

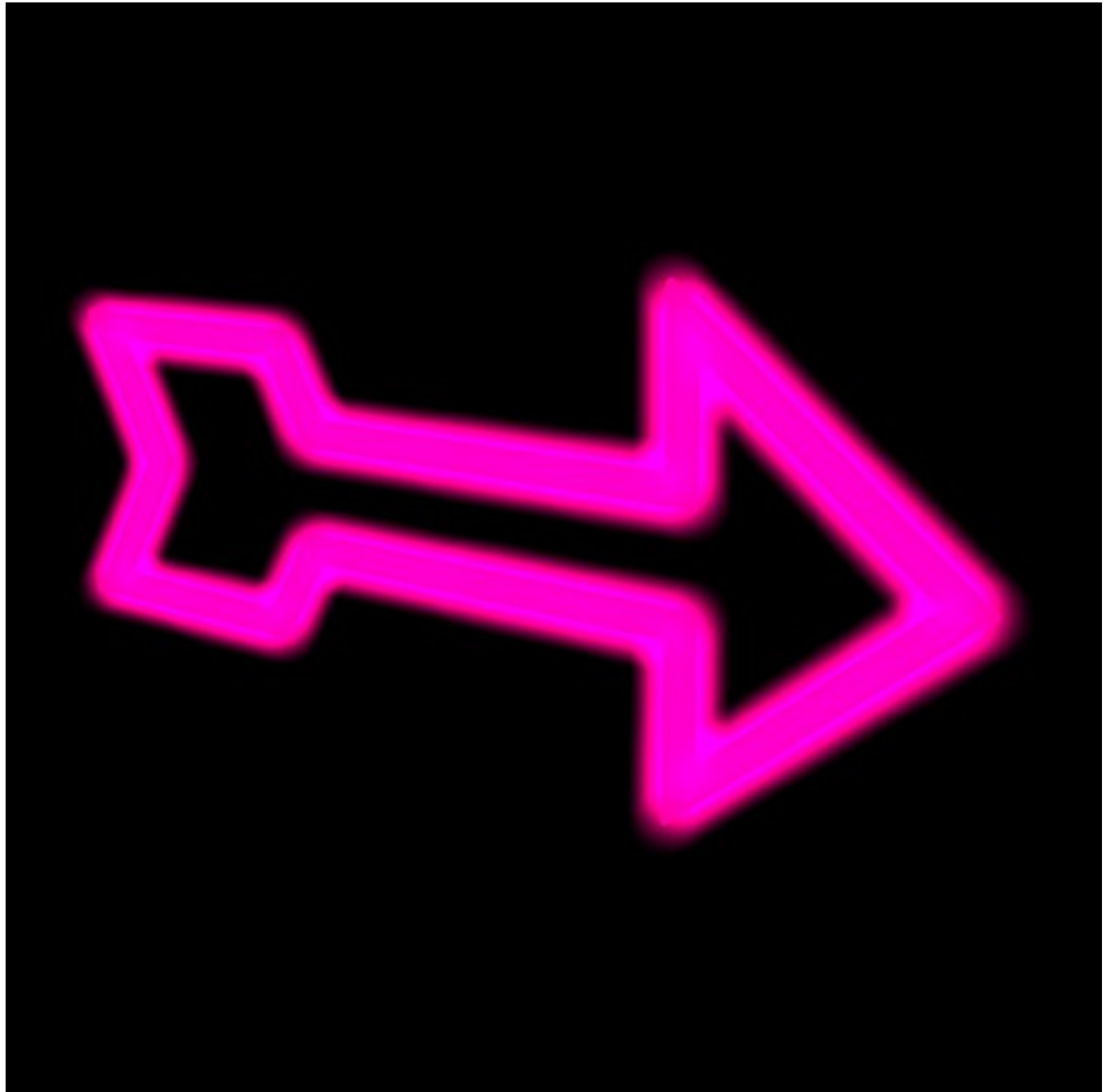
ArrowMaker

A plugin for Cinema 4D

Version 1.2

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For the latest version please go to
<https://microbion.co.uk/html/arrowmaker.htm>



ArrowMaker

What it is

A plugin to generate arrow shapes as a spline primitive.

What you need

Cinema 4D R14 or later

Windows 8/10/11 64-bit; Mac OSX 10.4 or later

How to install it

Unzip the correct archive for your version of C4D. **Make sure you have the right file.** Versions are supplied for R14 through to R19 (which will also run on R20 and R21 using the INSYDIUM Bridge plugin) plus separate versions, not requiring the Bridge, for R23/S24 and R25.

Unzip the archive into the plugins folder of Cinema 4D. Be sure to preserve the directory structure.

