MIDI CREATOR
&
MIDI GESTURE

Owners Manual

TABLE OF CONTENTS

TABLE OF CONTENTS cont.

Introduction

Congratulations on becoming the owner of the new Midi Creator.

The all British *Midi Creator* is a device for converting simple voltage messages into sophisticated Musical Instrument Digital Language which is recognised by synthesisers and computer software.

In simple language this means that any single switch or proportional controller can play sounds from your synthesiser, sound module or Midi keyboard.

Midi Creator, along with the various interfaces, can now control lighting modules, bubble machines in fact *anything* electrical, or terminating in a domestic plug! This control is *not* just on and off. It can be *proportionally controlled* eg. A lights intensity can be varied. Midi Creators open-ended design allows virtually limitless possibilities.

The single switch can be a pressure mat, an infra red beam, a light beam or, many of the switching devices available on the market or commonly used in schools, especially those dealing with Special Educational Needs.
The proportional controller may well be a *Midi Gesture* or simple compressive foam.

This manual aims to explain how to operate *Midi Creator* but what it will not do is presume to recommend its uses in music in education or music therapy.

You, the user, will, no doubt, have many instances *already* in mind where you would welcome the opportunity to have multiple access to MIDI and the exciting sounds which are available.

HOW TO Connect Your System

This section of the manual deals with HOW TO connect the different parts of your Midi Creator / Midi Gesture system.

HOW TO Connect your Power Supply Unit (PSU)

If you are using the Midi Creator with your own switches then simply connect the PSU which has been supplied with the Midi Creator.
The PSU plugs into the back of the Midi Creator, next to the MIDI ports.
If you are also using Midi Gesture, plug the PSU into the rear of the Midi Creator and, *with the lead provided*, connect to the Midi Gesture.

Note: 1 PSU will power 1 Midi Creator OR 1 Midi Creator and 1 Midi Gesture.

If you are using 1 Midi Creator with 2 Midi Gestures, then you will need 2 PSUs.
For every extra Midi Gesture you are using you will need an extra PSU.

HOW TO Connect Your Switches

As you will see from the front panel of the Midi Creator there are fourteen inputs for switches.
You can connect single switches or proportional switches into any of the inputs but this will depend on the PROGRAM you are using.
This is explained in the individual programs and in the section on soldering, pages 77-91.

SOUND
MODULE

Some Sound Modules have built in speakers. If yours does not then you will need to have a seperate amplifier system eg. Roland MA7's.

MIDI Lead from Midi OUT of Creator
to Midi IN of Sound Module

To PSU

Midi Out

Power 9v

MIDI CREATOR

Signal Leads to other Midi Gestures
or other switches

Signal Lead

- - - - SIGNAL LEAD
- - POWER LEAD
MIDI LEAD
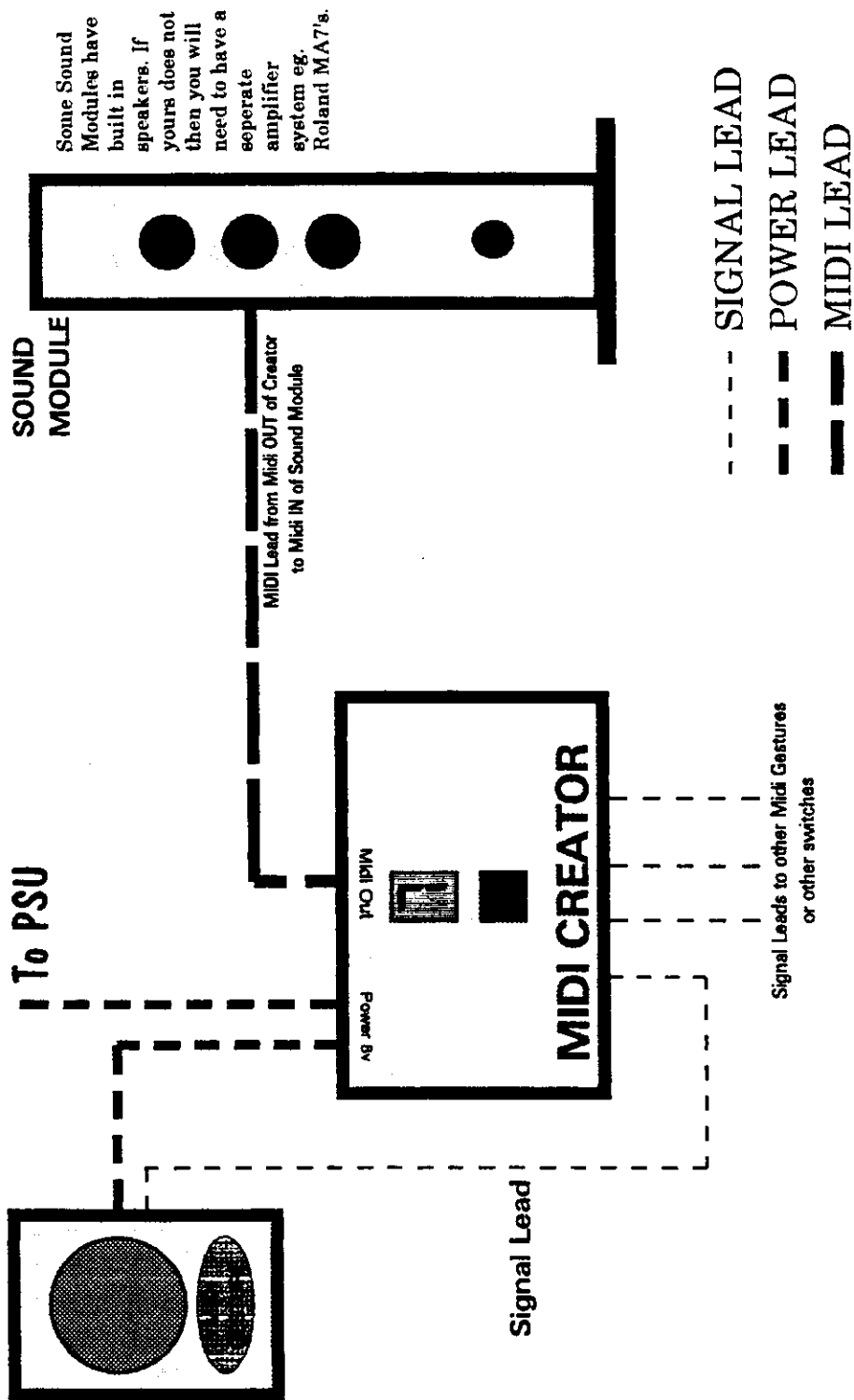
How to connect your system - BASIC

Proportional Controllers
"Midi Gesture"

This page explains about proportional controllers, and you should read it , even if you have not purchased a *"Midi Gesture"*.

F	FAR
M	MEDIUM
N	NEAR
O/P	OUTPUT
C-+	
8V	POWER IN

The three letters (F,M,N) at the top of the blue panel stand for *FAR, MEDIUM and NEAR*. These are the settings for the length of the ray which is being sent and received by *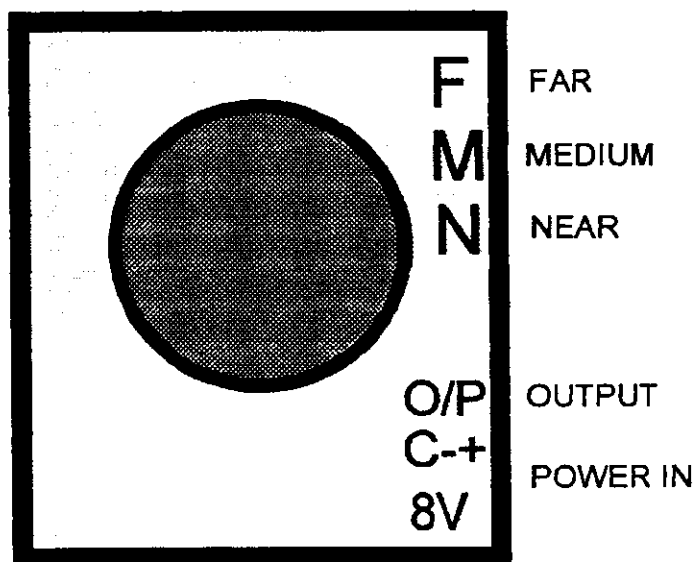"Midi Gesture"*. All settings start at about a metre from the unit. **FAR** means that the ray is reading a *three* metre range, **MEDIUM** a *two* metre range and **NEAR**, a *one* metre range.

Anything moving within or along the ray will activate *"MIDI GESTURE"*. Try walking towards the unit or sweeping your hand in the ray. The shorter the range you have selected the more sensitive the response. You may choose a single sound by passing through the ray at a given point.

Even if you use the *"Midi Gesture"* as a single switch it will still work, but you have to experiment to locate the switching area.

Other proportional controllers will also control a range of sounds on the programs which support them. Programs 0, 1, 4 and 6 on *"Midi Creator"*.

How To Use "MIDI"

What is MIDI?

