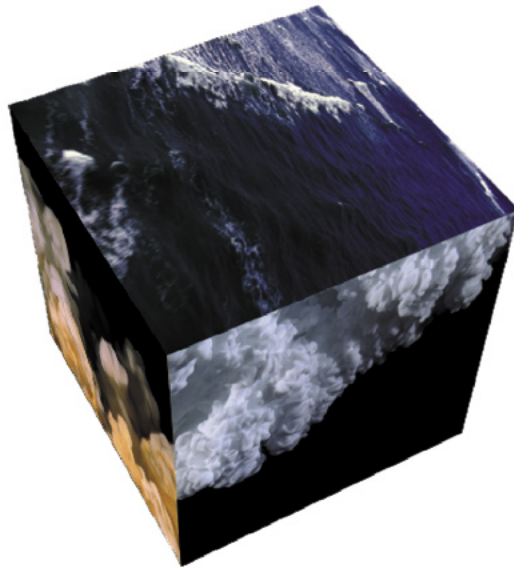


# 3D Assistants Lite.®

3D Keyframe Assistants  
for Adobe After Effects.



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## **Important Note! Read This! :**

The 3D Assistants Lite are not normal filters. They are keyframe assistants. As such, they show up under the Windows menu in After Effects, not the Effects menu.

Since they are designed to work with 3D layers, unless you have a 3D layer selected, all of the Assistants will be grayed out. To activate them just select any 3D layer or group of 3D layers. The Assistants do not work with Cameras or Lights.

In this manual, there are some references to the full version of the 3D Assistants. These have been left in because we felt they provided useful information about AE's 3D space and would be beneficial regardless of whether you had the particular assistant being used.

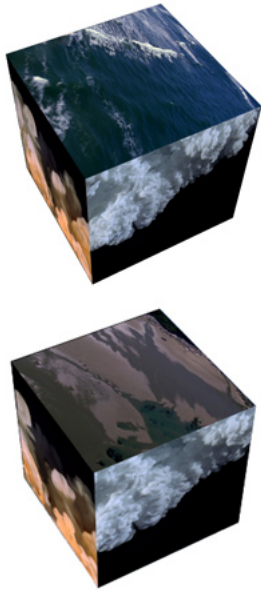
## **Support and Stuff**

We hope that you find 3D Assistants EZ to give you all the control you could want, while simple enough that you can set everything up in a few minutes. It's our desire to make sure you're satisfied with your purchase, and if you have any questions, comments, or whatever, we'd love to hear them.

If there's anything you'd like to see added to any of the filters, a completely different effect that you'd like to see a plug-in for, or would just like to say hello... definitely send us an email at [info@digitalanarchy.com](mailto:info@digitalanarchy.com).

If you have any technical problems or questions related to the filters, please email: [support@digitalanarchy.com](mailto:support@digitalanarchy.com).

## About the Assistants



### The Perfect Cube

As you might guess, creating a perfect cube requires 6 square layers that are all the same size.

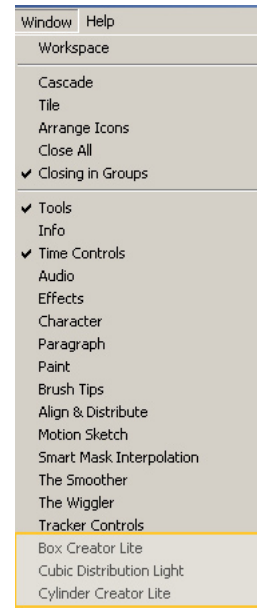
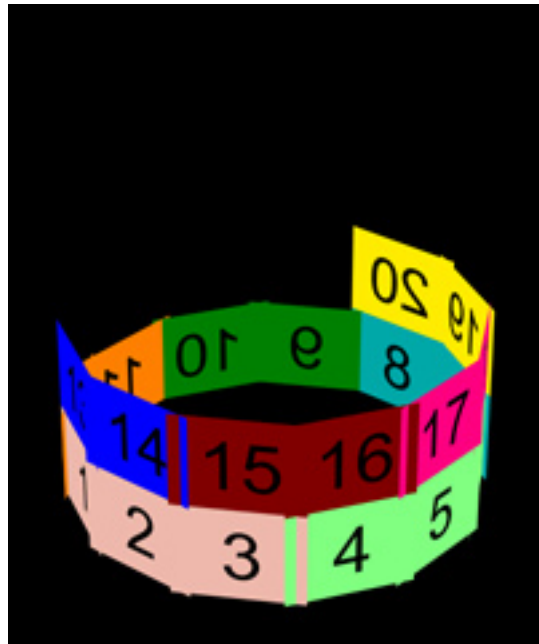
Being that there aren't many cameras out there that capture video in a square, this presents a problem. You can either squish the normal video or mask out a square portion of the video.

Since much footage is captured with the screen safe limits of TV in mind, it's often not difficult to cut a square chunk out without losing much.

The 3D Assistants don't recognize masks on layers. They still see the layer at its full size. The way around this is to drop each layer into its own square pre-comp.

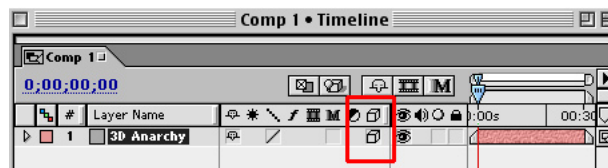
If you have a bunch of square pre-comps, all you need to do in the Box Creator is click 'Fit Box To Layers' and click Apply. This will make a perfect cube.

The 3d Assistants are a collection of keyframe assistants that function much like the keyframe assistants that ship with After Effects, like The Wiggler, Align & Distribute, etc. While these keyframe assistants do allow you to create keyframes, their main purpose is to allow you to arrange and manage your layers in 3d space. This gives you the ability to create clusters of layers, cubes, tunnels, and many other shapes out of your layers, all within AE's 3D space. Since these are keyframe assistants, there is no render time on top of the time it takes for AE to render your layers. You can use the AE cameras to fly around your layers, and you can create other



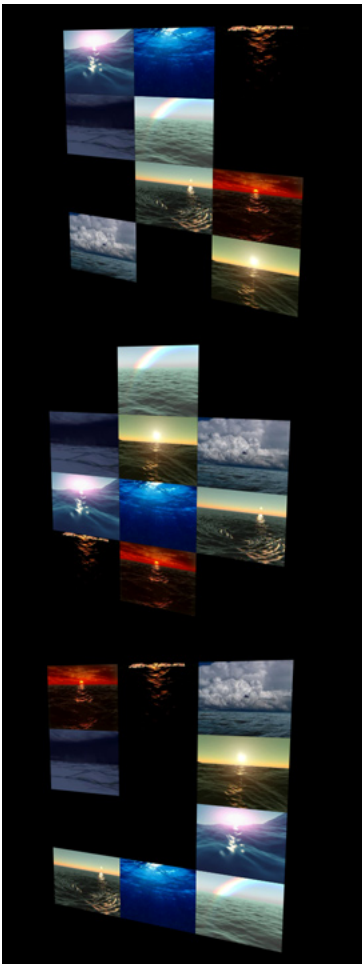
3d layers that will interact in 3d space with the layers positioned by the assistants. This gives the 3d assistants an advantage over filters that use 3D space, since they only work within *their* 3D space, not AE's. This means additional rendering time and it's not always easy to integrate their 3D space with After Effects'.

