

Pro 512

MOVING LIGHT CONTROLLER

USER MANUAL

(Version Number: 2.8)

LIGHTING CONTROL EQUIPMENT CO.,LTD

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1 Summary

1.1 Function

Pro512 Intelligent Fixtures Controller can connect up to 62 intelligent Fixtures with a maximum of 36 Channels each. The new technology of the core microcomputer has strengthened the functions. They are more humanized.

- DMX512/1990 standard, 512 DMX channels, output with optical isolated.
- Up to 62 intelligent Fixtures may be connected with a maximum of 36 channels each.
- Users can allocate DMX channel to each intelligent Fixture dynamically.
- The X/Y channel of different intelligent Fixtures can be controlled by modulation Wheel.
- 16-bit X/Y control for absolutely precise movement.
- Up to 80 SHAPE generators. SHAPE track control is provided to control such effects as circles, lines and shapes like 8, etc.
- 62 Chases, up to 100 Steps each. Trigger mode selectable: Music synchronously, Auto, Manual speed.
- 6 Chases, 62 Scenes operated at the same time. At most 62 intelligent Fixtures can be selected simultaneously.
- 31 MACRO, running combination of different manual, scene and chase can be recorded to the MACRO.
- USB port is provided. each USB flash-disk can record the whole data of controller.
- LCD display with backlight.
- Power supply: AC 90-250V / 50-60Hz

1.2 Specification parameter

DMX512/1990 OUTPUT SIGNAL	Yes
CONTROLLABLE DMX512 CHANNEL	512
MAX FIXTURES	62
MAX FIXTURE CHANNELS	36
DIRECT CALL OF SCENES	62
CHASE PROGRAM	62
TOTAL CHASE STEP	1450
CHASE SPEED RANGE	0.03s~180s
CHASE TRIGGER MODE	Auto, Music, Swing
CHASE DIRECTION CONTROL	Forward / Inversion
SHAPE CONTROL	Yes, up to 80 SHAPE generators
MACRO CONTROL	Yes, 31macro
LCD MONITOR	Yes
USB PORT	Yes
MUSIC SIGNAL INPUT	Unbalanced line level input (1/4" Monophonic audio input) / MIC input
DMX512 OUTPUT PORT	Optical isolated output port
ELECTRIC POWER SOURCE	Switch mode power, voltage range: 90~250VAC, frequency: 50/60, short-circuit protection & overload protection
POWER	15W
SIZE	483mm x 400mm x 105mm

2 Installation

Pro512 Intelligent Fixtures Controllers' packing chest contents items as following:

- One **Pro512** Intelligent Fixtures Controller:
- One feed cable; one user's guide.

Accessories available for choice:

- USB flash-disk
- 12V gooseneck work light

The controller is of international 19" construction standard of installation. It can be in board installed or installed on the 19" stander or machine cabinet.

2.1 Safety caution

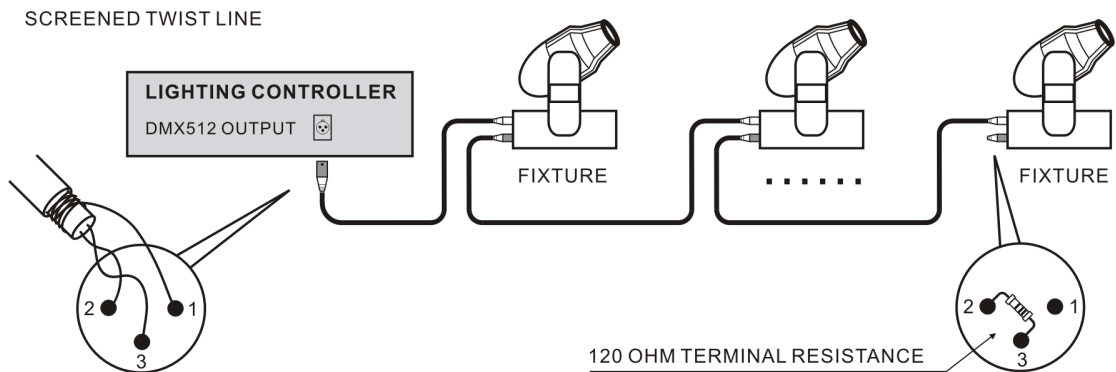
- The controller must be connected with the protective groundwire to ensure safety.
- The intelligent Fixtures controller is sophisticated electronics. Please mind the dust and moist.

2.2 Connect the power

Please check the supply power, ensure it in the suitable voltage range of the controller. The plug must connect with the protective groundwire to ensure the safety.

2.3 Connect intelligent Fixtures with digital Dimmer

- There are two DMX512 XLR-D3F output sockets on the rear panel of the Controller, Pin 1 for signal ground, Pin 2 for negative, and Pin 3 for positive.
- DMX512 cable is screened twist wire. Each end of the cable should be joined to XLR plug by user. Pin 1 of XLR plug is connected to the screen net of the cable. Two wires of twist (distinguished by different colors) are connected to Pin 2 and Pin 3 of the plug respectively. Please do not confuse.