MIDI (Musical Instrument Digital Interface) is the language by which musical instruments can "talk" to each other, and to computers and sequencers. They do this on different channels via one cable, rather like a television receiving different programmes via one aerial and one aerial cable.
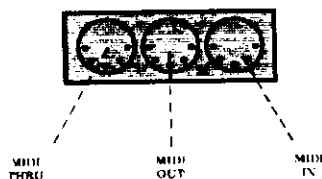
As previously mentioned, *Midi Creator* can take a simple voltage message and convert it to a MIDI message which can be understood by MIDI instruments. This can be done very simply with *Midi Creator* by plugging a device into the front of the box (Midi Gesture) and connecting a MIDI cable into the MIDI OUT, from the box, into the MIDI IN of your keyboard, sound module or synthesiser. At this moment in time you need not concern yourself with the MIDI IN and THRU ports of the *Midi Creator*.

MIDI
THRU   MIDI
              OUT   MIDI
                           IN

If you are using the latest models of keyboards, sound modules or synthesisers, they will conform to the *General Midi* ™ or *GS* ™ format. This means they will have different qualities of sound but that each type of sound will use the MIDI Program Number.

For example.- MIDI voice Number 11 will be a Vibraphone, MIDI voice Number 49 will be a String Ensemble.

When you choose a "program" on *Midi Creator* (see next section) all the MIDI information will be sent to your MIDI sound device and it will automatically select instruments.

If you are not using the latest instruments then you may have to select the sounds you are expecting from the MIDI instrument by using its control panel.

NOTE: Always use a proper MIDI cable and do not use an audio cable. The plugs may look similar, but proper cables will have the word MIDI printed on the plastic or rubber sleeve (if you have any doubts about your cables, please contact us on 0925 632591).

Midi Creator - Midi Gesture

Section 1 Program Numbers

When you first switch on your *Midi Creator* you will notice that **Program 0** lights up, on top of the box. These programs are banks of sounds, notes and clusters of notes (chords). The programs have been factory set and are described in this section. (More advanced details are given in Section 2).

Future developments may include the availability of software for users to design their own programs and/or affordable library cards which will expand the banks.

There are eight present programs which are numbered, in *computer speak* 0 to 7.

When this program is selected your *Midi Creator* will select the following bank of instruments, scales and modes on your MIDI sound source.

If you are confused by some of the musical or technical jargon which is used in this section, do not be put off. Remember, it is the sound which is important.

Plug in your switches and have fun!
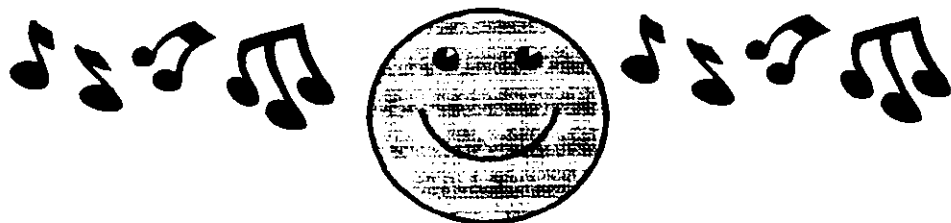
Midi Creator - Midi Gesture

Section 1 Program Numbers

Program 0 (All Note ON Velocities set to 64. All Note OFF Velocities set to 64)

You will notice that there is a time limit to the length of the sound you have created in this program (0). This has been designed to happen.

Should you not wish to have this time limit go to programme 1. You will notice it is identical in that it uses the same modes of scale and sounds, but has no time limit feature.

This program uses Proportional Controllers.

MIDI CREATOR INPUT	GENERAL MIDI ™ INSTRUMENT	CHORD	MIDI CHANNEL
1	Acoustic Grand Piano	Major Scale	1
2	Acoustic Grand Piano	Dorian Mode	1
3	Acoustic Grand Piano	Phrygian Mode	1
4	Acoustic Grand Piano	Lydian Mode	1
5	Acoustic Grand Piano	Mixolydian Mode	1
6	Acoustic Grand Piano	Aeolian Mode	1
7	Acoustic Grand Piano	Locrian Mode	1
8	String Ensemble 1	Harmonic Minor Scale	2
9	Flute	C Whole Tone Scale	3
10	Bagpipe	C Pentatonic Scale	4
11	Distortion Guitar	C Blues Scale	5
12	Kalimba	C Octal Scale	6
13	Glockenspiel	C Chromatic Scale	7
14	Shackuhachi	Eastern Scale	8

Section 1 Program Numbers

<u>Program 1</u> (All Note ON Velocities set to 64. All Note OFF Velocities set to 64)

Program 1 has all the scales, modes and sounds which are to be found in Program 0.

<u>There are differences however!</u>

Program 1 has no "time-out" in it. Quite simply, the voice keeps playing as long as:-

1) The single switch is closed.

2) The proportional switch is sending a signal.
It will not stop until you open the switch, or stop the proportional signal.

Midi Creator - Midi Gesture
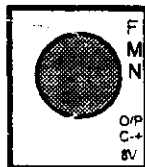
Section 1 Program Numbers

Program 2 (All Note ON Velocities set to 64. All Note OFF Velocities set to 64)

When this program is selected you will be offered a bank of **chords.** The chords are all in the keys of C Major and C Minor but, by using the transpose facility on your MIDI sound source, it will be possible to accompany many songs.

All inputs on Program 2 are for use with single switches

The voice used for this program is Electric Piano 1

INPUT 1	C Major
INPUT 2	D Minor
INPUT 3	E Minor
INPUT 4	F Major
INPUT 5	G Major
INPUT 6	A Minor
INPUT 7	B Diminished
INPUT 8	C Minor
INPUT 9	D Diminished
INPUT 10	Eb Major
INPUT 11	F Minor
INPUT 12	G7
INPUT 13	Ab Minor
INPUT 14	Bb Major

Section 1 Program Numbers

Program 3 (All Note ON Velocities set to 64. All Note OFF Velocities set to 64)

All inputs on Program 3 are for use with single switches.

A DRUM KIT AT YOUR FINGER-TIPS!

INPUT 1	Bass Drum
INPUT 2	Snare/Side Drum
INPUT 3	Rim Shot
INPUT 4	Open Hi-Hat
INPUT 5	Closed Hi-Hat
INPUT 6	Ride Cymbal
INPUT 7	Crash Cymbal
INPUT 8	Hi Tom
INPUT 9	Mid Tom
INPUT 10	Lo Tom
INPUT 11	Claves
INPUT 12	Hand Clap
INPUT 13	Cowbell
INPUT 14	Tambourine

Section 1 Program Numbers

Program 4 (All Note ON Velocities set to 64. All Note OFF Velocities set to 64)

When this program is selected you will be able to play *arpeggios*. An arpeggio is similar to a chord but the notes sound one after the other, and not as a cluster.

ALL INPUTS ON PROGRAM 4 ARE FOR USE WITH *PROPORTIONAL CONTROLLERS.*

The voice used for this program is *Vibraphone*.

INPUT 1	4 Octaves	C Major
INPUT 2	4 Octaves	D Minor
INPUT 3	4 Octaves	E Minor
INPUT 4	4 Octaves	F Major
INPUT 5	4 Octaves	G Major
INPUT 6	4 Octaves	A Minor
INPUT 7	4 Octaves	B Diminished
INPUT 8	4 Octaves	C Minor
INPUT 9	4 Octaves	D Diminished 7
INPUT 10	4 Octaves	Eb Major
INPUT 11	4 Octaves	F Minor
INPUT 12	4 Octaves	G Dominant 7
INPUT 13	4 Octaves	Ab Major
INPUT 14	4 Octaves	Bb Major

Section 1 Program Numbers

Program 5 (All Note ON Velocities set to 64. All Note OFF Velocities set to 64)

When this program is selected you will be offered another bank of *chords*.
This time they are even more exciting and jazzier than those in program 2.

ALL INPUTS ON PATCH 5 ARE FOR USE WITH *SINGLE SWITCHES*

The voice used for this program is *String Ensemble 2*.

INPUT 1	C Major (no third)
INPUT 2	C2
INPUT 3	Csus4
INPUT 4	C6
INPUT 5	C7
INPUT 6	Cmaj7
INPUT 7	C9
INPUT 8	C Maj 7/9
INPUT 9	c 6/9
INPUT 10	Cb 10
INPUT 11	Cm6
INPUT 12	Cm7
INPUT 13	Cm9
INPUT 14	Cm/maj7

Midi Creator - Midi Gesture

Section 1 Program Numbers

Program 6 (All Note ON Velocities set to 64. All Note OFF Velocities set to 64)

This is a complicated program, **but great fun. It demonstrates the flexibility of mixing and matching.**

This program enables a group to work with the basic elements of a **twelve bar blues.**
Some inputs are used with single switches and will sound as drums. Other inputs are to be used with proportional controllers and will provide *walking bass lines, rhythm guitar* and *solo* parts.

