

**KNOWLEDGE BASE**

Article Type: Instructions

PACO Cube Editor, Installation and User's Manual

Description:

Instructions on “How to” PACO Cube Editor; installation, Cuber configuration, using Cube editor, and troubleshooting.
(revision A July 2003)

WARNING

Never work on, clean or service this unit, control panel or any machine or open or remove any protective cover, guard, grate, door, or maintenance panel until the power or energy sources has been turned off, locked out / tagged out, and all moving parts have come to a complete stop and or blocked to prevent movement. Machinery is dangerous – avoid personal injury and or death by following manufacture, Local, and OHSA safety procedures. Contact Columbia Machine for safety decals, guards, horns and beacons.



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PACO Cube Editor

Installation and User's Manual

Revision A (July 2003)

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1 Introduction

1.1 Overview

The **PACO Cube Editor** is the software tool to be used in the creation of patterns for the PACO Premier Series Cuber. Its intuitive and simple interface allows user to easily create cube patterns and transfer them to the Cuber for execution.

The present manual covers the description, installation and use of the PACO Cube Editor.

1.2 Scope of this document

The main objective of this document is to assist the user of the PACO Cube Editor.

- ❑ The first part generally describes the software application.
- ❑ The second part indicates the installation procedure.
- ❑ The third part shows step by step how to use the Cube Editor.
- ❑ Known problems, workarounds and fault tracing are covered in the fourth part.

This document is designed to be as graphical as possible to ensure that users be rapidly familiar with the software.

PACO has put great efforts into the creation of this manual to ensure it is detailed, complete and accurate. However, if you find any error or omission, please contact your PACO representative so that they can be corrected promptly.



2 Description of the PACO Cube Editor

2.1 General Description

This software allows a user to perform the following tasks:

- ❑ Create new cube patterns
- ❑ Create different designs for cube layers, using different type of tiers and blocks
- ❑ Download the patterns to the Cuber, through the Cuber PLC
- ❑ Specify different loading sequence to the Cuber

2.2 Minimal Requirements

The PACO Cube editor is designed to run under the Windows 98, Windows NT, Windows 2000 or Windows XP operating systems

2.3 Ways to Use the Cube Editor

The Cube Editor must be installed on the computer connected to the PLC controlling the Cuber.

3 Installation

3.1 System requirements

- ☐ Windows 98, Windows NT, Windows 2000 or Windows XP
- ☐ Minimum screen resolution: 800 x 600
- ☐ Required disk space: 10 M
- ☐ Memory: 128 M
- ☐ CDROM drive
- ☐ RS 232 serial port (to connect to the PLC)

3.2 Installation Procedure

- ☐ Insert the PACO Cube Editor installation CD in the drive
- ☐ Browse to the CD in Cuber directory and double-click on “Setup.exe”.
- ☐ You will be presented with this welcome screen.

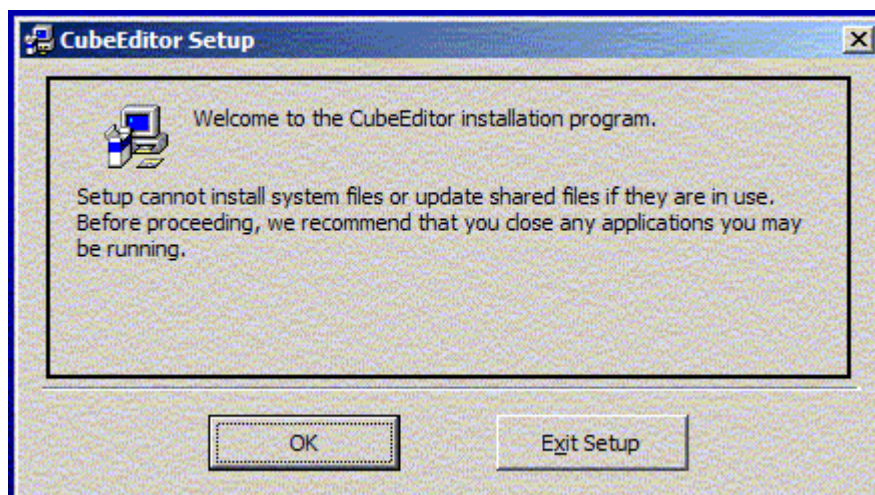


Figure 3.1 – PACO Cube Editor Installation welcome screen

- ☐ To proceed with installation click **OK**.

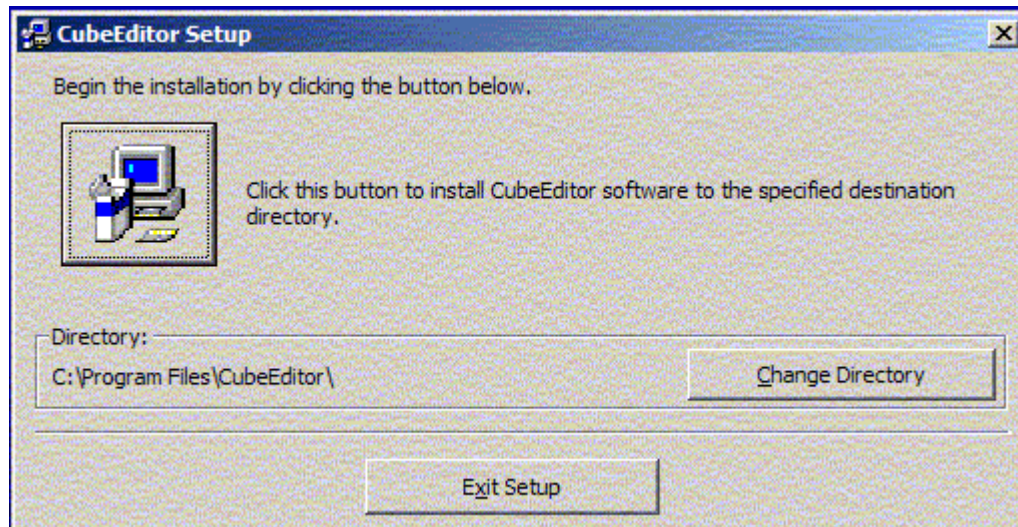


Figure 3.2 – PACO Cube Editor Installation directory screen

- ❑ At this point, if you wish to change the destination directory for the application click **Change....** The default directory is “C:\Program Files\CubeEditor\”. Click the install button to continue.

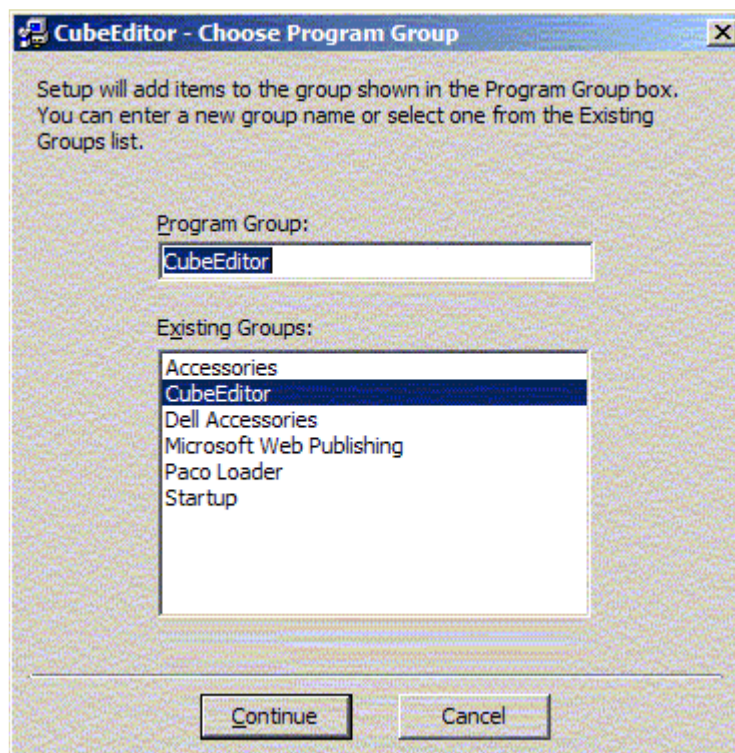


Figure 3.3 – PACO Cube Editor Installation information

- ❑ Click **Continue** to proceed with installation.

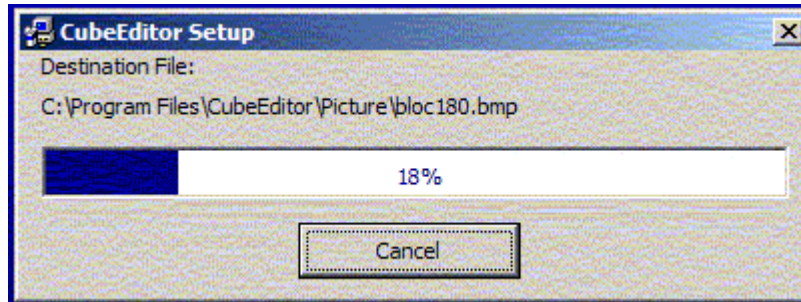


Figure 3.4 – Cube Editor Installation progress

- ❑ The installation progress will be displayed.

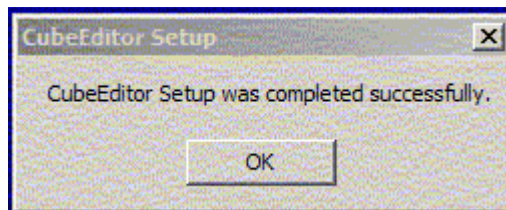


Figure 3.5 - PACO Cube Editor Installation complete

- ❑ Click **OK**.

- ❑ Browse to the CD in **InGearReg** directory and double-click on “Setup.exe”.
- ❑ If In-Gear is not already installed on your machine, click the install button. If it is already installed, click the “x” at the upper-right to close the window.



Figure 3.6 - In-Gear Installation welcome screen

- ❑ The In-Gear installation welcome screen will be shown. Click **Next** to begin installation.

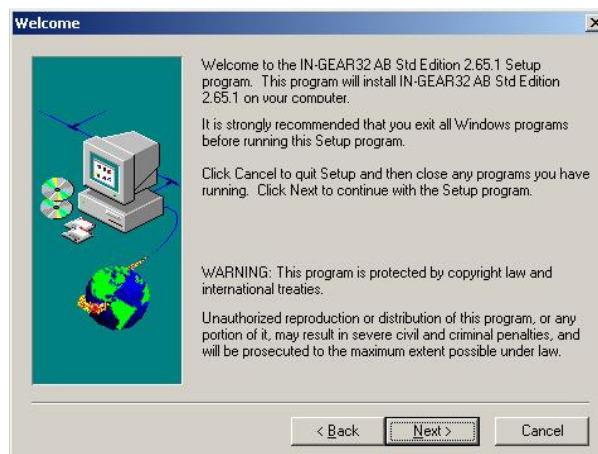


Figure 3.7 - In-Gear Installation warning screen

- ❑ Click **Next**.



Figure 3.8 - In-Gear Installation license agreement

- ❑ The license agreement is shown next. Click **Yes** to accept the agreement and proceed with information.

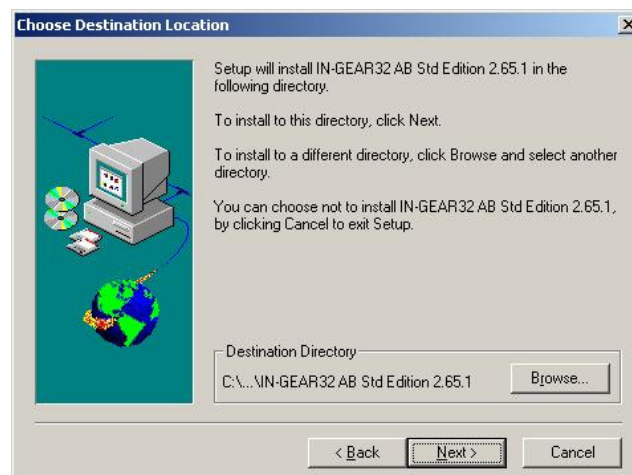


Figure 3.9 - In-Gear Installation directory

- ❑ If you wish to change the In-Gear's installation directory click **Browse** and select the desired destination directory. Click **Next** to continue.

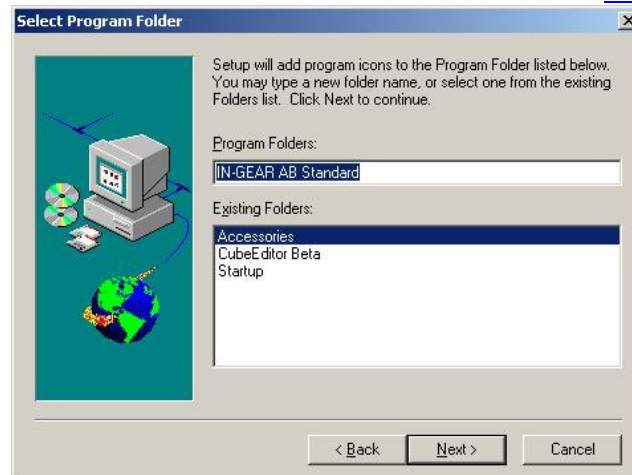


Figure 3.10 - In-Gear Program Folder selection

- ❑ Click **Next**.

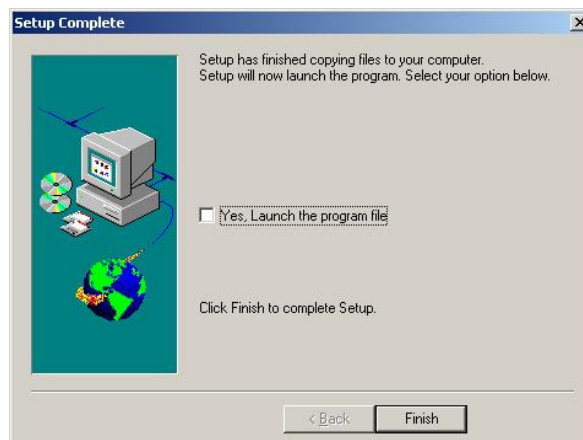


Figure 3.11 - In-Gear setup complete

- ❑ Click **Finish**.

- ❑ Your computer must be restarted for the installation to be completed.

3.3 Driver configuration & OCX registry

In order to allow the Cube Editor to send a tape to the PLC, the communication driver must be registered and configured.

- ❑ In order to register the driver, click on the **Start** of your computer. Then select **Program** on the **Start Menu**, and click on “OCX Win Registry”. The following message box will appear.

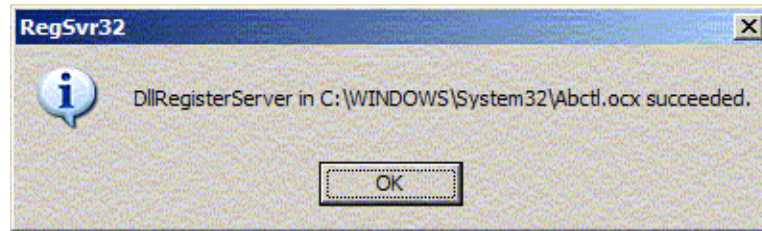


Figure 3.16 Register driver succeeded.

- ❑ In order to configure the driver, click on the **Start** of your computer. Then select **Program** on the **Start Menu**, and click on “Driver Configuration”. The setting should be as in the following dialog box.

