

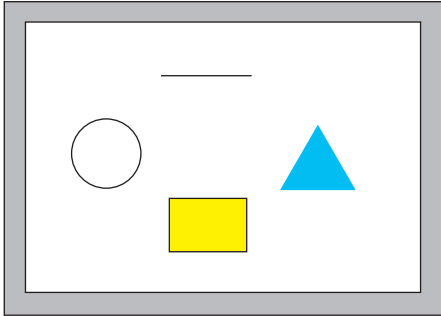
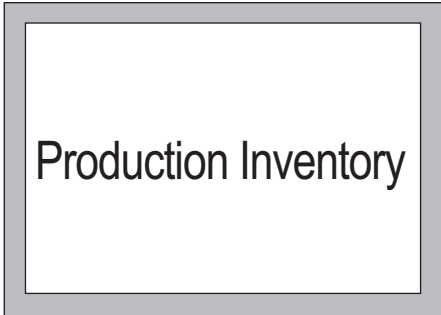
9 | Draw (Figures/Text)

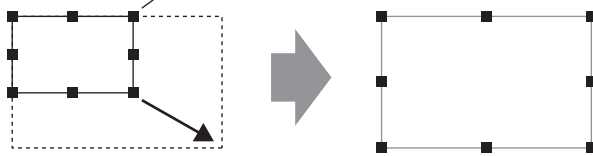
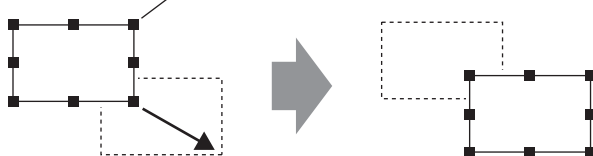
This chapter provides an overview of the draw/edit tools and how to draw figures and text in GP-Pro EX.

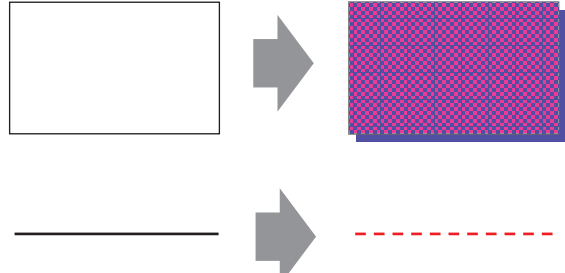
Read “9.1 Settings Menu” (page 9-2) first, then skip to the explanations as required.


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9.1 Settings Menu

| Drawing Pictures | |
|---|---|
|  <p>Draws a line, rectangle, and other pictures.</p> | <p>☞ "9.2.1 Drawing Picture Lists" (page 9-6)</p> |
| Writing Text | |
|  <p>Places text on the screen.</p> | <p>☞ Setting Procedure (page 9-23)</p> |

| Editing Objects | |
|---|---|
| <p>Enlarging/Reducing</p>  <p>Drag it to a desired size.</p> <p>Moving an Object</p>  <p>Drag it to a desired position.</p> | <p>☞ “9.4.1 Introducing Edit Tools” (page 9-26)</p> |
| <p>Runs screen edit operations such as enlarging, reducing or moving.</p> | |

| Changing Colors, Line Types and Patterns | |
|--|---|
|  | <p>☞ “9.5 Changing Colors, Line Types and Patterns” (page 9-34)</p> |
| <p>Changes a picture's color, line type, and pattern.</p> | |

| Editing a Part | |
|---|--|
| <p>Lamp</p>  <p>Changes the shape, color, and label of a part.</p> | <p>☞ “9.6.1 Editing Parts” (page 9-38)</p> |

Using a Screen for Various Purposes

Setting Procedure (page 9-50)

Create a screen for various purposes.

You can call and display various screens.

Editing a Picture on Another Screen

“9.8.1 Placing Pictures Registered in the Package” (page 9-53)

“9.8.2 Registering Pictures in the Package” (page 9-55)

Objects registered in a package

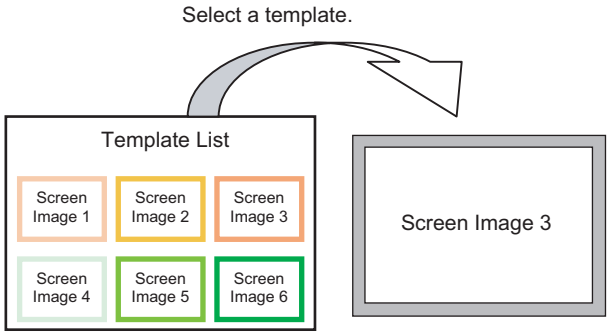
Place it on the screen and edit it.

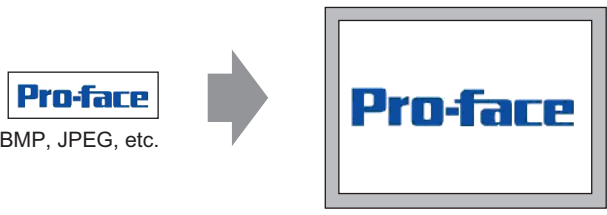
Setting up Grids

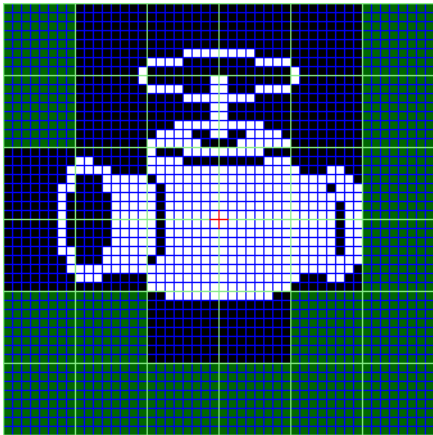
Setting Procedure (page 9-57)

Detail (page 9-57)

Displays an equally spaced grid on the editing screen and places parts with reference to an intersecting point.









| Selecting a Screen from Template | |
|--|---|
| <p>Select a template.</p>  <p>Edits screens from a template screen.</p> | <p>☞ "9.9.2 Selecting a Screen from Template" (page 9-60)</p> |

| Pasting an Image | |
|---|---|
|  <p>Converts image data and places it on the screen.</p> | <p>☞ Setting Procedure (page 9-64) ☞ Target Image (page 9-63)</p> |

| Drawing a Detailed Picture | |
|--|---|
|  <p>Draws a picture pixel by dot.</p> | <p>☞ Setup Procedure (page 9-66) ☞ Introduction (page 9-66)</p> |



9.2 Drawing Pictures

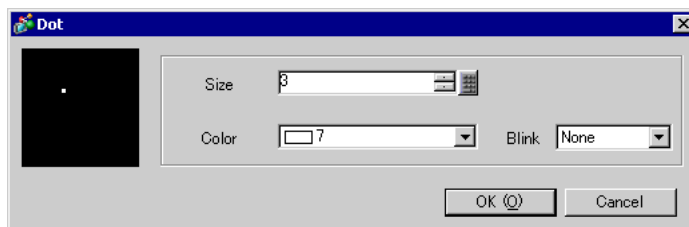
9.2.1 Drawing Picture Lists

| Picture | Description |
|--|--|
| Dot  | Draws a dot. ☞ "9.2.2 Drawing by Pixels" (page 9-6) |
| Line/ Polyline  | Draws a line/polyline. ☞ "9.2.3 Drawing Line/Polyline" (page 9-7) |
| Rectangle  | Draws a rectangle. ☞ "9.2.4 Drawing Rectangles" (page 9-8) |
| Polygon  | Draws a polygon. ☞ "9.2.7 Drawing Polygons" (page 9-16) |
| Circle/Oval  | Draws a circle/oval. ☞ "9.2.5 Drawing Circles/Ovals" (page 9-11) |
| Arc/Pie  | Draws an arc/pie. ☞ "9.2.6 Drawing Arcs/Pies" (page 9-14) |
| Scale  | Draws the graph scales. ☞ "9.2.8 Drawing Scales" (page 9-18) |
| Table  | Draws a table. ☞ "9.2.9 Drawing Tables" (page 9-20) |

9.2.2 Drawing by Pixels

The Dot feature can draw one to five dots at a time.

From the [Draw (D)] menu, select [Dot (D)] command or click  to place a dot on the screen. If you click  and double-click the placed [Dot], the following dialog box appears.






☞ For display colors, refer to "9.5.1 Setting Colors" (page 9-34)

☞ For blinking, refer to "9.5.2 Setting Blinks" (page 9-37)

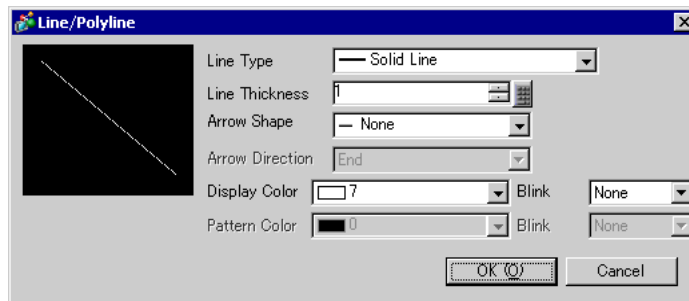
9.2.3 Drawing Line/Polyline


Drag the mouse to draw a line from the start to the end. For the polyline, click to designate the start, the mountain fold and the end, and right-click to set.

From the [Draw (D)] menu, select [Line (L)] or [Polyline (U)], or click  or  to place a line/polyline on the screen. If you click  and double-click the placed [Line] or [Polyline], the following dialog box appears.


NOTE

- If you press and hold the [Shift] key while placing a line, you can draw a line at an angle of 0 degrees and 90 degrees.
- If you place a line while pressing the [Ctrl] key, you can draw a line extending from the center. If you place a line while pressing the [Ctrl] and [Shift] keys at the same time, you can draw a line of 0 degrees or 90 degrees extending from the center.
- To edit after placing the line and polyline, click on the selected line to change to a yellow handle. You can drag the line to change the shape.
- For a polyline, you can left click and drag to draw, similar to handwriting.




| Setting | Description |
|-----------------|---|
| Line Type | Select the line type from [Solid Line], [Dotted Line], [Dash Line], [Chain Line], or [Two-Dot Chain Line]. ☞ "9.5.3 Setting Line Types" (page 9-37) |
| Line Thickness | Set the line thickness within the range of one to nine dots. NOTE • When line types other than [Solid Line] are selected in [Line Type], the setting range is one to two dots. |
| Arrow Shape | Select the arrow shape from  . |
| Arrow Direction | Select the arrow direction from [Start], [End], or [Both Ends]. |
| Display Color | Set the line color. ☞ "9.5.1 Setting Colors" (page 9-34) |
| Pattern Color | Select the pattern color. This function can be used only when line types other than [Solid Line] are selected in [Line Type]. |

Continued

| Setting | Description |
|---------|--|
| Blink | <p>Select whether or not the Part will blink, and the blink speed. You can choose different blink settings for [Display Color] and [Pattern Color] of the part.</p> <p>NOTE</p> <ul style="list-style-type: none"> • There are cases where you can and cannot set Blink depending on the Display and System Settings [Color Settings]. <p> "9.5.1 Setting Colors" (page 9-34)</p> |

9.2.4 Drawing Rectangles

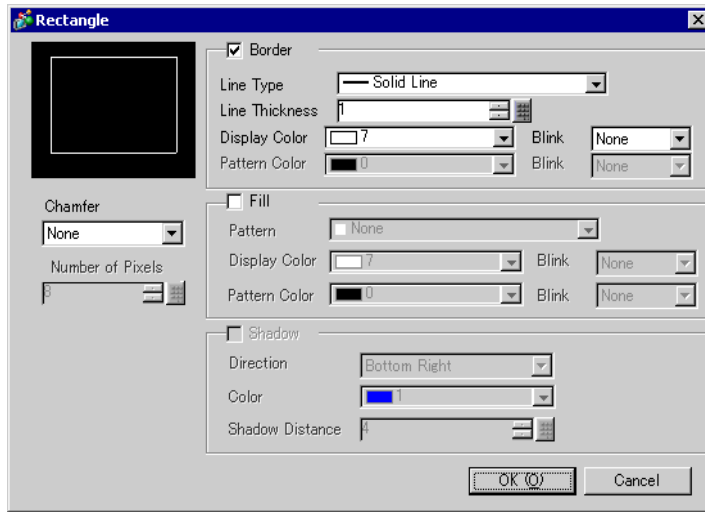
Draw a rectangle by dragging the mouse to specify two opposite corners.

In the [Draw (D)] menu, select [Rectangle (R)] or click  to place a rectangle on the screen.

 Double-click the placed [Rectangle] to display the following dialog box.

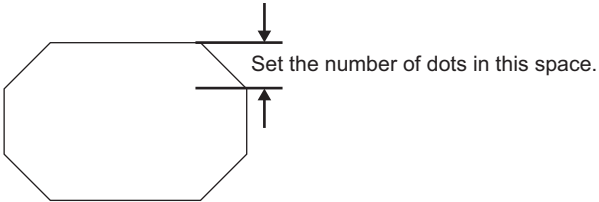
NOTE

- If you press and hold the [Shift] key while drawing a rectangle, the object is forced into a square.
- If you place a rectangle while pressing the [Ctrl] key, you can draw a rectangle spreading out from the center. If you place a rectangle while pressing the [Ctrl] and [Shift] keys at the same time, you can draw a square spreading out from the center.





| Setting | | Description |
|---------|----------------|--|
| Border | Line Type | Select the line type from [Solid Line], [Dotted Line], [Dash Line], [Chain Line], or [Two-Dot Chain Line]. ☞ “9.5.3 Setting Line Types” (page 9-37) |
| | Line Thickness | Set the line thickness within the range of one to nine dots. NOTE • When other line types than [Solid Line] are selected in [Line Type], the line thickness is fixed at one dot. |
| | Display Color | Set the border color. ☞ “9.5.1 Setting Colors” (page 9-34) |
| | Pattern Color | Select the pattern color. This function can be used only when line types other than [Solid Line] are selected in [Line Type]. ☞ “9.5.4 Setting Patterns” (page 9-37) |
| | Blink | Select whether or not the Part will blink, and the blink speed. You can choose different blink settings for the [Display Color] and [Pattern Color] of the part. NOTE • There are cases where you can and cannot set Blink depending on the Display and System Settings [Color Settings]. ☞ “9.5.1 Setting Colors” (page 9-34) |

Continued

| Setting | | Description |
|----------------|--|--|
| Fill | Pattern | Set a background pattern for the rectangle. ☞ "9.5.4 Setting Patterns" (page 9-37) |
| | Display Color | Set a color for the rectangle. ☞ "9.5.1 Setting Colors" (page 9-34) |
| | Pattern Color | Set the background pattern color for the rectangle. ☞ "9.5.4 Setting Patterns" (page 9-37) |
| | Blink | Select whether or not the Part will blink, and the blink speed. You can choose different blink settings for the [Display Color] and [Pattern Color] of the part. NOTE • There are cases where you can and cannot set Blink depending on the Display and System Settings [Color Settings]. ☞ "9.5.1 Setting Colors" (page 9-34) |
| Shadow | Direction | Select the shadow direction from [Top Left], [Bottom Left], [Top Right], or [Bottom Right]. |
| | Color | Set the shadow color. ☞ "9.5.1 Setting Colors" (page 9-34) |
| | Shadow Distance | Set the width of the picture and the shadow within the range of 1 to 16. |
| Chamfer | Select the chamfer shape from [None], [Line], or [Circle]. | |
| Number of Dots | Designate the number of dots for chamfer from 1 to 999.  | |

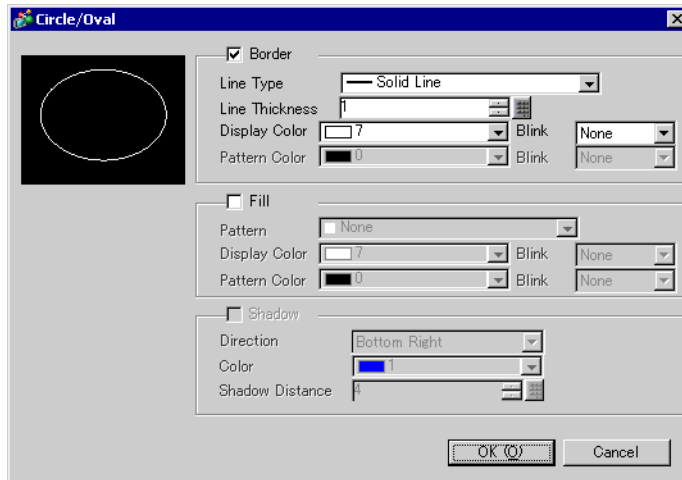
9.2.5 Drawing Circles/Ovals

Draw a circle or oval by dragging the mouse to specify the center point and one point on the circle.

From the [Draw (D)] menu, select [Circle/Oval (C)] or click  to place a circle/oval on the screen. If you  double-click the placed [Circle/Oval], the following dialog box appears.

NOTE

- If you press and hold the [Shift] key while placing an object, you can draw a circle.
 - If you place a circle/oval while pressing the [Ctrl] key, you can draw a circle/oval spreading out from the center. If you place a circle/oval while pressing the [Ctrl] and [Shift] keys at the same time, you can draw a circle spreading out from the center.
-



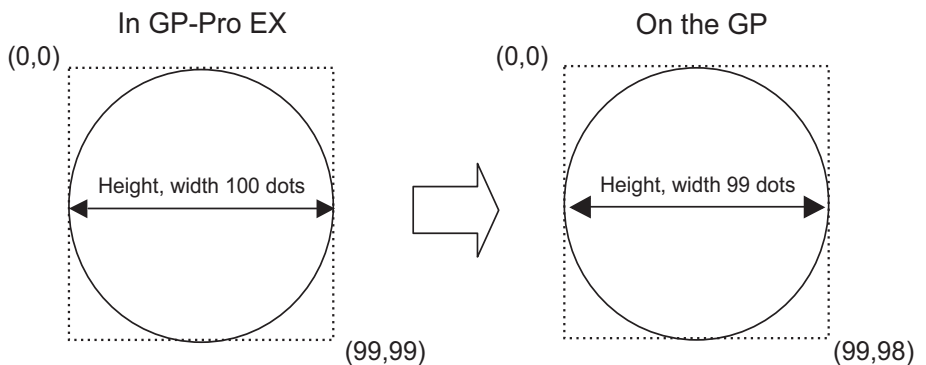
| Setting | | Description |
|---------|----------------|--|
| Border | Line Type | Select the line type from [Solid Line], [Dotted Line], [Dash Line], [Chain Line], or [Two-Dot Chain Line]. ☞ "9.5.3 Setting Line Types" (page 9-37) |
| | Line Thickness | Set the line thickness within the range of one to nine dots. NOTE • When other line types than [Solid Line] are selected in [Line Type], the line thickness is fixed at one dot. |
| | Display Color | Set the border color. ☞ "9.5.1 Setting Colors" (page 9-34) |
| | Pattern Color | Select the pattern color. This function can be used only when line types other than [Solid Line] are selected in [Line Type]. ☞ "9.5.4 Setting Patterns" (page 9-37) |
| | Blink | Select whether or not the Part will blink, and the blink speed. You can choose different blink settings for the [Display Color] and [Pattern Color] of the part. NOTE • There are cases where you can and cannot set Blink depending on the Display and System Settings [Color Settings]. ☞ "9.5.1 Setting Colors" (page 9-34) |

Continued

| Setting | | Description |
|---------|-----------------|---|
| Fill | Pattern | Set the background pattern for the circle/oval. ☞ "9.5.4 Setting Patterns" (page 9-37) |
| | Display Color | Set a color for the circle/oval. ☞ "9.5.1 Setting Colors" (page 9-34) |
| | Pattern Color | Set the background pattern color for the circle/oval. ☞ "9.5.4 Setting Patterns" (page 9-37) |
| | Blink | Select whether or not the Part will blink, and the blink speed. You can choose different blink settings for the [Display Color] and [Pattern Color] of the part. NOTE <ul style="list-style-type: none"> There are cases where you can and cannot set Blink depending on the Display and System Settings [Color Settings]. ☞ "9.5.1 Setting Colors" (page 9-34) |
| Shadow | Direction | Select the shadow direction from [Top Left], [Bottom Left], [Top Right], or [Bottom Right]. |
| | Color | Set the shadow color. ☞ "9.5.1 Setting Colors" (page 9-34) |
| | Shadow Distance | Set the width of the circle/oval and the shadow within the range of 1 to 16. |



NOTE

- You can set the width and height of a circle/oval in the [Properties (P)]. However, if you set the width or height to an even number, it will be drawn with one less dot on the GP.



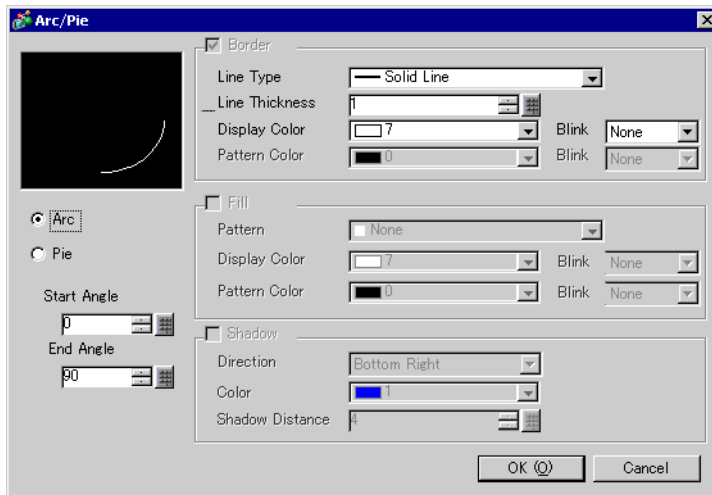
9.2.6 Drawing Arcs/Pies



Draw an arc or pie by dragging the mouse to specify the center point and one point on the circle, and specify the start angle and end angle in the dialog box. You can select an arc or pie.

From the [Draw (D)] menu, select [Arc/Pie (A)] or click  to place an arc/pie on the screen. If you click  and double-click the placed [Arc/Pie], the following dialog box appears.

