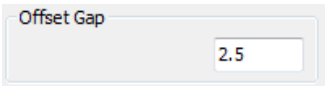


Patches can be placed on a drawing manually (you pick the patch insert point on the drawing) or can be auto placed (you select a object on your drawing)

Auto Placement:
First select **Auto Placement** as the patch positioning method



Then choose the desired position (with reference to the object on the drawing that you will select) from the list of radio buttons:



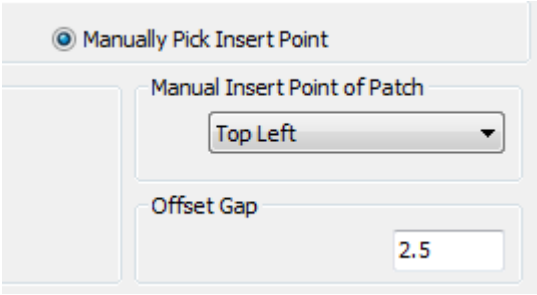
Enter the desired gap in the **Offset Gap** entry box

Example: To auto position a patch 2.5sw from the bottom left of a text legend, pick the **Bottom Left** radio button and then pick the **OK** button, the tool will respond thus:

Command: *CPANELS*
Select object to align patch to:

Select the object to align the patch to

Manually Pick Insert Point:



To manually position a patch

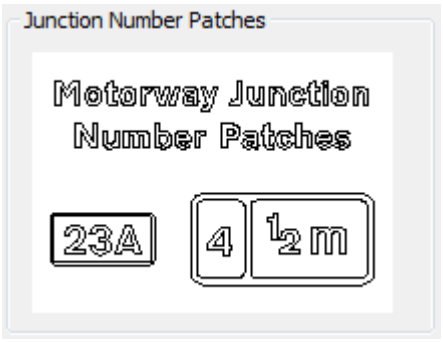
First select **Manually Pick Insert Point** as the patch positioning method

Then pick an insert point option from the pop up list of insert points then enter the desired **Offset Gap**

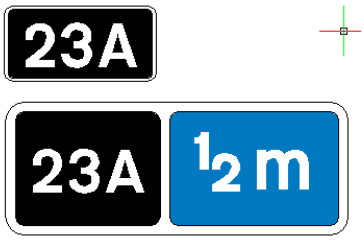
Example: Insert point offset 2.5sw from the Top Left corner of the patch

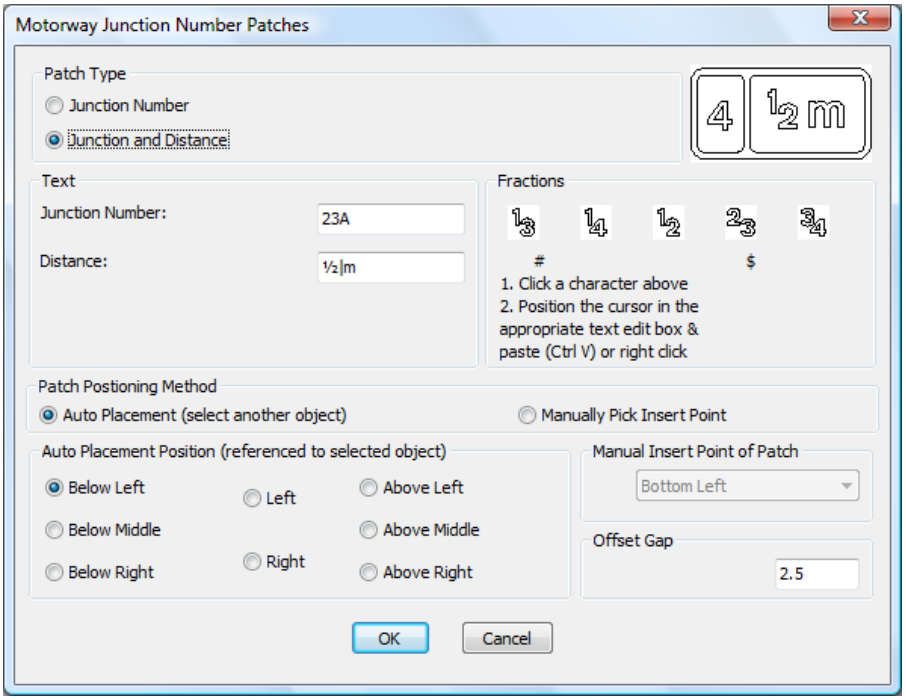
.

Motorway Junction Number Patches:



To create a motorway patch pick the
Motorway Junction Number Patch icon





Select the **Patch Type:** Junction Number or Junction Number + Distance

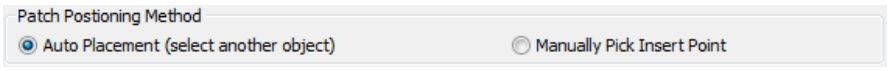
Enter the Junction Number and Distance values as appropriate in the **Text** entry boxes

Enter the desired gap in the **Offset Gap** entry box

Choose the desired **Patch Positioning Method**

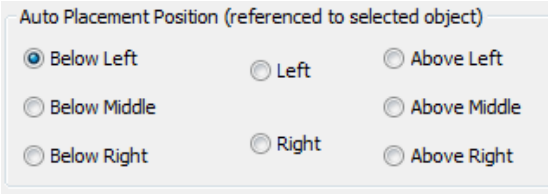
Select the **OK** button to place the patch on your drawing

Patch Positioning Method:



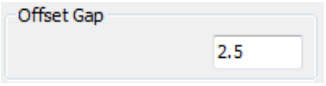
Patches can be placed on a drawing manually (you pick the patch insert point on the drawing) or can be auto placed (you select a object on your drawing)

Auto Placement:
First select **Auto Placement** as the patch positioning method



Then choose the desired position (with reference to the object on the drawing that you will select) from the list of radio buttons:

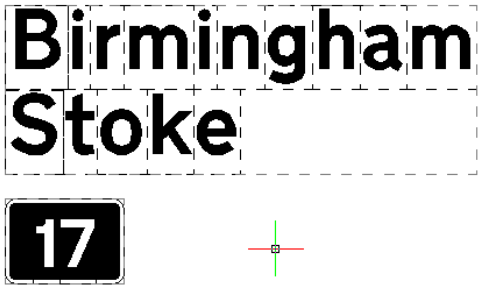
Enter the desired gap in the **Offset Gap** entry box



Example: To auto position a patch 2.5sw from the bottom left of a text legend, pick the **Bottom Left** radio button and then pick the **OK** button, the tool will respond thus:

Command: *CPANELS*
Select object to align patch to:

Select the object to align the patch to

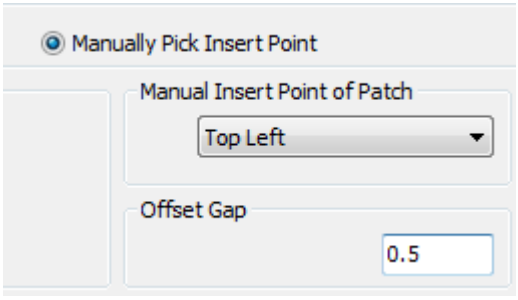


Manually Pick Insert Point:

To manually position a patch

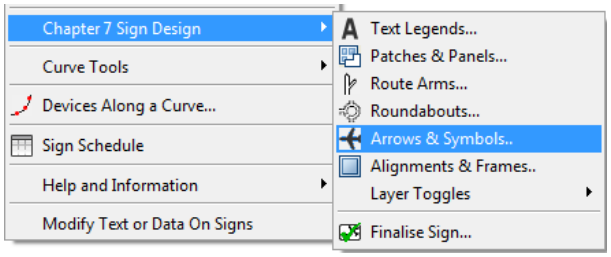
First select **Manually Pick Insert Point** as the patch positioning method

Then pick an insert point option from the pop up list of insert points then enter the desired **Offset Gap**



Example: Insert point offset 0.5sw from the Top Left corner of the patch

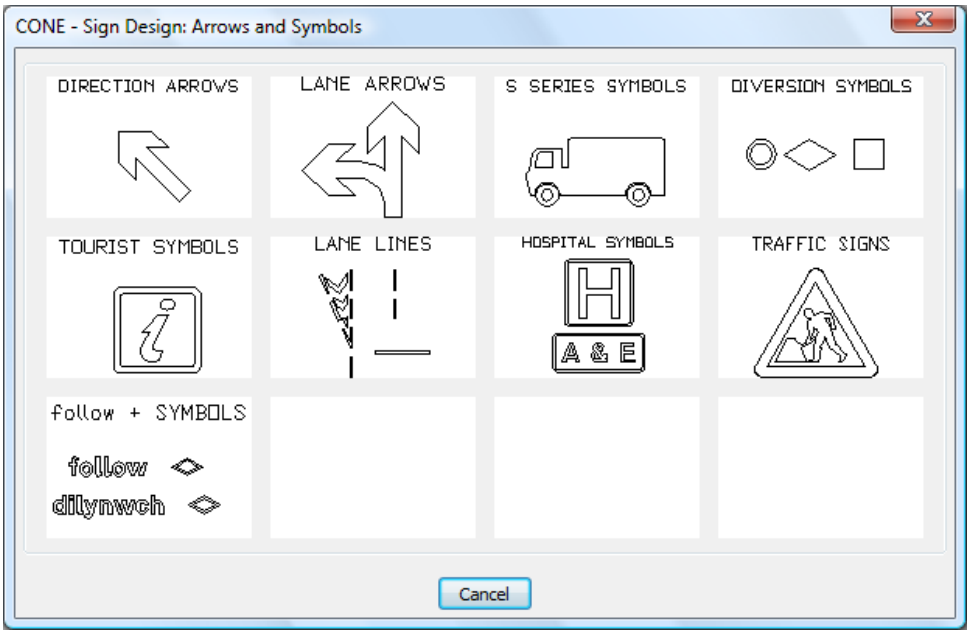
Arrows, Symbols and other Signs



From the CONE10UK pull down menu select
Chapter 7 Sign Design -> Arrows & Symbols

Or pick the **aircraft** icon from the
Cone Sign Design toolbar

The Arrow and Symbols dialog will be presented:



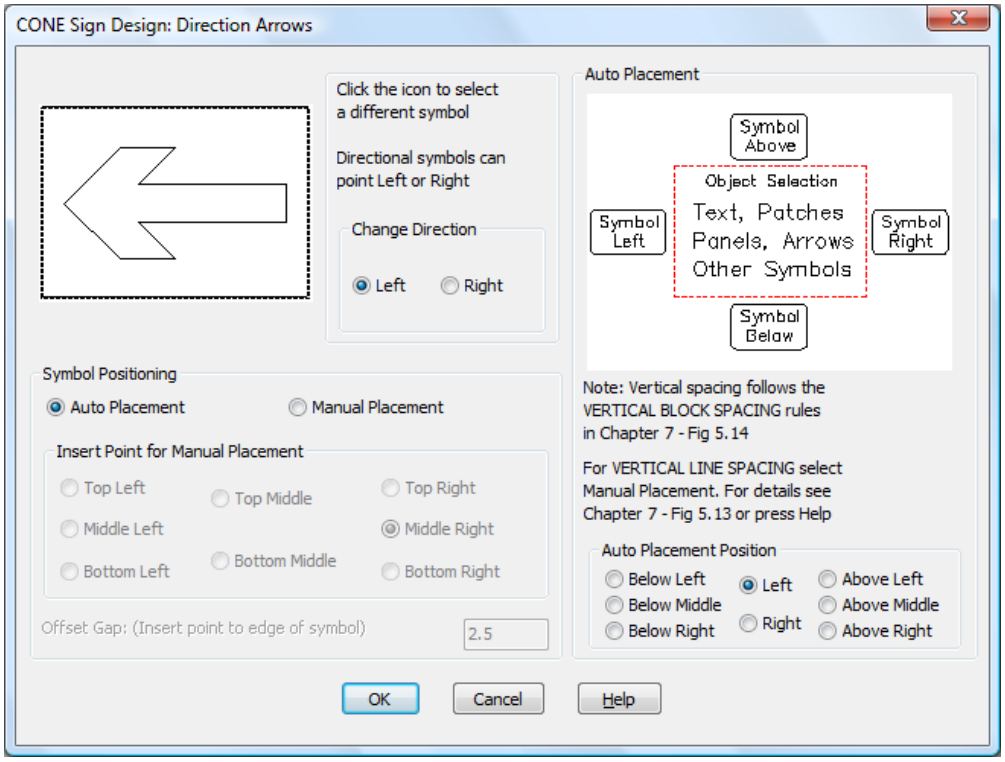
The current version of CONE 10 (August 2013) provides access to a range of arrow, symbol and sign types as shown above, future versions may include additional types.

The methods used for selection and placing on a drawing (with the exception of manual positioning of LANE LINES) are identical for each type.

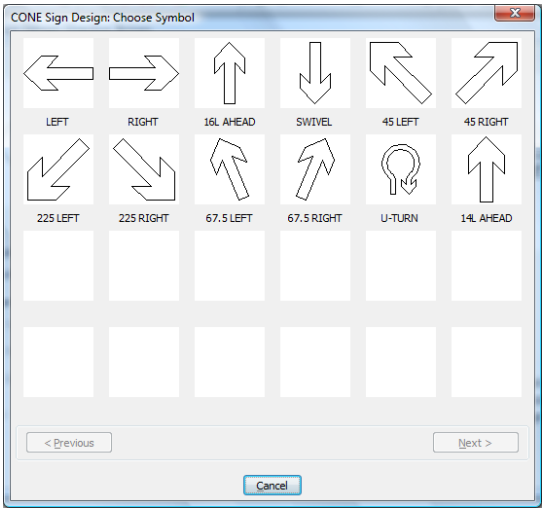
The following text describes the actions required and the options available for placing a DIRECTION ARROW on a drawing. Additional instructions for manually positioning LANES LINES are show separately at the end of this section.

Direction Arrows are selected by picking the DIRECTION ARROWS icon

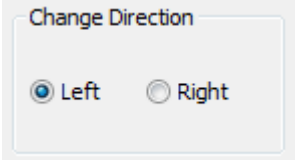
Direction Arrows:



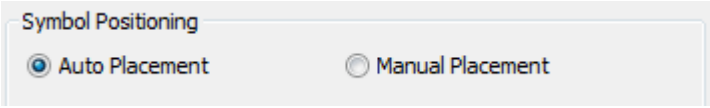
To change the current symbol click the top left icon and pick the desired symbol from the sub-dialog that will be presented



Symbols that have both Left hand and Right hand versions can be quickly swapped by using the **Change Direction** radio buttons



Symbol Positioning:



Symbols can be placed on a drawing manually (you pick the symbol insert point on the drawing) or symbols can be Auto placed (you select objects on your drawing)

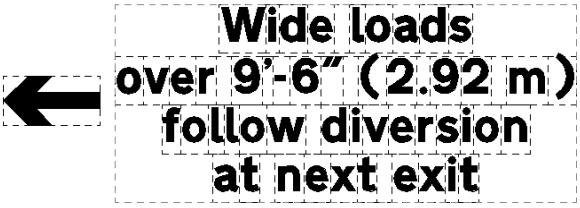
Auto Placement Position:

Select the desired position with reference to the object on the drawing that you will select from the list of radio buttons:

Example: To auto position an arrow to the left of a text legend, pick the **Left** radio button and then pick the **OK** button, the tool will respond thus:

Command: CSYMBOLS
Select object or objects to align symbol to:
Select entities

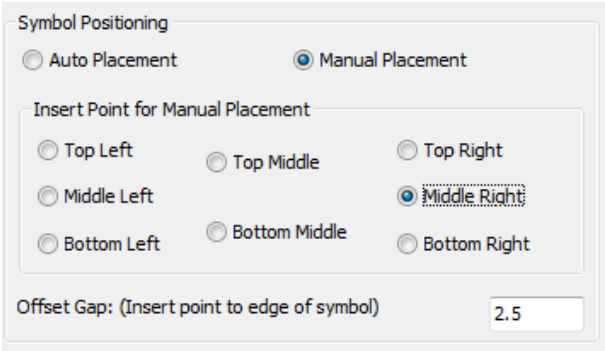
Select the text legend block and press the return key, the arrow will be positioned to the left with the correct horizontal gap and vertical position

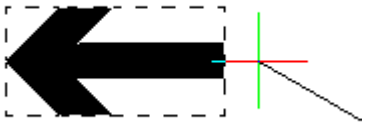


Manual Positioning:

To manually position a symbol pick: **Manual Placement** then pick an **Insert Point for Manual Placement** option then enter the desired **Offset Gap**

Example: Insert point offset 2.5 sw from the Middle Right of the symbol.

