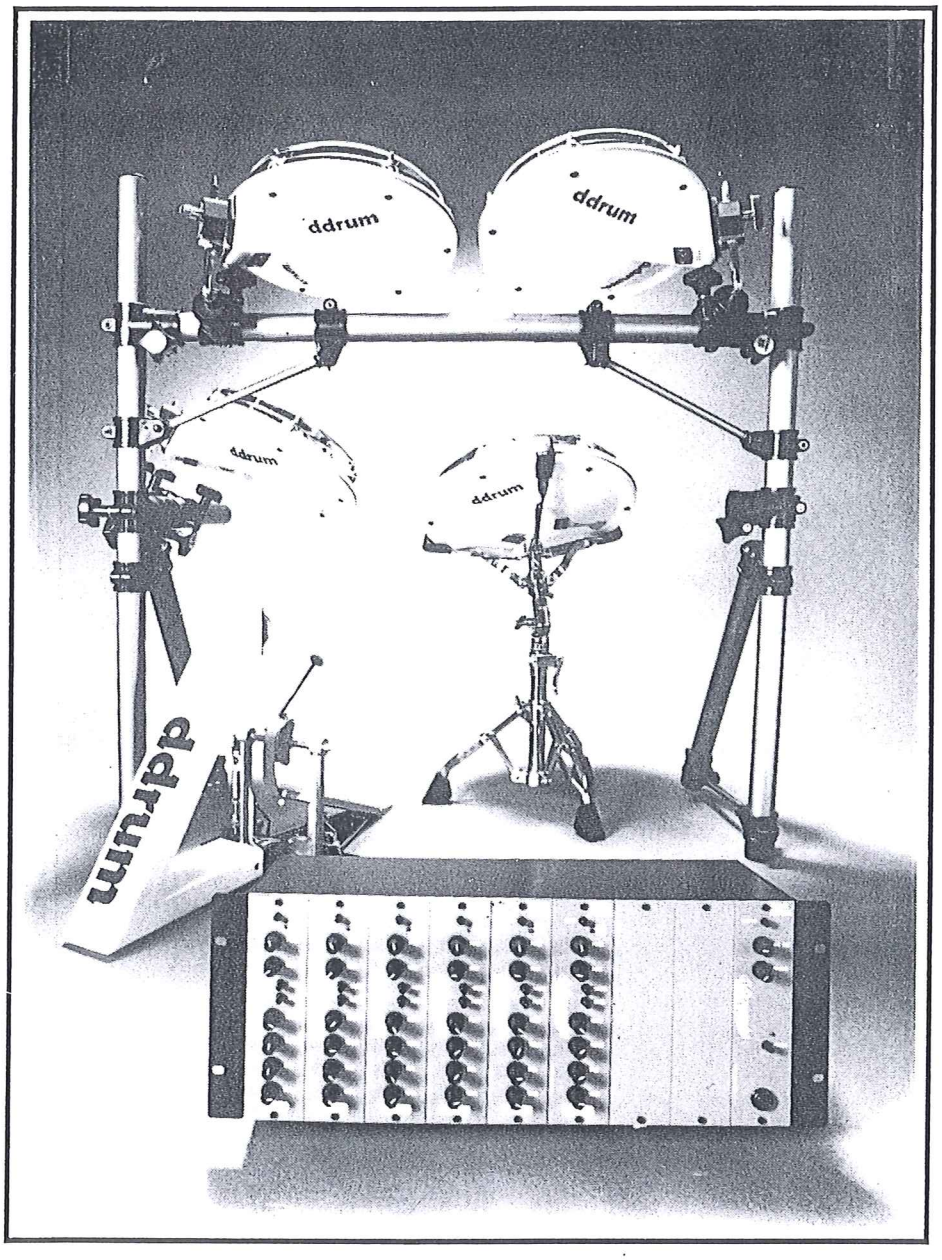
DDRUM AG info@ddrum.ch

ddrum® Plus!