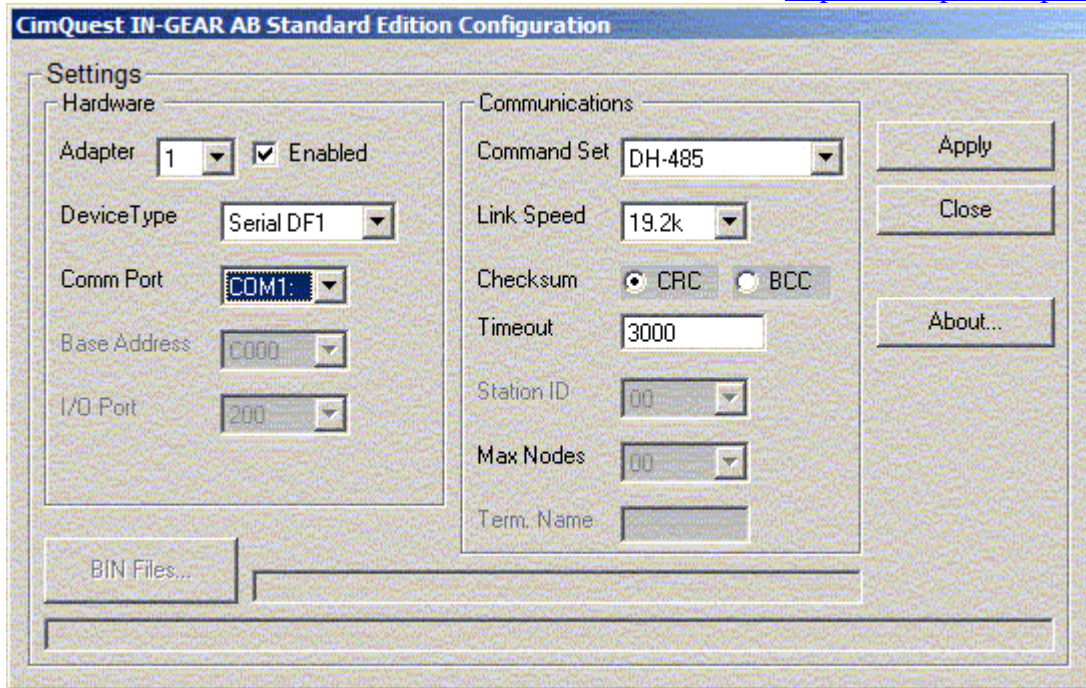


Figure 3.17 – Driver configuration dialog box with the correct setting.

4 Cuber Configuration

4.1 Cuber settings

In order to configure the Cube Editor, the Cuber.ini file must be edited. This file is located in the *C:\Program Files\CubeEditor* directory. It can be opened by selecting Start → Programs → CubeEditor → Cube.ini. Here are the possible configuration settings for the Cuber.ini file.

- **TurntableSize:** Maximum number of blocks allowed on a turntable (inches).
- **TurntableNumber:** Number of turntables (1 to 4).
- **LevelMaxXSize:** Maximum X size of a Tier Pattern (inches).
- **LevelMaxYSize:** Maximum Y size of a Tier Pattern (inches).
- **CubeMaxZSize:** Maximum height of a Cube (inches).
- **SideFeedNumber:** Number of possible side feed stops (1 to 6).
Set to 1 if there is no accumulation or if no void are needed.
- **LevelFeedNumber:** Number of pushers installed on layer pusher (1 to 4).
Set to 1 if your cuber doesn't include this option. Set to 4 if your cuber has a multi-pad side pusher.
- **PhotoCellNumber:** Number of photocells at grip + 1 (first photocell is not used).
- **PhotoCellSize:** Gap between photocells in inches.
- **StepsforSideFeed:** Set to TurntableNumber + 1.
- **StepsforLevelFeed:** Set to TurntableNumber + 1.
- **StepsforHoleCheck:** Set to TurntableNumber + 1.
- **StepsforCubeOut:** Set to TurntableNumber + 1.
- **TurntableRotation:** Rotation direction (0=Clockwise, 1=Counter clockwise).
Verify the mechanical arrangement of the turn table to set that variable.
- **Transformation:** Refers to the loading ramp's position. (0, 1, 2)
- **IncomingAngle:** Indicates the angle with which blocks are loaded on the ramp. (0, 1, 3).
- **PLCPATH:** The path to the driver used to send the tape to the PLC.
- **Pre-Pattern Maker:** Indicate if a Pre-Pattern Maker is installed (0=Yes,1=No).



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Shown below is an example of a Cuber.ini file.

```
[Cuber]
TurnTableSize=24
TurnTableNumber=3
LevelMaxXSize=64
LevelMaxYSize=48
CubeMaxZSize=80
SideFeedNumber=6
LevelFeedNumber=4
PhotoCellNumber=6
PhotoCellSize=4
StepsforSideFeed=5
StepsforLevelFeed=5
StepsforHoleCheck=4
StepsforCubeOut=5
TurnTableRotation=1
Transformation=0
IncomingAngle=3
PLCPATH=HMI
MAXTAPESIZE=512
PPM=0
```



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4.2 Layouts for Side Feed

Shown here are the possible layouts for the Cuber depending on the settings in the Cuber.ini file. The layouts presented here depend on the possible values for *IncomingAngle*, *Transformation* and *TurntableRotation*. The Cuber.ini settings should correspond to the actual Cuber being used.

Here is a description of all the graphical elements included in the layouts presented later on:



- Indicates whether the blocks are loaded vertically or horizontally into the Cuber. The black arrow (black triangle) indicates the entry direction of the block into the Cuber.



- Indicates the rotating direction for the turntables.



- Indicate the flow direction of the blocks.

- The **Cube Out** is where the completed cubes are led out from the Cuber. In the following diagrams, it is always located at the top of the Cuber.

The following schema identifies the main parts of the Cuber.