NOTE



- If you press and hold the [Shift] key while placing an object, you can draw a circle arc.
- If you place an arc/pie while pressing the [Ctrl] key, you can draw a circle/oval's arc spreading out from the center. If you place an arc/pie while pressing the [Ctrl] and [Shift] keys at the same time, you can draw a circle's arc spreading out from the center.
- If you edit an arc/pie after placing it, you can change the arc/pie's start angle and end angle by operating the yellow handle in the selected state.
- You can set the width and height of an arc/pie in the [Properties (P)]. However, if you set the width or height to an even number, it will be drawn with one less dot on the GP.



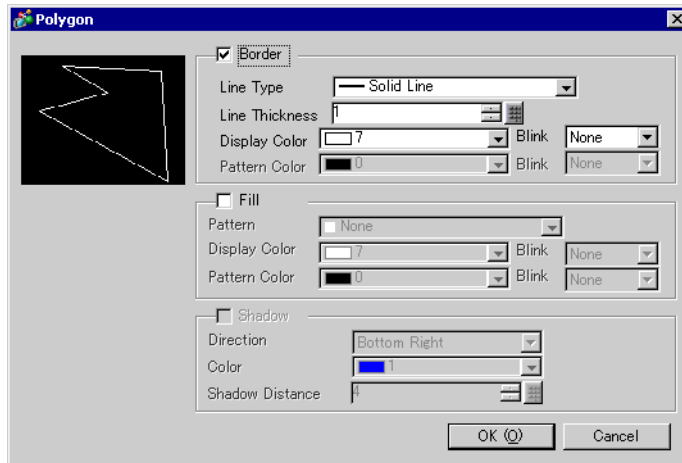
| Setting | | Description |
|-----------------------|-----------------|---|
| Border | Line Type | Select the line type from [Solid Line], [Dotted Line], [Dash Line], [Chain Line], or [Two-Dot Chain Line]. |
| | Line Thickness | Set the line thickness within the range of one to nine dots. NOTE <ul style="list-style-type: none"> When other line types than [Solid Line] are selected in [Line Type], the line thickness is fixed at one dot. |
| | Display Color | Set the arc/pie border color. |
| | Pattern Color | Select the pattern color. This function can be used only when line types other than [Solid Line] are selected in [Line Type]. |
| | Blink | Select whether or not the Part will blink, and the blink speed. You can choose different blink settings for the [Display Color] and [Pattern Color] of the part. NOTE <ul style="list-style-type: none"> There are cases where you can and cannot set Blink depending on the Display and System Settings [Color Settings].  "9.5.1 Setting Colors" (page 9-34) |
| Fill | Pattern | Select a background pattern for the pie. |
| | Display Color | Set the pie's color. |
| | Pattern Color | Set the background pattern color for the pie. |
| | Blink | Select whether or not the Part will blink, and the blink speed. You can choose different blink settings for the [Display Color] and [Pattern Color] of the part. NOTE <ul style="list-style-type: none"> There are cases where you can and cannot set Blink depending on the Display and System Settings [Color Settings].  "9.5.1 Setting Colors" (page 9-34) |
| Shadow | Direction | Select the shadow direction from [Top Left], [Bottom Left], [Top Right], or [Bottom Right]. |
| | Color | Set the shadow color. |
| | Shadow Distance | Set the width of the arc/pie and its shadow within the range of 1 to 16. |
| Arc/Pie | | Select from [Arc] or [Pie]. |
| Start Angle/End Angle | | Set the [Start Angle] or [End Angle]. |

9.2.7 Drawing Polygons

To draw a polygon, click each apex and right-click to define a polygon.

From the [Draw (D)] menu, select [Polygon (P)] or click  to place a polygon on the screen. If you click  and double-click the placed [Polygon], the following dialog box appears.

- NOTE**
- To edit a polygon, click on a line in the polygon to change to a yellow handle. You can drag a line on the polygon to change the shape.





| Setting | | Description |
|---------|----------------|--|
| Border | Line Type | Select the line type from [Solid Line], [Dotted Line], [Dash Line], [Chain Line], or [Two-Dot Chain Line]. ☞ "9.5.3 Setting Line Types" (page 9-37) |
| | Line Thickness | Set the line thickness within the range of one to nine dots. NOTE • When other line types than [Solid Line] are selected in [Line Type], the line thickness is fixed at one dot. |
| | Display Color | Set the border color. ☞ "9.5.1 Setting Colors" (page 9-34) |
| | Pattern Color | Select the pattern color. This function can be used only when line types other than [Solid Line] are selected in [Line Type]. ☞ "9.5.4 Setting Patterns" (page 9-37) |
| | Blink | Select whether or not the Part will blink, and the blink speed. You can choose different blink settings for the [Display Color] and [Pattern Color] of the part. NOTE • There are cases where you can and cannot set Blink depending on the Display and System Settings [Color Settings]. ☞ "9.5.1 Setting Colors" (page 9-34) |

| Setting | Description | |
|-----------|-----------------|--|
| Continued | | |
| Fill | Pattern | Set a background pattern for the polygon. ☞ "9.5.4 Setting Patterns" (page 9-37) |
| | Display Color | Set a color for the polygon. ☞ "9.5.1 Setting Colors" (page 9-34) |
| | Pattern Color | Set a background pattern's color for the polygon. ☞ "9.5.4 Setting Patterns" (page 9-37) |
| | Blink | Select whether or not the Part will blink, and the blink speed. You can choose different blink settings for the [Display Color] and [Pattern Color] of the part. NOTE • There are cases where you can and cannot set Blink depending on the Display and System Settings [Color Settings]. ☞ "9.5.1 Setting Colors" (page 9-34) |
| Shadow | Direction | Select the shadow direction from [Top Left], [Bottom Left], [Top Right], or [Bottom Right]. |
| | Color | Set the shadow color. ☞ "9.5.1 Setting Colors" (page 9-34) |
| | Shadow Distance | Set the width of the polygon and its shadow within the range of 1 to 16. |

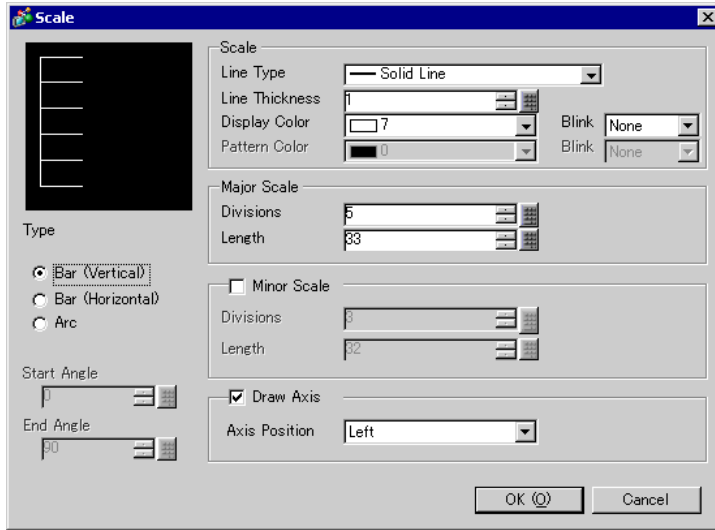
9.2.8 Drawing Scales

Draw a scale by dragging to specify two opposite corners. Set the divisions of the scale in the following dialog box.

From the [Draw (D)] menu, select [Scale (S)] or click  to place a scale on the screen. If you click  and double-click the placed [Scale], the following dialog box appears.

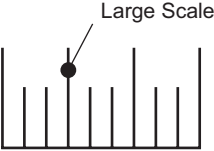
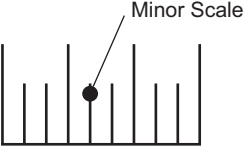
NOTE

- To edit a scale after placing it, click the line in the selected state to make it a yellow handle. You can change the scale type by operating the yellow handle axis.




| Setting | | Description |
|---------|----------------|--|
| Scale | Line Type | Select the line type from [Solid Line], [Dotted Line], [Dash Line], [Chain Line], or [Two-Dot Chain Line]. ☞ "9.5.3 Setting Line Types" (page 9-37) |
| | Line Thickness | Set the line thickness within the range of one to nine dots. NOTE • When line types other than [Solid Line] are selected in [Line Type], the setting range is one to two dots. |
| | Display Color | Select the scale color. ☞ "9.5.1 Setting Colors" (page 9-34) |
| | Pattern Color | Select the pattern color. This function can be used only when line types other than [Solid Line] are selected in [Line Type]. ☞ "9.5.4 Setting Patterns" (page 9-37) |
| | Blink | Select whether or not the Part will blink, and the blink speed. You can choose different blink settings for the [Display Color] and [Pattern Color] of the part. NOTE • There are cases where you can and cannot set Blink depending on the Display and System Settings [Color Settings]. ☞ "9.5.1 Setting Colors" (page 9-34) |

Continued



| Setting | | Description |
|-----------------------|------------------|---|
| Major Scale | Divisions | Select from 1 to 999 large-scale axis divisions.  |
| | Length | Select the large scale length from 2 to 3,072. |
| Minor Scale | Divisions | Select from 2 to 999 minor-scale axis divisions.  |
| | Length | Select the minor scale length from 1 to 3,071. |
| Draw Axis | Axis Position | Select the scale direction from the axis from [Left] or [Right]. |
| Type | Bar (Vertical) | Displays the scale for a vertical bar graph. |
| | Bar (Horizontal) | Displays the scale for a horizontal bar graph. |
| | Arc | Displays the scale for a circle graph. <div style="border: 1px solid black; padding: 2px; display: inline-block;">NOTE</div> <ul style="list-style-type: none"> You can set the width and height of a scale in [Edit (E)], [Change Attributes (M)]. However, if you set the width or height to an even number, it will be drawn with one less dot on the GP. |
| Start Angle/End Angle | | Set the [Start Angle] or [End Angle]. |

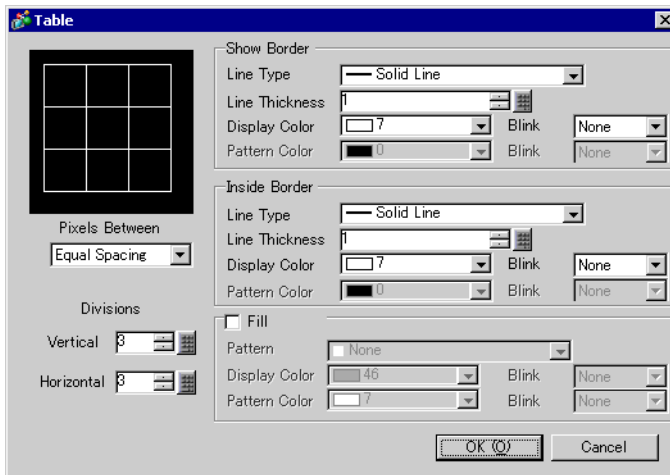
9.2.9 Drawing Tables

Draw a table by dragging to specify two opposite corners. Set the rungs and number of columns in the following dialog box.

From the [Draw (D)] menu, select [Table (T)] or click  and to place a table on the screen. If you double-click the placed [Table], the following dialog box appears.

NOTE

- To edit the table after placing it, click a line of the table in the selected state to make it a yellow handle. You can change the inside border spacing by operating the yellow handle.
-  When you click this icon, drag to select the table frame borders and move the pointer  to the drawing area to place the defined table.



| Setting | | Description |
|---------------|----------------|--|
| Show Border | Line Type | Select the line type from [Solid Line], [Dotted Line], [Dash Line], [Chain Line], or [Two-Dot Chain Line]. ☞ "9.5.3 Setting Line Types" (page 9-37) |
| | Line Thickness | Set the line thickness within the range of one to nine dots. NOTE • When other line types than [Solid Line] are selected in [Line Type], the line thickness is fixed at one dot. |
| | Display Color | Set the outer border color for the table. ☞ "9.5.1 Setting Colors" (page 9-34) |
| | Pattern Color | Select the pattern color. This function can be used only when line types other than [Solid Line] are selected in [Line Type]. ☞ "9.5.4 Setting Patterns" (page 9-37) |
| | Blink | Select whether or not the Part will blink, and the blink speed. You can choose different blink settings for the [Display Color] and [Pattern Color] of the part. NOTE • There are cases where you can and cannot set Blink depending on the Display and System Settings [Color Settings]. ☞ "9.5.1 Setting Colors" (page 9-34) |
| Inside Border | Line Type | Select the line type from [Solid Line], [Dotted Line], [Dash Line], [Chain Line], or [Two-Dot Chain Line]. ☞ "9.5.3 Setting Line Types" (page 9-37) |
| | Line Thickness | Set the line thickness within the range of one to nine dots. NOTE • When other line types than [Solid Line] are selected in [Line Type], the line thickness is fixed at one dot. |
| | Display Color | Set the inside border color for the table. ☞ "9.5.1 Setting Colors" (page 9-34) |
| | Pattern Color | Select the pattern color. This function can be used only when line types other than [Solid Line] are selected in [Line Type]. ☞ "9.5.4 Setting Patterns" (page 9-37) |
| | Blink | Select whether or not the Part will blink, and the blink speed. You can choose different blink settings for the [Display Color] and [Pattern Color] of the part. NOTE • There are cases where you can and cannot set Blink depending on the Display and System Settings [Color Settings]. ☞ "9.5.1 Setting Colors" (page 9-34) |

Continued

| Setting | | Description |
|----------------|---------------|---|
| Fill | Pattern | Select a background pattern for the table. ☞ "9.5.4 Setting Patterns" (page 9-37) |
| | Display Color | Set the table color. ☞ "9.5.1 Setting Colors" (page 9-34) |
| | Pattern Color | Set the background pattern color for the table. ☞ "9.5.4 Setting Patterns" (page 9-37) |
| | Blink | Select whether or not the Part will blink, and the blink speed. You can choose different blink settings for the [Display Color] and [Pattern Color] of the part. NOTE <ul style="list-style-type: none"> • There are cases where you can and cannot set Blink depending on the Display and System Settings [Color Settings]. ☞ "9.5.1 Setting Colors" (page 9-34) |
| Pixels Between | | Select from [Equal Spacing] or [Free]. <ul style="list-style-type: none"> • Equal Spacing The row width and column width are made equal. • Free The row width and column width can be adjusted freely. |
| Divisions | | Designate the number of rows [Vertical] and number of columns [Horizontal] in the table from 1 to 30. |


9.3 Writing Text

Draw text on the drawing screen.

To draw text in order to switch the screen display languages or display content while operating the GP, use a text table. For the settings, refer to “15.4 Changing Languages (Multilanguage)” (page 15-16) .


9.3.1 Setup Procedure

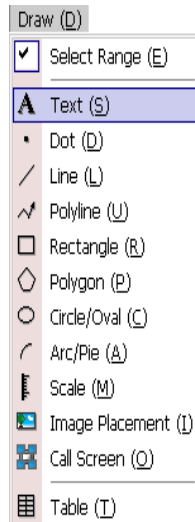
NOTE


- Please refer to the settings guide for details.
 “9.12.1 Text Settings Guide” (page 9-77)

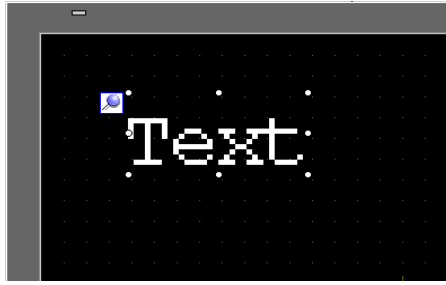
To place the text "Production Inventory" on the drawing screen.



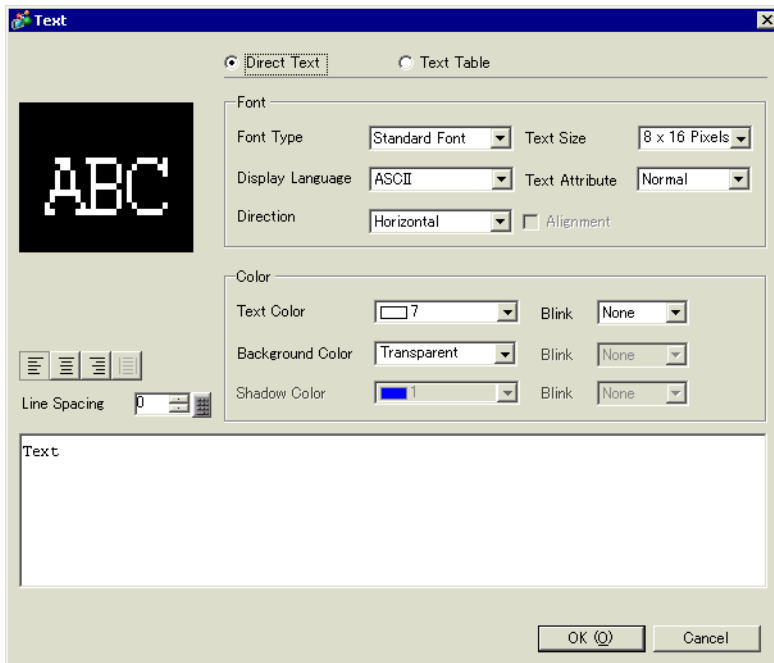
1 From the [Draw (D)] menu, select [Text (S)] or click  to place text on the screen.



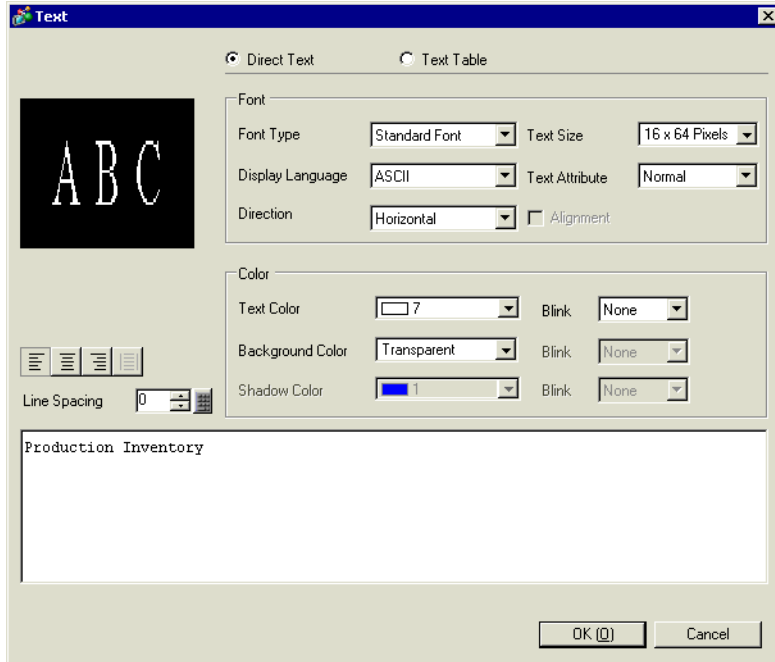
- 2 In the toolbar, click the pointer icon  and select the placed text. When the text border appears, drag to adjust its size and position.



- 3 Double-click the placed text and the [Text] dialog box appears.



4 Designate the font and size and input text to place in the Input Text border.








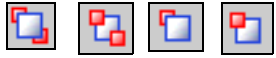


5 Click [OK] and the input text "Production Inventory" will be placed.

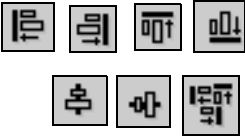



9.4 Editing Objects

9.4.1 Introducing Edit Tools

| Setting | Description |
|---|--|
| Cut  | Cut the object (Parts, Text, Figure). You can place the cut object on the screen with [Paste]. Operation Procedure You can cut an object by selecting a desired object and click [Cut] in the [Edit] menu. |
| Copy  | Copies the selected object. Place it on the screen by using the [Paste]. Operation Procedure You can copy by selecting a desired object and click [Copy] in the [Edit] menu. |
| Paste  | Pastes the copied or cut object onto a screen. Operation Procedure You can paste the object you copied or cut by clicking [Paste] in the [Edit] menu. <div style="border: 1px solid black; padding: 2px;">NOTE</div> <ul style="list-style-type: none"> • When pasting from one screen to another, you can paste the object to the same position as the other screen. |
| Duplicate  | Copies multiple pictures at a time. When duplicating parts, you can automatically assign the next consecutive address after the source part's address to the destination part. ☞ "9.4.5 Duplicate" (page 9-28) |
| Delete  | Deletes an object. Operation Procedure You can delete by selecting the desired object and clicking [Delete (D)] in the [Edit] menu. |
| Select All | Selects all the objects on the screen. You can also specify the range to drag multiple objects. ☞ "9.4.2 Selection Method" (page 9-27) |
| Edit Vertex  | You can edit, delete or insert each vertex coordinate of a polyline or polygon. ☞ "■ Edit Vertex" (page 9-30) |
| Group  | You can group multiple objects together and treat them as one unit. ☞ "9.4.7 Grouping (Ungrouping)" (page 9-31) |
| Order  | You can change the order of placed overlapping objects. ☞ "9.4.8 Order" (page 9-31) |

Continued

| Setting | Description |
|---|--|
| Place/ Align  | You can adjust the positions of multiple objects (Align Right, Align Left, Align Center, etc.). ☞ “9.4.9 Aligning” (page 9-32) |
| Rotate/ Flip  | <ul style="list-style-type: none"> • Rotate Rotates the object by 90 degrees. ☞ “9.4.10 Rotating Right or Left” (page 9-32) • Flip Flips the object horizontally or vertically. ☞ “9.4.11 Reversing X-Axis (Vertical)/Y-Axis (Horizontal)” (page 9-33) |
| Others | Sets a grid and guidelines to align a part with another one. ☞ “9.9 Creating a Screen from a Template” (page 9-57) |

9.4.2 Selection Method

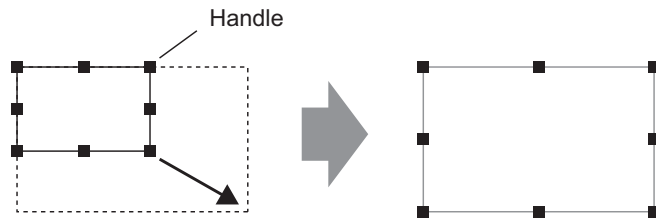
There are two ways to select an object: click the object directly or specify the range to drag multiple surrounding objects.