OPERATION MANUAL



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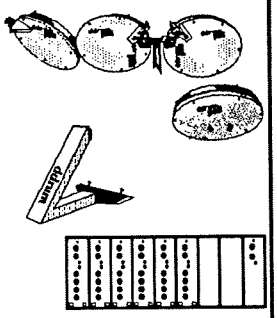
1. INTRODUCTION

1.1 ddrumPlus!, AN INTRODUCTION



The drumkit you have purchased is a development of the **ddrum** Rack System. It has a higher bandwidth than its predecessor, it has more functions, and (best of all!), it has a lower price. All these achievments are a result of experience we have gained during development of earlier products.

ddrumPlus! is a digital drumkit. This means that the sounds you are hearing are actual recordings that have been transformed into a stream of digits.

The Kit consists of a Rack unit with a number of playing pads, or just pads. The signals sent out from the pads are received by each respective Soundmodule in the Rack. Dynamic information is extracted and the sampled sound is played back. The only thing that differs between the Soundmodules are the memorychips containing the actual sound recordings.

We know that reading this manual once straight through pays off in better sounds and a longer lasting drumkit.

1.2 Read this before you use ddrumPlus!

Do not use the rack unit close to water, in very humid places or where it is extremely cold. If the unit has been kept at a low temperature for a long time, make sure it regains normal room temperature before switching on. The electronic specifications allow a working range of 0° to 50° centigrades.

ddrumPlus! rack unit is designed for 19" rack mounting with a height of 4 standard units.

Read the Maintenance section of this manual. It is important to take as much care of your ddrumPlus! kit as you would with an acoustic drumkit.

Do not put the cords under boxes or stands, or where people will step on them. Make sure the cords are not stretched unnecessarily.

When the rack unit is not to be used for a long time,disconnect power.

Do not under any circumstances attempt to repair the rack unit yourself. The chances are you will do more damage.

If the playing pads have been kept at a low temperature, make sure they regain normal room temperature before using them. The plastic becomes brittle when it's very cold.

1.3

SOUND SYSTEM

AMPLIFIER AND SPEAKERS

ddrumPlus! is a completely electronic drumkit and therefore totally dependent on a good sound system. All **ddrum**Plus! sounds are recorded in the best studios. So for best results use good quality amplification.

The total sound will never be better than the sound system used.

We recommend a system that reproduces all sounds as clear, strong and unadulterated as possible. PA-systems of good quality, and studio monitors with good amplifiers belong to this category. The attack part of drum and percussion sounds is very rich on transients, and therefore require high soundpower to sound **good** (not to sound loud). Do not underestimate the effect requirements of the amplifier.

A hifi system can be used, and will probably sound good. But there is a chance of seriously damaging it at higher levels, and it can therefore not be recommended.

Guitar and bass amplifiers are in most cases a bad choice. They are made to colour the sound of the instrument in a way not suitable for drums.

HEADPHONES

Choose a pair with low impedance. A hifi specialist can help you select a pair.

MIXER

ddrumPlus! has a built in mixer. For those who want to mix the sound with more instruments, or use many different effect units, it might be necessary to purchase a larger mixing console. Your music dealer knows what is suitable.

EFFECTS

Sure! **ddrum**Plus! is ideal for experiments with all kinds of units like reverbs, delay units and stereo processors like harmonizers and chorus. Dynamic processors like compressors and gates don't have the same impact on the sound, but don't take this as a rule. If it sounds good it's okay.

2. INSTALLATION

2.1 SETTING UP AND PLUGGING IN

WHAT'S INCLUDED?

ddrum Plus! comes as a six channel kit. The modules are labeled after their sounds. Here's the list:

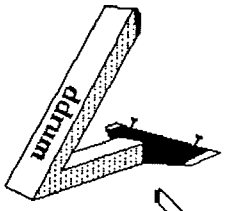
1 Kick (bassdrum, in three major parts)
1 Snare
3 Tom
6 leads for connection between pads and Rack (XLR-1/4" plug)
1 Rack with six modules
1 wall transformer

The six channels are intended to be used as bassdrum, snare with rim, and three toms.

A **ddrum** kit normally comes without stands. But most TomTom stands of TAMA type and many rack stands can be used, so there are a lot of choices. You should be able to find a solution that suits your needs.

PLAYING PADS

KICK



The Kick comes in three major parts

The "angle" with the head.

The bottom plate.

The clamp where you put the pedal.

Some screws, springs and an Allen key are also included.