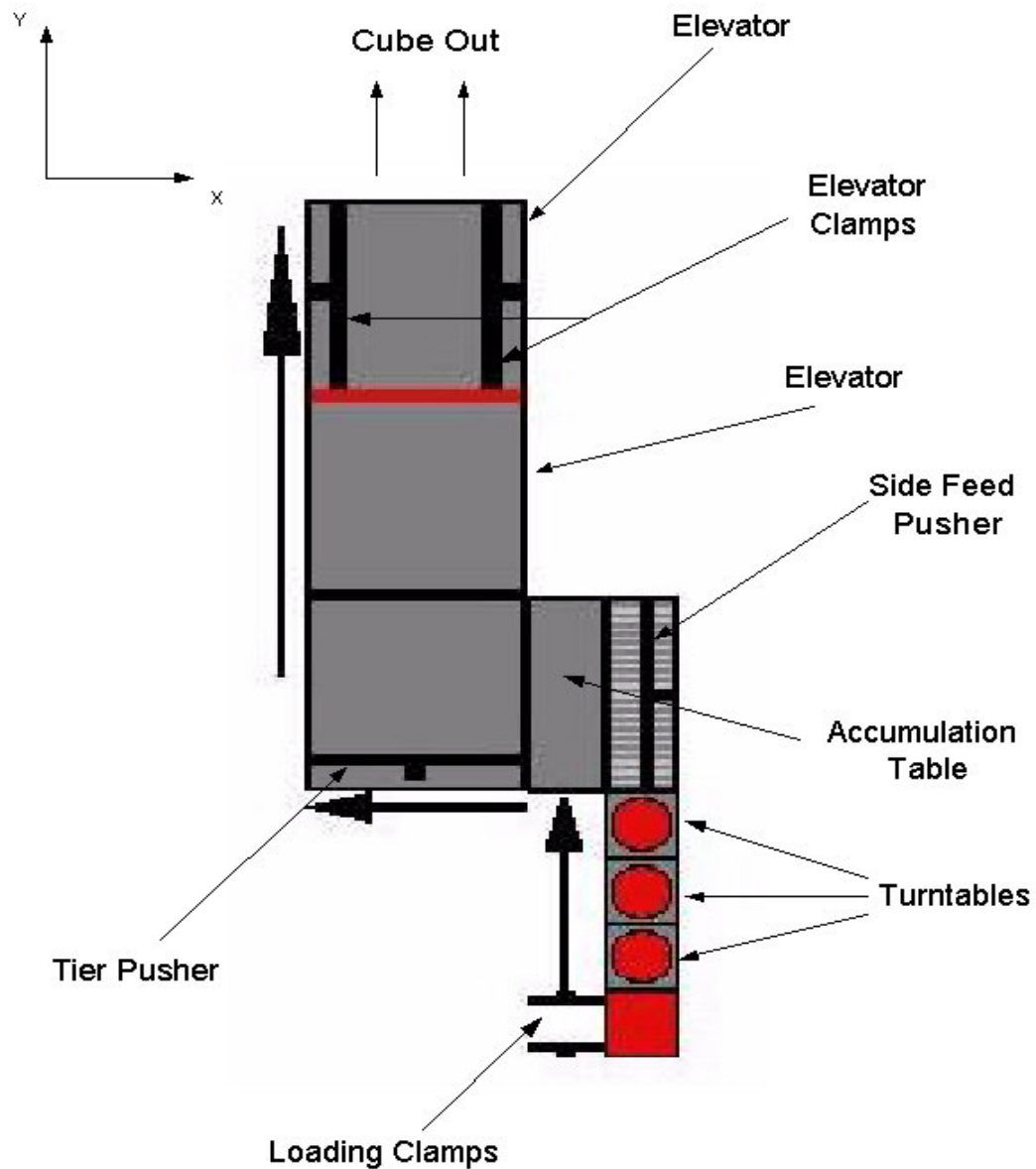


Figure 4.1 – Graphical representation of the Cuber

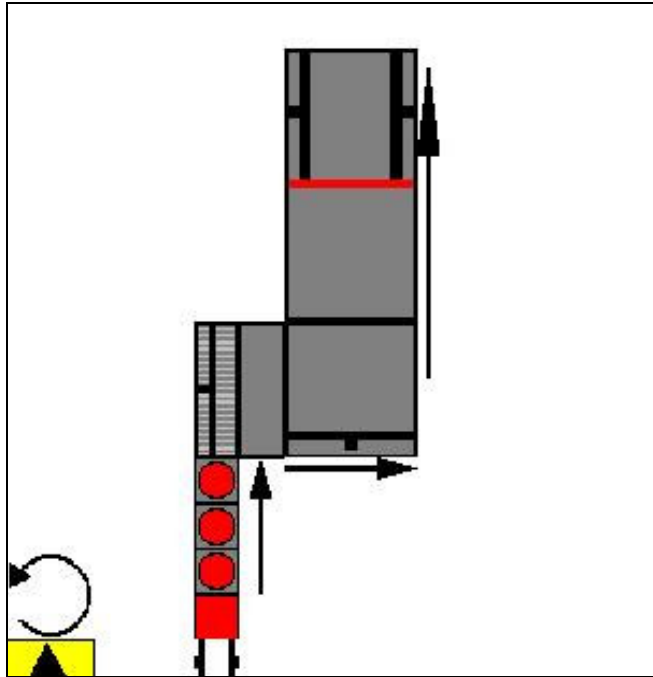


Figure 4.2 - Layout for side feed : model A

- IncomingAngle = 0
- Transformation = 0

4.2.2 Model B

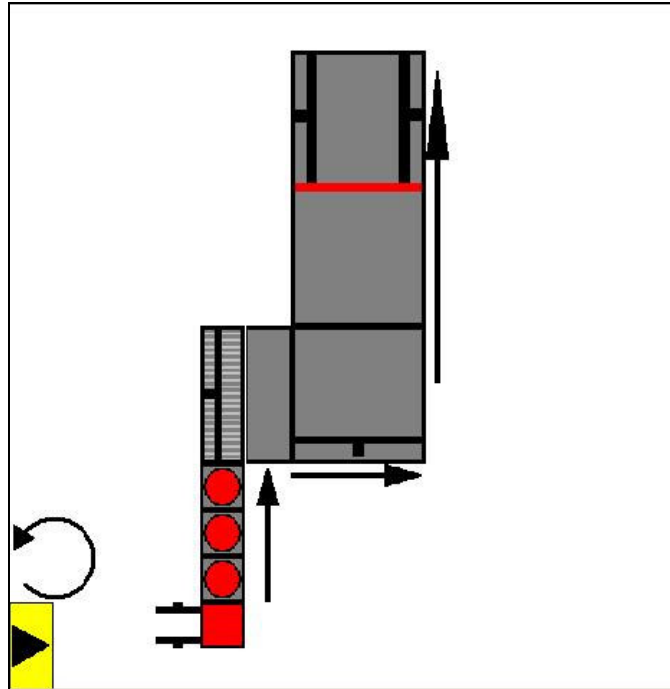


Figure 4.3 - Layout for side feed: model B

- IncomingAngle = 1
- Transformation = 0

4.2.3 Model C

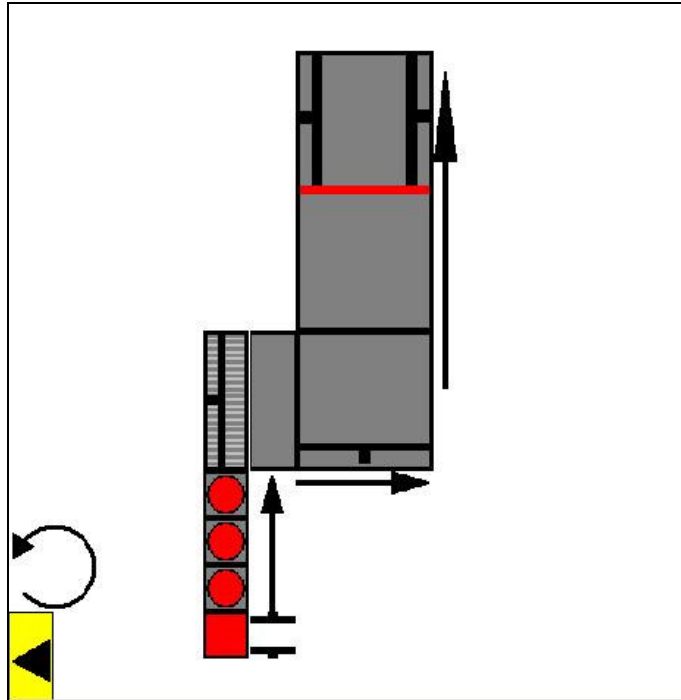


Figure 4.4 - Layout for side feed: model C

- IncomingAngle = 3
- Transformation = 0

4.2.4 Model D

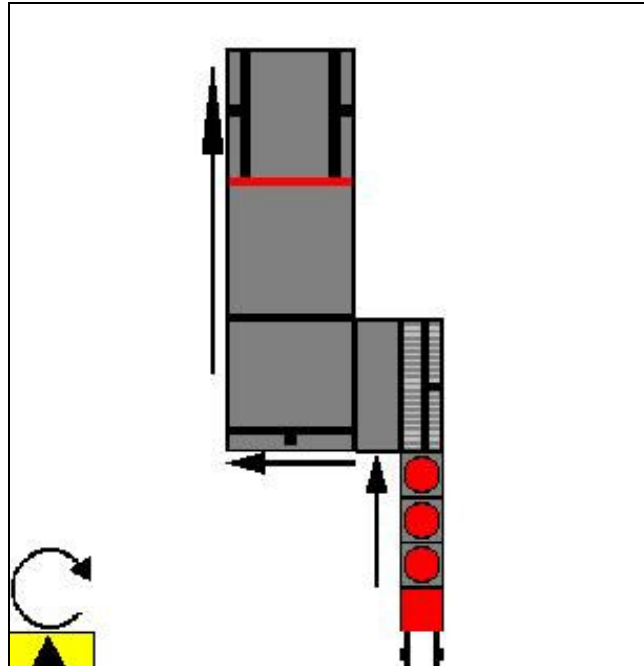


Figure 4.5 - Layout for side feed: model D

- IncomingAngle = 0
- Transformation = 1

4.2.5 Model E

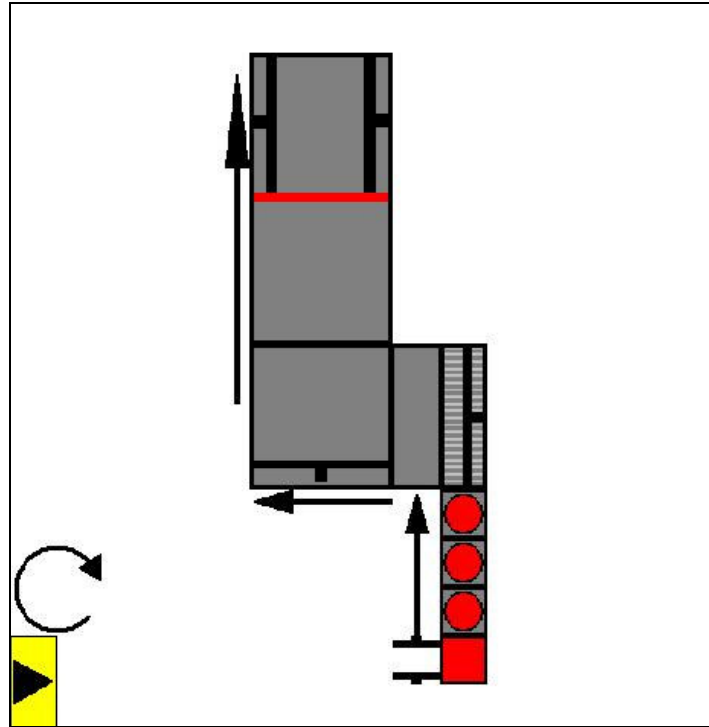


Figure 4.6 - Layout for side feed: model E

- IncomingAngle = 1
- Transformation = 1

4.2.6 Model F

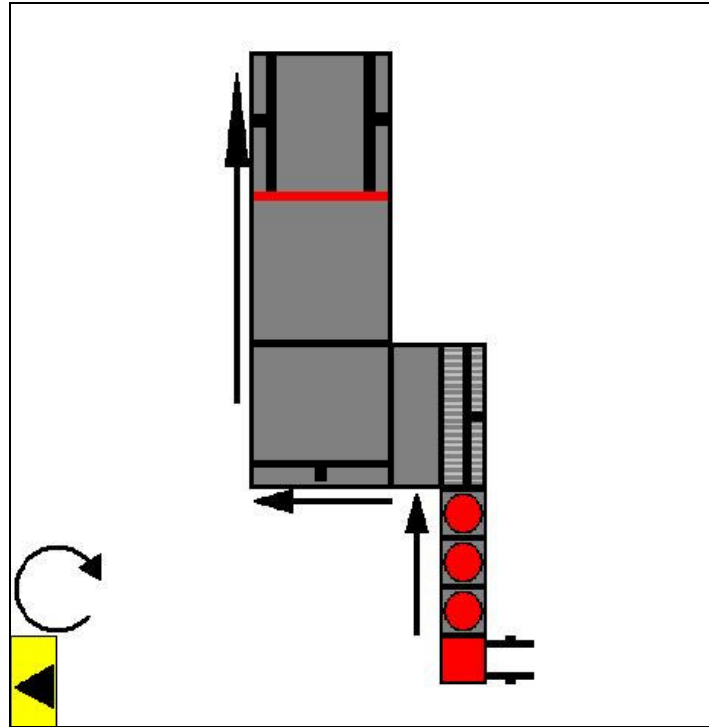


Figure 4.7 - Layout for side feed: model F

- IncomingAngle = 3
- Transformation = 1

4.3 Layouts for Front Feed

4.3.1 Model G

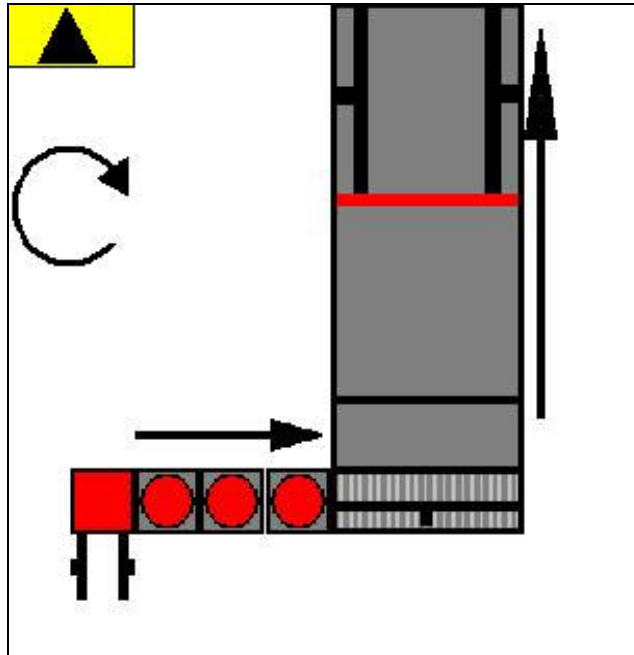


Figure 4.8 - Layout for front feed: model G

- IncomingAngle = 3
- Transformation = 2

4.3.2 Model H

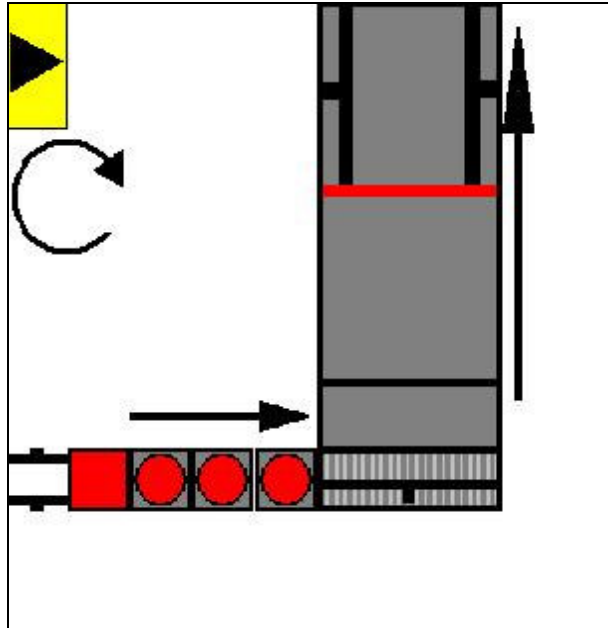


Figure 4.9 - Layout for front feed: model H

- IncomingAngle = 0
- Transformation = 2

4.3.3 Model I

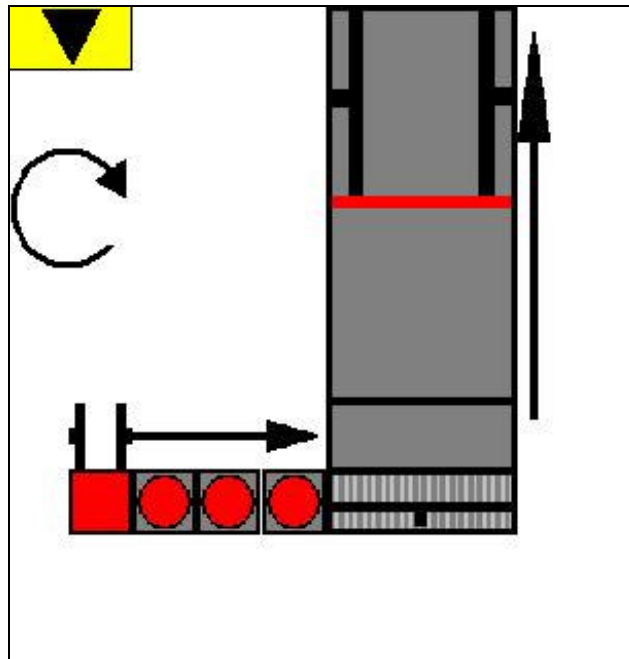


Figure 4.10 - Layout for front feed: model I

- IncomingAngle = 1
- Transformation = 2

4.3.4 Model J

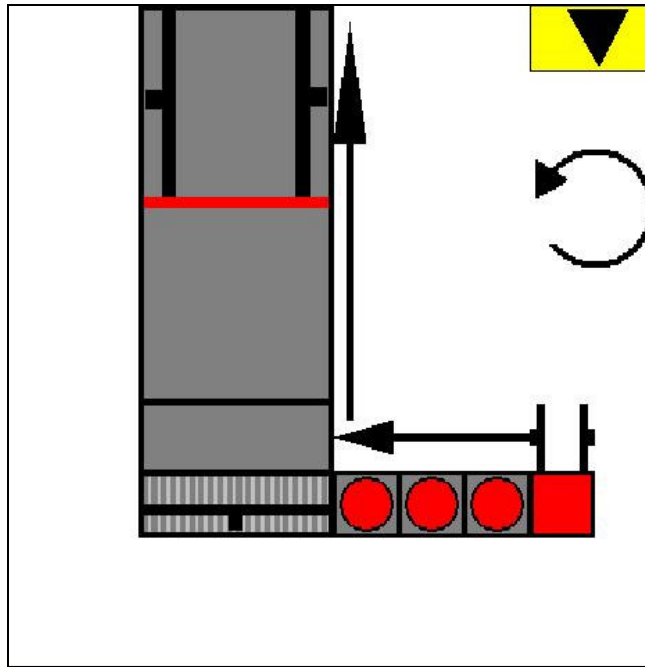


Figure 4.11 - Layout for front feed: model J

- IncomingAngle = 3
- Transformation = 3

4.3.5 Model K

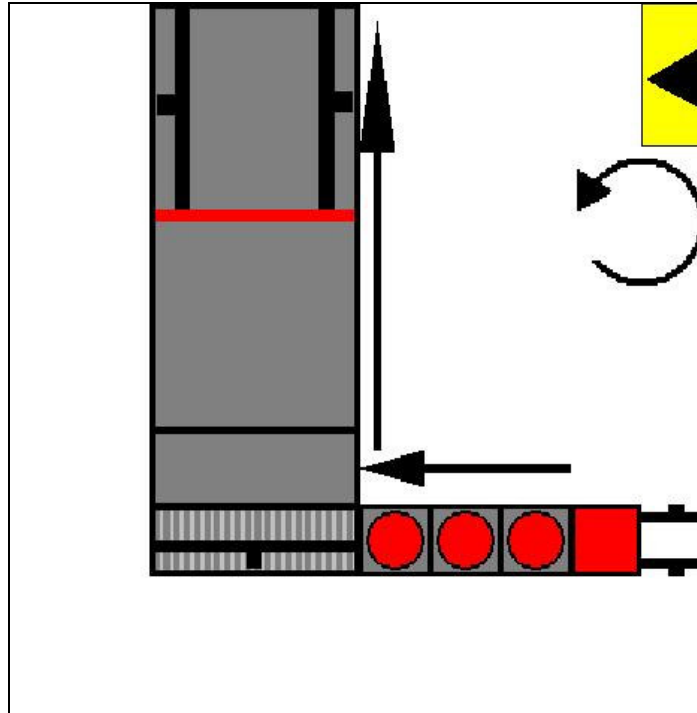


Figure 4.12 - Layout for front feed: model K

- IncomingAngle = 0
- Transformation = 3

4.3.6 Model L

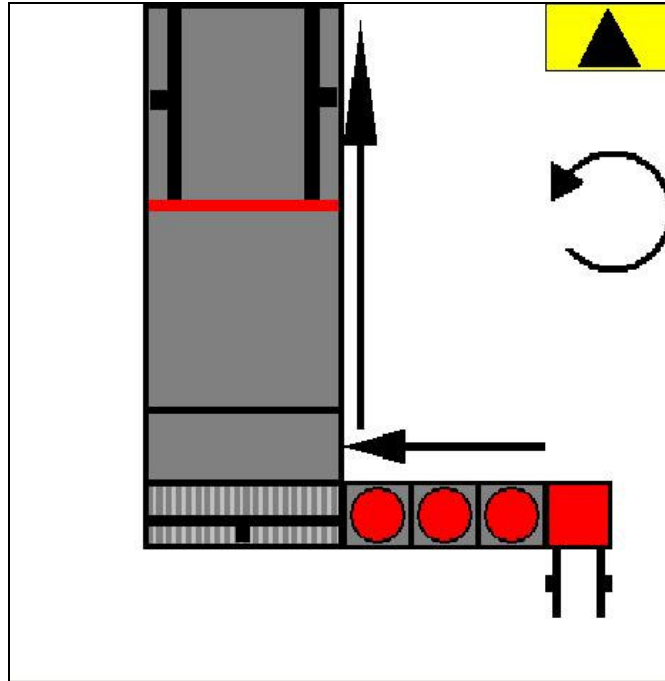


Figure 4.13 - Layout for front feed: model L

- IncomingAngle = 1
- Transformation = 3

5 Using Cube Editor

Shown below is an overview of the Cube Editor environment.

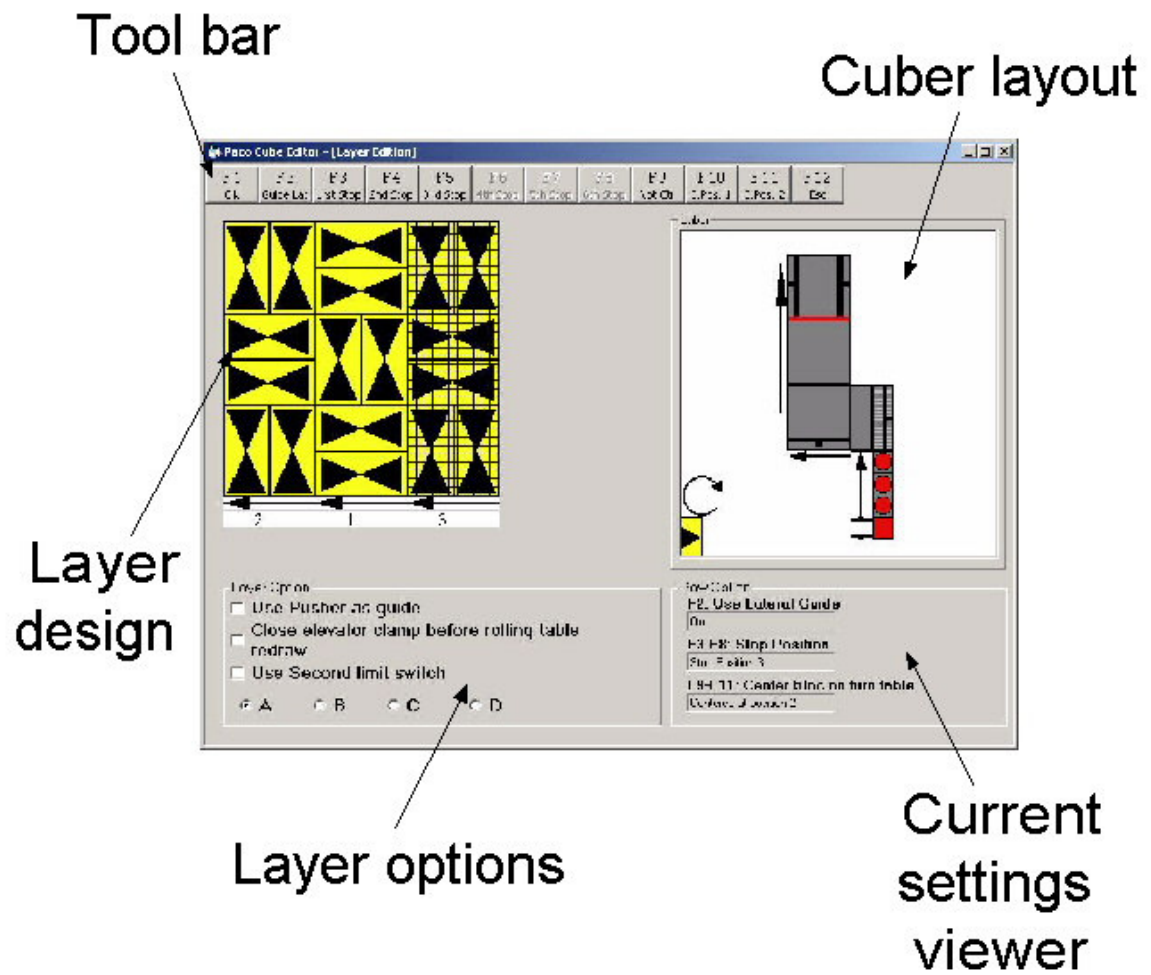


Figure 5.1 - The Cube Editor environment

5.1 Main Screen

When you start the PACO Cube Editor, you will be presented with the main screen, shown in figure 5.2.

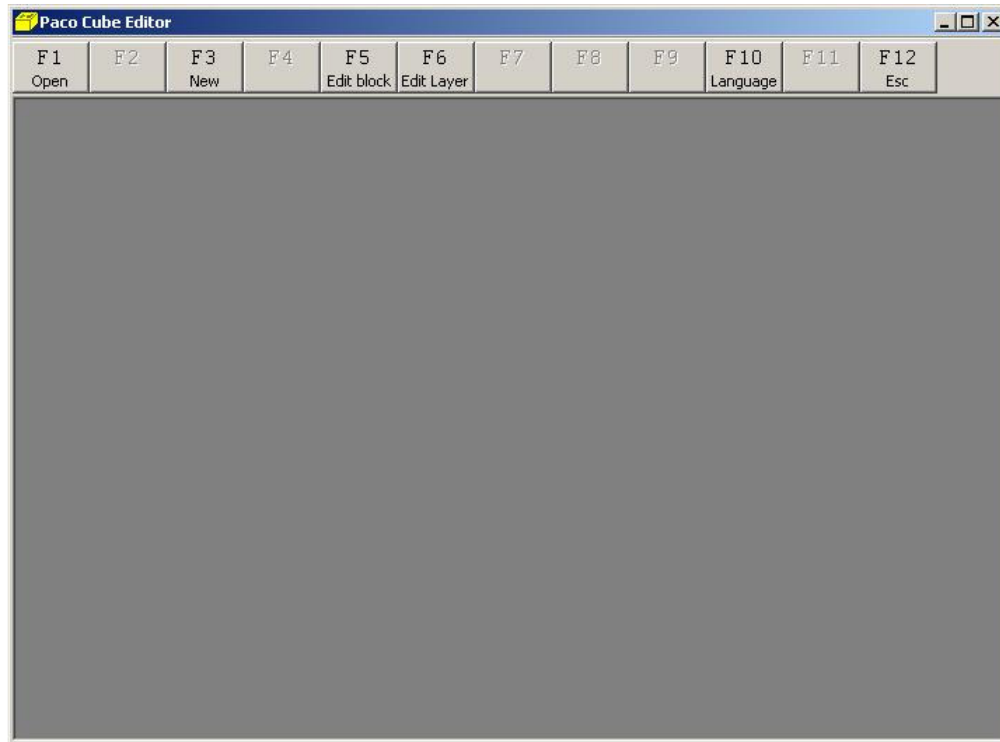


Figure 5.2 - Main screen

When the form is resized, the content of the window will be resized by a factor equal to the form's resize ratio. However, the menu bar's size doesn't change.

