XYLOSYNTH®

XS7s-3

Rev 008

Index

1.0 Introduction

Thank-you for choosing a Wernick Xylosynth. You are now the owner of a hand built MIDI compatible tuned percussion controller designed to put mallet players in the most comfortable MIDI environment possible. We've asked players like you a lot of questions over the last few years and the information gathered together has resulted in many of the unique features of the Xylosynth. Innovations like the wooden playing surface and the flexible, easy to use software have come from this process. We're proud to be a 'musician led' instrument company and continue to strive to realise the imagination of music makers.

Your basic Xylosynth package should include the following:

> **3 Octave F-F Xylosynth**
> **USB Power Supply Adapter**
> **2 x 3 metre USB A-A Cable**
> **3 metre MIDI (5 Pin DIN) Connector**
> **Manual**
> **Pair of Soft Vibraphone Mallets**

2.0 Setting Up your Xylosynth

1. Always make sure you mount your Xylosynth on a solid table or keyboard stand. Check the carrying capacity of any stand. If you **plug your pedals in first** and power up the instrument the Xylosynth will recognize open/closed and adjust itself accordingly. **If you plug/unplug pedals while powered up the instrument may crash so press the edit button to reset or power up again.**

2. Power In/USB – For 'power only' use the top slot (from wall adaptor or USB Power Bank). There is no on/off switch. For USB MIDI communication use bottom slot. If you have USB 3.0 (blue indicator) or above you can use the bottom slot for communication and power. It may well work with USB 2 in your laptop but we take no responsibility for any damage caused. The instrument needs to be **stable** while calibrating on power up so always push the USB cable in **gently** to avoid disturbance if the other end is already connected to the power source.

3. If you have internal sounds, plug in your headphones or line out to PA and start playing. Or, using the supplied MIDI lead or USB cable, connect to your chosen external sound source (the Xylosynth is set to Channel 1 as a factory default).

2.1 Sound Sources

The Xylosynth is a MIDI controller and the standard instrument has no internal sounds. If you don't have internal sounds the first thing needed is a sound source. This could be a sound module or software based sampler in your PC or Mac. Sound modules with tuned percussion sounds are available from most large musical equipment retailers. As well as traditional tuned percussion sounds, sound modules often contain several digital sounds with a very fast attack making them mallet friendly. For the individual sounds of your choice you need a software based system. There are many sample libraries available with traditional and synth sounds.

2.2 Amplification

The final link in the chain from Xylosynth to performance is amplification. The simplest thing to do is to plug a pair of good quality headphones into your sound source or Xylosynth with internal sounds. Otherwise simply use a keyboard or 'active' speaker amp. For playing live, to really appreciate the stereo of most of the sounds you'll be using, the best solution is a small mixer with a pair of active speakers. As with all amplification it is important to tailor your system to every possible requirement you can think of. We do advise you should try out the amplification system before you buy or find very good recommendations. Think about weight if you have to take the system on the road.

3.0 A Quick MIDI Lesson

The Xylosynth is a MIDI controller so it might be useful to include a short section on the basics. MIDI stands for Musical Instrument Digital Interface and is a digital computer code that all manufacturers in the music industry use. It means that the Xylosynth and any other MIDI device can communicate. It has become a world wide standard so you will be able to find MIDI equipment that is compatible with the Xylosynth everywhere (either through '5 Pin Din Midi' or 'USB to MIDI').   There are many volumes dedicated to the subject and to be honest all you really need to understand to use your Xylosynth are the following five parameters:

3.1 MIDI Program Number (0-127 or 1-128)

The Program Number is the **code number** for the **sound** that comes from your sound source. It instructs the sound module to switch to a particular sound. There are 128 standard General Midi (GM) sounds (list on page 13) numbered 0-127 or 1-128 depending on the source. Normally the sound source will have a name for each sound displayed on its screen. The Xylosynth is set at 1-128 so Vibraphone is number 12. If your sound source is numbered 0-127 then you can change the numbering of the Xylosynth to 0-127 (Global Settings, C. MIDI Format), the Vibraphone would become 11.

3.2 MIDI Bank Number (0-15 or 1-16)

Some sound sources have several banks of sounds with 128 different sounds in each. Our internal sounds have just one bank of 128 sounds. We have customized our sounds into 'patch settings' and numbered the patches to correspond to the progamme numbers.

3.3 MIDI Note Number

There are 128 Note Numbers in MIDI and these define the **pitch** of the sound. It's like having a keyboard with 128 keys. An easy reference point to remember is Middle C (C4) which is MIDI Note Number 60. Tuned A (440-442Hz) is MIDI Note Number 69.

3.4 MIDI Velocity Number

There are 128 levels of velocity in MIDI. The Velocity Number defines the amount of expression that can be applied to a MIDI sound. For example if you play a Vibe bar really hard the sound is very loud compared to if you give it a gentle stroke. Basically the same thing applies in MIDI and is defined within 128 levels from 0 to 127. A level of 0 is equivalent to a note off message. The Xylosynth actually has around 14000 levels which are divided down to 128 before the Midi message is sent.

3.5 MIDI Channel Number (0-15 or 1-16)

There are 16 Channels in MIDI and these are the codes used to allow different MIDI devices to talk to each other or to play different tracks within software programs. This is mainly relevant to software based systems. The Xylosynth sends out messages on Channel 1 as a factory setting. The GM sounds are the same for all MIDI Channels except Channel 10 which is dedicated to "percussion" sounds.

