Contents

# 1 CHAPTER 1: Introduction

Thank you for selecting a Martin Case light controller. Martin Case light controllers offer an enormous variety of tools helping light designers to create their most fabulous shows in no time.
Originally, the controllers were designed to be used in combination with moving lights.
Today they can be used in the small disco club as well as on the big concerts. From this software version, they offer the possibilities for the best theatrical jobs.

An enormous advantage is the software. You have to know only one software version to control all Martin Case light controllers. From the smallest version, the Pro 1, to the most extended version, the Pro 2 Plus, the same software is used. All functions available on the Pro 2 Plus are also available on the Pro 1, only the access on the Pro 2 Plus is more direct and easier to use.

Time pressure, no problem. The built-in Effects Generator saves a lot of programming time. Furthermore, you have always direct access to each function of every fixture. There have been spectacular shows in the past performed 'on the fly' with only some basic programming.

## 1.1 Features

**Hardware**

| | Pro 1 (*) | Pro 2 (*) | Pro 1+ | Pro 2+ |
|---|---|---|---|---|
| **Protocols** | DMX-out<br>DMX-in | DMX-out<br>DMX-in | DMX-out<br>DMX-in | DMX-out<br>DMX-in |
| **Channels<br>(standard/Max)** | 512/1536 | 1024/2048 | 512/1536 | 1024/2048 |
| **Grand master** | 1 | 1 | 1 | 1 |
| **Flash master** | 1 | 1 | 1 | 1 |
| **Programmable<br>sub-master** | 2 | 2 | 2 | 2 |
| **Playback analogue faders** | 10 (**) | 10 (**) | 42 | 42 |
| **Sequence digital faders** | - | 12 | - | 12 |
| **Functions digital faders** | - | 16 | - | 16 |
| **Extra keys for:<br>Timing/playback mode/<br>Direct access (***)** | - | - | Yes | Yes |
| **SMPTE/MIDI** | Option | Standard | Option | Standard |
| **CD-ROM** | Option | Standard | Option | Standard |
| **Hard disk - Floppy disk** | 1 - 1 | 1 - 1 | 1 - 1 | 1 – 1 |
| **Trackerball**<br>(on/off toggle) | 1 | 1 | 1 | 1 |

(*)     When the Pro 1 and the Pro 2 controllers are connected through the LINK with a **Playback Wing**, they will have the same functionality as their +version with the exception of the amount of channels.

(**)    The 32 extra playbacks are accessible through an external midi keyboard.

(***)   Those functions can be controlled on the Pro 1 en Pro 2 controllers, but a bit more time-consuming.

**Software**

FIXTUES
- Up to 700 fixtures with max 32 channels per fixture
- Library of more than 300 fixture types, grouped per manufacturer
- LEE®, ROSCO®, GAM® filter library for CMY (RGB) fixtures
- Extended dip-switch information of the fixtures
- Repatch possibilities
- Protected functions like (reset, lamp-off, lamp-on)
- Direct access on each channel of every fixture
- Extended functions for dimmer-channels like: Dimmer-curves, multi-patch and extended accessibility of dimmer-channels
- Possibility to group fixtures over 2 x 16 groups
- Adjustable DMX-timings for all outputs

PRESETS (70 x 4 types with extended functions)
- Pan/Tilt: includes Pan/Tilt, focus and dimmer information.
- Gobo:   includes 4 gobo-wheels, 4 gobo-parameter fields, knifes (PAL1200), iris, focus, zoom and prism information.
- Color:   includes 4 color-wheels, color-parameter field, RGB and dimmer information.
- Effect: includes all possible effects generator parameters.
- Every function can be enabled or disabled.

MEMORIES
- Maximum 4000 memories
- Every memory can include information of 700 fixtures of up to 32 channels, with their effects generator parameters and their timing parameters
- Changes in preset-values are automatically recorded in the memories, if the memories are built with presets
- Can be changed at any time
- Can be used in sequences and playbacks and can be called separately.

CUES
- Maximum 11,200 cues
- Per main-cue, 9 point cues
- Each cue can hold 1 cue-memory, 4 sequences and 42 playbacks
- Have transparent possibilities so that an activation of an other cue results in replacing only the programmed functions (sequences, playbacks, cue-memory) of the activated cue
- Have link possibilities to other cues

- CUE MEMORY
  - Every cue-memory can include information of 700 fixtures of up to 32 channels, with their effects generator parameters and their timing parameters. The timing-parameters can be applied on the cue-memory or on every single channel separately:
    - **Delay-in** time
    - **Fade-in** time
    - **Delay-out** time
    - **Fade-out** time
    - **Link** time
  - Multi-select cue, or activating several cues simultaneous
  - Auto-prepare cue-memory: when the dimmer closes in one cue, the controller will look ahead and execute all programmed non-dimmer channels until he finds a cue where the dimmer opens again.
  - Auto-trace: when a cue is activated, the controller will gather all missing channels in descending cue order.

- SEQUENCES
  - Up to 4 sequences per cue
  - Each sequence can hold 1 start-memory, 100 loop memories and 1 stop-memory
  - Have separate fade and wait-times.
  - Can be activated/deactivated separately
  - Can run forwards, backwards, in bounce (forwards and backwards) or at random.
  - Can be mutual synchronized
  - Possibilities for auto-trigger, manual trigger and triggering in 'learn the beat mode' (beat-step mode)
  - Linking possibilities to other cues

- PLAYBACKS
  - A playback is a memory to fade-in manually with:
    - A fader
    - A flash key
  - Flash key functions:
    - Flash: with fade-in and fade-out time (adjustable separately)
    - Toggle: with fade-in and fade-out time (adjustable separately)
    - Kill: with fade-in and fade-out time (adjustable separately)

EFFECTS GENERATOR
- Up to 7 functions (10 for Pan/Tilt) per channel per fixture adjustable:
  - Level, swing, speed, mode, delay, shift, wait (for non-Pan/Tilt channels).
  - x-swing, y-swing, speed, mode, figure1, figure2, rotate, delay, shift, wait (for Pan/Tilt channels).
- On Pan/Tilt channels, there is a choice out of a library of 49 different motion-patterns.
- Pre-programmed combined effects with the effect macro functions like: Pan/Tilt effects combined with dimmer effects or rainbow effect for RGB (CMY) fixtures.
- Possibility to spread the effect over more fixtures.

OTHER FUNCTIONS (overview)
- 1 Grand master
- 1 flash master
- 2 programmable sub-masters
- Time-code
    - o    Show-programming on time-code: SMPTE, CD-ROM, Internal clock or manual.
- Midi
    - o    Triggering of cues, cue-memories, sequences or playbacks through midi-codes.
- Direct access of fixture-channels resulting in fast programming of colors, gobos, functions… Direct access with digital fader belts on Pro 2 or Pro 2+ controllers.
- Absolute or relative programming of channel-values.
- Solo function for channel adjusting on the bigger shows.
- Freeze function to freeze fixtures, sequences, playbacks and cue-fading.
- Manual override mode
- Gel filter choice on filter number for RGB (CMY) fixtures
- Extended copy possibilities for memories and cues
- Extended load and save function to load or save shows
- Possibility to read memories from other controllers through DMX-IN
- Possibility to link MartinCase controllers (up to 41 with playback wing, up to 113 without) through DMX-IN
- Print or export possibility of stage layouts or patch lists.

## 1.2  Models

**Pro 1**
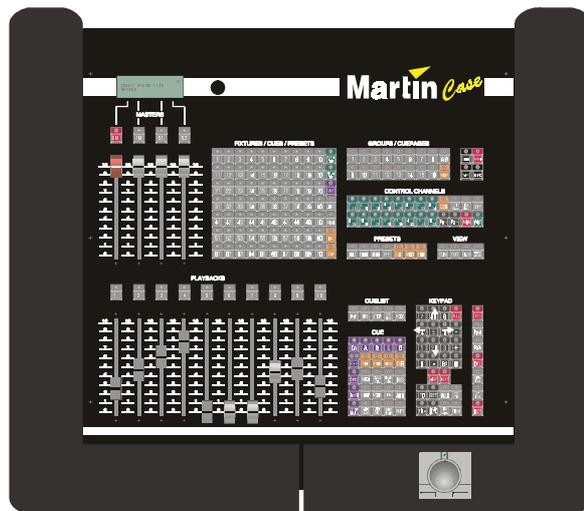


**Pro 1+**
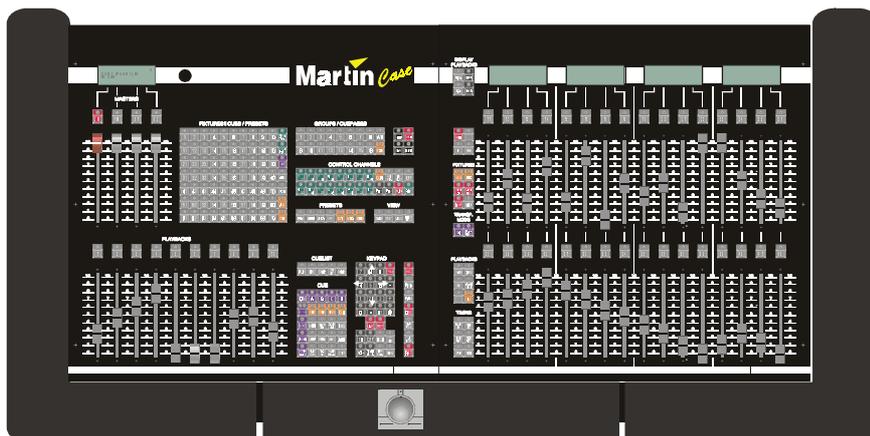


**Pro 2**
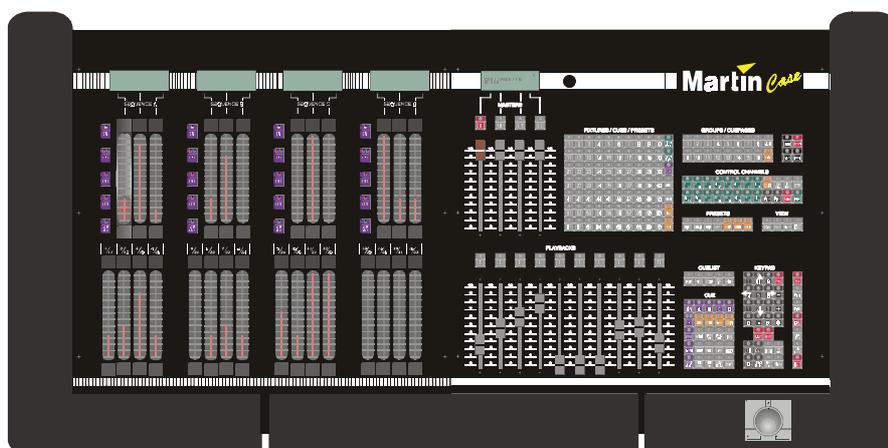
**Pro 2+**

## 1.3  Connecting

> **WARNING: Adjust the voltage setting of your controller to your local AC power supply before applying power.**
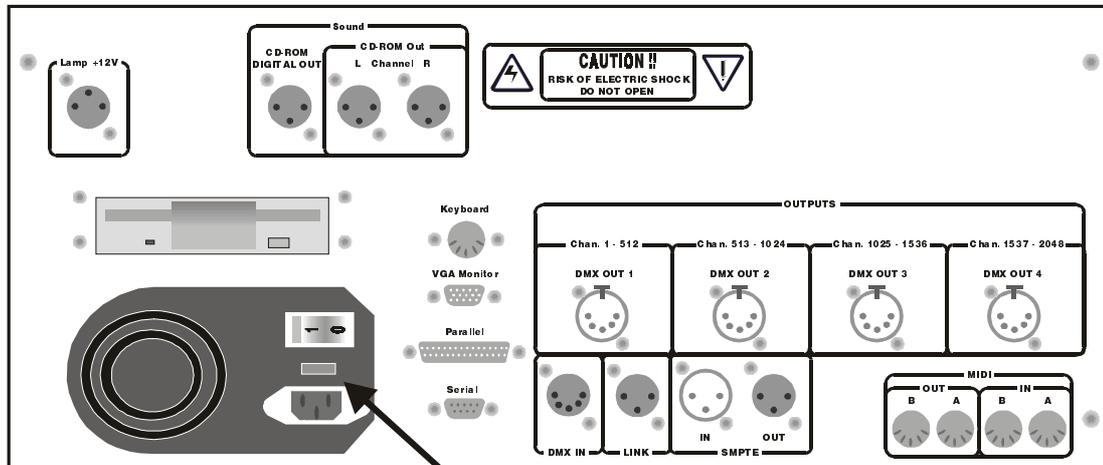


CHECK POWERSETTINGS

**Connect the power cable to AC power**

**Connect a standard VGA monitor to the 'VGA Monitor' output and connect its power.** Note: Some controllers don't have a power output for the monitor.

**Connect a standard PC keyboard (big connector) to the 'Keyboard' input.**

**Connect a data cable between the DMX or Martin output of the controller and the fixtures.**
Note: Martin Case controllers use a 5-pin XLR connector for the DMX signal. With the controller comes a 5-pin to 3-pin inverting and non-inverting adapter. See the table below for the pin-connections.

| DMX pin connections | GND | Signal – (cold) | Signal +  (hot) |
|---|---|---|---|
| 5 PIN XLR output controller | PIN 1 | PIN 2 | PIN 3 |
| 3 PIN XLR output adapter inverted | PIN 1 | PIN 3 | PIN 2 |
| 3 PIN XLR output adapter non-inverted | PIN 1 | PIN 2 | PIN 3 |

**Connect the supplied gooseneck lamp to the output (Lamp +12V)**

**Switch ON**

### 1.4 Connections

**Lamp +12V**

Connection for a Gooseneck lamp (12V).

| Lamp +12V | GND | +12V |
|---|---|---|
| 3 Pin XLR | PIN 3 | PIN 2 |

**CD-ROM Digital out**

Digital sound output of the build-in CD-ROM player.

| CD-ROM Digital out | GND | Signal |
|---|---|---|
| 3 Pin XLR | PIN 1 | PIN 2 |

**CD-ROM OUT L and R**

Analogue sound output left (L) and right (R) of the build-in CD-ROM player.

| CD-ROM L and R | GND | Signal |
|---|---|---|
| 3 Pin XLR | PIN 1 | PIN 2 |

**DMX OUTPUT**

DMX output for connection with the fixtures. Depending on the controller-type, there are 1, 2, 3 or 4 DMX outputs.

| DMX OUTPUT | GND | Signal - (cold) | Signal + (hot) |
|---|---|---|---|
| 5 Pin XLR | PIN 1 | PIN 2 | PIN 3 |

**DMX INPUT**

DMX input to read DMX signals coming from other controllers.

| DMX INPUT | GND | Signal - (cold) | Signal + (hot) |
|---|---|---|---|
| 5 Pin XLR | PIN 1 | PIN 2 | PIN 3 |

### LINK OUTPUT

LINK output for connection with an extra playback wing.

| LINK OUTPUT | GND | Signal - (cold) | Signal + (hot) |
|---|---|---|---|
| 3 Pin XLR | PIN 1 | PIN 2 | PIN 3 |

### SMPTE IN - OUT

SMPTE in and output for time-code controlling of shows.

| SMPTE INPUT OUTPUT | GND | Signal |
|---|---|---|
| 3 Pin XLR | PIN 1 | PIN 2 |

### MIDI IN (A, B) OUT (A, B)

Standard MIDI in and outputs (channels A and B) to connect external MIDI devices.

| MIDI IN | GND | Signal |
|---|---|---|
| 5 pin DIN | PIN 4 | PIN 5 |

| MIDI OUT | +5V | Signal | Screen |
|---|---|---|---|
| 5 pin DIN | PIN 4 | PIN 5 | PIN 2 |

### Keyboard

Connection for a standard PC keyboard (5 pin DIN connector).

### VGA Monitor

Connection for a standard VGA monitor.

### Parallel

Connection for a printer.

### Serial

To connect an external serial device like a mouse.

## 2　CHAPTER 2: Menu

### 2.1　Overview

When the main controlling program (logicase) is left with *[SHIFT] [SETUP]* (hold during 2 sec) next menu will appear:

```
┌──────────────────────────────────────────────────────────────────┐
│  05-01-2000            * Case console MENU *            13:54:52   │
├──────────────────────────────────────────────────────────────────┤
│ LIGHTCONSOLE   UPDATE   TEST-UTILITIES   TO/FROM FLOPPY  VIEW  DOS Utilities │
│                                                                     │
│   START                                                             │
│   CONFIG                                                            │
│        PROGRAM UPDATE                                               │
│        NEW LIBRARIES                                                │
│        MAKE NEW FIXTURE                                             │
│        LIST FIXTURES                                                │
│        LIST NEW FEATURES                                            │
│        KEYBOARD PATCH                                               │
│               CHECK HARDWARE                                        │
│               CHECK HARDDISK                                        │
│                     EXPORT PATCH SETUP                              │
│                     EXPORT STAGE CAD                                │
│                     EXPORT SHOW DATA                                │
│                     IMPORT SHOW DATA                                │
│                     IMPORT DEFAULT CURVE                            │
│                     IMPORT SHOW CURVES                              │
│                           VIEW AUTOEXEC.BAT                         │
│                           VIEW CONFIG.SYS                           │
│                                 EXIT MENU                           │
│                                 EDIT ...                            │
│                                 Menu Config                        │
│                                                                     │
│  Copyright (C) Case                                                 │
└──────────────────────────────────────────────────────────────────┘
```

## 2.2  LIGHTCONSOLE

**START**

This option starts the main controlling program (logicase) again.

**CONFIG**

To configure the system. When for example a DMX interface is added to the controller, to expand the amount of DMX channels, it is necessary to run the configuration.

When this option is selected, next menu will be shown:
**CONFIGURATION LIGHTCONSOLE**
**CONFIGURATION CASECARDS**
**AUTOMATIC CONFIGURATION**
**CHECKING CONFIGURATION**
**CHANGE PASSWORD**

**Configuration lightconsole**

To enable or disable functions like master faders, playback faders, digital faders, speaker etc…

**Configuration Casecards**

Some older fixtures may react strange on the controllers DMX signal. With this option, all DMX timings can be adapted. **WARNING: IF YOU ARE NOT FAMILIAR WITH DMX, DON'T CHANGE ANYTHING HERE,** the possibility exists that all fixtures will behave badly. To avoid this, the option is protected by a password (telesoft). If however, the options are changed, use the menu-item **automatic configuration** to default the DMX values.

This option is also used to prepare shows to be used on controllers with more DMX channels. You won't be able to control the fixtures, but the complete show can be prepared.

**Automatic Configuration**

Is used to repair the configuration of the controller or to upgrade the number of DMX channels when an extra DMX interface is added to the controller.

**Checking Configuration**

To test the configuration of the controller.

## 2.3 UPDATE

### PROGRAM UPDATE

To update the controller with new software: put the floppy(ies) with the new version in the floppy-drive and use this option.

The controller will automatically make a backup of the old version and will install the new version. The option 'List new features' gives an overview of new items. **RESET** the controller after updating.

Rem. : Regularly check both sites below for new software versions:
**http://www.martin.dk**
Or the Case site:
**http://www.caseconsole.com**

Please follow the instructions on the site to install new versions.

### NEW LIBRARIES

Each month new fixtures are added to the library. The latest libraries are always accessible on the Martin or Case sites. The option 'List fixtures' gives an overview of all fixtures installed in the controllers library.

Rem.: A library update will always update all fixtures.

### MAKE NEW FIXTURE

Not yet in use.

### KEYBOARD PATCH

After a software update or after a complete new installation, the keyboard patch file of the controller may be changed too. This causes some keys like the grand master flash key to behave strange, sometimes the front panel keyboard may be mixed up on older controllers. Use this option to select another keyboard patch file.

If an older controller was **upgraded with the playback wing link**, and the playback keys don't work, select in this option keyboard 4.

## 2.4 TEST-UTILITIES

### CHECK HARDWARE

To check the hardware functions of the controller.

### CHECK HARDDISK

To check the internal hard disk on errors.

## 2.5 TO/FROM FLOPPY

### EXPORT PATCH SETUP

To copy the patch setup, exported in the SETUP (see chapter SETUP) to a floppy. The file can be used on a Windows PC.

### EXPORT STAGE CAD

To copy the STAGE LAYOUT in BMP format, exported in the SETUP (see chapter SETUP), to a floppy. The file can be used on a Windows PC.

### EXPORT / IMPORT SHOWDATA

In rare occasions, on very big shows, a message '**NOT ENOUGH DISKSPACE'** can appear on the screen when saving a show to a floppy. If this happens, use this menu option **to save the show on multiple floppies**.

**To load a show from multiple floppies**, use the import option.

### IMPORT DEFAULT CURVE/ IMPORT SHOW CURVES

With the Windows program 'Logicurve', dimmer curves can be adapted externally. Use this option to import the curves. If the **default** option is used, the curves are used with every new show. If the **show** option is used, only the current show will use the curves.

The Windows program 'Logicurve' can be downloaded free on both earlier mentioned sites.

## 2.6 VIEW

To view the system files of the controller.

## 2.7 DOS UTILITIES

To edit files and to leave the menu.

## 3   CHAPTER 3: Using the manual
### 3.1. Overview

Each chapter begins with a diagram to show you which point you have reached when you are studying the controller.

```
                        ┌─────────────────────────┐
                        │          Setup          │
                        │ Fixtures DMX Addresses   │
                        │     and Stage Plan       │
                        └─────────────────────────┘
                                    │
   ┌────────────────────────────────┼───────────────────────────────────┐
   │                                                                     │
   │    ┌──────────────────────┐        ┌──────────────────────────┐     │
   │    │        Adjust        │        │          Adjust          │     │
   │    │ Fixture Control      │        │  Effect Generator        │     │
   │    │    channels          │        │      channels            │     │
   │    └──────────────────────┘        └──────────────────────────┘     │
   │              │                                                       │
   │              │       ┌──────────────────────────────┐               │
   │              │       │            Make              │               │
   │              │       │  Pan/Tilt, Gobo, Color and   │               │
   │              │       │   Effect Generator Presets   │               │
   │              │       └──────────────────────────────┘               │
   │              │                                                       │
   │              │                            ┌──────────────────┐      │
   │   ┌───────────┐                           │      Make        │      │
   │   │ Timings  │                            │   Memories       │      │
   │   └───────────┘                           └──────────────────┘      │
   │        │                                                            │
   │ ┌──────────────────────┐ ┌──────────────────────┐ ┌──────────────────────────────┐│
   │ │        Make          │ │        Make          │ │           Make               ││
   │ │ Cues with Cue-       │ │ Cues with Playbacks  │ │ Cues with Sequences (chasers)││
   │ │   Memories           │ │                      │ │                              ││
   │ └──────────────────────┘ └──────────────────────┘ └──────────────────────────────┘│
   │            │                                                        │
   │       ┌──────────┐                    ┌──────────────────┐          │
   │       │   Run    │                    │      Make         │         │
   │       │ the Show │                    │ Time-Code Show    │         │
   │       └──────────┘                    └──────────────────┘          │
   └─────────────────────────────────────────────────────────────────────┘
```
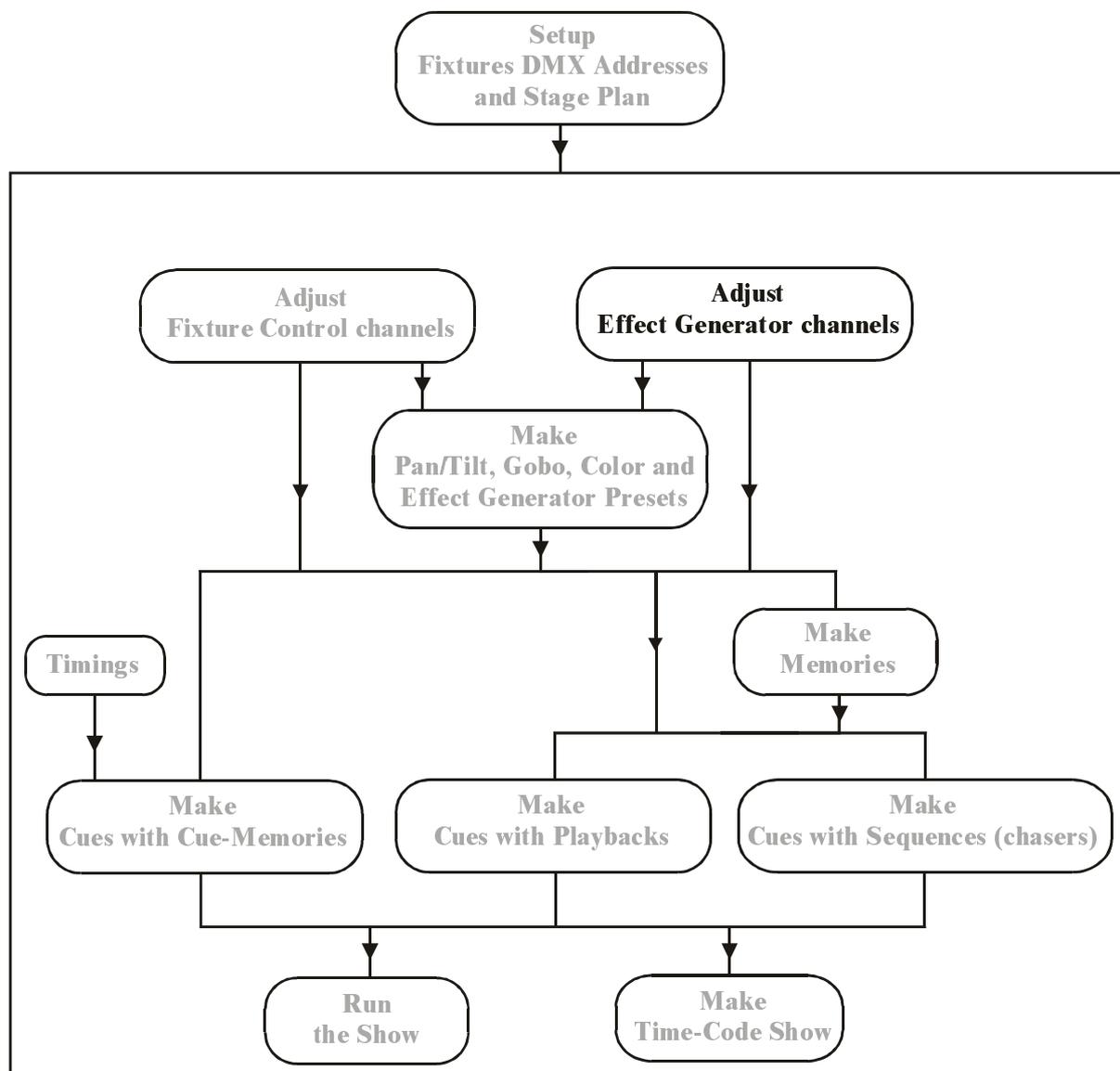
This example shows that the chapter explains the effects generator.

### 3.2. Experienced user or beginner

In this manual, we try to group everything per chapter. Because of this, it can happen that sometimes items, difficult to understand for new users, will be explained. New users are advised to skip those items until he has some experience in using the controller. The sign **{EXP}** in the margin or in the heading of the chapter stands for experienced user and it means that the item or the chapter is only to be read by experienced users.

### 3.3. Use of the keys and the denotation in this manual

The denotation of a key:

[*KEY*]

When an item has been explained in a previous chapter, a description will replace the key actions:

[*Description*]

A **PLUS** sign between the keys will mark that more keys have to be selected simultaneous:

[*KEY 1*] + [*KEY 2*]

If the keys have to be selected one by one, they will be separated by a **space:**

[*KEY 1*]  [*KEY 2*]

Some keys have the same function or meaning, like the big key matrix beginning with key 1 and ending with key 70. Those are denoted as:

[*1…70*]

This means, 'press one of the keys in the key matrix 1, 2, 3, …. , 70 (Fixtures/Cues/Presets)'

[*1…16*]

This means, 'press one of the keys in the key matrix 1, 2, 3, … , 16 (Groups/Cuepages)'

[*1/17…16/32*]

Means: 'press one of the keys in the key matrix [1/17] … [16/32]  (Control channels)'.

Some of the keys like the [CLR] or the [P&T] key, can be found more than once on the front panel keyboard. To indicate the correct key, an explanation is given between brackets ().

[*CLR* (Presets)*]*

An example:

[*1…70*]  [*1…70*]  ….  [*1…70*]

Select some keys in the key matrix 1…70. This is the same as: select some fixtures (see chapter 'fixtures and control channels'). Since we know now how to select fixtures, the next paragraph won't explain this again and the fixture selection is indicated by:

[*Select fixtures*]  [*STORE* (groups/cuepages)*] + [1…16*]

So this means: select some fixtures and press the [STORE] key (in groups/cuepages) simultaneous with on of the key in the key matrix 1…16.

## 3.4. Keyboard help

The controller keyboard is equipped with a **build-in HELP function** by means of LEDs. Every time when a function is called, the LEDs of the keys, which can be used with this function, will blink.

Example: Select the *[EDIT* (CUES)*]* key. All LEDs of the keys involved in the edit function will blink orange.

## 3.5. Important remarks and actions to be taken

**Bold marked texts** indicate an important remark or a tip.
***Bold and italic*** *or italic* texts indicate an action to be executed by the user.

## 3.6. Overview

The 'appendix' of this manual holds some fold up pages with an overview of the front-panel keys of the controller.

## 3.7. Example show

There are 2 example shows:

The first show 'getstart.cmp' gives examples for the 'getting started' manual.

The second show 'manual72.cmp' holds the examples for this manual.

If an MSD (Martin Show Designer) is connected to the controller, all examples can be seen 'in live'. For both shows, an MSD version is available.

---

**Loading of the example show 'MANUAL72':**

When the main program is started, load the show by pressing the *[LOAD]* key.

Step 1: Press *[LOAD* (hold for 2 secs)*]*. In the lower left corner of the screen, next message will appear: '1 = LOAD INTERNAL 2 = LOAD EXTERNAL'
Step 2: Select *[1* (keypad)*]* to load the show from the internal hard disk or select *[2* (keypad)*]* to load the show from a floppy disk.
Step 3: *Type the name MANUAL72 or highlight the name MANUAL72 using the [2↓] key.*
Step 4: *Press [RET]* (in case you've used the *[2↓] key* press *2 x [RET]*). The show will appear within a few seconds.

---

**4 CHAPTER 4: The Setup**

```
                    ┌─────────────────────────┐
                    │          Setup          │
                    │  Fixtures DMX Addresses  │
                    │     and Stage Plan       │
                    └─────────────────────────┘
```

# SETUP BASICS

```
┌──────────────────────┐
│  Select manufacturer │◄─────┐
└──────────────────────┘      │
           │                  │
           ▼                  │
┌──────────────────────┐      │
│   Select fixturetype │◄─────┤
└──────────────────────┘      │
           │                  │
           ▼                  │
┌──────────────────────┐      │
│   Select fixturepage │◄─────┤
└──────────────────────┘      │
           │                  │
           ▼                  │
┌──────────────────────┐      │
│   Select DMX-output  │◄─────┤
└──────────────────────┘      │
           │                  │
           ▼                  │
┌──────────────────────┐      │
│  Select DMX-address  │◄─────┤
└──────────────────────┘      │
           │                  │
           ▼                  │
┌──────────────────────┐      │
│ Place fixture on stage│     │
└──────────────────────┘      │
           │                  │
           ▼                  │
┌──────────────────────┐      │
│    Rotate fixture    │──────┘
└──────────────────────┘
           │
           ▼
┌──────────────────────┐
│  Exit and save SETUP │
└──────────────────────┘
```
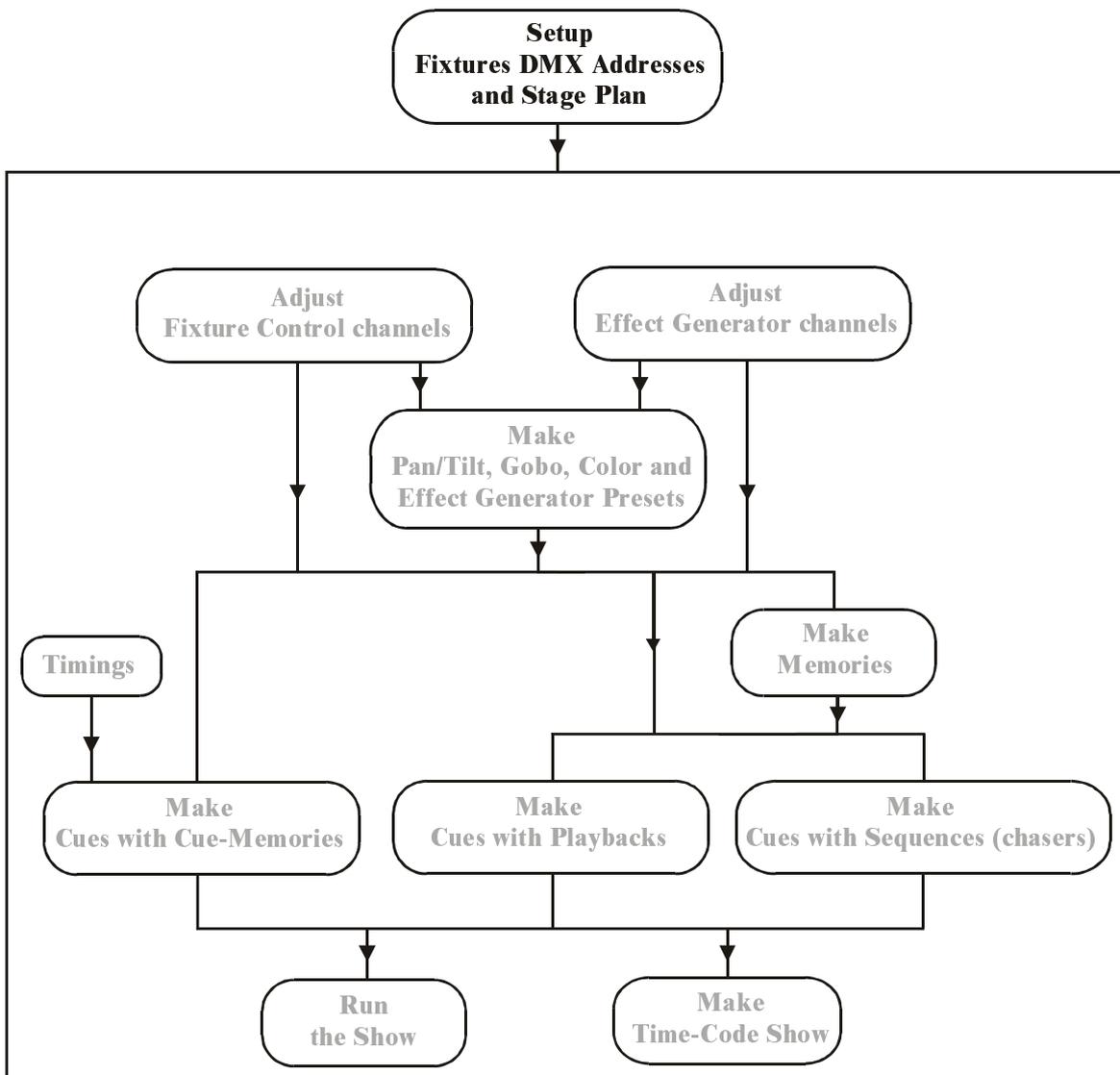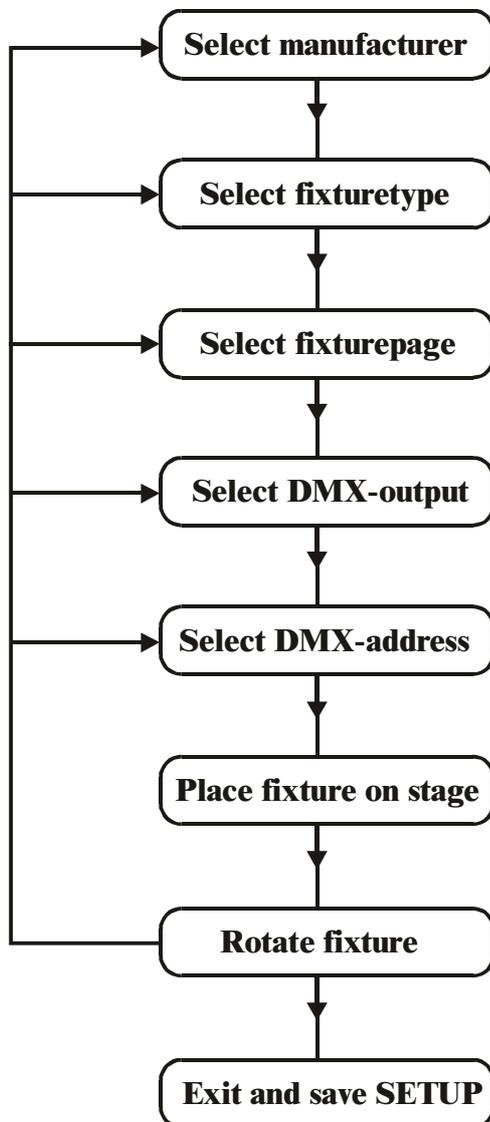
## 4.1. Start-up

When the controller is powered on, or when the option **'START'** is chosen from the menu, the main-program will show up.

To control lights with the controller, first the STAGE has to be built. The corresponding fixtures with their corresponding DMX addresses have to be set up.

The **SETUP** program is used to:
- modify the start-up options of the main program
- draw the stage layout
- set up the fixtures from the library
- set up fixture addresses
- re-patch fixture channels and fixture numbers
- select the dimmer curves for dimmer channels
- activate/deactivate dimmer channels for dimmer programming
- link controllers
- select the RGB (CMY) library
- print and export the patch setup and the stage layout

**[SETUP]**

The setup program is started from the main program by selecting the **[SETUP]** key (hold it during 2 sec).

2 key LEDs will start blinking now on the keypad. There are 2 possibilities:
- **Select [1]** to start the fixture setup program
- **Select [2]** to modify the start-up options and the default values for the main program

If option *[1]* is selected, the screen below will appear:
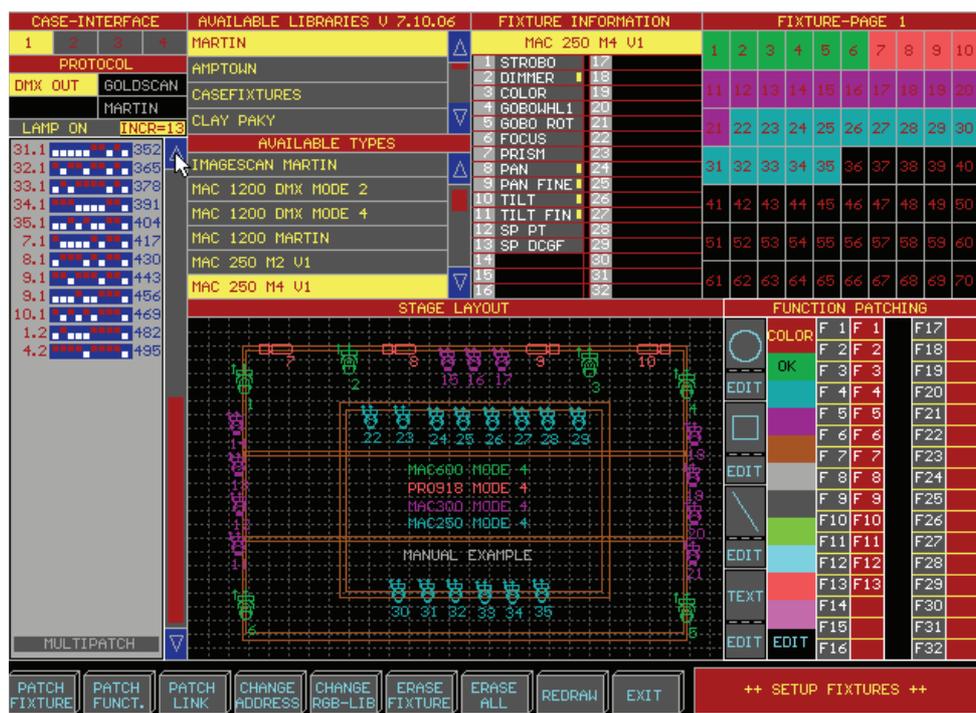
## 4.2. Set up fixtures

### 4.2.1 Fixture library
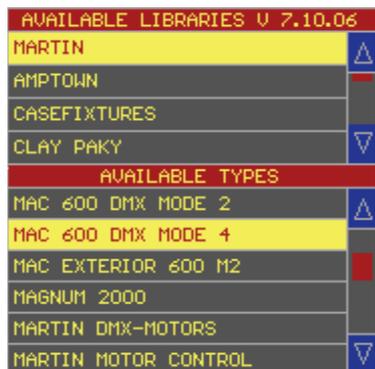
To place a fixture on the stage, the fixture has to be chosen from its library.
***First select a fixture page with the [Fixture PgUp] or [Fixture PgDn] keys.*** (There is a choice between 10 pages of 70 fixtures).

Then select a manufacturer, ***for example Martin,*** and select a fixture type.

Suppose we will build a stage with 6 MAC600 in mode .4

### 4.2.2 Fixture Information Window

From the moment, the fixture type is selected, its fixture channels will appear in the 'Fixture Information' window.

In this example, a MAC600 (mode 4) was selected. This fixture has 14 functions or channels. A yellow square behind the channel indicates that the channel has fading possibilities

### 4.2.3 Interface window

This window reveals the INTERFACE outputs and for older controllers also the PROTOCOLS. ***Select with the trackerball an output and a protocol.*** Output 1 is the same as channels 1 to 512, output 2 = channels 513 to 1024, output 3 = channels 1025 to 1536 and output 4 = channels 1537 to 2048.
A yellow box denotes the selected output, a gray box means a possible choice and a black box indicates that the option is not installed.

Rem. 1: It is not always possible to select a protocol, since the protocol depends on the fixture type. Also, on new controllers, only the DMX OUT protocol is available.

Rem. 2: Depending on the configuration, all output boxes may be gray, indicating that all outputs are available, but as explained in the menu chapter, a controller can be set up for 2048 channels with only 1 physical output available.

### 4.2.4 Dipswitch window
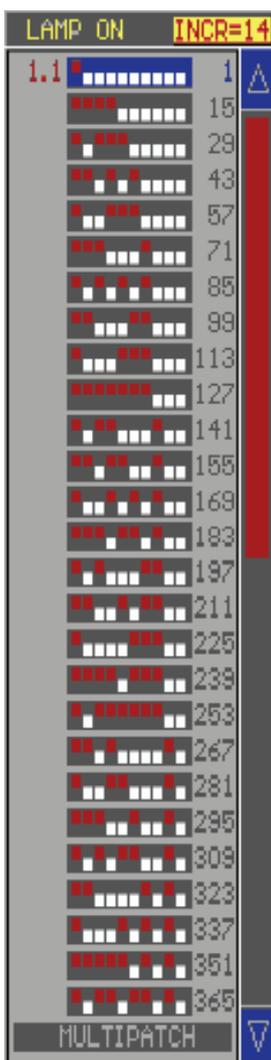
From this window, the fixture addresses are selected. The dipswitches represent address switch positions on the fixtures. New fixtures today use displays.

The **numbers on the left** represent the **fixture patch number,** as they appear in the stage layout window, and the **stage page** or fixture page where it is placed.

### Patch number.Stage page

The **numbers on the right** represent **fixture addresses.** The addresses increase per number of fixture channels. By clicking the **INC=14** box, the addresses will increase by 1 (the box will show INC=1).

When the fixture type, the output and the protocol are selected, *slide with the trackerball over the dipswitches.* When the dipswitch address corresponds with the physical fixture address, the fixture will respond with a Pan/Tilt at half its values, dimmer open, no gobo and no color. A gray box indicates an address not selected yet, a light blue box indicates a partially used address section and a dark blue box indicates that the address section is completely taken.

There is a second option to select the address by means of the keypad: select: *[@] number [RET]*.

If the fixture is equipped with a lamp-on/off function, the command LAMP ON is executed by selecting the *LAMP ON* box before the fixture address is chosen.


### 4.2.5 {EXP}  Multipatch/Softpatch

From this software version (7.20), there are **multipatch or softpatch** possibilities for certain fixture types like dimmers (out of the dimmerpacks library) or spots (out of the spots library). There are also some fixture types, like the VL5, that have a dimmer channel that is separately addressable. When those types are selected, the softpatch window will open automatically.