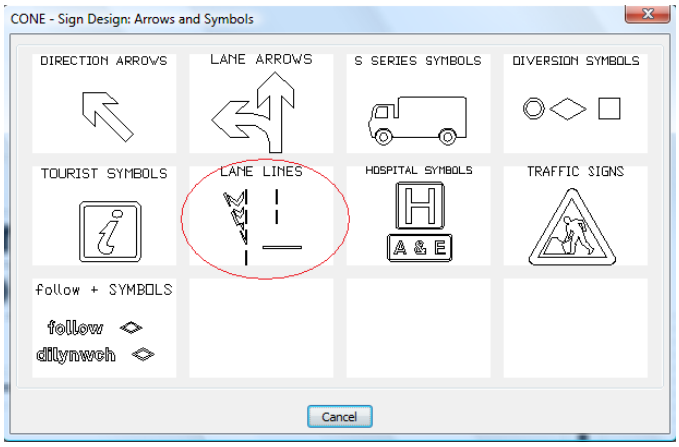




The cursor insert point is set to 2.5 sw distance from the middle right end of the arrow, use normal positioning methods (OSNAP etc) to place the symbol on the drawing

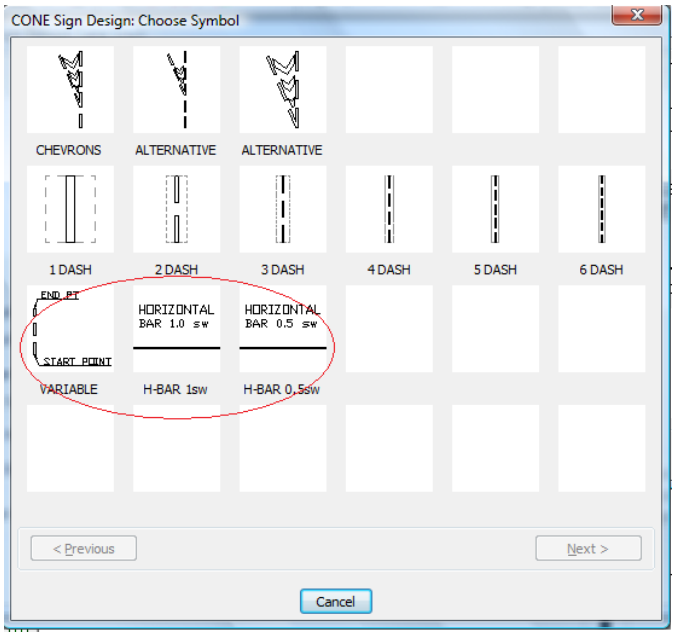
Manually positioning lane lines:

This variation only applies to three types of horizontal and vertical lines selected from the LANE LINES section of Arrows & Symbols, and when choosing the manual position method.

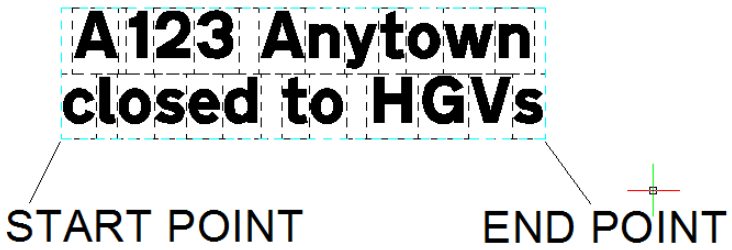


The length of the vertical of horizontal line is determined by picking two points on a drawing

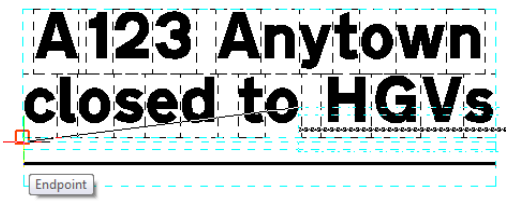
See example below:



You are prompted to pick the start point and the end point of the line



The bar is drawn and you then position it as required

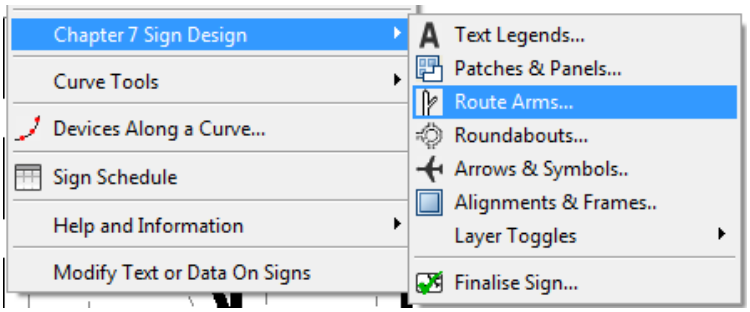


Route Arms

Creating route arm is a two or three step process

1. Add a base route arm
2. Add additional arm(s)
3. Stretch arms as required

From the CONE10UK pull down menu select *Chapter 7 Sign Design -> Route Arms*

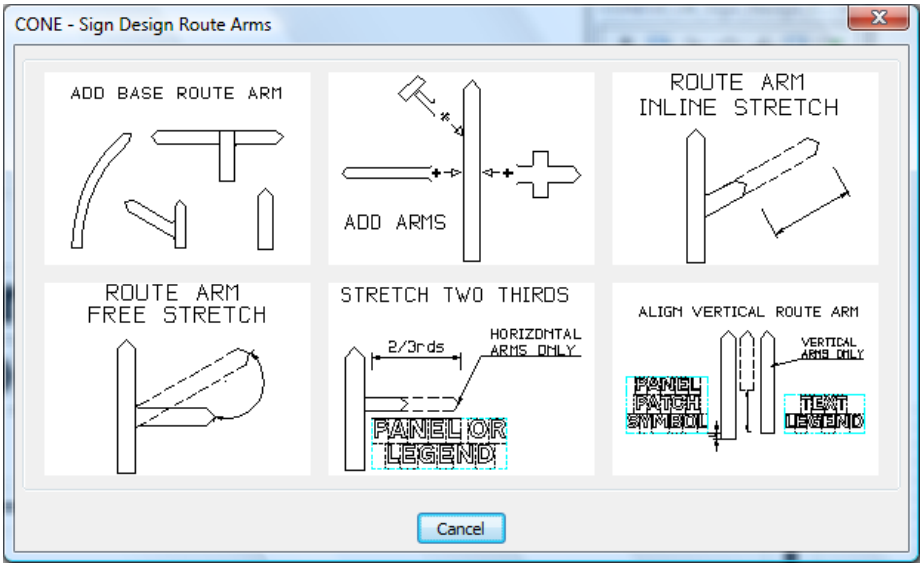


Or pick the **route arm** icon from the Cone Sign Design toolbar

The Route Arms dialog will be presented

Options:

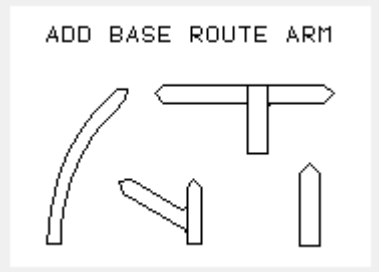
Add Base Route Arms
Add Route Arms
Route Arms Inline Stretch
Route Arms Free Stretch
Route Arms Stretch 2/3rds
Align Vertical Route Arm



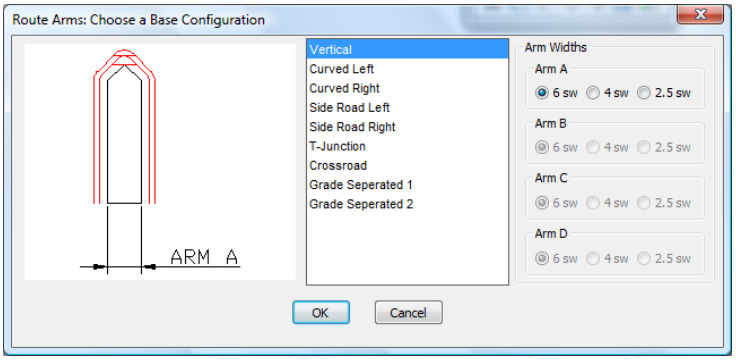
Add Base Route Arms:

To add a base route arm pick the ADD BASE ROUTE ARM icon

This action will load a dialog window



There are several base route arm configurations to choose from, select from the central list and a corresponding image will be displayed with labels that indicate the number of arms.
For example the Vertical base route arm has only one arm labeled ARM A, whereas the Crossroad base route arm has four arms labeled A, B C and D



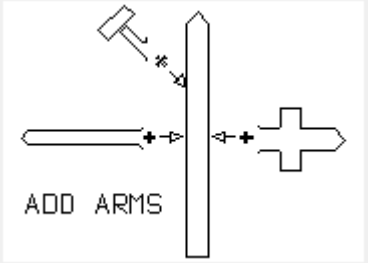
The Arm Width radio buttons enable you to choose the width of each arm of the chosen base configuration,
except in the case of Grade Separated 1 and 2, these arms have a fixed width of 5sw

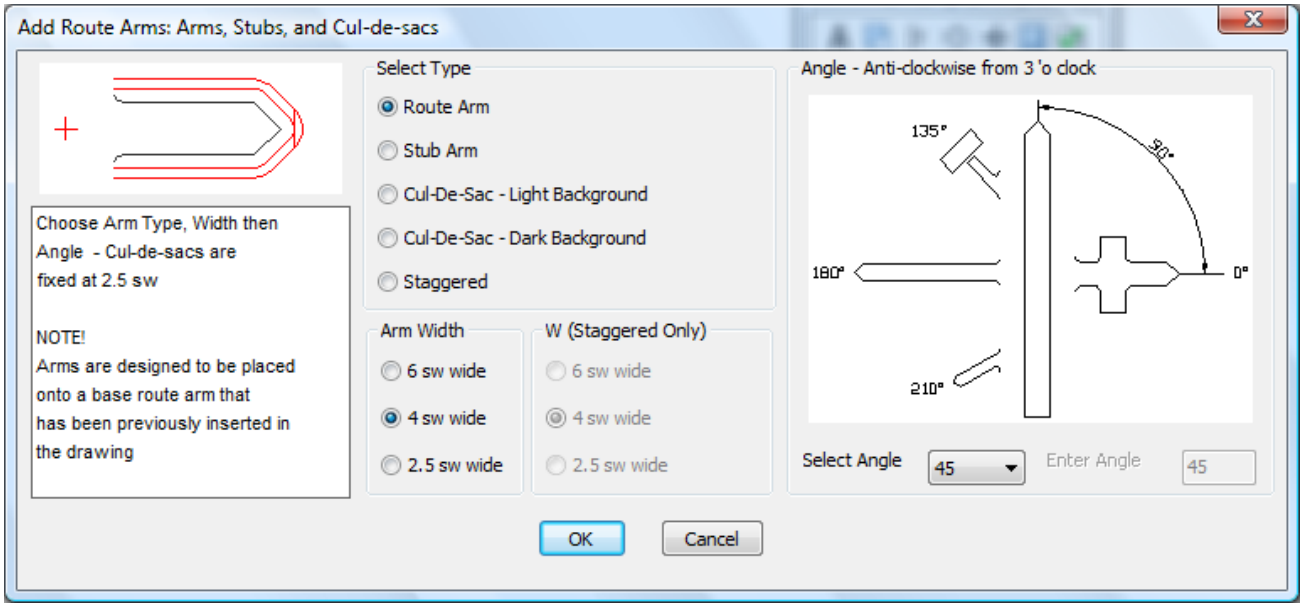
Select the **OK** button to position the arm on your drawing

The width of each route arm on map type signs is generally related to the status of the route indicated.
6 sw is used for primary routes and motorways, 4 sw for numbered non-primary routes and 2.5 sw for unnumbered local routes.
Where a bracketed route number is indicated along an unnumbered local route, the route arm width is 4 sw.

Add Arms:

To add additional arms to base route arm pick the ADD ARMS icon

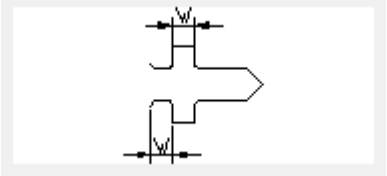




Select Type: There are five types of arm to choose from, Route Arm, Stub Arm, Cul-De-Sac for Light Backgrounds, Cul-De-Sac for Dark Backgrounds and Staggered, select the appropriate radio button, the preview image will change to suit

Arm Width: Choose from 2.5, 4 and 6sw except for Cul-De-Sac types which are fixed at 2.5sw

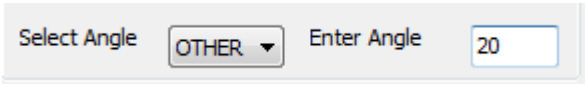
W (Staggered only): Staggered type has an additional dimension (W) option as shown

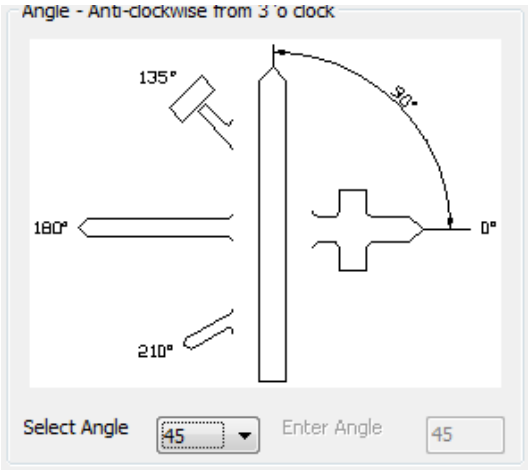


Arm Angle:

The angle of the arm can be selected from the **Select Angle** list.

Or if you require an angle that is not on the list, then select **OTHER** from the list and enter the desired angle in the **Enter Angle** edit box.

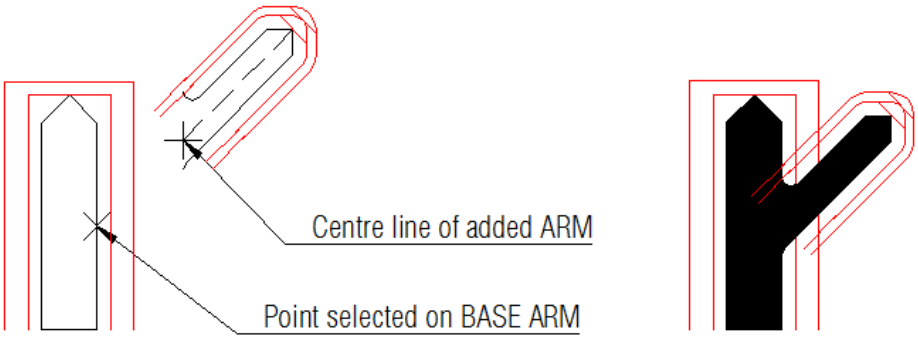




Select the OK button to select an existing base route arm, the tool will respond with:

Command: CRARMS
Select base route arm (Select the base route arm at the approximate position required)

The point at which you select the base route arm corresponds to the end point of the centre line of the arm being added as shown below:



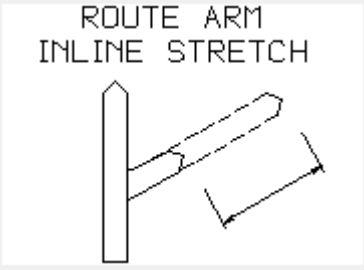
Note: Positioning and stretching of arms is performed visually, however either arm can be subsequently moved independently of each other using standard CAD move commands (setting ORTHO on is useful) and if real pinpoint accuracy is required then you can add construction lines as an aid

Tip: Turning layer CONEFILLED off and layer CONESIMPLE on will show the arms in outline mode as shown above or user the Cone menu selection: Cone Sign Design: > Layer Toggles: >Colour ON/OFF

IMORTANT POINTS

You should not add additional arms to Grade Separated Base Arms

Route Arm Inline Stretch:



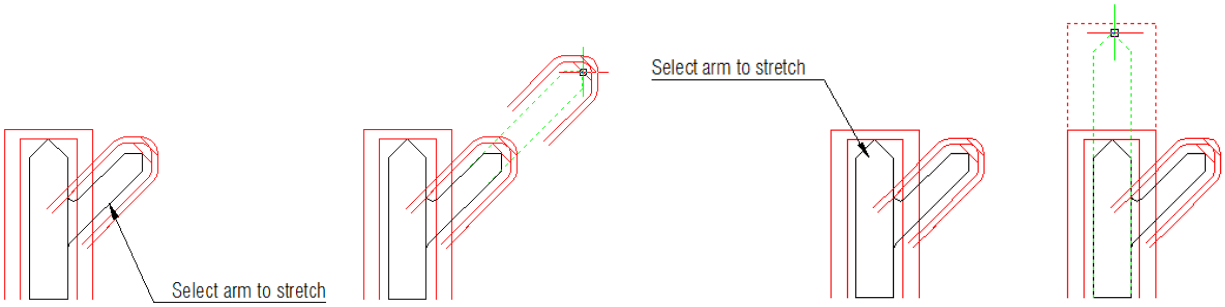
To stretch a route arm along the angle of the route arm pick the ROUTE ARM INLINE STRETCH icon

The tool will respond with

Command: CRARMS
Select route arm to stretch

Select the arm that you want to stretch and move the cursor to the desired position, the arm plus no-go areas will dynamically update as you move the cursor, the direction will always follow the original arm angle, (except for curved base route arms which you can freely stretch)
Pick a point to finish