Using ArrowMaker

1. Select 'ArrowMaker' from the plugins menu in Cinema 4D
2. An ArrowMaker object appears in the object manager and a spline primitive in the shape of the default arrow appears on screen
3. Play around with the parameters until you get the shape you like

The parameters

The diagram on page 5 shows the effect of most of the parameters. The two not covered there are Tail taper (start) and Tail taper (end). These taper the tail either from the start (so the tail nearest the head gets narrower) or the end (so the tail at the flight end gets narrower). See the example images for details.

Object tab

There are check boxes to turn various options on and off, these are:

1. Double-headed arrow. Makes a symmetrical arrow with two heads. The tail and flight parameters are not applicable to this type of arrow and are therefore unavailable. You do have two other parameters to play with – the distance between the two heads and the height of the linking bar between them.
2. Straight barbs. Switches between the default arrowhead and a barb with parallel edges. If turned on, the barb width can be set.
3. Right-angled: only available if 'Straight barbs' is checked, this will cause the top of the barb to be drawn at right angles to the sides (easier to try it out than to explain!).
4. Tail. Turning this off will leave the arrow as the head only. The tail and the flights are turned off.
5. Flights. Turning this on will draw flights on the arrow. The flight height, width, and offset can then be set.

The other parameters are all pretty self-explanatory and are shown in the diagram on page 5.

Also on this tab you see two buttons – ‘Load arrow...’ and ‘Save arrow...’ which let you load and save arrow presets. If you make an arrow you like, you can save it for future use by clicking the ‘Save arrow...’ button. You can give the arrow a name by entering it in the ‘Arrow name’ box, but this is entirely optional. The name doesn’t alter the name of the object in the Object Manager, it’s just there so you can see which preset you loaded.

By default these are saved in a folder called ‘presets’ located in the ArrowMaker plugin folder, but you can save them anywhere. These are very small binary files and so can’t be read with a text editor. A number of presets are included for your delectation and delight, including a default arrow which you can load to reset all the parameters back to their default state.

Important: presets saved with ArrowMaker 1.1 are in a different format to those saved in 1.2. If you have 1.1-style presets, these can still be loaded in 1.2 without problems, but version 1.1 of the plugin will not load version 1.2 presets.

Finally, there is a button ‘Reset arrow’ which resets the arrow to its default shape.

Automation tab

This tab lets you do a number of possibly useful things with your arrow. There are three buttons, which have the following effects.

1. Add to Extrude NURBS

Clicking this button will create an Extrude NURBS and drop your arrow into it, unless the arrow is already a child of an Extrude NURBS in which case this button has no effect. For convenience, if you click ‘Fillet caps’ the Extrude object will be given filleted caps with a default radius (five units) and number of steps (five). You can turn filleting on or off at any time by checking or unchecking this box. It will work whether you added the arrow to the Extrude manually or used the button in ArrowMaker.

NOTE: the following functions will not work if you don’t have the MoGraph module installed.

2. Add to MoGraph Cloner

Adds the arrow to a Cloner object. There are several options. If you check the box ‘Add to Extrude NURBS first’ the arrow will be added to an Extrude NURBS and the Extrude object dropped into the Cloner (unless the arrow is already a child of an Extrude NURBS, in which case the existing Extrude object is added to the Cloner). Checking (or unchecking) this box *after* you add the arrow to a Cloner has no effect, so this cannot be animated, but if you didn’t check the box before clicking the button you can still use the ‘Add to Extrude NURBS’ button described above even after the arrow has been added to a Cloner.

You can also set the clone count by using the ‘Clone count’ field, and you can change the count even after you add the arrow to the Cloner, so this parameter can be animated.

If you want to clone the arrow along a spline, you must check the box 'Clone along spline' AND drop a spline into the 'Spline' link field. If you don't provide a spline, clicking the button has no effect. You can change the spline at any time, so you can flip between splines during an animation, for example. You can also change the 'Rate' value – this links directly to the Cloner's Rate parameter, allowing you to change the animation speed without going into the Cloner itself.

The checkbox 'Align to spline' will try to align the arrow correctly along the spline. You can check this before or after you click the 'Add to MoGraph Cloner' button, but it is checked by default as this seems the most desirable setting.

Note that if you have cloned the arrow along a spline, unchecking the box 'Clone along spline' will not undo the operation – use Undo or Ctrl-Z/Cmd-Z to do that.

3. Add Spline Wrap Deformer

This button will add a MoGraph spline wrap deformer to the arrow, as a child of the arrow. If you check the box 'Add to Extrude NURBS first' the arrow will be added to an Extrude NURBS and – this is important – the deformer will be added to the Extrude, not the arrow, because adding it to the arrow when the arrow is in an Extrude NURBS produces erroneous results. Checking (or unchecking) this box after you add the arrow to a Cloner has no effect, so this cannot be animated.