NOTE

- To select one of the overlapping objects, click the object while pressing the [Ctrl] key. Each object becomes in the selective state in turn, and you can select the target object.
- To release a particular object from the selected objects, click the target object while pressing the [Shift] key.
- To add a particular object to the selected objects, click the target object while pressing the [Shift] key.

9.4.3 Enlarging and Reducing the Size

Select the target object and hover the cursor on the handle. When the cursor turns to ↔, you can zoom in or out and drag the object to the appropriate size.



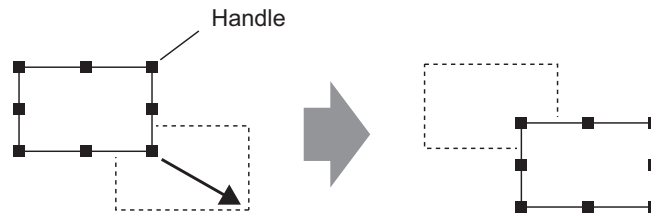
Drag it to a desired size.

NOTE

- If you select an object and move the four-cornered handles while pressing the [Shift] key, you can enlarge/reduce it with the same horizontal to vertical ratio.
- If you use the [↑], [→], [←], and [↓] keys with the cursor on the object handle, you can enlarge/reduce the object by the dot.

9.4.4 Moving Objects

Select the target object and hover the cursor on the object. When the cursor turns to \leftrightarrow , you can drag the object to the appropriate location.



Drag it to a desired position.

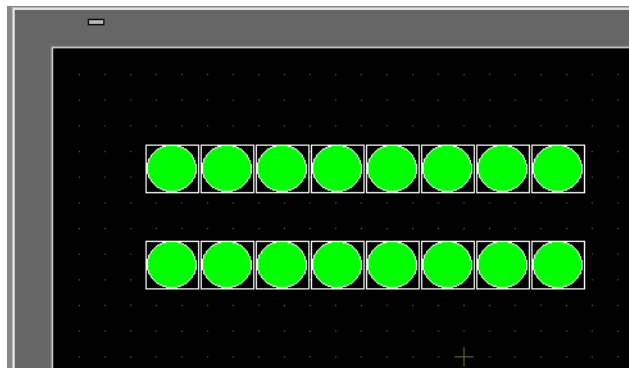
NOTE

- If you move while pressing the [Shift] key, you can move the object horizontally or vertically.
- If you use the [↑], [→], [←], and [↓] keys with the object selected, you can move the object a dot at a time.

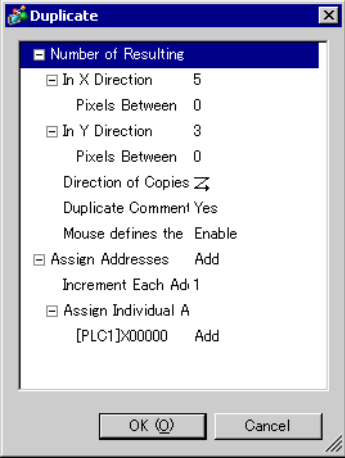








9.4.5 Duplicate

Copies multiple pictures at a time.

Right-click while selecting the object and click [Duplicate (W)].

**NOTE**

- When duplicating parts, you can automatically assign the next consecutive address after the source part's address to the destination part.

| Duplicate | Description |
|---|---|
|  | <ul style="list-style-type: none"> • In X Direction Set the number of display positions in the X direction from 1 to 99. • Pixels Between Set the number of dots between objects from 1 to 99 dots. |
| | <ul style="list-style-type: none"> • In Y Direction Set the number of display positions in the Y direction from 1 to 99. • Pixels Between Set the number of dots between objects from 1 to 99 dots. |
| | <ul style="list-style-type: none"> • Direction of Copies Select the display direction from , , , , , ,  or . |
| | <p>NOTE</p> <ul style="list-style-type: none"> • When you add addresses, sequential addresses are assigned in the specified direction according to the address addition width. |
| | <ul style="list-style-type: none"> • Duplicate Comment The copy source comment is reflected in the copy destination. |
| | <ul style="list-style-type: none"> • Mouse defines the range Using the defined interval, makes copies that fit into the range. |
| | <p>NOTE</p> <ul style="list-style-type: none"> • The minimum settings range depends on the size of the parts of the copy source and the number of copies. You cannot move the cursor to this range. |
| | <ul style="list-style-type: none"> • Assign Addresses You can assign sequential addresses from the copy-from addresses according to the [Increment Each Address by]. • Increment Each Address by Designates an address interval. When the copy-from addresses are Bit addresses, addresses are added by the Bit. When the copy-from addresses are Word addresses, addresses are added by the Word. • Assign Individual Addresses When multiple addresses are set to one object, you can designate whether or not to add each address. |

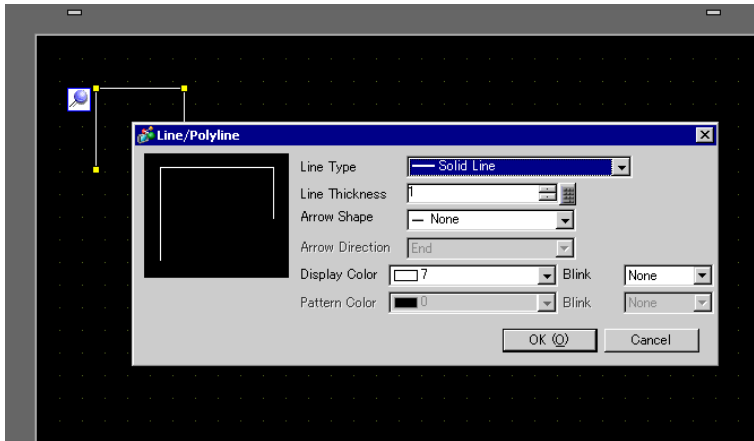
9.4.6 Changing Attributes

You can change object attributes such as color or address.

To change attributes, double-click the object while selecting it or select [Change Attributes (M)] from the [Edit] menu.

NOTE

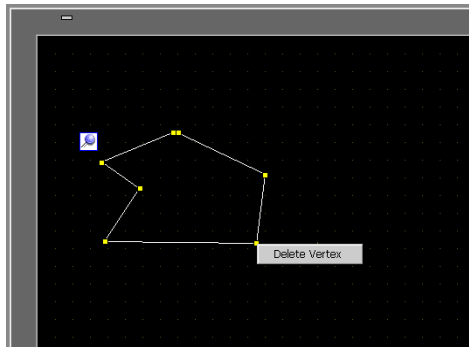
- When multiple objects are selected, you cannot change attributes.



■ Edit Vertex

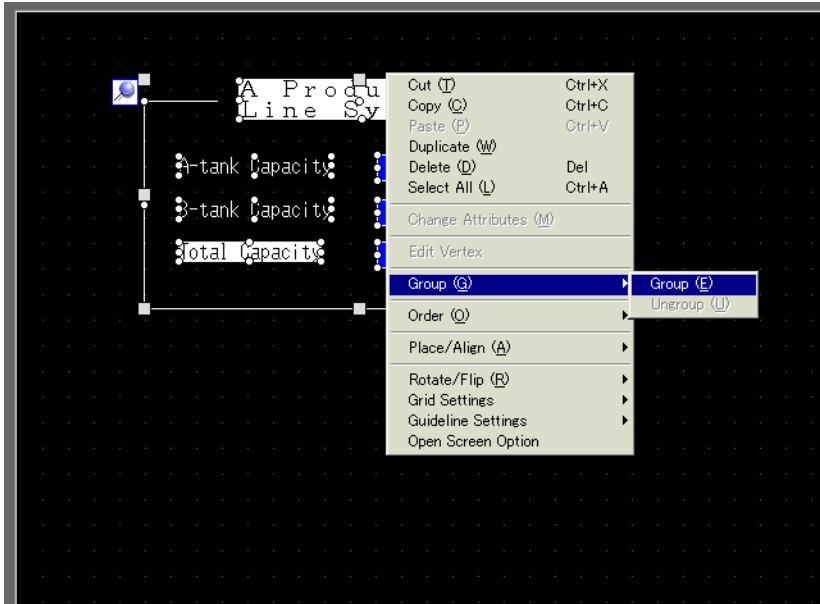
You can edit, delete, or insert each vertex coordinate of a polyline or polygon.

To edit the object's vertex, click a line in the selected state to change it to a yellow handle. Change the shape of the object by clicking an arbitrary line. To delete the vertex, right-click on the vertex and select [Delete Vertex].



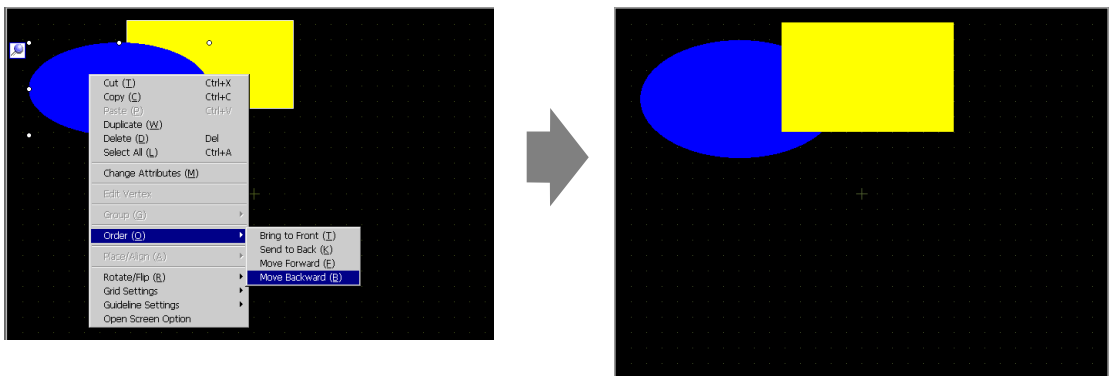
9.4.7 Grouping (Ungrouping)

You can group multiple objects and handle them as one object. To do so, select multiple objects, right-click, and click [Group (E)]. To ungroup, click [Ungroup (G)].



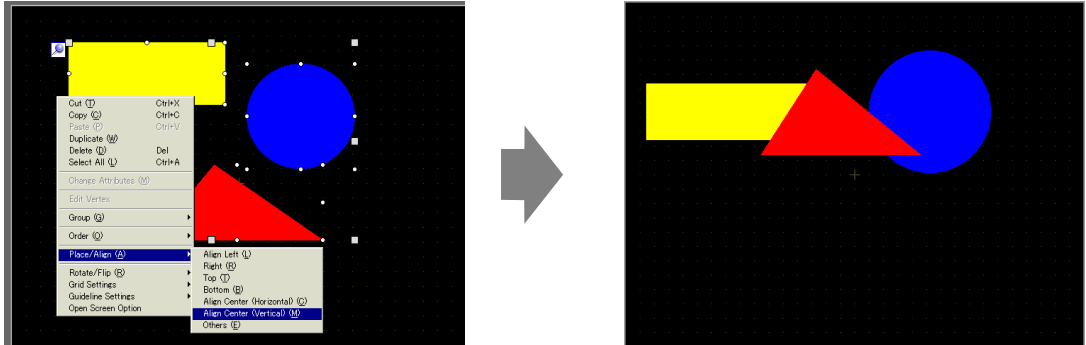
9.4.8 Order

When the placed objects are overlapping, you can change the placement order. Select and right-click the object whose order you want to change, click [Order (O)], and select the object order from [Bring to Front], [Send to Back], [Move Forward], or [Move Backward]. In the following example, the oval is moved backward.



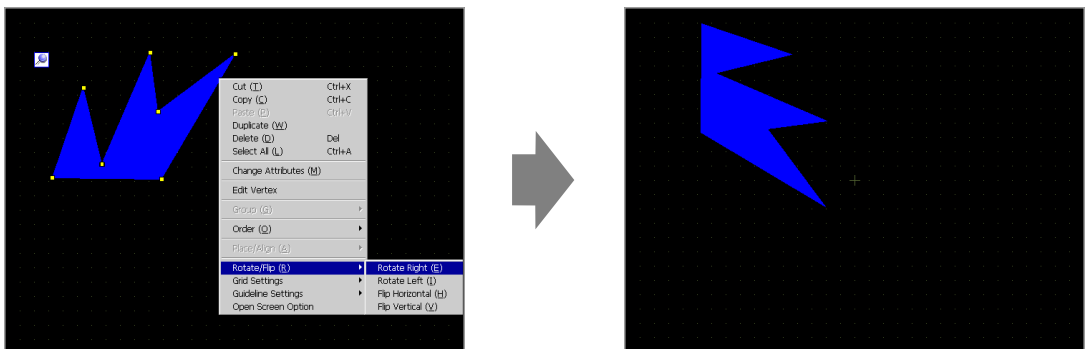
9.4.9 Aligning

You can align the position of multiple objects. Select the objects that you want to align, right-click, and then select [Align Left (L)], [Right (R)], [Top (T)], [Bottom (B)], [Align Center (Horizontal) (C)], [Align Center (Vertical) (M)], or [Others (E)] from [Place/Align (A)]. In the following example, the rectangle, polygon, and circle are all aligned to the top.



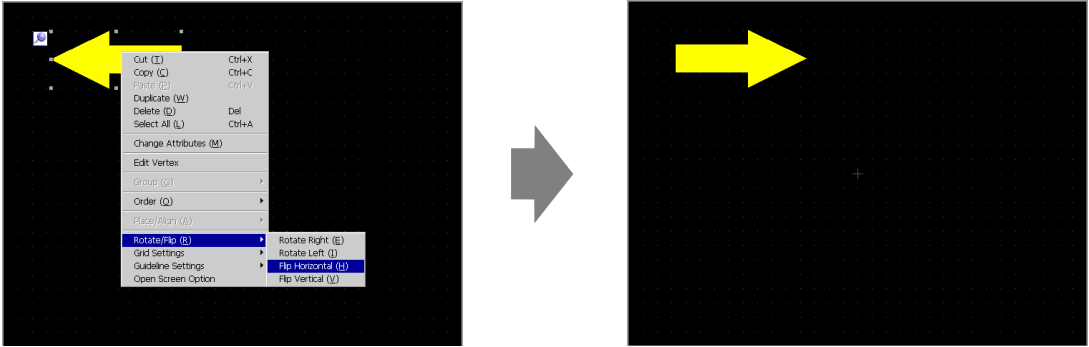
9.4.10 Rotating Right or Left

You can rotate the object to the right and left 90 degrees at a time. Right click to select the object you want to rotate, select the [Rotate Right (E)], [Rotate Left (I)] in [Rotate/Flip (R)]. The following example describes placement of a right-rotated polygon.



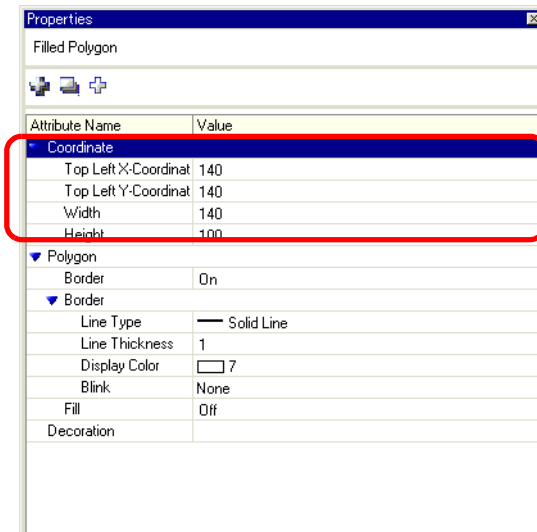
9.4.11 Reversing X-Axis (Vertical)/Y-Axis (Horizontal)

You can flip the object on the X-Axis (vertical) or the Y-Axis (horizontal) of the center line of the object. Right-click to select the desired object and select [Flip Horizontal (H)] or [Flip Vertical (V)] from the [Rotate/Flip (R)]. The following example shows the position of a polygon flipped horizontally. Please note that only the display position of the screen, marks, parts, and text are reflected.



9.4.12 Changing Coordinates

You can change the position and size of an object by designating a coordinate in the [Properties (P)]. The reference of the coordinate is the top left of an object.



NOTE

- If the [Properties] tab is not displayed in either the work space or the screen drawing area, from the [View (V)] menu, point to [Work Space (W)] and select [Properties (P)].

9.5 Changing Colors, Line Types and Patterns

9.5.1 Setting Colors

■ List of Available Colors

| Model | Display Device | Display Color | Designated Number of Colors in Drawing |
|-----------|-----------------------------|---|--|
| AGP-3200T | TFT Color LCD | 256 Colors, None Blink 64 Colors, 3-Speed Blink | 256 Colors 64 Colors |
| AGP-3200A | Monochrome LCD | 8 Levels, 1-Speed Blink | Monochrome 8 Levels |
| AGP-3302B | Blue-mode Monochrome LCD | 16 Levels, 3-Speed Blink | 16 Levels |
| AGP-3301L | Monochrome LCD | Monochrome, 16 Levels, 3-Speed Blink | Monochrome 16 Levels |
| AGP-3301S | STN Color LCD | 4096 Colors, 3-Speed Blink | 256 Colors |
| AGP-3300L | Monochrome LCD | Monochrome, 16 Levels, 3-Speed Blink | Monochrome 16 Levels |
| AGP-3300S | STN Color LCD | 4096 Colors, 3-Speed Blink | 256 Colors |
| AGP-3300T | TFT Color LCD | 65536 Colors, No Blink 16384 Colors, 3-Speed Blink | 256 Colors |
| AGP-3400S | STN Color LCD | 4096 Colors, 3-Speed Blink | 256 Colors |
| AGP-3400T | TFT Color LCD | 65,536 Colors, No Blink 16384 Colors, 3-Speed Blink | 256 Colors |
| AGP-3500T | | | |
| AGP-3500L | Monochrome LCD | Monochrome, 16 Levels, 3-Speed Blink | Monochrome 16 Levels |
| AGP-3500S | STN Color LCD | 4096 Colors, 3-Speed Blink | 256 Colors |
| AGP-3510T | TFT Color LCD | 65,536 Colors, No Blink 16,384 Colors, 3-Speed Blink | 256 Colors |
| AGP-3560T | | | |
| AGP-3600T | | | |
| AGP-3450T | | | |
| AGP-3550T | | | |
| AGP-3650T | | | |
| AGP-3750T | | | |
| LT-3201A | | | |
| PS3651A | TFT Color LCD | 65,536 Colors, No Blink 16,384 Colors, 3-Speed Blink | 256 Colors |
| PS3650A | | | |
| PS3700A | | | |
| PS3710A | | | |
| PS3711A | | | |
| PS2000B | | | |

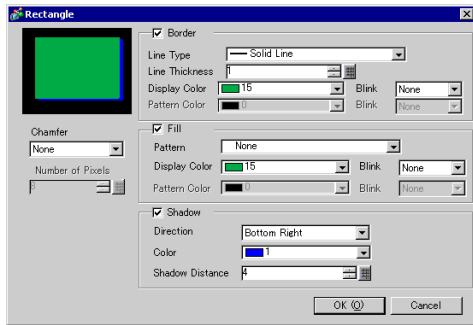
NOTE

- Objects with the blink setting option blink on the display and have three selectable blink speed rates.
 ☞ “9.5.2 Setting Blinks” (page 9-37)
- On monochrome LCD models and STN Color LCD models, when you set a tiling pattern in the background settings to use the blink setting, some drawing components that do not have the blink setting may blink. Please confirm the display in advance.

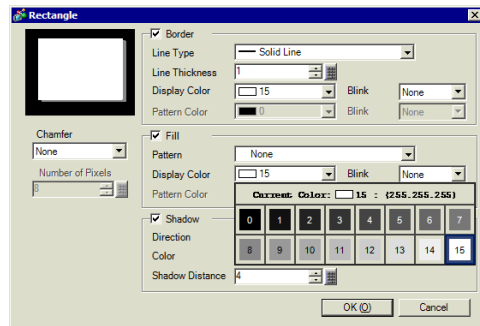
■ Defining Colors

Set the object colors. Depending on part type, setting items such as colors of a border, fill, shadow or label, differ depending on the part type.

For a 256-color supported model



For a monochrome 16-level supported model



NOTE

- For 256-color supported models, you can move to the next palette with the scroll button at the bottom of the color palette.
- You can only select [Transparent] for the [Pattern Color] for a Switch Lamp that does not use the [Lamp Feature] or for a Key that has a [Pattern] set in the settings dialog box.
- When you change from a model that supports more than 16 colors to a model that supports only 16 colors, any colors outside the 16 color range are converted to one of the 16 colors.

IMPORTANT

- For a monochrome 16-level model, there are some cases where color distinction is difficult or where flicker is caused. Use the color designation above after confirming the colors.

◆ Color Palette

Current Color: 7 : (255,255,255)

| | | | | | | | |
|----|----|----|----|----|----|----|----|
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
| 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 |
| 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 |
| 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 |
| 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 |
| 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 |

<< >>

| | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|
| 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 |
| 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 |
| 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 |
| 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 |
| 96 | 97 | 98 | 99 | 100 | 101 | 102 | 103 |
| 104 | 105 | 106 | 107 | 108 | 109 | 110 | 111 |
| 112 | 113 | 114 | 115 | 116 | 117 | 118 | 119 |
| 120 | 121 | 122 | 123 | 124 | 125 | 126 | 127 |

<< >>

| | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|
| 128 | 129 | 130 | 131 | 132 | 133 | 134 | 135 |
| 136 | 137 | 138 | 139 | 140 | 141 | 142 | 143 |
| 144 | 145 | 146 | 147 | 148 | 149 | 150 | 151 |
| 152 | 153 | 154 | 155 | 156 | 157 | 158 | 159 |
| 160 | 161 | 162 | 163 | 164 | 165 | 166 | 167 |
| 168 | 169 | 170 | 171 | 172 | 173 | 174 | 175 |
| 176 | 177 | 178 | 179 | 180 | 181 | 182 | 183 |
| 184 | 185 | 186 | 187 | 188 | 189 | 190 | 191 |

<< >>

Current Color: 7 : (255,255,255)

| | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|
| 192 | 193 | 194 | 195 | 196 | 197 | 198 | 199 |
| 200 | 201 | 202 | 203 | 204 | 205 | 206 | 207 |
| 208 | 209 | 210 | 211 | 212 | 213 | 214 | 215 |
| 216 | 217 | 218 | 219 | 220 | 221 | 222 | 223 |
| 224 | 225 | 226 | 227 | 228 | 229 | 230 | 231 |
| 232 | 233 | 234 | 235 | 236 | 237 | 238 | 239 |
| 240 | 241 | 242 | 243 | 244 | 245 | 246 | 247 |
| 248 | 249 | 250 | 251 | 252 | 253 | 254 | 255 |

<< >>

Current Color: 7 : (255,255,255)

| | | | | | | | |
|----|-----|-----|-----|----|----|----|----|
| E1 | E2 | E3 | E4 | E5 | E6 | E7 | E8 |
| E9 | E10 | E11 | E12 | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

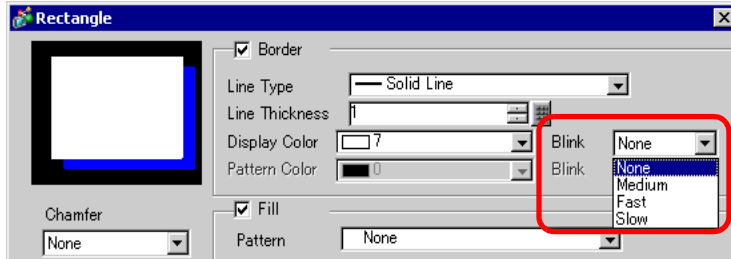
<< >>

9.5.2 Setting Blinks

Blink makes the object blink on the display and has three selectable blink speed rates (Slow, Medium, Fast).

