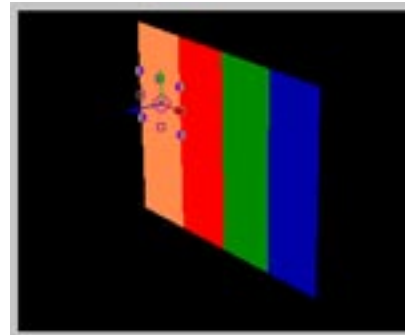# Quickstart for PlaneSpace

Get quickly started with an easy introduction to
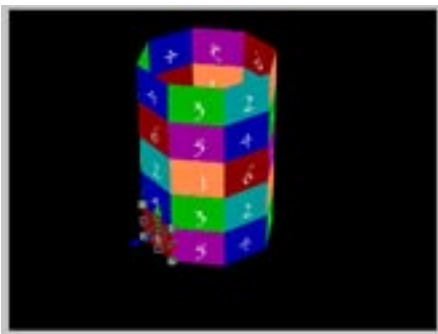5 of the 16 tools in this powerful keyframing package.

Cubic Distribution quickstart
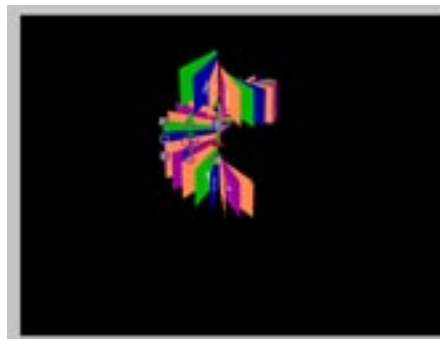

Box Creator quickstart

Cubic Distribution quickstart

Cylinder Creator quickstart

Cylinder Distribution quickstart

Formerly the 3D Assistants from Digital Anarchy.

Step-by-Step with Asssistants

This Quickstart covers five of the ten 'Pro' 3D Assistants. Since all of the tools operate in a similar way, going through these five mini-tutorials should give you a good understanding of how all of the 3D Assistants work.

Turn on Advanced 3D render

Is the "Advanced 3D" error the only one you are running into? Hit Ctrl+K when in your project to bring up your composition settings. When there, click on the Advanced tab and make sure that the Rendering Plug-In is set to "Advanced 3D." With this error you are running into, it is probably set to the wrong rendering plug-in.

Use a square pixel comp

In non-square pixel comps, 3D layers don't line up correctly due to the adjustment for the aspect ratio. In ALL the example below, use a square pixel composition. You can then drop the square pixel comp into a non-square pixel comp and the edges of your cube, cylinder, or whatever will remain aligned.

Activate the Assistants

The 3D Assistants are keyframing tools, not plugins. Therefore, you will find them listed in After Effect's 'Window' menu, not under the 'Effects' menu. The first time you use an Assistant, the tool may appear to be 'grayed out', or not selectable in the Window menu. To activate the 3D Assistants, you will need to do these simple steps.

(1) Select the layers in your Timeline.
(2) Turn on the 3D switch for those layers.
(3) Go to your Window menu to select the 3D Assistant.

Table of Contents

Matrix Creator Quickstart

This tutorial explains how to create a 4 x 4 video wall using the Matrix Creator Assistant. For this project, you will want to open the Matrix_Creator_QS.aep.

step 01

Create four 320x240 solid layers with different colors Select the '3D' switch for each of them in the Timeline. [figure 1]

step 02

Create a new Camera (Layer>New>Camera). From the Tool Palette, select the Orbit Camera tool. Orbit around the layers so you get a 3/4 view.

step 03

Press 'C' to get the Track Z Tool, this allows you to zoom the camera out. Zoom the camera out a bit. [figure 2]

step 04

This is where the 'start' Comp in the 'Matrix_Creator_QS.aep' project is at.
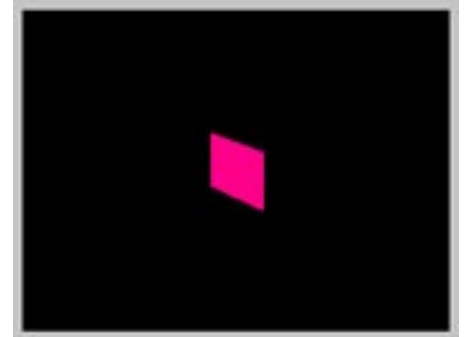
step 05

