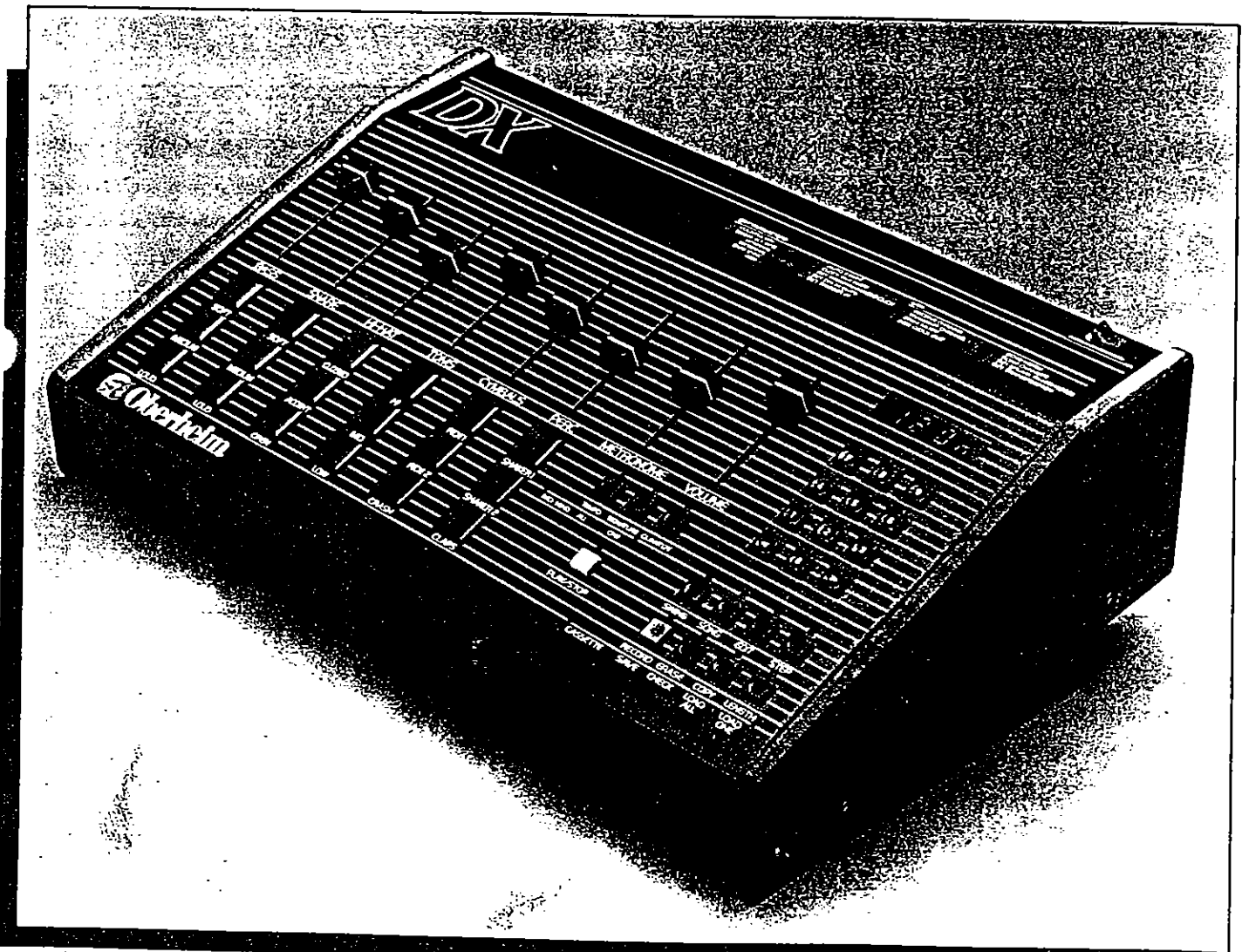


# OWNER'S MANUAL

# DX



D I G I T A L   D R U M   M A C H I N E

OBERHEIM ELECTRONICS, INC.,

Second Edition



# DX

**DIGITAL DRUM MACHINE**

## Owner's Manual

by  
Daniel Sofer

**SECOND EDITION JANUARY 1985**

For Units With Serial Number H44801 or Above

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**CAUTION:**

To Prevent fire or shock hazard do not expose this appliance to rain or moisture. Do not remove cover. No user serviceable parts inside. Refer servicing to qualified service personnel.

