Oberheim DX

STRETCH

OWNER'S MANUAL
Second Edition
October, 1985

Oberheim DX STRETCH Owner's Manual,
2nd Edition text by David M. Bertovic

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.

OBERHEIM
A Division of E.C.C. Development Corporation
2230 South Barrington Avenue
Los Angeles, California 90064

DX STRETCH WARRANTY CERTIFICATE

The E.C.C./Oberheim Limited Warranty is available to the original purchaser of an Oberheim STRETCH when purchased from an Authorized Oberheim Dealer **and** installed on his/her DX Drum Machine by an Authorized Oberheim Service Center. A current roster of Service Centers authorized by E.C.C./Oberheim is enclosed in the Owner's Packet included with this STRETCH.

To register the Warranty for your STRETCH, follow the procedure outlined in the INSTALLATION section of this manual under the heading "How to Obtain Warranty Protection for Your STRETCH". The Warranty Certificate at the bottom of this page must first be filled out by the service technician who installed your STRETCH. Then you are responsible for completing your section of the Certificate and returning it to Oberheim to be registered.

If you have reason to believe that your STRETCH is malfunctioning, refer to the section titled IF YOU HAVE A PROBLEM in the back of this manual.

- -

STRETCH WARRANTY REGISTRATION

OWNER INFORMATION

STRETCH Serial # _____ Date of Purchase _____

DX Drum Machine Serial # _____

Name _____ Dealer _____

Address _____ Address _____
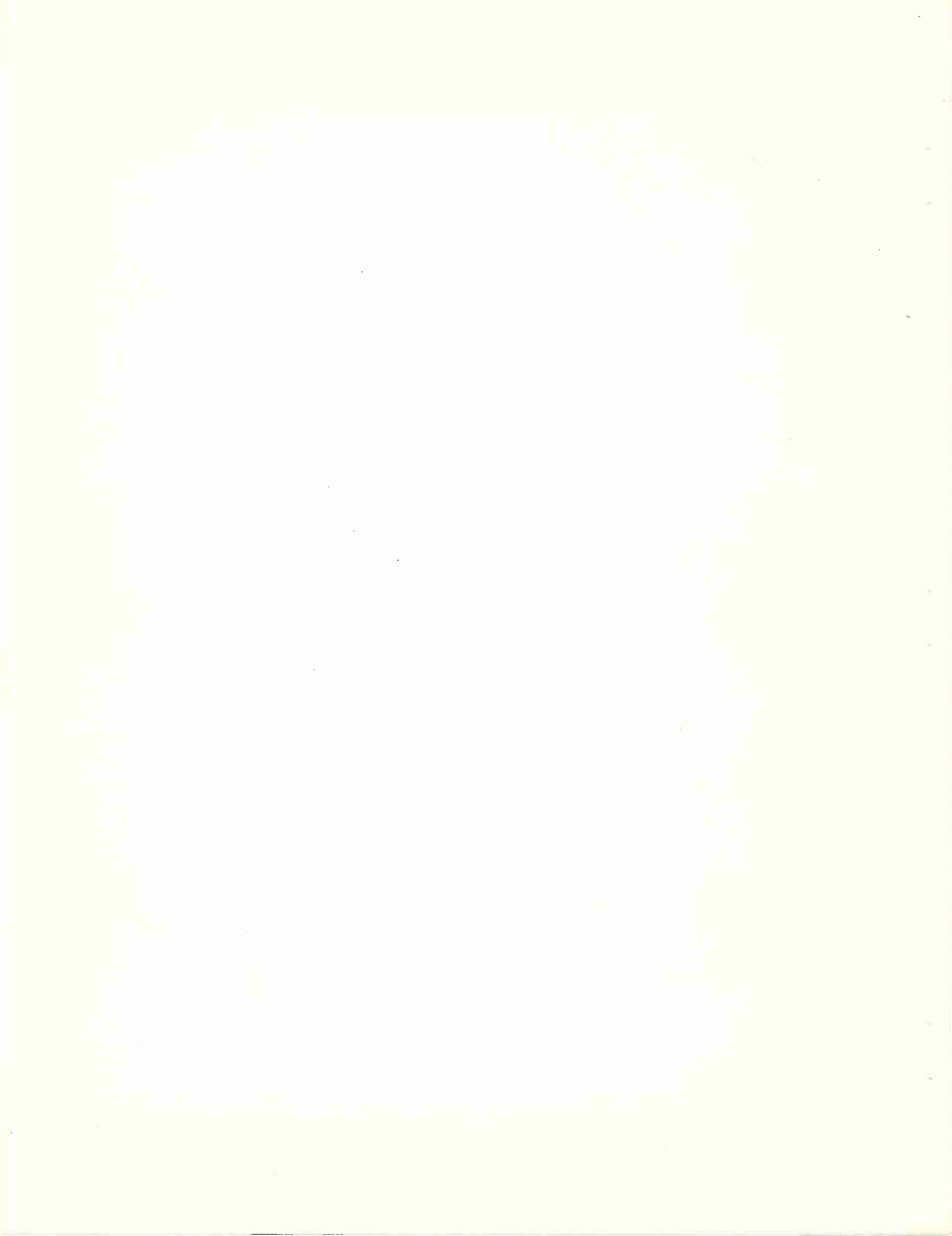
City _____ City _____

