

5.1 In general

To make programming a lot easier, and to save lots of time, the controller is equipped with an effect generator. Now it is possible to launch all kinds of effects on every fixture channel by just pressing some keys.

Some combined effects are already programmed for you by some built in macro's. What can be easier than creating a Pan/Tilt/Dimmer wave over lots of fixtures by just entering the macro mode and pressing 3 keys.

5.2 How does it work

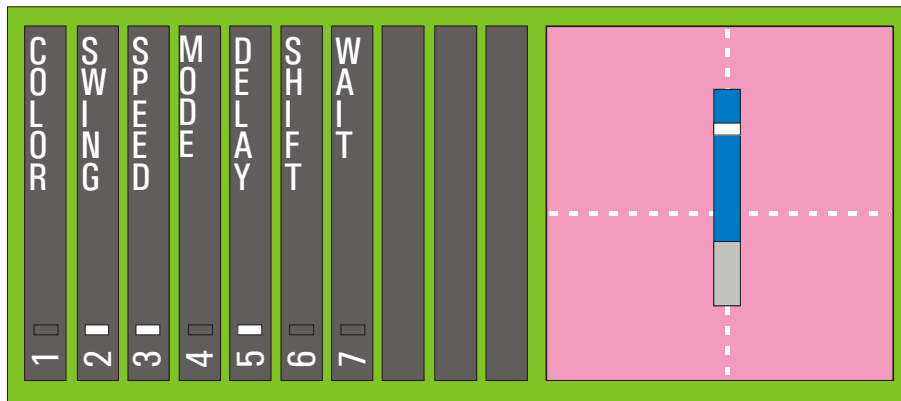
On every channel of every fixture that is selected, an effect can be launched. When opening the effect generator (not on Pan/Tilt) a screen will appear. The screen shows the 7 effect parameters you can modify.

Select a fixture
Select one of its control channels except Pan/Tilt (Ex. the color channel)

PRESS



The effect window will open now :



All the channels are accessed like if they were the fixtures normal control channels.

To make a color chaser, just open the color and swing parameters half and give it a speed by opening the third parameter. The color chaser will run. These settings can be stored now in a memory or preset.

5.3 Explanation of the effect control channels

When the effect generator is opened, its 7 control channels will appear on the screen. These are :

- Selected fixture control channel (in this example the fixtures color channel)
- Swing
- Speed
- Mode
- Delay
- Shift
- Wait

