

# SIMMONS ELECTRONIC DRUMS

OPERATING INSTRUCTIONS

# CONTENTS

CONCEPT	1
INTRODUCTION	2
THE RACK	3
THE DRUM PADS	4
THE DRUM MODULES	6
THE CYMBAL PADS	10
THE CYMBAL MODULES	11
AMPLIFICATION	15
RECORDING	16
SEQUENCING	16
SPECIFICATION	17

# concept

The Simmons Five represents a revolution in drums. The 'skins and shells' concept has remained unchanged for many thousands of years. You are in the front line of that revolution. You have purchased an instrument which has been designed to produce as accurately as possible the sound of acoustic drums, but at the same time offer all the advantages of modern electronics as applied to musical instruments.

The SDS V (Simmons Drum Synthesizer) is not a complicated instrument. The controls affect the parameters that would be desirable to adjust on acoustic drums and cymbals. In this manual, the explanation of these parameters is made by relating the effect of the controls to acoustic drum and cymbal sounds. This will give you the ability to break down an acoustic drum sound into its constituent parts and programme it electronically. As regards playing the instrument, the same level of technical and creative ability is required to play the SDS V as is required to play acoustic drums. There is no question that the instrument takes any skill away from the art of drumming. The pads react to the impact of a stick in exactly the way an acoustic drum would.

We sincerely thank you for buying the SDS V. Please remember that we are available to answer the queries that you may have. We look forward to hearing of your experiences with the kit, both in the studio and on the stage.

Finally, could we request that you read the remainder of this manual carefully. It has been written to enable you to get the best from your SDS V.

# introduction

Up to seven electronic drum modules plug into a standard 19" rack system which houses the power supply, input and output sockets, mixer and sensitivity controls, thus making an extremely flexible system which can be expanded at any time. Four screws release the modules for exchange or access for service. Each drum and cymbal module has four memories and is specific in its operations. i.e. A snare drum module will not produce a cymbal sound.

The Bass drum pad is an independant free standing unit, supported by two large spurs. It will accept most popular models of bass drum pedal.

