

Stickman & Elemento

Manual

Stickman 5.5

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About Stickman

My name is Sven Nilsen and I'm the creator of Cutout Pro Stickman & Elemento. Cutout Pro is my company, not the software as many think.

“Cutout” is the name of an animation genre, where you move 2D surfaces frame by frame to create movement. I added “Pro” because the software use modern techniques like keyframes. “Pro” stands also for “professional” and “programs”.

“Stickman” is the name of the animation editor.

“Elemento” is the name of the figure editor.

When I speak generally, I some times use “Stickman” instead of “Stickman & Elemento”.

In this manual, I use **LMB** for the left mouse button, **RMB** for the right mouse button and **MMB** for the middle mouse button.

Actions and buttons are marked **bold**. Example **F1**.

Path are marked *italic*. Example *My Documents\stickman*.

It is recommended to read the Stickman documentation first and then Elemento, since Stickman describe the basics while Elemento is more advanced.

Introduction to Stickman

In Stickman, you add figures and animate them to create an animation. One scene is saved in one st5 file.

To start Stickman, goto **Start Menu**, select **All Programs** and then **Stickman & Elemento**. In the section **Animate**, select **New Scene**.

A new window will appear with title “Stickman (version) (document)”.

If you have version 4, you cannot open st5 files. Stickman 5 can open st4 files.

The latest version is accessible at www.cutoutpro.com.

Since Stickman edits one scene per file, you need an external video editor to put the scenes together. For example MovieMaker, Adobe Premier or Sony Vegas. Stickman comes with a simple video software called “Movie Editor”. This can be used for simple projects or if you do not have another video editor.

The F1-10 buttons in the toolbar represent tools. You can use the keyboard to access the tool directly. Hold the mouse cursor over each button to read the name of the tool.

F1	Design Camera Tool	Move the camera view of work area
F2	Select Tool	Select a figure by clicking
F3	Color Tool	Change the color of vector graphics
F4	Control Points	Move figure control points
F5	Switch Tool	Change figure switches

F6	Matrix Tool	Move, rotate and flip figure
F7	Path Tool	Fine tune figure animation path
F8	Camera Tool	Animate camera movement
F9	Speaker Tool	Add sound and sound triggers
F10	Volume Tool	Animate pan and volume of sound

The work area is the area of the window where you look into your animation scene.

Each tool has HowTos. To access the HowTos, select the tool first, then select **How To...** in the upper right corner of the work area.

To add a figure from library, goto **Figures** at the right side of the screen. Select **Add...** and pick a figure.

To select a figure, goto **Figures** at the right side of the screen and select it in the list. You can also goto **F2** and click on the figure you want to select. If you have a three buttons mouse, you can use **MMB**.

To position a figure, select **F6** and drag in the work area with **LMB**.

To rotate a figure, select **F6** and drag in the work area with **RMB**.

To resize a figure, select **F6** and drag one of the corner or edges in the matrix grid. You can also use **Shift+RMB** and drag to resize.

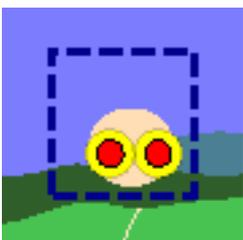
To flip a figure, select **F6** and drag one of the edges to the other side. You can also goto menu **Animation** and select **Flip Horizontal** or **Flip Vertical**.

TIP: If the selected figure is not visible in the work area, goto **Camera** and select **Goto Selected Figure**.

Control points are used to control arms and legs. To move control points, goto **F4** then **Control Points** at the left side and select a group of control points. Then select a control point in the work area and drag it with **LMB**.

If you want to lock a control point to it's position, select **F4** and hold **Ctrl** and select a control point. To unlock, just select the control point.

To select more than one control point, select **F4** and press **LMB** in a empty space, then move the mouse until you have the control points inside the rectangle.



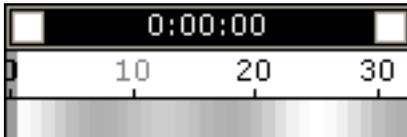
To move more than one control point, select **F4** and drag with **RMB** in the work area.

TIP: You can hold **Shift** to keep the selected control points and select more.

