

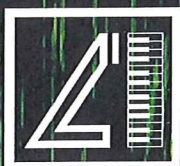
ddrum



ddrum 4
ELECTRONIC DRUM SYSTEM

OWNER'S MANUAL

OS VERSION 1.5X





CAUTION AVIS
 RISK OF ELECTRIC SHOCK
 DO NOT OPEN
*RISQUE DE SHOCK ELECTRIQUE
 NE PAS OUVRIR*



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED PERSONNEL.

ATTENTION: POUR EVITER LES RISQUES DE CHOC ELECTRIQUE, NE PAS ENLEVER LE COUVERCLE. AUCUN ENTRETIEN DE PIECES INTERIEURES PAR L'USAGER. CONFIER L'ENTRETIEN AU PERSONNEL QUALIFE. AVIS: POUR EVITER LES RISQUES D'INCIDENTE OU D'ELECTROCUTION, N'EXPOSEZ PAS CET ARTICLE A LA PLUIE OU L'HUMIDITE.



The lightning flash with the arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated voltage within the products enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

Le symbole éclair avec le point de flèche à l'intérieur d'un triangle équilatéral est utilisé pour alerter l'utilisateur de la présence à l'intérieur du coffret de "voltage dangereux" non isolé d'ampleur suffisante pour constituer un risque d'électrocution.



The exclamation mark within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

Le point d'exclamation à l'intérieur d'un triangle équilatéral est employé pour alerter l'utilisateur de la présence d'instructions importantes pour le fonctionnement et l'entretien (service) dans le livret d'instructions accompagnant l'appareil.

Instructions pertaining to a risk of fire, electric shock or injury to persons.

IMPORTANT SAFETY INSTRUCTIONS

SAVE THESE INSTRUCTIONS

Warning - When using electric products, basic precautions should always be followed, including the following:

1. Read all the instructions and observe the graphic symbols above before using the product.
2. Do not use this product near water - for example near a bathtub, washbowl, kitchen sink, in a wet basement, near or in a swimming pool, a swamp or the like.
3. This product should be used only with a cart or a stand that is recommended by the manufacturer.
4. This product, either alone or in combination with an amplifier and headphones or speakers may be perfectly capable of producing sound levels that could cause permanent hearing loss. Do not operate for a long period of time at a high volume level or at a level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should consult an audiologist.
5. The product should be located so that its location or position does not interfere with or obstruct its normal flow of ventilation.
6. The product should be located away from heat sources such as radiators, heat registers or other products that produce heat.
7. The product should be connected to a power supply only of the type described in these operation instructions or as marked on the product.
8. The power supply cord of the product should be unplugged from the outlet when the product is left unused for a long period of time.
9. Care should be taken so that objects do not fall, or liquids are not spilled into the enclosure through openings.
10. The product should be serviced by qualified service personnel when:
 - A. The power supply cord has been damaged; or
 - B. Objects have fallen or liquids have been spilled onto the product; or
 - C. The product has been exposed to rain; or
 - D. The product does not appear to operate normally or exhibits a marked change in performance; or
 - E. The product has been dropped or the enclosure has been damaged.
11. Do not attempt to service the product beyond those means described in this operating manual. All other servicing should be referred to qualified service personnel.

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1. INTRODUCTION

WELCOME!

We would first like to congratulate you on your purchase of the ddrum4 SE system! The ddrum4 system has been on the market a few years already and has become the choice of many professional and amateur drummers. With the ddrum4 SE system Clavia introduces the Signature Edition of the ddrum4 system, with multi-sampled instruments from **Simon Phillips, Dennis Chambers, Kenny Aronoff and Mel Gaynor** and a lot of other nice features!

ABOUT THIS MANUAL

Please read it. It contains a lot of useful information. The first section contains the necessary information for connecting your system parts. The reference section contains information regarding all the functions of the ddrum4. Every time this manual refers to a physical object on the ddrum4, a button on the panel, an indicator LED etc., it will be printed **LIKE THIS**, e.g. Press the **SYSTEM** button.

READING THE MANUAL IN ADOBE ACROBAT READER

This manual is also available in the digital PDF-file format. It can be downloaded, free of charge, from Clavia's web site at <http://www.clavia.se>. When reading the manual as PDF-file, you will need Adobe Acrobat Reader 4.0 or later. This program can be downloaded, free of charge, at <http://www.adobe.com>. With Adobe Acrobat Reader it is possible to use special navigation features like hyperlinks. This means that you can click with the mouse on a word or sentence and automatically get to the location indicated by the word/sentence. To better show what words or sentences are hyperlinked in this manual, these words are written in magenta.

ABOUT THE DDRUM4 SE SYSTEM

The ddrum4 SE system is a 10 channel percussion system. One channel can hold one sound, e.g. channel 1 could be the kick drum, channel 2 the snare etc. The sounds are digitally reproduced with the proprietary ddrum sound engine. The sounds have been carefully selected and edited by the Clavia crew. All the sounds in the ddrum4 SE have been edited and stored using a unique method. The intelligent playback engine eliminates machine gun effects during rolls and other unwanted artifacts that are typical in other electronic drum systems.

DDRUM4 MEGA DRUMKITS SIGNATURE SERIES SOUNDS

The major part of the ddrum4 SE drum sounds are built up with a lot of samples (multi samples) in order to produce a more realistic simulation of how an acoustic drum sounds when struck with different velocities. The ddrum4 SE features sounds played and recorded by the famous drummers **Simon Phillips, Dennis Chambers, Kenny Aronoff and Mel Gaynor**! "Dynamics" is one of the keywords describing the functionality of the ddrum4 SE. It is designed to make available every acoustic nuance of the drum sounds. The dynamic sound possibilities of the ddrum4 SE are one of its major features compared to samplers and ROM based playback machines.

THE PADS

The pads come in two different models. The Cast Precision Pads feature real drum heads. The Cast Precision Pads also detect pressure and position (Where on the pad you strike). They are also dampened for more quiet acoustic noise. The other model is the Cast Precision Mesh Head Pads which feature a “silent” web drumhead for minimum acoustic noise. To minimize the acoustic noise even more, the rim hoops are rubber coated. Both pad models are assembled in conjunction with a cast aluminum shell. The feel of the pads is as important to the overall function of the ddrum4 SE system as the sounds themselves.

THE CAST CYMBAL & CAST HI-HAT

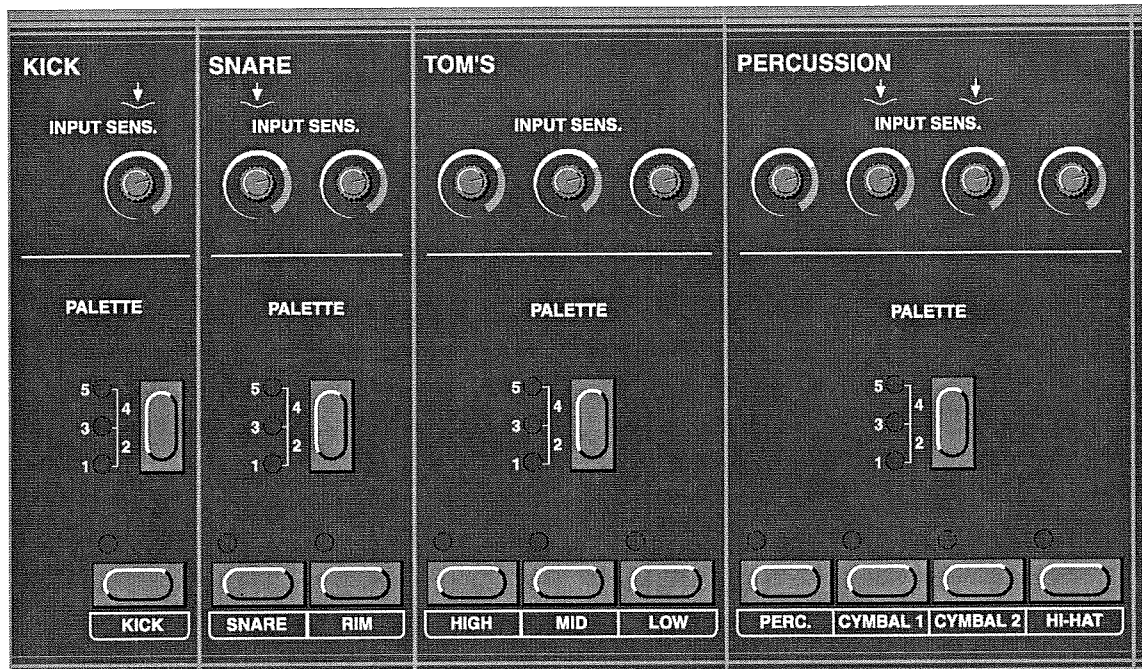
The Cast Cymbal offers both bell and ride zones. Since they are also chokeable you can either choke them with your hand or with the drumstick itself. The Cast Cymbals are fitted on a special spring to make them feel like acoustic cymbals. The innovative hi-hat triggering interface and the Cast Hi-hat makes it possible to play with a continuous three-way action, foot, open or closed sounds. The playing response is as close as you can get to the “real thing”. The Cast Cymbal and the Cast Hi-hat’s playing surface is rubber coated metal for the right feel.

EXPAND YOUR SOUND LIBRARY

At the Clavia web site (<http://www.clavia.se>), you will find more sounds (free of charge) to download to your ddrum4 SE. These sounds are in the MIDI file format. Use the ddrum4Tool program (PC) to listen to the sounds and to download them to the ddrum4 SE brain. The ddrum4Tool program is included on the CD ROM that comes with the ddrum4 SE module. You could also open the MIDI files in a standard MIDI sequencer, and download them to your ddrum4 SE as standard MIDI Sysex files.

2. OVERVIEW

THE LEFT FRONT PANEL SECTION

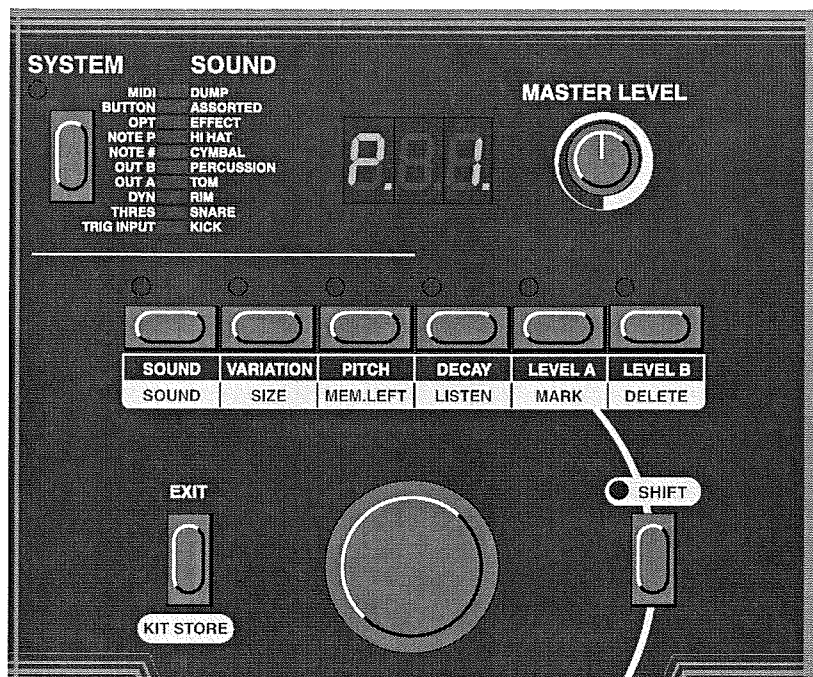


The front panel is divided in two sections. To the left side you see the channel slots with the **CHANNEL** buttons, the **PALETTE** select buttons and the **INPUT SENSITIVITY** knobs.

You can play the sounds by pressing the **CHANNEL** buttons. They are not velocity sensitive but you can program the velocity level that they should use to play the sounds (see “Button” on page 23).

The **CHANNEL** buttons are also used for selecting channels when you wish to edit the sounds or the functions of the channels. The **LED** above the channel buttons flashes when a channel receives a trig signal and is continuously lit when a channel is selected for editing. You can only select one channel at a time for editing purposes.

THE RIGHT FRONT PANEL SECTION



To the right you have the edit section with the edit buttons, the **ROTARY DIAL**, the **SYSTEM INDICATOR** bar, the **DISPLAY** and the **MASTER LEVEL** control.

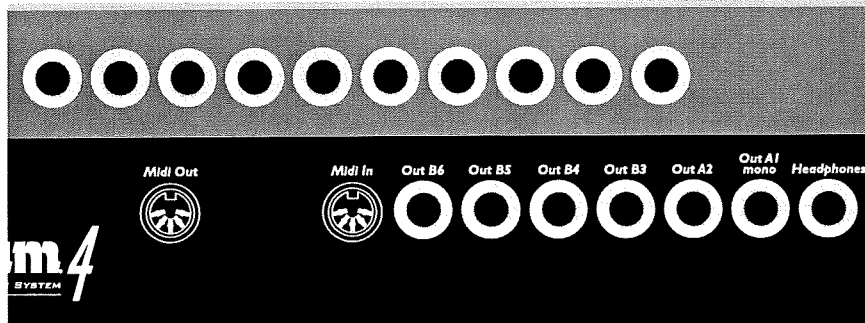
The **SYSTEM INDICATOR** bar will show activity when you are playing. This is an indication that the ddrum4 is not subject to any editing and it displays an approximation of the volume of the sounds. If you trigger a channel that has no sound, the system bar will not indicate anything. The system bar will also under certain circumstances help you to set the proper input sensitivity level.

If the display shows a 'P.' or 'F.' followed by a number, then the ddrum4 SE is in the Kit mode. If the display shows 'PAL' then the ddrum4 SE is in the Palette mode. You can always press the **PALETTE** buttons repeatedly to select different sounds from the four main channel groups, kick, snare, toms and percussion, no matter if the ddrum4 is in the Kit or Palette mode.

The **MASTER LEVEL** knob affects the line level outputs A1, A2 and the **PHONES** output. Note that the Master Level control does not send or respond to MIDI Volume (CC#7). Please refer to "Opt/MIDI Volume" on page 22 for information on how to control the ddrum4 SE volume via MIDI.

THE REAR PANEL

The rear panel contains all the TRIGGER INPUT, audio OUT and HEADPHONES jacks, the MIDI connectors and the POWER SWITCH. The ddrum4 SE outputs are unbalanced line level.



The ten TRIGGER INPUTS for the pads or external triggers correspond to each sound channel. They are identical in function except for the following:

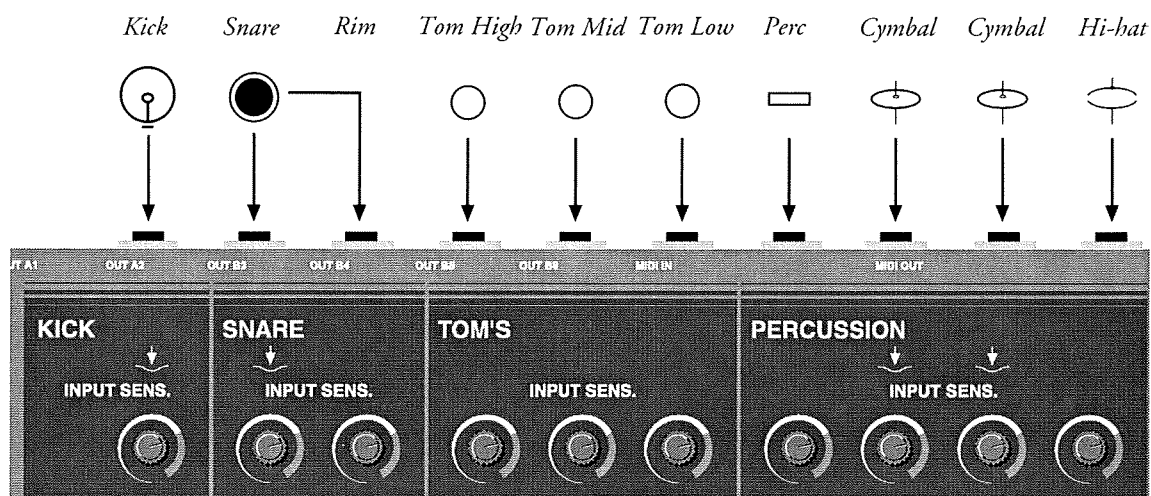
- Inputs 1, 2, 8 and 9 are capable of detecting pressure sensitivity. If you have pads that can transmit pressure, connect them to these inputs.
- Input 10 is also capable of detecting pressure sensitivity but only with the special ddrum Hi-Hat. This input has a special stereo jack connector, but it may be used with any other pad or trigger source for ordinary triggering.