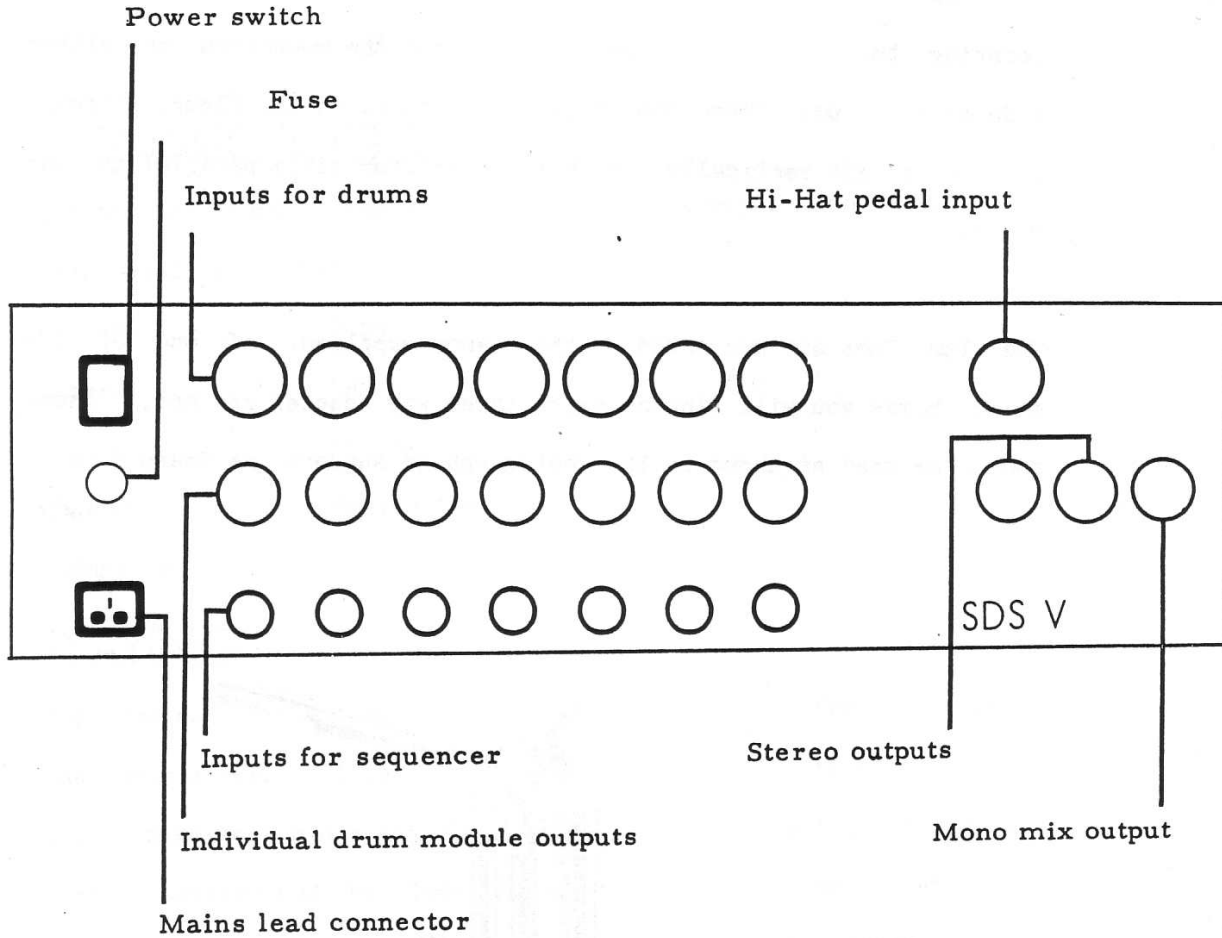
The Snare and Tom Tom drum pads are identical. They are hexagonally shaped, approximately 14" across and 2" deep. Like all of the drum and cymbal pads, the playing surfaces are made of a polycarbonate material developed for use in police riot shields and as such will withstand even the heaviest drummer. Obviously, the dynamic response from the stick hitting the drum remains constant. The Snare drum and Tom Toms are supported by conventional drum stands.

The Cymbal/Hi Hat pad, again hexagonal, mounts on a conventional cymbal stand. It is a stereo pad allowing the 'bell' of the cymbal to be struck independantly.