4.0 Patches

With the new Mk7 Xylosynth we can create 'Patches' by choosing a programme, for example 12 Vibes, then altering the 'parameters' to suit ourselves and saving to use next time. Parameters such as setting the first note (MIDI note number) for the pitch we want to start on and setting the note length (although this can be overridden with the note length knob) amongst other things. Basically, 'a patch is a configured sound that can be recalled for playback'. All 128 GM sounds have been configured into usable 'Patches' and it is the Patch number that changes with the patch buttons/pedals.

5.0 Control Panel

If you look to the right hand side of the front panel you'll see the connections for Line Out (to amplification), Headphone Socket, Power In/USB, MIDI Out, Blue LED Indicator, seven pedal inputs and above them the four push buttons for Octave Shift and Patch Change.

	SONG LIST/PATCH		OCTAVE SHIFT						
	▲	▼	◄		►				
			SUSTAIN			MIDI OUT	POWER IN/USB	HEADPHONE	LINE OUT
1	2	3	4	5	6	7	●	☺	■
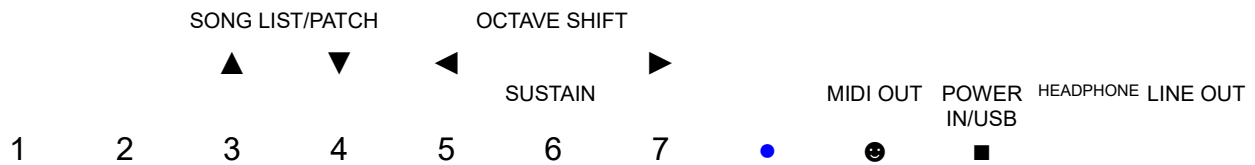
5.1 Push Button Controls

There are four push buttons to change octaves, patch or song list. You cannot change the function of these buttons. In performance mode they will always operate the octave shift and patch/song list. In edit mode they will move the cursor or change values.

5.2 Song List/Patch Up/Down

These buttons change the patch or song list by +1 or -1 each time. If you are in 'song list' mode they will change the song list number and if you are in 'patch' mode they will change the patch number. The instrument will arrive in patch mode so you can scroll through all the sounds. Simply press the save button to the left of the display to get into song list mode. We have made 3 song lists to get you started. Just press 'save' again to get back into patch mode.

5.3 Octave Shift

Octave Shift will change the range of the keyboard layout. On start up the instrument's range will be dependent on the size of your Xylosynth and the patch you are in. By pressing the octave shift you can shift up or down an octave (12 notes). This can be in **'latching mode'** where the shift stays until you press the pedal/button again to change it or **'single shift mode'** (for pedals only) where the octave reverts to it's previous range as soon as you release the pedal (see Patch Settings M. Octave Shift). The pedal factory default is 'single shift mode'. The pedals can also be set to shift semitones, see Patch Settings, V – I. Semitone Shift.

6.0 Foot Pedal Controls

The new Mk7 Xylosynth has seven pedal inputs which can be programmed to operate various functions apart from input 6 which is always Sustain. Inputs **1- 4** can only be used with **analogue/**expression pedals and inputs **5-7** can only be used with **digital/**on/off pedals (or expression pedals with digital functionality).

Pedal Type	Analogue/Expression Pedals				Digital On/Off Pedals		
Input Number	1	2	3	4	5	6	7
Wernick Pedal – (ON/OFF Function Only).	✓	✓	✓	✓	✓	✓	✓
Switchable Stereo Expression Pedals	✓	✓	✓	✓	✓	✓	✓
Mono Digital Pedals	X	X	X	X	✓	✓	✓
Drum Triggers – Mono/Stereo	✓	✓	✓	✓	X	X	X

Basically, the two types of foot pedal that can be used with the Xylosynth are the On/Off type (digital), normally with a mono jack (one black band) and Expression pedals (analogue) which contain a potentiometer for variable control (volume, wah wah etc)

always with a stereo jack (two black bands). Some expression pedals also have digital functionality because you can switch off the potentiometer so the pedal acts like a digital on/off pedal. The Wernick pedals now have stereo jacks so their simple on/off functionality will also work in inputs 1-4 to perform a basic +1 -1 duty but it doesn't turn them into expression pedals, you need a potentiometer in them for that. So the specially adapted **Wernick pedals** (digital but with a stereo jack) can be used in **all 7** inputs.

On/Off (digital) pedals can be 'normally open'or 'normally closed' (or switchable). If you **plug your pedals in first** and power up the instrument the Xylosynth will recognize the difference and adjust itself accordingly to work with them. **If you plug/unplug pedals while powered up the instrument may crash so press the edit button to reset or power up again.** Your on/off pedals must be non-latching. **You must only use non-powered (no battery) pedals. You may damage a chip inside that will have to be replaced if you plug in a device that has Voltage.**

6.1 Jack Inputs 1, 2, 3 and 4

These inputs are all the same and all **analogue**. The factory setting has Input 1 as WMI Half Dampening, 2 as Pitch Bend Up and 3 and 4 as Patch/Song List +1 -1 (same as the buttons above). You can reprogramme these inputs to operate different functions, see Patch Settings U. Jacks 1-4 Function.