Tip! Pressure can be very useful if you want to play a tabla sound and change the pitch with your hands, or to choke a ddrum Cymbal. Note that the pressure sensitivity function only works with Cast Precision Pads, ddrum Cymbal and ddrum Hi-hat - not with the Cast Precision Mesh Head Pads.

3. SETTING UP

CONNECTIONS

1. Make all the connections before turning on the ddrum4 SE. Turn on the ddrum4 SE module with the **MASTER LEVEL** knob at 0.
2. Connect the pads to the ddrum4 SE module according to the illustration below.



3. Connect the main outputs, marked A1 and A2 on the ddrum4 SE rear panel, to a suitable sound system. If you'd rather use a pair of headphones, a headphones jack has been provided. The **MASTER LEVEL** knob lets you adjust the output volume of the **HEADPHONES** output and of the line level outputs A1 and A2. The line level outputs B3 to B6 are not affected by the **MASTER LEVEL** knob.
4. Connect the mains cable and power-up your system in the following order:
ddrum4 SE - mixer - amplifier.

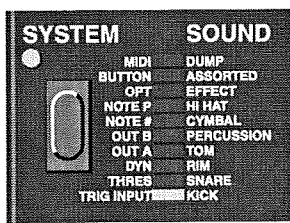
The very first thing that will appear in the ddrum4 SE **DISPLAY** is the software version number. After a brief moment, 'PAL' will appear in the **DISPLAY**. This indicates that the ddrum4 SE is in the Palette mode.

SETTING UP THE INPUT CHANNELS

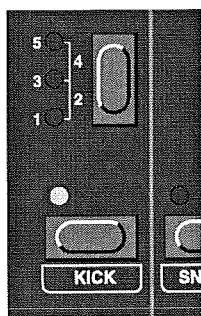
The ddrum4 SE module can be used with a variety of pads. After you have connected the pads of your choice, please proceed with the following procedure. When shipped from the factory the ddrum4 SE is set to kick (bAS) trigger on the kick channel, rim (rin) trigger on the rim channel, pad (PAd) trigger on the tom and percussion channels, cymbal (CYb) trigger on the cymbal channel and hi-hat (HHt) on the hi-hat channel. If your ddrum4 SE was shipped with ddrum Cast Precision Pads, you do not have to change the settings. If your ddrum4 SE system was shipped with the Cast Precision Mesh Head Pads the snare, toms and percussion channels should be set to mesh head 1 (nh1).

SELECTING TRIG INPUT TYPE

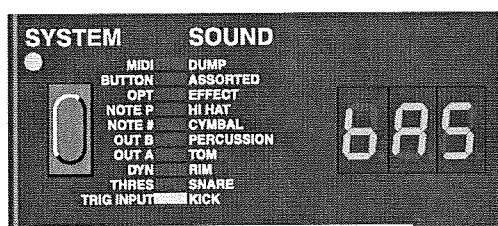
1. Press the **SYSTEM** button. The first segment of the **SYSTEM INDICATOR** bar will light up. (If not, press the **SYSTEM** button repeatedly until the **TRIG INPUT** segment of the **SYSTEM INDICATOR** bar lights up or hold the **SHIFT** button and press the **SYSTEM** button to scroll backwards).



2. Press one of the **CHANNEL** buttons, e.g. the **KICK** button. This will trigger a sound and it will also select the channel for editing. This is indicated with a steady light from the kick **CHANNEL LED**. You can also select a channel by hitting a pad, however once you select a channel by pressing a channel button, the pad select is disabled. To enable it again, press **EXIT** and go back to edit mode.



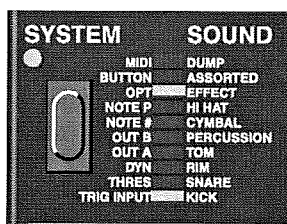
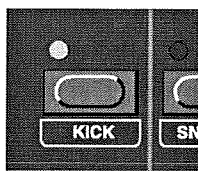
3. The **DISPLAY** will indicate the Trig Input type of the selected channel. If you turn the **ROTARY DIAL**, you will scroll through the possible Trig Input types that are implemented in the ddrum4 SE. These Trig Input types have their respective characteristics and by selecting the most appropriate for each channel, the ddrum4 SE will perform at its best. Please refer to "Trig Input" on page 18 for more details regarding the trigger options.



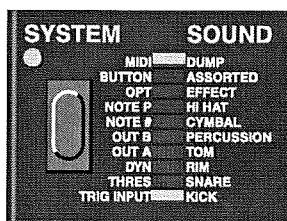
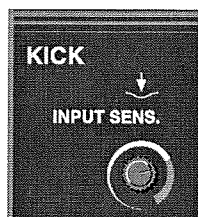
4. To select another channel for editing, just press any other **CHANNEL** button. A steady **CHANNEL LED** light will indicate which channel is selected for editing. If your ddrum4 SE system was shipped with the Cast Precision Mesh Head Pads the snare, toms and percussion channels should be set to Trig Input type 'mesh head 1' (nh1).
5. To leave the System mode, press the **EXIT** button.

ADJUSTING THE INPUT SENSITIVITY

1. Choose the Trig Input option from the system menu by pressing the SYSTEM button until the TRIG INPUT segment of the SYSTEM INDICATOR bar lights up. Select the channel you want to adjust by pressing the corresponding CHANNEL button. Hit the pad (not the channel button) and look at the CHANNEL LED, located above the (selected) channel button. It will dim briefly when the channel receives a trig signal. In this System mode, the SYSTEM INDICATOR bar will indicate the trig input level.



2. Adjust the trig input level with the INPUT SENSITIVITY knobs. Turning the INPUT SENSITIVITY knob clockwise will make the trig input more sensitive. You should adjust the INPUT SENSITIVITY knob so that the top segment of the SYSTEM INDICATOR bar lights up only during the hardest hits.



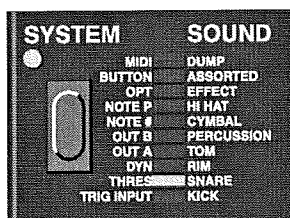
IMPORTANT! The sensitivity settings are crucial to the general feel and sound of your ddrum4 SE system. Dynamics is what it's all about. Take your time and adjust the sensitivity to your playing style. Do this on a good sound system if you can, in order to really hear what's going on. Do not use the INPUT SENSITIVITY knobs as a volume controls. Controlling the dynamic range and controlling the volume of the ddrum4 SE are two completely different things. The INPUT SENSITIVITY knob's settings are not stored in the ddrum4 SE's memory.

IMPORTANT! Make sure the dynamic curve setting for each of the channels is set to '0' (recommended) and definitely not to 'OFF' (this will spoil your sensitivity settings)! Please refer to "Dyn" on page 20 for more info on how to set the dynamic curve.

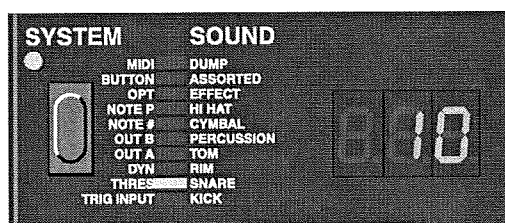
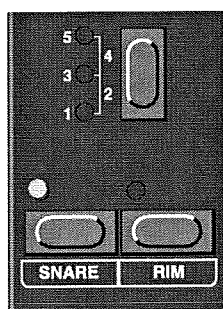
SETTING THE THRESHOLD

This is helpful if you find that, e.g. one of your tom pads triggers the other toms as well or that the kick triggers the snare. You then need to adjust the trigger threshold value.

1. Press the **SYSTEM** button twice (or repeatedly) to select the **THRES** segment of the **SYSTEM INDICATOR** bar.



2. Let's say that your toms are also accidentally triggering your snare. You would need to raise the threshold value of the snare channel. Select the snare channel for editing by pressing the snare **CHANNEL** button.



3. Adjust the threshold value of the snare with the **ROTARY DIAL** while playing the tom pads. Increase the threshold value until the toms no longer trigger the snare. The higher the threshold value, the less chance of a weak trigger pulse triggering that channel. The default value is 15 for all channels except for the snare channel which is set to 10.

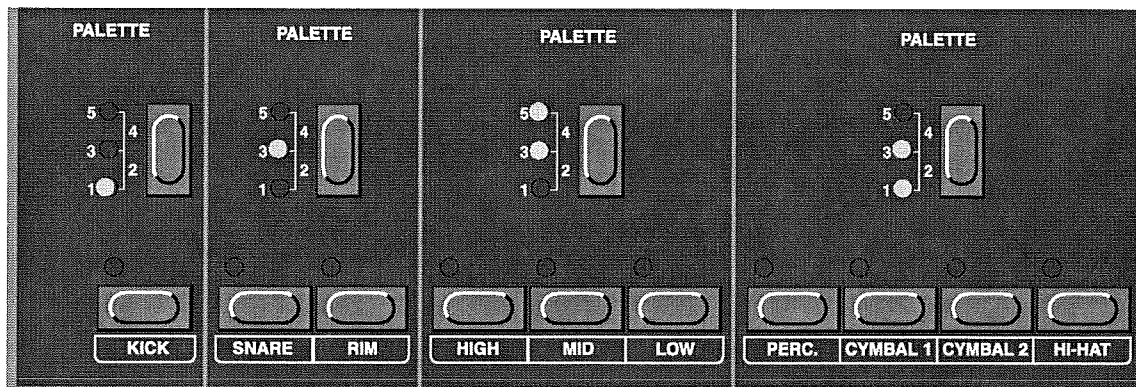
The three things that we have selected and adjusted here: Trig Input type setting, Input Sensitivity and trigger Threshold, are very important to get the right feel when playing the ddrum4 SE system. You might want to go back and adjust these settings later on but there is no need for doing this every time you want to play. The system selections that you have made (trigger input selection and threshold) are automatically stored in ddrum4 SE until you decide to change them.

There is another parameter called **DYN**, which can be used to set a dynamics curve for each input. Please refer to "Dyn" on page 20 for more details about the dynamic response curves.

4. KITS & SOUNDS

PALETTE MODE

When you switch on the ddrum4 SE module, it will default to the Palette mode, indicated by 'PAL' in the DISPLAY. Each one of the four main instrument groups, Kick, Snare, Toms and Percussion has a PALETTE button with which you can quickly choose one of five sound setups. You can also program your own selection of sounds in the Palette. See Chapter "6. Panel reference" on page 18 and onwards, for more details regarding programming.



Press the PALETTE buttons repeatedly to scroll through the five selections that are available for the different instrument groups.

IMPORTANT! All editing is automatically stored in the Palette memory. Please be careful when you start to explore the different possibilities and parameters of the ddrum4 SE module. If you do this while being in Palette mode, the ddrum4 SE will store every changes you make. Until you are familiar with the ddrum4 SE parameters, do your exploring in Kit mode instead (See below).

KIT MODE

If you turn the ROTARY DIAL clockwise from the Palette mode, the DISPLAY will change from 'PAL' to a 'P.' or an 'F.' followed by a number. This is the Kit mode. The number identifies the 99 different drum kits that are available in the ddrum4 SE module. Keep turning the ROTARY DIAL to scroll through the kits. You can program your own selection of sounds in the 'P.' kits, numbered from 1 to 26. The kits that are in the memory locations 27 to 99, indicated with an 'F.' and a number in the display, are the ROM factory kits. The factory kits can be edited but you can only store any edits or sound selections to the 'P.' (1-26) kits.

THE FACTORY PRESETS

The ddrum4 SE comes from factory with the following line-up of kits:

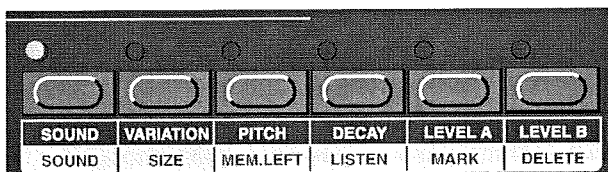
- Kits P1-P5 all have long decaying tom sounds
- Kits P6-P10 holds toms with shorter decay times and are intended mainly for use live.
- Kits P11-P15 holds "latin percussion" kits

- Kits P16-P20 contains sounds for different kind of percussion purposes
- Kits P21-P26 all contain “mixed” styles of kits
- Kits F27-F99 holds different types of drums that can be used as base for creating your own custom drum kits. You can then store your kits in any of the P1-P26 memory locations (see “Storing your kit” on page 16)

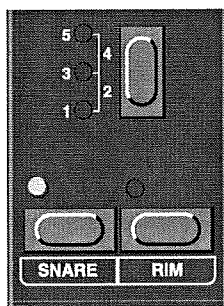
SELECTING SOUNDS

To select/change sound for each channel, do like this:

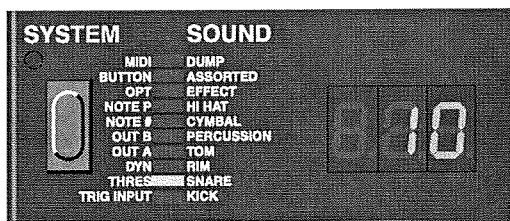
1. Press the **SOUND** button.



2. Select a channel by pressing a **CHANNEL** button.



3. Select a sound by turning the **ROTARY DIAL**. As you turn the **ROTARY DIAL**, the sound numbers are shown in the **DISPLAY**. When selecting sounds the **SYSTEM INDICATOR** bar indicates to which sound group the selected sound belongs. There are 10 sound groups (categories) in the ddrum4 SE module: Kick, Snare, Rim, Tom, Percussion, Cymbal, Hi-hat, Effects, Assorted and Dump. If you want to jump directly to another sound group, hold down the **SOUND** button and turn the **ROTARY DIAL**.

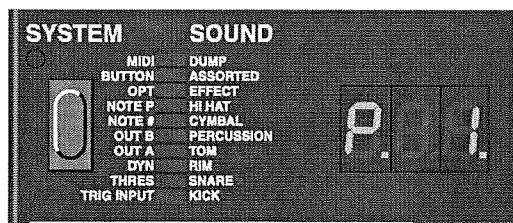


4. Repeat the procedure from step 2 above for the other channels.

For information on how to edit sounds, please refer to “Sound functions” on page 24.

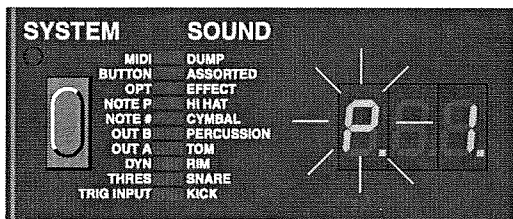
STORING YOUR KIT

As previously mentioned, all editing that you do while the ddrum4 SE is in the Palette mode is automatically stored. In the Kit mode, however, you have to manually store your edits. You can only store edits in the first 26 kits, the 'P. 1' to 'P.26' kits. When you have edited anything in a kit, a dot appears after the kit number, e.g. 'P. 1.'



