

TUT



Video Compositing

TUTORIAL

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Manual



Tutorial



Reference



Effects

VIDEO COMPOSITING

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Images, Clips, Texts and Effects

First Steps towards a Fantastic Animation



Video Compositing

Video compositing means the simultaneous overlapping of several images, graphics, clips and audio files in separate tracks. Typical functions include layering, 2D and 3D effects, color correction, keying functions (chroma key and others) as well as masking.

Our Aim

You already know how to set up MoviePack, how to edit clips and how to create effective transitions.



You are about to learn how to apply effects to clips and images. In particular we will concentrate on:

- Positioning and moving objects
- Scaling objects
- Rotating objects
- Applying effects to objects

In a few detailed steps, we are going to teach you how to successfully create your own animation.



- ❗ Please read the 'Tutorial - The Interface' booklet before beginning 'Video Editing' as the MoviePack interface described therein is needed for the following tutorial. A new animation is also needed in the **Canvas** window.



Each new animation has to be set up properly. The size of the animation should be 240 x 320 pixels with 25 frames per second set against a white background.

Preparing New Animations



- ▶ Close any existing animations with the **Close** command from the **File** menu (shortcut **Ctrl + F4**).

Save the animation under a suitable name in a suitable folder.

- ▶ Click the  **New Animation** icon in the MoviePack icon bar.
- ▶ In the **Animation Setup** dialog box select **PAL** (or **NTSC**) in the **Time** tab.
- ▶ In the **Page** tab select **Size Multimedia Medium, 320 x 240**.
- ▶ Click on  **Background Color**.
- ▶ In the **Choose Color** dialog box set the **Brightness** slider to 100 in **HSB** or in the chromaticity diagram drag the small slider to the white area.

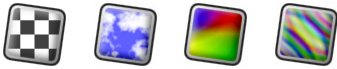
- ❗ In the **Schemes** tab you can save the settings under 'PAL-Medium-White' and then all new animations will be loaded with these settings in future.

Adjust the new **Canvas**, 'Animation x', to full size by dragging the corners of the window with the mouse.

- ❗ It is even easier to create a new animation by loading the 'Tut_1152x864.M3W' project from the 'Samples' folder.
- ▶ From the **File** menu, select the **Open Project** command.
- ▶ In the **Open Project** dialog box, select the 'Samples' folder and then the 'Tut_1152x864.M3W' project.

Procedural Images

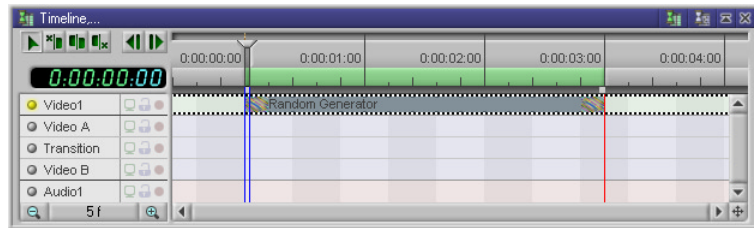
Large Choice



MoviePack generates graphic objects such as **Checker Board**, **Color Gradient**, **Color Ramp**, **Random Generator** and numerous others. These objects are used for compositing and can be animated using the parameters in the **Effect Box**. After insertion into the tracks **Video1**, **Video2**, generated images are square and smaller than the page.

For our little animation we are going to use the **Random Generator** object as a moving background.

- ▶ In the **Timeline**, set the Timeslider to 0:00:00:00.
- ▶ In the **Browser** open the **Objects** folder.
- ▶ Double-click the **All Objects** folder.
- ▶ Scroll down until the icon for the **Random Generator** is visible.
- ▶ Drag the **Random Generator** into the track **Video 1** in the **Timeline**, so that the black object bar begins at 0:00:00:00.