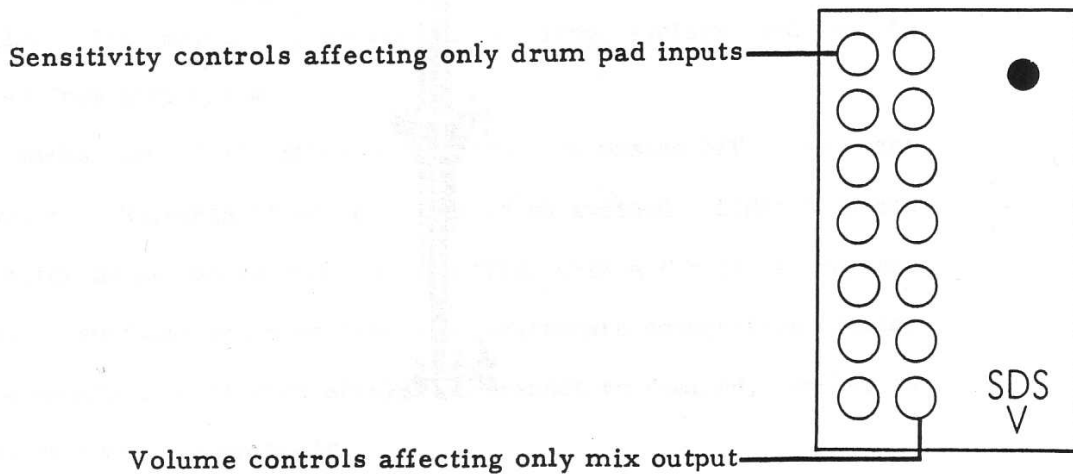


# the rack

## REAR PANEL



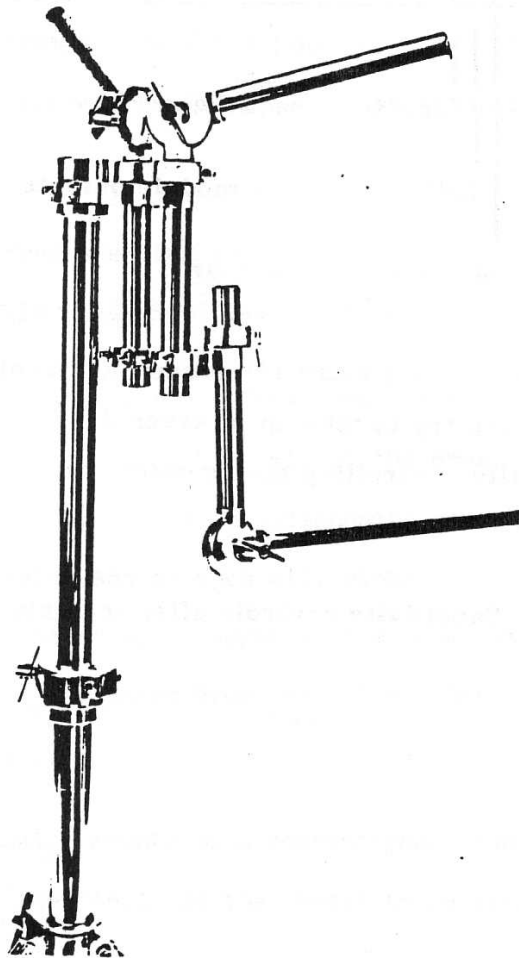
The rack is of standard 19" format and contains the power supply and input and output circuitry to take up to seven drum modules. It also contains a module for individually controlling the sensitivity and output of up to seven modules.



# the drum pads

The Bass drum is a freestanding unit and should be supported by locating the two large spurs supplied into the mountings on either side of the drum. These should be angled to touch the floor, allowing the drum to sit vertically, with the Bass drum place parallel to the floor.

The Tom Toms are supported on the stands supplied. In one of the stand boxes you will find an extra three way adapter and arm. These should be used as shown in the photograph to support the Snare drum.



## CONNECTING UP

Connect the drums to the pad inputs (Cannon Female) sockets on the rear panel as follows:-

- Channel 1            Bass
- Channel 2            Snare
- Channel 3            Hi Tom
- Channel 4            Medium Tom
- Channel 5            Low Tom

## PLAYING

The drum surfaces are hard, so stick response comes from the give in the drum stick. It is not necessary to use heavy sticks or hit the drums hard to achieve maximum volume. In fact, a light stick will 'feel' better and be less tiring than a thick or heavy stick. Likewise, the bass drum need not be struck with the force normally used on an acoustic drum. Damaged or soft tip drum sticks will affect the sound of the drums - dulling the attack and response.