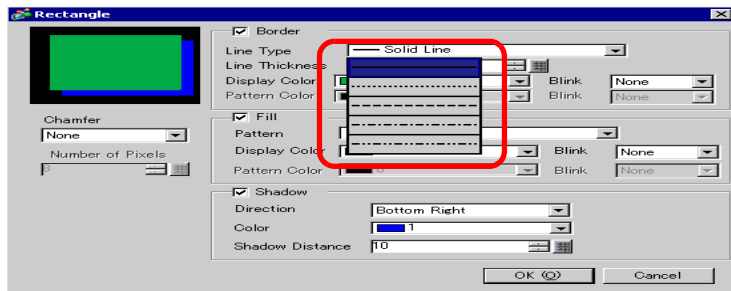
[Fast] is twice the speed of [Medium] and [Slow] is half the speed of [Medium]. If you select [None], the object will not blink.

NOTE • For dark color blink, refer to “5.14.6 [System Settings] Setting Guide ■ [Display Unit] Settings Guide ◆ Display” (page 5-112)



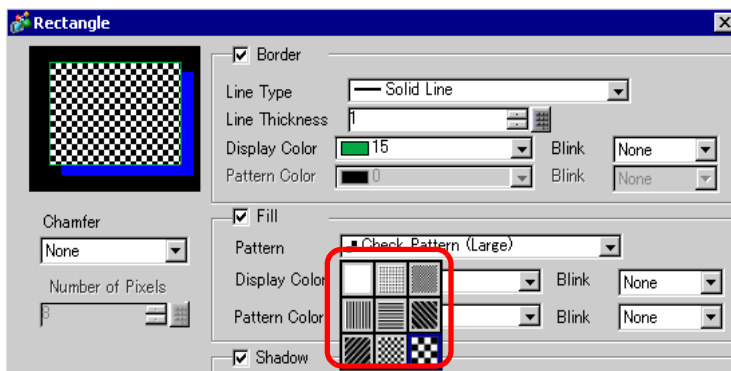
9.5.3 Setting Line Types

You can select the line type from five types: [Solid Line], [Dotted Line], [Dash Line], [Chain Line], or [Two-Dot Chain Line].



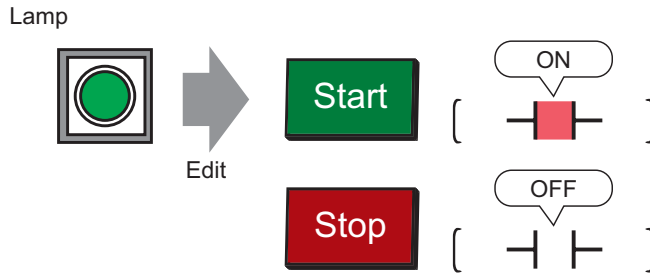
9.5.4 Setting Patterns

Select a pattern from the following nine types.





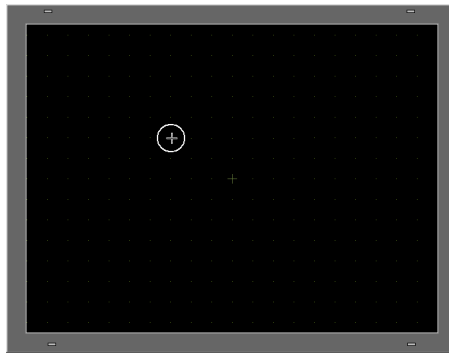
9.6 Editing a Part

9.6.1 Editing Parts

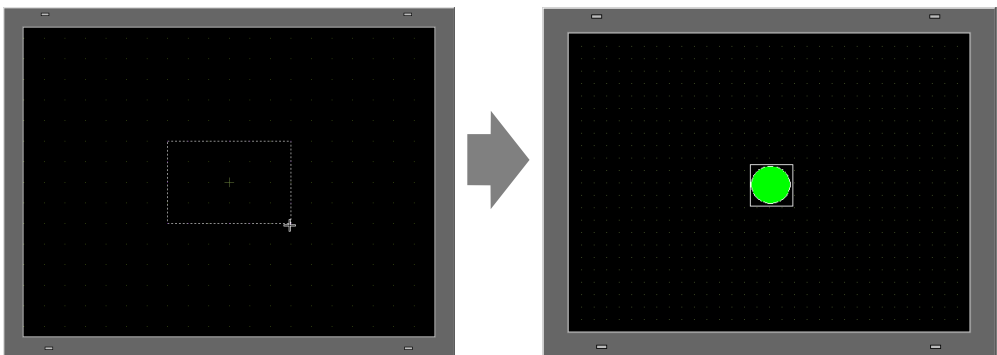


1 From the [Parts (P)] menu, point to [Switch Lamp (C)] and select [Lamp (L)] or click .

2 Move the pointer  to the drawing screen and the pointer changes to a cross-hair cursor .



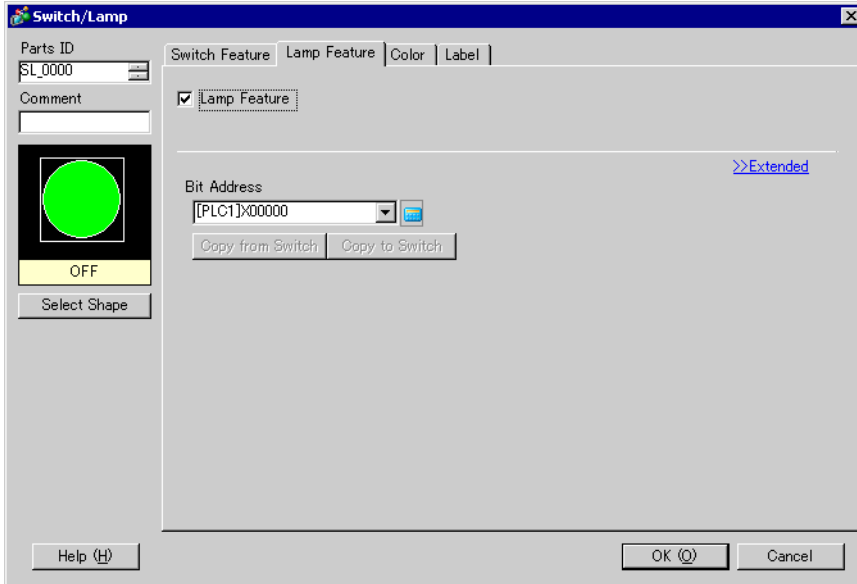
3 Drag to the location where you want to place the switch. The switch is placed in the area where it is dragged.




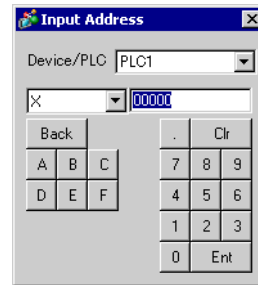
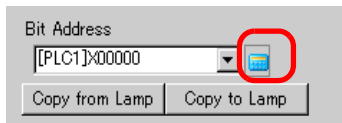
NOTE


- You can also drag and drop a part from the Parts Toolbox . From the [View (V)] menu, point to [Parts Toolbox (T)], [Work Space(W)] and select [Parts Toolbox (T)]. The Parts Toolbox appears. You can view different parts shapes by setting the [Parts Palette] and [Type].

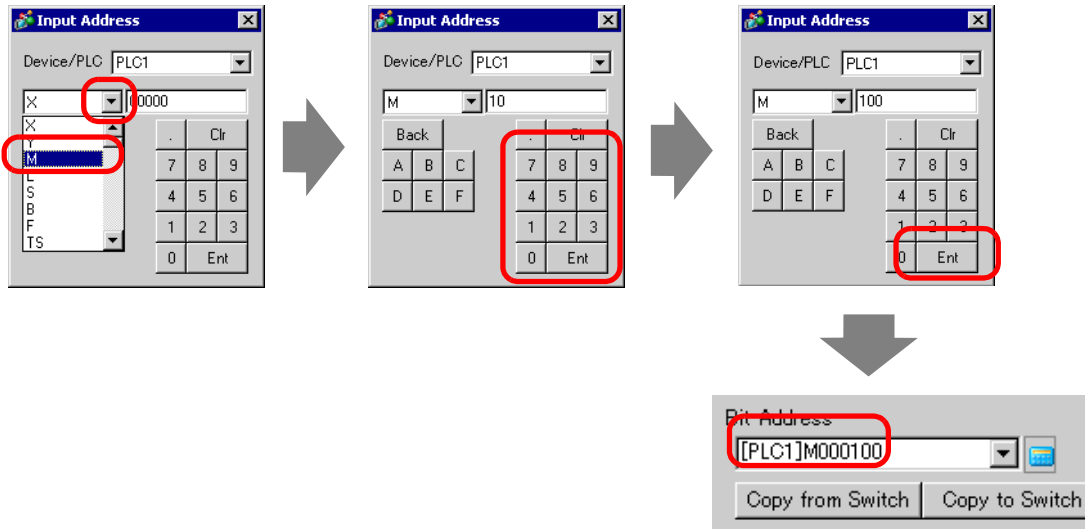
4 Double-click the placed Lamp and the following dialog box appears. Click the keypad icon



5 Click the keypad icon  and enter the bit address in the [Input Address] dialog box.



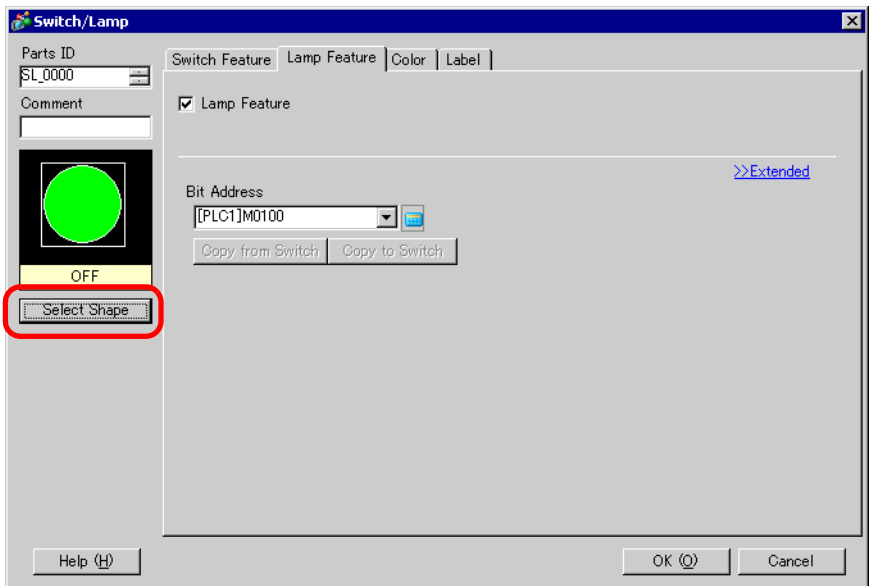
6 Click the  icon and select the [Device/PLC] and [Device]. Input an address from the keypad.(For example, M100)



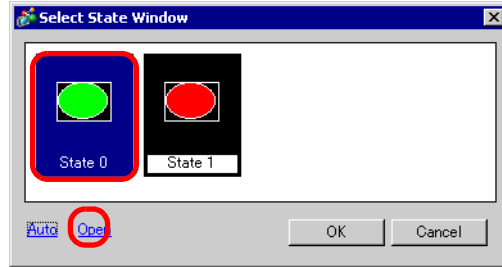
NOTE

- Input the address with the keypad on the [Input Address] dialog box. If you input it directly with the PC keyboard, it may not be recognized as an address.

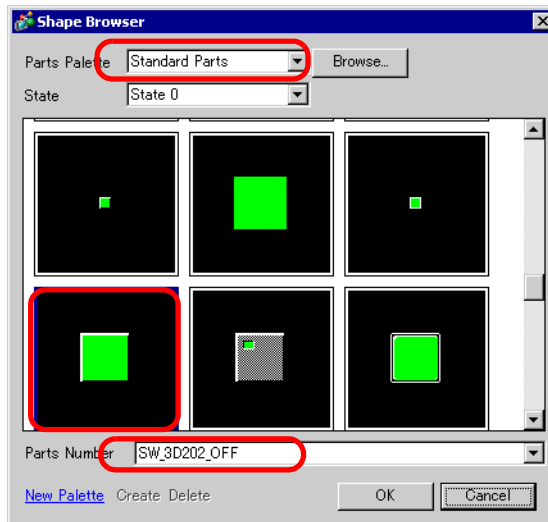
7 Click [Select Shape] and the [Select State Window] appears.



8 Select [State 0] and click [Open].



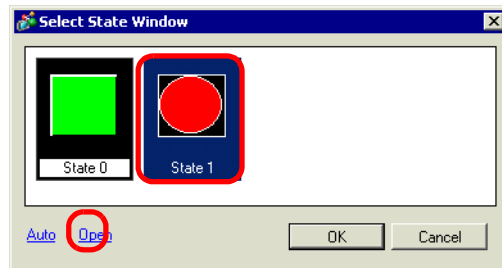
9 Select [Standard Parts] from the Parts Palette. Next select the [Part Number] SW_3D202_ OFF picture.



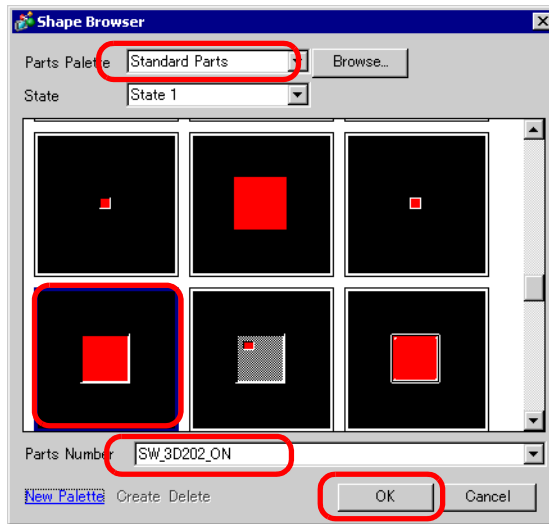
NOTE

- Use the Parts Palette drop-down list to change the images displayed. There are parts with 65536, 256 or 64 colors. Please select the parts palette that matches the colors supported by your model.

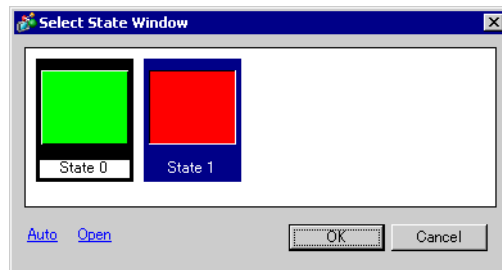
10 Click [OK] and the display returns to the [Select State Window]. Select [State 1] and click [Open].



- 11 Select [Standard Parts] from the [Parts Palette]. Next select the [Part Number] SW_3D202_ON picture and click [OK].



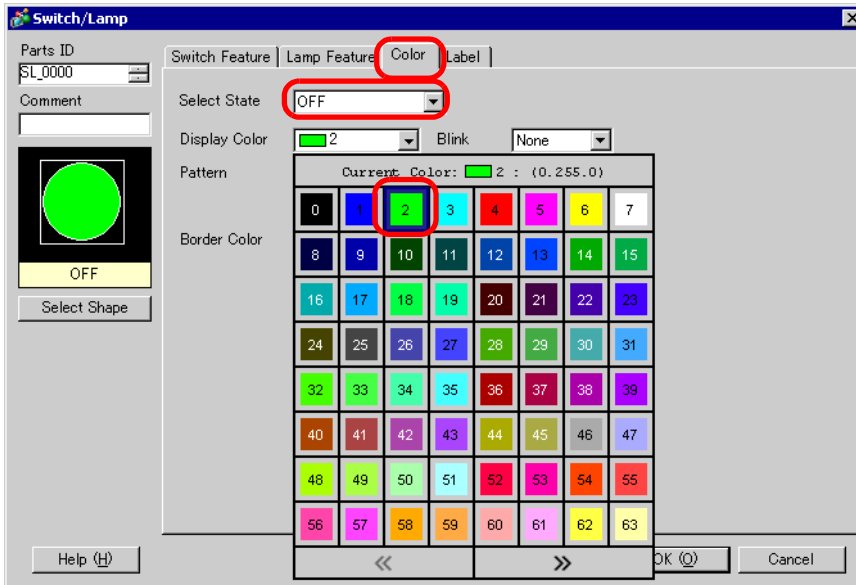
- 12 The pictures at [State 0] (OFF) and at [State 1] (ON) are displayed in the [Select State Window]. Click [OK].



NOTE

- Click [Auto] after defining the picture in [State0] to automatically match the pictures for all the other states.

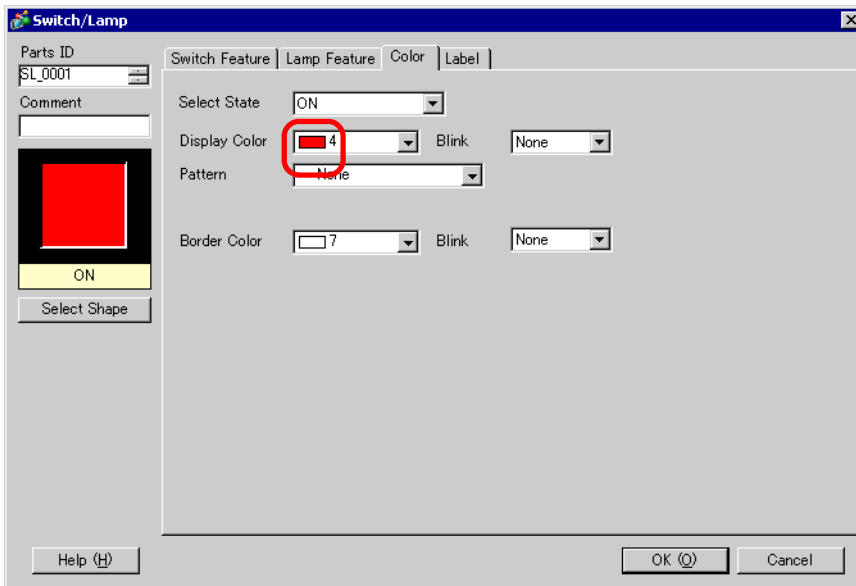
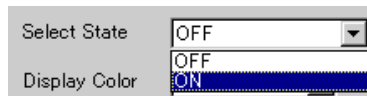
13 Click the [Color] tab. Confirm that [Select State] is OFF and set the color of the switch for the OFF state. For the [Display Color], click  and select a color from the color palette.



NOTE

- You cannot edit the color for the Switch/Lamp menu image parts.

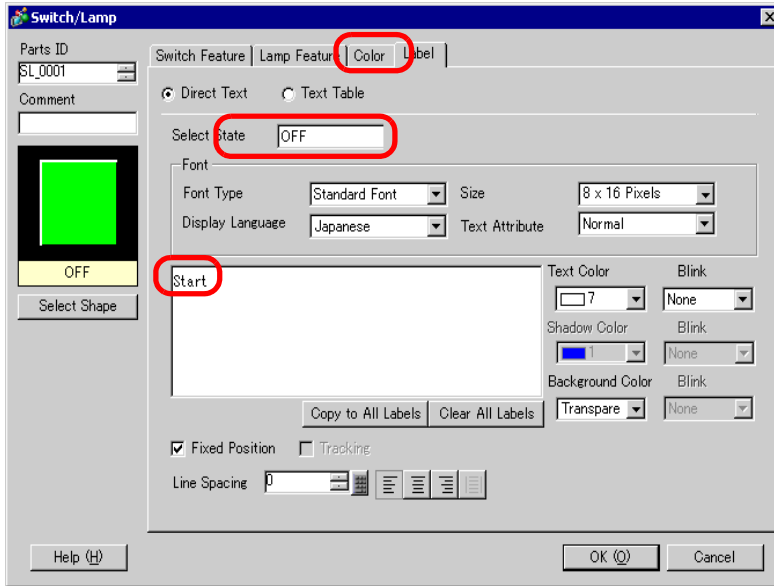
14 Select ON in [Select State] and set the color of the switch for the ON state.