At this point, you can either

- ☐ Open an existing Cube pattern (**Open - F1**)
- ☐ Create a new Cube pattern (**New - F3**)
- ☐ Edit a Block (**Edit Block - F5**)
- ☐ Edit a layer (**Edit Layer - F6**)
- ☐ Change language (**Language - F10**)
- ☐ Exit Cube Editor (**Esc - F12**)

5.1.1 Selecting the “Open (F1)” option from the Main Screen

If the user selects “Open”, he will be presented with this screen where he can visualise the existing cube patterns.

- ❑ **Id:** identification number for a particular pattern
- ❑ **Description:** short description of the pattern
- ❑ **Block name:** name of the type of block used for that pattern
- ❑ **W:** the blocks' width
- ❑ **H:** the blocks' height
- ❑ **L:** the block's length
- ❑ **Nb Layer:** number of layer in that pattern
- ❑ **Pallet Name:** name of the pallet type used in that pattern
- ❑ **X:** pattern's dimension for the X axis
- ❑ **Y:** pattern's dimension for the Y axis

[illegible]

Figure 5.3 - Opening an existing cube pattern

- ❑ To open an existing cube pattern, select the appropriate line and click **Ok (F1)** from the toolbar. The cube editor window will open next. There, you can edit all the layers for that particular pattern.
- ❑ To delete a cube pattern, select the appropriate line and click **Delete (F7)** from the toolbar.
- ❑ To go back to the main screen, click **Esc (F12)** from the toolbar.

5.1.2 Selecting the “New (F3)” option from the Main Screen

This option allows you to create a new pattern from scratch where you can design each layer for the cube. See **Section 5.2** for complete details on how to create a new pattern.

5.1.3 Selecting the “Edit Block (F5)” option from the Main Screen

This option allows you to edit an existing block pattern. You will be presented with the Block Selection dialog box from which you select the appropriate block pattern. See **Section 5.2** for complete details on editing blocks.

5.1.4 Selecting the “Edit Layer (F6)” option from the Main Screen

This option allows you to edit an existing layer. You will be presented with the Tier Selection dialog box from which you select the appropriate block pattern. See **Section 5.2** for complete details on editing layers.

5.1.5 Selecting the “Language (F10)” option from the Main Screen

This option allows you to switch between available languages for the Cube Editor. The Select Language window will appear, from which you select the desired language.



Figure 5.4 - Select Language window

5.1.6 Selecting the “Esc (F12)” option from the Main Screen

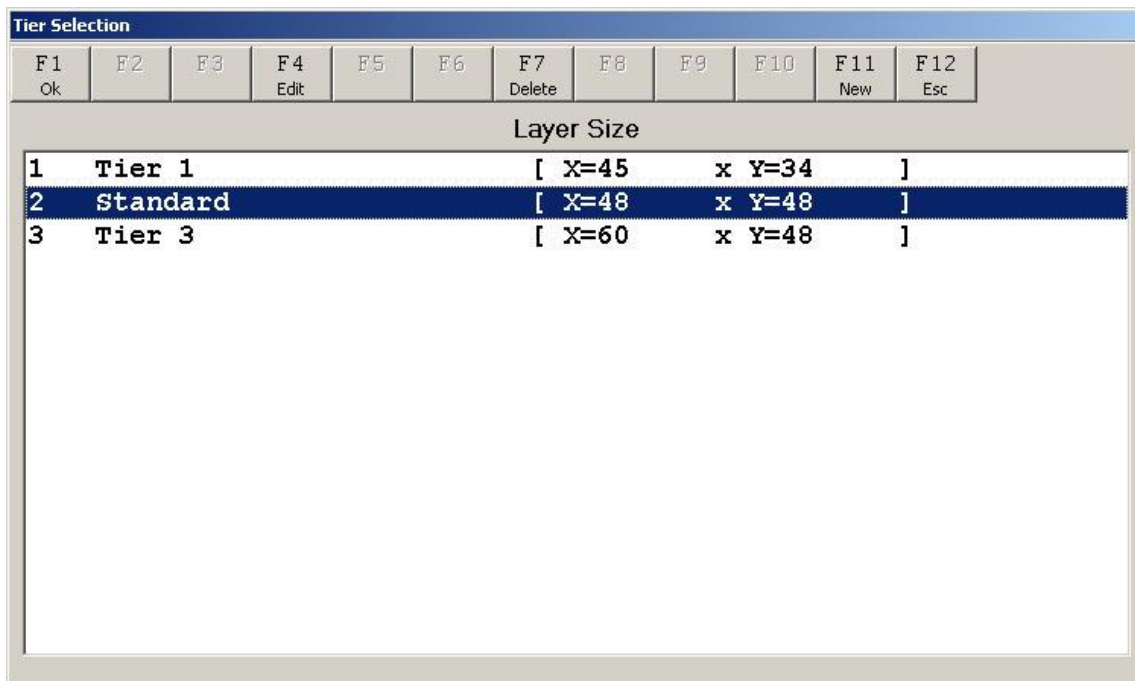
To quit the PACO Cube Editor, press **Esc (F12)**. A confirmation window will appear. Click **Yes** to quit the application. All non-saved designs are lost when quitting the application.

5.2 Creating or editing a layer

5.2.1 Steps for creating or editing new layer

This section presents the steps to follow for creating a new cube pattern.

- ❑ From the main screen, press **New (F3)**.
- ❑ The following screen displays the existing tiers (or layers). When no tier exists, the list is left blank and a new tier must be created to continue. Each line contains the tier's ID, name, and size according to the X and Y axis.



Layer Size		
1	Tier 1	[X=45 x Y=34]
2	Standard	[X=48 x Y=48]
3	Tier 3	[X=60 x Y=48]

Figure 5.5 - Tier Selection window

- If you want to create a new tier, press **New (F11)**. See **Section 5.4** for further explanations on how to create a new tier.
- To go back to the main screen, press **Esc (F12)**.
- ❑ Select the appropriate tier.
- ❑ Press **OK (F1)**.
- ❑ The following screen displays the available blocks. If no block exists, the list is left blank and a new block must be created to continue.

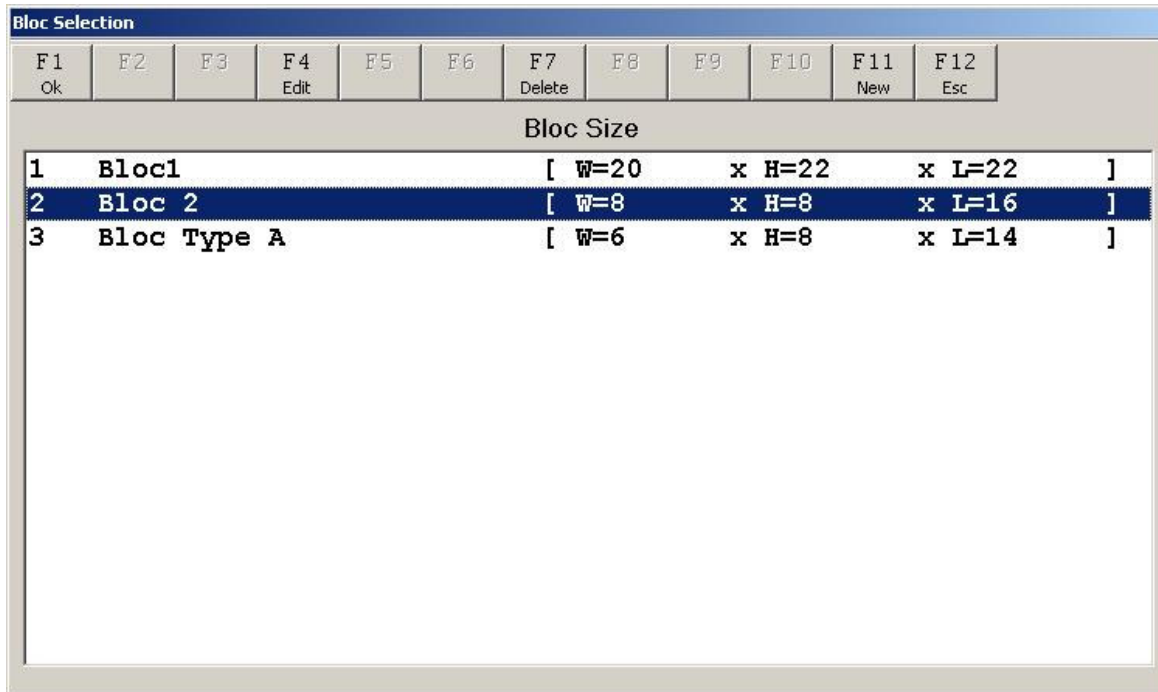


Figure 5.6 - Block Selection window

- If you want to create a new block, press **New (F11)**. See **Section 5.4** for further explanations on how to create a new block.
- To go back to the main screen, press **Esc (F12)**.
- ❑ Select the appropriate block.
- ❑ Press **OK (F1)**
- ❑ The following window will appear. If you want to use the Pre-Pattern Maker option, click **Yes**. See **Section 5.5** for detailed explanations on using the Pre-Pattern Maker.

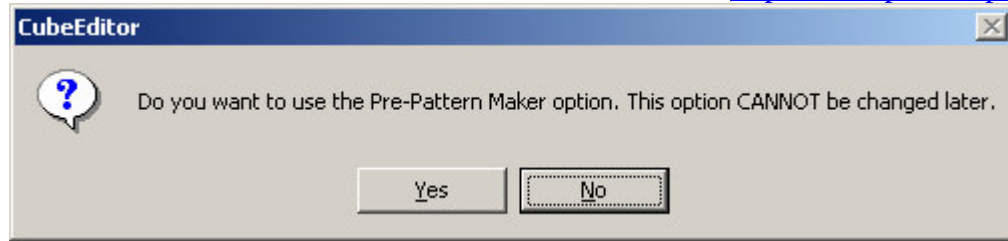


Figure 5.7 - Pre-Pattern Maker window

- The following screen appears next. **Cube Height** indicates the current height for the cube and **Maximum Cube Height** indicates the maximum possible height for the cube (values are in inches).

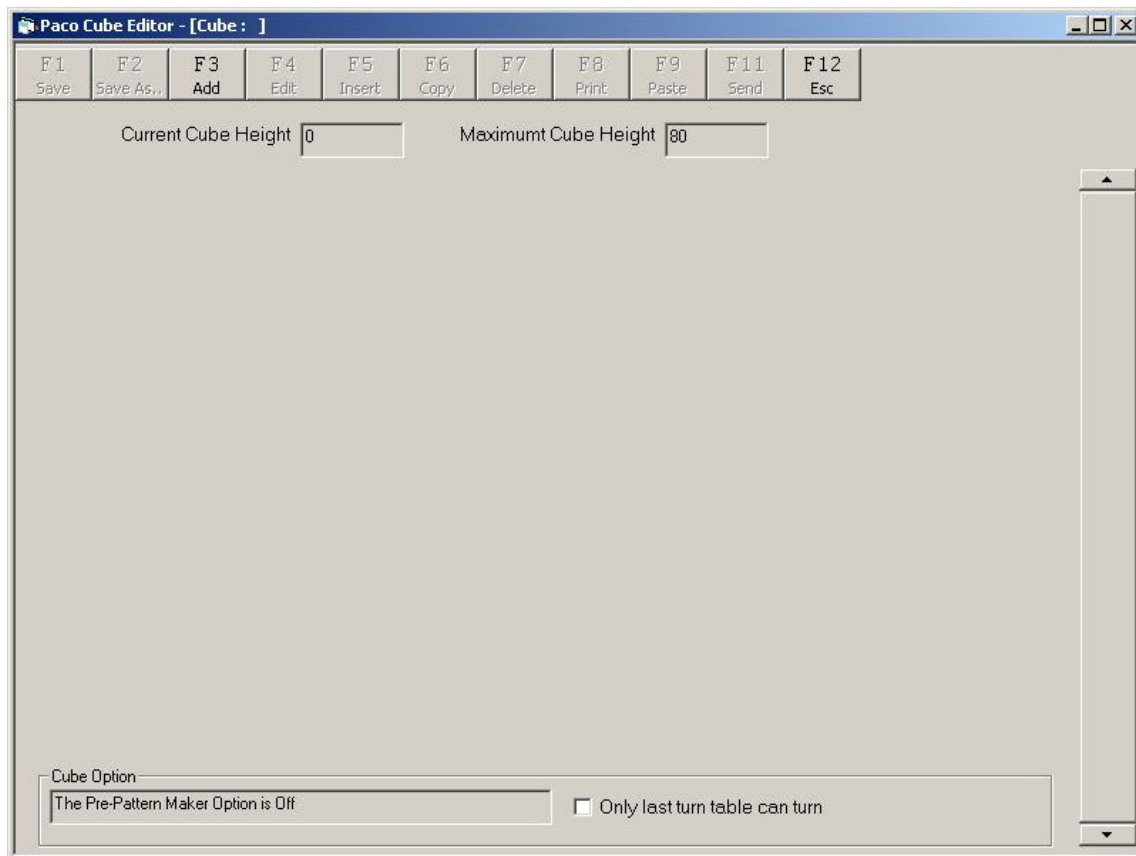


Figure 5.8 - Cube editor

- To go back to the main screen, press **Esc (F12)**.

- ❑ In the Cube Option frame at the bottom, you can see whether the Pre-Pattern Maker option is On or Off.
- ❑ If you wish that only the last turntable be turned, check the check box on the right. Some patterns require this option to be enabled.
- ❑ To add a new layer to the cube, press **Add (F3)**.
- ❑ The Layer Edition screen will be displayed.

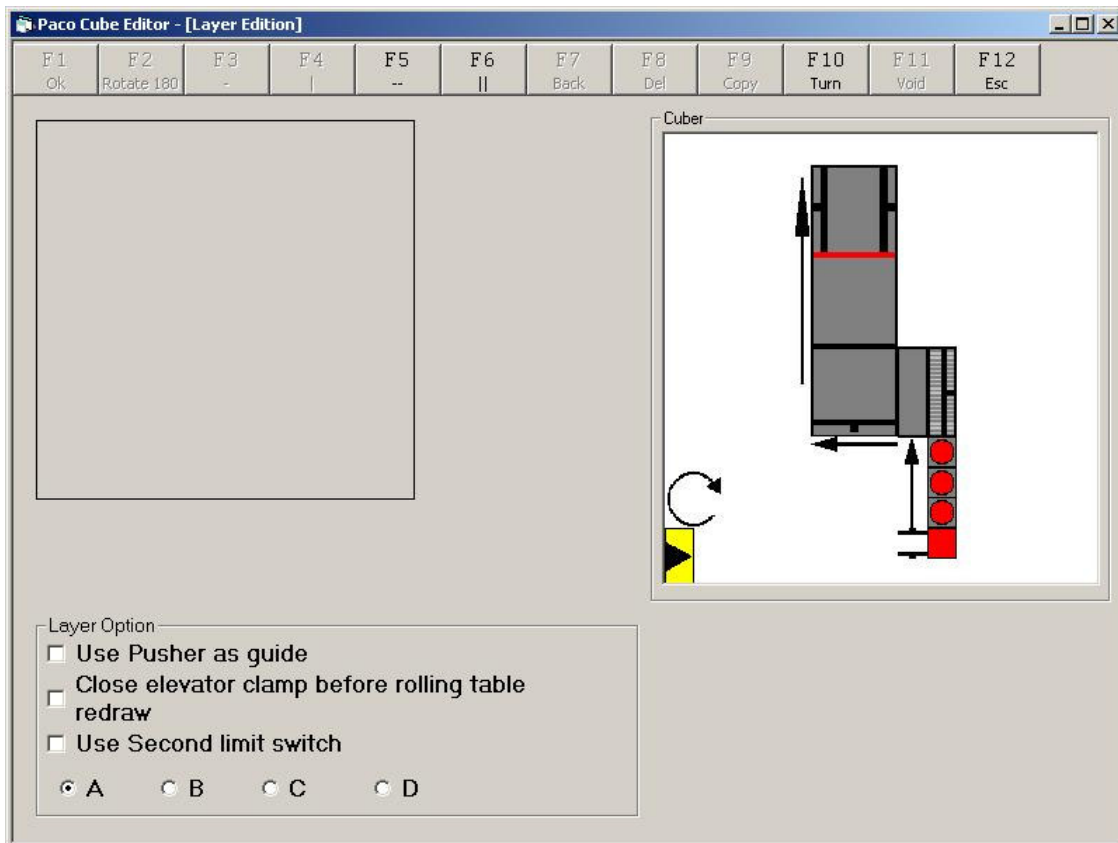


Figure 5.9 - Layer edition (Example 1)

- ❑ The frame at the bottom of the screen contains possible settings that can be applied to the current layer. Here are the possible options:
 - **Use Pusher as guide.** When this option is selected, the Side Feed Pusher will be used as a lateral guide when the Tier Pusher pushes a layer onto the elevator.