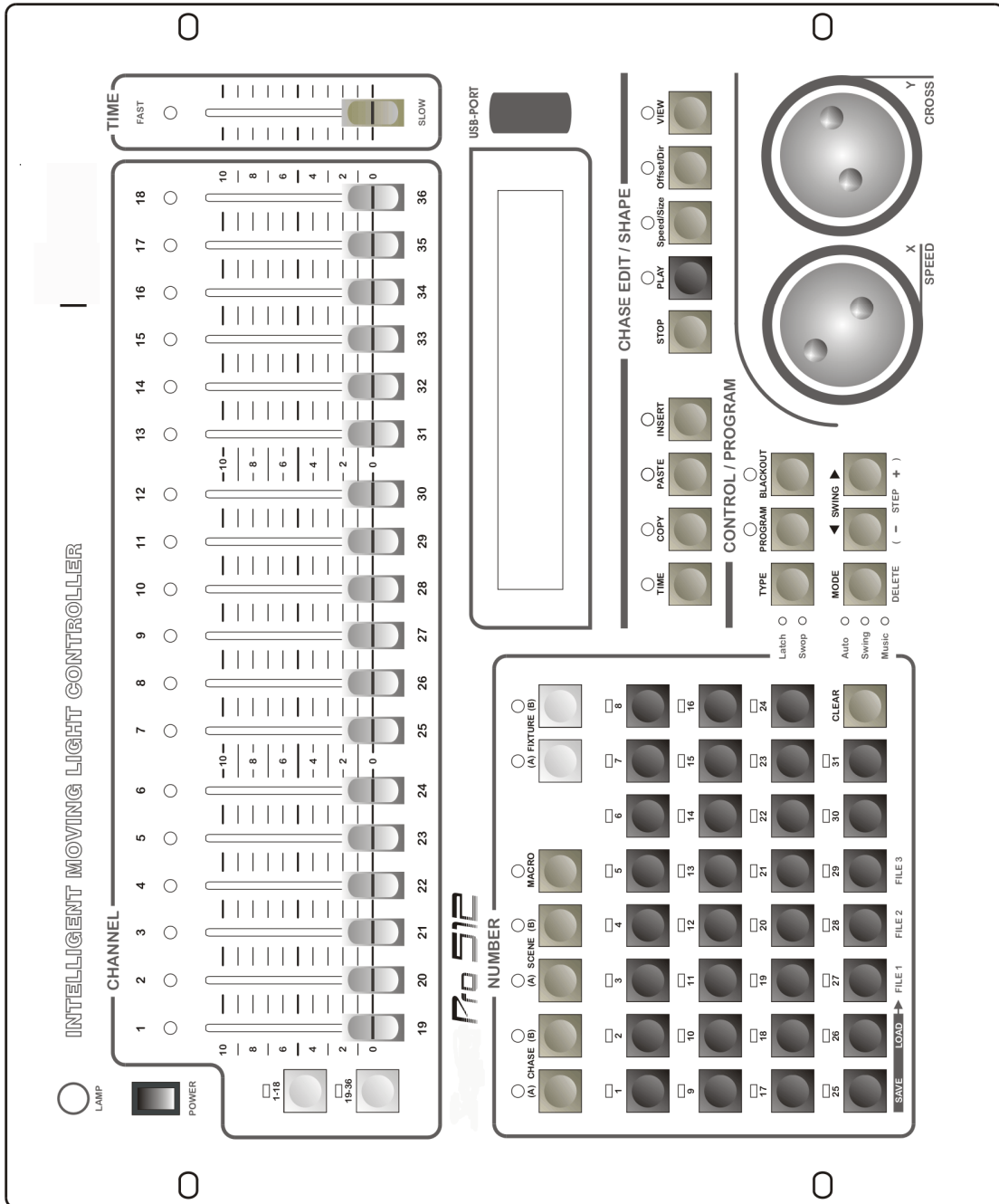
Pin number	Cable conductor
1	Shield
2	Negative pole
3	Positive pole

2.4 Audio signal source

- The audio signal can select from sound mixing console and line level output of other audio devices, or MIC selection. The controller can automatically pick the part of low-frequency swing as the music trigger signal of Chase program.
- One unbalanced monophonic audio input locates in the back board, the range of line level input is: -10dB ~ +10db. When audio device is plug in, the audio source is line level input. When there nothing plug in, the audio source is MIC selection.

3 Operation Guide

3.1 Panel plot

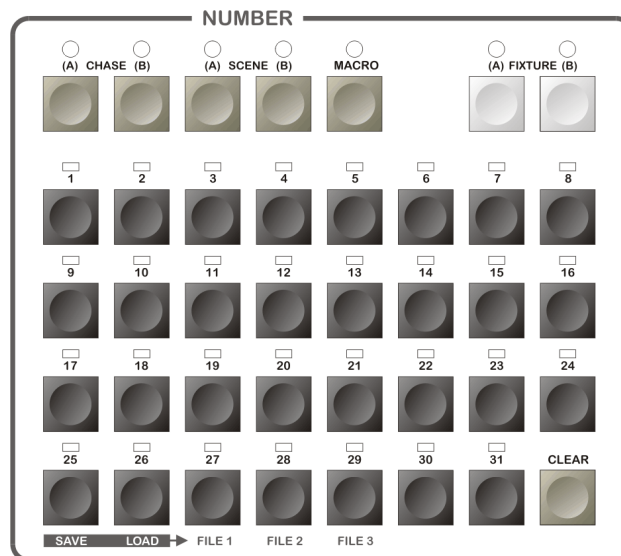


3.2 Useful glossary

- **Scene:** the concurrence of Channel values of intelligent Fixtures' X/Y position, Shape track, brightness, gobo, color, etc.
- **Chase program:** every Chase program is composed of some Chase Steps, and every Step is a Scene indeed.

3.3 Keyboard

FUNCTION KEYS:



CHASE Function key for Chase (Group A, controls Chase program A1~A31)
(Group B, controls Chase program B1~B31)

1. Used for choosing Chases:
When button down, The controller is in Chase running state. with number keys 1~31 to different Chases.
2. Used for checking the parameter of Chase
Press a number key to the very Chase when pressing **CHASE** key, the parameters of the very Chase can be viewed and transferred into without affecting current state.

SCENE Function key for Scenes (Group A, control Scene A1~A31)
(Group B, control Scene B1~B31)

When button down, the controller enters the state of controlling Scenes, meanwhile number keys 1~31 are for choosing Scenes.