**WARNING:**

This equipment generates and uses radio frequency energy and if not installed and used properly, i.e., in strict accordance with the instruction manual, may cause harmful interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment.

Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

---



**OBERHEIM ELECTRONICS, INC.**

**2250 South Barrington Avenue**

**Los Angeles, California 90064**

**USA**

**Telex 6831071 OBRHM**

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Manual Design and Graphics by Daniel Sofer  
Production: Kathy Weems  
Typesetting: Typographic Service/George Lithograph

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# **INTRODUCTION**

## **INTRODUCTION**

---

### **WELCOME TO THE DX**

You have just purchased a most powerful tool for composition and performance. The Oberheim DX Programmable Digital Drum Machine represents the latest in the Oberheim line of drum computers. The DX has been designed with the idea of giving you better sound, and better control of it, than has been previously available in a drum box, at a more economical price.

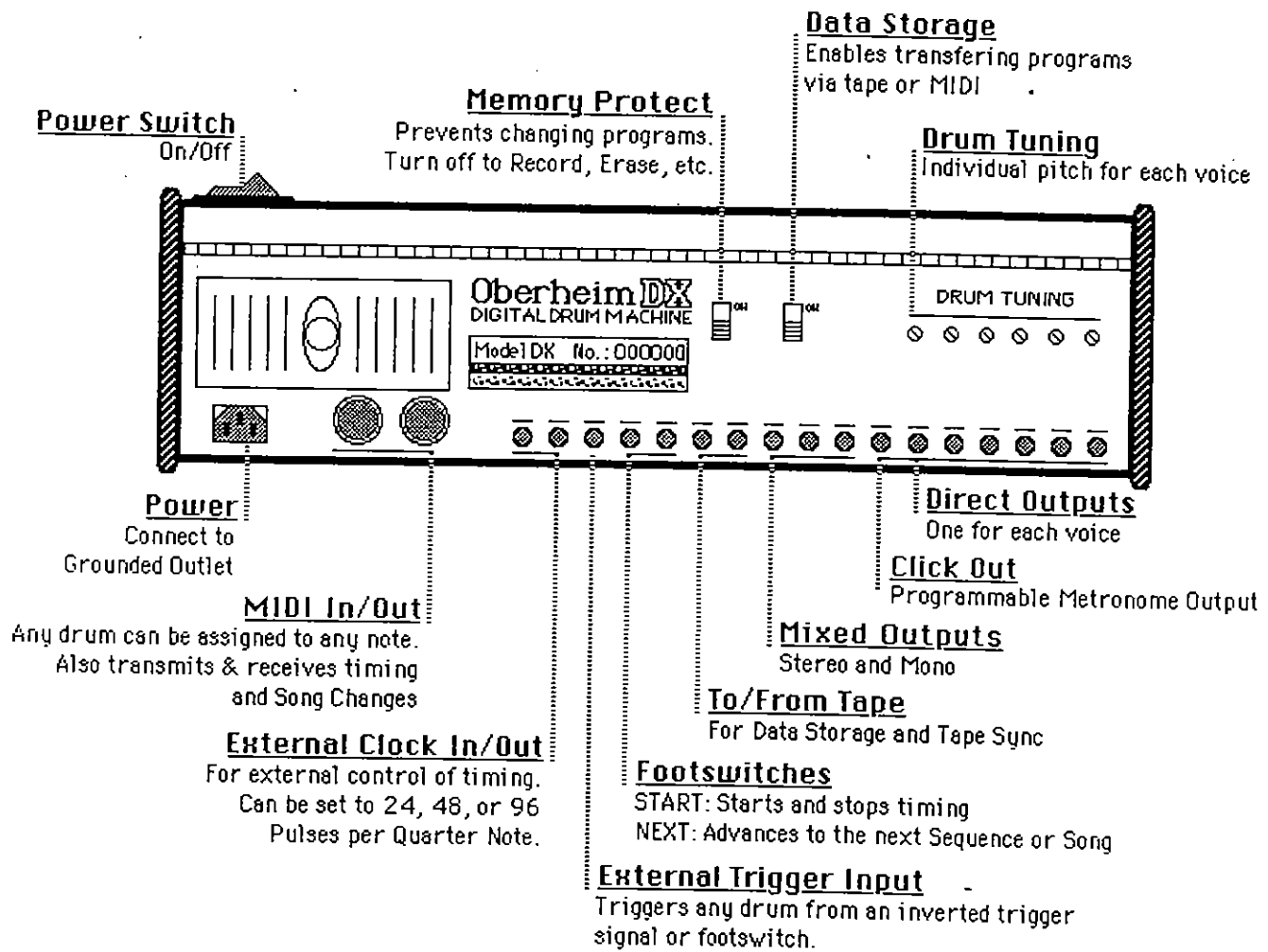
The DX generates the sounds of real drums. Actual drum recordings have been digitized, stored in computer memory, and are available at the touch of a button. A drum beat can be recorded in real time at any speed, remembered, and edited to make any beat of any length, tempo, or style—in short, any drum beat that you hear in your head, you can create on the DX. After you have created your drum beats, you can save them on tape for future use. Of course, the DX has a battery to keep the memory on when the power is off.

