4. The LCD window displays:
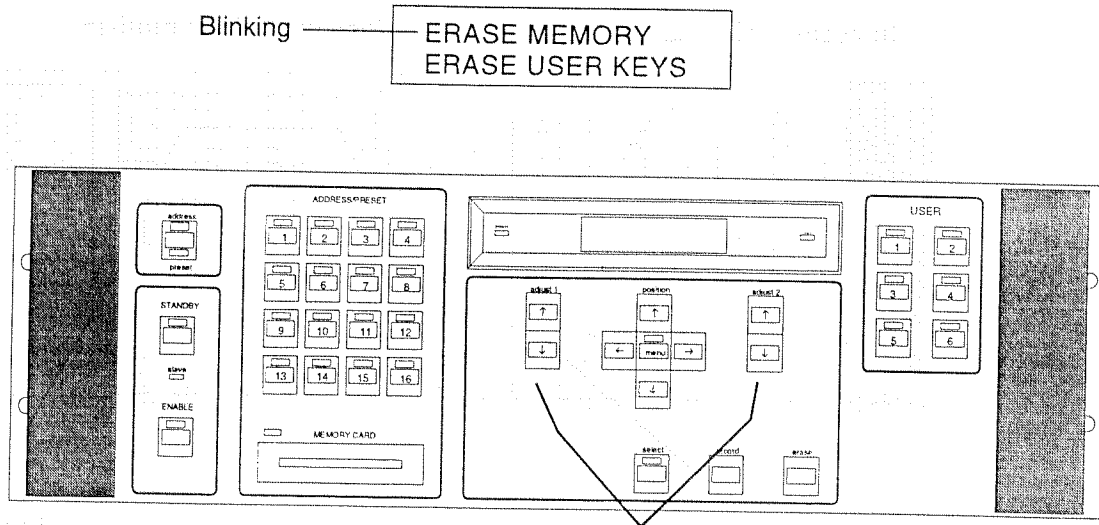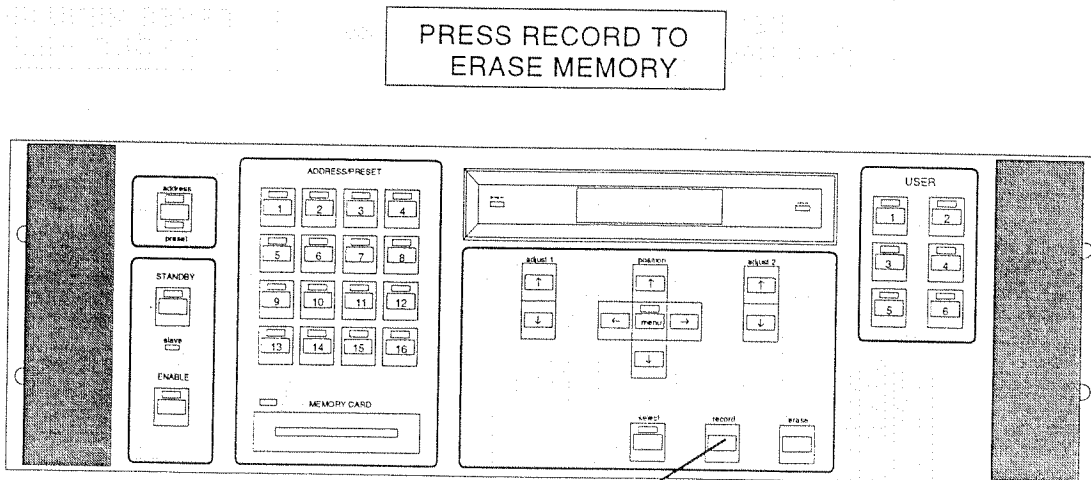
Blinking ———— ERASE MEMORY
                ERASE USER KEYS

5. Press any ADJUST
   key to enter the
   ERASE MEMORY
   display.

6. The LCD window displays the following message:

PRESS RECORD TO
ERASE MEMORY

7. To complete the
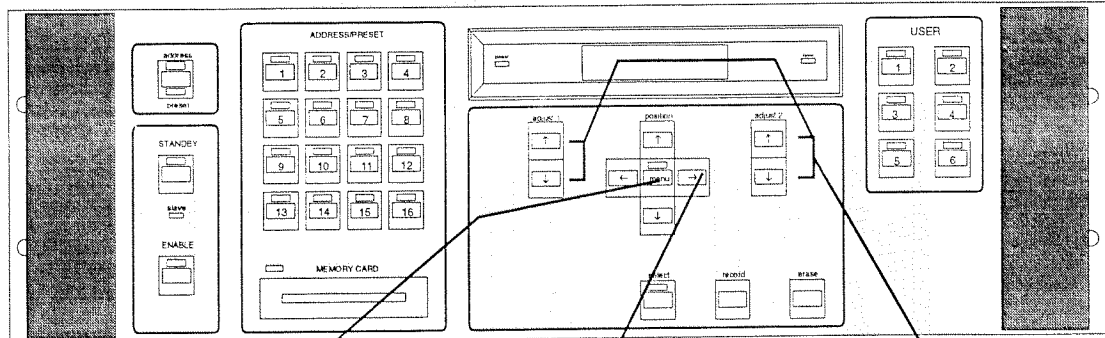   operation, press
   the RECORD
   key,

8. The LCD window briefly displays:

ERASING
MEMORY

and then returns to the Ready mode.