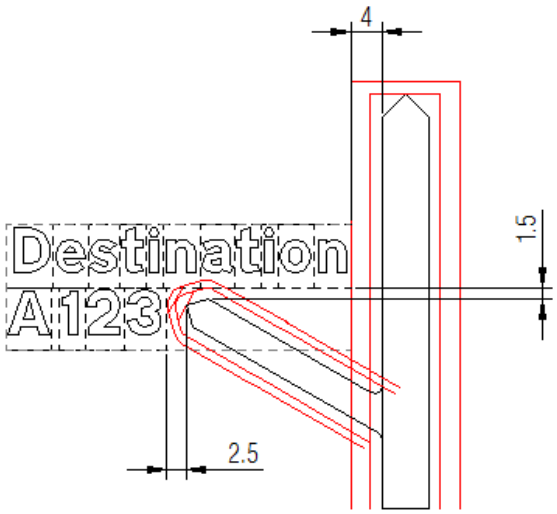
Note: You cannot stretch an arm to a distance of less than 12.5 sw
and you cannot stretch Stubs and Cul-de-sac's



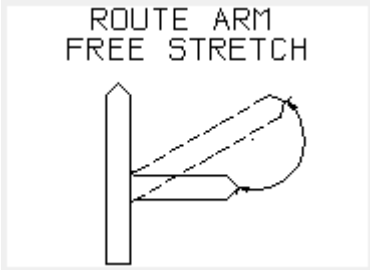
The arm tip no-go zones are marked in red; they have offsets from the outer outline of the route arms as follows:
Inclined route arms: 1.5 and 2.5 sw
Vertical route arms: 1.5 and 4.0 sw

These offsets reflect the min spacing rules between route arms and other sign objects in:
Chapter 7 – The Design of Traffic Signs (See pages 41 to 49)

An example is shown below (but refer to Chapter 7 for complete guidance)



Route Free Stretch:



To perform a free stretch of a route arm
pick the ROUTE ARM FREE STRETCH icon

The tool will respond with:

Command: CRARMS
Select route arm to stretch

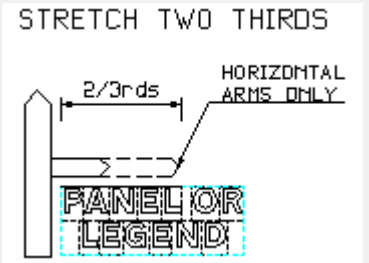
Select the arm that you want to stretch and move the cursor to the desired position, the arm plus no-go areas will dynamically update as you move the cursor, you may stretch in any direction thereby changing the angle arm angle, pick a point to finish

Note:
You cannot stretch an arm to a distance of less than 12.5 sw

You cannot FREE stretch a fixed vertical or horizontal base route arm
(use Inline Stretch to adjust those types of arms)

You cannot free stretch Stubs, Cul-de-sac's and staggered arms

Stretch Two Thirds:

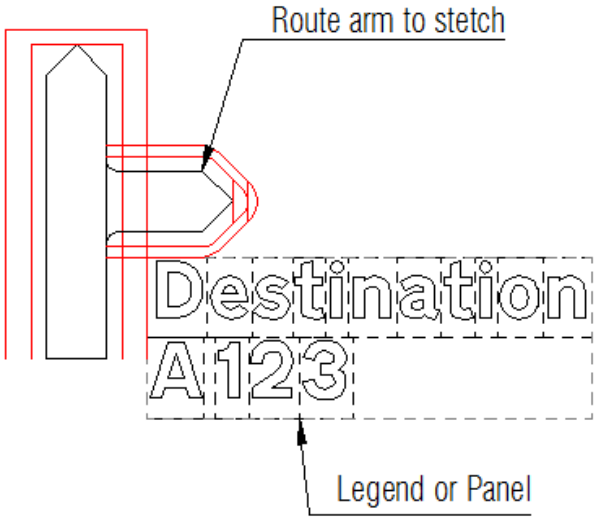


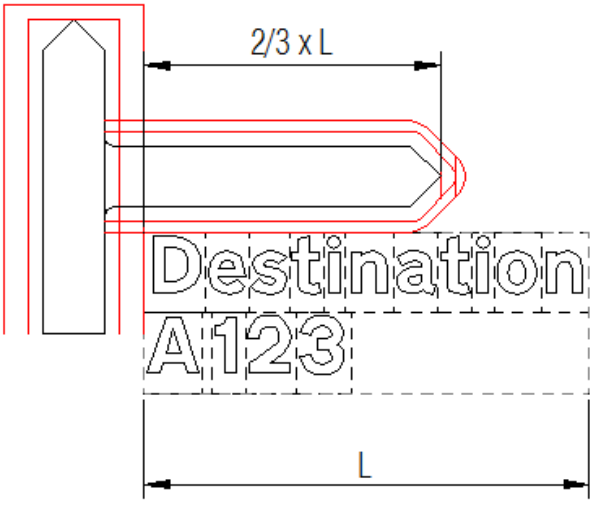
To stretch a HORIZONTAL route arm to a point
two thirds along the length of a text legend or panel
pick the STRETCH TWO THIRDS icon

The tool will respond with

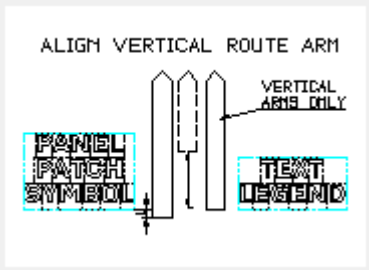
Command: CRARMS
Select horizontal route arm to stretch two thirds (select a horizontal route arm)

Select panel or legend (select a panel or text legend)





Align Vertical Route Arm:

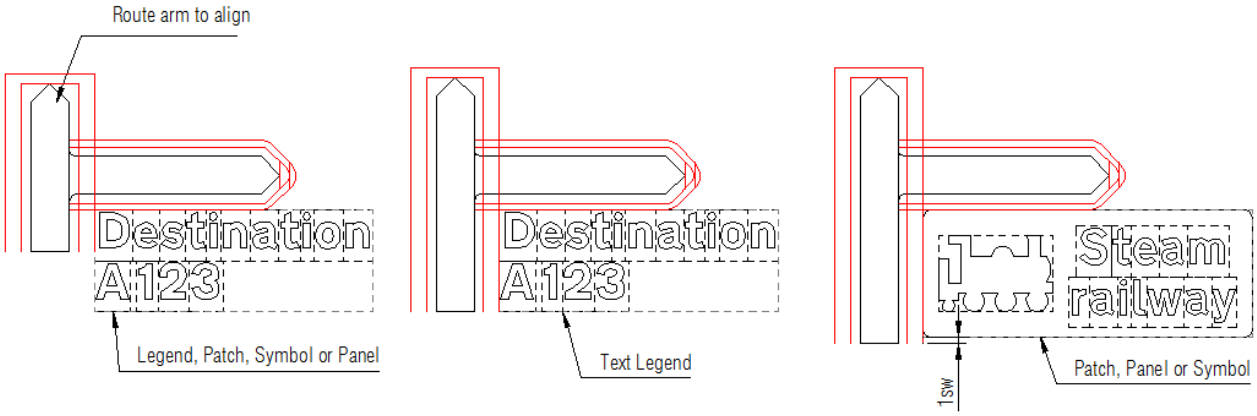


To align the base of a vertical route arm with the base of a text legend, panel, patch or symbol pick the ALIGN VERTICAL ROUTE ARM icon

The tool will respond with

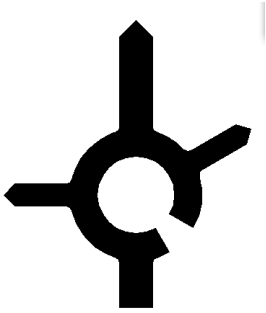
Command: CRARMS
Select vertical route arm to align (select a vertical route arm)

Select panel patch symbol or legend to align to (select a panel, patch, legend or symbol)



Note: Text legends and route arms will base align exactly, for Patches, Panels and Symbols the base of the route arm will extend 1sw below the base of the patch, panel or symbol.

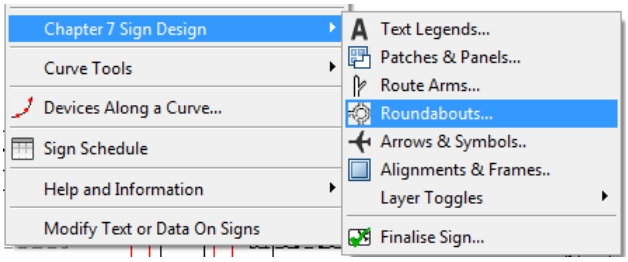
Roundabouts



Creating roundabout is a two or three step process

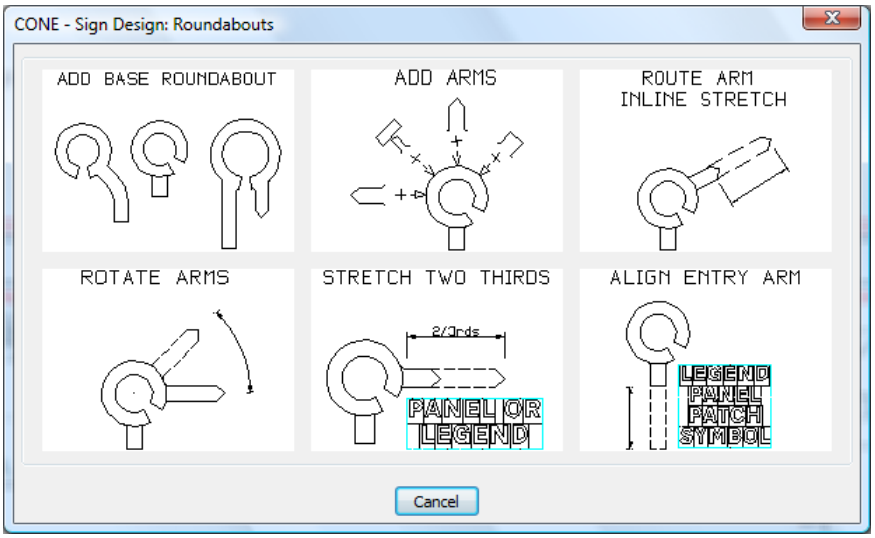
1. Add a base roundabout
2. Add additional exit arm(s) , stubs or cul-de-sacs
3. Stretch and rotate arms as required

From the CONE10UK pull down menu select *Chapter 7 Sign Design -> Roundabouts*



Or pick the **roundabout** icon from the Cone Sign Design toolbar

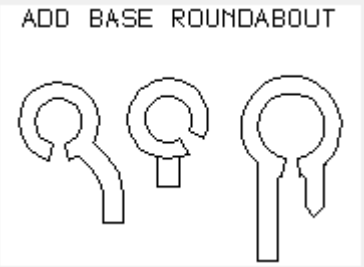
The roundabouts dialog will be presented



Options:

Add Base Roundabout
Add Arms
Route Arms Inline Stretch
Rotate Arms
Route Arms Stretch 2/3rds
Align Entry Arm

Add Base Roundabout:

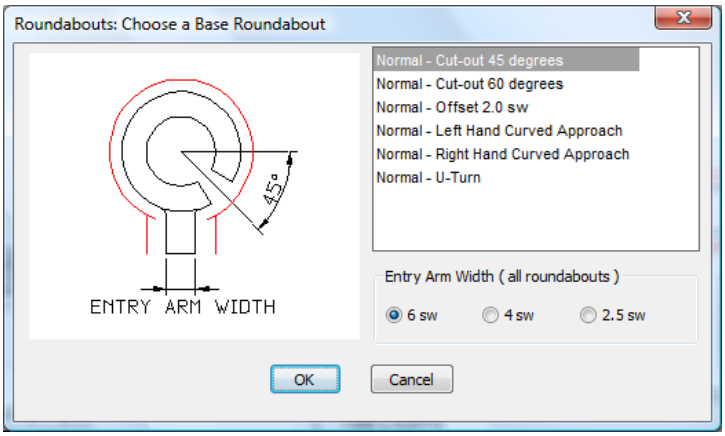


To add a base route arm pick the ADD BASE ROUNDABOUT icon

This will load a dialog window

There are several base roundabout configurations to choose from, select from the right hand list and a corresponding image will be displayed.

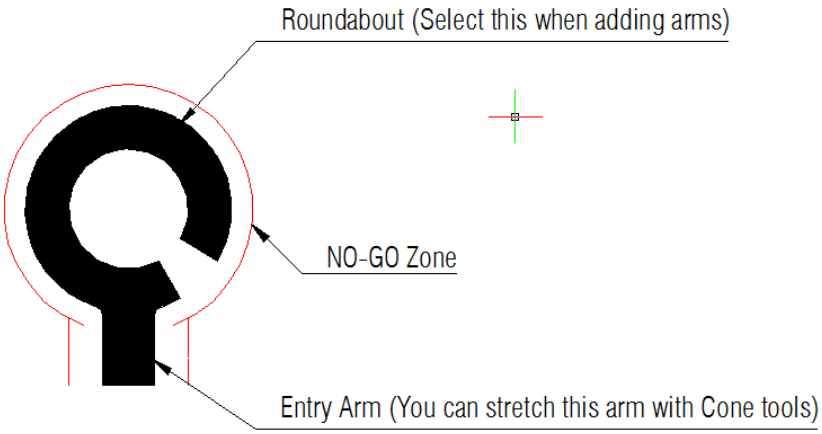
The **Entry Arm Width** radio buttons enables you to choose the width of the associated entry arm



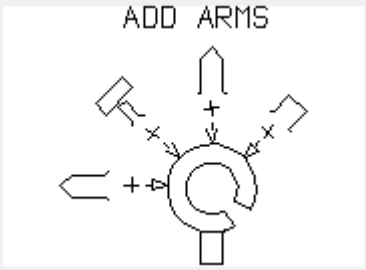
The width of the entry arm on map type signs is generally related to the status of the route indicated. 6 sw is used for primary routes and motorways, 4 sw for numbered non-primary routes and 2.5 sw for unnumbered local routes. Where a bracketed route number is indicated along an unnumbered local route, the route arm width is 4 sw.

Select the **OK** button and position the roundabout on your drawing

A base roundabout contains two separate parts, the Entry Arm (which you can stretch using the Cone tools that are described in the next few pages) and the central roundabout portion, something to bear in mind if you need to move or copy the base roundabout within your drawing.

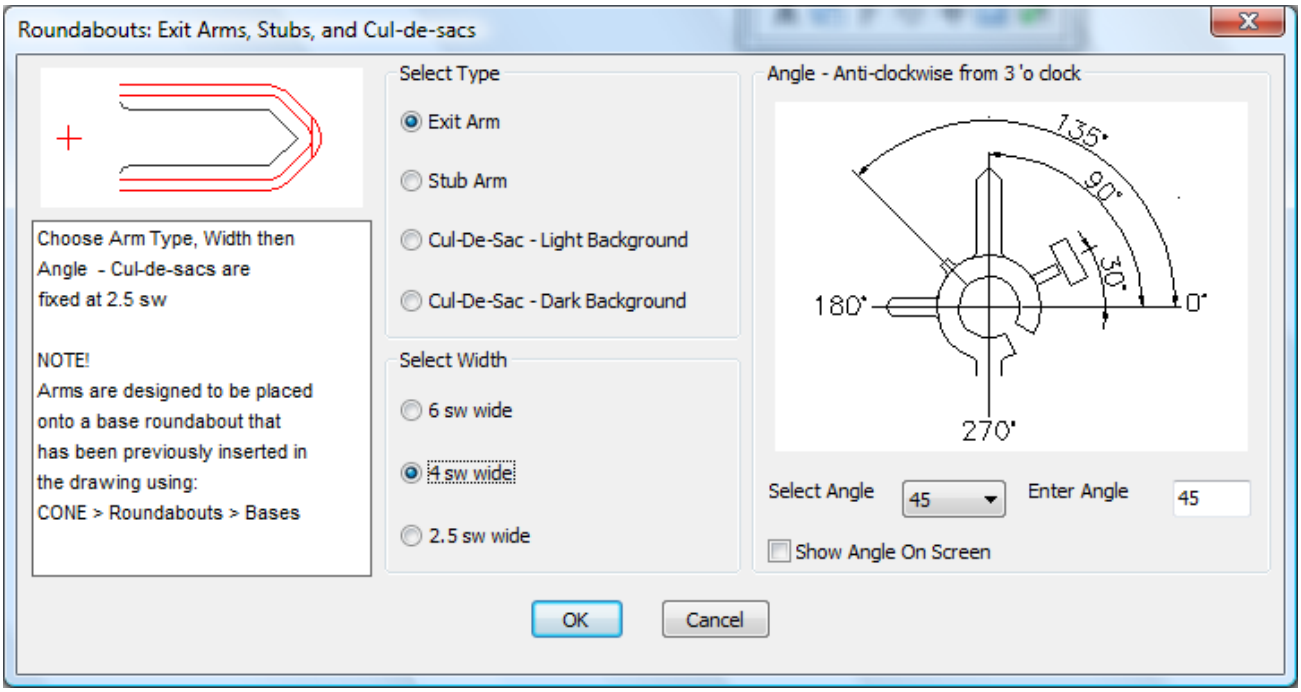


Add Arms:



To add additional arms to base roundabout pick the ADD ARMS icon

The dialog window shown below will be displayed

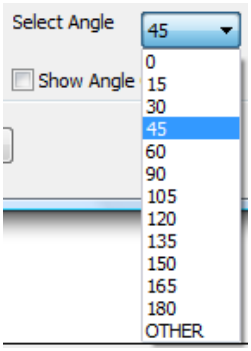


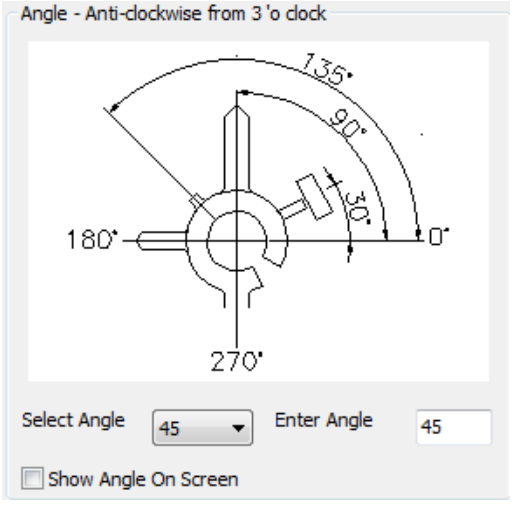
Select Type: There are four types of arm to choose from, Exit Arm, Stub Arm, Cul-De-Sac for Light Backgrounds and Cul-De-Sac for Dark Backgrounds, select the appropriate radio button, the preview image will change to suit

Arm Width: Choose from 2.5, 4 and 6sw except for Cul-De-Sac types which are fixed at 2.5sw

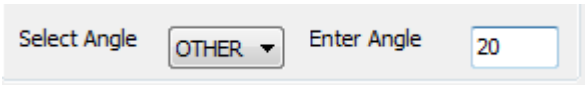
Arm Angle:

The angle of the arm can be selected from the **Select Angle** list.