INPUTS 1 TO 9 ON PROGRAM 6 ARE FOR USE WITH *PROPORTIONAL CONTROLLERS*

INPUTS 10 TO 14 ON PROGRAM 6 ARE FOR USE WITH *SINGLE SWITCHES*

INPUT 1	Acoustic Guitar (Steel Strings)	Arpeggio of E Major
INPUT 2	Acoustic Guitar (Steel Strings)	Arpeggio of A7
INPUT 3	Acoustic Guitar (Steel Strings)	Arpeggio of B7
INPUT 4	Acoustic Bass	Walking Bass Line on E Major
INPUT 5	Acoustic Bass	Walking Bass Line on A7
INPUT 6	Acoustic Bass	Walking Bass Line on B7
INPUT 7	Overdriven Guitar	2 Octaves Blues Scale on E
INPUT 8	Alto Sax	2 Octaves Pentatonic Scale on E
INPUT 9	Harmonica	2 Octaves Pentatonic Scale on G
INPUT 10	Bass Drum	
INPUT 11	Snare/side Drum	
INPUT 12	Hi-Hat Closed	
INPUT 13	Ride Cymbal	
INPUT 14	Crash Cymbal	

Midi Creator - Midi Gesture

Section 1 Program Numbers

Program 7 (All Note ON Velocities set to 64. All Note OFF Velocities set to 64)

"The bells, the bells!"

Program 7 is a **campanology bank.**

Single switches control the bells and it should be possible to re-create the sound of a group of hand bell ringers.
Use fourteen individual players or allow each player to operate two bells each.
As well as being lots of fun, this program can be used to teach the art of change ringing or for playing Christmas Carols and popular melodies.

ALL INPUTS ON PROGRAM 7 ARE FOR USE WITH *SINGLE SWITCHES*

INPUT 1	Low 'C'
INPUT 2	Low 'F'
INPUT 3	Low 'G'
INPUT 4	Note 'C'
INPUT 5	Note 'D'
INPUT 6	Note 'E'
INPUT 7	Note 'F'
INPUT 8	Note 'G'
INPUT 9	Note 'A'
INPUT 10	Note 'B'
INPUT 11	Note 'C'
INPUT 12	High 'D'
INPUT 13	High 'E'
INPUT 14	High 'C'

Midi Creator - Midi Gesture

Section 2 Program Numbers

Program 0 (All Note ON Velocities set to 64. All Note OFF Velocities set to 64)

MIDI CREATOR INPUT	GENERAL MIDI ™ INSTRUMENT	CHORD	MIDI CHANNEL
1	Acoustic Grand Piano	Major Scale	1
2	Acoustic Grand Piano	Dorian Mode	1
3	Acoustic Grand Piano	Phrygian Mode	1
4	Acoustic Grand Piano	Lydian Mode	1
5	Acoustic Grand Piano	Mixolydian Mode	1
6	Acoustic Grand Piano	Aeolian Mode	1
7	Acoustic Grand Piano	Locrian Mode	1
8	String Ensemble 1	Harmonic Minor Scale	2
9	Flute	C Whole Tone Scale	3
10	Bagpipe	C Pentatonic Scale	4
11	Distortion Guitar	C Blues Scale	5
12	Kalimba	C Octal Scale	6
13	Glockenspiel	C Chromatic Scale	7
14	Shackuhachi	Eastern Scale	8

Midi Creator - Midi Gesture

Program O
CONT.

(All Note ON Velocities set to 64. All Note OFF Velocities set to 64)

*All sounds for this program are listed on the previous page*

MIDI CREATOR INPUT	CHORD	MIDI CHANNEL	ACTUAL NOTES PLAYED
1	Major Scale	1	C3,D3,E3,F3,G3,A3,B3,C4,D4,E4,F4,G4,A4,C5
2	Dorian Mode	1	D3,E3,F3,G3,A3,B3,C4,D4,F4,G4,A4,B4,C5,D5
3	Phrygian Mode	1	E3,F3,G3,A3,B3,C4,D4,E4,F4,G4,A4,B4,C5,D5,E5
4	Lydian Mode	1	F3,G3,A3,B3,C4,D4,E4,F4,G4,A4,B4,C5,D5,E5,F5
5	Mixolydian Mode	1	G3,A3,B3,C4,D4,E4,F4,G4,A4,B4,C5,D5,E5,F5,G5
6	Aeolian Mode	1	A3,B3,C4,D4,E4,F4,G4,A4,C5,D5,E5,F5,G5,A5
7	Locrian Mode	1	B3,C4,D4,E4,F4,G4,A4,B4,C5,D5,E5,F5,G5,A5,B5
8	Harmonic Minor Scale	2	C3,D3,Eb3,F3,G3,Ab3,B3,C4,D4,Eb4,F4,G4,Ab4,B4,C5
9	C Whole Tone Scale	3	C3,D3,E3,F#3,G#3,A#3,C4,D4,E4,F#4,G#4,A#4,C5
10	C Pentatonic Scale	4	C3,D3,E3,G3,A3,C4,D4,E4,G4,A4,C5
11	C Blues Scale	5	C3,Eb3,F3,Gb3,G3,Bb3,C4,Eb4,F4,Gb4,G4,Bb4,C5
12	C Octal Scale	6	C3,D3,D#3,F3,F#3,G#3,A3,B3,C4,D4,D#4,F4,F#4,G#4,A4,B4,C5
13	C Chromatic Scale	7	C3,C#3,D3,D#3,E3,F3,F#3,G3,G#3,A3,A#3,B3,C4,C#4,D4,D#4,E4,F4,F#4,G4,G#4,A4
14	Eastern Scale	8	C#3,E3,F3,G3,G#3,B3,C4,C#4,E4,F4,G4,G#4,B4,C5

Program 1 (All Note ON Velocities set to 64. All Note OFF Velocities set to 64)

This program is a copy of Program O

However, each note will sustain for as long as an analogue input is present or a switch is closed.

A value of O volts will turn off any sustaining note or when the switch is opened.

1/4 W
FIXED
RESISTOR

1K
Resistor

.50K
POTENTIOMETER
OR FOOT CONTROLLER

- -
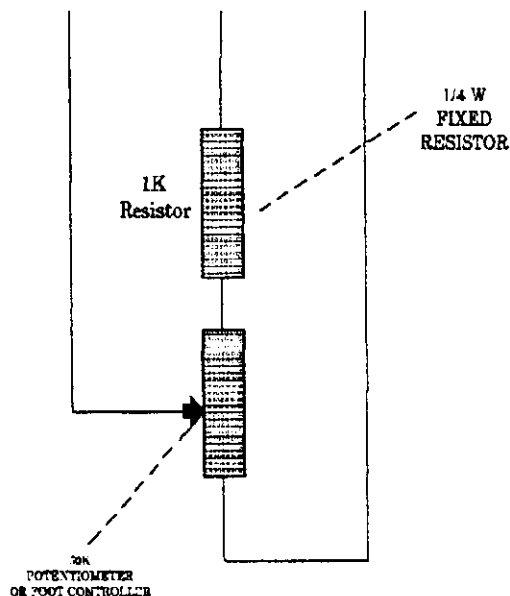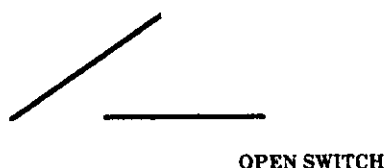
Program 2 (All Note ON Velocities set to 64. All Note OFF Velocities set to 64)

This program is designed for use with single switches connected to the 14 inputs.

CLOSED SWITCH
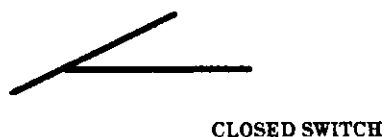
A switch from O to 5 volts will trigger a selection of chords.

OPEN SWITCH

A simple "make" switch (also called a momentary switch) connected across the tip and ring of a 3.5 millimetre stereo jack plug is the simplest way of triggering an input.

The descriptive tables for Program 2 follow overleaf.

Midi Creator - Midi Gesture

Program 2

CONT.

A MIDI Program Change command to select GM ™ sound "Electric Piano" is sent when this program is selected.

All inputs transmit chords on Midi Channel 1

MIDI CREATOR INPUT	CHORD	ACTUAL NOTES PLAYED
1	C Major	E3,C3,G3
2	D Minor	A3,F3,D3
3	E Minor	B2,G3,E3
4	F Major	C3,A3,F3
5	G Major	G3,D3,B3
6	A Minor	A3,E3,C4
7	B Diminished	D3,B2,F3
8	C Minor	D3,C3,G3
9	D Diminished	F3,D3,G#3
10	Eb Major	G3,D#3,A#3
11	F Minor	F3,C3,G#3
12	G7	D3,B3,G3,F3
13	Ab Minor	G#3,D#3,C4
14	Bb Minor	D3,A#3,F3

Midi Creator - Midi Gesture

Program 3   (All Note ON Velocities set to 64. All Note OFF Velocities set to 64)

This program was designed for use with single switches and uses a General Midi ™
Drum set as a suggested sound source.