By adjusting the camera like this, we'll be able to see the whole video wall. Now select all 4 solid layers.

step 06

Open the Matrix Creator (Window>Matrix Creator) (Open the 'End' Comp to see where we're going with this)

step 07

In the Dimensions parameter enter in 4 x 4. This will create a video wall that's 4 layers wide, by 4 layers high. Which creates a grid with 16 spaces in it. You can make this any size you want, say 10 x 2 would create a really long, but short, wall. 10 layers wide by 2 layers high.

[figure 2]

[figure 1]

However, you have to have enough layers to fill all the spaces. Right now we have a 4 x 4 grid with 16 spaces and only 4 layers. With only 4 layers, only the top row of the grid will get filled. So...

step 08

At the bottom of the UI, turn on Repeat Layers. Set it to 3. When we apply the assistant this will repeat the 4 layers we have now 3 times, giving us a total of 16 layers (3 x 4 = 12 + the original 4 layers). The 16 layers will fill up the 16 spaces in the 4 x 4 grid.

step 09

Set Size Of Grid Space to 'Largest Layer'. This will look at the dimensions of all your layers and see which is largest. Since all of our layers are 320x240, the largest layer is 320x240. Every space in our 4 x 4 grid will then be 320x240.

Some things to try to help get your head around this: set the grid space to say 200x200, the 320x240 layers will overlap, since each space in the grid would be too small.

This might be a little hard to see with solid layers, though, so you might want to try it with images. Set the grid space to 640x480, and notice that the grid spaces are now bigger than the 320x240 layers and there is space between them.

You'll need to click Apply for any of these changes to take effect. Remember to turn OFF Repeat Layers after you've got the number of layers you want.) [figure 3]
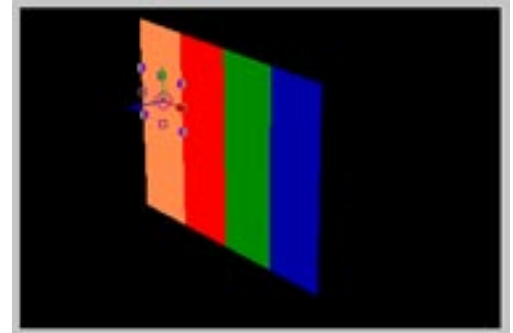
step 10

Click Apply. That should give you the video wall. If you want the layers to blink, follow the next steps. [figure 4]
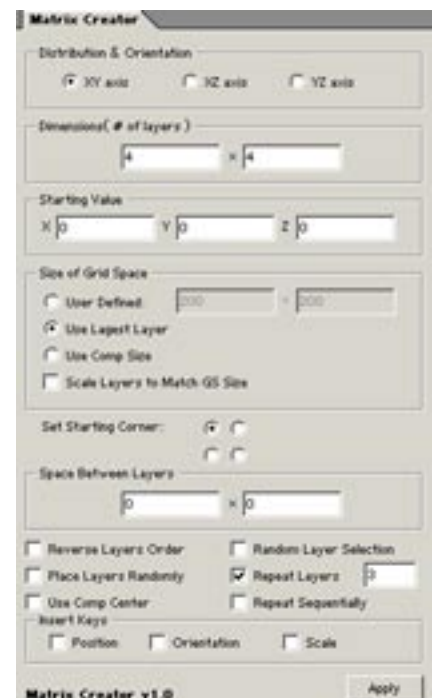
step 11

To make the layers blinmk, first select all 16 layers. Turn OFF Repeat Layers since we have as many as we need.

step 12

Turn on 'Random Layer Selection'. This will randomly place layers throughout the grid. Usually they're placed in an orderly fashioned, the first layer gets placed, then the second one, then the third
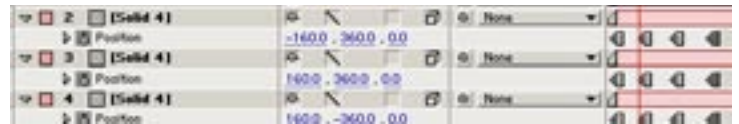

[figure 3]

[figure 4]

one, and so on. With this selected, the first layer is randomly stuck into the grid somewhere, as is the second one, and so on.

step 13

In the Insert Keys section turn on 'Position'. This will insert a Position keyframe for all the layers. Click Apply and notice the layers get all jumbled. They also now have keyframes.