This is to alert you that the edit(s) has not been stored. If you were to select another kit, the edit would be lost and the edited kit would return to the way it was. To store a kit, do like this:

1. Hold the **SHIFT** button and press the **KIT STORE** button. In the **DISPLAY** the 'P.' will begin flashing and you will be able to choose a kit location (a number) to store your edited kit to.



2. Choose a kit number by turning the **ROTARY DIAL**. If you like to overwrite the edited kit, go straight to step 3.
3. Confirm your intent by pressing **SHIFT** and **KIT STORE** again. If you change your mind, abort by pressing **EXIT** (don't press the **SHIFT** button this time).

IMPORTANT! Storing an edit to memory location will permanently overwrite the kit currently in that memory location. If you run out of memory locations to store to, you might want to dump the entire system setup, all the kits, settings etc. to an external MIDI device (a sequencer or a computer) using the dump function. See page 23 for more details.

5. GOOD DRUM SOUNDS

ABOUT YOUR SOUND SYSTEM

Since the ddrum4 SE is an electronic drum system it's totally dependent on a good sound system. Since all of the ddrum4's sounds have been recorded in the best studios, you will obtain the best results using good quality amplification. The sounds coming from your ddrum4 SE will only sound as good as the sound system you are playing them through.

We recommend a full-range sound system that is capable of reproducing all sounds as clear, strong and uncolored as possible. PA-systems, studio monitors with good amplifiers and systems specifically designed for electronic drums belong in this category. The attack portion of drums and percussion sounds are very rich in transients, thus requiring a powerful and fast power amplifier to sound good (not the same thing as loud). Do not underestimate the effect and speed requirements of the power amplifier used with your ddrum4 sound system.

A hi-fi system can be used and will probably sound quite good at low volume levels. There is however a risk that the ddrum4 SE could cause serious damage to a hi-fi system, so we do not recommend using one.

Guitar and bass amplifiers are optimized to reproduce guitar and bass sounds and typically do not work well with percussion sounds.

HEADPHONES

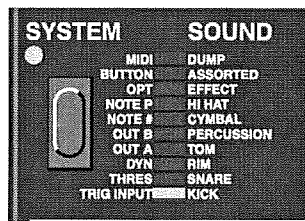
Choose headphones with high sensitivity. Your ddrum supplier can probably help you to select a good headphones model.

MIXER

The ddrum4 SE outputs are unbalanced line level. Please connect these only to the appropriate inputs on a mixer. Avoid microphone inputs. Too much amplification in the inputs (as in microphone inputs) may lead to a distorted sound.

6. PANEL REFERENCE

SYSTEM FUNCTIONS

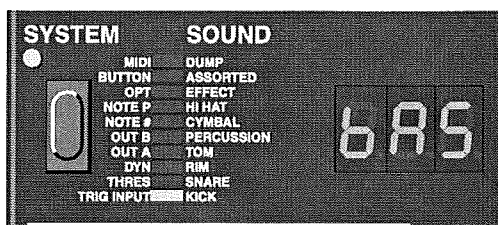


The System functions are active for editing when the **SYSTEM** LED is lit.

1. Select a system function by pressing the **SYSTEM** button repeatedly until the desired function is shown by the corresponding segment of the **SYSTEM INDICATOR** bar. Press the **SHIFT** button together with the **SYSTEM** button to scroll backwards.
2. Select the channel that you wish to edit by pressing one of the **CHANNEL** buttons. You can also select a channel by hitting a pad, however once you select a channel by pressing a **CHANNEL** button, the pad select is disabled. To enable it again, press **EXIT** and go back to edit mode.
3. Edit the selected System parameter with the **ROTARY DIAL**. The current value or function will be indicated in the **DISPLAY**.
4. Choose another system function, if desired, with the **SYSTEM** button or another channel with one of the **CHANNEL** buttons.
5. To exit the system functions, press **EXIT**.

There is no need to manually save or store the parameters of the system functions menu. Every change you make is automatically stored.

TRIG INPUT



Here you select Trig Input type separately for each trigger input channel:

'bAS': Use with the ddrum Cast Precision and Cast Precision Mesh Head Kick pad.

'Pad': This is the one to use when playing ddrum Cast Precision pads with sticks.

'rin': The ddrum Cast Precision and Cast Precision Mesh Head Snare pad has a special rim sensor. Use this trig input type if a channel is triggered from the rim sensor.

'AcP': Use this with the ddrum Cast Acoustic pads.

'Hnd': Select this if you want to play on the pads with your hands.

'Ac1': Use this one if you are using an acoustic snare drum together with a ddrum Trigger microphone. If you get multiple trig signals, try and raise the threshold value for the channel or select 'Ac2'.

'Ac2': This one is slightly less sensitive than 'Ac1'. Try this one if you are using a ddrum Trigger microphone mounted on acoustic toms or kick drums.

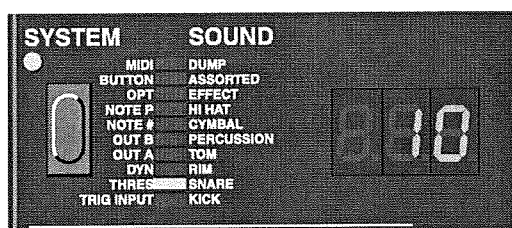
'Ac3': This is the least sensitive "acoustic" trig input type. It is designed for triggering long, sustained acoustic drum sounds using a ddrum Trigger.

'Cyb': Use this one if you are a ddrum Cymbal.

'nh1-3': Select one of these if you're playing on acoustic drums fitted with mesh head and triggering with ddrum Trigger. Use 'nh1' for small heads, 'nh2' for medium and 'nh3' for large heads. If your ddrum4 SE system was shipped with the Cast Precision Mesh Head Pads the snare, toms and percussion channels should be set to mesh head 1 (nh1).

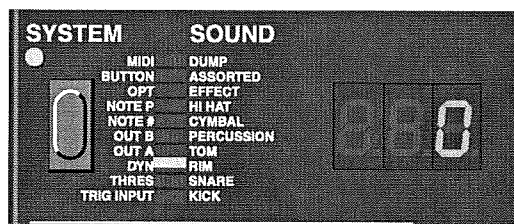
'HHt': This should be used if you're using the ddrum Hi-hat. The ddrum Hi-hat must be connected to trigger input number 10 on the ddrum4 SE module to work as intended. When you're using a ddrum Hi-hat for the first time, and select the 'HHt' trigger type, the ddrum4 SE module needs to be calibrated to the Hi-hat. While in Trig Input mode (in the System menu) for channel 10, loosen the clutch from the hi-hat rod, let the clutch slide all the way down and then hold Shift and press Exit. The DISPLAY will confirm the calibration by briefly showing 'CAL'. If you connect another ddrum Hi-hat or change the clutch, you will have to recalibrate.

THRES



The threshold prohibits weak or stray trigger signals from triggering a channel. If e.g. your toms trigger the snare as well or if your monitor speakers are loud enough to actually trigger sounds, increase the threshold value on the channel that receives external triggering. The higher the threshold value, the less sensitive the channel becomes. Change the threshold value by turning the **ROTARY DIAL**.

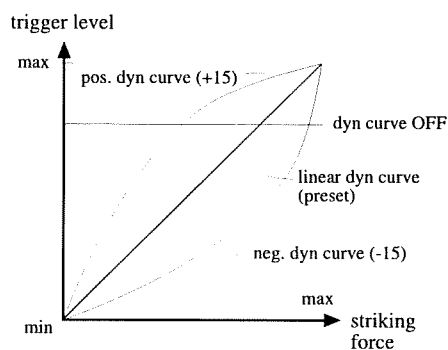
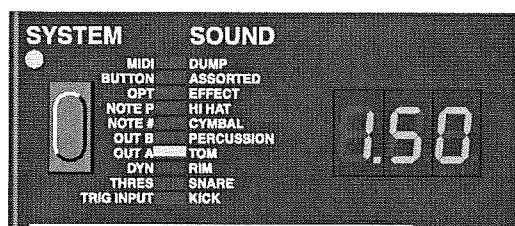
Values: 1 - 100, the default value is 15, except for the snare channel which is 10.

DYN

This function lets you adjust the dynamics response curve for each channel. The number indicates one of the dynamic response curves. The default value is 0, which is a linear type of curve. By turning the **ROTARY DIAL** counter-clockwise, a negative number appears, indicating that medium-soft to medium-hard hits will be less pronounced. If you turn the **ROTARY DIAL** all the way back, the **DISPLAY** will show 'OFF', meaning the dynamics response curve is totally deactivated. In 'OFF' mode, all sounds appear at 75% velocity level regardless how hard or soft you play. This could be useful if you want your playing to sound static. Turning the **ROTARY DIAL** clockwise will select the positive curves, where medium-soft to medium-hard hits will be more pronounced (see the figure below).

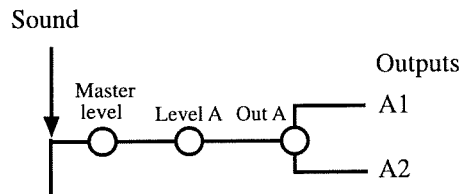
NOTE: If you set the dynamic curve to 'OFF' it could be wise to raise the Threshold value for the channel(s) to prevent accidental triggering (see "Thres" on page 19).

Values: OFF, -15 - 0 - 15.

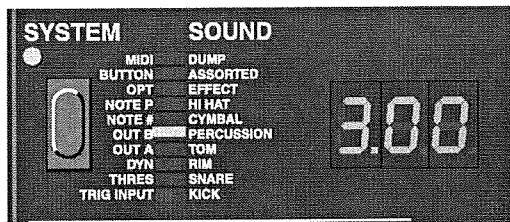
**OUT A**

This is where you position a channel in the stereo image at the outputs A1 and A2, like a pan-pot on a mixer. You can pan each channel individually. The stereo image stretches from 1.00 (full left) via 1.50 (center) to 2.00 (full right) (see the figure below). There are 25 steps to either side of the center position. By turning the **ROTARY DIAL** all the way counter clockwise you may switch off a channel from the A outputs, by selecting 'OFF'.

Values: OFF, 1.00 - 2.00.

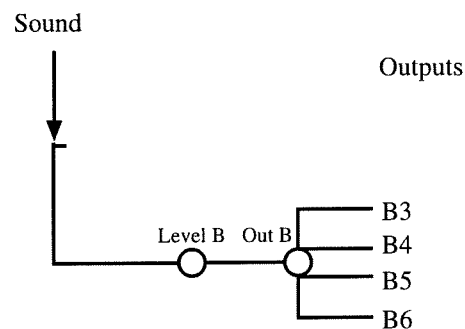


OUT B

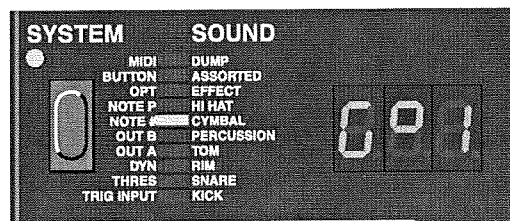


Here you can assign and set the panning of a channel to the outputs **B3**, **B4**, **B5** and **B6**. You could consider this function a pan control between four outputs rather than the normal two. If e.g. you would like to send one channel to a separate input on a mixer, set Out A of that channel to OFF, raise the Level B parameter (see page 27) to anything above 0 and set the Out B parameter to any integer. A value of 3.00 corresponds to output **B3** only, a value of 3.50 makes the channel present equally in both of the **B3** and **B4** outputs, a value of 4.00 is output **B4** only etc. (see the figure below). Change the pan setting for each channel with the **ROTARY DIAL**.

Values: OFF, 3.00 - 4.00 - 5.00 - 6.00



NOTE

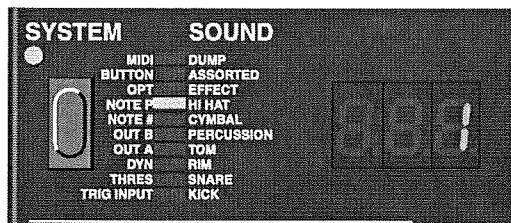


Here you can set the MIDI Note number that each channel is transmitting and responding to. MIDI Note number 60 (middle C) is equivalent to C4 in the ddrum4. If you press the Shift button, you will

get a numerical read-out in the display instead of the “musical” note value. The sharp notes (F#, C# etc.) are indicated by a small square in the display. Select Note numbers for each channel with the **ROTARY DIAL**.

Values: C-1 - G9 or 0 - 127

NOTE P

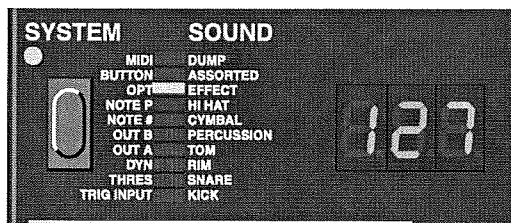


Here you set the “note position” of the channel. Sounds that can be triggered utilizing position sensing will transmit the note number selected with the ‘Note #’ above at its “center position”. Depending on the ‘Note P’ setting, the range from the center to the edge on the pad, will be transmitted as 1, 2, 4 or 8 consecutive MIDI note numbers, starting from the selected ‘Note #’. A snare that sounds different depending to where on the pad you strike will transmit that particular information as different MIDI note numbers. This means that when you play multisampled sounds across the head, the playing information is recordable into a MIDI sequencer as separate MIDI Note numbers. Select Note position number for each channel with the **ROTARY DIAL**.

IMPORTANT! The Hi-hat channel needs all 8 note numbers so leave its setting at 8!

Values: 1, 2, 4, 8.

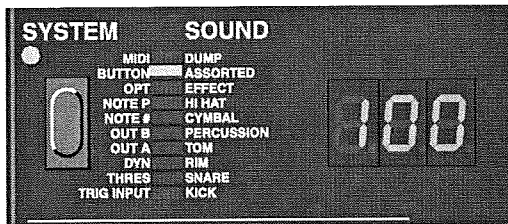
OPT/MIDI VOLUME



The Option function is used to set (or view) the overall MIDI Volume. MIDI Volume is useful mainly when controlling the overall volume of the ddrum4 SE module from an external MIDI application such as a sequencer. The MIDI Volume setting affects all six OUT jacks as well as the HEADPHONES output and is transmitted and received as MIDI CC#7. Change the MIDI Volume with the **ROTARY DIAL**.

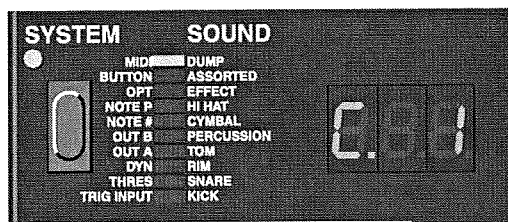
Note! When you restart the ddrum4 SE module, the MIDI Volume will default to ‘127’ (max volume).

Values: 0 - 127

BUTTON

Here you can set the velocity that the CHANNEL buttons should use to trig the sounds. This is helpful for checking sounds at different velocities without pads. Remember that the ddrum4 SE sounds are extremely velocity sensitive and to judge the quality and playability of a single sound, you need to hear it triggered at various velocities. Select velocity value with the **ROTARY DIAL**.

Values: 1 - 127

MIDI

The MIDI function has several modes. You step through these modes by pressing the **SYSTEM** button repeatedly. To step backwards, hold **SHIFT** and press the **SYSTEM** button.