**Multipatch/Softpatch** gives the possibility to:
- individually address all channels of a dimmerpack
- assign multiple addresses to one singe dimmerchannel

When a dimmer or spot is taken, and instead of selecting an address, the **_MULTIPATCH function is activated_**, a softpatch window will open.
**_Place the fixture somewhere in the Stage window_**.
**_Select a channel from the fixture information window and select ADD CHANNEL._** *Assign an address (see previous paragraph) to the channel.* The channel will appear in the softpatch window. With the **add channel** function, multiple addresses can now be assigned to one single channel. If an address has to be deleted from the window, select its address line in the softpatch window and click the **DELETE CHANNEL.**

A quick and shorter method to assign addresses: Select a channel from the fixture information window and press *[@]  [address* (keypad)*]  [RET]* or in case addresses 10 to 20 need to be assigned to the channel: *[@] [10* (keypad)*] [THRU] [20* (keypad)*] [RET]*

### 4.2.6 <u>Stage window</u>
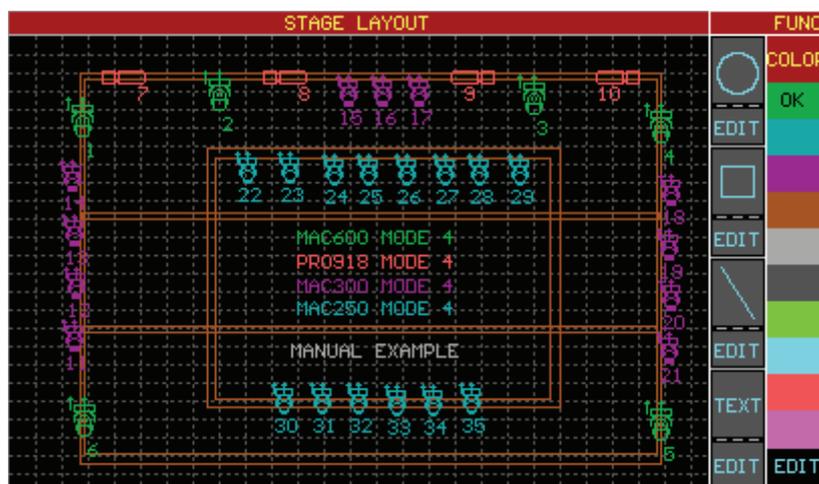


It is important that the **Pan/Tilt directions of the fixture correspond with the directions made with the trackerball.** To apply this correspondence the fixture can be turned in 9 possible positions with the keypad keys *[1…9]. **The fixture is now ready to be positioned somewhere on the stage by confirming its position with the left trackerball key.**

It is always possible to move the fixture by re-selecting it in the stage window.

When the same fixture type, with successive addresses, has to be set up, it is faster to select the *[next] key after assigning the first address to the first fixture.*

It is also possible to draw circles, rectangles and lines in the stage layout window. In addition, some texts can be added. Afterwards, everything can be edited with their EDIT function.

By default, everything that is placed in the stage window has a green color. To keep everything well organized, it is better to select first a color before a fixture is set up or before drawing lines etc… It is always possible to change colors afterwards with the EDIT functions.

### 4.2.7 Fixture patch window



From the moment the fixture is placed in the stage window, its number with its color will also appear in the fixture patch window.

This same window will also be displayed in the main program. The numbers 1…70 represent the fixture numbers on the selected fixture page as they appear in the stage layout window

### 4.2.8 Saving the setup

*Click on the EXIT box or select (and hold for 2 sec) the [SETUP] key.*
*Click the SAVE box or select key [1], NOT SAVE or key [2] or [ESC] to abort.*

**It is impossible to leave the SETUP as long as there are patch faults** (overlapping addresses).

### 4.3. Trackerball and keys in the setup program

**Trackerball**

Only the 2 upper trackerball keys have a function in the setup program:
- LEFT KEY: apply
- RIGHT KEY: abort

**Front-panel keys**

**In general:** When a function has been selected, the LEDs of the keys belonging to the selected function will blink.

| | |
|---|---|
| *Keypad [2] and [8]*: | Line down, up, like address down, address up. |
| *Keypad [1 ... 9]*: | Rotating fixtures |
| | Manually assigning addresses followed by *[RET]* |
| *[PgUp] en [PgDn]*: | Page up, Page down: for example address page up or address page down in the dipswitch window. |
| *[Fixture PgUp] and [Fixture PgDn]*: | Selecting a fixture page. |
| *[ESC]*: | Abort |
| *[@]:* | Select this key first when values need to be assigned, for example when assigning DMX addresses. |

## 4.4. {EXP} Other functions
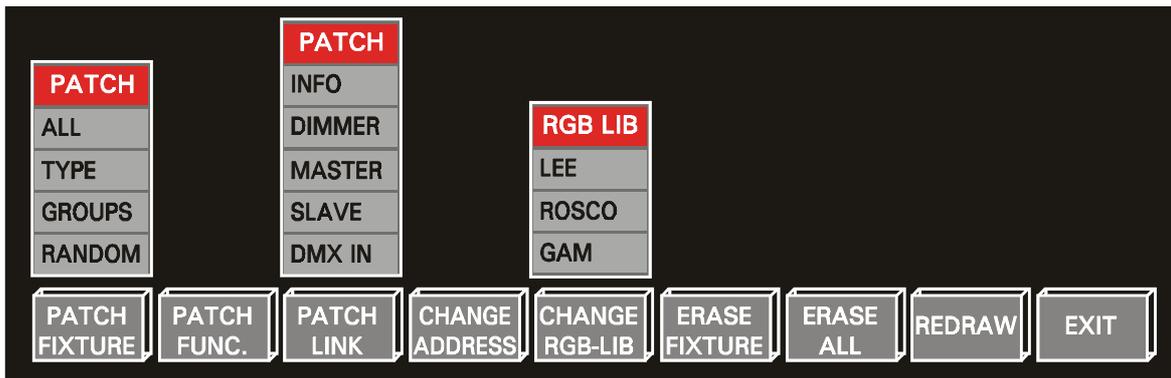


## 4.4.1 {EXP} Patch Fixture

This is a re-patch function or re-number function for fixtures already being placed on the stage.

**All**

All fixture numbers change starting from 1.
First, the fixture type, of the fixture that has to become fixture 1, has to be selected.
Then the fixtures, within the selected type, have to be clicked in successive order.

**Type**

To change the fixture order within one fixture type.
First, select the type (for example MAC300 or MAC600), and then click the fixture that has to become first within the selected type.

**Groups**

To renumber the fixtures by selecting complete groups of fixtures.
Select in successive order the groups. The fixtures will be renumbered automatically.

**Random**

To break the fixture type ordering. Every fixture can be ordered as wished.
The fixtures are selected in successive order.

---

Tip: It is also possible to re-patch fixtures by using the **DRAG AND DROP** function with the trackerball. Just click the fixture number, in the fixture patch window, with the left trackerball key and hold it. Drag the number to another position and drop it by releasing the key.

---

### 4.4.2 {EXP}  Patch Function

Like fixtures, also the fixture channels can be re-patched, since every fixture type has another channel ordering.

Ex.: For all types, channel 1 has to be dimmer, channel 2 has to be color and channel 3 gobo.

First, select a fixture from the library. The function patch window shows it's patching:



This picture represents the function patch for a MAC600 in Mode 4.

In this example, channel 2 (dimmer) is re-patched to channel 3 (CYAN) (F2 = F3 (cyan)), and channel 3 becomes the dimmer channel (F3=F2 (dimmer)). Channel 1 remains the same (F1 = F1).

If we want channel 2 to become the dimmer again and channel 3 to become cyan again then select:

***Patch Function, give the number of the channel to re-patch (ex. 2 [RET]), followed by the channel number where it should be re-patched to (ex. 2 [RET]***. In this case, channel 2 is re-patched to its original state (F2 = F2). The same sequence has to be repeated for channel 3 ([3] [RET]  [3] [RET])

Rem. 1:    It is impossible to re-patch 2 channels to the same function. The re-patch of the channels has to be completely finished, or an error message will appear (the red area cannot contain 2 times the same patch channel).

**Rem. 2:    It is also impossible to assign a patch number greater than the maximum number of channels of the fixture.** This means that the empty boxes cannot be used.

### 4.4.3 {EXP}  Patch link

### 4.4.1.1 {EXP}  Info

This function gives an overview of the already patched fixtures together with their addresses, protocols and dipswitch settings. This info may be printed (in hp laserjet mode) or exported.



There are 2 possible ways to group the information: by fixture type *(type)* or by controller output *(output).*
When exporting, the stage layout can be added to the export file *(include stage).*

When the *(export)* function has been selected, the exported BMP file has to be copied to a floppy disk using the MENU item *(TO/FROM FLOPPY)* (see chapter menu). This file can be imported and printed on a Windows PC.

### 4.4.1.1 {EXP}  Dimmer

Dimmer channels can be used with some advanced functions. **Dimmer curves** can be assigned to them and the dimmer channels can be added to a list of dimmer channels where **special dimmer commands can be applied on.** Those special commands are for example DIMCHANNEL x THRU y @ zz%
Each dimmer channel can be configured separately.

In the above example, dimmer channel 35 represents the dimmer of a MAC250. It is activated, which means that it is included in the list where the special dimmer commands can be applied on. The channel has a linear dimmer curve.

Channel 36 is also included in the list and linear. Because channel 36 represents a PAR64, we can assign another curve like PRE-HEAT to it.

*To activate dimmer channels in the list, the fixture(s) have to be selected with the trackerball and the ACTIVE or NONACTIVE box has to be clicked.*

*When the item DIMCURVE is selected, a supplementary window will open:*
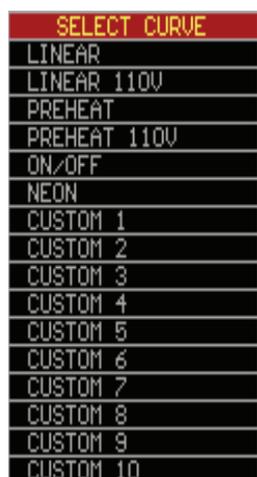
**Linear:** Normal linear curve
**Linear 110V:** Linear curve limited to 50% max value
**Preheat:** Linear curve starting from 5%
**Preheat 110V:** Preheat curve limited to 50% max value
**ON/OFF:** Relays function
**Neon:** Curve special for neon lamps
**Custom x:** User curves to be made with the program 'Logicurve'

Note: the program 'Logicurve' is a Windows based program that can be downloaded from the net for free. (addresses: see chapter Introduction). The user curves have to be imported to the controller using the menu.

### 4.4.1.2 {EXP}  Master (linking controllers, function has to be used on the MASTER desk)

MartinCase controllers are linked through DMX. This way, up to 41 controllers (with playback info) and up to 113 controllers (without playback info) can be linked. **To accomplish this, the DMX output of the master controller is connected with the DMX input of the slaves.**

*To set up a link, a fixture called 'Case slave controller' (out of the Casefixtures library) with its DMX address, has to be placed on the stage*
There are 3 possible fixture choices:
– Case slave console: this is a slave controller without point cues and limited to 10 playbacks. **New shows shouldn't use this fixture anymore, it is only included in the library to insure compatibility with older shows. New shows should select the Case Slave Desk V2.**
– Case slave desk V2: this is a slave controller with point cues and 10 playbacks.
– Case slave wing: Together with Case slave desk V2, a Pro Plus controller can be linked.

After setting up the Case slave desk, the function ***Patch Link  --  Master*** has to be selected. One has to make the choice between Playbacks, Masters and Cues automatic or manual:

- Automatic:    Playbacks, Master faders or cues will be send immediately to the slave desks as soon as there is a change in one of them on the master. The playbacks and master faders will have the same value on the save desks and the same cues will be activated. In this case, you don't have to worry about the slave desks placed on the stage; they are only there for the DMX addressing.

- Manual:    The slave devices on the stage act as normal fixtures. Master faders and playbacks have to be controlled as if they were normal fixtures. The cues will only be activated on the slave desks when Case Slave Desk channel 17 has a value higher than 50%. The advantage is that different cues numbers and different master and playback fader values and can be activated on the slaves.

***On the slave desk, patch link SLAVE must be activated*** (see next paragraph).

### 4.4.1.3 {EXP}  Slave (linking controllers, function has to be used on the SLAVE desk)

When controllers are linked, the function ***Patch Link – SLAVE has to be activated on each slave desk*** to assign a DMX address to the slave controller.

When the function is selected, the DMX address of the ***Playbacks – master – cue*** will be asked. This has to be the same address as assigned on the **master** desk for the **'Case Slave Desk V2'.**

When there is also a **'Case slave wing'** set up on the master, the address of the ***Playbacks 11 –42*** on the slave should correspond with the 'Case slave Wing' address assigned on the master. When there is no slave wing set up on the master, just press *[RET]* on the Playbacks 11-42 item of the slave desk.

De controller will ask now if the master is working in %***proportional or digital*** mode. In case of a MartinCase controller, select the digital option, in case of an other brand master controller, you have a choice.

**Note:** It is possible to control a MartinCase desk from an other brand controller using DMX. The other brand controller, which will act as master, needs a library called 'Case slave desk V2' and 'Case Slave Wing'  (for the channel values, see next page). It is also possible to control the MartinCase slaves with a dimmer on the Master. A dimmer of:
   o 20 channels for a MartinCase with point cues
   o 32 channels in case of a MartinCase slave with playbackwing

The MartinCase slave controllers act as a normal fixture on the master. If a library is made for another brand controller, the channel assignment will be:

| Channel | Without point cues          (*) | With point cues | Playback-wing |
|---------|---------------------------------|-----------------|---------------|
| 1 | playback 1 | playback 1 | playback 11 |
| 2 | playback 2 | playback 2 | playback 12 |
| 3 | playback 3 | playback 3 | playback 13 |
| 4 | playback 4 | playback 4 | playback 14 |
| 5 | playback 5 | playback 5 | playback 15 |
| 6 | playback 6 | playback 6 | playback 16 |
| 7 | playback 7 | playback 7 | playback 17 |
| 8 | playback 8 | playback 8 | playback 18 |
| 9 | playback 9 | playback 9 | playback 19 |
| 10 | playback 10 | playback 10 | playback 20 |
| 11 | grandmaster | grandmaster | playback 21 |
| 12 | flashmaster | flashmaster | playback 22 |
| 13 | submaster1 | submaster1 | playback 23 |
| 14 | submaster2 | submaster2 | playback 24 |
| 15 | cuepage | cuepage | playback 25 |
| 16 | cuenumber | cuenumber | playback 26 |
| 17 | GO          (**) | GO          (**) | playback 27 |
| 18 |  | pointcue | playback 28 |
| 19 |  | not in use | playback 29 |
| 20 |  | not in use | playback 30 |
| .... |  |  | playback 31 |
| 32 |  |  | playback 32 |

(*) The Case slave desk without point cues should not be used any more starting from software version 7.0. It only exists in the library to retain compatibility with older shows.

(**) The GO function is used to activate the cue, set with channels 15 and 16. To activate the cue, the GO channel must have a value > 127 (>50%).

#### 4.4.1.4 {EXP}  DMX-IN

DMX coming from other controllers can be read using the *[SHIFT] [READ OUTP.]* keys in the main program when the controllers are linked through DMX-IN.

It is also possible to mix the DMX of 2 controllers with the same setup when both are connected through the DMX output, DMX input. The **DMX-IN** signal will be mixed with the **DMX-OUT** signal on the **HTP** principle. This means that the highest channel value will take over.

Ex.: Suppose we have 2 desks with the same setup. The 2 desks are connected DMX-OUT (desk 1) to DMX-IN (desk 2). Suppose channel 30 of desk 2 has a value of 80 and the same channel on DMX-IN coming from desk 1 has a value 100. On desk **2** the DMX value sent out by its DMX out will be 100.

DMX in (100) > DMX out (80) ----> DMX out = 100

To activate this, the DMX-IN channels of the fixtures on the stage must be active. Using the function *Patch Link - DMX-IN, the DMX-IN patch can be toggled ON or OFF.*

#### 4.4.2  Change address

This function is used to change the address of already patched fixtures on the stage.
**This function is also used to change the multipatch/softpatch of an already existing setup.**

*Select the function, click the fixture and select a new address value.*

#### 4.4.3 {EXP}  Change RGB lib

When CMY (RGB) fixtures are in use, the filter library can be chosen. In the main program, the *[RGB]* key is used to call a color by its filter number.
The library selected here will be used for all CMY fixtures in the main program. There is a choice between  LEE®, ROSCO®, or GAM®.

*Select the function and select a library.*

#### 4.4.4  Erase fixture

To erase an already configured fixture, *select this function and click on the fixtures to remove.*

#### 4.4.5  Erase all

To clear the entire stage. If this function is used accidentally, the setup can be left without saving.

#### 4.4.6  Redraw

Redraw everything.

### 4.4.7 Exit

To leave and save the setup program, *select the exit function.* When leaving, there is a choice between:
- Save
- Not save
- Cancel

When fixtures, of a type already in use in the stage, are added on an existing programmed show, the setup program will ask next question when leaving:

*Fixture x (Page y) is new.*
*Select a fixture to copy from...*

With keys *[1...70] or by clicking with the trackerball,* the fixture(s), to copy from, can be selected. All memories, presets and all cues of the selected fixture(s) will be copied to the new fixtures.

---

Tip: It is easy to make a standard show that can be used on every occasion, if always the same type of fixtures are used. Just prepare the show with only 1 or 2 fixtures of every type. Since you can copy memories, cues and presets from the programmed fixtures when leaving the setup, it is easy to extend an already existing show.

---

### 4.5 {EXP} Changing the start options and controller default values

*[SETUP] [2]*

When option *[2]* is selected from the main program when entering the SETUP, next menu will appear:



```
                    EDIT GLOBAL SETTINGS

GLOBAL TRANSPARENTMODE          CONSOLE SETTINGS
  PLAYBACKS TRANSPARENT  ON        AUTOMATIC PLAYBACK-MEMORIES
  SEQUENCES TRANSPARENT  OFF                 FROM  2501
CONSOLE STARTUP                   AUTOMATIC SEQUENCE-MEMORIES
  MODE                   FIXT.               FROM  3001
  VIEWMODE               STAGE      AUTOMATIC MEMORYNAME      ON
  SEQUENCE A             OFF        AUTOMATIC CUENAME         ON
  SEQUENCE B             OFF        AUTOMATIC PRESETNAME      ON
  SEQUENCE C             OFF        AUTOMATIC GROUPNAME       ON
  SEQUENCE D             OFF        DEFAULT Cuetimings
  CUEFADING              ON             delay in          0m 0.0s
  VALUES                 DIGIT.         fade in           0m 2.0s
  TIMECODE PLAY          OFF            delay out         infinite
CUEFADING OPTIONS                       fade out          0m 0.0s
  AUTOLOAD CUEMEM        ON             hold              infinite
  AUTOPREPARE CUES       OFF     TIMECODE SETTINGS
  AUTOMATIC TRACE        OFF        AUTOMATIC CUETRACKING    NORMAL
```

The different options will become clear when reading the next chapters in this manual. We will give here a brief description.

**Note: The values in this example are the values from the 'EMPTY' show. Every time a new show is started, those values will be applied to the show.**

- **Global Transparentmode**

  Sets the global transparent mode for the entire show. Possible choices for sequences and playbacks are: **OFF or ON**. Explanation in chapter Sequences and Playbacks.

- **Console Startup**

  **The controller will activate those options when starting up:**

  **MODE**
  Will start-up the controller in **Fixture mode or cue mode.**

  **VIEWMODE**
  Opens the **STAGE, TEXT** (names) **or VALUES** (channel values) screen when starting up.

  **SEQUENCE A – D**
  Options: **OFF or ON.** Starts or stops the sequences when starting up. (Chapter Sequences and Playbacks).

  **CUEFADING**
  Options: **OFF or ON.** Starts or stops the cuefading when starting up. (Chapter Cuetimings).

  **VALUES**
  Options: **DIGIT. or PERC.** Shows the channel values in digital or proportional. (Chapter Fixtures and Control channels).

  **TIMECODE PLAY**
  Options: **OFF or ON.** Starts or stops the time-code when starting up. Handy on exhibitions, to automate everything when the power comes up. (Chapter Time-code).

- **Cue-fading Options**

  **AUTOLOAD CUEMEMORY**
  Options: **OFF or ON.** Selects whether a cue-memory has to be loaded or not, in the temporary memory, when selecting a cue. (Chapters cue-memories and cue-timings).

  **AUTOPREPARE CUES**
  Options: **OFF or ON.** Selects whether the auto-prepare function is active or not. (Chapter Cue-timings)

  **AUTOMATIC TRACE**
  Options: **OFF or ON.** Selects whether the automatic-trace function is active or not. (Chapter Cue-timings)

- **Console Settings**

  **AUTOMATIC PLAYBACK-MEMORIES FROM**
  Sets the starting memory number from which memories will be created automatically when using the fast playback-programming mode. (Chapter Sequences and Playbacks).

  **AUTOMATIC SEQUENCE-MEMORIES FROM**
  Sets the starting memory number from which memories will be created automatically when using the fast sequence-programming mode. (Chapter Sequences and Playbacks).

  **AUTOMATIC MEMORYNAME**
  Options: **OFF or ON.** In ON mode, a memory name will be asked every time a memory is created (also when using the fast programming mode of sequences and playbacks). (Chapters Memories, Sequences and Playbacks).

  **AUTOMATIC CUENAME**
  Options: **OFF or ON.** In ON mode, a cue name will be asked every time a cue-memory is created. (Chapters Cue-memories).

  **AUTOMATIC PRESETNAME**
  Options: **OFF or ON.** In ON mode, a preset name will be asked every time a preset is created. (Chapter Presets).

  **DEFAULT CUETIMINGS**
  Assigns default timings, used when creating cue-memories. (Chapter cue-timings).

- **Time-code settings**

  **AUTOMATIC CUETRACKING**
  Sets the time-code cue-tracking mode. (Chapter Time-code and Midi). Possible choices are: Disabled, normal or full. This setting stipulates what should be done with previous cues when the time code is started in the middle of a time-code show.

---

| *[2↓] or [8↑]  [EDIT]* |
| --- |

To change the settings, highlight the item with the *[2↓] or [8↑]* keys and press the *[EDIT]* key. When timing-values have to be given, use the keypad.

To save the settings, press the **[RET]** key.

**4.6** **Summary**

Before programming starts, the stage setup has to be created.

To create it:
- select a manufacturer
- select a fixture type
- select a fixture page with *[Fixture PgDn], [Fixture PgUp]* (up to 10 pages)
- select the address and output
- put the fixture somewhere in the stage window
- rotate it to correspond the Pan/Tilt motions with the trackerball actions
- repeat these steps until all fixtures are done
- save the setup and return to the main program

Other functions:
- drawing attributes to the stage and adapt the colors
- re-patch fixtures
- re-patch channels
- select dimmer curves
- linking of controllers
- configure DMX-IN
- RGB library select
- print and export the stage and patch

The start options and default settings can be modified, and the auto-trace and auto-prepare functions can be activated.

## 5   CHAPTER 5: Introduction to programming

```
┌─────────────────────────┐
│          Setup          │
│  Fixtures DMX Addresses  │
│      and Stage Plan      │
└─────────────────────────┘
```

Setup
Fixtures DMX Addresses
and Stage Plan

Adjust
Fixture Control channels

Adjust
Effect Generator channels

Make
Pan/Tilt, Gobo, Color and
Effect Generator Presets

Make
Memories

Timings

Make
Cues with Cue-Memories

Make
Cues with Playbacks

Make
Cues with Sequences (chasers)

Run
the Show

Make
Time-Code Show
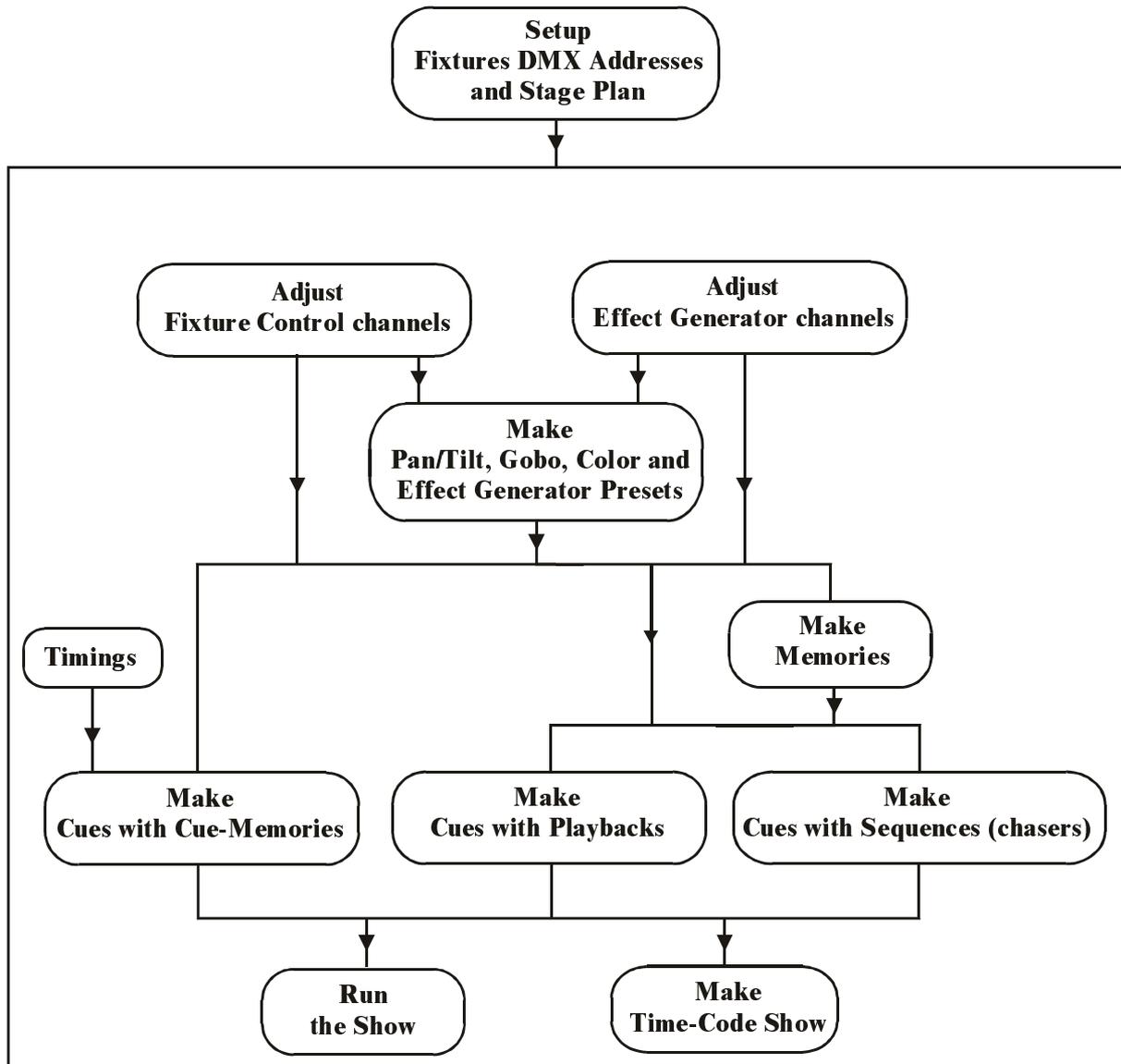
**This chapter gives a short description of the working of the Martin Case controller. Also some frequently used terms will be explained.**

## 5.1. Philosophy

```
                    ┌─────────────────┐
                    │    PRESETS      │
                    └─────────────────┘
                             │
                             ▼
         ┌───────────────────────────────────────┐
         │        Changes in light scene         │
         └───────────────────────────────────────┘
              │                  │          │
              │                  ▼          │
              │        ┌──────────────┐     │
              │        │  MEMORIES    │     │
              │        └──────────────┘     │
              │              │    │         │
              │              ▼    ▼         ▼
    ┌─────────────────────────────────────────────────┐
    │  CUE X                                           │
    │                                                  │
    │  ┌────────────┐  ┌────────────────┐  ┌──────────┐│
    │  │ CUE MEMORY │  │SEQUENCE(chaser)│  │ PLAYBACK ││
    │  │            │  │ ┌─┐┌─┐┌─┐┌─┐    │  │┌─┐┌───┐┌──┐│
    │  │            │  │ │A││B││C││D│    │  ││1││...││42││
    │  │            │  │ └─┘└─┘└─┘└─┘    │  │└─┘└───┘└──┘│
    │  └────────────┘  └────────────────┘  └──────────┘│
    └─────────────────────────────────────────────────┘
```
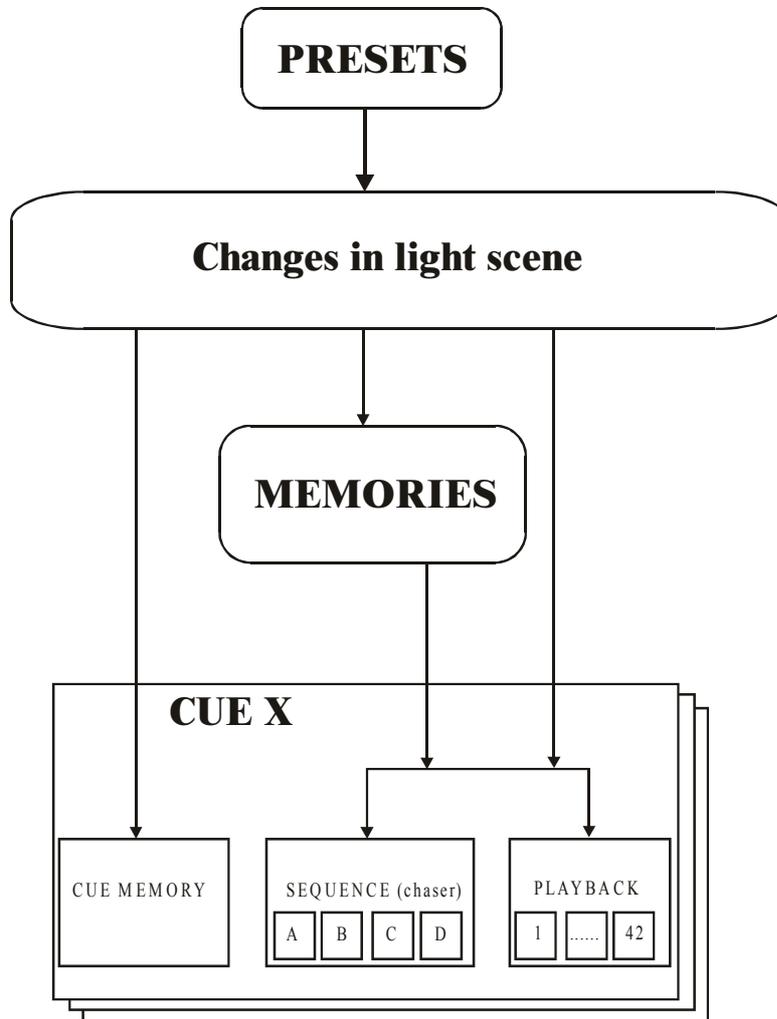
Martin Case controllers have many possibilities to control light. Every light engineer will develop his own method to create a fluent program style.

Martin Case controller's philosophy is very simple:
- First **PRESETS** have to be created, to make programming easier in a later stage.
- With those presets and with the fixture control channels, **changes in light scenes** are made.
- Those changes can be saved in **memories, in playbacks or sequences** (memories will be created automatically) or stored immediately in a **cue memory.**

## 5.2. PRESETS

**Presets have one purpose: saving frequently used Pan/Tilt positions, colors, gobos and effects in some kind of a user library,** to avoid that those values have to be adjusted again and again. Those preset-values can be used in a later stage, to make memories or light scenes. If a preset, already in use in a memory, playback or sequence, is changed, the changes will be forwarded immediately to them.
When presets are used in a show 'on tour', it becomes very easy to adapt the show to a new hall, by changing some of the presets.

**Presets are user definable combined settings of a main function of more fixtures together. Also, every main function has a number of sub-functions that can be toggled on or off.**

The main functions of the fixtures are: Pan/Tilt, color, gobo and effect. In every preset, the user can also adjust some of their sub-functions like, for example, the focus or dimmer in case of a Pan/Tilt preset. Those settings are stored for all fixtures together.

The user can store 70 presets in every main function.

```
┌─────────────────────────────────────────────────────────────────────────┐
│                            PRESETS                                        │
│                                                                           │
│  ┌────────────┐  ┌──────────────┐  ┌──────────────┐  ┌──────────────────┐ │
│  │70 x Pan/Tilt│ │ 70 x Gobo    │  │ 70 x Color   │  │ 70 x Effect      │ │
│  │            │  │              │  │              │  │                  │ │
│  │- Pan/Tilt  │  │- gobo wheel 1│  │- color wheel1│  │- Pan/Tilt effect │ │
│  │  info      │  │- gobo wheel 2│  │- color wheel2│  │  parameters      │ │
│  │- Focus info│  │- gobo wheel 3│  │- color wheel3│  │- gobo effect     │ │
│  │- Dimmer    │  │- gobo wheel 4│  │- color wheel4│  │  parameters      │ │
│  │  info      │  │- gobo        │  │- color       │  │- color effect    │ │
│  └────────────┘  │  parameters  │  │  parameters  │  │  parameters      │ │
│                  │- knifes      │  │- RGB         │  │- effect effect   │ │
│                  │- knife       │  │- dimmer      │  │  parameters      │ │
│                  │  parameters  │  └──────────────┘  │- iris effect     │ │
│                  │- effects1    │                    │  parameters      │ │
│                  │- effects2    │                    │- zoom effect     │ │
│                  │- effects3    │                    │  parameters      │ │
│                  │- iris        │                    │- focus effect    │ │
│                  │- zoom        │                    │  parameters      │ │
│                  │- focus       │                    │- dimmer effect   │ │
│                  │- frost       │                    │  parameters      │ │
│                  │- prism       │                    └──────────────────┘ │
│                  └──────────────┘                                         │
└─────────────────────────────────────────────────────────────────────────┘
```

Every preset has a number of sub functions, which can be toggled, on or off: ex. When loading Pan/Tilt presets, the focus and dimmer info can be loaded too or not.

Gobo presets can hold info of 4 gobo wheels, gobo parameters like speed..., knifes (on the PAL1200), certain effect wheels, iris, zoom, focus, frost and prism.

Example: When we work with the stage layout of the setup, we can make Pan/Tilt combinations with all fixtures. Suppose, we take the home position of all spots and this position is stored in Pan/Tilt preset 1 (home). Then we make a preset where they all focus 1 spot. We save this to Pan/Tilt preset 2. Then we can make color combinations with all fixtures and we save them in one of the 70 color presets. For example white, yellow and blue. This is important to gain programming time, because the color channel is not always on the same channel position for different fixture types. Also the color values change depending on the fixture type.

When shows have to be done at different locations with the same programmed show, then the programmed Pan/Tilt positions will certainly not be correct at each location. It will be easier now to change 70 Pan/Tilt presets than to check all the memories that hold Pan/Tilt info. Pay attention, the memories have to be programmed with presets, otherwise it won't help.

## 5.3. Changes in light scene

Martin Case controllers use the principle: only the changes is light scenes have to be stored in the memories. This means **that it is not necessary to store all parameters of all channels of all fixtures in the successive memories.** It is sufficient to store only once all parameters of all fixtures and then, only those parameters that change in the next memories.

<div style="border:1px solid black">

### Changes in light scenes

| Light scene 1 | All channels of all fixtures |

| Light scene 2 | Only the channels of the fixtures that change to scene 1 |

</div>
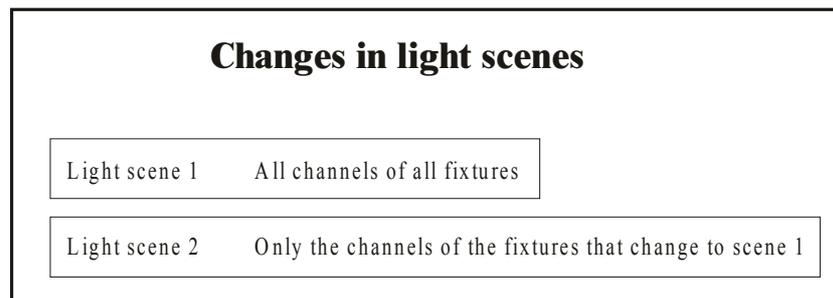
Example: Light scene 1: Let's take Pan/Tilt preset 1 (all spots home) and we program: no gobo, color white, no strobo,...
Light scene 2:   Only the color has to change. It is not necessary to program the Pan/Tilt, gobo and strobo info again, only the color change compared to light scene 1, has to be stored.

## 5.4. Dimmer functions

In chapter 'SETUP' was explained that dimmer channels could be stored into a list of dimmers where special dimmer commands can be applied on. Those dimmer commands can be things like:
- Dimmer 1 to 20 at 50%
- Decrease 5% on dimmer 5
- Increase all dimmers with 20%
- …

## 5.5. Cues

A cue is can have:
– a cue memory
– 4 sequences (chasers)
– 42 playbacks
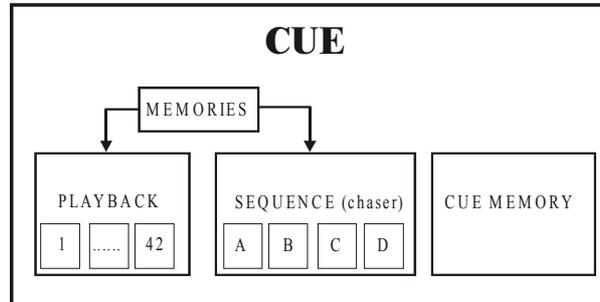


The system can hold up to 11,200 cues (16 pages of 70 cues + 9 point cues between every cue). This means that it can have 11,200 cue memories, 44,800 sequences and 470,000 playbacks.

### 5.5.1 Cue-memory

A cue-memory can be compared to a light scene. The light scenes we've made can be stored in cue-memories and we have the possibility to add **fade-times to them. Up to 2,000 cue-memories can be stored in the system.**

The cue memories **can** hold next parameters:
– all channel parameters (up to 32 per fixture) of all fixtures (up to 700 fixtures).
– all effect parameters (7 to 10) per channel, per fixture.
– delay-in time equal for all channels, or different per fixture channel
– fade-in time equal for all channels, or different per fixture channel
– delay-out time equal for all channels, or different per fixture channel
– fade-out time equal for all channels, or different per fixture channel
– hold time equal for all channels, or different per fixture channel

On every channel of every fixture, an effect can be set. This way it is possible to create enormously fast a color effect together with a Pan/Tilt motion in one single memory. (see chapter effects generator).

Cue memories are handled the same way as light scenes. **Also here, only the changes to the previous memories have to be stored.** Moreover, fade times can be put on every single channel.
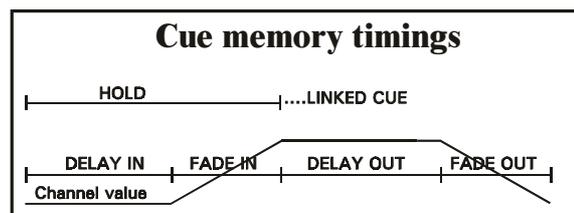
- Delay-in: the wait time before the channel fading starts
- Fade-in: the time needed to fade-in the channel
- Delay-out: the wait time before the channel starts fading-out
- Fade-out: the time needed to fade back to its start value
- Hold:   the wait time before calling another cue (link)

The **cue fading** can be **stopped, accelerated or decelerated at any time** during the performance. This function is often used in live performances where the timings depend on the speed of the actors.

**It is also important that cue-memories make use of the presets as much as possible.** It is easier to change 70 presets than having to scroll through 2,000 cue-memories.

**Multi-select cues:** This is a function, which makes it possible to pre-select multiple cues and start them at the same moment. For example, starting a Pan/Tilt cue-memory, together with a color-memory and a gobo-memory. Important here is that the different cue-memories don't hold values for the same channels.

**Auto-prepare:** When the dimmer is closed in one cue and opened again in one of the next cues, the controller will look ahead and execute all non-dimmer channels between those 2 cues, the cue where the dimmer opens included.

**Auto-trace:** This function is useful if the cues are programmed in successive order of performance. When those cue-memories are programmed on the 'only changes' principle, it can happen that a light scene is not reproduced correctly when going back a few cue-memories. At this point, the auto-trace function will gather all channels in descending cue-order, starting from the last activated cue, until he has found a value for all channels.

## 5.5.2 Sequences

A sequence can be compared with a chaser. The light scenes can be placed in a user definable order and in an endless loop so that they can be called automatically.

**Sequences are built with memories** (see paragraph memories). Starting from this software version, those memories are created automatically when light scenes are added to a sequence.

Memories in the sequence:
- start memory: this is a memory executed only ones when the sequence is started or when the sequence is linked.
- loop memories: these memories are executed in an ending or endless loop. 100 loop memories can be added.
- stop memory: this memory is also executed only once when the sequence is stopped or linked.

## Cue xx

| Sequence A | Sequence B | Sequence C | Sequence D |
|---|---|---|---|
| Start memory | Start memory | Start memory | Start memory |
| Loop memory 1 | Loop memory 1 | Loop memory 1 | Loop memory 1 |
| Loop memory 2 | Loop memory 2 | Loop memory 2 | Loop memory 2 |
| Loop memory 3 | Loop memory 3 | Loop memory 3 | Loop memory 3 |
| Loop memory 100 | Loop memory 100 | Loop memory 100 | Loop memory 100 |
| Stop memory | Stop memory | Stop memory | Stop memory |

In every cue, up to 4 sequences can be used. Every sequence:
- has his own fade and wait times for the loop memories
- has a start/stop key
- has loop memories that can run forwards, backwards, in bounce or at random
- can be synchronized with other sequences
- can run in automatic mode, in manual trigger mode or in 'learn the beat' mode
- can be linked with another cue to call other sequences automatically

### 5.5.3 Playbacks

A playback is **one light scene that can be faded in by a slider or by a switch (flash key)**. There are 42 playbacks available per cue. **A playback holds 1 memory** (see paragraph memories). Starting from this software version, those memories are created automatically when light scenes are added to a playback.

When a flash key activates the playbacks, **a fade-in and fade-out time** can be added **per playback.** When used by a flash key, there are 3 possible modes:
- Flash:　The memory is faded-in (with fade-in time) when the key is pressed. Releasing the key results in fading-out (with fade-out time).
- Toggle:　The memory is faded-in (with fade-in time) when the key is pressed. When the key is pressed again, the memory fades-out (with fade-out time).
- Kill:　Two playbacks **of the same cue** in kill mode: pressing the key of the first playback results in fading-in the memory (with fade-in time). Pressing the key of the second results in fading-out the fist one (with fade-out time) and at the same time fading-in the second (with fade-in time) = (radio button mode). When the last flash key is pressed again, a fade-out will happen.

```
┌─────────────────────────────────────────────────────────┐
│                       CUE xx                            │
│                                                         │
│   Playback 1   Playback 2   Playback 3  ........... Playback 42  │
│                                                         │
│   ┌──────┐    ┌──────┐    ┌──────┐      ┌──────┐        │
│   │Memory│    │Memory│    │Memory│      │Memory│        │
│   └──────┘    └──────┘    └──────┘      └──────┘        │
│  Fade-in time Fade-in time Fade-in time  Fade-in time   │
│  Fade-out time Fade-out time Fade-out time Fade-out time │
└─────────────────────────────────────────────────────────┘
```
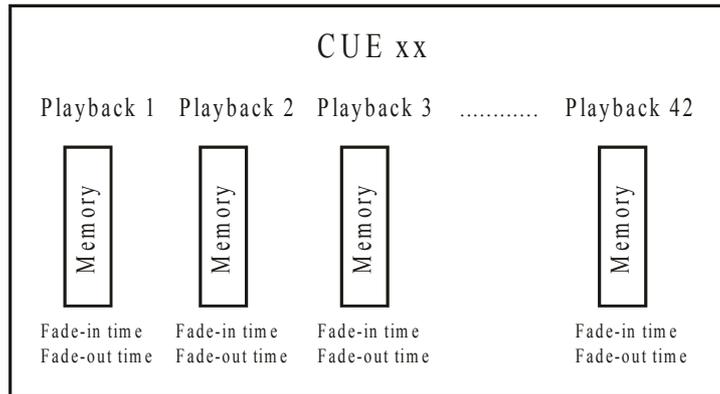
### 5.5.4 <u>Memories</u>

The memories we've mentioned in the sequences and playbacks paragraphs, are in fact light scenes. They are comparable to cue-memories, only the fade-timings are missing. From software version 7.0, there are **4,000 memories available to program.** This means that 4,000 different light scenes can be programmed.

The memories **can** hold next parameters:
- All channel parameters (up to 32 per fixture) of all fixtures (up to 700 fixtures).
- All effect parameters (7 to 10) per channel, per fixture.

Like mentioned in previous paragraph, it is not necessary to save the values of all channels in the memories. If only the color has to change, only the color channel has to be filled in. The other parameters will **remain empty.**

On all channels of all fixtures, an effect can be run. It is very simple to create a color chase together with a Pan/Tilt motion in only one memory (see: effect generator).

**It is very important that the presets are used as much as possible in the memories.** It's faster to change 70 presets than 4,000 memories.

### 5.5.5 <u>Priorities within a cue</u>

**This is the most important paragraph from this chapter.**

**General:**     **HTP** (highest takes precedence) **is used for DIMMER channels.** I.e. the highest active value for a dimmer channel will take precedence over the rest.

**LTP with priorities is used for all other channels**. I.e. the active function (cue mem, sequence, playback) with the highest priority for the same channel, takes precedence over the rest. **The cue memory has the lowest priority, followed by sequence D, C, B, A and playbacks 41, 40, ..., 1. There is also the MANUAL mode. It has the highest priority.**

These rules are only valid IF THE SAME FIXTURE CHANNEL IS USED IN THE CUE MEM, SEQUENCES, PLAYBACKS OR MANUAL MODE.