TIP: If you have more than one control point selected, and some of the overlap, some yellow help control points will appear that let's you move one of the control points individually.

To add a key frame, select an **empty frame** in the time line and **double-click**. You can also use the **Add Key** button in the lower left of the screen.

To zoom the time line, drag one of the white boxes in the black scrollbar.



If you want precision scrolling with the time line, drag with **RMB**. Do you want to scroll fast, use the red offset button.



TIP: The offset button is used to navigate the time line in scenes with many frames.

TIP: Drag with **LMB** in the time line to preview the animation frame by frame. This is useful to get a feeling of how the animation will be.

To set the start and end of the animation, select **F1** then goto **Animation Limits** and then set **Start** and **End**.

To preview the animation, hit **Space** or the **Preview** button in the lower left area. To stop preview, hit **Space** or push the **Preview** button again.

Stickman plays all the frames from **Start** to **End** by default. You can choose to play only the visible frames in the time line. To play only the visible frames in the time line, goto menu **View** then **Preview: Time Line**. To change back goto menu **View** then **Preview: Animation**.

Stickman uses 25 frames per second for all scenes. You can choose another frame rate when exporting the animation to a movie file. Exporting animation to a movie file is called “rendering”.

To render the animation, goto menu **File** then **Export** and select a rendering option:

Easy Rendering	Quick setup for small movie, cinema or web rendering
Advanced Rendering	Render to video, vector or single frames
Sprite Sheet	Render to a single PNG image for use in 2D games
Single Frames	Render to one PNG image per frame
Animation Data	Export data for use in game engines.

Stickman has two types of cameraes. One is the design camera that is used to look through when working with on the animation.

To move design camera, select **F1** and drag with **LMB** in the work area.

To rotate design camera, select **F1** and drag with **RMB** in the work area.

To zoom design camera, select **F1** and drag with **Shift+LMB** in the work area.

The other type of camera can be animated.

To move animated camera, select **F8**, goto **Cameraes** and select a camera, then drag with **LMB** in the work area.

To rotate animated camera, select **F8**, goto **Cameraes** and select a camera, then drag with **RMB** in the work area.

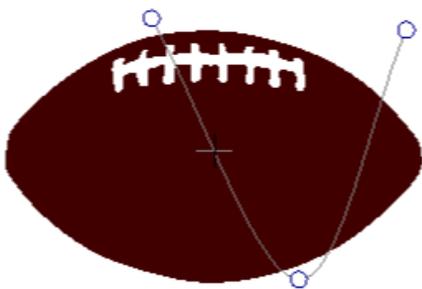
To zoom animated camera, select **F8**, goto **Cameraes** and select a camera, then drag with **Shift+LMB** in the work area.

You can add sound to the animation. To add a sound, select **F9**, goto **Sounds** then select **Add...** and pick a sound file and select **OK**. If the sound file is not in WAV format, it will be converted.

After you have added a sound, you need to add a keyframe in **Speaker Tool** to start the sound. To start a sound, select **F9** then goto **Sounds** and select a sound then add a keyframe to the time line.

To animate the volume and pan of a sound, select **F10** then goto **Sounds** and select a sound. Then add a keyframe and goto **Volume** then set the volume and pan.

If you have more than one keyframe in **Matrix Tool**, you can use the **Path Tool** to change the path. Each keyframe is displayed as a white dot. To use the Path Tool, select **F7** then goto **Figures** and select a figure. Add two key frames and position them by **select & drag** in the work area.



To animate a switch, select **F5** then goto **Figures** and select a figure. Then goto **Switches** at the left side and select a switch. Click with **LMB** in the work area to increase the switch value. Click with **RMB** in the work area to decrease the switch value. To reset the switch value, hold **Shift** and click with **LMB** in the work area.

TIP: When animating a mouth, you can add the sound first, then use Switch Tool to set the mouth positions. Some figures has control points that controls the mouth instead of a switch. When you drag with **LMB** in the time line, you hear the sound frame by frame.

TIP: You can use 0-9 at the keyboard to set the switch value directly.

A “container” is a matrix layer inside a figure. Containers are used to create relations or display a figure inside another figure.