The DX has a MIDI Interface, which enables interconnections with other equipment such as sequencers, keyboards, drum pads, and other drum machines.

The DX operates like a tape recorder: press RECORD + PLAY to Record your rhythms; then press PLAY to hear it back. But there's more to it than that. There are features incorporated into the DX that actually give you more control over your music than a tape recorder allows. We recommend that you familiarize yourself with these features in order to get the most out of your DX.

The DX can make most any drum beat that an acoustic drummer can create. In fact, this rhythmic flexibility of the DX creates a new dilemma for the user: exactly WHAT makes a good drum beat? It is not within the scope of this manual to try to answer this question, but if you're not a drummer already, we strongly suggest spending some time listening and studying the rhythms of your favorite music. Listen to where the notes are and where they're *NOT*, where the accents are, when the beat is pushed or swung. If your drum machine sounds cold and robot-like, it's because you've programmed it that way. It takes a good sense of timing to create rhythms that really breathe.

Experiment! You'll never know what you'll discover.



**MIXER: (FOR MIXED OUTPUTS)**

Individual Volume fader for each voice and the Metronome, plus a Master Volume fader. These controls have no effect on the individual voice outputs.

**EDIT PARAMETERS:**

Many features are controlled with the Edit Parameters. This legend will help you interpret the display. See "EDIT PARAMETERS" (Page 19).