**Memory modes can change the priority.**

- 

# Priorities within the CUE

### ONLY IF THE SAME CHANNEL IS USED IN THE DIFFERENT FUNCTIONS (cue mem, sequence, playback, manual)

| Channel is a DIMMER channel | | Channel is NO DIMMER channel (or dimmer channel in mode 5 or 6) | |
|---|---|---|---|
| CUE memory | | CUE memory | Lowest |
| Sequence D | | Sequence D | |
| Sequence C | Highest value takes precedence | Sequence C | Order of priority |
| Sequence B | | Sequence B | |
| Sequence A | | Sequence A | |
| Playback 42 | | Playback 42 | |
| Playback 41 | | Playback 41 | |
| .......... | | .......... | |
| Playback 1 | | Playback 1 | |
| Manual mode | | Manual mode | Highest |
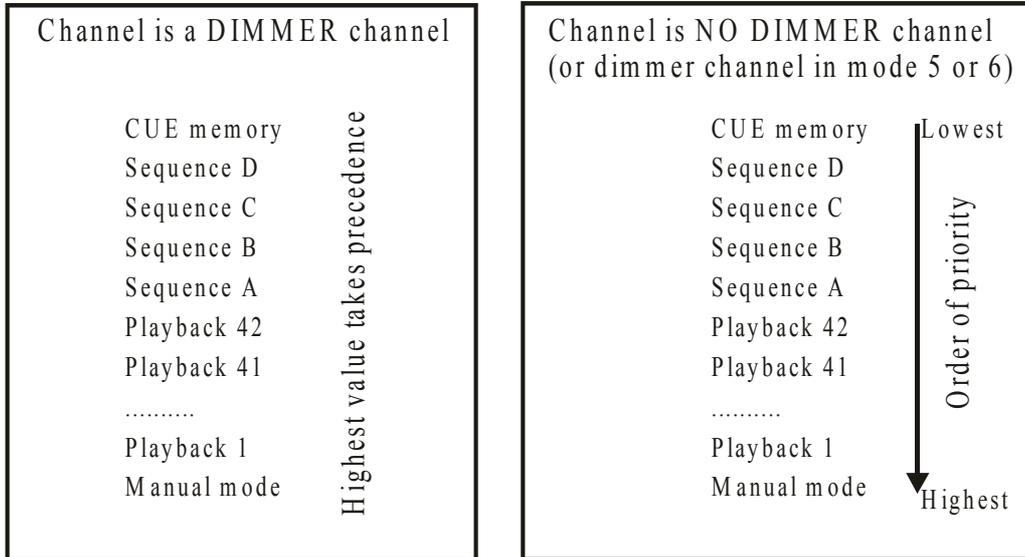
**Note for HTP on the dimmer channels:** The HTP for dimmers can be disabled by applying MODE 5 or MODE 6 on the memory (see: memory modes)

## 5.5.6 Transparent mode

Sequences, playbacks or the entire show can be used in 2 modes:
- Transparent mode on
- Transparent mode off

**Transparent mode on:**    **When changing cues, only the programmed sequences/playbacks of the called cue will replace** the functions of the previous one.

Suppose, there are 2 cues:
- Cue 1: playbacks 1 to 10 and sequences B, C, D in use
- Cue 2: playbacks 5 to 15 and sequences A, B in use


- Calling Cue 1: playbacks 1 to 10 and sequences B, C, D are active
- Calling Cue 2: playbacks 1 to 4 are still active and belong to cue 1, playbacks 5 to 15 are those of cue 2, sequences C and D belong to cue 1, sequences A and B belong to cue 2

**In transparent mode ON, it is possible to make combinations of different cues.**

**Transparent mode off:**          **Changing cues will result in replacing ALL sequences/playbacks** (also those who are not programmed) **of the old cue by those of the new one. = Replace all mode.** When certain sequences/playbacks were not programmed in the new cue, they will remain empty.

When in the previous example, cue 2 is called, the result will be:

- Calling Cue 1: playbacks 1 to 10 and sequences B, C, D are active
- Calling Cue 2: playbacks 1 to 4 become empty, playbacks 5 to15 are those of cue 2, sequences C en D become empty, sequences A and B are those of cue 2.

The choice can be made between transparent mode ON or OFF for the entire show, or for playbacks and sequences apart.

## 5.6. Manual mode

**Manual mode is the HIGHEST PRIORITY mode.** No matter what cue, what sequence or what playback is activated, **it is always possible to select manual mode and do other things with the fixtures on all channels.**

Even when only the setup stage has been built and some presets are programmed, big shows can be performed by taking all fixtures in manual mode and working with the direct access function and the effect generator.

When sequences are running or playbacks are opened, it is always possible to take our one or more fixtures in manual mode and do other things with them.

If manual mode is deactivated again, then all fixtures that were taken manually will remain in manual mode until the manual changed channels are called again in a playback, sequence or cue-memory.

Note for users of older software versions: In the older versions, the channels jumped immediately back to the values they had before the manual mode was activated.

## 5.7. Direct access

There are 4 ways to adjust fixture channels:
- or the channel is adjusted with the trackerball
- or the channel value is typed in on the keypad
- or the channel value is selected by the direct access function of the controller
- or the channel value is adjusted with the digital fader belts of the P2 or P2+ controller.

Some fixture channels like color, gobo, prism... are divided into areas in the library. Those areas are given a name like yellow, green, star gobo, square gobo... Just a simple press on a key is needed to access those area's. This is called **direct access.**

Using this method, it's easy to program blind, because you see what you select.

Certain functions of some fixtures are protected against accidental use; this means that they can be called only using the direct access function. **Functions like RESET, LAMP OFF and**

**LAMP ON are only accessible using the direct access and can't be selected using the trackerball or the digital fader belts.**

On the Pro 2 Martin Case controllers, there is a second direct access possibility. The channels of the selected fixtures are sent immediately to the Pro 2s 16 digital fader belts, which can be adjusted at any time. With those belts, you have an overview over 16 channels and for fixtures with more than 16 channels; you can select the next bank of 16 channels

## 5.8. Thresholds

**A threshold is a table with percentages indicating when a channel has to be activated if this channel is involved in a fading.**

Thresholds are mainly used when many actions have to happen in one single memory (!!! Not cue-memory), but those actions have to happen at different times.

Suppose we have 2 memories:

Memory 1: dimmer closed, no gobo
Memory 2: dimmer open, laser gobo

**When we fade from memory 1 to memory 2, the dimmer will open slowly, but the gobo will begin changing also at the same speed.**
**Suppose we want the gobo to change if the dimmer is open for 90%, so in 90% of the fading, then we'll have to give the gobo channel a threshold of 90%. The result will be that the dimmer opens slowly and when he's open for 90%, the gobo will start changing.**

Thresholds can only be applied on memories (playbacks and sequences) and not on cue-memories, since a threshold can be simulated using the delay-in timings from the channels in a cue-memory.

## 5.9. Effects generator

There have been many discussions already about creativity and the use of effects generators in shows. Of course a self-made chaser will always give more satisfaction, but for some things like Pan/Tilt motions in perfect circles and if time-pressure increases, the effects generator is and will always be a handy tool.

On every fixture channel, the effect generator can be launched. Using the effect generator saves lots of memory space, because an effect on all channels of all fixtures can be stored in 1 single memory.

### 5.9.1 Effects generator on Pan/Tilt channels

If the effect generator is used on Pan/Tilt channels, 10 extra channels will be added to the fixture channels:

- x-swing: adjusts the motion width
- y-swing: adjusts the motion height
- speed: adjusts the speed of the motion
- mode: choice between forward or backward motion
- figure1: polygonal motion selections
- figure2: circle and elliptical motion selection
- rotate: rotate the motion axis
- delay: to create a phase shift between more fixtures
- shift: to create a phase shift of 360° between more fixtures (used together with wait).
- wait: to adjust the wait time between the effect cycles

### 5.9.2 Effects generator on non-Pan/Tilt channels

7 channels are added to each non-Pan/Tilt channel of a fixture:

- Function: The center-point of the selected channel
- swing: The size of the effect around the center-point
- speed: The speed of the effect
- mode: Selection of forward or backward effect, fade, not fade, under or above the center-point.
- delay: The phase shift
- shift: to create a phase shift of 360° between more fixtures (used together with wait).
- wait: to adjust the wait time between the effect cycles

### 5.9.3 Synchronization of effects

Effects on different channels can be synchronized if **the speed and the wait of the different effects are equal.**

It is possible to create a Pan/Tilt fall motion together with a dimmer On/Off effect and synchronize both, and this over more fixtures. The entire effect can be stored into one single memory.

### 5.9.4 Effect macros

Effect macros are pre-defined, synchronized effects available by a simple key press. There are effect macros only meant to be used with CMY (RGB) fixtures like the rainbow effect, which creates a running color mix over several fixtures.

There are also typical combined effects like the previous explained Pan/Tilt + dimmer open-/dimmer closed effect. There can be 70 different effect macros in the system.

**5.10.** <u>Time code</u>

Calling cue memories, starting sequences or activating playbacks, in short the recording and the playback of a show can be done using the time code. There are some possibilities:
  – On the internal controller clock
  – by using SMPTE (24, 25, 30, 30 drop) internal or controlled by any external SMPTE controller.
  – MTC or Midi Time Code
  – by using the built-in CD-ROM, this means the music time-code of a music CD.
  – manual (last/next step by manual triggering)

Internal:     The controller has a built-in clock that can be used to record or playback a show

SMPTE:      Standard on Pro 2 controllers, optional on Pro 1 controllers. With the SMPTE time-code, controlled internal or external, a show can be recorded or reproduced.

MTC:         Midi Time Code can be applied by connecting an external midi time-code source to the MIDI input of the controller.

CD-ROM:    Standard on Pro 2 controllers, optional on Pro 1 controllers. A music CD in the controller sends also a time-code signal. This signal can be used to record or reproduce the show on the frame exact. The controller has an analogue and digital music output.

Manual:      Cue actions can be recorded in manual mode. Those actions can be called by pressing the last/next keys.

**5.11.** <u>Midi</u>

By connecting a midi keyboard or midi sequencer to the controller, cues, sequences and playbacks are triggered by sending midi codes (note on/off, beat, program change) to the controller.

Using the controller this way, the 32 extra playback flash keys (not faders) can be used on Pro 1 or Pro 2 controllers without the need of an extra playback wing.
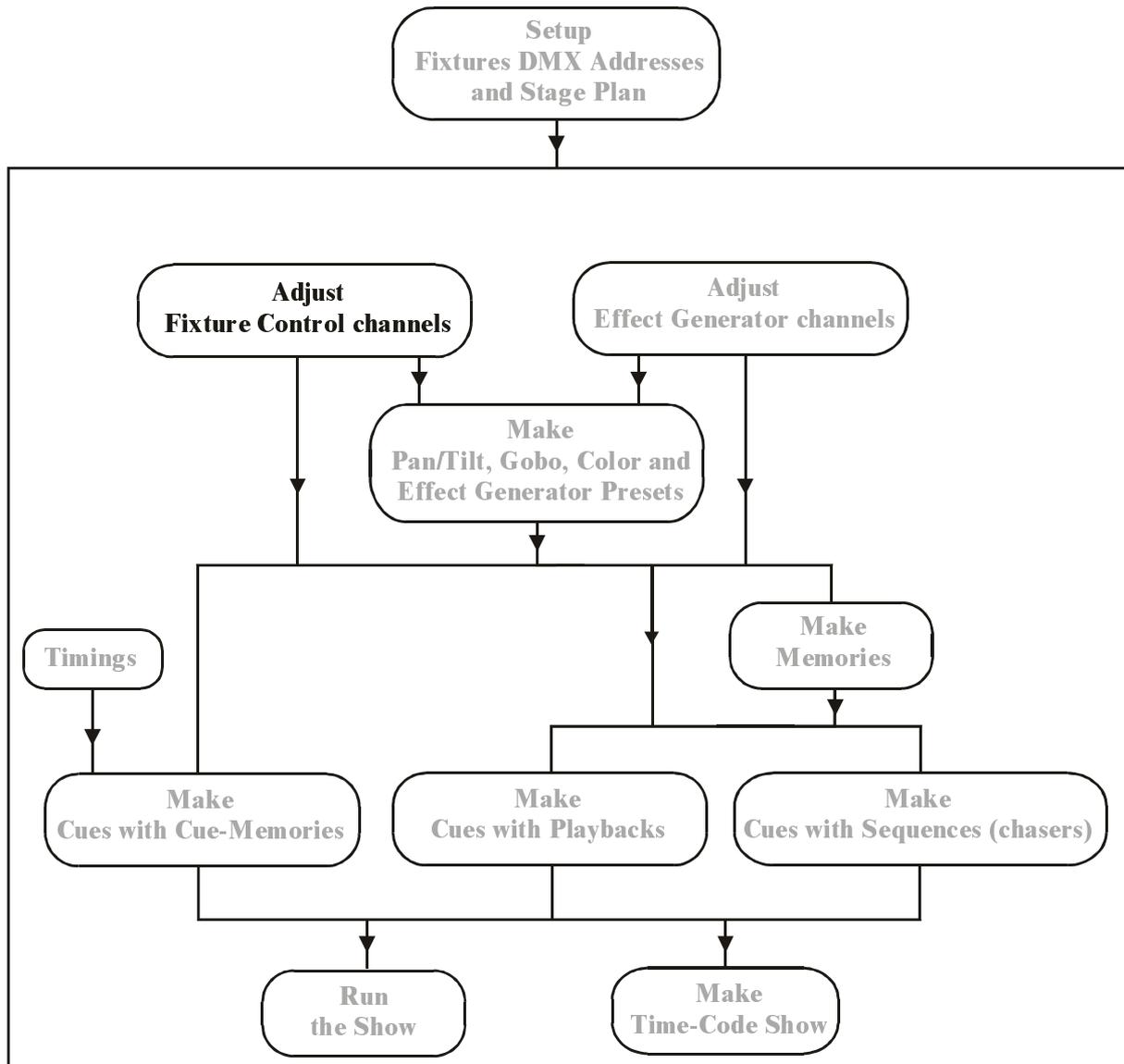
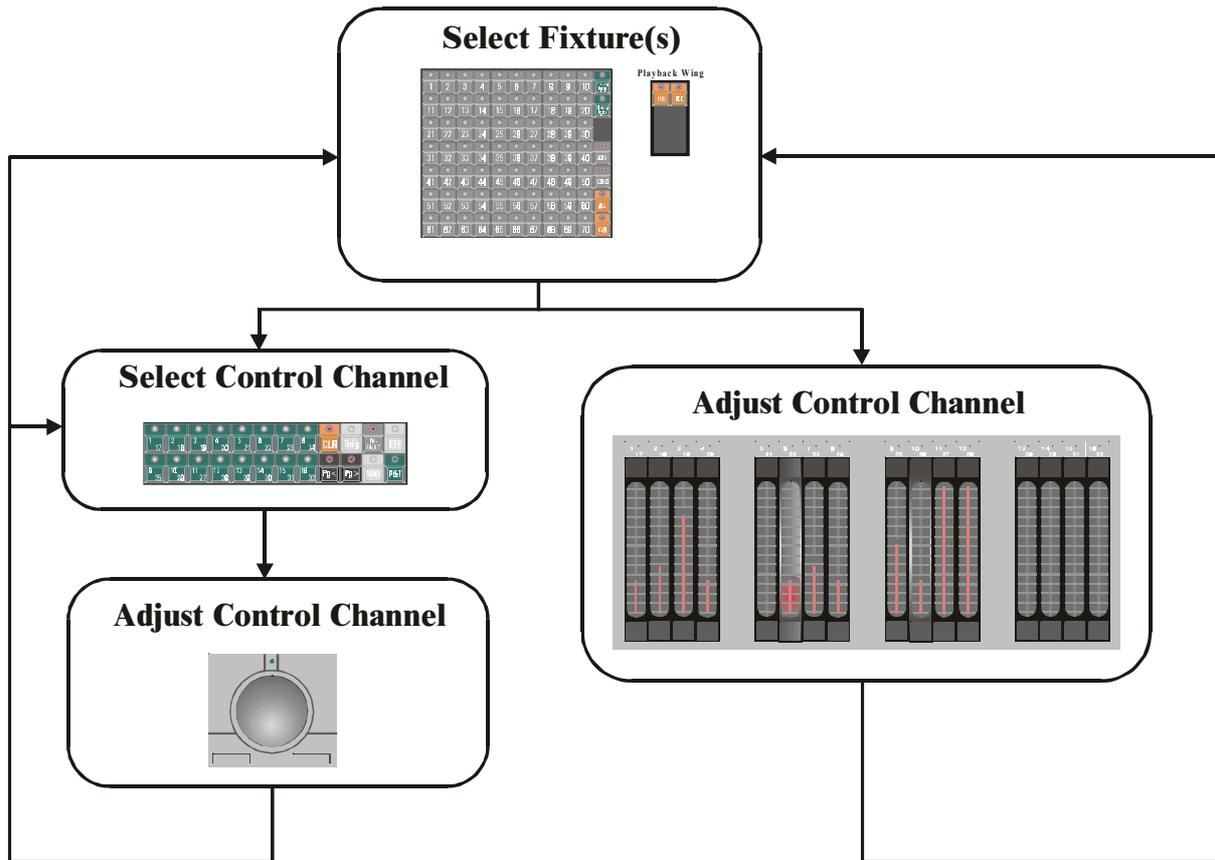For simple shows, a musician can control the lights by just playing a song on his midi keyboard.

**5.12.** <u>Summary</u>

This chapter explained the philosophy of the Martin Case controller. Starting from a preset, we can program a memory, a cue-memory, sequences or playbacks.
Important is that **only the changes in light scenes** have to be stored into the memories.

**The priorities (cue memory = lowest, manual = highest)** were explained and we saw how it is possible to combine cues.

6. CHAPTER 6: Fixtures and Control channels
===

```
                    ┌─────────────────────────┐
                    │         Setup           │
                    │ Fixtures DMX Addresses  │
                    │    and Stage Plan       │
                    └────────────┬────────────┘
                                 │
   ┌─────────────────────────────┼─────────────────────────────────┐
   │                             │                                  │
   │  ┌──────────────────────┐   │   ┌──────────────────────┐       │
   │  │      Adjust          │   │   │       Adjust          │      │
   │  │ Fixture Control      │   │   │ Effect Generator      │      │
   │  │    channels          │   │   │    channels           │      │
   │  └──────────┬───────────┘   │   └──────────┬───────────┘       │
   │             │     ┌─────────────────────┐  │                   │
   │             │     │        Make         │  │                   │
   │             │     │ Pan/Tilt, Gobo,     │  │                   │
   │             │     │ Color and Effect    │  │                   │
   │             │     │ Generator Presets   │  │                   │
   │             │     └──────────┬──────────┘  │                   │
   │             │                │             │                   │
   │  ┌────────┐ │         ┌──────────┐   ┌──────────────┐          │
   │  │Timings │ │         │          │   │    Make      │          │
   │  └───┬────┘ │         │          │   │  Memories    │          │
   │      │      │         │          │   └──────┬───────┘          │
   │  ┌───────────────┐ ┌───────────────┐ ┌───────────────────────┐ │
   │  │     Make      │ │     Make      │ │        Make           │ │
   │  │Cues with Cue- │ │Cues with      │ │Cues with Sequences    │ │
   │  │  Memories     │ │ Playbacks     │ │   (chasers)           │ │
   │  └───────┬───────┘ └───────────────┘ └───────────────────────┘ │
   │          │                                                     │
   │     ┌─────────┐              ┌──────────────────┐              │
   │     │   Run   │              │      Make        │              │
   │     │the Show │              │ Time-Code Show   │              │
   │     └─────────┘              └──────────────────┘              │
   └─────────────────────────────────────────────────────────────────┘
```

**Select Fixture(s)**

**Select Control Channel**

**Adjust Control Channel**

**Adjust Control Channel**

This chapter explains how to select fixtures, how to group fixture types and how to set the control channels.

| When using the example show 'MANUAL72', then first select the *[MAN]* key. The explanation for this is explained in the paragraph 'manual mode' in this chapter. |
| --- |

## 6.1. The trackerball

The trackerball will be used to set channel values and to control Pan/Tilt positions.

On the trackerball, there are 4 keys and an LED.
.
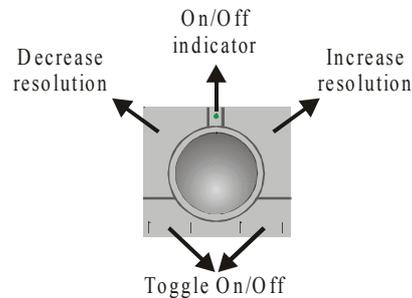


**Toggle On/Off:**     The trackerball can be toggled ON or OFF with both keys. When the trackerball is active, the **On/Off indicator** LED will be green (only on new controllers).

**Decrease resolution:**     This function will only work on 16 bit channels of some fixtures like Pan/Tilt channels, which have fine channels. By means of **Decrease resolution**, the resolution will go to 8 bit. The resolution setting is shown in a window left on the monitor. An 8 bit resolution means: when Pan/Tilt is selected on the trackerball and it is moved, the fixtures mirror or head will move fast, but its position is not accurate.

**Increase resolution:**     This is the opposite of the previous function. The position can be set precise, but the movement will be slow. Depending of the fixture type, the resolution can be increased to 16 bit.

## 6.2. Screen selections



On the monitor, different windows can be opened.

### [STAGE]

**Opens the stage layout window, as we know it from the setup. The 4 sequences will be displayed too.**
**When the *[STAGE]* key is selected again, the analogue fader window will open.**

Rem.: For users of older software versions, the second function of the *[VALUES]* key is now moved to the *[STAGE]* key.
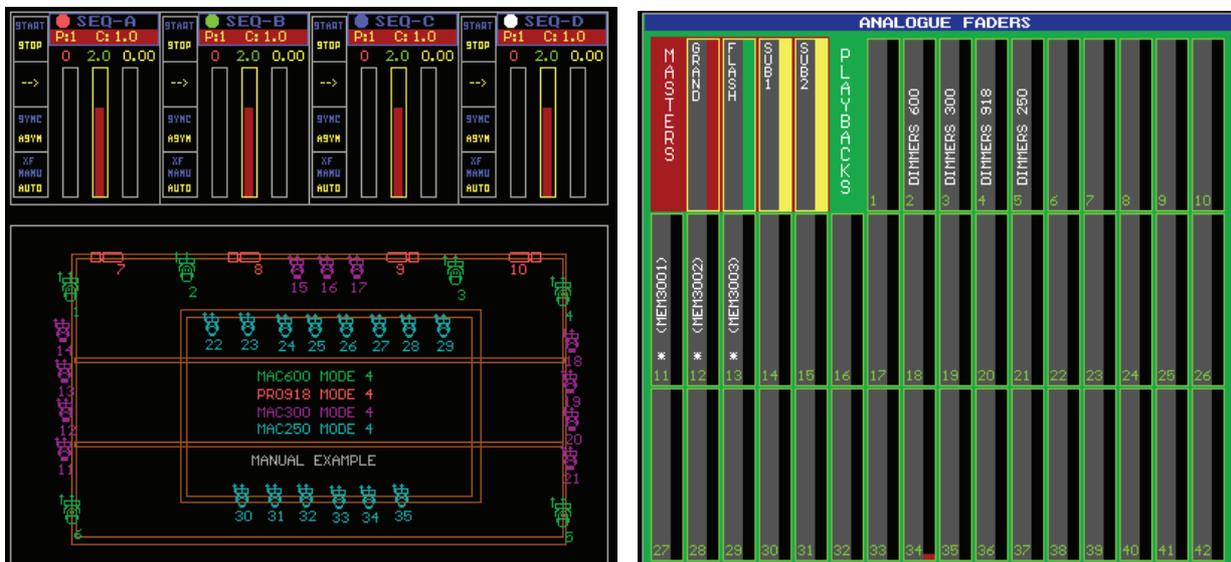


### [TEXT]

**Opens the names screen:**

| | |
|---|---|
| In fixture mode: | displays the memory names given by the user. |
| In cue mode: | displays the cue names given by the user. |
| In preset mode: | displays the preset names given by the user. |

**[VALUES]**

Opens the channel value screen. There are 2 modes:
- Digital Memory-Values
- Digital Output-Values (select *[VALUES]* again)

The **Digital Memory values** screen represents the values, recorded in the memories or cue-memories.

The **Digital Output values** screen represents the value, send to the fixtures through the DMX interface. These are the values of what you see on the stage.



**Note: When the combination *[SHIFT]* + *[VALUES]* is used, the values will be in % instead of digital.**

## 6.3. Grand master
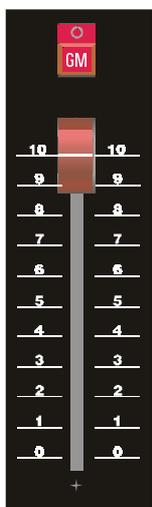


The grand master controls the light intensity of **all fixtures.** When it is closed, some functions on some fixture types like reset, lamp-on... will not function.

Before starting, better check first the level of this fader.

The flash key **[GM]** is used to flash to the maximum value of the master fader when the fader is closed or not at maximum level.

| | |
|---|---|
| LED off: | Grand master not active |
| LED green: | Grand master active but not at full level |
| LED red: | Grand master at full level |

## 6.4. Selecting fixtures



**Playback Wing**

**[Fixture PgUp]**
**[Fixture PgDn]**

Like mentioned in the SETUP, there can be 10 stages of 70 fixtures. With these keys, the stage page can be chosen.

**When fixtures have to be selected to set their control channels, first a page has to be chosen. This mode is called FIXTURE MODE.**

**[Fixture PgUp]**

**Fixture Page up.**

**[Fixture PgDn]**

Fixture Page down.

**[Fixture PgUp] + [Fixture PgDn]**

**When both keys are selected together, the keys [1]...[10] will flash. Those keys represent the pages to select.**

**[ALL]**

**Select all fixtures on all pages.**

**[CLR]**

**Deselect all fixtures on all pages.**

**[EVEN]**

**Select only the even numbered fixtures from the present selection.**

**[ODD]**

**Select only the odd numbered fixtures from the present selection.**

Remark:          To work with the keys *[EVEN] and [ODD],* first a number of fixtures have to be selected. Then the even or odd numbered fixtures can be chosen out of this selection.

│ *[1]…[70]* │

   **To select one or more fixtures**

│ *[1]* │

   **Selection of fixture number 1**

│ *[x]*      (x represents a number from 1 to 70) │
   **Selection of fixture number X**

│ *[x] + [y]*     (x and y represent a number from 1 to 70) │
   **When both numbers are selected together, all fixtures between those 2 numbers will be selected.**

## 6.5. Group fixtures



   Fixtures can be grouped. There can be 32 groups (A and B each 16 groups) created.

│ *[A/B]* │

   **To select group page A or B.** Each group page can hold 16 groups of fixtures.

│ *[STORE] + [1…16]* │

   **To save a group of fixtures in group x.** Select first the fixtures, like only the MAC600 or only the MAC250 and press *[STORE]* together with a group number.

   **Note:** To erase a previously stored group: Deselect all fixtures and store this in the group number to erase.

│ *[1…16]* │

   **To select/deselect a stored group.** The called group will be selected or deselected **to the existing selection.**

│ *[TXT EDIT* (keypad)*] + [1…16] [give a name using the keyboard] [RET]* │

   Groups that have been stored can be named. The group-names will appear at the left of the screen.
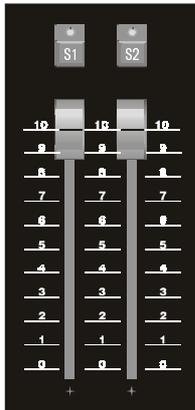
## 6.6. Sub-masters

2 groups of fixtures can have each their own dimming fader. This can be useful when intelligent light (scans) is used together with conventional light (pars).

In the example we can store all scans (fixture page 1) in sub-master 1, and all dimmers (fixture page 2) in sub-master 2.

LED off: Sub-master closed or not programmed
LED green: Sub master active but not at maximum level.
LED red: Sub master at maximum level.

**[S1]**
**[S2]**
　　**Sub-master flash keys**

**[EDIT] + [S1]　[select fixtures or groups]　[S1]**
　　**Program sub masters**

When the *[EDIT* (CUE keys)*]* is selected together with *[S1] or [S2]*, the sub master will be in edit mode. Fixtures or fixture groups have to be selected. Save the selection by selecting the *[S1] or [S2]* key again.

Both fixture groups can be dimmed with the fader or flashed with the *[S1] or [S2]* keys.

## 6.7. Control channels
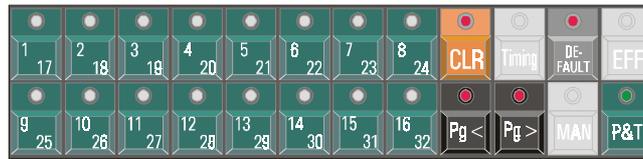


### 6.7.1 Selecting and adjusting channels

*[1/17]…[16/32]*

Each fixture has 1 to 32 control channels. **Keys *[1/17]* to *[16/32]* represent the fixtures control channels**, if a fixture has been selected.

*[Pg<]*
*[Pg>]*

**View control channels 1 to 16 or 17 to 32.** When the *[Pg<]* LED is lit, keys *[1/17]...[16/32]* represent control channels 1 to 16.

The name of the control channel can be found on the monitor:



---
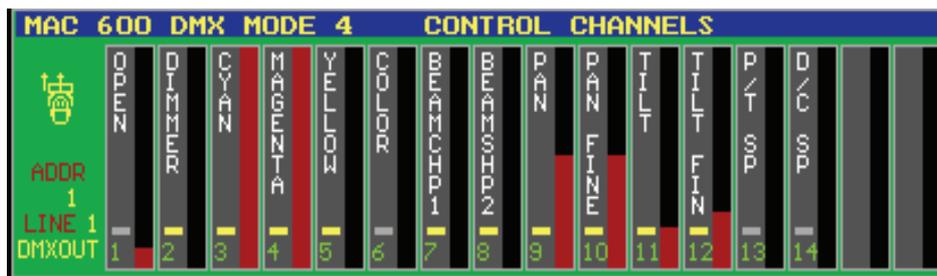
**Note1:** **When more fixtures of different types are selected together, the control channels window represents the channels of the last selected fixture.** For example, if both MAC600 and MAC250 are selected together and the MAC600 was the last selected one (like this example), the window will show the MAC600.

**Note2:** **When different types of fixtures are selected together, and a certain control channel is changed then the software will filter out the same control channel in the other selected fixtures,** if the control channel exists on the other types.
     Example: When the dimmer channel is changed and different types of fixtures are selected together, then the dimmer channel will change on all selected fixtures, even if the dimmer is patched on another control channel number.

---

**To set a channel value, select the channel number with keys *[1/17]...[16/32]*. The selected channel is now on the trackerball.**

**[@]  [value** (keypad)**]  [RET]**

**It is also possible to give in the value manually:**
  –     Select the control channel
  –     Select *[@] and give-in the value on the keypad. Press [RET]*.

**[SHIFT] + [VALUES]**

This combination sets the values, in the value screen, in digital or % view (see also Screen selections).
When the values are represented as % values, they cannot exceed 100%. For digital values, the maximum is 255.

**Pro 2 controllers** have always direct access on the 16 control channels by means of the digital fader belts:
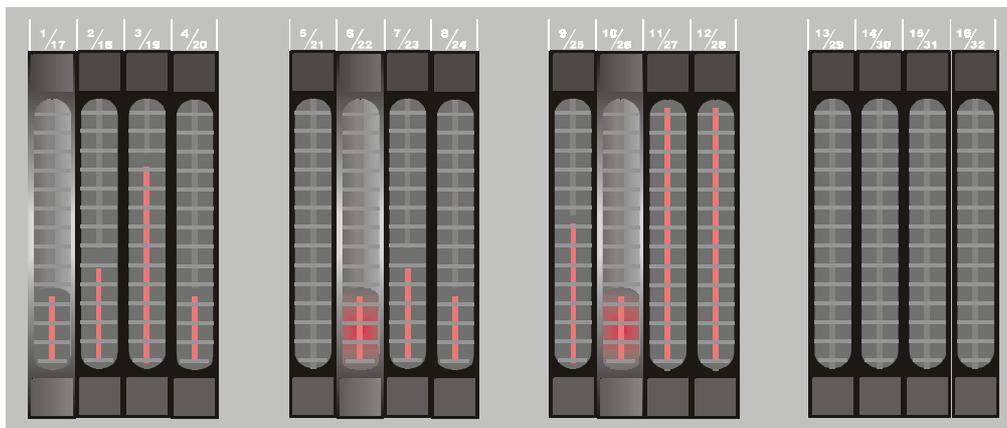


On the **Pro 2 controller**, changing the fader belt without selecting the channel first sets the channel value. Remember, with the *[Pg<] and [Pg>]* keys, the channels are shifted.

**[P&T]**

**Pan/Tilt control.**

When *[P&T]* is selected, Pan and Tilt will be on the trackerball at the same time.

---

Note:    As mentioned before, the speed and the precision of the movement when using fixtures with a resolution higher than 8 bit on Pan/Tilt (pan and tilt fine available), depend on the resolution setting of the trackerball.

---

## 6.7.2 {EXP}   Controlling dimmer channels

**In the SETUP, we have seen that dimmer channels can be enabled in a list, to perform special dimmer commands on them. The origin of these commands is the theater world. It is now possible to select dimmer channels and give them a value using the keypad:**

Example:       On the stage, we've set up 6 MAC600 (fixtures 1 to 6), 4 PRO918 (fixtures 7 to 10) and 11 MAC300 (fixtures 11 to 21). When we want the dimmers of the MAC600s and those of the PRO918s at 40%, we type:
*[DIM Chan.] [1] [THRU] [1] [0] [@] [4] [0] [RET]*

When the dimmer values of the MAC600s and the PRO918s, except PRO918 number 8, have to be decreased with 15%, we type:
*[DIM Chan.] [1] [THRU] [1] [0] [-] [8] [@] [-] [1] [5] [RET]*

The command line looks like this (between (brackets) is optional):

*[DIM Chan.] [x] ( [THRU] [y] [+] [-] [z] )  [@]  ( [+] [-] ) [value] [RET]*

## 6.7.3 Clear

We already talked about changes in light scenes. Not all channel values of all fixtures have to be stored into the memories. Therefor it should be possible to store for example only the color in a memory. This is done by erasing all other channels out of the memory table.

Use this function with the **channel value screen on 'digital memory values' *[VALUES]*.**

Example:       Select all MAC600 and press 2x the *[DEFAULT]* key. All channel values of all MAC600 will be displayed in the channel value window. We want to erase the value for channel 8 (focus). Select *[CLR] + [8/24]*. The field 'channel 8' of all MAC600 will be erased.

> **Note:      A channel field containing value 0 is not the same as an empty field.** Zero is a value; an empty field means that nothing will change.

*[CLR] + [ALL]* (Fixtures/Cues/Presets*)]*
Erases all fields of all fixtures on all pages, resulting in an empty page

*[CLR] [CLR]* (double-click)
Erases all fields of the **pre-selected fixtures.** For example: *[ALL]  [CLR] [CLR]* will have the same effect as the *[CLR]+[ALL]* function.

*[CLR] + [1…70]*
Erases all fields of the selected fixture (1...70)

*[CLR] + [1…16* (groups/cuepages*)]*
Erases all fields of all fixtures of the selected group of fixtures

---

**[CLR] + [1/17…16/32]  or  [CLR] + [P&T]**

Erases the selected channel (1...32) or the Pan/Tilt channel **of the pre-selected fixtures.** To use this function, the fixtures have to be selected in advance.

**[CLR] + [P&T** (Presets)**]  or  [CLR] + [GOBO]  or  [CLR] + [COLOR]  or  [CLR] + [EFF** (Presets)**]**

Erases Pan/Tilt or gobo or color or effect generator fields **of the pre-selected fixtures.**

**[CLR] + [EFF] + [ALL]**

Erases all effect generator functions of all channels of all fixtures, **except Pan/Tilt effects.**

**[CLR] + [EFF] + [1…70]**

Erases all effect generator functions of all channels of the selected fixture (1...70), **except Pan/Tilt effects.**

**[CLR] + [EFF] + [1/17…16/32]**

Erases the selected channel (1...32) or the Pan/Tilt channel **of the pre-selected fixtures.** To use this function, the fixtures have to be selected in advance.

**[CLR] + [EFF] + [P&T]**

Erases all effect generator functions of the selected channel (1...32) **of the pre-selected fixtures.**

## 6.7.4 Default

Sometimes it can be useful to put fixtures in their defaults. By default, the default setting is white open and no gobo. The fixtures defaults can be changed.

**[DEFAULT] [DEFAULT]**

Selecting the *[DEFAULT]* key twice will **default the pre-selected fixtures and stops all effects (\*)**. It is necessary to select the fixtures first before using the function like this.

**[DEFAULT] + [1…70]**

Fixtures can be put in their defaults separately by selecting the *[DEFAULT]* key together with a fixture key(s). **The effects keep running (\*).**

**[DEFAULT] + [ALL]**

Defaults all fixtures. **The effects keep running (\*).**

**[DEFAULT] + [1…16]**

Defaults all fixtures of the selected group. **The effects keep running (\*).**

**[DEFAULT] + [1/17…16/32] or [DEFAULT] + [P&T]**

Defaults the selected control channel (1...32) of **the pre-selected fixtures**. Useful to default ex. Only color, or gobo or only Pan/Tilt. **The effects keep running (\*).**

**[DEFAULT] + [P&T** (presets)**] or [DEFAULT] + [GOBO] or [DEFAULT] + [COLOR]**

To default Pan/Tilt, colors or gobos **of the pre-selected fixtures. The effects keep running (\*).**

Note:    Maybe a little bit confusing, but this function doesn't have to do anything with presets here.

---

**[DEFAULT] + [EFF] + [ALL]**

Defaults all effects (except Pan/Tilt) of all fixtures (*).

**[DEFAULT] + [EFF] + [1…70]**

Defaults all effects of the selected fixtures (1...70) (*).

**[DEFAULT] + [EFF] + [1/17…16/32]**

To stop effects on single channels. Select the *[DEFAULT] together with the [EFF] and a channel [1/17....16/32]*. The effects **of the pre-selected fixtures** will go to their defaults (effects stop) (*).

**[DEFAULT] + [EFF] + [P&T]**

Stops all Pan/Tilt effects, **of the pre-selected fixtures (*).**

**(*) see chapter effects generator**

### 6.7.5 {EXP}   Adjusting Default values

The original fixture default values come with the fixture libraries. The user can adapt the settings to his own needs.

**[EDIT] + [DEFAULT]**

Will open the default editor window:

The numbers in the left column are the fixture numbers as they appear in the stage-layout.



Select fixture(s) and change the channel settings as needed.

By selecting *[CLR] + [1...70]* the original settiing (library settings) of fixture (1-70) can be recalled.

To save the adapted settings, select the *[DEFAULT]* key again.

## 6.8. Manual mode

**[MAN]**

Later we will explain that we can store the control channel values in memories or cue-memories. Those memories or cue-memories will be used to make programs of light-scenes.

But, if changes are needed to those memories while the program is running, or if new (cue-) memories must be created, it is necessary to activate the manual mode.

**MANUAL MODE has the highest priority. Every channel that is changed in manual mode will stop in the program (cue).** This is why we asked in the beginning of this chapter, to select the manual mode when following the examples explained in the previous paragraphs.

**The *[MAN]* key will toggle the manual mode on or off. When changes are made to the fixtures control channels, those channels will follow the manual actions and stop in the cues that use those channels. When the *[MAN]* mode is left by selecting it again, the channels will leave the manual mode and start running again in their program, if the program calls them again.**

**[CLR] + [MAN] + [1/17…16/32]**

So a control channel that is manually changed will stop following the programmed actions on it. If during manual actions, a channel that is changed manually has to go back to the program, it is possible to clear the manual mode for that channel by selecting the *[CLR] key together with the [MAN] key and the control channel [1/17...16/32]*. This action will clear the manual setting of the channel. **!! Pay attention, the cleared manual channel has to be recalled in the cue-memory or sequence to follow the program again.**

**The manual mode is very important while programming.**

## 6.9. Direct access

Some channels like color or gobo or... have pre-defined area's to make them direct accessible to the user.



**[select fixtures or groups] [DIRECT ACCESS] + [1/17…16/32** (blinking LED's)**]**

First make a selection of fixtures. Then use the *[DIRECT ACCESS]* key together with one of **the blinking control channels** (only those are accessible). The direct access window will open on the monitor:

This example shows the color channel of the PRO918. With keys *[1...70] or with the trackerball* a color like color 3 (red) can be selected.

---

*[select fixtures or groups] [DIRECT ACCESS] [DIRECT ACCESS]*

The direct access window can remain opened when the *[DIRECT ACCESS]* key is selected twice. Now you have the possibility to select between the control channels, the window will stay open. To close the window, press *[ESC].*

---

| | |
|---|---|
| **Remark:** | Some functions like **reset, lamp-on, lamp-off** can only be accessed by using the direct access function or with the *[RESET], [LAMP ON] or [LAMP OFF]* **keys of the playbackwing** (Pro 1+, Pro 2+ or extra wing)**.**. When the channel holding the reset function, is set by the trackerball or by a digital fader, those functions will not be activated. In the channel window, the text reset, lamp-on, lamp-off... will be colored blue, meaning that it is **only accessible by direct access.** This is a security against accidental use of the special functions. |

---

## 6.10. Selections on the playbackwing

**Pro1+, Pro2+ or the extra wing controllers have some extra possibilities:**
**Playbackwing**



---

*[EVEN] or [ODD]*

**To select out of a present fixture selection, the even or odd numbered fixtures.**

---

---

**[LAMP ON]  or  [LAMP OFF] + [Select fixtures or [ALL] ]**

To select the lamp-on, or lamp-off commands.

**With these keys, it is possible to select a LAMP ON command for all fixtures** *([LAMP ON] + [ALL])*. **In this case, the software will send the command to all fixtures, one by one, with a pause of 300 ms between them.**

**Remark:** These commands can have macro contents, setting more channels on different values in a limited time. Like for a Cyberlight or a MAC600 where during 5 sec the lamp off command has to be given together with the CMY at 141. This even works with the Lamp off=OFF in the display menu of the MAC600.

### 6.11. {EXP}  Absolute or relative channel adjustment

When channels of different fixtures have to be set at the same time, you have 2 ways of doing this:
  − relative setting to each other
  − absolute setting to each other

When using **relative programming, the changes** of 2 fixtures to each other will always **remain equal.**
  Example: When the first fixture has value 50 for Pan and the other value 100, and the Pan increases with 100, the result will be 150 for the first and 200 for the second.

When using **absolute programming, the channel values of the fixtures will always be the same.** From the moment a channel value is changed in absolute programming when more fixtures are selected at the same time, the channel value will be copied to the other selected fixtures.

| | |
|---|---|
| **Remark:** | The channel values of several selected fixtures in relative mode will always change relative to each other until one fixture reaches its limits (0 or 255). This one will stay at this value, the others will continue changing relative to each other. If the value is still increased until all fixtures have reached 255, they all will stop moving. When coming back again to value 0, everything will happen in reversed order. The one that stopped last will start first and the one that stopped first will start last again. |
| | Only in relative mode it is possible to point all fixtures to 1 spot and move the spot around. |

**[ABS]**

**To select or deselect absolute programming mode.** To deselect or to go back to relative programming, press the key again.

---

**6.12.** **The SOLO function**

**Programming a very big show with many fixtures is not so easy if you can't see the fixtures one by one. The SOLO function will help. It only opens the selected fixtures and dims the other ones.**

**An active SOLO function will open only the dimmers of the selected fixtures.**

*[Select fixtures]   [SOLO]*

**The SOLO function will only be activated when the CUE-FADING and all sequences are deactivated.**

**6.13.** **Example**

In this example we will perform next steps:
- Sub-master 1 will be used for all scans (fixtures of fixture page 1).
- Sub-master 2 will be used for all dimmers (fixtures of fixture page 2)
- All MAC600s will be grouped in group 1
- All PRO918s will be grouped in group 2
- Both groups will be defaulted
- We will select color 3 and move the Pan/Tilt of the MAC600s
- We will change Pan/Tilt in relative and absolute mode for the PRO918s and MAC600s


Select: *[EDIT* (Cue)*] + [S1]*
        To put sub-master 1 in edit mode.

Select: *[1* (1…70)*] + [35*(1…70)*]*
        To select fixtures 1 to 35 (all scans)

Select: *[S1]*
        *To save sub-master 1*

Select: *[FIXT. PgDn]*
        To go to fixture page 2 (dimmers)

Save all dimmers to sub-master 2

*Open both sub-masters.* (Pay attention, the grand master has to be open too.)

Select: *[MAN]* to put the controller in manual mode. When the show 'MANUAL72' is loaded, cue-memories can be active in the background. Since manual mode has the highest priority, it is better to switch it on.

Select: *[VALUES]* (until the digital memory-values screen opens)
        To see the adjustments we will make..

Select: *[FIXTURE PgUp]*
        To go back to the scan page.

