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50-60 Hz 60 WATTS MAX

No. 905115-XP
6 Voice

Owner's Manual

115

OBSX

Polyphonic Synthesizer

John

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453 6586
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CONGRATULATIONS!

- on the purchase of a new Oberheim OB-SX Polyphonic Synthesizer. We believe that you will find this instrument to be an outstanding combination of value, versatility and reliability.

The OB-SX is a versatile performance oriented Polyphonic Synthesizer with 56 different pre-programmed patches, any of which can be recalled at the touch of a button. The OB-SX has been developed using much of the same circuitry as the Oberheim OB-Xa in order to get true polyphonic synthesizer sounds. This gives you the sound of an OB-Xa along with the ease of operation of a pre-set synthesizer.

FEATURES INCLUDE:

- * Storage for 56 Programs
- * Automatic Tuning of All Voices
- * A-440 Pitch Reference
- * Two Oscillators per Voice
- * Two Full ADSR Envelope Generators per Voice
- * Edit Mode Control Panel
- * Pitch and Modulation Levers
- * Voice Hold
- * Unique Transposable "Unison Chord" Feature
- * Polyphonic Portamento
- * Three Foot Control Inputs: Filter, Modulation, and Sustain
- * 115/230 Volt Power Switch

To get started with your OB-SX, do the following:

- 1) First, make sure the 115/230 switch on the rear panel is set for the local AC power;
- 2) Apply power and plug into your sound system;
- 3) Press "AUTO" to tune all the oscillators;
- 4) Select a programmed sound by pressing a GROUP (A thru C or any combination) and a PROGRAM (1 thru 8);
- 5) Play!

The OB-SX comes from the factory pre-programmed with 56 patches. These include a great variety of sounds which can be modified with the front panel controls to further increase the capabilities of your instrument.

You can adjust the output volume of the OB-SX with the VOLUME control on the left hand side of the control panel. This controls the master volume of all the synthesizer voices. The instrument can also be fine-tuned to other instruments by using the MASTER TUNE knob on the back panel of the unit. When this control is within the "dead-zone" near the top center, the instrument is tuned to standard A-440 pitch.

SELECTING A PROGRAM

The programs on the OB-SX are divided into 7 GROUPS of 8 PROGRAMS each. The 7 GROUPS are selected by pressing the three GROUP buttons ("A", "B", & "C") individually OR in any combination ("AB", "AC", "BC", "ABC"). The PROGRAM within the selected GROUP is then selected by pressing one of the eight PROGRAM buttons. The PROGRAM button may be pressed at any time--before, after, or at the same time as the GROUP button--but the GROUP button or buttons must all be held down AT THE SAME TIME, like playing a chord.

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THE OB-SX PATCH DIRECTORY

No Motro

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Cherry-O

The OB-SX comes from the factory programmed with 56 programs, arranged in 7 groups of 8 programs each. The names of these programs have been chosen to categorize the type of sound each program has.

GROUP	PROGRAM							
	1	2	3	4	5	6	7	8
A	Brass Ensemble	: Clav	: Low	: Electric	: Percussive	Flutes	: Harpsi-	: Lead
			: Strings	: Piano	: Organ		: chord	: Sync
B	Classic Horns	: Celeste	: High	: Brass in	: Pipe	: OB-SX	: Harp	: Calli-
			: Strings	: Fifths	: Organ	: Choir		: ope
AB	Calcu- lator	: Mellow Wow	: Fiddle	: Reed Piano	: Double Reed	: Sax	: Marimba	: PW Rezz
C	Trumpets	: Pop	: Slow	: Rezz	: Combo	: SX-6	: SX-7	: SX-8
		: Organ	: Strings	: Sweep	: Organ			
AC	Ensemble Trumpets	: Poly Port	: Strings	: Accordion	: Filter Drone	: Pulse Comp	: Steel Drums	: Water Wiggle
BC	Square Wave Mod	: Bells	: Strings II	: Sitar	: Unison Port	: X-Mod Delay	: Kalimba	: Solo Unison
ABC	Bass	: X-Mod	: Solo	: Harmonica	: Rotary	: Clarinet	: Conga	: Rush
		: Bells	: Strings		: Organ			: Rezz

The patches on the OB-SX were programmed by Todd McKinney, with additional programming by Mike Christopher, Geoff Farr, Marcus Ryle, and Daniel Sofer.

Here are some suggestions on the use of some of the patches.

A1 B1 B4 C1 BRASS: These are five different kinds of brass programs.
AC1 The brightness can be changed with the FILT FREQ control. OSC 2 DETUNE will change the "ensemble" effect on A1 and AC1.

A3 B3 AB3 STRINGS: These are seven different string programs. A3
C3 AC3 BC3 and C3 are an octave lower and deeper sounding
ABC3 than the others. C3 has a slow attack, while
 AC3 and BC3 have more vibrato. ABC3 has more
 of a "solo" sound created by decreasing the
 amount of vibrato and detune. AB3 has a fast
 attack and decay.