[figure 5]

step 14

Move forward ten frames in the Timeline. Click Apply. Move forward another ten frames in the Timeline. Click Apply. Move forward ten more frames. Click Apply.

After every time you click 'Apply', the layers should change position.

step 15

With all the layers selected in the Timeline, hit the 'U' key to show all keyframes. Select all the keyframes and turn them into Hold keyframes (Animation>Toggle Hold Keyframes). [figure 5]

Now if you play the animation you should have layers jumping around, making it look like they're blinking on and off.

Cubic Distribution Quickstart

This tutorial will explain how to use the Cubic Distribution Assistant. For this project, you will want to open the Cubic_Distribution_QS.aep.

step 01

Create five 3D layers that are 320x240.

step 02

If you open the 'Start' comp in the 'Cubic_Distribution_QS.aep' project you will see this has already been done. Take a look at these briefly.

step 03

We've also moved the camera back a bit from it's default position. You'll need to get used to moving the camera around, so I'd recommend spending some time getting used to it, and maybe going through some tutorials or books on it (if you're not familiar with 3D cameras). It's a bit beyond the scope of this tutorial.

step 04

If you want to do this step by step, add a new camera (Layer>New>Camera), and zoom it back a little (using the Track Z Camera Tool).

step 05

Select all five layers, and open up the Cubic Distribution assistant (Window>Cubic Distribution).

step 06

The Cubic Distribution assistant will distribute layers throughout a 3D cube. You set the dimensions of this cube, tell it how to distribute the layers, and it takes care of the positioning.

step 07

Since we want to fly through a number of layers more or less in a straight line, we only need to stretch the cube out over one axis. In this case we'll stretch it over the Z axis, since that's the axis the camera is facing anyways. We'll distribute the layers along this long cube and fly the camera right down the center of it.

step 08

In the Dimensions section of the Cubic Distribution, set Z to be 10000, set X and Y to be 1500.

step 09

Even though we've moved the camera back a bit, it's still pretty much in the center of the scene. By default the 'Cube' that everything gets distributed in will be created around the center of 3D space. More or less where the camera is at. That means half of the cube will be behind the camera.

To fix this, lets move the cube forward 4000 units. In the Starting Value area, set Z to 4000. The Starting Value defines the center of the 'Cube'.

step 10

Layers can be distributed two ways. 1: You can define the distance or range of distances that will separate each layer or 2: You can just have the Assistant distribute the layers randomly throughout the cube.

In this case, we're going to have the layers distributed randomly so select the Distribute Randomly checkbox in the Starting Value area. (For a good understanding of how #1 works and setting up distances, see the manual).

step 11

We have a pretty large cube to distribute our layers in. We probably want more than 5 layers to fill the space up. Luckily there's a really easy way to distribute more layers.

step 12

In the Options section, turn on the 'Repeat Layers' checkbox. Set the Repeat Layers value to 5.

This will repeat our layers 5 additional times, giving us 30 layers (5 x 5 = 25 + the original 5). These will then be distributed randomly throughout the cube.
[figure 1]

[figure 1]

step 13

BIG IMPORTANT STEP: Click Apply. Wa lah! Our layers are now distributed all over the place. If you open up the End Comp, this is where we're at. [figure 2]

step 14

Switch the camera mode to 'Top' and set the comp window zoom to 3.1%. You can see how the layers have
been distributed over the Z axis. [figure 3]

step 15

Switch back to Camera 1 and set the window to 50 or 100%.