State _____ ZIP _____ State _____ ZIP _____

SERVICE CENTER INFORMATION

Sevice Center Name _____

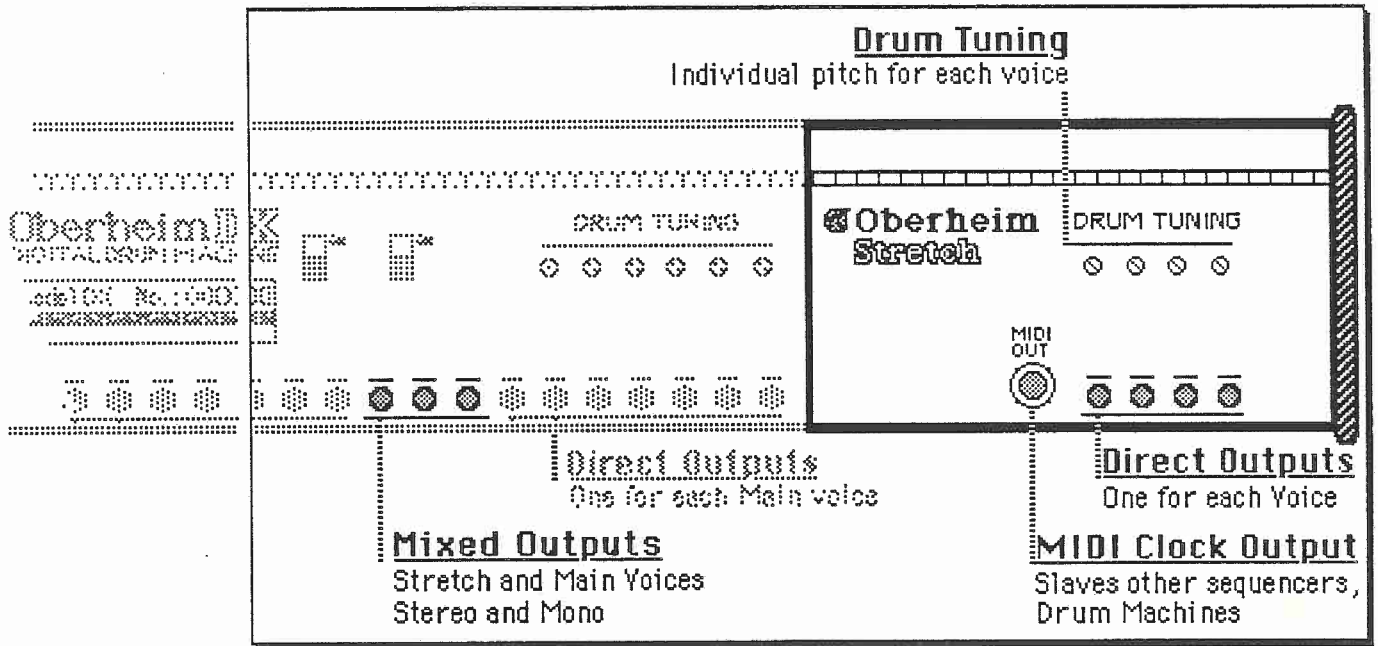Date of Installation _____

Technician's Signature _____

TABLE OF CONTENTS

WELCOME TO THE STRETCH

The STRETCH expands the sound capability of your Oberheim DX Drum Machine by adding four additional voice channels, similar to adding more inputs to a mixing console. The new voices have quick change "ZIF" (Zero Insertion Force) sockets , as well as individual outputs and tuning controls on the back of the STRETCH. The STRETCH voices are output together with the DX's main voices at the MIXED OUTPUTS of the DX and each has its own volume slider on the STRETCH's Front Panel.

If your DX does not already have MIDI, adding STRETCH adds the MIDI Clock output, so that the STRETCH DX can synchronize other MIDI sequencers and drum machines. The STRETCH adds other features to your DX as well, such as selectable external clock rates, programmable metronome, pre-record countdown, Auto-Start (used when syncing the DX to tape or other clock sources), and so forth. These new features are explained later in this manual titled NEW SOFTWARE FEATURES AND CHANGES OF OPERATION. Adding the Stretch adds all of the features of the MIDI DX except MIDI notes, and some other MIDI functions.

Stretch Back Panel

INSTALLATION

You will need to take your STRETCH to an Oberheim Authorized Service Center for installation. Although the procedure is not difficult, installation must be performed by an Authorized Service Center in order to register the Warranty. You will invalidate your Warranty if your STRETCH is installed by anyone other than an Oberheim Authorized Service Center.

To obtain Warranty protection for your DX STRETCH, do the following:

1. Take your DX Drum Machine, STRETCH and the Warranty Certificate on the inside front cover to your nearest Oberheim Authorized Service Center. A current roster is included in your STRETCH Owner's Packet.

2. The installation of your STRETCH is **not** included in the purchase price. The Service Center performing the work will charge you an installation fee. The Warranty that you will obtain by having your STRETCH installed at an Authorized Service Center will cover parts and labor for one year should your STRETCH require servicing in the future.

3. When your STRETCH has been installed, the service technician who performed the work must complete the lower portion of the Warranty Certificate.

4. After you receive your STRETCH DX from the Service Center, you must complete the upper portion of the Certificate and mail it to:

> OBERHEIM
> Department S
> A Division of E.C.C. Development Corporation
> 2230 South Barrington Avenue
> Los Angeles, CA 90064

5. When your Warranty has been registered, we will send you notification by mail. Please allow 6 to 8 weeks for delivery. If your STRETCH requires servicing before you receive this notification, simply present the installation receipt and the Warranty will be honored.

6. Should your STRETCH need servicing, do not attempt repairs yourself. Refer to the section in the back of this manual titled IF YOU HAVE A PROBLEM and contact the Service Center that performed the installation. You have certain rights and responsibilities under the Oberheim Limited Warranty and we strongly recommend that you read this chapter thoroughly.

SOUNDS

Sound Chips are required to play the additional four channels and are not included with the STRETCH. A list of sounds currently available from Oberheim is included in your Owner's Packet. These optional Sound Chips are sold through your Oberheim Authorized Dealer and may be purchased from them or ordered if they are out of stock.

Many of these Sound Chips are interchangeable with the chips in the DX itself and we have provided a "Compatibility Chart" that cross-references the different uses of the chips. This chart is printed on the same page as the Sound Chip List mentioned above that is included in your Owner's Packet.