All inputs tranmit single notes on Midi Channel 10

MIDI CREATOR INPUT	DRUM SELECTED	ACTUAL NOTES PLAYED
1	Bass Drum	B0
2	Snare Drum	E1
3	Rim Shot	C#1
4	Open Hi-Hat	A#1
5	Closed Hi-Hat	F#1
6	Ride Cymbal	D#2
7	Crash Cymbal	C#2
8	Hi Tom	C2
9	Mid Tom	A1
10	Lo Tom	F1
11	Claves	D#4
12	Hand Clap	D#1
13	Cowbell	G#2
14	Tambourine	F#2

Midi Creator - Midi Gesture

Program 4

Program 4 is a proportional program which generates a string of notes (Arpeggio's) in response to an analogue voltage input.

All inputs tranmit arppeggio's on Midi Channel 1

As can be seen from the graph below, the input voltage is in proportion to the musical chord, for each input (see overleaf for the table). This input voltage can be controlled by a device such as Midi Creator ™ or by any voltage varying device. Examples of such are given on pages 67 and 89.

3.2 v

The greater the voltage (0-5V) - the higher up the scale

Scale of notes

3.2 v
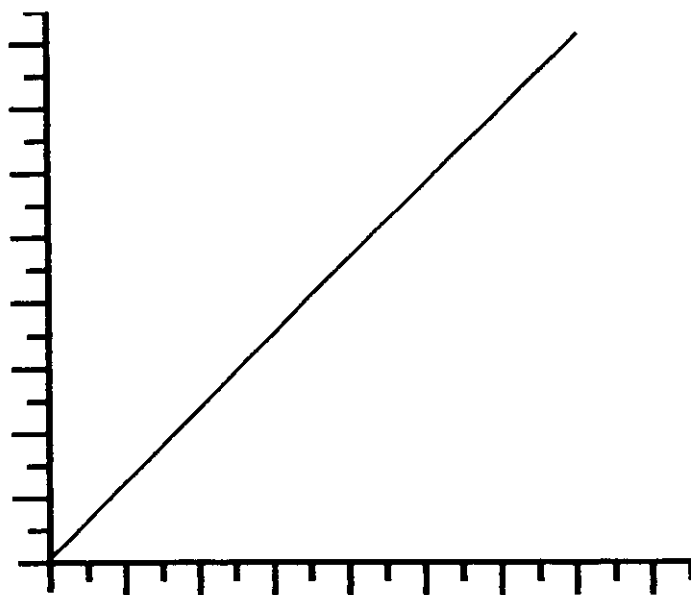
Voltage between inputs (0 to 5V)

Midi Creator - Midi Gesture

Program 4
cont

(All Note ON Velocities set to 64. All Note OFF Velocities set to 64)

This table gives the actual notes output from the MIDI Creator ™. All outputs are at velocity 64.
The best results will be obtained from a proportional controller

All sounds are vibraphone.

All inputs tranmit arpeggios on Midi Channel 1

MIDI CREATOR INPUT	CHORD	ACTUAL NOTES PLAYED
1	C Major	C2,E2,G2,C3,E3,G4,C4,E4,G4,C5,E5,G5,C6
2	D Minor	D2,F2,A2,D3,F3,A3,D4,F4,A4,D5,F5,A5,D6
3	E Minor	E2,G2,B2,E3,G3,B3,E4,G4,B4,E5,G5,B5,E6
4	F Major	F2,A2,C3,F3,A3,C4,F4,A4,C5,F5,A5,C6,F6
5	G Major	G2,B2,D3,G3,B3,D4,G4,B4,D5,G5,B5,D6,G6
6	A Minor	A2,C3,E3,A3,C4,E4,A4,C5,E5,A5,C6,E6,A6
7	B Diminished	B2,D3,F3,B3,D4,F4,B4,D5,F5,B5,D6,F6,B6
8	C Minor	C2,Eb2,G2,C3,Eb3,G3,C4,Eb4,G4,C5,Eb5,G5,C6
9	D Diminshed 7	D2,F2,G#2,B2,D3,F3,G#3,B3,D4,F4,G#4,B4,D5,F5,G#5,B5,D6
10	Eb Major	Eb2,G2,Bb2,Eb2,G3,Bb3,Eb4,Bb4,Eb5,Bb5,Eb6
11	F Minor	F2,Ab2,C3,F3,Ab3,C4,F4,Ab4,C5,F5,Ab5,C6,F6
12	G Dominant 7	G2,B2,D3,F3,G3,B3,D4,F4,G4,B4,D5,F5,G5,B5,D6,F6,G6
13	Ab Major	Ab2,C3,Eb3,Ab3,C4,Eb4,Ab4,C5,Eb5,Ab5,C6,Eb6,Ab6
14	Bb Major	Bb2,D3,F3,Bb3,D4,F4,Bb4,D4,F4,Bb4,D5,F5,Bb5,D6,F6,Bb6

Program 5 (All Note ON Velocities set to 64. All Note OFF Velocities set to 64)

This program was designed for use with single switches. Each input will trigger a specific chord. Midi Creator or Proportional switches can still be used but scales will not be generated with them.

A String Ensemble is a suggested sound source.

All inputs tranmit single notes on Midi Channel 1

MIDI CREATOR INPUT	CHORD	ACTUAL NOTES PLAYED
1	C (No Third)	C2,C1,G3,C3
2	C2	C1,C3,C2,G3,E3,D3
3	C sus 4	C1,C3,C2,A3,G3,C4
4	C6	C1,E3,C2,A3,G4,C4
5	C7	C3,C2,C1,G3,E3,A#3
6	C maj 7	C1,G2,C2,E3,C3,B2
7	C9	C2,C1,G3,E3,D4,A#3
8	C maj 7/9	C1,G2,E2,C2,D3,B2
9	C6/9	C1,A2,E2,C2,D3
10	Cb 10	C1,E3,C2,D#4,A3
11	Cm6	C2,C1,A3,G3,D#3,C4
12	Cm7	C2,C1,G3,D#3,C3,A#3
13	Cm9	C2,C1,D#3,D3,C3,G3,C4,D4
14	Cm/Maj 7	C2,C1,D#3,C3,B3,G3

Program 6 (All Note ON Velocities set to 64. All Note OFF Velocities set to 64)

This program was designed for use with proportional control on inputs 1-9 and single switches on inputs 10-14

It was designed to enable a basic **12 bar blues** *to be realised.*

Suggested sound sources are :-

MIDI CREATOR INPUT	VOICE
1	Steel Strings
2	Steel Strings
3	Steel Strings
4	Bass Guitar/Double Bass
5	Bass Guitar/Double Bass
6	Bass Guitar/Double Bass
7	Guitar
8	Alto Sax
9	Harmonica
10	Bass Drum
11	Snare Drum
12	Closed Hi-Hat
13	Ride Cymbal
14	Crash Cymbal

* Note Table follows overleaf

Midi Creator - Midi Gesture

Program 6 (All Note ON Velocities set to 64. All Note OFF Velocities set to 64)
cont.

*This page lists the Midi Creator input number alongwith the corresponding Midi
Channel and scale produced. For details of the actual notes output a table is
included overleaf.*

All inputs transmit as described below.

MIDI CREATOR INPUT	MIDI CHANNEL	CHORD/SCALE
1	1	Arpeggio of C Major
2	1	Arpeggio of A7
3	1	Arpeggio of B7
4	2	E Major Bass Line
5	2	A7 Bass Line
6	2	B7 Bass Line
7	3	E Blues scale
8	4	E Pentatonic scale
9	5	G Pentatonic scale
10	10	Bass Drum (B0)
11	10	Snare Drum (E1)
12	10	Closed Hi-Hat (F#1)
13	10	Ride Cymbal (D#2)
14	10	Crash Cymbal (C#2)

Program 6 (All Note ON Velocities set to 64. All Note OFF Velocities set to 64)
cont

The table on this page lists the actual MIDI notes output from the creator for this program. Inputs 10 - 14 only send out single notes (to trigger the MIDI Drum kit).

All inputs tranmit as described below.

MIDI CREATOR INPUT	MIDI CHANNEL	CHORD/SCALE
1	1	E1,B1,E2,G#2,B2,E3
2	1	E1,A1,E2,G2,C#3,E3
3	1	B1,D#2,A2,B2,F#3
4	2	E1,G#1,B1,C#2,D2
5	2	A1,C#2,E2,F#2,G2
6	2	B1,D#2,F#2,G#2,A2
7	3	E3,G3,A3,A#3,B3,D4,E4,G4,A4,A#4,B4,D5,E5
8	4	E3,F#3,G#3,B3,C#4,E4,F#4,G#4,B4,C#5,E5
9	5	D3,E3,G3,A3,B3,D4,E4,G4,A4,B4,D5
10	10	B0
11	10	E1
12	10	F#1
13	10	D#2
14	10	C#2

Program 7 (All Note ON Velocities set to 64. All Note OFF Velocities set to 64)

*This program was designed for use with single switches and intended as a
campanology bank. As you would expect the recommended sound sources are
"BELLS"*

All inputs tranmit single notes on Midi Channel 1

MIDI CREATOR INPUT	NOTE PLAYED
1	C2
2	F2
3	G2
4	C3
5	D3
6	E3
7	F3
8	G3
9	A3
10	B3
11	C4
12	D4
13	E4
14	C5

Midi Creator - Midi Gesture

Section 3 Program Changes

The Midi Creator was designed for use with *General Midi* ™ sound modules or synthesisers. .