6.2 Jack Inputs 5 and 7

These inputs are all the same and all **digital**. The factory setting has inputs 5 and 7 as Octave Shift +1 -1 (same as the buttons above). You can reprogramme inputs 5 and 7 to operate different functions, see Patch Settings V. Jacks 5&7 Function.

6.3 Sustain

Pedal input 'Sustain' will sustain all notes playing or about to play when you press the pedal. The sound you are playing will have to be sustainable or be looped for the sustain pedal to be effective. For example Vibes sound will sustain but not Marimba. There are four sustain modes. See Patch Settings N. Hold is the default setting.

7.0 Analogue Settings
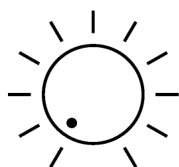
SENSITIVITY
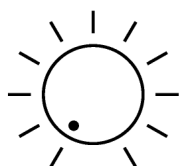
NOTE LENGTH

7.1 Length of Note Knob

Although you can set your preferred note length for each patch in the patch settings, the Length of Note Knob allows instant adjustment 'on the fly'. The control begins with 'instant note off' at 0.03 seconds (30 Milliseconds) and goes up to 8 seconds. You have to turn the knob by at least 1 division on the dial to activate it otherwise it won't override the patch setting. If the knob is activated and turned to **zero** an 'all notes off' message is also sent so it can be used as a 'panic button'. For the panic feature to work with an external sound source make sure the sound source is set to accept 'all notes off' messages.

7.2 Sensitivity Knob

This is the master sensitivity control and affects all the keys equally no matter which patch you are in. It can be used to adapt the Xylosynth's playing characteristics to your playing style and choice of mallets. At its lowest setting it will be very hard to achieve full 127 velocity. At its highest setting it will be very hard to achieve a velocity of 1. In effect the sensitivity control can act as a volume control knob 'on the fly'. Starting with the sensitivity knob at its maximum setting and striking a key to the hardest you are likely to play, turn the knob anticlockwise. When the sound heard starts to drop from your sound source stop turning the sensitivity knob. Setting the knob to about a third seems to give most people the best dynamic range. We strongly advise you use rubber core mallets to give a good dynamic range, to keep the acoustic contact sound minimal and to protect the sensors.

8.0 Display

The new Mk7 Xylosynth is using the latest technology OLED display so we can show more information to the player. When you are 'performing' there are 2 choices. You can either have the Patch screen showing where you can scroll through a long list of all the Patches or the Song List screen showing where you can scroll through a select list of patches that you have chosen for the song list. The instrument will arrive in patch mode with a shortcut to song list mode by pressing the 'save' button (press 'save' again to get back to patch mode).

PATCH CONTROL SCREEN

HARPSICORD		
CHAN 01	PITCH	PATCH
PRG 007	NOTE C3	
BANK 01	MIDI 048	007

SONG LIST CONTROL SCREEN

	HARPSICORD		
next patch on list →	011►	PITCH	PATCH
no.of song on list →	SONG 01	NOTE C3	
no. of song list →	LIST 01	MIDI 048	007

You can customize the screen brightness see Global Settings H.

When you change patch, the next sound will be heard immediately but the screen takes a fraction of a second to catch up.

PROGRAMMING SECTION

9.0 Introduction to Programing
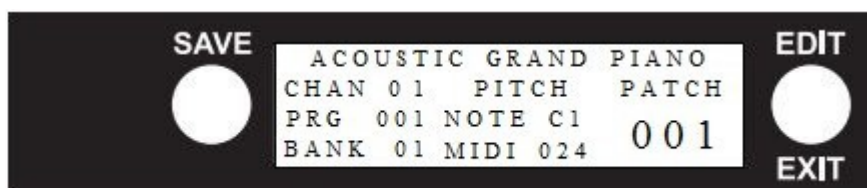
There are 4 main programming/edit screens.

1. Press the EDIT/EXIT button on the right of the display, keep it pressed and it will scroll through the 4 options – Global Settings – Song List – Patch Settings – Patch Template. If you want to edit Global Settings, release the button when you see Global Settings. If you release the button on the wrong list, press the button again to exit. The performance screen comes back up and then you can start again. Once you have chosen your screen:

2. Select the item/s you want to change using the up/down patch buttons.

3. Select your change/s using the left/right octave shift buttons.

4. **SAVE** your change/s using the save button to the left of the display.

5. **EXIT** the edit mode by pressing the Exit/Edit button until it says **'Performance Mode'. Settings may work imperfectly unless you are in Performance Mode.**

Press 'Exit' at any time to get out of a screen.

Shortcut – a quick press on the edit button will get you back into the last screen you were editing.

9.1 Global Settings

The Global Settings influence the instrument as a whole. There are 11 items. A-K that you can alter. See 9.0 on how to get into the Global Settings edit screen and on how to choose options using patch and octave buttons.