Help Function

To access information on a key's functions in various modes:

1. In Ready mode,
    press the MENU key.

2. Press the
    POSITION Right
    Arrow key twice.
    The HELP menu
    item will flash.

3. Press any
    ADJUST 1 or
    ADJUST 2
    key.

4. The LCD window cycles between the following messages:

```
PRESS/HOLD KEY
FOR INFORMATION
```
◄──────►
```
PRESS MENU KEY
TO QUIT HELP
```
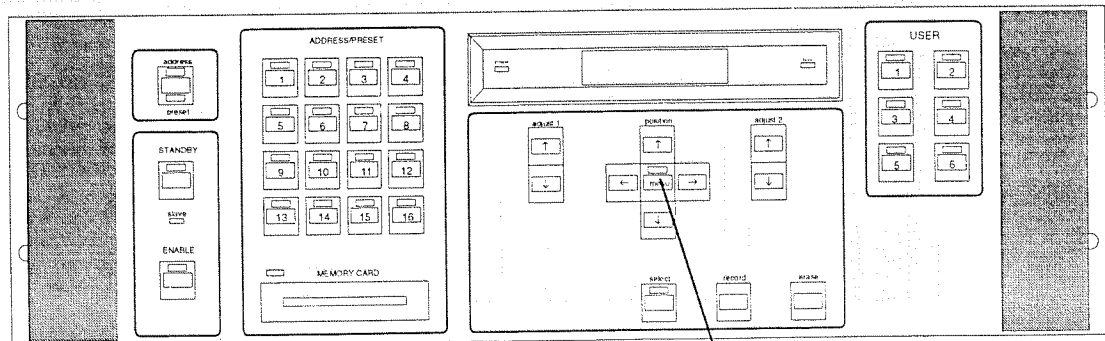

5. Press ane hold any key
    (except the MENU key)
    and the LCD window
    will display the various
    functions of that key.

6. Press the MENU key to exit the
    HELP mode. Press the MENU
    key again to enter Ready mode.

Programming

The **universal** Controller has 500 Pages available for programming. You can program Pages individually, in a sequence, or in loops. A Page (traditionally called a scene) consists of Constructs (Color, Gate, Delay, Xfade, Position, Speed, and so on) and their parameters that you define for up to 16 fixture Addresses and their modifications. The controller has two programming modes, Address and Preset:

Address Mode: In Address mode you directly program one or more fixtures by entering Construct parameters directly into Pages and then record these parameters. You then playback the information by manually selecting the Pages or automatically by selecting the DELAY (Position Right Arrow) key while the controller is in ready mode.

Preset Mode: In Preset mode, you save a program you created in Address mode as Preset programs and assign it a keypad number. Then recall the program at any time by its assigned keypad number.

Note: If you are not familiar with controller Constructs read or review *Chapter 2* before programming the controller.

Address Mode Programming

There are 16 Addresses available on the **universal** Controller that control 16 fixtures. You can assign more than one fixture to an Address, thus configure up to 16 sets of fixtures. If several fixtures are assigned to the same Address, they must be the same fixture type because they share the same Constructs and they all move simultaneously in response to the digital joystick when you select their Addresses.

A Page consists of the Construct parameters and positions for up to 16 fixture Addresses and their modifications. You can compare a single Page to a "static scene" in traditional lighting desk nomenclature. An individual Page can be as simple as a single fixture, in plain white light, shooting straight out, or as complicated as multiple fixtures with different colors and patterns.

You playback these Pages as static scenes, simple chases, or very complex chases. Creating a Page can be accomplished easily by using the following method.

Defining Fixture Types

The uniqueness of the **universal** Controller is its ability to control three different fixture types at the same time. Therefore, before you program Pages you must first define the type of fixtures assigned to each Address. You do this through the MENU SETUP display explained earlier in this chapter. The default fixture setting is for **trackspot**. If you are using **trackspot** fixtures, then you can bypass this procedure and continue with the *Create or Edit a Single Page* section. If you are using **intellabeam** or **emulator** fixtures then go to the SETUP menu and perform the FIXTURE procedure found on page 10.

Create or Edit a Single Page

1. To begin programming, make sure you are in ready mode.
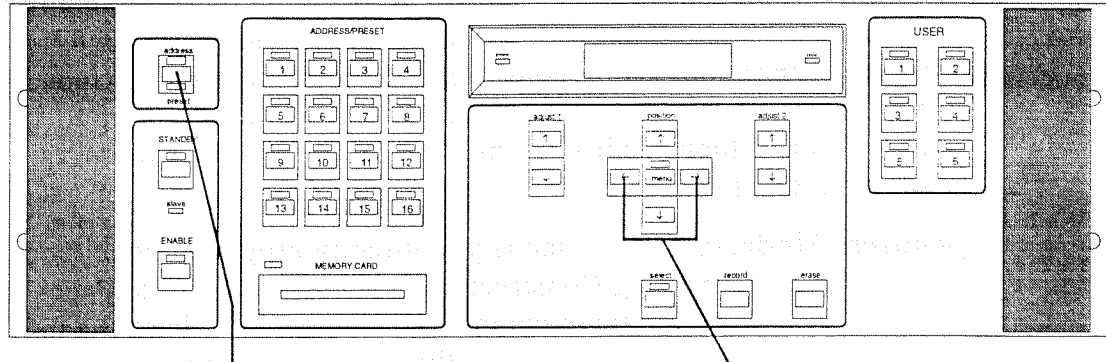
1. Make sure that the ADDRESS/PRESET keys are in Address mode (the top LED on the ADDRESS/PRESET key will be lit if you are in Address mode.). If you are not in Address mode, press the ADDRESS/PRESET key to change the controller to Address mode. The ADDRESS/PRESET key toggles the controller between these two modes.