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- **Close elevator clamp before rolling table redraw.** Select this option to make sure all the blocks are hold still when the rolling table redraws.
- **Use the second limit switch.** It is possible to specify two stop position for the elevator clamps. This option specifies the second position.

Two examples, using different settings for the Cuber, will be used to explain the layer creation.

❖ EXAMPLE 1

For the following screen, the current settings in the Cuber.ini file indicate that blocks will be added in columns instead of rows.

- ❑ IncomingAngle = 1, which means that the loading clamps are located at the left of the loader i.e. the blocks will be inserted vertically into the Cuber. It is then possible to turn the blocks using the turntables.
- ❑ Transformation = 1, which means that series of blocks will be coming from the bottom and that the Side Feed Pusher will be needed to push the blocks onto the layer space. Thus, blocks are added to the layer in columns.
- ❑ TurntableRotation = 0, which means that the turntables rotation direction is clockwise.

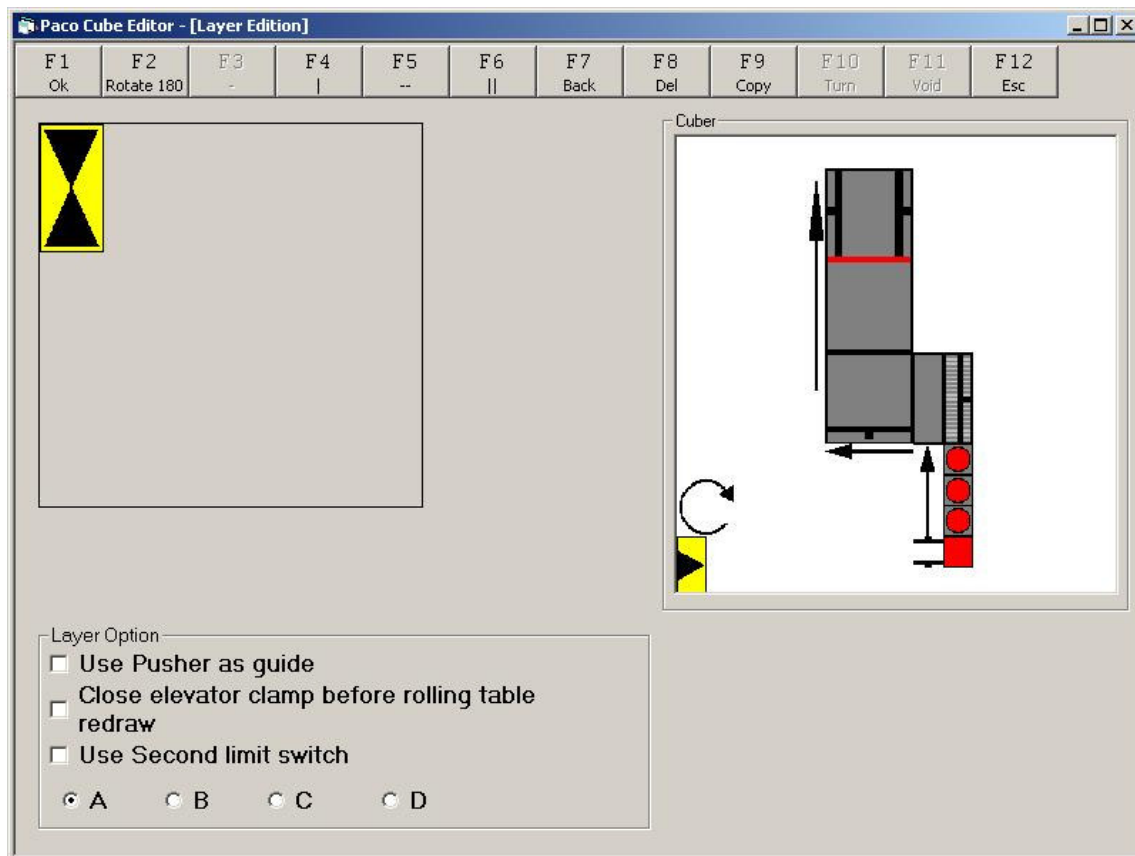




Figure 5.10 - Layer edition, blocks added in columns (Example 1)

- ❑ To add a new horizontal block , press -- (F5).
- ❑ To add a new vertical block , press || (F6).
- ❑ To add a new vertical block next to another vertical block while remaining in the same column, press | (F4). You can add up to 2 other blocks next to an existing one. This option is available only if a vertical block has just been inserted. The next screen shows an example for a column.
- ❑ Here is an example of a complete column for this example.

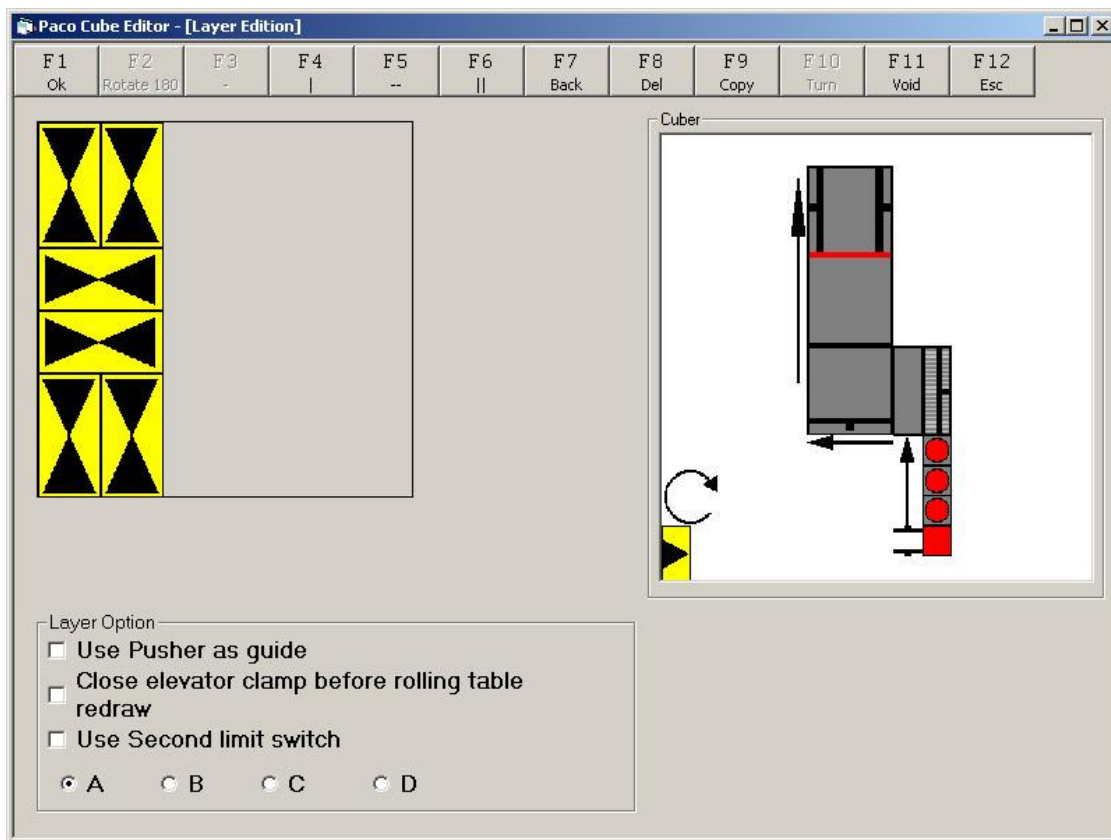


Figure 5.11 - Layer edition, complete column (Example 1)

❖ EXAMPLE 2

Here is another example of a layer creation, using different settings.

- ❑ Incoming angle = 3, which means that the loading clamps are at the bottom of the loader i.e. the blocks are loaded horizontally into the Cuber. Again, the blocks can then be turned using the turntables.
- ❑ Transformation = 2, which means that series of block will be coming form the left. Thus, no Side Feed Pusher is required to push them onto the layer space so they will be added in rows.
- ❑ TurntableRotation = 0, which means that the rotation direction for the turntables is clockwise.

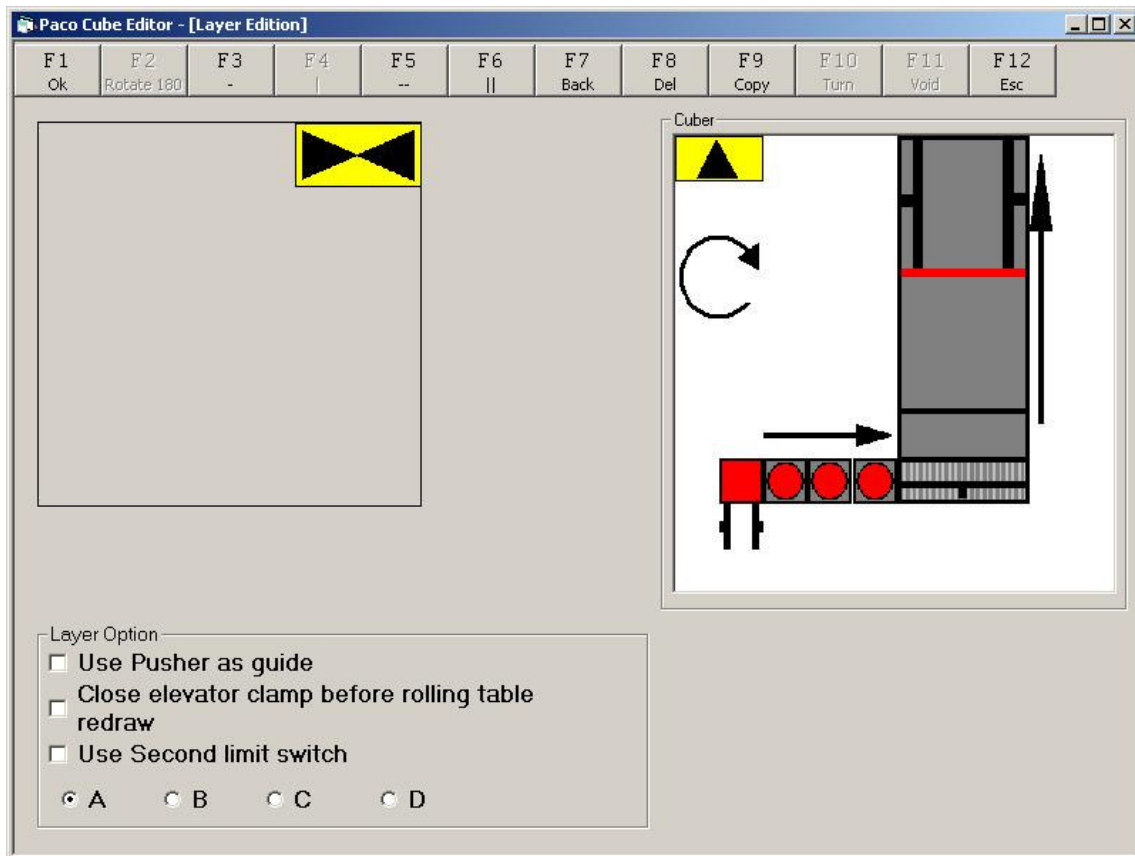


Figure 5.12 - Layer edition, blocks added in rows (Example 2)

- ❑ To add a new horizontal block under another horizontal block while remaining in the same row, press - **(F3)**. You can add up to 2 other blocks under an existing one. This option is available only if a horizontal block has just been inserted.
- ❑ The next screen shows a complete row.

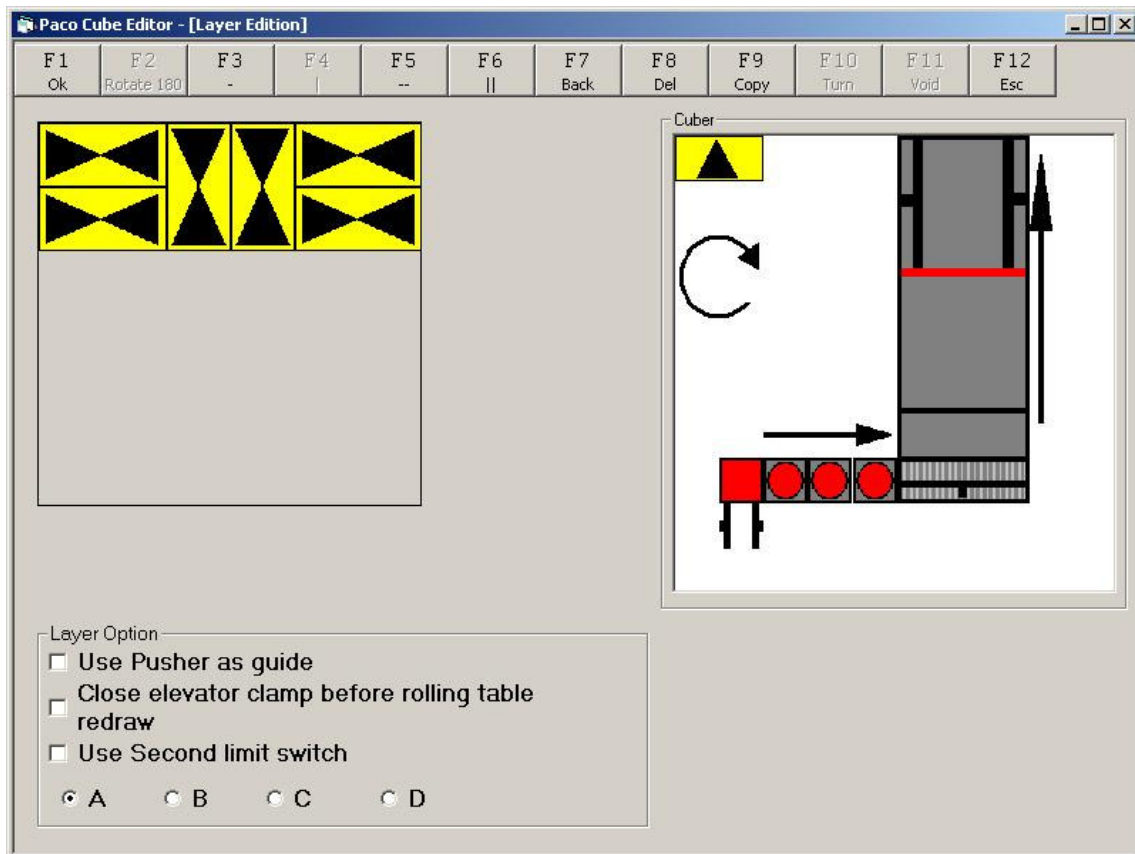
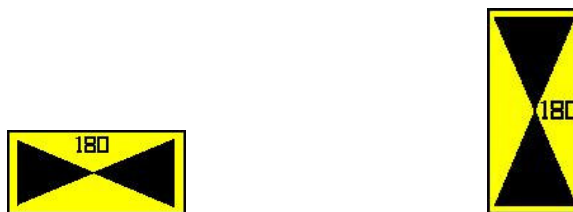


Figure 5.13 - Layer edition, complete row (Example 2)

For specific blocks, rotation can be enabled. Rotation is used when non-symmetric blocks must be placed in a way that wouldn't be possible using the normal rotation process. When this option is enabled, the block is rotated 180° more than usual in order to match the appropriate pattern.