**DX**

**EDIT PARAMETERS:**

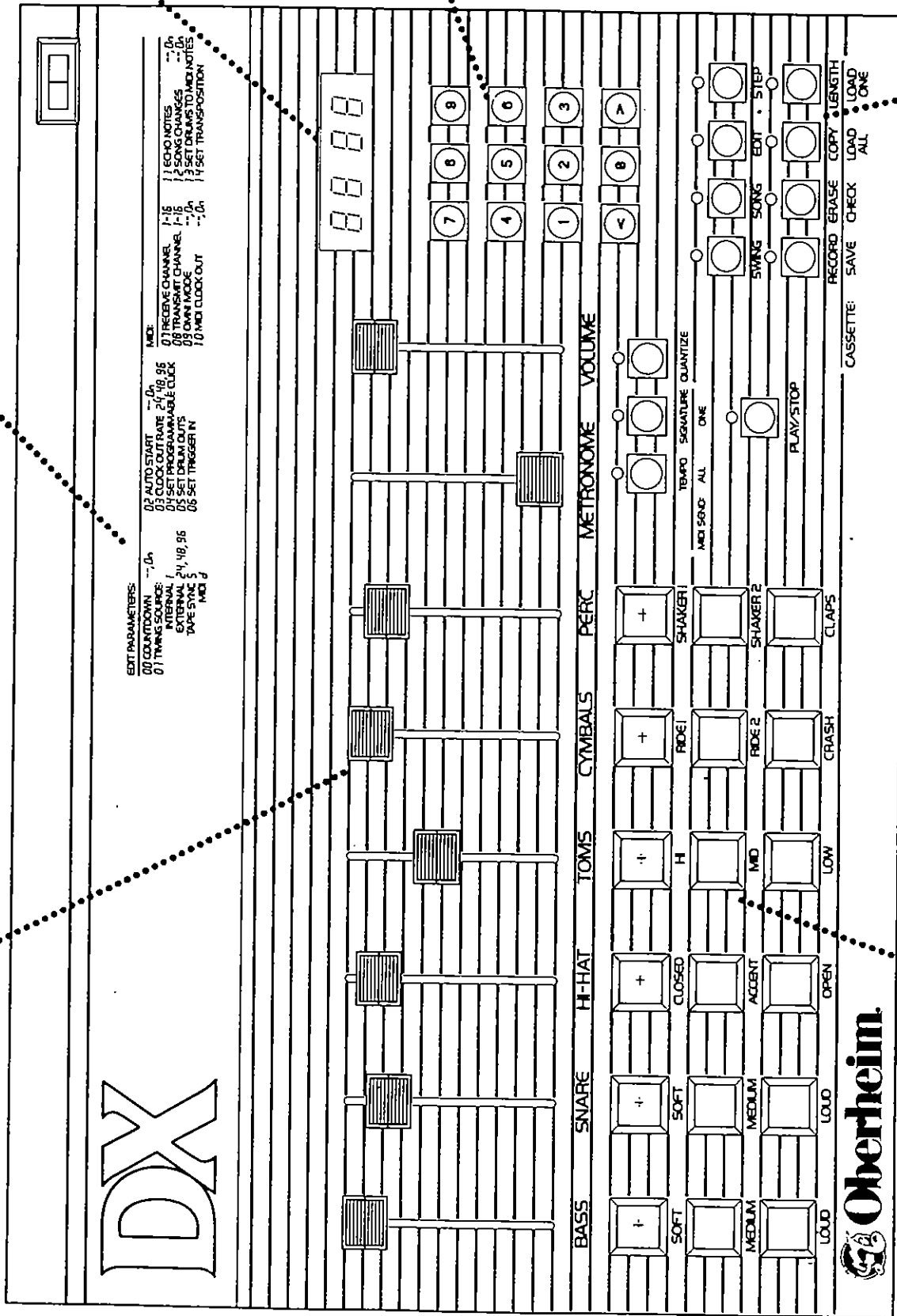
- 00 COUNTDOWN
- 01 TUNING SOURCE: INTERNAL 2V, 48, 96
- 02 TAPE SYNC
- 03 AUTO START
- 04 CLOCK OUTPUT RATE 2/4, 4/8, 9/16
- 05 SET PROGRAMMABLE CLICK
- 06 SET DRUM OUTPUTS
- 07 RECEIVE CHANNEL
- 08 TRANSMIT CHANNEL
- 09 MASTER CLOCK
- 10 MIDI CLOCK OUT
- 11 ECHO NOTES
- 12 SONG CHANGES
- 13 SET DRUMS TO MIDI NOTES
- 14 SET TRANSPOSITION

**DISPLAY:**

Shows current settings.

**KEYPAD:**

Enter numbers directly or use the arrow keys, to select Sequences, Songs, Tempos, etc.