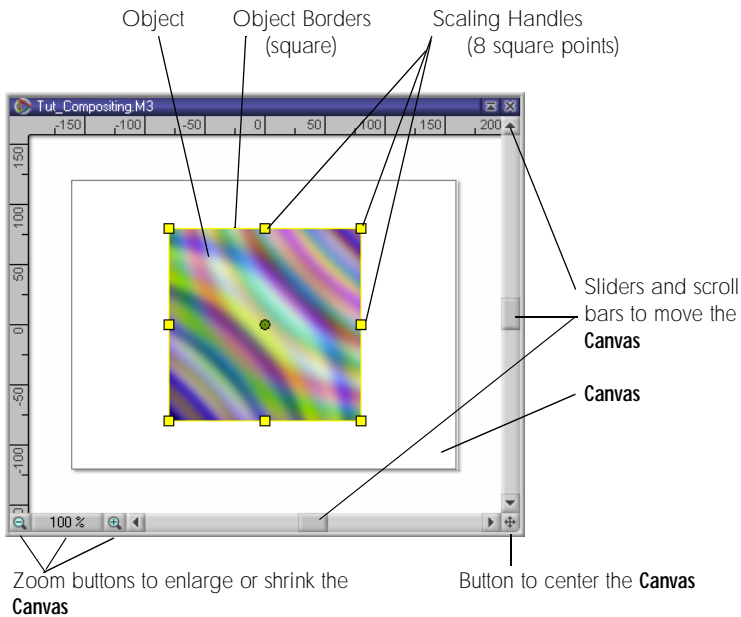
The square surface of the **Random Generator** is automatically centered in the **Canvas** but does not fill the entire workspace.



Zooming

If the **Canvas** display is too big or too small, the zoom button can be used to either enlarge or reduce it.



- ▶ Click on the **167 %** zoom button and select another scale, for example, 100 % instead of 167 %.



The **Canvas** display can be shrunk or enlarged gradually using the two magnifying glasses   (zoom buttons).

- i** The size of the **Canvas** (320 x 240 pixels) is not affected by the scaling of the display. This can be altered only in the **Scene Setup** dialog box (**File - Scene Setup**).

Outside the actual **Canvas** there is enough space for editing.

As the background, the **Random Generator** should fill the entire **Canvas** area. To fill the remaining black area, the **Random Generator** has to be enlarged.

There are two ways to enlarge or shrink (scale) images and videos in MoviePack:

- Scaling in the **Canvas**
- Scaling in the **Effect Box**

Scaling in the Canvas

In the **Canvas**, if the corners are represented by small squares an object can be scaled using the four corners of the object.

- ▶ Position the mouse over one of the square corners in the **Canvas**.

The pointer is transformed into a scale symbol. Click the corner and the entire object can be proportionally enlarged or shrunk subject to the existing aspect ratios.

The Various Mouse Pointers used for Scaling

Depending on where the pointer is positioned, for example next to an object, directly over an object or handle on a horizontal or vertical border, it changes into a different symbol with specific manipulation functions.



The normal select symbol: An object beneath this pointer can be activated by a simple click.



Move symbol: The object beneath this pointer can be moved.



Scale symbol: The object beneath this pointer can be proportionally enlarged and shrunk.



Stretch symbol: The object beneath this pointer can be non-proportionally stretched and compressed.

Place the pointer on various areas of the **Canvas** and watch how it changes.

- ▶ In the **Canvas**, position the pointer over a square corner.
- ▶ Click the corner and drag it inwards or outwards.

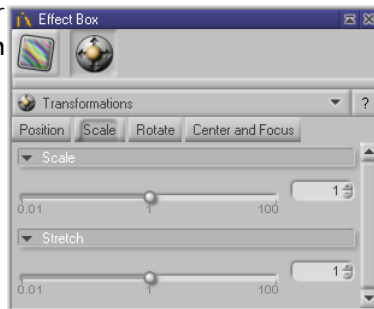
For the time being, the **Random Generator** will remain the same size, while the enlarged or reduced object borders with the 8 handles have changed size.



The **Effect Box** icon bar, under the **Effect Box** title bar, contains two icons. The first icon represents the object **Random Generator**, the second icon represents all the basic **Transformations** that can be applied to an object, such as scaling, rotating, alteration of rotation center and focusing.

- ▶ In the **Effect Box**, click the **Transformations** icon.
- ▶ In **Transformations**, click the **Scale** tab.

In the **Scale** tab, the default slider settings for both the **Scale** and **Stretch** parameters are set to 1.



Scaling in the Effect Box



Random Generator



Transformations

- ❗ If an object is bigger than the **Canvas**, it is automatically scaled and displayed, so that both the height and width are visible. Naturally the original aspect ratio **Width : Height** is retained (**Stretch** = 1) and the parameter **Scale** adopts a value of less than 1.

All sliders are manipulated using the mouse.

- ▶ In the **Effect Box**, drag the **Scale** slider to the right until the **Random Generator** is bigger than the **Canvas**.

