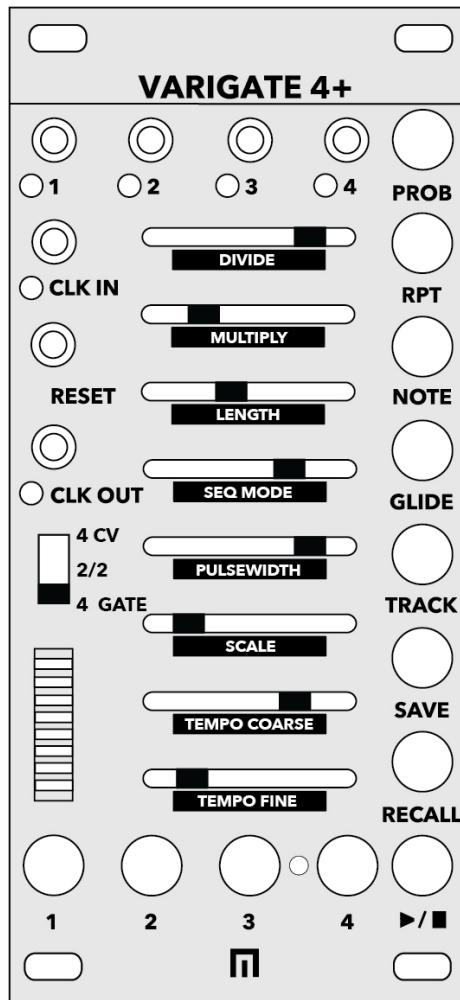


VARIGATE 4+ MANUAL V.1



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SPECIFICATIONS

FORMAT:
EURORACK

DIMENSIONS:
12HP, 26mm deep

INTERNAL AND EXTERNAL SIGNALS (3.5mm jacks):
0-5V Logic I/O

MAX CURRENT:
+12V: 90mA
-12V: 13mA
+5V: n/a



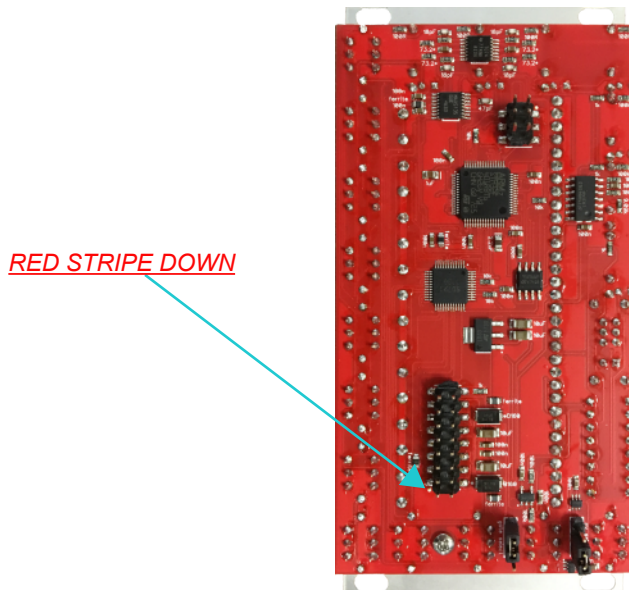
INSTALLATION

Remove module from packaging.

Power down your modular synthesizer and disconnect the power cable from the wall outlet.

Attach the included power cable to the module's power connector and connect the other end to the power distribution bus in your EuroRack synthesizer case. Position the red stripe **DOWN** on your Varigate 4+.

Position the module on the mounting rails in your EuroRack case and screw down mounting screws. Power up! If your case does not turn on properly then you have installed the module incorrectly. Simply power down and make sure to follow the diagram when reconnecting the module.





DESCRIPTION

The Varigate 4+ is a 4-channel, 8-step sequencer that includes the features of the original Varigate 4, PLUS the new option to output both CV (quantized or unquantized) and gates simultaneously. Other new features include a Play/Stop function, Preset Banks (4x4), Glide Per Step, Scales and can also be configured as master for the Malekko Voltage Block as well as a slave to the Varigate 8+ if you're looking to expand your total channels and presets (up to 14 channels and 100 presets with V8+).