2. If the LCD display indicates AUDIO or DELAY mode, press the POSITION Left or POSITION Right keys, respectively, to return to the READY mode.
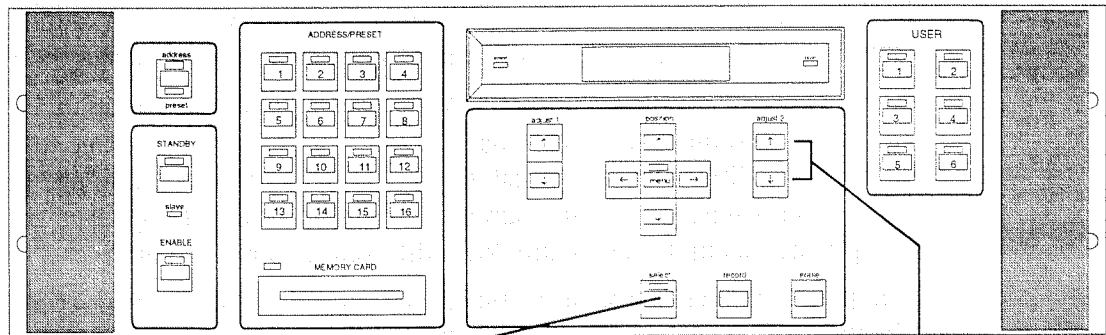
3. If the LCD window does not display "DIM READY PAGE", or if the MENU LED or the SELECT LED are flashing, press the SELECT key.

4. Use the ADJUST 2 Up/Down keys to select any Page (001 to 500) where you want to begin programming.
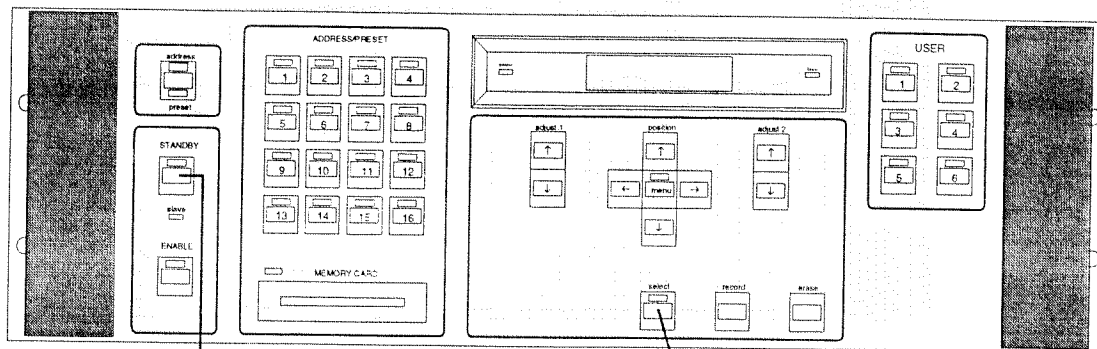
5. Press the Standby key to ensure that the Standby LED is out or the fixtures will not open their gates when you playback the program.

6. Press the SELECT key. The SELECT key LED flashes.
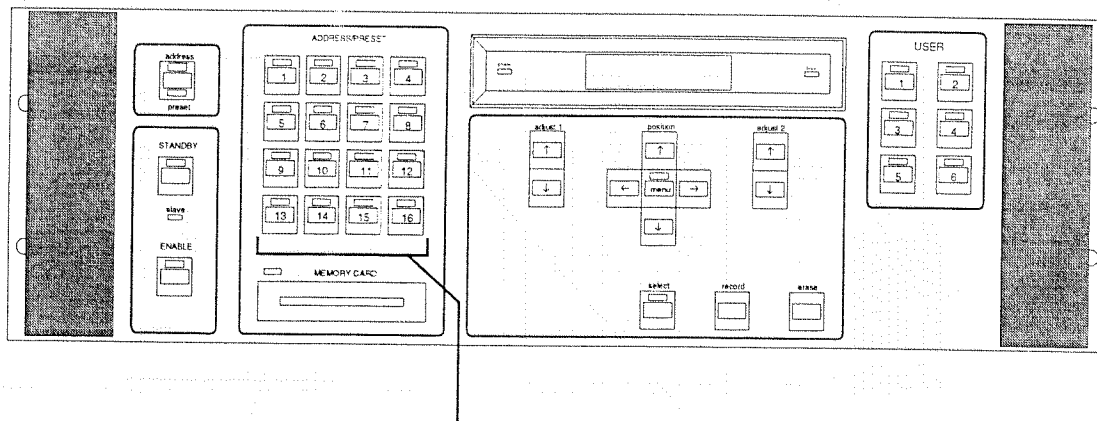
7. Next, select one or more fixture Addresses that you want to program by pressing their respective controller ADDRESS keys. The LEDs on the selected ADDRESS Keys blink to confirm selection.