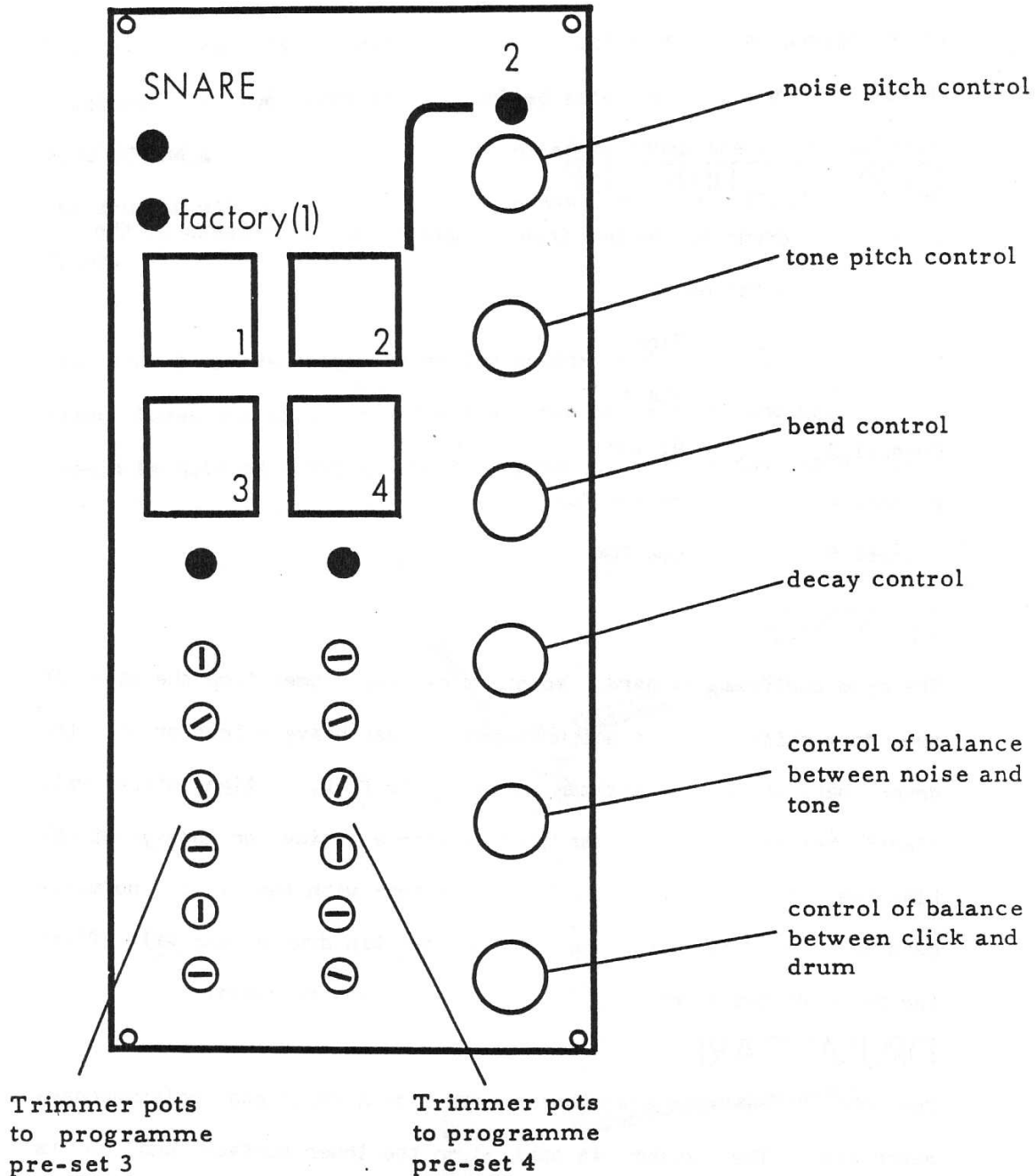
## DRUM CARE

The SDS V drum pads are manufactured from acrylic and polycarbonate materials. The colour is applied to the inner surface and so is protected from scratching.

Finger marks and light stick marks should be washed off with warm soapy water. Solvents of any kind should be avoided. Scratching and heavy stick marks can be removed by buffing with a furniture polish. The playing surfaces are made from a polycarbonate composition created for the manufacture of riot shields and cannot be damaged, except in the most extreme circumstances.

# the drum modules

Controls for Pre-set No. 2



The trimmer pots have the same effect on pre-sets three and four as the controls on the right of the module have on pre-set No. 2. Their positions relate exactly to the controls -- i. e. noise pitch at the top through to click-drum balance at the bottom.