The size of the image in the **Canvas** (identifiable thanks to the symbolic object borders) and the scale factor to the right of the slider, are changed simultaneously.


- ❗ The scale factor can also be entered using the keyboard.
- ▶ In the **Effect Box**, overwrite the scale factor, for example, , with 2.5 using the keyboard.



- Whether the decimal symbol is a comma or a dot will depend on your Windows setting (**Start - Settings - Control Panel- Regional Settings- Tab Number - Decimal symbol**).

The scale factor can be entered using the plus and minus buttons to the right-hand side of the scale .

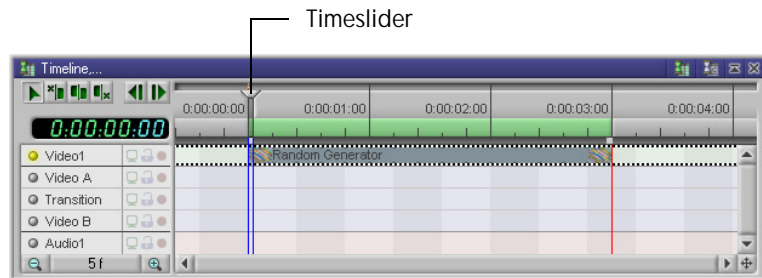
A scale factor of 2.5 means the entire background of the **Canvas** is filled. Let's take a quick look at our animated background in the **Preview** window.

- In the **Preview**, press  **Play**.

We can see a 3 second preview. At the beginning the background is the desired size, but as the time passes the image becomes smaller.

- If we move the Timeslider to another point in time, we can see the changes in the **Canvas**.

- In the **Timeline**, click the Timeslider and drag it back and forth.



The Various Mouse Pointers in the Timeline



The mouse pointer is displayed in several different ways in the **Timeline**.



When the pointer is positioned over the Timeslider, it automatically changes from a hand or pointer into a move symbol, meaning the Timeslider can be moved.



The reason for the background becoming smaller is that the object has a constant scale factor of 1.0 over the entire time span (0:00:00:00 to



0:00:02:24), and we have manually changed the scale from 1.0 to 2.5 at 0:00:00:00.

Generally, every change to an object or effect parameter is applied only at the point of time when the change was made.



Changes at a Certain Point in Time

The following example clearly explains this MoviePack principle:

The **Random Generator** has been inserted into the animation. The scale value is 1 at both the beginning (0:00:00:00) and the end (0:00:02:24) of the object, as well as at every point of time in-between. If the value is altered to 2 at a certain point in time, for example, 0:00:01:00, the frames in the time span between 0:00:00:00 and 0:00:01:00 will get increasingly bigger in size, while the frames in the time span between 0:00:01:01 and 0:00:02:24 will get increasingly smaller.

The **Random Generator** is magnified for 1 second from frame to frame linearly, so that afterwards it is scaled down to its original size.

As the change in size of the object in our example is regular, yet the temporal spacing is different (1s for the enlargement and 2s for the reduction), we see a quick increase in size then a slow reduction in size.

-  Different time spans and parameter changes result in various speeds.
-  In principle, every object and effect parameter can be manually changed for each frame.

The size of the background should remain constant throughout.

Equalizing Changes

- ▶ In the **Timeline** set the Timeslider to 0:00:00:00.
- ▶ In the **Effect Box**, enter the value 2.5 in **Scale**.
- ▶ In the **Timeline**, set the Timeslider to 0:00:02:24.
- ▶ In the **Effect Box**, enter the value 2.5 in **Scale**.

The size of the background remains constant from the beginning and to the end of the animation. In the **Preview** a motionless colored background is visible.

Unifying Keyframes

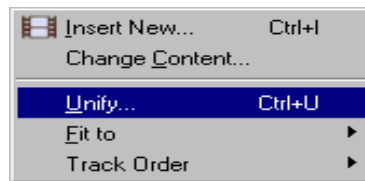
It is even easier to equalize different parameter values with the **Unify Keyframes** function. To illustrate how this works we have to first undo the last step.

- ▶ From the **Edit** menu select **Undo** (shortcut **Ctrl+Z**).