C1-16

Here you select the MIDI channel that the ddrum4 SE should use for transmission and reception of MIDI data. Select MIDI channel with the **ROTARY DIAL**.

P.ON, P.OF, P.TH

This function allows you to choose whether the ddrum4 SE shall receive and transmit MIDI Program Change messages or not. 'tH' is the Thru mode where any incoming Program Change messages are immediately throughput to the **MIDI OUT** jack. Please refer to "MIDI Program Change messages" on page 33 regarding how the ddrum4 SE interprets these messages. Select mode with the **ROTARY DIAL**.

L.ON, L.OF, L.Pd

This is the MIDI Local Control function. It is used if you are transmitting MIDI data to a sequencer, an external sound source or a computer. If Local is switched off, it prevents the pads (trigger inputs) from playing the internal sounds directly. The MIDI data will only be transmitted through the **MIDI OUT** jack. To hear yourself playing, make sure that the sequencer or computer is echoing the MIDI notes back to the MIDI input on the ddrum4 SE. If local is switched on, this could cause double triggering and flaming when the MIDI notes arrive back at the **MIDI IN** jack and trigger the sounds again. The 'pads disabled' mode (L.Pd), can be used if the ddrum4 SE is only played via incoming MIDI. The trigger interface for the pads is then switched off, allowing the ddrum4 SE to react even faster to incoming MIDI data. Select mode with the **ROTARY DIAL**.

A.ON, A.OF

Here you select whether the ddrum4 SE shall receive and transmit MIDI Aftertouch messages or not. This will only be transmitted from those inputs/channels that are connected to appropriate pads that are able to transmit aftertouch to the ddrum4. Those inputs are number 1, 2, 8, 9 and 10. Select on or off with the **ROTARY DIAL**.

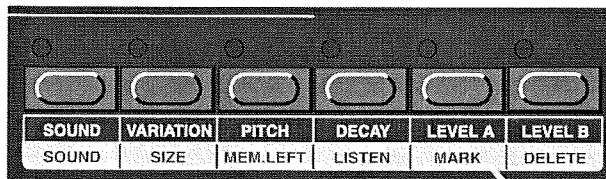
D.AL, D.SY, D.PA, D. 1 - D.26

Here is where you can initiate a MIDI System Exclusive dump to store the settings of the ddrum4 SE to a sequencer or a computer. The first option is dumping all of the system settings (AL). 'Sy' is the System functions, 'PA' dumps the Palette settings and by choosing a number, you can transmit any individual Kit setting. You initiate the transmission by holding **SHIFT** and pressing **EXIT**. While transmitting the data, the **DISPLAY** will show a 't' for the short moment it takes, to perform the transmission. Select the type of MIDI Sysex dump with the **ROTARY DIAL**.

F.--, F.AL, F.SY, F.PA, F. 1 - F.26

This function allows you to initialize different settings in the ddrum4 SE to the factory defaults. The possibilities are the same as described above for the MIDI System Exclusive dump. Hold **SHIFT** and press **EXIT** to initialize the desired option to the factory settings. The **DISPLAY** will show an 'L' during the initialization. The '--' option acts as a safeguard to prevent accidental initialization.

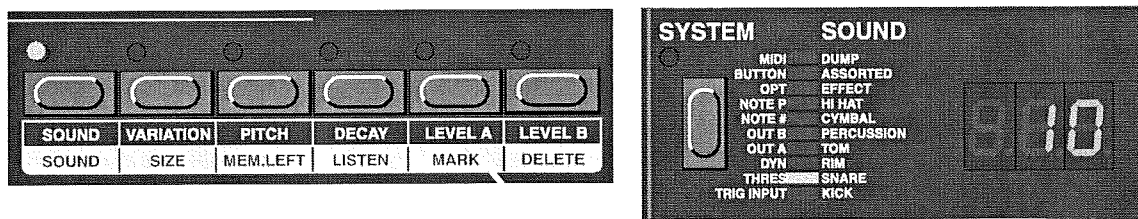
SOUND FUNCTIONS



With the sound functions you can select how the different sounds that are assigned to the channels in the ddrum4 SE behave when triggered and how they sound. One particular sound can be used in several Kits and in the Palette. The sounds can also have different sets of sound parameters in each and everyone of those kits.

1. Select the channel that you wish to edit by pressing one of the **CHANNEL** buttons.
2. Press one of the sound function buttons. They are situated in the horizontal row below the **DISPLAY**.
3. Edit the selected parameter with the **ROTARY DIAL**.
4. Save the edited sound(s) by using the Kit Store function described on page 16
5. To leave the sound functions, press the **EXIT** button.

SOUND

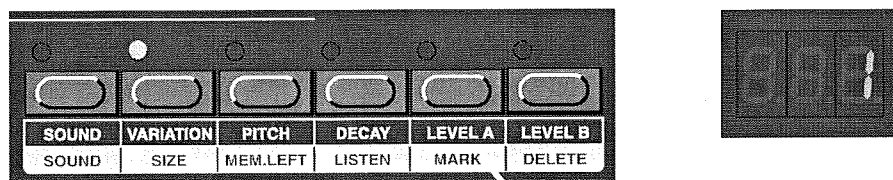


No matter if the ddrum4 SE is in Palette mode or in Kit mode, this is where and how you select a sound for a particular channel. Any sound in the ddrum4 SE can be assigned to any of the ten sound channels. The sounds are indicated with a number in the **DISPLAY** and by a lit segment in the **SYSTEM INDICATOR** bar to indicate sound group (category).

1. Press the **SOUND** button.
2. Select a channel by pressing a **CHANNEL** button.
3. Select a sound by turning the **ROTARY DIAL**. As you turn the **ROTARY DIAL**, the sound numbers are shown in the **DISPLAY**. When selecting sounds the **SYSTEM INDICATOR** bar indicates to which sound group the selected sound belongs. There are 10 sound groups (categories) in the ddrum4 SE module: Kick, Snare, Rim, Tom, Percussion, Cymbal, Hi-hat, Effects, Assorted and Dump. If you want to jump directly to another sound group, hold down the **SOUND** button and turn the **ROTARY DIAL**. If you want a channel to be silent, turn the **ROTARY DIAL** counter clockwise until '---' is shown in the **DISPLAY**. This could be useful if you would like to trigger external sounds over MIDI, without having the ddrum4 SE making any sound of its own. **Tip! You can quickly select consecutive sounds to adjacent channels. This can be very useful for the Tom channels. If you e.g. select a sound for the high tom, hold down the SOUND button and press the MID and LOW tom buttons. The sounds that are next in order to the first selected one, will be assigned to the other two channels.**

If a channel in a kit is silent, the sound assigned to that channel may have been deleted from the sound memory. If you select that channel in the sound function mode, the **DISPLAY** will flash. You can then reload the sound or select another sound to the channel. See page 32 for details on how to load sounds to the ddrum4 SE.

VARIATION



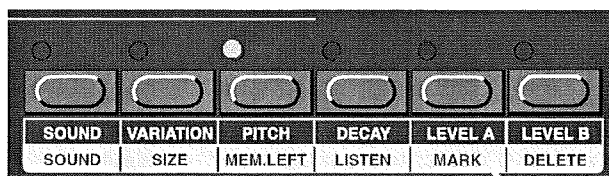
In some sounds several variations can be selected. A variation uses the same sound sample or multi samples, but with some additional programming or tweaking. This could be different equalization, different velocity selections etc. Try them out! Select variation with the **ROTARY DIAL**.

Note: The Variation function also works for your custom MIDI Sample Dump sounds. For MIDI Sample Dump sounds, Variation #5 is a “mono trig” variation which means that any new trig of the

sound will automatically mute the previously played hit. This could be useful especially for long decaying sounds. Please refer to page 31 for more info on loading MIDI Sample Dump sounds.

Values: 1 - 10, (differs from sound to sound)

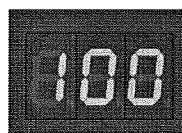
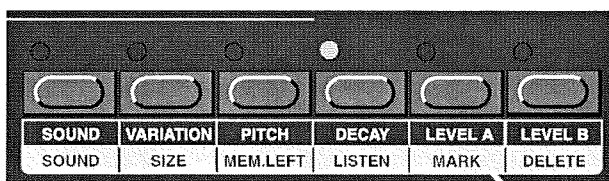
PITCH



With this function you can tune the sound. The range is between +12.0 and -48.0 semitones. Select pitch with the ROTARY DIAL. If you hold the PITCH button, you are able to fine tune the sounds in 0.1 increments.

Values: -48.0 - +12.0

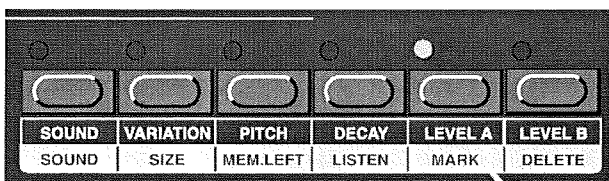
DECAY



Here you can set the decay of the sound. You can shorten any sound by setting this parameter to anything below the default value '100', which is the maximum, original length. The lower the value, the shorter the sound. This is very useful if you e.g. have tuned down a sound. The lower the tuning, the longer the sound. Shorten it if needed, with the ROTARY DIAL.

Values: 0 - 100

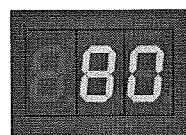
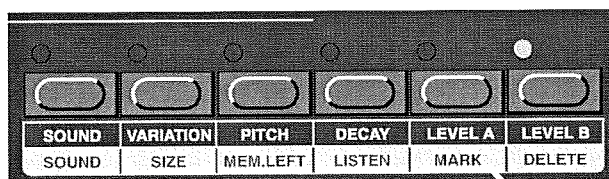
LEVEL A



This sets the level of the selected sound in the two main outputs A1 and A2 and to the HEADPHONES output. Set the level with the ROTARY DIAL.

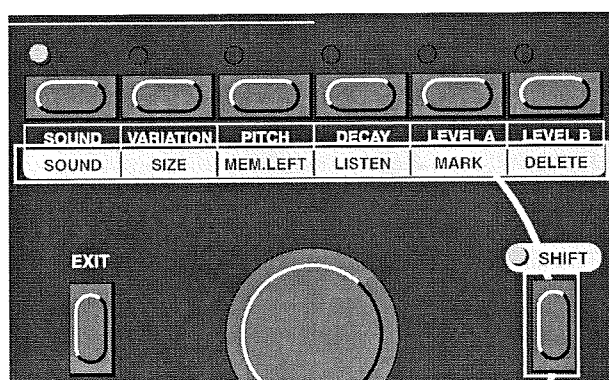
Note! The total level of the A1 and A2 (and HEADPHONES) outputs are also affected by the MASTER LEVEL setting as well as by the MIDI Volume setting described on page 22.

Values: 0 - 100

LEVEL B

This sets the level of the selected sound in the four alternate outputs B3-B6. Set the level with the ROTARY DIAL. Note that a sound can be present at both the A and the B outputs at the same time.
Note! The total level of the B3-B6 outputs are NOT affected by the MASTER LEVEL setting but IS affected by the MIDI Volume setting described on page 22.

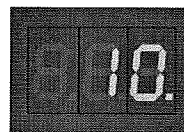
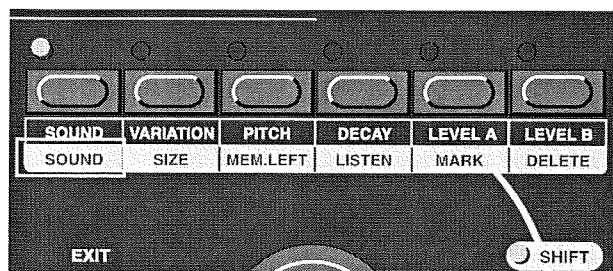
Values: 0 - 100

SHIFT FUNCTIONS

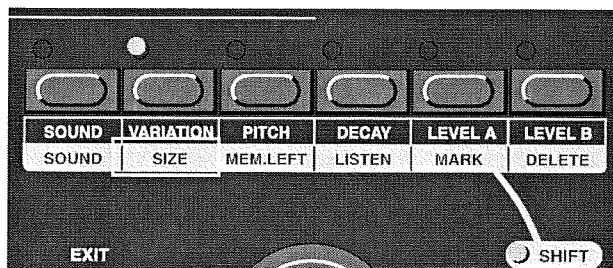
To access the shift functions you should press and hold the SHIFT button and then press any of the sound function buttons.

The ddrum4 SE has a large sound memory. When the ddrum4 SE is shipped from factory it's loaded with the ddrum4 SE factory sounds. Most of the shift functions are related to sound and memory management including erasing and replacement of sounds.

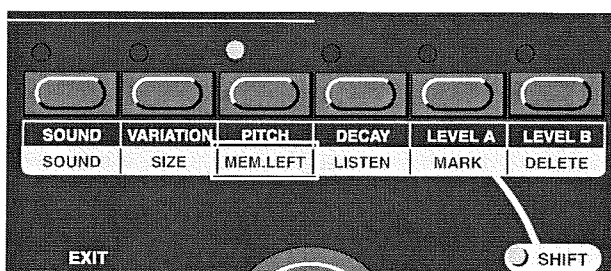
IMPORTANT! It's very important to understand that the entire sound memory including the factory sounds can be erased and replaced with other sounds. There are no factory sounds that cannot be removed or replaced. This sets a new standard of flexibility but it presents a potential problem; the unintended erasing of sounds, or the entire sound memory. After such an operation, you would need to reload the ddrum4 SE with sounds in order to be able to use it again. We have made it a bit difficult to erase the memory but please read the following paragraphs before you start to experiment with these functions. Another good thing to do is to download the factory sounds from our web site at <http://www.clavia.se/> as a precaution.

SHIFT-SOUND

With this function you can select a single sound (or an entire sound group) for Memory Size check, Listening or for MIDI Sysex Dump. It defaults to the last sound that you have triggered from a CHANNEL button. Select a sound with the ROTARY DIAL. A dot in the right corner of the DISPLAY indicates that the sound is used in the Palette or in one or more of the Kits. To select entire sound groups (categories), hold the SOUND button while turning the ROTARY DIAL. The DISPLAY will show 'G.xx', where the 'xx' indicates the total number of sounds in the selected group. This is especially useful if you plan to erase an entire sound group to be able to make room for downloading new sounds. When you turn the ROTARY DIAL after having selected an entire sound group you can see each individual sound of the selected group.

SHIFT-SIZE

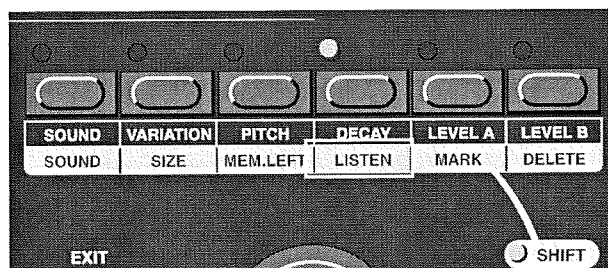
This shows the size (in Blocks) of the sound(s) you have selected using the Shift-Sound function described above. This information could be useful if you are planning to delete sounds to be able to load new sounds into your ddrum4 SE. One Block is very close to a kilobyte. If, e.g. you have a sound in a computer that is 34,2 kilobytes in size, you will need 35 Blocks of free space in the ddrum4 SE.