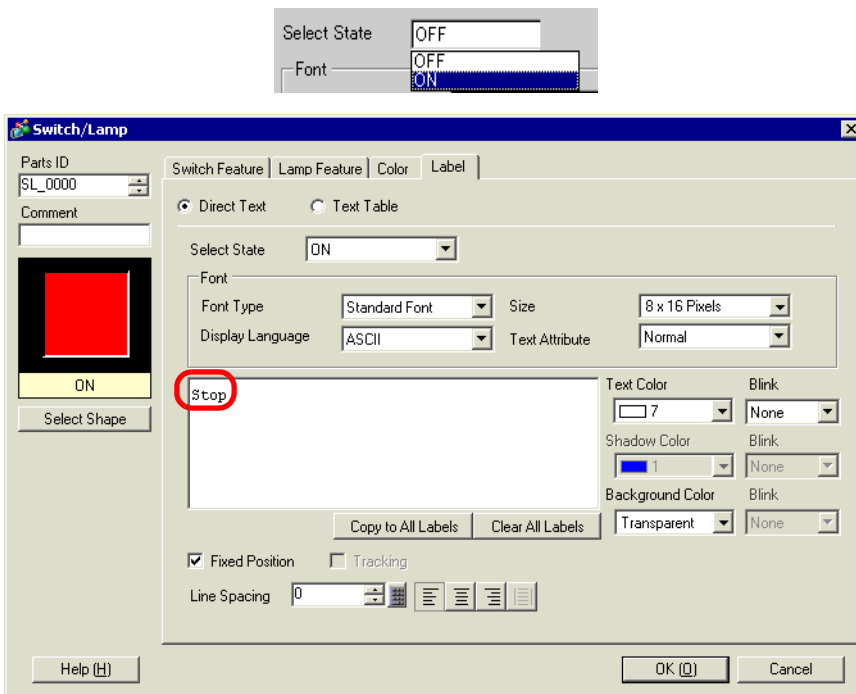
NOTE

- You cannot edit the color for the Switch/Lamp menu image parts.

- 15 Select the [Label] tab. Select [OFF] in [Select State] and input the text to display on the switch in the OFF state.



- 16 Select [ON] in [Select State] and input the text to display on the switch in the ON state. (For example, STOP)

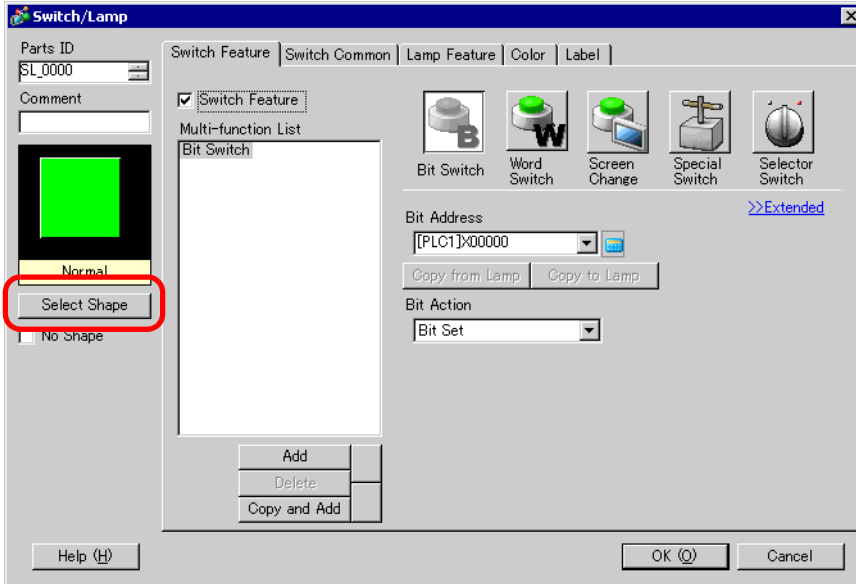


- 17 Click [OK] when all the settings are complete.

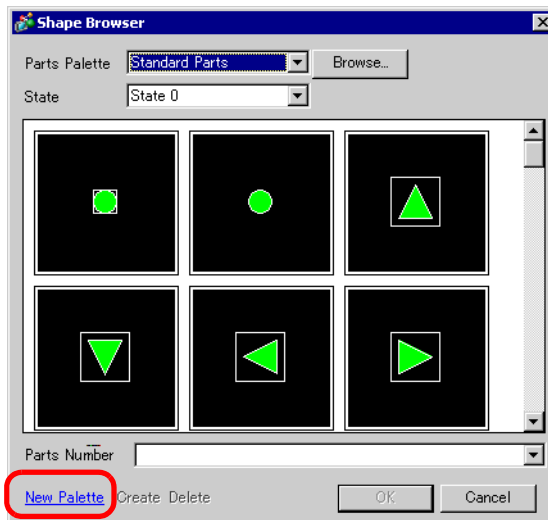
9.6.2 Registering New Part Image

Use the following procedure to register new images for parts.

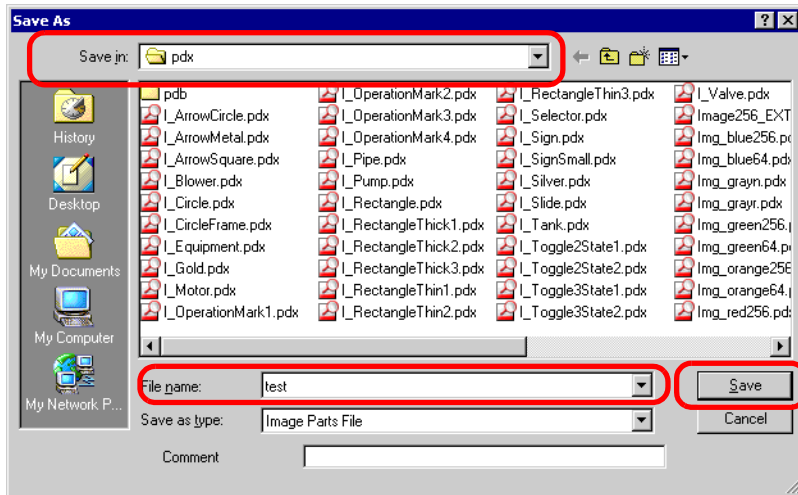
- 1 Double-click the part you want to register a new image for, and the following dialog box appears. Click [Select Shape].



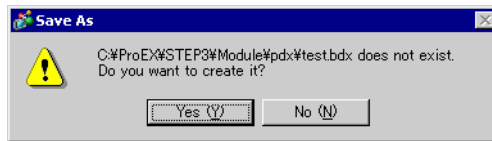
- 2 The [Shape Browser] dialog box appears. Click [New Palette].



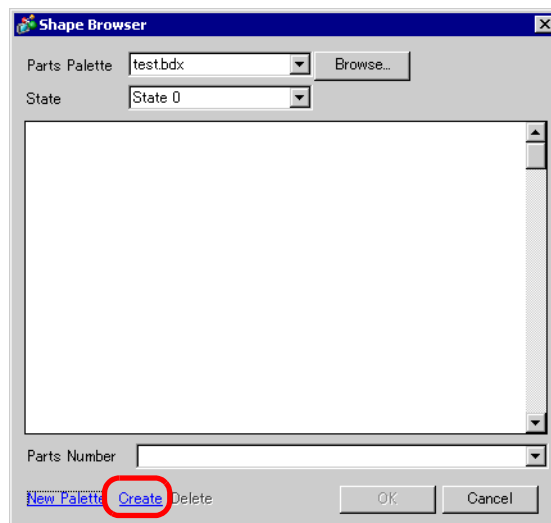
3 The [Save As] dialog box appears. Define the [Location(I)] and [File Name (N)] of the new parts palette you and click [Save (S)].



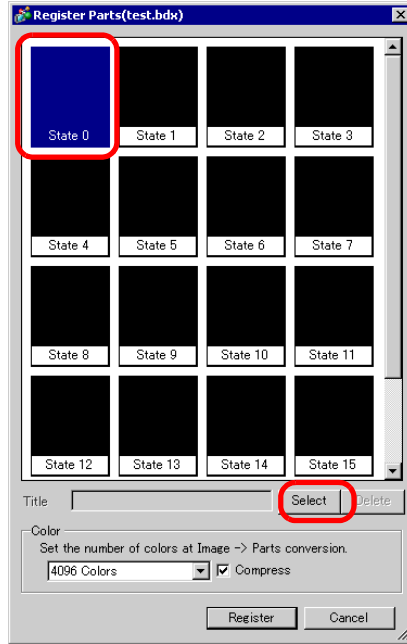
4 When the following message appears, click [Yes (Y)].



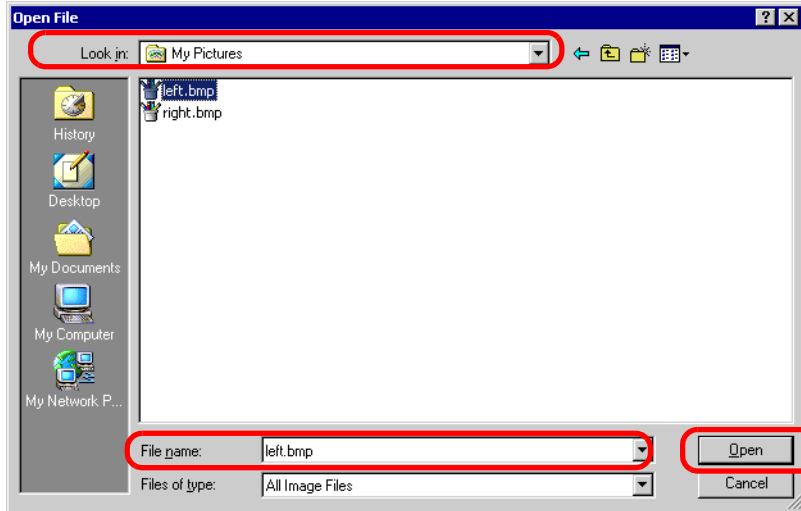
5 The newly registered [Shape Browser] dialog box appears. Click [Create].



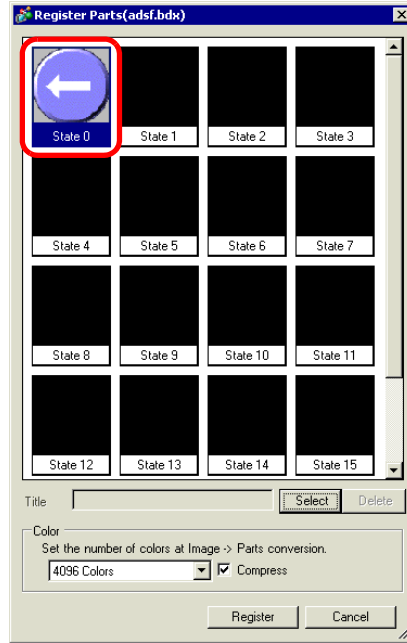
6 The [Register Parts] dialog box appears. Select [State 0], and click [Select].



7 When the [Open File] dialog box appears, navigate to the image location [Look In], select the file [File Name] and [Look in] and [File name] and click [Open].



8 The image will be registered in [State 0] of the [Register Parts] dialog box.





9 If necessary, set the part number and number of colors for the image to register in [Title] and [Color Settings], and click [Register], to complete the process.

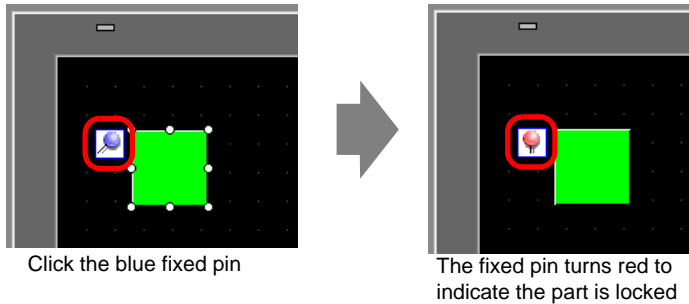
NOTE

- To select an image for the part, open the Parts dialog box and click [Select Shape].
The [Shape Browser] appears. Select a palette name in [Parts Palette]. Select the appropriate image and click [OK].
- If you click "Create" while a previously registered part is selected, you can edit that part image. To create a new image, click the "Create" button while no previously registered part is selected.
- Image parts can be registered with a maximum size of 160 x 160 dots.
- Parts which use registered images can cause large project file sizes. It is recommended you set [Compress] in the [Color].
- You can register up to 200 image parts in a single parts palette file.
- Image parts that have been enlarged or reduced may display differently on the GP and in Pro-EX.
- When the registered image size is different depending on the state, the larger image will remain the same, and the smaller image will be enlarged.
- You cannot register or delete a previously-prepared PDX file.
- The types of image file that can be registered to a part are BMP, JPEG, DPD, and PNG.


9.6.3 Fixing/Unfixing Objects

◆ Fixing Objects

Place drawings and parts, and a blue fixed pin  appears at the top-left corner objects on the screen. Click add space on the pin and it turn red  the object cannot be selected or edited. When you put the cursor over the object, a "lock" mark appears to the right, indicating that the placement position is fixed.)

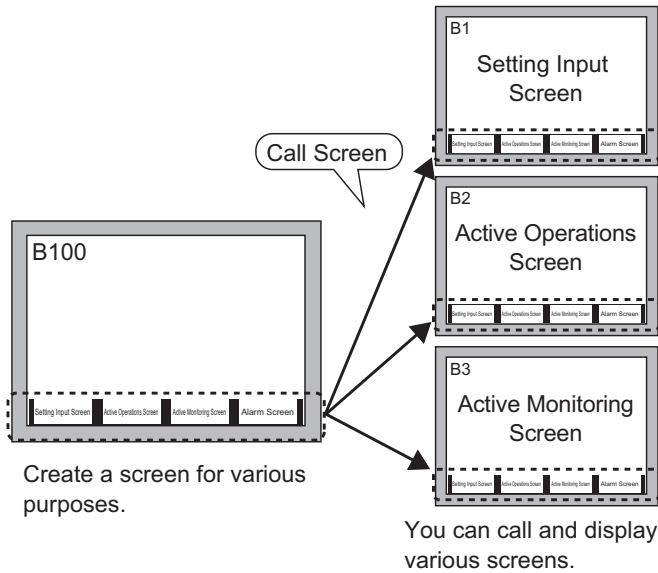


◆ Releasing Fixed Pins

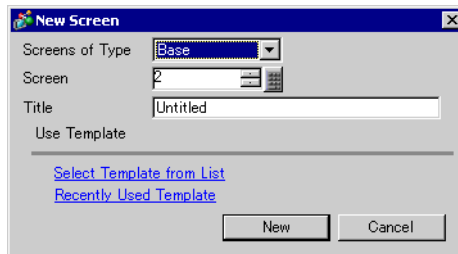
- Releasing individual objects
Double-click a drawing or part, click  and the pin turns blue.
- Releasing all fixed pins on the screen
From the [Edit (E)] menu, select [Release All Fixed Pins (K)].


9.7 Using a Screen for Various Purposes

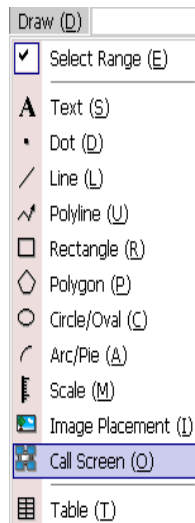
9.7.1 Setup Procedure



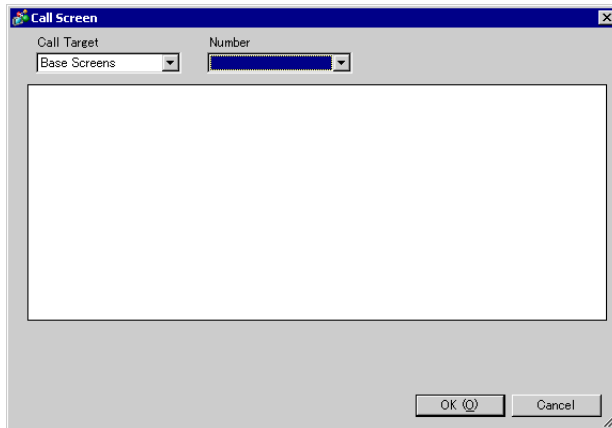
- 1 From the [Screen (S)] menu, select [New Screen (N)]. The following dialog box appears. Click [New] to create a new base screen (Example: Base Screen 2)



- 2 From the [Draw (D)] menu, select [Call Screen (O)] or click .

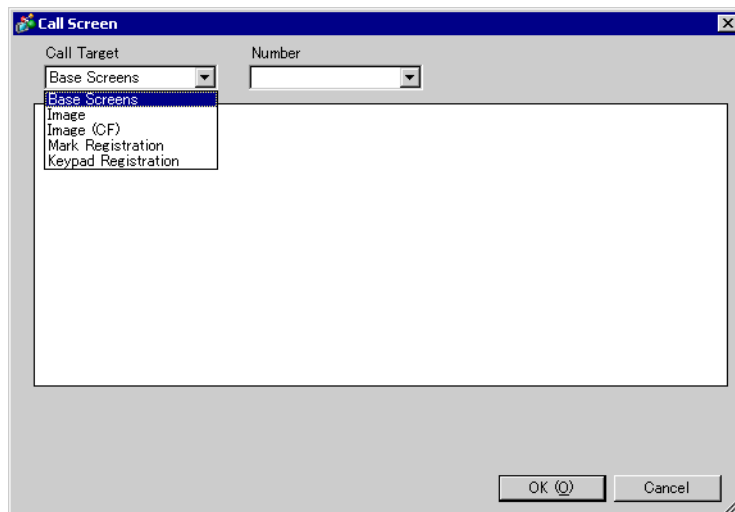


- 3 When you drag on the image screen, a dashed line is drawn. [Call Screen] dialog box is displayed.



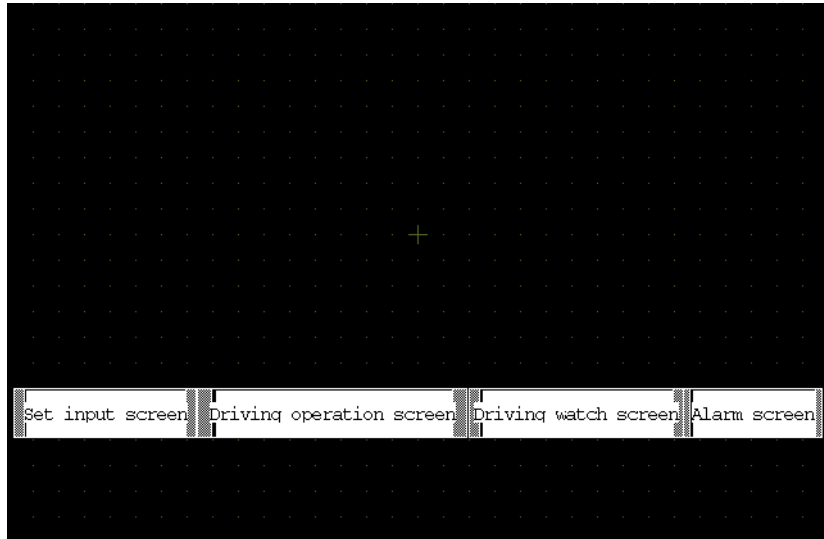
- 4 Select the target image from [Call Target].

| | |
|---------------------|---|
| Base Screens | Previously created base screens are displayed. |
| Image | The image data registered in "Image Registration" is displayed. |
| Image (CF) | The CF-card image data registered in "Image Registration" is displayed. |
| Mark Registration | Displays registered marks. |
| Keypad Registration | The keypads registered in "Keypad Registration" are displayed. |

**NOTE**

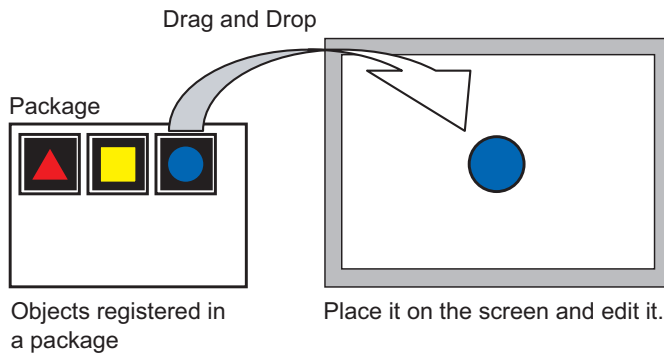
- When you call a [Base Screen], call and place it in the center of the screen.

5 Select an image and click [OK] to display the designated image.

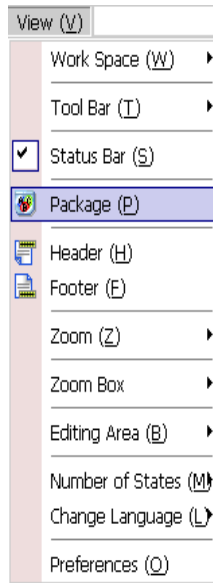


9.8 Editing a Picture on Another Screen

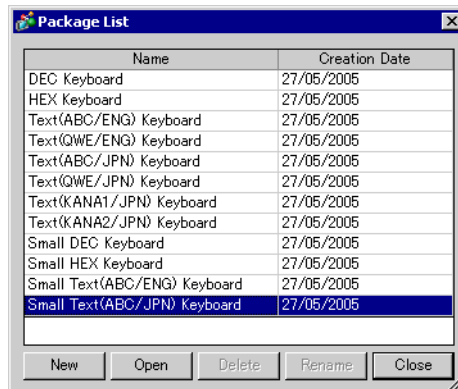
9.8.1 Placing Pictures Registered in the Package



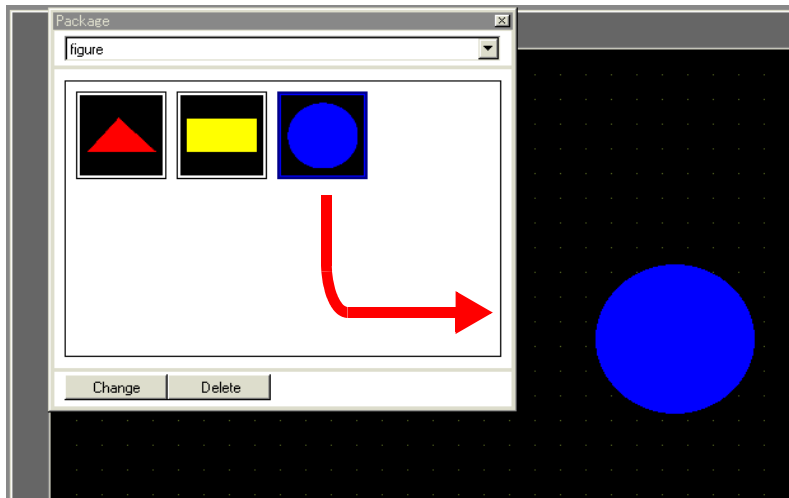
- 1 Display the registered picture list. From the [View (V)] menu, select [Package (P)].