- ❑ To specify that a block will be rotated 180°, press **Rotate 180 (F2)**. Rotation can be applied only to the current block, one block at a time. The block will be marked with a **180**.



- ❑ To delete the last inserted block, press **Back (F7)**.
- ❑ To delete a column, press **Del (F8)**. A conformation window will appear. Press OK to confirm deletion. The last edited column will be deleted.
- ❑ To copy a column, press **Copy (F9)**. The last edited column will be copied to the next available space for a column. If not enough space is available for a column to be copied, the Copy button will be disabled.
- ❑ To turn over a block, press **Turn (F10)**. This option is only available at the beginning of the layer edition for the entire blocks of the layer must be turned. Shown here is the representation for a turned block. A turned block is pivoted around its X axis.

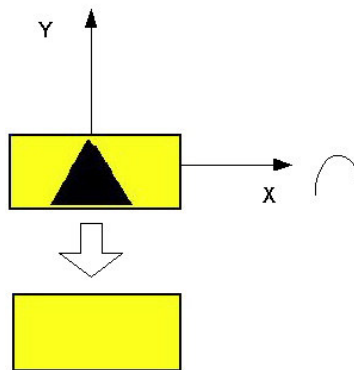
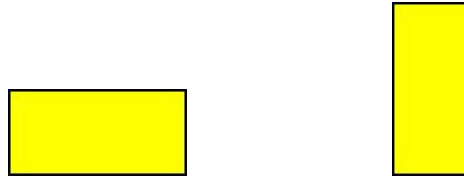


Figure 5.14 - Pivoted block

On screen, this gives you the following results for the horizontal and the vertical blocks.



It is possible to insert an empty space, or void, between columns, in order to match a specific pattern.

- ❑ To insert a void in the layer, press **Void (F11)**. This option is only available when inserting columns.
 - After pressing **Void (F11)**, the following screen appears.

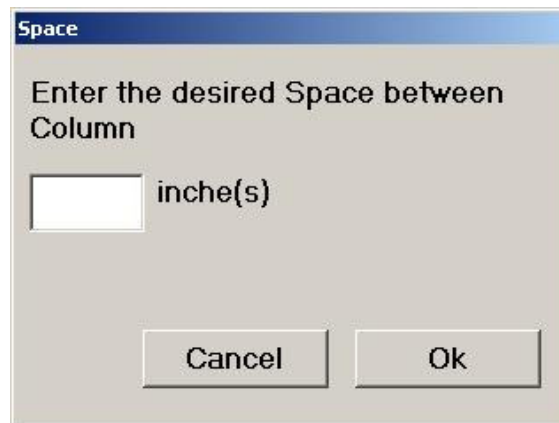


Figure 5.15 - Void dialog window

- Enter the desired width for the void in inches and press **OK**.
- A void is inserted in the layer.

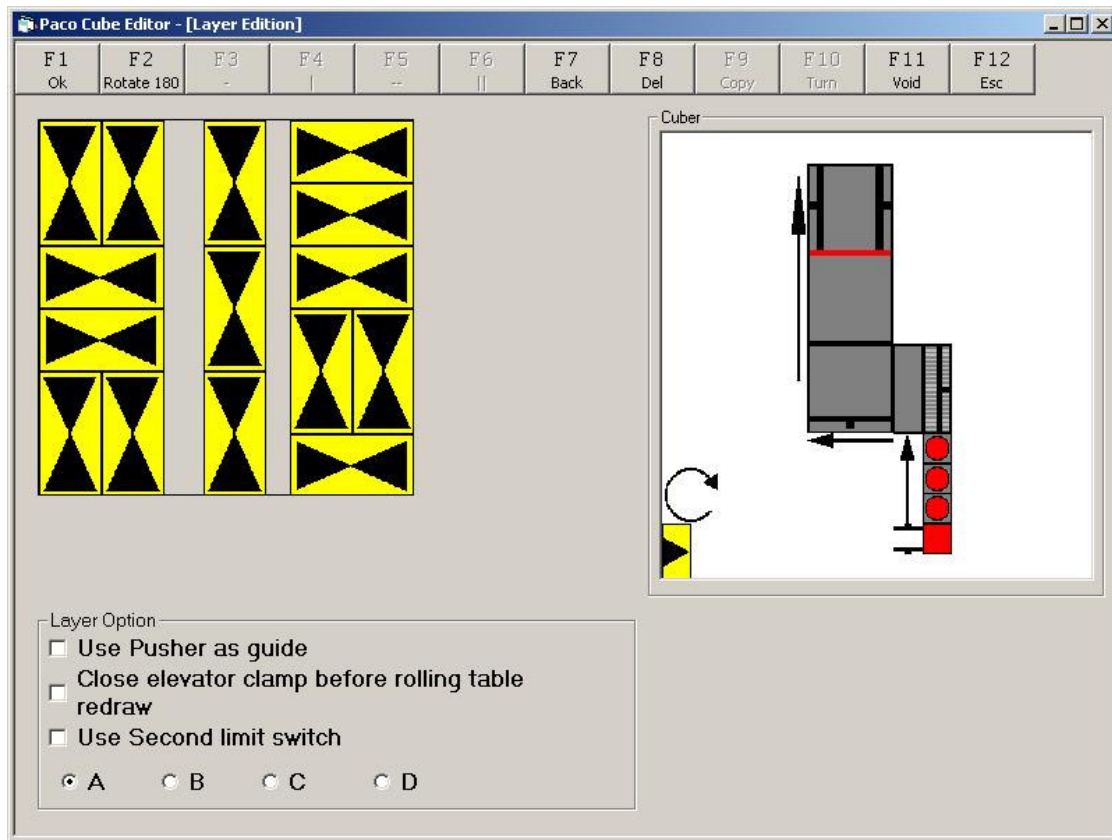


Figure 5.16 - Layer edition, void insertion

- ❑ To accept the current layer design, press **OK (F1)**.
- ❑ To go back to the Cube Editor screen, press **Esc (F12)**.

5.2.2 Applying settings to a layer

After creating a new layer, further settings can be applied to the layer. The following screen shows the possible settings that can be applied to the layer. Settings are applied to each row or column. Settings are always applied to the current selected row or column. The current selected row or column is covered with a grid.

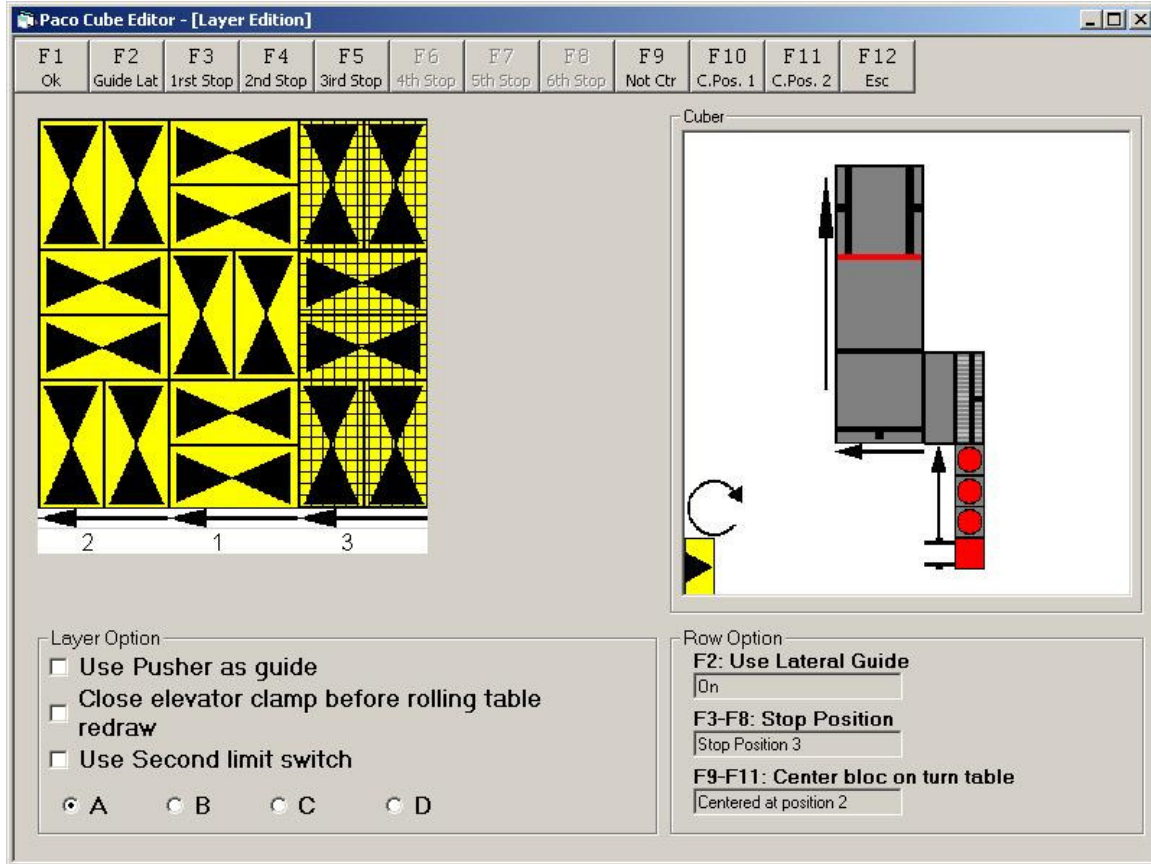


Figure 5.17 - Layer edition (applying settings)

- ❑ To enable the use of the lateral guide, press **Guide Lat (F2)**. The text in the **F2: Use Lateral Guide** text-area will change from Off to On. Press Guide Lat (F2) to keep switching between both values.
- ❑ To set the Side Pusher Stopping Positions, select between first, second or third position (**F3 thru F8**).
- ❑ When the layer is completed, press **OK (F1)**. You will be presented with the Cube Editor section where you can add multiple tiers to a block. See section 5.3 for further details on how to create or edit a new cube.

5.3 Creating a new cube

5.3.1 Creating a new cube

- After you created a new layer, the Cube Editor screen appears.

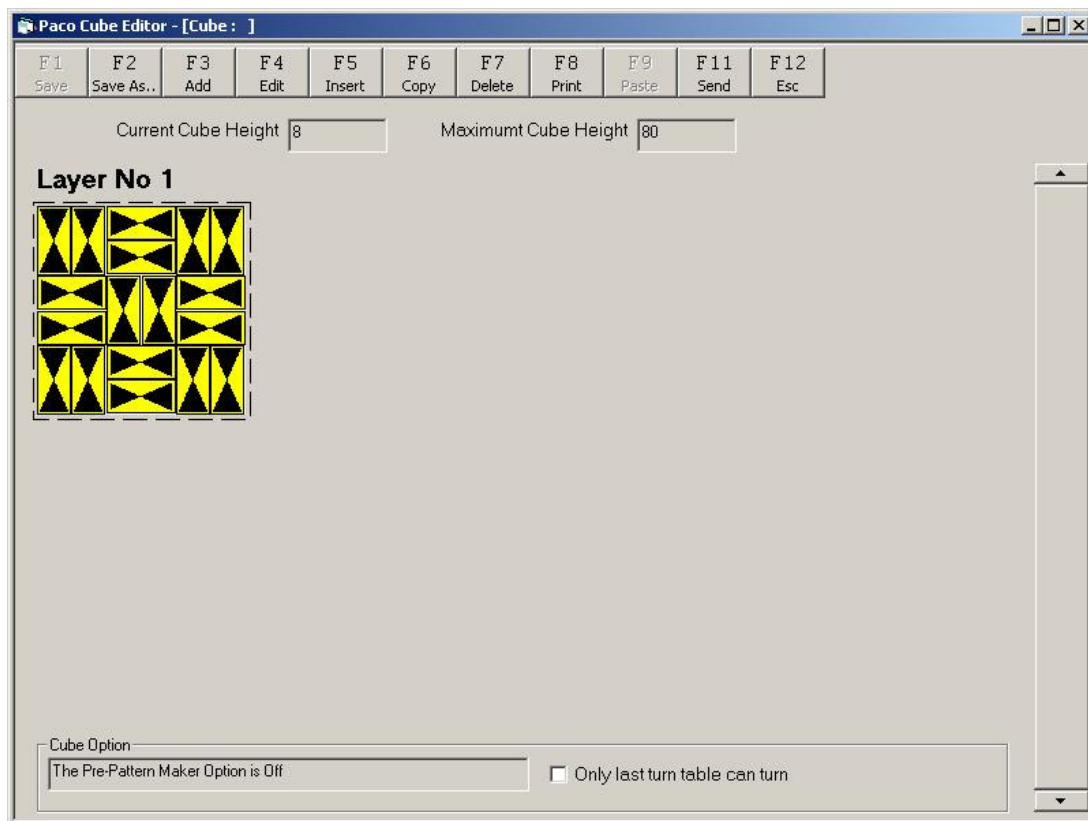


Figure 5.18 - Creating a cube pattern

- When you create new layers, they will be added here.

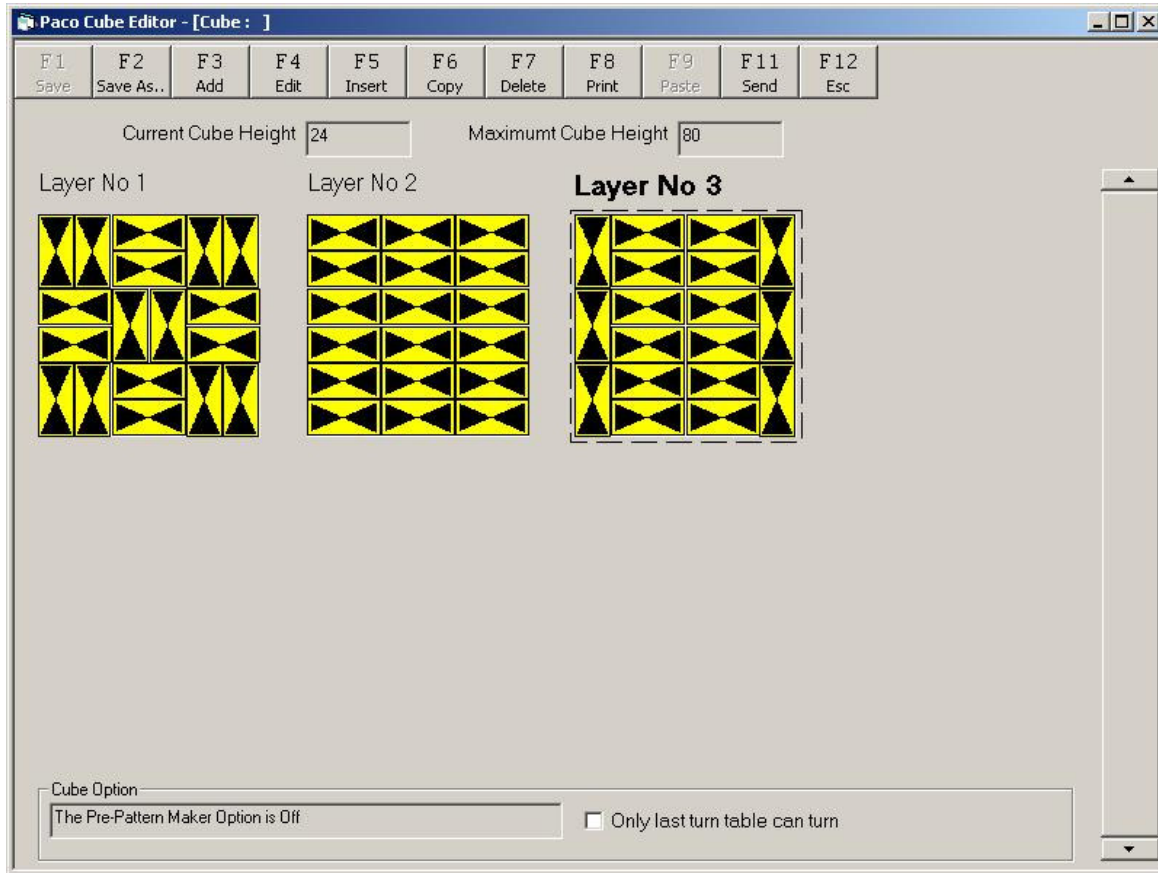


Figure 5.19 - Adding layers to a cube

- To save the current block, press **Save As...(F2)**. Note that the Layer 1 will be at the bottom of the cube.
- ❑ To copy a layer, select the layer, press **Copy (F6)** and press **Paste (F9)**.
- ❑ To copy a layer over an existing layer, select the layer to copy, press **Copy (F6)**, select the layer to be replaced and then press **Paste (F9)**.
- ❑ To delete a layer, press **Delete (F7)**.
- ❑ To print the current layers, press **Print (F8)**.
- ❑ To send the following cube pattern to the PLC, press **Send (F11)**. Make sure a PLC is connected to the computer. See **Section 5.6** for explanations on connecting the PLC to the computer. The following screen will appear.