Or if you require an angle that is not on the list, then select **OTHER** from the list and enter the desired angle in the **Enter Angle** edit box.



You can also "show" the angle by setting the **Show Angle On Screen** checkbox to on

When ready select the **OK** button to select an existing base roundabout, the tool will respond with:

Command: CROUNDABOUTS
Select a base roundabout (Select a base roundabout)

If you have selected **Show Angle On Screen** then you will be able to rotate the arm around the centre of the roundabout and pick a point to set the angle, otherwise the arm will be positioned at the actual angle chosen.

Route Arm Inline Stretch:

To stretch a roundabout route arm along the angle of the route arm, pick the ROUTE ARM INLINE STRETCH icon

The tool will respond with

Command: CROUNDABOUTS
Select route arm to stretch

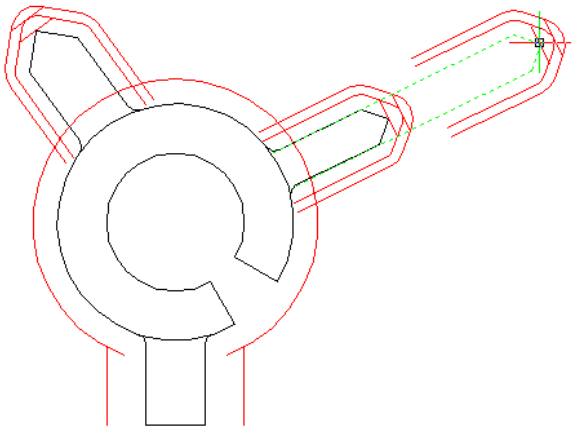
Select the arm that you want to stretch and move the cursor to the desired position, the arm plus no-go areas will dynamically update as you move the cursor, the direction will always follow the original arm angle. Pick a point to finish

Note: You cannot stretch an arm to a distance of less than 12.5 sw and you cannot stretch Stubs and Cul-de-sac's

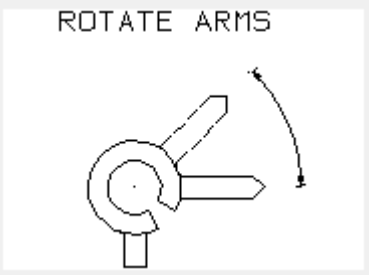
The arm tip no-go zones are marked in red; they have offsets from the outer outline of the route arms as follows:

Inclined route arms: 1.5 and 2.5 sw
Vertical route arms: 1.5 and 4.0 sw

These offsets reflect the min spacing rules between route arms and other sign objects in: Chapter 7 – The Design of Traffic Signs (See pages 41 to 49)



Rotate Arms:



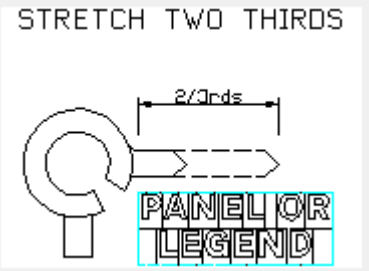
To free rotate of a roundabout route arm
pick the ROTATE ARMS icon

The tool will respond with:

Command: CROUNDABOUTS
Select arm to rotate

Select the arm that you want to rotate and either move the cursor to show the new angle and pick a point to finish or enter a new angle at the command line

Stretch Two Thirds:

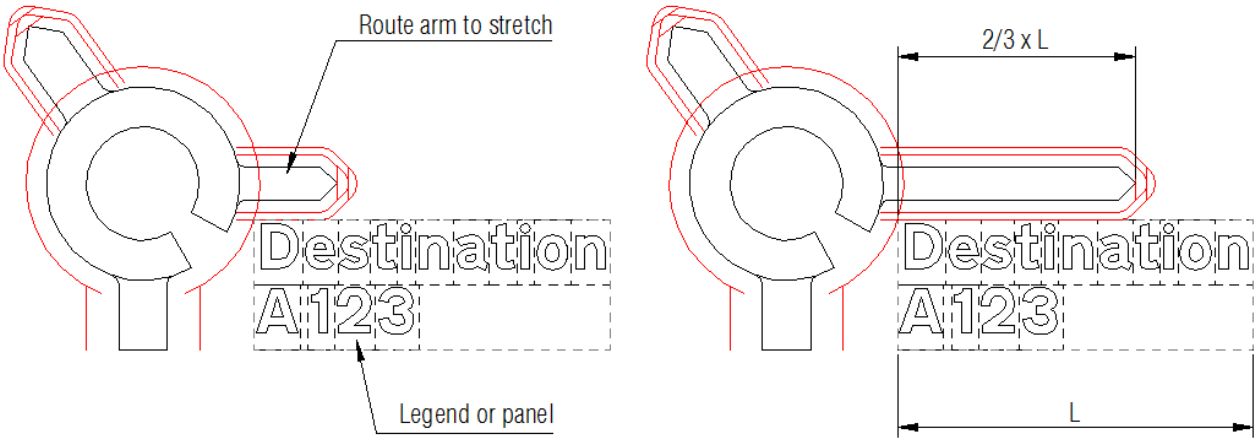


To stretch a HORIZONTAL route route arm to a point
two thirds along the length of a text legend or panel
pick the STRETCH TWO THIRDS icon

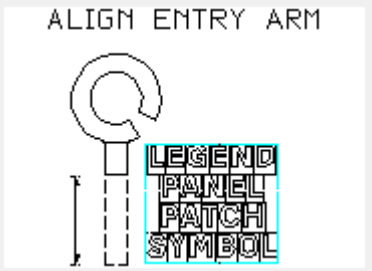
The tool will respond with

Command: CROUNDABOUTS
Select horizontal route arm to stretch two thirds (select a horizontal route arm)

Select panel or legend (select a panel or text legend)



Align Entry Arm:

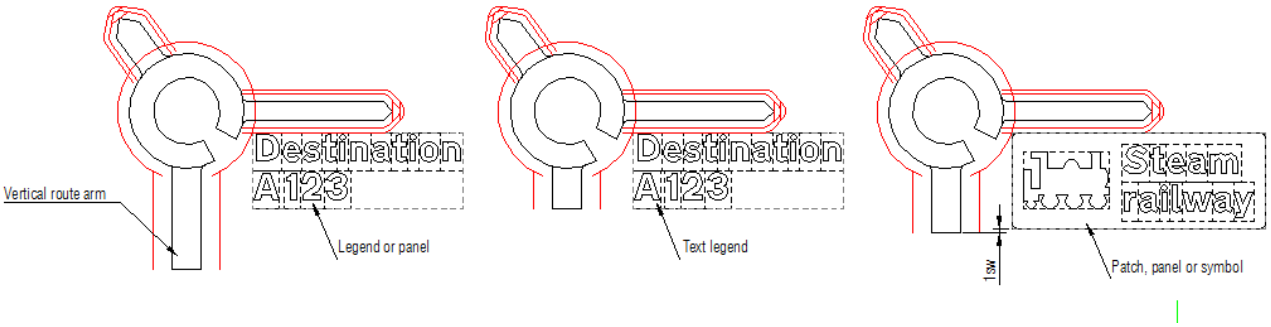


To align the base of roundabout entry arm with the base of a text legend, panel, patch or symbol pick the ALIGN ENTRY ARM icon

The tool will respond with

Command: CROUNDABOUTS
Select vertical route arm to align (select a vertical route arm)

Select panel patch symbol or legend to align to (select a panel, patch, legend or symbol)

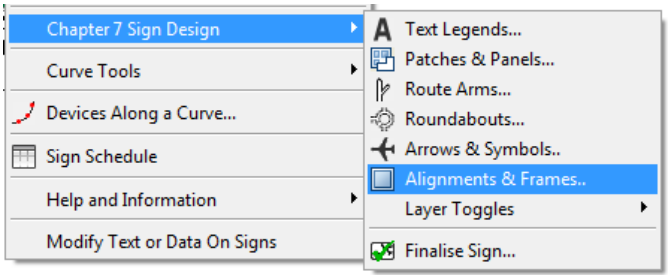


Note: Text legends and route arms will base align exactly, for Patches, Panels and Symbols the base of the route arm will extend 1sw below the base of the patch, panel or symbol.

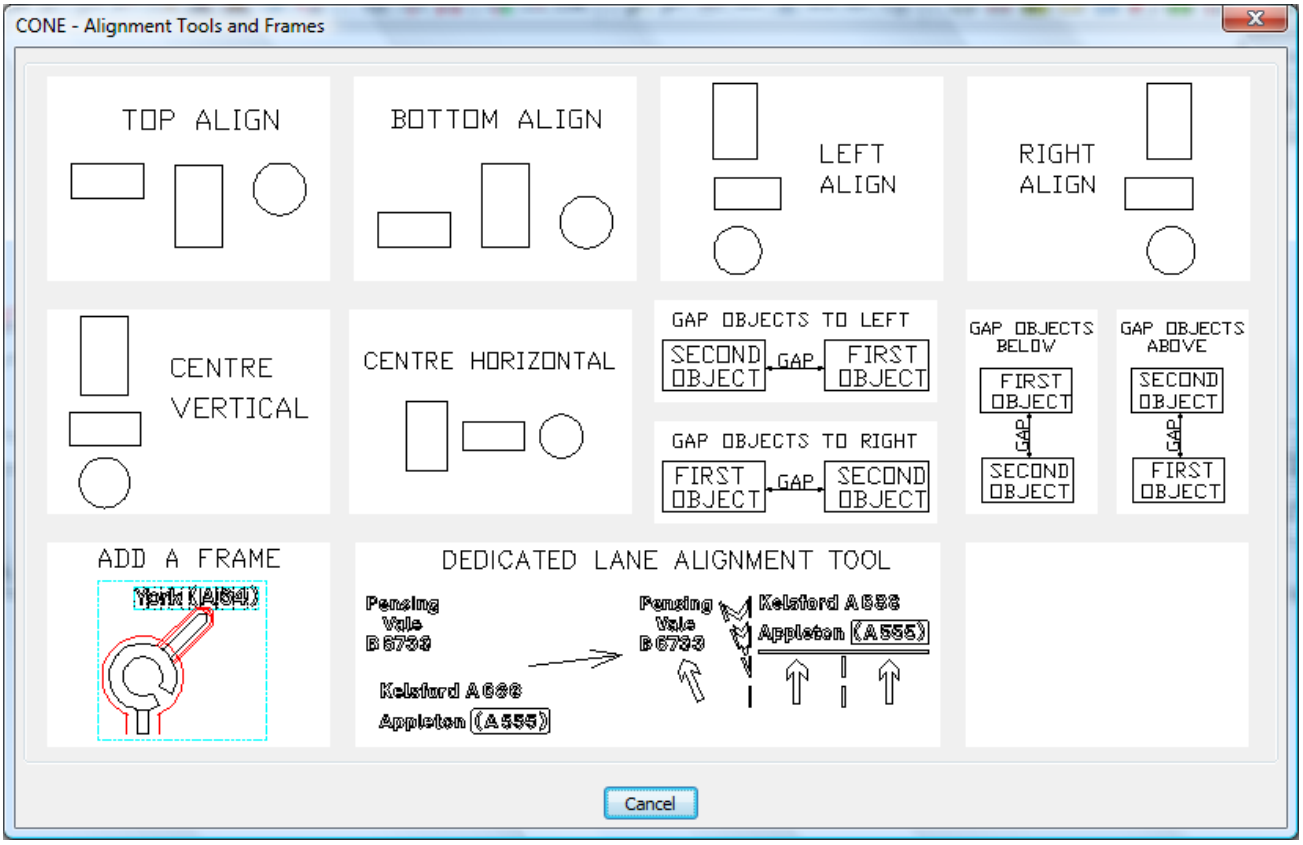
Alignment & Frames

The alignments tools and frame facility contains several tools to assist in the accurate alignment of sign design objects

From the CONE10UK pull down menu select
Chapter 7 Sign Design -> Alignments & Frames



Or pick the icon from the
Cone Sign Design toolbar



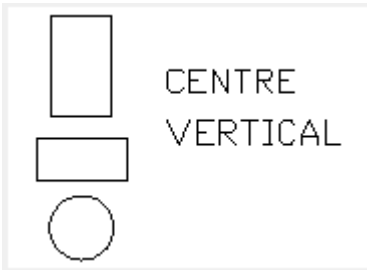
There are six alignment tools: (Top, Bottom, Left, Right, Centre Vertical and Centre Horizontal)

There are four tools for "gapping" objects (Left, Right, Above and Below)

The Add a Frame tool contains several tools for adding frames to objects

The Dedicated Lane Alignment Tool is a special tool for adding arrows, vertical and horizontal bars to existing text legends

Alignment Tools

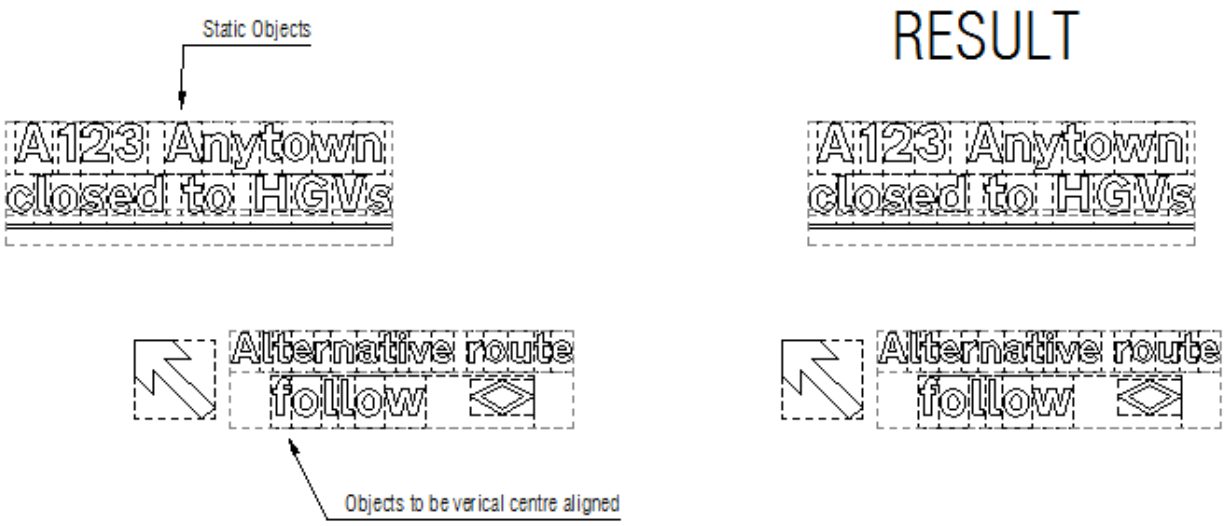


Aligns two objects or two sets of objects

Select the icon that matches your desired alignment

In the example shown below CENTRE VERTICAL has been chosen

Example to VERTICAL CENTRE ALIGN these two set of objects shown below select the CENTRE VERTICAL icon:



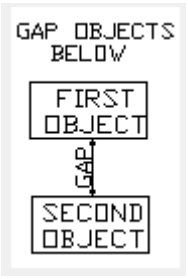
The tool responds thus:

Command: CATOOLS
Vertical aligned: Select the static object[s]
Select entities: (Select the objects that make up the static set using standard objects selection, press enter when done selecting)

Now select other object[s] to be Vertical aligned to the static object[s]:
Select entities: (Select the objects to be aligned using standard object selection methods, press enter when done selecting)