Each Channel (or Track) correlates with it's own sequencer (so 4 independent sequencers). The addition of the Gate/CV Switch allows for switching between 4 channels of CV, 2/2 for 2 channels of CV and 2 channels of gates, or all 4 channels to output only gates. Additionally, each step of a sequencer can be programmed with Probability for gates, Repeats, Glide and Notes (when in a CV mode). There is also a Randomization feature for Repeats, Notes and Glide. Channel parameters for Scales, Sequence Direction (Forward, Reverse, Pendulum and Random), Sequence Length, Division, Multiplication and Pulswidth are all easily accessible using Track Mode.

Easy Preset Recall makes the Varigate 4+ perfect for live performance. Pair it with the Malekko Voltage Block for maximum control!

Features include:

- Switch between 4 channels of 5v gate outputs, 4 channels of CV outs or 2 gates and 2 CV outs
- 8 steps per channel
- GLIDE per step
- PLAY/STOP function
- DIVIDE and MULTIPLY clock per channel
- Adjust sequence length per channel
- Adjust PULSEWIDTH per channel
- Program NOTES (for CV outs)
- Quantized SCALE adjustment
- TEMPO COURSE adjustment per bank of presets (This parameter adjusts the internal clock between 30 and 255 BPM)
- TEMPO FINE adjustment (This parameter adjusts the clock +/- 25 BPM)
- Change SEQUENCE mode per channel (Forward, Reverse, Pendulum and Random)
- CLK IN: Clock input with LED indicator
- RESET: Gate input for resetting to step 1
- CLK OUT: Clock output with LED indicator
- PROBABILITY: Control the probability of a step outputting a gate.
- REPEAT: Control the amount of repeats per step
- RANDOMIZER functions for Repeat, Note, and Glide
- Saved PRESETS function
- Slave Voltage Block to Varigate 4+
- Slave Varigate 4+ to Varigate 8+ for use as an "expander" (for a total of 14 channels)
- LED BAR GRAPH: displays the step currently being adjusted as well as a final overview of all adjusted steps.
- LEDs for A,B,C and D indicating gate outs, notes for each channel.



OVERVIEW

GATE and CV OUTPUT CHANNELS 1-4:

With LED indicators: Connect your patch cables from these outputs to other module gate, trigger or CV inputs depending on the mode you're in (see MODE switch for more info).

CLK IN:

External CLOCK INPUT with clock indicator.

RESET:

Gate input for resetting to step 1.

CLK OUT:

CLOCK OUTPUT with LED indicator.

MODE SWITCH:

4 CV MODE: Enables CV output on all 4 channels.

2/2 MODE: Enables CV output on Channels 1 and 3 and Gate outputs on channels 2 and 4.

4 GATE: All outputs are gate outputs.

LED BAR GRAPH:

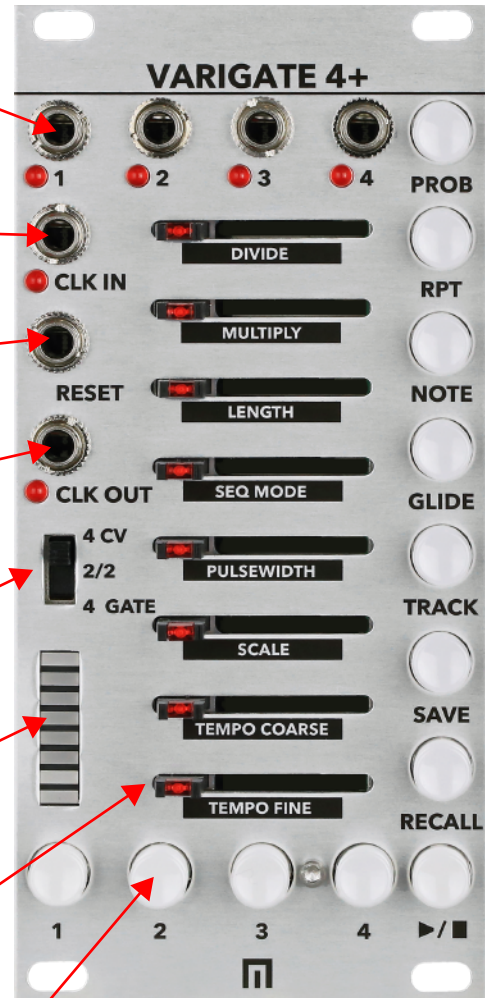
Displays various mode settings 1 through 8 (active steps, scales, sequence modes etc.).