USING THE STRETCH VOICES - HARDWARE CONFIGURATIONS

Each of the four Stretch voices are configured differently so that the voice hardware can be optimized for a particular type and style of sound. These configurations are:

Stock Voice Configuration:			
PERC1	**PERC2**	**PERC3**	**PERC4**
HIGH	SOFT	Sound1 HIGH	SOFT
MID	MED	Sound1 LOW	MED
LOW	LOUD	SOUND 2	LOUD

Stretch Front Panel

All Oberheim Sound Chips for the Stretch are identified with one of the following codes. These refer to the configurations of the voices as they come from the factory :

(P1) PERC1 / There is one sound on the chip that plays with three different *pitches* when used in the PERC1 Voice or the TOM Voice of the DX.

(P2) PERC2 / Designed for sounds that utilize *dynamics*. There is one sound on the chip that plays with three different **volume levels** when used in the PERC2 Voice of the Stretch or the SNARE or BASS Voices of the DX.

(P3) PERC3 / Designed for percussion sound *combinations*, such as Cowbell/Rimshot. There are two sounds per chip: one of them plays with two **pitches** when used in the PERC3 Voice of the Stretch, or two **volumes** when used in the PERC Voice of the DX.

(P4) PERC4 / One *long sound* on one larger-capacity chip, with three volume levels. Used for Cymbals. These chips will fit the CYMBAL Voice of a MIDI DX, as well as PERC4 of Stretch. These chips are also identified by the "256" in their name.

The Limitation of the Stretch (And How to Get Around It)

The four STRETCH voices are paired with four of the DX's voices - HIHAT, TOM, CYMBAL and PERC - for sequence recording purposes (SNARE and BASS are independent). This pairing is much the same as the grouping within each DX Voice. This means that the DX Voice and its paired STRETCH Voice cannot be triggered at the exact same moment. However, the Voices can play within 1/192 note and will not cancel each other when played.

While the DX Voice and its STRETCH counterpart can not play at the exact same moment, they can play together like a flam. Here's how:

1. RECORD one of the Voices at the desired beat in the Sequence.

2. Stop recording, and set the QUANTIZE to "OFF".

3. Enter STEP mode, and use the arrow buttons to advance through the sequence until the previously recorded voice is heard.

4. Advance to the next STEP Value.

5. Press the desired button of the paired voice. This will record the paired voice 1/192nd note after the original voice.

When the sequence is played back, both of these sounds will play one immediately after the other. But since they have been recorded only 1/192nd note apart, this subtle time difference will not be significant, especially at higher tempos.

Changing Sound Chips
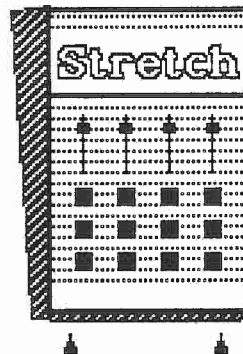
Stretch

Remove screws and lift up front panel
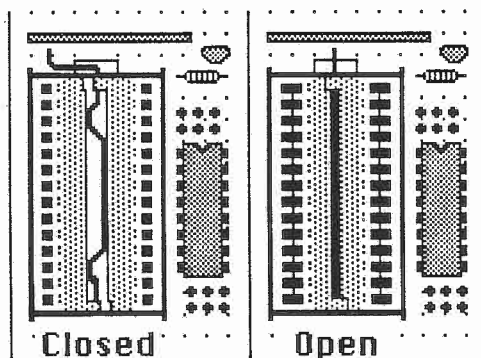
<u>Remove Power Cord</u>
<u>Before Doing ANYTHING!</u>

Then,
Open your Stretch DX...

Closed Open

Locate the desired
Sound Chip ZIF Socket...

Move the socket lever
to its OPEN positon.
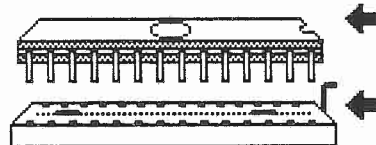
Line up the sound chip, making
sure that the notch on the chip
is on the same side as the
lever on the socket.

(Chips can be destroyed by not inserting
them correctly, so be careful!)
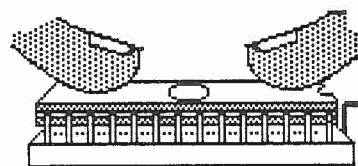
Press the chip carefully into
the socket. Check to make
sure that all of the pins have
mated correctly.
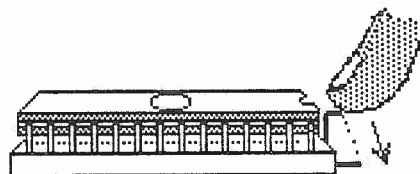
Press down on the lever
to lock the chip in the socket.

The STRETCH provides Non-MIDI DX Drum Machine owners with 15 new operating features that greatly expand the flexibility of the DX. We are able to provide Non-MIDI DXs with the operating parameters of the MIDI DX so that they will be up-to-date. If you own a MIDI DX, you already have these features and this section of the manual does not pertain to you.

In addition to the new features, we have also incorporated 7 changes of operation in adding the STRETCH to your DX. In other words, the DX still performs the same functions as it did before but several of these parameters are now accomplished in a different way.

CHANGES OF OPERATION

FREE MEMORY DISPLAY

The amount of available memory left in the DX can be displayed by pressing and holding the red RECORD button for 1.5 seconds while the DX is in STOP (Sequence or Song mode). The display will show a 2-digit number that represents the percentage of memory remaining in the DX, and will continue to display this number until you let the record button go. The number of drum events available at any given time varies depending on the length of the current sequence.

The DX has the capacity to store 2200 "events". An event is any time that any or all of the DX voices are playing. This means that you can play two, three or more drums at the same time (they will all be recorded into memory on the same quantize beat) and only use **one** event in memory. If all six voices are playing on every one of the 2200 possible events, that adds up to a total of 13,200 notes that can be stored! There are many ways that this capacity can be allocated among the 100 sequences.

As a general guide, it is best to take advantage of the repetitive nature of drum parts by constructing Songs from short sequences. Each part of a Song requires only one-third as much memory as a single drum event in a Sequence. As an example, a Song consisting of a one-bar sequence repeated eight times (eight Parts) uses less than one-fifth the memory of one sequence eight bars long. Therefore, the most efficient use of memory is achieved by using SONG mode whenever possible.