The second set will be moved to line up with the static objects

Gapping Tools

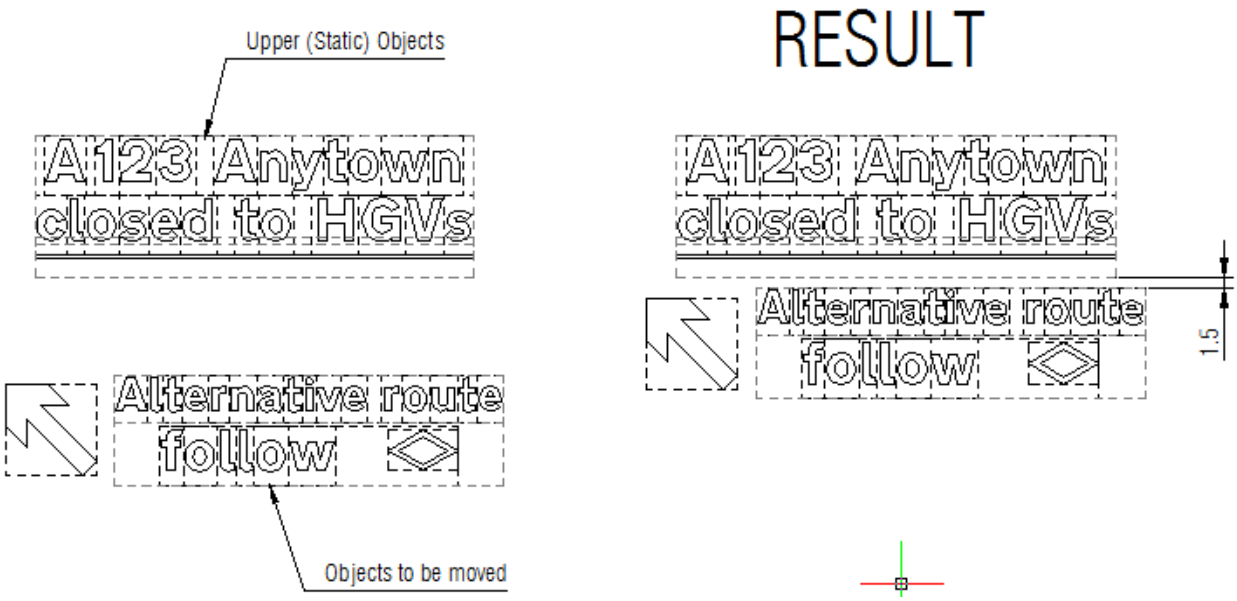


Sets the gap between two objects or two sets of objects

Select the icon that matches your desired alignment

In the example shown below GAP OBJECTS BELOW has been chosen

Example to set the gap between these two set of objects show below to 1.5sw select the GAP OBJECTS BELOW icon:



The tool responds thus:

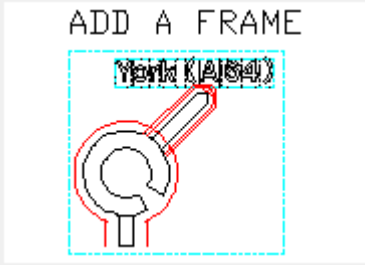
Command: CATOOLS
Select the first [Upper] objects
Select entities: (Select the objects that make up the static set using standard objects selection, press enter when done selecting)

Now select other objects to be to be below the first objects:
Select entities: (Select the objects to be below using standard object selection methods, press enter when done selecting)

Enter the Gap between the objects: (enter a distance)

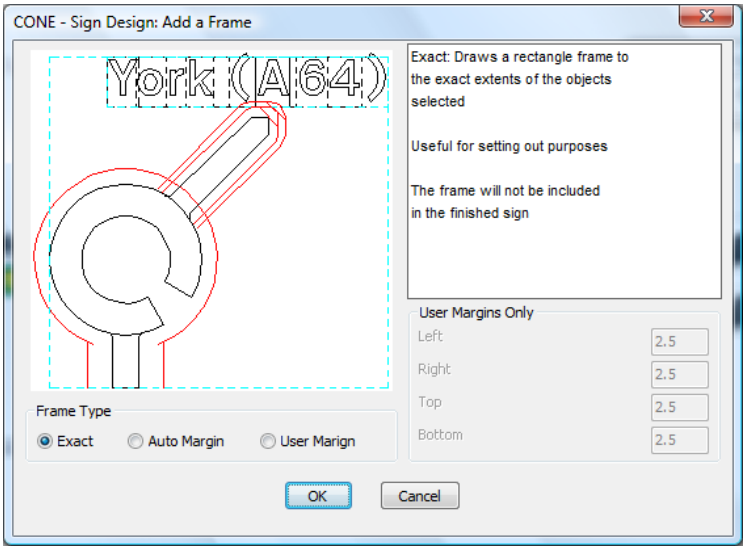
The second set will be moved up so there is a gap that you have specified between the bottom of the static objects and the top of the objects to be moved

Add a Frame



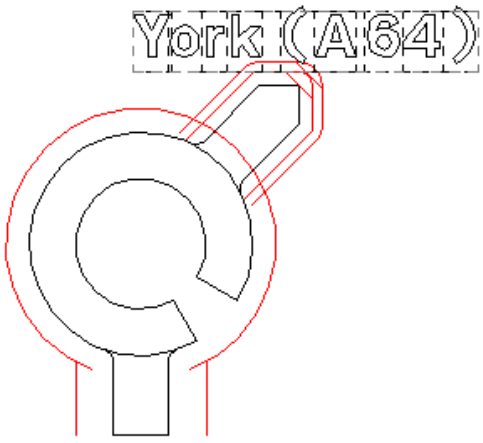
The Add a Frame tools add various frames to sign objects, the frames are not included in the finalised sign

Selecting the ADD A FRAME icon loads the dialog shown below:

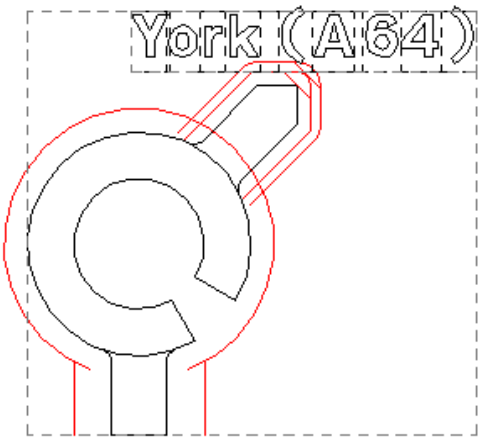


Exact:
Sometimes it's useful to add an exact frame around objects to assist in manual alignment, for example if you need to snap to the bottom left extents of the objects below, without the frame you would need to construct your own guide lines in order to reference the outermost corners.

After a frame has been added, objects snaps can be set to the corners of the frame, note that the tool ignores any NO-GO zones and works to the extents of any legend tiles



BEFORE EXACT FRAME ADDED

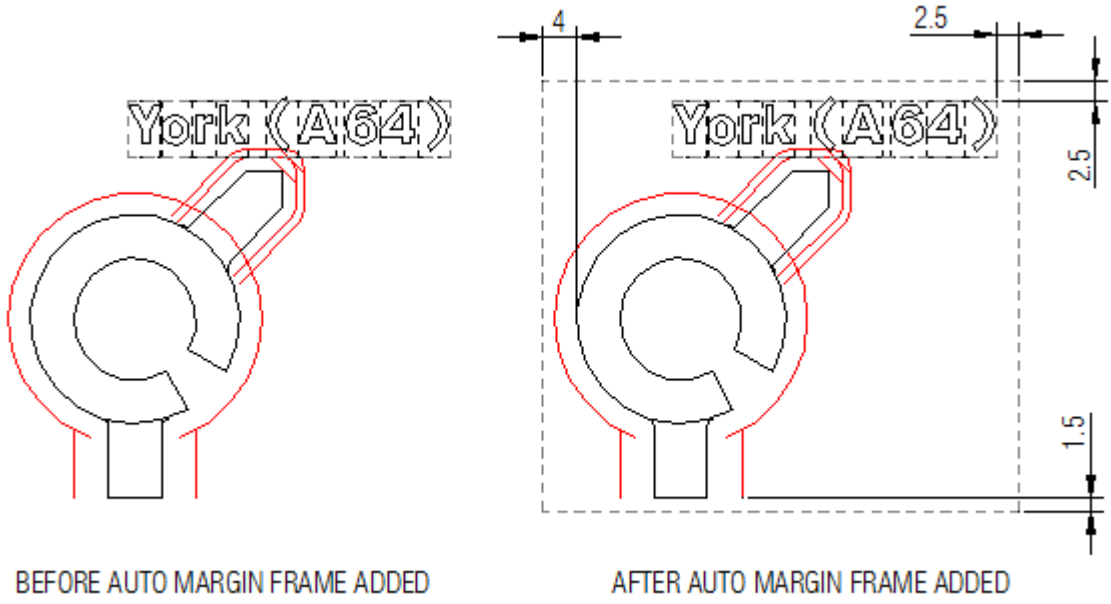


AFTER EXACT FRAME ADDED

Auto Margin:

Auto Margin mimics the inner border of a finished sign

See example below:



User Margins:

Cone automatically calculates the correct inner border margins when finalising the sign; however there are some instances when this will not meet the requirements.

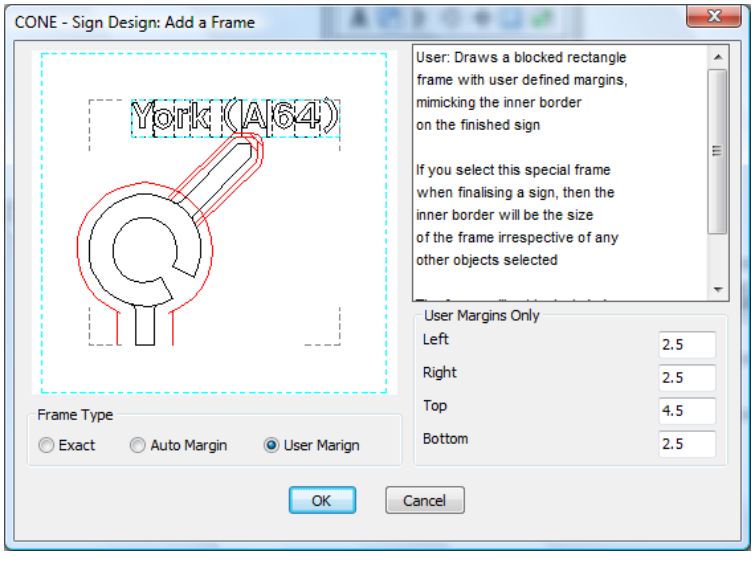
Example: (see diagram below) When an overhead sign is mounted without a grey backing board then the top margin has to be increased from 2.5sw to 4.5sw. This is accomplished by adding a user margin of 4.5 for the top and the normal 2.5 for the other three margins.

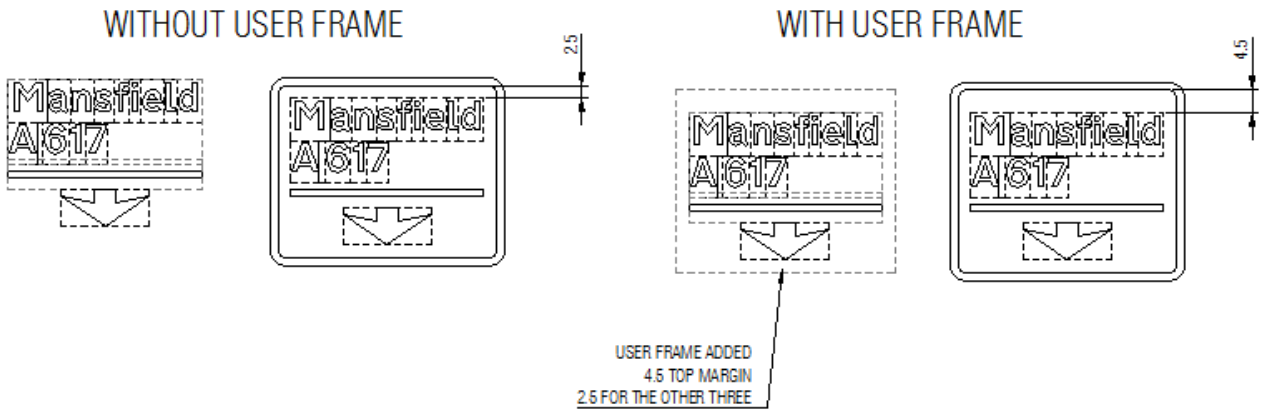
Input required user margins and select the OK button

You will then be prompted to select entities, use normal CAD methods for selection and press enter when finished selecting, the frame will be added to your sign objects

At sign finalisation time the finalisation tool detects the user frame and sets the inner border to be the same size of the User frame and the 4.5 top margin is achieved

Note: The User frame is not included in the finished sign

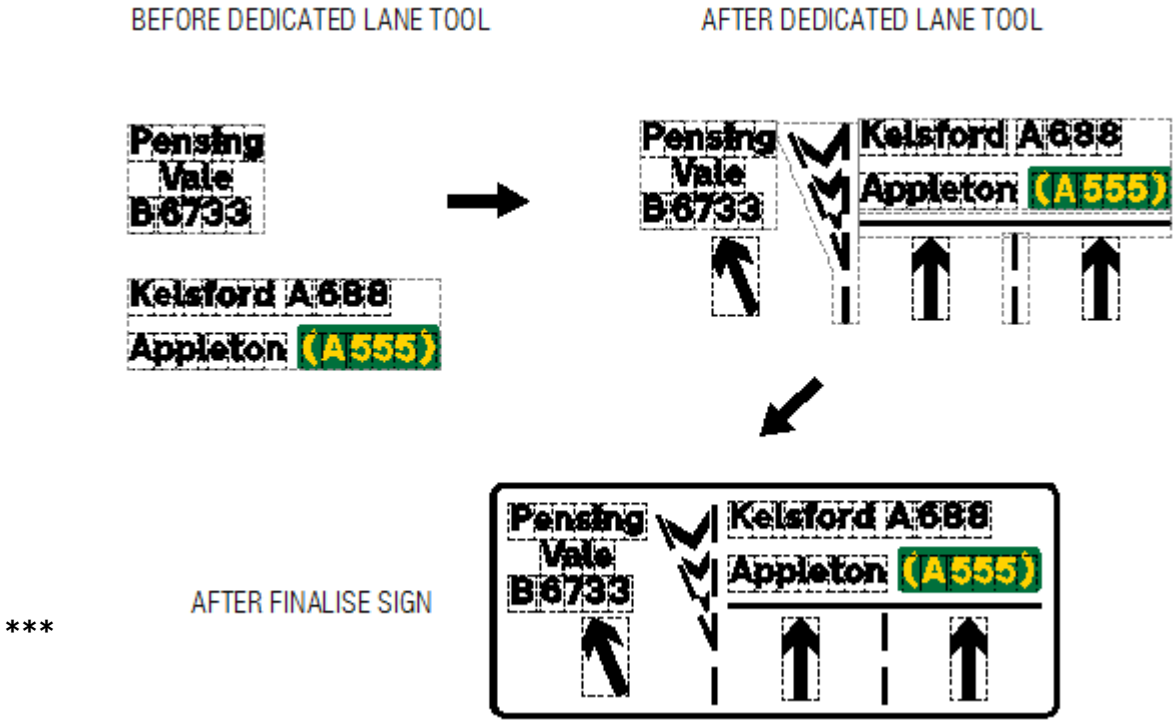




Dedicated Lane Alignment Tool:

The dedicated lane alignment tool automates most of the alignment and spacing tasks when creating dedicated lane signs

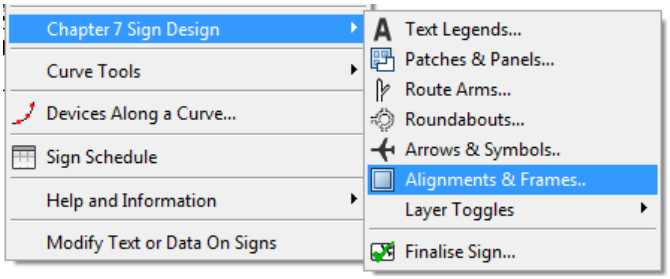
All the user needs to create are the objects (legends, panels, patches and symbols) for each lane or set of lanes, the dedicated lane tool adds the lane arrows, horizontal and vertical bars and takes care of the spacing and alignments.