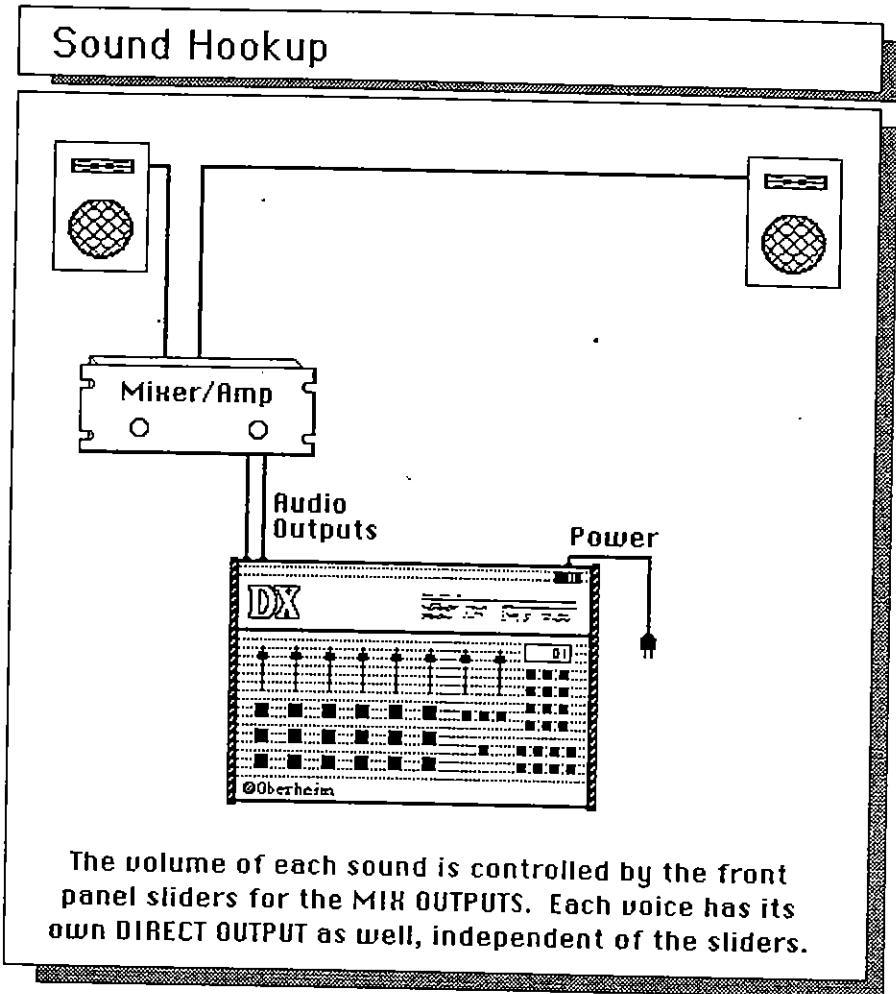


**DRUM BUTTONS:**

Play the drums with these buttons. Big enough for two-finger operation.

**OPERATION BUTTONS:**

These buttons access the different modes of the machine, such as PLAY, STOP, RECORD, TEMPO, etc.



GETTING AROUND

## SEQUENCES

**Selecting A Sequence**

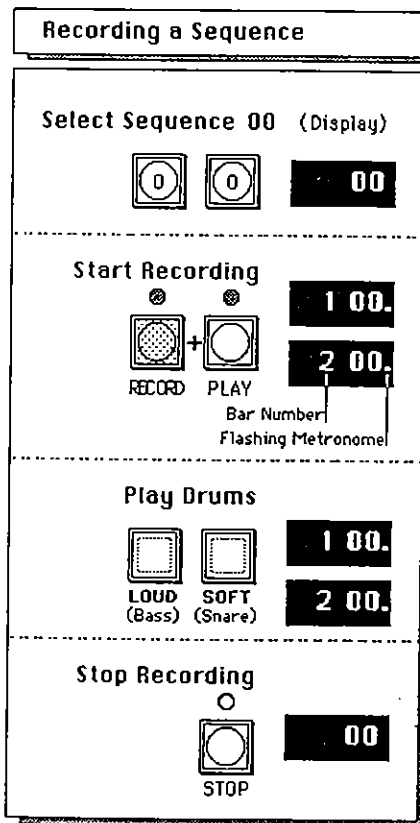
The DX can store up to 100 drum sequences, numbered 00 thru 99. Select one by pressing two numbers, or one of the arrow buttons. The display will show you which sequence you have selected.

**Playing A Sequence**

Press PLAY. The sequence will play over and over until you press STOP. You can also select another sequence while playing and the DX will play it immediately after the first sequence has finished.

**Real Time Recording**

There are two ways to record on the DX: REAL TIME and SINGLE STEP. In REAL TIME, the sequence plays over and over and you simply press the buttons where you want the drums to sound. In SINGLE STEP, the sequence advances one beat each time you press either of the arrow buttons, which allows you to record your drum beat slowly. The REAL TIME mode of recording is explained here. The SINGLE STEP mode of recording is explained in the section entitled STEP.