Select: *[1*(1…70)*] + [6*(1…70)*]*
        To select fixtures 1 to 6 (MAC600).

Select: *[STORE] + [1*(1…16)*]*
        To save the MAC600s in group 1.

Select: *[CLR* (Fixtures/Cues/Presets)*]*
        To deselect all fixtures.

Select: *[7*(1...70)*] + [10*(1...70)*]*
        To select fixtures 7 to 10 (PRO918s)

Select: *[STORE] + [2*(1…16)*]*
> To store the PRO918s to group 2.

Select: *[CLR* (Fixtures/Cues/Presets)*]*
> To deselect all fixtures.

Select: *[1*(1…16)*] [2*(1…16)*]*
> To select both groups.

Select: *[DEFAULT] [DEFAULT]* (2x fast)
> To put all selected fixtures in their defaults. They will be all white open. (In the example show, all dimmers will be closed, because the defaults are changed).

Select: *[CLR* (Fixtures/Cues/Presets)*]*
> To deselect all fixtures.

Select: *[1*(1…16)*]*
> To select all MAC600s

Select: *[DIRECT ACCESS] + [6/22]* (and hold the direct access key)
> To select the direct access function on the color channel.

Select: *[4*(1…70)*]* (and release all keys)
> To select color 3.

The direct access can also be selected by doing this: *[DIRECT ACCESS] [DIRECT ACCESS]* (2x fast) *[6/22]* *[4] or select using the trackerball, color3* *[ESC]* (All keys are selected one by one).

Select: *[P&T* (Control Channels)*] and move the trackerball* (trackerball has to be switched on). To change Pan/Tilt on the MAC600s

Select: *[2*(1…16)*]*
> To select also the PRO918s.

***Move the trackerball***
> The Pan/Tilt values of the MAC600s and the PRO918s will be different, since we've moved the Pan/Tilt of the MAC600s before, but they will move relative upon each other.

**{EXP}** Select: *[ABS]*
> To select absolute mode.

***Move the trackerball.***
> Watch the Pan/Tilt values, they will now be equal for all fixtures.

**7.** **CHAPTER 7: Effects Generator**
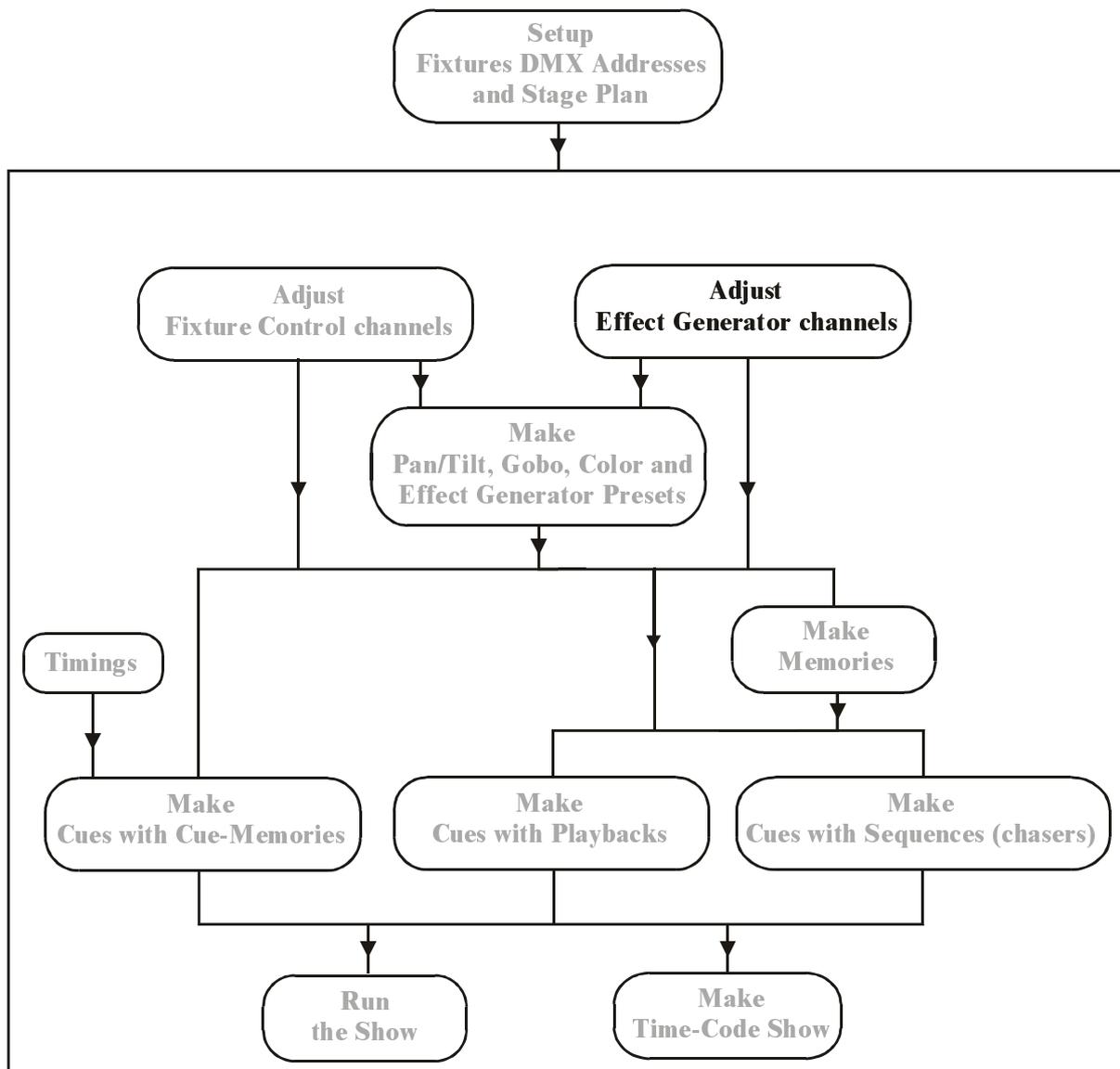
> **When working with the example, the show 'MANUAL72', first go to manual mode *[MAN]*.**

## 7.1. In general

On every channel of each fixture an effect can be started. Therefor a number of effect generator channels are added to each channel.
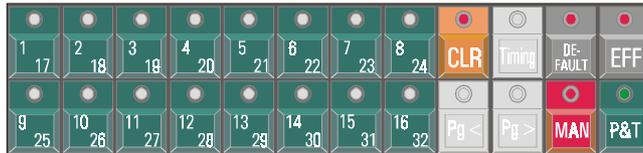


### [EFF]

Displays and enters the effect generator channels for a selected control channel.

When a control channel like, for example Gobo is selected and the *[EFF]* key is pressed then the fixture control channels **will be replaced by the effect control channels**. Those **effect control channels are used in the same way as the fixture control channels.** To return to the fixture control channels, the *[EFF]* key has to be selected again.

### [1/17]...[10/26]

To select the effect control channels if the effect generator is started. The selected channel is adjusted like a normal control channel.

## 7.2. Effects generator on non-Pan/Tilt channels.

### [Select a non-Pan/Tilt channel] [EFF]

The control channel window will be replaced by the effect control channels.
On **non-Pan/Tilt** channels, 7 parameters will be displayed:

1    The fixture control channel itself: ex. Gobo channel
2    Swing
3    Speed
4    Mode
5    Delay
6    Shift
7    Wait

## 7.2.1 Channel 1

The first control channel is nothing more than the selected fixture control channel. When for example the effect generator was opened on the gobo channel, then this first channel will represent the gobo channel.

With this channel, **the center point, around which the effect will run, is selected.**

### 7.2.2 Swing

This channel sets **the size of the effect around the center point of channel 1.**
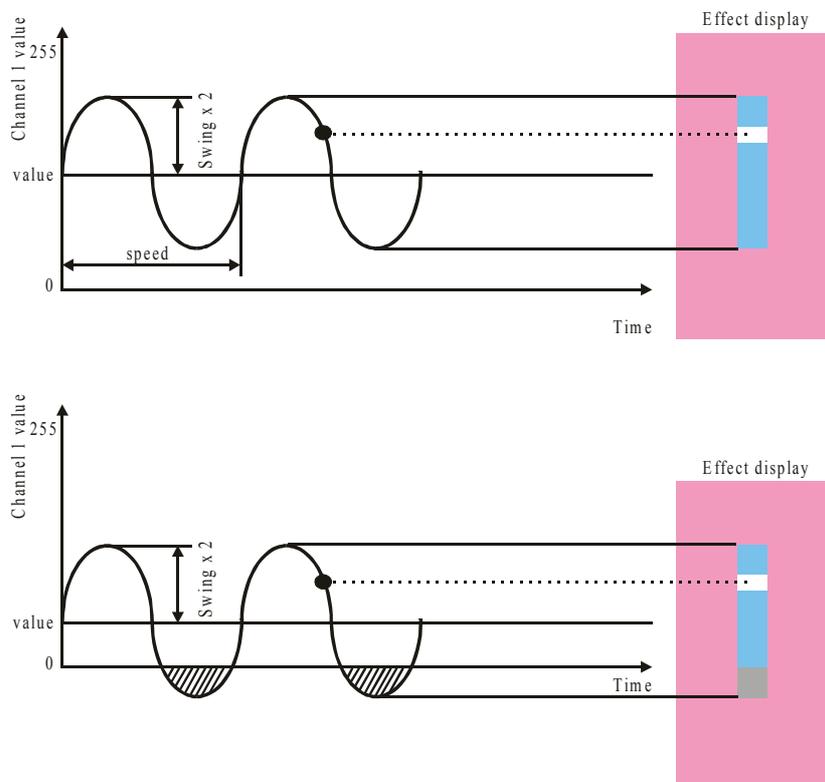




The max. value of the swing depends on the selected value (value on Fig.) of channel 1. When the swing is chosen too big, the channel value will exceed its limits, which are 0 or 255. Those limits are shown on the effect display by a gray area. In reality, channel 1 will stay a certain time (depends on the speed) on the limit values (0 or 255). When the values stay between the limits, the point on the effect display will never leave the blue (white on Fig.) area.

Example:     Select a MAC600 and select channel 2 (dimmer). Press *[EFF]* to open the effect generator. With channel 1, the center point is selected. Adjust the swing and give the effect a speed (channel 3). When the swing is too big, the dimmer will stay open (255) or closed (0) for a certain time. This is shown in the effect display by the point hitting the gray area. Experiment now with channel 1 and the swing to keep the point in the blue area.

Sometimes it is the intention that the effect exceeds its limits, to create, for example, an ON/OFF effect. In this case, the channel will stay at its limits for a longer time and will rush through the blue area (depends of the selected effect-speed).

### 7.2.3 Speed

This channel controls the speed of the effect. **A speed of 0 will stop the effect. To disable the effect completely, the swing has to be set at 0 too**.

### 7.2.4 {EXP} <u>The delay</u>

When the same effect is launched at more fixtures at the same time then the effect will be in phase on all fixtures or they are all doing the same thing at the same time. **With the delay parameter, a phase shift can be created between more fixtures.** The shift will always be taken in relation to 0.
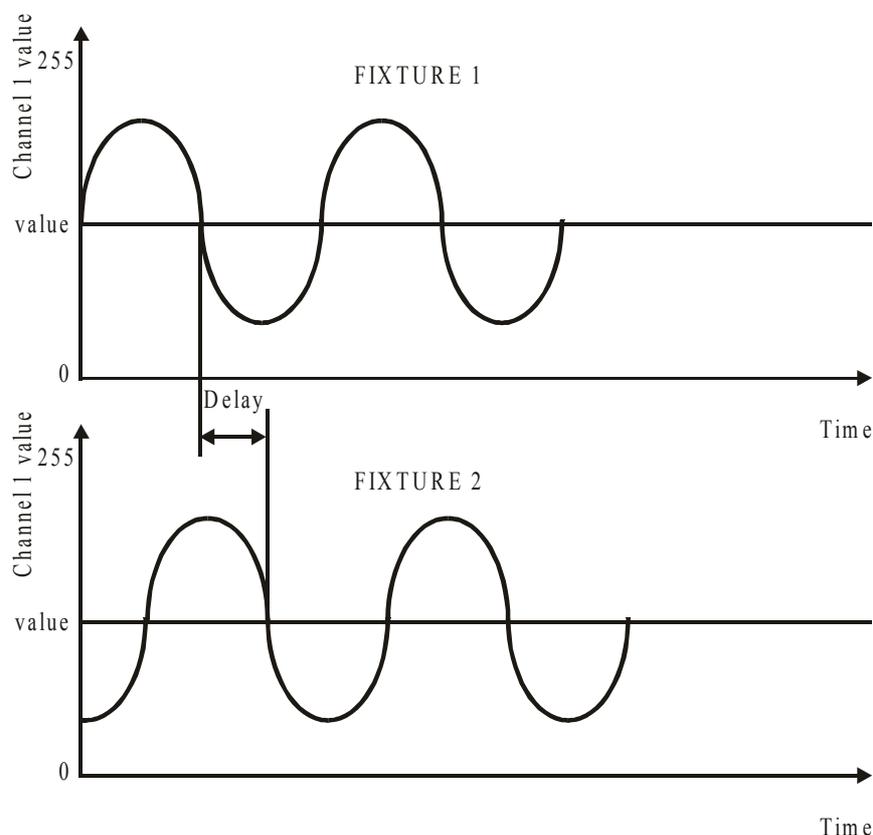


| Example: | Start an effect on the gobo channel of the 4 PRO918s. Put the delay for the first one at 0, for the second at 45, for the third at 90 and for the fourth at 135. |
|---|---|

### 7.2.5 {EXP} <u>The shift</u>

A shift is a delay or phase shift of 360°. On its own, a shift has no effect because a shift of 360° will shift the start point of the effect to the next cycle, but combined with the WAIT, the shift can create a step function.

### 7.2.6 {EXP} <u>The wait</u>

The wait is used to stop the effect during a short period. When the effect stops, it will wait on the center point (channel1).

To create a step function over more fixtures, a combination of wait and shift is needed.
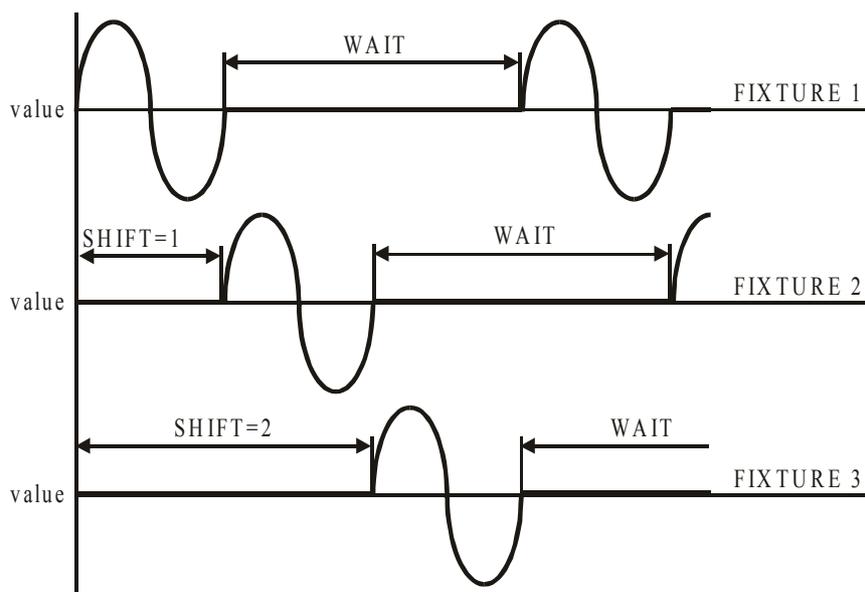
In this example, a step over 3 fixtures will be created.
- Fixture 1: shift = 0 and select a wait.
- Fixture 2: shift = 1 and the same wait as 1.
- Fixture 3: shift = 2 and the same wait as 1.

When on fixture 1 the first fading cycle is finished, fixture 2 will start its fading. Fixtures 1 and 3 will wait at the center point (channel 1 value) while fixture 2 is fading. When the fading on fixture 2 is finished, fixture 3 will start. When this is done, the cycle will start all over again. This is called a step function.

Remark: It will be a lot easier when the delay, shift and wait timings are calculated by the controller. This can be accomplished by using the direct access function on those channels.

## 7.3. Direct access on effect generator channels.

The direct access function can be used on channels 4 (mode), 5 (delay) and 6 (shift).

### 7.3.1 Mode

With the mode parameter, the fade mode and the direction of the effect is selected.

| [DIRECT ACCESS] + [4/20] |
|---|

Will open next screen:
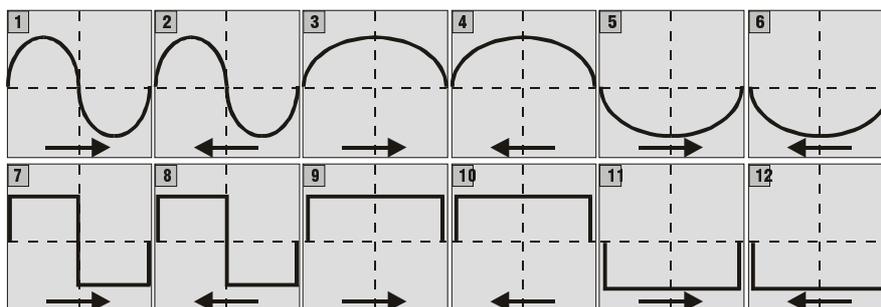


1    Fading above and below the center point on channel 1.
2    Fading above and below the center point on channel 1 (reversed direction)
3    Fading only above the center point on channel 1.
4    Fading only above the center point on channel 1 (reversed direction)
5    Fading only below the center point on channel 1.
6    Fading only below the center point on channel 1 (reversed direction)
7    Step above and below the center point on channel 1.
8    Step above and below the center point on channel 1 (reversed direction)
9    Step only above the center point on channel 1.
10 Step only above the center point on channel 1 (reversed direction)
11 Step only below the center point on channel 1.
12 Step only below the center point on channel 1 (reversed direction)

{EXP}     Note: **Functions 9, 10, 11 and 12 are not useful when the wait time is zero.**
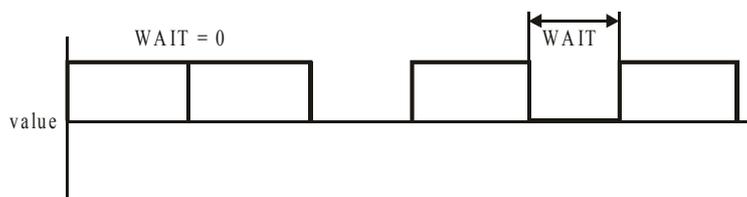


If the wait = 0, the step will happen so fast that it will be invisible.

**7.3.2** <u>Delay</u>

**To spread out a wave effect** over more fixtures, the direct access on the delay channel is used.

**[Select some fixtures] [Select a control channel] [EFF] [Adjust swing and speed] [DIRECT ACCES] + [5/21] [select a wave per x]**

**Example:    Suppose we have to make a dimmer wave on next fixtures (6 x MAC600 and 11 x MAC300). Select those fixtures, select the dimmer channel and open the effect generator. Adjust the dimmer value (center point), swing and speed. Select, using the direct access, channel 5/21 and choose wave per 17 (because 17 fixtures were selected). The result will be a fluent dimmer wave over all selected fixtures.**

**7.3.3** <u>Shift</u>

**To spread out a step effect** over more fixtures, the direct access on the shift channel is used. On a step effect, the fading of a fixture will wait for the end of the fading of a previous fixture.

Example:       We repeat last example, but now with a direct access on channel 6/22. The result will be a dimmer chaser where every fixture waits for the previous one to be finished.

**7.4.** <u>**Effects generator on Pan/Tilt channels**</u>

**On Pan/Tilt channels** the effect generator supplies you with a tool to create Pan/Tilt motions like circles, polygons, squares,… in a fast way. 10 channels will be added to each fixture:

    1     X-swing
    2     Y-swing
    3     speed
    4     mode
    5     figure1
    6     figure2
    7     rotate
    8     delay
    9     shift
    10    wait

*[Select a Pan/Tilt channel or select [P&T]]  [EFF]*

**The speed, delay, shift and wait channels have the same functions as on non-Pan/Tilt channels.**

**!!! The center point of the motion is selected by the Pan/Tilt setting and here, in contradictory to non-Pan/Tilt channels, its value will not be displayed in the effect control channels window.**

**7.4.1** <u>**X-swing and Y-swing**</u>

The X-swing and Y-swing channels adjust the width and length of the motion. When for example a circle motion was selected, the x-swing and y-swing set the width in both directions. When they are equal, the motion will be a circle, when they differ a lot, it will be an ellipse.

**Remark:** **When moving heads like the MAC600, MAC500, MAC300 or MAC250 are used, it is impossible to make a circle motion when the head is positioned in line with the foot. A circle motion in this position will result in an 8 motion.** This is a result of the mechanical construction of moving heads.

**7.4.2** <u>**Mode**</u>

The mode function on Pan/Tilt channels has only 2 functions:
-   forward motion
-   backward motion

**7.4.3** <u>**Figure1 and Figure2**</u>

Those channels are used in **direct access** mode:

**Figure1:**
This function gives direct access to **lots of lissajous motions** like line motion, circle motion, elliptical motions…
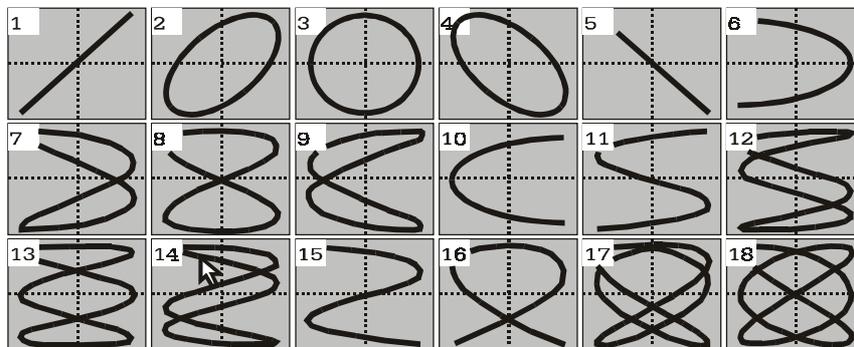


**Figure2:**
This function accesses to **geometrical motions** like squares, triangles…
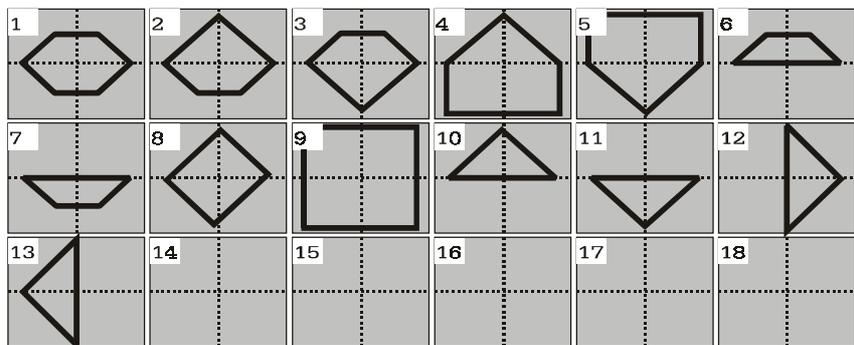
### 7.4.4 {EXP} Rotate

Using the rotate results in rotating the motion over x degrees. Use this function **with direct access** when the rotation has to be spread over more fixtures.

Example: Take all MAC600s and select a line motion. Adjust x and y swing and the speed. Select channel 7/23 with direct access and use ROTATE PER 6. Next figure shows the result:
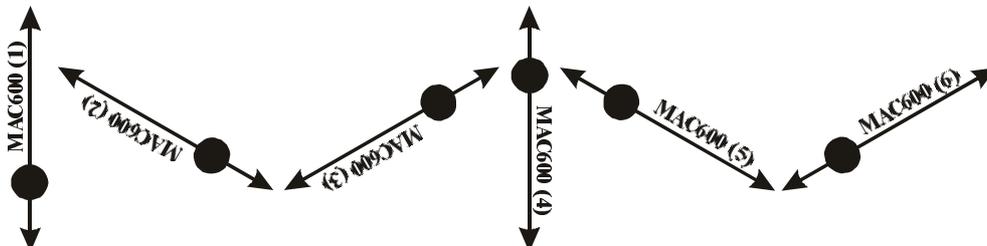


### 7.5. {EXP} Synchronization of effects

Effects on different channels can be synchronized. There is just one rule: **Speed and wait have to be the same (same value for speed and wait).**

Example: We want to synchronize a dimmer effect with and up and down motion on Pan/Tilt. We have to make the dimmer and the Pan/Tilt effect and we set the values for speed and wait equal on both, the dimmer effect and the Pan/Tilt effect.

### 7.6. Effect Marcos or Effect Wizard

Effect macros are pre-programmed combined and synchronized effects. Here is also the possibility to spread the effect over more fixtures.

┌─────────────────┐
│ *[SHIFT] + [EFF]* │
└─────────────────┘

The combination of *[SHIFT] and [EFF] keys* will open the effect macros selection screen. There is a choice between:

- **Effects only applicable on RGB (CMY) fixtures: Effects 1 to 14** are only applicable on RGB fixtures. Color effects like 'Rainbow effect' (runs through the color spectrum), 'Green/Red effect' (red green transitions)…
- **Effect combinations with Pan/Tilt** like 'Pan/Tilt fall-dimmer' (dimming effect combined with Pan/Tilt motion, 'Pan/Tilt fall+dimmer+iris'…
- **Effect combinations with dimmers** like 'Dimmer wave', 'Dimmer bump'…
- **Fixture depending effects,** like for ex. For MAC500 or for PALs.

Example:    We wish to create an up/down Pan/Tilt motion and a dimmer effect with the PRO918s. The dimmer has to be open in upper Pan/Tilt position and has to be closed in lower position (snap effect). This effect has to be spread over all fixtures resulting in one fluent wave.

*Select all PRO918s and press [SHIFT] + [EFF].*
*Select function [19] (P/T-FALL DIMMER*). All fixtures will make now the up/down motion with the dimmer effect. To spread the effect, just click the *[NEXT]* button and select *Wave per 4 (4 PRO918s).*

When the effect runs, try next steps: Leave the effect macro's by clicking the *[ESC]* button (the effect will keep running), select *[P&T] [EFF]* to adjust the effect generator on the Pan/Tilt. Change the *Rotate* parameter.

## 7.7. Stopping effects

Like explained, a running effect can be stopped by setting the **speed and swing of the effect at zero.**

When a **fixture is put in his default state**, **all effects will stop, except the Pan/Tilt effect**. **To stop the Pan/Tilt effect,** *select first the fixtures and then [DEFAULT] + [EFF] + [P&T].*

Suppose an effect, including a Pan/Tilt effect, is running on all fixtures. To stop all effect, we select:

*[DEFAULT] + [EFF] + [ALL]* will stop all effects, except on Pan/Tilt, of all fixtures.
*[ALL]   [DEFAULT] + [EFF] + [P/T]* will stop all Pan/Tilt effects on all fixtures.

## 8. CHAPTER 8: Presets

```
                    ┌─────────────────────────┐
                    │        Setup            │
                    │  Fixtures DMX Addresses  │
                    │     and Stage Plan       │
                    └────────────┬────────────┘
                                 │
                                 ▼
┌────────────────────────────────────────────────────────────────┐
│                                                                  │
│  ┌──────────────────┐              ┌──────────────────┐          │
│  │     Adjust        │             │     Adjust        │         │
│  │ Fixture Control   │             │ Effect Generator  │         │
│  │    channels       │             │    channels       │         │
│  └───┬──────────┬────┘             └───┬──────────┬────┘         │
│      │          │                      │          │              │
│      │          ▼                      ▼          │              │
│      │    ┌────────────────────────────────┐     │              │
│      │    │            Make                │     │              │
│      │    │  Pan/Tilt, Gobo, Color and     │     │              │
│      │    │  Effect Generator Presets      │     │              │
│      │    └──────────────┬─────────────────┘     │              │
│      │                   │                        ▼              │
│  ┌────────┐              │              ┌──────────────────┐     │
│  │Timings │              ▼              │      Make         │     │
│  └───┬────┘                             │    Memories       │     │
│      │                                  └────────┬─────────┘     │
│      ▼                                           │               │
│  ┌──────────────────┐  ┌──────────────────┐  ┌──────────────────┐│
│  │      Make         │ │      Make         │ │      Make         ││
│  │ Cues with Cue-    │ │ Cues with         │ │ Cues with         ││
│  │   Memories        │ │  Playbacks        │ │ Sequences(chasers)││
│  └──────────────────┘  └──────────────────┘  └──────────────────┘│
│                                                                  │
│       ┌──────────────────┐    ┌──────────────────┐               │
│       │      Run          │   │      Make         │               │
│       │    the Show       │   │  Time-Code Show   │               │
│       └──────────────────┘   └──────────────────┘               │
└────────────────────────────────────────────────────────────────┘
```

## STORE PRESET

```
┌─────────────────────────┐
│   Adjust Control Channels│
│        of fixtures       │
└─────────────────────────┘
```

```
Press:
[STORE] + [P&T] + [1...70]
or
[STORE] + [GOBO] + [1...70]
or
[STORE] + [COLOR] + [1...70]
or
[STORE] + [EFF] + [1...70]
```

## CALL PRESET

```
┌─────────────────────────┐
│    Select  fixture(s)    │
└─────────────────────────┘
```

```
Press:
[P&T] + [1...70]
or
[GOBO] + [1...70]
or
[COLOR] + [1...70]
or
[EFF] + [1...70]
```

## MODIFY PRESET

```
┌─────────────────────────┐
│    Call Preset to modify │
└─────────────────────────┘
```

```
┌─────────────────────────┐
│   Adjust Control Channels│
│        of fixtures       │
└─────────────────────────┘
```

```
┌─────────────────────────┐
│ Select all modified fixtures│
└─────────────────────────┘
```

```
Press:
[MOD] + [P&T] + [1...70]
or
[MOD] + [GOBO] + [1...70]
or
[MOD] + [COLOR] + [1...70]
or
[MOD] + [EFF] + [1...70]
```

Presets are an important part of programming. Of course, a show can be programmed without the use of presets, but taking time to make presets will reduce the rest of the programming a lot.

## 8.1. Presets, in general

280 presets can be programmed on the controller:
- 70 Pan/Tilt presets
- 70 Gobo presets
- 70 Color presets
- 70 Effect generator presets

**Those presets can be called for each fixture separate; this gives the possibility to make combinations of presets**. It is possible to combine for example Pan/Tilt preset 1 of the first MAC600 with Pan/Tilt preset 2 of the other MAC600s while both presets were made for all fixtures together.

**It is also possible to load some extra sub-functions on each preset.** Those sub-functions can be toggled on/off on every preset different. For example, it is possible to load also the focus when a Pan/Tilt preset is called, or only color wheel 1 for fixtures with more color wheels. The sub-functions from:
- Pan/Tilt presets can have:
  - Pan/Tilt
  - Focus
  - Dimmer
- Gobo presets can have:
  - Gobo-wheel 1
  - Gobo-wheel 2
  - Gobo-wheel 3
  - Gobo-wheel 4
  - Gobo parameters like speed…
  - Knifes (PAL)
  - Knife parameters (PAL)
  - Effect wheel 1 (Ex. Cyberlight)
  - Effect wheel 2
  - Effect wheel 3
  - Iris
  - Zoom
  - Focus
  - Frost
  - Prism
- Color presets can have:
  - Color wheel 1
  - Color wheel 2
  - Color wheel 3
  - Color wheel 4
  - Color parameters like speed…
  - RGB
  - Dimmer

- Effect presets can have:
  - Pan/Tilt effect parameters
  - Gobo effect parameters
  - Color effect parameters
  - Effect effect parameters
  - Iris effect parameters

- o  Zoom effect parameters
- o  Focus effect parameters
- o  Dimmer effect parameters

## 8.2. Storing Presets



| Very important: | When <u>saving</u> presets, always <u>the values of all fixtures</u> will be saved whether there is a selection of fixtures or not. In addition, the values of all sub-functions will be stored in the preset. When there was only a correct Pan/Tilt setting for the MAC600s but those of the PRO918s, the values of the PRO918s will be stored too when the preset was saved. Also, the dimmer and focus settings will be stored. **However, when the preset is called, it is possible to decide what to load.** |
|---|---|

*[Adjust fixture channels]  [STORE] + [P&T] + [1…70]   [Enter preset name]  [RET]*

A preset stores fixture channel values, so the first step will be to adjust them. When for example all fixtures light 1 spot on the stage, the Pan/Tilt values of those fixtures are stored by pressing the *[STORE], [P&T] and a number out of the [1…70] matrix* together. The system will ask to enter a name for the preset. Enter the name and press *[RET]*.

*[Adjust fixture channels]  [STORE] + [GOBO] + [1…70]   [Enter preset name]   [RET]*
*[Adjust fixture channels]  [STORE] + [COLOR] + [1…70]   [Enter preset name]   [RET]*
*[Adjust fixture channels]  [STORE] + [EFF] + [1…70]   [Enter preset name]   [RET]*

The same procedure is used to store gobo, color or effect presets.

Example:   We'll make the first 2 presets of the show 'Manual72'; preset 'HOME' (everything facing down) and preset 'CENTER' (everything facing the center of the stage).

- Select all fixtures and start from their default positions. When the dimmers from all fixtures are opened (in the default show, the default values were changed); all dimmers were closed). As we can see now, most of the fixtures are facing the ground already; only the MAC300s have to be adjusted. This preset is stored like this: **[STORE] + [P&T] + [1]  [Type preset name 'HOME'] [RET]**
- To create preset 2, it is advised to work with the **SOLO** function (remember to stop all sequences and the cue-fading). All fixtures should face the center of the stage.

## 8.3. Calling Presets

| **Presets are called for the selected fixtures only.** |
| --- |

| *[Select fixtures]  [P&T] + [1…70]* |
| --- |

When *[P&T]* (presets) is selected together with one of the blinking LEDs in the 1…70 matrix, the preset will be called, **but only for the selected fixtures.**

When one of the preset functions (P&T, gobo, color or eff) is selected, the preset names window will open at the screen and the LEDs of matrix 1…70 will blink orange for the programmed presets.

| *[Select fixtures]  [GOBO] + [1…70]* |
| --- |
| *[Select fixtures]  [COLOR] + [1…70]* |
| *[Select fixtures]  [EFF] + [1…70]* |

To call gobo, color or effect presets.

*Example: To show the possibility of combined presets, we will call preset 1 for all MAC600s and preset 2 for the PRO918s.*
- *Select the SOLO function and select fixture group 1 (MAC600s). Select Pan/Tilt preset 1.*
- *Deselect group 1 and select group 2 (PRO918s). Select Pan/Tilt preset 2.*
- *Deactivate SOLO.*

If the value screen *[VALUES]* (digital memory values) is opened, you can see that the preset numbers replace the digital values.

Color preset 2 is represented by:  **C 2**

In general:  C xx  :  Color preset
P xx:  Pan/Tilt preset
G xx:  Gobo preset
F xx:  Effect preset

## 8.4. Erasing and changing presets

| *[CLR] (presets)  +  [P&T or GOBO or COLOR or EFF] + [1…70]* |
| --- |

When the *[CLR]* (presets) key is used together with a preset function (P&T, color or eff), and at the same time, a number (1…70) is selected, the preset will be erased.

| **Note: When a preset, already used in a memory (see later), is erased, then the preset number will still show up in the memory but it doesn't have any value or function any more. This means that the value of this preset is empty and will not change anything to the channel, when the memory is called.** |
| --- |

> *[Select fixtures] [Adjust fixture channels]  [MOD] (presets)  + [P&T or GOBO or COLOR or EFF] + [1…70]*

When a preset needs to be modified, **first the fixtures have to be selected and their channels have to be adjusted** before saving the preset in modify mode.

> **Only the altered values of <u>the selected fixtures</u> will be stored in modify mode.** This makes sense otherwise all fixtures will be changed and the preset has to be re-adjusted.

Suppose that the same show has to be performed on different locations, it will always be necessary to adjust the Pan/Tilt values of the fixtures. When everything is programmed with presets, it is a lot easier to change those 70 Pan/Tilt presets than having to check all cue-memories (up to 2,000) or all memories (up to 4,000). You just call all 70 presets and change their settings. If the Pan/Tilt presets of all fixtures have to change, you can use STORE or MOD. Is it only necessary to change the settings of some fixtures, you can use MOD.

The **MOD (modify)** function is designed **to change differences during performance of the show.** This is to avoid that you have to call the preset during show performance. When you see that the preset is wrong during the show, just change the settings when you see it and use the MOD key to store those changes.
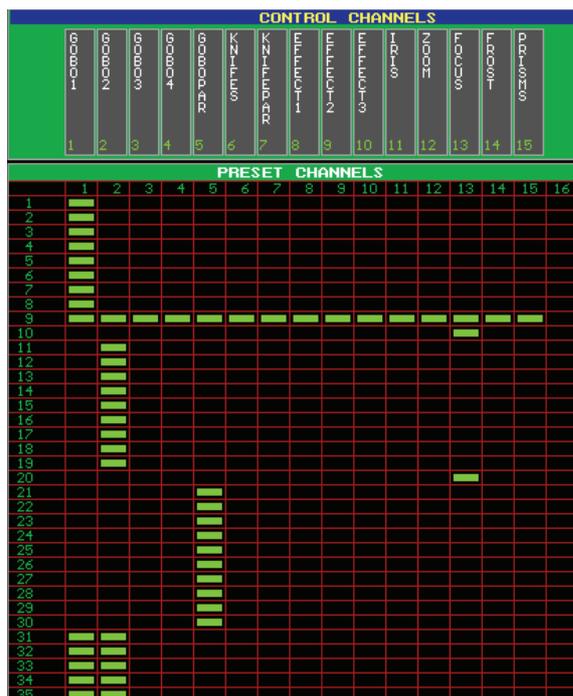
## 8.5. Preset load-selection

We already mentioned that the presets can hold more than Pan/Tilt, gobo, color or affect values, but also zoom, iris, focus etc…

You can decide what to load for every preset.

---

**[EDIT]** (cues) + **[P&T or GOBO or COLOR or EFF]** (presets)

---

When the *[EDIT]* (key from CUES) is selected together with one of the preset functions, next window will open:



The numbers on the left represent the preset numbers. With the **[PgUp] or [PgDn]** keys, presets 1 – 35 or 36 – 70 will be shown.

The numbers on the top represent the sub-function. Which sub-function belongs to which value can be found in the window on top (control channels).

In this example, only gobo-wheel 1 is taken when **calling one of those presets**. Presets 9 loads everything, and in preset 10 and 20, only the focus is called (the gobo-preset becomes a focus-preset in this case).

**On saving a preset, the values of all sub-functions are stored, on calling them however, only the values, activated in the table, are called.**

When this window is open, LEDs (1…70) of the programmed presets will be RED.

---

**[Select preset(s) (1…70)]  [Toggle sub-function(s) on/off (1…16)]**

---

Select the preset(s) that needs to have another load selection (just select the numbers in the matrix (1…70) until their LEDs are off), and toggle their sub-functions on or off with the keys (1…16 control channels).

---

**[Select opened preset function, to save,  P&T or GOBO or COLOR or EFF]**

---

When the changes are made, we can store the whole setting by selecting the *[preset function]*, the one we've used to open it, again.

**8.6.** **Summary**

In this chapter we've explained the advantage of using presets. Many users skip this step for little shows that have to be performed only once, but once the presets are programmed, you will regain lots of time when programming the rest.

Presets storing **(of all fixtures)**:
> *[Adjust fixture control channels]  [STORE] + [Preset function] + [1…70]*

Presets calling **(of the selected fixtures)**:
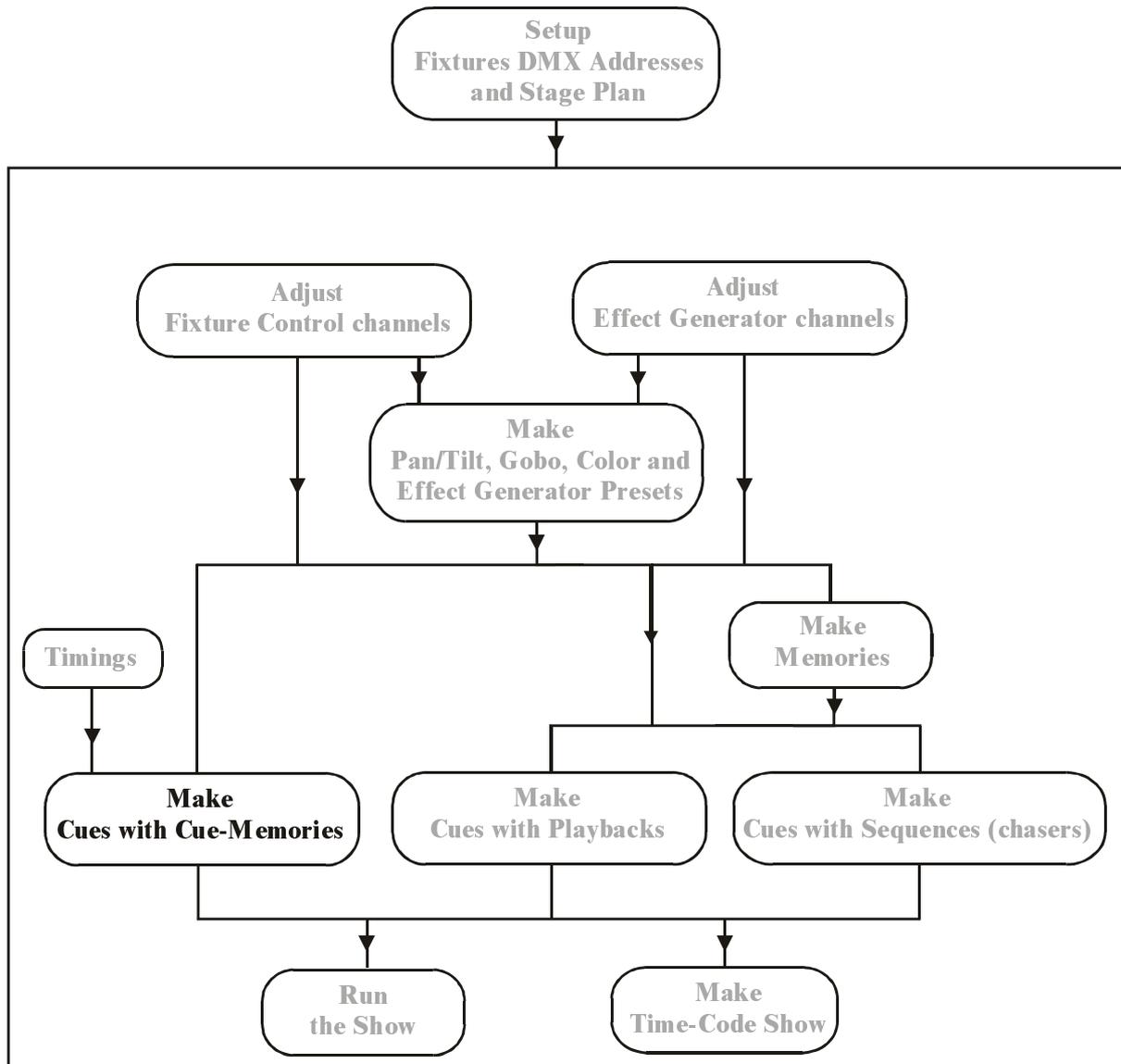> *[Select fixtures]  [Preset function] + [1…70]*

Presets deleting **(of all fixtures)**:
> *[CLR] + [Preset function] + [1…70]*

Presets changing **of the selected fixtures)**:
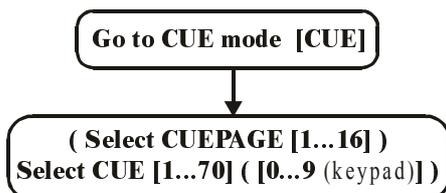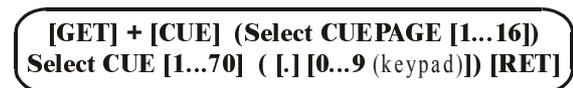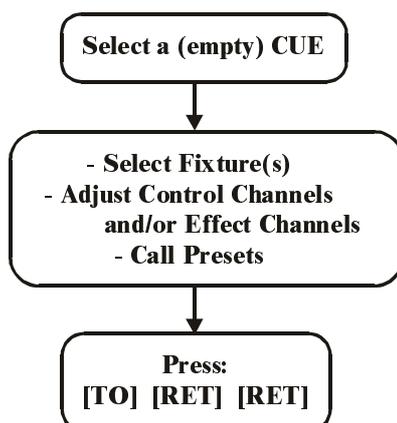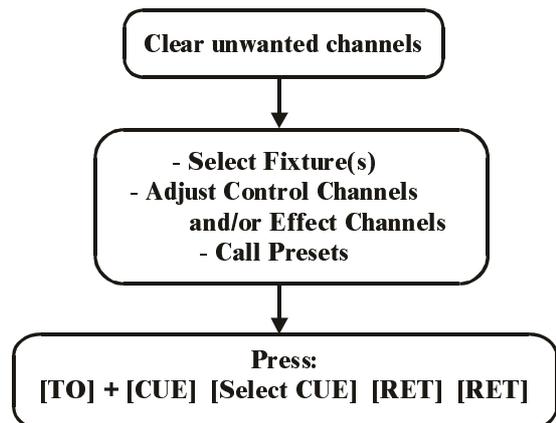> *[Select fixtures]  [Adjust fixture control channels]  [MOD] + [Preset function] + [1…70]*

Preset load selection change:
> *[EDIT] + [Preset function1]  [Select preset(s) (1…70)]  [toggle sub-function(s) on/off (1…16)] [Preset function1]*

## 9. CHAPTER 9: Cue-memories

```
                    ┌─────────────────────────┐
                    │         Setup           │
                    │ Fixtures DMX Addresses  │
                    │    and Stage Plan       │
                    └─────────────────────────┘
```

┌──────────────────────────────────────────────────────────────────────────┐
│                                                                            │
│       ┌──────────────────────┐          ┌──────────────────────┐           │
│       │        Adjust        │          │        Adjust        │           │
│       │ Fixture Control channels │      │ Effect Generator channels │        │
│       └──────────────────────┘          └──────────────────────┘           │
│                                                                            │
│                  ┌──────────────────────────────┐                          │
│                  │            Make              │                          │
│                  │  Pan/Tilt, Gobo, Color and   │                          │
│                  │   Effect Generator Presets   │                          │
│                  └──────────────────────────────┘                          │
│                                                                            │
│                                              ┌──────────────┐               │
│                                              │    Make      │               │
│                                              │  Memories    │               │
│   ┌──────────┐                               └──────────────┘               │
│   │ Timings  │                                                              │
│   └──────────┘                                                              │
│                                                                            │
│   ┌──────────────────┐  ┌──────────────────┐  ┌────────────────────────┐    │
│   │      Make        │  │      Make        │  │         Make           │    │
│   │ Cues with Cue-   │  │ Cues with        │  │ Cues with Sequences    │    │
│   │ Memories         │  │ Playbacks        │  │ (chasers)              │    │
│   └──────────────────┘  └──────────────────┘  └────────────────────────┘    │
│                                                                            │
│              ┌──────────┐              ┌──────────────────┐                 │
│              │   Run    │              │      Make        │                 │
│              │ the Show │              │ Time-Code Show   │                 │
│              └──────────┘              └──────────────────┘                 │
│                                                                            │
└──────────────────────────────────────────────────────────────────────────┘

**Activating CUES**

> **Go to CUE mode  [CUE]**

> **( Select CUEPAGE [1...16] )**
> **Select CUE [1...70]   ( [0...9** (keypad)**] )**

**Getting values of**
**cuememories with autoload=ON**

> **Go to CUE mode  [CUE]**

> **( Select CUEPAGE [1...16] )**
> **Select CUE [1...70] ( [0...9** (keypad)**] )**

**Getting values of**
**cuememories with autoload=OFF**

> **[GET] + [CUE]  (Select CUEPAGE [1...16])**
> **Select CUE [1...70]  ( [.] [0...9** (keypad)**]) [RET]**

**Making cuememories with autoload=ON**

> **Select a (empty) CUE**

> **- Select Fixture(s)**
> **- Adjust Control Channels**
> **and/or Effect Channels**
> **- Call Presets**

> **Press:**
> **[TO]  [RET]  [RET]**

**Making cuememories with autoload=OFF**

> **Clear unwanted channels**

> **- Select Fixture(s)**
> **- Adjust Control Channels**
> **and/or Effect Channels**
> **- Call Presets**

> **Press:**
> **[TO] + [CUE]  [Select CUE]  [RET]  [RET]**

IMPORTANT: Adjustments to be done to follow the examples:
- **Please check the start options of the controller, before starting to program cue-memories. Press the** *[SETUP]* **key during 2 secs. and select option** *[2]* **(show settings). Go to AUTOLOAD CUEMEM. with the blinking keys and select** *[EDIT]* **until the option is marked 'ON'. Select** *[RET]* **to save the settings.**
- **The CUEFADING should be disabled. Press** *[CUE] + [ON],* **until the red box behind cue-fading at the left of the screen, is black.**

## 9.1. Cues

What are CUEs?
A cue can hold:
- 1 cue-memory
- 4 Sequences (chasers)
- 42 Playbacks
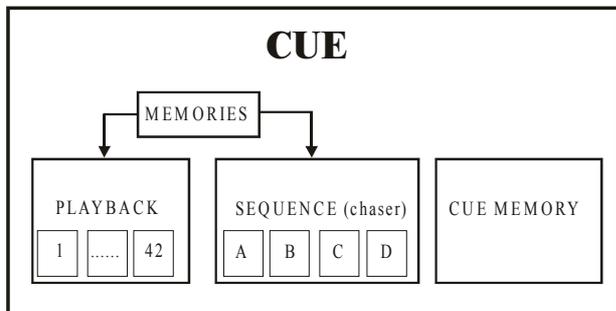


The system can hold up to 11,200 cues (16 pages of 70 cues + 9 point-cues between every 2 main-cues). Of those 11,200 cues, 2,000 can hold a cue-memory.