Note: Only similar fixture types can be edited at the same time, i.e. only *emulator* fixtures can be edited together, and *trackspot* and *intellabeam* fixtures can be edited together. Although it is possible to select both *trackspot* and *intellabeam* fixtures for editing at the same time, it makes a difference which type you choose to edit first. If you want to edit with *trackspot* values, select a *trackspot* first or if you are editing a range, make sure that the first address selected in the range is a trackspot. Likewise, if you want to edit with *intellabeam* values, select an *intellabeam* first.
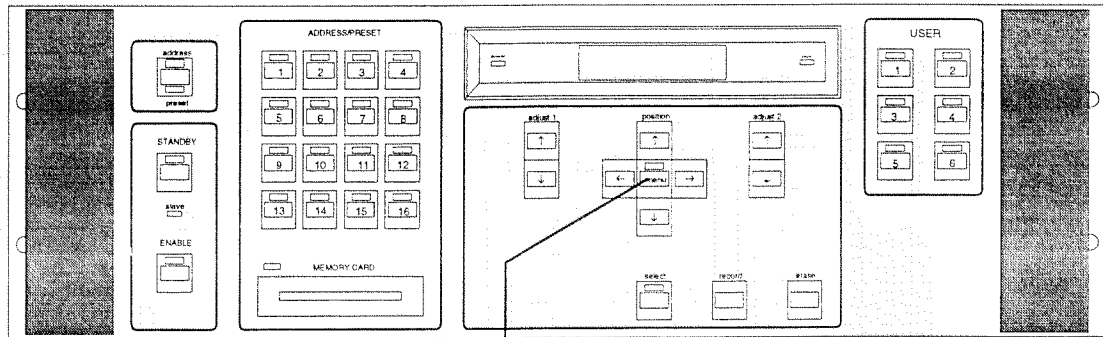
8. Press the MENU key to display the Construct parameters.

Note: When the MENU key LED is flashing, you can select Constructs. When the MENU key LED is extinguished, the four POSITION Arrow keys function as the "digital joystick".
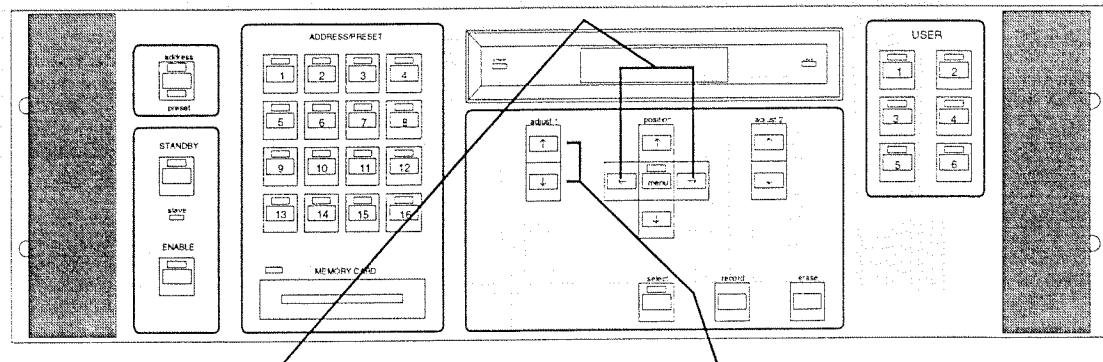
9. Use the POSITION Left/Right Arrow keys to select the Construct

10. Press the ADJUST 1 Up/Down Arrow keys to set the parameters for the selected Construct.

Repeat these steps for each Construct parameter that you want to change or define. Refer to *Chapter 2* for information about Construct parameters.

11. Press the RECORD key and the LCD window returns to Ready mode. You can abandon the operation at any time by pressing the SELECT key again. To playback any Page, just select the Page with the ADJUST 2 key while in Ready mode. Refer to the *Playback* section later in this chapter for details.

Create a Loop of Pages

A loop (sequence or chase) is a sequence of Pages that runs continuously until you stop it. For example, you may have created a sequence in Pages 5 and 6 that moves the beam from position A to position B, changes gobo patterns from a "splash" to a "star", and then changes colors from red to green. You now want to continuously run these two pages in a loop.

To continuously run a sequence of Pages in a loop you must bracket the Pages that you want to include in the loop with Uninitialized Pages. This separates the loop from other loops. In the previous example, you would make Pages 4 and 7 uninitialized pages. Then, when you run the loop, it would run continuously from Pages 5 through 6.

Create a Loop

Refer to the previous *Create or Edit a Single Page* section and use the procedure listed there to create a sequence of single Pages that you want to run in a loop. For example, you want to create a sequence from Page 20 to Page 30 that moves a trackspot beam in a circle around the floor. Create Page 20 with the beam at a certain position on the floor. Create Page 21 with the beam moved a distance from Page 20. Create Page 22 with the beam moved a distance from Page 21, and so on, until you complete the circle with all 10 Pages. You can now manually move the beam sequence in a circle by selecting Page 20 with the ADJUST 2 keys. Then, bump the ADJUST 2 key one Page at a time until you reach Page 30. Now that the sequence is programmed you must bracket the sequence with Uninitialized Pages to run it in a loop. Refer to the following *Create an Uninitialized Page* section for the procedure.

