Artwork Optimizer Standard Edition

# Table of Contents

Artwork Optimizer for CorelDRAW Standard Edition

http://www.LeonardCNCSoftware.com

The Artwork Optimizer Standard Edition performs sequence / stacking order optimization in CorelDRAW. What this means is it rearranges the objects in a drawing so they can be processed in the optimum order for cutting on a vinyl cutter, laser or CNC cutting system. The optimization of the cutting order speeds up cutting and in the case of the vinyl cutter also improves accuracy. Here is a sample drawing before optimization showing what can happen while a CorelDRAW drawing was being created. The objects become scattered in the stacking order due to cut-and-paste and other operations. The red lines and arrows show the sequence in which the drawing will be processed.
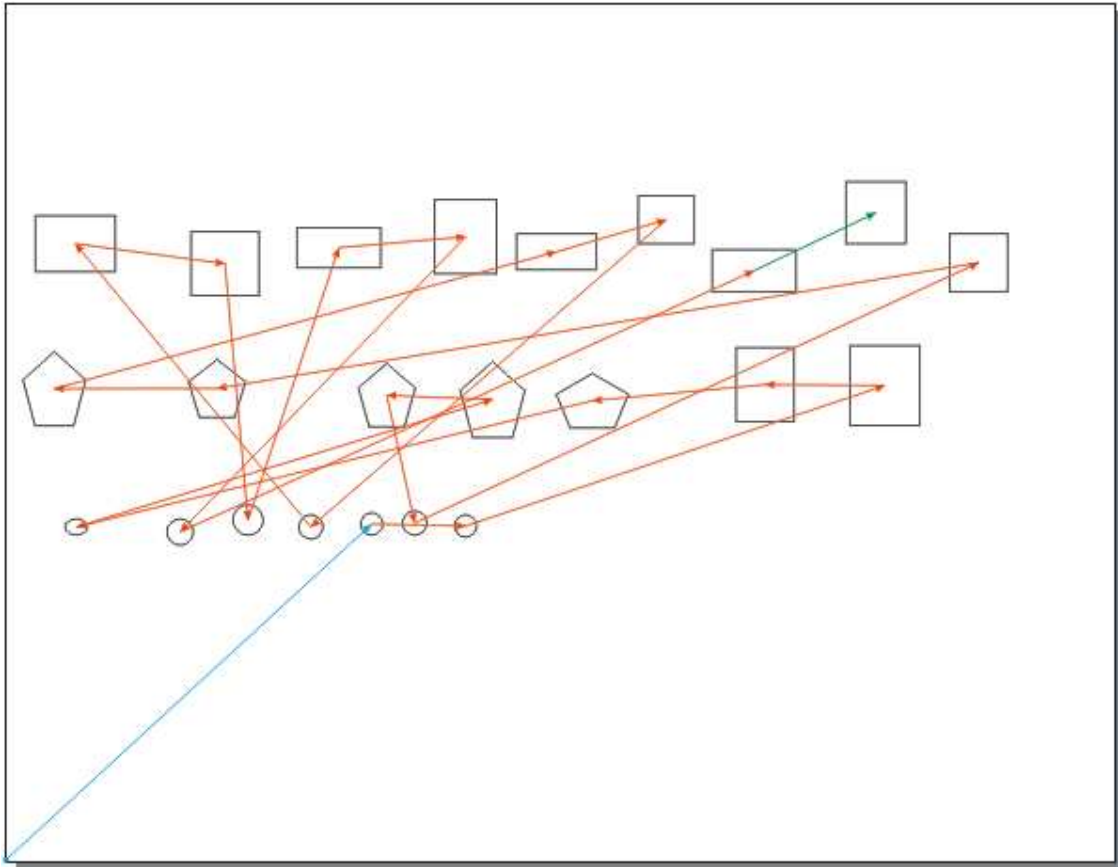
And here is the same drawing after being optimized:
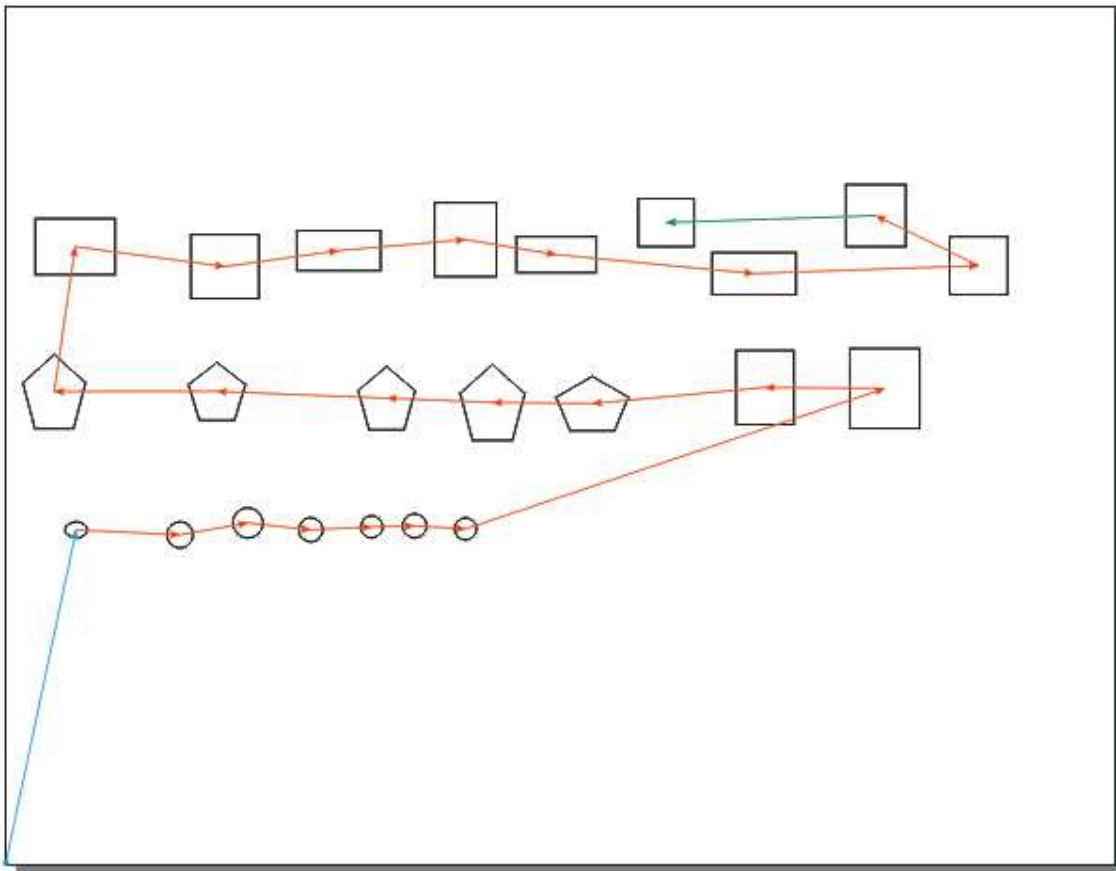
The difference is pretty dramatic and was very easy to do. A drawing this small would also be easily rearranged / optimized by just dragging the objects around in the object manager. BUT what about 200 objects? 2000? 6000? The Artwork Optimizer has processed drawings as large as 12000 objects and the 6000 object drawing that it was developed with can be rearranged in just about 30 seconds if Inside Before Outside is not selected.

The 64 bit version can do even larger files!

Inside Before Outside

For CNC and Laser users the Artwork Optimizer sequences inside shapes (islands) before outside outlines so that they are cut first and don't suffer from the outside outline shifting causing them to move before being cut. This option must be selected on the 'Change Shape Sequence' dialog.
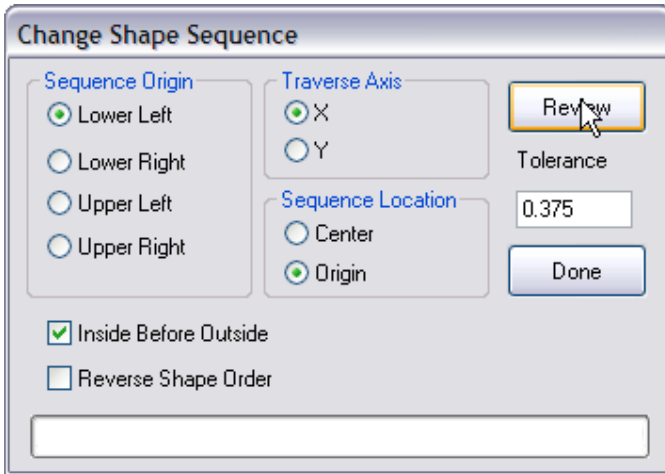

Just try the Artwork Optimizer on your own drawings to see what improvements can be had.

Artwork Optimizer for CorelDRAW Standard Edition

Installation of the Artwork Optimizer Standard Edition is very simple.

