

Behringer 0718-ABY86-US1

Behringer Kobol Expander Semi-modular Analog Synthesizer User Manual

Model: 0718-ABY86-US1

1. INTRODUCTION

The Behringer Kobol Expander is a duophonic semi-modular analog synthesizer designed to provide a wide range of sound-shaping possibilities. This manual provides essential information for setting up, operating, and maintaining your synthesizer, ensuring optimal performance and longevity.

2. IMPORTANT SAFETY INSTRUCTIONS

- Read these instructions.
- Keep these instructions.
- Heed all warnings.
- Follow all instructions.
- Do not use this apparatus near water.
- Clean only with a dry cloth.
- Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- Only use attachments/accessories specified by the manufacturer.
- Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

3. PACKAGE CONTENTS

Verify that all components are present upon unpacking:

- Behringer Kobol Expander Synthesizer
- Power supply
- Patch cables
- User manual (this document)
- Warranty information
- Software download codes

4. PRODUCT OVERVIEW

The Behringer Kobol Expander features a comprehensive front panel with various controls and patch points for extensive sound design. Familiarize yourself with the layout below.

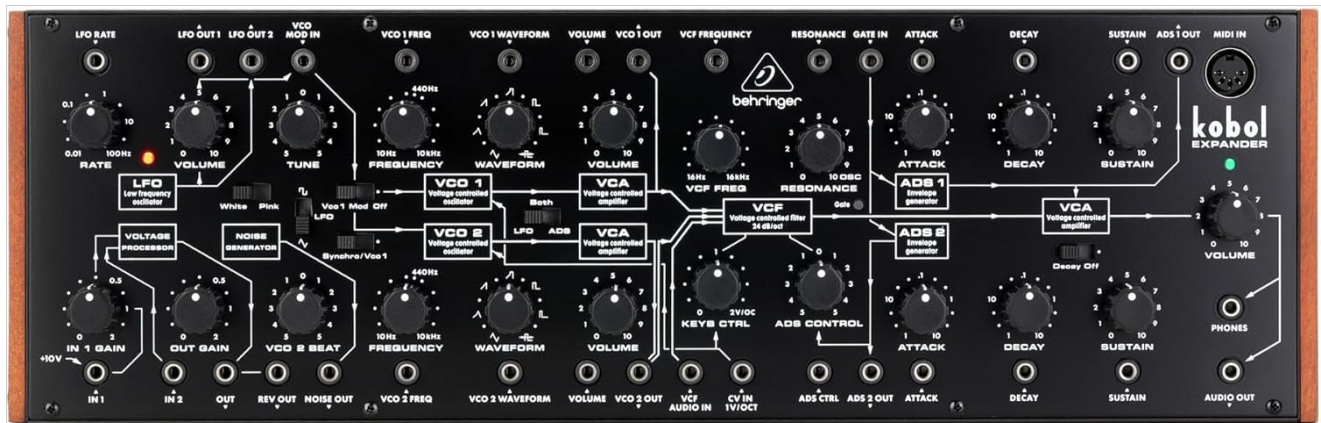


Figure 1: Front panel layout of the Behringer Kobol Expander. This image displays the entire control surface, including oscillators, filters, envelopes, LFO, and various input/output patch points.