Of course, that means you have to use these assistants on 3D layers. Remember, we're positioning them in 3D space, so it's not much good if the layers are 2D and *can't* be positioned in 3D space. If you try to use the 3d Assistants on a 2d layer, you will notice that the 3d Assistants are grayed



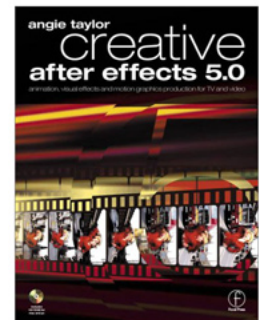
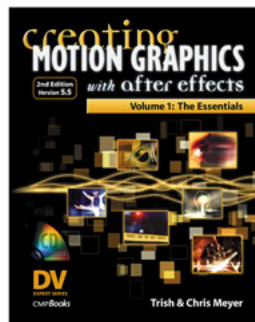
out and cannot be selected.

You can arrange, re-arrange, re-position, and re-arrange again as much as you like. If you don't like one configuration, change a few parameters and re-adjust the layers. Or hit undo to go back to your original layout. The 3D



assistants give you a very powerful and easy way of arranging 3D layers.

If at this point in time you're going "hmm, this sounds neat, but I don't get this whole 2D/3D thing. Maybe I should go read a good book instead.". Yes! You should go read a good book. Preferably one that explains how After Effects' 3D system and layers work. In the back of this manual you'll find a list of resources (books, DVDs, web sites, etc) for finding out more about AE's 3D space. 3D space can be difficult getting your head around, and there is already plenty of well written stuff about it, including the manual that comes with After Effects. It didn't make much sense for us to rewrite chapters of the AE manual. However, we do touch on some basic concepts here and there, but you'll be much better off if you go through AE's manual and some of the third party materials.



You can pretty easily create a 'TV Wall' that will flash images or even have the images move around. Here we've used the Place Layers Randomly parameter that's in the Matrix Creator.

Some great resources: Creating Motion Graphics by Trish and Chris Meyer, Total AE training tapes by total training (you can buy Total AE on [www.digitalanarchy.com](http://www.digitalanarchy.com)), and Creative After Effects by Angie Taylor. All are excellent references.

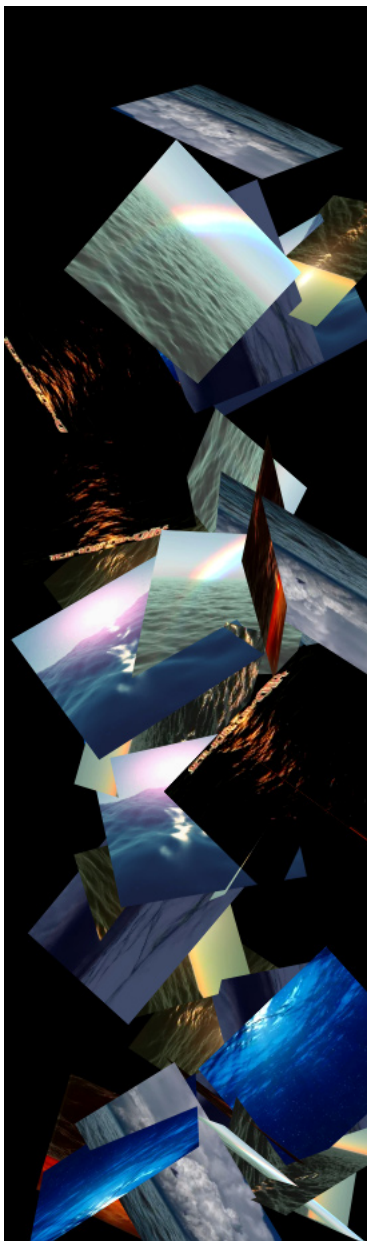
Place Layers Randomly will take the selected layers and, surprisingly, place them randomly in the grid. This can be very cool if there are more grid spaces than layers. The empty spots will move around too.

### 3D Space

All of the 3d Assistants conform to After Effects' 3d coordinate system. The origin of After Effects' 3d space ( $x=0$ ,  $y=0$ ,  $z=0$ ) is always the upper left corner of the composition, regardless of the composition's size. All the assistants default to the center of the current comp. Usually this won't be a problem, but it's something to be aware of. If something else has already been set up around AE's center of 3D space, the Assistants will position things slightly off of center.

### Keyframe Assistants

Unlike some other keyframe assistants, like The Wiggler, the 3d Assistants do not need keyframes to be present in a layer in order to function. In fact, they weren't designed to set keyframes at all. You can use them to set keyframes but mostly they're designed to arrange layers in 3D space. This doesn't require keyframes unless you want to animate the position or orientation of your layers.

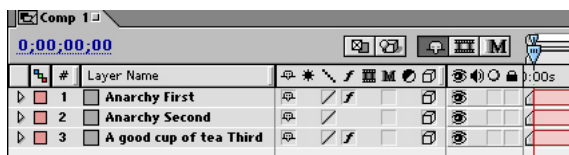


There is no limit to the number of layers that you can simultaneously apply a 3d Assistant to. In fact, the ability to distribute large groups of layers is one of the most useful aspects of this software. You can even use the assistants to replicate your layers and create large groups of layers. Be careful about this, tho... you can easily turn 7 layers into 700 layers which won't have happy results if you don't have enough memory for 700 layers.

### Layer Order

The 3d Assistants distribute 3d layers in the order they are arranged in the Time Layout Window. If your animation requires that there be a certain order to your layers, like if you were animating several letters to spell a word, be sure to arrange your layers in the proper order in the time layout window before applying the 3d assistants. Some of the assistants handle this differently than other ones. When we get to those assistants will discuss how they work.

All numeric values used in the 3d Assistants represent pixels. That's how AE's 3D space works, so that's how we work.



The order that layers get placed is pretty much how you would expect. Layer 1 is placed first, Layer 2 is placed second, Layer 3 is placed third, and so on and so forth until it runs out of layers or the world ends.

### Nasty Intersections

The great thing about AE's Advanced 3D Renderer is that it can render intersecting layers.

Of course, you don't always want to see intersections and in fact, would prefer to avoid layers intersecting altogether.

Unfortunately, the 3D Assistants don't help here. Currently there is no collision detection in any of the assistants. Even if there was, since we don't control the animation, the layers would intersect when animated.

In simple cases, try using expressions to prevent collisions.





## Distribution vs. Creator

### Alpha Channels

One nifty trick that you can do in AE is use 3D layers with alpha channels.

This becomes particularly powerful when used with the 3D Assistants. You can distribute many of these layers in space and make it look like your flying through stars, birds, or fireworks and explosions. That's what's happening here.