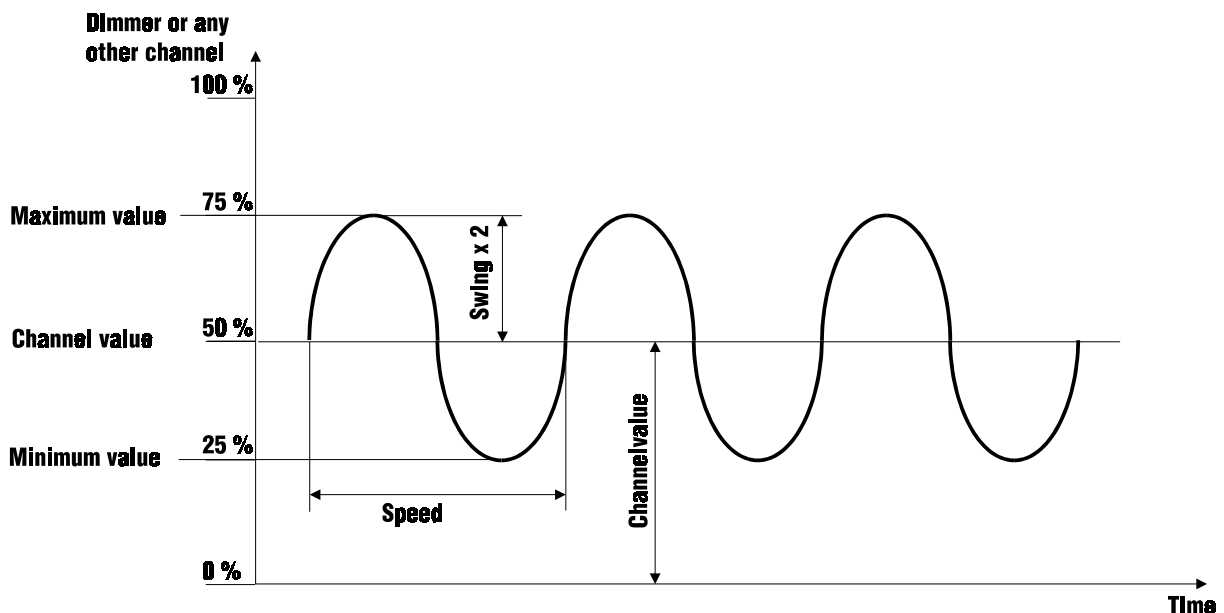
5.3.1 Selected fixture control channel

Before entering the effect generator, the fixtures control channel on which the effect has to be launched, has to be selected. When the effect generator is entered, the first parameter represents this selected control channel.

5.3.2 Swing

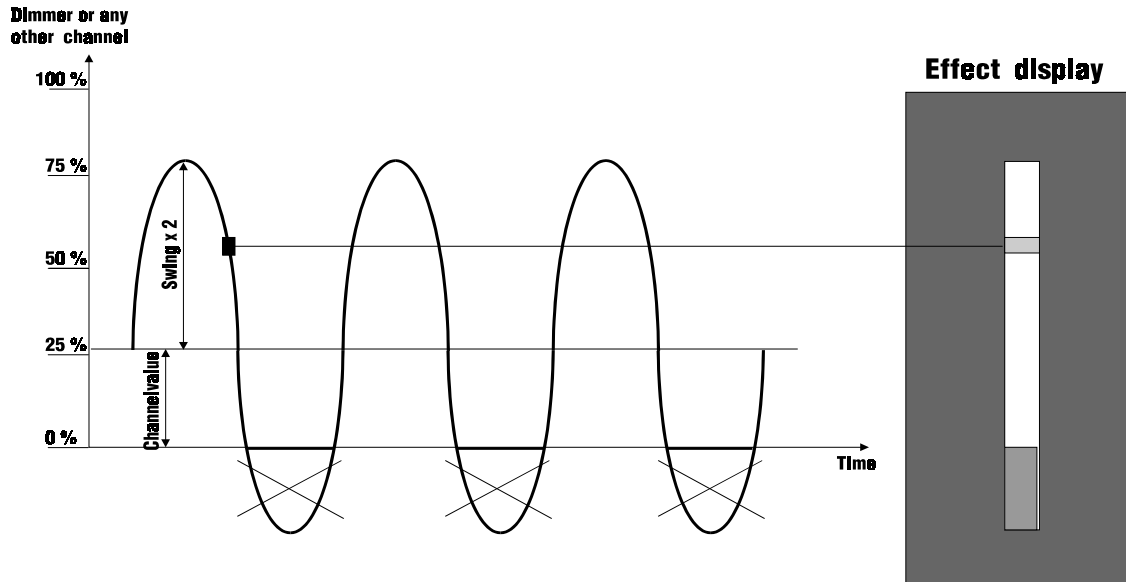
This parameter defines the maximum and minimum value of the effect on the fixtures control channel.

Suppose, a dimmer channel of a fixture is chosen. With the swing, we can select the maximum and minimum dimming of the running effect.



In this effect, a dimmer channel is fading continuous from maximum (75% open) to minimum (25% open). The maximum (minimum) channel-value can be calculated by multiplying the swing value by 2 and add (subtract) it to the control channel value.

When the swing value is too big or when the channel value is chosen wrong, there can be areas where nothing happens. You can see this in the effect display. When the moving bar stays in the white area, the effect will stay between the limits. If the moving bar comes into the gray area, the limit is passed and nothing will happen as long as the bar is in the gray area.



When the bar is in the gray area, the dimmer-value is below 0%. The value will stay on 0% until the bar is back in the white area.