SHIFT-MEM.LEFT

This indicates the total unused sound memory in the ddrum4 SE in Blocks. One Block is very close to a kilobyte. If, e.g. you have a sound in a computer that is 34,2 kilobytes in size, you will need 35 Blocks of free space in the ddrum4 SE. Please note that the 'Mem.Left' indication also includes any sounds that are marked for removal. This is indicated with a flashing number in the DISPLAY. In this case, the number in the display indicates the memory that will be free, but not until you have performed the delete proce-

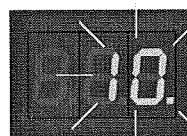
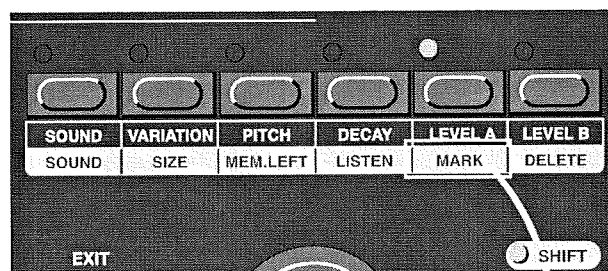
duration. There are 8128 Blocks in the original ddrum4 SE sound memory. Any number of blocks above 999 is indicated by a digit, a dot and two more digits. If e.g. 1280 blocks would become free, this is indicated as 1.28 in the DISPLAY.

SHIFT-LISTEN



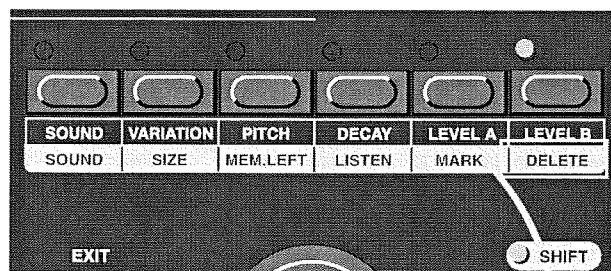
Pressing **SHIFT** and **LISTEN** will play the sound that you have selected with the shift-sound function described above. The sound will be played through outputs A1 and A2 and through the **HEADPHONES** output.

SHIFT-MARK



Pressing **SHIFT** and **MARK** will mark the selected sound for removal. A dot in the right corner of the display warns you if the sound that you have marked for removal is being used in at least one of the Kits or in the Palette. The dot is just a warning however, you can still remove the sound, leaving the Kit or the Palette that used the sound incomplete. To select entire sound groups (categories), hold the **SOUND** button while turning the **ROTARY DIAL**. The **DISPLAY** will show 'G.xx', where the 'xx' indicates the total number of sounds in the selected group. This is especially useful if you plan to erase an entire sound group to be able to make room for downloading new sounds. Then press the **MARK** button to mark the entire sound group.

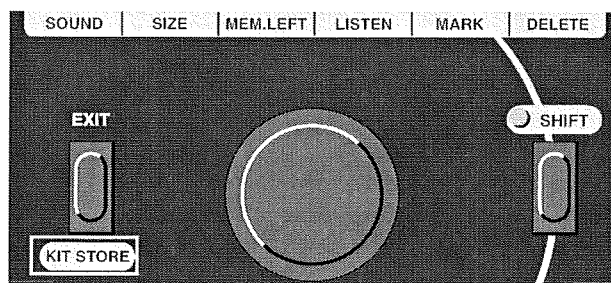
When a sound or a sound group is marked for removal, the **DISPLAY** will flash. To un-mark a selected sound/sound group, just press the **SHIFT** and **MARK** buttons again. When you turn the **ROTARY DIAL** after having marked an entire sound group you can see each individual sound of the selected group flashing in the **DISPLAY**. It's possible to unmark individual sounds of a sound group by scrolling with the **ROTARY DIAL** and pressing **SHIFT** and **MARK** for each individual sound. It's also possible to mark several sounds by selecting sounds with the **ROTARY DIAL** and mark them by pressing **SHIFT** and **MARK**. If you have marked some sounds and leave the shift functions without deleting the sounds, they will be un-marked and you have to start all over, marking them again at a later stage. If you are unsure whether your sounds should be deleted, simply leave the Mark function by pressing **EXIT**.

SHIFT-DELETE

You are now ready to delete the sounds that you marked for removal (see above). Be aware that this is going to be a “no-going-back” operation:

1. Hold the **SHIFT** and press the **DELETE** button. The **DISPLAY** will flash, indicating the total number of Blocks that will be deleted (the total number of Blocks for all marked sounds).
2. Confirm the deletion by holding the **SHIFT** button and pressing the **DELETE** button again, or abort by pressing **EXIT**.

While the ddrum4 SE is clearing up its sound memory, the **DISPLAY** will count down as the Blocks are deleted. This operation will take a while, depending on the size and location of the sounds that are removed. You must wait until this operation is finished, which will be indicated by a zero in the **DISPLAY**. **IMPORTANT! Do not turn off the ddrum4 SE module during this process!**

SHIFT-EXIT

Sounds that are marked, as described above, can be transmitted as ddrum4 MIDI System Exclusive data via the **MIDI OUT** connector. Hold **SHIFT** and press **EXIT** to start the transmission. The **DISPLAY** will count down the Blocks of the individual sounds being transmitted. You may interrupt the procedure by pressing **EXIT**. The transmission will then stop after any current sound has been completely transmitted.

Note: The data will be transmitted as several MIDI System Exclusive data packets. The number of packets will depend on the size and number of sounds that are included in the transmission. You can not restore any individual sounds that have been a part of a multi-sound transmission. If you want to be able to restore individual sounds, you must transmit them one by one.

7. SOUND FORMATS AND MIDI

The sounds in the ddrum4 SE reside in a memory that is technically called a Flash ROM. This means that besides storing sounds, you can delete sounds that you do not want and replace them with new ones. The Flash ROM also retains its content when the power is switched off. You can load sounds into the ddrum4 SE module via MIDI in two different formats, the ddrum4 format and the MIDI SDS (Sample Dump Standard) format. Sounds in the ddrum4 format can be accessed from the Clavia web site, free of charge. Point your browser to <http://www.clavia.se/> for more information.

DDRUM4 SOUNDS

A ddrum4 sound contains one or more samples that have been converted to a proprietary format. It has been carefully edited by the Clavia crew and finally compressed (by a factor 3-6 times). The compression technology allows for the sounds to take up less memory so that we can put more of them into the ddrum4 SE. Each ddrum4 sound has a unique name, which assigns it to the appropriate sound group. The sound numbers do not have to be consecutive. A ddrum4 sound can also contain a couple of variations, which are different sets of functions that affect the sound and how it behaves when played back. These special functions/parameters cannot be edited by the user. One type of variation function would be the crossfade information for multi samples or dynamic filter settings.

DOWNLOAD NEW SOUNDS - FREE OF CHARGE

At the Clavia web site you will find all sounds as zipped MIDI files. Fetch them with your web browser and unzip them. Then you can load the MIDI files to the ddrum4Tool (PC) or to your sequencer, and download them to your ddrum4 SE. Do not forget to download a copy of the factory sounds. This could be very handy to have around, if you delete sounds and then change your mind.

MIDI SAMPLE DUMP

A MIDI Sample Dump sound is a sample in another format that can also be transmitted via MIDI. There are many devices that can transmit and/or load MIDI Sample Dumps. All you need is access to a sampler or computer software with this capability. If you would like to have your own personally sampled sounds, and have access to a sampler that can transmit sample dumps, you can exchange every single sound in the ddrum4 SE.

These samples will not be compressed as much as the ddrum4 sounds (only by a factor 2), making them bigger than a corresponding ddrum4 version of the same sound, and making the transfer process slower. A MIDI Sample Dump has not the sound group identification data like the ddrum4 sounds have. Therefore the MIDI Sample Dump sounds are placed in the Dump group in the ddrum4 sound memory. They are numbered according to the MIDI Sample Dump standard. Check your sampler for information regarding how it is numbering samples. The ddrum4 will truncate these numbers to fit within the range of 1 to 999. A MIDI Sample Dump lacks the special variations of the ddrum4 sound format. But we have made it possible for MIDI Sample Dumps to benefit from the variation functions. There are cool variations to check out on the sample dump sounds.

Note: For MIDI Sample Dump sounds, Variation #5 is a “mono trig” variation which means that any new trig of the sound will automatically mute the previously played hit. This could be useful especially for long decaying sounds. Please refer to page 31 for more info on loading MIDI Sample Dump sounds.

If you start to make new drum sounds in a sampler, please remember that you have to edit them in the sampler before you transmit them to your ddrum4 SE. Make sure that the sample start point is correct (no space before the actual sound) etc. Please note that the ddrum4 SE playback sample rate is 44.1 kHz. If you load a MIDI sample that is sampled with a lower sample rate, the ddrum4 SE will automatically adjust them. Sounds with a higher sample rate will be played back with a lower pitch. Adjust this with the Pitch function described on page 26.

If you have the sounds on your computer hard disk, you need to check their size to see if they fit in the ddrum4 SE sound memory. If you have a PC, just look in the directory to see the size of each sound file. If you have a Mac OS computer you will have to check the size of the MIDI file with the “get info” command (command-I). Look for the info “bytes used:”. The Mac OS will not tell you the exact size of a file if you just look in the directory of the Finder or in a folder. On the ddrum4 SE a ‘Block’ is approximately 1 kB. You can check the available space in the ddrum4 with the shift-mem.left function described on page 28. If the space isn’t enough you will need to delete sounds from the ddrum4 SE sound memory.

LOADING SOUNDS INTO DDRUM4 SE

This is extremely easy. You do not need to do anything with the ddrum4 SE module in order to receive sounds via MIDI. Just make sure that the connections are correct and start the transmission from the sending device (software, the sequencer or the sampler).

1. Connect the MIDI Out from your computer or sampler (if you are transmitting a MIDI Sample Dump Standard sound) to the **MIDI IN** on the ddrum4 SE module. If the other device needs a closed loop connection, also connect the **MIDI OUT** of the ddrum4 SE to the MIDI In of the sending device.
2. Start the MIDI Sysex transmission on the sending device.

The ddrum4 will automatically recognize the format of the incoming data. During this transmission, the ddrum4 display will indicate the amount of blocks to load from each sound in the transfer. The transmission of these sounds to the ddrum4 SE can take a while, especially if you want to load lots of sounds or very long sounds.

ERROR CODES

FuL

If you try to load a sound to the ddrum4 SE that does not fit in its memory, the **DISPLAY** will alert you by showing you the ‘FuL’ (full) error code. If this happens, please stop the transmission and wait a little while until the ddrum4 SE reverts to normal operation (shown by the **DISPLAY** returning to a normal appearance).

duP

If you try to load a ddrum4 sound to the ddrum4 SE that already exists in the memory, the display will alert you by showing you the duplicate error code, ‘duP’, and the data of that particular sound will be ignored. This error code may also occur if you try to load two identically numbered MIDI Sample Dumps into the ddrum4 SE. Please consult your Sample Dump sources manual for information regarding the numbering of the samples in a sample dump.

ERR

The 'Err' message will appear if anything goes wrong with the transmission. If this message appears, please abort the operation on the transmitting device. The ddrum4 SE will return to normal operation after a short while. The file being transferred when this error message appeared, might be partially stored in the ddrum4 SE memory. Please delete it using the Shift-Mark and Shift-Delete described on page 29 and page 30.

MIDI PROGRAM CHANGE MESSAGES

The ddrum4 SE has a special way of interpreting MIDI Program Change messages.

The kits, P. 1 - 26 can be selected by sending MIDI Program Change numbers 0 to 25 to the ddrum4 SE. The factory kits, F.27 - 99 use MIDI Program Change numbers 26 to 98.

MIDI Program Change 99 is used to turn the ddrum4 SE to the default Palette mode, the default mode when you turn on the ddrum4 SE.

To select one of the sounds in the Kick palette, send one of the MIDI Program Change numbers 100 to 104, for the Snare palette, use one of the MIDI Program Change numbers 106 to 110. The other two Palette groups use the MIDI Program Change numbers 112 to 116 and 118 to 122 respectively.

To deselect a Palette in, e.g. the Kick group, send the MIDI Program Change number 105 (to revert to the kit selection for that particular Palette group). Use the MIDI Program Change numbers 111, 117 and 123 for the other Palette groups.

This means that in order to set the ddrum4 to a certain sound combination by sending MIDI Program Change numbers to it, you may have to use a combination of several MIDI Program Change messages. You may select a kit by one MIDI Program Change message (0 -98), change the kick in that particular kit by sending another MIDI Program Change number, etc.

As well as receiving MIDI Program Change numbers, the ddrum4 SE transmits them whenever you select a kit or palette on the ddrum4 SE itself.

MIDI IMPLEMENTATION CHART

Model: Clavia ddrum4 SE

Date: November 2001

Version: 1.5x

FUNCTION		TRANSMITTED	RECOGNIZED	REMARKS
Basic Channel	Default Changed	1 1-16	1 1-16	Memorized
Mode	Default Messages	Mode 3 X	Mode 3 X	
Note Number		0-127	0-127	
Velocity	Note ON Note OFF	O v=0-127 X	O v=1-127 X	
After Touch	Key Channel	O 0-127 X	O 0-127 X	
Pitch Bender		X	X	
Control Change	0,32 1 4 6,38 7 10 11 64 65 66 67 84 91 93 96,97 98,99 100,101 120	X X O X O X X X X X X X X X X X X X X X X X X X	X X O X O X X X X X X X X X X X X X X X X X X X	Bank select Modulation Foot controller Data entry Volume Panpot Expression Hold 1 Portamento Sostenuto Soft Portamento control Effect 1 depth Effect 3 depth Data incr, decr NRPN LSB, MSB RPN LSB, MSB All sound off
Prog Change		O 0-127	O 0-127	
System Exclusive		O *1, 3	O *1, 2, 3	
System Common	: Song Pos : Song Sel : Tune	X X X	X X X	
System Real Time	: Clock : Commands	X X	X X	
Aux Messages	: Local ON/OFF : All Notes OFF : Active Sense : Reset	X X X X	X X X X	
Notes *1 System setup *2 Sample Dump Standard *3 ddrum4 sounds				

Mode 1: OMNI ON, POLY
Mode 3: OMNI OFF, POLY

Mode 2: OMNI ON, MONO
Mode 4: OMNI OFF, MONO

O: YES
X: NO

8. APPENDIX

DDRUM4 SE SOUND LIBRARY

The ddrum4 SE sound library holds several multi-sampled sounds made by the great drummers **Simon Phillips**, **Dennis Chambers**, **Kenny Aronoff** and **Mel Gaynor**. It's their drums, their choice of heads, their custom tunings etc., exclusively recorded by these drummers for the ddrum4 SE sound library! If you like you can download more of their sounds at www.clavia.se and from the enclosed CD-ROM!

The two letters to the right of the sound number in the KICK, SNARE, TOM, CYMBAL and HI-HAT groups below indicate which drummer the sounds originate from: The 'SP' sounds were produced by **Simon Phillips**, 'DC' by **Dennis Chambers**, 'KA' by **Kenny Aronoff** and 'MG' by **Mel Gaynor**.