We started off with 5 layers, repeated them several times throughout 3D space and then flew the camera through them. While it's not exactly Star Wars, it is pretty effective.

No, this section is not about the ongoing debate of whether it was God's magic hand or a huge, flying turtle distributing little gummy seeds that resulted in us being here. While it's true that many times we have argued long into the night in the turtle's favor, we will not do so here.

Actually this is about the two types of 3D assistants. The Distribution assistants and the Creator assistants.

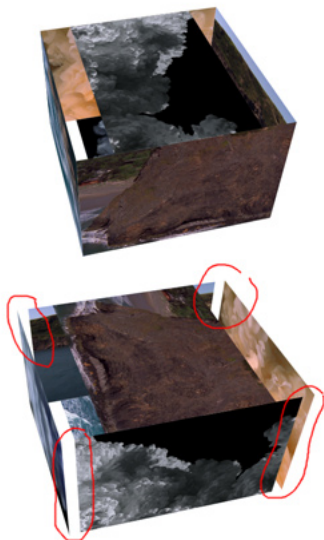
### The Distribution Assistants



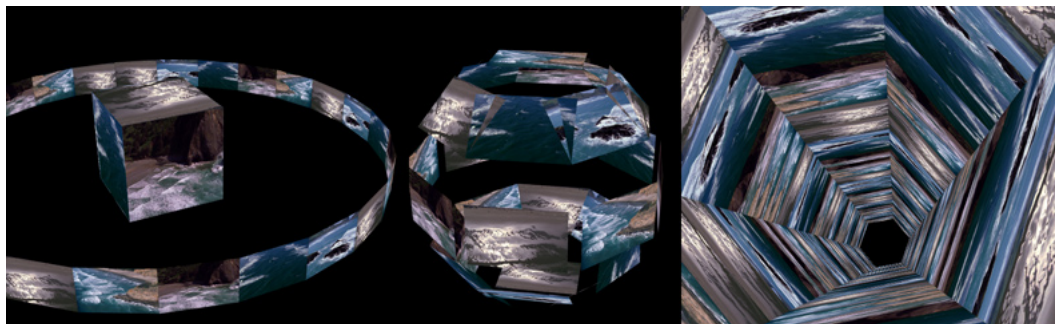
In the 3D Assistants Lite package there is only one Distribution assistant, Cubic Distribution. Cubic distributes the selected 3D layers throughout 3D space. With Cubic, you define the area of a cube and the assistant takes care of placing them throughout that area. The layers can either be placed randomly or by following the parameter values you set up.

This assistant make it very easy to place a large number of layers throughout 3D space. You control how they're distributed and how they're oriented by making a few selections in the assistant itself.





## The Creator Assistants



### Damn D1

What to do about those pesky non-square pixels? After Effects being the really cool app it is, generally helps us out and we don't have to worry about it.

At least, until we use 3D.

AE compensates for the non-square pixels, but in doing so throws off the placement of 3D layers. Notice the gaps on the lower cube (in red). Not pretty.

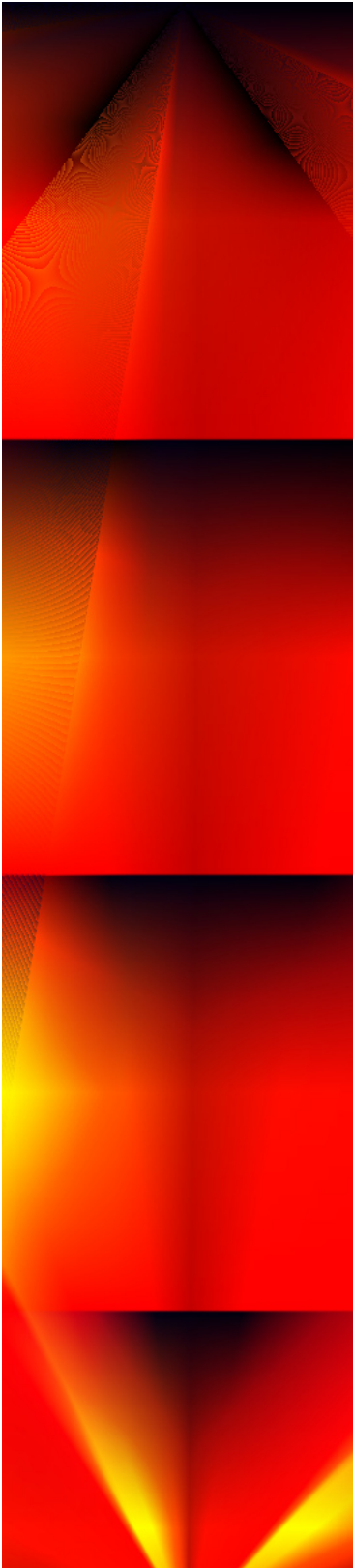
The top box is what it should look like.

So how do we get that top box? Square pixels! Interpret your footage so it uses square pixels and make sure your comp is using square pixels. If so, everything is happy and the Assistants can put things together correctly without AE misinterpreting what's up.

The Creator assistants are a different beast. They are designed to create the selected primitive out of the layers you select. For example, creating a video wall, a cube, a ring or other shape. This allows you to quickly set up common shapes all within AE's 3D space.

You just need to set the dimensions, how the shape is going to look, and how many layers you're going to use. The assistants do the rest, calculating all the position, orientation, and scaling information.

Of course, you can also animate from shape to shape. Set one shape, set a few keyframes, then arrange the layers into a different shape. AE will take care of the animating. Since the assistants aren't calculating all the in-between data, there's no way to prevent the layers from intersecting or crossing over in front of each other. If you need to prevent the layers from doing this, you may have to go in and manually tweak some of the animation paths. Since AE is doing the animation, it's easy to tweak the animations. Just adjust it like you would any normal animation curve.



## Some Concepts

### RAM (Don't Crash Your Machine)

Layers need RAM. If you're just building a cube, then it's no big deal. In fact if you're building half a dozen cubes, it's probably not going to be a big deal.

However, with the Repeat Layers option (see below), it's very easy to create hundreds of layers. I mean REALLY easy. Don't accidentally repeat your six layers 10 times... then repeat the resulting 60 layers, another 10 times. Be careful about that Repeat Layers function.

### Orientation

There are two ways to rotate a layer in AE's 3D space. The orientation parameter or the rotation parameters. When the assistants need to rotate a layer, they use orientation. This sets a layer in a particular 'pose'. Unlike the rotation parameters, where you can have a layer flip around infinitely, the orientation only lets you rotate the angle from 0 to 360. This works well for animating a layer from the bottom of a box into a video wall or something. Since that's the type of thing the assistants were designed to do, we use orientation.

If you want layers spinning wildly, you'll need to manually set for the rotation values.