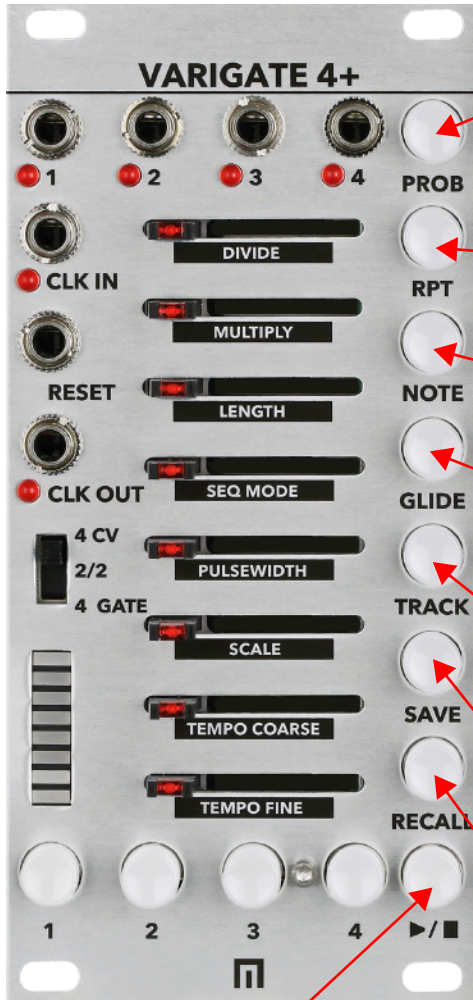
STEP SLIDERS:

Move to adjust various per-step parameters (PROBABILITY, REPEAT, NOTE, GLIDE per step) or features listed underneath each slider when in TRACK MODE (see TRACK for more info).

BUTTONS 1-4:

Press BUTTON 1 to access parameter adjustments for CHANNEL 1 and so forth. NOTE: You can also **SAVE** PRESETS to these buttons as well as access **BANKS** of PRESETS. TO SAVE A PRESET: Hold SAVE while pressing a button. TO RECALL A PRESET: HOLD RECALL while pressing a button. The PRESET that is active will pulse.





PROB:
 Select and then adjust a step slider to control the amount of probability per step. NOTE: HOLDING PROB and then SELECTING RPT, NOTE or GLIDE will engage the randomize function for those features and for a selected channel.

RPT:
 Select and then adjust a step slider to control the amount of repeats per step.

NOTE:
 Select and then adjust a step slider to add CV per step.

GLIDE:
 Select and then adjust a step slider to add glide per step.

TRACK:
 Select to enter TRACK MODE for adjusting all of the features listed in black underneath the sliders (DIVIDE, MULTIPLY, SEQUENCE LENGTH, SEQUENCE MODE, PULSEWIDTH, SCALE, TEMPO COARSE AND TEMPO FINE per channel).

SAVE:
 Hold and then select Buttons 1-4 to save your current settings to a preset.

RECALL:
 Hold while selecting a saved preset to RECALL saved presets.

 HOLDING SAVE + RECALL and then selecting buttons 1-4 will change BANKS.

PLAY / STOP: Press to start or stop the Varigate 4+



PROGRAMMING GATES PER STEP

ADJUST GATE/CV SWITCH to 2/2 to enable CV output on Channels 1 and 3 and Gate outputs on channels 2 and 4.

GATE PROGRAMMING:

PRESS THE PLAY BUTTON so the sequence is playing. By default the sequence will play forward (and the LED's on the sliders will cycle top to bottom for each of the 8 steps).

Select CHANNEL button #2 (button will be illuminated).

The PROBABILITY button will be illuminated indicating you're ready to start programming gates per step. Now adjust a slider to the right to add a gate for a given step (you will also see each active step light up on the LEDs underneath each channel jack). If you move a step slider all the way to the right, the chance that that gate will occur is 100%. Setting the slider to the center and the gate will occur 50% of the time and so forth.

If you want to change TEMPO, simply select the TRACK button, then adjust the sliders for TEMPO.

Now add some REPEATS on a step by pressing the REPEAT button. Move one of the active steps to the right to add multiple gates to that step (great for adding hi-hat rolls for instance). You can dial exact repeats per step (refer the LED bargraph for 1-8 repeats per step).

Now repeat the above for CHANNEL #4.

If you want to just program GATES, switch to 4 GATE outs.