Sound No. & Name	Samples	Variations	Description
KICK_702 KAKick1 DRY	7	1	Tama Starclassic 24" bass (dry)
KICK_703 DCKick1 DRY	7	1	Pearl Masters Custom 22" bass (dry)
KICK_704 DCKick2 AMB	7	1	Pearl Masters Custom 22" bass (amb)
KICK_707 SPkick2 DRY	7	1	Tama Starclassic 24" bass (dry)
KICK_709 SPkick3 DRY	7	1	Tama Starclassic 18" bass (dry)
SNRE_73 "73-an"	1	2	
SNRE_700 MGsnare1 AMB	7	1	Tama Starclassic 14" snare (amb)
SNRE_701 MGsnare2 AMB	7	1	Tama Starclassic 14" snare side shot (amb)
SNRE_712 KAsnare1 DRY	7	1	5 x 14" KA145 Trackmaster snare (dry)
SNRE_713 KAsnare2 DRY	7	1	5 x 14" KA145 Trackmaster snare off (dry)
SNRE_717 DCsnare1 AMB	7	1	DC5314D snare (amb)
SNRE_720 SPsnare1 DRY	7	1	12" Pageant Signature snare (dry)
RIM_709 KAsnare2asrtrim DRY	7	1	5 x 14" KA145 Trackmaster snare rim (dry)
RIM_715 DCsnare1sided AMB	4	1	DC5314D snare rim (amb)
RIM_716 DCsnare1shot AMB	7	1	DC5314D snare side shot (amb)
RIM_719 SPsnare1 sided DRY	4	1	12" Pageant Signature snare side stick (dry)
RIM_720 SPsnare1shot DRY	5	1	12" Pageant Signature snare side shot (dry)
TOM_723 DCtom1 AMB	7	1	Pearl Masters Custom 10" tom (amb)
TOM_725 DCtom3 AMB	7	1	Pearl Masters Custom 13" tom (amb)
TOM_727 DCtom5 AMB	7	1	Pearl Masters Custom 16" tom (amb)
TOM_728 DCtom6 AMB	7	1	Pearl Masters Custom 18" tom (amb)
TOM_729 SPtom1 DRY	7	1	Tama Starclassic 10" tom (dry)
TOM_732 SPtom4 DRY	7	1	Tama Starclassic 14" tom (dry)
TOM_734 SPtom6 DRY	7	1	Tama Starclassic 16" tom (dry)
TOM_735 SPgongtom1 DRY	7	1	20" Gong tom (dry)
TOM_737 SPoctoban2 DRY	7	1	Low Pitch Octoban
PERC_001 Afro guiro	1	4	

Sound No. & Name	Samples	Variations	Description
PERC_002 Bamboostix	1	4	
PERC_003 Bell mute	1	4	
PERC_004 Bellbright	1	3	
PERC_005 Cabasa	1	4	
PERC_006 Cascara	1	4	
PERC_007 Castanjet	1	4	
PERC_008 Claves	1	4	
PERC_009 CrackBell	1	4	
PERC_010 DDRtriangl	1	5	
PERC_011 Duckshells	1	4	
PERC_012 Earthdrum1	1	3	
PERC_013 Earthdrum2	1	3	
PERC_014 GBcha-cha1	1	3	
PERC_015 GBcha-cha2	1	3	
PERC_016 GBconga	1	3	
PERC_017 GBquinto	1	3	
PERC_018 GBtumba	1	3	
PERC_019 Handbell 3	1	3	
PERC_020 Indie drum	1	3	
PERC_021 Kandgila	1	3	
PERC_022 LPtimbale	1	3	
PERC_023 M bira	1	3	
PERC_024 Mambo bell	1	4	
PERC_025 MPbongo	1	3	
PERC_026 MPbongo2	1	3	
PERC_027 Tabla bass	1	3	
PERC_028 Tabla mid	1	3	
PERC_029 Tabla high	1	3	
PERC_030 Table drum	1	3	
PERC_031 Tamborin3	1	4	
PERC_032 Tamborin4	1	5	
PERC_033 Timbalehi	1	4	
PERC_035 Woodblock	1	4	
PERC_036 Bongo small-large	1	6	
PERC_037 Hiconga1-2	2	4	
PERC_038 Earthdrum	1	3	
PERC_039 Tamborim	2	3	
PERC_040 Tamburin1	2	4	
PERC_041 Cascara	1	2	
PERC_042 Cowbell	1	3	
PERC_043 Handbell 1&2	2	1	
PERC_044 Lowconga	1	3	
PERC_045 Tamburin	1	4	
PERC_046 Tamburin2	1	4	

Sound No. & Name	Samples	Variations	Description
PERC_047 Tempelbl	1	4	
PERC_048 Timbalelrg	1	3	
PERC_049 Timbalesma	1	4	
PERC_050 Triangle	1	4	
PERC_051 UFsbell	1	5	
PERC_052 Woodblock	1	4	
PERC_053 Guiro.1	1	5	
PERC_054 Guiro.3	1	4	
PERC_056 Bongos 2 samp	2	2	
PERC_060 Timpany F1 2samp	2	4	
CYMB_713 KAcrash1 DRY	3	1	
CYMB_716 KAride1 DRY	3	1	
CYMB_717 KAsplash1 DRY	4	1	
CYMB_744 KAhatFX2 DRY	3	1	
CYMB_745 KAchina DRY	3	1	
HHAT_702 KA hihat2 DRY	7	1	
HHAT_706 SPihat1 DRY	7	1	
EFCT_002 Iron elem	1	4	
EFCT_003 Lrge Hit	1	4	
EFCT_005 Fingersnaps4	1	4	
EFCT_006 Goomcheaks 1	1	4	
EFCT_009 Alarmclock 1	1	4	
EFCT_011 Bycyclebell 1	1	4	
EFCT_013 Chaindump 2	1	4	
EFCT_019 Belldump	1	2	
EFCT_020 Belltree 2	1	4	
EFCT_023 Laser	1	1	
ASRT_001 808clap	1	3	
ASRT_002 808clave	1	3	
ASRT_003 808conga	1	3	
ASRT_004 808cowbell	1	5	
ASRT_005 808kick	1	3	
ASRT_006 808rim	1	3	
ASRT_007 808snare2	1	3	
ASRT_008 808tom	1	3	
ASRT_009 909rimshot	1	3	
ASRT_010 909snare2	1	4	
ASRT_011 analogbell	1	4	
ASRT_012 clap1	1	4	
ASRT_013 Housekick	1	4	
ASRT_017 Bombo sft1&hrd2	2	1	

DDRUM4 CAST PRECISION PADS

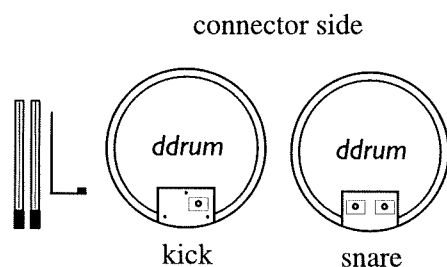
The feel of these pads is as important to the overall function of the ddrum4 SE sound engine as the sounds themselves.

CAST PRECISION PADS

The Cast Precision Pads feature a real drumhead. They are assembled in conjunction with a cast aluminum shell. The Cast Precision Pads detect pressure on the head and the position where you strike. The position feature is great to use together with multisampled sounds! These pads are also dampened for a quiet performance.

ASSEMBLY OF THE PADS

Locate the Kick pad. It is one of the two 12 inch pads in the pad package, the one with only one XLR connector on the back side. The Snare pad comes in the same size as the Kick pad but with two XLR connectors; one for the drumhead and one for the rim.

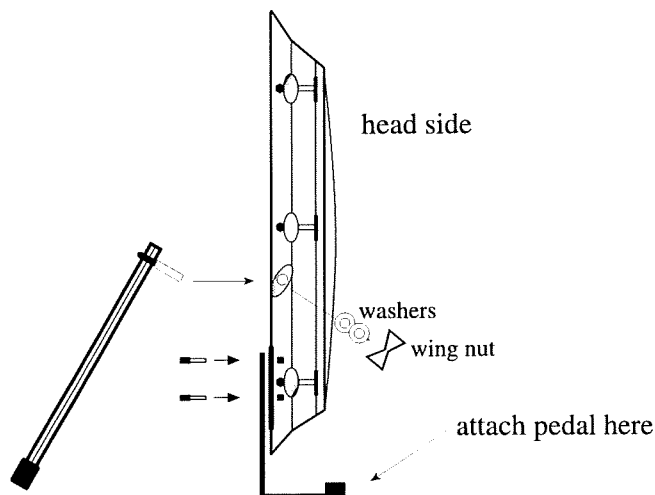


You need to assemble the L-shaped pedal attachment and the two chrome legs to the kick pad. The necessary nuts, bolts and washers are located within the package that contains the legs. The only tool needed is your drum key. The pedal attachment has three holes for the bolts and one square cut-out, for the connector output. The shorter part of the L should point in the direction towards your playing position.

Place the pad with the drum head facing downwards on, e.g. a table. Locate the square connector housing towards the edge of the table. Place the L-shaped attachment on top of the connector housing, short part facing downwards. Insert a nut from underneath and a bolt through one of the holes from the top. Tighten the bolt with your fingers. You should use all three bolts to secure the pedal attachment to the kick pad.

Locate the points of attachment for the two legs on the cast aluminum rim of the pad. Take the eye-bolt and insert the leg through it. Place the legs in the attachment, pushing the bolt through the hole in the

rim. Place two washers on each bolt and then take the wingnut and tighten the legs firmly to the pad. The legs should point downwards, at an angle away from your playing position.



MAINTENANCE

Always make sure that the pads regain normal room temperature if they have been kept at a low temperature. Wipe the surface of the pads and the cymbals with a soft cloth, every now and then. Do not use any solvent. The heads should be replaced when worn out. You can use any head you like with the ddrum pads.

TOM PADS

When you replace the head on a Cast Precision Tom, check that the foam layer beneath the head has not turned porous. The foam layer is a spare part and can be obtained at your ddrum supplier.

SNARE AND KICK PADS

The two foam layers in these two Precision pad types are separated from the sensor plate. If the foam gets porous or the sensor plate is damaged on a snare or kick pad, you must replace both the foam layer(s) and the sensor plate. **Make sure you place the hardest foam layer on top (in front) of the sensor plate!**

DDRUM4 CAST PRECISION MESH HEAD PADS

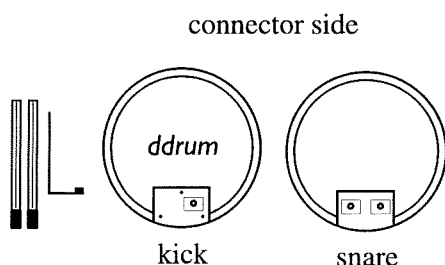
The feel of these pads is as important to the overall function of the ddrum4 SE sound engine as the sounds themselves. The mesh heads make these pads extremely low on acoustic noise.

CAST PRECISION MESH HEAD PADS

The Cast Precision Mesh Head Pads feature “silent” web drumheads for minimum acoustic noise. To minimize the acoustic noise even more, the rim hoops of the pads are rubber coated. They are assembled in conjunction with a cast aluminum shell.

ASSEMBLY OF THE PADS

Locate the Kick pad. It is one of the two 12 inch pads in the pad package, the one with only one XLR connector on the back side and with a solid aluminum back side. The Snare pad comes in the same size as the Kick pad but with two XLR connectors; one for the drumhead and one for the rim, and without the aluminum back.

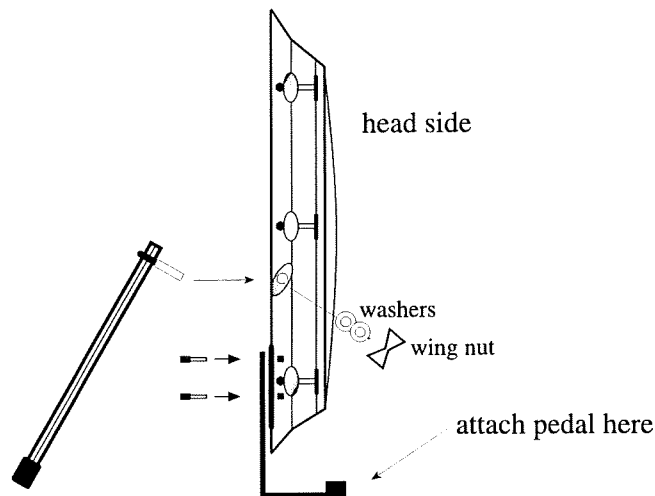


You need to assemble the L-shaped pedal attachment and the two chrome legs to the kick pad. The necessary nuts, bolts and washers are located within the package that contains the legs. The only tool needed is your drum key. The pedal attachment has three holes for the bolts and one square cut-out, for the connector output. The shorter part of the L should point in the direction towards your playing position.

Place the pad with the drum head facing downwards on, e.g. a table. Locate the square connector housing towards the edge of the table. Place the L-shaped attachment on top of the connector housing, short part facing downwards. Insert a nut from underneath and a bolt through one of the holes from the top. Tighten the bolt with your fingers. You should use all three bolts to secure the pedal attachment to the kick pad.

Locate the points of attachment for the two legs on the cast aluminum rim of the pad. Take the eye-bolt and insert the leg through it. Place the legs in the attachment, pushing the bolt through the hole in the

rim. Place two washers on each bolt and then take the wingnut and tighten the legs firmly to the pad. The legs should point downwards, at an angle away from your playing position



MAINTENANCE

Always make sure that the pads regain normal room temperature if they have been kept at a low temperature. Wipe the surface of the pads and the cymbals with a soft cloth, every now and then. Do not use any solvent. The mesh heads should be replaced when worn out. You can use any head you like with the ddrum Mesh Head Pads, but for “silent” playing, use mesh heads.

SNARE AND TOM PADS

When you replace the head on the Cast Precision Mesh Head pad, first remove the small red protection plate that sits above the transducer. Then, remove the rest of the tension rods. Note: don't forget to mount the red protection plate back on after you've replaced the drum head. The protection plate prevents the piezo transducer from direct hits, which might destroy it.

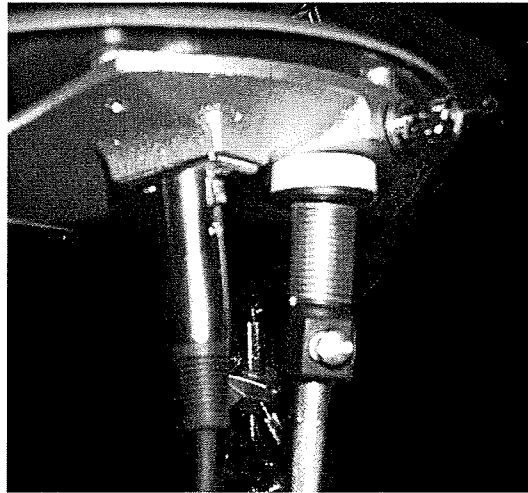
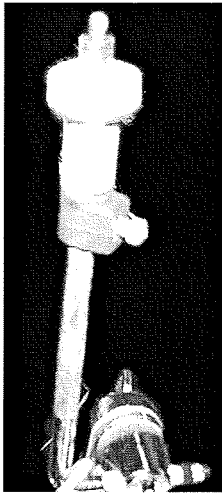
KICK PAD

The two foam layers in the Kick pad are separated from the sensor plate. If the foam gets porous or the sensor plate is damaged on the Kick pad, you must replace both the foam layer(s) and the sensor plate. Make sure you place the hardest foam layer on top (in front) of the sensor plate!

DDRUM4 CAST CYMBAL

UNPACKING THE CAST CYMBAL

The Cast Cymbal comes with an L-rod receiver, a supporting spring and a mono XLR-jack cable. The Cast Cymbal is designed to be mounted on an L-rod stand using the supporting spring (see pictures below). Connect the cymbal to Channel 8 or 9 on the ddrum4 SE module.



HOW TO CHOKE THE CAST CYMBAL

The Cast Cymbal pad is chokeable in a different way than you are used to. You press with your hand or with the drumstick in the center of the pad to mute the sound. Most of the ride cymbals in the ddrum soundlibrary offers ride and bell sound. The bell sound in these cases will be naturally positioned in the center of the Cast Cymbal pad.