### Ignored Layers

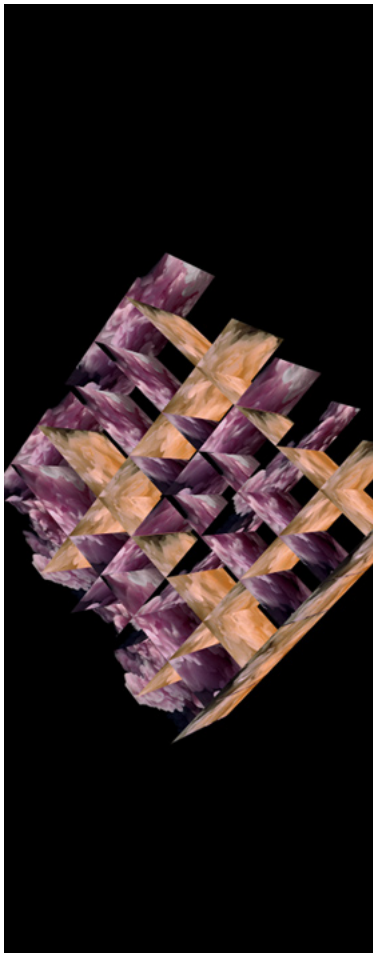
When an Assistant can't use all the layers selected (for example, when you have 10 layers selected and you're making a 6 sided box), the Assistant will ignore the unused layers. Leaving them untouched in their original position. Make sure they don't get in the way. Either move them or position the primitive away from the original layers.

Gradient!

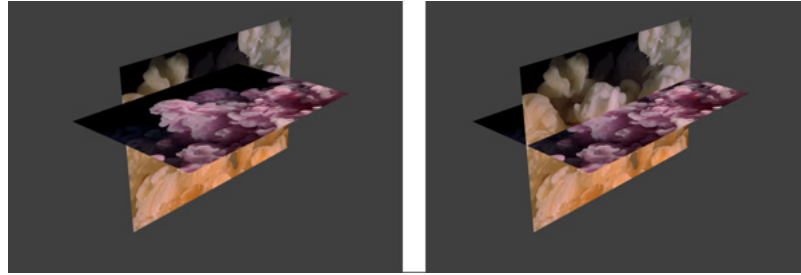
Ok, so this has nothing to do with the 3D assistants. It's pretty and it's left over from the manual to our Gradient! plug-in. Gradient! creates cool, pretty stuff like this and it's inexpensive.

### Primitives

Primitives are the basic building blocks of 3D: cubes, spheres, a plane, cylinders, etc. You'll see them referred to in this manual frequently.



## Advanced 3D Renderer



On the left is an example of the Standard 3D renderer. Notice how the pink cloud layer appears on top of the orange cloud layer. The image on the right is the Advanced 3D example, which is how things should look. Notice how the layers are intersecting.

If you go to your Composition Settings (Command/Control + K), in the Advanced section you'll see you have the choice of two renderers. The Standard 3D Renderer, and the Advanced 3D Renderer. This should almost always be set to the Advanced 3D Renderer. If it isn't, you'll see very strange behavior if your 3D layers intersect.

If your layers aren't going to intersect, then the Standard 3D Renderer can be somewhat faster. However, for most work, you'll want the Advanced version. If you're in AE 5.0 this option is not available, but is worth the upgrade price by itself.

## Arrangements

With the Assistants you can create all sorts of cool layer arrangements. In this case we've used the Linear Assistant to create a virtual Hollywood Squares filled with clouds or cotton candy or something.

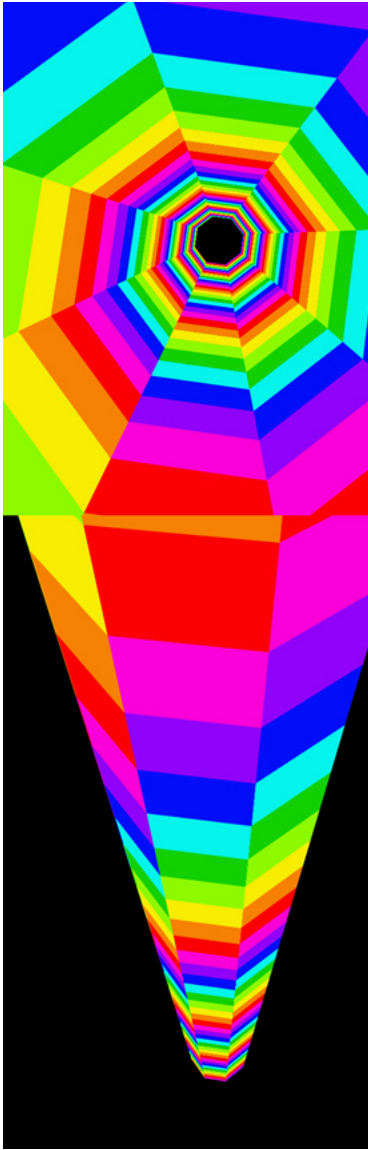
With the Linear Assistant we lined up one set of layers along the Z axis facing the XY plane, and another set along the X axis facing the YZ plane. Next thing you know we have a whole carnivals worth of cotton candy.

Ok we lied. They are actually clouds off of one of the ArtBeats stock footage CDs. Neat stuff.

## D1, Non-Square Pixels, and Other Spacing Issues

You may run into problems when using the 3d Assistants with compositions and footage with non-square pixels. Specifically, in situations where you need layers to line up edge to edge, the 3d Assistants will not always give you the desired result. Because the aspect ratio is different, AE aligns them differently than square pixel images. This is the way AE works and at the time of writing this manual, we were unclear on exactly what AE is doing. We hope to release an update that offers some controls to help alleviate this problem. The suggested workaround is to use the 3d Assistants in a composition with square pixels, and nest that comp into your non-square pixel comp. For more random arrangements of layers, the 3d Assistants will work fine in non-square pixel comps.

Even with square pixels, AE's 3D space sometimes will render gaps between layers that are perfectly aligned. You can scale your layers up slightly, set it to 100.5% (or some similar percentage) once they've been placed or start out with them all at 99.5% and scale them up to 100 once they've been placed. Which you use is up to you and will depend on how your defining the shape you're creating.



## 20,000 Pixel Tunnels

Are pretty easy to make if you have the memory for it. Just repeat layers as desired and make sure you set the Height to your layers height.

Set up the cylinder creator with the 'Radius Set By' parameter set. In this case we set it to 8. To create the spiral effect you see, we then selected 9 layers. One layer was always left over have the 8 spots in the radius were taken up. So the ninth layer is shifted down and everything starts over. Resulting in the spiral you see.