step 16

Let's quickly animate the camera. Set a Position keyframe for
the camera at Time 00:00. Also set a keyframe for the Camera's
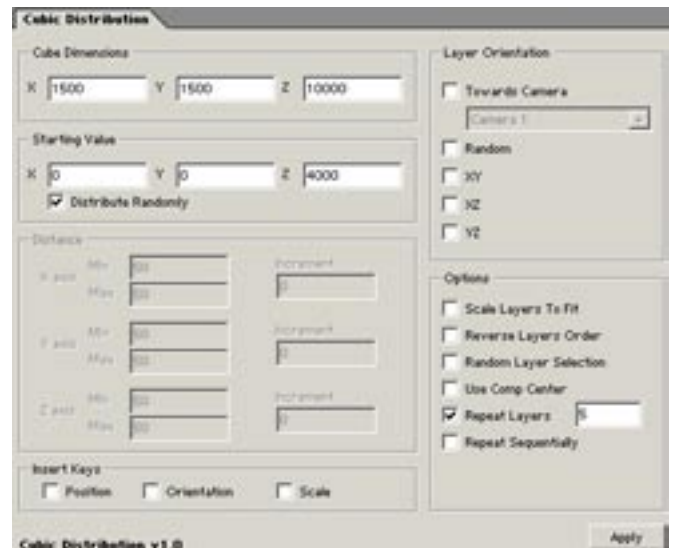Point of Interest.

step 17

Move the Time Marker to 03:00.

step 18

Change the Position Z value to 8800, and change the Point of Interest Z value to 8890. [figure 4]

That will give you a nice fly through animation. Check out End+ Comp if you want to see it finished.

[figure 2]

[figure 3]

[figure 4]

Cylinder Distribution Quickstart

This tutorial will explain how to use the Cylinder Distribution Assistant. For this project, you will want to open the Cylinder_Distribution_QS.aep.

step 1

Create five 3D layers that are 320x240.

step 2

If you open the 'Start' comp in the 'Cylinder_distribution.aep' project you will see this has already been done. Take a look at these briefly.

We've also moved the camera back a bit from its default position.

step 3

If you want to do this step by step, add a new camera (Layer>New>Camera), rotate it around a bit so you get a 3⁄4 view, and zoom it back a little (using the Track Z Camera Tool).

step 4

Select all five layers, and open up the Cylinder Distribution assistant (Window>Cylinder Distribution)

step 5

The Cylinder Distribution assistant will create a virtual cylinder and distribute the layers throughout it. By default, this isn't much different from the Cubic Distribution assistant, however we'll show you how it can be VERY different.

step 6

With the Cylinder Dist. Assistant you can arrange layers in a spiral. The layers will rotate around the center of the cylinder as they are placed. This is what separates this assistant from the Cubic Dist. Assistant.

step 7

Let's make the virtual cylinder more elongated by setting the Y portion of the cylinder to 3000. This should give us plenty of space to place the layers in.

The Starting Value section is fine, so we'll skip that.

step 8

The Distance section is where all the fun stuff happens in this assistant. The Angle parameter determines how much each layer is rotated from the last one.

For example, if Angle is set to 15, the first layer is placed, then the next layer is turned 15 degrees in the clockwise direction around the center of the cylinder, then the next layer is turned another 15 degrees, and so on.

step 9

Set the Angle Min and Max to 15. This will ensure that each layer is rotated 15 degrees. If the Min and Max vary then a value is chosen randomly between the two, and the layer is turned by that amount.

step 10

Distance From Center is fine, so we'll leave that alone. This is just how far away from the center of the cylinder the layer will be placed.

step 11

Y Axis is also fine. This sets how much along the Y axis every subsequent layer is offset. If this is set to 50, then each layer is raised 50 pixels along the Y axis before it is placed.