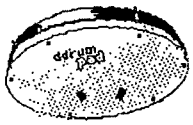
1. Attach the bottom plate to the angle with the three screws included (a coin can be used) with the rubber surface upwards.
2. Insert the two anchoring screws (with the springs) in the holes in the bottom plate.
3. Attach the basspedal clamp, with the rubber surface upwards, at the end of the Kick. Use the Allen key. Do not tighten it yet. Use your bassdrum pedal to adjust the clamp to the correct height.
4. Tighten the clamp with the Allen key.
5. Adjust the pedal beater so that it hits the center of the Kickhead.

Note:

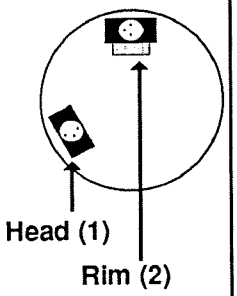
It is important, both for the sensitivity and life of the Kick, that the beater really hits the center of the head.
Use a felt beater for best playing comfort and least wear. Remember that the quality of the beater does not affect the sound at all.

Connect a cable from the "XLR output" on the Kick to "Pad In" on the **Kickmodule** (at the back of the Rack).

SNARE



The Snare differs from the Tom in that it has two outputs. One signal comes from the head, and one from the rim. This makes it possible to play two sounds from a single Pad, by connecting the Snare to two modules. The Snare fits all regular snare stands. It is fastened just as an ordinary snare, but remember to make room for the two outputs at the bottom.



Connect an "XLR-1/4" cable from "output 1" to "Pad In" on the **Snaremodule**.

Connect a cable from "output 2" to "Pad In" on the **Rimmodule**.

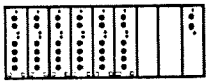
TOM

Put the Toms on their stands.

Note

Make sure the wing nut is loose enough to allow the Tom to move freely before you try to change the angle.

Connect the Toms to the remaining modules **Tom 1, 2 & 3**. Number one is highest in pitch.



RACK AND CONNECTIONS

Note:

First connect the Rack to the sound system and then to the mains. Do not turn the power on yet.

If **ddrum**Plus!' built in mixer is to be used, connect a cable from the jack labeled Mix Out on the back of the Power/Mix Module, to the input of the sound system.

If a separate mixer is to be used, connect a cable from the the jack socket labeled Audio Out on each Soundmodule, to the respective channel on the mixer.

First connect the wall transformer to the "Power In" jack on the Power/Mix Module's back. Then connect the transformer to the mains.

Turn the power on in the following order:

1. **ddrum**Plus! Rack unit.
2. Outboard effects (if used)
3. The external mixer (if used)
4. The amplifier

The principle for this order is valid for all sound systems. The unit closest to the speakers should be turned on last (and turned off first), and the unit furthest away from the speakers should be turned on first (and turned off last).

It is not time turn up the volume yet.

Hit every playing pad and check that the Led labeled Trig lights up momentarily on each respective Soundmodule. If this is not the case, turn up the Gain knob a little (clockwise), until it does. It might be that the other Led (Peak) goes on too, but don't worry now.

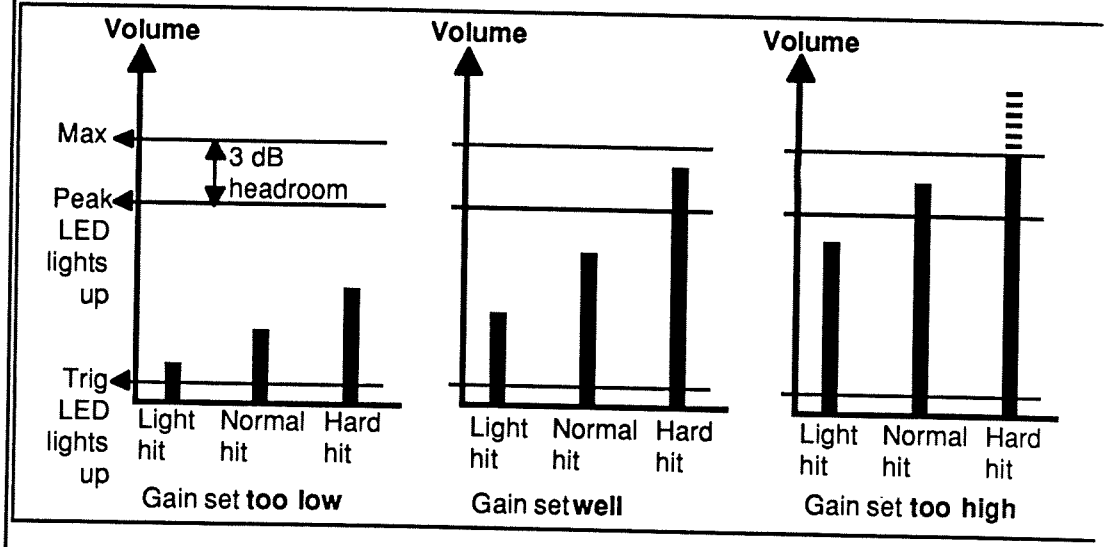
Set the level knob on each Soundmodule at "one o'clock". Set Mix Level at "one o'clock". Slowly turn up the volume of the sound system while playing a pad.