## Common Parameters

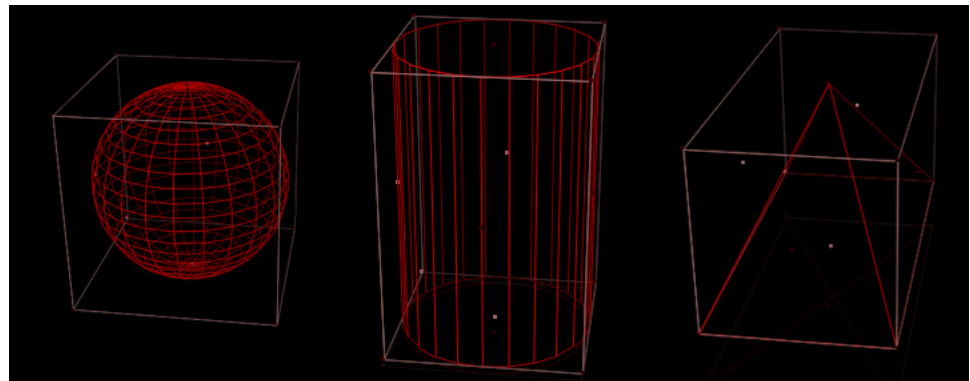
### Starting Point

the Starting Point of all the Lite Assistants is set to the center of your composition. For example, if your composition is 640 x 480, the starting point will be 320, 240, 0.

Keep in mind that AE's 3D space defaults to 0,0,0, which is the upper left corner of the comp at the default view. So even though your layers are in the center of your comp window, they are not (usually) in the center of AE's 3D world. Most of the time this won't make any difference, but it's something to be aware of... especially if you have other 3D layers that aren't being affected by the 3D Assistants.

### Size or Dimensions

This sets the size of the bounding box that contains the primitive that the layers will be distributed in. In the case of the Cubic Distribution, this is exactly the size of the cube that is created. In the case of the other distribution assistants, this will only set the boundaries for the other primitives and the actually distribution space will vary depending on the primitive. Please see the illustrations.



The Squares around the shapes are the bounding boxes. The primitive shapes are then

## Seams and Overlapping

Occasionally AE's Advanced 3D Renderer will render seams between layers where there shouldn't be one. This can be particularly obvious between layers of flat color.

To get rid of this your layers need to overlap by a few pixels. One way of doing this is to scale all your layers down to something like 99.5% and then place them. Once they've been placed by the Assistants using the smaller size, increase them to 100%.

The Assistants place the layers thinking the 99.5% is their real size. So all the calculation are done with that in mind. Then when you scale everything back up to 100%, all the layers overlap, just slightly and usually enough to get rid of any unseemly seams.

## Random Layers

This will cause the layers to be selected randomly as they are being placed. The Layer Order is ignored.

Layers will not be used twice, so once a layer is selected and placed, another layer is randomly selected. This doesn't affect placement; layers are placed exactly as they would be if the normal layer order was being followed. The only difference, is instead of going down the timeline 1... 2... 3... 4... when placing the layers, it goes 5... 2... 8... 6... etc.

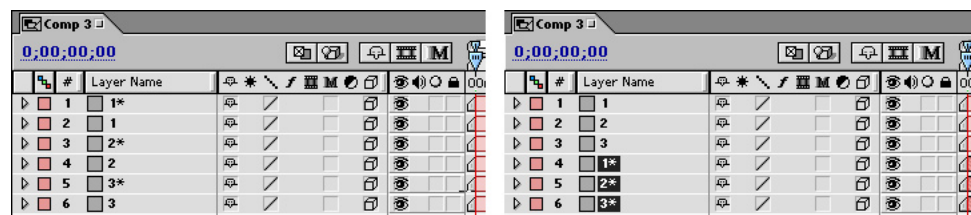
## Repeat Layers

This can be very useful if you're trying to quickly fill an area up with layers. It can also crash your machine. Repeat Layers will automatically duplicate your selected layers however many times you tell it to. Say you have 7 layers and you want those layers duplicated 7 times, you just enter in 7 in the value box, and when you click 'Apply', not only will the original 7 layers be placed, but 49 extra ones will be as well.

By using this you can quickly and easily experiment with extra layers and figure out exactly how many you need without duplicating and/or deleting them manually. If 49 isn't enough, just click Undo, enter in 10 instead and click apply. Maybe 70 is the magic number.

The downside to this is if you have 49 layers selected, you forget that Repeat layers is on, and you repeat the 49 layers 10 times. You now have 490 layers, and unless you have a lot of RAM, you're in trouble. This can potentially crash your machine. So just pay attention to this and make sure you're not going to create more layers than you have RAM for.

This differs somewhat from the behavior of Repeat Layers under the Creator Assistants. The Creator Assistants will eventually stop repeating layers if it runs out of space for them. The Distribution Assistants, never really run out of space, so they never stop repeating. This is what potential could crash a machine.



The image on the left shows how the timeline looks after a normal Repeat Layers, and the image on the right shows what happens with Repeat Sequentially turned on.



## Rings and Filmstrips

There are a great many shapes and effects that you can pull off with the 3D Assistants. You can use the Spheroid Creator Assistant to create rings or use the Linear Assistant to lineup a sequence of images into a film strip.

Of course, don't forget about all the cool tools you have within After Effects, like projection lights, shadows, and the material options.

We hope the 3D Assistants will really allow people to take better advantage of the AE's 3D space.

## Repeat Sequentially

This only works if Repeat Layers is turned on. Normally, layers will be repeated right next to each other. For example, if you repeat your layers once, your timeline will look like this:

If you select Repeat Sequentially, the layers are treated as a block, and when they're duplicated the whole block gets placed after the last layer. It'll look something like the illustration above.

## Layer Orientation

This determines how the layers are oriented. Regardless of whether the layers are being distributed along one, two, or three axes, you need to determine what axis they will be oriented around.

- None: No effect on layer orientation. Use this if you only want to reposition the layers and not have the assistant change the orientation.
- Towards Camera Orients all layers towards the selected camera. This will change the orientation along all axes if necessary.
- Random Orients layers randomly around all axes.

## Insert Keys

The checkboxes in this section, allow you to specify which properties will have a keyframe set for them. This is a convenient way of setting the appropriate keyframes if you want to eventually animate your layers. You can certainly do this from the main AE interface, but this is a bit more convenient and makes sure you set keyframes for all the necessary properties.

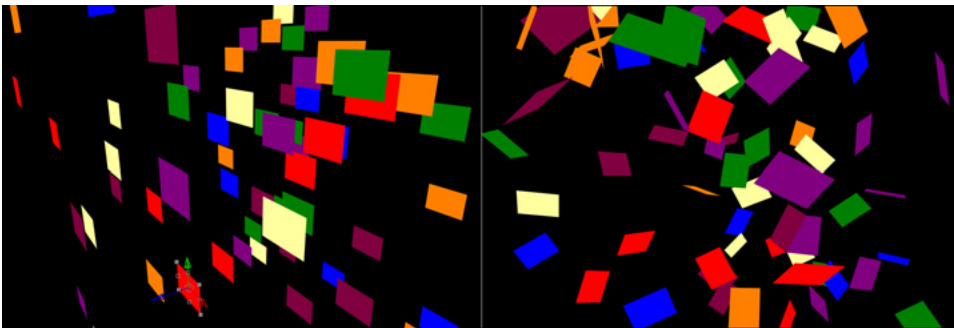
The position check box will set a keyframe for the Position property for all the selected layers, the Orientation checkbox will set a keyframe for the Orientation, and the Scale checkbox will set a keyframe for Scale property. Obviously all of these may not be necessary for your animation. If you're just moving your layers forewords or backwards in 3D space, you may only need to set Position keyframes. However, if you're transforming your layers from a box to a sphere, you'll need to set a Rotation keyframe as well.