You must provide a spline in the 'Spline' link field BEFORE you click the button. If you don't, clicking the button has no effect.

If you add a spline wrap deformer to the arrow, *then* click the 'Add to Extrude NURBS' button described above, ArrowMaker will remove the deformer from the arrow and add it to the Extrude object instead.

There are two additional parameters. By default, 'Keep length' is checked; this is linked directly to the same parameter in the deformer, and seems the most logical setting for this type of object. You can turn it off at any time if desired. Finally, the option 'Set intermediate points to Natural' changes the interpolation of the ArrowMaker object from whatever it was (Adaptive, by default) to Natural. This gives a smooth deformation whereas Adaptive interpolation does not (depending on the spline you are wrapping the arrow around, you may need to increase the number of points in ArrowMaker's object tab). Again, this can be turned off if desired.

PLEASE BEAR IN MIND that all the settings and buttons on the Automation tab are purely for convenience as a workflow enhancement. They have no effect on the arrow shape and are not saved as part of an arrow preset.

In the 'scenes' folder of the ArrowMaker plugin folder, you will find two very simple scenes which were set up in a few clicks using the Automation tab. They're not exactly earth-shattering animations, but give an idea of what can be done and how quickly something like this can be built in ArrowMaker.

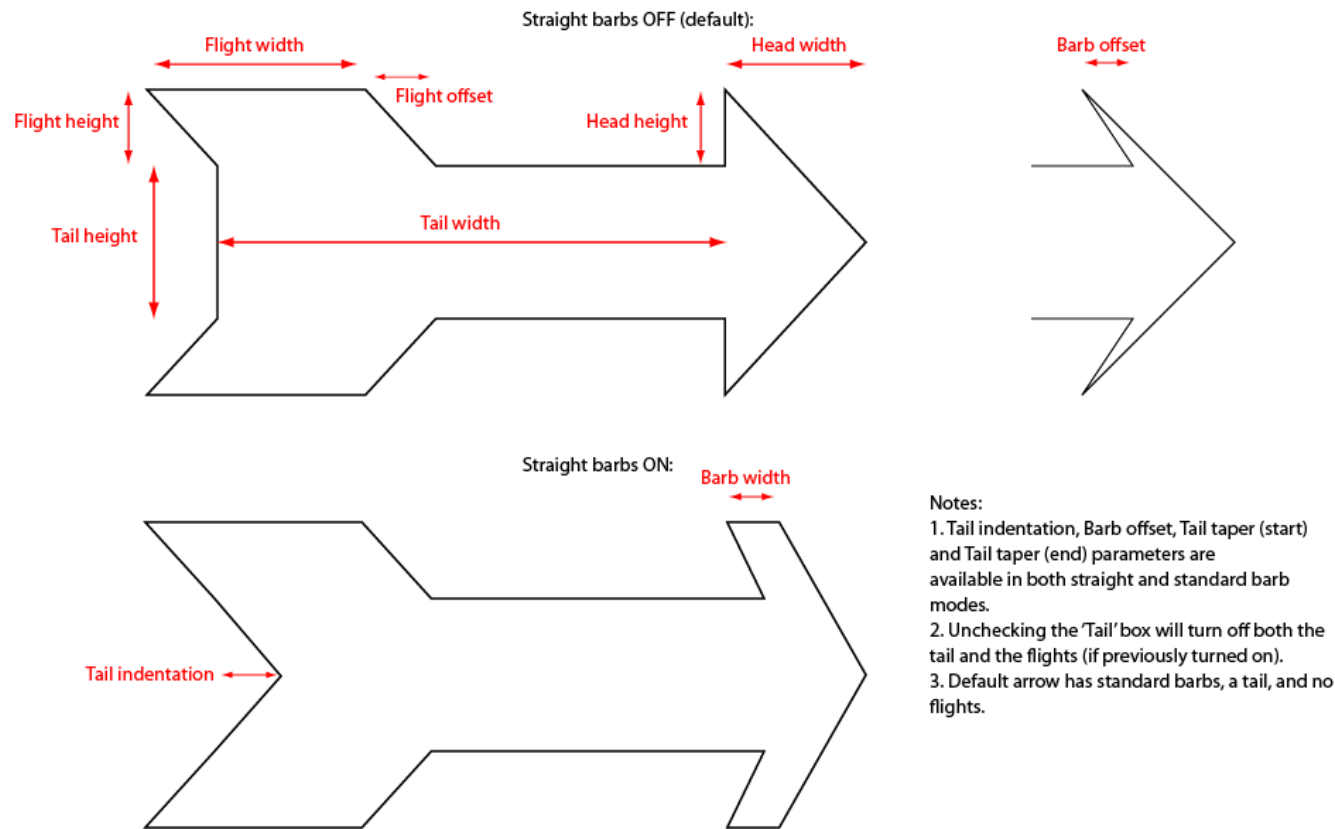
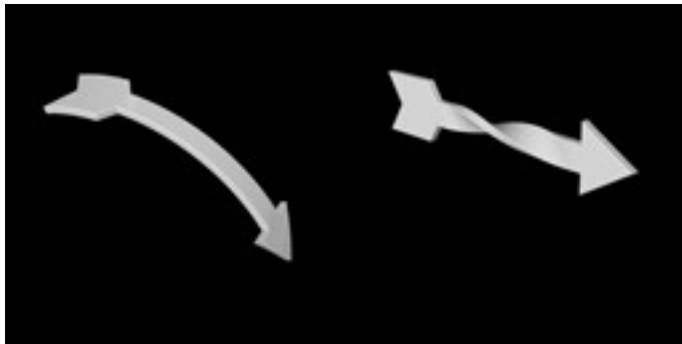
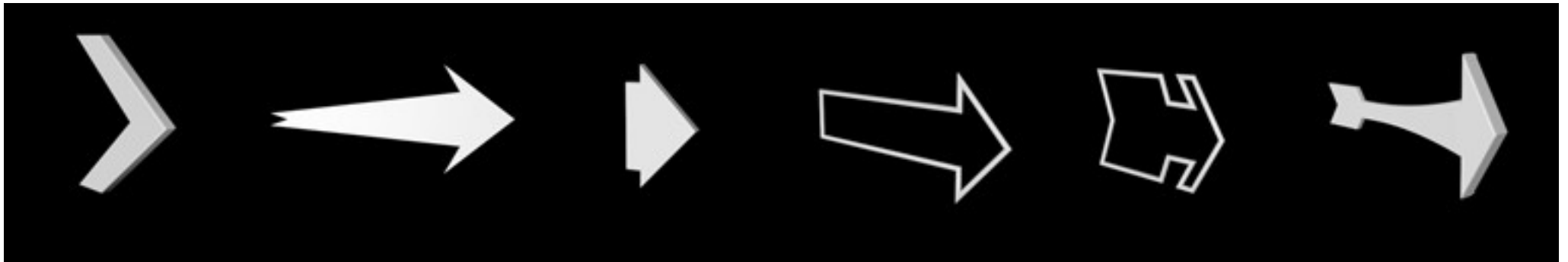