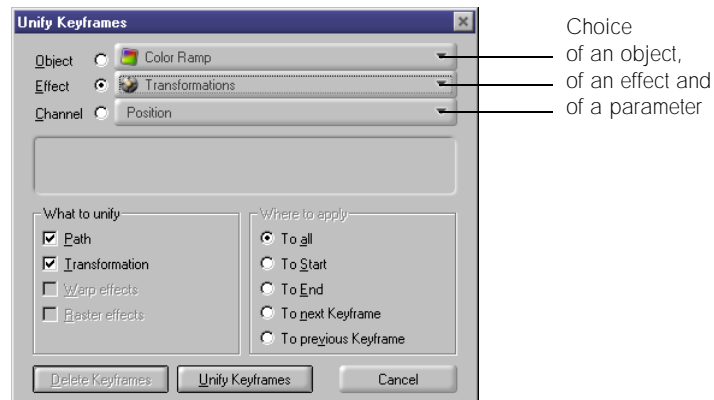
In the **Effect Box**, the **Scale** value automatically goes back to 1.0 from 2.5.

The parameter value of the **Random Generator** at 0:00:00:00 should be constant throughout.

- ▶ In the **Timeline** set the Timeslider to 0:00:00:00.
- ▶ From the **Object** menu select the **Unify...** command (shortcut **Ctrl+U**).



In the dialog box **Unify Keyframes**, a chosen object, the effect to be applied to it or one of the effect's parameters (channel) can be selected from the three top lines.



If for example the effect **Transformations** is selected, all parameters of the **Transformations** (Scale, Stretch, Position, Rotation, ...) remain constant in the animation.

If the size of the object is to remain constant, select the **Transformations** effect and **Scale** channel. The values for **Position, Stretch, Rotation, ...** are not unified.

- ▶ In the **Unify Keyframes** dialog box select the **Transformations** effect.
- ▶ Click the **Unify Keyframes** button.

In the **Preview** a motionless background is visible.

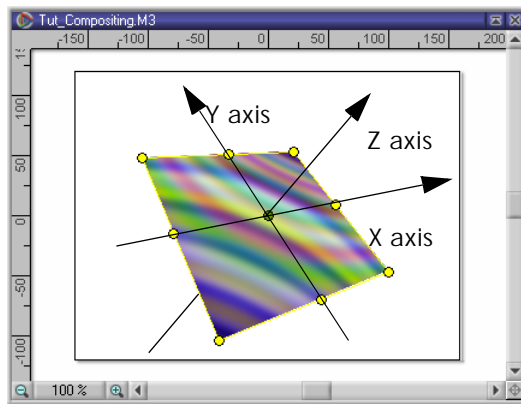
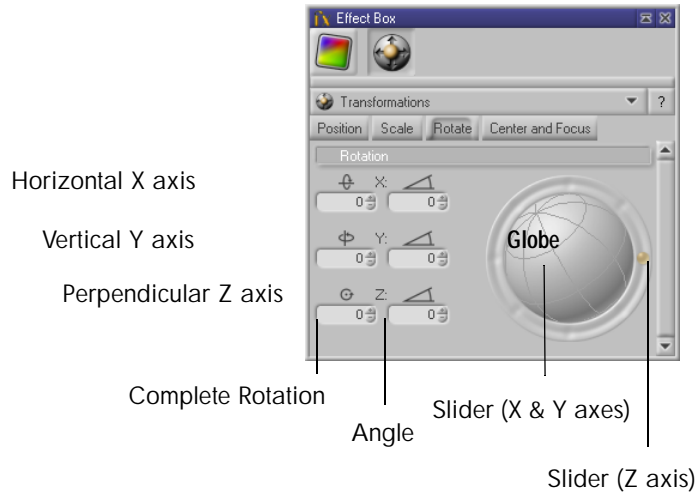
Now we are going to bring the background to life.

- ▶ In the **Effect Box**, activate **Transformations**.
- ▶ In **Transformations**, click the **Rotate** tab.

Rotating in the Effect Box



In the **Effect Box**, there are 6 numerical input boxes for the rotation on the 3 axes. There is a circular slider around the globe which allows rotation on the Z axis.



i The X axis is horizontal, Y axis is vertical and the Z axis is perpendicular to the XY plane.

Rotation in MoviePack is very simple. The **Globe** itself is a slider for the rotation on the X axis and Y axis. As with the slider for the Z axis, it can be rotated using the mouse.



The image is simultaneously rotated in the **Canvas**. In the numerical input fields in the **Effect Box** the rotation is displayed for both full rotations in the left-hand field and for part rotations in the angle field (right-hand field).