To use the installer program you must rename it. It will originally have a file extension of .ex1. This must be renamed to .exe so you can double click on it to run it. ArtworkOptimizerStd-Setup.ex1 will be renamed to ArtworkOptimizerStd-Setup.exe. When you run ArtworkOptimizerStd-Setup.exe you will see the welcome screen, then a license text screen. After you agree to the license you will see:
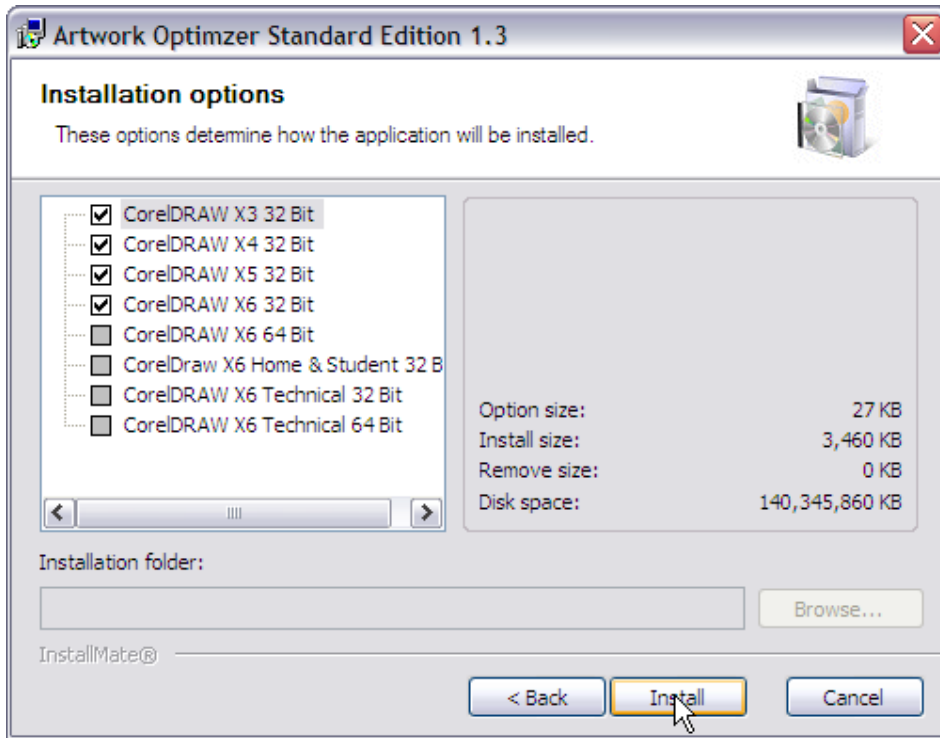
This screen shows all the supported CorelDRAW versions that were found on the computer being installed. If you want all the versions checked then just press the 'Install' button and the installation will proceed.
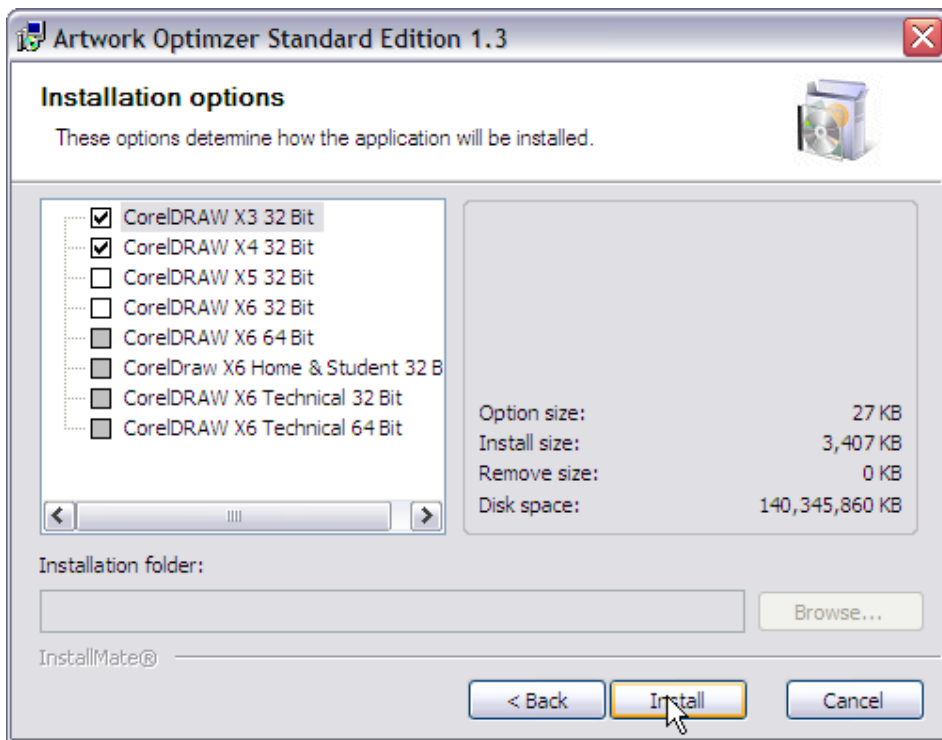
If you only want some of the CorelDRAW versions to have the product installed then uncheck the ones that you don't want.

If you can't unzip the distribution file(s) then you can download WinZIP from Corel:

http://www.winzip.com/

There is a free WinZIP alternative from:

http://www.jzip.com/

Disk Drive Used

If your computer does NOT have a C: drive then just install as usual. Substitute the drive letter you installed on for the C: in the examples in this document. For example, a system that only has an I: main disk drive will usually have CorelDRAW X3 installed here:

I:\Program Files\Corel\CorelDRAW Graphics Suite 13

Windows Vista

Windows Vista is only supported for CorelDRAW X3 and X4, since Corel only supports X3 and X4.

If you encounter difficulties installing on Vista, please try disabling the UAC temporarily and reinstalling.

Windows 7

Windows 7 is only supported for CorelDRAW X4, X5 and X6, since Corel only supports X4, X5 and X6.

Windows 8

Windows 8 is only supported for CorelDRAW X6, since Corel only supports X6.

Customizing the Toolbar for CorelDRAW X3, X4, X5 and X6

If you want to change the toolbar that the Artwork Optimizer Standard Edition button appears on just edit the ArtworkOptimizerStd.ini file using NOTEPAD.EXE. Change the ToolBarName=Standard to whatever toolbar you would like to use. For example, if you have created a toolbar just to hold all the buttons from macros and other CorelDRAW addins you have acquired then use that name. The toolbar name MUST be EXACTLY the same as you see in the CorelDRAW customization screen.

You can find the ArtworkOptimizerStd.ini file at:

C:\LeonardCncSoftware\Artwork Optimizer Standard Edition

Please only use NOTEPAD (from the windows accessories menu) to do any editing. Other editors like Microsoft Word will make the file unusable as a Artwork Optimizer Standard Edition configuration file.

CorelDRAW V12

The Artwork Optimizer is not available for CorelDRAW V12 due to the use of advanced features that are only present in X3 and later releases of CorelDRAW.

Artwork Optimizer for CorelDRAW Standard Edition

Please note that all operations are performed only on the active layer. This allows you to keep whatever you don't want changed on other layers.

The main screen of the Artwork Optimizer Standard Edition shows the different options that are available. The 'Quick Start' section gives a simple workflow that will get you going ASAP.


The 'Show Shape Sequence' screen allows you to preview the existing shape sequence / stacking order so you can see what problems may occur when you go to cut the drawing on your CNC router, laser or vinyl cutter. Just press the 'Show Seq' button and the tool will display a screen showing the sequence layout after displaying a screen with a progress bar for a short time. The shape sequence shown is for the active layer which is also the layer which is optimized when that is done.
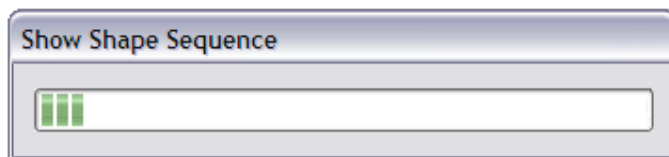