You still have to set a decent sound on each channel, and adjust dynamics so that it fits your playing style, but for now, take a break and play!

ADJUSTING DYNAMICS TO YOUR PARTICULAR STYLE

One of the most important things that sets **ddrum** apart from other electronic drumkits is the dynamics of the kit. However, to get the best reults from this ability you have to adjust each Soundmodule properly.

1. Play the pad connected to the Soundmodule to be trimmed. Check that the "Trig lamp" lights up. If it doesn't, turn the small knob labeled Gain clockwise a little.
2. Hit the pad with the strongest force you use during normal playing, while at the same time adjusting Gain. Clockwise makes it more sensitive, and counterclockwise less sensitive.
3. The correct position is when the Peak Led lights up shortly for the strongest hits.
4. Repeat this procedure with the remaining Soundmodules.



A BASIC SOUND

With every drumkit comes a **Quick Sound Chart**. Use this to get started.

IN CASE OF DIFFICULTY

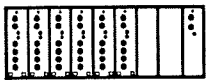
Repeat the instructions step by step.

Check that all cables are okay by switching between two channels.

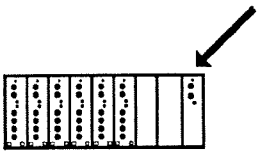
Read the instructions under Faultfinding (page 18).

3. DESCRIPTION

3.1 RACK UNIT



The electronics are housed in a nineteen inch wide, and four units high, metal casing. This size makes it easy to install in a rack case.



POWER/MIX MODULE

BACK

Power In

Wall transformer input. 4-pin XLR. Do not connect anything but the specially made Clavia transformer here. If in doubt, contact your dealer.

Line In

Input for tape recorder, monitor signals from a mixer, or similar. There are a lot of uses for this input. It is designed for line level signals as produced by tape machines, mixers, CD-players and so on. It is not made for microphone signals or regular record players.

The connected sound source is mixed in mono with the drumsounds in the Headphones output and not in Mix Out. The volume of the external sound source is controlled with Line In Level on the front of the Power/Mix Module.

The Line Input could be used to connect a hifi system or a tape recorder. This, in combination with the Headphone output makes **ddrum**Plus! the perfect practice kit.

Another way of using it is to connect a monitor signal from a mixer where other musicians are connected. In that way, Headphones Out can be used as a complete monitor signal for the drummer.

Or why not connect the return signals from an effect unit, a drummachine that is to be used as a clicktrack, or...

Mix Out

The sum of all the sound signals from the Soundmodules. This output is connected to the sound system for those who are not using a separate mixer.

If you are using a monitor system, Mix Out could be used as a monitor signal, or as an effects send to a unit like a reverb or a delay. Since the separate sound outputs are not affected by the volume knob (Level) on each Soundmodule, it is possible to achieve two totally different mixes in this way. Read more in the Soundmodule section, page 10.

FRONT

Power On/Off

Power switch for the whole Rack. Power on is indicated by the Led.

Master Level

Volume control for the complete soundmix from the Soundmodules.

Headphones Level

Volume control for the headphones signal. Mono.

Note: **Do not set the individual Level controls (Level) on the Soundmodules low, and then compensate with the Headphones Level knob, as this will lead to unwanted background noise.**

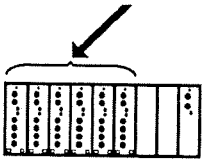
Headphones Out

This is where you connect your headphones. Makes sense, doesn't it? A pair of low impedance, light-driven, stereo hifi headphones are best. A hifi specialist can help you pick out a pair. If you are using this output as a monitor signal, set Headphones Level fairly high to avoid background noise.