## PROGRAMME CONTROLS

As an acoustic drum is struck, the following occurs:-

1. There is the sound of the stick hitting the plastic drum head which is a loud but short burst of noise, this is represented by the click control on the SDS V and can be adjusted in level compared with the actual drum tone. If the drum head was calf skin instead of plastic, the 'click' would be duller than the bright 'smack' of the plastic head, this can be controlled on the SDS V by the noise pitch control.
2. The drum head vibrates at a certain pitch, dependent upon the tension and size of the drum head. The pitch control on the SDS V enables you to tune from an 8" tom tom to a large timpani.
3. As the drum is struck, the skin stretches, thus the pitch starts at a higher point than the actual tuned 'note' of the drums, the sound dies away, the head 'relaxes' so the pitch falls away. This parameter is controlled by the bend control. The fall in pitch of an acoustic drum is a couple of semi-tones at maximum, so exaggerated use of the bend control on the SDS V can make the drum sound unnatural.
4. The sound of any drum contains a lot of noise, the pitch (or brightness) of the noise falls as the drum sound dies away, this is imitated on the SDS V and the overall brightness of the noise content can be adjusted by the noise pitch control. The amount of noise compared to the pitched 'tone' of the drum is controlled by the 'noise'-tone balance control.
5. Finally, the sound dies away completely. An acoustic drum will have a long or short decay, depending upon skin size, tension and damping. Thus, a timpani will be a long sound, a bongo a very short sound. This is controlled by the decay control on the SDS V.

# the drum modules

Each drum module being specific in its function, the effect of the controls are slightly different for each one as listed in the chart below.

	BASS	SNARE	TOM TOM
NOISE PITCH	Unpitched noise, but gets brighter as the drum is hit harder. Imitating head noise.	Pitched noise with control of pitch. Noise pitch is not affected by the striking force. Imitating the snares.	As Bass drum
TONE PITCH	Low, slightly modulated.	Medium, slightly modulated.	As Snare Drum
BEND	Insensitive to striking force. Set fairly high and lower pitch setting for 'thump'.	As Bass drum	Sensitive to striking force. Harder hits send the pitch higher.
DECAY	Controls short or long sound.	As Bass Drum.	As Bass drum.
NOISE- TONE BALANCE	Controls the amount of noise mixed with drum. Bright initially then duller as the sound dies away.	Balance between snare noise and tone of drum.	As Bass Drum.
CLICK- TONE BALANCE	Sets the balance between the beater 'smack' and the drum sound set on the other controls	Sets the balance between the stick 'smack or click' and the drum sound.	As Snare Drum.

## MEMORIES

Each drum module has four 'memories'.

Pressing the 'factory' button sets up a conventional drum sound which cannot be altered. Pressing button 2 switches in the front panel knobs which allows you to experiment with different settings. Pressing buttons 3 or 4 brings in the six presets which lie under these switches which are identical to the front panel controls.

The easiest way to set 3 and 4 is to obtain the required sound in memory 2 and then transfer the settings to the required presets with a small screwdriver.

The standard five drum synthesizer has timps, roto toms, slack and undamped bass drums, slack and tight snare sounds already set in memories 3 and 4.

## RIM SHOT

The Snare has a special function which changes the attack of the drum sound as the rim is struck.

The rim shot sound is triggered by a heavy blow to the drum or rim. So playing with very heavy sticks or having the sensitivity at a high level will produce rim shots constantly. You do not have to hit rim and surface at the same time as on an acoustic drum, just the rim will trigger the effect making flashy rim and surface playing extremely easy.

# the cymbal pads

The Cymbal/Hi Hat pad is supported on a conventional cymbal stand, just as an acoustic cymbal. Obviously, when used to trigger the Hi-Hat module, a Hi-Hat stand need not be employed as the action of opening and closing the Hi-Hat is electronic.