(Preset Scenes are divided into Group A and Group B with 31 preset Scenes each)

FIXTURE Function key for Manual control (Group A, control Fixture A1~A31)
(Group B, control Fixture B1~B31)

When buttons down, The controller enters the state of Manual, with number keys 1~31 for choosing intelligent Fixtures.

Use key (A), (B) with number keys can select 62 intelligent Fixtures. Group A is for the former 31 intelligent Fixtures, Group B is for the later 31.

Number keys (1~31)

There are 31 number keys on the controller. Under different states of different function keys, the keys give different effects. For example: when the LED of a number key is on, it means it's outputting a very Scene or a very Chase program.

CLEAR Clear key

Clear the whole choice of current number key.

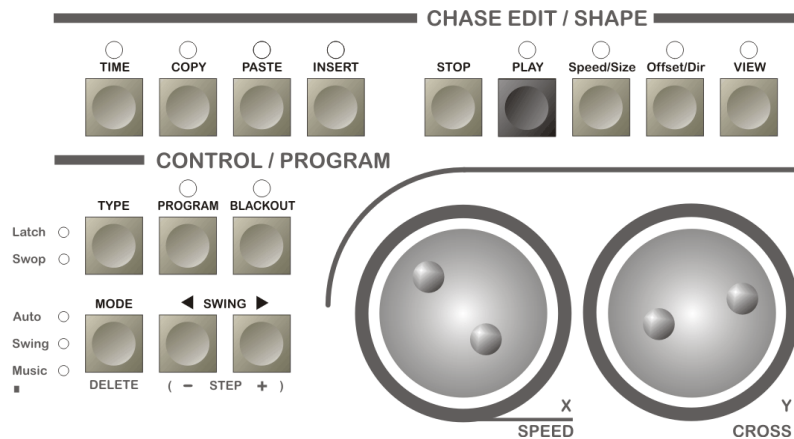
LOAD Key for loading data

Load data from USB-disk to the controller.

SAVE Key for saving data

Save data of the controller into USB-disk.

CONTROL KEYS:



TYPE Key for choosing the type of number keys

Independently set the type of number keys (Latch, Swop of saving.) under some state.

- **Latch:** More than one number key can be pressed under this state.
- **Swop:** Press a number key, the content of the key is latch and the content of other keys is deleted.

Press **TYPE** continuously, the type of number keys will change repeatedly.

The types of number keys under different state:

STATE	LATCH	SWOP
CHASE (A,B)	✓	✓
SCENE (A,B)	✓	✓
MACRO	x	✓
FIXTURE (A,B)	✓	x

MODE Key for choosing trigger mode of Chase

There are 3 mode totally:

- **auto** auto mode: The Chase running speed is controlled by time of Chase Steps and **TIME%** (Time proportion Fader).
- **swing** swing mode: The Chase running speed is control by Key **SWING**
- **music** music mode: Chases are music swing triggered.

Press **MODE** continuously can change the Chase trigger mode.

◀ **SWING** ▶ Key for choosing direction of Chases and swing

When running a Chase, the key is used for change direction of the Chase.

When the Chase mode is under **swing** mode, hit the key with certain rhythm, then the Chase will run with the very rhythm.

BLACKOUT Blackout key(or cut light key)

To turn all lights down

EDIT KEYS:

PROGRAM Program edit key

When in running state, press the button to enter the edit state. The LED indicator will flicker.

COPY, PASTE, INSERT, DELETE Key for copy, paste, insert and delete.

Uses for copy, paste, insert and delete Steps in Chases program edit.

- STEP + Chase Step number minus / plus key

When a Chase program is edited, is used to change the Step number of the current Chase program.

TIME Edit key for the Chase Step time

When in Chase edit state, pressing the button, with the use of the X/Y wheel, the Speed and Cross% of current Chase Step can be adjusted.

KEYS FOR SHAPE TRACKS:

STOP Stop key for Shape track

Used for stop all the Shape generators, restore intelligent Fixtures to X/Y origin point.

PLAY Run and edit key of Shape tracks

Used for running the Shape track generator, and entering the edit state of Shapes.

Speed / Size Speed of Shape / Size of Shape key

Offset / Dir Offset of Shape phase/ Direction edit key

VIEW Calling key of Shapes

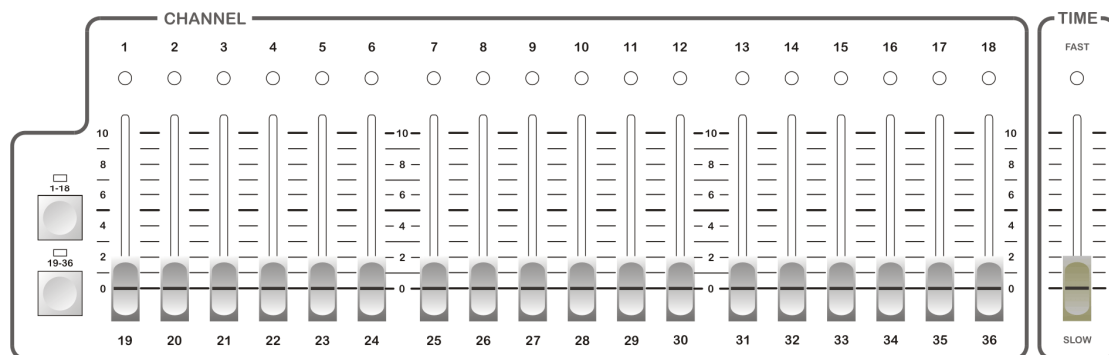
Used for viewing the calls of Shapes.