Press ◄ for patch settings	◄ GLOBAL SETTINGS ► Press ► for song list link
	A. Patch Cntrl PATCH
	B. Jacks 1-4 Type
	C. MIDI Format 0-127

▼

A. PATCH CONTROL	PATCH/ SONG	Switch the Xylosynth between incremental patch up/down control or song list control. There is a shortcut between these by pressing the SAVE button to the left of the display.
B. Jacks 1-4 Type	◄ **Jack Input 1**►	Choose expression pedal number 1-4

A. Input	Select according to which device you are plugging in.
	    DRUMPAD – to set up also go to **Patch Settings U. Jacks 1-4 Functions** and select **M. Drum Trigger** if you want to play sounds on the drum pad (otherwise the pad will act like a switch for changing patch etc).
	    OPEN expression pedal
	    CLOSED expression pedal	

B. Decay Rate	Adjusts the cross talk filter Decay Rate to prevent multiple notes (for Drumpad – default 30).	
C. Decay Amplitude	Adjusts the cross talk filter Decay Amplitude to prevent multiple notes (Drumpad–default 30)	
D. Noise Threshold	Sets the Drum Pad trigger level (for Drumpad – default 15, raise if blue light triggering) .	
E. Gain	**0.1–2.5** Similar function to 'sensitivity knob, the higher the number, the easier it is to get 127 velocity (default 1)	
Press Exit to get back into Settings		
C. PROG FORMAT	0-127/1-128	Sets the first programme number, bank number and patch to display either 0 or 1. MIDI standard starts on 0 but many connecting devices start on 1.
D. MIDDLE C FORMAT	**C4/C5**	Sets middle C, MIDI note number 60, to display either C4 or C5. MIDI standard states that middle C is C5 but C4 is more commonly used for middle C.

E. NOISE THRESHOLD	**0-200**	Threshold above which the instrument does not pick up external noise and trigger randomly (blue light flashes randomly). Will also affect the sensitivity of the lightest hits. May only need to adjust one or two notches either way. See 10.0 page 13.
F. MAX POLYPHONY	**64,128, 256, 512**	This sets the maximum number of sounds heard at the same time. Too small and notes may be missed. Too high and latency may be noticeable, especially on computer based systems. This setting is about optimising your sound source as certain sound sources can only work with a limited polyphony.
G. KEY CALIBRATION	If a key is replaced or becomes less sensitive the individual key can be adjusted to bring the key/s into line. Screen 1 shows the key number and original sensitivity. Bring your new or 'waning' key sensitivity into line at about 100. A waning or 'losing sensitivity' key will have lost some dynamic after this process but will still play. This won't work if the key is broken. Press **SAVE** and the results are now saved and you will be back in Global Settings screen. YOU CAN PRESS EXIT AT ANY TIME.	
H. DISPLAY	Brightness – OFF to 100	
I. CREATE BACKUP	Backs up all your patch settings – takes ≈ 5mins	
J. RESTORE BACKUP	Overwrites the patch settings using the back up stored settings - takes ≈ 5mins	
K. FACTORY RESET	Overwrites all settings to the factory default - takes ≈ 5mins	

PRESS 'EXIT' AT ANY TIME TO GET OUT OF A SCREEN.

9.2 Song List

Instead of scrolling through all 128 patches you may want to create a song list of a few favourite patches or of the patches you need for a certain performance. See 9.0 on how to get into the Song List edit screen and on how to choose using patch and octave buttons.

SONG LIST EDIT SCREEN

◄ to song links   ◄   Song List 01   ►   to next song list   ►

```
01        001 GRAND PIANO
02        007 HARPSICORD
03        008 CLAVINET
```
▼

1. Select the number of your song list (you may want to create more than one list) on the first line using the Octave Shift buttons. They are already numbered 1-25.

2. Using the Song List/Patch buttons scroll down one line to the first song in the list.

3. Using the Octave Shift buttons choose your song (patch).

4. Using the Song List/Patch buttons scroll down one line to the next song in the list.

5. Repeat **4.** until you have chosen your list.

6. Press the 'Save' button to left of the screen.

7. Press 'Exit' right of screen

To DELETE a patch in the song list press exit and follow instructions on screen.

To INSERT a patch in the song list press save and follow instructions on screen.

There are a maximum of 25 patches in a song list and you can make up to 25 song lists.

You can link song lists – there is always a minimum of 3 linked song lists - go to song list edit screen – press octave shift button left – choose your order of song lists.

PRESS 'EXIT' AT ANY TIME TO GET OUT OF A SCREEN.

9.3 Patch Settings

See section 4.0 for a definition of Patch. You can store up to 200 patches in the memory. The first 128 patches have been pre-programmed using the 128 GM format sounds. You can alter the parameters listed below to customize these patches. If you want to create new patches, overlays or splits you could use patch numbers 129-200 (128-199) if you don't want to overwrite the first 128 pre-programed patches. Try copying a patch to a higher number and experimenting. If at any time you want to get the factory default settings back, go to Global Settings K. See section 9.0 on how to get into the Patch Settings and on how to change parameters using patch and octave buttons.

PATCH EDIT SCREEN

◄ 001 ACOUSTIC GRAND PIANO ►	
A. Program	001
B. Channel	001
C. Bank	001

▼

First select your Patch Number on the top line using the Octave Shift buttons. They are numbered 1 -200 (0-199). The first 128 are pre-programmed and named using the 128 internal GM sounds.