Create an Uninitialized Page

An uninitialized (non-initialized) Page acts as a "placeholder" to indicate the beginning and end of a chase or loop. To create an uninitialized Page you perform a double erase operation to the Page.

If you want to program a Loop from Page 10 to Page 15 you would make Pages 9 and 16 Uninitialized Pages in order for Pages 10 through 15 to perform as a Loop.
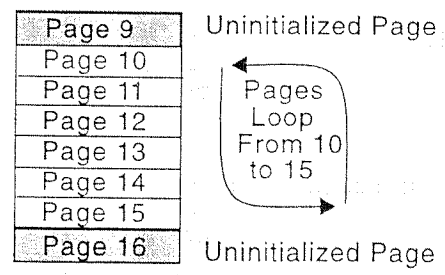
**To create an Uninitialized (non-initialize) Page:**
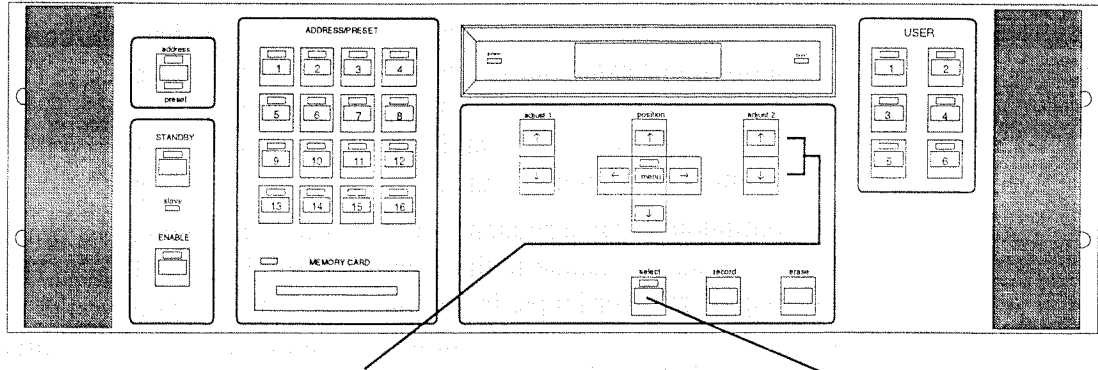
1. Select the first or beginning Page that you want to "uninitialize" using the ADJUST 2 Up/Down keys.

2. Press the SELECT key to select the Page. The SELECT key LED flashes.

3. The LCD window displays:

> SELECT ADDRESS
> TO EDIT

Although this message is not applicable to this procedure, it is displayed when you press the SELECT key.
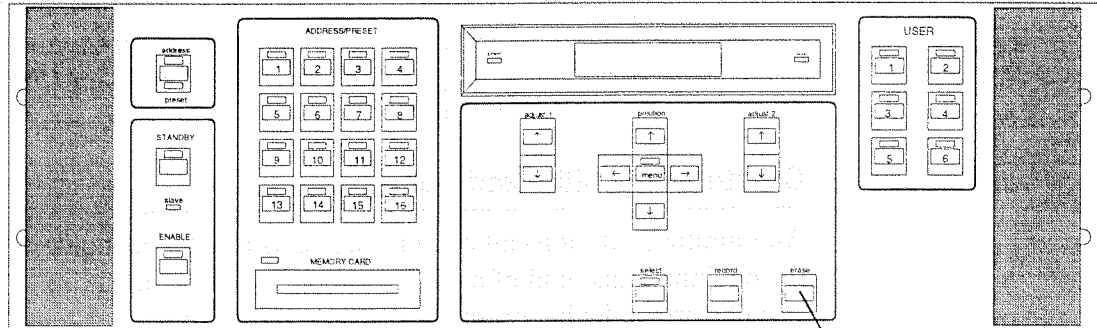
4. Press the ERASE key once.

5. The LCD window begins flashing two prompting messages. The first reads:

> press ERASE key
> to deinit page

and the second message reads:

> press RECORD key
> to erase page

6. Since you want to uninitialize (deinit) the page press the ERASE key a second time. In a moment the controller returns to Ready Mode.

7. Repeat steps 1 to 6 for the second or ending Uninitialized page.

   Note: When you press any ADDRESS key while the controller is on an Uninitialized Page the LCD window displays:

   ```
   fixture type
   page is uninit
   ```

   This completes the Uninitialized page operation.
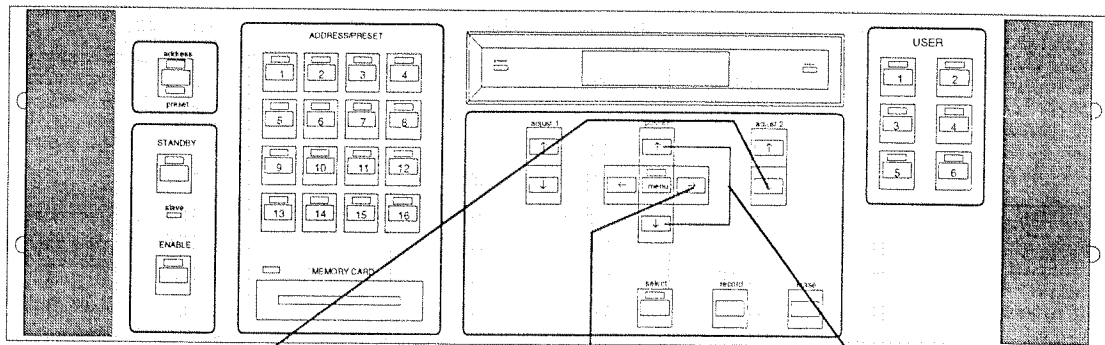
8. To run the loop from ready mode, use the down arrow key of the ADJUST 2 keys to select a page in the loop.