QUANTIZING

The STRETCH software expands the Quantizing capability of your DX. The Quantize values that are now available are:

1/2 = half note	1/16 = sixteenth note
1/3 = half note triplet	1/24 = sixteenth note triplet
1/4 = quarter note	1/32 = thirty-second note
1/6 = quarter note triplet	1/48 = thirty-second note triplet
1/8 = eighth note	1/64 = sixty-fourth note*
1/12 = eighth note triplet	1/96 = sixty-fourth note triplet*

OFF = 1/192nd note resolution

*new Quantize levels

Another new feature of Quantize is that you can now change Quantize Values while the DX is in RECORD or PLAY as well as in STOP as before.

METRONOME (Click Value)

The Click value of the METRONOME is now selected by pressing the SIGNATURE button once.Previously, the Click was set by pressing EDIT and QUANTIZE. After the Click value has been selected, pressing the SIGNATURE button again will enter the Signature mode allowing changes to the sequence's time signature to be made as usual. The Click values have also been expanded to allow for increased flexibility in using the DX's Metronome. The new Click values are similar to those of the new Quantize values listed above although the last value is displayed differently.

The new Metronome values are:

1/64 = sixty-fourth note clicks
    64 clicks per measure, 16 clicks per quarter note
1/96 = sixty-fourth note triplet clicks
    96 clicks per measure, 24 clicks per quarter note
1/92 (1/192nd note) = 128th note triplet clicks
    192 clicks per measure, 48 clicks per quarter note

Using the METRONOME as a Clock Source
As discussed in the section titled NEW FEATURES, the DX now has a variable Clock Out rate. The limitation of this feature is that the DX cannot output a clock rate faster than the rate of its Clock In. Here is where the expanded Click Values can be used as a substitute for the Clock Out. Here's an example:

You are driving the DX from a clock source of 24 pulses per quarter note. But you need to drive another instrument from the DX that requires 48. Since the DX cannot put out a higher Clock rate than it is receiving, how can you get around this?

Set your Metronome Click Value to "1/92" which will give us 192 pulses per measure or *48 pulses per quarter note*. The Metronome will act in this case as our Clock Out source. Use the CLICK OUT jack on the back of the DX when connecting to the receiving instrument's Clock In.

Also, as with the Quantize parameter, the Click Value can be changed while the DX is in RECORD or PLAY modes.

The CLICK OUT outputs the Metronome whenever the DX is in PLAY (a Sequence or Song) or RECORD modes. The TEMPO and CLICK VALUE parameters cotrol the rate of the metronome pulses. The CLICK OUT is +12 volts DC with a pulse width of 900 microseconds (0.9 milliseconds).

The Metronome can be set to click in a programmable rhythm instead of a steady, even pattern. See EDIT PARAMETER "04 SET PROGRAMMABLE CLICK" on page 19.

SWING

The range of the SWING function has also been extended and will operate in conjunction with more Quantize Values than before. You will notice that the available Swing Values as well as the upper limit (maximum Swing) varies depending on the Quantize Value that you have selected.

QUANTIZE VALUE	MAXIMUM SWING
1/2	98%
1/3	98%
1/4	97%
1/6	96%
1/8	95%
1/12	93%
1/16	91%
1/24	87%
1/32	83%
1/48	75%
1/64	Not Operative
1/96	Not Operative
OFF	Not Operative

The SWING value can be changed while the DX is in STOP, RECORD or PLAY.

ERASING

The Erase function of the DX has also been expanded and the Display will show some new messages when certain Erase functions are being executed.

Erasing "On-the-Fly" - You can erase individual drums from a sequence *while the DX is looping in RECORD mode:*

1. Holding ERASE and any drum button will erase that drum for as long as both buttons are being held down.

2. Holding ERASE and RECORD will erase *all drums* from the sequence for as long as the buttons are being held down.

Erasing and Deleting a Sequence - While the DX is in SELECT SEQUENCE mode and in STOP, holding ERASE and then pressing RECORD *once* erases all drums from the sequence but retains length, tempo and time signature information. At this point you may reprogram the sequence or use the blank sequence to add rests in a Song. Erasing the sequence *a second time* resets the sequence to the DX's standard default settings: Length = 2 bars, Tempo = 80 BPM and Time Signature = 4/4. The Display will verify that this has occurred by reading "**dEL**" and the DX will completely remove the sequence from memory.

Erasing a Song - While the DX is SELECT SONG mode and in STOP, holding ERASE and then pressing RECORD erases the currently selected Song. The DX will "beep" and will completely remove the Song from memory.

Erasing Everything - To erase the entire memory of the DX, hold ERASE and then press both < > buttons at the same time. The display will show the message "**CLr?**" and the ERASE button LED will light. Press the ERASE button a second time and the display will go dark, the lights will flash and the DX will "beep". This deletes all Sequences and Songs by clearing the entire contents of memory, but will have no effect on the settings of the EDIT PARAMETERS.

NEW FEATURES

In addition to the Changes of Operation that we discussed previously, the STRETCH software provides15 operational features that are entirely new. Based on the technlogy used in the MIDI-DX, the STRETCH incorporates the same operational features into your DX, except for some MIDI functions.

RECORD MODE

Punch-Out / Punch-In - Holding RECORD and pressing PLAY *while recording* a sequence "punches out" into PLAY mode. Once you have punched out of a sequence you can "punch in" to the **same** sequence by holding RECORD and pressing PLAY again. You can punch in at any time, but the DX will not start Recording until the beginning of the sequence loops around.

- You can only punch out of RECORD.

- You cannot punch in from PLAY without having been in RECORD first.

- If you punch out of a sequence and then change to another sequence number while the DX is still looping in PLAY, you cannot punch into the new sequence.

Flams - While Recording a sequence, Flams or "grace notes" can be added to the sequence whenever desired by holding the RECORD button and pressing the desired drum buttons. The second note is recorded right after the played note in the next Quantize slot. The flam(s) will not be heard until the sequence loops around and plays again.

Flams can be recorded only when QUANTIZE is set to **1/64, 1/96** or **OFF**.