001 ACOUSTIC GRAND PIANO		
A. Programme	**1-128 (or 0-127)**	Selects programme number
B. Channel	**1-16 (or 0-15)**	Selects Channel Number
C. Bank	**1-16 (or 0-15)**	Selects bank Number
D. Octave	**0, 12, 24, 36, 48, 60, 72, 84, 96, 108**	Sets the MIDI Note Number of the first key in steps of 12
E. Semitone	**000-011**	Offsets the MIDI Note Number of the first key in steps of 1.
F. Min Velocity	**001-127**	Sets minimum MIDI Velocity for lightest hit.
G. Max Velocity	**001-127**	Sets maximum MIDI Velocity for hardest hit
H. Note Length	**0.01-8.00**	Sets default Note Length for patch. Note length Knob movement will over-ride value.
I. Dampening	**requires action**	Select dampening to unlock. Set dampening level using mallet strikes to set maximum dampening level. Can be fine tuned using buttons. Will lock again on exit. To turn OFF, reduce level to 0 and SAVE.
J. Velocity Curve	**0**	Adjusts strike energy to MIDI Velocity Relation
K. Velocity Test	**requires action**	Striking any key will display the MIDI Velocity number (test key sensitivity).
L. Polyphony	**Poly/Mono**	Selects polyphonic or monophonic mode.
M. Octave Shift	**LATCH** Shifts 1 octave and holds new value when pedal is released **SINGL** Shifts 1 octave but reverts when the pedal is released.	
N. Sustain Mode	**HOLD** – Holds off sending out MIDI note off messages until pedal is released then all note off messages are sent.	

(only HOLD works with internal sounds)	**MIDI CC 64** – On/Off switch that controls sustain. **MIDI CC 66** – Only holds notes that were 'On' when the pedal was pressed. Use it to 'hold' chords and play melodies over the held chord. **MIDI CC 69** – Notes fade out according to their release parameter rather than when the pedal is released.	
O. Overlay Mode	**ON/OFF**	Turns the instrument overlay on or off
P. Overlay Settings	**Goes to Overlay Settings screen below.**	
A. Bottom key	Strike a key to set the bottom limit of instrument overlay.	
B. Top Key	Strike a key to set the top limit of instrument overlay.	
C. Program	**1-128 (0-127)**	
D. Channel	**1-16 (0-15)**	
E. Note Length	**0.01-8.00** Sets default Note Length for overlay.	
F. Bank	**1-16 (0-15)**	
G. Octave	**0, 12, 24, 36, 48, 60, 72, 84, 96, 108** Set the starting MIDI Note Number of the 'bottom limit' in steps of 12	
H. Semi-tone	**0-11** Offset the starting MIDI Note Number of the 'bottom limit' in steps of 1.	
I. Layer Type	**OFF -** dead zone – the overlay area does not send MIDI messages	
	COMB - instrument will output two 'note on' messages (layered)	
	EXCL- instrument will only output Overlay MIDI 'note on' messages (split keyboard)	
Q. Trigg Settings	Goes to Drum trigger settings below. Drumpads are **activated** by selecting Drumpad in Global Settings B - A. Input and also Patch Settings U. Jacks 1-4 Functions and select M. Drum Trigger.	
A. Program	**1-128**	
B. Channel	**1-16**	
C. Pad Note number	**1-128**	
D. Note Length	**0-8000**	
E. Bank	**1-16**	
PRESS 'EXIT' AT ANY TIME TO GET OUT OF A SCREEN (AND AGAIN FOR PERFORMANCE MODE!).		
R. Patch Name	^ACOUSTIC GRAND PIANO	Spells out Patch name using patch and octave shift buttons by scrolling through A-Z, blank space, 0-9, blank space, a-z, blank space, various symbols, blank space and back to A-Z.
S. Copy to Patch	**Copy Patch 00X to XXX**	Copies patch settings to another patch
T. Dynamic Gain	You can vary the sensitivity of the whole keyboard as well as relative to pitch. Range is 0.1-9.9. 1 is normal or a gain of 1. 9.9 is a gain of 9.9.	
A. Toggle ON/OFF	**OFF**	
B. Bottom Key Gain	**0.1 - 9.9**	
C. Top Key Gain	**0.1 - 9.9**	
U. Jacks 1-4 Function	**◄ Expression Pedal 1►**	
A. WMI Dampening	Note length control on the foot (half dampening)	
B. Patch Up	⌂ Allows foot control of patch up.	
C. Patch Down	⌂ Allows foot control of patch down.	
D. WMI Pitch bend	For future use with special Wernick Pedal!	
E. Pitch bend Up	⌂ Movement in the pitch bend pedal sends corresponding pitch bend messages of range 8000-16000.	

F. Pitch Bend Down	△ Movement in the pitch bend pedal sends corresponding pitch bend messages of range 0-8000
G. WMI Modulation	For future use with special Wernick Pedal!
H. Modulation Up	△ Movement in the pedal sends corresponding control change 'Modulation' messages of range 8000-16000.
I. Modulation Down	△ Movement in the pedal sends corresponding control change 'Modulation' messages of range 0-8000.
J. Programme Up	△ Press on pedal increases programme number on sound source by 1 - for use with special software such as FORTE
K. Programme Down	△ Press on pedal decreases programme number on sound source by 1 - for use with special software such as FORTE.
L. CC Message	△ Press on pedal allows control of most control change messages implemented in MIDI
	A. CC Number – choose CC message number using octave shift button.
	B. Data Range - choose data range using octave shift button.
M. Drum Trigger	△ Sets expression input as a drum trigger allowing the drum pad to play notes which differ in settings to the base instrument. **Go to Q. Trigg Settings** to set parameters.
N. Sensitivity	△ Press on pedal allows control of sensitivity knob on a foot pedal.
O. Channel Pressure	△ Midi function known as channel pressure.
P. Key Pressure	△ Midi function known as key pressure.
PRESS 'EXIT' AT ANY TIME TO GET OUT OF A SCREEN (AND AGAIN FOR PERFORMANCE MODE!).	