The following screen will display while the existing drawing sequence is being shown:
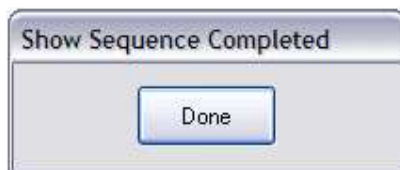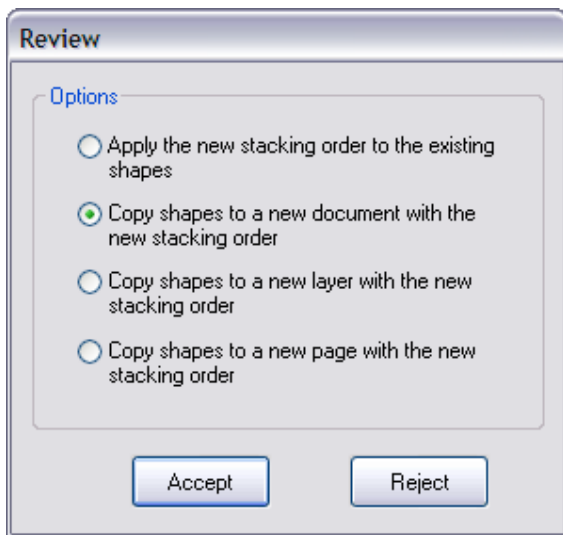
Here is the existing sequence for the LaserSeq_01.cdr drawing:
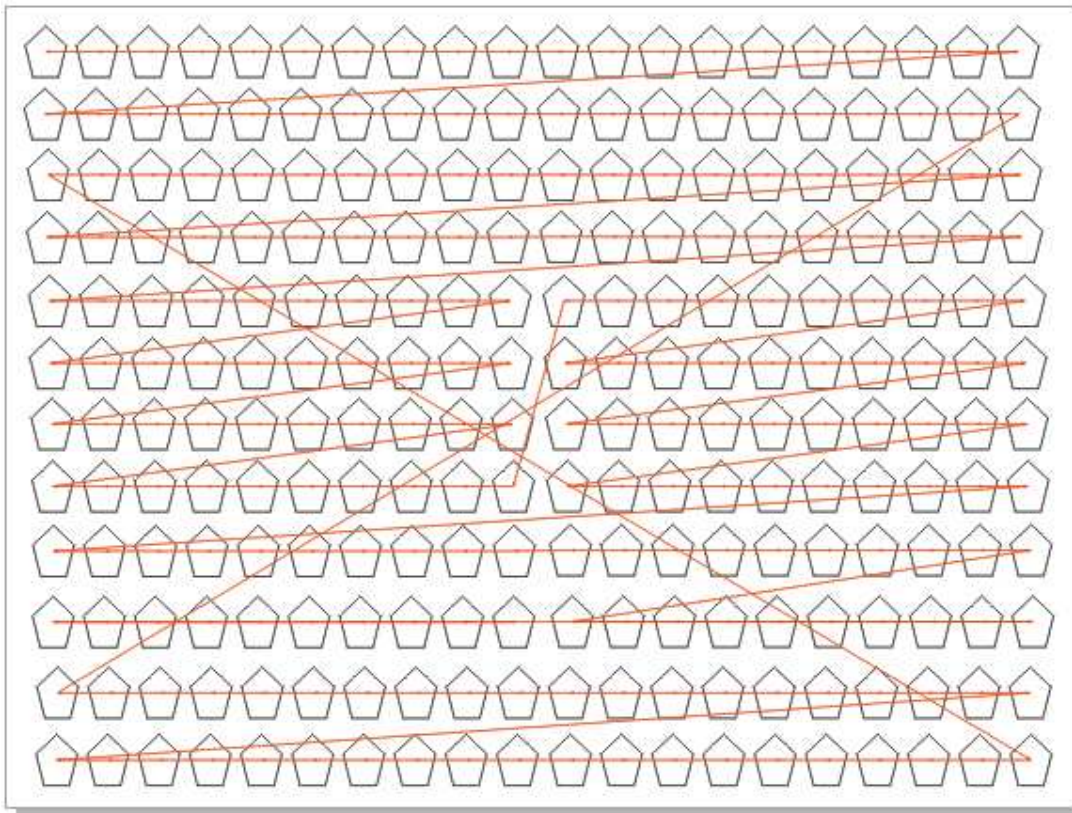
This is the screen that sets the parameters to rearrange the drawing sequence. You can choose any corner to be the starting point and either X Axis Traverse (Row) or Y Axis Traverse (Column) order. The center of the shape or the shape origin can be specified for the shape position to use. Inside Before Outside sequence can be selected and Reverse Shape Order will make final stacking order bottom to top in the Object Manager. The Tolerance value is what determines what is a Row or a Column. All shapes whose positions fall within the tolerance (variance) will be in the row or column. Press the 'Review' button to perform the shape sequencing operation.
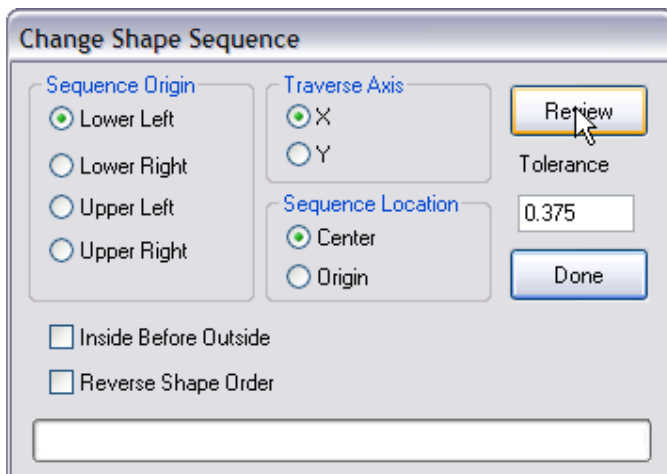
This screen will display after the sequencing operation has finished. It has both 'Accept' and 'Reject' buttons. If you Reject the sequencing operation no changes will be made to the current drawing. If you Accept the sequencing operation then the drawing will be modified according to which radio button was selected. The 'Copy the shapes to a new document with the new stacking order' is the default since it will probably be the most common choice.

The first option 'Apply the new stacking order to the existing shapes' simply rearranges the current document. Note that all grouped shapes have been ungrouped and all combined shapes have been broken apart. If you want to preserve the original shapes as they were or the original document as it was you should choose another option.

The second option will create a new document with the text "_Optimized" appended to the original file name. This is the best option if you don't need both the original shapes and the optimized ungrouped and broken apart shapes in the same document.

The third option will create a new layer on the original page of the original document with the text "_Optimized" appended to the original layer name.

The fourth option will create a new page named "Optimized" in the original document. This will have a layer with the sequenced shapes on it.

The 'Accept' performs the sequencing operation, the 'Reject' abandons the operation and leaves the original document unchanged.