Those cue-memories are quick accessible in run-mode by means of the 1…70 key-matrix.

## 9.2. Activating cues
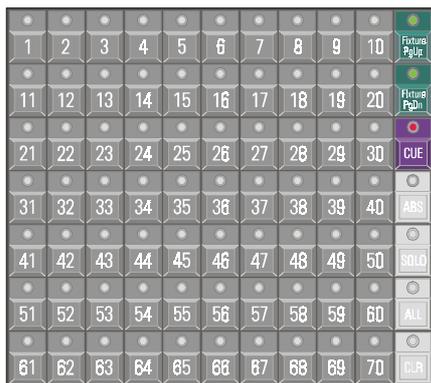


The 1…70 key-matrix is frequently used. An overview:

*[Fixture PgUp] or [Fixture PgDn]*

**Fixture mode:**
- Fixture mode is activated with the keys *[Fixture PgUp] or [Fixture PgDn]*.
- In this mode, keys 1 to 70 represent fixtures.

*[Direct Access] [Direct Access] [1/17…16/32] or [P&T]…*

**Direct access mode:**
- In this mode, the keys represent possible direct access choices.

*[P&T]* (presets) *or [GOBO] or [COLOR] or [EFF]* (presets)

**Preset mode:**
- The keys represent presets.

*[CUE]*

**Cue mode:**

When we select the *[CUE]* key, the key-matrix represents CUES. When no cues are programmed, only the LED of *key [1]* will be lit green. If **cues are programmed**, their LEDs will be lit **red or orange** (orange: when only point-cues are programmed). The **active cue** is **green**.

When we select a key *[1…70]*, we call a **main cue.** Note that on the keypad, key *[0]* will blink. **The keypad keys *[0]* to *[9]* represent point-cues. Point-cues** are **insertions between 2 main cues.**

When we wish to activate Cue 5.7, we select *[5* (1…70)*] and [7* (keypad)*]*. On the monitor, this will appear as:

| PAGE 1 | CUE 5.7 | REL 5.7 |
|---|---|---|

*[1…16]* (Groups/Cuepages)

Each cue-page can hold 70 main cues with their point-cues. To change the cue-page, select a page *[1…16]* in the **Groups/Cuepage** keys. Remember, in **Fixture mode**, those keys represent **fixture groups**, in **Cue mode** they represent **cue-pages.**

If Cue 60.2 on cue page 2 has to be activated, select first page *[2* (1…16)*]*, then *[60* (1…70)*] [2* (keypad)*]*. The monitor will show:

| PAGE 2 | CUE 60.2 | REL 130.2 |
|---|---|---|

In general, to activate a cue:

*( [1…16] ) [1…70] ( [0…9] )*

**{EXP}**        REL 130.2 stands for 'Relative Cue 130.2'; the cue number is taken relative to cue 1.0 on cue-page 1. Cue 60.2 cue-page 2 is relative: 70 (cues of page 1) + 60 (cues of page 2) = 130, and point-cue 2, or 130.2.

> **[CUE] + [number** (keypad)**] [.] [digit** (keypad)**]    [RET]**

**{EXP}**        If a cue has to be called **relative**; select and hold the *[CUE]* key, and type the relative number on the keypad followed by a *[RET]*.
Example: Cue rel 135.3 has to be called as: *[CUE] + [1] [3] [5] [.] [3] [RET]*.

> **REMARK: When a point cue is activated using the common way, <u>first the main cue has to be called and it will be activated, then the point-cue.</u> If we want to avoid that the main cue is activated too, we have to select it using the relative way.** There is a second way to avoid this:
>
> > **[CUE] + [1…70] [.] [digit** (keypad)**] [RET]**
>
> This means: select and hold the *[CUE]* button, while selecting the cue.

> **[LAST] of [NEXT]**

       When **cues are programmed in order of performance, and the controller is in Cue mode**, the cues can be called in sequence using the ***[LAST] or [NEXT]*** key.

## 9.3. Cue-memories

> **A cue-memory is a light scene with its own fade, delay and hold times** (see next chapter for the timings).

### 9.3.1 Programming cue-memories with Autoload parameter ON

Suppose we want to program the default light scene in cue-page 16 cue 1:
- Select cue mode; *[CUE]*, select cue-page 16 *[16 (1…16)]* and select cue1 *[1 (1…70)]* to activate an empty cue.
- Put all fixtures in their defaults: go back to fixture mode *[FIXT PgUp] [ALL] [DEFAULT] [DEFAULT] [open all dimmers]*
- Save this light scene in the selected empty cue: *[TO] [RET] [RET] (*on the first RET, a timing window will open, this will be explained in the next chapter. Select RET again to save the scene*)*.

In cue 2 of the same cue-page, we want Pan/Tilt preset 2:
- Select empty CUE 2: *[CUE] [2 (1…70)]*
- *[P&T* (presets)*] + [2 (1…70)]*. We don't have to select all fixtures again, since they are still selected.
- *[TO] [RET] [RET]*

We have programmed the default light scene in cue 1 (page 16), and a Pan/Tilt change in cue 2. If both cues must be activated (one by one), we go the cue mode *[CUE]* and we select CUE 1 *[1* (1…70)*]* or *[2* (1…70)*]* in cue page 16.

| *[Select an empty cue] [Adjust fixture control channels]  [TO] [RET] [RET]* |
| --- |

Summary: if we want to program a cue-memory with the autoload parameter ON, we have to select first an empty cue, and then we adjust the fixture control channels. To save it, we select *[TO] [RET] [RET]*.

### 9.3.2 {EXP}  Programming Cue-memories with Autoload parameter OFF

If we want to program the same light scenes as in the previous paragraph, but with the **autoload parameter OFF**, more keyboard actions have to be taken:
- Select all fixtures in fixture mode *[FIXT PgUp]  [ALL]*
- Default scene for all fixtures *[DEFAULT] [DEFAULT]  [open the dimmers]*
- Save in cue 1 page 16: *[TO] + [CUE]  [16* (1…16)*] [1* (1…70)*] [RET] [RET]*
- Clear all channels of all fixtures: *[CLR* (control channels)(double-click)*]*
- Select P/T preset 2: *[P&T* (presets)*] + [2* (1…70)*]*
- Save in cue 2: *[TO] + [CUE]  [16* (1…16)*]  [2* (1…70)*]  [RET]  [RET]*
- To activate the cues, first the CUEFADING parameter has to be activated: *[CUE] + [ON]* until the box behind CUEFADING (left at the screen) colors red. This has to be deactivated again to proceed with programming.

| *[Adjust fixture control channels and delete the not-needed channels] [TO] + [Select a cue] [RET]  [RET]* |
| --- |

### 9.3.3 Viewing the values of a  cue-memory with Autoload parameter ON

If we want to view the values of a previously stored cue-memory, **the 'Digital Memory-values' screen has to be open:**

*[VALUES]* until the screen shows: 'Digital Memory-values'

**The DIGITAL MEMORY-VALUES screen represents the fixtures control channels, as they are stored in the cue-memory.** This is not the output memory, but a memory in between, showing what was programmed.

| *( [Select cue-page] ) [select CUE] ( [0…9* (keypad)*] )* |
| --- |

In 'Autoload ON' mode, this is the same as activating a cue. When a cue from another page has to be viewed, then first the cue-page has to be selected *[1…16]*, then the cue *[1…70]* and if necessary a point-cue *[0…9]*.

**In 'Autoload ON' mode, the stored cue-memory values are directed automatically to the Digital Memory-values' memory when the cue is activated.** Adjustments can be done instantly.

### 9.3.4 {EXP} Viewing the values of a cue-memory with Autoload parameter OFF

> *[GET] + [CUE]  ( [Select cuepage] )  [select CUE]  ( [.]  [0…9]* (keypad) *]  [RET]*

**In 'autoload OFF mode', the values stored in the cue-memory are not directed instantly to the digital memory-values screen, when the cue is activated. Only when the cue-memory is called with the GET key, the values will be updated.**

### 9.3.5 {EXP}  The AUTOLOAD parameter

> *[SETUP]  [2]*

In the last 4 paragraphs, it has become clear that the AUTOLOAD parameter is best ON, when programming. To explain this, **open the digital memory-values screen.**

Take back example 1 with the AUTOLOAD ON.
- Activate an EMPTY CUE. Since activating is the same as getting the values, in AUTOLOAD ON mode, all values will be erased when the empty cue is called. If, for example Pan/Tilt preset 2 is selected, then the values of Pan/Tilt will show up for the selected fixtures. In fact, the Autoload does the same as a *[GET] + [CUE]*.

If the AUTOLOAD is OFF:
- When activating an empty cue, the values screen won't change. We are obliged to clear the values first (*[CLR] key).*
- On top of this, we MUST activate the CUEFADING to send the values to the output (and to the fixtures), and DEACTIVATE it later to resume programming. To avoid the CUEFADING switch, we can work with the *[GET] + [CUE]* key combination, but this is a longer way.

**The end of the chapter 'cue-fading' will give a survey of the possible combinations of autoload, cue-fading and manual mode.**

### 9.3.6 What should be stored in a cue-memory

| A cue-memory has to hold changes, to a previous cue-memory or light scene. |
| --- |

It is possible, but not necessary to store all values of all fixtures in a cue-memory. When, for example, we want to change only the color of all fixtures, there is no need to store also the values for Pan/Tilt, dimmer, gobo, …
Example:
- In cue-memory 3 (the next cue), we want all fixtures in green. This means that only the green color has to be programmed: Select cue 3 (page 16) (autoload cuemem = on, cuefading=off) and select color preset 5 (green). Press *[TO] [RET] [RET]*.
- Activate cue 1, everything has color white in default position.
- Activate cue 2, P/T to the center, white.
- Activate cue 3, P/T remains unchanged because we didn't record Pan/Tilt information in this cue, but everything will be in green.
- Activate cue 1 again, so everything will be white again in default.
- Skip cue 2 and go instantly to cue 3, only the color will change to green.

Attention, when the effects generator is activated on some channels in a cue-memory, it will keep running until some cue-memory contains values to stop him.
Example:
- In cue-memory 4, the effects generator is activated on Pan/Tilt of the MAC600s: *[Select cue 4] [Select the MAC600s] [Select P&T and open the effects generator] [adjust the x and y swing and the speed] [TO] [RET] [RET]*.
- If cue 4 is activated, the effects generator can only be stopped when cue 1 is selected, because the default in cue 1 stops all effects. If we just want to stop the effect in a cue, then we make a cue 5: *[Select cue 5] [Select the MAC600s] [DEFAULT] [EFF] [P&T] [TO] [RET] [RET]*

| **Important remark: Like advised, it is not necessary to record all parameters in a cue-memory, but it is possible. Cue-memories that hold information for all parameters can slow down the controller enormously.** |
| --- |

## 9.4. The values screens
## 9.4.1 Digital Memory-Values (Channels)



The 'Digital Memory-Values' screen represents a memory showing only the values, which were or are stored in the cue-memory.

The rows represent the fixtures (with their numbers as they appear in the stage window), the columns represent the fixture control channels. With the *[PgUp], [PgDn], [Fixture PgUp] and [Fixture PgDn]* keys, the values of the other fixtures can be retrieved.
Keys *[Pg<] and [Pg>]* will shift the channels to channels (1-16) or (17-32).

The different symbols:

 Empty field. When calling the cue-memory, the empty field will change nothing on the fixtures control channel.

 Color preset 3. A field like this, calls a preset, in this case color preset 3. The values for the preset are stored in the preset itself. When the preset is changed, the values are forwarded automatically to the cue-memories, where it was been used.
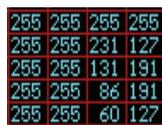
 Field with digital memory values. Those values can have 2 colors:
- **Blue: the values from the cue-memory**
- **Yellow: channel values changed in MANUAL MODE**
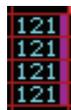
 A colored box behind the channel value indicates that some effects generator channels have values for the concerning channel.

 Fields filled only with effect generator channels. If the effects generator box is blue, it indicates a Pan/Tilt channel. In this case, the Pan/Tilt value is not changed but its effect generator channels are.
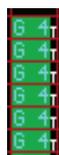
 Gobo preset 4 is in use, but there are some timing differences (T) (see next chapter) to the main cue timing.

## 9.4.2 Digital Output-Values

Contrary to the 'Digital Memory-Values' screen, the 'Digital Output-Values' screen will never have empty fields. **An empty field in this screen indicates a non-existing channel.** Since the rows represent the fixtures, fields 15 and 16, for example of a MAC600 (fixtures 1 to 6), will remain always blank (MAC600 has 14 channels).

| PAGE 1 | DIGITAL OUTPUT-VALUES | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 21 | 0 | 0 | 98 | 0 | 0 | 0 | 0 | 127 | 127 | 44 | 63 | 0 | 0 | | |
| 21 | 0 | 0 | 98 | 0 | 0 | 0 | 0 | 127 | 127 | 213 | 191 | 0 | 0 | | |
| 21 | 0 | 0 | 98 | 0 | 0 | 0 | 0 | 127 | 127 | 213 | 191 | 0 | 0 | | |
| 21 | 0 | 0 | 98 | 0 | 0 | 0 | 0 | 127 | 127 | 44 | 63 | 0 | 0 | | |
| 21 | 0 | 0 | 98 | 0 | 0 | 0 | 0 | 127 | 127 | 44 | 63 | 0 | 0 | | |
| 21 | 0 | 0 | 98 | 0 | 0 | 0 | 0 | 127 | 127 | 44 | 63 | 0 | 0 | | |
| 20 | 0 | 16 | 0 | 196 | 8 | 0 | 127 | 0 | 0 | 45 | 191 | 0 | 0 | 0 | 0 |
| 20 | 0 | 16 | 0 | 196 | 8 | 0 | 127 | 0 | 0 | 43 | 191 | 0 | 63 | 0 | 0 |
| 20 | 0 | 16 | 0 | 196 | 8 | 0 | 127 | 0 | 0 | 212 | 127 | 0 | 0 | 0 | 0 |
| 20 | 0 | 16 | 0 | 196 | 8 | 0 | 127 | 0 | 0 | 212 | 0 | 1 | 255 | 0 | 0 |
| 20 | 0 | 0 | 115 | 0 | 0 | 0 | 111 | 127 | 53 | 255 | 0 | 0 | | | |
| 20 | 0 | 0 | 115 | 0 | 0 | 0 | 123 | 159 | 56 | 191 | 0 | 0 | | | |
| 20 | 0 | 0 | 115 | 0 | 0 | 0 | 133 | 159 | 56 | 191 | 0 | 0 | | | |
| 20 | 0 | 0 | 115 | 0 | 0 | 0 | 146 | 63 | 53 | 95 | 0 | 0 | | | |
| 20 | 0 | 0 | 115 | 0 | 0 | 0 | 115 | 223 | 178 | 95 | 0 | 0 | | | |
| 20 | 0 | 0 | 115 | 0 | 0 | 0 | 127 | 223 | 177 | 63 | 0 | 0 | | | |
| 20 | 0 | 0 | 115 | 0 | 0 | 0 | 140 | 127 | 178 | 159 | 0 | 0 | | | |
| 20 | 0 | 0 | 115 | 0 | 0 | 0 | 107 | 63 | 51 | 223 | 0 | 0 | | | |
| 20 | 0 | 0 | 115 | 0 | 0 | 0 | 123 | 63 | 57 | 63 | 0 | 0 | | | |
| 20 | 0 | 0 | 115 | 0 | 0 | 0 | 134 | 255 | 56 | 159 | 0 | 0 | | | |
| 20 | 0 | 0 | 115 | 0 | 0 | 0 | 144 | 95 | 53 | 223 | 0 | 0 | | | |
| 20 | 0 | 36 | 50 | 0 | 127 | 0 | 144 | 255 | 232 | 223 | 0 | 0 | | | |
| 20 | 0 | 36 | 50 | 0 | 127 | 0 | 139 | 127 | 232 | 223 | 0 | 0 | | | |
| 20 | 0 | 36 | 50 | 0 | 127 | 0 | 135 | 95 | 232 | 223 | 0 | 0 | | | |
| 20 | 0 | 36 | 50 | 0 | 127 | 0 | 130 | 191 | 232 | 223 | 0 | 0 | | | |
| 20 | 0 | 36 | 50 | 0 | 127 | 0 | 124 | 223 | 232 | 223 | 0 | 0 | | | |
| 20 | 0 | 36 | 50 | 0 | 127 | 0 | 120 | 191 | 232 | 223 | 0 | 0 | | | |
| 20 | 0 | 36 | 50 | 0 | 127 | 0 | 116 | 223 | 232 | 223 | 0 | 0 | | | |
| 20 | 0 | 36 | 50 | 0 | 127 | 0 | 108 | 223 | 232 | 223 | 0 | 0 | | | |
| 20 | 0 | 36 | 50 | 0 | 127 | 0 | 141 | 127 | 252 | 191 | 0 | 0 | | | |
| 20 | 0 | 36 | 50 | 0 | 127 | 0 | 136 | 31 | 252 | 191 | 0 | 0 | | | |
| 20 | 0 | 36 | 50 | 0 | 127 | 0 | 131 | 127 | 252 | 191 | 0 | 0 | | | |
| 20 | 0 | 36 | 50 | 0 | 127 | 0 | 126 | 191 | 252 | 191 | 0 | 0 | | | |
| 20 | 0 | 36 | 50 | 0 | 127 | 0 | 120 | 223 | 252 | 191 | 0 | 0 | | | |
| 20 | 0 | 36 | 50 | 0 | 127 | 0 | 113 | 127 | 252 | 191 | 0 | 0 | | | |

**This screen represents the values that are sent to the fixtures.** This screen is slowed down, because the output takes precedence over the screen. If one wants to see, on screen, what happens in real-time, *press and hold the [VALUES] key.* In this case, the screen takes precedence over the output.

**Colored boxes in this screen indicate that effects generator channels are active on the channels.**

**{EXP}** The values are colored yellow. If they have a different color, then the values are changed by a sequence (see chapter Playbacks and sequences).
- white: values coming from sequence D
- blue: values coming from sequence C
- green: values coming from sequence B
- red: values coming from sequence A

## 9.5. Naming Cues

To keep everything well organized, it is important to give the cues a name. **If in the 'start options ( *[SETUP]  [2])* the 'automatic cuename' setting is 'ON', a name will be asked automatically when saving a cue-memory** ( *[TO]  [RET]  [RET]  [name]  [RET]).*

When the setting is 'OFF', you can give a cue a name by:

> *[Activate a cue]  [TXT EDIT] + [CUE]  [Type name]  [RET]*

### 9.5.1 'Cuenames' window

*[Select CUE-mode] [TEXT (view)]*



A name-field only marked with a * indicates that the cue has been programmed, but didn't get a name (for example cue 48).

Some yellow boxes appear after CUE 60 in the picture. This means that the cue **holds also some point-cues.** The point-cue names appear on the left of the screen:



### 9.6. Arranging cues

Since cue-memories can hold a variety of values, many combinations are possible. Cue-memories can hold values for:
- all fixtures and all their channels (don't use that too much)
- one single function of one or more fixtures
- one single channel of one or more fixtures
- all channels of 1 type of fixture
- only effects generator channels
- etc…

Therefor cues can be programmed in many different ways:
- Programming for performances or for a theater show. In this case, the cues will be programmed in order of performance.
- Programming for performances or discos where the programmer doesn't have a clue of what will happen.

**9.6.1** <u>**Cue arrangement for shows with a defined cue-sequence**</u>

The start-cue in this case will be a cue that holds all values for all fixtures. The next cues will hold only the changes to the previous cues or light scenes.

```
┌─────────────────────────────────────┐
│              CUE 1                   │
│   All channel values for all fixtures │
└─────────────────────────────────────┘
                  │
                  ▼
┌─────────────────────────────────────┐
│              CUE 2                   │
│  Only changes in the cue-memory to cue 1 │
└─────────────────────────────────────┘
                  │
                  ▼
┌─────────────────────────────────────┐
│              CUE 3                   │
│  Only changes in the cue-memory to cue 2 │
└─────────────────────────────────────┘
                  │
                 ....
                  │
                  ▼
┌─────────────────────────────────────┐
│              CUE n                   │
│  Only changes in the cue-memory to cue n-1 │
└─────────────────────────────────────┘
```
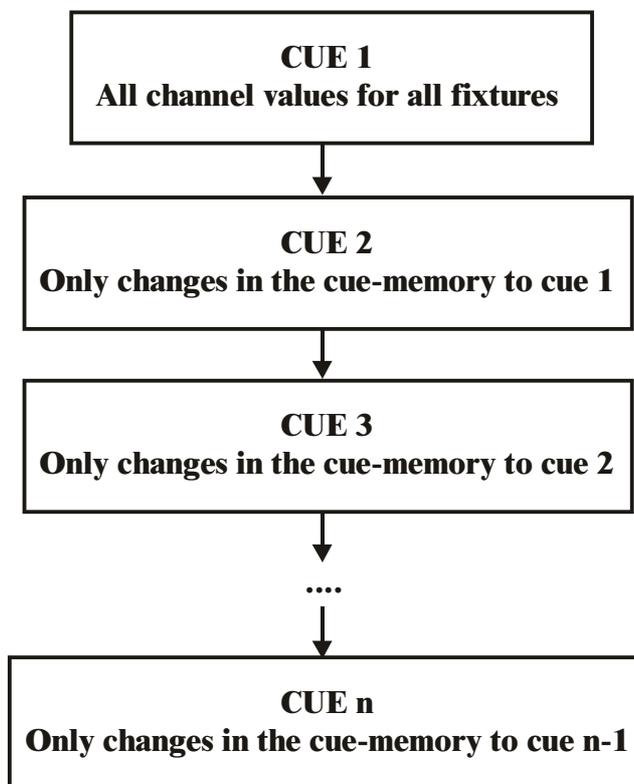
> *[LAST] of [NEXT]*

Cues that are programmed on this base can be called in sequence by hitting the *[LAST] (go back) or [NEXT] (go forward) buttons* **(!!! The controller must be in CUE MODE)**.

An example of this is given in the show 'MANUAL72: Cuepage 1 cues 1 to 7.
- The first cue 'BLACKOUT' holds all values for all fixtures
- Cue 2 'MAC300 ON' opens the dimmers of the MAC300s and MAC600s
- Cue 3 'MAC250 ON+MOVE' opens the MAC250s and sets them in P/T preset 4
- Cue 4 'MAC300+250' sets the MAC300s in color preset 6 and some of them have also a P/T preset 6
- Cue 5 'MAC250 Stage Pink' opens PRO918s, closes Mac300s and sets color preset 4, gobo preset 32 and P/T preset 1 for the MAC250s
- Cue 6 'Mac600 Down' puts the MAC600s in color preset 10 and P/T preset 1 and starts an effect on P/T preset 3 of the MAC250s
- Cue 7 'MAC250 chase': the dimmers of the MAC600s and the PRO918s will close, those of the MAC300s will open in color preset 6 and P/T preset 4 and a dimmer chase in color white will start on the MAC250s. In addition a P/T effect will start. Since there is no sign of Pan/Tilt values here, the effect will start on the values of a previous cue (in this case cue 6 with pan/tilt preset 3).

### 9.6.2 Cue arrangement for shows with no cue sequence order

If the cue sequence has not been defined or if the show has to be used in discotheques, then it can be useful to select the cues on an effect or fixture base.

It is possible to make combinations of cues, if partly filled cue-memories are used, since partly filled cue-memories call only the values that are programmed in the cue-memory:

**Example 1**

| CUE 1<br>All channel values for all fixtures | CUE 21<br>Color values | CUE 30<br>Effect values like gobo's, shutter... | CUE 50<br>Effect generator values |
|---|---|---|---|
| CUE 2<br>P/T values | CUE 22<br>Color values | CUE 31<br>Effect values like gobo's, shutter... | CUE 51<br>Effect generator values |
| CUE 3<br>P/T values | CUE 23<br>Color values | CUE 32<br>Effect values like gobo's, shutter... | CUE 52<br>Effect generator values |
| .... | .... | .... | .... |
| CUE 20<br>P/T values | CUE 29<br>Color values | CUE 49<br>Effect values like gobo's, shutter... | CUE 59<br>Effect generator values |

In this example (Example 1) the cues are **arranged per effect for all fixtures together.** We start from cue 1 where all fixtures have a value for all channels. This way, we are sure that all channels have a value somewhere. Then we arrange the cues as follows:
- cue 2 to for example cue 20 hold **only** pan/tilt values in the cue-memories
- cue 21 to cue 29 hold **only** color values in the cue-memories
- cue 30 to cue 49 hold **only** effects like gobos, prisms, strobo …
- cue 50 to cue 59 hold **only** effects generator values for ex. P/T, or gobo, or dimmer…
- Then we can also make some cues for dimmers

Remark:
- The best way to start is: assign the default value of the series to every first cue of a series. For example: the fist cue of the color cue series (cue 21) has to hold the value for 'white'. The first cue of the gobo cue series (cue 30) has to hold the value for 'no gobo'. The first cue of the effects generator cue series (cue 50) has to hold the values to stop all possible effects.
- This way of programming makes it possible to combine the cues. We can combine cue 3 (Pan/Tilt) with cue 25 (a color) with cue 31 (a gobo). Just activate them.

**Example 2 : cues grouped per fixture**

### cue PAGE 2 = MAC600

| | | | |
|---|---|---|---|
| **CUE 1**<br>P/T values | **CUE 21**<br>Color values | **CUE 30**<br>Effect values like gobo's, shutter... | **CUE 50**<br>Effect generator values |
| **CUE 2**<br>P/T values | **CUE 22**<br>Color values | **CUE 31**<br>Effect values like gobo's, shutter... | **CUE 51**<br>Effect generator values |
| **CUE 3**<br>P/T values | **CUE 23**<br>Color values | **CUE 32**<br>Effect values like gobo's, shutter... | **CUE 52**<br>Effect generator values |
| **....** | **....** | **....** | **....** |
| **CUE 20**<br>P/T values | **CUE 29**<br>Color values | **CUE 49**<br>Effect values like gobo's, shutter... | **CUE 59**<br>Effect generator values |

### cue PAGE 3 = PRO918

| | | | |
|---|---|---|---|
| **CUE 1**<br>P/T values | **CUE 21**<br>Color values | **CUE 30**<br>Effect values like gobo's, shutter... | **CUE 50**<br>Effect generator values |
| **CUE 2**<br>P/T values | **CUE 22**<br>Color values | **CUE 31**<br>Effect values like gobo's, shutter... | **CUE 51**<br>Effect generator values |
| **CUE 3**<br>P/T values | **CUE 23**<br>Color values | **CUE 32**<br>Effect values like gobo's, shutter... | **CUE 52**<br>Effect generator values |
| **....** | **....** | **....** | **....** |
| **CUE 20**<br>P/T values | **CUE 29**<br>Color values | **CUE 49**<br>Effect values like gobo's, shutter... | **CUE 59**<br>Effect generator values |

### cue PAGE 4 = MAC300

| | | | |
|---|---|---|---|
| **CUE 1**<br>P/T values | **CUE 21**<br>Color values | **CUE 30**<br>Effect values like gobo's, shutter... | **CUE 50**<br>Effect generator values |
| **CUE 2**<br>P/T values | **CUE 22**<br>Color values | **CUE 31**<br>Effect values like gobo's, shutter... | **CUE 51**<br>Effect generator values |
| **CUE 3**<br>P/T values | **CUE 23**<br>Color values | **CUE 32**<br>Effect values like gobo's, shutter... | **CUE 52**<br>Effect generator values |
| **....** | **....** | **....** | **....** |
| **CUE 20**<br>P/T values | **CUE 29**<br>Color values | **CUE 49**<br>Effect values like gobo's, shutter... | **CUE 59**<br>Effect generator values |

The example (example 2) is programmed using **cue-pages**. **Every cue-page holds cues for another type of fixture:**
- cue page 2: everything for MAC600s
- cue page 3: everything for PRO918s
- cue page 4: everything for MAC300s
- cue page 5: everything for MAC250s

In addition, we use the same arrangement as explained in example 1, but now the cue-memories hold values for 1 type of fixtures.

Combinations can be made easily. For example:
- cue 3 Page 2 together with cue 20 Page 3 together with cue 51 Page 4….

We can find an example of this in the show 'MANUAL72':
- Cue page 2: MAC600s
  - cues 1 to 6: P/T positions
  - cues 11 to 14: P/T effects on effects generator base
  - cues 21 to 35: colors
  - cues 60 to 66: dimmer effects
  - cue 70: combined effect dimmer and P/T (P/T fall+dimmer)
- Cue page 3: PRO918s
  - cues 1 to 6: P/T positions
  - cues 11 to 14: P/T effects on effects generator base
  - cues 21 to 35: colors
  - cues 40 to 49: gobos
  - cues 51 to 53: iris
  - cues 60 to 66: dimmer effects
  - cue 70: combined effect dimmer and P/T (P/T fall+dimmer)
- Cue page 4: MAC300s
- Cue page 5: MAC250s

When running this example, watch the values recorded in the cue-memories (open the 'digital memory-values' screen).

Activate now different cues of cue-pages 2, 3, 4 and 5. The fixtures can be controlled independently.