X/Y WHEEL:

- X wheel used for setting the PAN of intelligent Fixtures, and Y wheel for TILT under the Manual mode.
- X/Y wheels used for transferring and editing a very item under edit mode.
- X/Y wheels is of dead-band regulated mode, that is, the faster it roles, the adduction will increase by degrees.

LAMP Connector of gooseneck work light
12V gooseneck work light can connect in.

3.4 Fader



CH1~CH16 Group of Faders

- When the keys **1~18** beside the group is workable, the group of Faders can be used to control the value of Channel 1~18 of intelligent Fixtures.
- When the keys **19~36** beside the group is workable, the group of Faders can be used to control the value of Channel 19~36 of intelligent Fixtures.

TIME% Fader for changing time proportion of Chase Steps

The Fader is used for controlling time proportion of Chase Steps under **auto** trigger mode of Chase programs.

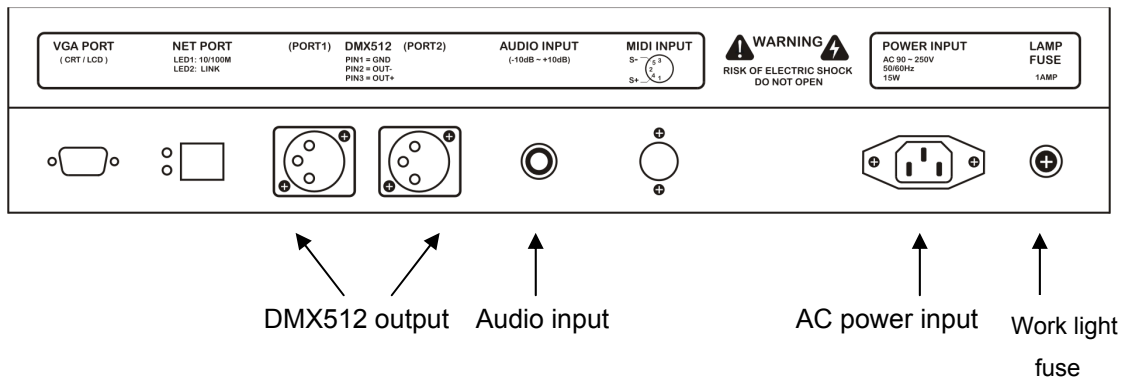
Pull the Fader towards FAST, run of Chase programs will speed up; pull it towards SLOW, run of Chase programs will slow down.

The value of time of Step (Time) x TIME% = actual running time of current Step

Adjusting range is 300% ~ 30%. When it is at 100%, Chase programs will run according to the set time and cross. When it needs to speed up, adjust TIME% (time proportion) to less than 100%, the fastest speed available is 3 times of the standard speed (30%); when it needs to slow down, adjust TIME% to more than 100%, the slowest speed available is 1/3 of the standard speed (300%) or stop (stop%).

3.5 Introduction to back board port

- The controller adopts two DMX512 output modules with optical isolated and the same output.
- The audio input socket is 1/4" monophonic socket, with input line level 0dB. When audio device is plug in, the audio source is line level input. When there nothing plug in, the audio source is MIC selection.
- When connected to the AC power, please make sure the controller is connected to the protective groundwire and ensure the voltage is suitable for safety concerned.



4 Settings of intelligent Fixtures

4.1 Know more about your intelligent Fixtures

When programming, the intelligent Fixtures user's guide should be at hand, for the number of channels and the control parameters varies for different intelligent Fixtures.

4.2 X/Y (pan / tilt) Channel Analysis

X channel controls left/right (PAN) movement of the intelligent Fixtures, while Y channel controls up/down (TILT) movement.

To make the X/Y wheels fit for any intelligent Fixtures which adopt DMX512 protocol, receiving address code of every intelligent Fixture must be set in advance; then the X/Y channel of each intelligent Fixture should input into the controller according to the serial number. **If X/Y gradual movement (CROSS) and Shape track effects are wanted, the X/Y of the intelligent Fixtures must be set in advance.**

The X of intelligent Fixtures with 16-bit resolution is controlled by two data channels, and the Y the same; that is, they are controlled by the four channels as follows: X coarse adjust channel (Xh: high 8bit), X fine adjust channel (Xl: low 8bit), Y coarse adjust channel (Yh: high 8bit), and Y fine adjust channel (Yl: low 8bit). The 8-bit intelligent Fixtures only have two: X coarse adjust channel (Xh: high 8bit), Y coarse adjust channel (Yh: high 8bit).

4.3 Allocation of DMX512 address & Setting of X/Y

4.3.1 Fixed allocate addresses of intelligent Fixture

- The initialization setup of the controllers is set for 32 intelligent Fixtures with 16 channels for each Fixture. (The method of data initialization is in chapter 12.)

Chart 1: initialization Setting of the intelligent Fixtures address

intelligent Fixtures NO.	DMX512 address	intelligent Fixtures NO.	DMX512 address
A1	1	A17	257
A2	17	A18	273
A3	33	A19	289
A4	49	A20	305
A5	65	A21	321
A6	81	A22	337
A7	97	A23	353
A8	113	A24	369
A9	129	A25	385
A10	145	A26	401
A11	161	A27	417
A12	177	A28	433
A13	193	A29	449
A14	209	A30	465
A15	225	A31	481
A16	241	B1	497

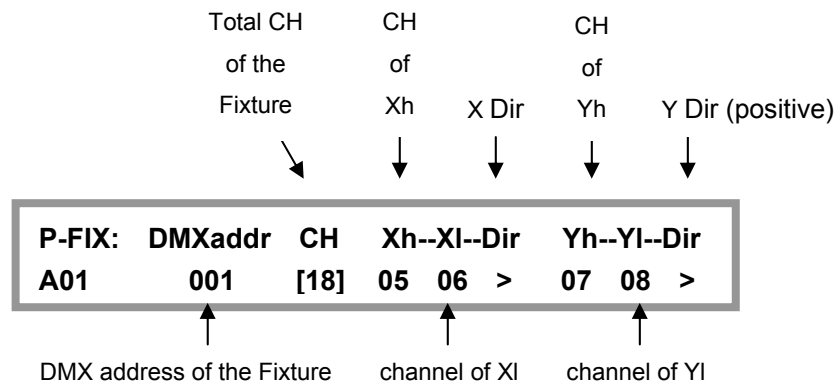
4.3.2 Dynamically allocate addresses of intelligent Fixtures:

Users can allocate DMX channel to each intelligent Fixture dynamically. A maximum of 62 Fixtures with up to 36 channels each can be chosen.

