

# MidiUp

**OWNER'S MANUAL**

Document OMMU0905



## **2 Year Limited Warranty**

Sound Sculpture Musical Instrument Products (Sound Sculpture) warrants the MidiUp MIDI controller device to the original purchaser to be free of defects in material and workmanship under normal use for a period of 2 year from the date of purchase from an authorized Sound Sculpture dealer or directly from Sound Sculpture Musical Instrument Products.

Sound Sculpture's liability under this warranty is limited to repairing or replacing defective materials that show evidence of defect, and only if the product is returned for repair directly to Sound Sculpture or to the authorized Sound Sculpture dealer from which the unit was purchased.

Sound Sculpture reserves the right to make changes in design or make additions or improvements on the product without incurring any obligation to install the same on products previously manufactured.

Sound Sculpture shall not be liable for any consequential damage or loss of profits as a result of the use of this product even if Sound Sculpture is advised of the possibility of such damages or loss. In no event will Sound Sculpture's liability exceed the price paid for the product.

No other warranties are expressed or implied and Sound Sculpture neither assumes nor authorizes any person to assume for it any obligation or liability in connection with the sale of this product. In no event shall Sound Sculpture or its dealers be liable for special or consequential damages due to the use of this product. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusions or limitations may not apply to you.

## **In Case of Difficulty**

In the unlikely event that you experience problems with the MidiUp, please refer to the section in this manual pertaining to the operation you are having difficulty with. Very often the difficulty is simply a result of improper setup or programming and can be resolved by studying this manual.

If, after reading this manual, you are unable to resolve the problem email us at [info@soundsculpture.com](mailto:info@soundsculpture.com) or call Sound Sculpture at the number listed below during normal business hours. If we are unable to resolve your problem over the phone and determine that the unit needs repair, you will be given a return authorization number and further procedures for returning the unit. **UNAUTHORIZED REPAIR OF THE MidiUp BY ANYONE OTHER THAN THE FACTORY VOIDS THE WARRANTY. NO UNITS WILL BE ACCEPTED FOR REPAIR WITHOUT FIRST CONTACTING THE FACTORY FOR A RETURN AUTHORIZATION NUMBER.**

## **Precautions and safety notes**

To reduce the risk of fire or electric shock, do not expose this unit to rain or operate this unit in a wet environment.

Use only the power module supplied with the unit. Use of another module will void the warranty.

If the unit becomes physically damaged due to dropping or for other reasons, it should be returned to the factory for repair to avoid the risk of further damage to the unit or to attached units.

To avoid damage due to overheating this unit should not be exposed to, or operated in, direct sunlight for extended periods of time.

To avoid damage due to lightning, this unit should be unplugged during an electrical storm.

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**20380 Rae Road, Bend OR 97702 - USA**

**(541) 318-1877**

**[info@soundsculpture.com](mailto:info@soundsculpture.com)    [www.soundsculpture.com](http://www.soundsculpture.com)**

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## INTRODUCTION

Congratulations on your purchase of the Sound Sculpture MidiUp. This professional MIDI controller system gives you new flexibility in your ability to control any MIDI effect that responds to MIDI Control Change commands. The MidiUp is simple to use, flexible and solves a variety of problems encountered by electric musicians. With the MidiUp you can transmit MIDI Controller information in two ways:

1. By using a user installed pot inside the guitar or
2. By attaching a standard volume pedal.

The MidiUp can transmit a MIDI Controller Numbers in the range of 0-15 over any of the first 8 MIDI channels. The number and channel to transmit are selected by sending a Program Change from any MIDI foot controller to the MidiUp over it's own channel.

The MidiUp is also a MIDI merger. This means any MIDI information being transmitted from an attached foot controller will pass directly through the MidiUp with no interference. If the pedal happens to transmit at the same time that the MidiUp is transmitting, the two data streams will be seamlessly merged before passing the data on to your effects. No additional MIDI splitter is necessary.

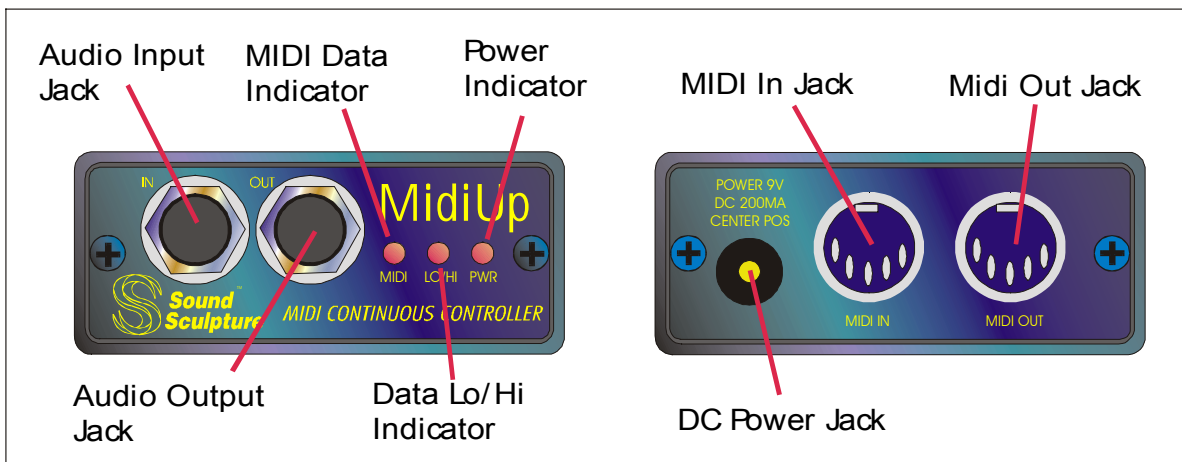
Several MidiUps can be used together. By connecting the MIDI output of one MidiUp to the MIDI input of the next, you can have as many controllers as you like. One can be connected to the guitar over the stereo cord and the others are connected to volume pedals. Or if you chose all units can be connected to volume pedals.