4.1. Control Sections

- **LFO (Low Frequency Oscillator) Section:** Controls for LFO Rate, LFO Out 1, LFO Out 2, and LFO Volume. Includes White and Pink Noise sources and a Voltage Processor.
- **VCO 1 (Voltage Controlled Oscillator 1) Section:** Controls for VCO 1 Frequency, Waveform selection, Volume, and VCO 1 Out. Features Tune control and modulation options.
- **VCO 2 (Voltage Controlled Oscillator 2) Section:** Controls for VCO 2 Beat, Frequency, Waveform selection, Volume, and VCO 2 Out. Includes LFO and ADS modulation inputs and a Synchro/VCO 1 switch.
- **VCF (Voltage Controlled Filter) Section:** Controls for VCF Frequency and Resonance. Features a 24 dB/oct filter, Keys Ctrl input, CV In 1V/Oct, and VCF Audio In.
- **VCA (Voltage Controlled Amplifier) Sections:** Dedicated VCAs for VCO 1, VCO 2, and a master VCA for overall output volume.
- **ADS (Attack, Decay, Sustain) Envelope Generators:** Two independent envelope generators (ADS 1 and ADS 2) with controls for Attack, Decay, and Sustain. ADS 1 includes a Gate In, while ADS 2 features an ADS Control input and Decay Off switch.
- **Input/Output Connections:** Various patch points including Mod In, Gate In, MIDI In, In 1 Gain, Out Gain, In 1, In 2, Out, Rev Out, Noise Out, Phones, and Audio Out.

5. SETUP

Follow these steps to set up your Behringer Kobol Expander:

1. **Power Connection:** Connect the included power supply to the DC input on the rear panel of the Kobol Expander and then to a suitable power outlet.
2. **Audio Output:** Connect the AUDIO OUT jack to your mixer, audio interface, or amplifier using a standard 1/4-inch TS cable. For monitoring with headphones, connect to the PHONES jack.
3. **MIDI Connection:** For MIDI control, connect a MIDI cable from your MIDI controller or interface to the MIDI IN port on the Kobol Expander. The MIDI THRU port can be used to daisy-chain other MIDI devices.
4. **Patching:** Use the included patch cables to explore the semi-modular capabilities. Start with simple patches to understand signal flow.
5. **Power On:** Once all connections are secure, power on the unit. The power indicator LED will illuminate.

6. OPERATING INSTRUCTIONS

This section details the function of each control and patch point on the Kobol Expander.

6.1. LFO (Low Frequency Oscillator)

- **RATE:** Adjusts the speed of the LFO from 0.01 Hz to 100 Hz.
- **LFO OUT 1 / LFO OUT 2:** Outputs for the LFO signal.
- **VOLUME:** Controls the output level of the LFO.
- **White / Pink:** Selects between white noise and pink noise from the Noise Generator.
- **VOLTAGE PROCESSOR:** Processes incoming voltage signals.
- **NOISE GENERATOR:** Provides noise signals for sound design.

6.2. VCO 1 (Voltage Controlled Oscillator 1)

- **VCO 1 FREQ:** Fine-tunes the frequency of VCO 1.
- **WAVEFORM:** Continuously morphs between various waveforms (e.g., sawtooth, pulse, triangle).
- **VOLUME:** Controls the output level of VCO 1.
- **VCO 1 OUT:** Output for the VCO 1 signal.
- **TUNE:** Adjusts the coarse tuning of VCO 1.
- **VCO 1 MOD OFF / LFO / Both:** Selects modulation source for VCO 1.

6.3. VCO 2 (Voltage Controlled Oscillator 2)

- **VCO 2 BEAT:** Adjusts the beat frequency between VCO 1 and VCO 2.
- **VCO 2 FREQ:** Fine-tunes the frequency of VCO 2.
- **WAVEFORM:** Continuously morphs between various waveforms for VCO 2.
- **VOLUME:** Controls the output level of VCO 2.
- **VCO 2 OUT:** Output for the VCO 2 signal.
- **LFO / ADS:** Selects modulation source for VCO 2.
- **Synchro/VCO 1:** Synchronizes VCO 2 to VCO 1.

6.4. VCF (Voltage Controlled Filter)

- **VCF FREQUENCY:** Sets the cutoff frequency of the filter.
- **RESONANCE:** Controls the filter's resonance (Q).
- **VCF (Voltage Controlled Filter 24 dB/oct):** The main filter section.

- **KEYS CTRL:** Input for keyboard control voltage to the filter.
- **CV IN 1V/OCT:** Control voltage input for 1 Volt per Octave tracking.
- **VCF AUDIO IN:** Audio input for external signals to be processed by the filter.