5.3.3 The speed

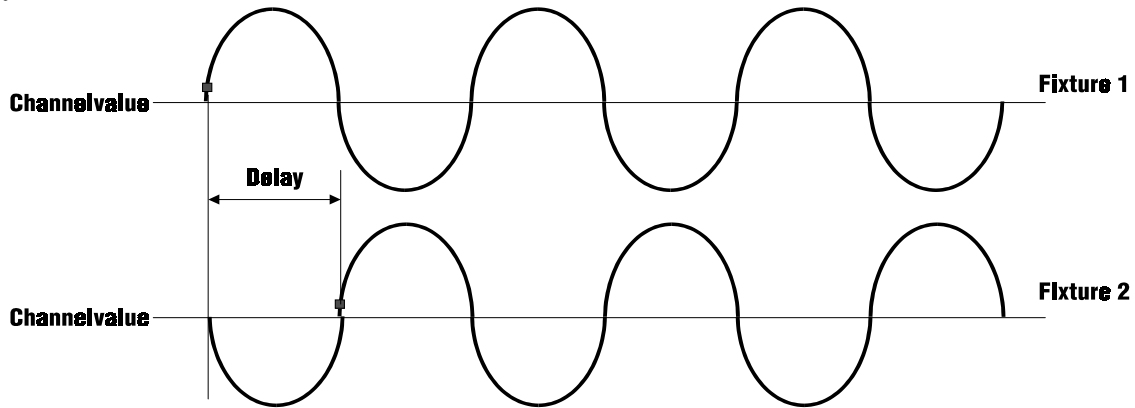
As long as the speed is at 0, the effect will not be generated. Sometimes it can be useful to make a memory with a maximum speed value of all effects. When this memory is put in a playback, the effects and their speed can be launched by simply sliding open the playback.

With the speed parameter, the speed of the running effect is controlled.

5.3.4 The delay

When the same effect is running at more fixtures, they will run in phase. De-phasing is done by giving each fixture an other delay.

Ex. When you have a dimmer-fade effect running on 2 fixtures, but you want to make it like : When the first fixtures lamp is on, the lamp of the second has to be off . You have to de-phase the fixtures effect. This is done by selecting a delay time of +/- 90 on the second fixture.



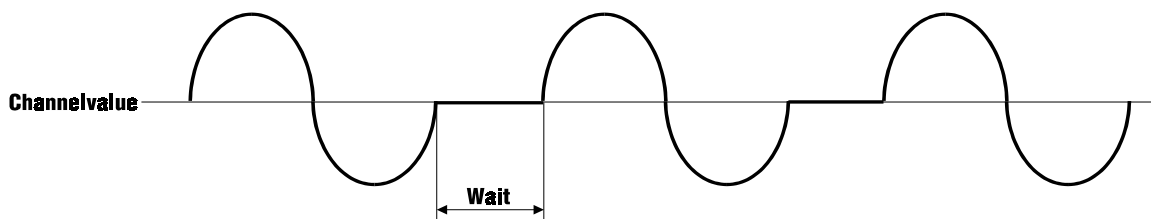
1 delay step gives a delay of +/- 2°.

5.3.5 The shift

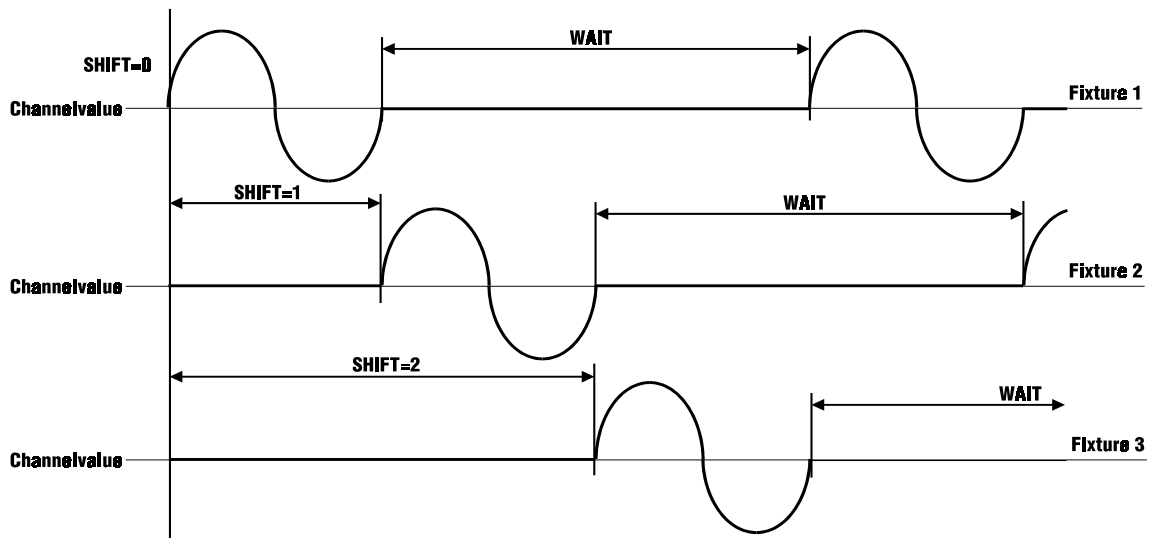
A shift is a delay of 360°. On its own, this parameter is not useful, but combined with the wait parameter, you can delay an effect over more effect cycles (see wait parameter).