- ❗ To rotate the image around the X or Y axes, click on the **Globe** and move it in any direction.
- ▶ In the **Timeline**, set the Timeslider to 0:00:02:24.
- ▶ In the **Effect Box**, rotate the **Globe** up and down or left and right.

The results are visible in the running preview and in the **Canvas**.

In this tab of the **Effect Box** all values can be entered numerically using the keyboard.

- ❗ Using the **Tab** key on the keyboard, you can switch from one input field to the next.
- ▶ In the **Effect Box**, set all values to 0.

The background should be rotating clockwise. If you have already experimented with the sliders, you can delete all values and start over.

- ▶ In the **Effect Box**, set all values to 0.
- ▶ In the **Effect Box**, rotate the **Globe** once in a full circle beginning at the bottom.

The Z value (complete rotation) is set to -1.

We can see the background rotating in the **Preview**.

- ❗ To rotate in the opposite direction either rotate the globe in the opposite direction or simply enter a negative value for the rotations and angles.

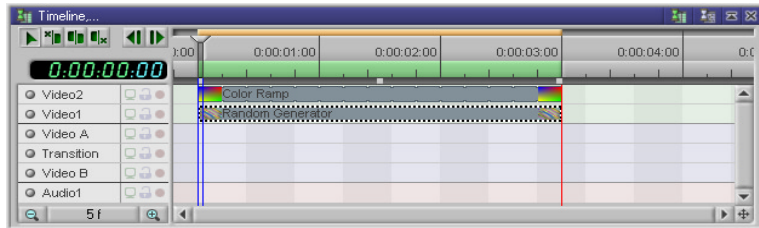
Moving Foreground



A second procedural image, the **Color Ramp**, is now going to play a part in the foreground of our little animation.

- ▶ In the **Timeline**, set the Timeslider to 0:00:00:00.
- ▶ In the **Browser**, drag the **Color Ramp** object from the **All Objects** folder into the **Timeline**, ensuring that the black object bar is positioned over the **Video 1** track and that it begins at 0:00:00:00 .

The **Color Ramp** has been inserted into a new track above the **Video1** track.



The square surface of **Color Ramp** is centered in the **Canvas**.



The **Color Ramp** colors can be animated in the **Effect Box** just like the **Random Generator** colors.

The colors in the four corners of the **Color Ramp** are shown in the tabs **Top Colors** and **Bottom Colors**.

Changes to the HSB or RGB color models can be made using the sliders or in the numeric input fields.



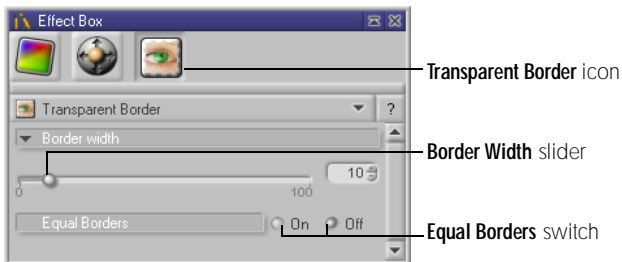
Now we are going to introduce you to the MoviePack effects. Effects change the behavior and appearance of an object.

- ▶ In the **Timeline**, set the Timeslider to 0:00:00:00.
- ▶ In the **Browser**, select the **Effects** folder.
- ▶ Double-click **All Effects** in the **Effects** folder.
- ▶ Scroll down using the scroll bar on the right-hand side until the **Transparent Border** effect is visible.
- ▶ Drag the **Transparent Border** onto the **Color Ramp** in the **Timeline**.

Changing Appearances using Effects



In the icon bar of the **Effect Box** the icon for the active effect appears next to the **Transformations**.



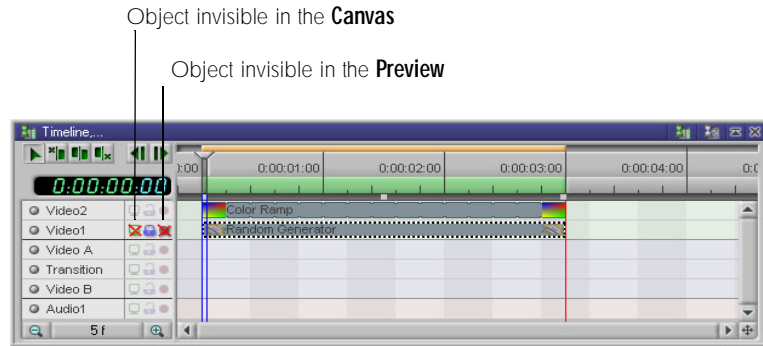
Other effects can be applied to the object in the same way.