Press and hold RECORD and then press PLAY. The Metronome will click in eighth notes and the DX will record over and over on two measures. In RECORD, the DX does not ERASE, so you can build your drum beat as it loops over, playing the cymbal first, the bass drum, then the snare, etc., until you are finished. The DX will also Quantize or round off, your playing. When you have finished recording, press STOP.

You can add more parts to the sequence simply by recording once again. Erasing is a separate process.

► **REMEMBER:** The DX will not RECORD if the MEMORY PROTECT switch on the rear panel is ON.

## Erasing A Sequence

If you have made a mistake, or would like to record over again, press and hold ERASE and while holding ERASE press RECORD. The current sequence will be erased, and you can record again from scratch. The DX will "beep" when the erasure actually takes place. The volume of the beep is controlled by the metronome volume control.

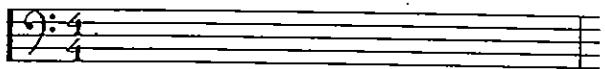
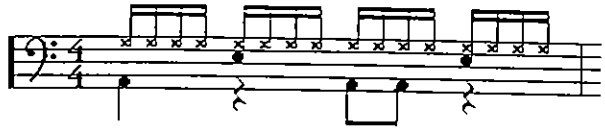
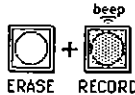
### Erasing a Sequence:

Hold the ERASE key:



And while holding,

Press RECORD:



## Erasing Notes Within A Sequence

You can erase any single drum (or cymbal) from the entire sequence. Hold ERASE and then press the drum you wish to erase.

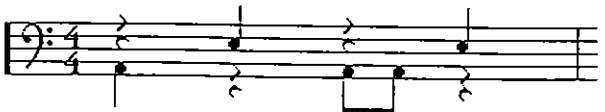
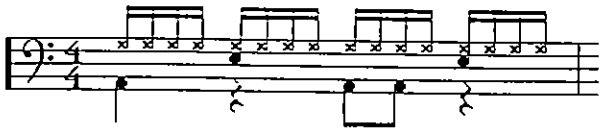
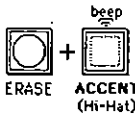
### Erasing a drum from the entire Sequence:

Hold the ERASE key:



And while holding,

Press the desired button:



**Setting the Tempo:**

---

Enter TEMPO Mode: (Display)

80

---

Set Tempo to 105 Beats/Minute

1

0

5

80

10

80

105

---

Exit TEMPO Mode:

00

## Tempo

The DX is normally set to a tempo of 80 Beats per Minute, but can be varied within a range of 25 to 250 Beats per Minute. You can change the tempo at any time by entering the tempo mode. Press TEMPO. The Tempo button will light and display will show the tempo currently selected. You can change the tempo by pressing the buttons with the arrows to increase or decrease the tempo, or you can enter the desired Beats per Minute on the keypad (3 digits). To exit the tempo mode press TEMPO once again.

To program the tempo in a sequence press TEMPO while in Record, set to the desired speed and press TEMPO once again to exit. Whenever that sequence is recalled, the DX will recall the tempo as well. You can change the tempo at any time, but the programmed tempo will be changed only when the tempo is set in record.

■ **NOTE:** Not every tempo marking between 25 and 250 Beats per Minute can be played. Near the high end of this range the tempo steps are larger than one Beat per Minute. If you enter a tempo which cannot be played, the DX will play the nearest valid tempo to the one which you entered. Also, if you try to RECORD an invalid tempo, the DX will actually record the nearest valid one.

If you enter a number that is out of the tempo range, the display will flash. You must set the tempo to be in range before you can exit from the tempo mode.

The arrow buttons will always step between valid tempos.

**Setting the Sequence Length:**

---

Enter LENGTH Mode: (Display)

2

---

Select Length of 8 Bars:

0

8

20

8

(Flashes)

---

Set Length and Exit LENGTH Mode:

00

## Length

A sequence can be any length from 1 to 99 bars. The DX sets a length of 2 bars for each sequence unless you set it differently. To change the length of the current sequence press LENGTH. Then, using the arrow buttons or the number keys, choose the new length. The display will flash. The new length can be entered in memory by pressing the LENGTH key again. If any other key is pressed, the length will not change.