***

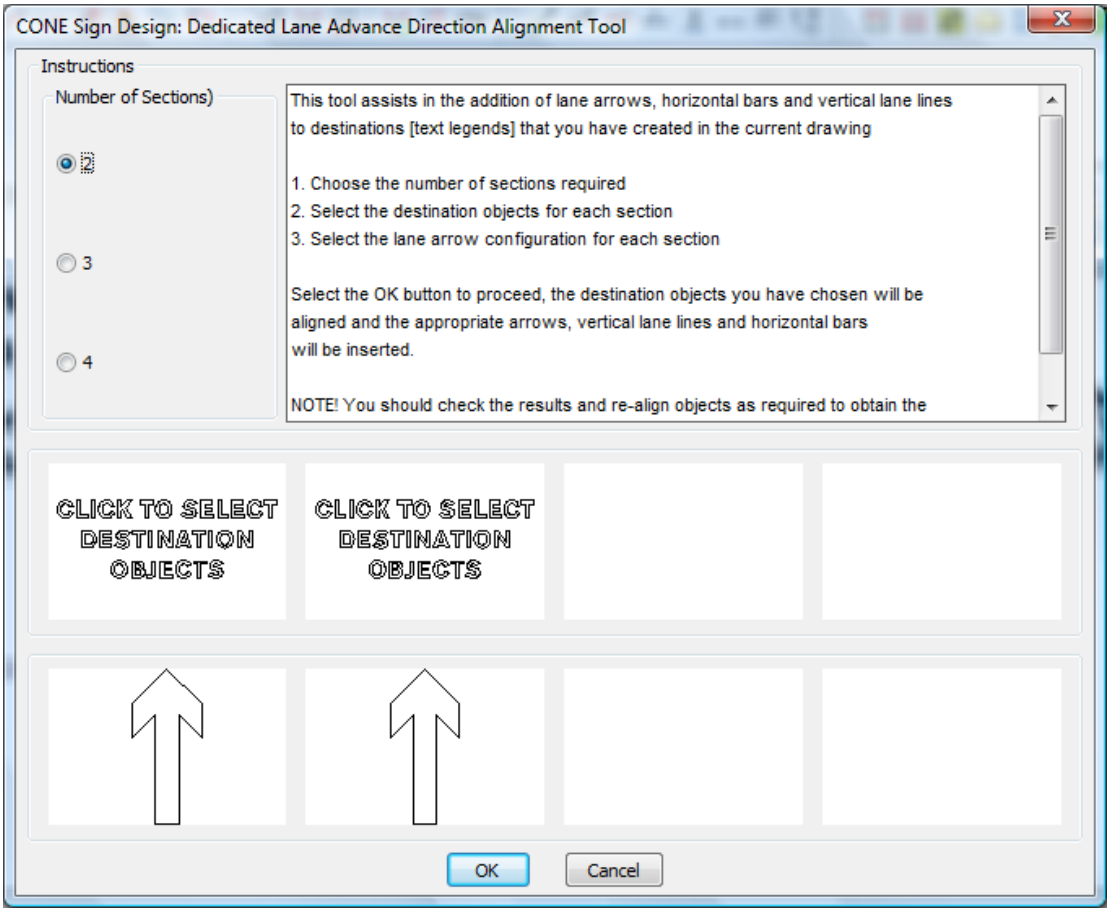
*****Before using the tool create the sign objects for each lane or set of lanes *****

From the CONE10UK pull down menu select *Chapter 7 Sign Design -> Alignments & Frames*



Or pick the icon from the Cone Sign Design toolbar

Then pick the DEDICATED LANE ALIGNMENT TOOL ICON to load the tool dialog



First select the number of sections required (a section can contain between one and four lanes)

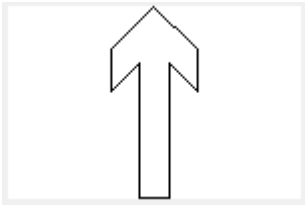
Then for each section select the destination objects, the dialog will temporarily disappear and you will be prompted to select objects for each section thus:

Command: CATOOLS
Select Destination objects to include in Section 1
Select Entities:

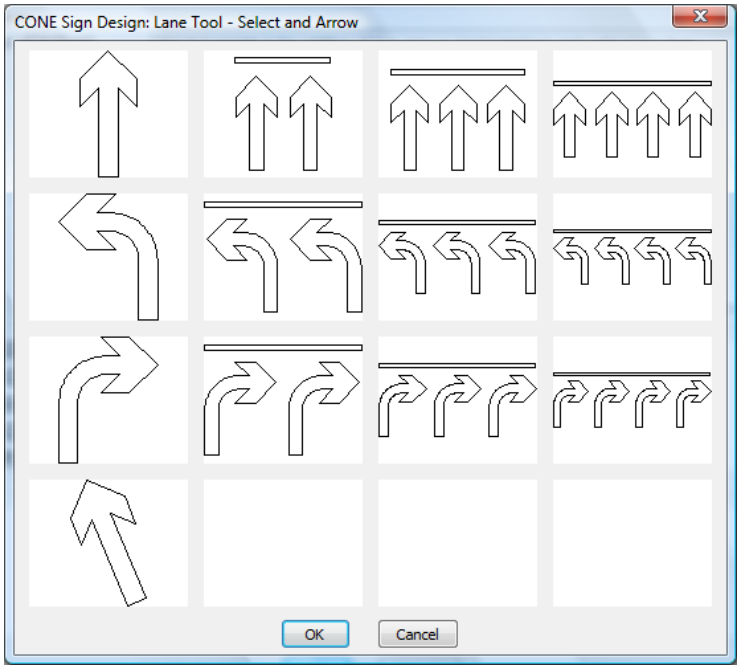
Use normal CAD methods for selection and press enter when finished selecting, the dialog will re-load and the section icon will have changed to confirm that a selection has been made. You can reselect objects at any time.

Next choose the lane arrow requirements for each section; click the arrow icon below each section, a sub dialog will be loaded

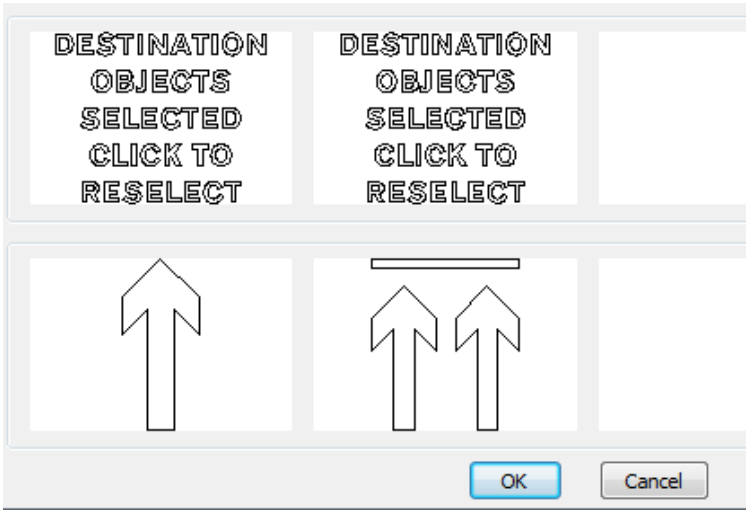
Click the icon that matches the lane arrow requirements for each section



Repeat for each section



When all section objects and arrows are selected pick the OK button to finish



The original sign objects will be move and the arrows and lines will be added, you should double check that the result is to your requirements and make adjustments as required before finalising the sign

Finalise Sign

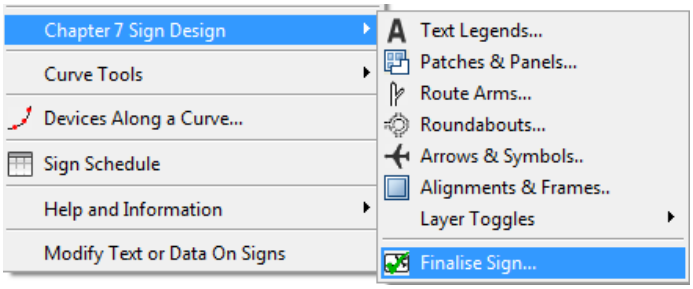
The Finalise Sign Tool adds borders and backgrounds to your sign design objects (legends, panels, symbols, patches, arrows etc)

The tool supports the creation of Single, Double, 3 Stack, 4 Stack and Left and Right Chevron plates

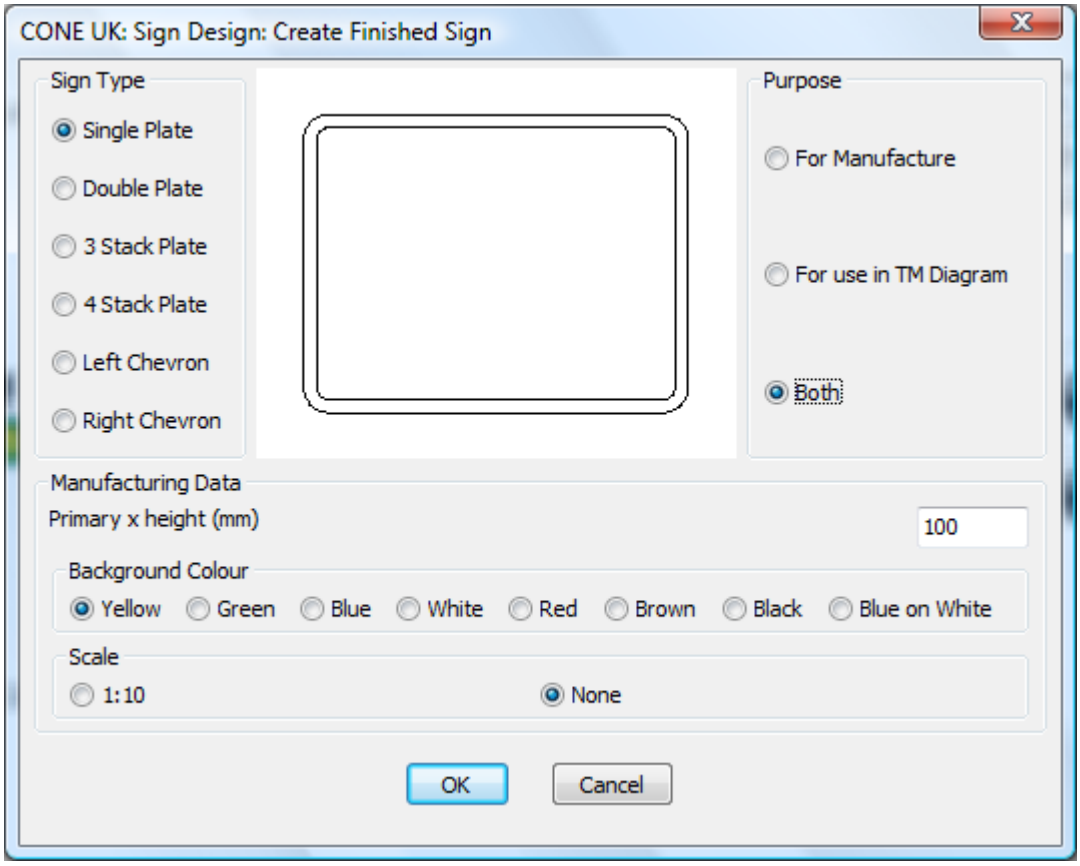
The tool has three modes:

1. Create a sign for manufacturing purposes only
2. Create a sign for TM plan purposes only
3. Both of the above

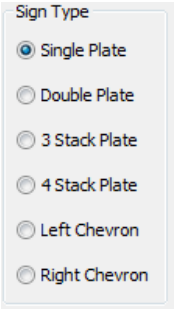
From the CONE10UK pull down menu select *Chapter 7 Sign Design -> Finalise Sign*



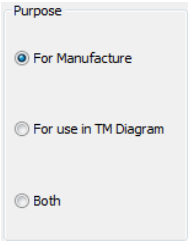
Or pick the **Finalise** icon from the Cone Sign Design toolbar



Sign Type: Select the required plate type
(Single, Double, 3 Stack, 4 Stack and Left or Right Chevron)



Purpose:
For Manufacturing: Creates the finished sign from objects you select on screen and adds a manufacturing data table (see below).
The tool removes all CONEFRAME frames but keeps all CONETEXTTILE frames



For use in a TM Diagram: Creates the finished sign from objects you select on screen and writes the result out as an external block in the "CONE10UK\USER" subfolder of your personal USER folder, this allows it to be located easily with the Sign/Browse/Insert Tool.

The finished size of this type of sign is proportional to all other CONE signs, the tool also removes all CONEFRAME & CONETEXTTILE frames

Note: Your personal USER folder can be found by typing the following at the command line and press enter (include the brackets, spaces and quotes)

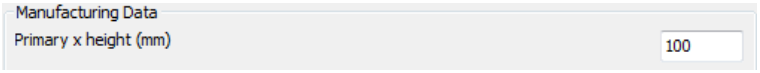
Command: (getenv "appdata")

A typical response will be: "C:\\Users\\peter\\AppData\\Roaming"

So in this case the full path to the location will be "C:\\Users\\peter\\AppData\\Roaming\\CONE10UK\\USER"

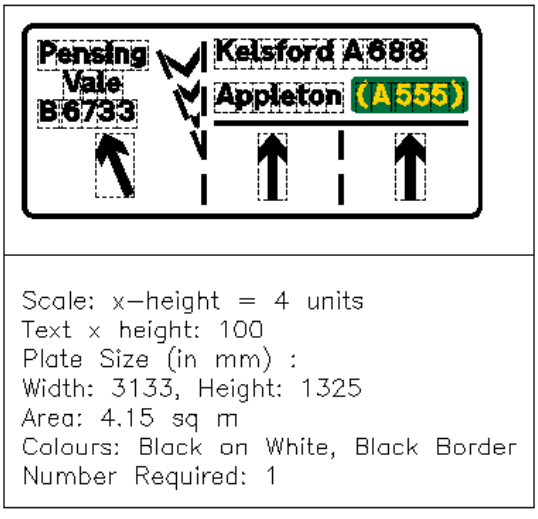
Both: Creates a sign for both Manufacturing and TM purposes

Primary x height (mm):

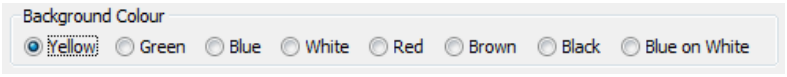


If you know the required x-height you can enter it here or after the sign objects are selected. Changing this value DOES NOT alter the actual CAD finished sizes, it is used to calculate what the finished size of the sign would be based on the x-height entered, this information is shown in the manufacturing data table only

Example of finished sign complete with sign size data



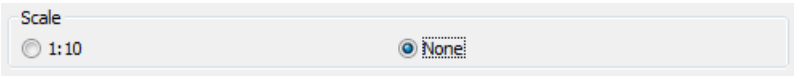
Background Colour:



The background colour of the sign should be commensurate with the primary text font used for sign objects

Dark backgrounds use transport medium and light backgrounds use transport heavy

Scale:



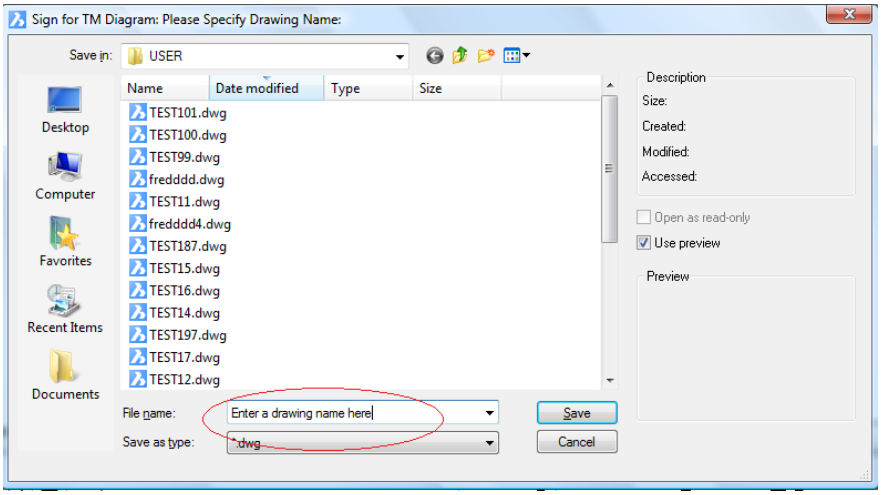
This setting only affects signs for manufacturing purposes, if set to **none** the finished size will be as-is (The height of a text tile is 8 units)

If you set the scale to **1:10** then the finished size will be 10% of the finished size shown in the data table

Selecting the **OK** button will begin the sign finalisation

Signs for use in a TM diagram or both

If you have selected signs for use in a TM diagram or both then you need to give the TM diagram type a unique drawing **File name** and **Save** it in your USER folder

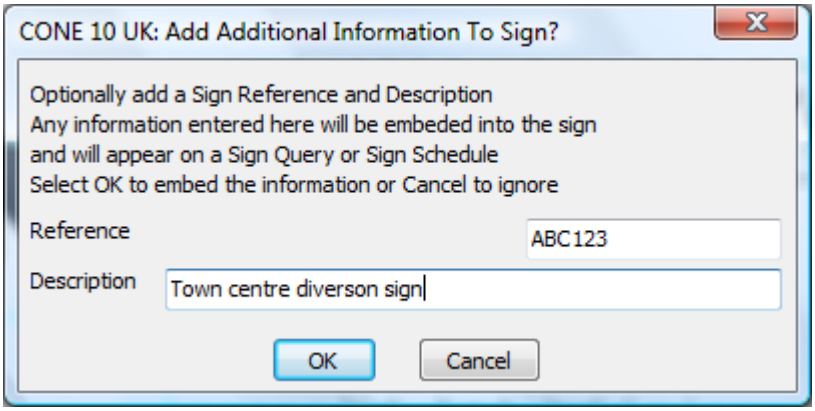


You can of course save it at any location on your hard drive(s) as long as you have write access, but be aware that when subsequently you insert the sign using the Insert User File option from within the Sign/Browse/Insert tool the starting point is always your USER folder + "\\CONE10UK\\USER"

Example: "C:\\Users\\peter\\AppData\\Roaming\\CONE10UK\\USER"

You can also create subfolders underneath the USER folder

Additional Information



The next part is optional, any information you enter here will be stored with the sign for potential subsequent usage in a sign schedule

Enter a **Reference** and **Description** and pick the **OK** button or pick **Cancel** to ignore

Signs for Manufacturing Purposes and for TM Diagrams

If you select **Signs for Manufacturing Purposes** the previous steps will not be required

You will now be asked to select objects using normal CAD methods

Follow the command line prompts

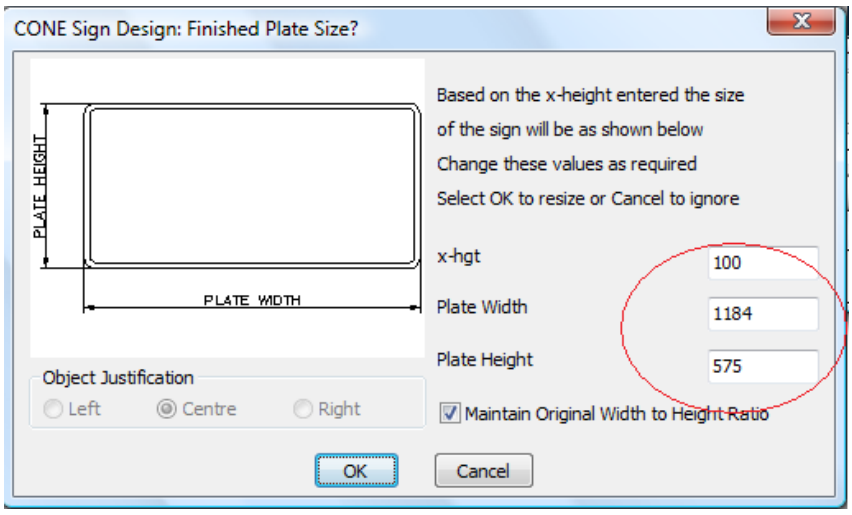
Single, Left and Right only expect one set of objects

Double expects two sets, the upper objects first

3 and 4 stack expects three and four sets of objects respectively working in sequence from upper objects to lower objects.