V. Jacks 5 & 7 Function	◄ Digital Pedal 5 ►	
A. Octave Up	△ Shift keyboard up an octave (12 notes)	
B. Octave Down	△ Shift keyboard down an octave (12 notes)	
C. Programme Up	△ Increases programme number on sound source by 1.	
D. Programme Down	△ Decreases programme number on sound source by 1.	
E. Toggle Overlay	△ Patch with overlay set – turn overlay off/on	
F. Toggle Dampening	△ Patch with dampening level set – turn dampening off/on	
G. Patch Up	△ Allows foot control of patch up.	
H. Patch Down	△ Allows foot control of patch down.	
I. Semitone Shift	△ Will shift keyboard by number of semitones selected. -36 to +36	
W. Advanced Settings	**A. to X.** Not all sound sources will accept all CC messages.	These are presets (MIDI control change CC messages) to set up a sound module when you change patch.
X. Fine Tuning (%)	**+50 - OFF -50**	

9.4 Patch Template

This is a template for copying changes to multiple patches such as transposing all your patches to a different key or setting minimum velocity. It is the same list as the for patch settings. **1.** Select the item in the list you want to change using the up/down patch buttons. **2.** Select your change using the left/right octave shift buttons. **3.** Press SAVE (if you have gone into a second screen such as for jack inputs press exit first to get back to main patch template screen) and follow the instructions – select ALL to change all 200 patches or select SELECTED and choose patches using up/down arrows and left/right arrows △. **4.** Press SAVE and then a fresh template screen will appear. **5.** Make another change or EXIT into Performance Mode.

10.0 The Noise Threshold

This is the threshold at which the instrument will trigger - a sound will be heard or the blue LED will flash. So that even the gentlest strikes produce a sound we have set the noise threshold at 7. You may want this lower for finger playing. Or this may be too sensitive for some players. In electrically 'noisy environments' on stage or when taking sounds from an 'electrically noisy' laptop the instrument may pick up unwanted external influence and the blue LED will flash randomly. Just raise the threshold a notch or two to remedy. You can find this setting in Global Settings E. If you don't like the new setting repeat the process.

11.0 Different Ways of Manipulating Your Sound Volume.

1. Turn the sensitivity knob up to increase volume (affects the instrument Globally) Sensitivity can also be foot pedal controlled, see Patch Settings U. N.sensitivity.
2. You could use an expression pedal – see Patch Settings U. Jack Input settings L.CC message 7 Channel Volume (not for internal sounds). Or use a volume pedal between sound source and amplification.
3. Increase dynamic sensitivity of the keyboard in a particular patch – Patch Settings – T. Dynamic Gain – toggle ON – raise bottom key sensitivity (up to a gain of 9.9) and top key sensitivity to match (up to a gain of 9.9). Or, to mimic a wooden barred instrument such as Xylophone/Marimba you may want to set the top key sensitivity to be less than the bottom key sensitivity.
4. Raise minimum volume in your patch setting – F. Min Velocity - so that your sound makes an entrance even if you have hit too softly (useful in theatre/ensemble work).
5. Lower maximum volume in your patch setting G. Max Velocity - so that your sound won't be too loud even if you have hit too hard (useful in theatre/ensemble work).

12.0 Internal Sounds

You can access the internal sounds either through the headphone socket or through the line out to amplification. There is no direct volume knob. The left hand Jack is designed for headphones and the right hand for line out or to amplification. The headphone output is approximately twice as loud as the line out.

The following sounds are accessed from Midi Program numbers 1-128 (0-127) and Midi Channel Numbers 1-9 and 11-16. Midi Channel 10 is reserved for a set of percussion sounds. The numbers should refer to the numbers on the display. If this is out by one then see **9.1 C.** to change the display numbering.

Piano		
1. Acoustic Grand Piano	5. Electric Piano 1	
2. Bright Acoustic Piano	6. Electric Piano 2	
3. Electric Grand Piano	7. Harpsicord	
4. Honkey-tonk Piano	8. Clavinet	
Chromatic Percussion		
9. Celesta	13. Marimba	
10. Glockenspiel	14. Xylophone	
11. Music Box	15. Tubular Bells	
12. Vibraphone	16. Dulcimer	
Organ		
17. Drawbar Organ	21. Reed Organ	
18. Percussive Organ	22. Accordion	
19. Rock Organ	23. Harmonica	
20. Church Organ	24. Tango Accordion	

Guitar	
25. Acoustic Guitar (Nylon)	29. Electric Guitar (Muted)
26. Acoustic Guitar (Steel)	30. Overdrive Guitar
27. Electric Guitar (Jazz)	31. Distortion Guitar
28. Electric Guitar (Clean)	32. Guitar Harmonics

Bass	
33. Acoustic Bass	37. Slap Bass 1
34. Electric Bass (Finger)	38. Slap Bass 2
35. Electric Bass (Pick)	39. Synth Bass 1
36. Fretless Bass	40. Synth Bass 2