Sliders and numeric entry fields control the parameters. If you want a stronger effect, the same effect can be applied several times.

Looking at the **Canvas**, the **Color Ramp's** transparent border is not clearly visible because of the colored background. The background has to be made invisible in either the **Canvas** or the **Preview**.

Switching Objects On/Off


In the **Timeline** there are two buttons which make objects visible or invisible.




-  The first button (cross on the monitor) next to the name of the track, in this example **Video 1**, makes the visible object invisible in the **Canvas** only. Objects that were hidden become visible.
-  The third button (cross on the render icon) makes the visible object invisible in the **Preview** only. Objects that were hidden become visible.
-  Another click on the respective button makes the object visible again.
-  In the **Timeline**, activate and deactivate each button in turn and observe the results in the **Preview** and the **Canvas**.

Protecting Objects Against Changes

Until now changes could be made to an object.

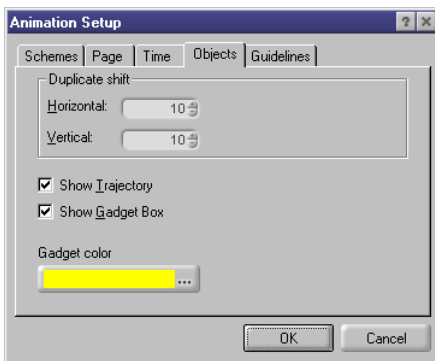
-  Activating the second button in the **Timeline**, the 'Padlock', protects the object from changes. This means:
 - Changes to the object or the effect parameters are not possible using the sliders or numeric entry fields.
 - In the **Effect Box**, parameter changes of individual effects are still visible when the object is locked.
 - The object can be activated in both the **Timeline** and in the **Canvas** by a simple mouse click as before but it cannot be moved. The object borders in the **Canvas** are a different color.



-  The color of the object borders can be altered in the **Objects** tab in the **Animation Setup** dialog box.
- ▶ Right-click in the **Canvas**.
- ▶ Select the **Animation Setup** command from the context menu.



In the **Animation Setup** dialog box other settings can be altered besides the frame rate in the **Time** tab and the size in the **Page** tab.



For the time being we are not going to change the background, so the object can remain locked. For this exercise it does not matter whether the object is visible or not.

As with scaling, an object can be rotated in both the **Effect Box** and the **Canvas**.

Rotating in the Canvas

- ▶ Click the object in the **Canvas**.

The object and the object borders with the 8 handles are displayed in the **Canvas**. Remember that positioning the mouse over one of the handles changes the pointer into a different symbol and the object can be stretched and compressed using the handles on the horizontal and vertical borders, and scaled using the corner handles.



If the object borders are not shown in the **Canvas**, click the object once to make them visible.

Click the object a second time and the square handles turn into circular handles.

Various Pointers for Rotation

Depending on where the pointer is positioned, for example next to an object, directly over an object or handle on a horizontal or vertical border, it changes into a different symbol with specific manipulation functions.



The normal select symbol: An object beneath this pointer can be activated by a single click.



Move symbol: The object beneath this pointer can be moved.



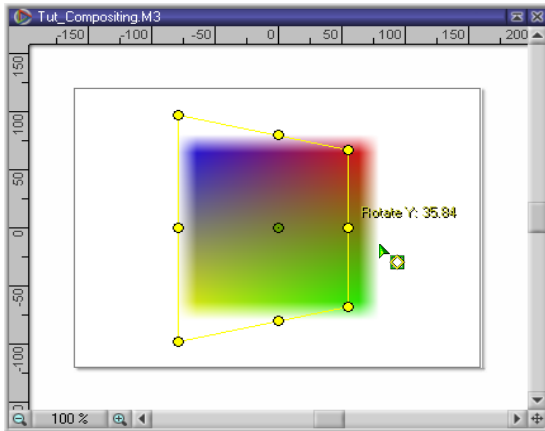
Rotation symbol: The object beneath this pointer can be rotated on an axis.

Position the pointer on the different areas of the **Canvas** and see how it changes.