COPY/PASTE: To copy and paste newly programmed step sequence data to another channel, simply hold down one of the CHANNEL buttons while selecting another channel button.



PROGRAMMING CV/NOTES PER STEP

CV/NOTE PROGRAMMING:

Select CHANNEL button #1.

The NOTE button will be illuminated indicating you're ready to start programming unquantized or quantized CV per step. Unquantized CV is useful for animating other modules and quantized for notes within a scale (patched to a module with a 1v/oct or "pitch" input for instance). All CV that is programmed within a sequence will be set to unquantized by default and until you set the SCALE for that channel.

Adjust sliders to the right to program CV per each step. You can program up to 5 volts per step. The LED bargraph indicates relative value of CV per step. One fully lit bar is approximately 1/8 of the 5V CV range of that channel. A fully lit (slider all the way right) bargraph represents the full 5V range of that channel, an empty bargraph indicates 0V.

To quantize CV you've just programmed, select TRACK and then move the slider for SCALE. You'll notice that the LED bargraph now indicates different scale settings. See pg. 8 for the available scales. Now each step will be quantized cv/notes within the scale you've selected.

Once you have CV programmed, you can add GLIDE to a step (a smooth transition between each step). Simply move sliders to the right to add GLIDE per step.

Now repeat the above for CHANNEL #3.

If you want to just program CV on all 4 channels, switch to 4 CV outs.

OCTAVE RESTRICT MODE: Once quantized CV is programmed on a step, you can fine tune it by using OCTAVE RESTRICT MODE (you must already be in quantized mode first). Now hold the NOTE button while moving the slider to program that note within the current octave (there are 5 octaves available).





TRACK MODE

TRACK:

DIVIDE, MULTIPLY, SEQUENCE LENGTH, SEQUENCE MODE, PULSEWIDTH, SCALE, TEMPO COARSE AND TEMPO FINE can be adjusted per CHANNELS 1-4. To enter TRACK MODE, simply select TRACK and the CHANNEL button you want to edit.

DIVIDE:

To DIVIDE a sequence for a given channel, move the DIVIDE slider to the right. The position of the slider affects the amount of division down to 1/8 (refer to LED bargraph while programming).

MULTIPLY:

To MULTIPLY a sequence for a given channel, move the MULTIPLY slider to the right. The position of the slider affects the amount of multiplication up to 8x.

LENGTH:

To change the length of a sequence for a given channel, move this slider to the right. Sequence length goes up to 8 steps per sequence or down to 1 (the LED bar graph indicates length).

SEQUENCE MODE:

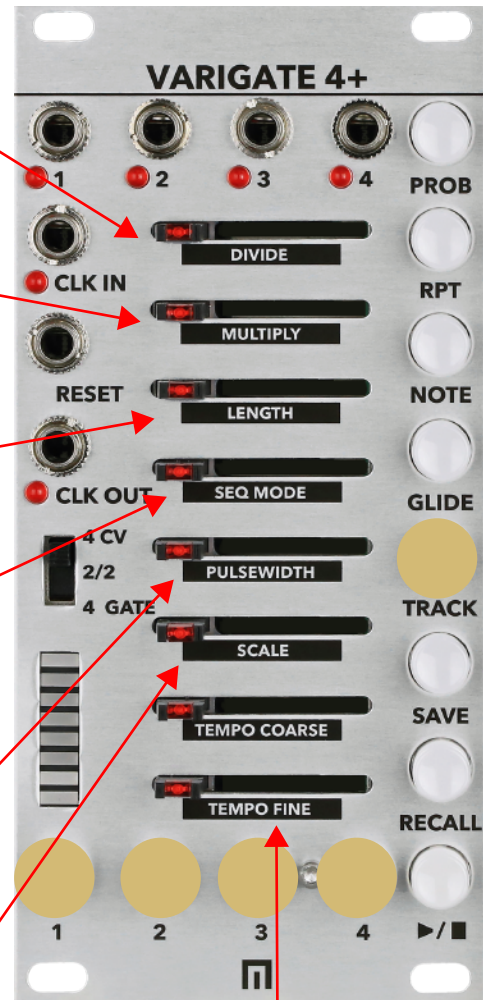
To change the direction of a sequence for a given channel, move this slider to the right. The LED bar graph indicates the 4 available sequence directions: FORWARD, REVERSE, PENDULUM or RANDOM in this order. Bar 1 on the bar graph is FORWARD and so forth.