4.3.3 Methods & steps of X/Y settings:

1. Press **PROGRAM** to enter edit state; the indicator on.
2. Double click **FIXTURE (A)** or **(B)** key to enter setting state of intelligent Fixtures(Group A or B).
3. Use **number keys 1~31** to select the Fixture wanted.
4. Use **X wheel** to select items edited.
5. Use **Y wheel** to set the very value.
6. Repeat step 3~5 to set other intelligent Fixtures.
7. Press **PROGRAM** to escape from edit state.

Examples: A01 Fixture with 18 Channels; X axis on Channel 5, X fine on Channel 6, direction= positive; Y axis on Channel 7, Y fine on Channel 8, direction= positive;



Tips:

- Notice: Changes of total number of Channels will affect the first DMX address of intelligent Fixtures. Please check whether the DMX addresses of each intelligent Fixture is right with the controllers after changing Channel's number.
- If the total number of DMX Channel is over 512, the controller will automatically shield the intelligent Fixtures with over Channels.
- Use **COPY** and **PASTE** key can quick setting same intelligent Fixtures.

5 Manual mode of intelligent Fixtures

Set Channel value of brightness, X/Y, Shape... of a pointed intelligent Fixture under the Manual mode.

The items controlled by each Channels are different to different intelligent Fixtures. Knowledge of details about the items and Channels is necessary for skillful management.

Manual mode is adopted as the most advanced mode, the chosen intelligent Fixture will automatically escape from the current Scene and Chase when transferred into Manual mode. Manual run is also the basic run. It can store the Scenes. It is also the basic run for Chase program edit.

FIXTURE (A)/(B) used with **number keys (1~31)** can enter the function of choosing Fixtures. When the indicators of number keys are on, the very intelligent Fixture is under choice mode. The chosen Fixture can be controlled by Channel Fader (CHANNEL) and **X/Y wheels**.

5.1 CHANNEL Faders & Wheel

The channel value of intelligent Fixtures is set by channel Faders **CH1~18**.

When the keys **1~18** beside the group is workable, the group of Faders can be used to control the value of Channel 1~18 of intelligent Fixtures.

When the keys **19~36** beside the group is workable, the group of Faders can be used to control the value of Channel 19~36 of intelligent Fixtures.

The X channel of intelligent Fixtures is set by **X wheel**, while **Y wheel** for Y Channel, the value range of the wheels is 0~999, representing the entire movement range of the X axis and Y axis.

When the X/Y Channel is under the control of wheels, the very Channels Faders are automatically locked. Only using wheels can change the X/Y position of the intelligent Fixtures.

5.2 Manual run of intelligent Fixtures

For different kinds of intelligent Fixtures, only one kind can be manually set at one time. It's a common run.

1. Press **FIXTURE (A)** or **(B)** to enter the manual state.
2. Press **number key (1~ 31)** to select one or more intelligent Fixtures.
 - Only the same type of intelligent Fixtures can be selected at the same time. The controller will automatically transfer into the current type of intelligent Fixtures, the former ones will be under the remaining state.
 - The Channels value of intelligent Fixtures under the remaining state (whose indicators flicker slowly) won't be changed. The remaining state can be transferred into choosing state by pressing the very key to make the indicator on)

3. Use **CH1~CH18** Faders to set the Channels value, use wheels to adjust the X/Y position. (Shape generator can be called at the same time)
4. Press the very number key for the chosen intelligent Fixtures again, the indicators will be flickering, that means they are under the remaining state.
5. Repeat steps 2~4, set other intelligent Fixtures.

5.3 Cancel the Manual run of intelligent Fixtures

Under the Manual mode of the intelligent Fixtures, press **CLEAR** to cancel the Manual runnings without saving the Channel values.

6 Edit of Scenes

To set suitable value for the brightness, color, X/Y Channels, Shapes of every intelligent Fixture, the needed light-beam-pattern will be displayed in the air. Accompanied with the call of Shape generators, a Scene is produced. Each Scene is a combination of the set Channel values of intelligent Fixtures. The controller can store 62 Scenes which can be run as you wish.

6.1 Important tips

To run multiple Scenes and multiple Chases at one time, the different values of the same control Channel will be expressed according to HTP technique.

6.2 Edit records' steps of Scenes

1. According to the Manual mode of intelligent Fixtures, select intelligent Fixtures and set the Channel values and X/Y position. (Shape can be called at well)
2. Press **PROGRAM** to enter edit state; the indicator flickers.
3. Press **SCENE (A)** or **(B)** to enter Scene choosing state.
4. Use **number keys (1~31)** to select the Scene you want to save.
5. The controller will escape from the edit state after saving Scenes.

P-SCENE:
please select a scene to save.

Example: Save the running of the intelligent Fixture as Scene A10.

Press **PROGRAM**, then press **SCENE (A)**, then press **number key 10**, done!

6.3 Copy of Scenes

Example: Copy Scene A2 into Scene A10.