Figure 1. The various settings for the arrow to change its shape.

I recommend that you play around with these parameters to see what they do! Altering one parameter may have an apparent effect on other parameters, so you will need to tinker with them to get the effect you want.

Examples

The last page shows some examples of the sort of thing you can make. All these arrows are made by ArrowMaker without additional modification, except where stated. They are used in Extrude or Sweep NURBS to get the actual mesh.



All arrows are made by altering ArrowMaker settings only, apart from the last three which have deformers attached.

A number of presets are included with ArrowMaker, some of which were kindly supplied by Mike Abbott, who also made some suggestions for enhancements to the plugin. My thanks to Mike for allowing me to include his presets with this release.

Legal stuff

I really hate these things. I make free software, you use it, what's the problem? Unfortunately we live in a world where everybody seems to reach for their lawyer at the drop of a hat. The only purpose of what follows is to emphasise that if you use ArrowMaker, you do so at your own risk, as I don't guarantee that it will or won't do anything. So please don't sue me if it doesn't work for you.

THIS PROGRAM IS PROVIDED "AS IS" AND WITHOUT WARRANTIES AS TO PERFORMANCE OF MERCHANTABILITY OR ANY OTHER WARRANTIES WHETHER EXPRESSED OR IMPLIED.

Because of the various hardware and software environments into which ArrowMaker may be put, NO WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE IS OFFERED.

Good practice indicates that any program be thoroughly tested with non-critical data before relying on it. The user assumes the entire risk of using the program and the author cannot be held liable for any damage to or loss of critical data, program or operating system files, hardware, or any other content or aspect of the user's computer system.

In plain English, this means that use of ArrowMaker is your own responsibility. If the program trashes your system, or crashes when manipulating critical data, you take the responsibility. Microbion Software and the program's author accept no responsibility.

Hopefully nothing like this will happen, but in today's litigious climate such disclaimers are a necessary evil.

Contact details

If you have any suggestions for enhancements to ArrowMaker, or to report a problem, you can contact me through my website at <https://microbion.co.uk/html/contact.htm>.

The latest version of the plugin is available on my site at <https://microbion.co.uk/html/arrowmaker.htm>.

Enjoy!

Steve Pedler
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