Here is the revised sequence for the LaserSeq_01.cdr drawing:
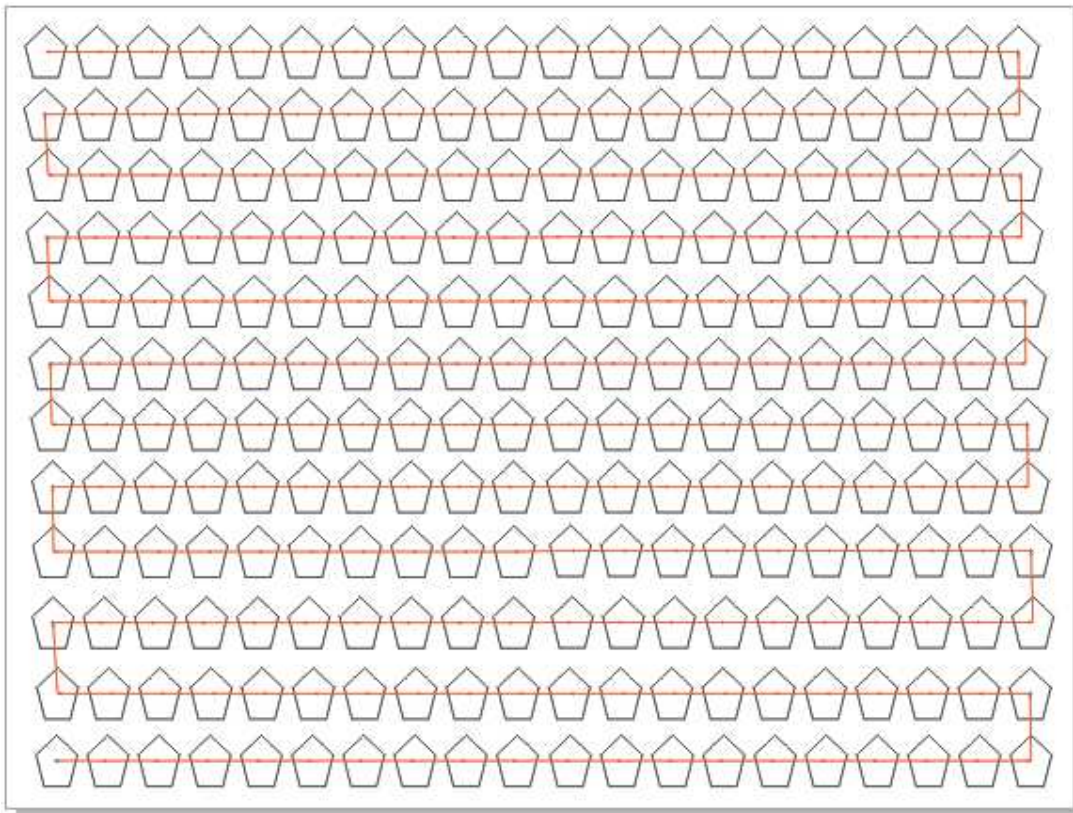
Here is the 'InsideBeforeOutside_01' example after sequencing. The 'Shape Origin' location was used instead of 'Shape Center' for this example. Note that sequencing with Inside Before Outside selected is slower than without it.
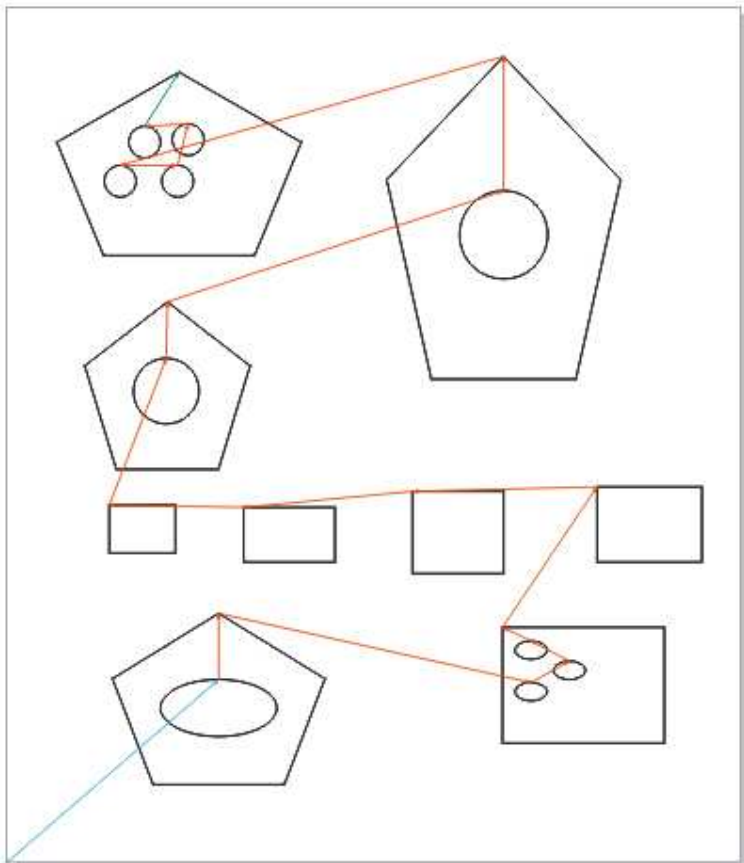
The 'Inside Before Outside' option must be selected on the 'Change Shape Sequence' dialog. Note that sequencing with Inside Before Outside selected is slower than without it.
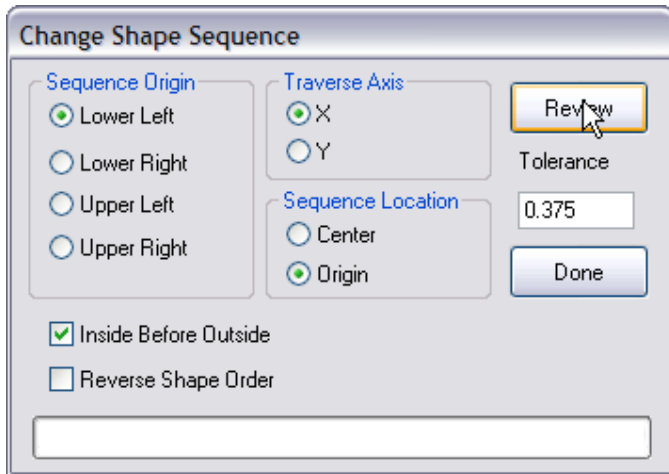

Note that after you press the Accept button you still need to save the drawing to make the changes permanent.

Artwork Optimizer for CorelDRAW Standard Edition

To get started, just push the toolbar button that was installed for your version of CorelDRAW. This will display the main menu screen for the Artwork Optimizer Standard Edition. Note that if you do not have the drawing that you want to optimize open then you must open it now. Only the active layer is optimized so you can keep other things like notes, artwork to print before cutting and shapes that you may want to do in the future on other layers.