9. Then press the POSITION right arrow key.

10. Use the POSITION Up/ Down keys to set the Master delay time between pages in the loop.

Creating Position Memories

There are 32 Position Memories (or Position Presets) available that you create with position information. You then reference the Pages that you program to any of the 32 Position Memories for position information. Thus, many Pages can use position information from a single Position Memory. When you alter the position information in a Position Memory, all Pages that reference it reflect the changes. Position Memories contain absolute positions that are used to position the mirror head. For example, pan = xxx value and tilt = yyy value.

Position Memories provide you with the means to quickly update a show when it moves from one venue to another. At each venue the fixtures may be mounted in different positions and the stage trusses may be arranged differently. In this case, you just edit the Position Memories for the new venue and all fixtures referencing the updated Position Memories will have the correct positioning. To simplify these adjustments, the **universal** Controller allows you to adjust Position Memories. That is, you can select and fine tune a Position Memory. This is explained in the *POSMEM (Position Memory Edit)* menu item section earlier in this chapter.

Once you create Position Memories, you then reference them through the POSITION Construct when you program Pages.

The controller stores the Position Memories that you create in Pages 469 to 500. Although these Pages are used for Position Memories, you can still program them as any other Pages with the exception that they may not reference Position Memory. When an Address references Pages 469 to 500 as a Position Memory, only the position of the mirror head is used. It ignores any other Constructs contained in Pages 469 to 500.

These 32 Pages equate to Position Memories 1 through 32 as Table 4.2 shows.

PM No.	Page No.	PM No.	Page No.	PM No.	Page No.	PM No.	Page No.
1	469	9	477	17	485	25	493
2	470	10	478	18	486	26	494
3	471	11	479	19	487	27	495
4	472	12	480	20	488	28	496
5	473	13	481	21	489	29	497
6	474	14	482	22	490	30	498
7	475	15	483	23	491	31	499
8	476	16	484	24	492	32	500

Table 4.2 Converting Page Numbers to Position Memory Numbers

To create a Position Memory (PM):
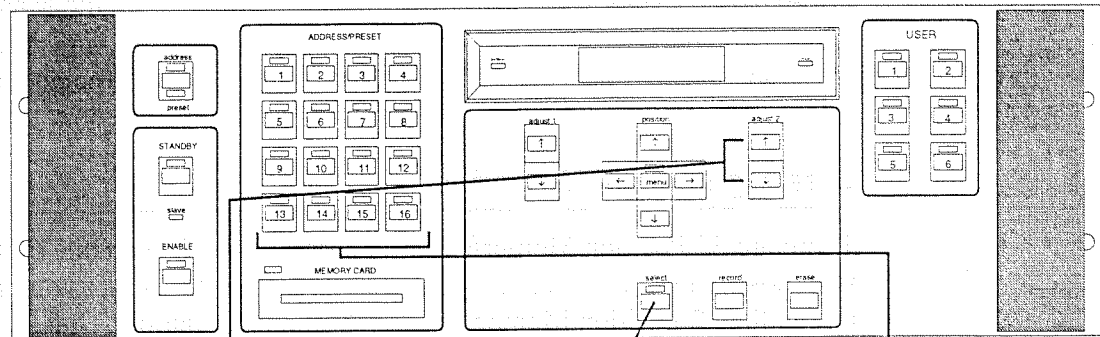
1. In READY mode, use the ADJUST 2 keys select the Page that equates to the desired Position Memory as shown in Table 4.2.

2. Press the SELECT key

3. Press the ADDRESS Key of the fixture that you want to define for this Position Memory.
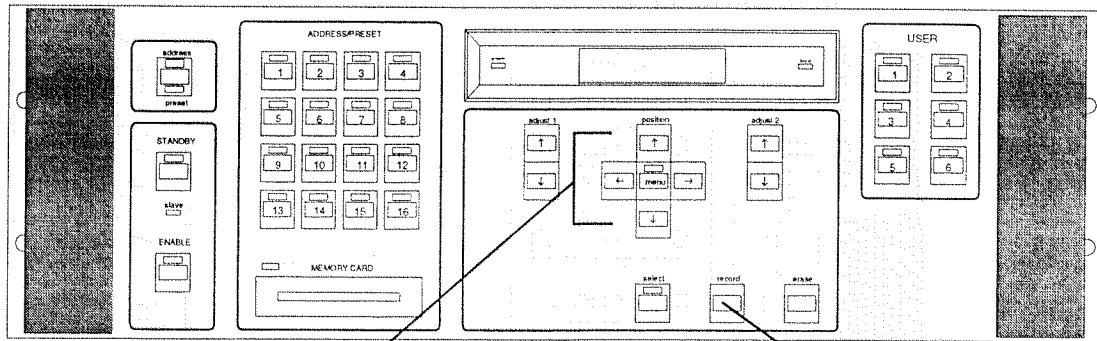
5. Position the mirror to the desired location with the four POSITION Arrow Keys.