Cue Tempo - In STOP, pressing TEMPO while holding RECORD enters "Cue Tempo" mode. The TEMPO of the sequence in Beats-per-Minute is now set by tapping the STEP button or playing the EXTERNAL TRIGGER in quarter notes at the desired tempo. The TEMPO of the sequence will be set to match that rhythm, rounded off to the nearest valid TEMPO value in memory.

CASSETTE MODE

The Cassette Interface function of the DX has been modified and expanded to include the ability of the DX to load in single Sequences or single Songs. The format of the cassette data has been changed so that each Sequence and each Song has its own ID code on the tape and thus single loading from tape becomes possible. The cassette function of recording data to tape has remained essentially the same - all Sequences and Songs are saved to tape in one batch. Conversely, the entire contents of the tape can be loaded back into the DX just as before. The difference now is that you can take individual Sequences or Songs from a tape or several tapes and load them into the DX one at a time. This makes it possible to compile data from several tapes into the DX.

Data tapes made from your DX before the STRETCH was installed are compatible with the new software when the entire tape is loaded in. Single loading of old-format data is not possible, however, unless it is converted. To do this, simply load in the old data then record it back to the tape. When the data goes back to the tape, it is automatically converted and saved in the new format and single loading can now occur. Data tapes made from a DX with the STRETCH are now compatible with MIDI DXs. Data tapes that are in the new format, however, are not compatible with Non-MIDI DXs that do not have a STRETCH.

Single Sequence Loading - To load a single sequence from tape into the DX, follow this procedure:

1. Enter CASSETTE mode by flipping the Cassette Interface ENABLE ON switch to its up position. The display will now read **"CASS"**.

2. Press the TEMPO button on the DX's front panel. The display's left-hand segment will show the number **"00"**.

3. Use the Keypad to type in the number of the sequence *on the tape* that you want to load into the DX. This is the Source sequence.

4. Press the TEMPO button again. Now the display's right-hand segment will show the number **"00"**.

5. Use the Keypad to type in the number of the sequence *in the DX* where you want the single load from the tape to go. This is the Destination sequence. Keep in mind that if there is already a drum pattern stored in that sequence location, it will be erased and replaced with the one coming in from tape.

6. Press TEMPO a third time. The display will not change but this action tells the DX that you have completed the selection of the Source and Destination sequences and prepares the DX to receive the incoming data.

7. Press PLAY on your tape recorder.

8. The DX will look at all the incoming data, during which time the TEMPO L.E.D. will flash on and off with the data. The DX will recognize only the sequence that you selected in Step #3 as the Source sequence. When this occurs, the DX will immediately exit the Single Load function and store the sequence in its new location. The display will then revert back to the "**CASS**" message.

Single Song Loading - Loading in a single Song from tape is accomplished the same way as with loading in a single sequence. The only difference is that the SIGNATURE key is used instead of TEMPO. You should keep in mind that when loading in a Song, the Song is comprised only of a **list** of the sequences in it. Each sequence within the Song must then be loaded in individually for the Song to actually play.

EDIT PARAMETERS

Many aspects of the DX can be "customized" by the user in a new section called EDIT PARAMETERS. You are now able to turn ON or OFF several operating parameters of the DX as you need them. EDIT PARAMETERS mode is accessed by pressing the EDIT button at any time except while the DX is in SONG mode (where the EDIT key is used to edit songs).

When the DX is in EDIT, the 0 - 9 and < > buttons on the Keypad are used to select the seven available EDIT PARAMETERS, numbered **00** through **06**.

While in EDIT, the STEP button is used to select from among the options available for some parameters or selecting ON ("On") or OFF ("--") status for others.

00 RECORD COUNTDOWN (--,On)
When "On", Record Countdown gives you four metronome clicks as a count-off when you are recording a sequence. The Beat Value of these four clicks is the same as the CLICK VALUE for the Metronome. For example, if you have set the CLICK VALUE to be eighth note clicks, the Countdown will be four eighth notes. If CLICK = quarter notes, Countdown = four quarter note clicks. If CLICK = half notes, Countdown = four half note clicks.

When Record Countdown is "--" (off), the RECORD function operates normally. The DX will enter its record function as soon as RECORD and PLAY are pressed.

RECORD COUNTDOWN operates only while recording a sequence. A count-off is not possible when playing a Sequence or Song.

01 TIMING SOURCE (I,24,48,96,S)
The DX can operate from a number of different timing sources, either internally or externally. This parameter is allows you to select where the DX's timing control comes from.

I - Internal Clock: Selecting "I" allows the DX to run as a stand-alone instrument. The Internal Clock is used when the DX is used by itself or as the Master clock source in a system.

24,48,96 - External Clock: The DX normally operates at a clock rate of 96 clock pulses per quarter note. This is also the normal operating rate of the Oberheim DMX and MIDI-DX Drum Machines as well as the Oberheim DSX Polyphonic Sequencer. The 96 pulse clock rate, however, is not standard and several other manufacturers use 24 or 48 pulse rates in the design of their instruments.

The new software provided with the STRETCH enables you to select from among these three most-used clock rates so that direct interfacing with other brands is now possible without the need for additional conversion boxes. If you are driving the DX as a Slave from another manufacturer's instrument, use the STEP button to select the correct clock rate output of the Master. You should be able to find this rate in the Owner's Manual of the Master instrument. A chart of available Clock Output rates is provided in the INTERFACE section of this manual for your convenience (page 24).

The "24", "48" and "96" External Clock readings in the TIMING SOURCE parameter will only be displayed if a Master instrument is plugged into the EXTERNAL CLOCK jack on the DX's back panel. If no external clocking source is plugged into the DX, the STEP button will only switch between "I" (for Internal Clock) and "S" (for Tape Sync).

S - Tape Sync: Selecting "S" enables the DX to slave to its Sync Tone. This was previously selected by holding EDIT then pressing SWING. Refer to the guide "Oberheim DX Digital Drum Machine, Sync-to-Tape / Firmware Revision 1.4" for the basic instructions on how to use the Sync-to-Tape function in your DX.