Line In Level

Level control for the Line Input. This input is designed for line level signals as produced by tape machines, mixers, CD-players and so on. It is not made for microphone signals or regular record players.

SOUNDMODULES



Every Soundmodule contains four sounds, stored digitally. The electronics read the incoming signal from the connected pad and play back the drumsound.
The sounds are recorded and stored in ROM (Read Only Memory) in each Soundmodule.

What follows is a description of one Soundmodule (they are identical), and after that you will find a few hints for setting different kinds of sounds.

BACK

Pad In

Input for **ddrum** playing pads. But other signal sources **can** be connected here. More reading about that is found in chapter 4.2, page 17.

Audio Out

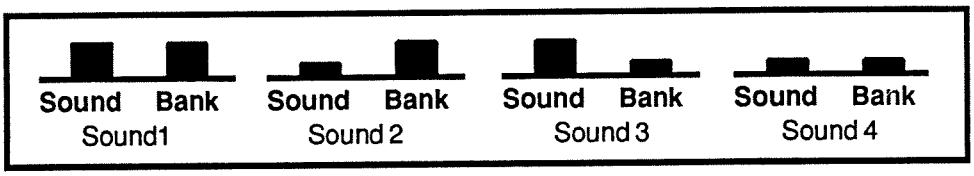
Sound output for each module. Line level.

Note: **Note that the Level knob on the frontpanel doesn't have any effect on this output.**

FRONT

Sound/Bank

ddrumPlus! Soundmodules comes with four sounds each. There are two switches on each Soundmodule. The settings determine which sound you hear. Exactly what combination recalls what sound is illustrated on the "map" below:



Pitch

Simply the basic tuning of the drumsound. The range is approximately one octave.

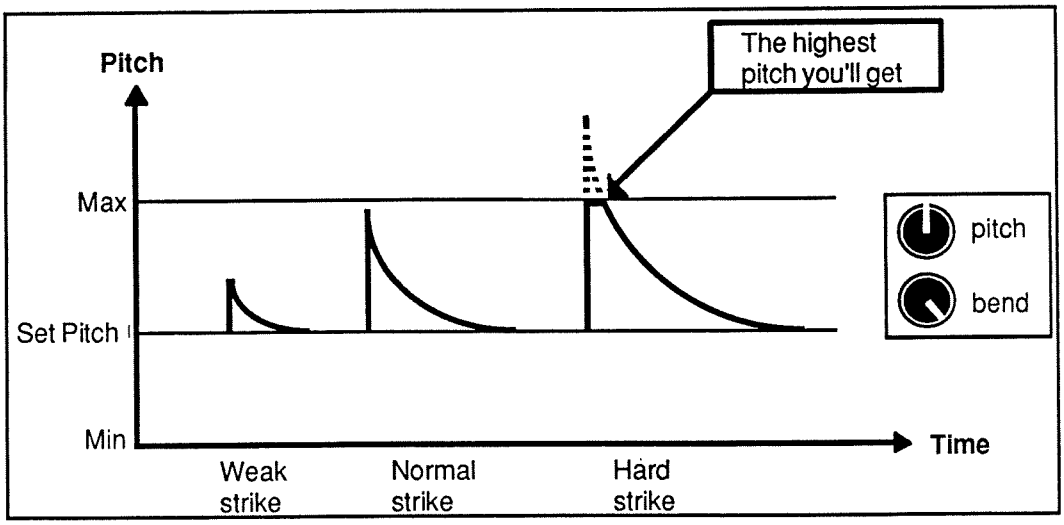
Note: **Pitch is also dependent on Bend. If you just want to listen to how one sound sounds at different pitches, it's best to set Bend to zero.**

Bend

When you tune a regular TomTom you notice how the pitch drops as the sound decays. This control simulates or magnifies that effect. When you hit the pad, the pitch drops to the level set with Pitch. Bend is dependent on striking force. The stronger, the more effect.