When used with a pot inside your guitar, modifications must be made inside your guitar that should be simple enough for anyone who is handy with a soldering iron, or can be made at your favorite guitar repair center. In addition you must use a stereo guitar cable from your guitar to the MidiUp. Full instructions for modifications are included in this manual.

When used with a volume pedal no modification is necessary, simply hook a standard guitar cable from the pedal output to the MidiUp input and you are ready to roll. In this application no cable is attached to the input of the volume pedal. Instead your guitar just goes directly to the effects.

The MidiUps clever architecture adjusts itself automatically to any of the standard guitar pot or volume pedals resistance values, typically 250K, 500K, and 1M ohms. With this ability to self-calibrate, you can switch the MidiUp from guitar to guitar and always feel confident that the full range of the pedal or guitar pot will transmit the full range of controller messages. The MidiUp automatically re-calibrates whenever the instrument cable is unplugged from the guitar or from the volume pedal and reconnected.

## FRONT AND REAR PANEL CONNECTIONS



**Audio Input Jack:** This is a stereo (Tip-Ring-Sleeve) jack that connects the MidiUp to the guitar using a stereo cord. The tip of the jack (guitar audio) is connected internally to the tip of the output jack enabling the signal to pass straight through the unit unhindered. The ring (which connects to the installed guitar pot via the cable) is connected to the processing section of the MidiUp to convert the pot value to a MIDI Data stream.

If a standard (mono) instrument cable is plugged into this jack and if the audio output jack is left connected, the Tip of the cable is routed to the processing section instead. This is the standard configuration when used with a volume pedal where the tip of the volume pedal jack is naturally connected to the pedal pot.

**Audio Output Jack:** This is a mono (Tip-Sleeve) jack that is connected to the audio input jack to pass the guitar signal unhindered. If left disconnected then it rewires the input jack for use only with a volume pedal.

**MIDI LED:** This LED blinks whenever the MidiUp is actually transmitting a MIDI data stream in response to a the pot turning or the volume pedal moving. It also blinks whenever it sees a valid Program Change Command coming from a connected MIDI foot controller. A valid PCC in this case is one that is transmitted on the MidiUp's own channel as set by the internal DIP switch.

**HI/LO LED:** This LED will light whenever the guitar pot or volume pedal reach either their lowest or highest extreme. When this LED lights it indicates that either a 0 (lowest) or a 127 (highest) MIDI value have been transmitted and is your assurance that the MidiUp is seeing the full sweep range of the pot. If upon turning the pot to it's extremes the LED does not come on either on one side or both, then this indicates that the MidiUp has not been calibrated to the pot and calibration should be performed. (See Calibration section)

**PWR LED:** When this LED is illuminated it simply means that DC power has been applied to the MidiUp through the power jack on the back panel.

**MIDI In Jack:** This jack may be connected to a MIDI foot controller normally used to select presets on MIDI capable devices. Normally you will connect the MidiUp between the foot controller and your first MIDI effect. The MidiUp will pass whatever signal the midi foot controller sends so all effects can respond to it accordingly and it will also respond to any Program Change command intended for itself. The MidiUp can be directed to transmit Controller information over selected channels and with selected Controller numbers in response to the foot controller.

**MIDI Out Jack:** This Jack connects the MidiUp to the next effect device in line. It automatically configures as a MIDI Thru jack unless the MidiUp is actually transmitting Controller data. If the MidiUp receives data from the footswitch while it is currently transmitting, it will merge the data from the foot controller insuring that no data is ever lost.