02 AUTO START (--, On)

When this parameter is **On**, external timing sources (External CLOCK IN and SYNC-TO-TAPE IN) will cause the DX to enter PLAY mode automatically when the DX is being used as a Slave. Previously, the PLAY button had to be pressed to put the DX in a "Play Ready" mode before it would recognize an incoming clock or tape sync pulse.

Because the DX is always looking for a clock or tape sync signal in this mode, *any* signal - even noise or static in the connecting cable - that is present at the CLOCK IN or SYNC-TO-TAPE IN jacks will put the DX into PLAY. You may experience the DX "flickering" or jumping in and out of PLAY rapidly and erratically as the noise in the line is causing the DX to false start. If SYNC-TO-TAPE is being used, the DX will not false start once the Leader Tone is detected by the DX. We suggest that you make the Leader Tone on the tape fairly long - about six to eight seconds before the sync pulses begin - so that the DX has enough time to lock on to the Leader Tone and thus prevent false starting from ruining your recording.

When AUTO START is off ("--"), The DX will not detect any external signals until PLAY is pressed.

You can only AUTO START from Select Sequence or Select Song modes. AUTO START will not put the DX into PLAY from STEP, QUANTIZE, SWING etc., for example.

If AUTO START is **On**, pressing PLAY while the DX is stopped will run the DX from its Internal Clock. This makes it easy to switch back and forth from Internal to External timing.

03 CLOCK OUT RATE (24, 48, 96)

This parameter sets the rate of the External CLOCK OUT, used for slaving other equipment to the DX when the DX is intended to be the Master. The numbers **24**, **48** and **96** select the rate of the External Clock's output, expressed in "pulses-per-quarter note". Set this to 96 when driving other Oberheim equipment. Refer to the INTERFACE GUIDE on page 24 when driving other brands of instruments.

The MIDI CLOCK OUT on the back panel of the STRETCH always outputs MIDI Timing Data whenever the DX is in PLAY. The clock rate of MIDI is a standard 24 pulses per quarter note.

The CLOCK OUT rate cannot be faster than the CLOCK IN rate. For example, if **01 TIMING SOURCE** is set to 24, CLOCK OUT cannot be faster than 24.

04 SET PROGRAMMABLE CLICK

The Metronome can be set to click only when one or several different drums play. This allows the click to be used as a programmable trigger output that provides a non-steady click pattern. This is useful in having the DX drive a synthesizer's arpeggiator (like the OB-8) in a syncopated rather than an even pattern, for example. The DX's CLICK OUT jack is connected to the arpeggiator input of the slave synthesizer in this case.

While the DX is in this mode (the **04** edit parameter number is displayed), holding down any combination of drums **first** then pressing RECORD will cause the Metronome click through the CLICK OUT and the MIX OUTPUTS to occur only when those drums are played in PLAY mode. The normal, steady Metronome click will be given in RECORD mode.

"Any Combination of Drums" is limited in that you can select only one drum from each *vertical* drum channel up to a total of 6. As a rule of thumb, bear in mind that if two or three buttons are pressed in the same channel, only the lowest button pressed will program the click. Since the STRETCH shares triggers with the corresponding voice channels on the DX (see page 8), the DX voices have precedence over the STRETCH voices when programming the click. For example, if the CLAPS button on the DX and the third button in Channel P3 on the STRETCH are pressed, only the CLAPS voice on the DX will be effective in programming the click.

The click can be re-set to its normal, steady output by pressing RECORD while ERASE is being held down while the DX is in this mode.

05 SET DRUM OUTS

Drum Outs act like mutes for the sound of each button. You should note that drums that are muted can still be recorded and erased - only their audio output is disabled.

While the DX is in this mode...

• Pressing a drum button while holding ERASE disables the audio for that drum.

• Pressing a drum button while holding RECORD enables the audio for that drum.

• Pressing RECORD while holding ERASE enables **all** drums.

06 SET TRIGGER IN

The DX utilizes an EXTERNAL TRIGGER jack that enables you to play the drums from an external source. This input is designed for a switch closure, such as a footswitch, an inverted Gate signal from a sequencer (such as the Oberheim DSX) or an inverted Moog "S-Trig" type trigger. In order to trigger the DX drums with an acoustic signal such as that from a live drum or an electric signal from an electronic drum pad, it is necessary to utilize one of the trigger interface devices that are available on the market.

The EXTERNAL TRIGGER IN acts essentially the same as pressing one of the drum buttons on the front panel. When in RECORD mode, triggering any of the drums externally will cause them to be recorded subject to the same correction settings in QUANTIZE and SWING, just as for drums being played from the front panel buttons.

The EXTERNAL TRIGGER input on the rear panel can be set to play any one of the drums or combination of drums. As with **04 SET PROGRAMMABLE CLICK**, selecting "any combination of drums" means one from each vertical channel.

To set which drums are to be triggered, hold the desired drum button or buttons then trigger the input. When the trigger you send to the DX is received, the drums selected will play and the DX will "beep". The drums selected to be triggered will remain in memory until you change the setting. To remove the trigger setting, hold ERASE and trigger the input.

HOUSEKEEPING

The DX now has several functions that act as general maintenance routines for the memory of your Sequences and Songs. They are described as follows:

DATA CHECK

One of the features of the DX is a Data Check routine that runs automatically when the unit is turned on and also when you exit the CASSETTE mode. Data Check examines each Song and Sequence to make sure that it is properly configured in memory.

Bad Sequences can appear in the DX's memory in several ways. Loading data from a cassette tape that has more than 2200 events from a DMX into a DX is one example. If there is illegal information in a sequence, the Data Check routine will identify the sequence and alternately flash its Sequence Number on the display followed by the message " **dEL?**". The ERASE button will light, prompting you to delete the sequence. If an error is found in a Song, the Song Number will flash and the Song button will light.

Press ERASE to delete the bad Sequence or Song. If any other button on the DX's front panel is pressed, the Sequence or Song in question will not be deleted and will remain in memory as is. Data Check will then continue its routine and look for more bad Songs or Sequences, if any.