This only sets keyframes at the point where the Time Marker is on the timeline. Remember to de-select them if you move to a different point in the timeline, but don't want to set keyframes. Once you turn them on, they stay on until you turn them off.

## Cubic Distribution Lite

Cubic Distribution distributes layers within a 3d space defined by a cube or rectangular area. It is not to be confused with Box Creator, which distributes layers based on the surface of a cube or rectangular solid. (For simplicity's sake, this shape will be referred to as a cube from this point forward, but it should be understood that the shape can also be a rectangular area.) To use the Cubic Assistant, select the 3d layers in your composition that you wish to distribute within a cube, and go to Window> Cubic Assistant Lite.

The layers are placed randomly throughout the 3D space. As you'll notice from the image below, layers are placed all along the three axes. Random orientation appears on the right side, while the same distribution with no orientation change appears on the left.



Cube Dimensions (Also: See Common Parameters)

These settings define the size of the cube in which the selected layers will be distributed. The size limitation of this cube is 1,000,000 x 1,000,000 x 1,000,000. Which would be a pretty big damn cube. Values of 2000-5000 are much more normal and practical.

Layers will then be randomly placed throughout this area. Every time you click Apply, the layers will re-position themselves. Just keep clicking Apply until you get a distribution you like, or adjust the cube size and re-position them. This is one of the great things about the Assistants... the ability to quickly and easily make changes and experiment to get the exact effect you're looking for.

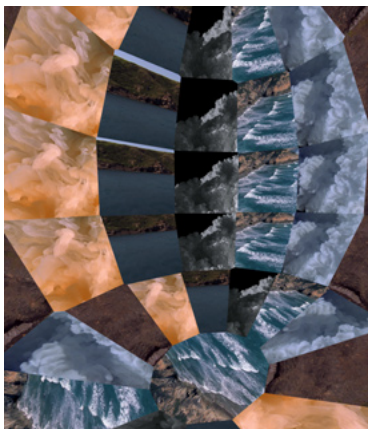
The Cubic Distribution Assistant provides a particularly valuable function. It allows you to easily create the illusion of 3D Space. It's difficult for any viewer to get a sense of the scale of the 3D world you're trying to create without reference layers. Usually these are layers off in deep space which no one will ever see up close, but they provide that important reference. Cubic Distribution provides an easy way of placing lots of these layers giving users that sense of 'depth' that's necessary to sell 3D space.

Layer Orientation - (See Common Parameters)

Options- Random Layer Selection (See Common Parameters)

Insert Keys See Common Parameters





## Inside Out

While viewing the shapes from the outside might be the initial reaction, try going inside. Here we have a view from within a sphere created with the Spheroid Creator. From the outside this looks like a bunch of intersecting layers (which it is). From the inside, it looks like a massive video wall or control room.

Use your imagination. There's many ways these can be put to use and we just scratch the surface in this manual.

## The Box Creator Lite

The Box Creator is for distributing layers based on the surface of a cube. This can be used to create cubes, boxes, tunnels, walls, and other effects. It is not to be confused with Cubic Distribution that distributes layers within a cube. To use the Box Creator, select the 3d layers in your composition that you wish to distribute on the surface of a cube, and go to Window> Box Creator Lite.

Options- Random Layer Selection See Common Parameters

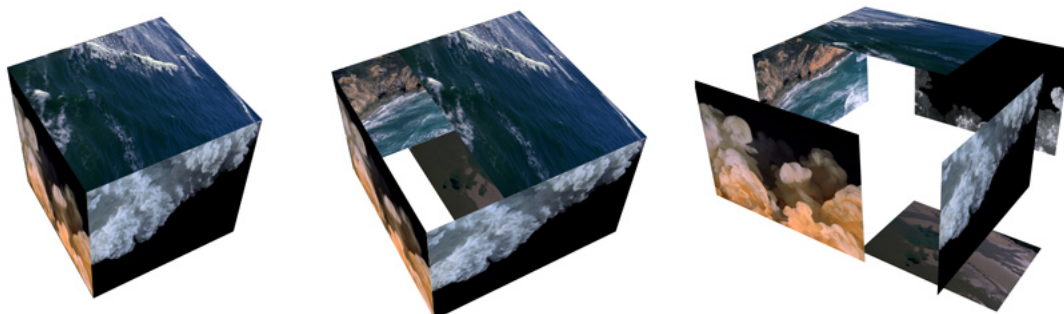
This setting will cause your selected layers to be placed on the surface of the cube in a random order, rather than in the order they appear in the time layout window. The usual layer order will be ignored completely.

### Box Dimensions:

These values represent the dimensions of the box that will serve as the template for layer distribution. Be aware of your layer sizes when using this assistant. A perfect cube can only be created when all the layers are squares, and are the same size. If you're layers are not square and the same size, you will see gaps where the edges don't meet perfectly.

This is a pretty important concept. If your layers aren't the same size, you're going to have difficulty creating a well formed shape. By that I mean a shape without gaps where the layers are aligned and the edges meet. Of course, this may not be an issue, depending on what you're doing. However, if it is, try using layers with similar dimensions.

Make sure you have enough layers to create what you want to build. A cube requires 6 layers, a tunnel may require 60. A little pre-planning and thinking about the number of layers and the size of the layers will go a long way to getting what you want. You can use the Repeat Layers option, but one way or the other, you need to get the right amount of layers.



The above image shows: 1) a well formed cube with square layers that are the same size, 2) A 'Fit Box To Layers' box with non-square layers, 3) a box with sides that are larger than the layers.

### Fit Box to Layers

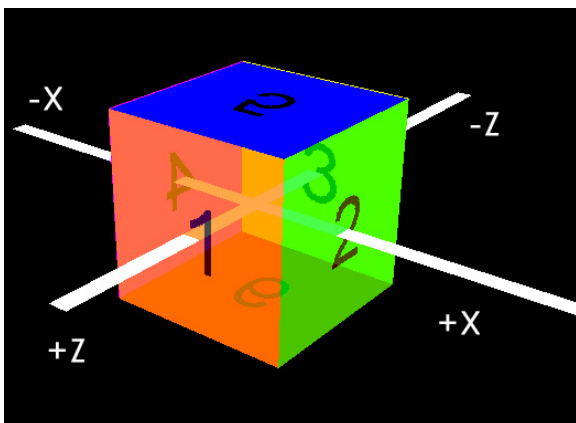
This setting will automatically size the box based on the dimensions of the selected layers. It is most effective when used to create a simple 3d cube or box using square layers. When using Fit Box to Layers, it is best to select the same number of layers as there are active faces (see below) on your cube. For instance, if you wanted to create a cube, you should select 6 layers; one for each face. If you wanted to create a box with no top or bottom, you would select 4 layers.