Note: **The amount of Bend (in combination with Pitch) determines the pitch at the beginning of the sound. But no matter how high you set Pitch and Bend, there is no way to exceed the one octave range.**

We have made a diagram so that you can understand this even better:



The time it takes for the pitch to drop is the time set with Decay. If the decay setting is very high, and the sampled sound is short, the Bend effect will be less noticeable (if at all!).

Note: **So: Pitch at zero and Bend at maximum will give max effect. If pitch on the other hand is set to maximum, there will be no Bend at all.**

Decay

The length of the sound. The higher the setting, the longer the sound. Naturally, it will never be longer than it was when it was recorded, but in many cases there is a lot to gain by shortening a sound. A higher setting might sound good separated, but when you play the whole kit, and together with other instruments, the drumsound tends to get "sloppy".

The best is to trim Decay to the lowest acceptable value, without ruining the sound.

Note: **The time it takes for the sound to drop in pitch when you use Bend is dependent on the Decay setting.**

As you can see, there are several good reasons for not leaving the Decay control at maximum on sheer routine.

Treble

An active treble filter. You can both add and subtract treble with this control.

Bass

An active bass filter. You can both add and subtract bass with this control.

On thin sounds with high pitch (like a cowbell) this control may appear to have less effect.

Level

Individual volume control for each Soundmodule in the Mix Out signal. This is used to balance the level between different drums in a kit. It should be set as high as possible, to avoid noise.

Note: **Level only affects the volume on the total signal coming via of Mix Out. It has no effect on the separate outputs on each Soundmodule.**

Volume is dependent on striking force, so it is important to adjust the Gain control properly.

If Treble is set high, a sharp sound is perceived as stronger than a dull sound. This means that it might be necessary to adjust Level when switching between two sounds with the Bank and Sound buttons.

Gain/Trig/Peak

The Gain control is used to adjust the dynamic range. A low setting makes the module less sensitive. For an initial setting, follow the steps in Chapter 2.2, page 8.

The green Led labeled Trig indicates that a signal is coming from the pad. The reason for this is to quickly get a picture of what is connected to what. If Gain is set extremely low, or if you play very soft, it might happen that the Trig Led does not light at all.

Note: **The fact that the Peak Led lights up doesn't affect sound quality, since you are not listening to the sound of the pad itself.**

When Gain is normally adjusted, the dynamics of **ddrum**Plus! are very much like those of an acoustic kit. If you want to make a module less sensitive, overload the Pad Input so that the Peak lamp is glowing almost constantly. Since all hits that make the Peak lamp light up result in the same sound volume, this can be used to even out levels completely (drummachine effect).

Note: **Do not use Gain as a volume control. Raising sensitivity is far from the same thing as raising the Level.**
A certain "leakage" occurs between pads mounted on the same stand. If Gain is set too high, this might make them trigger each others modules.
If Gain is properly adjusted, the risk for this is very small.

3.2 GOOD DRUMSOUNDS

There are no definite settings for any sound. But a good start are the ones on the **Quick Sound Chart** that comes with every kit. What follows are just a few tips and tricks from the people who have been working with **ddrums** for a few years. If you find that something else suits you better, then go ahead.

All sounds play at their natural pitch with Pitch set to "eleven o'clock" and Bend at zero.

Note: **A general recommendation is to be careful with Bass and Treble. It is easy to crank them up to get more "power" out of the sound. Turn them back down and raise the volume instead!**

BASSDRUM

You can control the "tightness" of the bassdrum with the Decay knob. Treble brings out the click of the beater against the head in the sampled sound. Be careful with Bass, too much can sound bad in some sound systems. Another trick is to turn up Gain a little or a lot over the normal setting. This evens out levels (read more in Gain/Trig/Peak, page 12-13). You might want to do this, since the big dynamic range the Kick gives you can feel awkward in the beginning. Another reason is that an undynamic bassdrum sound is sometimes just what you want.

SNARE

If the snare is to sound natural, it is important to tune it correctly. Many of the sounds are recorded with compression which raises the snare volume. To avoid a "sloppy" sound it might be a good idea to turn Decay down a little.

RIMSOUNDS

Try other sounds than regular rim and crossticks. Play certain sounds with a rimshot on the playing pad so that the two sounds are mixed.