PULSEWIDTH:

Move this slider to the right to increase the width of all gate pulses in a sequence. To decrease the width of all pulses, move the slider to the left.

SCALE:

To change the SCALE of a particular sequence of CV/NOTES specifically, move the slider to the right. You'll see the LED bargraph indicating the different available scales. From top to bottom on the LED bargraph: **Unquantized, Major Pentatonic, Minor Pentatonic, Blues, Dorian, Minor, Major, Chromatic**



TEMPO COARSE AND FINE: To change the tempo move this slider to the right. Coarse adjusts the internal clock between 30 and 255 BPM. TEMPO FINE adjusts the clock +/- 25 BPM. You can save different tempos to different banks of presets.

Note that TEMPO adjustment is only available while in internal clock mode.



SAVING & RECALLING PRESETS AND BANKS

The CHANNEL buttons also act as PRESET slots as well as BANK slots. There are a total of 4 preset slots per bank and 4 banks for a total of 16 preset slots.

During playback, you will see the active preset pulsing with tempo.

TO SAVE A PRESET:

Press and hold the SAVE button while you select one of the CHANNEL buttons to save all sequence settings programmed on channels 1-4 to one preset (this includes TRACK mode settings per channel as well).

TO RECALL A PRESET:

Once you've saved a few different presets, you can now recall them by holding the RECALL button while selecting a saved PRESET. The active preset will pulse. Also note that the recalled PRESET will play back once the active preset and all sequences in this preset have completed their cycles (this includes sequences that have been divided).

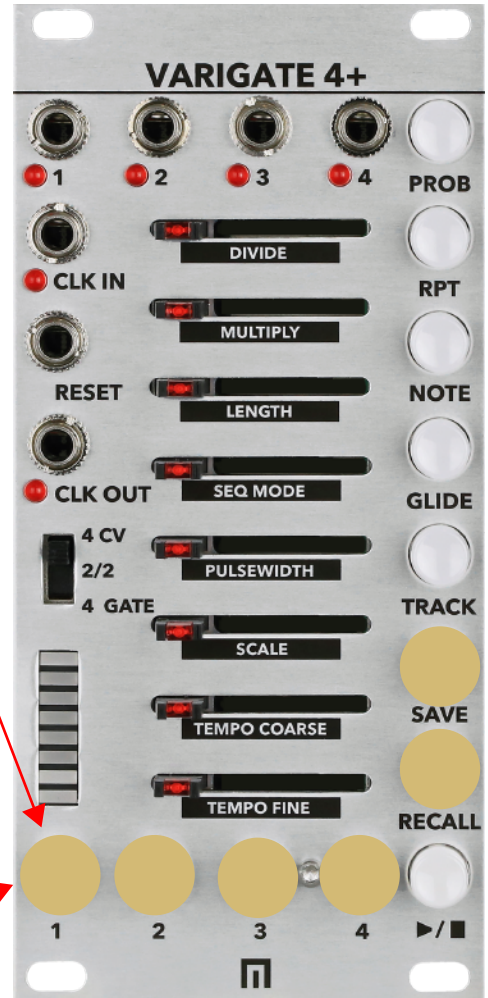
BANKS:

Your first set of saved presets are saved to BANK 1 by default. On power up, BANK 1 will be active by default as well.

To recall/save presets to BANK 2:

Hold the SAVE + RECALL button for about 1 second until both buttons are illuminated at the same time. Now press BUTTON #2 to enter BANK #2, BANK #3 and so forth. Now you can save the active settings/preset to the available preset slots in this new bank. Follow the same steps to recall each available bank of presets.

NOTE: MAKE SURE THAT YOU SAVE ANY EXISTING PRESETS BEFORE SWITCHING TO A NEW BANK OR YOUR CHANGES WILL BE LOST.



CLEARING PRESETS and CHANNELS:

You can clear a preset by holding the TRACK button until it is pulsing, then press each CHANNEL button 1-4 you wish to clear. You can then save that cleared preset or just start programming new parameter changes etc.

To **overwrite** an existing/active preset, simply start programming changes to parameters and save again.



RANDOMIZING



You can randomize the following features on each step for a given CHANNEL.

REPEAT NOTE GLIDE

Once in RANDOMIZE MODE for these features, sliders positioned full right equals full randomization for a given step. Sliders positioned to full left equals zero randomization.