MAINTENANCE

Wipe the surface of the Cast Cymbal with a soft cloth, every now and then. Do not use any solvent. The playing surface is rubbercoated metal for the right feel. If the rubber becomes damaged or worn out, you can order a replacement rubber part from your ddrum supplier.

DDRUM4 CAST HI-HAT

UNPACKING THE CAST HI-HAT

The Cast Hi-Hat comes in two parts. The upper part is called the Hi-Hat clutch, to be mounted on your Hi-Hat rod. The larger part is called the Hi-Hat Controller, that mounts onto the Hi-Hat stand similar to a traditional bottom Hi-Hat cymbal. The Cast Hi-Hat is designed to fit conventional Hi-Hat stands. There is also a stereo XLR-jack cable included.

HOW TO MOUNT THE CAST HI-HAT

Start with the Hi-Hat Controller. The first thing to do is to totally open up the mounting bracket on the lower part of the Hi-Hat Controller. Take the package and let the Hi-Hat rod slide through the centre hole. Place the Controller on the felt washer. (Make sure you have one!) It is important to make sure that the plastic center part of your Hi-Hat stand doesn't protrude above the surface where the Hi-Hat clutch have its target area. If it does; adjust the Hi-Hat Controller upwards or get a felt washer. Now attach the clamp around the Hi-Hat stand and tighten it firmly.

Connect the Hi-Hat Controller to channel 10 on the ddrum 4 with the attached stereo cable.

Please note: To gain all the features of the Hi-Hat functions you need to use a stereo XLR-jack cable!

Finally, mount the Cast Hi-Hat clutch onto the Hi-Hat rod. Do not tighten it until you have done the calibration described below.

HOW TO CALIBRATE THE CAST HI-HAT

1. Let the Hi-Hat clutch fall down on the Hi-Hat Controller by its own weight.
2. Press the SYSTEM button until you get to the Trig Input mode for channel 10. Select 'HHt' with the ROTARY DIAL.
3. Without touching the Hi-Hat stand, hold SHIFT and press EXIT. The DISPLAY will briefly show 'CAL' and the calibration is completed.
4. Secure the Hi-Hat clutch at a comfortable height for playing.
5. Your new Cast Hi-Hat is ready for action.

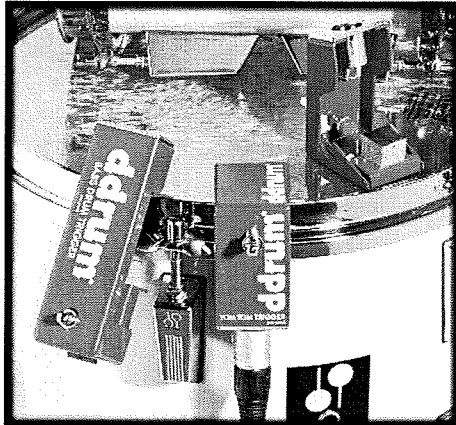
MAINTENANCE

Wipe the surface of the Hi-Hat Controller with a soft cloth, every now and then. Do not use any solvent. The playing surface is rubbercoated metal for the right feel. If the rubber becomes damaged or worn out, you can order a replacement rubber part from your ddrum supplier.

WHICH HI-HAT SAMPLES SHOULD I USE IN THE DDRUM4?

In Sound Library versions starting from 3.1, all hi-hat samples are compatible with the Cast Hi-Hat. In Soundlibrary 3.0: The samples 001, 005 and 008 are compatible with the new Hi-Hat functions. The Hi-hat samples 202 and 203 are velocity Hi-Hats and should only be played on a Cast Precision Pad. They do not work as expected with the Cast Hi-Hat Controller.

DDRUM ACOUSTIC TRIGGERS



The ddrum Acoustic Triggers should be mounted on acoustic drums. They can be used with ordinary drum heads as well as with mesh heads. When used together with the ddrum4 SE module you'll get the same great dynamic response as with ddrum4 Pads. The ddrum Acoustic Triggers come in three different models: the Tom Trigger, the Kick Trigger and the Snare Trigger.

TOM TRIGGER

This one should be fastened to your tom tom hoops. If you have drums with rims mounted you will find the area to mount the Trigger to be more restricted, but there is still plenty of space for it. If you find that the Triggers are in your way, try to change the angle of your tom tom holder. If you are using a rack system type of stand you will find you get a lot of different options on the placement of your toms and triggers. The Triggers use an industry standard XLR output connector. Use a ddrum pad cable or similar to connect it to the ddrum4 SE module. The pin configuration is as follows: pin 2 is hot (signal), ground on pin 1. All tom tom sounds can be found on Channels 4, 5 and 6 in the factory kits. We recommend you to use these inputs for your Tom Tom Triggers. The highest pitched tom is usually located on Channel 4 in a ddrum4 SE module.

KICK TRIGGER

Fits all types of standard bass drums hoops. The Kick Trigger comes with an extra rubber part. Mount the rubber if you have a bass drum hoop that is made out of metal. Most of the metal hoops have a pit on the drumhead side. Put the rubber part in this pit. This will prevent the lower part of the Kick Trigger to slip. Make sure that the transducer isn't pressing on the shell edge.

SNARE TRIGGER

The ddrum Snare Trigger is a special double microphone Trigger. Use an XLR cable split into two mono jack connectors to connect to your ddrum4 SE module. Pin 2 on the XLR is the signal from the drumhead microphone, pin 3 is the signal from the rim microphone and pin 1 is ground. On the ddrum4 SE module the snare sounds can be found on channel 2 and the rim sounds on channel 3.

SETTING UP WITH DDRUM TRIGGERS

Mount the triggers on you drums. Press softly downwards towards the drumhead and tighten the screws that locks the Tom and Snare Triggers to the hoops. Make sure the screws are firmly tightened but not

too hard. Don't worry, they will not come off. When mounting the Kick Trigger, press softly towards the drumhead. Make sure that the transducer isn't pressing on the shell edge. Tighten the screw firmly.

SOME TRIGGERING TIPS ON THE ROAD

When you set up your toms we suggest that you match the tuning of your acoustic drums and the sounds produced by the ddrum4 SE module. Otherwise you might experience the total drum sound as less natural. Matching the tuning will make the composite sound (digital and acoustic) much more natural and you will feel more comfortable when playing the system. The higher in pitch you tune your drum, the weaker the trig signal will get. This may not be a problem, but if you find that you need more gain from your Triggers, lower the tuning of the drum. If the Snare double triggers while you hit other drums, or itself, it can depend on the snare bed. Try to tighten the snare bed properly. If that isn't the problem try to raise the trig threshold or increase the crosstalk value a little.

MAINTENANCE

The triggers are roadworthy and they shouldn't require any real maintenance. Do not use any solvents when you clean them. The transducer itself can be bought as a spare part. A good idea is to have one as a spare in case of malfunction. It's very easy to change it. The only thing you need is a good soldering unit. The transducer is fastened onto the metal casting with adhesive. And it's soldered to the XLR connector. Check the configuration on the cables before you remove the old transducer from the metal and solder it away from the connector. (It's Blue lead on pin 1 and shield. Red on pin 2 (red is hot). Rim sensor is hot on pin 3). Take away the old adhesive from the metal. Use your nail or a alcohol based solvent. Take the new transducer and peel off the protecting paper from the foam. Fasten it at the same place. Put the cables through the clips and tighten the cable to the connector. Solder them onto appropriate pins on the XLR connector.

The ddrum Acoustic Triggers are patented by Clavia DMI AB.
US Patent # 5,345,037, EU patent # 0542706, other countries patent pending.

DDRUM RED SHOT TRIGGERS



The ddrum Red Shot Triggers should be mounted on acoustic drums. They can be used with ordinary drum heads as well as with mesh heads. When used together with the ddrum4 SE module you'll get the same great dynamic response as with ddrum4 Pads. The ddrum Red Shot Triggers come in two different models: the Tom (and snare) Trigger, and the Kick Trigger.

TOM TRIGGER

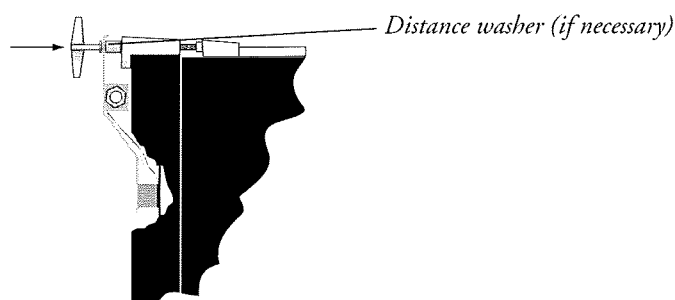
This one should be fastened to one of your tom or snare tension rods. The Triggers use an ordinary mono-jack output connector. Use standard mono-jack cable to connect it to the ddrum4 SE module. The pin configuration is as follows: tip is hot (signal), and sleeve is ground. All snare sounds can be found on Channel 2 and all tom tom sounds can be found on Channels 4, 5 and 6 in the factory kits. We recommend you to use these inputs for your Red Shot Tom Triggers. The highest pitched tom is usually located on Channel 4 in a ddrum4 SE module.

KICK TRIGGER

This one should be fastened to one of your kick tension rods. The Triggers use an ordinary mono-jack output connector. Use standard mono-jack cable to connect it to the ddrum4 SE module. The pin configuration is as follows: tip is hot (signal), and sleeve is ground. All kick sounds can be found on Channel 1 in the factory kits. We recommend you to use these inputs for your Red Shot Kick Trigger.

SETTING UP WITH DDRUM TRIGGERS

Mount the triggers on you drums. Press softly downwards towards the drumhead and tighten the tension screw that locks the Tom Triggers to the rims. Make sure the screws are firmly tightened but not too hard. Don't worry, they will not come off. When mounting the Kick Trigger, remove one tension screw. Put the tension screw through the hole of the Red Shot Kick Trigger and back on the drum again. If necessary, also apply the supplied distance washer to make the entire trigger sensor surface touch the drum head (see picture below). You may have to bend the trigger plate slightly to fine-adjust the position.



SOME TRIGGERING TIPS ON THE ROAD

When you set up your toms we suggest that you match the tuning of your acoustic drums and the sounds produced by the ddrum4 SE module. Otherwise you might experience the total drum sound as less natural. Matching the tuning will make the composite sound (digital and acoustic) much more natural and you will feel more comfortable when playing the system. The higher in pitch you tune your drum, the weaker the trig signal will get. This may not be a problem, but if you find that you need more gain from your Triggers, lower the tuning of the drum. If the Snare double triggers while you hit other drums, or itself, it can depend on the snare bed. Try to tighten the snare bed properly. If that isn't the problem try to raise the trig threshold or increase the crosstalk value a little.

MAINTENANCE

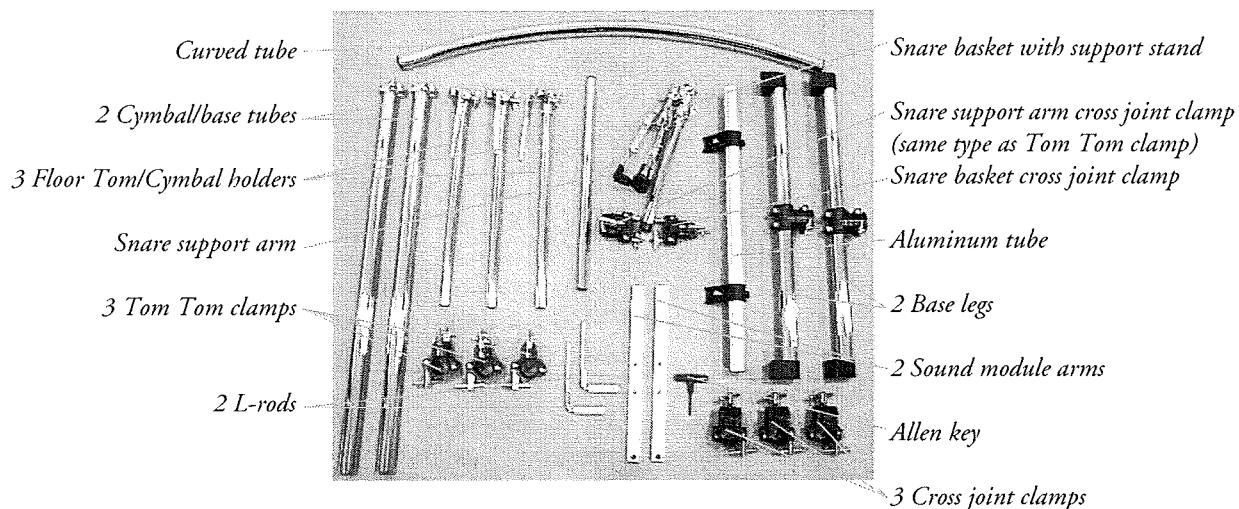
The triggers are quite roadworthy and they shouldn't require any real maintenance. Do not use any solvents when you clean them. The transducer itself can be bought as a spare part. A good idea is to have one as a spare in case of malfunction. It's very easy to change it. The only thing you need is a good soldering unit. The transducer is fastened onto the metal plate with adhesive. And it's soldered to the jack connector. Check the configuration on the cables before you remove the old transducer from the metal and solder it away from the connector. (It's Blue lead on shield and Red lead on the tip (red is hot). Take away the old adhesive from the metal. Use your nail or a alcohol based solvent. Take the new transducer and peel off the protecting paper from the foam. Fasten it at the same place. Put the cables through the holes and tighten the cable to the connector. Solder them onto the appropriate pins on the jack connector.

The ddrum Red Shot Triggers are patented by Clavia DMI AB.

US Patent # 5,345,037, EU patent # 0542706, other countries patent pending.

DDRUM4 RACK STAND ASSEMBLY

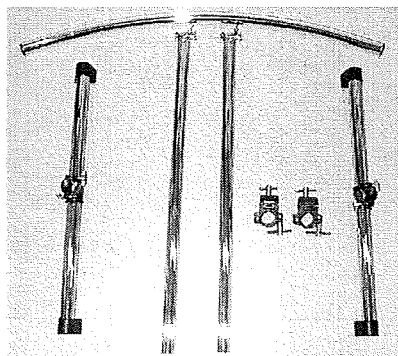
WHAT THE BOX CONTAINS:



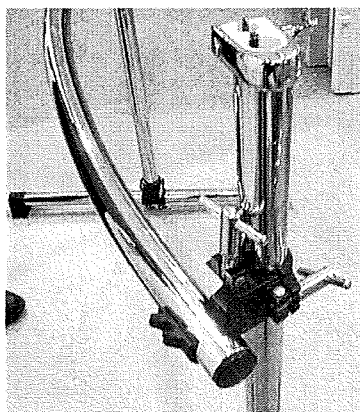
MOUNTING THE MAIN STAND

THIS IS WHAT YOU NEED:

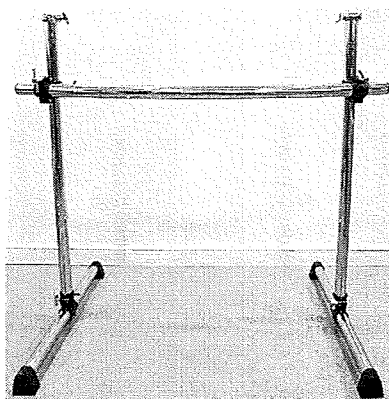
The Curved tube
 The two Base legs
 The two Cymbal/base tubes
 Two Cross joint clamps



Begin with mounting the two Cymbal/base tubes on one Base leg each. Tighten the two bolts on each Base leg. Then mount one Cross joint clamp on each Cymbal/base tube. To make it easier to fit the Curved tube in the Cross joint clamps, make sure you have the tightening bolts facing upwards (see picture to the right). Fit the Curved tube in the two Cross joint clamps of either Cymbal/base tube and tighten the bolts.