This allows anyone, however "Midi Literate" to be able to quickly and easily make music with a Midi Creator.

Each time the *Program Select* button is pressed, Midi program change messages are sent out to set up the musical voices for each program. If you wish to change these voice assignments, simply *turn OFF the program change facility* on your synthesiser/sound module.

The Program change messages are as follows :-

Program 0

Midi Channel	Program Change
1	0
2	48
3	73
4	109
5	30
6	108

Midi Creator - Midi Gesture

Program 1

Midi Channel	Program Change
1	0
2	48
3	73
4	109
5	30
6	108
7	9
8	77

——— ——— ——— ———

Program 2

Midi Channel	Program Change
1	4

Midi Creator - Midi Gesture

Program 3

Midi Channel	Program Change
10	N/A

—— —— —— ——

Program 4

Midi Channel	Program Change
1	11

—— —— —— ——

Program 5

Midi Channel	Program Change
1	49

—— —— —— ——

Program 6

Midi Channel	Program Change
1	25
2	32
3	29
4	65
5	22

Program 7

Midi Channel	Program Change
1	14

Appendix A : *Technical Data*

The **Midi Creator** can generate almost any kind of MIDI
message in response to an analogue input. The analogue inputs
can be either a simple switch or an analogue voltage *between 0
and 3.2 volts.*

When you first switch on the **Midi Creator**, the first of the eight
factory presets programs is active. ie. **Program 0**.

Program 0 is an proportional program in that the 14 inputs
respond to analogue voltage inputs.

These analogue voltages can be used as a feed to a
potentiometer or a light dependant resistor etc. The return
voltage will then be the *variable control source.*

The **tip** of the 3.5mm plug connects to **5V**.
The **ring** of the 3.5mm plug is the **analogue input**.
The **screen** of the 3.5mm plug is **earth**.

Please see diagram overleaf :-

Appendix A : *Technical Data*
cont.

3.5 millimetre stereo jack plug

```
                              ┌─────────────────────────┐
  ┌──┬──┬────┬──────────┐     │                         │
  │  │  │    │          │     │   3.5MM JACK PLUG        │
  └──┴──┴────┴──────────┘     │                         │
   /    \      \              └─────────────────────────┘
  /      \      \
 /        \      \
```

TIP
(5 VOLTS)

RING
(SIGNAL INPUT)

SHIELD
(GROUND)
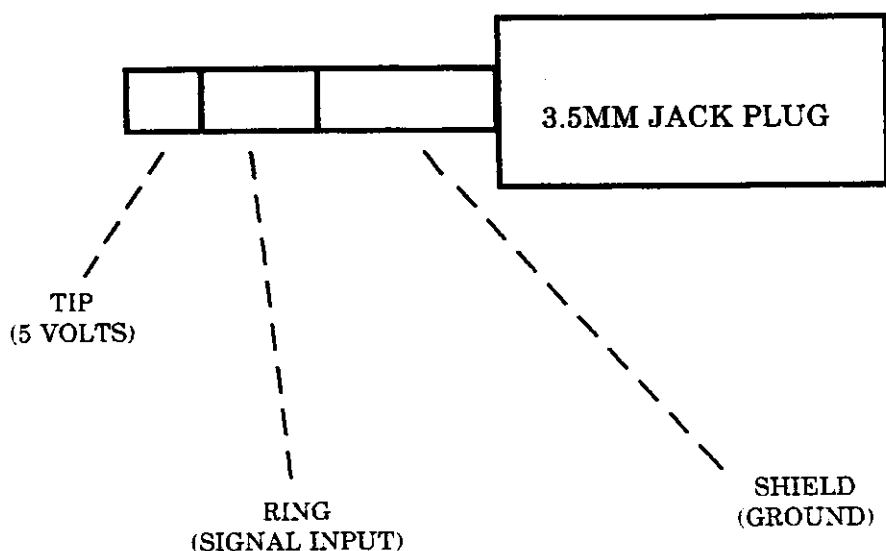
For a *switch input* to **Midi Creator**, simply connect the switch between the *tip and ring* of a jack plug, so that *when the switch is closed the signal input receives 5V*.

For a *proportional control* to **Midi Creator**, connect the analogue voltage, *between 0 - 3.2 volts*, to the **ring** of the jack plug.

Appendix A : *Technical Data*
cont.