- ▶ In the **Timeline**, set the Timeslider to 0:00:00:00.
- ▶ Click the object once or twice in the **Canvas** so that the circular handles are visible.



- ▶ In the **Canvas**, click on a circular handle on a vertical border and rotate the object 180 degrees to the other side of the object.



While rotating the object border on the vertical axis, the object itself remains in place. The rotation axis and the angle of rotation are shown next to the pointer. After releasing the mouse, the object is rotated in both the **Canvas** and the **Preview**. The new values are entered into the appropriate rotation and degree input fields in the **Effect Box**.

The object can be rotated on all three axes using the handles:

- Rotation on the horizontal X axis. Either one of the circular handles in the center of the horizontal border lines.
- Rotation on the vertical Y axis. Either one of the circular handles in the center of the vertical border lines.
- Rotation on the perpendicular Z axis. Any of the circular handles at the 4 corners of the object.

It is irrelevant which of the two or four handles are used to rotate the object.

Rotating on Several Axes



In MoviePack, each object can be rotated on several axes simultaneously.

- ▶ In the **Timeline**, set the Timeslider to 0:00:01:12 (the middle of the animation).

The **Color Ramp** rotates 90 degrees in the **Canvas** and the handles are now difficult to see and to grasp, therefore we have to rotate the object in the **Effect Box**.

- ▶ In the **Effect Box**, drag the handle of the slider for Z axis downwards to the other side of the **Globe** (180 degree rotation).

Take a look at the **Preview** with a visible background and you will see that both objects are contrarotating.

Title and Text

In MoviePack, it is not only graphics, images and videos that can be animated. Titles and texts supply additional information and occasionally contain the fundamental content of a clip, skillfully wrapped up in an animation.

MoviePack contains objects for displaying textual information.



The **Titler** is a particularly effective way of displaying textual information as a title. The text can be altered by many parameters in the **Effect Box**.



The **Text String** object is suitable for simple texts.



With **Marquee**, longer texts can run across the screen in single lines, like stock market or news tickers.



Roll allows several lines of text to roll over the screen like film credits.



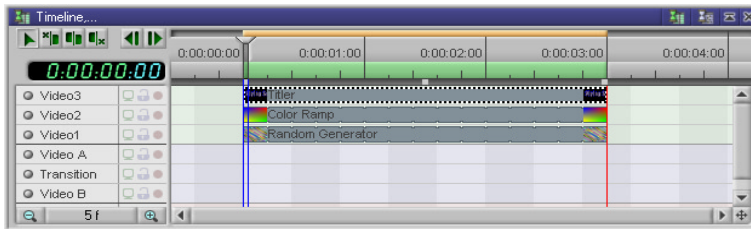
We are now going to introduce the **Titler** into the animation. As with other objects, it can be found under the **All Objects** tab in the **Browser**.

Object Titler



- ▶ In the **Timeline**, set the Timeslider to 0:00:00:00.
- ▶ In the **Browser**, drag the **Titler** from the **All Objects** folder into the **Video 2** track in the **Timeline**, ensuring that the black object bar begins at 0:00:00:00.

There are now three objects in three different tracks in the **Timeline**.



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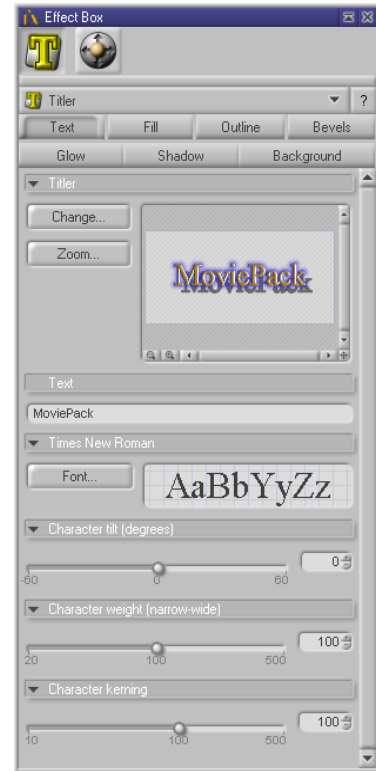


Effects

In the **Titler** effect box there are many parameters in different tabs. In the first tab, **Text**, the title is shown in a small preview window. The text can be entered, the font can be selected and some text characteristics can be altered.