This is the Artwork Optimizer Standard Edition main menu screen that you will see when you have the 'seq_test_01' example open.
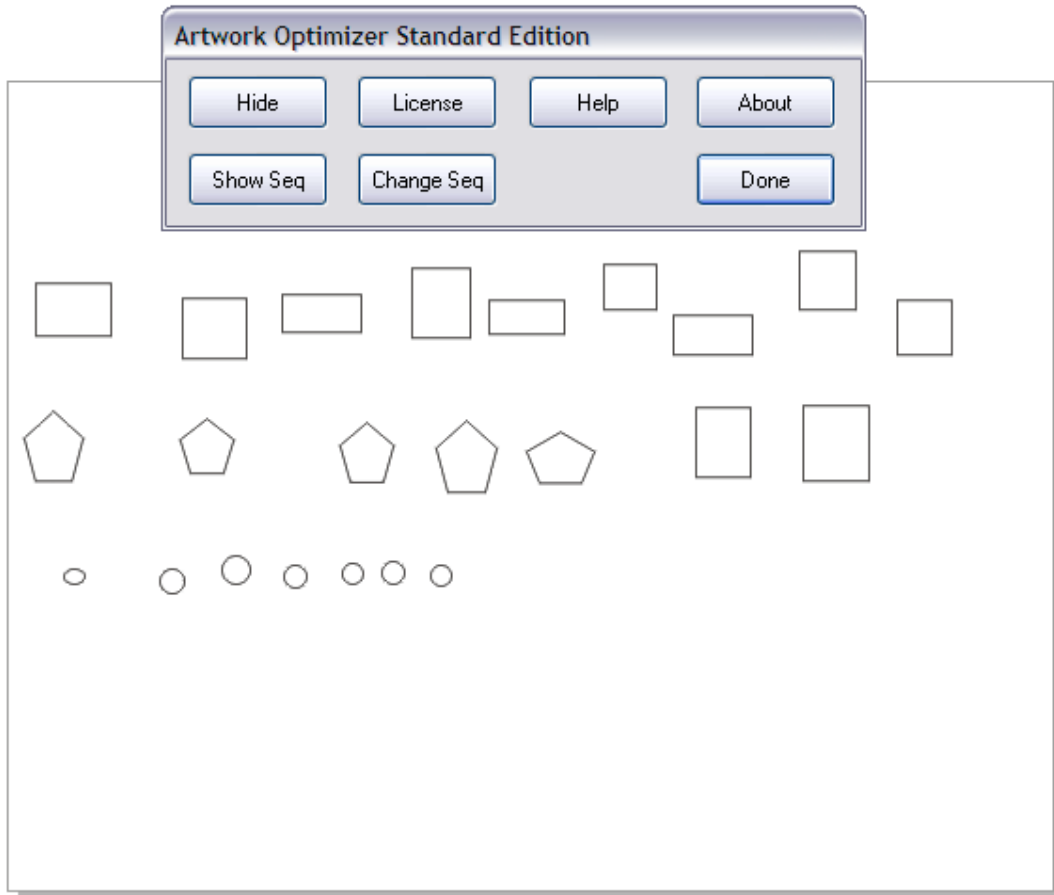
Use the 'Show Seq' button to display the 'Show Shape Sequence' screen with the progress bar.
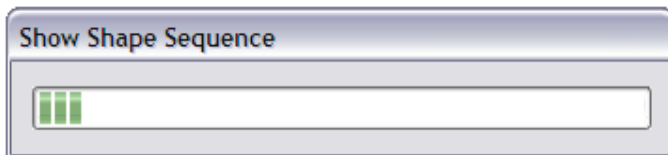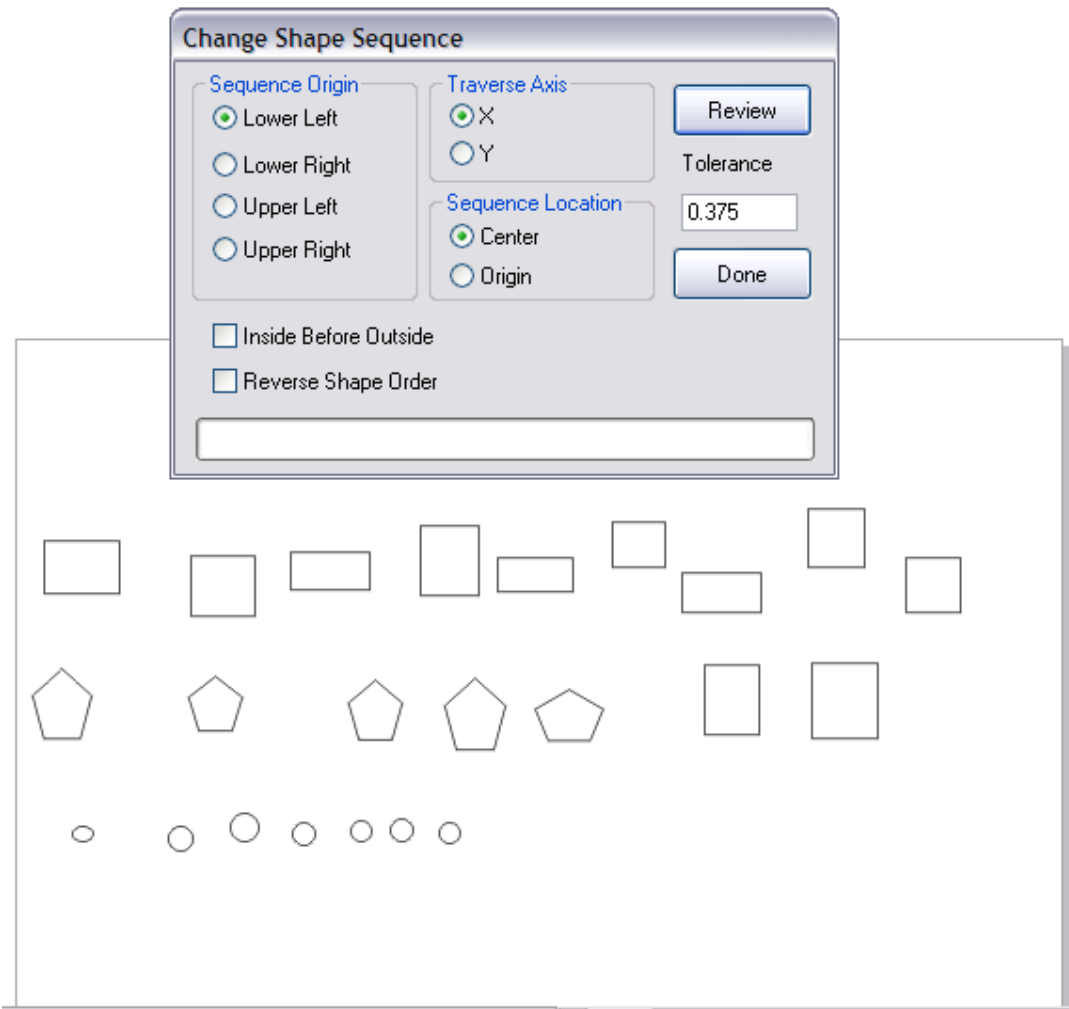
The existing stacking order will display along with the 'Show Sequence Completed' screen. When you press the 'Done' button this screen will disappear and so will the red sequence arrows and lines.
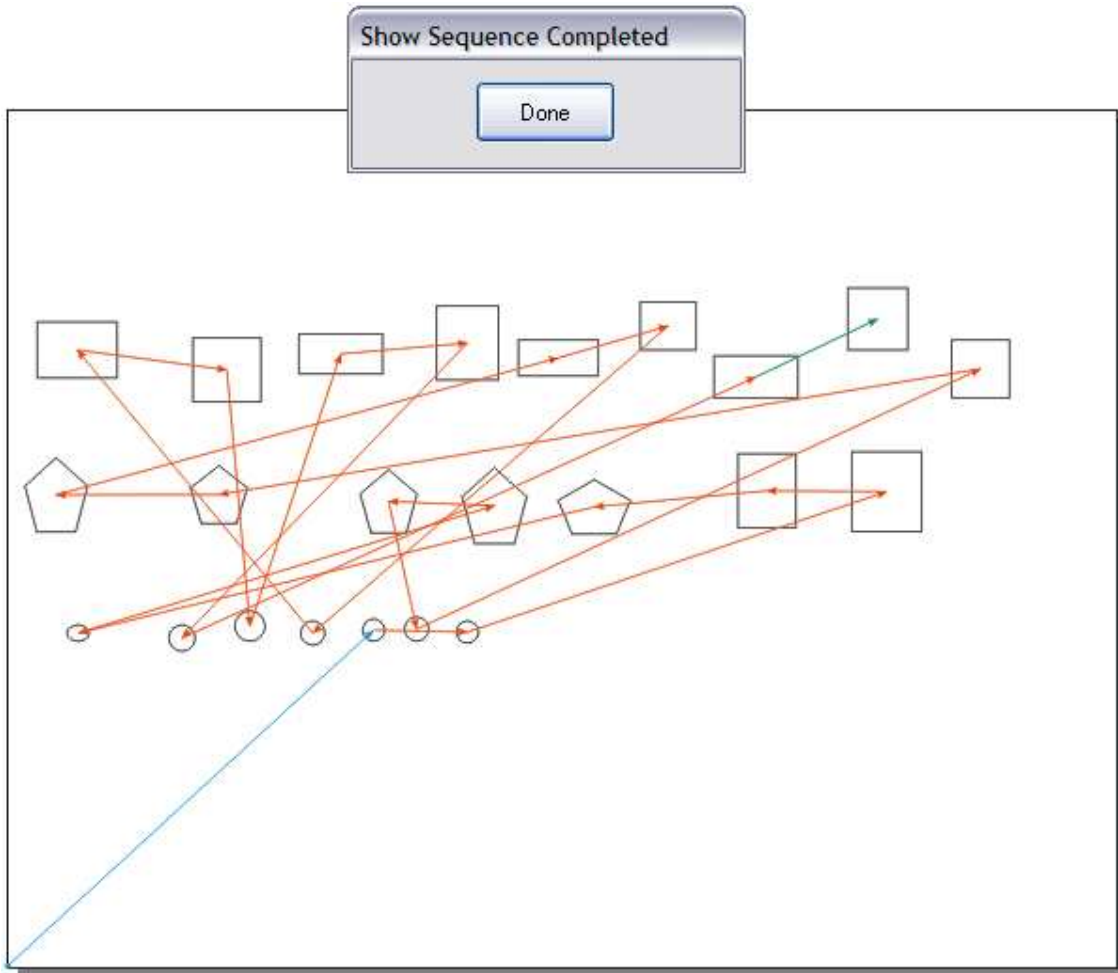
To change the shape sequence press the 'Change Seq' button on the main menu screen:
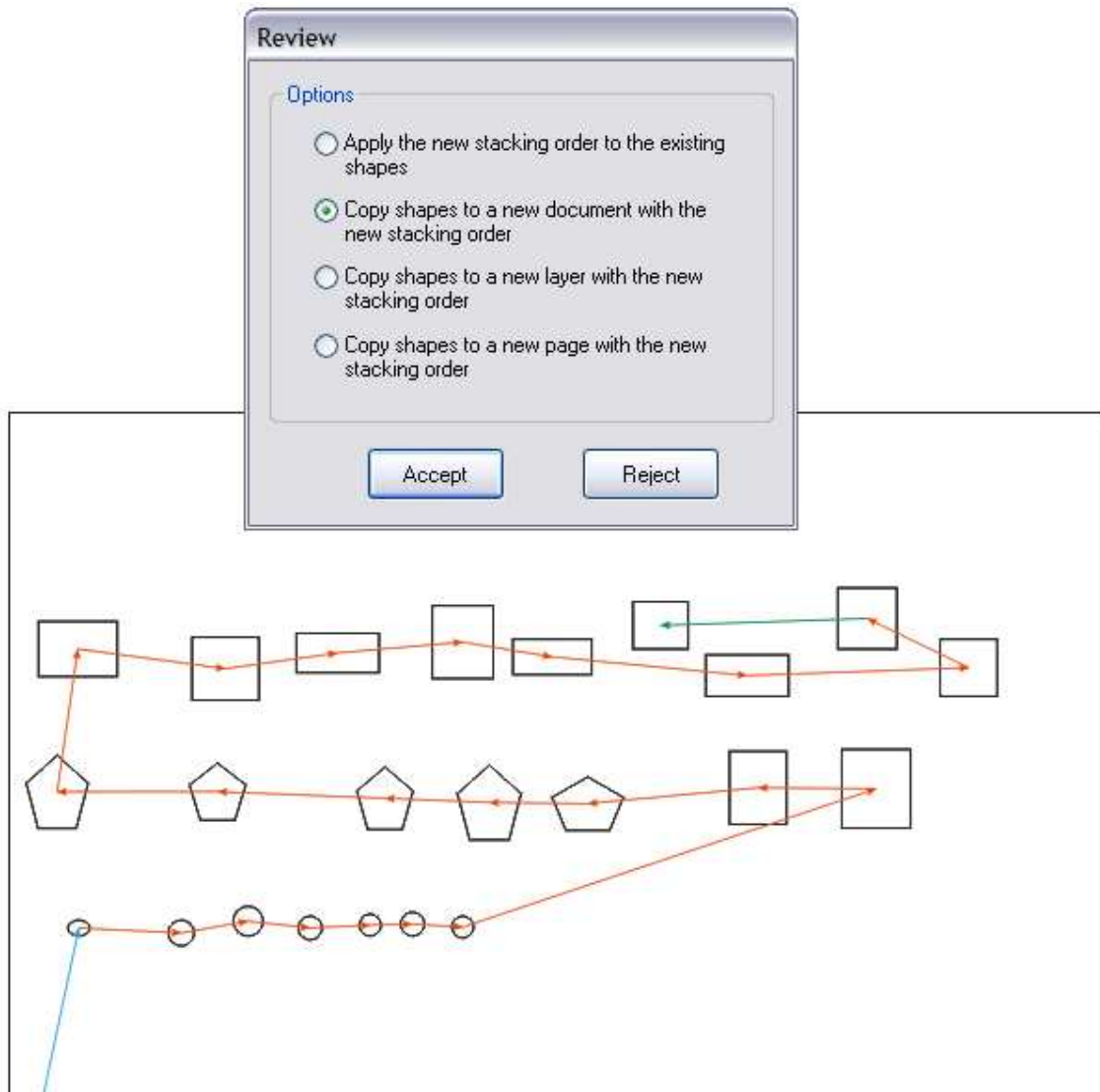
The 'Change Shape Sequence' screen will appear. Press the 'Review' button to perform the shape sequencing.