A simple Proportional Controller

3 . 5 M M S T E R E O J A C K

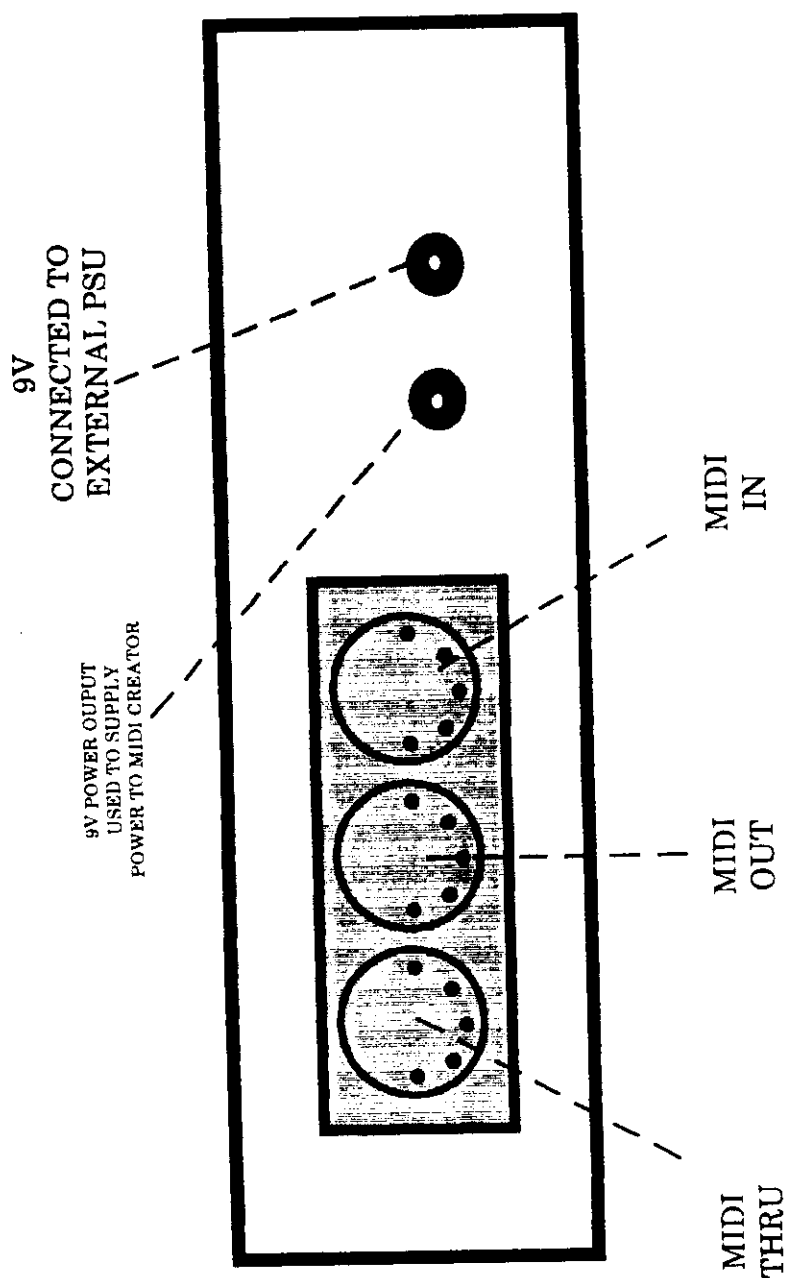RING   TIP   SCREEN

1K
Resistor

1/4 W
FIXED
RESISTOR

50K
POTENTIOMETER
OR FOOT CONTROLLER

MIDI IMPLEMENTATION CHART
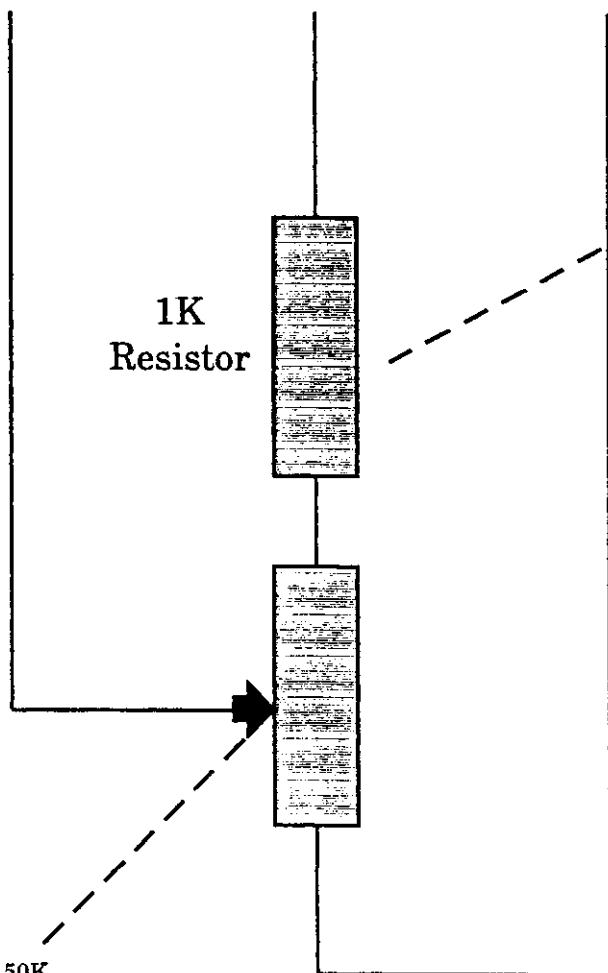
FUNCTION		TRANSMITTED	RECEIVED	REMARKS
BASIC CHANNEL	DEFAULT	1 - 8 (i)	all channel	(i) Program O
	CHANGED	1 - 16	X	
Mode	Default	3	O	
Note Number		O - 127	O - 127	
Velocity	Note ON	O 9nH V=1-127 (ii)	O	(ii) Default ON V=64 OFF=64
	Note OFF	O 8nH V=1-127 (ii)	O	
After Touch	Key	X	O	
	Channel	X	O	
Control Change		O	O	
O - 121				
Program Change		O O - 127	O (iii)	(iii) re transmit only
System Exclusive		O (iv)	O	(iv) Maximum 50 byte per input
System Common	Song pos	X	O	
	Song Sel	X	O	
	Tune	X	O	
System Real Time	Clock	X	X	
	Commands	X	X	
Aux Messages	local on/off	O	O	
	all notes off	O	O	
	active sens.	O	O	
	reset	O	O	
Notes		Received Messages are only bypassed to Midi Out		

Mode 1 : OMNI ON POLY   Mode 2 : OMNI ON POLY
Mode 3 : OMNI OFF POLY   Mode 4 : OMNI OFF MONO

O=YES
X=NO

9V
CONNECTED TO
EXTERNAL, PSU

9V POWER OUPUT
USED TO SUPPLY
POWER TO MIDI CREATOR
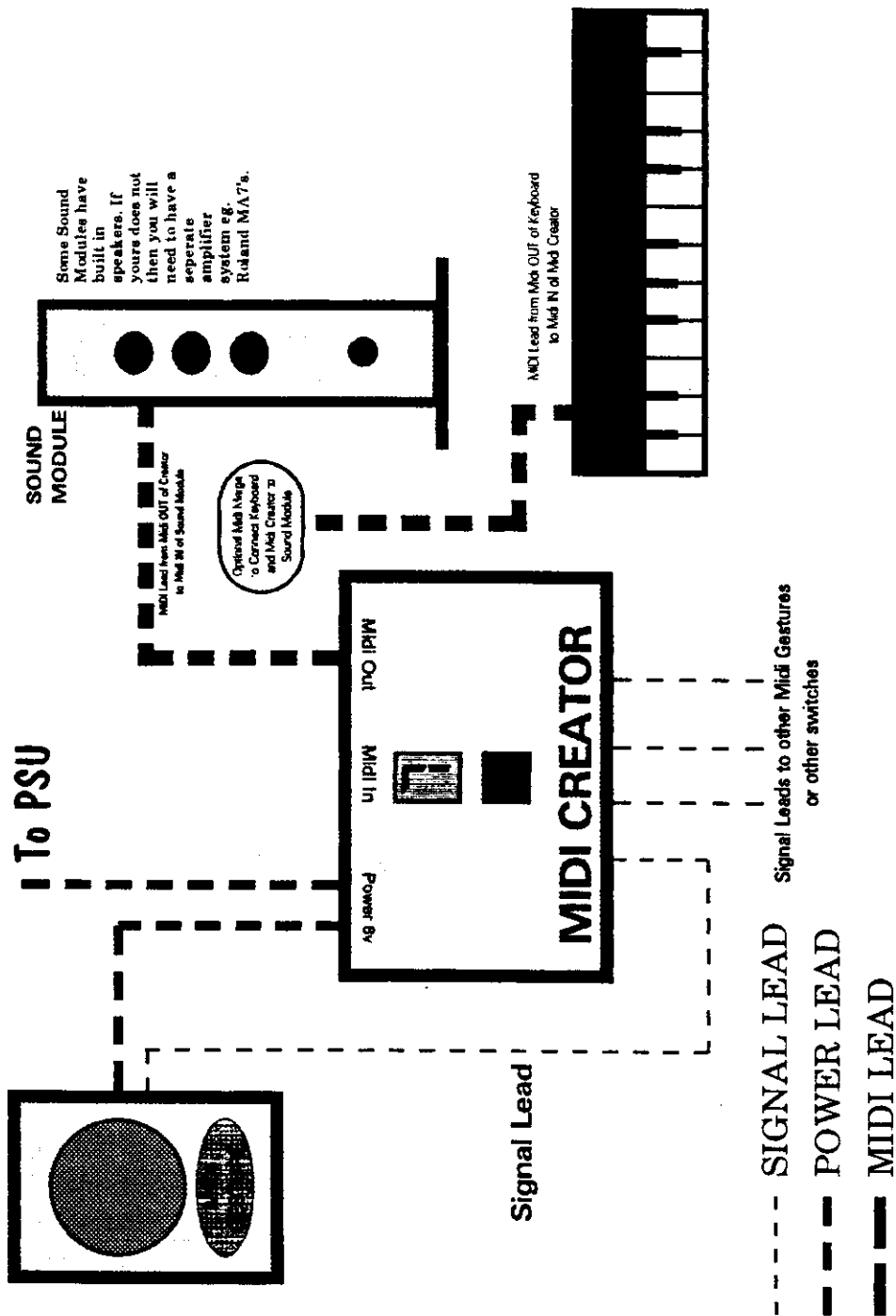
MIDI
IN

MIDI
OUT

MIDI
THRU

REAR OF MIDI CREATOR

This switch selects how long the Gestures ray should be. It has *three* settings :- Far, Medium and Near. Far is approx 3 metre, Medium (2m), Near (1m).

This socket is used to connect the Midi Gesture to the Midi Creator. The supplied *"Signal Lead"* plugs into here and the other end plugs into the Midi Creator.
Note: This socket only appears on Midi Gesture MkI. Midi Gesture MkII has built in leads to connect to Midi Creator.

The Power Lead plugs in to this socket. The other end plugs into the socket on the Midi Creator. This supplies power to the Gesture from the Creator.

SIDE VIEW OF MIDI GESTURE

Some Sound Modules have built in speakers. If yours does not then you will need to have a seperate amplifier system eg. Roland MA7's.

SOUND MODULE

MIDI Lead from Midi OUT of Keyboard to Midi IN of Midi Creator

MIDI Lead from Midi OUT of Creator to Midi IN of Sound Module

Optional Midi Usage to Connect Keyboard and Midi Creator to Sound Module

To PSU

Midi Out

Midi In

Power 6v

MIDI CREATOR

Signal Leads to other Midi Gestures or other switches

Signal Lead

- - - - SIGNAL LEAD
— — POWER LEAD
——— MIDI LEAD

How to connect your system - ADVANCED

IT'S NOT WORKING

"Machines have a tendency to fight back".

This is a well known fact which
frustrates all users of technology.

Midi Creator and Midi Gesture
have been made to the highest
standards and have been
rigorously tested but they, like all
pieces of equipment, are not
infallible.
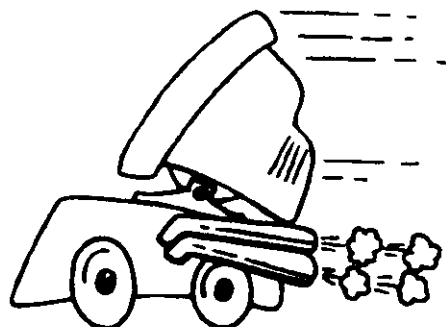
Listed below are some of the problems which may occur and
simple test procedures to help find the faults

*"I have followed the instructions for
wiring Midi Creator and I am not
hearing anything from my Midi
source."*

Is there a program number showing on top of
the Midi Creator? If not, check that you have
the power supply unit plugged in, switched on
and connected to the Midi Creator.

Is your MIDI sound source plugged in and
switched on?

IT'S NOT WORKING cont.

Cont.

"I have followed the instructions for wiring Midi Creator and I am not hearing anything from my Midi source."

If you are using a MIDI sound source which does not have its own built-in speakers, have you got your amplifier plugged in, switched on, and are the speakers connected?

If you are using MIDI GESTURE, have you connected the power lead from MIDI CREATOR to MIDI GESTURE and have you connected the lead from the output (O/P) socket on MIDI GESTURE to any of the input sockets on MIDI CREATOR?

"A sound or note sticks and will not switch off"

MIDI has locked up. This may have been caused by MIDI GESTURE being used as a single switch or by unplugging a switch while the unit is in use. Simply switch off your MIDI sound source and then switch it back on again. You will need to re-select the program number of your choice.