From all the options available we are going to use only one for the moment:

- ▶ In the text entry line overwrite the existing 'MoviePack' text with 'Flying Letters'.



In the **Preview**, the background and the **Color Ramp** are rotating behind the title.

Flying Titles

The title can also be brought to life. Imagine your title flying from the bottom left behind the **Color Ramp** to the top right of the screen.

- ▶ In the **Timeline**, set the Timeslider to 0:00:01:12 (the middle of the animation).
- ▶ In the **Timeline**, click the **Titler**.

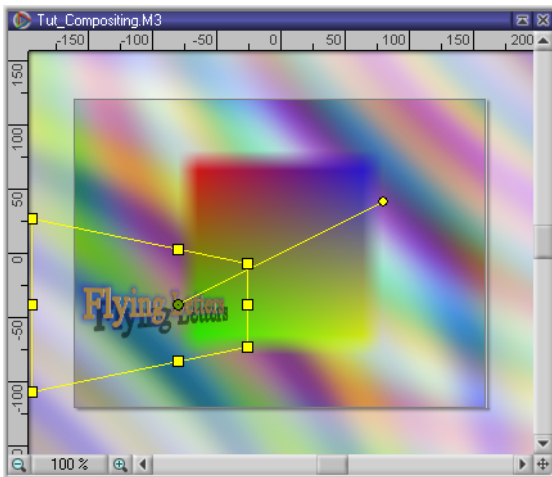


- ▶ In the **Effect Box**, click **Transformations**.
- ▶ In **Transformations**, click the **Scale** tab.
- ▶ Set **Scale** to 0.01 seconds.

The titler increases then decreases in size in the **Preview**.

- ▶ In the **Timeline**, set the Timeslider to 0:00:00:00 (at the beginning of the animation).
- ▶ In the **Canvas**, click the center of the **Titler** and drag it towards the bottom left-hand corner (Position -80 : -40).
- ▶ Click the **Titler** a second time to enable rotation.
- ▶ Rotate the **Titler** on the Y axis about 60 degrees using the vertical handle on the right (Rotate Y: 60).

The following picture should appear in the **Canvas**:

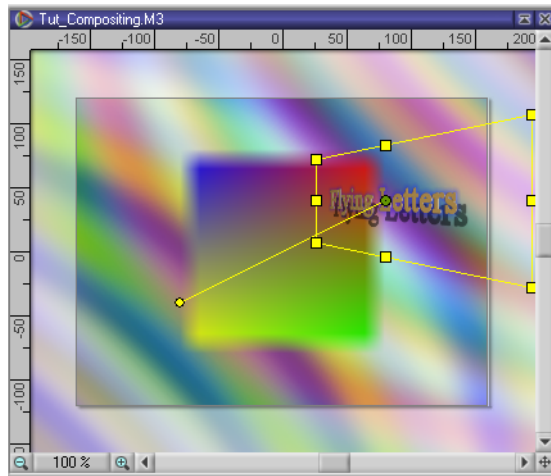


Now we are going to enter the same manipulations but with the negative values at the end of the animation.

- ▶ In the **Timeline**, set the Timeslider to 0:00:02:24 (at the end of the animation).
- ▶ In the **Canvas**, click the center of the **Titler** and drag it towards the top right-hand corner (Position 80 : 40).

- ▶ Rotate the **Titler** on the Y axis about -60 degrees using the vertical handle on the left (Rotate Y: -60).

The following picture should appear in the **Canvas**:



The Animation in the Preview

Finally, let's take a look at our little animation in the **Preview**:



Preview of the beginning and end of the animation.

The **MoviePack** generated **Random Generator** rotates slowly in the background, while the **Color Ramp** rotates on several axes in front of it. The title flies through time and space in the foreground towing a shadow in its wake.





This animation is saved under 'Tut_Compositing.M3' (the project under 'Tut_Compositing.M3W') in the 'Samples' folder and can be used for further experiments.

Save the animation under a suitable name and experiment a bit more to get better acquainted with the object and effect parameters. The **Titler** has endless possibilities, from the many effects (besides the **Transformations**) we have only used the **Transparent Border** - there is simply not enough space in this tutorial to describe all the available effects.

The objects used in the animation were generated by MoviePack but you can swap them for other objects or for your own images and videos. The MoviePack CD also offers a huge selection of images and videos.

Have Fun Experimenting!



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Effects