- 2 The [Package List] dialog box appears. Select the picture to place and click [Open].




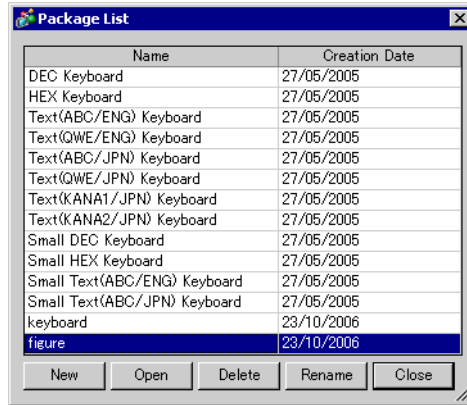
3 The [Package] dialog box is appears. Select a picture and drag it to the drawing screen to place it.



9.8.2 Registering Pictures in the Package

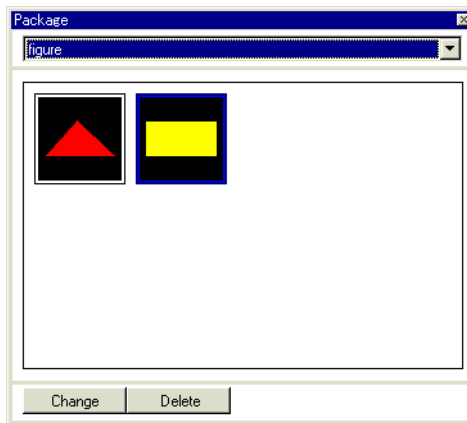
You can register a created object. You can also register a combination of multiple objects.

- 1 From the [View (V)] menu, select [Package (P)], or click .
- 2 The [Package List] dialog box appears. Select a package name and click [Open].

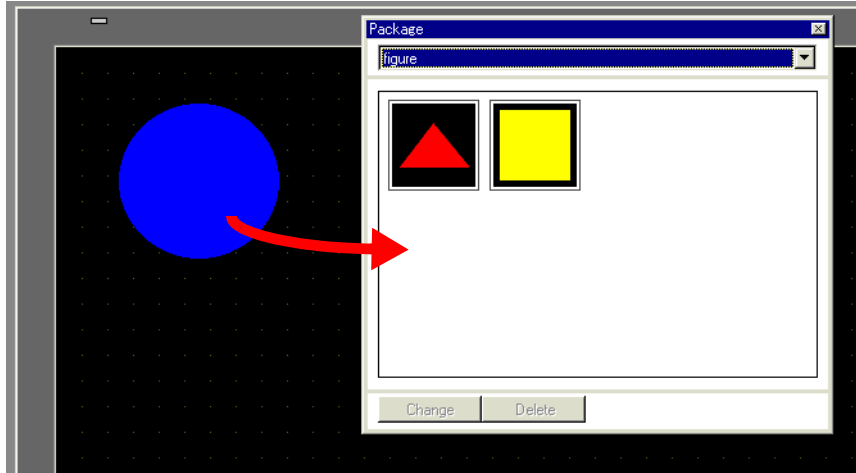

NOTE

- To register pictures in a new package, click [OK].

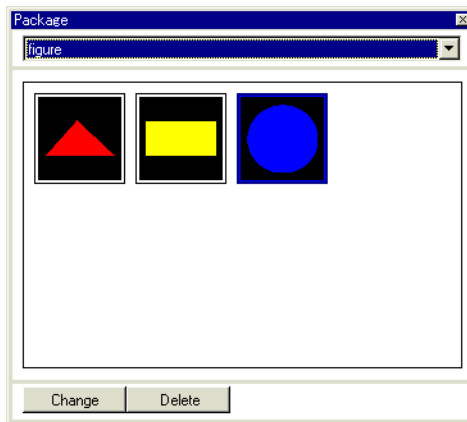
- 3 The [Package] dialog box, which displays a registered package list, appears.



4 Select the figure to be registered and drag to the [Package] dialog box.



5 The pictures have been registered in a package.



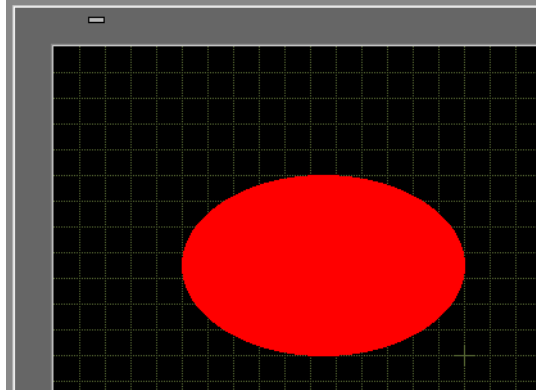
9.9 Creating a Screen from a Template

9.9.1 Setting up Grids

■ Introduction

You can display a grid with dots or lines on the drawing screen for reference when placing multiple objects.

The position of each object is determined according to the intersecting points of the grid, to make it easier to adjust the object position.

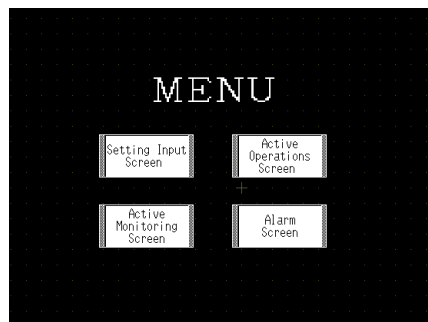


■ Setup Procedure

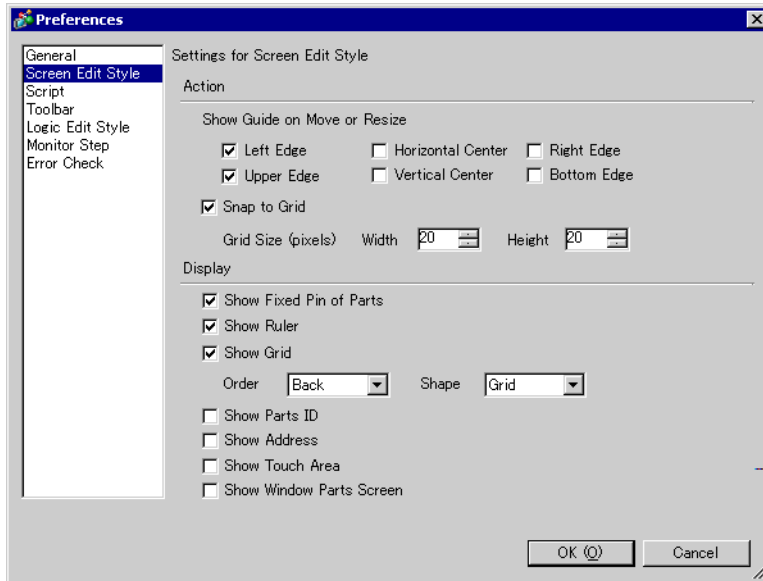
NOTE

- Please refer to the settings guide for details.
 ➔ “9.12.2 Preferences [Edit Screen] Setting Guide” (page 9-79)

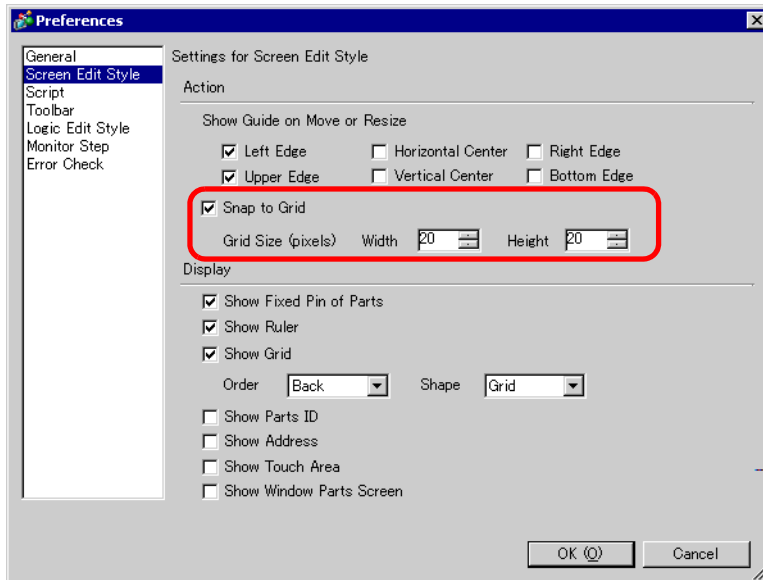
Display a lined grid on the drawing screen and set the environment for placing an object along a line.



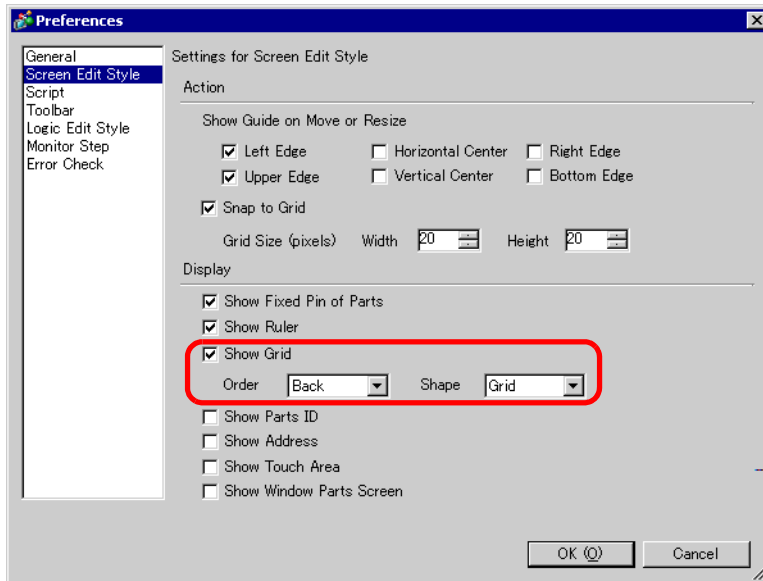
- 1 From the [View (V)] menu, select [Preferences (O)].
- 2 The [Preferences] dialog box appears. Select [Screen Edit Style].



- 3 Set the Action to align objects with intersecting points. Put a check mark next to the [Snap to Grid] box. Set the grid spacing in [Grid Size] (by the pixel). (For example, [Width] 20, [Height] 20)

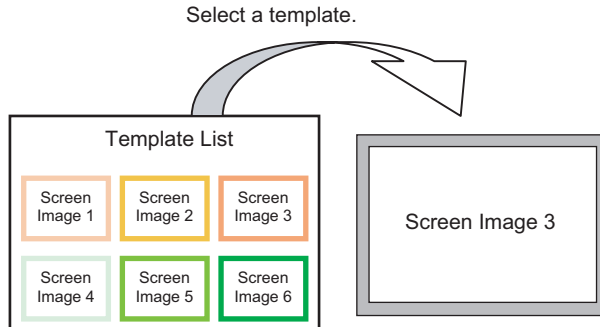


- 4 In the Display group box, select the [Show Grid] check box. Select [Order] and [Shape] options as necessary. Click [OK] to close the dialog box.



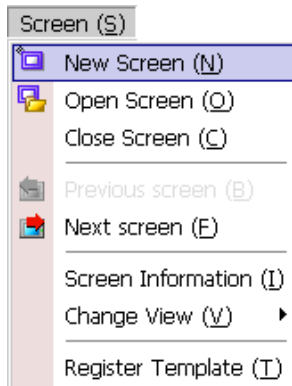
9.9.2 Selecting a Screen from Template

You can reduce the number of drawing processes by editing in a screen registered in the templates.

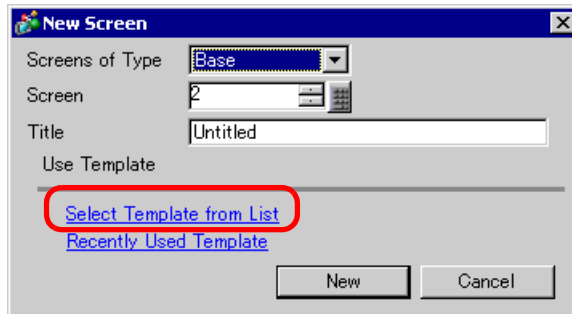


■ Placing a Picture Registered in Templates

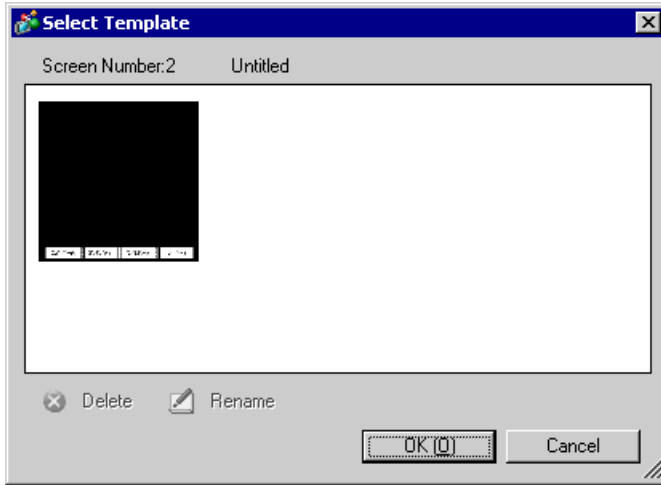
- 1 From the [Screen (S)] menu, select [New Screen (N)].



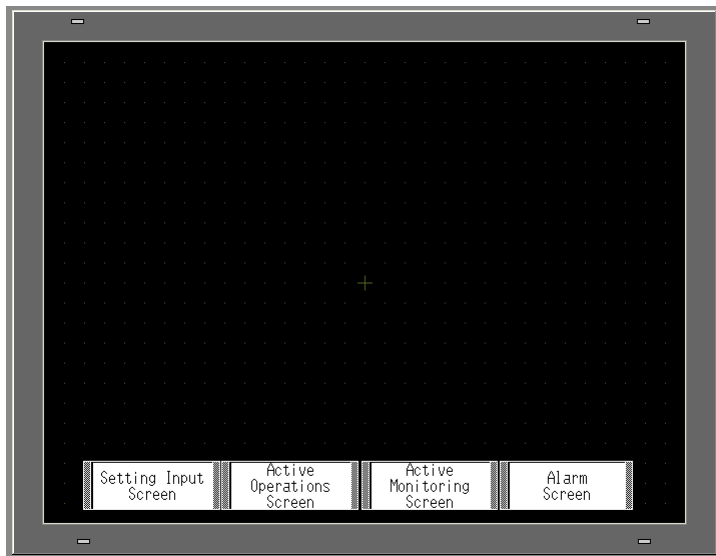
- 2 The following [New Screen] dialog box appears. Click [Select Template from List].



3 The registered templates display. Select a screen you want to use and click [OK].

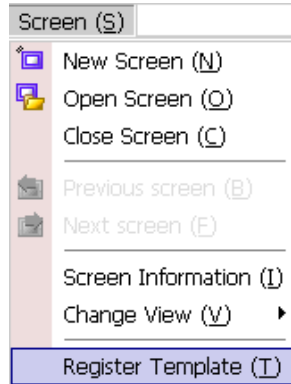


4 The template is placed.



■ Registering a Screen as a Template

You can register created screens as templates and use them again. To make a screen into a template, from the [Screen (S)] menu, select [Register Template (T)].



9.10 Pasting an Image

9.10.1 Target Image


Image data that can be displayed on the GP screen is as follows.

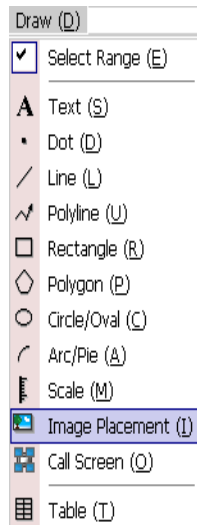
| Image | Pasting Method | Description |
|--------------------------|---|--|
| BMP, JPEG, DPD, PNG File | Directly placing an image on the screen | <p>Directly pastes BMP, JPEG, DPD, or PNG on the screen.</p> <p>NOTE</p> <ul style="list-style-type: none"> In using the same image on the multiple screens, you can hold down the screen capacity by registering the original image in "Image". You can call the base screen with an image already placed onto another base screen. <p>☞ "9.10.2 Pasting BMP/JPEG Procedure" (page 9-64)</p> |
| | Registering an image in "Image (Display)" and using Call Screen | <p>Registers a BMP, JPEG, DPD, or PNG file as the "Image" and displays it on the base screen by using Call Screen.</p> <p>NOTE</p> <ul style="list-style-type: none"> You can improve screen capacity by registering an image file in "Image" and using the same image on the multiple screens. <p>☞ "9.7 Using a Screen for Various Purposes" (page 9-50)</p> |
| | Registering an image in "Image (CF)" and using Call Screen | <p>Calls and displays the image data stored in the CF Card on the base screen.</p> <p>☞ "9.7 Using a Screen for Various Purposes" (page 9-50)</p> |
| | Calling the base screen's image | <p>Calls and displays the base screen's already created image data on the base screen.</p> <p>☞ "9.7 Using a Screen for Various Purposes" (page 9-50)</p> |
| Mark Registration | Registered "Mark registration" images. | <p>Calls and displays the dotted image data registered in "Mark" on the base screen.</p> <p>☞ "9.11 Drawing a Detailed Picture" (page 9-66)</p> |
| Keypad Registration | Registered "Keypad Registration" images. | <p>Calls and displays the registered keypad on the base screen.</p> <p>☞ "9.7 Using a Screen for Various Purposes" (page 9-50)]</p> <p>NOTE</p> <ul style="list-style-type: none"> You can call one keypad from a [Call Screen] part on a Base Screen. |

9.10.2 Pasting BMP/JPEG Procedure

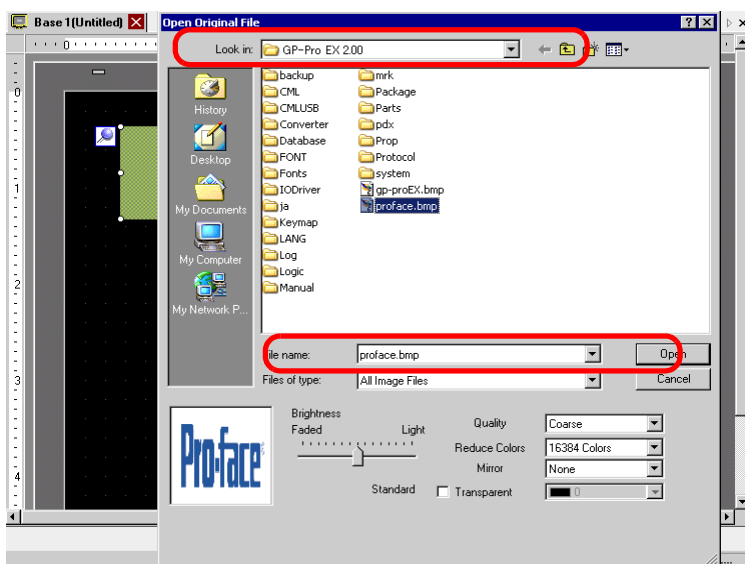
To directly paste the image on the screen:



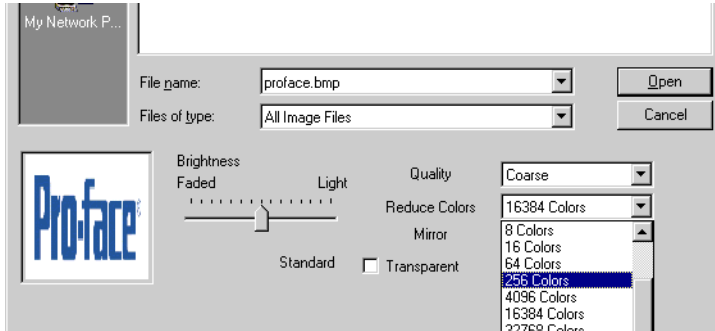
1 From the [Draw (D)] menu, select [Image Placement (I)], or click the  icon.



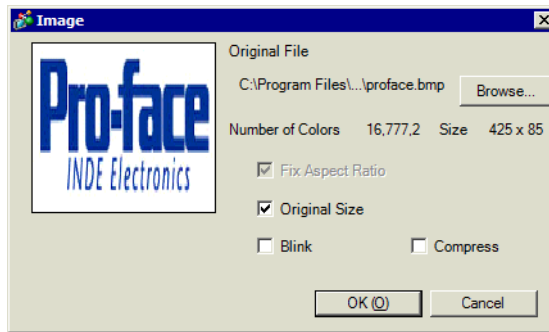
2 Move the cursor to the drawing area and the cursor converts to cross hairs. Click the screen and the [Open Original File] dialog box appears. Set the [Look in] and [File name] for the image to paste.



3 Adjust the image quality and number of colors, and click [Open].



4 The following [Image] dialog box appears. Set the size and blink rate for the image to paste.



NOTE

- When [Original Size] is selected, an image is placed with the same size as the original image. You cannot change the image size after placing it.
- When [Fix Aspect Ratio] is selected, an image is placed with the original image horizontal to vertical ratio fixed.

5 Click [OK] and the designated image will be placed.

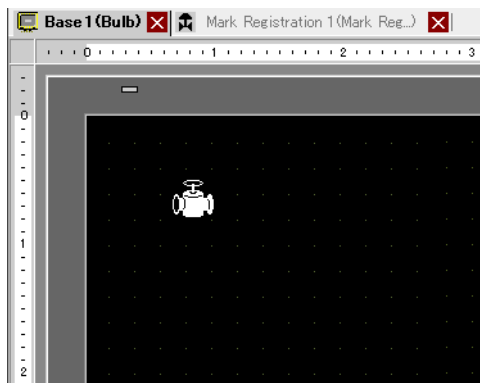
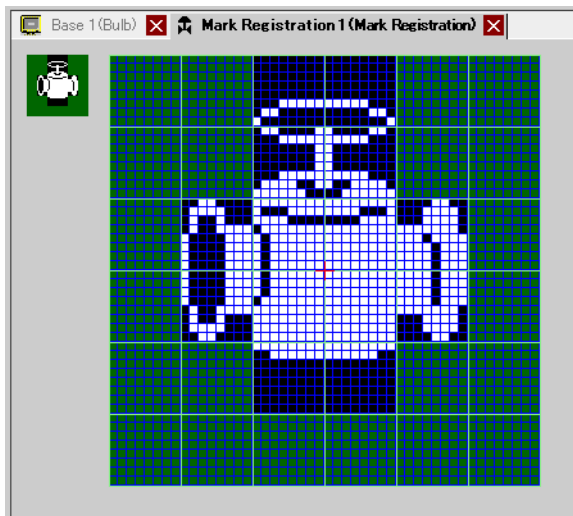


9.11 Drawing a Detailed Picture

9.11.1 Drawing a Valve

■ Introduction

You can call and display image data created in a Mark to the base screen. In the [Mark], you can draw your own symbols or pictures with dots.