RANDOMIZE REPEATS PER STEP:

Hold PROBABILITY + **REPEAT** for a second until REPEAT is pulsing. Now move step sliders to the right to program random repeats per step. If you move a step slider to the right to 4 for instance (refer the LED bar graph), the range will be set from 1 to 4 repeats for that step and will randomize within this range on every cycle of the sequence. You can also add randomization to already programmed repeats per step and within a set range. If you already have 3 repeats programmed on a step and you hold PROBABILITY + NOTE, then move that step slider to the right to 5 for instance, your randomized repeat range will now be between 3 and 5 for that step every time the sequence cycles.

RANDOMIZE CV/NOTES PER STEP:

Hold PROBABILITY + **NOTE** for a second until NOTE is pulsing. Now move sliders to the right to start adding random cv/notes per step. If you move a step slider to 4 for instance, the range will be set from 1 to 4 and will randomize within this range on every cycle of the sequence. You can also add randomization to already programmed cv/notes per step and within a set range. Hold PROBABILITY + NOTE and move one of these step sliders to 7 for instance. Now the range of randomization will occur between what was already programmed +7 for that step every time the sequence cycles.

RANDOMIZE GLIDE PER STEP:

Hold PROBABILITY + **GLIDE** for a second until GLIDE is pulsing. If you move the slider to the right to 4 for instance, the range for glide per step will be set from 1 to 4 and will be randomized within this range on every cycle of the sequence. You can also add randomization to existing glide per step and within a set range. If existing glide is programmed on a step and set at 3, and you then hold PROBABILITY + GLIDE, you can then move that step slider to the right to 7 and the randomization range will be set between 3 and 7 every time the sequence cycles.



USING VARIGATE 4+ WITH VOLTAGE BLOCK & VARIGATE 8+

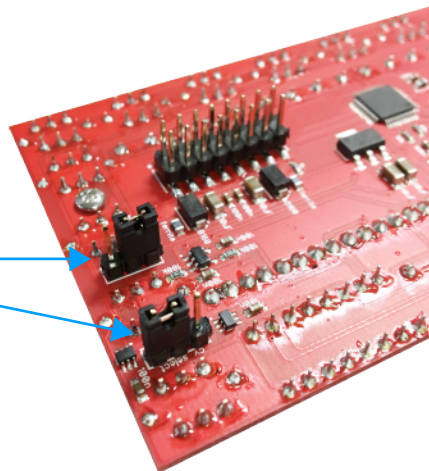
The Varigate 4+ utilizes busboard clocks.

The Varigate 4+ ships in MASTER MODE. This means anything else connected to the busboard that includes busboard clocking will slave to the Varigate 4+ clock.

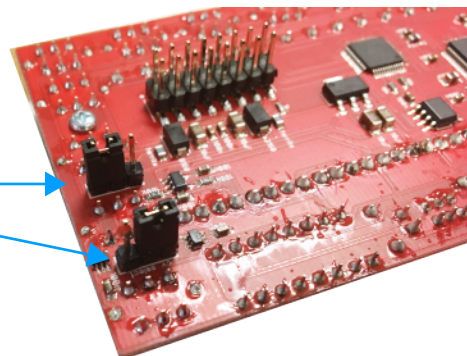
To slave Voltage Block to the Varigate 4+, you'll need to set the Voltage Block to SLAVE MODE. Also make sure your Varigate 4+ jumpers are set to MASTER MODE. Slaving Voltage Block to Varigate 4+ allows you to save programmed parameters on your Voltage Block within Varigate 4+ presets.

If you want to *slave* the Varigate 4+ to the Varigate 8+ to share clock, expand available channels and utilize all 100 Varigate 8+ presets, you will need to set your jumpers in reverse.

**MASTER MODE
JUMPER SETTINGS**



**SLAVE MODE
JUMPER SETTINGS**





WARRANTY

This product is covered by the Malekko Heavy Industry warranty, for one year following the date of purchase. This warranty covers any defect in the manufacturing of this product. This warranty does not cover any damage or malfunction caused by incorrect use - such as, but not limited to, power cables connected backwards, excessive voltage levels, or exposure to extreme temperature or moisture levels. The warranty covers replacement or repair, as decided by Malekko Heavy Industry. Please visit our website malekkoheavyindustry.com to obtain full warranty information and to register your product for coverage.