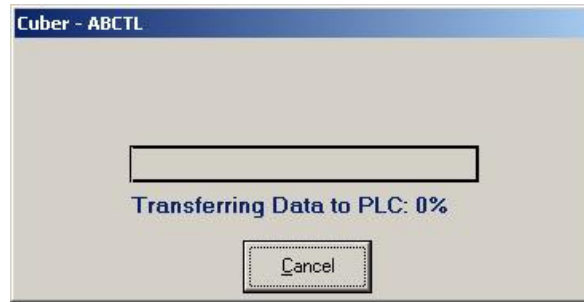


Figure 5.20 - Sending pattern to the PLC

5.4 Creating new tiers and new blocks

Before explaining tiers and blocks creation, it should first be explained what are these elements. A cube is formed of multiple tiers, or layers, and each tier is formed of multiple blocks. The following diagram shows a cube constitution.

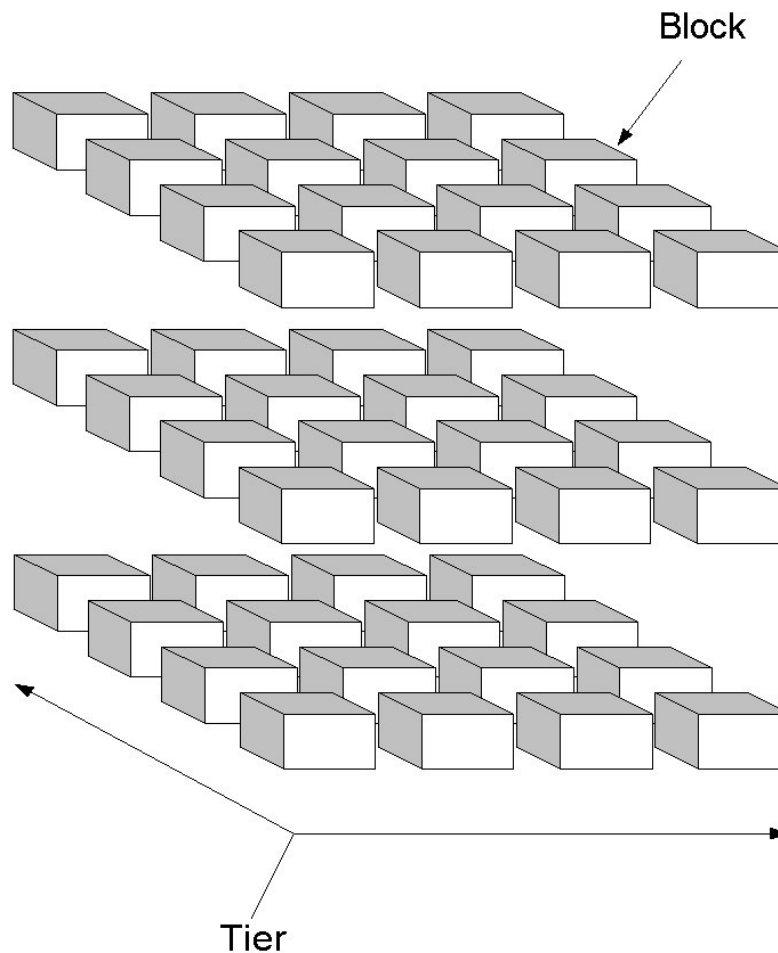
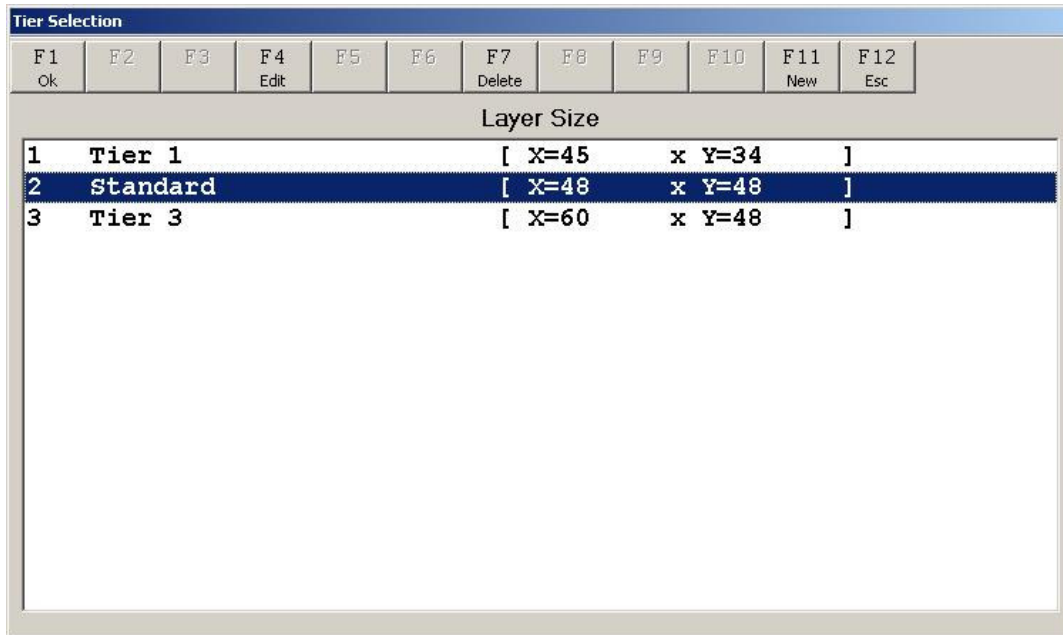


Figure 5.21 - A cube is formed of tiers, which are formed of blocks

In order to create a new cube, you must first define your tiers and blocks' dimensions and settings. You then create all the layers, which, when put together, will form the cube. The following is a description of how to create tiers and blocks.

5.4.1 Creating a new tier

- From the main screen, press **New (F3)**. The Tier Selection screen appears.

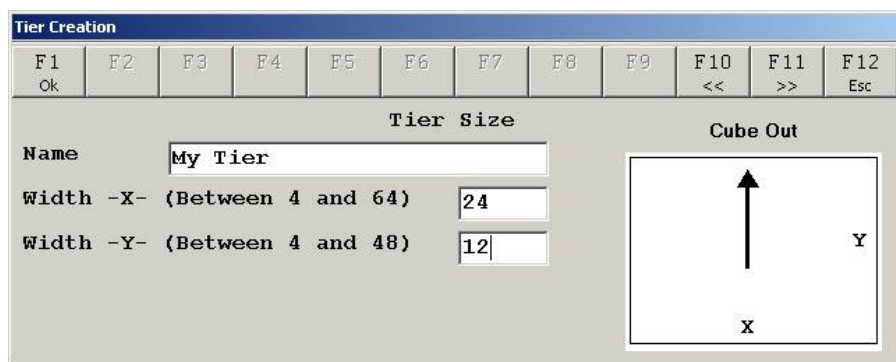


The Tier Selection window displays a table of existing tiers. The table has three columns: a number, a tier name, and a layer size in brackets. The second tier, 'Standard', is highlighted.

Layer Size		
1	Tier 1	[X=45 x Y=34]
2	Standard	[X=48 x Y=48]
3	Tier 3	[X=60 x Y=48]

Figure 5.22 - Tier Selection window

- Press **New (F11)**. You will be presented with the Tier Creation dialog box.



The Tier Creation dialog box contains fields for Name, Width -X-, and Width -Y-, and a Cube Out diagram. The Name field is filled with 'My Tier'. The Width -X- field is filled with '24' and the Width -Y- field is filled with '12'. The Cube Out diagram shows a coordinate system with X and Y axes and an upward arrow.

Figure 5.23 - Tier Creation dialog box

- Enter the desired name for the tier in the **Name** section.
- Enter the desired width, according to the X axis, in the **Width -X-** section

- Enter the desired width, according to the Y axis, in the **Width -Y-** section
 - The Cube Out section represents the tier's orientation according to the Cuber's X and Y axis.
 - Use the << (**F10**) and >> (**F11**) buttons to switch between the fields in the dialog window
 - Press **Esc** (**F12**) to quit the Tier Creation dialog window.
- Press **OK** (**F1**) when you're done. You will return to the Tier Selection screen. Press **OK** (**F1**) to go to the Block Selection screen.

5.4.2 Creating a new block

- After creating a new tier, from the Tier Selection window press **OK** (**F1**) to go to the Block Creation window.

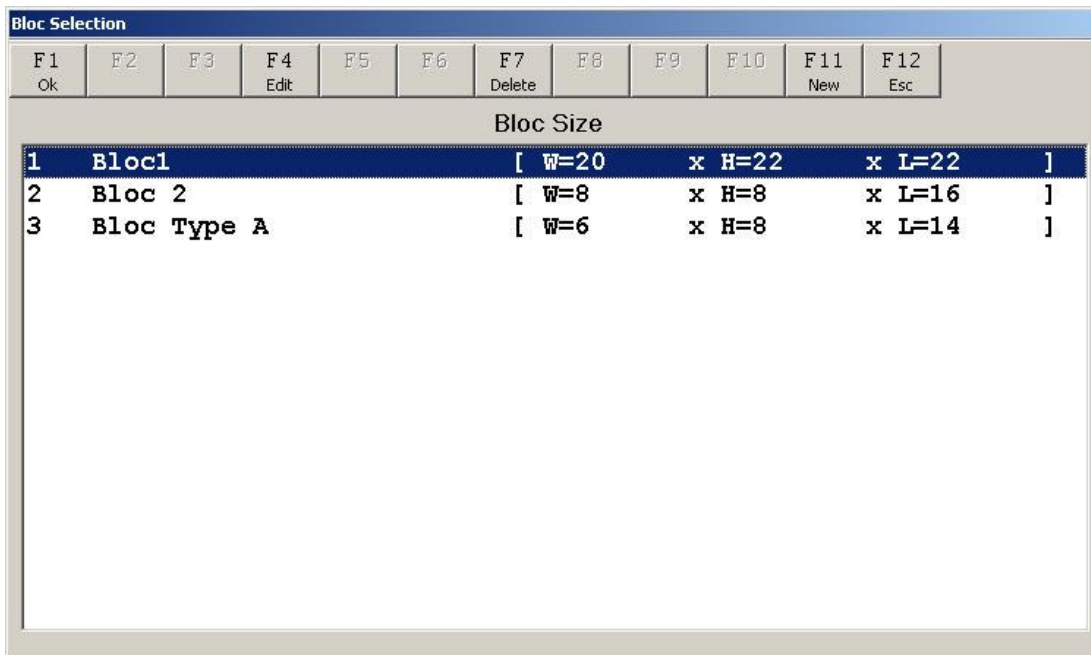


Figure 5.24 - Block Selection window

- Press **New** (**F11**). The Block Creation dialog window will be shown.

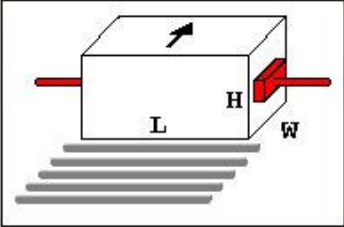
block Creation											
F1 Ok	F2	F3	F4	F5	F6	F7	F8	F9	F10 <<	F11 >>	F12 Esc
<div style="display: flex; justify-content: space-between;"> <div> <p>Name <input type="text" value="STANDARD"/></p> <p>Width (Between 4 and 24) <input type="text" value="8"/></p> <p>Height (Between 4 and 24) <input type="text" value="8"/></p> <p>length (Between 4 and 24) <input type="text" value="16"/></p> </div> <div style="text-align: center;"> <p>Block Size</p> </div> <div>  </div> </div>											

Figure 5.25 - Block Creation dialog box

- Enter the desired name for the block in the **Name** section.
 - Enter the desired width, according to the X axis, in the **Width** section
 - Enter the cube's desired height in the **Height** section
 - Enter the cube's desired length in the **Length** section
 - A 3D representation of the block is shown on the right
 - Use the << (**F10**) and >> (**F11**) buttons to switch between the fields in the dialog window
 - Press **Esc** (**F12**) to quit the Block Creation dialog window.
- Press **OK** (**F1**) to complete the block creation and to go to the layer editor.
See **Section 5.2** for complete details on layer creation.

5.5 Using the Pre-Pattern Maker

5.5.1 Enabling the Pre-Pattern Maker option

The Pre-Pattern maker allows creation of particular patterns that could not be created otherwise. When this option is enabled, certain block structures will be recognized as patterns and the Cuber will perform specific tasks to place the blocks corresponding to the desired pattern in order to save time in the loading process.

Possible patterns are shown here:



- When creating a new cube pattern and after pressing **OK (F1)** from the Block Selection window, a prompt window appears.

Note: This windows will appears only if the Pre-Pattern Maker option is set to **Yes** in the cuber.ini file. See **Section 4.1** for more details.

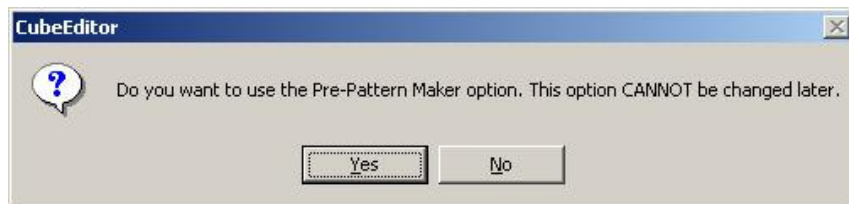


Figure 5.26 - Pre-Pattern Maker prompt window

- Select **Yes** in order for the Pre-Pattern Maker option to be enabled.

The following screens will be used to show how the Pre-Pattern maker can be useful.

- ❑ Shown below is an example of a layer created without the Pre-Pattern Maker. Here, the horizontal and vertical blocks are not represented in the same column. Thus, patterns are not recognized.

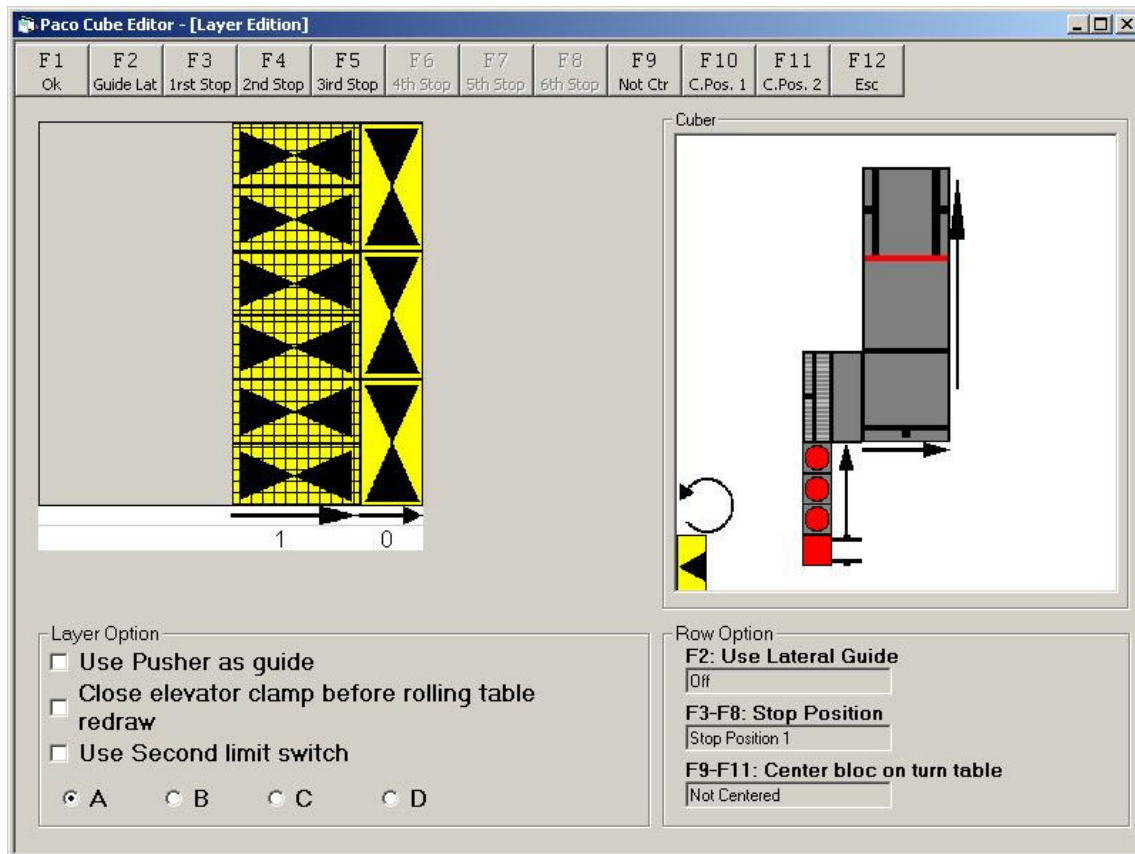


Figure 5.27 - Layer edition without the Pre-Pattern Maker

- The following example shows how to add blocks so that they will be part of a pattern when the Pre-Pattern Maker option is enabled. In this example, a vertical block is first inserted, using the || (F6) button.