The first layer is placed, the second layer is raised 50 pixels then placed, the next is raised another 50 pixels and then placed, and so on.

step 12

Set the Y Axis Min and Max to 50. This will cause every layer to be raised 50 pixels from the last layer placed. If the Min and Max vary, a value will be chosen randomly between the two and the layer will be placed that many pixels above the previous layer.

step 13

Under Layer Orientation, select Rotate XY. This will cause the layers to be oriented upright as they turn around the cylinder center, like slides in a slide projector. If you select Rotate XZ, the layers will lie
flat as they are rotate, kind of like blades in a fan.

step 14

The options under Layer Orientation are best experimented with to understand what they do. Run the assistant with one option, then undo, run it with another option, undo, run it with a further option, etc., etc. The manual has more information about each option.

step 15

In the Option section of the Assistant, select Random Layer Selection. This will mix the layers up a little bit so they don't appear in order. Without this, our layers would be selected as they are in the timeline… 1, 2, 3, 4, etc.

With it selected, they are mixed up when placed. You'll see how this works in a second. [figure 1]

step 16

Also select Repeat Layers and enter '5' into the value field. This will repeat our 5 layers five times, giving us a total of 30 layers (the original 5 + the 25 repeated layers).

We use this because 5 layers isn't going to give us much of a spiral. This provides an easy way of duplicating as many layers as you need. [figure 2]
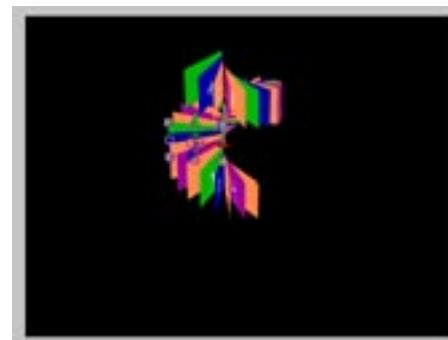
That's it! Click Apply and see what happens!

[figure 1]

step 17

For further adventures, try undo–ing and trying different values. Try 5 in the Angle Min and Max. Try 'Rotate Outward' under Layer Orientation. Try 20 in the Y Axis Min and Max. There's lots of different options, so give them all a try.

[figure 2]

Box Creator Quickstart

This tutorial will explain how to use the Box Creator Assistant. For this project, you will want to open the Box_Creator_QS.aep.

step 1

Create six 3D layers that are 320x240.

step 2

If you open the 'Start' comp in the 'Box_Creator_QS.aep' project you will see this has already been done. Take a look at these briefly.

We've also moved the camera back a bit from its default position.

step 3

If you want to do this step by step, add a new camera (Layer>New>Camera), and zoom it back a little (using the Track Z Camera Tool).

step 4

Select all six layers, and open up the Box Creator assistant (Window>Box Creator)

step 5

The Box Creator assistant will attempt to create a cube out of your selected layers. For a real cube each side has to be square and the same size and this is the case with the Box Creator.

However, if they are not the same size, the BC will attempt to arrange them as close to a cube as possible, but there will be gaps between some layers if your layers are rectangular.

step 6

It's very simple to use the Box Creator. Since we have 6 layers selected, we have enough faces for a cube.

step 7

The first thing to do is set the Dimensions of the box. Go to the Box Dimensions section and enter in 320 in each of the value boxes. Since all our layers are 320x240 we're going to make the sides of the box that size.

step 8

Leave '1 Layer Per Side' selected. For a box, we only want one layer on each side. In other arrangements we might want to have multiple layers on each side, say if we were making a tunnel. [figure 1]

That's it! Click Apply and see the result!

step 9

Hmm… ok, maybe that's not it. You'll notice the sides line up pretty well, but there's a gap in the top, and the bottom is completely detached from everything.

Remember our box is 320x320x320 and our layers are 320x240. So there's a 80 (320–240) pixel gap between the bottom of the side layers and the bottom of the cube.

[figure 1]

step 10

Before we fix that, let's play around a bit. We're all a bunch of wild and crazy anarchists, so it's time to get wild. Set the Box Dimensions to 1000x1000x1000. Click Apply.

step 11

Good lord, the excitement is too much to stand! Our layers are now spread out over a larger box, so they're even farther apart. This was just to point out how easy it is to make adjustments.