Changing the LFO RATE and the OSC 2 DETUNE controls will change the vibrato and the "depth" of the sound. The Modulation Pedal can be used to bring the Vibrato in and out.

A4 ELECTRIC PIANO: This program works best with the Keyboard Transpose switch in the middle position and without a Filter pedal. To simulate this sound, Oscillator 2 of each voice is set rather high above Oscillator 1 and becomes too noticeable if played in the lower range or with the Filter open.

A5 B5 C2 C5 ORGAN: These five organ programs have distinctly different sounds. The speed of the "leslie" effect in all but B5 can be changed using the LFO RATE control.

A6 AB5 AB6 WINDS: These are four different wind style programs.
ABC6 A6 is a flat sound, ABC6 has more bite, while AB5 is more nasal, and AB6 is in unison. ABC6 in particular can be modified substantially with the ATTACK control, and all of the programs should be played with generous use of the Vibrato and Bend levers.

A8 LEAD SYNC: This is a UNISON program which has OSC 2 in Sync with OSC 1. The LFO RATE will control the sweep of OSC 2.

The following is a list and description of the non-programmable functions on the front panel. "Non-Programmable" means the preset sounds do not have control over the following parameters.

VOLUME This control adjusts the overall volume of the synthesizer.

AUTO When this button is pressed, the microprocessor inside the synthesizer automatically tunes all of the OB-SX Oscillators. While this process is occurring, the Output Amplifier is shut off. The AUTO TUNE procedure takes about two seconds. As the Oscillators on each voice are tuned, the PROGRAM lights advance. If a voice is unable to be tuned, the PROGRAM light corresponding to that voice will flash for two seconds, and then that voice will be skipped by the keyboard, assuring good tuning at all times.

All of the controls are disabled during AUTO TUNE except the PITCH BEND lever. Therefore, if this lever is moved while the tuning process is taking place, the oscillators will be unable to be tuned.

If a particular voice is unable to be tuned after repeated attempts, a problem exists and the unit should be turned over to an Authorized Service Center for servicing.

HOLD This button is used to produce a sustained note or chord. To use, press the HOLD button and simultaneously press one or more notes, and then release the HOLD button. The note or notes played will now be sustained indefinitely. If it is desired to hold several notes, they may be played either one at a time or simultaneously, while holding down the HOLD button. To cancel the hold function, press HOLD a second time, but be sure not to hold down any keys.

CHORD

The HOLD and CHORD switches can be used together to play chords with one key. First, select the desired notes by using the HOLD function as described above. Then, press the CHORD switch. The held chord will cease sounding. By playing low C (C0) on the keyboard, the held chord will be reproduced as previously played. Playing notes above C0 will transpose the chord up by a corresponding interval. If the G above lowest C (G0) is played, the chord will sound transposed up a fifth; if the C two octaves above the lowest C (C2) is played, the chord will sound transposed up by two octaves. If there are enough voices, the actual note being played will sound as well. To exit the CHORD mode, simply press the HOLD switch.

The OB-SX cannot play notes higher than the top note on the keyboard (C4). If a note is transposed by the CHORD mode higher than C4, the OB-SX will transpose it down by octaves until it is in range. This accounts for the "cluster" effect that results when transposing chords by large intervals. The Transpose switch on the Modulation Panel may be used to achieve a higher range.

EDIT MODE CONTROL PANEL FUNCTIONS

The following parameters are always in the "Edit Mode". They are used to change the sound of a program. When you choose a preset, these controls will have no effect on the sound until they are changed. This way, the programs will always sound the same, regardless of the position of the controls. When you move a control, it will affect the sound by how much you move it, and not by its position. For instance, you could choose program A1 with the FILTER FREQ control half way up and turn it up a quarter of the way more, and it would have the same effect as choosing A1 with the FILTER FREQ all the way down and turning it a quarter of the way up. If it is desired to further increase or decrease a control setting, and that control is already at its minimum or maximum position, simply rotate the control all the way in the opposite direction and then make your desired setting. To return to the preset sound, simply re-select the program.

- UNISON** When switched on, this causes all voices to be sounded by one key depression. In the UNISON mode, the OB-SX keyboard operates with low note priority, which means that the lowest note played on the keyboard will determine the pitch of all the voices. Pushing the button again will cause the synthesizer to return to its Polyphonic mode.
- PORTAMENTO** This control determines the amount of Portamento or "glide" between notes played on the keyboard.
- LFO RATE** This control determines how fast the LOW FREQUENCY OSCILLATOR (LFO) oscillates. Its range is from approximately 1/10 oscillation per second to 20 oscillations per second. This will determine the speed of Vibrato or Pulse Width Modulation on the instrument.
- OSC 2 DETUNE** This control allows Oscillator 2 to be tuned either flat or sharp with respect to Oscillator 1. Turning the control to the left makes Oscillator 2 go flat and to the right makes it go sharp. The associated LED turns on whenever the second Oscillator is being detuned.
- FILTER FREQ** This control determines the initial cut-off frequency of the Filter on each voice. The Filter is a two-pole, low-pass type.