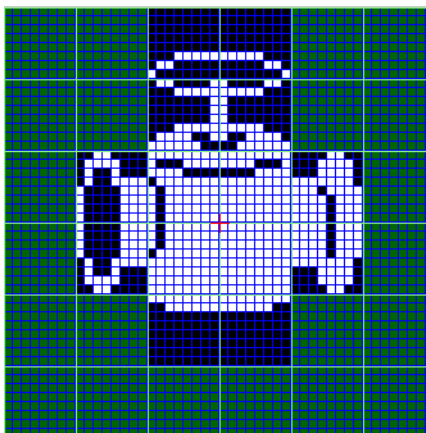


■ Setup Procedure

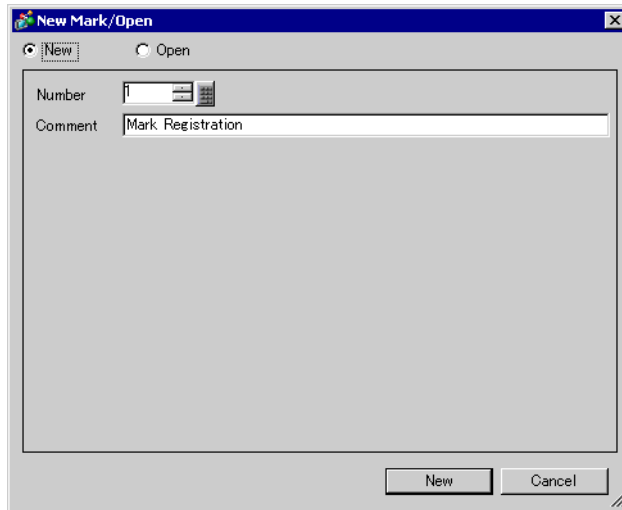
NOTE

- Please refer to the settings guide for details.
 ☞ "9.12.3 Common (Mark Registration) Settings Guide" (page 9-81)

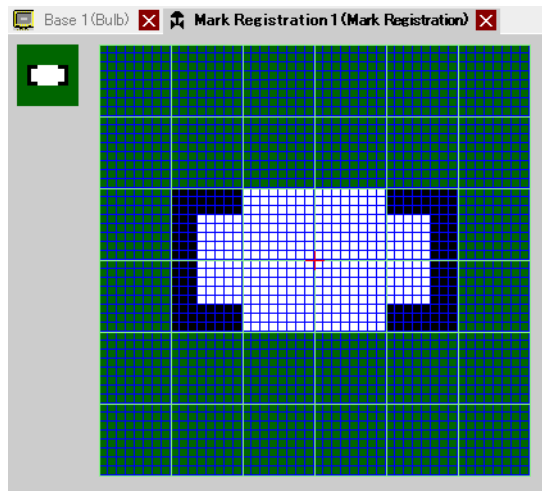
To draw a valve with dots:



- 1 From the [Common Settings (R)] menu, click [Mark Registration (M)]. Select [New] and enter the [Number] and [Comment] and click [Create] (Example: [Number]1, [Comment] Mark Registration)

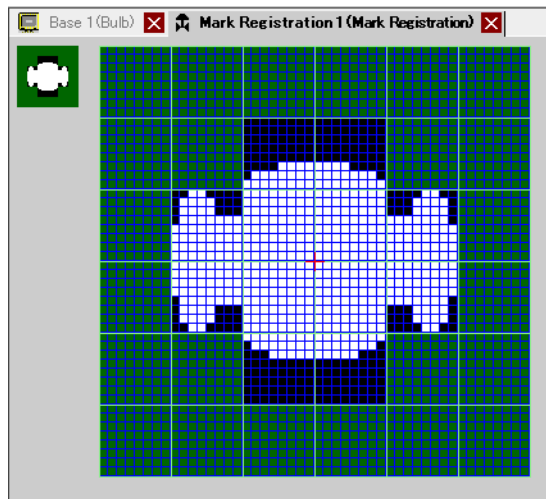


- 2 Create an outline of the valve body with a rectangle. From the [Draw (D)] menu, select [Filled Rectangle (T)]. Place after dragging to adjust the size and location of the rectangle.

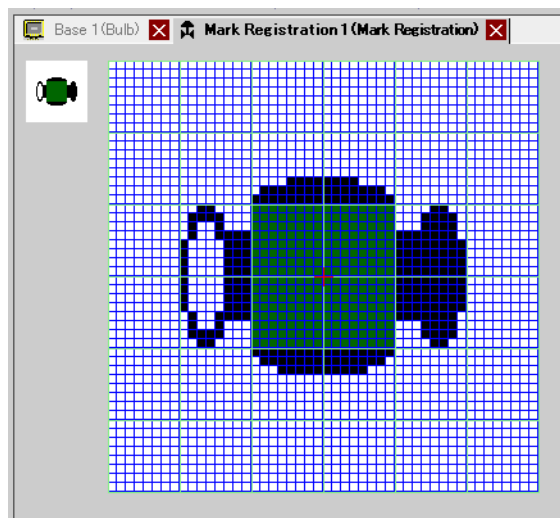
**NOTE**

- From the [Edit] menu, click [Undo (U)] to undo the command.

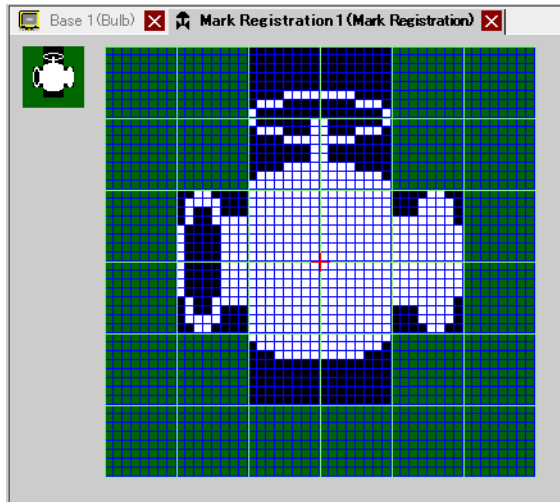
- 3 Create a valve opening with an ellipse. From the [Draw] menu, select [Filled Circle/Ellipse], Place the object after adjusting the size and location of the ellipse.



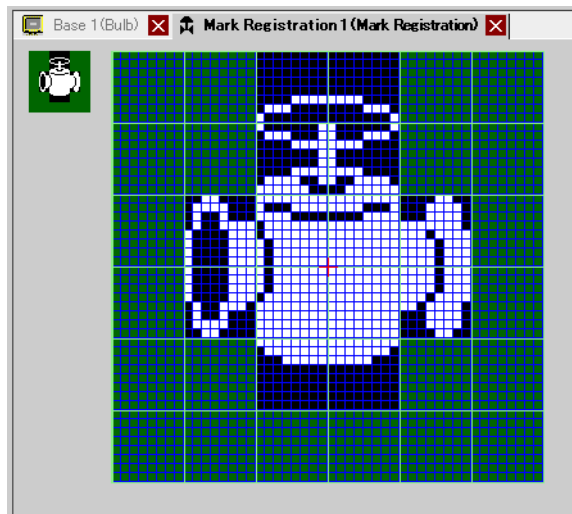
- 4 Create an outline of the valve opening using [Color Inversion]. From the [Edit] menu, select [Color Inversion (Y)] to mirror the dot on the campus. In this state, from the [Draw] menu, select [Filled Circle/Ellipse] to place after adjusting the size and location of the ellipse. After placement, click [Color Inversion (Y)] again to return to the campus state.



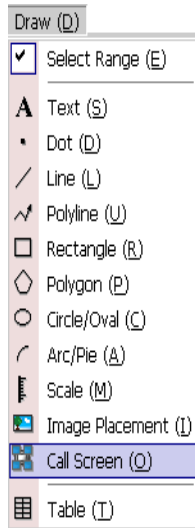
- 5 Create the handle part with an oval and rectangle. From the [Draw] menu, select [Circle/Oval (I)] or [Filled Rectangle (T)]. Place the object after adjusting the size and location of the oval and rectangle.



- 6 Fine tune each part using dots. From the [Draw (D)] menu, select [Dot (D)]. To draw, you can click to turn ON (white) and right-click to turn OFF (black).

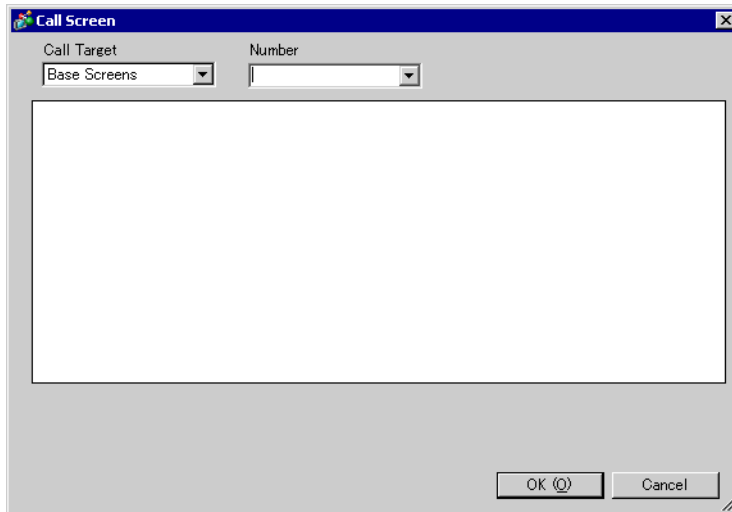


- 7 Click the [Base 1] tab and open a base screen to place the mark. From the [Draw (D)] menu, select [Call Screen (O)].

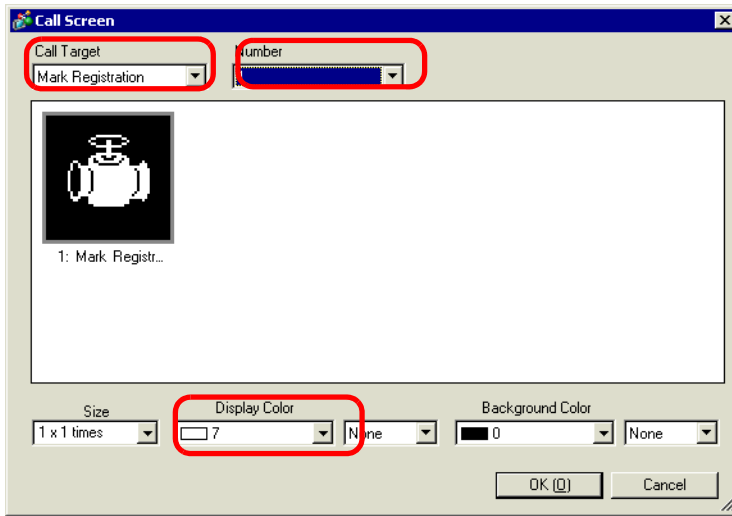
**NOTE**

- From the [Screen (S)] menu, select [New Screen (N)] to create a new base screen.

- 8 Click the drawing screen and the dotted border is placed and the [Call Screen] dialog box appears.



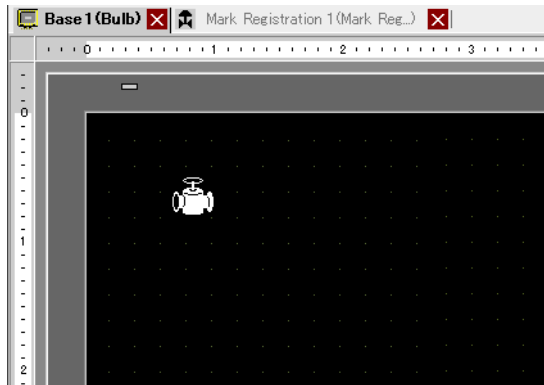
9 Select [Mark Registration] from [Call Target] and select the mark number registered in [Number]. (For example, 1)



NOTE

- You can designate the display color of the created mark.

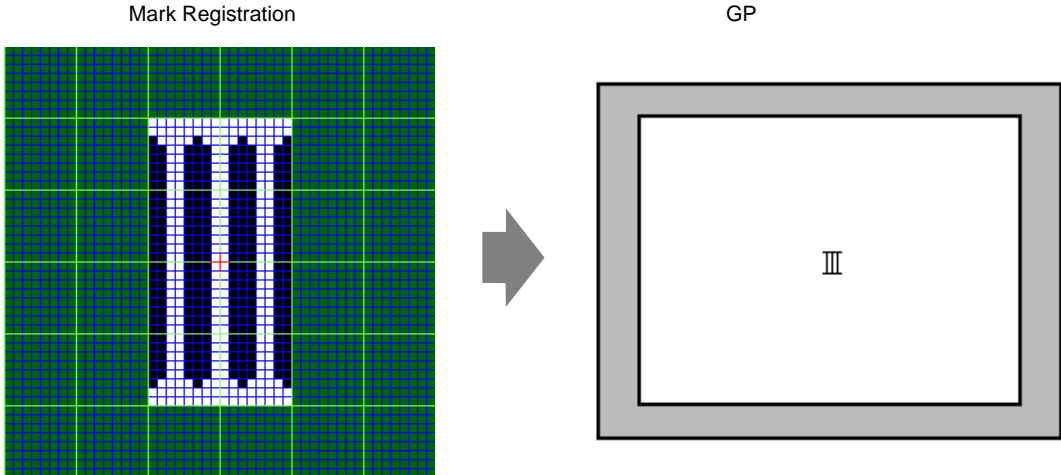
10 Select an image and click [OK] to display the designated image.



9.11.2 Displaying a Character External to the Character Code

Draw an external character with dots in Mark. You can display registered external characters on the screen.

You can register external characters only when selecting the ASCII standard font (bitmap font) and the font size of 8 x 16 dots or larger.



■ Setup Procedure

You can display the created character on the screen by replacing a character in the frame in the character code table with it. The following is the procedure for replacing the character ë (89h) in the character code table (Code Page 850) with the character "III", which was created with dots, and displaying the character "III" on the GP screen.

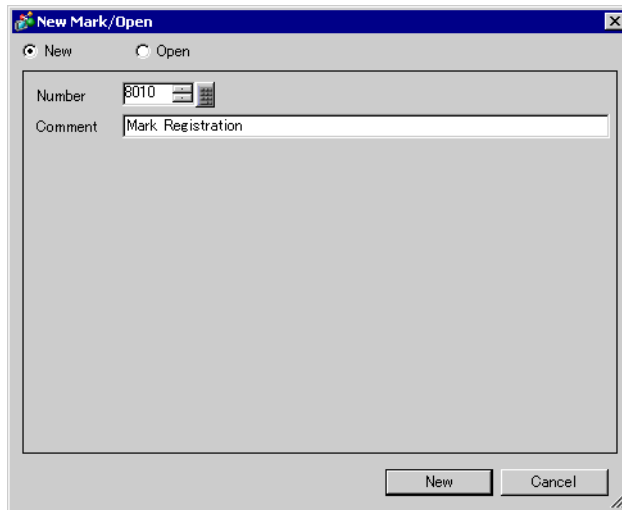
◆ Character Code List

The following is the character code table of Code Page 850, the character code used on the GP.

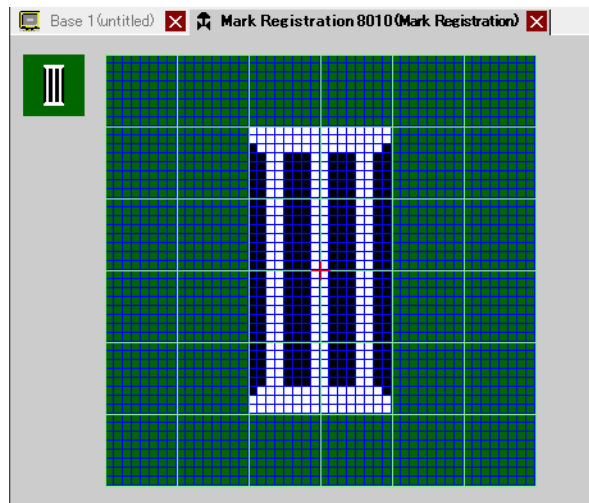
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | a | b | c | d | e | f |
|---|---|---|---|---|----|---|---|---|---|---|---|---|---|---|---|---|
| 0 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| 1 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| 2 | | ! | " | # | \$ | % | & | ' | (|) | * | + | , | - | . | / |
| 3 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | : | ; | < | = | > | ? |
| 4 | @ | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O |
| 5 | P | Q | R | S | T | U | V | W | X | Y | Z | [| \ |] | ^ | _ |
| 6 | ' | a | b | c | d | e | f | g | h | i | j | k | l | m | n | o |
| 7 | p | q | r | s | t | u | v | w | x | y | z | { | | } | ~ | ■ |
| 8 | Ç | ü | é | â | ä | à | ç | ê | ë | ï | î | ï | Ä | Å | | |
| 9 | È | Ë | Æ | ô | ö | ò | ù | ÿ | Ö | Ü | ø | ƒ | Ø | × | ƒ | |
| a | á | í | ó | ú | ñ | Ñ | ≡ | º | ¿ | ¼ | ½ | ¾ | ¿ | « | » | |
| b | ■ | ■ | ■ | | † | ‡ | § | ¶ | | ¶ | ¶ | ¶ | ¶ | ¶ | ¶ | ¶ |
| c | L | ⊥ | T | † | - | + | × | ÷ | ℓ | ℓ | ℓ | ℓ | ℓ | ℓ | ℓ | ℓ |
| d | δ | ∂ | Ê | Ë | È | ' | í | î | ÿ | ↓ | ↑ | ■ | ■ | ! | ! | ■ |
| e | Ó | Ø | Ô | Õ | Ö | µ | ¶ | ß | Ú | Û | Ü | Ý | Þ | ' | ' | ' |
| f | - | ± | = | ¼ | ½ | ¾ | ÷ | · | · | · | · | · | · | · | · | · |

Corresponds to

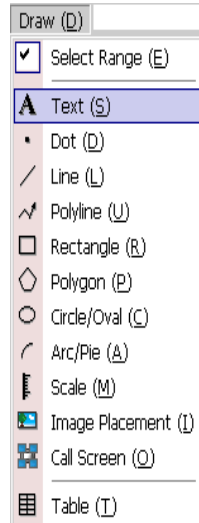
- 1 From the [Common Settings (R)] menu, select [Mark Registration (M)]. Select [OK] and enter the mark number "8010" in the [Number] which corresponds to the character ë (89h) in the character code table. Click [New].
☞ " ■ Input Code Table" (page 9-76)



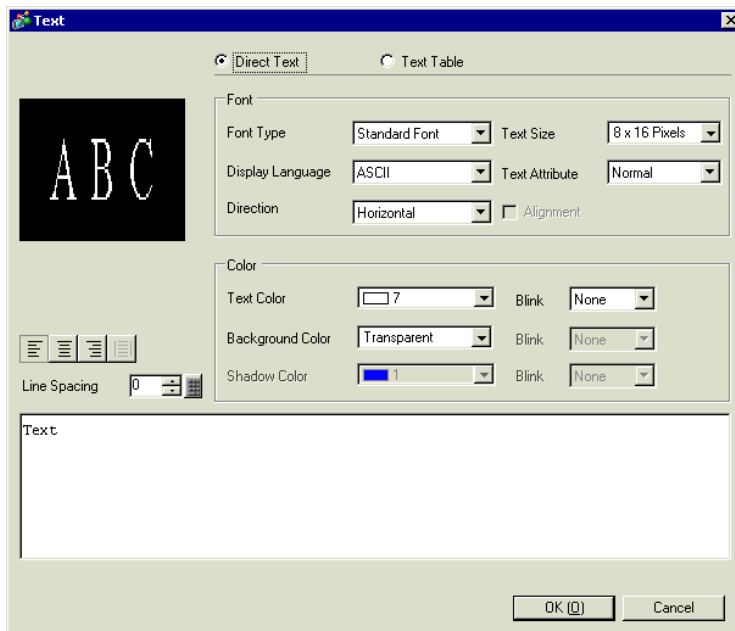
- 2 Draw a special character. Create "III" to display on the screen.



3 From the [Draw (D)] menu, select [Base 1] and then select [Text (S)].

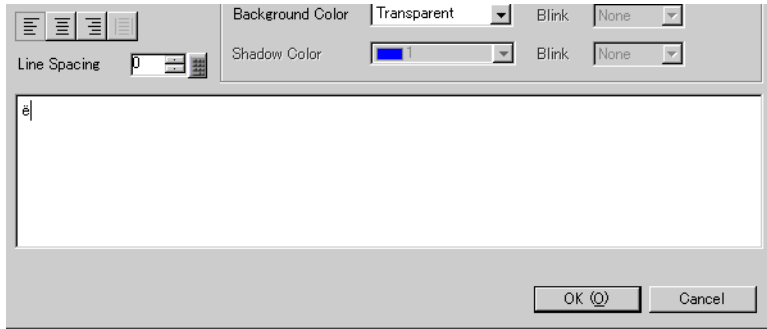


4 Place the text on the screen, and double-click it to open the [Text] dialog box.



5 In the text input area, enter the [Input Code] as "0235", which corresponds to the text code (89h), while pressing the [Alt] key. ë has been input. Click [OK].

☞ " ■ Input Code Table" (page 9-76)



NOTE

- The character placed on the drawing screen is ë. On the screen display of to the GP, "III" is displayed.
-

■ How to Display Characters External to the Character Code List

The marks drawn for the mark numbers from 8001 to 8128 are treated as the characters of the character codes from 80h to FFh. For example, 8001 corresponds to 80h, and 8002 to 81h.

If you create marks for these mark numbers, they will be registered as external characters.