Make a figure pick up items and carry them can be hard in most animation software. But not in Stickman! Stickman uses something called “relations”. The item that is picked up, has a relation to a container in the parent figure. To add a relation, select **F6** and goto **Figures** then select a figure then goto **Animated Relation** and select [/]. Select a container from the popup menu.

TIP: Finish the animation of the figure before creating the relations. Animate the item that is carried in the end.

TIP: Animated relations are displayed in the time line as yellow triangles.

To change the display order, goto **Display Order** and select a figure then select **Up** or **Down**.

To display a figure inside another figure, goto **Display Order** and **drag & drop** a figure on another figure then select a container from the popup menu.

TIP: Display order changes are applied to the selected frame. Changes are displayed in the time line as yellow triangles.

Introduction to Elemento

Elemento is used to build figures and backgrounds for Stickman. Each figure is saved in an elemento file.

To start Elemento, goto the **Start Menu** and select **All Programs**. Then select **Stickman & Elemento**. In the **Build Figures** section, choose **New Figure**.

TIP: You can choose **Open Figure** if you want to open an existing figure.

The figure library is saved in *My Documents\stickman\packages*. Each folder represents a figure package.

To create figure package in the library, goto *My Documents\stickman\packages*. **Right-click** and choose **New** and then **Folder**. Give it a name.

In Stickman, you can add a figure from the local disk by goto **Figures**, then choose [...] button beside **Add...**

F1	Selection	Edit selected element
F2	Control Points	Move figure control points
F3	Bones	Add new bones to the figure
F4	Switches	Change figure switches
F5	Camera	Move the camera view
F6	Placement	Move the figure offset
F7	Debug	Test the figure in run time

The work area is the area of the window where you look at the figure.

Each tool has HowTos. To access the HowTos, select the tool first, then select **How To...** in the upper right corner of the work area.

To import Photoshop Layers, goto **File** then **Import** and then **Photoshop Layers**.

To import an image, goto **Toolbox** then **Drawing** then double-click **image**. Goto **Actions** then **Open File** and select **Open...**

There are many kind of layers in Elemento. The most common in matrix. A matrix layer can be moved, rotated and flipped.

To create a new matrix layer, goto **Draw Order** and select **New Layer**.

To drag an image into a layer, create an image and a matrix layer and then goto **Draw Order** and **drag & drop** the image on the layer.

TIP: When creating figures, create one layer per body part and rename them. Example “leftHand”, “body” or “head”.

To create a new bone, goto **F3** and choose **Add Control Point** on the left side of work area. Add two control points. Then select **Add Bone** on the left side and **drag & drop** from one of the control points to the other.

To test the figure, select **Debug** in the toolbar. Changes in debug mode will not affect the figure.

TIP: You are not done after creating skeleton. You also need to attach the graphics to the control points.

TIP: Rename the control points to make it easier to identify. Example “leftHandPoint”.

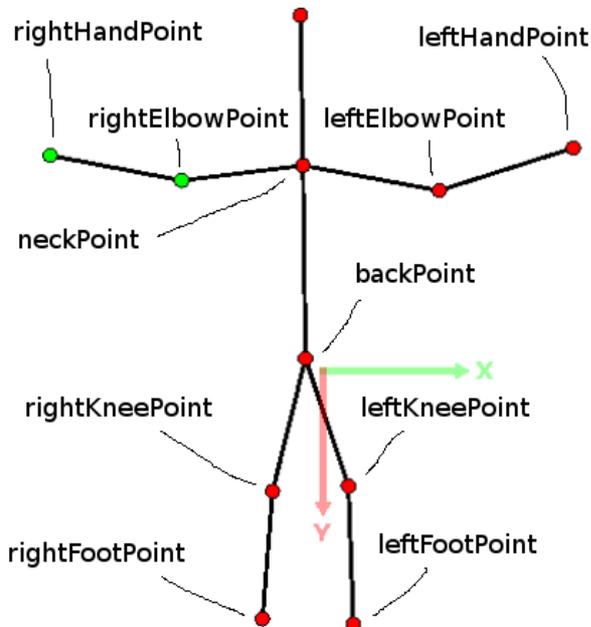
To rename a control point, goto **Variables** and select the control point. Then hit **Ctrl+R** and give it a new name.