5.3.6 The wait

The wait is used to stop the effect a certain time. When the effect is stopped, it waits at its channel-value.



To explain the combination of shift and wait, we will make a dimmer-wave with 3 fixtures :



In the example, fixture 1 will fade while fixture 2 and 3 wait. When the fading is done, fixture 1 and 3 will wait while fixture 2 is fading. When the second fading is done, fixture 3 will fade while fixture 1 and 2 are waiting. We have to give all 3 fixtures the same wait-time, but seen from the starting point, we have to delay fixture 2 for 1 complete cycle (*SHIFT=1*) and we have to delay fixture 3 for 2 complete cycles (*SHIFT=2*).

5.4 Direct accessing effect control channels

The mode channel, delay and shift can be direct accessed.

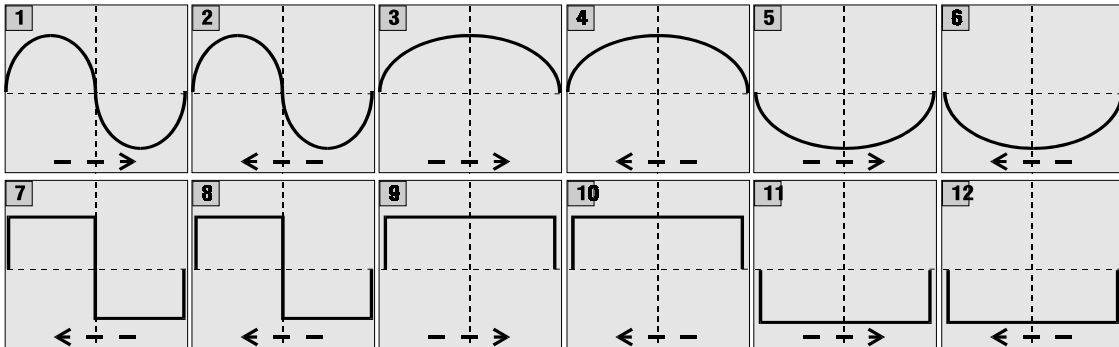
PRESS



twice, and select the control channel (4, 5 or 6)

5.4.1 Mode (control channel 4)

The mode function is used to select the fading mode of the effect. Selecting this function will open the screen :



Mode functions 1 to 6 are fading functions. Mode functions 7 to 12 are ON/OFF functions. The arrow shows the direction of the effect.