If the layers are not square, the assistant will make the best attempt to arrange them without the gaps being too large. However, any non-square layers will result in gaps and this is unavoidable. Again, make sure your layers have similar dimensions.

If you look at the second image in the above illustration, this was used to create that box.

### One Layer Per Side / Layer Order

This option will limit the box to one layer per active face. If there are extra layers selected, they will be ignored by the assistant. It's important to understand layer order for this assistant. The assistant will first place a layer on the front side, and go counter clockwise from there. The right side will get the second layer, the back will get the third, the left side will get the fourth layer, and the top and bottom will get layers 5 and 6. It will look like this:



All layers are placed in the center of the box side. If the box side is larger than the images, the images will be placed dead center in the sides of the virtual box. In this case you won't see the edges of the box as there'll be gaps. Use 'Scale Layers To Fit' to match the layers to the box size.\

### Scale Layers to Fit

## Animations

Remember that these were designed to assist with creating animations. There are many ways of creating interesting animations.

Try using the results of one Assistant as the basis for another one.

For example, use the Spheroid Creator to create a ring of layers. Then pull all those into one central point with the Linear Assistant. Make sure you have NONE selected in the orientation. Set a keyframe.

Now stretch those layers out, with the Linear Assistant again. Align them right next to each along one of the axes (this time changing the orientation).

When you animated, it looks like a deck of cards unfolding. Very neat effect.

This option will automatically scale the selected layers so that they match the dimensions of the cube. This is extremely useful if you're trying to make a perfect box. It'll scale the layers up to the required size. Use this option to make boxes out of layers whose sizes differ or whose dimensions don't match the desired box size. Of course, the problem here is that the layers are scaled, so they may not look distorted or pixilated.

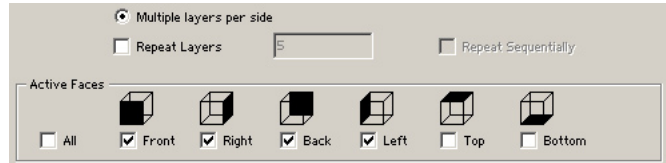
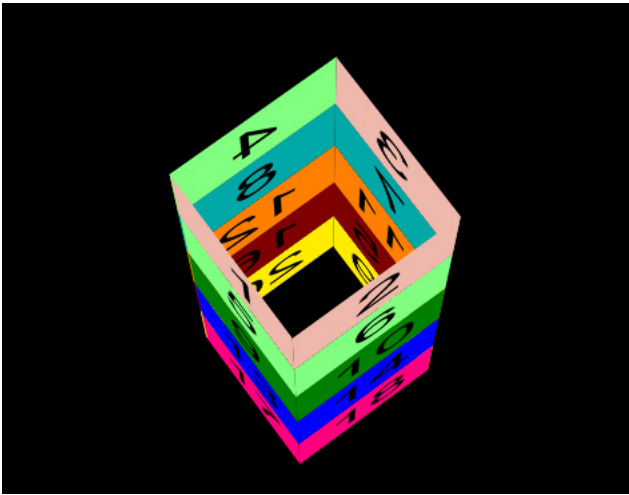
Again, it helps to prepare your files in advance, although where layers are only be scaled slightly it works fine. It also works great for creating cubes out of solids. Just create a solid of any dimension, repeat it 5 times and scale it to fit. Instant color box!

### Multiple Layers per side

Selecting this option will allow multiple layers to be distributed on each face of the cube. Unlike 'one layer per side' this positions the first image in the upper left corner (instead of the center) and places subsequent images clockwise around the side of the cube. Of course, in this case it behaves like the Matrix Creator when placing more than one layer on each side.



Here's an interesting use of multiple sides to create a four walled tunnel. Simply set the width of the box sides to match the width of your layers, make the box really tall, and turn off the top and bottom.

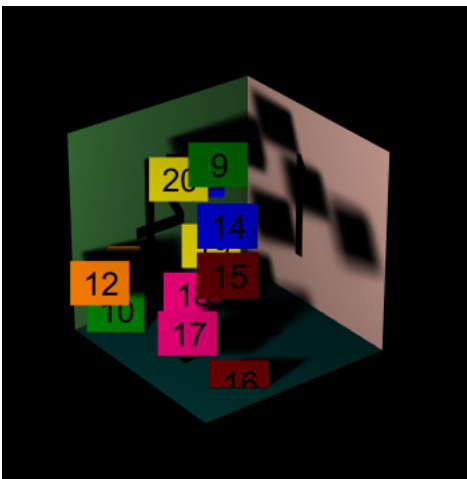


Repeat Layers See Common Parameters

### Active Faces

These settings decide which faces of the cube will be used for layer distribution. Selecting “All” will make all 6 of the cube’s faces active. Any combination of these faces can be selected. For example, if you wanted to make a box with no top, you would select front, right, back, left, and bottom.

This allows you some very cool flexibility with this. You can create tunnels, arrange layers to form rooms or whatever suits your fancy.



## Illusion of 3D

One of the things you need to do when dealing with 3D is to sell the viewer on the fact that you're in a 3D space. One way of doing this is to place elements far in the background and elsewhere within the 3D space, so viewers have reference points.

Most likely the viewer will never see these reference layers up close or even as much more than small rectangles of color. However, they're very important in letting your viewer get a feel for the scale of your 3D world.

The Cubic Distribution Assistant is great for placing layers randomly throughout 3D space. Making it very easy to create the sense of depth and space necessary to sell the effect.

## Orientation- Layers Face Outward, Layers Face Inward

Sometimes you want to be on the outside looking in, and other times you just want to be on the inside staring out. Regardless of where you choose to be, these options will let you see the layers correctly. If you're point of view is from inside the box, orient the layers inward. If they are oriented outwards, any writing or images on them will appear backwards. Likewise, if you're one of those nifty internet people who like to think outside of the box, orient your layers outwards. Can't really think about the box if you can't see the box and orienting the layers outward will cause everything to look correct.

Insert Keys See Common Parameters

## Cylinder Creator Lite

The Cylinder Creator is used for distributing layers based on the surface of a cylinder. The Cylinder Creator will attempt to create a cylinder based on the layers you give it. It arranges the layers in a circle with a given radius, and then stacks the rings of layers to form the cylinder. This works best if all the layers have the same width. Otherwise, the assistant can't keep all the layers inline and the cylinder ends up being a hodge podge of rings. This may be fine, but if not, make sure everything is the same width.

To use the Cylinder Creator, select the 3d layers in your composition that you wish to distribute on the surface of a sphere, and go to Window> Cylinder Creator Lite.

