INTERNATIONAL LIMITED WARRANTY

ARX Systems (ARX) warrants to the first purchaser of any ARX equipment that it is free from defects in materials and workmanship under normal use and service. ARX's sole obligation under this warranty shall be to provide, without charge, parts and labour necessary to remedy defects, if any, which appear within twelve (12) months from date of purchase, and for a further twelve (12) months supply parts only.

This is our only warranty. It does not cover finish or appearance items, burned voice coils, or if the equipment has been, in ARX's sole judgement:

•Subjected to misuse, abuse, negligence or accident;

•Repaired, worked on, or altered by persons not authorized by ARX;

•Connected, installed, adjusted or used for a purpose other than that for which it was designed. This includes running a speaker system with the ISC leads disconnected, or with a non-ARX crossover, or with the wrong processor.

This warranty gives you and us specific legal rights and you may also have other rights which may apply.

Warranty Service Procedure

Should it become necessary to have your equipment serviced under the terms of the warranty, please follow these steps:

1. Call your ARX distributor for a Return Authorization (RA) number;

2. *Carefully* repack the unit, in its original packaging where possible, including a note with a description of the problem, and a copy of the receipt showing date of purchase. Attach these to the actual unit itself. Don't forget to write your name and address clearly, and include a phone number where you can be contacted during normal business hours. Make it easy for our service technicians to contact you if they have a question. Also, use *plenty* of packing material - better to be safe than sorry.

3. Send the unit freight prepaid to ARX Systems, at the address given you with your RA number. We will pay the return freight when the serviced unit is returned to you.

4. We strongly recommend you insure the package. We can't fix it if it gets lost! Send it by UPS, Fedex, DHL or any similar service that can track the package. Parcel Post is *not* recommended

If Warranty Registration Card is missing, please write to ARX in the country of purchase, stating model and where purchased, or to ARX, PO Box 15, Moorabbin, Victoria 3189, Australia.

Or you can Email us at: info@arx.com.au
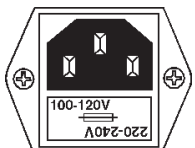
SIXGATE™

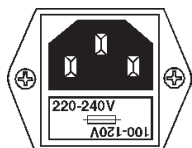## Six Channel

Noise Gate

Owner's Manual

ARX
www.arx.com.au ®

 IMPORTANT - PLEASE READ THIS FIRST

THIS IS A DUAL VOLTAGE UNIT. IT IS ESSENTIAL THAT YOU CHECK THAT THE VOLTAGE ON THE FUSEHOLDER COVER BELOW THE AC CONNECTOR ON THE REAR OF THE CHASSIS IS SET CORRECTLY BEFORE CONNECTING IT TO AC POWER.

THIS IS SET FOR 100 V
AC TO 120 V AC
OPERATION

THIS IS SET FOR 220 V
AC TO 240 V AC
OPERATION

To change, pull fuseholder out and rotate 180º, then push in again. Do not insert power cable into unit until voltage has been correctly set. Do not connect power cable to AC power until voltage has been correctly set

RoHS

CE N1819

Manufactured in Australia

Complies with 89/336/EEC EMC Directive, amended by 92/31/EEC and 93/68/EEC; meets the following standards:EN 55013 : 1990, Sections 3.2 and 3.5, EN 55020 : 1988, Sections 4.3, 5.4, 6.2, 7.0, 8.0., and EN 60950 : 1994 Low Voltage Directive

Complies with Australian Standard AS/ N25 1053

Our policy is one of continuous improvement, and therefore designs may change without notice. However, unless otherwise stated, specifications will always equal or exceed those previously given.

WARNING SYMBOLS USED ON THIS EQUIPMENT

This symbol is intended to alert you to the presence of important operating instructions contained in this owner's manual

This symbol is intended to alert you to the presence of uninsulated dangerous voltage within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock.