Strings	
41. Violin	45. Tremolo (Strings)
42. Viola	46. Pizzicato (Strings)
43. Cello	47. Orchestral Harp
44. Contrabass	48. Timpani

Ensemble	
49. String Ensemble 1	53. Choir Aahs
50. String Ensemble 2	54. Voice Oohs
51. Synth Strings 1	55. Synth Choir
52. Synth Strings 2	56. Orchestra Hit

Brass	
57. Trumpet	61. French Horn
58. Trombone	62. Brass Section
59. Tuba	63. Synth Brass 1
60. Muted Trumpet	64. Synth Brass 2

Reed	
65. Soprano Sax	69. Oboe
66. Alto Sax	70. English Horn
67. Tenor Sax	71. Bassoon
68. Baritone Sax	72. Clarinet

Pipe	
73. Piccolo	77. Blown Bottle
74. Flute	78. Shakuhachi
75. Recorder	79. Whistle
76. Pan Flute	80. Ocarina

Synth Lead	
81. Lead 1 (Square)	85. Lead 5 (Charang)
82. Lead 2 (Sawtooth)	86. Lead 6 (Voice)
83. Lead 3 (Calliope)	87. Lead 7 (Fifths)
84. Lead 4 (Chiff	88. Lead 8 (Bass + Lead)

Synth Pad	
89. Pad 1 (New age)	93. Pad 5 (Bowed)
90. Pad 2 (Warm)	94. Pad 6 (Metallic)
91. Pad 3 (Polysynth)	95. Pad 7 (Halo)
92. Pad 4 (Choir)	96. Pad 8 (Sweep)

Synth Effects	
97. FX 1 (Rain)	101. FX 5 (Brightness)
98. FX 2 (Soundtrack)	102. FX 6 (Goblins)
99. FX 1 (Crystal)	103. FX 1 (Echoes)
100. FX 1 (Atmosphere)	104. FX 1 (Sci-Fi)

Ethnic	
105. Sitar	109. Kalimba
106. Banjo	110. Bag pipe
107. Shamisen	111. Fiddle
108. Koto	112. Shanai
Percussive	
113. Tinkle Bell	117. Taiko Drum
114. Agogo	118. Melodic Tom
115. Steel Drums	119. Synth Drum
116. Woodblock	120. Reverse Cymbal
Sound Effects	
121. Guitar Fret Noise	125. Telephone Ring
122. Breath Noise	126. Helicopter
123. Seashore	127. Applause
124. Bird Tweet	128. Gunshot

For **Channel 10** and any program number the following sounds are played when striking different keys. The numbers here refer to the note numbers where 60 is middle C.

35 Bass Drum	36 Bass Drum 1	37 Side Stick
38 Snare Drum 1	39 Hand Clap	40 Snare Drum 2
41 Low Floor Tom	42 Closed Hi Hat	43 High Floor Tom
44 Pedal Hi-Hat	45 Low Tom	46 Open Hi-Hat
47 Low/Mid Tom	48 Hi/Mid Tom	49 Crash Cymbal 1
50 High Tom	51 Ride Cymbal 1	52 Chinese Cymbal
53 Ride Bell	54 Tambourine	55 Splash Cymbal
56 Cowbell	57 Crash Cymbal 2	58 Vibraslap
59 Ride Cymbal 2	60 Hi Bongo	61 Low Bongo
62 Mute Hi Conga	63 Open Hi Conga	64 Low Conga
65 High Timbale	66 Low Timbale	67 High Agogo
68 Low Agogo	69 Cabasa	70 Maracas
71 Short Whistle	72 Long Whistle	73 Short Guiro
74 Long Guiro	75 Claves Claves	76 Hi Wood Block
77 Low Wood Block	78 Mute Cuica	79 Open Cuica
80 Mute Triangle	81 Open Triangle	

13.0 How to Replace a Key

Tools Required

'Pozi Drive' Screwdriver. Bit size PZ1 & referred to as cross head and a 7mm socket or spanner for M4 nuts.

General Notes

 Replacing a Key should take less than 20 minutes if you have carried out this operation before. This time can be reduced if you use a Pozi (PZ1) bit with a battery operated drill to remove & fix screws that hold the Bottom Panels. But only use a battery operated drill if you are proficient with using one. If using a battery powered drill take special care by engaging the bit properly & starting slowly with some end pressure to stop the bit slipping but also not too hard to damage the threads. Make sure not to over tighten the screws that hold the bottom cover and this means carrying out the final tightening of the screws by

hand if necessary. If using a battery powered drill you will have to stop before the screws 'bottom out' i.e. slowing down well before then. You cannot rely on any torque limiter that comes with the drill. Hand tightening means just 'nipping up' the screws.

Description

1/ Find a suitable area to carry out the task. You can set up on a fine carpet if the carpet is clean (so as not to scratch the wooden bars when resting on the carpet). If the floor does not have a suitable carpet then use cloth 120cm x 30cm (48" x 12") minimum. Or you can work on a table top with a table cloth.

2/ Now place the Xylosynth upside down onto the work area.

3/ Undo & remove, with the battery powered drill if you if you are able to, all cross head screws securing the bottom panel. Make a note of the two (or 3 on a 4/5 octave) types of screw so you can replace them correctly.

4/ Lift off bottom panel.

5/ Locate the key to be replaced. Gently pull off the white plastic housing after releasing the springy plastic clip holding it in place. Now undo & remove the two nuts and crinkle washers.