Function 1 and 2 will fade the channel above and under the channel-value

Function 3 and 4 will fade the channel only above the channel-value

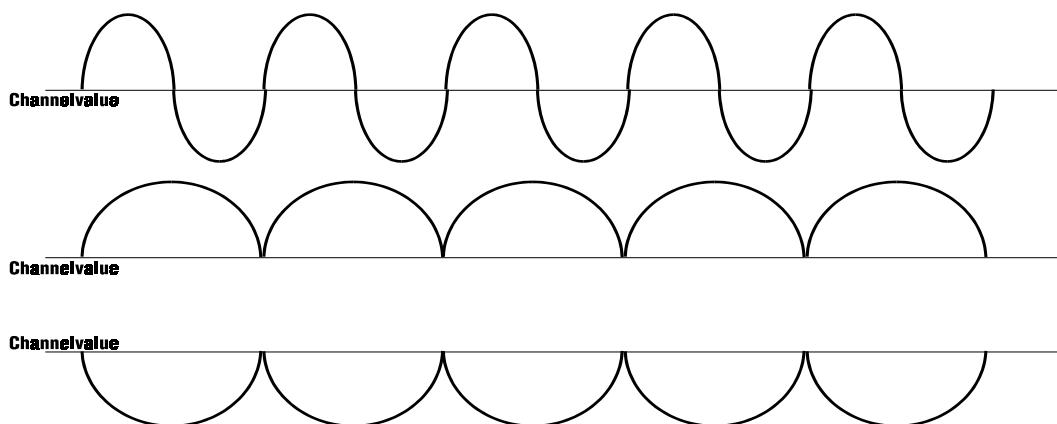
Function 5 and 6 will fade the channel only under the channel-value

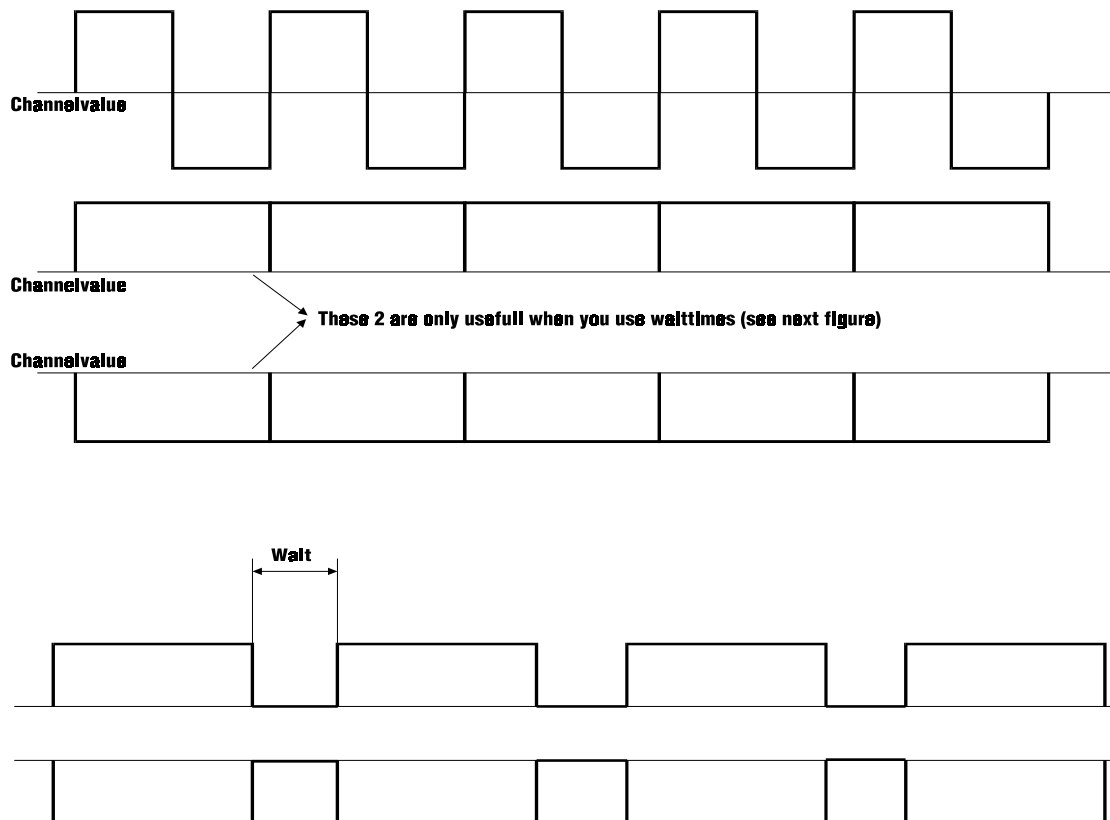
Function 7 and 8 will jump above and below the channel-value

Function 9 and 10 will jump only above the channel-value

Function 11 and 12 will jump only under the channel-value

Note : Functions 9, 10, 11 and 12 work only in combination with waits.





5.4.2 Wave (control channel 5 delay)

In stead of having to calculate delays and shifts between several fixtures, a functions had been build in that fills in the values for you.