Change Shape Sequence

Sequence Origin
- ◉ Lower Left
- ○ Lower Right
- ○ Upper Left
- ○ Upper Right

Traverse Axis
- ◉ X
- ○ Y

Sequence Location
- ◉ Center
- ○ Origin

[Review]

Tolerance
0.375

[Done]

☐ Inside Before Outside
☐ Reverse Shape Order

After the sequencing is finished the 'Review' screen will display and you can either Accept or Reject the new sequence that is displayed. You can choose one of four options for accepting the new sequence.

Review

Options

- ○ Apply the new stacking order to the existing shapes
- ● Copy shapes to a new document with the new stacking order
- ○ Copy shapes to a new layer with the new stacking order
- ○ Copy shapes to a new page with the new stacking order

[Accept]   [Reject]

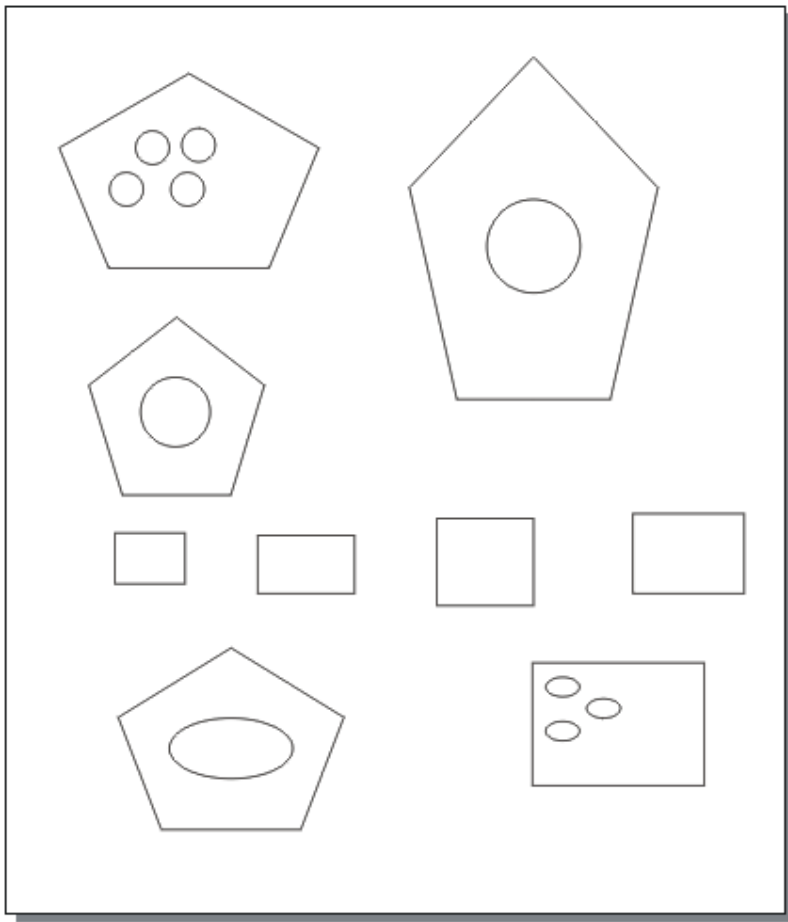Be sure to save the drawing after accepting or all changes will be lost.

Artwork Optimizer for CorelDRAW Standard Edition

There are three example drawings that are installed with the ArtworkOptimizer. They can all be found in the folder C:\LeonardCncSoftware\Artwork Optimizer Standard Edition\SampleDrawings.

LaserSeq_01.cdr

seq_test_01.cdr

InsideBeforeOutside_01.cdr
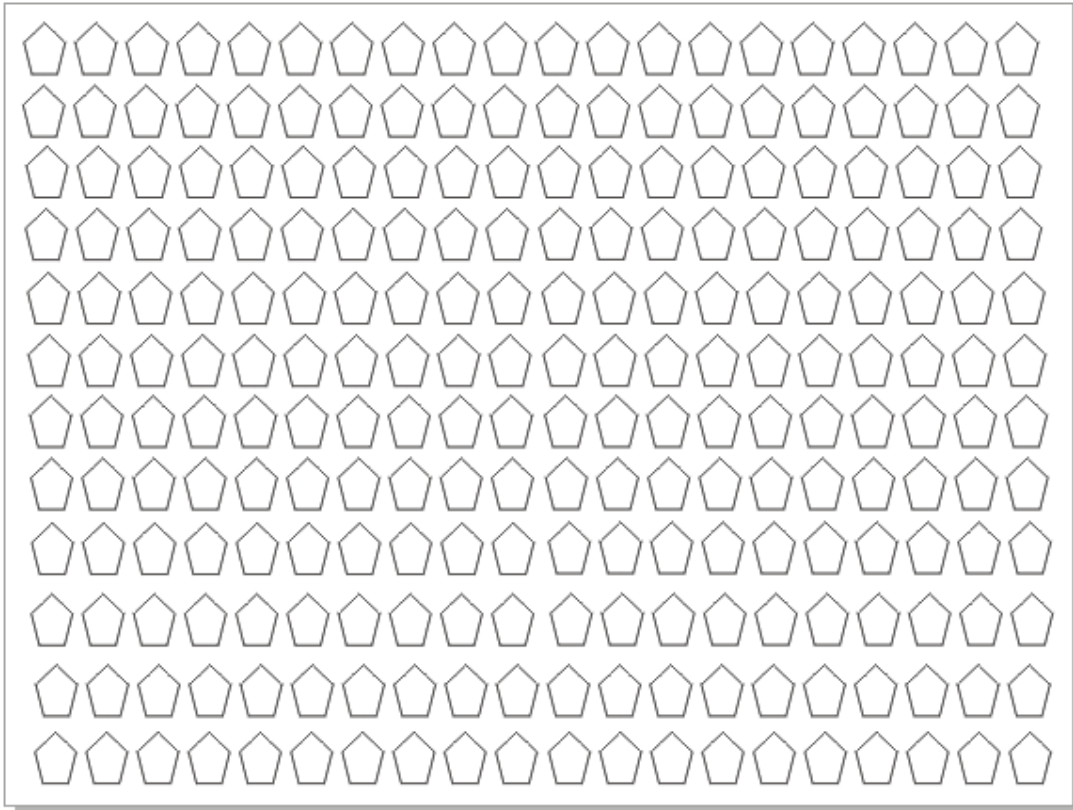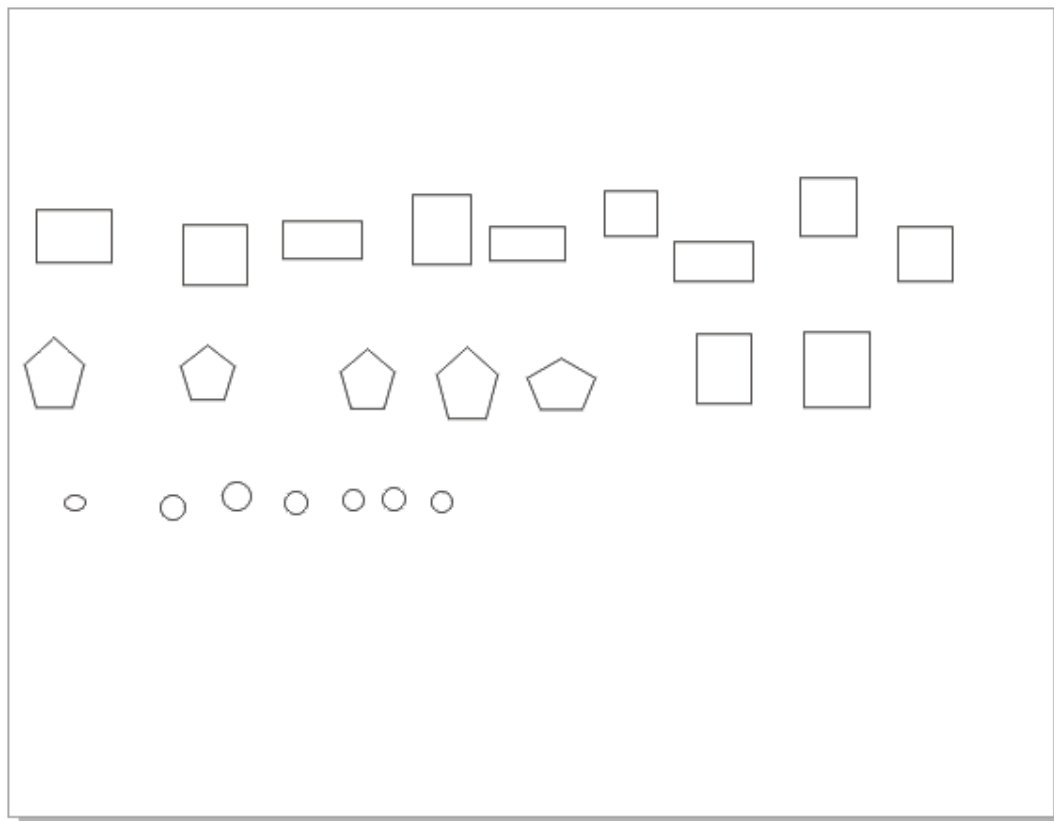
These are the drawings that were used in the documentation. They are saved in X3 format so they can be used with X3, X4, X5 or X6. Note that the active layer is the layer that is optimized and that there is no cross-layer consolidation performed.