After sign object selection the tool will present the Finished Plate Size dialog (except of left and right chevrons)

This will vary depending on the type of sign chosen

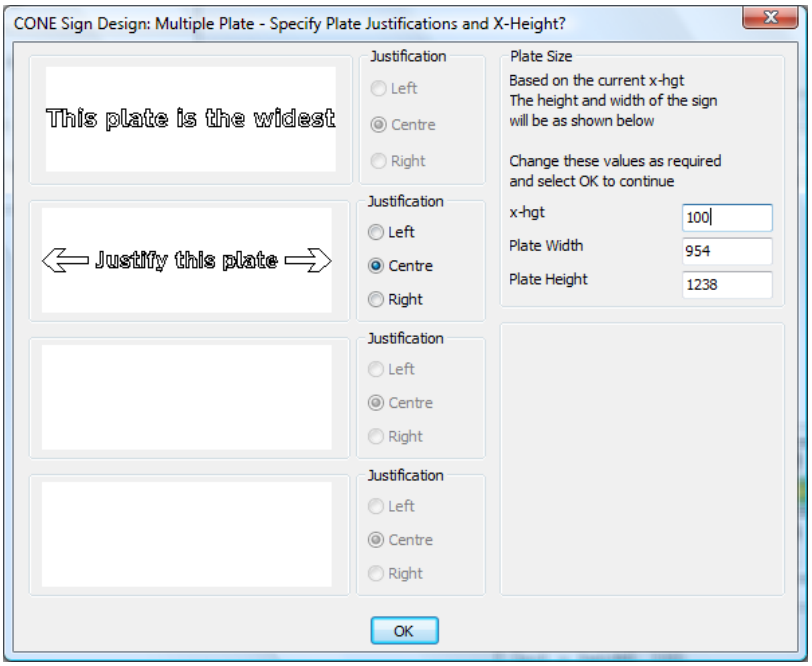


Single Plate Signs

With single rectangular signs you may revise the actual x-height, plate width and height information that is included in the data portion of the finished sign

You can experiment by changing the x-hgt, plate width and plate height sizes to obtain the actual size required

Double, 3 Stack and 4 Stack Signs



With multiple rectangular plates you need to specify the justification of each plate with respect to the widest plate (Left, right or centre justifies)

You can also revise the actual x-height, plate width and height information that is included in the data portion of the finished sign

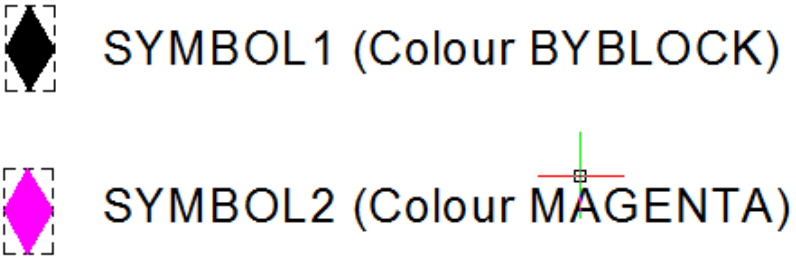
When you have finished revising plate sizes select the **OK** button and place the finished sign and data information on your drawing

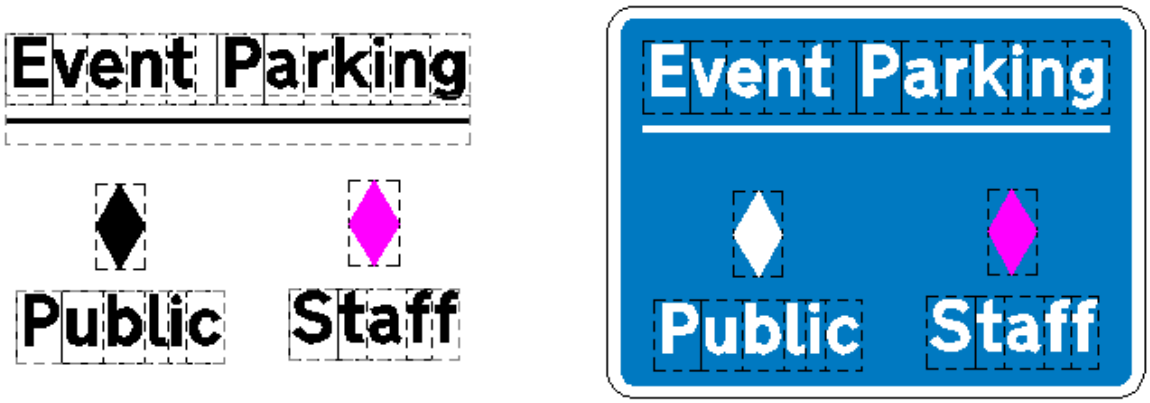
Including Your Own Symbols

You can easily incorporate your own symbols onto signs or panels.

The sign finalisation tool will include any object as long as it is a BLOCK INSERT

In addition there is one other rule with reference to colour, if any entities contained within the block have a BYBLOCK colour setting then those entities will automatically change colour to true black or true white at sign finalisation time depending on the background colour of the sign





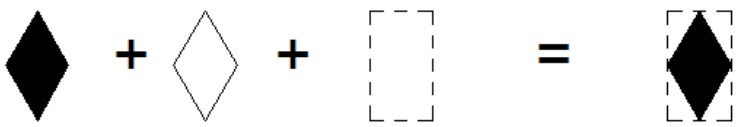
In SYMBOL1 the black filled diamond has a colour setting of BYBLOCK, whereas the filled diamond in SYMBOL2 has a colour setting of MAGENTA

In the final sign SYMBOL1 is automatically changed to true white because the background colour of the sign is dark (blue) whereas SYMBOL2 does not change colour

If you wish to completely copy the CONE method of symbol design then your symbols should contain three layers: CONEFILLED, CONESIMPLE and CONETEXTTILE

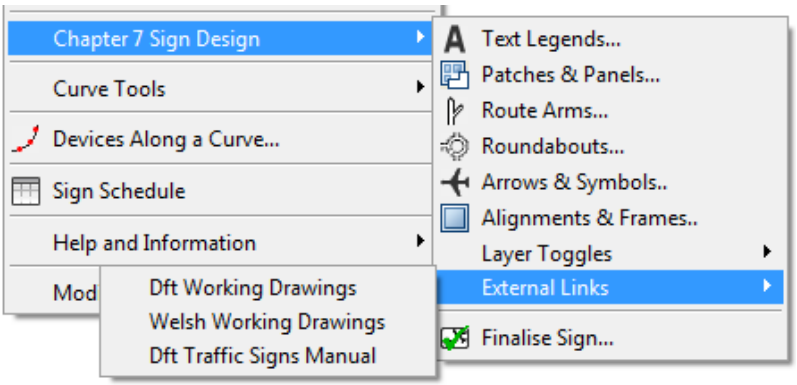
In the example below:

The filled diamond is placed on layer CONEFILLED with a colour of BYBLOCK
The outline diamond is placed on layer CONESIMPLE with a colour of BYLAYER
The dashed rectangle is placed on layer CONETEXTTILE with a colour of BYLAYER



External Links

The sign design menu includes three web site links



Dft Working Drawings: https://www.gov.uk/working-drawings-for-traffic-signs

Link to website showing list of available drawings detailing the design of particular traffic signs together with PDF files of each drawing for download

Welsh Working Drawings: http://www.traffic-wales.com/traffic_signs.aspx

Link to website showing list of available drawings detailing the design of particular traffic signs together with PDF files of each drawing for download

Dft Traffic Signs Manual: https://www.gov.uk/government/publications/traffic-signs-manual

Link to website Traffic signs manuals 1 to 8

Basic Tutorial

In this basic tutorial you are going to create the sign shown here

The procedure involves the following steps:

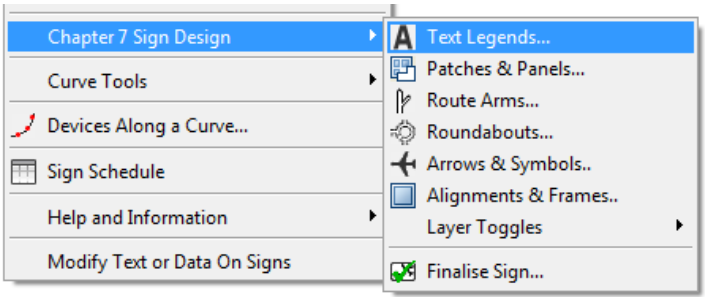
1. Add legend text
2. Add an arrow symbol
3. Finalise the sign

In the finalisation process you will create both a sign design for **Manufacturing Purposes** and also a sign for subsequent use in a **Temporary Traffic Management Plan**

Before commencing the tutorial we recommend you start a new drawing based on one of the supplied CONE templates or one of your own, either way we assume that your units are metric, decimal and your INSUNITS are set to zero

Step 1: Add legend text

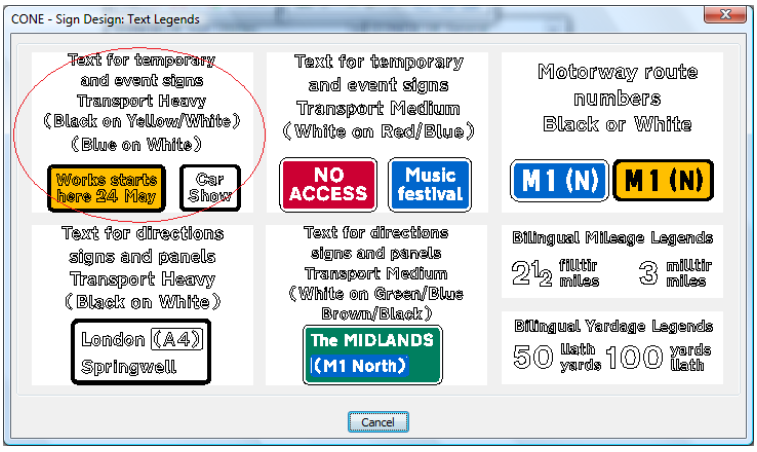
From the CONE10UK pull down menu select *Chapter 7 Sign Design -> Text Legends*



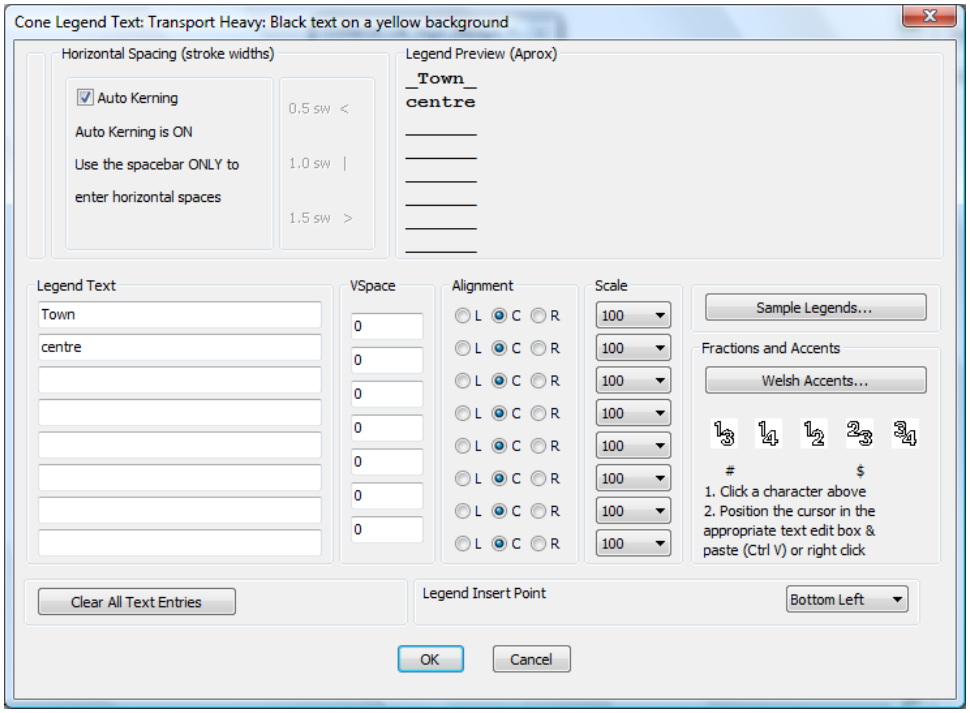
Or select the **A** icon from the Cone Sign Design Toolbar

From the dialog that appears next pick the top left icon:

Text for temporary and event signs - Transport Heavy (Black text on yellow or white backgrounds)



The text entry dialog for black text on yellow backgrounds will now be displayed.