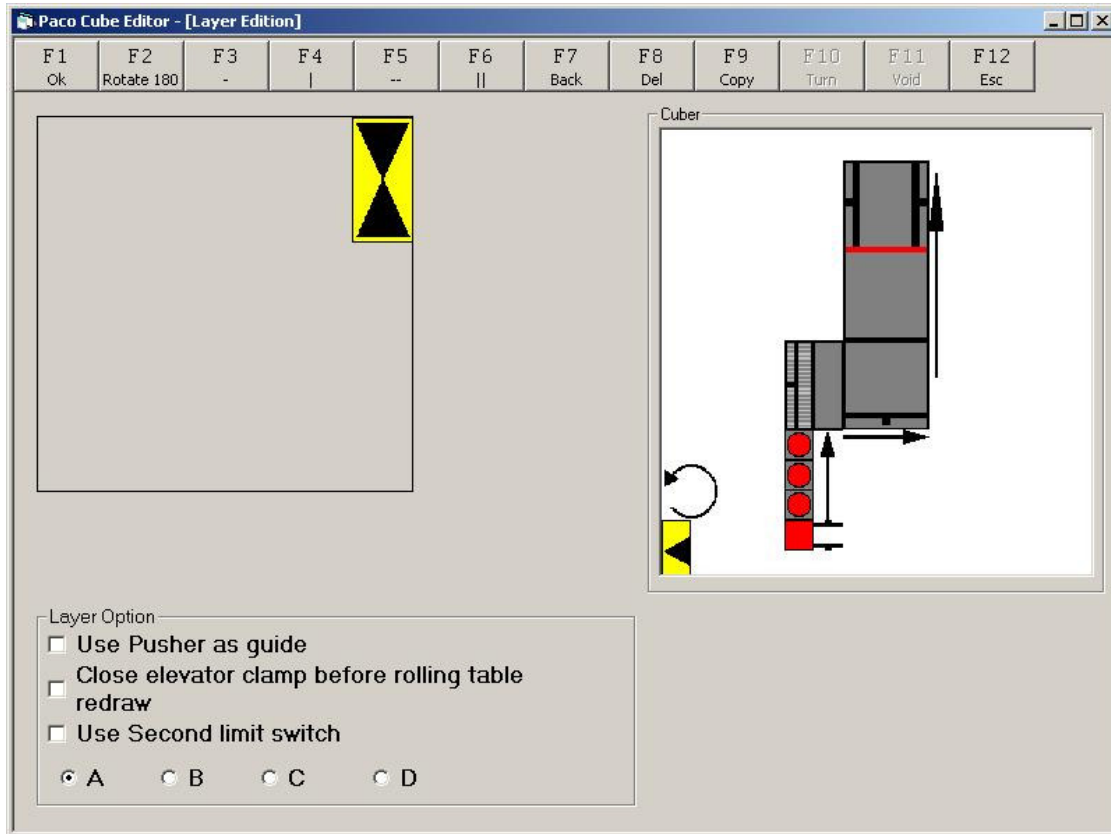


Figure 5.28 - Layer edition with the Pre-Pattern Maker

- To add two horizontal blocks next to the vertical block already inserted, press the - (F3) button. The pattern is now created and will be recognized by the application and the Cuber.

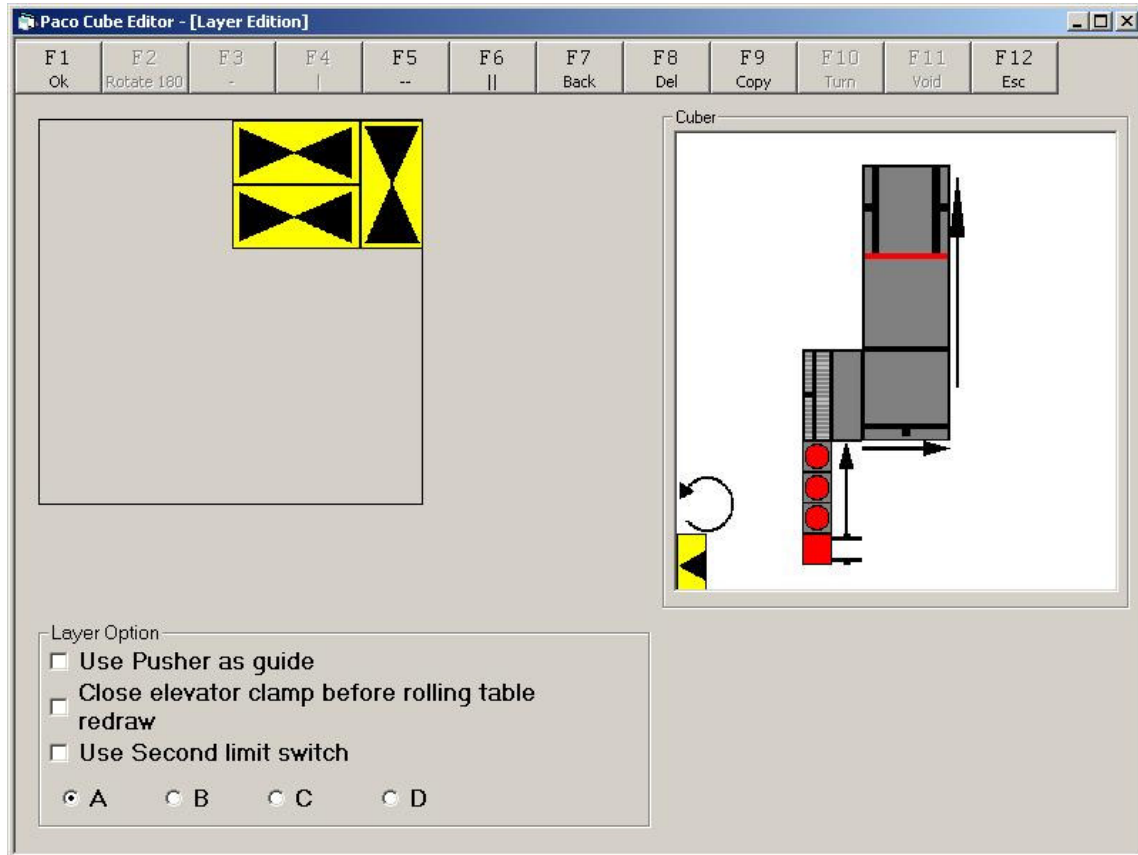


Figure 5.29 - Pattern creation

- ❑ In the layer editor, what was previously considered as two columns will now be considered as only one, because of the Pre-Pattern Maker.

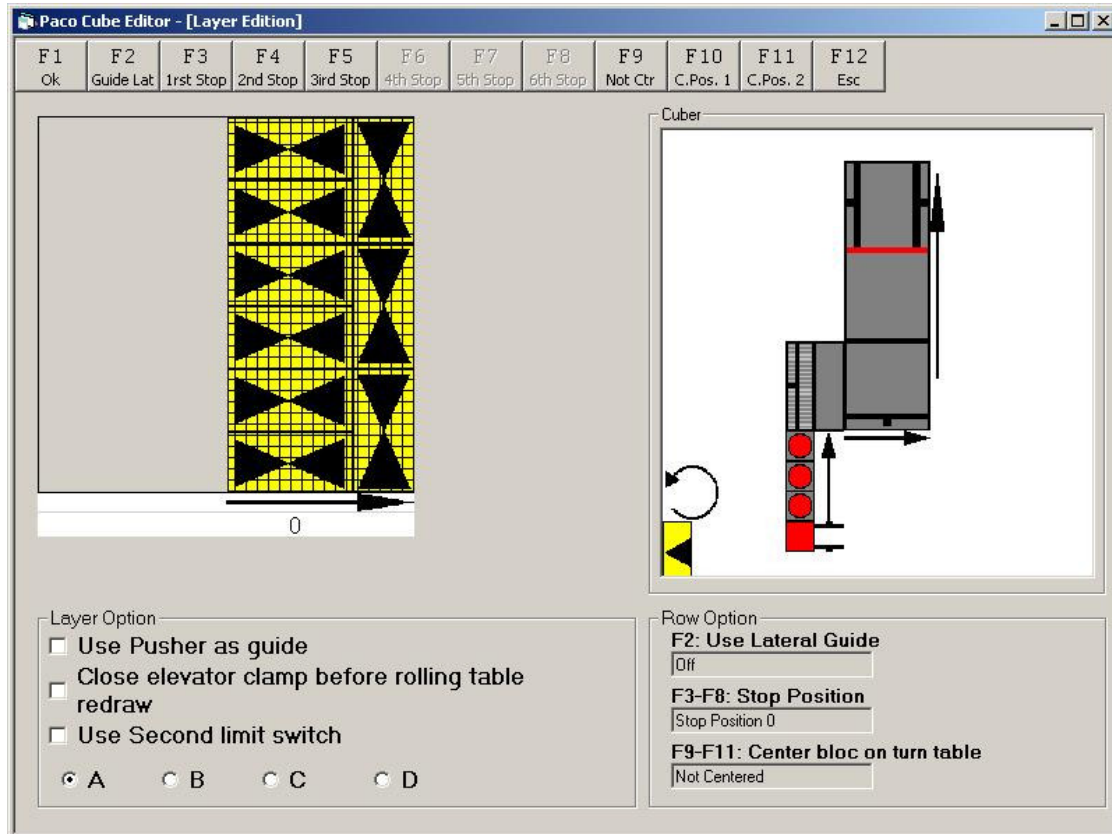


Figure 5.30 - Column created with the Pre-Pattern Maker

- ❑ Also, the Pre-Pattern Maker allows creation of pattern fittings that would not be possible otherwise. The following image is an example.

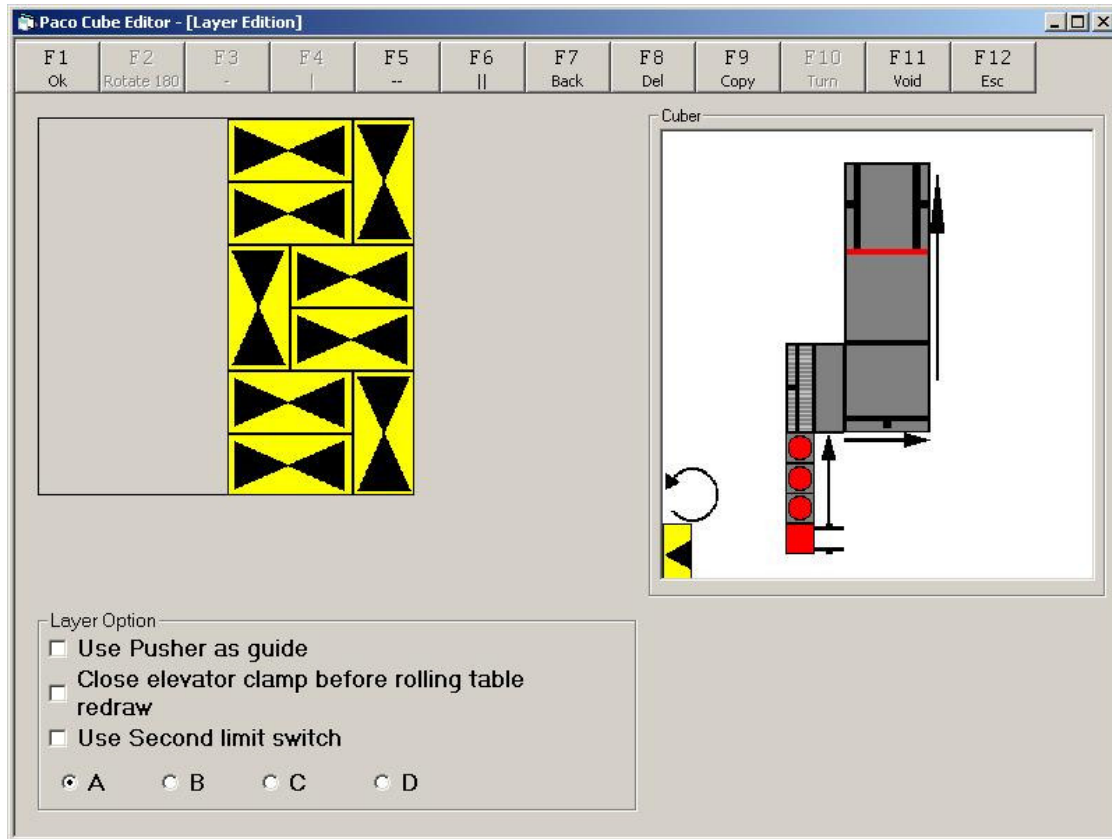


Figure 5.31 - Special pattern fitting created with the Pre-Pattern Maker

5.6 Connecting to the PLC

For the cube patterns to be correctly sent to the PLC:

- ❑ The InGear software must be installed
- ❑ A connexion using a RS-232 serial port must be established with the PLC

Shown here is the pattern flow diagram:

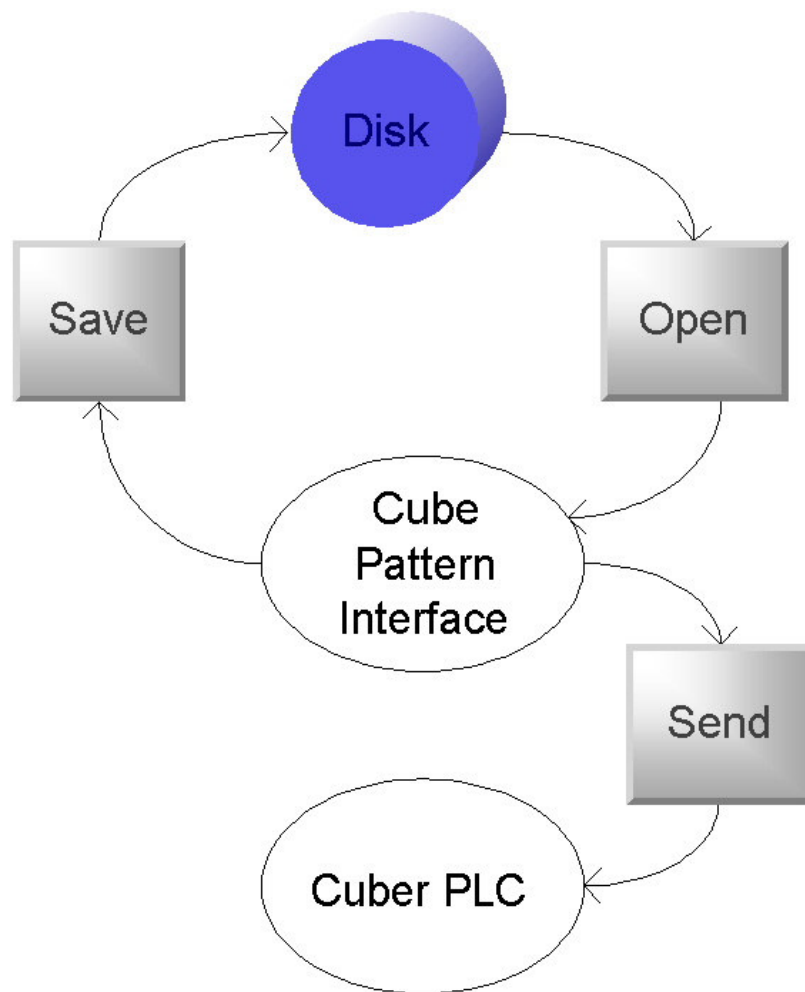


Figure 5.32 - Pattern Flow Diagram



6 Troubleshooting Guide

6.1 Known Problems, Limitations and Workarounds

No known problems at the moment