This symbol indicates that a Slow Blow fuse is used in this equipment. Replace with same type and value only

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

TO PREVENT ELECTRIC SHOCK, DO NOT REMOVE COVER OR BACK OF UNIT
NO USER-SERVICEABLE PARTS INSIDE
REFER SERVICING TO QUALIFIED PERSONNEL

WARNING
TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

ATTENTION
RISQUE DE CHOC ÉLECTRIQUE - NE PAS OUVRIR

Input Impedance	Balanced 20 Kohms
	Unbalanced 10 Kohms
Input Headroom	+ 20 dB
Output Impedance	Balanced 300 ohms
	Unbalanced 150 ohms
Output Level (Max)	+ 20 dB
Frequency Response	20 Hz to 20 KHz,
	$\pm$ 0.2 dB
Signal to Noise ratio	
Gate Closed:	-95 dB Unweighted
	-105 dB 'A' weighted
Gate Open, Depth Min:	-93.5 dB Unweighted
	-98 dB 'A' weighted
Distortion	.01% THD @ 0 dB,1KHz
Dynamic Range	125 dB
Power Requirements	100/120 V AC 50/60 Hz
	220/240 V AC 50/60 Hz
	50-60 Hz,8 Watts (8 VA)
Weight	5 lbs/2.2 Kg
Dimensions	19"W x 1¾"H x 6"D
	482 x 44 x 155mm
Input/Output Connector type	Balanced TRS Jack
Key Input /Sidechain	
Insert Connector	TRS Jack; Tip IN, Ring OUT, Sleeve GROUND

Complete online documentation is available on the ARX website:
www.arx.com.au/Sixgate.htm

Specific queries can be emailed to the factory at **info@arx.com.au**

ARX
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Front Panel Controls

- Red and Green LED Gate status indicators.
- Hardwire bypass Gate IN/OUT switch
- Release control; varies how fast the gate closes after the signal has dropped back below the threshold. 100ms to 2 seconds.
- Depth control; determines how much signal and/or unwanted noise is held back when the gate is closed.

- Threshold control; varies the level that the signal has to reach to open the gate, from -40dB to +12dB.
- Numbered marker panel for labelling gate assigns. Use a Chinagraph or grease pencil only. Please don't use a felt tip marker as these may cause permanent staining of the panel.

Rear Panel Connectors

- Balanced TRS Input socket. Tip HOT, Ring COLD, Sleeve GROUND
- Key Input and Sidechain Insert TRS socket. Tip IN, Ring OUT, Sleeve GROUND
- Output jack socket. Same wiring as Input
- IEC 3 pin AC connector and integral fuseholder. Replace fuse with correct value only: 100 -

110 V AC 1 amp, 220-240 V AC 0.5 amp. Please also refer to voltage details on Page 2

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from cymbals, other drums, guitars and everything else. By gating the Kick drum you can eliminate all this unwanted sound, since the gate opens the instant the beater hits the drum, and closes a few milliseconds later.

This also lets you remove any 'boing'from the drum sound without excessive EQ cut.

Using the Sixgate

Your ARX Sixgate is an extremely straightforward gate to set up and operate. To get it going, just follow these steps:

• Plug the unit into the main AC power, after checking that the voltage marked on the unit is the same. All the RED LEDs should light up. Switch Channel 1 IN.

• From the mixing console Insert points, feed a percussive signal, perhaps a Kick or Snare drum into the Input of Channel 1. Set the RELEASE and DEPTH controls at the 12 o'clock position, and the THRESHOLD at -40dB (hard Left).

• Plug a lead from the Ouput of Channel 1 back into themixer insert, and listen to the sound of the drum coming through unchanged.

• Slowly turn the THRESHOLD control to the Right until the sound of the drum becomes

progressively 'drier' as the gate starts to OPEN on the beats of the drum, and CLOSE in between. Go too far and the gate will shut off completely - adjust the THRESHOLD until you have as much of the drum signal as you want.

That's all there is to it.

If you still have too much 'boing' coming in from the drum, shorten the RELEASE time by moving the control towards FAST; if there is too much background sound coming through, turn the DEPTH control towards MAX.

From here you can go on to the other drums if you want - your one Sixgate can individually gate a whole drum kit if necessary:

1/ Kick   2/ Snare   3/ HiHats   4/ Tom 1   5/ Tom 2   6/ Floor Tom

When gating vocals you will need less of the DEPTH control than with drums, so there is not so much of a jump from CLOSED to OPEN. Use just enough DEPTH to lose the background noise, or the sound can be unnatural and 'choppy'. Set the RELEASE time longer too, so the ends of the words can fade away naturally. As with most new things, a little time spent in experimenting will prove invaluable in getting to know your Sixgate.

Using the Key Input

When you plug a signal into the KEY input, the gate is no longer controlled by the signal plugged into the ordinary input, but by the one plugged into the KEY input.

Let's say you want the Bass guitar exactly in time with the Kick drum. Insert a Sixgate channel on each of them. Take a parallel split from the Kick channel and plug it into the KEY input of the Bass gate. Now the Bass gate is controlled by the Kick drum, and will open and close exactly in time with it.