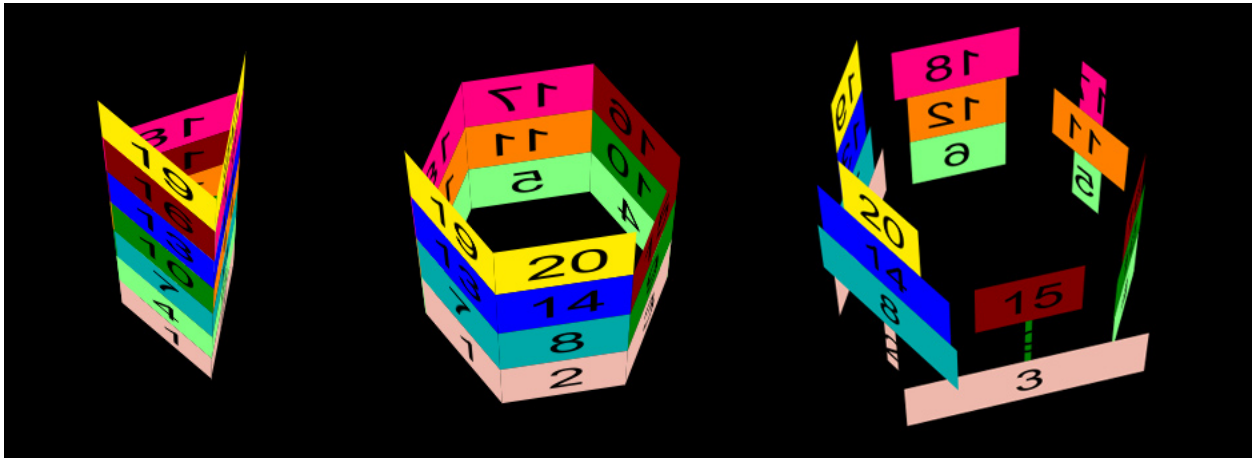
Dimensions/Bounding Box (Also: See Common Parameters)

### Radius Set By

This causes the radius to be determined by the first several layers in the timeline. The exact number is set by the value of the parameter. For example if you set it to 5, the first 5 layers in the timeline will be used to determine the radius of the first ring in the cylinder. This sets the radius for the cylinder and all subsequent rings of layers will approximately be this size.

When this is selected the 'Y' value of the bounding box is still active. This sets the height of the cylinder. The Assistant will calculate how the layers should be positioned around the cylinder, but you still need to tell it how high you want the cylinder and how frequently the rings should be placed vertically.

This is particularly effective when all the layers have the same width. The rings are all the same size and all the layers in the ring are the same distance from each other. If layers are different sizes then there's no way to create a perfect cylinder and you'll see gaps. As you can see in the image below, if the images aren't the same size (right-most image) everything is helter skelter. The left and middle images show cylinders with a radius of 3 and 6 layers respectively. In both those cases the images are the same size and the rings fit together perfectly.



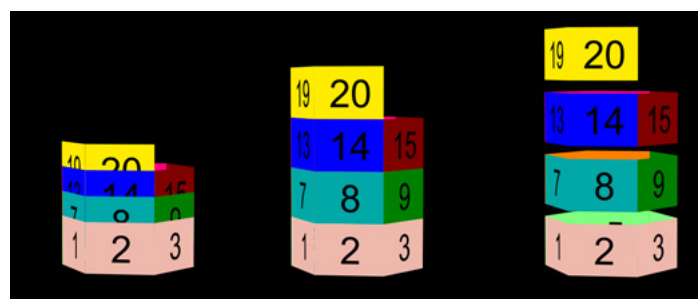
## Distribute Evenly

Choosing this option will result in the selected layers being distributed evenly around the surface of the cylinder as possible. Given the number of layers and the size of those layers, this may not always work great. Particularly with very oddly shaped layers or a lot of layers over a small surface. However, usually it will give you the most even distribution of layers across the surface of the sphere. Selecting this option also disables the 'Radius Set By', 'Distance Between Layers Vertically', and 'Frequency Of Layers' parameters.

## Distance Between Layers Vertically (Dist.) and Frequency of Layers Around Cylinder (Freq.)

These settings determine how far apart the layers will be distributed on the surface of the sphere. Dist. sets the vertical spacing of the rings of layers. You need to be aware of how many pixels high your layers are in order for this to work correctly. For example, if your layers are all 240 pixels high, and you want to create a seamless cylinder without any overlap, you'll need to set the Height min/max to 240. This will place a new ring of layers every 240 pixels. Since you're layers are 240 pixels high, this creates a seamless cylinder.

In the image below, the left-most image has the Dist. set to a smaller value than the height of the layers, the middle image has it set to exactly the height of the layers, and the image on the right has it set to a value that's larger than the layer height.





Freq. determines how often a layer gets placed around the diameter of the cylinder. This is the angle at which a new layer is placed. If it's set to 30, then a new layer will get placed every 30 degrees. The smaller this value, the more dense the cylinder will be, as it's basically increasing the resolution of the cylinder diameter. Of course, depending on the size of your layers, this will potentially introduce more overlapping of layers.

Freq. is turned off if 'Radius Is Set By' is turned on, since the radius is determined by how many layers are selected. In that case the angle is going to be determined by the size of the layers and how many of them there are.

## Orientation

The two choices for layer orientation in the Cylinder Creator are Inward and Outward. Inward will cause layers to be oriented towards the center of the sphere, while Outward will cause layers to be oriented away from it.

The way they should be facing is really a matter of where the camera is at. If the camera is inside the cylinder, most likely you'll want to see the layers facing you. If you want them facing you and readable you need to have them facing inward. If they're facing outward any text or image will appear backwards.

If the camera is outside the cylinder and you want the layers looking normal, have them facing outward.

If the camera is flying around outside and inside and all over the place then you're screwed. You'll just have to deal with seeing the backside of the layers. Oh, the humanity!

Random Layer Order- See Common Parameters

Repeat Layers- See Common Parameters

Insert Keys- See Common Parameters

## Resources

Most of the training tapes and books cover concepts that can be used no matter what version of AE you're using. Don't think that just because it's for AE 5.5 that it's not any good. The AE programmers do a great job of building on prior versions so that your knowledge (and these training materials) don't get obsolete.

### Training Tapes/DVD

Total Training ([www.totaltraining.com](http://www.totaltraining.com)) - Probably the best training resource out there. Total AE 5.5 is like having a world class instructor always on hand. Not too mention they use the Cylinder Creator in the opening sequence of the DVDs!

### Books

Creating Motion Graphics with After Effects by Trish and Chris Meyer

After Effects In Production by Trish and Chris Meyer

The two Trish & Chris Meyer books together make the best printed training resource out there. Extremely comprehensive and you can get a couple free Digital Anarchy filters on them!

Creative After Effects by Angie Taylor

AE Magic by Mark Christianson and Nathan Moody

### Web Sites with forums and tutorials:

Creative Cow: [www.creativecow.net](http://www.creativecow.net)

Digital Media Net Forums: [www.dmnforums.com](http://www.dmnforums.com)

Adobe User to User Forums: [www.adobe.com](http://www.adobe.com)

2-Pop: [www.2-pop.com](http://www.2-pop.com)

### User Groups

Motion Graphics - Los Angeles: [www.mgla.org](http://www.mgla.org)

Bay Area Motion Graphics User Group (San Francisco): [www.bamg.org](http://www.bamg.org)

Toronto AE User Group: [www.mograto.com](http://www.mograto.com)