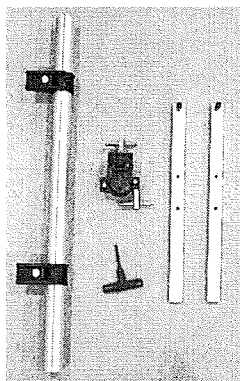
When the parts are assembled, adjust the Base legs so they are fairly parallel to each other. Then tighten all the bolts.



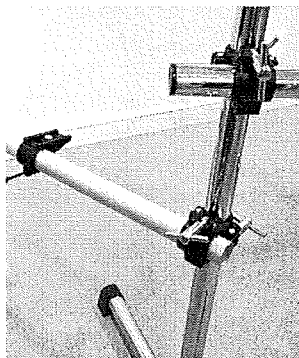
MOUNTING THE ALUMINUM TUBE FOR THE SOUND MODULE AND FLOOR TOM:

THIS IS WHAT YOU NEED:

The Aluminum tube
One Cross joint clamp
The Allen key
The two sound module arms



Begin with mounting the Cross joint clamp on the right Cymbal/base tube (if you're left-handed, you might prefer to have it on the left Cymbal/base tube instead). To make it easier to fit the Aluminum tube in the Cross joint clamp, make sure you have the tightening bolts facing upwards (see picture to the right).

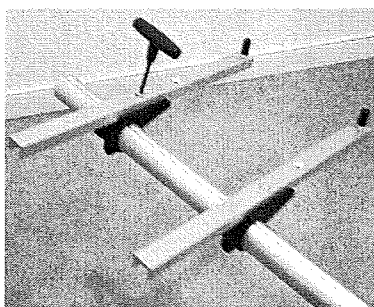


Fit the Aluminum tube in the Cross joint clamp of the Cymbal/base tube and tighten the bolt.

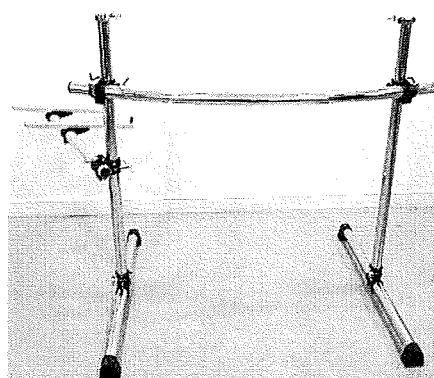
Adjust the position of the Sound module arm holders by loosening the screws with the Allen key and slide the arm holders on the Aluminum tube to a suitable position.



Mount the two Sound module arms on the arm holders. You can choose two positions of the arms to your liking.



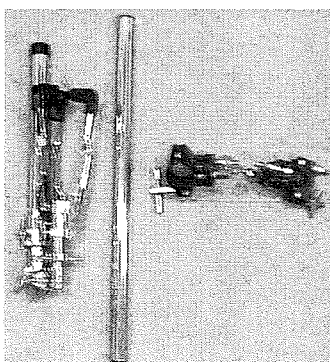
When all parts are assembled, the Rack Stand should look like this.



MOUNTING THE SNARE BASKET AND SNARE SUPPORT ARM:

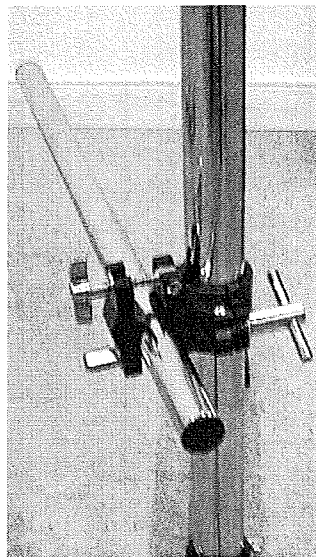
THIS IS WHAT YOU NEED:

- The Snare basket with support stand
- The Snare support arm
- The Snare support arm cross joint clamp (same type as Tom clamp)
- The Snare basket cross joint clamp

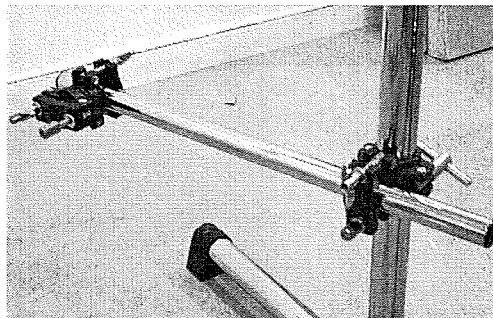


Begin with mounting the Cross joint clamp on the left Cymbal/base tube (if you're left-handed, you might prefer to have it on the right Cymbal/base tube instead). To make it easier to fit the Snare support arm in the Cross joint clamp, make sure you have the tightening bolt facing upwards (see picture to the right).

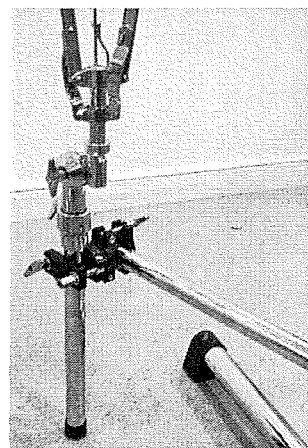
Fit the Snare support arm in the Cross joint clamp of the Cymbal/base tube and tighten the bolts. Adjust both bolts of the Snare support arm cross joint clamp to get an even pressure on the Snare support arm.



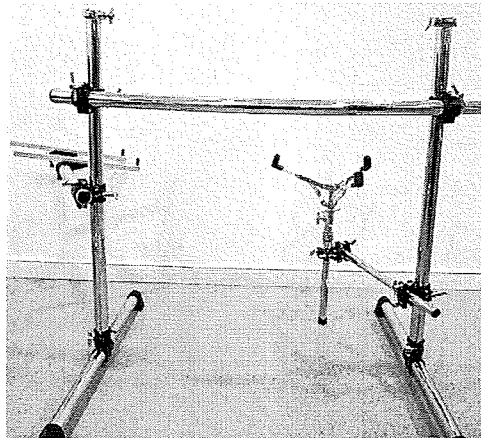
Mount the Snare basket cross joint clamp on the other end of the Snare support arm. Adjust both bolts of the Snare basket cross joint clamp to get an even pressure on the Snare support arm.



Fit the Snare basket with support stand in the Snare basket cross joint clamp. Adjust both bolts of the Snare basket cross joint clamp to get an even pressure on the Snare basket support stand. Make sure you fit the Snare basket cross joint clamp on the lower part of the Snare basket support stand to be able to easily adjust the height of the Snare basket afterwards. The Snare basket support stand should rest on the floor.



When all parts are assembled, the Rack Stand should look like this.



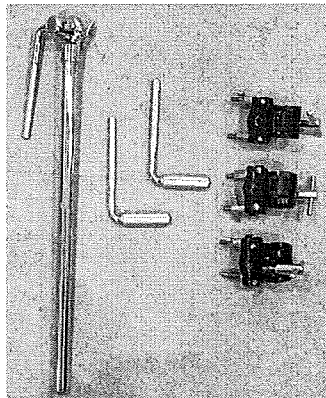
MOUNTING THE TOM TOM HOLDERS:

THIS IS WHAT YOU NEED:

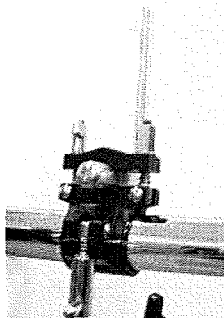
One Floor Tom/Cymbal holder

The two L-rods

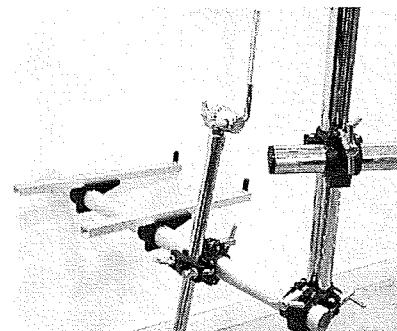
The three Tom Tom clamps



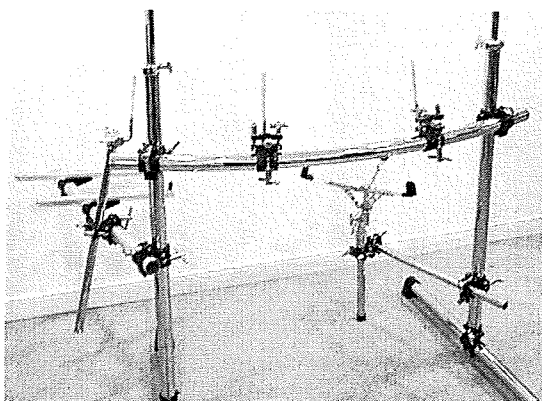
Begin with mounting two Tom Tom clamps on the Curved tube. Then mount an L-rod in one Tom Tom clamp each. Adjust both bolts of the Tom Tom clamps to get an even pressure on the L-rods.



Mount the third Tom Tom clamp on the Aluminum tube. Then mount the Floor Tom/Cymbal holder in the Tom Tom clamp. Adjust both bolts of the Tom Tom clamp to get an even pressure on the Floor Tom/Cymbal holder.

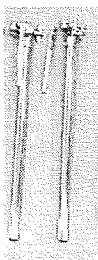


When all parts are assembled, the Rack Stand should look like this.

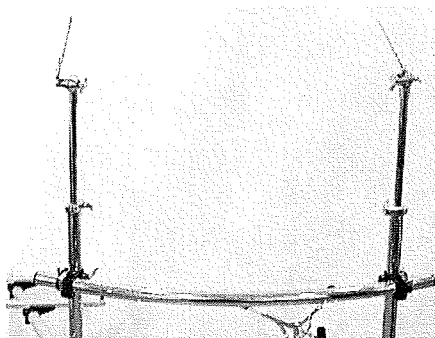


MOUNTING THE CYMBAL HOLDERS:

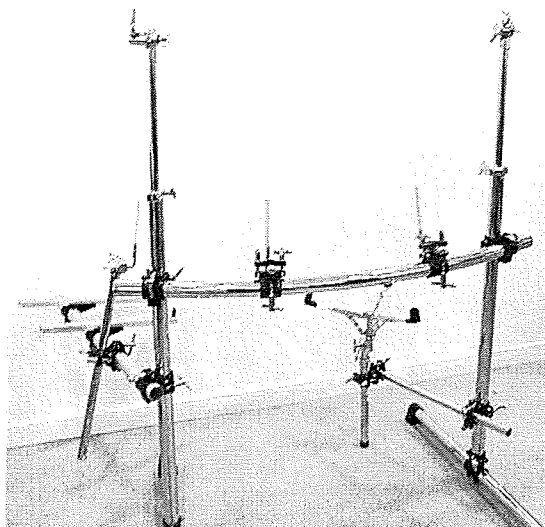
THIS IS WHAT YOU NEED:
Two Floor Tom/Cymbal holders

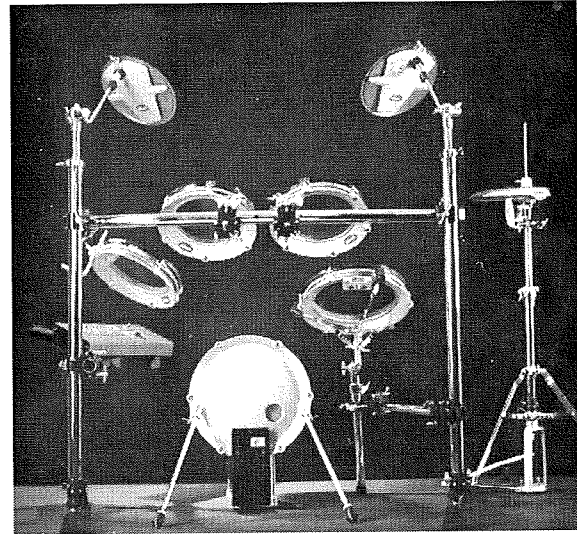
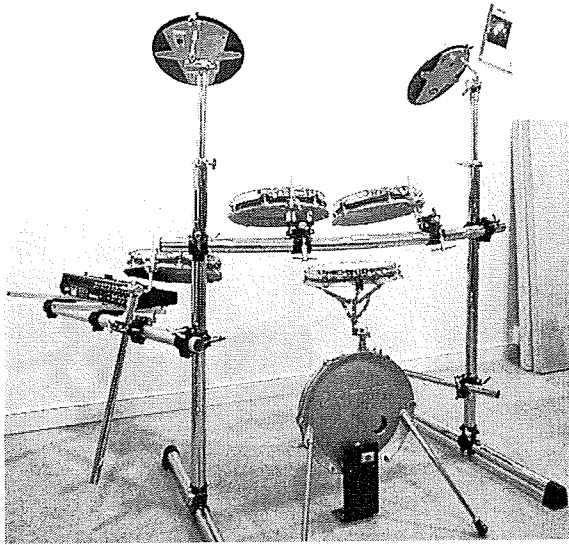


Place the Floor Tom/Cymbal holders in the Cymbal/base tubes. Tighten the Floor Tom/Cymbal holders with the bolts on the Cymbal/base tubes.



When all parts are assembled, the Rack Stand should look like this.



MOUNTING THE DDRUM4 PAD SET:

Now, the Rack Stand assembly is complete and you can mount the ddrum4 Pad Set. After you have mounted the Pads, make adjustments to have the pads at a comfortable playing position.
Note! Before attaching the Cymbals, don't forget to fit the supporting spring to the L-rods.

Good luck an enjoy playing your new ddrum4 kit!

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Installation Instructions for the ddrum4 1.5x upgrade software.

***Warning:** ddrum does not warranty the brain unless the upgrade is installed by a qualified service technician:*

The upgrade should contain:

1. An Eprom marked "1.5x"

You will need a **#2 Phillips screwdriver**, an **Eprom circuit remover** and a **small wrench**.

1. There are 4 screws and 10 nuts to remove.

***Warning:** If you don't have an "anti-static mat", you will have to make sure your free hand is grounded to the case of the ddrum4 while handling the Eprom. This entails touching something that has a true earth ground.*

2. Remove the screws on the front and in the back. Also remove the 10 upper nuts, with washers, from the back.
3. Remove the upper panel upwards; make sure to disconnect the ribbon cable that connects the mother board with the panel board. Put this aside. There could be extra washers mounted between the panel board and the lower lid. That's correct.
4. Locate the position of the Eprom that you are about to exchange.
5. Gently remove the Eprom from its socket (use your circuit remover) and replace it with the new one.
6. Make sure the jack mark on the Eprom corresponds to the jack mark on the socket. Also see to that all the legs are correctly inserted into the socket.
7. Replace the upper lid, don't forget to connect the cable from the panel board to the motherboard.
8. Perform a test: Power up the ddrum4. The ddrum4 will show the new software number "1.50" on the numeric display.
9. If everything is okay, power down.
10. Make sure that the extra washers (*if included*) are replaced between the panel board and the lower lid before replacing the screws, nuts and washers.
11. Power up the ddrum4.

How to replace EPROM in the ddrum4 unit:

WARNING! Beware of static electricity. Disconnect the power cord and ground yourself before touching any electronic components or circuit board!

1. Remove the front panel (2 panel screws on the front and 2 on the rear + the 10 trigger input nuts).
2. Gently pull up the EPROM chip (sits next to the flat cable) using a flat screwdriver.
3. Gently insert the new EPROM. Make sure you place it in the right direction!
4. Put the front panel back, and before putting the nuts back on the trigger inputs, make sure there are washers on either side of the chassis according to the figure below.