## 10      CHAPTER 10: Cue-timing

```
                        ┌─────────────────────────┐
                        │          Setup          │
                        │  Fixtures DMX Addresses  │
                        │     and Stage Plan       │
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                                    │
                                    ▼
┌──────────────────────────────────────────────────────────────────────────┐
│                                                                            │
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│   │        Adjust        │          │        Adjust        │              │
│   │ Fixture Control      │          │ Effect Generator      │             │
│   │      channels        │          │      channels         │             │
│   └──────────────────────┘          └──────────────────────┘             │
│          │          │                  │              │                    │
│          │          ▼                  ▼              │                    │
│          │     ┌────────────────────────────┐        │                    │
│          │     │           Make             │        │                    │
│          │     │  Pan/Tilt, Gobo, Color and │        │                    │
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│          │                                │       Memories       │         │
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│  │ Timings  │                                       │                      │
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│ ┌──────────────┐   ┌──────────────────┐   ┌──────────────────────────┐    │
│ │    Make      │   │      Make        │   │          Make            │    │
│ │ Cues with    │   │ Cues with        │   │ Cues with Sequences      │    │
│ │ Cue-Memories │   │ Playbacks        │   │      (chasers)           │    │
│ └──────────────┘   └──────────────────┘   └──────────────────────────┘    │
│                          │                          │                      │
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│                 ┌──────────────┐          ┌──────────────────┐            │
│                 │     Run      │          │      Make        │            │
│                 │  the Show    │          │ Time-Code Show   │            │
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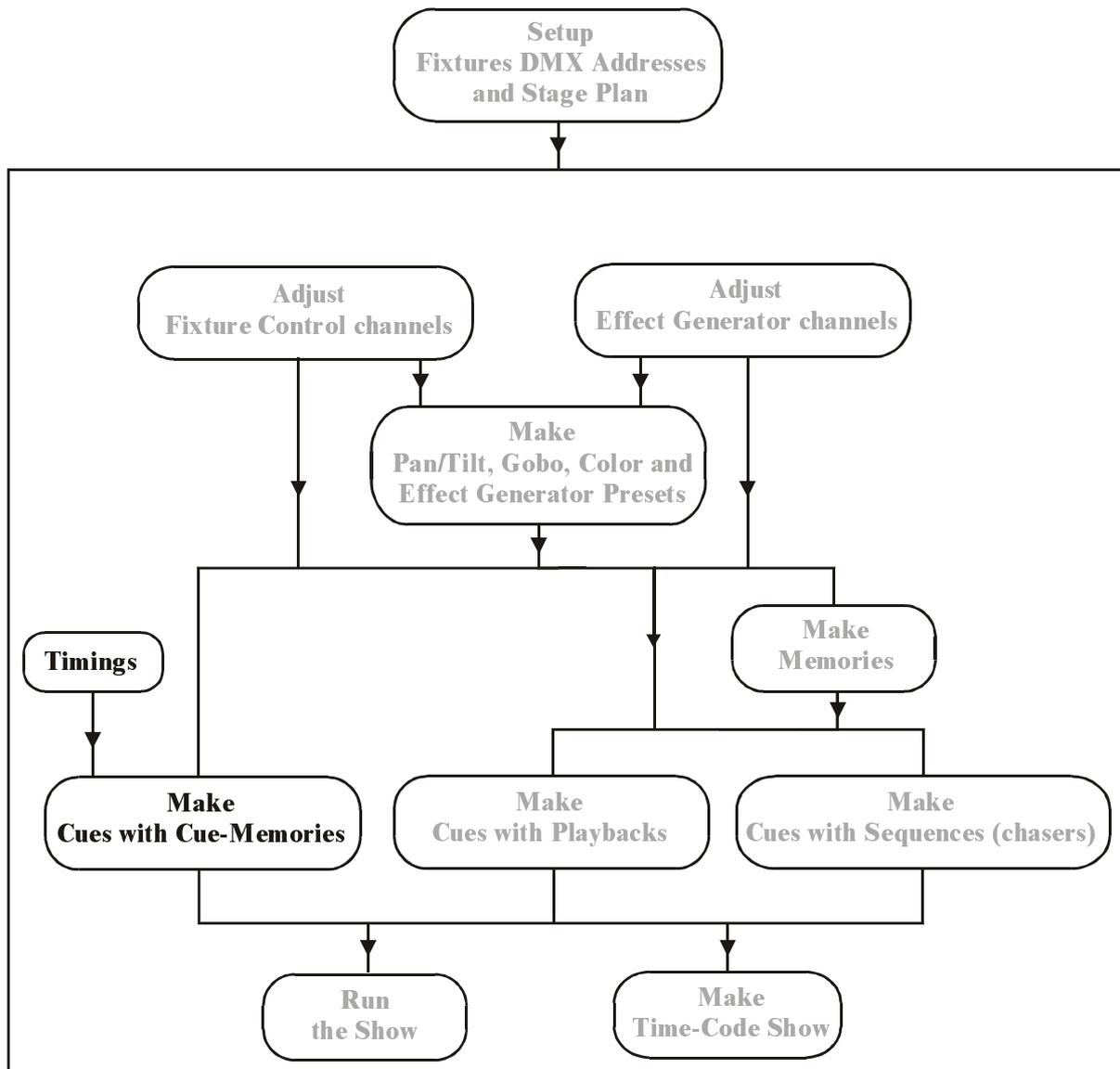
In the previous chapter, there was asked to disable the CUEFADING when the examples of the show 'MANUAL72' were tried.

Press *[CUE] + [ON]* until the red box, behind the 'CUEFADING ACTIVE' is enabled. Activate cues 1 to 7 of cue-page 1.

## 10.1 The main Cue-fading

In the previous chapter, we have explained that a **cue-memory is a light scene**. On this light scene, **fade, delay and hold times can be applied.**
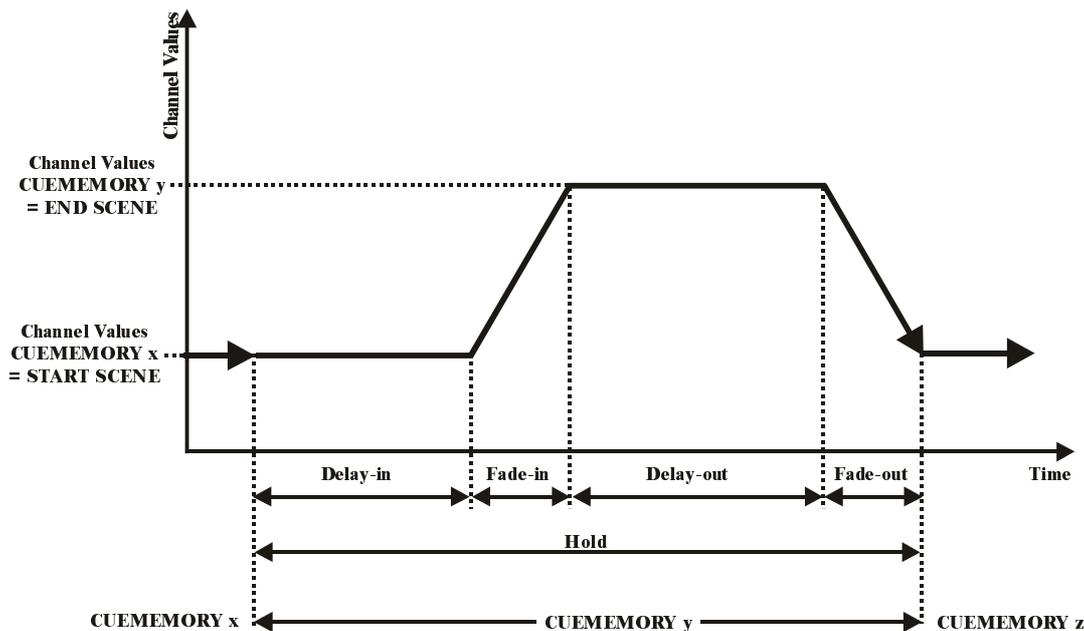


This figure represents the main cue timing on a cue-memory. Suppose, first cue-memory x is called, and afterwards, cue-memory y.

First, we will explain the items: **start-scene and end-scene:**
- The **start-scene expresses the fixtures channel-values on the moment that the cue is started.** This is the light-scene that we become when the cue is started. In the figure, the start-scene is in fact the end of a PREVIOUSLY called cue.
- **The end-scene expresses the fixtures channel-values, programmed in the cue-memory.** This is the light-scene we become after fading in the cue-memory (in the figure represented by cue-memory y).

     o     Delay-in:    The activation wait-time. The fixtures channel-values will wait at the start-scene, as long as indicated in the delay-in time. This means that they will wait at the previously called cue-values.

     o     Fade-in:    The activation-time. This is the time, needed to fade from the start-scene to the end-scene, or the time needed to fade from the channel-values of cue-memory x to the channel-values of cue-memory y.

     o     Delay-out: This is the time, the cue-memory will wait at its end-scene. By default, this time is infinite, which means that the cue-

memory will wait for an endless period of time at its programmed channel-values.

o Fade-out: This is the time, needed to fade back from its end-scene to its start-scene, or to fade back from the channel-values programmed in cue-memory y to the start-scene, which is in this case cue-memory x.

o Hold: The time there will be waited before calling a next cue-memory, when the cue was linked with another cue. Pay attention: This timing starts when the cue was activated. When this timing is less than the sum of the delay-in and fade-in, the end-scene will never be reached. By default, this time is set at infinite, meaning that the cue will never be linked.
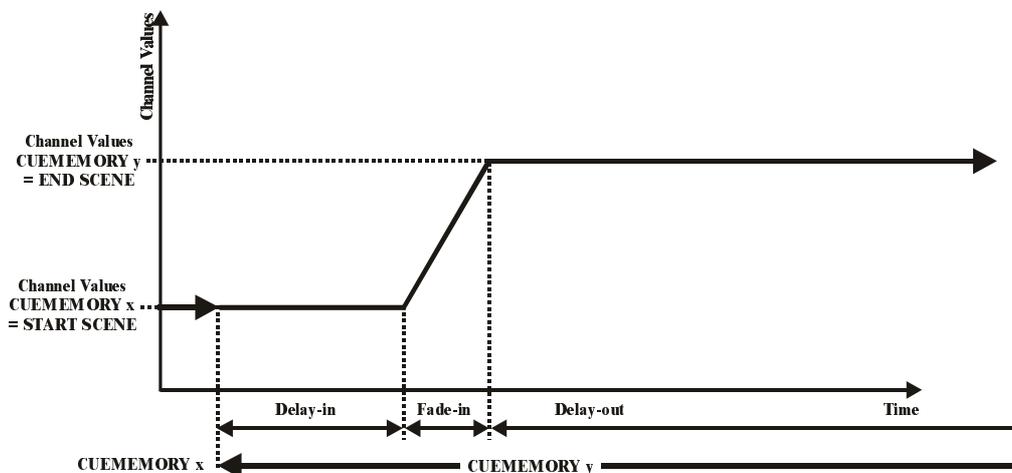


In this figure, the delay-out is set at infinite, which means that the cue-memory will wait an endless period of time at its end-scene. When a next cue-memory, which **uses the same fixture-channels (**but some other values for them**),** is called, then the delay-out is aborted and the timers of this next cue-memory will start running.
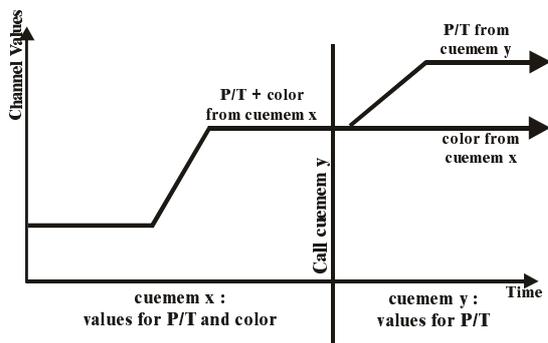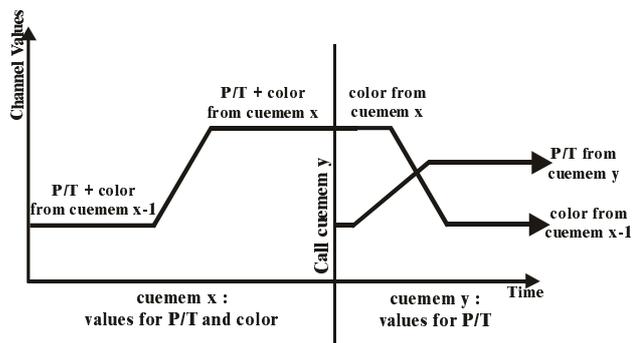


**DELAY-OUT Infinite**                    **DELAY-OUT NOT Infinite**

> **Important remark:**
> - **(1) The delay-out of the cue-memory will only abort for the common channels, used in both, the aborted and the next called cue-memory.** Suppose, a cue-memory x holds values for Pan/Tilt and for color of a fixture, and cue-memory y holds only the Pan/Tilt values for the same fixture, then the delay-out will only be aborted for the Pan/Tilt value when cue-memory y is called. The color value will still be that of cue-memory x.
> - **(2)** When **cue-memory x holds a finite delay-out, and it is aborted** by a next called cue, then a **quick fade-out will happen for the common channels** of both cue-memories. The timers of the non-common channels will not be aborted, they will keep following the timings specified in cue-memory x.

### 10.1.1  Cue-timing screen

When a cue-memory is saved, after the first *[RET],* the cue-timing screen will open.

---
***[Select a cue]  [EDIT] + [CUE]  [RET]***
---

To open the cue-timing window of an already saved cue-memory, first the cue has to be selected, then the combination *[EDIT] + [CUE]*.
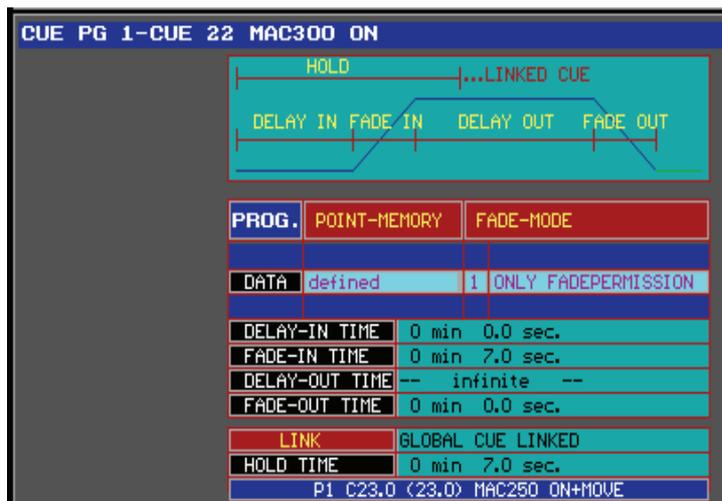


To make changes to one of the fields, high light the item with the *[2↓] or [8↑] keys*, and select the *[EDIT]* key.

---
*[High light the item with 2↓ or 8↑]  [EDIT] or [@]  [0...9(keypad)] or [@]    [RET]*
---

**To change for example the fade-in time, high light the fade-in time and select the *[EDIT] or [@]* key. A window will open where a new time can be entered using the keypad. If a value 0 has to be set in one of the fields (min, sec or msec), the field is skipped by hitting the *[@] or [.]* key.**

If the show default value has to be re-entered for an item, select the *[CLR* (cue)*]* key.

If the value **infinite** should be entered (only for delay-out or hold), enter **99 min.**

---

**The other fields:**

**Point-memory:** defined or empty. An already programmed cue-memory will be indicated as 'defined'. If a cue without cue-memory is edited, then the indication will be 'empty'. By hitting the *[EDIT]* key in this field, changes can be made to the control channels. Save the changes by selecting *[RET]*.

**Fade mode:** See next paragraph.

**Link:** See paragraph 'linking cue-memories'.

Example 1: Suppose cue-memory 2 at cue-page 1 needs a fade-in time of 15 sec instead of 7 sec.

- Select cue 2 (cue-page 1)
- Open the timing window: *[EDIT] + [CUE]*
- *High light FADE-IN and select [@]*
- Since we don't have to enter minutes, we select *[@]*
- Use the keypad to enter 15 and *[RET]*
- Again *[RET]* to save everything.

When the cue-fading is activated (*[CUE] + [ON])* and we go from cue 1 to cue 2, then the light scene of cue 1 (dimmers closed) will go to dimmers open (cue 2) in 15 sec. in stead of 7 sec.

Example 2: Suppose next timings are entered for cue-memory 3 (page 1):

- Delay-in: 0 sec.
- Fade-in: 10 sec.
- Delay-out: 0 sec.
- Fade-out: 5 sec.

Before the changes, the delay-out was set at infinite, or in cue-memory 3 the dimmers of the MAC250s are opened and Pan/Tilt is fading down. Because of the infinite value, everything stopped there until another cue was selected. Since we entered a delay-out of 0 and a fade-out of 5 sec., everything will fade back to the position it had before the cue was selected. **A fade-out will fade back to the start-scene.** When, before selecting cue 3, cue 1 was activated, the fading will go back to cue 1. If on the other hand, cue 2 was selected before, everything will fade back to cue 2.

## 10.1.2 {EXP} Fade modes

**Every fixture is defined in a library. The fixture-library holds also the fade-mode of every channel. A channel can fade or not (bump). On the screen, this is indicated in the control channel window:**
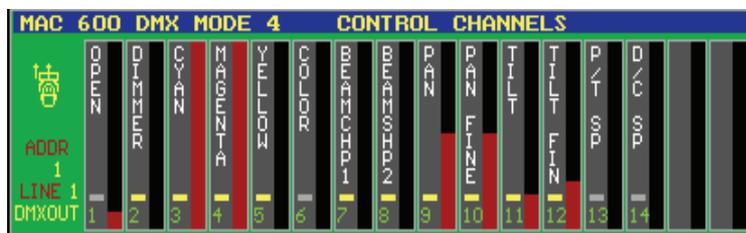


A channel that can fade is marked with a yellow box. A bump channel has a gray box.

The dimmer of a MAC600 can fade, the color wheel not. If the (real) color wheel (not the CMY) should have fading possibilities, all transitions would be seen in a fading from one color to another. In bump mode however, the fade will be so fast, that the transitions won't be seen.

*[Open the cue-timing window] [MODE (cue)]*

On the cue-memory, the fade-mode can be changed with the *[MODE]* key. There are 6 possible choices:
- Mode 1: Only fade permission: This is the default mode. Channels that are given fade-possibilities, will fade, the others will bump.
- Mode 2: Fade all channels: All channels will have fade possibilities. The library is ignored.
- Mode 3: No fading: All channels will be in bump mode.
- Mode 4: Same as mode 3, only when used in sequences (chapter playbacks and sequences), this mode differs.
- Mode 5: LTP-dimmers fade. Normally a dimmer is in HTP (highest takes precedence) mode (see chapter 'introduction to programming). In mode 5, the dimmer-channels will act as any other channel.
- Mode 6: LTP-dimmers fade but bump mode for all other channels. This is a combination of mode 5 and mode 3. Attention, THRESHOLDS react different in this mode (see chapter playbacks and sequences).

## 10.1.3 {EXP} Linking cue-memories

Cues can be called automatically by other cues. This is called cue-linking. Cue 1 can call cue 2, cue 2 can call cue 3, and cue 3 can call cue 1 again. In this case, we made a loop.

There are 2 link-modes:
- **Link only defined channels:**
    **This mode is used to run series of cues independent.** We can easily link cues with only gobo-channels defined and other cues with only color-channels defined. Those 2 links can run independent. If we make loops in those links, we have 2 independent chasers.

    This link-mode will link only channels that are defined (have a value) in the cue-memory. Channel-values that are left blank, will never link.
    To understand this, an example:
    Suppose, cue-memory 1 holds values for Pan/Tilt and color. Cue-memory 2 holds a value for Pan/Tilt only, and cue-memory 3 holds values for both

Pan/Tilt and color. When those 3 cues are linked, only the Pan/Tilt channel will be involved in the link, since cue 2 doesn't hold values for color. **2 cue-memories that have no common channels will never link in this mode.**

.

Cues can hold also sequences and playbacks. **Sequences and playbacks will <u>not</u> change when linking cues in 'only defined channels' mode.**

- **Global cue linked:**

**All channels will always link** in this mode. So the complete next cue-memory will be executed. If we take back the previous example, the color will change also. **This is the same as selecting another cue.**

**Sequences and playbacks will be replaced** (depends on the transparent mode) **by those of the linked cue** (see chapter playbacks and sequences).

**To change the mode, highlight the LINK item and press the *[EDIT]* key.**

---

| *[Open the cue-timing window]  [LINK] + ( [1…16*(groups/cuepages)*]) + [1…70]* |
|---|

To link a cue-memory to another cue-memory, open the cue-timing window, press and hold the link key and select a cue-page and cue.

Very important is the setting of **the hold-time**, when linking cues. The default setting is infinite, which means that the cue will never link. To make a link possible, the hold time should be finite. Since the hold-timer starts counting when the cue is started, it **should be greater or equal to the sum of the delay-in and fade-in timings,** or fading of the cue-memory will never happen or partly be finished.
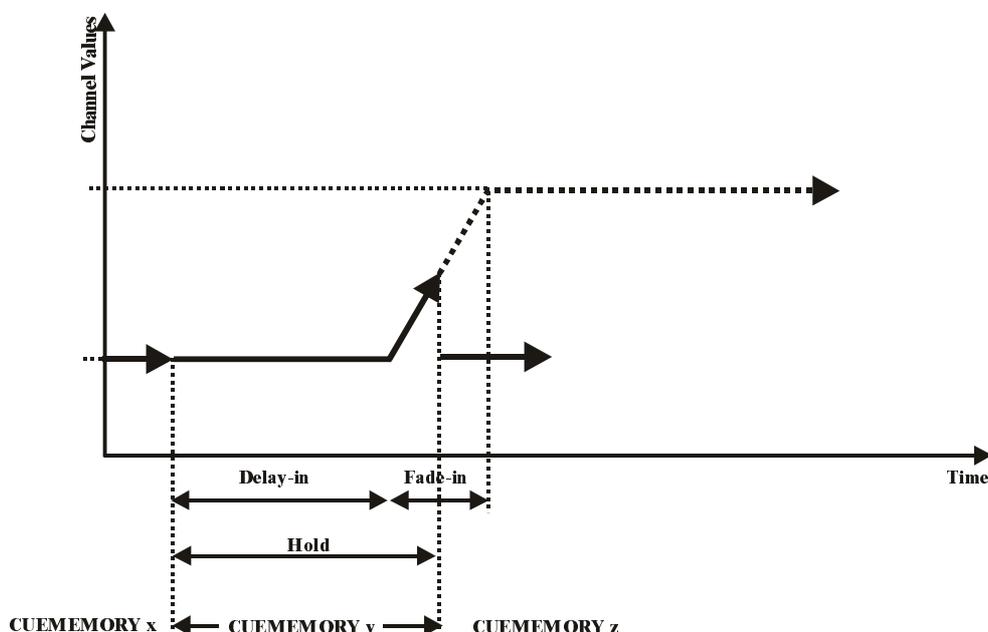


The figure shows a fading that is aborted because the hold-time was selected to short.

There is an example of cue-linking in the show 'MANUAL72'. Cues 21 to 27 are linked in a loop. When one of those cues is activated, the loop will start (if cue-fading is set to ON).

Don't pay attention on the special timing-effects, those are explained in the next paragraph.

## 10.2 {EXP} Channel timings

The timings, of the previous paragraphs, were set on the whole cue-memory; they are called main cue-timings. But, it is also possible to select different timings on the fixture-channels used in the cue-memory.

*[open the 'digital memory-values' window] [get a cue-memory] [go to fixture mode] [select fixtures and a fixture control channel] [TIMING] [select a function* (delay-in, fade-in, delay-out, fade-out)*] [adjust value] [TO] [RET] [RET]*

To enter different timings to fixture-channels, the 'digital-memory values' screen has to be opened. Then select a cue-memory and go to fixture mode. Select the fixture(s) and select a control channel. Open the **'control channel timing' screen** with the *[TIMING]* key. The different times can be adjusted like if they were control channel values. Since we have already selected the cue-memory, the values can be stored using *[TO] [RET] [RET].*

Lets take cue 12 (cue-page 1) of the show 'MANUAL72'

In 'autoload cuemem ON' mode, select cue 12, go to fixture mode and open the 'digital memory-values' screen:



Cue 12 will open the dimmers of the MAC600s and the MAC300s. Behind the values of MAC300 15, 16 and 17, we can notice a **T**. The T means that the timings on channel 2 of the 3 MAC300s, differ from the main cue-timings.

If those 3 MAC300s and their dimmer channel (key *[2/18]*) are selected, the 'control channel timing' window can be opened when the *[TIMING]* key is hit:
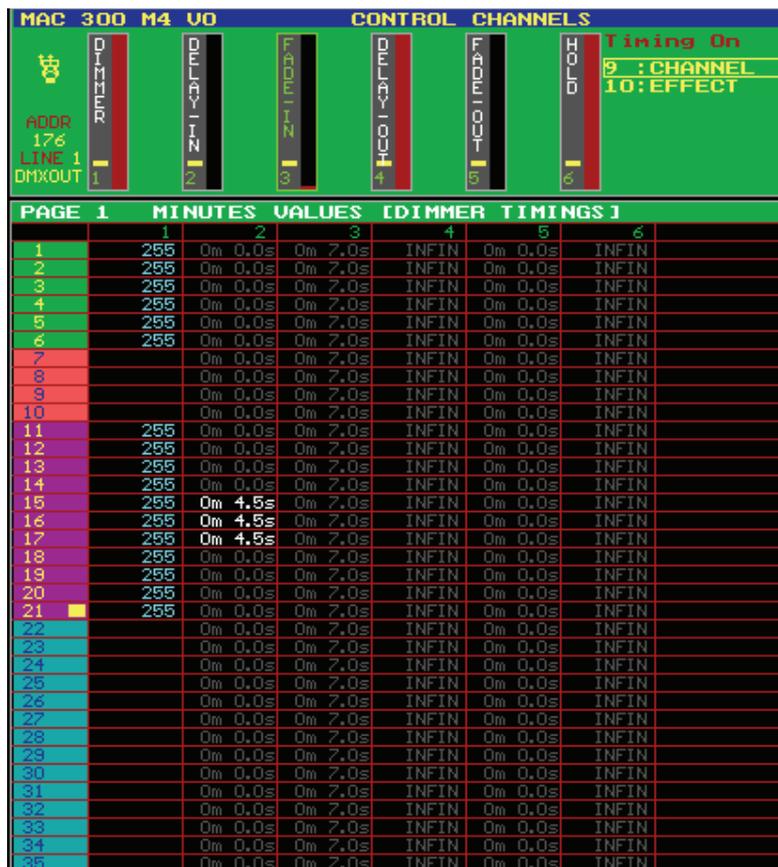
The 'control channels' screen shows now the 'control channels timing'. The timings (delay-in, fade-in, dalay-out and fade-out) are selected like if they were normal control channels with the *[1/17…16/32]* keys or with the digital fader belts on Pro2 or Pro2+ controllers.

The screen shows that the timings work on the selected channel itself (9: channel), in this case the dimmer-channel, and/or on his effect generator (10:effect). This selection can be toggled with the *[9/25] and [10/26]* keys. Yellow means: selected; Blue means not selected.

This makes it possible to put the different timings on only the effect generator of the channel (deselect for this channel 9).

The timing values can have 2 colors:
- GRAY: the value doesn't differ from the main cue-timing values of the selected cue.
- WHITE: the timer differs from the main cue-timings of the selected cue, so it follows its own way.

This example shows that there is a different delay-in time on the dimmer-channel of the MAC300s number 15, 16 and 17. While the rest of the MAC300s and MAC600s start immediately with their fading in 7 seconds, MAC300 number 15, 16 and 17 will wait for 4.5 seconds before starting to fade in 7 seconds.

For Pan/Tilt channels, the screen differs a little bit. The timing difference can be set on the Pan channel, the tilt channel, on its effect generator, or on a combination of those 3. Let's take cue 16:



We can see a different timing on the MAC250s (fixtures 22 – 35) Pan/Tilt channels.



However, if we open the 'control channel timing' window on Pan/Tilt *[P&T]* *[TIMING]*; we can't find anything.

If the Pan and the Tilt channels are deselected (hit keys *[9/25] and [10/26]*) until the texts (9:PAN and 10:TILT) are blue, some timing differences will show up. In this cue-memory, a different timing was set on the Pan/Tilt effect generator only.

All cues from 11 to 17 of the show 'MANUAL72' have timing differences on the cue-memory control channels. Cues 11 to 17 are a copy of cues 1 to 7, but with different channel timings. Also the linked cues of the previous paragraph are a copy.

## 10.3  Entering times with the playbackwing

### Playbackwing



We will represent the *[DELAY IN], [FADE IN], [DELAY OUT], [FADE OUT] and [HOLD] keys* by **[TIMING KEYS WING]** in this paragraph.

The cue-timings or the channel timings can be entered very fast with the 'timing keys wing' of the Pro + or extra playbackwing controllers.

### 10.3.1  Entering Cue-timings with the playbackwing

*[Select a cue]   [TIMING KEYS WING] + [CUE]  [enter time]  [RET]*

The cue-timings can be entered with the playbackwing keys by **selecting first a cue, the one of the 'timing keys wing' together with the [CUE] button.** Using the keypad, the time can be entered. Save it by hitting the *[RET]* key.

### 10.3.2  Entering channel timings with the playbackwing.

> *[get a cue-memory] [go to fixture mode] [TIMING KEYS WING] + [select fixtures] + [deselect not-wanted fixture control channels] [enter time] [TO] [RET] [RET]*

The channel-timings can be entered with the playbackwing:
- Get a cue-memory
- Go to fixture mode
- Select one of the 'timing keys wing' and hold it
- **Select** the fixtures (or groups or ALL). The LEDs of the **selected fixtures** will be lit **green, the not selected, orange.**
- If the fixtures are selected, all channels will be selected automatically. We must now **deselect the channels** that we don't want to be involved (**the LEDs of the selected channels will be green.)**
- Release the timing key. The timing window will open. Enter the time on the keypad.
- Save all this by hitting *[TO] [RET] [RET]*

Example: In cue 2 on page 1, we want the delay-in of the dimmers of the MAC300s at 5 seconds. The result will be that the dimmers of the MAC300s will start opening later than those of the MAC600s.
Following steps have to be taken:
- Get the cue-memory of cue 2:
  - *[2 (1…70)]* (controller in autoload ON)
  - *or [GET] + [CUE]  [2 (1…70]* (controller in autoload OFF)
- Go to fixture mode: *[FIXTURE PgUp]*
- Select the delay-in on the wing and select the MAC300s with fixture group 3. Deselect all control-channels except the dimmer-channel: *[DELAY IN]  +  [3 (1…16)] + [1/17…16/32* (everything except 2/18 (dimmer))*]*
- Use the keypad to enter 5 seconds: *[@] [5] [RET]*
- Save: *[TO] [RET] [RET]*

### 10.4  {EXP}  Cue-timing options

We have already mentioned some times to switch off and on the cue-fading with the *[CUE] + [ON]* keys. If the cue-fading is active, next screen appears:
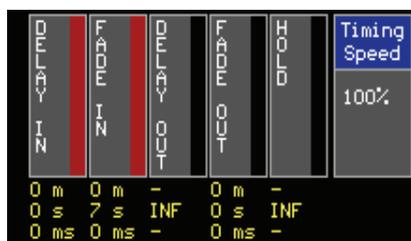


The timings at the bottom represent the main cue-timings from the last selected cue.

In shows, rehearsals, theaters etc… the programmed timings can differ sometimes with what happens on the stage. Therefor it should be possible to slow down or speed up the cue.

### 10.4.1 {EXP} Stopping the Cue-timing during performance

*[CUE] + [FREEZE* (cue)*]*

The cue-fading can be stopped by selecting *[CUE] + [FREEZE]*. **All cue-timings will stop. To proceed, select *[CUE] + [FREEZE] again.* When during a stop, another cue is selected; the cue-timing will start automatically in the new cue.**

### 10.4.2 {EXP} Speeding-up or slowing-down the cue-fading
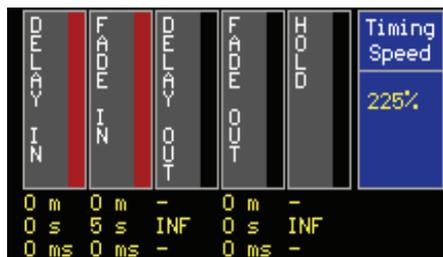


During performance, it is possible to slow-down or speed-up the cue-fading from 0% to 1,000%. By default the 'timing speed' is set at 100%.

This example shows a cue-fading on 225%.

*[CUE] + [Trackerball]*

Select the *[CUE] key and hold it. Adjust the speed with the trackerball from 0% to 1,000%.*

*[CUE] + [DEFAULT]*

To default the timing speed to 100%.

**REMARK:**
- **During programming, the 'timing speed' has to be set at <u>100%.</u>**
- **Stopping, slowing-down or speeding-up the timing speed is used only during performance.**
- **Once the timing speed is changed, it will stay that way, also when a new cue was selected. On the other hand, a stopped timing speed (freeze) will restart when a new cue is selected.**

### 10.5 Multiselect cues

In the previous chapter, we have explained that we can program cues for shows where we have to improvise. The cues are programmed per effect or per fixture-type.
In the example show, cuepages 2 to 5 are used to group effects per fixture-type. Suppose we want to launch cues for different fixtures all at the same time.

*[CUE] [CUE]* (double-click) *[Select cues] [RET]*
Select the *[CUE]* key twice until the CUE-LED blinks. Now we can make a selection of cues over different pages without launching them. If the *[RET]* key is pressed, all selected cues will be launched at the same time.

**When cues are selected with common programmed channels, then only the last selected cue will be executed.**

**10.6** **{EXP}** **Autoprepare cues**

Suppose, we make next example on cue-page 16:

Cue 11: All fixtures in their defaults with dimmer opened:
        Cue-timings:
- Delay-in: 0
- Fade-in: 0
- Delay-out: infinite
- Fade-out: 0

Cue 12: Dimmer closed for all fixtures
        Cue-timings:
- Delay-in: 0
- Fade-in: 5 sec
- Delay-out: infinite
- Fade-out: 0

Cue 13: Dimmer opened for all fixtures, different color and different Pan/Tilt position
        Cue-timings:
- Delay-in: 0
- Fade-in: 10 sec
- Delay-out: infinite
- Fade-out: 0

Suppose that we want the different color and the different Pan/Tilt position **before** the dimmer opens when we select cue 13, then we have some possibilities:
- We use a point-cue between cue 12 and 13 with only the color and Pan/Tilt change.
- We use a delay-in on the dimmer-channel in cue 13 of 10 seconds
- We select **autoprepare cues mode.**

---

**[SETUP]  [2** (keypad)**]  [high light autoprepare cues] [EDIT** until ON**]  [RET]**

**When the option 'autoprepare cues' is active, the controller will execute all cues, starting from the cue <u>where the dimmer closes (zero value)</u> <u>up to and including</u> the cue where the <u>dimmer opens again (non-zero value),</u> in successive order without cue-timings. In the cue where the dimmer opens again, <u>all non-dimmer channels</u> will be executed instantly, without cue-timings.**

In the example:
- Cue 11 is executed normal.
- Cue 12 is executed normal, but when the dimmer reaches **zero,** the Pan/Tilt and color of cue 13 are executed without cue-timings.
- If cue 13 is called, then only the dimmer will fade-in according to the cue-timings of the cue-memory.

**Tip: If autoprepare is active, and we want to fade-in the non-dimmer channels too, in the cue where the dimmer opens again, then we have to make a cue, just before this one, where the dimmer has a non-zero value, for example value 1.** For example if we make a point-cue 12.9 with the dimmer at 1.

---

> **Note: The AUTOPREPARE function looks also at playbacks and sequences** (chapter playbacks and sequences**). When the dimmer is opened in one of those functions, the autoprepare won't be executed until the dimmers are closed in those functions.**

## 10.7 {EXP} Automatic trace

When we are using shows, that are programmed in successive cue-order, and those cues are filled with partly filled cue-memories, we have one problem: If we suddenly go back to a cue somewhere in between, we will never get the correct light scene for that cue.

The reason is this: Partly filled cue-memories just make changes **to the previously called cue.**

Let's take the example of the show: cues 11 to 17. When the automatic trace is disabled, and we want to launch the light scene for cue 16, we have to activate cues 11 – 12 – 13 – 14 – 15 – 16. If suddenly we want to have the light scene that we had when cue 13 was launched, we have to go back first to cue 11, then 12 and then 13.

> *[SETUP]  [2* (keypad)*]  [high light automatic trace] [EDIT* until ON*]  [RET]*

**The automatic trace function will collect all functions of all fixtures in descending cue order starting from the called cue, until he found a value for all channels. This 'picture' will be sent to the output.**

When, in the example, we come from nothing and activate cue 16, the controller will start collecting the values in cue 16 and then in descending order to cue 11 until all channels have a value. Cue 16 and cue 13 will now give the correct scene..

This function is often used when programming shows in successive cue-order. If suddenly we want to change something in a previous cue, we can see the result instantly without activating all previous cues.

> *[go to cue-mode]  [SHIFT] + [1...16]  [change options]  [[1...16] or [RET]]*

The 'Autoprepare' and the 'Automatic trace' may be set different for each cue-page. The controller must be in cue-mode, to change it. Select *[SHIFT] + [cue-page (1...16)] and high light the option with the [2↓] or [8↑] keys.* Like with the transparent mode options, the cue-page can take the show defaults, or can be set different. *Save by selecting the edited cue-page again, or press [RET].*
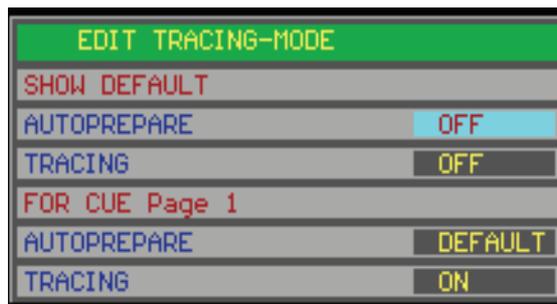
## 10.8 {EXP} The combinations Autoload, Cue-fading and Manual

Remember:
- Autoload is a setting, only used when programming. When a cue is selected with the function active, then the controller executes automatically a *[GET] + [CUE]*. At the same time, all values are sent to the output. If a *[GET] + [CUE]* is manually selected, it will be the same in autoload ON or OFF mode.
- Cuefading activates the cue-memory together with its cue-timings. When the cue-fading is not active, nothing will be sent to the output when activating a cue. Only a *[GET] + [CUE]* will send values to the output but without timings. So, when autoload is ON (get+cue automatic), the values are sent, without timings.
- Manual mode has the highest priority. A channel adjusted in manual mode, will stop in its program. A cue-memory called in manual mode (get+cue) will always be activated without timings.

| AUTOLOAD | CUEFADING | MANUAL | KEY ACTION | Digital Memory-Values screen | Stage (*1) |
|---|---|---|---|---|---|
| OFF | OFF | OFF | *[GET] + [CUE]*<br>*[1...70]* | Cue-memory (1...70) | Cue-memory (1...70) without timings |
| | | | *[1...70]* (*2) | Doesn't change | Doesn't change |
| OFF | OFF | ON | *[GET] + [CUE]*<br>*[1...70]* | Cue-memory (1...70) | Cue-memory (1...70) without timings |
| | | | *[1...70]* | Doesn't change | Doesn't change |
| OFF | ON | OFF | *[GET] + [CUE]*<br>*[1...70]* | Cue-memory (1...70) | Doesn't change (*3) |
| | | | *[1...70]* | Doesn't change | Cue-memory (1...70) with timings |
| OFF | ON | ON | *[Select fixtures]*<br>*[GET] + [CUE]*<br>*[1...70]* | Cue-memory (1...70) (the values of the selected fixtures are yellow, the others blue) | Only the selected fixtures change. |
| | | | *[1...70]* | Cue-memory (1...70) | Cue-memory (1...70) with timings |
| ON | OFF | OFF | *[GET] + [CUE]*<br>*[1...70]* | Cue-memory (1...70) | Cue-memory (1...70) without timings |
| | | | *[1...70]* | Cue-memory (1...70) | Cue-memory (1...70) without timings |
| ON | OFF | ON | *[GET] + [CUE]*<br>*[1...70]* | Cue-memory (1...70) | Cue-memory (1...70) without timings |
| | | | *[1...70]* | Cue-memory (1...70) | Cue-memory (1...70) without timings |
| ON | ON | OFF | *[GET] + [CUE]*<br>*[1...70]* | Cue-memory (1...70) | Doesn't change (*4) |
| | | | *[1...70]* | Cue-memory (1...70) | Cue-memory (1...70) with timings |
| ON | ON | ON | *[Select fixtures]*<br>*[GET] + [CUE]*<br>*[1...70]* | Cue-memory (1...70) (the values of the selected fixtures are yellow, the others blue) | Only the selected fixtures change. |
| | | | *[Select fixtures]*<br>*[1...70]* | Cue-memory (1...70) (the values of the selected fixtures are yellow, the others blue) | Cue-memory (1...70) with timings but the selected fixtures are executed without timings. |

(*1) Stage: this is what will happen on the scene.
(*2) *[1...70]* means: select a cue.
(*3) OFF ON OFF: This is RUN mode, the mode used during performance. Changes can be made to cue-memories during performance; this will not be seen on the stage.
(*4) Same as (*3), but with autoload ON. The autoload ON should never be used during performance

## 11  CHAPTER 11: Memories

```
                    ┌─────────────────────────┐
                    │          Setup          │
                    │  Fixtures DMX Addresses  │
                    │      and Stage Plan      │
                    └─────────────────────────┘
                                 │
                                 ▼
┌──────────────────────────────────────────────────────────────────────┐
│                                                                        │
│     ┌────────────────────┐          ┌────────────────────┐            │
│     │       Adjust        │          │       Adjust        │           │
│     │ Fixture Control     │          │ Effect Generator    │           │
│     │    channels         │          │    channels         │           │
│     └────────────────────┘          └────────────────────┘            │
│              │          │                       │                      │
│              │          ▼                       │                      │
│              │   ┌──────────────────────┐       │                      │
│              │   │         Make          │      │                      │
│              │   │ Pan/Tilt, Gobo, Color │      │                      │
│              │   │ and Effect Generator  │      │                      │
│              │   │       Presets         │      │                      │
│              │   └──────────────────────┘       │                      │
│              │             │                     │                      │
│              │             ▼                ┌──────────┐                │
│  ┌────────┐  │                              │   Make    │               │
│  │Timings │  │                              │ Memories  │               │
│  └────────┘  │                              └──────────┘                │
│      │       │                                   │                      │
│      ▼       │                                   │                      │
│  ┌────────────┐   ┌────────────┐   ┌──────────────────────────┐        │
│  │    Make     │  │    Make     │  │          Make             │        │
│  │Cues with    │  │Cues with    │  │Cues with Sequences        │        │
│  │Cue-Memories │  │Playbacks    │  │     (chasers)             │        │
│  └────────────┘   └────────────┘   └──────────────────────────┘        │
│       │                │                       │                        │
│       ▼                │                       ▼                        │
│  ┌──────────┐          │            ┌────────────────┐                 │
│  │   Run     │         │            │      Make        │                │
│  │ the Show  │         │            │ Time-Code Show   │                │
│  └──────────┘          │            └────────────────┘                 │
│                                                                        │
└──────────────────────────────────────────────────────────────────────┘
```

## Making a memory

```
┌─────────────────────────────────┐
│   ╭─────────────────────────╮   │
│   │  Clear not needed channels  │   │
│   ╰─────────────────────────╯   │
│              │                  │
│              ▼                  │
│   ╭─────────────────────────╮   │
│   │ Adjust fixture control channels │   │
│   ╰─────────────────────────╯   │
│              │                  │
│              ▼                  │
│   ╭─────────────────────────╮   │
│   │ [TO]  [number on keypad] [RET] │   │
│   ╰─────────────────────────╯   │
└─────────────────────────────────┘
```

## Where memories are used



PLAYBACK

SEQUENCE

MEMORY

The controller can hold in each cue, a cue-memory, but also up to 4 sequences and 42 playbacks. **Those sequences and playbacks <u>use normal memories</u>; the cue-memories cannot be used here.**
**The controller can store up to 4,000 normal memories.**

| |
|---|
| A **cue** can hold **1 cue-memory, 4 sequences and 42 playbacks**. |
| A **sequence** is a **succession of memories** (light scenes), **placed in a loop** to make a chaser. Every sequence can hold:<br>- A number of loop-memories (up to 100)<br>- A start-memory<br>- A stop-memory |
| A **playback is 1 memory** that can be faded. By opening a playback-fader, a light-scene can be faded. |

## 11.1 Differences between normal memories and cue-memories

Both memories represent light scenes, and can be called immediately.

| Normal memory | Cue-memory |
|---|---|
| Holds fixture control channels | Holds fixture control channels |
| Holds timing parameters, but they can't be used. | Holds timing parameters |
| Has to be used in a playback or a sequence | Is placed automatically in a cue |

For those normal memories, we need an additional step before they can be used in a cue. If they have been made, they have to be put in a sequence or a playback of a cue. **Starting from this software version, the step 'making memories' can be skipped.**

## 11.2 Making memories

| *[MAN* (control channels)*]* |
|---|

Puts the controller in manual mode.
Remember the use of the *[MAN]* key. It represents **manual mode** and takes precedence over everything, even if sequences, playbacks or a cue-memory are active. If, in manual mode, a fixture channel is changed, the change is sent to the output, and the value for that channel in an active sequence, playback or cue-memory is ignored. If the manual mode is disabled again, the channel will stay in the manual setting as long as it isn't changed in the sequence, playback or cue-memory.

---

**In fixture mode** *[Adjust fixture control channels]  [TO]  [memory-number on keypad]   [RET]*

---

This differs with a cue-memory, first fixture-mode has to be called, and then, instead of *[TO]* + *[CUE]*, just hit *[TO]* followed by a memory-number (1 to 4,000). Save with the *[RET]* key. Note: if the memory number already exists, a second *[RET]* has to be entered, to confirm.

Like cue-memories, only the changes have to be recorded in the memories. You have to think a little bit ahead when you program memories. When later, the memories will be used to make for example a color-chase, and then it doesn't make sense to save also Pan/Tilt or gobo channels in those memories.

Example:    Suppose we have to make a color-chase, without using the effects-generator. Suppose also, we have already made some color-presets.

- First we hit the Manual mode, to take precedence over running cue-memories, sequences and playbacks, or we stop the cue fading and sequences and we close the active playbacks.
- Select, in fixture mode *[Fixture PgUp],* some fixtures.
- Double-click  *[DEFAULT]*. All selected fixtures will be in default and the actions of running cue-memories are stopped.
- If the 'Digital Memory-Values' screen is open, we will see that all channels have a value. Since we only want color values, all the other channels have to be erased. So, we select *double-click [CLR]* (to erase all channels of the selected fixtures).
- Select a color-preset *[COLOR]  + [1…70]*. The color-channels will be filled with the preset number.
- These values must be stored in a memory: *[TO] [memory-number using the keypad* (ex. 100)*] [RET]*.

---

**[TO+]**

The *[TO+] key* is used to save the channels **to the next memory.**

- If the next memory has to hold other color-values, we just select another color-preset and save this to the next memory using the *[TO+]* key. **Always check the control channels values on screen,** because, depending on the load-selection of the preset, a preset with more/less load channels can be called (see presets). The memory will be stored now in memory 101.

**[GET] [Memory-number using keypad] [RET]**

To call a previously stored memory.

**[LAST] or [NEXT] !!! If the controller is in FIXTURE mode !!!**

In **fixture mode**, we can call the **previous or next memory with the *[LAST] or [NEXT]*** keys. This makes it possible to run through the memories. **Empty (not programmed) memories will be skipped.**

Remembrance: In **cue mode, the previous or next cue will be called with the *[LAST], [NEXT] keys.***

## 11.3 Viewing memories

Since memories resemble cue-memories, only the timings are unused, the philosophy of making them is much alike. So, only fill them with the control channels you need.

The **'Digital Memory-Values'** screen, when getting memories, looks very much the same as the one you get when calling cue-memories.

**[SHIFT] + [VALUES]**

Remember, this key-combination converts the digital values to %.

## 11.4 Naming memories

| [Get a memory] [TXT EDIT] + [TO]  [enter name on the keyboard]  [RETURN] |

To give memories a name.

To overview the memory-names, open in fixture mode the text screen *[TEXT]*. *With the [PgUp] or [PgDn]* keys, you can run through the names without calling the memories.

## 11.5 {EXP} Thresholds on memories

When we fade-in a memory, all fixture control channels, stored in the memory, will start fading immediately as soon as the fading begins. So there is no control on the start of the fading. However, with a threshold, we can add a delay to each fixture control channel.

> **Thresholds indicate the fading percentage per fixture control channel, on which the fading has to start, when a memory is used in a sequence or playback** (chapter playbacks and sequences). **Thresholds cannot be applied on cue-memories, because there, the delay-in timer simulates a threshold.**

Suppose, a memory (with Pan/Tilt and dimmer values) is faded from 0% to 100%, and suppose that the dimmer has to start opening at 70%; it is impossible to make this with just a memory, a threshold has to be added to the memory. If the dimmer is set at 70% in this threshold, and all other channels at 0%, then all other channels will start immediately the fading, except the dimmer. The dimmer will wait until the fading reaches 70%.
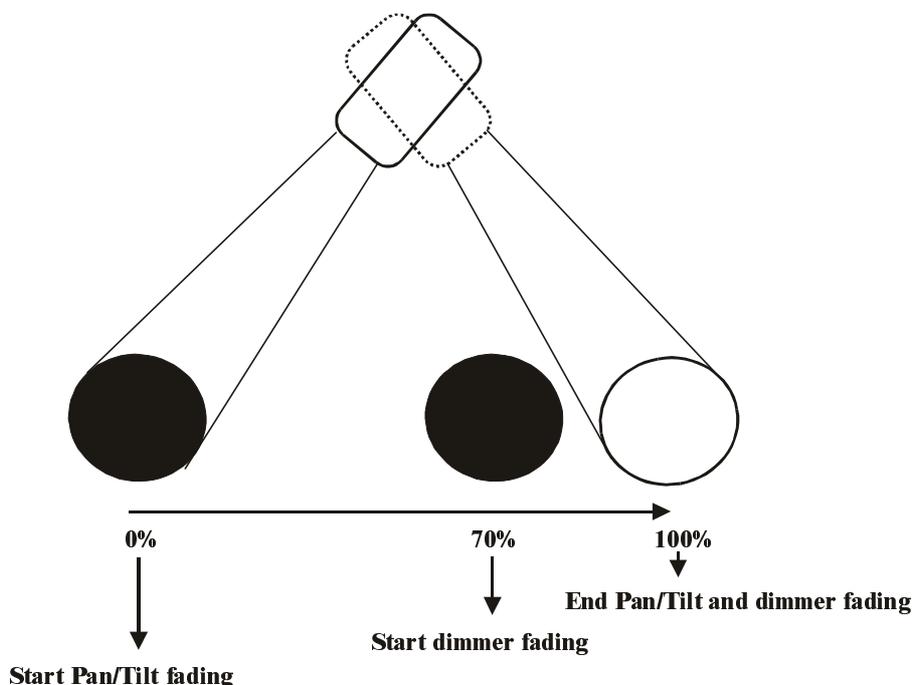
**Up to 70 different thresholds** can be made per show.

---

*[EDIT* (CUE)*] + [TRESH LIB* (CUE)*]* *[select threshold-number 1…70] [adjust threshold values] [TRESH LIB]*

---

When the *[EDIT]* key is selected together with the *[TRESH LIB]* key, a threshold-number *[1...70]*, has to be selected. This will open the threshold screen:

| PAGE 1 | THRESHOLD PERCENTAGES | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 1 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | | |
| 2 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | | |
| 3 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | | |
| 4 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | | |
| 5 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | | |
| 6 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | | |
| 7 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| 8 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| 9 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| 11 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | | | |
| 12 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | | | |
| 13 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | | | |
| 14 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | | | |
| 15 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | | | |
| 16 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | | | |
| 17 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | | | |
| 18 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | | | |
| 19 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | | | |
| 20 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | | | |
| 21 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | | | |
| 22 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | | | |
| 23 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | | | |
| 24 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | | | |
| 25 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | | | |
| 26 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | | | |
| 27 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | | | |
| 28 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | | | |
| 29 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | | | |
| 30 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | | | |
| 31 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | | | |
| 32 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | | | |
| 33 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | | | |
| 34 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | | | |
| 35 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | | | |

The rows represent, like always, the fixtures and the columns represent the control channels. With the *[Pg<] and [Pg>]*, the control channels can be shifted for fixtures with more than 16 channels. With the *[Fixture PgUp] and [Fixture PgDn]* keys, fixture pages 1 to 10 are selected.

This example shows a threshold. Later this threshold will be used in a playback. We can see that:
- All MAC600 channels will start fading, when the fading has reached 30%.
- All PRO918 channels will start fading, when the fading has reached 10%.
- All MAC300 channels will start fading, when the fading has reached 60%.
- All MAC250 channels will start fading, when the fading has reached 90%.

When this threshold is applied on a memory in a playback, and the playback is activated (opened) then the channels involved in the fading will start fading if the playback percentage is identical to the value stored in the threshold for that channel.

The channel percentages can be adjusted like normal control channels, with the trackerball. When fixtures are selected and a control channel, we can enter the percentage immediately with *[@] [value on keypad] [RET].*

To save the threshold, select the *[TRESH LIB]* key again.

**In the chapter playbacks and sequences, we will see how we can apply a threshold on a memory.**

## 12   CHAPTER 12: Sequences and Playbacks