Note. MIDI CREATOR has been taught to ignore small changes in the power supply but, for safety reasons, it may lock up if it senses a big voltage change.

IT'S NOT WORKING cont.

✗

"I can not change the program number on Midi Creator"

This is a similar problem to that above and again it is caused by the safety device built in to MIDI CREATOR to guard against short circuits. Simply unplug the power lead from the rear of MIDI CREATOR and plug it back in again.

"I am not hearing the instrumental sounds which I am expecting from my MIDI keyboard."

Because MIDI CREATOR expects to "talk" to a sound source which conforms to General MIDI or GS Format, you may have problems if you are not using such a device. The solution is to make sure that your MIDI keyboard is switched to MULTI MODE, check in this manual to see which MIDI channel is being used by the particular program and input socket on MIDI CREATOR, and then choose the instrumental sound you wish to hear to hear from your keyboard.

If all else fails, please feel free to call us at Dawsons Music LTD
0925 632591   FAX 0925 417812

SOLDERING

REQUIREMENTS

A Soldering iron of between 20 to 40 watts rating
A reel of Multicore solder
A pair of small long nosed pliers
A pair of wire or side cutters
A pair of wire strippers
A damp cloth or sponge

HOW ITS DONE

Strip back the insulation from approx. 1/4" of the wire to be used. Twist the bare conductors using your fingers so that they are tight together.
Plug in the soldering iron and allow it to heat up for a couple of minutes. Wipe the end of the iron on a damp piece of cloth and melt a little solder onto the tip of the iron and again wipe the iron tip on the damp cloth - this is known as 'tinning the iron'.
NB. If the iron has not been used for some time it may be necessary to clean the tip with a piece of fine glass/sand paper-you should do this before the iron is switched on.

Hold the tip of the iron against the wire (about half way from the tip of the bared wire to the plastic insulation) and feed in a little solder between the iron bit and the wire.
The solder should flow onto the wire and penetrate the spaces between the conductors,creating a single solid conductor - this is known as 'tinning the wire'

Next tin the tags inside the jack plug in the same way.The solder should eventually flow freely on to the tags. If the hole in the tags block up with solder then simply re-heat the tag and quickly bang the plug against a hard surface. The excess solder will fall out of the hole before it hardens - don't do this on a polished surface as the hot solder will mark it - use a piece of old wood or cardboard to protect your work surface.

Using the long nosed pliers push the tinned end of the wire through the hole in the tag and then wrap the wire around the tag once,squeezing the wire onto the tag, to form a solid mechanical joint.

Place the iron tip against the joint and feed in a little fresh solder until the solder flows freely between the wire and the tag filling the tag hole with solder.
If the solder forms reluctant blobs on the joint then heat the joint up again and apply more fresh solder - the flux in the solder will clean the joint and help the solder flow.
It is vital that the plug is held perfectly still whilst the solder is cooling otherwise you will end up with a 'dry joint' which results in an imperfect mechanical and electrical joint.
Some plugs do not have holes in their tags, in this case you will have to hold the wire against the tag whilst applying the iron tip and solder - in these cases you have

to be doubly careful not to move the plug or wire whilst the joint is cooling.

If you are using the conductive foam as a switch/controller then a tag will have 2 connections made to it ie: one side of a resistor and the actual wire connected to the foam. In these cases the resistor should be attached through the tag hole and then crimped and soldered. The tinned wire then should be held against this joint whilst applying more heat and solder.

Connecting to the conductive Foam

Strip off approx. 3" of insulation from your wire and twist the bare wires using your fingers. Tin this length of wire running the soldering iron tip down its length whilst applying the solder.
Allow this to cool before bending the stiff wire into a loop as shown.
Place this loop of wire against the foam and secure with a couple of small pieces of insulation tape.

Conductive Foam Pad

Stripped and tinned wire
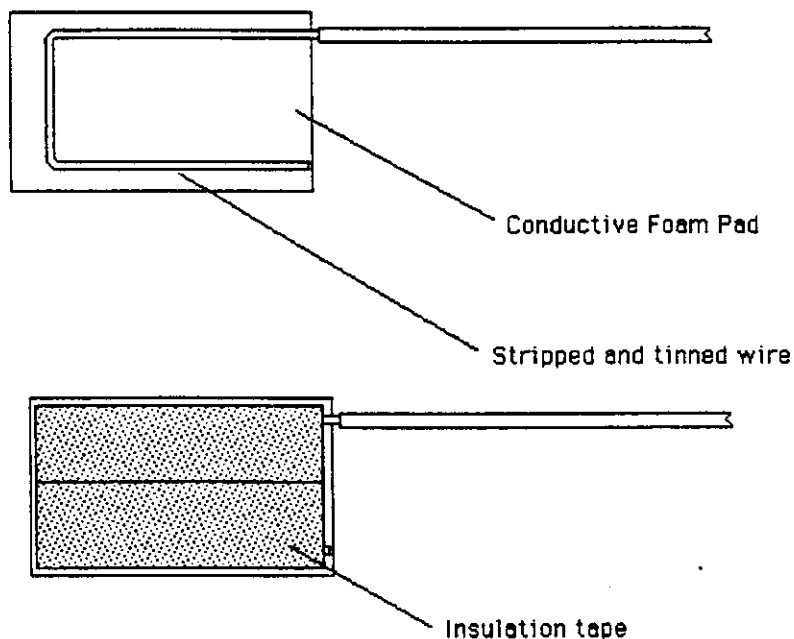
Insulation tape

Place the 2 pads together with the wire connections facing out (Shown below)   secure the 2 pieces together by gently wrapping insulation tape around the pads

Using a Joystick as a proportional control

To use a Joystick as a proportional controller connect as shown below
For a 50kΩ potentiometer connect a 27kΩ fixed resistor as shown
For a 100kΩ potentiometer connect a 56kΩ fixed resistor as shown

To Input A

fixed resistor

Underside view
of a typical
Joystick

To input B
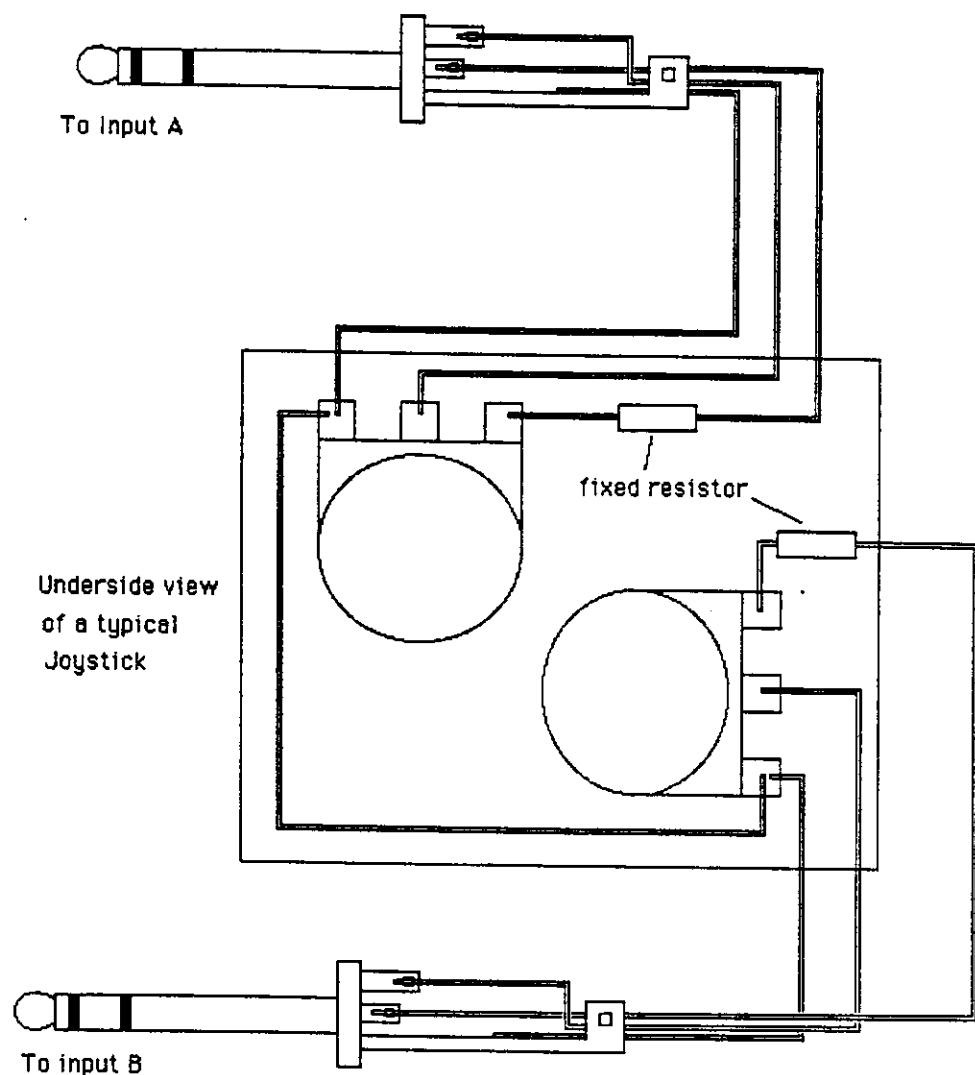
Using Potentiometers as controllers