6. Press the RECORD Key to complete the operation.

7. The LCD window displays the default Gate Construct; this display is not applicable to this procedure. After you define this PM, you can later reference other Addresses to this PM.

Copy

This item provides a submenu that allows you to perform the following copying operations:

- Page Copy – copy all fixture information on a single Page to another Page
- Block Copy – copy all fixture information from one block of Pages to another block of pages
- Position Copy – copy position and Construct parameter information between fixtures on different Pages
- Parameter Copy – copy Construct parameter information between fixtures on the same Page

> **Note:** Refer to the *Hot Key Sequences* section, later in this chapter, for an additional Parameter Copy function that "copies all Construct parameters from selected address on one Page to another Page".
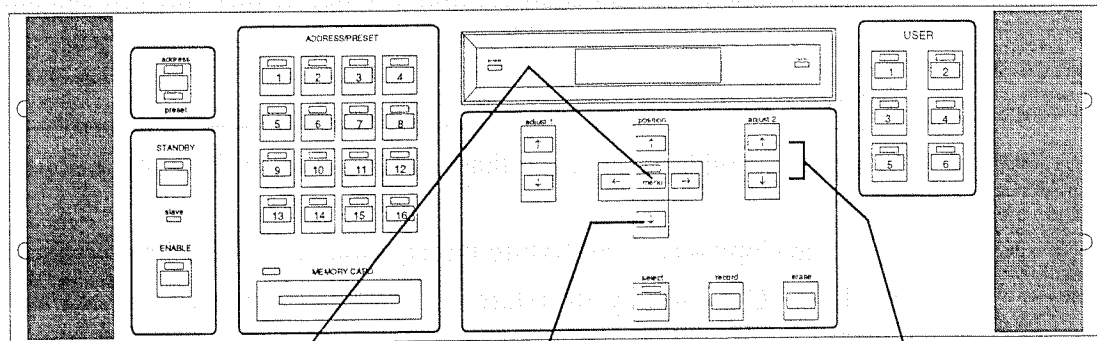
Page Copy

Use this feature to copy all fixture information from a single Page to another Page. See *Hot Key Sequence* section for alternate method.

To perform a Page copy:
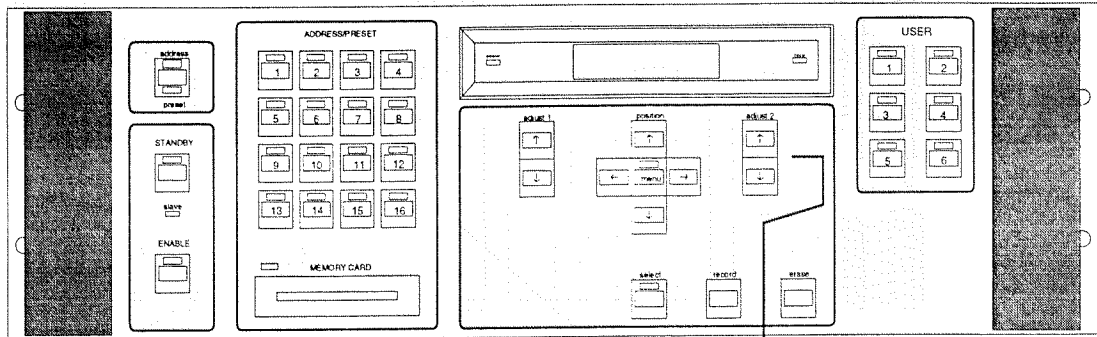
1. In Ready mode, using the ADJUST 2 keys, set the desired Page that you want to copy in the LCD window.