After checking all of the Songs and Sequences, the DX will return to normal operation. But if any bad Songs or Sequences remain in memory (the ones you chose not to delete), the display will show the message " **bAd**" and the DX will "beep". Be careful when working with bad Songs or Sequences (the ones you declined to delete). In particular, any attempt to alter a bad Sequence by Recording, Erasing, Copying etc. will almost always cause the DX to crash its memory or lock-up. See "IF YOUR DX GETS LOST" below on the following page.

RAM CHECK

Besides the Data Check routine, the DX will also check the RAM (Random Access Memory) circuits that contain your Sequences and Songs. RAM Check is run every time the DX is turned on. This routine checks for bad data in memory when the unit is powered on. Random data of this type can result from a loss of the back-up battery's power to the memory, for example. If the back-up battery inside your DX is low or dead, memory will get lost or scrambled and the RAM Check will detect this. The most common source of this problem is poor A.C. power to the DX. Any power outages or spikes in the A.C. caused by air conditioners or even power amplifiers on the same house current will contribute to this problem.

If the data in memory is is bad for any reason upon turning the DX on, the DX will "beep" and display "**bAd**" followed by a "**CLr?**" prompt and the ERASE button will light. Pressing the ERASE button *erases everything* in memory and resets the Edit Parameters.

IF YOUR DX GETS LOST

If the error message "**Err**" appears on the display, the DX has gotten lost or confused due to bad data in memory. In this extreme case, clearing memory will take care of the lock-up problem, but the side-effect is that you will lose all of your memory in the process. This is why we **strongly advise** that you record your memory onto cassette on a regular basis. If a back-up data cassette of your programs is not available, immediately enter CASSETTE MODE on the back of the DX's back panel and make a data tape according to the procedure in your DX Owner's Manual.

When your data is safely on cassette, proceed as follows:

- Exit CASSETTE MODE.

-Press any button on the DX front panel. This will attempt to get the DX to proceed in its normal operation

- If the DX locks up again, the only alternative is clear memory. Turn the machine off. Hold the ERASE button while turning the DX back on. This "**FAILSAFE ERASE**" mode will clear memory entirely and reset the Edit Parameters. You can now load data back in from the tape you made and use the DX as before.

INTERFACING WITH THE STRETCH

The interfacing capabilities of the DX are enhanced by the addition of the STRETCH. We have already covered most of these possibilities in the "CHANGES OF OPERATION" and "NEW FEATURES" sections. We will now cover the use of the STRETCH's "MIDI Clock Out" function and sum up the interfacing operations in chart form.

Utilizing the MIDI Clock Out provides an easy method of interconnecting MIDI devices. You will need a standard MIDI cable for this purpose. Because the STRETCH uses a MIDI Clock Out only, the DX can only be used as the Master when clocking with MIDI.

1. For best results, turn off both units before connecting the MIDI cable.

2. Connect the MIDI CLOCK OUT jack on the rear panel of the STRETCH to the MIDI IN of the Slave unit.

3. Set EDIT PARAMETER "02 TIMING SOURCE" to "I" for Internal Clock. The STRETCH will output a MIDI Clock signal whenever the DX is in PLAY or RECORD modes.

4. Be sure that the instrument the STRETCH will drive is set to receive MIDI Clock as a timing source.

| INSTRUMENT | EXTERNAL CLOCK | | MIDI CLOCK |
	STRETCH w/ DX Master	DX Slave	DX Master Only
OBERHEIM			
Non-MIDI DX w/out STRETCH	96	96	NO
Non-MIDI DX with STRETCH	96,48,24	96,48,24	NO
MIDI DX with or w/out STRETCH	96,48,24	96,48,24	YES
DMX	96	96	NO
DSX	96	96	NO
EMu			
Emulator II	24	24	NO
Drumulator	96	24	YES
FAIRLIGHT			
CMI (w/ General Interface Card)	96	96	NO
KURZWEIL			
250	96	96	NO
LINN			
LinnDrum	48	96	NO
9000	48	48	YES
PPG			
Wave 2.3	NO	48	NO
ROLAND			
MSQ-700	NO	NO	YES
MSQ-100	NO	NO	YES
TR-909	NO	NO	YES
TR-707	NO	NO	YES
SEQUENTIAL			
SixTrak	96	NO	YES
DrumTracks	96	NO	YES
64 Sequencer	96	NO	NO
YAMAHA			
RX-15	96	96	YES
RX-11	96	96	YES
QX-1	NO	NO	YES
QX-7	NO	NO	YES

IF YOU HAVE A PROBLEM

The staff at E.C.C. / Oberheim wish to thank-you for purchasing an Oberheim product and hope that you will remain a long-time Oberheim player. We are confident that your instrument will provide you with years of excellent service as each unit is thoroughly tested and inspected before it leaves the factory. The Owner's Manual was written to be logical and comprehensive so that you will be able to get the most out of your Oberheim.

Although we have taken great care in manufacturing your Oberheim instrument and preparing thorough documentation in the manual, products at this level of technology may require servicing. The following Warranty Policy outlines your rights and responsibilities, and also lists several limitations of coverage and important exclusions. We strongly recommend that you read the following policy statements carefully and refer to the procedure at the end in obtaining service for your Oberheim product should it ever be needed.

OBERHEIM LIMITED CUSTOMER WARRANTY
(Non-Transferable)

Oberheim, a Division of E.C.C. Development Corporation, warrants its products, when purchased from an Authorized Oberheim Dealer, to be free from defects in materials or workmanship for a period of 12 months from the date of purchase. Warranty service is effective and available to the original purchaser **ONLY**, and only upon completion and return of the Oberheim Warranty Registration card within 14 days of the date of purchase.

To obtain service under this Warranty, the product must, upon discovery of the defect, be properly packed and shipped to the nearest Oberheim Authorized Service Center. The party requesting Warranty service must provide proof of original ownership and date of purchase of the product by supplying to the Oberheim Authorized Service Center either the Warranty Registration Sticker applied to the unit itself, or the sales receipt. In the event that both have been lost or misplaced, the Service Center shall, at the Service Center's or owner's expense, contact Oberheim to verify the Warranty status of the product.