When you Direct Access control channel 5 (delay), a selection window will open. There, it is possible to select **per how many fixtures** you want to divide the running effect.

Suppose, you want a dimmer-wave over 8 fixtures :

- Select all fixtures together
- Adjust the dimmer value as wanted
- Give a swing and a speed
- Select the desired fade-mode
- Select a wave per 8

Now you have a dimmer-wave over 8 fixtures. When you open the **Values** screen, you will notice that delays and shifts are filled in.

5.4.3 Loop (control channel 6 shift)

This function also calculates for you the delays, shifts and waits. The difference between a wave effect and a loop effect is that **in a wave, more fixtures are fading together and in a loop only 1 fixture is fading, the next fixture will wait until the fading of the previous one is finished.**

If you want to make a loop over 8 fixtures :

- Select all fixtures together
- Adjust the dimmer value as wanted
- Give a swing and a speed
- Select the desired fade-mode
- Select a loop per 8

5.5 Effect generator on Pan/Tilt

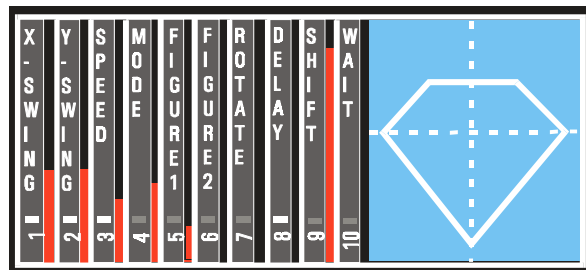
The effect generator is capable of running all kind of complex Pan/Tilt figures. All those motions can be synchronized with other effects.

Select a fixture
Select P&T

PRESS



The effect generator will open the window :



Channels 3, 4, 8, 9 and 10 are the same as on the effect generator on not Pan/Tilt channels.

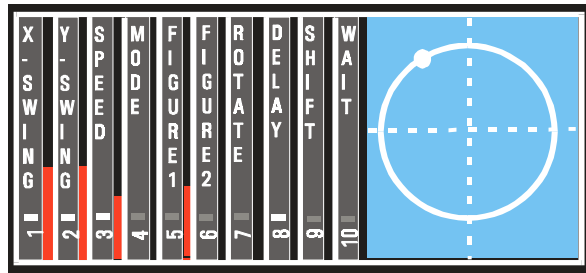
If we want all fixtures to make a perfect circle. We have to select a figure, set its height and its width and give it a speed.

- Press **DIRECT ACCES** together with control channel 6 and hold down the direct acces key. Now select 3 in the Fixtures/Cues/Presets selection window.

The circle motion is now activated, but it won't run because it has no speed and no height and width.

- Select control channel 1 (width) and give it a value.
- Select control channel 2 (height) and give it the same value (width and height must be the same for a circle, otherwise you'll become an ellipse).
- Select control channel 3 (speed) and give it a value.

When cue mode is selected with the value screen, watch the P&T values. They'll move.



If we want some fixtures to turn clockwise and other fixtures anticlockwise:

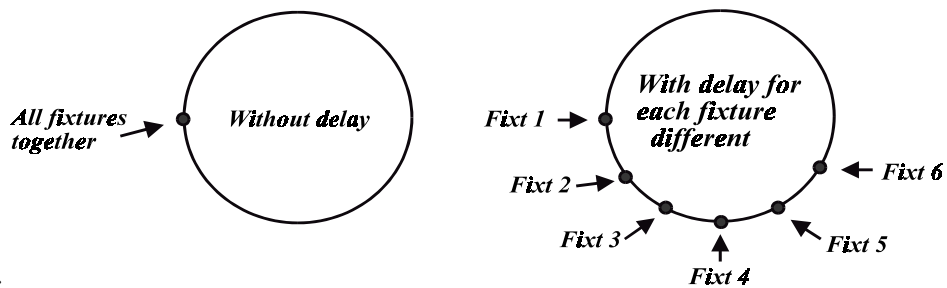
- Select only the fixtures that have to turn clockwise
- Direct access control channel 4 and select sinewave 1

- Select only the fixtures that have to turn anticlockwise
- Direct access control channel 4 and select sinewave 2

The **delay** channel on Pan/Tilt.