1. Firstly, present Scene A2.
2. Press **PROGRAM**, press **SCENE(A)**, then press **number key 10**, done.

5. Use **number keys** to select intelligent Fixtures; Set the Channel values of all the intelligent Fixtures. (Shape generator can be used as well)
6. Repeat steps 4~5, edit next Chase Step.
7. Press **PROGRAM**, escape from edit state.
(or repeat step 2~6 to edit another Chase program)

Tips:

- Use **COPY** to copy a Step.
Tips: Press **COPY**, one Step of the Chase is copy.
Pressing **COPY** for 1 seconds, All Steps of the Chase is copy.
- Use **PASTE** to paste copied Steps into the current Chase.
- Use **INSERT** to add a new Step after the current Step.
- Use **DELETE** to delete current Step.

8 MACRO program edit

The current Manual mode, Scene, Chase and calls of Shapes is a combined MACRO running environment. Saving the running environment into a MACRO is convenient for quick displaying the saved environment again.

A controller can store 31 MACRO programs which can be called directly by keys.

Notice: To prevent false control, calling a MACRO needs double click the corresponding **number keys (1~31)** under MACRO state.

8.1 Steps of record MACRO program edit

1. The following mode can be chosen at one time according to different demands.
 - a) Manual runs intelligent Fixtures.
 - b) Scene state (enable multi-Scene running)
 - c) Chase state (enable multi-Chase running)
2. Press **PROGRAM**, enter edit state, indicator flickers.
3. Press **MACRO**, enter Macro choosing state.

P-MACRO:
Please select a macro to save.

4. Use **number keys (1~ 31)** to choose the number of the target MACRO.
5. The controller will escape from edit state after saving the MACRO.

Tips:

Each MACRO program can independently record the running parameters of all Chases. The changes of Chases' parameters will not affect the effect of MACRO.

9 Running

9.1 Run Scenes

Example : run Scene A5, Scene A6, and Scene A7 at the same time.

1. Press **SCENE (A)** to enter Scene state of group A;
Thus, number keys (1~31) are for the control of Scene A.
2. Press **TYPE** to choose **Latch** state;
3. Press **number key 5, 6, 7** to run the needed Scenes.

Tips:

- When number keys are under **Swop** state, only one Scene can be run at one time.
- When number keys are under **Latch** state, several Scenes can be run at one time.
- Press **TYPE** to change the types of number keys.

9.2 Run Chases

The following contents are displayed on the screen when running Chases:

CHASE:	Tg-Mode	Dir	Total.Step	Time
A1	auto	->	12 - 001	100%
↑	↑	↑	↑ ↙	↑
Trigger mode	Running direction	Total Step	Current Step	TIME% proportion

Example : run Chase B5, Chase B6 at the same time.

1. Press **CHASE (B)** to enter Chase state of group B;
Thus, number keys (1~31) are for the control of Chase B.
2. Press **TYPE** to choose **Latch** state.
3. Press **number key 5, 6** to run the needed Chase.

The controller can run several Chases at one time (version 2.5 defaults 6 synchronous Chases.) If the number of running Chases is over the permitted number, "**Chase over load!**" will be displayed on the controller.

9.2.1 Check running conditions of each Steps of the Chase

When running several Chases at one time, the parameter displayed on the LCD screen is of the last Chase. If parameter of other Chase needs change, the Chase which needs change must be presented on the LCD screen, that is, it must be called then. Pressing **CHASE (A)** or **(B)**, then press **number keys** of the wanted Chase, the wanted Chase can be viewed and controlled without affecting the state of the former Chase.

9.2.2 Trigger mode of Chases

There are 3 mode totally:

- **auto** auto mode: The Chase running speed is controlled by time of Chase Steps and **TIME%** (Time proportion Fader).
- **Swing** swing mode: The Chase running speed is control by Key **SWING**.
- **Music** music mode: Chases are music swing triggered.

Press **MODE** continuously can change the Chase trigger mode. Each Chase can set different trigger mode independently.

9.2.3 Adjust the running speed of Chases

Adjusting **TIME%** (Fader for time proportion) can change the running speed of the Chase of which the number is displaying on the LCD screen. The Fader is used for controlling the Chase speed proportion under **auto** trigger mode.

Pull the Fader towards FAST, run of Chase programs will speed up; pull it towards SLOW, run of Chase programs will slow down.

The value of time of Step (Time) x TIME% = actual running time of current Step

Adjusting range is 300%~30%. When it is at 100%, Chase programs will run according to the set time and cross. When it needs to speed up, adjust **TIME%**(time proportion) to less than 100%, the fastest speed available is 3 times of the standard speed (30%), when it needs to slow down, adjust **TIME%** to more than 100%, the slowest speed available is 1/3 of the standard speed (300%) or Stop (stop%).

While Chase is Stop, Press ◀ or ▶ can step by step runing the Chase.

The method of viewing Chase running parameters (pressing **CHASE**, then press number keys) can help select Chases into setting their speed.

9.3 Run MACRO

Tips: To prevent false control, calling a MACRO needs double click the corresponding **number keys (1~31)** under MACRO state.

Example : Run MACRO 1

1. Press **MACRO**, enter Macro state.
2. Double click **number key 1**. (run MACRO 1)

10 Shape track

The function of Shape track is convenient for users to control intelligent Fixtures to have graphic movement such as circle, line, square on X/Y tracks. The function enables multi-intelligent Fixtures to produce various dynamic effects which are composed of different Shapes. Take making a circle for example, if Chase program is used for making a circle, each point of the circle needs an individual Step, and the resolution is limited. Besides, the size of the circle could not be changed for composing with other Shapes. But with the Shape track function, only with the parameter of the circle's speed, size, direction input, it will have the effect.