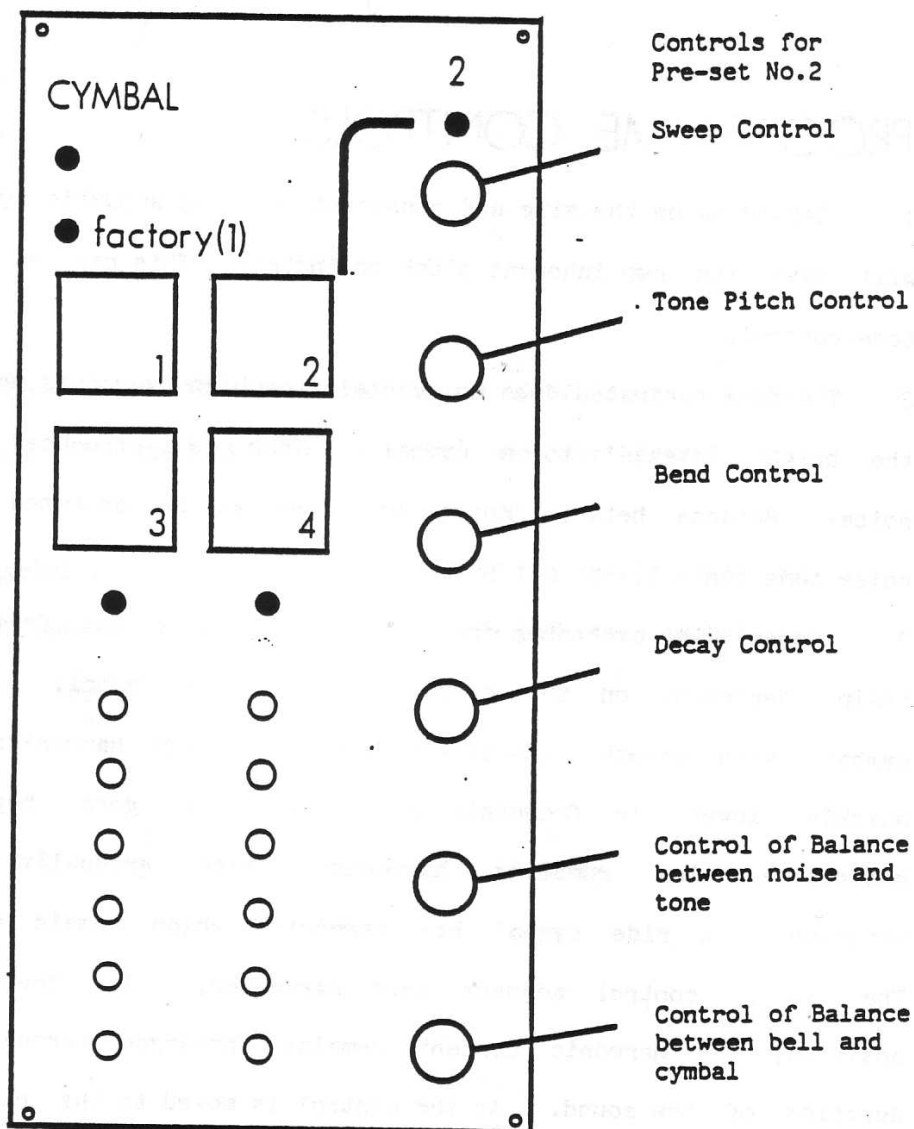
The Cymbal/Hi-Hat pad has two 'sensors' attached to the bell and the main body of the cymbal. Striking the bell will produce the metallic 'clang' associated with striking the bell at the centre of an acoustic cymbal.

## HI HAT PEDAL

The Hi-Hat pedal should be connected via the lead supplied to the appropriate socket on the back panel of the rack. The pedal can be located anywhere around the kit, closing the pedal without striking the pad will produce a sound similar to the 'chip' of two acoustic Hi-Hat cymbals being brought together. When the Hi-Hat pad is struck with the pedal open the sound will sustain for a length of time, dependent upon the decay setting of the module. Closing the pedal kills the sustain immediately.



# the cymbal modules



The trimmer pots have the same effect on pre-sets three and four as the controls on the right of the module have on pre-set number two. Their positions relate exactly to the controls - i.e. sweep at the top through to bell cymbal balance at the bottom.

## PROGRAMME CONTROLS

1 Depending on the size and construction of an acoustic cymbal it will have its own inherent pitch or 'note'. This can be set by tone control.

2 The tone generated does not contain the high overtones which give the bright 'sizzle' to a cymbal. This is introduced by the noise. Balance between noise and tone can be adjusted by the noise tone control.

3 These high overtones occur at different times and frequencies, again dependant on the construction of the cymbal. A crash cymbal when struck immediately generates high harmonics which quickly lower in frequency and decay. A gong begins by generating low rumbling harmonics which gradually become brighter. A ride cymbal has harmonics which remain constant. The sweep control adjusts this parameter. In the central position, the harmonic content remains unchanged throughout the duration of the sound. As the control is moved to the right, the harmonics begin brighter and become more dull and to the left, begin dull and become brighter.