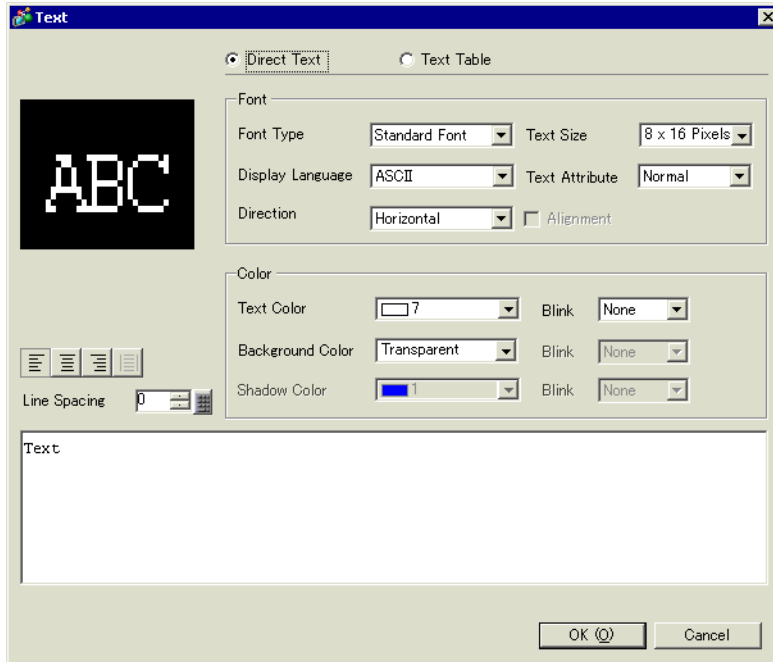
By inputting the input code corresponding to a mark number on the base screen, the character displayed on the base screen is displayed as a registered external character on the GP.

■ Input Code Table

| Mark Number | Text Code Code Page 851 | Input Code (Alt + Code) | Mark Number | Text Code Code Page 851 | Input Code (Alt + Code) | Mark Number | Text Code Code Page 851 | Input Code (Alt + Code) |
|-------------|-------------------------|-------------------------|-------------|-------------------------|-------------------------|-------------|-------------------------|-------------------------|
| 8001 | 80h | 0199 | 8049 | B0h | 0130 | 8097 | E0h | 0211 |
| 8002 | 81h | 0252 | 8050 | B1h | 0131 | 8098 | E1h | 0223 |
| 8003 | 82h | 0233 | 8051 | B2h | 0132 | 8099 | E2h | 0212 |
| 8004 | 83h | 0226 | 8052 | B3h | 0133 | 8100 | E3h | 0210 |
| 8005 | 84h | 0228 | 8053 | B4h | 0134 | 8101 | E4h | 0245 |
| 8006 | 85h | 0224 | 8054 | B5h | 0193 | 8102 | E5h | 0213 |
| 8007 | 86h | 0229 | 8055 | B6h | 0194 | 8103 | E6h | 0181 |
| 8008 | 87h | 0231 | 8056 | B7h | 0192 | 8104 | E7h | 0254 |
| 8009 | 88h | 0234 | 8057 | B8h | 0169 | 8105 | E8h | 0222 |
| 8010 | 89h | 0235 | 8058 | B9h | 0135 | 8106 | E9h | 0218 |
| 8011 | 8Ah | 0232 | 8059 | BAh | 0136 | 8107 | EAh | 0219 |
| 8012 | 8Bh | 0239 | 8060 | BBh | 0137 | 8108 | EBh | 0217 |
| 8013 | 8Ch | 0238 | 8061 | BCh | 0138 | 8109 | ECh | 0253 |
| 8014 | 8Dh | 0236 | 8062 | BDh | 0162 | 8110 | EDh | 0221 |
| 8015 | 8Eh | 0196 | 8063 | BEh | 0165 | 8111 | EEh | 0175 |
| 8016 | 8Fh | 0197 | 8064 | BFh | 0139 | 8112 | EFh | 0180 |
| 8017 | 90h | 0201 | 8065 | C0h | 0140 | 8113 | F0h | 0173 |
| 8018 | 91h | 0230 | 8066 | C1h | 0141 | 8114 | F1h | 0177 |
| 8019 | 92h | 0198 | 8067 | C2h | 0142 | 8115 | F2h | 0159 |
| 8020 | 93h | 0244 | 8068 | C3h | 0143 | 8116 | F3h | 0190 |
| 8021 | 94h | 0246 | 8069 | C4h | 0144 | 8117 | F4h | 0182 |
| 8022 | 95h | 0242 | 8070 | C5h | 0145 | 8118 | F5h | 0167 |
| 8023 | 96h | 0251 | 8071 | C6h | 0227 | 8119 | F6h | 0215 |
| 8024 | 97h | 0249 | 8072 | C7h | 0195 | 8120 | F7h | 0184 |
| 8025 | 98h | 0255 | 8073 | C8h | 0146 | 8121 | F8h | 0176 |
| 8026 | 99h | 0214 | 8074 | C9h | 0147 | 8122 | F9h | 0168 |
| 8027 | 9Ah | 0220 | 8075 | CAh | 0148 | 8123 | FAh | 0183 |
| 8028 | 9Bh | 0248 | 8076 | CBh | 0149 | 8124 | FBh | 0185 |
| 8029 | 9Ch | 0163 | 8077 | CCh | 0150 | 8125 | FCh | 0179 |
| 8030 | 9Dh | 0216 | 8078 | CDh | 0151 | 8126 | FDh | 0178 |
| 8031 | 9Eh | 0128 | 8079 | CEh | 0152 | 8127 | FEh | 0247 |
| 8032 | 9Fh | 0129 | 8080 | CFh | 0164 | 8128 | FFh | 0160 |
| 8033 | A0h | 0225 | 8081 | D0h | 0240 | | | |
| 8034 | A1h | 0237 | 8082 | D1h | 0208 | | | |
| 8035 | A2h | 0243 | 8083 | D2h | 0202 | | | |
| 8036 | A3h | 0250 | 8084 | D3h | 0203 | | | |
| 8037 | A4h | 0241 | 8085 | D4h | 0200 | | | |
| 8038 | A5h | 0209 | 8086 | D5h | 0153 | | | |
| 8039 | A6h | 0170 | 8087 | D6h | 0205 | | | |
| 8040 | A7h | 0186 | 8088 | D7h | 0206 | | | |
| 8041 | A8h | 0191 | 8089 | D8h | 0207 | | | |
| 8042 | A9h | 0174 | 8090 | D9h | 0154 | | | |
| 8043 | AAh | 0172 | 8091 | DAh | 0155 | | | |
| 8044 | ABh | 0189 | 8092 | DBh | 0156 | | | |
| 8045 | ACH | 0188 | 8093 | DCh | 0157 | | | |
| 8046 | ADh | 0161 | 8094 | DDh | 0166 | | | |
| 8047 | A Eh | 0171 | 8095 | DEh | 0204 | | | |
| 8048 | AFh | 0187 | 8096 | DFh | 0158 | | | |

9.12 Settings Guide

9.12.1 Text Settings Guide



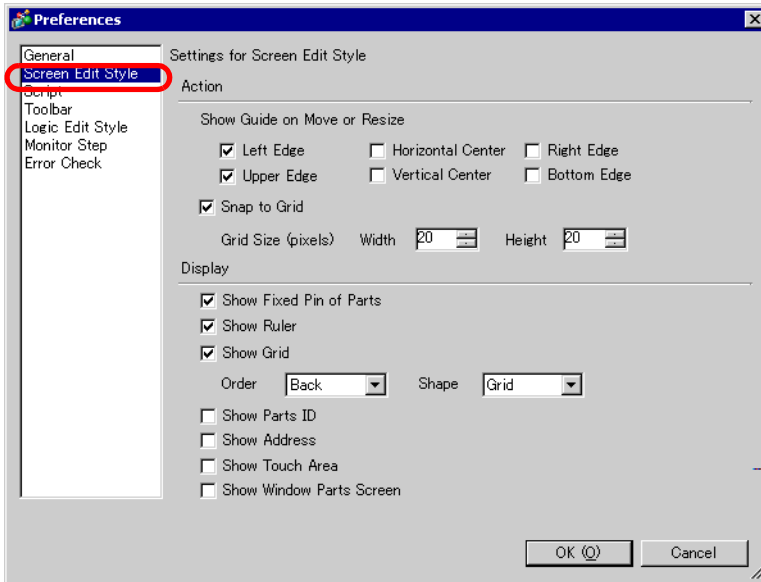
| Setting | Description |
|-------------|---|
| Direct Text | Input text into the Input Text window and place it directly as fixed text. |
| Text Table | Use text from a previously saved Text Table. ☞ “15.4 Changing Languages (Multilanguage)” (page 15-16) |
| Font Type | When [Direct Text] is selected: <ul style="list-style-type: none"> • Standard Font You can select a bitmap font from [Japanese], [ASCII], [Chinese (Traditional)], [Chinese (Simplified)], or [Korean]. <div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 5px 0;">IMPORTANT</div> <ul style="list-style-type: none"> • The standard font will become bitmap font. The display speed is faster than with other fonts, but characters may have jagged outlines or distorted if enlarged/reduced too much. • The Japanese and ASCII standard fonts are normally transferred to the GP. If you want to use Chinese (Simplified), Korean, or Chinese (Traditional) standard fonts, add the language in [System Settings] window, [Font] page. ☞ “6.2 Defining Stroke Font and Standard Font” (page 6-3) |

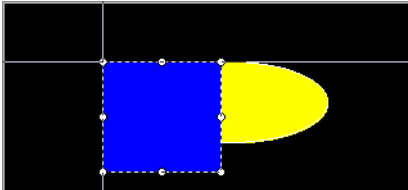
Continued

| Setting | Description |
|------------------|--|
| Font Type | <ul style="list-style-type: none"> • Stroke Font You can select a vector font from [Japanese], [ASCII], [Chinese (Traditional)], [Chinese (Simplified)], [Korean], [Cyrillic], or [Thai]. <p>IMPORTANT</p> <ul style="list-style-type: none"> • The standard font will become vector font. Characters are displayed with smooth outlines if enlarged, but the display speed is slower than with the standard font. • ASCII stroke fonts are transferred to GP as a normal operation. If you want to use Japanese, Chinese (Simplified), Korean, Chinese (Traditional), Cyrillic, or Thai stroke fonts, add the language in [System Settings/Font]. <p>☞ "6.2 Defining Stroke Font and Standard Font" (page 6-3)</p> <ul style="list-style-type: none"> • Image Font Displays a Windows font as bitmap data. <p>☞ "6.3 Image Font" (page 6-15)</p> <p>When [Text Table] is selected: Select between Standard Font and Stroke Font.</p> |
| Display Language | Select a text display language from [Japanese], [ASCII], [Chinese (Traditional)], [Chinese (Simplified)], [Korean], [Cyrillic], or [Thai]. |
| Direction | Select from [Portrait] or [Landscape]. |
| Text Size | Select the text size. Each font type has a different size range. Standard Font: Depending on the font you are using, you can either select the font size from [8 x 8 pixel] to [64 x 128 pixel], in increments of 8 pixel units, or select a fixed font size, [6 x 10 pixel], [8 x 13 pixel], or [13 x 23 pixel]. Stroke Font: Select from 6 to 127. |
| Text Attribute | When [Font Type] is [Standard Font] or [Stroke Font], select from the following text attributes. Standard Font: Choose from [Standard], [Bold], [Shadow] (When using a fixed font size [6 x 10], select from [Standard] or [Shadow].) Stroke Font: Choose from [Standard], [Bold], [Outline] |
| Alignment | When selecting "Vertical", align the center of text with single-byte and double-byte characters. |
| Text Color | Set the display color for the text. |
| Background Color | Set the background color for the text. |
| Shadow Color | When the [Font Type] is [Standard Font] and the [Text Attribute] is [Shadow], choose a color for the shadow. |
| Line Spacing | Set a value from 0 to 255. This is only applicable when the text is multiple lines. This option cannot be used when the [Font Type] is set to [Image Font]. |



9.12.2 Preferences [Edit Screen] Setting Guide

On the [View (V)] menu, click [Preferences (O)]. The following dialog box appears. Select [Screen Edit Style] in the left window.



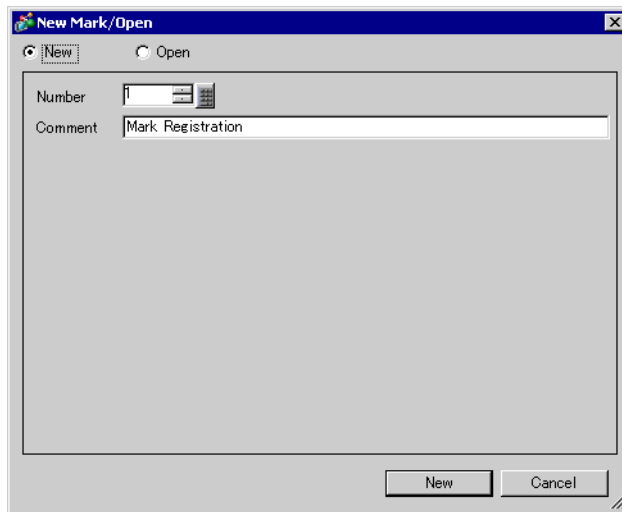
| Setting | | Description |
|---------|---------------------------------|---|
| Action | Guide Display on move or resize | This function is valid when aligning an object with a previously placed object. Guidelines are displayed at the designated points (the left edge and upper edge, etc.).  |
| | Snap to Grid | The cursor position is determined from the grid size, you don't have to fine tune the position. ☞ "9.9 Creating a Screen from a Template" (page 9-57) |
| | Grid Size (pixels) | Designate the grid interval by the pixel. |

Continued

| Setting | | Description |
|---------|--------------------------|--|
| Display | Show Fixed Pin of Parts | <p>Designate whether or not to show the pin mark when an object is selected.</p>  <p>NOTE</p> <ul style="list-style-type: none"> If you click the pin mark, the Move and Edit Object functions will be locked and the pin mark will be red. |
| | Show Ruler | <p>Shows rulers at the top and the left side of the screen.</p>  |
| | Show Grid | Designate whether or not to show a grid. |
| | Show Parts ID | Designate whether or not to show the part ID number of the placed part. |
| | Show address | Designate whether or not to show the address set to the part. |
| | Show touch areas | <p>Designate whether or not to show a touch input valid area.</p> <p>IMPORTANT</p> <ul style="list-style-type: none"> Place each object so that the touch areas do not overlap each other. |
| | Show Window Parts Screen | Designate whether or not to show a window part screen. |

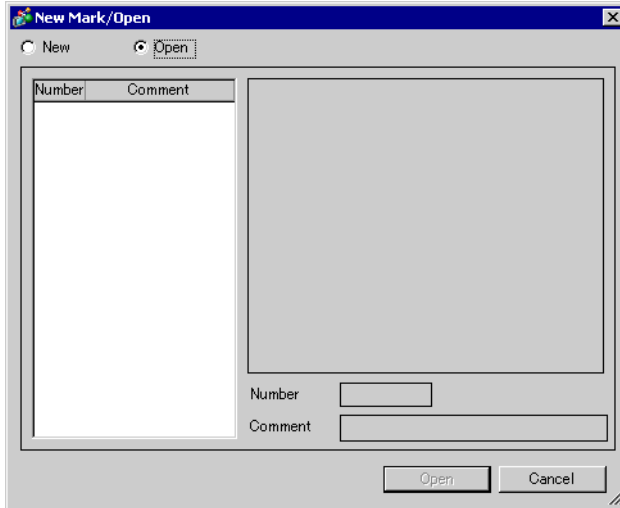
9.12.3 Common (Mark Registration) Settings Guide

■ Creating Marks



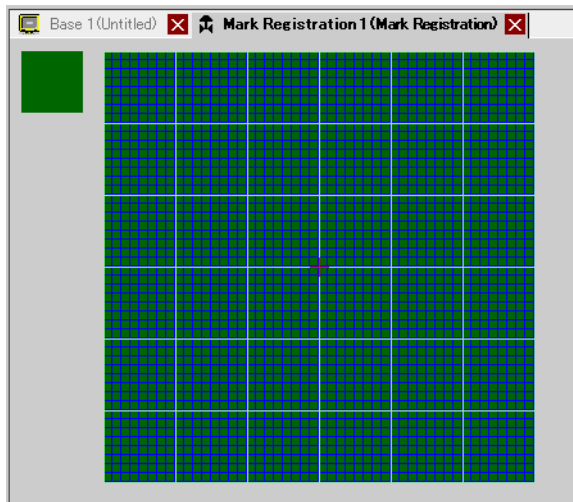
| Setting | Description |
|---------|---|
| New | Creates a new [Mark Registration] screen. |
| Open | Opens a previously created [Mark Registration] screen. |
| Number | Set the [Mark Registration] screen Number to any value between 1 and 8,999. |
| Comment | Enter a comment of up to 30 characters for the [Mark Registration] screen. |

■ Open



| Setting | Description |
|---------------|--|
| New | Creates a new [Mark Registration] screen. |
| Open | Opens a previously created [Mark Registration] screen. |
| List of marks | Displays the list of the [Mark Registration] screens in the project file. |
| Number | Displays the number of each [Mark Registration] screen. |
| Comment | Displays the comment for each [Mark Registration] screen. |
| Mark preview | Provides a preview display of the marks in the [Mark Registration] screen selected in the mark list. |
| Number | Displays the number of the [Mark Registration] screen selected in the mark list. |
| Comment | Displays the comment for the [Mark Registration] screen selected in the mark list. |

■ Mark Registration



| Setting | Description |
|--------------|---|
| Preview area | Provides a preview display of the mark's on-screen display size. |
| Drawing area | <p>Used to draw marks using the drawing operations below, which can be selected from the menu and toolbar.</p> <ul style="list-style-type: none"> -[Dot] -[Line] -[Rectangle] -[Circle/Oval] -[Filled Rectangle] -[Filled Circle/Ellipse] -[Fill] -[Text] -[Draw Size] <p>The following items are displayed in the drawing area:</p> <ul style="list-style-type: none"> -Origin -48 x 48 dot grid -Quadrant (8 x 8 dot area) borders -Dot ON, Dot OFF (Black), Dot OFF (Transparent) |

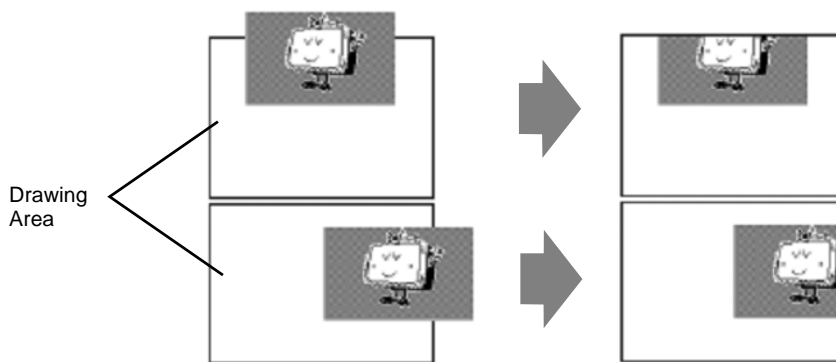
9.13 Restrictions

9.13.1 Restrictions for Drawing (Text)

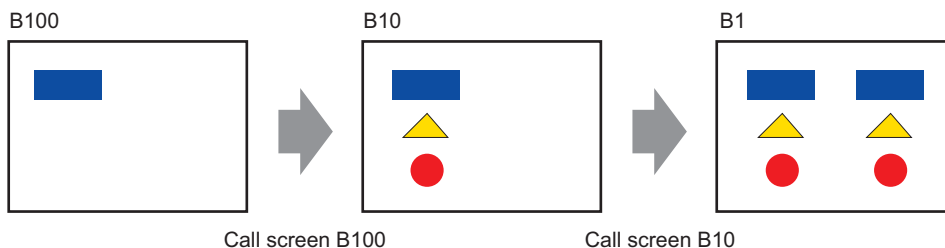
- When text is enlarged or rotated, the thickness of some letters may change.
- For characters with a character code (0x80 to 0xFF), the characters' shape will change due to differences in font between GP-Pro EX and the GP.

9.13.2 Restrictions for Pasting BMP/JPEG

- If you set the background color to the screen used for a call screen, the objects placed on the screen are not displayed on the GP.
- For a color data image screen, the data capacity is large, but the display speed on the GP is fast. For a monochrome data image screen, the display speed on the GP is somewhat slow, but the data capacity can be saved. Convert screens depending on the purpose.
- If an image screen is placed beyond the drawing area, the part that is outside the area is not displayed on the GP.



- Nesting (calling hierarchy) up to 10-layer (11-fold) is available. However, if the remaining memory in the PC decreases in operation, the display on the screen may be omitted. When transferred, the nested objects are normally displayed on the GP. For example, Double-layer (threefold) nesting.



9.13.3 Package Registration Restrictions

- Package register save is executed when you close the GP-Pro EX project.
- Up to 200 objects can be registered in one package. To register more than 200 objects, create a new package and register them in a new category.

9.13.4 Restrictions on Marks

- Acknowledge the registered external character after the screen data transmission on the display unit. The text corresponding to the input text code is displayed on GP-Pro EX.
- External characters can be registered only when the English standard font with a font size of 8 x 16 dot or larger is selected. 8 x 8 dot is not supported.
- To create an external character, draw it with single-byte characters (within 8 x 16 dot) with reference to the origin of the mark creating area (0,0).
- External characters cannot be rotated.
- When you print text in Alarm, external characters are not outputted. The results depending on printer types are as follows:
For NEC PR201, EPSON ESC/P, HP Laser Jet, and Text ASCII:
Direct code output of the text codes.
For EPSON PM/Stylus:
Image output of Code Page 850 characters
- If you were using the Character code (0x80 to 0xFF) of the Western standard fonts in a CSV file while registering external marks, and you want to display the marks in the Special Data Display [CSV Display] and [CSV Data Transmission] on GP, they will be converted to the external characters that were registered in the mark screen.

9.13.5 Restrictions for Screen Display

- When you reduce the screen edit area with the zoom function, some drawings may not display correctly, depending on the magnification.