```
                        ┌─────────────────────┐
                        │       Setup         │
                        │ Fixtures DMX Addresses│
                        │   and Stage Plan    │
                        └─────────────────────┘
                                  │
    ┌─────────────────────────────┼─────────────────────────────┐
    │                             │                              │
    │   ┌─────────────────┐          ┌─────────────────────┐    │
    │   │     Adjust      │          │       Adjust        │    │
    │   │Fixture Control  │          │Effect Generator     │    │
    │   │   channels      │          │    channels         │    │
    │   └─────────────────┘          └─────────────────────┘    │
```

**Setup**
**Fixtures DMX Addresses and Stage Plan**

**Adjust Fixture Control channels**

**Adjust Effect Generator channels**

**Make Pan/Tilt, Gobo, Color and Effect Generator Presets**

**Make Memories**

**Timings**

**Make Cues with Cue-Memories**

**Make Cues with Playbacks**

**Make Cues with Sequences (chasers)**

**Run the Show**

**Make Time-Code Show**

## CUE x  CUEPAGE y

### 42 playbacks

### 4 sequences

Seq A    Seq B    Seq C    Seq D

CUEMEMORY

Plus Wing

PRIORITY

---

## TRANSPARENT MODE

**Transparent mode OFF**

Selecting other CUE  →  4 new sequences
and
42 new playbacks

**Transparent mode ON**

Selecting other CUE  →  Only programmed
sequences and playbacks
of the selected CUE
will be replaced

---

### Adding loopmemories
### to sequences (fast method)

Select a CUE

↓

[CLR] + [ALL]

↓

Select fixtures and
adjust control channels

↓

[TO] + [A, B, C or D]  [Name]  [RET]

### Adding memories
### to playbacks (fast method)

Select a CUE

↓

[CLR] + [ALL]

↓

Select fixtures and
adjust control channels

↓

[TO] + [1 … 42 (playback flashkey)]  [Name]  [RET]

## 12.1  Introduction sequences

Sequences are in fact chasers. Each cue can hold a cue-memory, 4 sequences and 42 playbacks. The sequences are numbered A, B, C and D. Since there are 16 pages of 70 cues + their point-cues, 44.800 sequences can be programmed.

A sequence can hold:
- A start-memory (not essential)
- A number of loop-memories (at least 1, max. 100)
- A stop-memory (not essential)

| **Sequence A** | **Sequence B** | **Sequence C** | **Sequence D** |
|:---:|:---:|:---:|:---:|

**(Startmemory in fademode(1-6)) + (threshold)**

**Loopmemory1 in fademode(1-6) + (threshold)**

**(Loopmemory2 in fademode(1-6)) + (threshold)**

**(Loopmemory3 in fademode(1-6)) + (threshold)**

(.....)

**(LoopmemoryX in fademode(1-6)) + (threshold)**

**(Stopmemory in fademode(1-6)) + (threshold)**
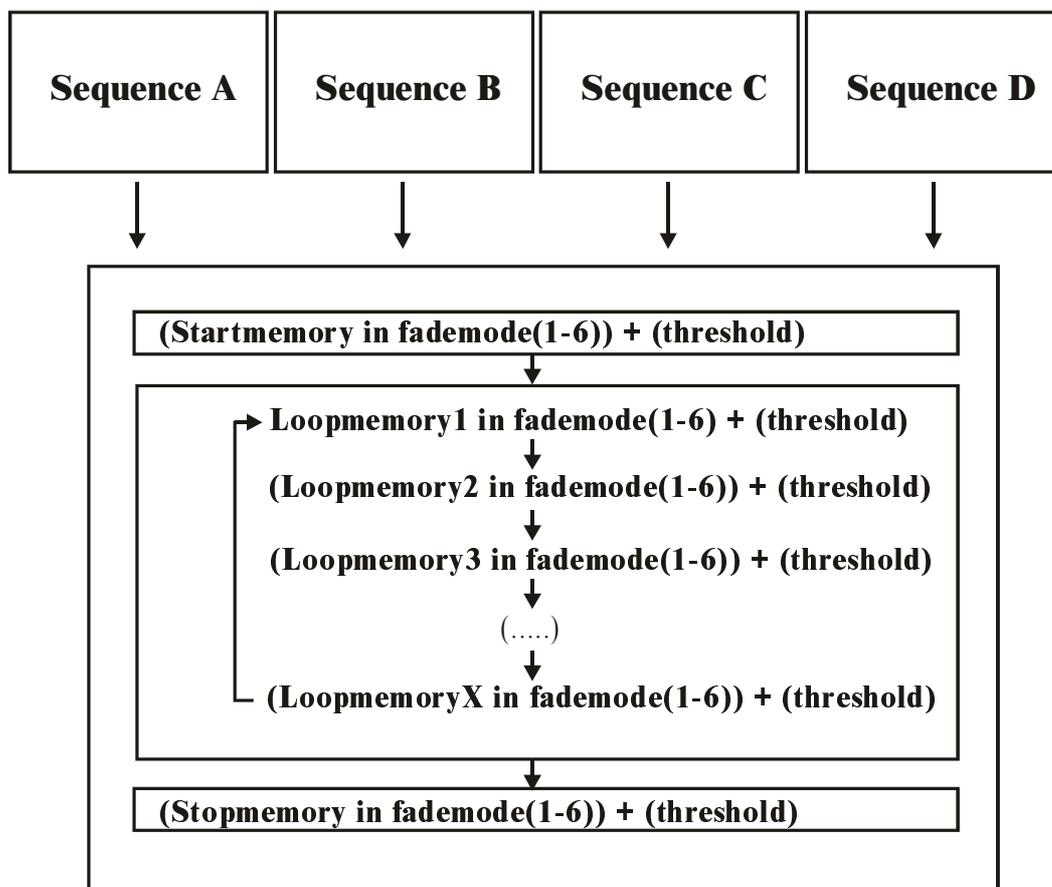
Sequences can be linked to other cues.

Each sequence has his fade and wait time.

Each sequence has a start/stop button. The loop-memories can run in forward direction, in backward direction, in bounce (forwards and backwards) or at random.

Sequences can be mutual synchronized.

Sequences can run in automatic, manual trigger or semi-automatic trigger mode.

## 12.2 Introduction playbacks

A playback can hold one memory. This memory can be faded manually with an analogue fader, or flashed with a playback flash key. Since there are **16 pages of 70 cues + point-cues, and each cue can hold up to 42 playbacks**, 470,000 playbacks can be programmed.

**Memory in fademode(1-6) + (threshold)**
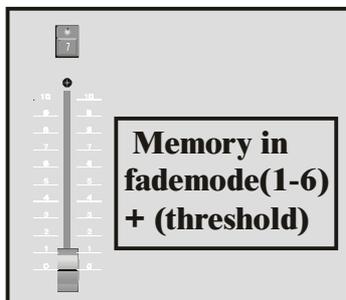
A playback holds 1 memory that can be faded from 0% to 100% with an analogue fader. On the memory, a threshold can be applied. There are 6 possible fade-modes that can be applied on the memory.

Each playback has a flash key to fade-in, or flash, the memory instantly. **The maximum flash value depends on the value of the flash-master.**

There are **3 possible flash key-modes**:
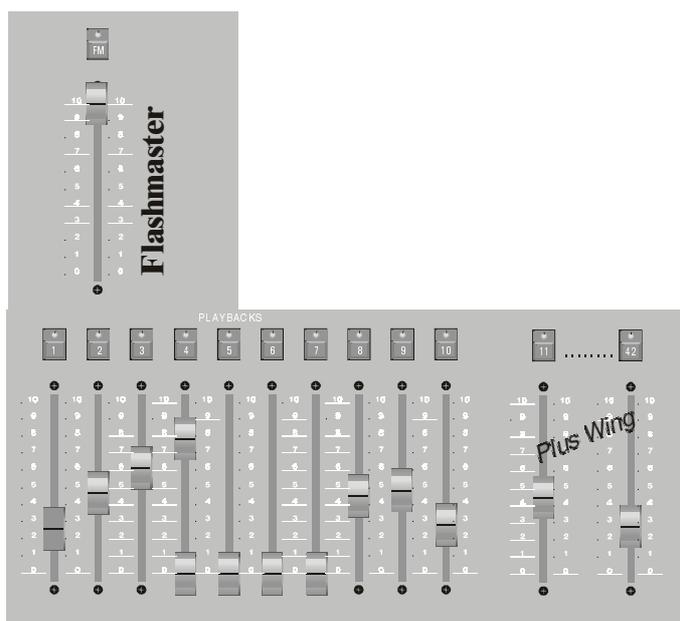
- **Flash**: When pressing the flash key, the playback-memory is faded in. When releasing the flash key, it is faded out.
- **Toggle**: When pressing the flash key, the playback-memory is faded in. To fade out the memory, the flash key has to be selected again.
- **Kill**: If 2 playbacks **of the same cue** are in kill mode, then the activation of one flash key will deactivate, or fade out, the other one. Both playbacks need to be of the same cue.

On **the flash keys**, **fade in and fade out timings** can be applied

## 12.3  Priorities

> **VERY IMPORTANT: When the <u>same fixture control channel</u> is used in an active cue-memory, active sequences, active playbacks and in manual mode, and the fixture control channel is <u>not a dimmer-channel</u>, then <u>priorities arise</u>. The <u>cue-memory has the lowest priority</u>, then sequences D, C, B and A take precedence, then playbacks 42, 41, ..., 1. The <u>manual mode has the highest priority</u>.**

An example:       Suppose, we use the Pan/Tilt channel of the first MAC600 in a cue-memory, and in the memories of sequences D, C, B and A. The cue-fading is active, and all sequences are started. Then the Pan/Tilt channel of the MAC600 will get its values only from sequence A, because the same control channel is used and sequence A has the highest active priority.

The priority principle is only active when:
- **The same fixture control channel is used.**
- The control channel is **not a dimmer-channel**
- The control channel is **<u>active</u> in more functions** (cue-memory, sequences, playbacks, manual)
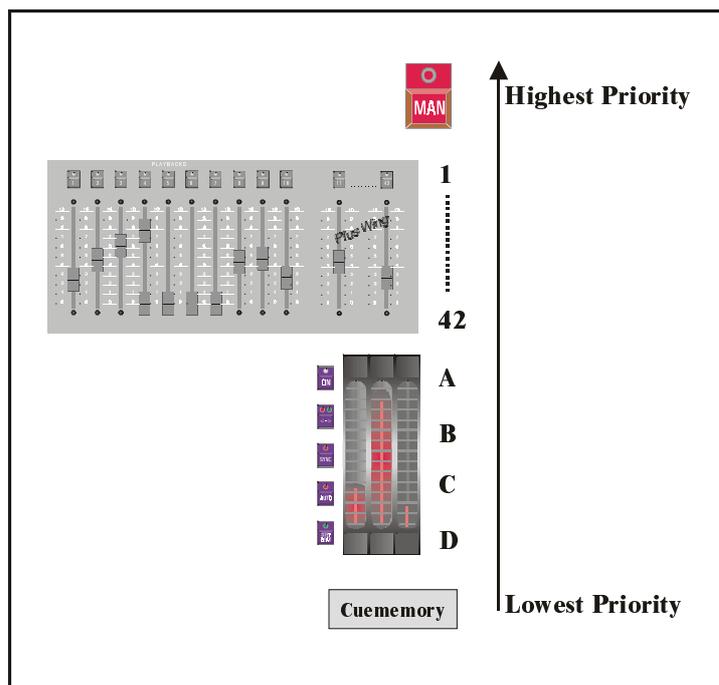


> **A dimmer-channel follows the HTP principle,** i.e. when the fixture control channel is a **<u>dimmer-channel</u>**, then the **<u>function</u>** that sends the **<u>highest value</u>** for that channel will **<u>take precedence</u>**. If, for example, the cue-memory sets the dimmer-channel at 80% and playback 1 sets the same dimmer-channel at 40%, then 80% will be sent. However, placing the memory in mode 5 or 6 can change the priority mode of the dimmer-channel.

**12.4**  **Adding memories to sequences (fast programming)**

For new users, there is a fast way to make a memory and add it to a sequence:

*[Select a cue] [Go to fixture mode] [Adjust fixture control channels and remove not-needed channels] [TO] + [A or B or C or D] [enter memory-name] [RET]*

Step 1:    First the cue, in which we will create the sequence, has to be selected.
Step 2:    We go to fixture mode. It can be useful to open the 'digital memory values' screen.
Step 3:    Like on cue-memories, all channels can be erased (double-click *[CLEAR]*) and the channels can be adjusted.
Step 4:    Select *[TO] together with one of the sequence keys [A], [B], [C] or [D]*
Step 5:    When in the start-options (see chapter SETUP) the item 'AUTOMATIC MEMORYNAME' is active; a memory-name will be asked automatically.
Step 6:    Save by pressing *[RET]*.

The memory-numbers will be created automatically, starting from the memory-number assigned in the start-options ('AUTOMATIC SEQUENCE-MEMORIES FROM …').

**Note: Memories added to sequences using this fast programming tool, will always be loop-memories. They will always be added, never inserted. These memories will always be in fade-mode 1.** If on the other hand, start-memories, stop-memories, thresholds or fade-modes have to be added, then the sequence has to be edited. (See paragraph 'Editing sequences').

**12.5**  **Adding memories to playbacks (fast programming)**

For new users, there is a fast way to make a memory and add it to a playback:

*[Select a cue] [Go to fixture mode] [Adjust fixture control channels and remove not-needed channels] [TO] + [playback key (1…42)] [enter memory-name] [RET]*

The method used is the same as adding memories to sequences with the exception that a playback can hold only 1 memory.

The memory-numbers will be created automatically, starting from the memory-number assigned in the start-options ('AUTOMATIC PLAYBACK-MEMORIES FROM …').

**Note: A memory added to a playback will always be in fade-mode 1.** When another fade-mode or a threshold is needed, the sequence has to be edited. (See paragraph 'Editing Sequences').

## 12.6　{EXP} Editing Sequences



---
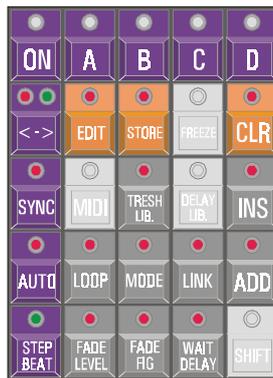
**[Select a cue]　[EDIT] + [A or B or C or D]**

To add memories to a sequence, first a cue has to be selected. To open one of the sequences of the selected cue, select the *[EDIT]* key together with a sequence key *[A], [B], [C] or [D]*.

Next screen will open:



The sequence-number, cue-page and cue-number of the edited sequence are marked at the top (here: Sequence D of cue 1 of cue-page 1). In the left column, we can find the memories with there names (if a name hasn't been assigned, it will be marked with a *).

At the right, we see the contents of the sequence:
- START: Represents the start-memory. This start-memory is not essential. It is activated only once, when the sequence starts.
- LOOP: Up to 100 loop-memories can be added to the sequence. Every memory can have its own threshold and one of the 6 fade-modes.
- STOP: When linking to another cue, a stop-memory can be executed. The stop-memory is not essential, and it is only executed once.

---

- LINK: When a sequence has run a couple of times through its memories, it can be linked to another cue. Attention, the **link** will only happen if **a finite number of loops** have been programmed.

- LOOP COUNTER: Represents, the number of times that the loop-memories have to be executed. By default, this counter is set at infinite, meaning that the loop-memories are executed as long as no other cue was selected. If a finite value is assigned, the sequence will execute the stop-memory after having executed the finite number of loop-memories. After the stop-memory, a memory called 'memory 0' will be executed, if no link has been assigned. **Memory 0 is an empty memory, so it doesn't change anything.**

## *[2↓] or [8↑]*

With those keys, the item (start-memory, loop-memories, stop-memory) in the right window is high lighted.

## *[GET] [Number on keypad] [RET]   or   [LAST]  or  [NEXT]*

This is the same as calling programmed memories. The called memory will be high lighted.

## *[ADD]  or  [INS]*

To add or insert the high lighted memory of the left column to the right columns start, loop or stop-memories..

## *[CLR]*

To delete the high lighted memory (at the right) from the sequence. It **will not erase the memory** from the controller.

## *[TRESH. LIB.] + [1…70]*

To assign one of the 70 programmed thresholds (see chapter memories) to the highlighted memory on the right.


Note: There is another method to add loop-memories to a sequence:

## *[Get a memory [GET] [number on keypad]]  [EDIT] [[A, B, C or D] [A, B, C or D]* (double-click)*]*

## 12.6.1 {EXP} <u>Fade modes</u>

In the chapter cue-timing we have already mentioned the fade-modes:
- Mode 1: Only fade-permission: This is the default mode. Channels that are given fade-possibilities, will fade, the others will bump.
- Mode 2: Fade all channels: All channels will have fade possibilities. The library is ignored.
- Mode 3: No fading: All channels will be in bump mode.
- Mode 4: Same as mode 3, but the fade time of the sequence will be ignored (sequence fade time will be taken 0)
- Mode 5: LTP-dimmers fade. Normally a dimmer is in HTP (highest takes precedence) mode (see paragraph 3). In mode 5, the dimmer-channels will act as any other channel.
- Mode 6: LTP-dimmers fade but bump mode for all other channels. This is a combination of mode 5 and mode 3. Attention, THRESHOLDS (see fade-modes on playbacks) react different in this mode. In this mode, all non-dimmer channels will bump to their positions as soon as the fading begins, the dimmer will keep fading.

> *[MODE]*

By selecting the *[MODE]* key, the fade-mode will change for the highlighted memory on the right.

## 12.6.2 {EXP} <u>Linking cues</u>

When a sequence has run through a finite number of loops, this sequence can call another sequence.

> *[LINK] [1…16] [1…70] [RET]*

To link the sequence to another cue. In fact, a sequence is linked to another sequence, but since sequences are part of a cue, the link will activated another cue.

**The sequence will only link <u>when a finite number of loops have been entered.</u>**

> *[LOOP] + [2↓] or [8↑]*

To adjust the number of loops. Select the *[LOOP]* key together with the arrow keys. The loop-counter can be set between 1 to 1,000 or infinite.

### 12.6.3  {EXP} Saving an edited sequence

> **[A] or [B] or [C] or [D]**

When all adjustments to the sequence have been done, select the sequence key that we used to open the sequence (A, B, C or D), again.

### 12.6.4  Sequence functions

Sequences have their individual fade and wait timers. They can be started and stopped. They can be mutual synchronized, and they have their own triggers (automatic, manual and semi-automatic).

> **[Select a sequence A, B, C or D]  [FADE FIG]  [Adjust on trackerball]**

This is the overall fade-time for the memories of the sequence.

> **[Select a sequence A, B, C or D]  [WAIT DELAY]  [Adjust on trackerball]**

This is the overall wait-time for the sequence memories. This is the wait-time between the fading of two loop-memories.

On **Pro 2 or Pro 2+ controllers** there is a **direct access** to the fade en wait-timers of the 4 sequences. With the digital fader belts, wait-times can be adjusted instantly, without selecting the sequence number first.
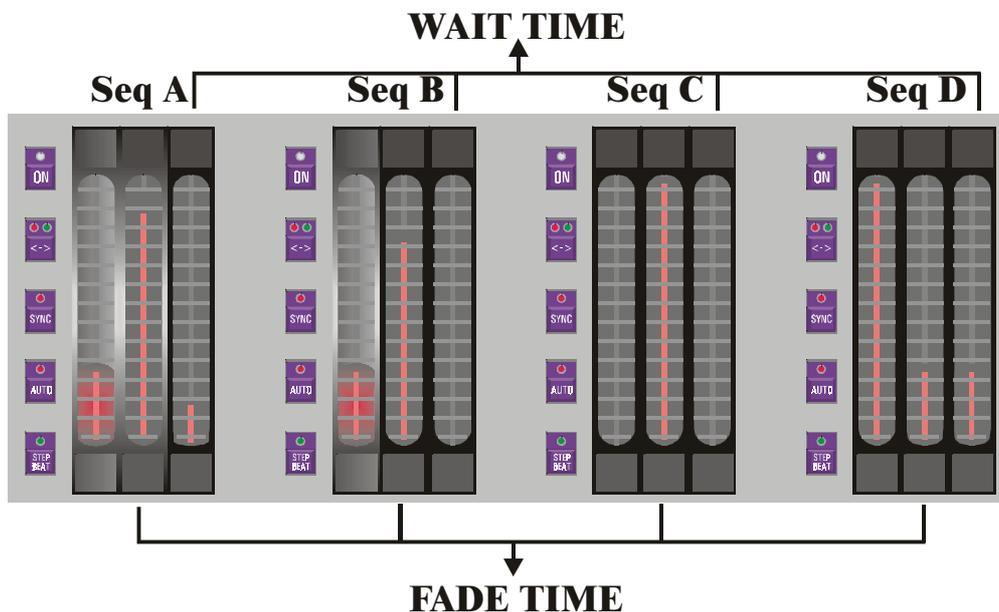
> *[Select a sequence A, B, C or D]*   *[ON]*

Only for Pro 2 or Pro 2+   *[ON]*

The *[ON]* key starts or stops the sequence. On Pro2 or Pro2+ controllers, there is a direct access to it.

> *[Select a sequence A, B, C or D]*   *[↔]*

Only for Pro 2 or Pro 2+   *[↔]*

The loop-memories can run:
- Forwards (green LED)
- Backwards (red LED)
- In bounce (both LEDs on)
- At random (both LEDs off)

> *[Select a sequence A, B, C or D]*   *[SYNC]*

Only for Pro 2 or Pro 2+   *[SYNC]*

Two or more sequences can be synchronized. This is done by activating the *[SYNC]* key on **all the sequences to synchronize.** All synchronized sequences will wait for each other.

> *[Select a sequence A, B, C or D]*   *[AUTO]*

Only for Pro 2 or Pro 2+   *[AUTO]*

Sequences have their individual trigger button. They can be triggered:
- Automatic (LED on), the memories will run according to the fade and delay timers.
- Manual (LED off), after a loop-memory has been faded in, the sequence will wait for a trigger with the *[STEP BEAT]* key to continue with the next loop-memory.
- Semi-automatic (LED blink). This is a special mode. The controller has to learn the beat. On the rhythm of the music, the *[STEP BEAT] key* has to be selected 3 times, to teach the controller the beat. The sequence will now resume automatically.

Note: When more sequences are in manual trigger mode, and those sequences have to be triggered at the same time, the *[RET]* key can be used as trigger key.

> *[Select a cue]*   *[Adjust sequence(s)]*   *[STORE]*

The sequences fade and wait times and their functions (on/off, direction, sync and trigger) can be saved **per cue.** Select the cue, adjust the sequences and select the *[STORE]* button.

## 12.7  {EXP} Editing Playbacks

There are 2 ways to add a memory to a playback:

---

*[Select a cue] [Get a memory]  [EDIT] + [[Playback Flash key]  [Playback Flash key]* (double-click)*]*

---

This is another fast method, but here the memory isn't created automatically. Because a playback is part of a cue, the cue must be selected. A memory has to be called to add it to the playback.

---

*[Select a cue]   [EDIT] + [Playback Flash key]*

---

On the other hand, when the playback memory needs a threshold or another fade-mode, the playback has to be edited. A screen similar to the sequences will open:



By using the *[GET] [memory number] [RET] or with the [LAST] and [NEXT] keys* a memory can be called to *[ADD] or [INS]* it to the playback (right column). Note, the *[ADD] and [INS]* key will do the same thing, since only one memory can be assigned to a playback.

---

*[2↓]  or  [8↑]*

---

To high light an item in the right column.

---

*[EDIT]  [[0-9] [@]* (keypad)*] [RET]*

---

We have spoken about the playback flash keys. **When activating a playback with the flash keys, a fade in and fade out time can be selected.** In addition, the flash mode (flash, toggle or kill) can be adapted to the needs. **Highlight the timers' items with the arrow keys and use the keypad to adjust the time. Highlighting it changes the flash mode; use the *[EDIT]* key to change the flash mode.**

---

On a Pro1+, Pro2+ or extra playback wing, there is an easier method to change the timers and the flash mode:



---

**[FLASH] or [TOGGLE] or [KILL]  +  [Playback flash key(s)]**

Puts the playback(s) instantly in the selected flash mode.

---

**[FLASH] or [TOGGLE] or [KILL]  +  [ALL** (+ wing**)]**

Puts all playbacks **!! of the last selected cue !!** in the selected mode.

### 12.7.1  Playback screen and display modes

**[STAGE]**

Remembrance: The *[STAGE]* key toggles between the 'stage layout' and the 'playback overview' on the monitor. There are now 3 different view modes (for the monitor and for the displays on the playback wing):
- Memory number + cue number of the playback memory
- Memory name of the playback memory
- Flash mode of the playback memory

With the playback overview screen opened, the **[PgUp] or [PgDn] keys** will change the playback display mode.

**Rem: Users who have upgraded to this software version (version 7.20); the playback screen was opened in older versions with the *[values]* key.**

On the playback wing, the contents of the playback are always displayed in the 4 LCD displays.



---

**[PgUp] or [PgDn]**

To change the different modes.

---

**[UPPER] or [LOWER]**

To display the upper or lower 16 playbacks.

---

**12.7.2　The memories in the playbacks**

We already mentioned several times, that there is no need to store all fixture channels in the memories. When for example only dimmer values are stored in the memories, then it is possible to use those memories in a playback to create a sub-master.

If the effect generator is used in a memory, then it is possible to store only the speed parameter of the Pan/Tilt effects generator, or the x-swing or y-swing. If those memories are used in playbacks, the speed, x-swing and y-swing can always be controlled on the fly. In this case, you have to make a cue-memory with the speed, x-swing and y-swing at 0. Since a playback has a higher priority, the values for them programmed in the playbacks will take over.

| | |
|---|---|
| **Cuememory with values for effect generator on Pan/Tilt but Pan/Tilt speed on 0.** | **Playback filled with memory where there is only a value for effect generator Pan/Tilt speed X** |

**Playback will set the speed between 0 and X because the playback has a higher priority as the cuememory.**

If completely filled memories are used in a playback, it is possible to fade in a light scene. Beware of the priorities.

**12.7.3　{EXP} Playback fade-modes**

Like with sequences and cue-memories, 6 different fade modes can be set on the memories of the playbacks (attention here for mode 6):

- Mode 1: Only fade-permission: This is the default mode. Channels that are given fade-possibilities, will fade, the others will bump.
- Mode 2: Fade all channels: All channels will have fade possibilities. The library is ignored.
- Mode 3: No fading: All channels will be in bump mode.
- Mode 4: Same as mode 3, but when used in sequences, the fade time of the sequence will be ignored (sequence fade time will be taken 0)
- Mode 5: LTP-dimmers fade. Normally a dimmer is in HTP (highest takes precedence) mode (see paragraph 3). In mode 5, the dimmer-channels will act as any other channel.
- Mode 6: LTP-dimmers fade but bump mode for all other channels. This is a combination of mode 5 and mode 3. In this mode, all non-dimmer channels will bump to their positions as soon as the fading begins, the dimmer will keep fading. **When a threshold is applied on the memory, then the <u>threshold will react inverted for non-dimmer</u> channels.** The **<u>dimmer channels will start its fading</u>** as indicated in the threshold, **but the <u>non-dimmer channels will fade until</u> the threshold % is reached. <u>This mode will only work if the dimmer-channels of the indicated fixtures are closed in other playbacks, active sequences or the cue-memory, or the mode will be switched to mode 1 + mode 5.</u>**

An example: To fade in a light scene (complete light scene), a completely filled memory is used with the dimmer on their maximum value. When no threshold is applied on this playback memory (in mode 6), all fixture channels (except the dimmer channel) will bump to their new positions (also Pan/Tilt) as soon as the playback is opened just a little bit. If in this case a threshold of 25% on all channels is applied on this memory, then all channels will fade to their new positions until the playback is open at 25%. Now the dimmer will start fading in at 25% opening (attention, the dimmer may not be open in another function like another playback, sequence, cue-memory or manual).

## Mode 6 without threshold



| 0 % | 10 % | 100 % |
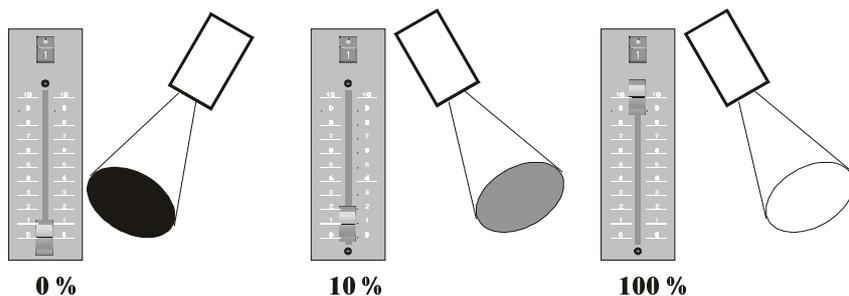
## Mode 6 with threshold of 25% on all channels



| 0 % | 10 % | 25 % | 100 % |
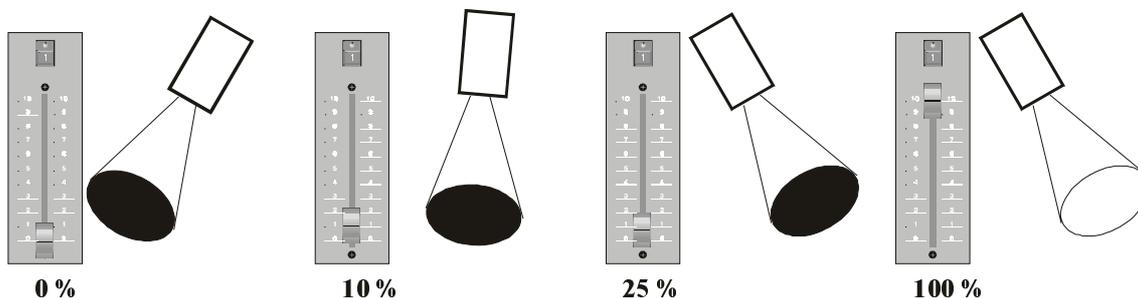
## 12.8  {EXP} Transparent mode

When cues are programmed, we can work in 2 different modes:
- Transparent mode on
- Transparent mode off

## 12.8.1  {EXP} Transparent mode on

**Transparent mode on signifies that only the programmed sequences and playbacks of a selected cue will replace those of previously selected cues, when the cue is activated.**

Example:
- In cue 1, sequences A, B, C and D are programmed
- In cue 2, only sequence C is programmed
- When we change from cue 1 to cue 2, only sequence C will be replaced, the others will still come from cue 1.

We program:

| Cue 1 | Cue 1 Seq A | Cue 1 Seq B | Cue 1 Seq C | Cue 1 Seq D |
|---|---|---|---|---|
| Cue 2 | Seq A empty | Seq B empty | Cue 2 Seq C | Seq D empty |
| When we select cue 1 and then cue 2, the result will be: | | | | |
| Change from cue 1 to cue 2 | Cue 1 Seq A | Cue 1 Seq B | **Cue 2 Seq C** | Cue 1 Seq D |

**Remark: This is also the case with playbacks**

**Note: In this mode it is possible to program only playbacks in cue 1, and still have them if another cue is selected.**

## 12.8.2  {EXP} Transparent mode off

**Transparent mode on signifies that selecting another cue will replace all sequences and playbacks.**

Example:
- In cue 1, sequences A, B, C and D are programmed
- In cue 2, only sequence C is programmed
- When we change from cue 1 to cue 2, everything is replaced. Since sequences A, B and D were not programmed in cue 2, they will be empty when cue 2 is called.

We program:

| Cue 1 | Cue 1 Seq A | Cue 1 Seq B | Cue 1 Seq C | Cue 1 Seq D |
|---|---|---|---|---|
| Cue 2 | Seq A empty | Seq B empty | Cue 2 Seq C | Seq D empty |
| When we select cue 1 and then cue 2, the result will be: | | | | |
| Change from cue 1 to cue 2 | Seq A empty | Seq B empty | **Cue 2 Seq C** | Seq D empty |

**Remark: This is also the case with playbacks**

### 12.8.3 {EXP} <u>Making the choice: transparent mode on or off?</u>

In earlier software versions, it was only possible to set the transparent mode (old replace all mode) for an entire show. From version 7.01, it is possible to set the mode per cue, and set this different for playbacks and sequences.

Suppose, the 42 playbacks, programmed in cue 1, should never change, then the transparent mode should be enabled or ON for the playbacks.

If, however, every cue represents a complete new scene where the playbacks and sequences should have new functions every time, then the transparent mode should be off for the entire show.

**Pre-defined shows:**

In this kind of shows, cues are programmed in order of succession. Those shows are programmed per cue. In those shows, the transparent mode for sequences is disabled or off, and if the playback contents should always remain the same, then the transparent mode for playbacks should be enabled.

| CUE 1 (programmed) | | | | |
|---|---|---|---|---|
| Seq A<br>= empty | Seq B<br>= empty | Seq C<br>= empty | Seq D<br>= colorchaser1 | Cuememory1 |
| **Playbacks filled with lightscenes (ex. Lightscene on drummer, lightscene in audience)**<br>**Playbacks filled with speed values for effect generator**<br>**.....** | | | | |

| CUE 2 (programmed) | | | | |
|---|---|---|---|---|
| Seq A<br>= empty | Seq B<br>= empty | Seq C<br>= Gobochaser1 | Seq D<br>= colorchaser2 | Cuememory2 |
| **Playbacks empty** | | | | |
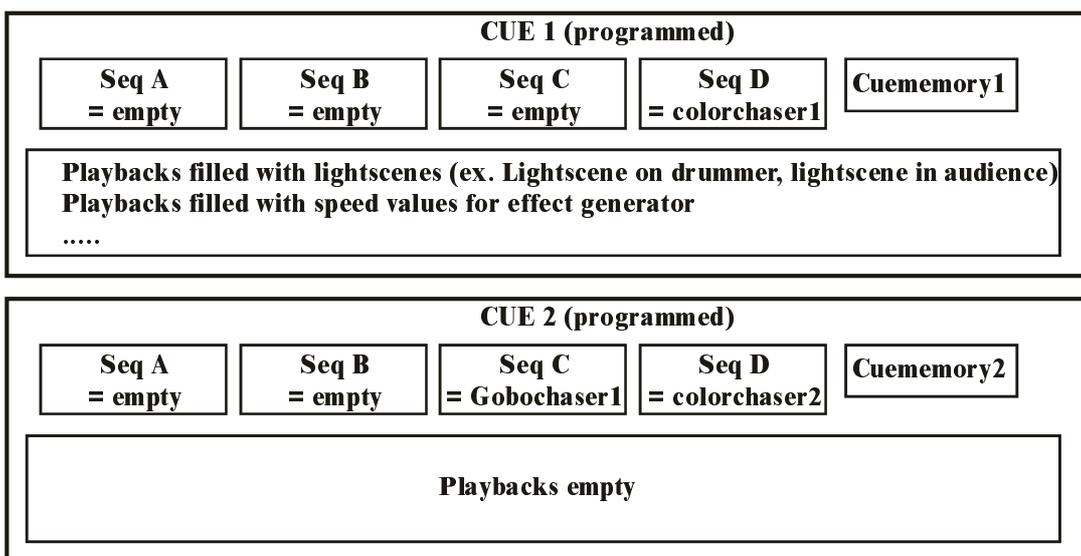
Suppose we have two cues like in above example and **the transparent mode is disabled for sequences and enabled for playbacks**, then the result, if we go from cue 1 to cue 2, will be:

| CUE 2 | | | | |
|---|---|---|---|---|
| Seq A<br>= empty | Seq B<br>= empty | Seq C<br>= Gobochaser1 | Seq D<br>= colorchaser2 | Cuememory2 |
| **Playbacks filled with lightscenes (ex. Lightscene on drummer, lightscene in audience)**<br>**Playbacks filled with speed values for effect generator**<br>**.....** | | | | |
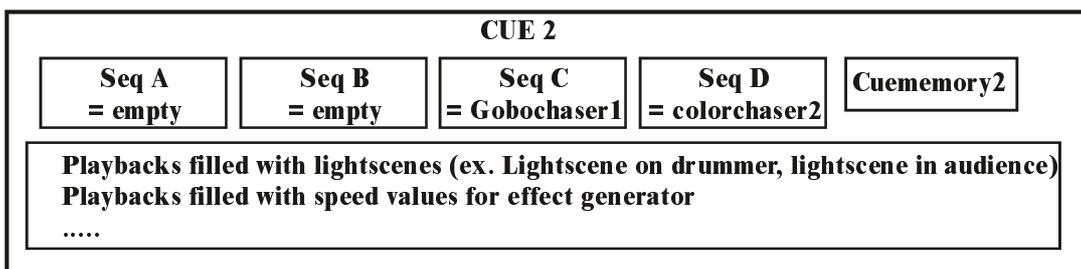
**Disco clubs and shows with improvisation:**

If the order of performance is unknown, like in disco clubs, then combination of different effects must be possible.

Example:
- For Pan/Tilt motions, cue-memories are used in cues 1 to 19
- For color chasers, sequence D is used in cues 20 to 39 (other sequences empty)
- For gobo chasers, sequence C is used in cues 40 to 59 (other sequences empty)
- For **sequences and playbacks, the transparent mode is ON.**

| CUE 1 (programmed) | | | | |
|---|---|---|---|---|
| **Seq A**<br>**= empty** | **Seq B**<br>**= empty** | **Seq C**<br>**= empty** | **Seq D**<br>**= empty** | **Cuememory1** |
| **Playbacks filled with lightscenes (ex. Lightscene on drummer, lightscene in audience)**<br>**Playbacks filled with speed values for effect generator**<br>**.....** | | | | |

| CUE 20 (programmed) | | | | |
|---|---|---|---|---|
| **Seq A**<br>**= empty** | **Seq B**<br>**= empty** | **Seq C**<br>**= Empty** | **Seq D**<br>**= colorchaser1** | **Cuememory**<br>**= empty** |
| **Playbacks empty** | | | | |

| CUE 40 (programmed) | | | | |
|---|---|---|---|---|
| **Seq A**<br>**= empty** | **Seq B**<br>**= empty** | **Seq C**<br>**= Gobochaser1** | **Seq D**<br>**= Empty** | **Cuememory**<br>**= empty** |
| **Playbacks empty** | | | | |

- Now, we have the possibility to combine Pan/Tilt motions (cues 1 to 19) with color chasers (cues 20 to 39) with gobo chasers (cues 40 to 59), because we used for Pan/Tilt, cue-memories, for the color chasers, sequence D and for the gobo chasers sequence C. Since the transparent mode is active, we can combine the cue-memories with the sequences D and C of different cues.

| Result combination cue1 with cue20 with cue40 | | | | |
|---|---|---|---|---|
| **Seq A**<br>**= empty** | **Seq B**<br>**= empty** | **Seq C**<br>**= Gobochaser1** | **Seq D**<br>**= colorchaser1** | **Cuememory1** |
| **Playbacks filled with lightscenes (ex. Lightscene on drummer, lightscene in audience)**<br>**Playbacks filled with speed values for effect generator**<br>**.....** | | | | |
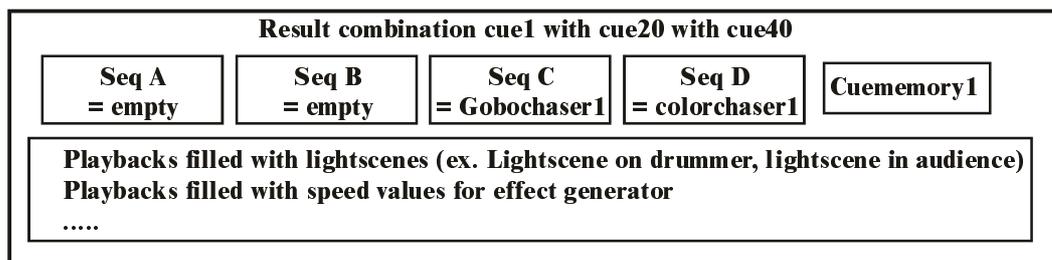
## 12.8.4  {EXP} Set up the Transparent mode

*[Select a cue]   [SHIFT] + [CUE]*

The combination of *[SHIFT] and [CUE]* will open next window:
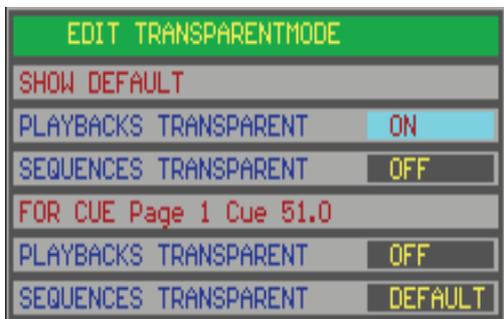


The SHOW DEFAULT is the common default setting for the controller (options: ON or OFF). To change it, high light the item with the arrow keys *[2↓] or [8↑] and select the [EDIT] key.*

For each cue, the settings can be different for sequences and playbacks. Possible choices are:
-   ON: transparent mode on
-   OFF: transparent mode off
-   DEFAULT: transparent mode follows the SHOW DEFAULT setting.

In the example here, in cue 51 on page 1, the setting for playbacks is OFF and the sequences follow to show defaults, which is OFF.

On a playback wing, you have quicker access:



*[Select a cue]  [SEQ] and/or  [PLAYBACK]    [STORE]*

First, a cue has to be selected. The a combination of the sequence and playback transparent mode setting is made, followed by *[STORE]*

The LEDs on the  *[SEQ] and [PLAYBACK]* keys of the playbackwing represent:
-   LED ON: transparent mode on
-   LED OFF: transparent mode off
-   LED blinks: transparent mode = show default mode

**12.9**   **The example show**

**Playbacks**

The example show holds 9 playbacks in CUE 1 cue-page 1. The memories and functions, stored in the playbacks are:

| Playback | Memory number | Threshold number | Fade Mode | Fade-in time | Fade-out time | Playback mode |
|---|---|---|---|---|---|---|
| 1 | 2008 | 1 | 1 | 0 | 0 | Flash |
| 2 | 10 | Non | 1 | 2 sec | 4 sec | Kill |
| 3 | 12 | Non | 1 | 2 sec | 4 sec | Kill |
| 4 | 13 | Non | 1 | 2 sec | 4 sec | Kill |
| 5 | 11 | Non | 1 | 2 sec | 4 sec | Kill |
| 7 | 23 | Non | 1 | 0 | 0 | Flash |
| 8 | 22 | Non | 1 | 0 | 0 | Flash |
| 9 | 21 | Non | 1 | 0 | 0 | Flash |
| 10 | 20 | Non | 1 | 0 | 0 | Flash |

The contents of the memories:

| Memory Number | Contents |
|---|---|
| 2008 | Strobe value, dimmers full and color preset 1 for all fixtures |
| 10 | Only dimmer full for MAC600s |
| 12 | Only dimmer full for MAC300s |
| 13 | Only dimmer full for MAC250s |
| 11 | Only dimmer full for Pro918s |
| 23 | Only wave per type on the dimmers of all fixtures except Pro918s |
| 22 | Only Wave per 4 on the dimmers of all fixtures except the Pro918s |
| 21 | Speed open on the dimmers of all fixtures, except the Pro918s |
| 20 | Only Swing open on the dimmers of all fixtures except the Pro918s |

**Sequences**

4 sequences were programmed in **CUE 41:**

| Sequence number | Memory numbers |
|---|---|
| D | Loop memories: 3001 to 3004    Stop memory: 3005 |
| C | Loop memories: 2002 to 2007    Stop memory: 2001 |
| B | Loop memories: 2010 to 2011    Stop memory: |
| A | Loop memories: 2020 to 2022    Stop memory: |

Memories 3001 to 3005 hold only Pan/tilt presets for the PRO918s
Memories 2002 to 2007: color preset 2 is applied on the 6 MAC600s separately.
Memories 2010 and 2011:   Orange/Peacock color preset alternated on 2 groups of Mac300s
Memories 2020 to 2022: Dimmer chase on the Mac250s

***Select CUE 1, and afterwards CUE 41.*** The playbacks of CUE 1 will remain unchanged, but the sequences are all replaced. This is possible because the transparent mode of the sequences is disabled and of the playbacks is enabled (the transparent mode follows the show defaults).

## Using Cue 41

Cue 41 holds also a **cue-memory, which closes the dimmers of all fixtures.**

***Activate the 4 sequences and close all playbacks.***

When an **MSD** (Martin Show Designer) is connected and the show is loaded, we will see:

A Dimmer chase on the Mac250s from **sequence A.** *Open playback fader 4.* Since playback 4 opens all dimmers of the MAC250s to full open, the chase will fade out to full because of the HTP principle of dimmer channels.

***Open playback 3.*** The orange/Peacock chase on the MAC300s will be visible. Sequence B holds only color changes, but the playback will open the dimmers of the MAC300s

***Open playback 2.*** A color chase on the MAC600s will be visible. The chase runs in sequence C and the dimmers open in the playback.

***Open playback 5.*** The Pan/Tilt motion from sequence D will be visible on the PRO918s. The playback opens the dimmers.

***Open playback 1.*** A strobe will be visible on all fixtures. Since playback 1 has a higher priority then all other playbacks and its priority is higher than the sequences en the cue-memory, the strobe and the color-preset will be taken from this playback (= memory 2008). The dimmer in memory 2008 still follows HTP. All other channels not defined in the playback will be taken from lower playbacks (2-42), sequences (A, B, C, D) and the cue-memory in this order.

***Press alternating playback flash keys 2 to 5.*** Since playbacks 2 to 5 are in kill mode, and they are programmed in the same cue, one flash key will disable or fade out the previous one. If the last selected flash key is selected again, it will fade out.

***Open playbacks 9 and 10.*** A dimmer effect will be visible on all fixtures except the PRO918s. With playback 9, the speed of the effect is adjusted; playback 10 adjusts the swing of the effect. The dimmer effect itself is stored in the cue-memory of cue 41. In this cue-memory, the speed and the swing of the effect is set at 0, so opening the playbacks, will control the effect because they have a higher priority.

***Open playbacks 9 and 10 half and play with playbacks 7 and 8 separately.*** The delay effect will come from playbacks 7 or 8, because their priority is higher than the cue-memory.

## 13   CHAPTER 13: Special Functions

This chapter explains some special functions of the controller.

### 13.1   Loading shows

*[LOAD* (during 2 sec)*]   [[1] or [2]]*

To load an already programmed show, or to start a new show.
Select:
- **1** to load a show from **the internal hard disk**.
- **2** to load a show from **the floppy disk**



### 13.1.1   The options

When a show is loaded, there can be selected what should be loaded:

*[2↓]  or  [8↑]*

To high light an existing show. Press *[RET]* to select the show.

*[6→]  or  [4←]*

To change between the 'show' and 'data' window.

In the 'data' window, there can be selected with the *[RET]* key, what should be loaded. When the option is marked yellow, it is selected and it will be loaded.

### 13.1.2   Starting with a new show

If a new, empty show should be started, the show **EMPTY** must be selected. Everything will be erased, setup, presets, cue-memories and memories, thresholds, cues, groups sub-masters and time-code lists (see chapter time-code and midi).

If the same stage layout will be used and the presets must remain unchanged to the show in the main program, but all the rest needs reprogramming and must be erased, then the 'data' options SETUP and PRESETS must be disabled when loading the empty show.

**Important remark: When unfortunately, a show is loaded, and the previous show hasn't been saved yet, then it is possible to undo this by loading the BACKUP show.** Every time a new show is loaded, a backup of the current show will be made. **This is possible only once. Loading twice a wrong show will destroy the backup.**

**Remark 1: In time-code mode** (see chapter time-code and midi)**, only the time-code show will be saved, not the whole show. To save everything, time-code mode should be left.**

**Remark 2: A power failure doesn't harm the show. Nothing will be lost, only when the power failure occurs when saving something (show, memories, presets….), files may be damaged.**

### 13.1.3 Deleting shows

*[High light the show name]  [DEL]  [Confirm with [RET]]*
Shows can be erased from the hard disk or floppy.

The shows 'EMPTY' and 'BACKUP' are protected against erasing.

### 13.2 Saving shows

*[SAVE* (during 2 sec)*]  [[1] or [2]]*
To save a programmed show.
Select:
- **1** to save the show on **the internal hard disk**
- **2** to save the show on **the floppy disk**

Like when loading, the save options can be set. By default, everything is selected, so everything will be stored.

Shows with names 'EMPTY' or 'BACKUP' can't be stored.

## 13.3 {EXP} RGB

Some fixtures like MAC600, MAC300, PAL… have an RGB or CMY function. This means that they have 3 different color channels for Red, Green and Blue, or Cyan, Magenta and Yellow.

There are some well-known gel manufacturers like ®Lee, ®Rosco and ®Gam. Many of those gels or color filters can be mixed with the RGB channels.

*First the filter library has to be selected for the show in the SETUP program* (see chapter setup)**.** The selected library is applied to the entire show.

When RGB fixtures are set up on the stage, a gel number can be called out of the library:

| [Select RGB (CMY) fixture(s)]  [RGB] |
| --- |

**Remark the placing of the RGB key: On older controllers, the key is situated within the 'control channels' key-window. It should be exchanged with the CTRL CHAN or TIMING key. The RGB key must be between the GET and TXT EDIT keys.**

A color library window will open:

| COLORLIBRARY (LEE-FILTERS) | |
| --- | --- |
| COLOR-NAME | COLOR-NUMBER |
| LAVENDER-TINT | 3 |
| LILAC-TINT | 169 |
| PALE-LAVENDER | 136 |
| LIGHT-LAVENDER | 52 |
| DEEP-LAVENDER | 170 |
| FUCHSIA-PINK | 345 |
| ROSE-PURPLE | 48 |
| MAUVE | 126 |
| SPECIAL-MEDIUM-LAVENDER | 343 |
| DARK-LAVENDER | 180 |
| LAVENDER | 58 |
| SURPRISE-PINK | 194 |
| VIOLET | 344 |

The number at the right is the gel number that belongs to the name at the left.

| [2↓] or [8↑] |
| --- |

To run through the color filters.

| [GET]  [number on keypad] [RET] |
| --- |

To call the gel number immediately.

| [Adjust RGB channels]  [TO]  [number on keypad]  [RET] |
| --- |

To adjust the colors of a gel. The adjustments can be stored.

**Rem. Pay attention, many fixtures have besides their CMY channels also a color-wheel. If a color is set using this channel, the gels will not conform.**

## 13.4 {EXP} BLIND

| *[BLIND* (during 2 sec)*]* |
| --- |

In BLIND mode, cues can be programmed, memories can be made, even fixtures can be added in the setup, **and none of this will be seen on the stage. Playbacks and so on will keep running.**

**Remark: BLIND mode will stop the cue-linking.**

## 13.5 {EXP} FREEZE

In chapter 'cue-timing', is explained that the *[FREEZE]* key is used to stop the cue fading timers.

It is possible to freeze also Sequences, Playbacks and fixtures.

| *[FREEZE] + [CUE]* |
| --- |

Stops the cue fading timers.

| *[FREEZE] + [A, B, C or D (until sequence LED is green)]* |
| --- |

Freezes (not stops) sequences A, B, C or D. When changing cues, they will never be replaced.

| *[FREEZE] + [A, B, C or D (until sequence LED is red)]* |
| --- |

Freezes sequence-**timers (fade-time and wait-time)**. Whatever is stored in the different cues, the timers will not change.

| *[FREEZE] + [playback flash key]* |
| --- |

Freezes the contents of playbacks. When changing cues, the frozen playbacks will never be replaced.

| *[FREEZE] + [Fixture number(s) [1...70]]* |
| --- |

Freezes a fixture in its current position. Suppose, one of the fixtures is acting strange, then it is possible to point it somewhere where it doesn't harm the show, and freeze it. All programmed actions on this fixture will be ignored. **Attention, manual mode still has priority.**

### 13.6  {EXP} <u>COPY ITEM and TO ITEM</u>

The functions COPY ITEM and TO ITEM are used to copy cues, sequences, playbacks and fixture channels.

### 13.6.1  {EXP} <u>Copying fixtures and fixture channels</u>

To copy channels from one fixture, to another fixture or to a memory:
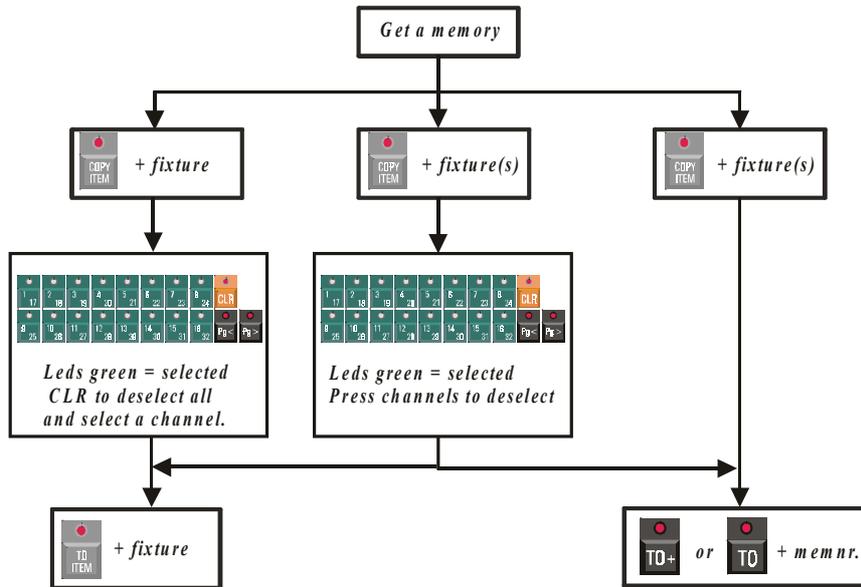


### 13.6.2  {EXP} <u>Copying cues, sequences and playbacks</u>
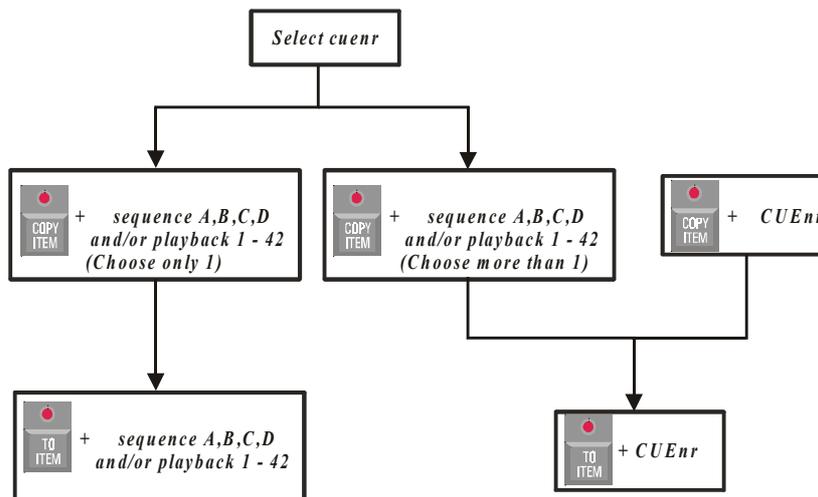
### 13.6.3  {EXP} Copying a memory to a cue-memory

There is a simple method to copy a memory to a cue-memory. Just get the memory and save it as a cue-memory.