4 The bend control affects only the tone content of the sound. In the central position the tone remains at a constant pitch for the duration of the sound. When moved to the right the pitch begins higher and becomes lower giving the effect of a cymbal being immersed in water and when moved to the left the pitch begins lower and becomes higher. Subtle use of this facility allows for the slight pitch change present when a large gong is struck.

5 The decay control simply affects the length of the sound. A long decay for gongs and open hi hats, a short one for crashes and pangs.

6 The bell cymbal control adjusts the level of the 'bell', relative to the sound generated when the main body of the cymbal is struck.

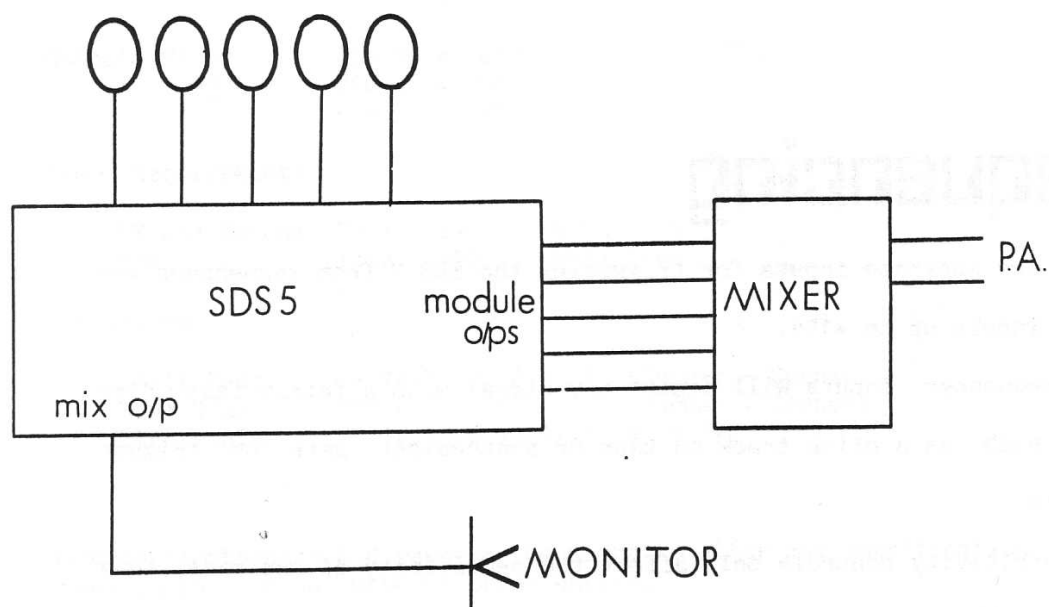
	CYMBAL	HI HAT
Noise Sweep Central to Clock-wise	Unpitched Noise/Tone (Dependent upon Noise- Tone Setting) Brighter as the Cymbal is struck harder, becomes duller as sound decays.	As Cymbal
Noise Sweep Central to Anti Clock- wise	Unpitched Noise/Tone (Dependent upon Noise- Tone Setting) Duller a the Cymbal is struck harder, becomes brighter as sound decays.	As Cymbal
Tone	Controls the cycling speed of the E-Prom (which stores in digital form the sound of the Cymbal) and thus the pitch of the Cymbal.	As Cymbal
Bend Central to Clock-wise	The pitch of the Cymbal starts higher and falls as the sound decays (Dependent upon how hard the Cymbal is struck).	As Cymbal
Bend Central to Anti Clock- wise	The pitch of the Cymbal starts lower and climbs as the sound decays.	As Cymbal
Decay	Controls short or long sound.	Controls Length of decay of open Hi Hat sound.
Noise-Tone Balance	Controls the balance between unpitched noise and digital recording of cymbal.	As Cymbal
Bell-Cymbal	Controls the balance between cymbal and bell sound.	As Cymbal

# amplification

There are ten outputs on the SDS V which can be used in various ways. In all cases it is essential that high power high quality amplification is used. Ideally, public address amplification consisting of horns and bass bins. The SDS V produces hard, dynamic attacking signals similar to a drum kit and must be treated accordingly.