To use a potentiometer as a proportional controller connect as shown below

For a 50kΩ potentiometer connect a 27kΩ fixed resistor as shown

For a 100kΩ potentiometer connect a 56kΩ fixed resistor as shown

For a 10kΩ potentiometer connect a 4.7kΩ fixed resistor as shown

For a 5kΩ potentiometer connect a 2.2kΩ fixed resistor as shown

To ring

To tip

To shield

Fixed resistor

Potentiometer

Fixed resistor
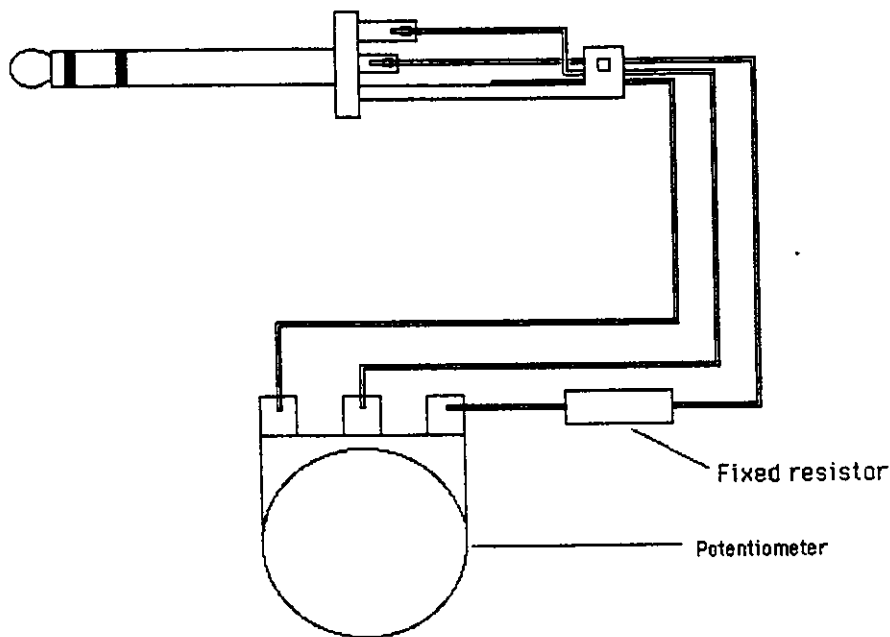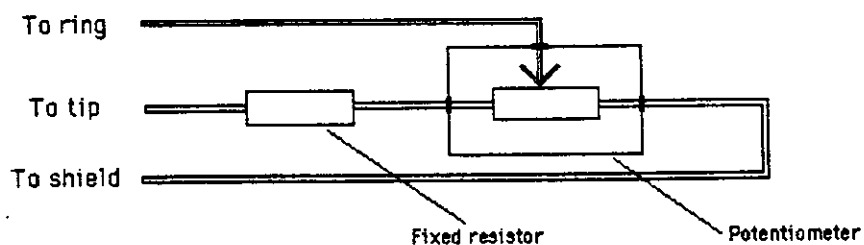
Potentiometer

The potentiometer shown is a rotary pot, however a linear 'Slider Pot' could also be used.

solder
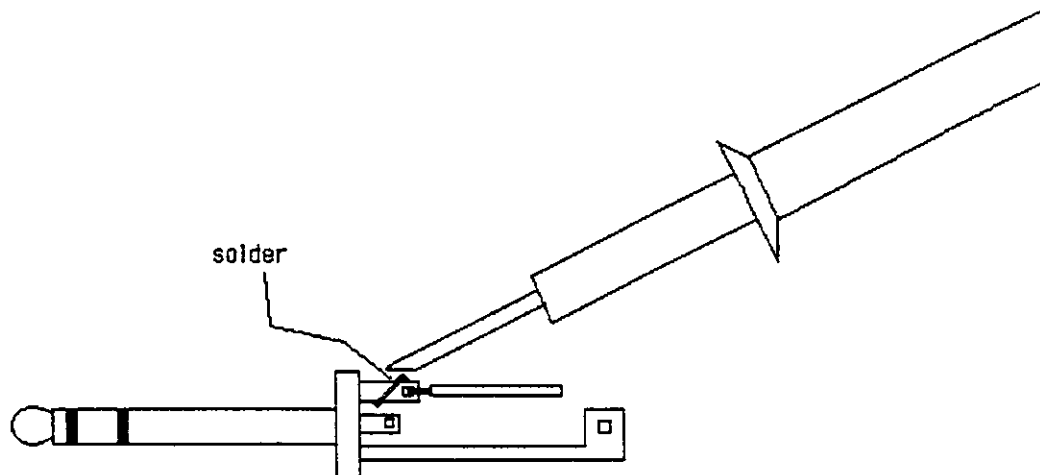
Insert the bare end of the wire through the hole in the tag and
crimp the wire around the tag surface.
When soldering ensure that the solder completely fills the hole and flows
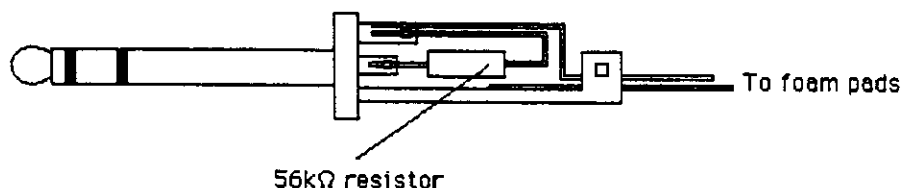on to the wire and tag surface.

NB: do not move the joint as the solder is setting as this can result
     in a 'dry joint'.
     Ensure that the finished joint is shiny and smooth,if not,re-heat
     the joint and apply a little fresh solder.
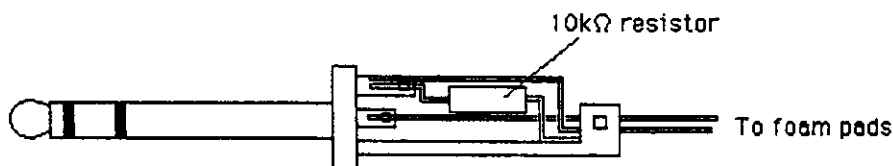
A 3.5 mm stereo jack plug

Ring

Shield

Tip
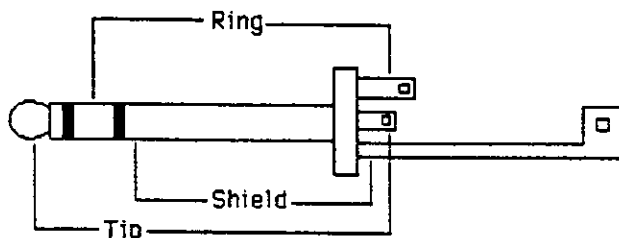
Break to make connection

To foam pads

56kΩ resistor

To wire a plug so that a release of pressure on the foam pads triggers the creator
use a 56kΩ resistor connected between the tip and ring of the jack plug. One foam
pad is then connected to the shield and the other pad to the ring.

push to make connection

10kΩ resistor

To foam pads

To wire a plug so that a squeeze on the conductive foam pads will trigger
the creator use a 10kΩ resistor wired as shown ie: connected beteeen the
ring and shield connections.
One foam pad is then connected to the tip of the plug and the other
foam pad is connected to the ring of the jack plug.

York Electronics Centre

Technical Note for adding 'Home Made' Sensors to Midi Creator

There have been cases of Midi Creators being damaged, possibly because of electrical spikes entering the unit via 'home made' sensors. This can occur where the contacts of the sensor are accessible to touch. The user may be charged to several 1000's of volts (static electricity) and it is this voltage that the Creator must be protected from.

When a 'home made' sensor is made then the following component should be included inside the 3.5mm jack plug or as near to it as possible:-
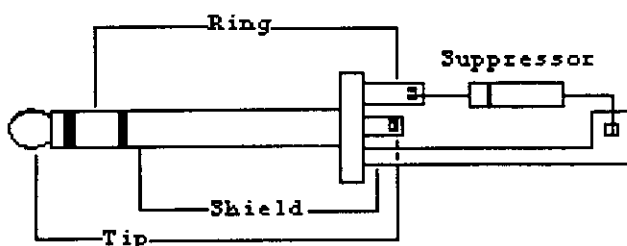
The component is called a 'transient suppressor' and should halt any excessive voltage entering the Creator and damaging it. The part, a P6KE6.8, is available from Maplin and its code is CP77J, currently 75p each or 47p in quantities of 25.

Note which way round the suppressor is connected i.e. the end with a **band** round it is connected to the **ring** and the other end is connected to the shield terminal. This component is in addition to any other components fitted for correct operation of the sensor.

The sensors made by the YEC do not require this addition as they are already protected.

Another cause of Creator failure may be due to external sensors deriving their power from some other source. **Connections to the Creator and any 'home made' sensors must only be made via the 3.5mm jack plug**; this provides the power for the sensor.