You can choose your own names for the control points, but if you want to use the Walk Tool in Stickman, use the following standard:

leftArmPoint or The left hand control point (or at the wrist)

leftHandPoint	
rightArmPoint or rightHandPoint	The right hand control point (or at the wrist)
leftElbowPoint	
rightElbowPoint	
leftOverarmPoint or leftOverArmPoint or leftShoulderPoint or neckPoint	The left shoulder control point Use "neckPoint" if building a stick figure
rightOverarmPoint or rightOverArmPoint or rightShoulderPoint or neckPoint	The right shoulder control point Use "neckPoint" if building a stick figure
leftFootPoint	The left foot control point (or the heel)
rightFootPoint	The right foot control point (or the heel)
leftKneePoint	The left knee control point
rightKneePoint	The right knee control point
leftOverlegPoint or leftBackPoint or backPoint	The left hip control point Use "backPoint" if building a stick figure
rightOverlegPoint or rightBackPoint or backPoint	The right hip control point Use "backPoint" if building a stick figure

Stick figure example:



A more advanced figure:

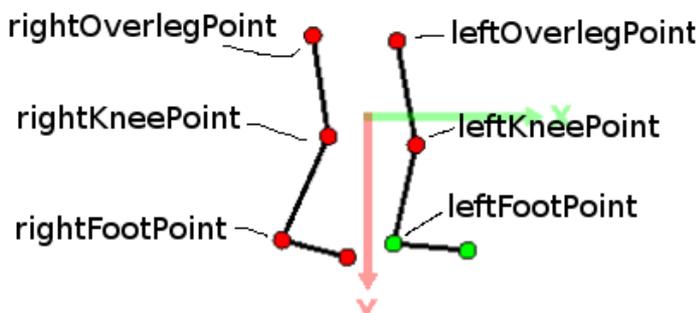
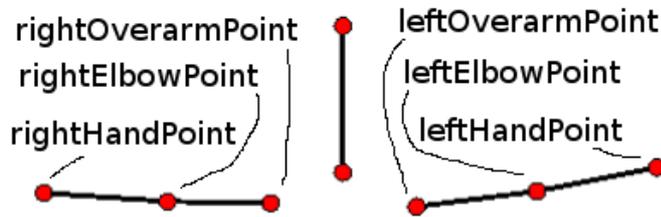
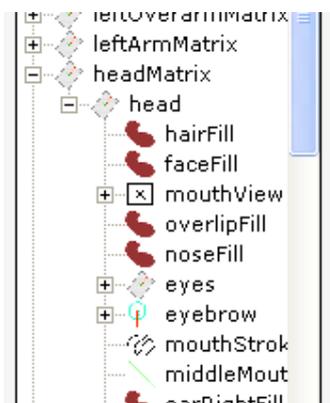


Image and vector graphics are not attached to skeleton. Instead, you put the image or vector graphics inside matrix layers. The matrix layers are then attached to the skeleton, or to be more exact, to two control points per layer.

To attach a matrix layer to two control points, goto **F1** then goto **Draw Order** and select the layer. Goto **Actions** and select **Attach** and then select **Points** and then **Next** and the select one control point from each list and then **Attach**.

The attach action creates a new matrix layer and links it to the control points using expressions. Then it puts the selected matrix layer inside the new matrix layer to attach the graphics.



TIP: “headMatrix” is attached, and since “head” is inside “headMatrix” it will inherit the transformation of the parent.

All body parts need to be attached to control points in order to move when the control points are moved.

When you have more than two control points that you want to connect, use rigid. Rigid elements are used in bodies to constrain the control points relative to each other.

To setup a rigid element, goto **Toolbox** then **Misc** and double-click **rigid**. Then goto **Actions** and select **Setup** and then **Select...** and select the control points and then **OK**.

You don't need to attach each matrix layer individually if your figure is modelled in T-pose. You can simply add the control points and goto menu **Edit** and **Create Skeleton and Attach Graphics**. This function creates bones and rigid automatically and attaches the matrix layer to the control points. If something wrong happens you can select **Undo** and try again.