2. Press the MENU key.

3. Press the POSITION Down Arrow key once to select the COPY menu item.

4. Next, press any ADJUST key twice to enter the PAGE COPY display.

5. The LCD window displays the following prompt:

Source
Page ————————

PAGE COPY
P:nnn TO P:nnn

———— Destination
Page

The "nnn" values reflects the Page number you set in step 1. The first "P:nnn" value is the source Page and the second "P:nnn" is the destination Page receiving the copy information.
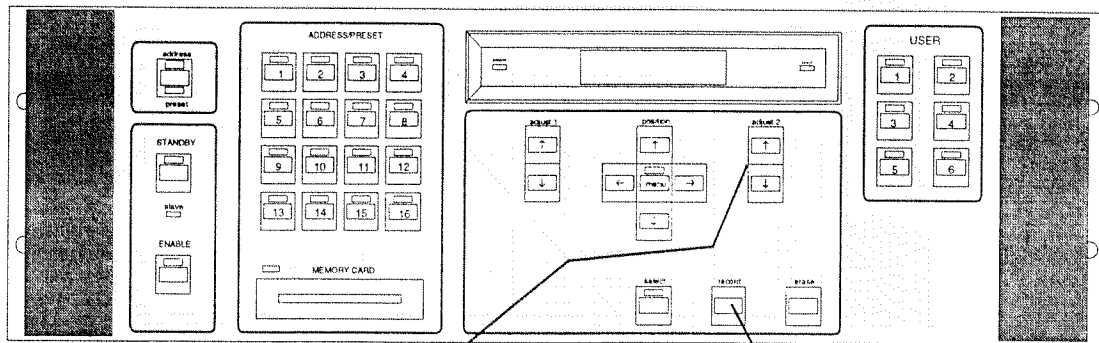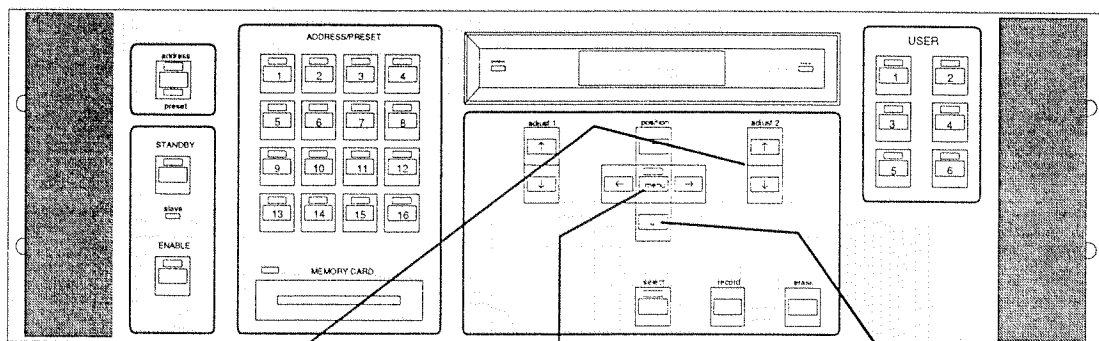
6. Then, press the ADJUST 2 Arrow keys to set the destination Page value for the copy operation.

7. To complete the operation, press the RECORD key, the controller returns to the Ready mode on the destination page.

Block Copy

Use this feature to copy a block or range of Pages to another area of Memory. You specify the first and last Page of the block to copy and the first Page of the destination block of Pages. Refer to the *Creating an Uninitialized Page* section later in this chapter. Also see *Hot Key Copying* section for an alternate method.

To perform a block copy:

1. In Ready mode, using the ADJUST 2 keys, set the first Page of the desired range of Pages that you want to copy.

2. Press the MENU key.

3. Press the POSITION Down Arrow key once to select the COPY menu item.
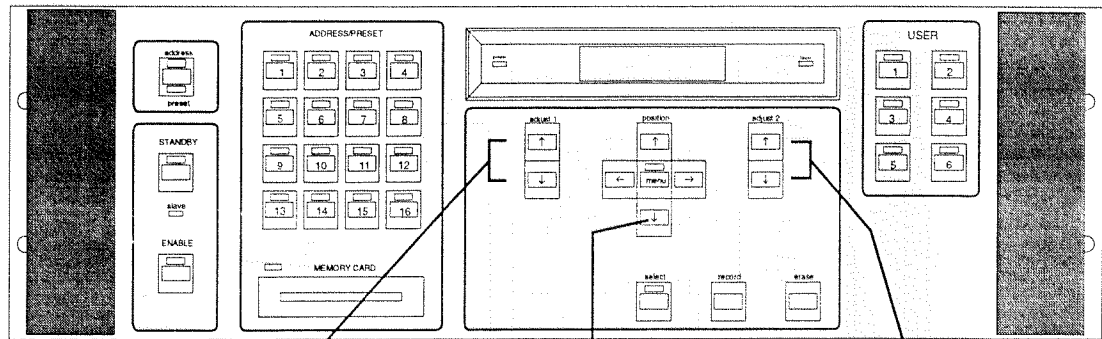
4. Press any ADJUST key to enter the COPY submenu.

5. Press the POSITION Down Arrow key once again to select the BLOCK menu item.

6. Next, press any ADJUST key to enter the BLOCK display.

7. The LCD window displays the following prompt:

Beginning
Source
Page

| BLOCK COPY |
| P:nnn TO P:nnn |

Ending
Source
Page

The "nnn" values reflects the Page number you set in step 1. The first "P:nnn" value is the first Page in the block and the second "P:nnn" is the ending Page in the block to copy. When the display first appears both the first and last Page are the same.
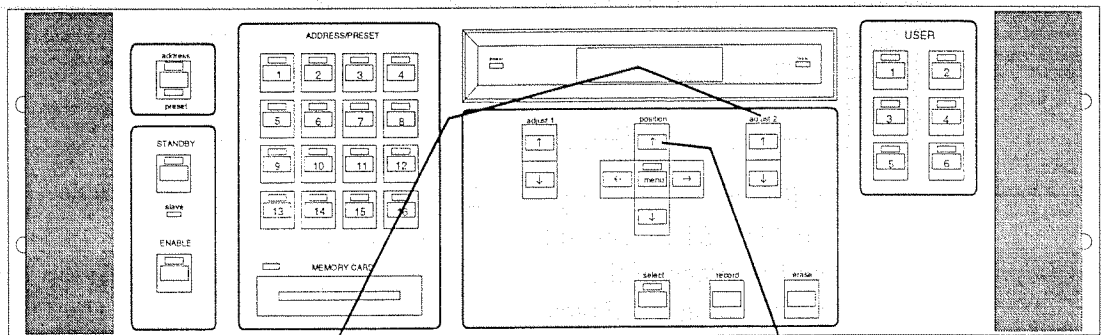
8. Then, press the ADJUST 2 Arrow keys to set the ending Page in the block to copy.

9. Next, press the POSITION Up Arrow key,