If the Warranty has been verified, Oberheim will, without charge for parts or labor, either repair or replace the defective part(s).

PRICES AND SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE

WHAT IS COVERED

Oberheim warrants that it will make all necessary adjustments, repairs or replacements at no cost to the original owner within the first 12 months from the purchase date if:

1. The product fails to perform its specified functions due to failure of one or more of its components.

2. The product fails to perform its specified functions due to defects in workmanship.

3. The product is maintained and operated by the owner in strict accordance with the written instuctions for proper maintenance and use as specified in the Owner's Manual.

WHAT IS NOT COVERED

Before purchasing and using, the owner shall determine the suitability of the product for his/her intended use, and the owner assumes all risk and liability whatsoever in connection therewith. Oberheim shall not be liable for any injury, loss or damage, direct or consequential, arising out of the use or inability to use the product.

The Warranty provides only the benefits specified and does not cover defects or repairs needed as a result of acts beyond the control of Oberheim including but not limited to:

1. Damage caused by abuse, accident or negligence.

Oberheim will not cover under warranty any Sound Chip damaged or destroyed as a result of the owner's mis-handling, or the improper removal and installation into the Stretch or the DX itself.

2. Any tampering, alteration or modification of the product's mechanical or electronic components.

3. Failure to operate the product in strict accordance with the procedures written in the Owner's Manual.

4. Repairs performed by unauthorized persons.

5. Damage caused by fire, smoke, falling objects, water or liquids etc. or acts of God such as earthquakes, floods, lightning, tornadoes, storms, etc.

6. Damage caused by operation on improper voltages.

IMPORTANT NOTICE: The warranty is VOID if the product is electronically or mechanically modified, altered or tampered with in any way.

Oberheim shall not be liable for costs involved in packing or preparing the product for shipping with regards to time, labor or materials, shipping and freight costs, or time and expenses involved in transporting the product to and from an Oberheim Authorized Service Center, an Oberheim Authorized Dealer or the Oberheim Factory. If a suitable shipping container is unavailable, a replacement carton may be purchased from Oberheim.

Oberheim will not cover under Warranty an apparent malfunction that is determined to be in fact user error, or the owner's inability to use the product.

Oberheim will not cover under Warranty an apparent malfunction that is inaccurately or inadequately described by the owner to the Service Center at the time of repair.

THE DURATION OF ANY OTHER WARRANTIES, WHETHER IMPLIED OR EXPRESS, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTY OF MERCHANTABILITY, IS LIMITED TO THE DURATION OF THE EXPRESS WARRANTY HEREIN.

Oberheim hereby excludes incidental and consequential damages, including but not limited to:

1. Loss of time
2. Inconvenience
3. Delay in performance of the Warranty
4. The loss of use of the product
5. Commercial loss
6. Breach of any express or implied warranty, including the Implied Warranty of Merchantability, applicable to this product.

Oberheim shall not be liable for damage or loss resulting from the negligent or intentional acts of the shipper or his contract affiliates. The owner of the product should contact the shipper for proper claims procedures in the event of damage or loss resulting from shipment.

HOW TO OBTAIN WARRANTY SERVICE

If you have reason to believe that your Oberheim product is malfunctioning or otherwise not operating properly, do the following:

STEP 1: **CONTACT YOUR NEAREST OBERHEIM SERVICE CENTER**
Telephone them as soon as the problem is discovered. Be prepared to discuss the problem as completely and accurately as possible. A current roster of Authorized Service Centers is included with the Owner's Manual.

The Service Center will let you know when the repair can be scheduled, the approxiamate number of days it will take to complete the repair and if the required parts are in stock or if they need to be ordered.

Take the failed unit to the Service Center along with the sales receipt as the Service Center will need to verify the Warranty. If you have returned your Warranty Card, the Warranty Verification Sticker affixed to the bottom panel of your unit is sufficient to prove warranty status.

The Service Center will then inspect the product and take the necessary steps to complete the repair.

If the product continues to malfunction or another problem different from the original problem occurs, contact the service center IMMEDIATELY so that the problem can be resolved without delay or futher complications.

STEP 2. **CONTACT YOUR OBERHEIM DEALER**

If you feel that your problem has not been resolved, contact the Oberheim Dealer where the product was purchased. It will be most expedient if you discuss the matter personally with the salesperson who sold you the instrument. By making the salesperson aware of your situation, they will be in a better position to assist you in getting the problem resolved.

STEP 3: **CALL OR WRITE TO THE OBERHEIM FACTORY**

If you believe that the problem is still unresolved after you have contacted the Service Center and Dealer, contact the Oberheim factory. In an attempt to resolve your problem, we will work with your local Service Center or Dealer to review and verify the information and facts. Based on these facts, we will advise or consult with the Service Center or Dealer as appropriate.

Written correspondence should be addressed to:

OBERHEIM
Division of E.C.C. Development Corporation
Customer Services Department
2230 S. Barrington Avenue
Los Angeles, CA 90064

Every attempt will be made to respond to your letter as quickly as possible.

If you would prefer to contact the Oberheim factory by telephone, a Service Representative will be available to assist you. Our telephone hours are from 1:00 PM to 4:00 PM West Coast Time, Monday through Friday **only.** The Customer Services Department can be reached at 213-479-4851. Collect calls cannot be accepted.

When calling the Oberheim offices:

- Have your instrument and amplifier turned on and in front of you when you are on the phone. You should also have your Owner's Manual with you.

- Tell the receptionist that you are having a problem with your Oberheim product and ask to speak to a Service Representative.

- Be prepared to provide the following information:

1. Your name.
2. The model of the product.
3. The product's Serial Number.
4. The name of the Dealer from where it was purchased.
5. The exact date of purchase.
6. A complete description of the problem.

When writing to Oberheim, please also include your full address, telephone number and the best time to call should it be necessary to call you rather than answer your letter.