TOMTOMS

The toms often benefit from being shortened from their original length. A sound that feels okay alone might be too long when played together with the other drums in the kit. One way to liven up a tom that sounds the same strike after strike, is to turn up Bend a little (be careful!). If this is to work properly, Gain has to be well adjusted.

Strange and interesting tom sounds can be achieved by using a sound sample in a range it wasn't meant for. An eight inch tuned down to a sixteen inch for instance.

4. APPENDIX

4.1 MAINTENANCE

RACK

The Rack is normally not exposed to serious wear and tear, and doesn't really need any real Maintenance. Clean it with a soft, lightly moistened cloth. Do not use any solvents.

Avoid using and keeping the Rack in cold and humid places. The electronics Are designed to work at temperatures between 0° and 50° centigrade. If the unit has been kept in a cold place, it needs a chance to regain room temperature before it is used.

Note: **Always make sure that the pads regain normal roomtemperature if they have been kept at a low temperature. The plastic becomes brittle when cold, and might crack. Also avoid extreme heat.**

TOM

The Toms are made of a plastic material that should be cleaned with a soft cloth every now and then. Do not use any solvents.

The head should be replaced when worn out. If it becomes too uneven the pad loses its sensitivity and "dead spots" might show up. When you replace the head, check that the foam layer underneath hasn't turned porous. This reduces sensitivity. The foam layer is a spare part. Contact your dealer for a replacement.

Remember that playing with worn out, or damaged heads ruins both sensitivity and feeling, and wears out the foam. Any 10" drum head can be used.

SNARE

Wipe of the surface every now and then, as with the Toms. Do not use any solvents.

The Snare is the pad you use most, and it probably takes a beating. Therefore it is very important to replace the head as soon as it is worn out so that the foam underneath doesn't get damaged. If it has become porous and lost its springiness, it is time to replace it. The foam layer is a spare part. Contact your dealer.

The Snare requires a 12" drum head.

KICK

The Kick is of sturdy and solid construction. It is lacquered, so do not use any solvents when you clean it.

The Kickhead is designed to feel like a bassdrum head. What follows is a couple of tips to make your Kick last long and live well:

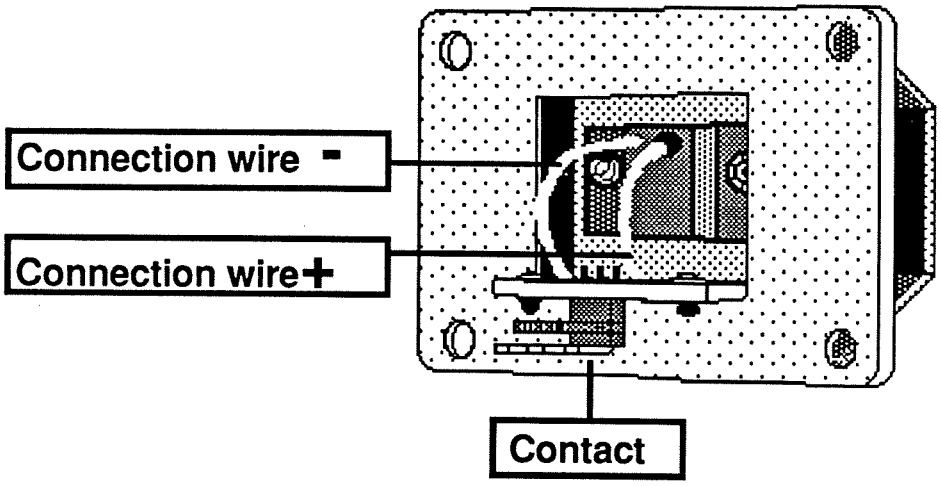
Note: **Use a feltbeater. It gives you the best comfort, and it will prolong the life of the head. The type of beater you use does not affect the sound.**

It is important that the beater hits the middle of the Kickhead. The Kick is made to correspond to a 22" bassdrum.

If you always bring extra drumheads with you when you work, then maybe you should bring an extra Kickhead. A head lasts a year under normal circumstances. And a year passes quickly!

If the Kickhead has to be replaced, this is how to do it:

1. Unscrew the four bolts, take a firm grip on the head and pull it slowly towards you.
2. Under the head you will find a small female contact which is easily removed by lifting the tongue that locks the contact to the Kick.
3. Take the new head, make sure the two wires are not shortcircuited, and plug it in, just as you unplugged the old one.
4. Put the bolts back, and you are ready to play again. This whole procedure shouldn't take you more than three minutes.