10.1 Shape track generator

The Shape generator can produce Shape tracks of different Shapes, various sizes and speeds for intelligent Fixtures. The controller has several individual generators which can work at the same time. Each generator can run several intelligent Fixtures, producing pattern effects of several lights phase excursion. The currently version of system's software offers 50 generators as follows:

- 20 circle (circle)
- 10 fader circle (fader&c)
- 10 circles ranged in triangle shape (three&c)
- 10 8-shape (eight)
- 10 Xline (Xline)
- 10 Yline (Yline)
- 5 squares (square)
- 5 triangles (tri)

Tips: The mechanical features of intelligent Fixtures may cause changes of shapes when the Fixtures are vertical. (For example: the circle might become 8-shape). Some intelligent Fixtures' responding speed might be so slow that the shapes will have a little change. An intelligent Fixture with faster responding speed will produce better shapes.

10.2 Call and edit of Shapes

Shape generator can be used under Manual mode, Scene and Chase to produce X/Y Shape tracks automatically. In Manual mode, the call of Shapes is basic skill.

Call Shapes in Scenes:

Record the Manual running with calls of Shapes into the preset Scene, the corresponding Shape will automatically call whenever the Scene is run.

Call Shapes in Chases:

Add calls of Shapes into Steps under Chase edit state, the corresponding Shape of each Step will be run automatically when running the Chase.

Manual calls of Shapes:

1. Select intelligent Fixtures wanted under Manual mode.
2. Set the X/Y origin point (the position of a Shape centre) of each intelligent Fixture.
3. Press **PLAY** in Shape edit mode. The indicator will become flickering.
(Then, use **X/Y wheel** to select the Shape generator wanted. When the name of the Shape generator is **0.Null**, it's an empty call of Shape. This call can be used to delete other calls of Shapes)

```
SHAPE:
  name = [ 01 - circle.01      ]
```



Name of Shape generator

4. Press **Speed/Size** to change the Speed% and Size% value of current Shape if wanted; Indicators on.

```
SHAPE:
  speed =[ 15 ]%   size =[ 25 ]%
```



Speed%



Size%

- Use **X wheel** to adjust Speed% (**sp**), Use **Y wheel** to adjust size% (**si**)
- Speed% is the speed of running Shapes, the larger the value, the faster the speed.
- Size% is the size of Shapes, for example: how large a circle is; how far a light-beam should move, etc.

5. Press **Offset/Dir** to change Offset% and direction if wanted, indicators on.

```
SHAPE:
  offset =[ 0 ]%   dir =[ > ]
```



Offset%



Running direction

- Use **X wheel** to change Offset%, use **Y wheel** to change direction.
- Offset% is offset of a Shape, that is, to set different positions of different intelligent Fixtures in a Shape. For example, when a circle of 50% offset is

set, Fixture 1 will be the beginner, Fixture 2 will be in the semi-circle behind it, and Fixture 3 will be in the position of Fixture 1. When a circle of 25% offset is set, Fixture 1 will be the beginner, Fixture 2 in the quart-circle behind it, Fixture 3 in the quart-circle behind Fixture 2, Fixture 4 behind Fixture 3 and a Fixture 5 in the position of Fixture 1, etc.

- DIR is the moving direction of Shapes.
6. Repeat step 1~5, edit other intelligent Fixtures.
 7. Press **PLAY** or other keys to escape from Shape edit state, the calls of Shapes will be confirmed and run continuously. Indicator of **PLAY** on.

Tips: Shape edit such as adjusting speed or sizes will affect all Fixtures the Shape uses, no matter whether the Fixtures are being chosen. That is, if you want to use a new circle generator when there are other Fixtures working of other direction or speed, you should call a new Shape for each change and use the changes in the corresponding Fixtures.

10.3 Stop & run the Shapes

Press **STOP**, very Shape generator will stop; all intelligent Fixtures will return to their X/Y origin point. Then press **PLAY**, the indicator of PLAY on with all Shapes run again.

10.4 Cancel intelligent Fixture's call of Shape

Call the Shape generator named **0.Null**.

10.5 View the call of Shapes

Press **VIEW**, LCD screen will display the number of used Shape generators.

Example: To view which generators are used in Scene A2.

1. Select Scene A2 under Scene state. (only Scene A2 is presenting)
2. Press **VIEW**, LCD screen will display the number of the used generators.

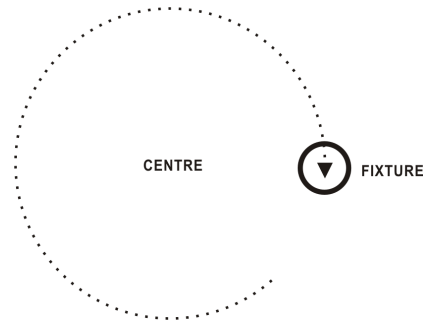
Tips: When the indicator of **VIEW** is on, there must be calls of Shapes being run.

10.6 Skills of using Shapes

Example1: Use intelligent Fixture 1 to draw a circle.

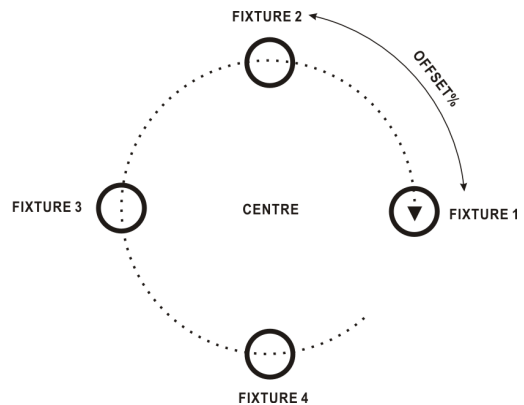
1. Select Fixture 1 under Manual mode.
2. Set the X/Y origin point (the position of the circle's centre).
3. Press **PLAY** to enter Shape edit state, indicator flickers.
4. Use **X/Y wheel** to select a Shape [**circle1**].
5. Press **Speed/Size** key.
 - Use **X wheel** to change the value of Speed%, such as 15%;

- Use **Y wheel** to change the value of Size%, such as 25%;
6. Press **Offset/Dir** key.
 - Use **X wheel** Change the Offset%: Offset%=0;
 - Use **Y wheel** select the DIR;
 7. Press **PLAY** or other keys to escape from Shape edit state.