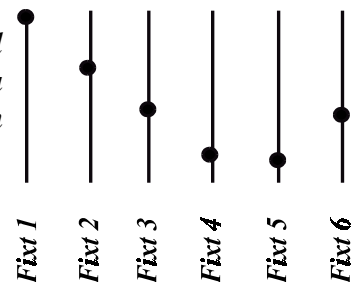
If we program the delay channel for each fixture different, there will be a **phase shift** between the fixtures.

Suppose, all fixtures were moving together in 1 spot in a circle. When we give each fixture an other delay, the fixtures will start following each other.



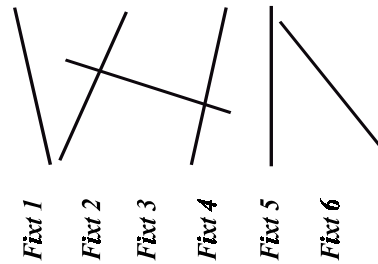
Of course, let the controller make the calculations for you, and take a WAVE per 6. Also try out the LOOP by 6 and see what happens.

When we take the line motion (direct access control channel 6 and take the line) and we give each fixture a different delay (wave per 6), we become a mexican wave effect.



The **rotate** channel

If for example the line motion is chosen, we can turn this line for each fixture.



Remember, to stop the effect generator, simply put the swings on zero, or press the DEFAULT together with EFF and P&T.

5.6 Synchronizing effects

Suppose, you have 8 fixtures running in a dimmerwave effect. Now you want to add a pan/tilt effect which is synchronized with that dimmerwave effect.

There is just one rule for synchronizing effects :

- **Speed, direction (see mode) and waits of the different effects per fixture have to be the same.** When speed and direction are the same, the timers are internally corrected and the fixtures will come slowly in sync (it is if they seek each other). Of course there may be no differences between the wait times of the effects on the same fixture otherwise they will become out of phase.

Suppose, we want to make the Pan/Tilt - dimmer effect over 8 fixtures :

- Select the 8 fixtures
- Select the dimmerchannel and go into the effect generator
 - Adjust the dimmerchannel
 - Give a swing and a speed
 - Select the mode
 - Select wave per 8
- Deselect the effect generator
- Select P/T (pan/tilt) and go back to the effect generator
 - Adjust Pan/Tilt
 - Set the swings and the same speed as the dimmer
 - Select in the mode the same direction as the dimmer (it doesn't matter what fade-mode)
 - Select wave per 8

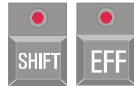
Pan/Tilt and dimmer are now synchronized.

5.7 Effect macro's


Some effects are already predefined in macro functions. The above effect (Pan/Tilt + Dimmer) has been put into a macro function.


To enter the effect macro function :

**Select the fixtures and
PRESS**



The macro functions will appear on the screen. A macro can now be selected, it will be launched directly on the fixtures.

With the  keys, the wave or loop functions can be selected.

As long as the  key is **not** pressed, the functions in the control channel window will

take effect on all effects involved in the selected macro function. So if you have selected the Pan/Tilt-Dimmer macro and, with the NEXT button, you choose a wave per..., you can increase the speed of the effect by taking the speed channel and give it a higher value. The speed will be increased on the Pan/Tilt and on the dimmer. This means that the synchronization is **not** lost.

We will make the same effect as we did in chapter 5.6.

- Select the fixtures
- Select SHIFT + EFF
- Select the Pan/Tilt- fall Dimmer effect
- Press NEXT
- Select wave per 8

You have now the same effect as explained in chapter 5.6, but you can change the speed of the effect without losing the synchronization.