4.2 TRIGGERING

When you work in the studio you often want to replace an existing drum sound, that is already on tape or is coming out of a drummachine. Sometimes there is also need for "fireing" or triggering a **ddrum** sound from an acoustic snare via microphone.

You could write an essay on triggering drumsounds (maybe someone should?). But one thing is for sure:

Note: **The Pad In jack is adapted for ddrum pads, and nothing else. You could say that if you are successful with triggering from other sources it is more luck than skill.**

Despite that we would like to give you some advice:

- The Trig-signal should be approximately line level, or peak at 5 Volts.
- Most sounds are to long to be used as sources! Sidestick and bassdrum could be used as they are, but all other sounds need to be shortened to just a click, with the help of a gate. This is to avoid double triggering.
- Sawtooth or square pulses don't work. The Pad In jack expects something that is more like a sound, a signal that contains several periods of a repeating waveform.
- The signal may have to be compressed. If you want to try to restore the dynamics of the original signal, it might be a good idea to compress it a little.
- Remember to adjust Gain as you do with the pads.
- **ddrum**Plus! differs from other electronic musical instruments in that there is no delay between trig and sound. **ddrum**Plus! copies the attack of the triggering signal, which because of this needs to be enhanced with an increase in treble to avoid any feeling of delay.

4.3 FAULTFINDING

If something isn't as it should, check the following list. If it still doesn't work, contact your dealer.

The Rack is completely "dead".	Check that the wall transformer really is plugged in as it should be. Check that the wall transformer is working. Is there any power in the wall outlet?
The Power lamp on the Power/Mix Module is lit, but one or more modules seem "dead".	Check that there are signals coming from the pad. Try another pad. Check that gain is not set that low that the module (and the Trig Led) do not react. Check that the pad isn't connected to Audio Out. Check that the ribbon cable is properly connected to the Soundmodule (remove the hood).
One Soundmodule doesn't sound even though the Trig Led lights up for every hit.	Check that Level is not set at zero. Check the sound system and the cables to it.
The sound is distorted.	Check the sound system. It isn't very likely that **ddrum**Plus! is causing this one. Remember that all outputs are line level. The problem is not that Peak lights up on any of the modules. That indication has nothing to do with sound in itself, only dynamics.
One of the playing pads doesn't respond as it should.	Check the cable.
One of the playing pads responds unevenly.	This is probably because the head is worn out, or because the foam layer has become porous (or both). Check that the dynamics are properly adjusted.
The Kick responds unevenly.	Check that the foam layers aren't completely worn out. If they are, the Kickhead needs to be replaced. Check that dynamics are properly adjusted

4.4 INSTALLING EXTRA SOUNDMODULES

Soundmodules can be bought as accessories. Putting one in isn't hard, but if in doubt, contact your dealer.

Installing a new module

1. Turn off the Rack, and unplug all cords. Put it on a firm surface.
2. Unscrew the two screws holding the hood that runs across the back panel.
3. Remove the two screws holding the blind plate (that occupies the space of a Soundmodule) on the front of the Rack.
4. Carefully insert the new module from the front. Make sure the two jack sockets and the ribbon cable contact fits in their holes on the back.
5. Fasten the two screws holding the module from the front.
6. Fasten the two nuts holding the jack sockets Pad In and Audio Out.
7. Connect the ribbon cable, and make sure the locks snap properly in place.
8. Attach and fasten the hood covering the flat cable.
9. Connect the module, check that it works, and adjust the dynamics.

To remove a module

1. Turn off the Rack, and unplug all cords. Put it on a firm surface.
2. Unscrew the two screws holding the hood that runs across the back panel. Underneath this is a ribbon cable.
3. Open the two snaplocks that holds the ribbon cable in the module. Pull the contact carefully straight out, until it is free from the contact.
4. Remove the two nuts that hold the jack sockets, labeled Pad In and Audio Out.
5. Unscrew the two screws securing the module from the front.
6. Pull the module from the front straight out, gently. If it doesn't come out easily, check that you didn't forget anything.

4.5 BLOCK DIAGRAM