6.5. VCA (Voltage Controlled Amplifier)

- **VCA (for VCO 1/VCO 2):** Amplifies the respective oscillator signals.
- **VCA (Master):** Controls the overall output volume of the synthesizer.

6.6. ADS Envelope Generators

- **ADS 1 / ADS 2:** Two independent Attack, Decay, Sustain envelope generators.
- **ATTACK:** Controls the time it takes for the envelope to reach its peak level.
- **DECAY:** Controls the time it takes for the envelope to fall from its peak to the sustain level.
- **SUSTAIN:** Sets the level at which the envelope holds as long as a key is pressed.
- **ADS 1 OUT:** Output for the ADS 1 envelope signal.
- **GATE IN:** Input for a gate signal to trigger ADS 1.
- **ADS 2 OUT:** Output for the ADS 2 envelope signal.
- **ADS CONTROL:** Input for controlling ADS 2.
- **DECAY OFF:** Disables the decay phase for ADS 2.

6.7. Inputs and Outputs

- **MOD IN:** Modulation input.
- **GATE IN:** Gate input for triggering envelopes.
- **MIDI IN:** 5-pin DIN MIDI input for receiving MIDI data.
- **IN 1 GAIN / OUT GAIN:** Gain controls for input 1 and the main output.
- **IN 1 / IN 2:** Audio inputs.
- **OUT:** Main audio output.
- **REV OUT:** Reverse output.
- **NOISE OUT:** Output for the noise generator.
- **PHONES:** Headphone output.
- **AUDIO OUT:** Main audio output.

7. MAINTENANCE

Proper maintenance ensures the longevity and optimal performance of your Kobol Expander.

- **Cleaning:** Use a soft, dry cloth to clean the exterior of the unit. Do not use abrasive cleaners or solvents.
- **Storage:** Store the synthesizer in a cool, dry place away from direct sunlight and extreme temperatures.
- **Handling:** Avoid dropping or subjecting the unit to strong impacts.
- **Ventilation:** Ensure proper ventilation around the unit to prevent overheating.

8. TROUBLESHOOTING

If you encounter issues, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
No sound output	Incorrect audio connections, low volume settings, no active patch.	Check audio cables, ensure master VCA volume is up, verify patch cables are correctly routed.
MIDI not responding	Incorrect MIDI cable connection, wrong MIDI channel, MIDI controller issue.	Ensure MIDI cable is connected to MIDI IN, check MIDI channel settings on your controller.
Unexpected sound behavior	Complex or incorrect patching, control settings.	Simplify your patch, reset controls to default positions, consult the operating instructions.
Unit does not power on	Power supply not connected, faulty power outlet.	Check power supply connection, try a different power outlet.

9. SPECIFICATIONS

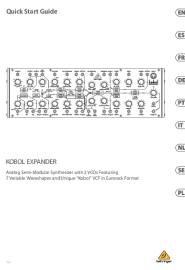
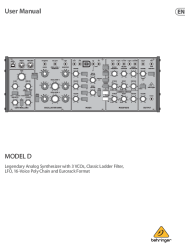
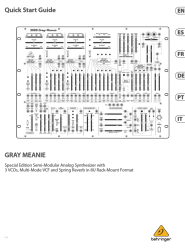
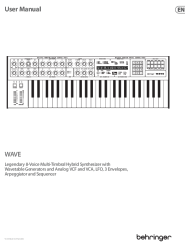
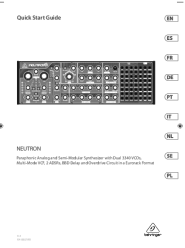
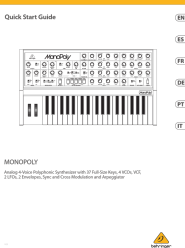
Feature	Specification
Manufacturer	Behringer
Model Name	Behringer Kobol Expander
Item Model Number	0718-ABY86-US1
UPC	644216653805
Product Dimensions (L x W x H)	21.9 x 7.7 x 5.3 inches
Item Weight	5.92 pounds
Connector Type	USB Type B (for potential future use/firmware)
Finish Type	Matte or Textured

10. WARRANTY AND SUPPORT

The Behringer Kobol Expander comes with a limited warranty. Please refer to the separate warranty information document included in your package for details regarding coverage, terms, and conditions.