Uptill now, the preprogrammed macro's are:

- **RGB - Macros** : (will only operate on fixtures supporting RGB(CMY))
 - Rainbow
 - Pastel Rainbow
 - Darkblue White
 - Magenta White
 - Darkblue Magenta
 - Blue Green
 - Darkblue Cyan
 - Darkblue Red
 - Green Yellow
 - Green Red
 - Yellow Red

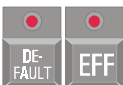
- **Pan/Tilt macro's :**
 - P/T Fall - Dimmer
 - P/T Fall - Iris
 - P/T Fall - Dim + Iris
 - P/T Fall - Blue/White
 - P/T Fall - Red/Yellow
- **Dimmer macro's :** (will also work on dimmer racks)
 - Dimmer wave
 - Dimmer x-chase 1
 - Dimmer x-chase 2
 - Dimmer Bump 1
 - Dimmer Bump 2
- **Iris Macro's :**
 - Iris Wave

5.8 Some remarks

The waves and loops, chosen with the direct access function will be calculated in the order as they appear in the Fixtures window. If the patching is wrong, you can always change the order in the setup.

The speed of an effect can't be changed with the fade time of a sequence. Some people mix up the speed, programmed in a memory, and the speed of a sequence. If a speed is programmed in a memory, and that memory is put in a sequence of a cue, then the only way to change the speed is : take the fixtures manually, and change the speed of the effect. Like mentionned before, you can always make memories for playbacks with only the speed parameters programmed.

There are 4 possibilities to stop an effect.

- zero the swing parameter
- zero the speed parameter
- Use  and select the fixture(s) or the control channels to default the effect channels (swing at zero) of the selected fixtures.
- Press the DEFAULT key twice for the selected fixtures, but in this case everything will be on its default value.

5.9 Effect presets

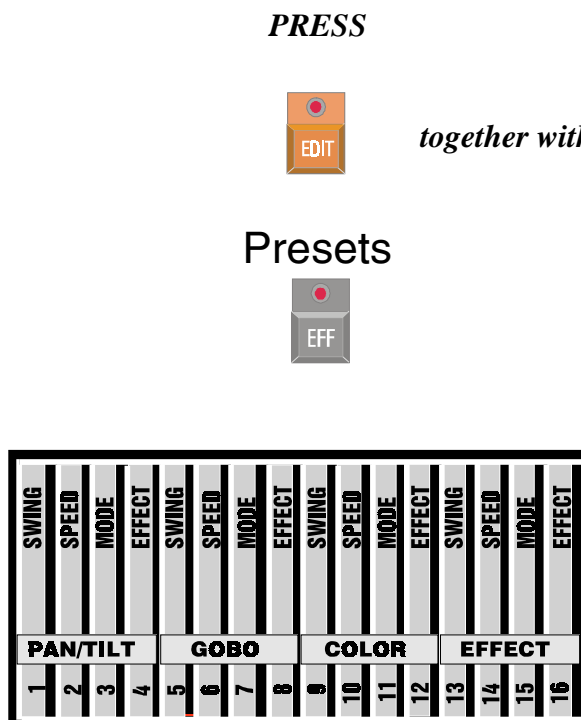
When storing effect presets, every channel is stored of all effects except the first parameter which is the fixtures control channel.

That control channel (color, gobo, P/T, iris, zoom...) is stored in the other presets. This allows you to get an effect preset (ex. of gobo) but you still can change the channel on which the effect runs (you can still take an other gobo preset) without changing the effect parameters (swing, delay, shift, speed, mode, wait).

The other way is also possible, you can take a gobo preset and launch on it different kinds of effect presets. **This way it is possible to make your own effect macro's.**



5.10 The load selection on effect channels

Opening the load selection with EFFECT presets will change the control channel window to:



The control channel window shows the effect channels.

- Pan/Tilt for effect presets on pan/tilt
- Gobo for effect presets on gobo
- Color for effect presets on color
- Effect for effect presets on effect wheels of certain fixtures (prisms,...)

Selecting the   keys will switch the channels to :

- Iris for effect presets on iris
- Zoom for effect presets on zoom function
- Focus for effect presets on focus
- Dimmer for effect presets on the dimmer channel

Every effect channel has 4 parameters :

- Swing
- Speed
- Mode
- Effect (delay, shift and wait)

The load selection screen will look like :

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1																
2																
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The preset load selection screen shows what is loaded out of the effect preset.

Ex. : If we don't want to load the effects of effect preset 5 on the gobo wheel and the swing of effect preset 5 on the color wheel, we take preset 5 and press control channels 8 and 9 to deselect the loading of both channels when effect preset 5 is called.