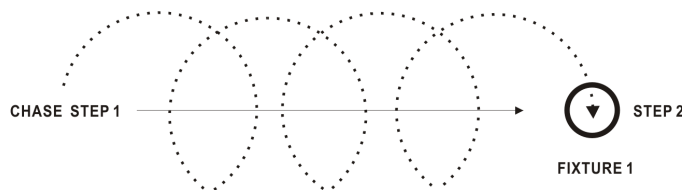
Example 2: Use 4 intelligent Fixtures to draw a circle.

1. Select four intelligent Fixtures under Manual mode.
2. Set the X/Y of chosen Fixtures, make all the luminous spots be at the same position. (the circle's centre)
3. Press **PLAY** to enter Shape edit state, indicator flickers.
4. Use **X/Y wheel** to select a Shape [**circle2**].
5. Press **Speed/Size** key.
 - Use **X wheel** to change the value of Speed%, such as 15%;
 - Use **Y wheel** to change the value of Size%, such as 25%;
6. Press **Offset/Dir** key.
 - Use **X wheel** Change the Offset%: Offset%=25%;
 - Use **Y wheel** select the DIR;
7. Press **PLAY** or other keys to escape from Shape edit state.



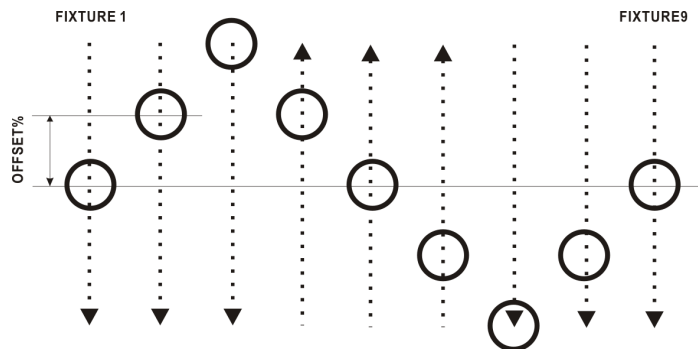
Example 3: move when drawing circle

To have the effect, call Shapes in Chase can be used. Use 2 Steps to move the centre of the circle, then call the same circle generator in the 2 Steps, parameter is up to you.



Example 4: Use several intelligent Fixtures to produce an up/down waving wave.

1. Select 9 intelligent Fixtures under Manual mode (No need to select continuous numbers, but the direction of the Fixtures should be the same).
2. Set the X/Y of chosen Fixtures, range the luminous spots in a line.
3. Press **PLAY** to enter Shape edit state, indicator flickers.
4. Use **X/Y wheel** to select a Shape [**Yline-1**].
5. Press **Speed/Size** key.
 - Use **X wheel** to change the value of Speed%, such as 40%;
 - Use **Y wheel** to change the value of Size%, such as 60%;
6. Press **Offset/Dir** key.
 - Use **X wheel** Change the Offset%: Offset%=25;
 - Use **Y wheel** select the DIR;
7. Press **PLAY** or other keys to escape from Shape edit state.



Tips: If the Shape uses horizontal line (**Xline**), an effect of left/right movement of lights will be produced.

11 Load and Save USB-DISK

For different users and various usages, the needs of controller data are different. Besides, the set data need prevention from being changed. USB-DISK offers backups of data. The controller offers a slot of USB-DISK for users to save and load their own data. Each USB-DISK can save three File. Each File can record all data from the controller.

11.1 Save File

Steps: (Example: Save controller's data into File 1 of the USB-DISK)

1. Insert the USB-DISK under running state.
2. Press **SAVE** key.
3. Press **File1** to choose File 1. (After saving, the controller will display "complete")
4. Pull out the USB-DISK, the controller returns to the running state.

Tips:

- During the period of saving files, the progress will be displayed on the LCD.
- During the period of saving files, don't pull out the USB-DISK.
- After the saving is ended, the old data of the target File will be overlaid by the new data.
- Each USB-DISK can store 3 Files.

11.2 Load File

Steps: (Example: Load File 2 of the USB-DISK onto the controller)

1. Insert the USB-DISK under running state,.
2. Press **LOAD** key.
3. Press **File2** to choose File 2. (After loading, the controller will display "complete")
4. Pull out the USB-DISK, the controller returns to the running state.

Tips:

- During the period of loading File, the progress will be displayed on the LCD.
- During the period of loading Files, don't pull out the USB-DISK, or the loading will fail.
- After the loading is ended, the old data of the controller will be overlaid by the new data. The controller will run according the new data.

12 Initialization of data

Steps:

1. Pressing **PROGRAM** and switch on the power till LCD screen displays "PLEASE INPUT PASSWORD!"
2. Press **number keys 1, 2, 3, 31** at the same time.
3. The system will restart automatically after initialization.

Notice: After the initialization, all data will return to the origin factory state.

Special function

Notice: Please keep this paper. If you forget the password, please contact with the retail store to ask for help.

(A) The steps of using password to start:

1. Pressing **PROGRAM** and switch on the power.
till LCD screen displays "PLEASE INPUT PASSWORD!"
2. Press **number keys 1, 2, 7, 8** at the same time.

(B) The steps of canceling the starting password:

Repeat the above two steps.

- When the password is enabled, every time when the controller is started the password is needed:

Press number keys 1, 2, 7, 8 at the same time.