If you don't like one group of settings, make some changes, click Apply, and see if you like those settings. Very easy to make changes.

step 12

So now the sides of the cube are 1000x1000. That has done anything but solve our problem of having seams between the layers. Let's fix this.

step 13

Next to '1 Layer Per Side', you'll see a 'Scale To Fit' checkbox. Guess what this does? Yep, it scales the layers to fit the side of the layers. Turn on the Scale To Fit checkbox. Click Apply.
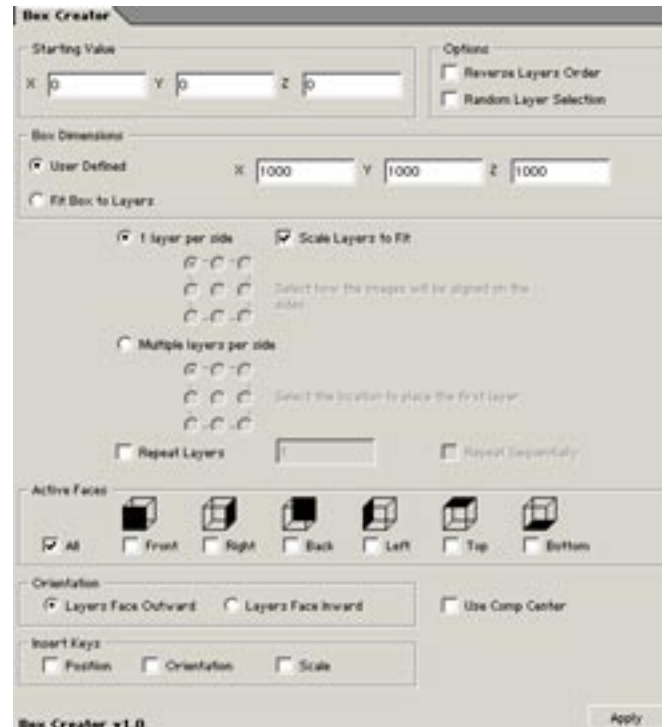
step 14

Wah La! Our layers are scaled to fit the 1000x1000x1000 box, resulting in a perfect, happy box. Woohoo! Of course, we had to scale them to get them there so there may be some pixelization, but such is the price of perfection. [figure 2]

step 15

The ideal situation is to have square layers before you start creating the box. This will prevent you from having to scale them and introducing artifacts or distortions. Of course, if you don't care gaps then you don't have to worry about this. Otherwise, mind the gaps. [figure 3]

[figure 2]

[figure 3, next page]

Cylinder Creator Quickstart

This tutorial will explain how to use the Cylinder Creator Assistant. For this project, you will want to open the Cylinder_Creator_QS.aep.

step 1

Create six 3D layers that are 640x480.

step 2

If you open the 'Start' comp in the 'Cylinder_Creator_QS.aep' project you will see this has already been done. Take a look at these briefly.

We've also moved the camera back a bit from its default position.

step 3

If you want to do this step by step, add a new camera (Layer>New>Camera), and zoom it back a little (using the Track Z Camera Tool).

step 4

Select all six layers, and open up the Cylinder Creator assistant (Window>Box Creator).

step 5

The Cylinder Creator assistant will attempt to create a cylinder out of your selected layers. The radius of the cylinder can be set in a variety of ways and you can create the entire cylinder or just a portion of it.

step 6

The first thing to do is set the height of the cylinder. In the Bounding Box section, set the Y axis to 2000. This will give us a reasonably long cylinder.

step 7

Next, let's take a look at the Height Min/Max values. You can think of the cylinder as being a stack of rings. A ring is created with your layers. Once the ring is completed, the Assistant moves up a given amount and creates another ring.

I ran across an *oops* in the last of the QS tutorials, Cylinder Creator, starting on page 8 of the .pdf file.

The AE project file that goes with that tutorial has its two comps named in reverse. The start comp is actually the end comp and vice versa. The switch can be reasoned out, but you might want to change it and eliminate emails such as this one.

Once that ring is completed, it moves up again, and creates yet another ring. This goes on until you run out of layers or you reach
the height set in the Y axis of the Bounding Box section.

step 8

Since all our layers are 480 pixels high, we want the Cylinder Assistant to move up 480 pixels after it completes each ring. So set the Height Min/Max to 480.