If you have recorded a sequence and then shorten the length, you will lose the bars you have cut. If you lengthen a sequence you have recorded, rests will appear at the end.

LENGTH sets the number of bars within a sequence. The length of each bar is set by SIGNATURE.

► **REMEMBER:** If the MEMORY PROTECT switch is on, the Length of a sequence cannot be changed, although the Length can be displayed.

## SONGS

One prominent feature of music is that it is organized into sections that repeat and alternate with each other. The Song Mode allows you to record each section of a piece as a separate sequence and then combine sequences into a complete composition.

A Song is a listing of sequences. The DX contains 50 Songs, numbered 00 thru 49, in addition to the 100 sequences. Unlike a sequence, a song does not remember the notes, only the order of sequences that you wish to play. There can be as many as 255 sequences contained within a song, and each sequence within a song can have its own tempo, length, or time signature. Songs make more efficient use of the DX memory. In fact, playing three sequences in a song uses as much memory space as a *single note* in a sequence.

### Selecting A Song

To enter the song mode, press SONG. The Song button will light and the DX will select the song previously selected. To select a different Song simply press the number of the desired Song.

To go back to Sequence mode, press SONG again.

### Playing A Song

Once the desired song has been selected, press PLAY and the selected song will play from beginning to end and then stop.














As the song plays through the different sequences in it, the sequence number on the display will change to reflect the actual sequence presently being played. Each sequence in the song is given an ascending PART number that reflects its order in the song.

### Creating A Song

Creating a song is different than recording a sequence, because you are not playing any notes, just making a list of sequences.

To create a song press EDIT (while in Song mode—both SONG and EDIT buttons should be lit.). Once you enter SONG EDIT mode, the DX will ask you to select the sequences that will make up the song: the "Song List:"

The arrow buttons can be used to "rewind" and "fast forward" through the song list to get to a particular part.

Function:	Enter SONG EDIT	ADD SEQ 01	Advance to Next Part	ADD SEQ 02	Advance to Next Part	ADD SEQ 01	Advance to Next Part	ADD SEQ 00
Press:	 	 		 		 		 
Song List:	Part: Seq: <b>1</b> (Empty Song)	Part: Seq: <b>1 0 1</b>	Part: Seq: <b>1 0 1</b> <b>2</b>	Part: Seq: <b>1 0 1</b> <b>2 0 2</b>	Part: Seq: <b>1 0 1</b> <b>2 0 2</b> <b>3</b>	Part: Seq: <b>1 0 1</b> <b>2 0 2</b> <b>3 0 1</b>	Part: Seq: <b>1 0 1</b> <b>2 0 2</b> <b>3 0 1</b> <b>4</b>	Part: Seq: <b>1 0 1</b> <b>2 0 2</b> <b>3 0 1</b> <b>4 0 0</b>

# GETTING AROUND

There are four editing commands:

**ADD:** If the display shows the end of a song list (only a part number displayed on the left side — right side blank), you can add a sequence to the end of the song by entering the desired sequence number. If a song list is empty, the first part will be blank.

**REPLACE:** You can REPLACE any sequence currently displayed with another simply by entering the new sequence number.

**INSERT:** By pressing RECORD and EDIT, the DX will insert Sequence 00 into the song list before the sequence previously displayed. You can then REPLACE Sequence 00 with the desired sequence by entering its number.

**ERASE:** By pressing ERASE and EDIT, the DX will remove the displayed sequence from the song list.

To play the song you have just created, press PLAY.

■ **NOTE:** A song can have up to 255 parts in it. However, only the lowest two digits are shown in the display.

► **REMEMBER:** The DX will not EDIT a SONG if the MEMORY PROTECT switch on the rear panel is ON.

## Erasing A Song

You can erase an entire song while in Song mode by holding ERASE and pressing RECORD. Individual sequences within the song list can be removed in the Song Edit mode (see Creating A Song).

## Song Length

When in Song Mode, pressing LENGTH will display the number of parts contained in the song list.