Artwork Optimizer for CorelDRAW Standard Edition

Licensing the Artwork Optimizer Standard Edition after the end of the evaluation period (or before!) is easy. Press the 'License' button on the main screen and you will see the license screen. The Computer ID is at the top. This string of characters uniquely identifies the computer you want to license for the Artwork Optimizer. Press the 'Save' button and a file 'ArtworkOptimizerStdID.uid' will be created in the folder "C:\LeonardCNCSoftware\Artwork Optimizer Standard Edition". Just email this file to us at 'license@leonardcncsoftware.com' and then pay us with PayPal or use the payment buttons on the website..
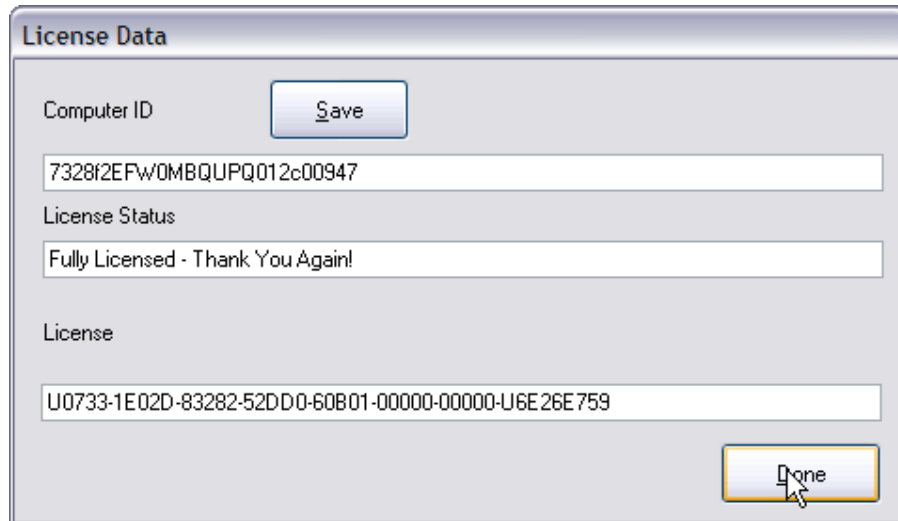
We will return another file to you which is 'ArtworkOptimizerStd.lic'. Copy this file to the folder "C:\LeonardCNCSoftware\Artwork Optimizer Standard Edition" and your Artwork Optimizer is licensed for unlimited use!

NOTE: The 64 bit ID and license files will be named 'ArtworkOptimizerStd64ID.uid', 'ArtworkOptimizerStd64ID.don', 'ArtworkOptimizerStd64.lic' and 'ArtworkOptimizerStd64.don'.

If you have purchased the dongle option then the ID file will be 'ArtworkOptimizerStdID.don' and the license file will be 'ArtworkOptimizerStd.don'. You MUST copy the 'ArtworkOptimizerStd.don' to the folder "C:\LeonardCNCSoftware\Artwork Optimizer Standard Edition" on every computer that you want to run the Artwork Optimizer Standard Edition on. The dongle MUST be plugged in at all times you wish to use or license the software.

If the license key in the ArtworkOptimizerStd.lic file does not match the computer ID of the current computer the text 'Invalid License - Please contact us" will display in the License Status box.

If all is well you will see this screen with the text 'Fully Licensed - Thank You Again' in the License Status box.

NOTE: Cut-and-paste of computer IDs and License keys is no longer supported. Screencaps have never been supported. You MUST use the instructions here to get a license key.

Artwork Optimizer for CorelDRAW Standard Edition

Please note that all operations are performed only on the active layer. This allows you to keep whatever you don't want changed on other layers.
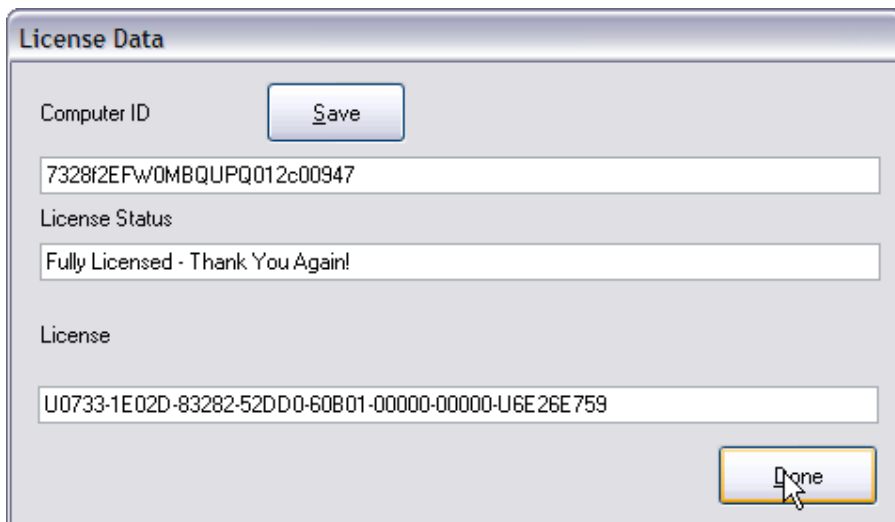
The Artwork Optimizer main menu has seven buttons that are used for different features.

The 'Hide' button hides the main menu and displays a place holder screen that takes up very little space and can be placed off the CorelDRAW work area for maximum visibility.
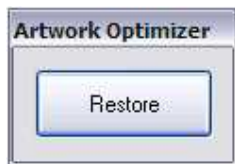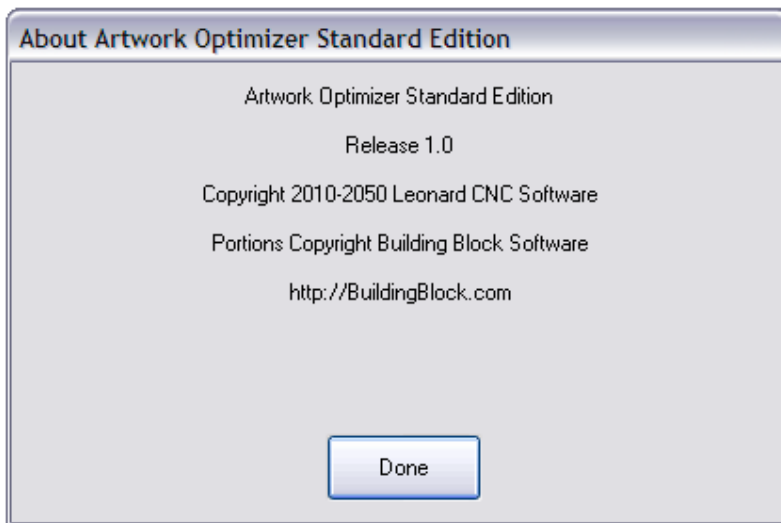

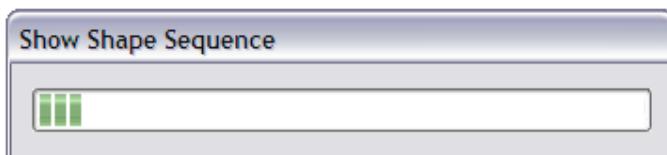The 'License' button displays the license screen.