---ENVELOPES---

Each voice of the OB-SX contains two Envelope Generators. One controls the Filter and one the Amplifier. Each Envelope Generator has four parameters: Attack, Decay, Sustain, and Release. These parameters are pre-programmed into each patch. The controls in the ENVELOPES section of the control panel allow you to alter these parameters.

AMP'L & FILTER ATTACK This controls the Attack time of both the Filter Envelope and the Amplifier Envelope. The shortest time is selected by setting it fully counter-clockwise (after first setting it fully clockwise).

FILTER DECAY This control determines the fall time of the Filter Envelope down to the level set by the Sustain control of a program, while a key on the keyboard is being held down. If the Sustain is programmed at its maximum position this control has no effect on the sound.

AMPLIFIER RELEASE This control determines the Release time of the Amplifier Envelope after a key has been released. At its maximum position, the Release time is about 20 seconds (after first being set fully counter-clockwise).

The Modulation Panel is located just to the left of the keyboard.

- MODULATION LEVER** This controls the amount of vibrato to be added to both Oscillators. If a patch already contains vibrato, this control will add more as it is moved towards the front. It has no effect when moved in the other direction.
- PITCH BEND LEVER** This control is used to bend the pitches of the notes being played. Moving it towards the front causes the pitch to go up, and moving it towards the rear causes the pitch to go down. Its range is determined by the NARROW/BROAD switch.
- OSC 2 ONLY** When this switch is on, the PITCH BEND lever bends only Oscillator 2 of each voice. This has an interesting affect on programs in which Oscillator 2 is in "sync". When the switch is OFF, the PITCH BEND lever controls both Oscillators of each voice.
- NARROW/BROAD SWITCH** This switch controls the range of the PITCH BEND lever. In the NARROW position, the PITCH BEND lever has a range of up or down one whole-step (e.g. "C" could move up to "D" or down to "Bb"). In the BROAD position, the PITCH BEND Lever can move the pitch up or down one octave.
- TRANSCOPE** This switch has three positions, UP OCTAVE, normal, and DOWN OCTAVE. This transposes the entire keyboard up or down one octave from its normal range, expanding the keyboard's range to six octaves.

REAR PANEL INPUT/OUTPUTS

In addition to the AUDIO OUTPUT and the MASTER TUNE control, the inputs and outputs described below exist on the rear panel of the OB-SX. These consist of three types. There is one input for a foot switch, two inputs for foot pedals, and four input/outputs which interface the Control Voltage and Gate of Voice 1 with the outside world:

- JS*
FOOT SWITCH CIRCUITRY The foot switch input is configured for a foot switch assembly which causes an electrical connection to occur between the signal lead and the ground lead of the jack when the footswitch is pressed.
- FOOT PEDAL CIRCUITRY Both foot pedal inputs are configured for a foot pedal assembly which contains a 50 K Ohm linear potentiometer with its wiper connected to the signal lead of the jack and the "off" or most counter-clockwise connection connected to the ground lead of the jack. In both cases the wiper must make contact with the ground terminal when the foot pedal is in the completely "off" position. The third potentiometer connection is not used.
- 2/1/42*
SUSTAIN SWITCH This is an input for a Sustain foot switch. When activated, it causes the both Envelope Generators to maintain their current level.
- LF*
MOD PEDAL This is an input for a Modulation foot pedal. It controls the amount of Frequency Modulation from completely off to the maximum of a particular program. If a program doesn't have any Modulation to start with, the pedal will have no effect.
NOTE: A foot switch may be used in place of the pedal to allow either no vibrato when the switch is depressed, or the maximum amount when not depressed.
- FILTER PEDAL This input is for a master Filter Pedal. It allows the cutoff frequency of all Filters to be controlled from a slightly lower frequency than that which exists when the pedal is not attached, to a frequency significantly higher.

CV-IN

This jack allows an external 1 Volt per Octave control voltage to control the Frequency parameters on Voice 1. When a plug is inserted into this jack, the Keyboard Control Voltage to Voice 1 is disconnected.

CV-OUT

*10V 500K
to the
modulator*

This jack provides a 1 Volt per Octave control voltage from the Voice 1 section of the Keyboard circuitry to the outside world in order to control other synthesizers, sequencers, etc.

GATE-IN

This jack allows a 0 to +5 volts or more Gate signal from external equipment to gate Voice 1. When a plug is inserted into this jack, the internal Gate signal to Voice 1 is disconnected. If this plug is a standard mono type plug, the Keyboard circuitry automatically skips Voice 1. If this plug is a stereo type, and the "ring" connection is not connected, then Voice 1 will not be skipped.

GATE-OUT

This jack provides a 0 to +10 Volt Gate signal from the Voice 1 section of the Keyboard circuitry to the outside world.

COMPUTER INTERFACE

This connector is used to connect the OB-SX to the DSX Polyphonic Digital Sequencer.

*6 pins
11-16*

*37 pin
connection*