The mix output is a low impedance line level output which enables all seven channels from the SDS V to be mixed into one channel of an amplifier. The relative volumes of each can be adjusted with the 'level' controls on the right hand side of the SDS V rack. These controls do not affect the stereo or individual outputs. The left and right output produces a stereo image of the seven drums allowing just two channels on a stereo mixer to handle the drums in stereo. The bass, snare and medium tom tom are at the centre of the stereo image, with the hi-hat and hi tom tom coming from the left and low tom tom from the right. The individual outputs are low impedance and at mic level and can be used to mix each drum separately, thus allowing different EQ on each drum.

Using the mix output as an on stage monitor mix and the separate outputs (or stereo outputs) for the main PA, the drummer can have a separate monitor mix on stage.



## recording

The individual outputs should normally be used for recording, taking each drum to a separate channel on the mixer. The outputs are unbalanced, so care must be taken to ensure that the recording equipment is compatible. The drums can then be equalised and treated separately. Ambiance that would probably be present from the recording studio and picked up on acoustic drum microphones can be added by plugging the mix output into an amplifier in the studio and 'miking' at a distance.

Alternatively, the clicks from the playing surfaces can be recorded (by plugging the pads directly into the desk) and then played back off tape, which, when fed into the SDS V, will trigger the drums. Thus, the drum sounds can be altered and experimented with during mixing.

## sequencing

There are separate inputs for triggering the SDS V from sequencers and other inputs up to +15v.

The sequencer inputs will accept any signal with a fairly fast rise time such as a click track on tape or synthesizer gate or trigger signals.

The sensitivity controls only affect the sensitivity of the pads, thus allowing the pads and a sequencer to be used at the same time.

# specification

Connect to a properly earthed mains supply using the following code:

Blue - Neutral

Brown - Live

Green/Yellow - Earth

DO NOT USE WITHOUT A PROPER EARTH

Trigger Range	Pads	5mv Min	1.5v Max
	Sequencer	1v Min	15v Max

Maximum output occurs at 75mv and 7v respectively.

Input Impedance	Pads	4.7k ohms
	Sequencer	1m ohms

Output Level	„Mix out (level controls at Max)	2vpp into 50 ohms
	„L and R out	2vpp into 50 ohms
	„Individual outputs	100 mvpp into 50 ohms.

„Factory pre-set sounds, triggered at maximum.

Pad Inputs Wired	Pin 1	= Ground
	Pin 2	= Hot
	Pin 3	= Ground

Outputs Wired	Pin 1	= Ground
	Pin 2	= Ground
	Pin 3	= Hot

## Power Requirements

UK and Europe	220v - 240	50Hz 11va
USA	110v - 120	60Hz 11va

## Dimensions

Small Pads	14 1/4" x 2 1/4"	(Corner - Corner)
Bass Drum	22" x 2 1/4"	(Corner - Corner)
Electronics	17 1/2" x 11 3/4"	x 5 1/2"

Simmons Electronics Ltd reserve the right to alter any specification shown in this manual without prior notice.

# warranty

Any fault that, in the opinion of Simmons Electronics Ltd., has not occurred through mis-use or operating practices other than those outlined in this manual, shall be repaired free of charge for a period of twelve months from the date of original purchase. In the event of a fault occurring, please contact your dealer first to confirm that the unit is malfunctioning.

This warranty is non-transferable, therefore please fill in the form below and return to Simmons Electronics Ltd., Abbey Mill, Abbey Mill Lane, St. Albans, Herts., to ensure full warranty facilities.

cut here

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

DATE OF PURCHASE \_\_\_\_\_

SERIAL NUMBER \_\_\_\_\_

PURCHASED FROM \_\_\_\_\_



Thanks for visiting  
<http://www.simmonsmuseum.com>