```
┌─────────────────────┐
│    Get a memory     │
└─────────────────────┘
           │
           ▼
┌───────────────────────────────────┐
│ [TO] + [CUE]  [Select CUE (1...70)] │
└───────────────────────────────────┘
```
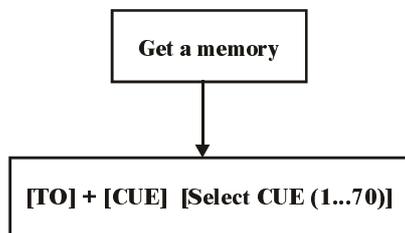
### 13.7 Deleting memories, cue-memories, cues, sequences and playbacks

#### Deleting memories and cue-memories

> *[ALL]  [CLR* (control channels)(double-click)*]  [TO] [memory-number to delete] [RET]  [RET* (confirmation overwrite)*]*

To delete a memory, an empty memory should overwrite it. If the memory had a name, it will disappear.

> *[ALL]  [CLR* (control channels)(double-click)*]   [TO] + [CUE]  [select cue (memory) to delete] [RET]  [RET* (confirmation overwrite)*]*

To delete a cue-memory, an empty cue-memory should overwrite it. Only the cue-memory will be deleted, not the playbacks and sequences in the cue.

#### Deleting entire cues

> *[CLR* (CUE)*] + [Select cue to delete]*

This function will delete the entire cue, i.e. the cue-memory, all sequences and all playbacks from the cue.

#### Deleting sequences and playbacks

> *[CLR] + [A, B, C or D]*

Deletes the contents of the sequence. The memories, added to the sequence, will not be erased.

> *[CLR] + [playback flash-key]*

Deletes the contents of the playback. The memory, added to the playback, will not be erased.

## 13.8 READ OUTPUT

Suppose, you are programming a show, and suddenly you get a nice picture (light scene). This picture can be a mix of running sequences, cue-memories, playbacks. You want to save this picture for later use. The channel-values of this picture can be called:

| *[READ OUTP.] + [Select fixtures (1...70) or [ALL]]* |

Reads the channel-values from the DMX-outputs of the selected (or all) fixtures. This light scene can now be stored in a cue-memory or memory.

**ATTENTION: The READ OUTPUT function reads all values, and searches also all effects generator channels. In addition, the values are compared to the stored presets, and if there is a match, the value will be replaced by a preset-number. Since all values, also effects generator values, are filled up, it can slow down the controller enormously when it is stored in a cue-memory.**

| *[Select fixtures] [READ OUTP.] + [[1/17…16/32] or [preset function]]* |

This combination will read only the selected channels or the selected preset-function **of the selected fixtures.** Presets doesn't mean that presets are read, it reads the preset function.

| *[Select fixtures]   [SHIFT] + [READ OUTP.]* |

**{EXP}** When 2 controllers are linked through DMX, memories from one controller can be copied to another, even when the memories come from another brand controller. This key-combination actually reads the DMX-input of the controller.

Conditions for copying:
- Both controllers must have the same stage-layout, this means the same fixtures in the same mode and the same DMX-addresses must be set up on both controllers.
- The DMX-IN patch of the fixtures of the MartinCase controller has to be active (default) (see chapter SETUP).
- **The MartinCase MUST send for all DMX channels a value 0, since between DMX-in and DMX-out, there is an HTP.** So if you want to read in values coming from another controller, first make a memory where all values are at 0 and activate it.

The values read, can now be stored in a memory or cue-memory.

## 13.9 The MEM-FREE item

**The 'MEM FREE' box, left on your monitor, indicates the amount of internal memory, free to program. If this field reaches 10%, you must upgrade the internal memory of the controller, if you still have to program.**

Erasing memories, cue-memories, cues... will have no effect on the number, unless the program is left and start-up again.

## 14 CHAPTER 14: Running the Demo show

```
                    ┌─────────────────────────┐
                    │          Setup          │
                    │  Fixtures DMX Addresses  │
                    │     and Stage Plan       │
                    └─────────────────────────┘
```

Setup
Fixtures DMX Addresses
and Stage Plan

Adjust
Fixture Control channels

Adjust
Effect Generator channels

Make
Pan/Tilt, Gobo, Color and
Effect Generator Presets

Timings

Make
Memories

Make
Cues with Cue-Memories

Make
Cues with Playbacks

Make
Cues with Sequences (chasers)

Run
the Show

Make
Time-Code Show
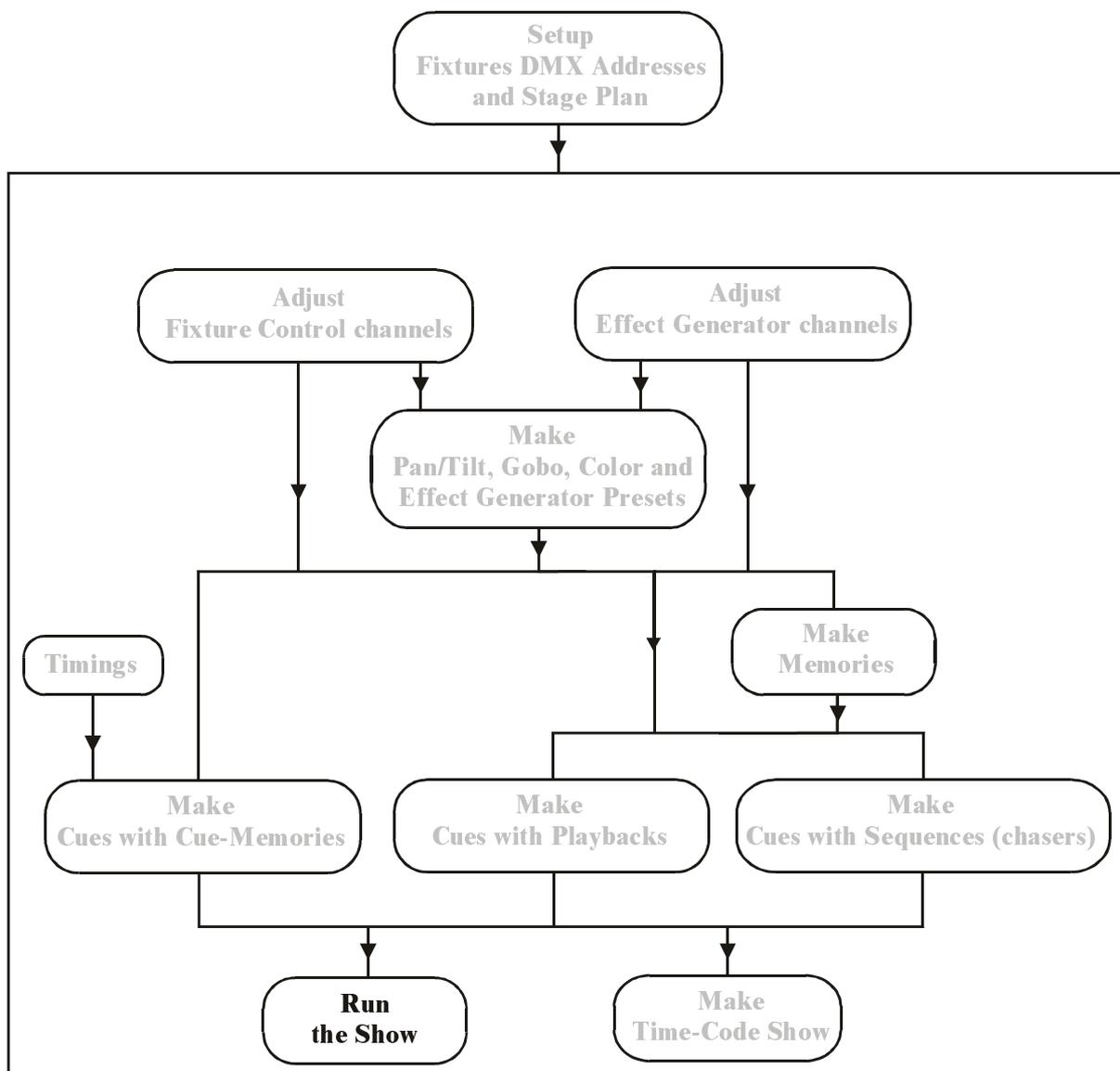
**14.1** <u>**Startup for running**</u>

When the controller is powered up, it is ready to run a show. When running a show, set the controller start-up option (*[SETUP] [2]*), 'AUTOLOAD CUE-MEMORY' to OFF.

To be able to see this demo show, download the MSD file together with this manual and configure the Case controller together with the first DMX-link of the MSD.

**14.2** <u>**Explanation of the demo show**</u>

Programming a show on the Case controller can be done in many ways. But as explained several times, one can divide programming in two big parts:

**First way of programming:**
Programming for Concerts, Theatre, TV, Time-code shows were you program the cues in sequential order, to use only the [NEXT] key to run the show.
Examples for the first way of (sequential) programming can be found on Cue-page 1.

**Second way of programming:**
Programming the cues to be able to improvise 'on the fly' like for Festivals, Disco clubs etc.. With this second way of programming it's handy to use the multiselect *(double-click [CUE])* feature. One can select multiple cues before launching them at the same time with the *[ENTER]* key.
Examples of this second way of programming can be found on Cue-pages 2 to 5.

The most flexible way is to divide the two ways of programming into different cue-pages.
Because, for the first way, it's always better to enable for that cue-page the "Autotrace" function, and if needed for theatre the "Autoprepare" function, since these functions can be enabled/disabled per cue-page.

**14.2.1** <u>**Overview of Cue-page 1**</u>

The first 3 rows are in fact the same cues, but with differences.

Cues 11-17 are copies from Cue 1-7, and Cues 21-27 are copies from Cues 11-17, with this difference that Cue 11-17 have split-timings for certain control channels and Cue 21-27 are linked together in a continuous loop.

Cues 41-45 are cues to explain the functionalities that can be done with the playbacks and sequences in combination with the cue-memories.

**Cue 1: Blackout**

The first cue is a cue with a "full" cue-memory and dimmers are closed.
It's our blackout-memory to start the show and to give each control channel, including the effect channels, a value, this to be sure that all fixtures are ready to launch, without "flipping" colors, gobos etc..., when the dimmers are opened in the next cues.
The fastest way to make this memory is to select all fixtures, double-click [default] to load the default values. Change values to a desired value, close dimmers and save it into a Cue-memory.
**It's best to make for each big change in your show (new song, new item) a new "full" cue-memory**. This way, the changes are made fast and easy for each song.

For example:
      All the cues in between the full cue-memories only need to contain the control channels that change from the previous cue.
      With the "AutoTrace-function" enabled during running the show, they will behave like they are full memories too (processed in real-time by the controller).

**Cue 2:** the dimmers of the Mac300's are opened to 100%
**Cue 3:** the dimmers of the Mac250 on + Pan/Tilt move
**Cue 4**: Mac300 + Mac250 change
**Cue 5:** Mac250 move to stage in pink
**Cue 6:** Mac600 facing down + Mac250 move
**Cue 7:** Dimmer chase Mac250

**Cue 11**: identical to Cue 1, but all the channels have a global delay-in time except for the dimmer channels.
**Cue 12**: identical to Cue 2, but the center Mac300's have a delay-in of 4.5 sec before they start fading in.
**Cue 13**: identical to Cue 3, but the Mac250 dimmer channels and Pan/Tilt have a different delay-in.
**Cue 14:** identical to Cue 4, but the fade-in time of the Mac300's CMY = 0 sec.
**Cue 15**: identical to Cue 5, but the color and gobo channels of the Mac250 have a delay-in of 5 seconds. This results, that the color and gobo changes when the Pan/Tilt fading has arrived at the end point of the fade-in.
**Cue 16**: identical to Cue 6, but the delay-in of the Mac600 CMY is changed to 2.9 sec. The Pan/Tilt delay is changed to 8 seconds.
**Cue 17:** identical to Cue 7, but the fade-in time of the dimmers from the Mac250 = 0 sec. Dimmer Mac600 delay-in 4 seconds.
**Cue 21-27:** are copies of the cue-memories 11-17, and are linked together in a continuous loop.

You'll see that by using the split-timing capability in cue-memories, you can do many things within one cue-memory, without the need of making many cues in-between to achieve the same result. Cues 11-17 look a lot "cleaner", than Cues 1-17, because certain channels are fine-tuned in timings.
By simply adding/changing split-timings to channels you can add/change things, without the need of making an extra new cue-memory.

**Tip 1: To see instantly what's in the cue-memory when the Cue is selected, enable the "auto load cue-memory" in the startup options, and put the screen output at "memory values".**

**Tip 2: If you want to see the cue-memories without the fade-times, disable the Cue-fading with [CUE]+[ON]. If the "auto load Cue-memories" is enabled, then you will see the cue-memories in the output, without the fade-times, on every cue selection.**

Tip 3: You can select new cues before the last called cue has finished with the fading. If the channels of the new selected cue differ from previous selected cues, then the timings start without interfering the other cues. This way you can, for example, start a cue, which changes the color of a backdrop in 10 minutes. If all the other cues you select do not have the channels for that backdrop, the fading will continue, while selecting other cues. You can start as much different cues as the amount of control channels you are using!

With the [NEXT] and [LAST] buttons, you can run the show too, instead of selecting the cues ([CUE] has to be active) separately.

When the **"Auto trace"** function is enabled you'll see that all the cues behave like if they were all "full" memories, because all the control channels are traced back. This is needed during a show when you need to go back a cue when it was activated to early, or during rehearsals to jump in-between cues, without the need to select all the cues starting from the last "full" memory.
On the other hand, when the "auto trace" function is disabled, the desk will only change the values that are in the selected cue, when launched.
Change in the startup-options, the option "Automatic trace" to see the different results.

When the option **"Automatic prepare"** is enabled, the desk will look automatically (in real time) if dimmers are closed from certain fixtures, and will look in the following cues starting from the active one, what the values are when the dimmer opens again.
Use this function for example in theatres. Every time a fixture goes dark, it prepares itself to open again, without the need of making a prepare memory.
In our example if the "automatic prepare" is enabled: when you change from Cue 2 to cue 3, the Mac250's are already prepared and only the dimmer opens, without the movement from up to down.

**Tip: If you still want to see the movement, program in the previous Cue the swing of dimmer-effect channels from those fixtures at value "1" instead of "0". Value "1" will not be noticeable in the output, but it will stop the preparation for those fixtures, because the desk recognizes that the dimmer is not "0" anymore at that time.**

**Cue 41-45:** are all "Full" cue-memories.

**Cue 41**: is especially made to show the functionalities that are possible in the sequences and playbacks.

The playbacks and sequences

**When the demo show is loaded, Cue 1 is automatically loaded when the program starts-up again. Since in Cue 1, also the first 10 playbacks (except playback 6) are programmed, they are loaded with a memory.**

Because the **transparency for the playbacks is default at ON**, they will remain unchanged, even if you select other cues, until they are replaced in another cue.
The playbacks in Cue1 contain following channels:
- Pl 1: Strobe / White for all fixtures with a threshold-level for each fixture type.
- Pl 2: Dimmers Mac600
- Pl 3: Dimmers Mac300
- Pl 4: Dimmers Mac 250
- Pl 5: Dimmers Pro918
- Pl 6: not programmed in Cue1
- Pl 7: Dimmer wave per group
- Pl 8: Dimmer wave per 4 fixtures
- Pl 9: Speed of dimmer chase
- Pl 10: Swing value dimmer chase

The **transparency for the sequences is OFF**, this means that, with every cue-selection, the sequences are replaced, programmed or not.
In Cue 41 the four sequences A, B, C, D are programmed. They all contain separate channels, to not interfere each other:
- Seq A: dimmers Mac250.
- Seq B: Orange/Green chase Mac300.
- Seq C: Yellow/Red chase Mac600.
- Seq D: Pan & Tilt sequence for the PRO918.

Now we are going to start using these sequences and playbacks (make sure Cue 41 is active).

o Playback 1, open it slowly.
    You'll see that at first the Pro918's start strobing, the Mac600's, Mac300's and finally the Mac250's. When the fading is fully open, all the colors for all the fixtures are white too.
    With the use of the threshold, not all the fixtures start strobing at the same time. This saves the need to program multiple playbacks to achieve the same result, and you have this effect under one playback!

o Playback 2-5 holds dimmer channels, grouped per fixture type.
    After playing with the first playbacks 1-5, close them again.
o Open now playback 10.
    The effect generator starts running a wave-effect on all the dimmers from left to right.
o With playback 9 you can adjust the speed of the effect.
o Playback 8 and 7 changes the wave effect per fixture group or per 4 fixtures.

When you use the playbacks 1-5 in combination with playback 7-10, you'll see that for the dimmers, the HTP rules are working.

o Close all faders, except playback 5 to see the Pro918's.
o Start Sequence D. The Pan & Tilt of the Pro918's start moving.
o Open playback 2 to see the Mac600's
o Start Sequence C. The Yellow/Red color chase starts on the Mac600's.
o Open playback 3, to see the Mac300's
o Start Sequence B. The Orange/Green color chase starts on the Mac300's
o Start Sequence A. The dimmer chase starts running on the Mac250's.
 When you open playback 4, you'll see that the dimmers of the Mac 250's open, in combination with the dimmer chase.
o Start combining playbacks and sequences to see the effects.

**Cue 42:** is a full Cue-memory like Cue 41, but the sequences will disappear, only the playbacks stay loaded.
**Cue 43:** is a full memory with effect-generator channels.
**Cue 44, 45:** are two full cue-memories, which show Pan and Tilt effects made with the effects-generator.

## 14.2.2 Overview of Cue-pages 2 to 5

**Cue-pages 2-5 are programmed to improvise "LIVE":**

This is the way a lot of users are programming the Martin Case controller, to be able to select "on the fly" functions of fixtures. Per fixture type, different cues are programmed.
Program the same functionalities per cue-page; this is easy to remember during running the show.
In the example, Cue-page 2 contains cues for the Mac600, Cue-page 3 cues for the Pro918, Cue-page 4 cues for the Mac300's and Cue-page 5 cues for the Mac250's.

Select the cues while the Cue-fading is on and you'll see that you can achieve a lot of effects "on the fly" with this way of programming.

**Tip:** If you want to start multiple cues from multiple cue-pages at the same time:
- *Double-click the [CUE] button. The Cue button starts blinking.*
- *Select several cues*
- *With the [RET] button all these selected cues are launched together.*

## 15   CHAPTER 15: Time-code and midi

```
                    ┌─────────────────────────┐
                    │         Setup           │
                    │ Fixtures DMX Addresses   │
                    │   and Stage Plan         │
                    └─────────────────────────┘

   ┌──────────────────────┐      ┌──────────────────────┐
   │       Adjust         │      │       Adjust         │
   │ Fixture Control      │      │ Effect Generator     │
   │    channels          │      │    channels          │
   └──────────────────────┘      └──────────────────────┘

                 ┌──────────────────────────┐
                 │          Make            │
                 │ Pan/Tilt, Gobo, Color    │
                 │ and Effect Generator     │
                 │      Presets             │
                 └──────────────────────────┘

   ┌──────────┐                         ┌──────────┐
   │ Timings  │                         │   Make   │
   │          │                         │ Memories │
   └──────────┘                         └──────────┘

 ┌──────────────┐  ┌──────────────┐  ┌────────────────────────┐
 │    Make      │  │    Make      │  │        Make            │
 │ Cues with    │  │ Cues with    │  │ Cues with Sequences    │
 │ Cue-Memories │  │ Playbacks    │  │   (chasers)            │
 └──────────────┘  └──────────────┘  └────────────────────────┘

        ┌──────────┐              ┌──────────────────┐
        │   Run    │              │      Make        │
        │ the Show │              │ Time-Code Show   │
        └──────────┘              └──────────────────┘
```

---
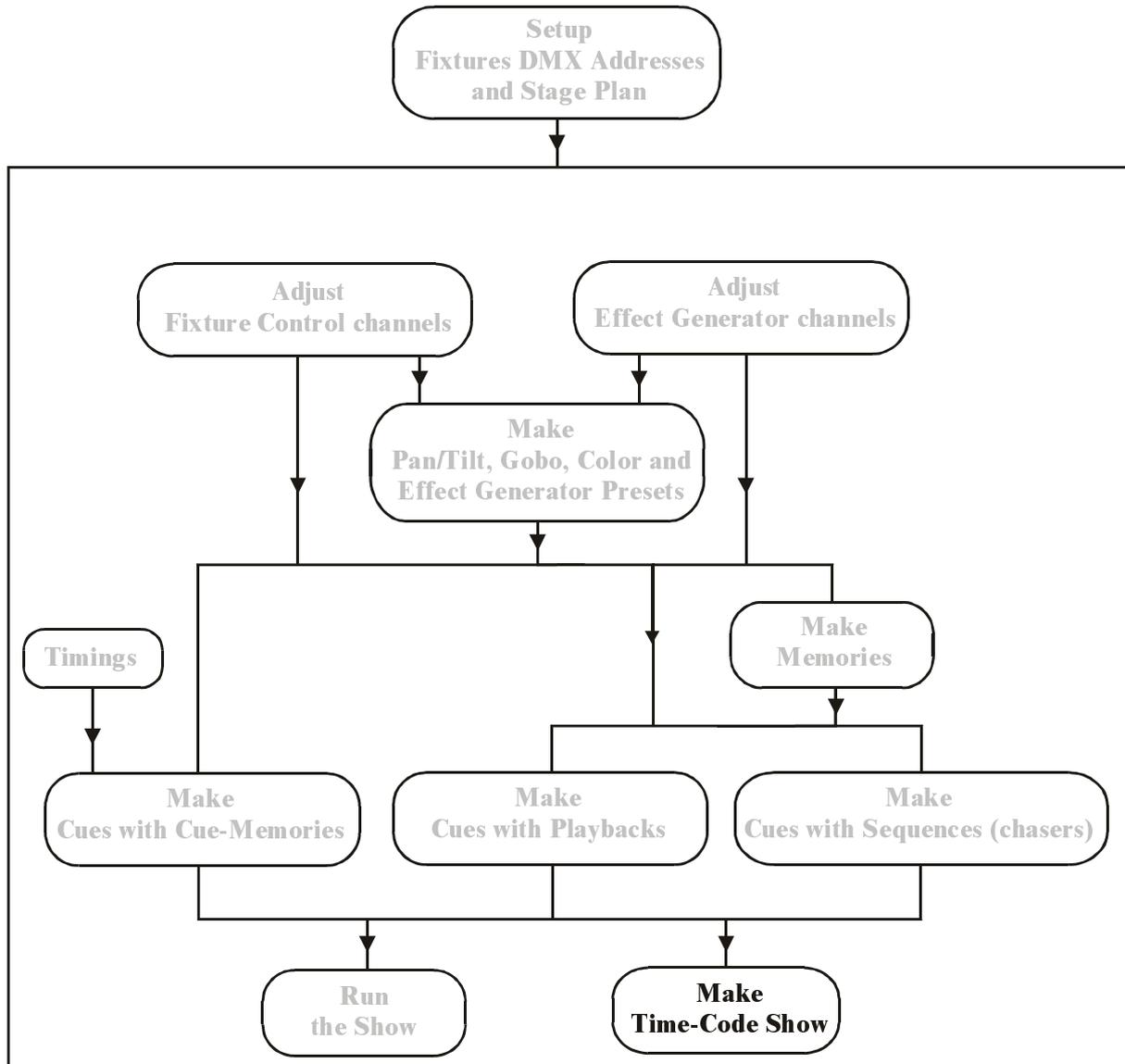
## This chapter is only for experienced users.

---

When cues are made with cue-memories, sequences and playbacks, we can record a show on time-code or we can play a cue-list manually.

It is also possible to trigger cues, playbacks and sequences using MIDI-codes.

## 15.1  Time-code

### 15.1.1  Time-code modes

**[MODE** (CUELIST) **]**
Changes the time-code mode. A cue-list can be played and recorded in 6 different modes:
- **PC-TIMER**: Uses the internal clock of the controller.
- **MIDI:** Midi Time Code.
- **SMPTE:** When an external SMPTE signal is connected to the controller on it's SMPTE input (option), and then a cue-list can be synchronized with this signal.
- **INTERNAL:** In this mode, the controller generates SMPTE, and can be used as a SMPTE master to control other devices. The cue-list is played and recorded on the SMPTE time.
- **CD-ROM:** When the controller is equipped with a CD-ROM player, the cue-list can be recorded on the music time-code of the CD (75 frames/sec). In the mean while, the CD-time code is converted to SMPTE (24 frames/sec), and the controller can be used to synchronize with other devices. To hear the CD sound, connect an amplifier to the controllers analogue or digital outputs.
- **MANUAL**: When cues were not programmed in succession, they can be recorded in a cue-list. This cue-list can be played using the **[LAST] [NEXT]** keys.

In all modes (except CD-ROM and MANUAL), the frame-rate can be set:
- **24 frames/sec**: film industry
- **25 frames/sec:** European broadcast
- **30 frames/sec:** Old American Standard
- **30-drop frames/sec:** New American Standard for color TV. Every minute, 2 frames are dropped.

The CD-ROM standard is **75 frames/sec**.

If the controller has been put in SMPTE mode, the incoming SMPTE signals frame-rate is detected automatically.

When the user changes between the different modes, the timings recorded in the show will be recalculated to the selected format.

### 15.1.2 Recording a cue-list

#### PC-Timer, SMPTE, Internal

| *[REC]  [enter time on]  [REC]* |

What can be recorded in a cue-list:
- All CUE selections
- All playback flash-keys
- All sequence functions like Start/Stop, sequence mode, sync, and triggering auto/man.

The first thing that is done automatically, when a cue-list is recorded, is recording:
- The active cue
- The state of all sequence functions

Starting recording:
Select the *[REC]* key and enter the start-time on the keypad. Select the *[REC]* key again to start recording from the selected time.



#### CD-ROM

When CD-ROM mode was selected, next screen will appear:



The indications:
- Total CD time: CD: xx:xx:xx:xx
- Total number of tracks: #TR. :x
- The current track number: TR. : x

| *[+] or [-]* (momentary) |

Selects the next or previous track.

| *[+] or [-]* (hold long) |

To wind or rewind the CD.

| *[REC] [REC]* |

To start recording from the selected track.

In CD-mode, first the track has to be selected, then the *[REC]  [REC]*.

## MANUAL

To add or insert actions in manual mode, the cue-list window must be opened first:

| *[CUE LIST]* |
|---|

Opens the cue-list.



| *[ [INS] or [ADD] ]  [select some actions]  [ESC]* |
|---|

To add or insert actions like cue-selections, sequences or playbacks, the *[ADD] or [INS]* key has to be selected first. Once one of both keys are selected, you can add or insert as many actions as you need. When done, press *[ESC]*.

**Remark (in all modes): The same cue-list can be recorded several times. Each time you start recording again, the actions will be inserted between the already existing actions.** This way, a show can be recorded in steps. First, for example, the beats, then the more precise things and to end, the finishing tough.

**IMPORTANT REMARK (in all modes): As long as the recording hasn't been stopped once (key *[STOP]*), the recorded cue-list will not be saved.  When a power failure occurs during recording, the new added actions will not be saved. When a <u>cue-list is saved with the *[SAVE]* key, and the time-code window is open, only the cue-list will be stored</u>. To save the entire show, including the setup, presets, cue-memories... and the cue-list, leave first the time-code mode.**

## 15.1.3  Playing a cue-list

**PC-Timer, SMPTE, Internal**

| *[PLAY]  [enter time on keypad]  [PLAY]* |
|---|

Like when recording, the start time has to be entered.

| *[CUE LIST]* |
|---|

When the cue-list window is open during playing, the actions can be traced.

## CD-ROM

Like when recording, first the track has to be selected with the *[+] or [-]* keys. If *[PLAY]* *[PLAY]* is selected without entering a time, the cue-list will be played, starting from the selected track. Also, in this case, the *[CUE LIST]* window can be opened.

During playing or recording in CD-ROM mode, there is always the possibility to wind or rewind.

## MANUAL

**[PLAY]  [PLAY]**
Will start the cue-list from the beginning.

**[LAST]  or  [NEXT]**
To call the previous or next action.

The previous or next action will be indicated in the time-code window.



REMARK: It is possible to run a time-code show every day at the same time. The time-code should be played in PC-timer mode. As start time, you can enter the actual time on which the show has to start every day. (set the start-options to start instantly the time-code when the controller is powered-up).

In the configuration (MENU – CONFIG – CONFIGURATION LIGHTCONSOLE), the item 'Timecode set dos-time' should be set to DOSTIME.

**15.1.4  Time-code cue-tracking**

When a show is recorded or played, there are 3 possibilities:

- Time-code cue-tracking **disabled**: This option is used when stopping and restarting at the same point the recording or playing. The show will continue normally.
- Time-code cue-tracking **normal**: Suppose, between 2 cues, there are a number of playback actions recorded. The show is stopped, and rewinded to the time between those 2 cues. When **cue-tracking was disabled**, the **contents of the playbacks will depend on the last selected cue** (that holds playback information) **before stopping**. On the other hand, when **cue-tracking is set at normal**, the controller will **call first the cue that was recorded before the action on restart**.
- Time-code cue-tracking **full**: In this case, **everything** is played **very fast, in blind mode** to the point where was restarted.
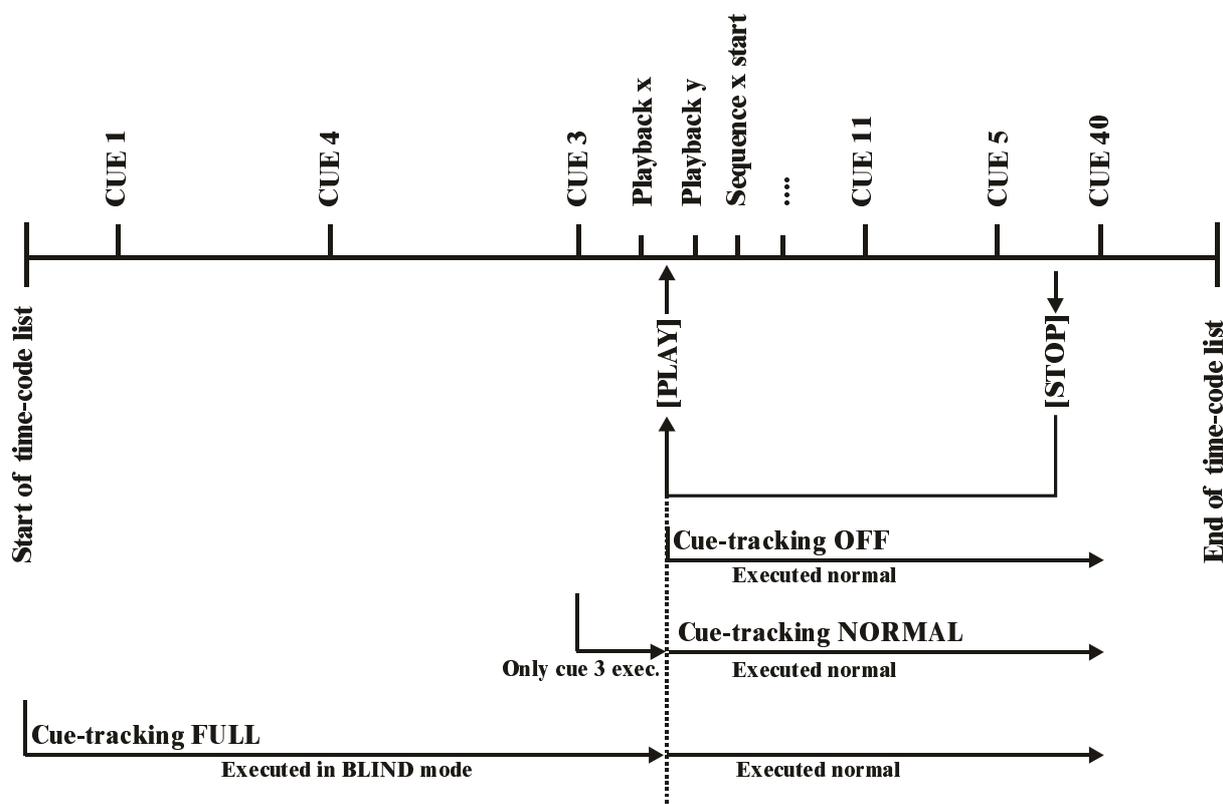


**Time-code show is stopped between cue 5 and cue 40 and started again between cue 3 and cue 11**

The time-code cue-tracking is set in the **SETUP start-options** of the controller (see chapter SETUP).

## 15.1.5  Changing a cue-list

The recorded cue-list can always be modified:
- Actions can be deleted
- Times can be adjusted
- Actions can be shifted or copied
- Actions can be inserted manually

### Opening the cue-list

### [CUE LIST]
Will open the cue-list window:

| TIMECODE-TABLE | |
|---|---|
| TIME (hh/mm/ss/ff) | EVENTS |
| 00001 00/00/00/00 | PAGE 01 - CUE 01 [BLACKOUT] |
| 00002 00/00/00/00 | SEQ A - STOP |
| 00003 00/00/00/00 | SEQ B - STOP |
| 00004 00/00/00/00 | SEQ C - STOP |
| 00005 00/00/00/00 | SEQ D - STOP |
| 00006 00/00/06/62 | PAGE 01 - CUE 01.0 [BLACKOUT] |
| 00007 00/00/08/13 | PAGE 01 - CUE 41.0 [SEQ EXAMPLE 1] |
| 00008 00/00/10/42 | PLAYBACK 02 - 00/00/00/10 |
| 00009 00/00/13/66 | PLAYBACK 03 - 00/00/00/12 |
| 00010 00/00/18/27 | PLAYBACK 04 - 00/00/00/13 |
| 00011 00/00/22/73 | PLAYBACK 05 - 00/00/00/09 |
| 00012 00/00/28/16 | PLAYBACK 05 - 00/00/00/11 |
| 00013 00/00/33/15 | END |

### Running through the cue-list

There is a difference when the cursor is **put in the left or in the right part of the cue-list window**:
- **Left: the actions are not executed when running through the list**
- **Right: the actions are executed when running through the list**

### [4←] or [6→]
To position the cursor in the left or right part.

### [2↓] or [8↑]
To run manually through the cue-list.

### Deleting, inserting and adding actions

### [CLR]
Deletes the high lighted item from the list

### [INS] [select action]
Inserts an action, before the highlighted item. This action will receive the same time as the high lighted action. The time can be changed afterwards.

**[ADD]  [select action]**

Adds an action to **the** end of the list. This action will receive the same time as the last action but one (before END). The time can be changed afterwards.

### Selecting a block

**[.] + [2↓]  or  [.] + [8↑]**

Selects a block of actions:



The selected block will be marked red.

To deselect (not delete) the block, press the **[DEL]** key.

### Adjusting the time of a block or of an item

Go with the **[2↓] or [8↑]** keys to the item or **to the first item of the selected block** *and press* **[RET]**. Change the time with the **[4←] , [6→] and the [2↓], [8↑]** keys.



### Copying a block or an item

**[Select a block or item]  [COPY ITEM]  [Enter time on keypad]  [RET]**

The selected block or item will be copied to the entered time.

### Creating a loop

It can be handy on exhibitions to create endless shows.

**[ADD]  [TO]  [ESC]**

Will add an item '**goto time 00.00.00.00**' at the end of the list.

### Changing the duration of an action

When playback flash-keys were used in the show, or when the action 'goto time 00.00.00.00' was added, the duration of the flash or the time of the 'goto time' can be changed:

**[position the cursor in the right part]  [RET]  [Change time on keypad]**

## 15.2 MIDI

MIDI (Musical Instrument Digital Interface) is used to link a musical instrument or a midi show-controller with the MartinCase. The link is made by connecting a 5 pin DIN cable to the MIDI input (A or B) of the MartinCase controller.

Through MIDI, cues can be called and sequences and playback flash-keys can be triggered.

| [Select a cue]   [EDIT] + [MIDI] |
|---|

Will open the MIDI window of the selected CUE:



Through MIDI, it is possible to:
- Trigger CUES
- Trigger sequences in manual mode
- Trigger playbacks (1 – 42).

*Select with the [2↓] or [8↑] keys a function. Send with the musical instrument or with the MIDI show-controller a MIDI-code to the MartinCase controller (for example: press a key on a synthesizer to send a note-on command). The same thing is repeated for the other functions (sequences, playbacks...). Save by selecting the **[MIDI]** key again. This can be repeated for other cues.*

In short:

| **[Select a CUE]    [EDIT] + [MIDI]  [Select function with [2↓] or [8↑]]   [Send MIDI code] ([Select another function] [Send MIDI code])  [MIDI]** |
|---|

Attention: In the above example of CUE 41 from the show 'MANUAL72', the sequences were stored in auto-trigger mode. To use them with MIDI, the sequences must be put in manual trigger mode (*[AUTO]  [STORE])* (see chapter sequences and playbacks).
In this example we can also trigger the playbacks. BUT, since the controller is in transparent mode for playbacks, the playbacks that are active when selecting CUE 41, come from CUE 1. If we want to trigger the playbacks also, MIDI codes have to be added in CUE 1.

**Remark 1:** If you don't have a playback wing, but you want to use playbacks 11 to 42, there is a possibility to use them through MIDI. Those playbacks are programmed through next keyboard actions:

*[EDIT]  +  [Playback number on keypad]   [RET]*

This will open the 'playback edit window' for the selected playback. For the programming of the playback itself, we refer to chapter sequences and playbacks. It is only possible to trigger playbacks 11 to 42 with MIDI-codes, not fade in with a fader.

**Remark 2:** The recorded MIDI codes will be sent to the MIDI outputs, when the show is performed.