If you have timing problems with the brass section in a band, assign them all to one subgroup, gate it, and Key that gate with a line from the Lead brass player's channel. Now when he or she plays, they all play!

If you have access to a signal generator you could run a 40 Hz signal into a gate and Key it from the Kick drum for a really FAT sound that no amount of EQ could give you. You could also try the same thing with a White noise generator Keyed by the snare drum (or Pink noise for a deeper sound).

Using the Key inputs of your Sixgate is limited only by your imagination. Just about anything is possible - try it and see.

Sidechain Insert

The KEY inputs on your Sixgate are also insert points for the gate sidechain, and are wired Tip IN, Ring OUT, Sleeve EARTH/GROUND. By using this insert point you have access to the gate's control circuitry (sidechain) for Frequency Sensitive Gating. This involves the insertion of a Graphic EQ, Parametric EQ or a simple RC filter in the gate's sidechain, to make the gate more or less sensitive to certain frequencies or frequency ranges.

For example, the insertion of a Low Pass Filter decreases the gate's sensitivity to higher frequencies such as Cymbal splash. This can be useful in drum miking, where the gate on a Tom can be falsely triggered by a loud cymbal crash, or the Snare gate triggered by the very close HiHats.
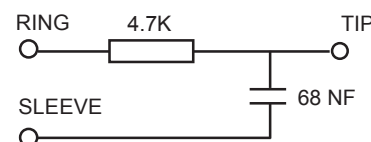
By inserting a Low Pass Filter in the control circuitry you make the gate 'deaf' to the cymbal frequencies, so it is only triggered by the sound of the drum.

Here is a simple Low Pass Filter that will fit inside a stereo guitar jack plug, and suitable for drums.

Specifications
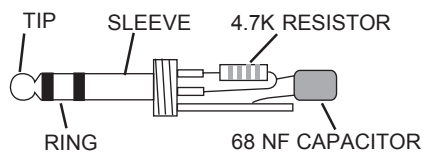
For non-technical people   For technical people

To raise the filter frequency, decrease the capacitor value; to lower the filter frequency, increase the capacitor value.

Introduction

Thank you for choosing this ARX Sixgate. We hope you enjoy using it as much as we enjoyed creating it. As with all ARX equipment, it has undergone extensive alignment and 'burn in' before shipping. To ensure continued trouble free use, please familiarise yourself with the contents of this manual before using.

About the Sixgate

The sheer amount of effects and signal processors necessary for today's standards of audio production puts a great strain on the available space in equipment racks, both in the studio and on the road.

To put it in a nutshell, space is money.

Recognising this fact, ARX design engineers have developed the Sixgate, a Six channel Noise Gate in a single rack unit. This truly unique and versatile signal processor gives no less than Six independent channels of gating in the space normally taken up by a single channel unit.

The effective use of gates is a key element in creating clean mixes, and enhances the stereo imaging, as well as cleaning up noisy tracks. With its Six independent gates, the ARX Sixgate can handle a complete drum kit through to a conference, and all points in between.

In live work gates let you have the sound you want, not the sound you are forced to have to stop things feeding back. In studio work gates give you a dramatic increase in clarity, stereo depth and overall sound.

Despite its compact size, the Sixgate is not short of features. Each channel has an IN/OUT switch, individual controls for Release, Depth and Threshold, and Red and Green LED displays to indicate Gate Open or Closed status. In addition to this, as on all ARX single rack unit equipment, there is a numbered marker panel that you can write on for easy confirmation of your compressor assigns.

Balanced Inputs and Outputs are standard.

Full access to each gate sidechain is provided through Key Input/insert points on the rear panel.

Application Notes - Noise Gates

A Noise Gate is an audio signal processing device that shuts off a signal when the level drops below a user adjustable threshold.

When the signal is below this threshold the gate will close and the signal won't be heard; when it is above this threshold the gate will open and the signal will pass through unaffected by the gate, at unity gain.

Thus a gate can be set to discriminate between the audio signals you want, and unwanted sounds such as tape hiss, ground loop buzzes, background noise, and leakage from other instruments. All that is necessary is a level difference of a few dB for the gate to distinguish between wanted (louder) and unwanted (softer) sounds. By careful adjustment of the Threshold control you can let through what you want to hear (or to record) and shut out what you don't.

As an example, listen to a Kick drum channel alone, with the PFL/SOLO button on the desk, when the whole band is playing. In between beats of the drum you will normally hear leakage