Rewind to Part 3	REPLACE with SEQ 14	Rewind to Part 2	INSERT a New Part	REPLACE with SEQ 19	Advance to Part 3	Advance to Part 4	ERASE SEQ 14	Finish Editing
			+ <sup>beep</sup>				+ <sup>beep</sup>	
Part: Seq:	Part: Seq:	Part: Seq:	Part: Seq:	Part: Seq:	Part: Seq:	Part: Seq:	Part: Seq:	Part: Seq:
1 0 1	1 0 1	1 0 1	1 0 1	1 0 1	1 0 1	1 0 1	1 0 1	
2 0 2	2 0 2	2 0 2	2 0 0	2 1 9	2 1 9	2 1 9	2 1 9	
3 0 1	3 1 4	3 1 4	3 0 2	3 0 2	3 0 2	3 0 2	3 0 2	
4 0 0	4 0 0	4 0 0	4 1 4	4 1 4	4 1 4	4 1 4	4 0 0	
			5 0 0	5 0 0	5 0 0	5 0 0		

# THE VOICES

---

The DX contains six sets of voices. Each voice has three variations, and some of the voices contain two completely different sounds. Only one voice variation can be played at a time. The sound of each voice is contained on one or several memory chips.

---

## SOUNDS

The DX comes from the factory with the following voices and these variations:

**BASS** / Bass drum, with three volume levels.

**SNARE** / Snare drum, with three volume levels.

**HI-HAT** / A hihat, with a closed and an accented sound, plus a longer "open" sound.

**TOMS** / Toms with three pitches.

**CYMBALS** / A Ride cymbal, with two volumes, plus a Crash cymbal.

**PERC** / Two sounds: a shaker with accent, plus hand claps.

### **Tuning**

The pitch of each of the voices can be tuned up or down half an octave by adjusting the pitch controls located on the rear panel of the DX.

### **Changing Sounds**

The DX drum sounds are contained on computer memory chips. By changing the chips, you can customize your DX to your specific application.

---

## SOUND LIBRARY

In addition to the sounds that come with the DX, the library of Sound Chips available include:

### **Bass Drums**

Electronic Bass  
Beat Kick

### **Snare Drums**

Electronic Snare  
Fat Snare  
Beat Snare  
Reggae Snare

### **Tom-Toms**

Electronic Tom  
Roto Tom

### **HiHats**

Electronic Hihat  
Long HiHat

### **Percussion**

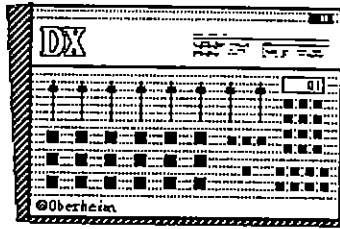
Cowbell  
Tambourine/Rimshot  
Conga  
Timbale  
Bones  
Finger Snaps

### **Effects**

Scratch  
Backwards Snare-Clap  
Click/Clap  
Punch/Zap  
Noise

The Oberheim sound library is continually expanding. Check with your dealer for new sounds. Additional sounds for the DX are available from other manufacturers as well.

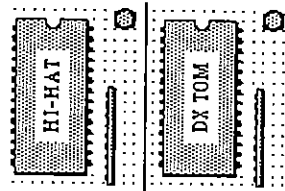
# Changing Sound Chips



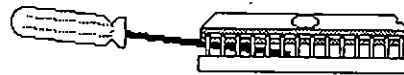
Remove Screws  
and Lift up Front Panel

**Remove Power Cord  
Before Doing ANYTHING!**

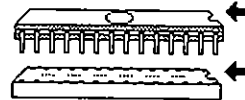
Then,  
Open your DX...



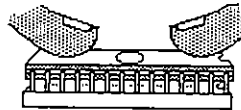
Locate the Sound Chip  
to be removed...



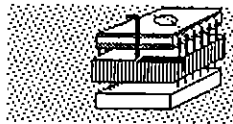
Using a small screwdriver  
or Chip Extractor, **CAREFULLY**  
lift the chip out of its socket,  
from both sides.



Line up the new chip, making  
sure that the notch on the chip  
faces the same way as the  
notch on the socket.



Press the chip firmly into  
the socket. Check to make  
sure that all of the pins have  
mated correctly.



For easier chip changing, install  
Zero Insertion Force ("ZIF")  
sockets in your machine.