For technical support, service, or further inquiries, please visit the official Behringer website or contact their customer support directly. Keep your purchase receipt for warranty claims.

Online Resources: www.behringer.com

 <p>Quick Start Guide</p> <p>KOBOL EXPANDER</p> <p>Analog Semi-Modular Synthesizer with 2 VCOs, Featuring 7 Variable Waveforms and Behringer's "Kobol" VCF in Eurorack Format</p>	<p>Behringer Kobol Expander Quick Start Guide</p> <p>Get started with the Behringer Kobol Expander, an analog semi-modular synthesizer featuring 2 VCOs, 7 variable waveshapes, and a unique "Kobol" VCF in Eurorack format. This guide covers essential safety instructions, hook-up procedures, getting started steps, detailed control descriptions, and Eurorack installation.</p>
 <p>User Manual</p> <p>MODEL D</p> <p>Analog Semi-Modular Synthesizer with 2 VCOs, Classic Ladder Filter, 100% Pure Analog VCF and Eurorack Format</p>	<p>Behringer MODEL D User Manual: Legendary Analog Synthesizer Guide</p> <p>Explore the features, controls, and specifications of the Behringer MODEL D analog synthesizer. This user manual provides detailed guidance on setup, operation, calibration, and Eurorack integration for this iconic instrument.</p>
 <p>Quick Start Guide</p> <p>GRAY MEANIE</p> <p>Analog Semi-Modular Synthesizer with 2 VCOs, Multi-Mode VCF and Spring Reverb in 1U Eurorack Format</p>	<p>Behringer GRAY MEANIE Quick Start Guide</p> <p>Quick start guide and control overview for the Behringer GRAY MEANIE semi-modular analog synthesizer, detailing its features, connections, and specifications.</p>
 <p>User Manual</p> <p>WAVE</p> <p>Analog 8-Voice Multi-Timbral Hybrid Synthesizer with Wavetable Generators, Analog VCF and VCA, LFO, 3 Envelopes, Arpeggiator, and Sequencer</p>	<p>Behringer WAVE User Manual: Legendary 8-Voice Multi-Timbral Hybrid Synthesizer</p> <p>Comprehensive user manual for the Behringer WAVE, detailing its features as a legendary 8-voice multi-timbral hybrid synthesizer with wavetable generators, analog VCF and VCA, LFO, 3 envelopes, arpeggiator, and sequencer. Includes safety instructions, operational guidance, and warranty information.</p>
 <p>Quick Start Guide</p> <p>NEUTRON</p> <p>Analog Paraphonic and Semi-Modular Synthesizer with Dual VCOs, Multi-Mode VCF, LFO, 3 Envelopes and Behringer's "Neutron" VCF in Eurorack Format</p>	<p>Behringer NEUTRON Quick Start Guide</p> <p>Get started quickly with the Behringer NEUTRON Paraphonic Analog and Semi-Modular Synthesizer. This guide provides essential setup and safety information.</p>
 <p>Quick Start Guide</p> <p>MONOPOLY</p> <p>Analog 4-Voice Polyphonic Synthesizer with 2 VCOs, VCF, 2 LFOs, 2 Envelopes, Sync and Cross Modulation, and an Arpeggiator</p>	<p>Behringer MonoPoly Analog Synthesizer: Quick Start Guide</p> <p>Get started with the Behringer MonoPoly, an analog 4-voice polyphonic synthesizer featuring 37 full-size keys, 4 VCOs, VCF, 2 LFOs, 2 Envelopes, Sync and Cross Modulation, and an Arpeggiator. This guide covers setup, controls, hook-up, and basic operation.</p>