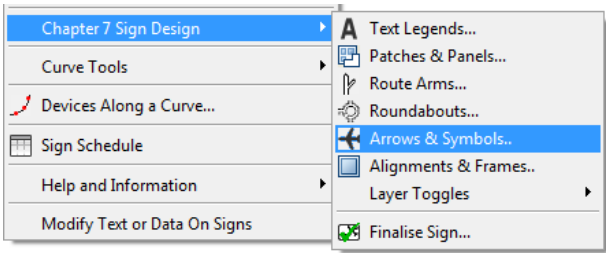
Enter the words **Town** and **centre** on separate lines with zero vertical space and centre alignment as shown above and pick the **OK** button to position the text legend on the drawing

The command prompt will respond thus:

Command: UKTLEGENDS
Pick legend insert point
Pick any point on your drawing

Your text legend should look like this

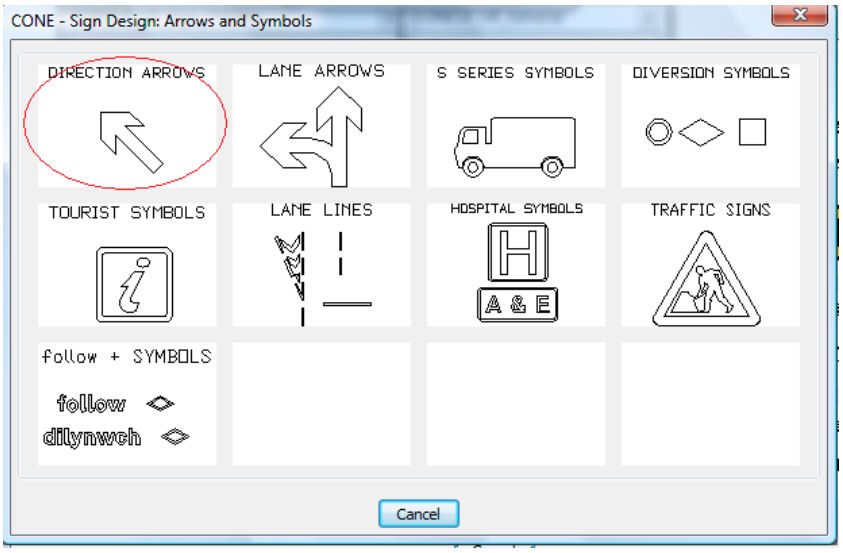
Step 2: Add an Arrow Symbol
From the CONE10UK pull down menu select
Chapter 7 Sign Design -> Arrows & Symbols



Or pick the **aircraft** icon from the Cone Sign Design toolbar

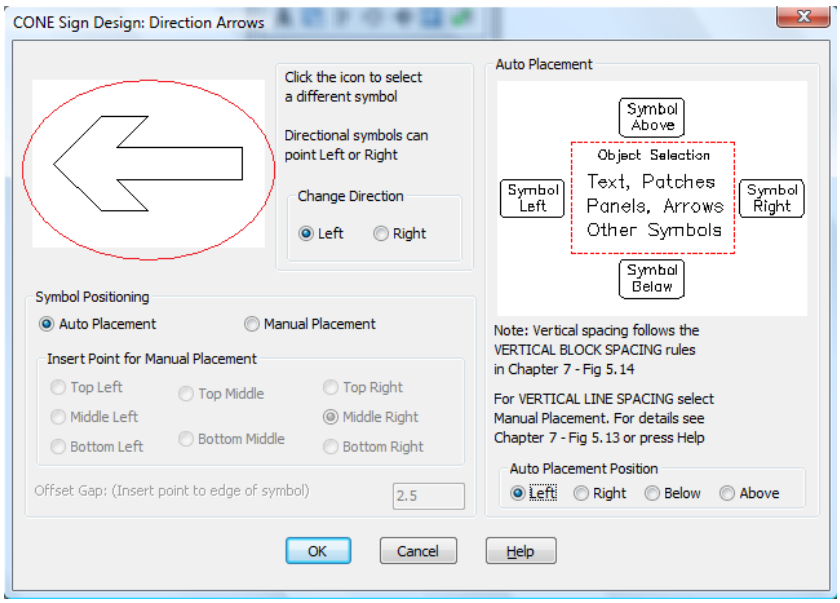
From the Arrows and Symbols dialog

Select the **DIRECTION ARROWS** icon



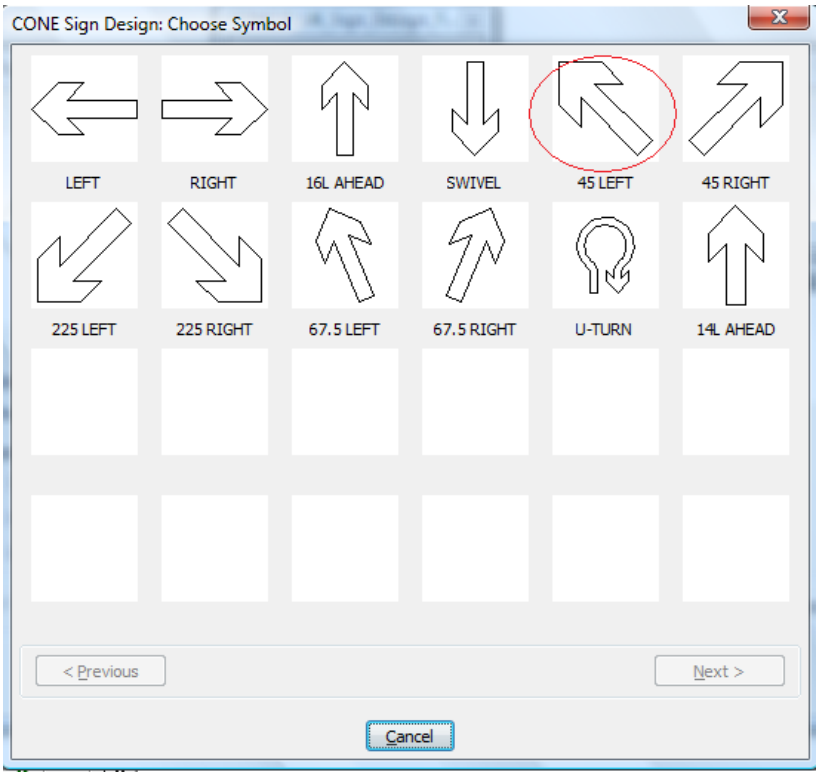
The Direction Arrows dialog will now be displayed

Change the symbol type by clicking the left hand icon



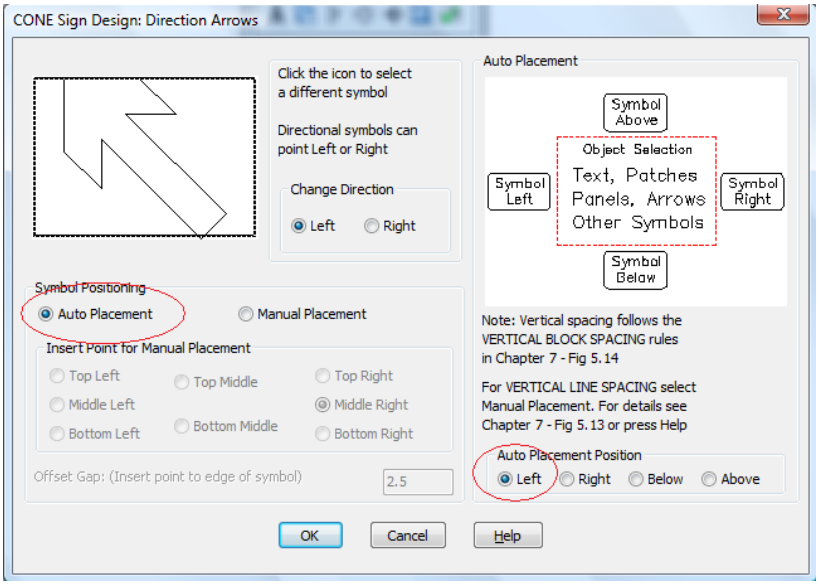
Pick the **45 LEFT** arrow icon from the next dialog that appears

This will select the 45 degrees left arrow symbol and return to the previous dialog



Ensure **Auto Placement** is selected and **Auto Placement Position** is set to **Left**

Press the **OK** button



The command prompt will respond thus:

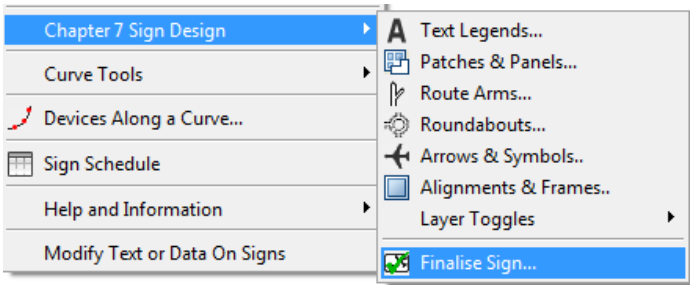
Command: CSYMBOLS
Select object to align symbol to:

Pick the text legend and the arrow will be placed next to the text legend with correct spacing and alignment

Step 3: Finalise the Sign

From the CONE10UK pull down menu select *Chapter 7 Sign Design -> Finalise Sign*

Or pick the **Finalise** icon from the Cone Sign Design toolbar



The create Finished Sign dialog will appear

Ensure that you select:

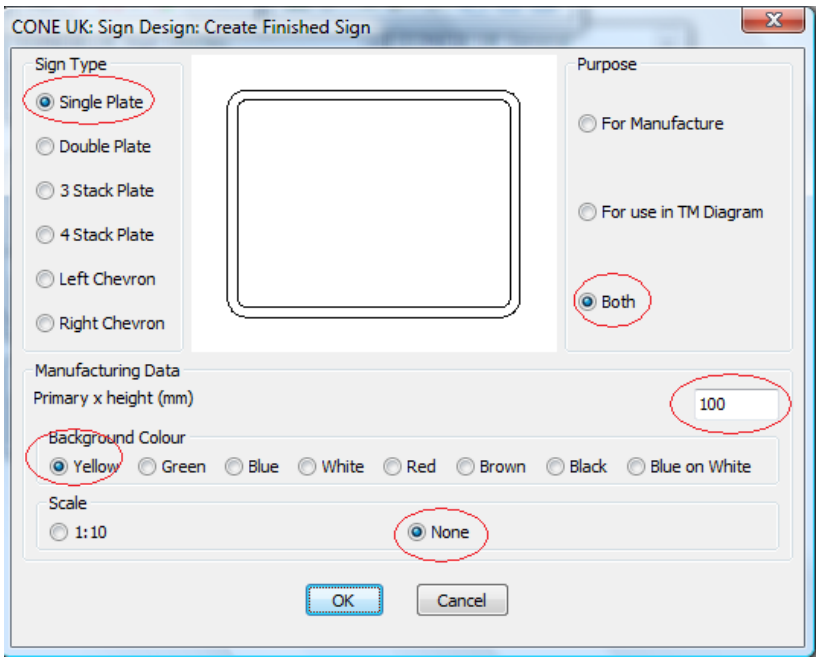
Sign Type: Single Plate

Purpose: Both

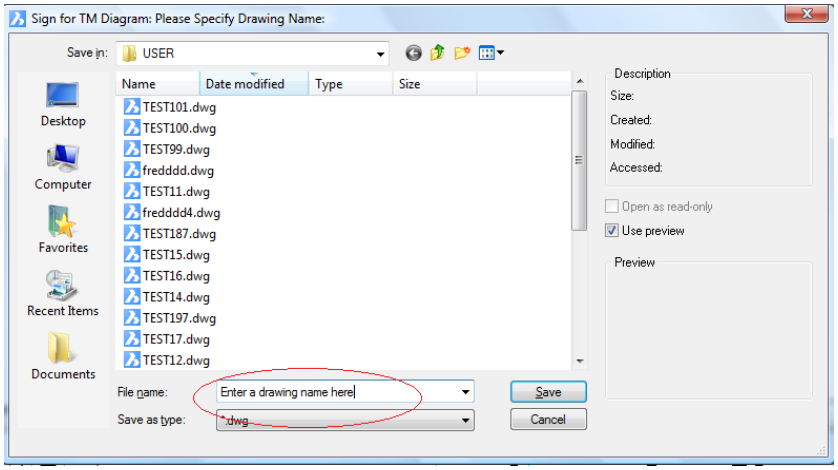
Background Colour: Yellow

Primary x height: 100

And select the **OK** button

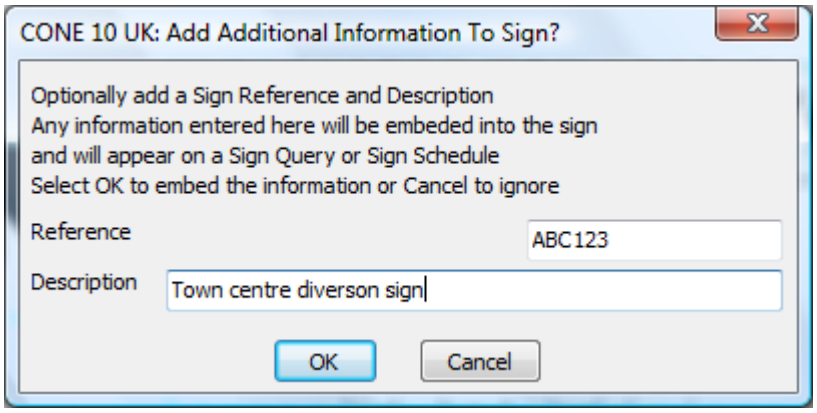


Because you are creating two types of sign , one for manufacturing purposes that will be created in the current drawing, and another for subsequent use in a TM diagram that will be stored on your hard disk you need to give the TM diagram type a unique drawing **File name** and **Save** it in your USER folder



The next part is optional, any information you enter here will be stored with the sign for potential subsequent usage in a sign schedule

Enter a **Reference** and **Description** and pick the **OK** button or pick **Cancel** to ignore



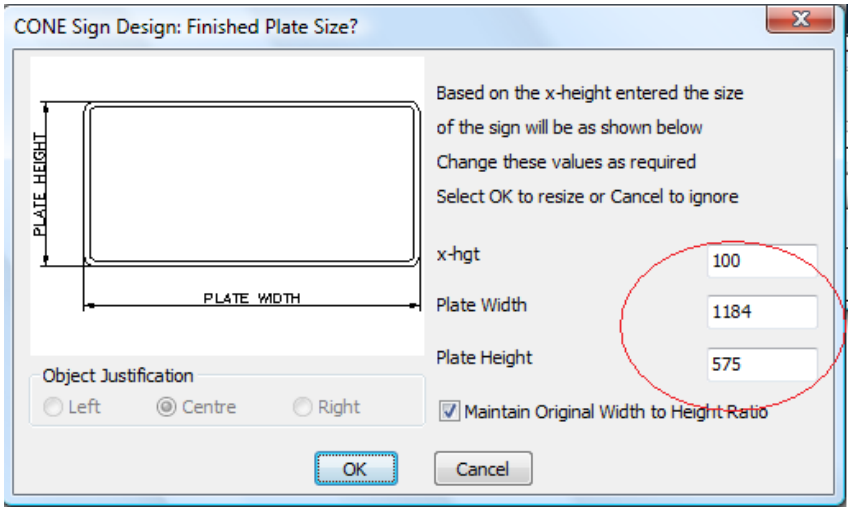
The command prompt will respond thus:

Command: UKSCREATE
Single Plate: Select Sign Objects
Select entities:

Select both the arrow and the text legend and press the enter key

The Finished Plate Size dialog will now appear offering the opportunity to revise the actual x-height, plate width and height information that is included in the data portion of the finished sign

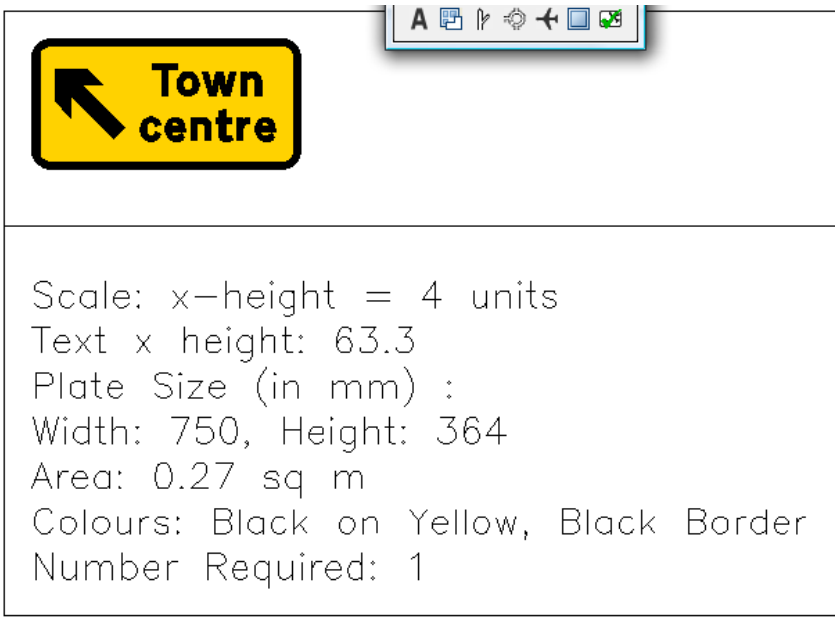
From Chapter 8: Table A1.2
The minimum x-height for this type of plate is 60mm for a Single Carriageway -30mph road speed and 70mm for 40mph road speed



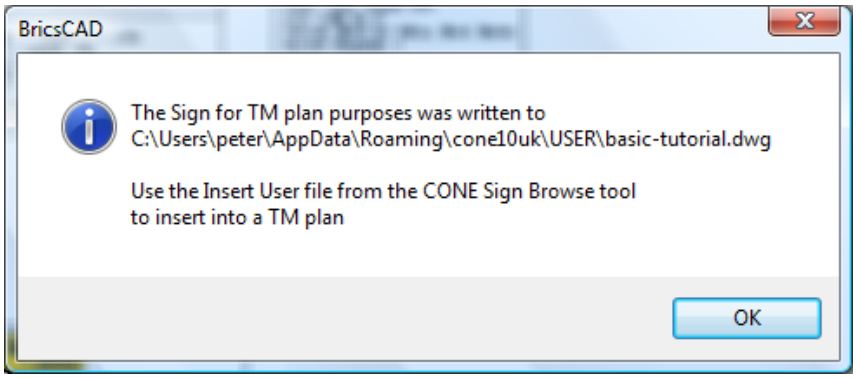
You can experiment by changing the x-hgt, plate width and plate height sizes.
For example changing the plate width to 750mm wide will give a x-height of 63.35 or changing the x-hgt to 70mm will give a plate width of 829mm

You could just leave the x-height at 100mm which makes it easy to scale by the sign manufacturer
Ultimately the decision is yours

When you have finished revising plate sizes select the **OK** button and place the finished sign and data information on your drawing



Because you have opted to also create a sign for TM purposes the system reminds you of its location and how to go about inserting the sign into a TM plan



END OF TUTORIAL

CONE is solely developed and distributed by CADaptor Solutions
The Heritage Exchange, Lindley, Huddersfield, HD3 3HR
Tel: 01484 489339
Email: info@conesoftware.com
Web: www.conesoftware.com