6/ To remove the Key you will need to do two operations at once. Get your hand under the Key to be removed & work the Key out with your other hand. You may find this operation easier if you are able to raise the instrument onto its front or back edge. You may need to coax the connector housing through the hole. Take care not to pull the wires unduly.

7/ Re assembly is the opposite process but concern yourself with the points below as well as the general notes at the top. When putting the new Key in be careful not to trap any wires coming from the Key. Compare the wire loop with keys nearby as they should all be the same. Also you can test this before putting the crinkle washers & nuts by moving the wires into & out of the hole noticing that they are free to move. If not tease the wires so that they become free. Now place and tighten up the nuts so the crinkle washers grip into the circuit board and Aluminium but do not over tighten to completely flatten the crinkle washers. Clean with tissue or cloth the two gold plated pins of the connector block to remove any grease/oil that may have come from your fingers prior to pushing the the key connector housing back onto the block. The housing only fits on one way. Place the bottom cover back on and place and tighten a couple of screws in the Holes. Carefully tighten the screws. Then turn the Xylosynth the correct way up and test the key to see if it working properly. You can just look at the Blue LED and tap the key when the power lead is plugged in. If OK then put the remaining screws into the bottom cover.

14.0 General Care

Make sure that the mallets you use are clean with no grit as this will scratch the surfaces. The Birch surfaces are coated with a hard polyurethane varnish that should last for years. The Bubinga keys can be re-varnished using **Rustins Danish Oil** if necessary. It is strongly advisable not to subject the Bubinga keys to sudden changes in temperature. If you have to leave your instrument in a large auditorium over night we strongly advise you insulate the keys by placing a thick padded cover over them (maybe a soft bag you have for the instrument) or putting the whole instrument into a flight case. Never leave next to a radiator. Do not store vertically for long periods unless in a flightcase. Preferably store flat to avoid key disturbance.

15.0 Physical Specifications

	3 Octave
Overall Length:	1228mm (48½")
Height:	82mm (3¼")
Depth:	360mm (14⅛")
Weight:	10Kg (22lb)
Keys:	37

16.0 How to Contact Us

We are a small and friendly electronic percussion company and we will help in any way we can with any queries. You are never more than a phone call or e-mail away from expert advice and in our experience 99% of problems can be solved this way. If something more urgent happens we can help you assess the problem and find the best way forward as quickly as possible.

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MIDI Implementation Chart

Function		Transmitted		Remarks
Basic Channel		1-16 0-15		Set within each Patch
	Default	1 0		
Mode	Default	Incremental Patch 1-200 0-199		Toggled with Song List/Song Link
	Altered	Song List 1-25		
		Song link 1-25		Links Song Lists
Note Number	Default	0-127		Key range, C-1 to C9 C0 to C10
				Set Chromatically set within each Patch
Velocity	Note ON	1-127		Various means to change Individual Key Gain Globally and Velocity Curve and Gain within each Patch.
	Note OFF	0		Sent as Note ON, Note Velocity 0
Bank	Default	1-16		Within each Patch
		0-15		
Pitch Bender		O	8192 ~ 15000	Pitch Bend Up, Expression Pedal
		O	0 ~ 8192	Pitch Bend Down, Expression Pedal
Modulation		O	CC1 0-127	Expression Pedal
Channel Pressure		O	0-127	Expression Pedal
Key Pressure		O	0-127	Expression Pedal
Incremental/Decremental Program Change		O	CC101, CC100, CC96 or CC97	Expression Pedal or Digital Pedal
Control Change (CC)	2	O		Breath Controller, Pedal Control
	4	O		Pedal Control
	5	O		Portamento, Pedal & set within Patch
	7	O		Channel Volume, Pedal & set within Patch
	8	O		Stereo Balance, set within Patch
	10	O		Pan, Pedal & set within Patch
	11	O		Expression, Pedal
	12	O		Effect control 1, Pedal & set within Patch
	13	O		Effect Control 2, Pedal & set within Patch
	16	O		General Purpose Controller 1, Pedal
	17	O		General Purpose Controller 2 Pedal
	64	O		Sustain, Pedal
	65	O		Portamento on/off, Pedal & set within Patch
	66	O		Sostenuto, set within Patch
	67	O		Soft Pedal, Pedal
	68	O		Legato, Pedal & set within Patch
	69	O		Sustain Pedal 2, Pedal
	70	O		Sound Controller 1, set within Patch
	71	O		Sound Controller 2, set within Patch
	72	O		Sound Controller 3, set within Patch
	73	O		Sound Controller 4, set within Patch
	74	O		Sound Controller 5, set within Patch
	75	O		Sound Controller 6, set within Patch
	76	O		Sound Controller 7, set within Patch
	77	O		Sound Controller 8, set within Patch
	78	O		Sound Controller 9, set within Patch
	80	O		General Purpose Controller 1, Pedal
	81	O		General Purpose Controller 2, Pedal
	84	O		Portamento Control,Pedal & set within Patch
	91	O		Effects: Reverb, set within Patch
	92	O		Effects: Tremelo, set within Patch
	93	O		Effects: Chorus, set within Patch
	94	O		Effects: Celeste, set within Patch
	95	O		Effects: Phaser, set within Patch
	126	O		Mono Mode, Pedal