With them being the same value, the Assistant will always go up 480 pixels. If the values differ, a random value between the two will be chosen.

[figure 1]

step 9

The other parameter here, the Longitude value is fine the way it is. This determines where subsequent layers are placed as the Assistant moves around the ring. It's set in degrees. So every 45 degrees a new layer will be placed around the rings.

step 10

We've got six layers in the Timeline. This poses a bit of a problem, since that's not going to be enough to create a tall cylinder. The solution is to turn on Repeat Layers.
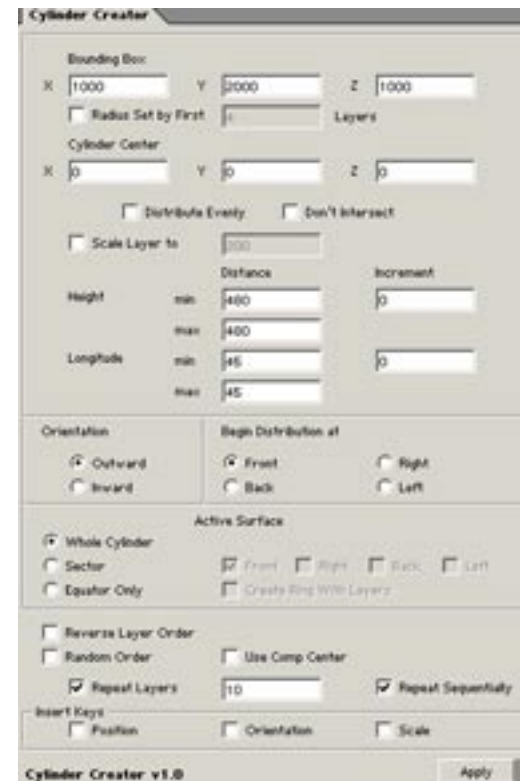
step 11

We're not entirely sure how many layers we're going to need, so set Repeat Layers to 10. This will repeat our 6 layers 10 times. The nice thing about this, is that it will only repeat the layers as long as we need them.

We probably won't need 60 layers, but it'll keep repeating them until we run out of space. So if we only need 30 layers to make a
cylinder that's about 2000 pixels high, it'll stop at 30 layers.

[figure 2]

step 12

Click on the Repeat Sequentially checkbox. By default, duplicated layers are placed after the original layer. This will result in your Timeline looking like this: 1, 1, 1, 2, 2, 2, 3, 3, 3, etc.
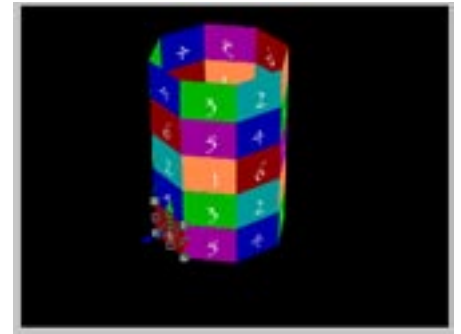
You may want it to look like this: 1, 2, 3, 1, 2, 3, 1, 2, 3, etc. That is what Repeat Sequentially will do for you. [figure 1]

That's it... click Apply!

step 13

Now this is fine, except all the layers are intersecting each other on the edges. You may want this, but if not, click on the 'Radius Is Set By' checkbox up by the Bounding Box section. Set the value to 8. [figure 2]

[figure 3]

step 14

This sets the circumference of the cylinder to the circumference of the first eight layers in your timeline.

It puts the first eight layers side by side to form a ring and that becomes the circumference. This provides an easy way of creating a seamless cylinder. [figure 3]

step 15

Now this is fine, except all the layers are intersecting each other on the edges. You may want this, but if not, click on the 'Radius Is Set By' checkbox up by the Bounding Box section. Set the value to 8. [figure 4]

step 16

What this does is sets the circumference of the cylinder to the circumference of the first eight layers in your timeline. It puts the first eight layers side by side to form a ring and that becomes the circumference. This provides an easy way of creating a seamless cylinder.

[figure 4]

step 17

With Radius Set By set to 8, select all your layers and click Apply There ya have it! A perfect cylinder.