TIP: If you have forgotten to group the graphics into matrix layers, the **Create Skeleton and Attach Graphics** function will create layers for you. Do you have more than one graphic element per body part, group them into one layer beforehand.

A deform layer can bend graphics using three or more control points. It's often used with tails or clothes. To setup a deform layer, goto **Toolbox** and select **Layers** and then double-click **deform**. Then goto **Draw Order** and **drag & drop** the graphics on the deform layer. Then select the deform layer, goto **Actions** and select **Setup** and then **Skip** and then **Select...** and select the control points you want to deform with and then **OK**.

To create a tail or a rope, you need to use the rope element. Goto **Toolbox** then **Misc** and double-click **rope**. Then goto **Actions** and select **Setup** and the **Select...** and select the control points and then **OK**.

TIP: When setup a rope element, the control points order under **Draw Order** is significant. They must be ordered from one end to the other. Example point1, point2, point3 ...

TIP: When working with skeleton and graphics, I always use **Debug** to check whether the setup is correct. If I do something wrong, I use **Undo** and then fix the problem.

After you have rigged your character, you may want to constrain the movement on feet or hands. This is why we have feedback elements. It is easier to work with feedback if you already have a bone element.

To setup a feedback element, goto **Variables** and select a bone element then goto **Actions** and select **Convert to Feedback** and then select matrix "leftHandMatrix" if you have attached "leftHand" and then select relative matrix "leftArmMatrix" if you have attached "leftArm". Then select "Set Limits" and then set the **Min** and **Max** angle and click **OK**.

TIP: If you have forgotten to rename the matrix layers, you can select **F3** and then goto **Variables** and select one matrix layer. If the matrix is attached the control points will turn green in the work

area. Example headPoint and neckPoint are green, you can rename the matrix to “headMatrix”.

“References” are links between properties. For example “curve1.Brush” can have a reference to “skinBrush.Brush”. When “skinBrush.Brush” changes, “curve1.Brush” will change too. References are updated in design time only.

“Expressions” are also links between properties. But expressions can have a complex logic. For example “leftEyeMatrix.Offset” can have expression “Inside(leftEyePoint.Pos;Point(10,76233;-33,18386);3)”.

To create an expression, goto **Variables** and select a variable then select a property and select **Code Editor...**

TIP: Expressions use the same syntax as spreadsheet applications like Excel.

To view all available expression functions, goto menu **Help** and then **Object Browser**.

Expression examples:

point.Pos Point(10;20)
Returns a position with x value 10 and y value 20.

point.Pos Closest(line1;.Pos)
Returns the closest position of the control point position at line1. This is used to “lock” a control point to a line. You can use the **Lock to Line** action on control points to create this expression. “.Pos” means the expression refers the the owners property. “point” cannot refer to “point.Pos” in the expression. Use “.Pos” instead.

matrix.Offset Inside(point.Pos;Point(0;0);20)
This expression returns a position inside a circle with Point(0;0) as the center and radius 20. It is often used to constrain an eye inside a circle.

matrix.Rotate Rotate(neckPoint.Pos;leftBackPoint.Pos;Rotate)
Returns the angle between neckPoint.Pos and leftBackPoint.Pos. T

clip.Region Region(ellipse1)
Returns a region with the shape of ellipse1. Clip layers are used to mask child nodes with a region. For example when creating a cartoon figure, you use the **Hide Intersection** action to hide the border that intersects with another body part.

All actions in Elemento creates new variables, references, expressions or set properties. You can do everything manually, but it's faster to use actions.

TIP: You can learn from the existing figures by creating a new one based on an existing figure. To create a new one based on an existing figure, goto menu **File** then **New Based On** and select a figure then click **OK**.

Introduction to Movie Editor

You can use Movie Editor to put together rendered scenes.

To open Movie Editor, select **Start** then **All Programs** then **Stickman & Elemento**. In the startup dialog, select **New Movie Project**.

To add video clips, select **Add Clip...** and choose a video file then select OK.

TIP: Render your scenes with same resolution to avoid strange results when exporting the movie.

TIP: If the clips are in the same folder as the project file, you can move the clips and the project file to another computer. If a clip is not in project folder, it cannot be found by Movie Editor when you move the files.

Movie Editor supports all formats that is supported by Stickman.