The 'Help' button displays the HTML help system with all of these instructions in a convenient place.
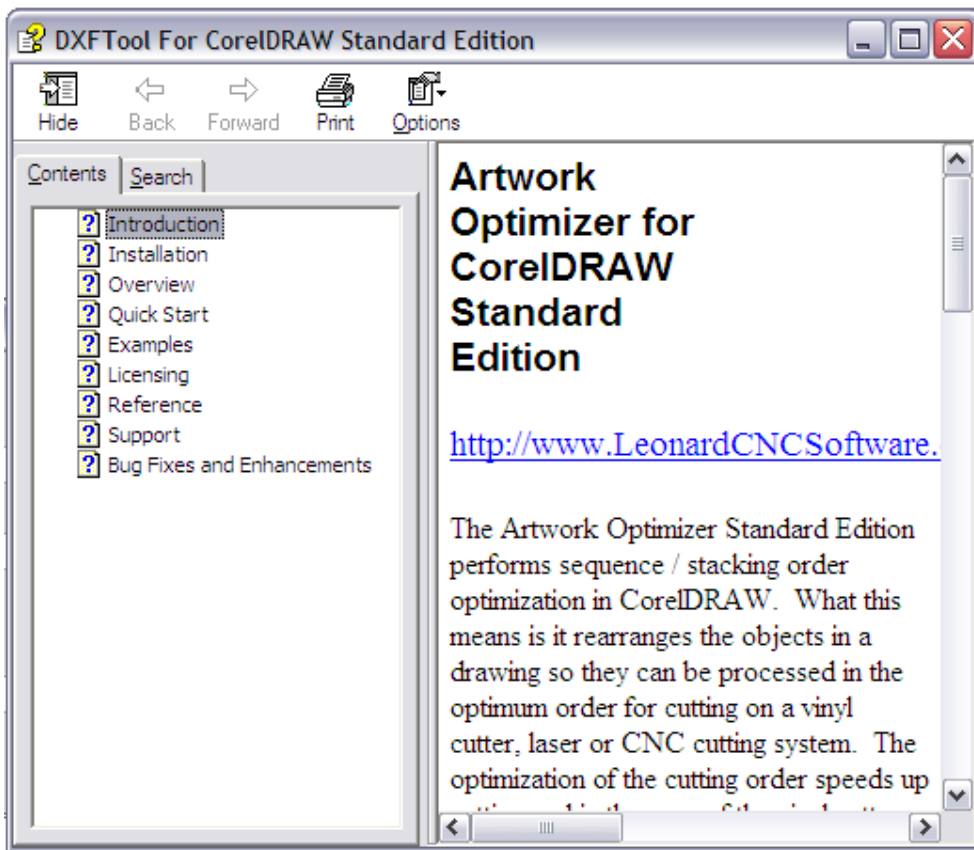
The 'About' button displays the About Artwork Optimizer screen.

The 'Show Seq' button displays the 'Show Shape Sequence' screen.

When the Show Sequence is completed the 'Show Sequence Completed' screen will display.

Show Sequence Completed

Done
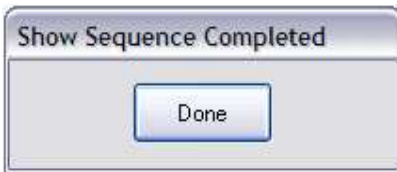
The 'Change Seq' button displays the 'Change Shape Sequence' screen. Note that if the 'Inside Before Outside' option is selected the sequencing will be slower than without it.

Change Shape Sequence

Sequence Origin
- ⦿ Lower Left
- ◯ Lower Right
- ◯ Upper Left
- ◯ Upper Right

Traverse Axis
- ⦿ X
- ◯ Y

Sequence Location
- ⦿ Center
- ◯ Origin

Review

Tolerance

0.375

Done

☐ Inside Before Outside
☐ Reverse Shape Order
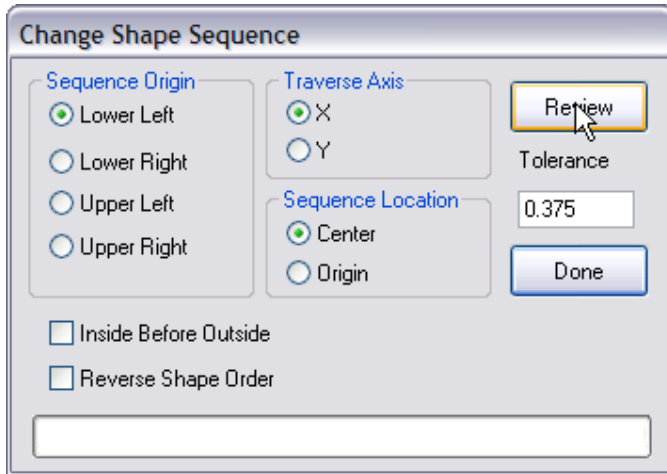
When the Change Shape Sequence is completed the 'Review' screen is displayed.

The first option 'Apply the new stacking order to the existing shapes' simply rearranges the current document. Note that all grouped shapes have been 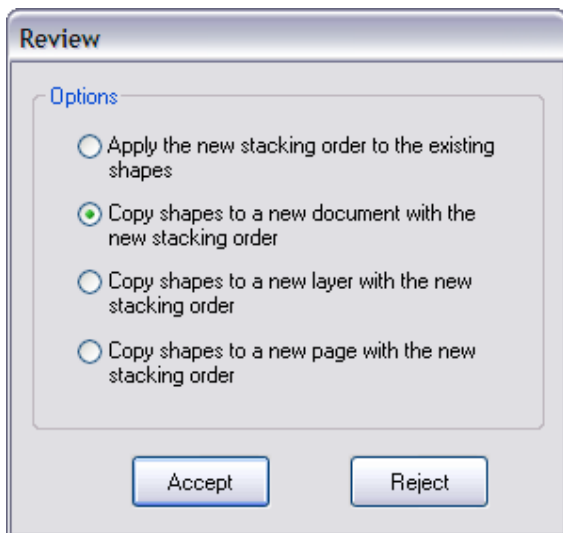ungrouped and all combined shapes have been broken apart. If you want to preserve the original shapes as they were or the original document as it was you should choose another option.

The second option will create a new document with the text "_Optimized" appended to the original file name. This is the best option if you don't need both the original shapes and the optimized ungrouped and broken apart shapes in the same document.

The third option will create a new layer on the original page of the original document with the text "_Optimized" appended to the original layer name.

The fourth option will create a new page named "Optimized" in the original document. This will have a layer with the sequenced shapes on it.

The 'Accept' performs the sequencing operation, the 'Reject' abandons the operation and leaves the original document unchanged.

The 'Done' button on the main screen closes the Artwork Optimizer main menu screen.

Artwork Optimizer for CorelDRAW Standard Edition

Support is available through email and at our CNC software forum
http://www.leonardcncsoftware.com/phpBB3/

Contact us on the web at http://www.leonardcncsoftware.com

Portions of the Artwork Optimizer Standard Edition are copyright Building Block Software - http://BuildingBlock.com - This is a world class computational geometry library that we are also using in our full CAD / CAM program DragonCNC. This library enables us to write solutions beyond what the CorelDRAW Object Model can do in VBA. Please inquire as to any custom programming for CorelDRAW that you may need.

Reseller arrangements are available. Please inquire.

Bulk / Site licenses are available and the technology inside the Artwork Optimizer can be licensed for use in your own systems. A non-competition agreement is necessary for this.

Artwork Optimizer for CorelDRAW Standard Edition

Release 1.0

This is the first release of the Artwork Optimizer Standard Edition. Future releases will have bug fixes and enhancements to the software will be documented here.

Release 1.1

Support for CorelDRAW X6 was added

Release 1.2

Support for the 64 bit version of CorelDRAW X6 was added

The Artwork Optimizer Standard Edition was completely rewritten and is now a separate tool. It is no longer dependent on DragonCNC.

Support for Windows 8 has been verified.

Release 1.3

Support for inside-before-outside sequencing has been added for shapes that have islands inside their main outlines.

It has a new licensing system and installer that bundles all the files needed for all supported versions of CorelDRAW into a single installer.

The new licensing system requires the use of ID and License files. Cut-and-paste is no longer supported.

This version allows multiple users with different user accounts on the same computer.

Fixed a bug in the licensing system that prevented using maximum length computer names.

A dongle option to allow use on multiple computers (one at a time) is available for an extra charge

Added support for Home and Student X6 installations

Added support for Technical Suite X6 installations