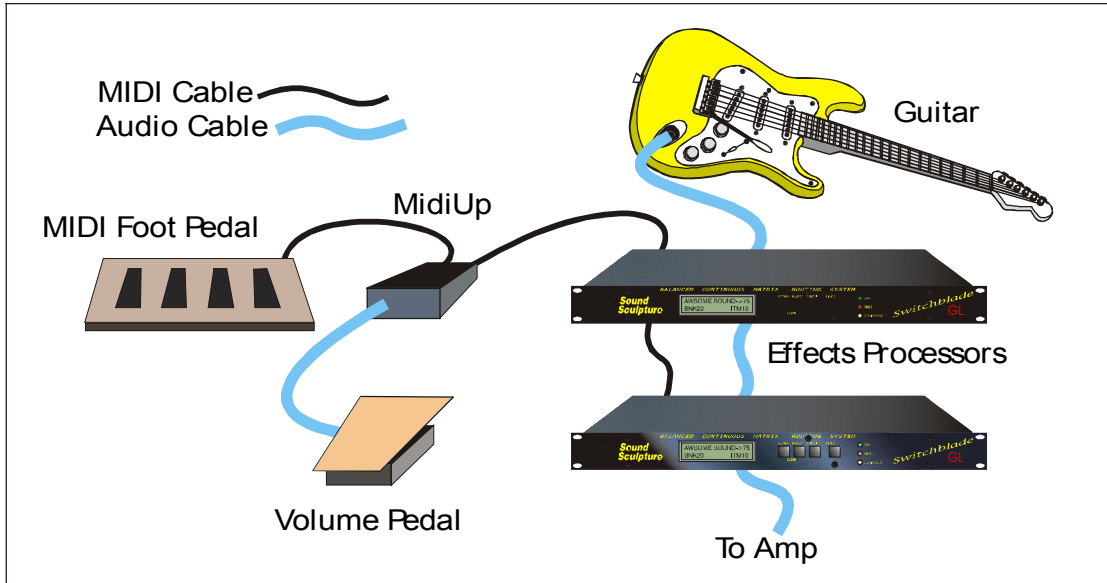
**Power Jack:** This jack connects to the supplied power module.

## ABOUT MIDI CONTROLLERS AND YOUR EFFECTS

Multi Effects devices and other MIDI equipment are usually capable having their parameters changed smoothly and in real time in response to MIDI Control Change (MIDI Controller) messages. If your MIDI gear can respond to these types of messages then the MidiUp can be used with this equipment. The MIDI Control Change message itself is a 3 byte message containing the MIDI channel (limited to channels 1-8 in the MidiUp) that the message transmits over, the Controller number which can be anything from 0-127 (limited to 0-15 in the MidiUp) and the last byte is the Controller value (from 0-127). The Controller number represents the parameter in the MIDI effect that is to change, and the value represents the degree of change of that parameter. The MIDI device must also be set to the same number as the MIDI channel in the message. For example, if you have a MIDI device set to channel 1, and it's echo time is

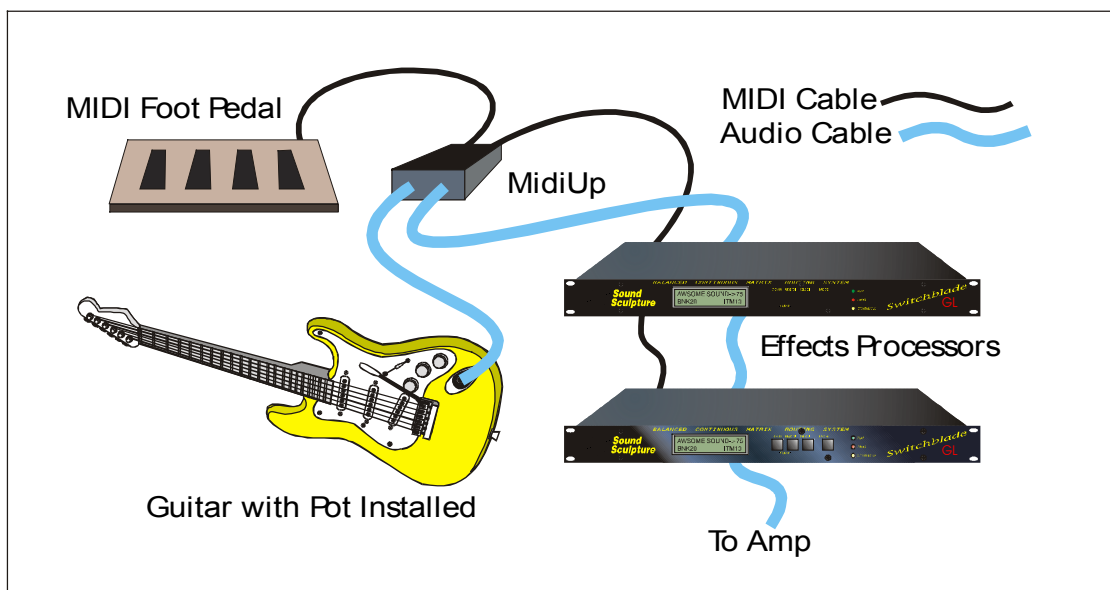
assigned to MIDI Controller value 13, then you can change the echo time by transmitting a Controller 13 over channel 1. As the Value byte in the message varies, so does the echo time.

## SETUP USING A VOLUME PEDAL



Using the MidiUp with a standard volume pedal is very simple. Just connect a standard guitar cable between the volume pedal output and the MidiUp audio input. Nothing is connected to the input of the volume pedal since the pedal is only used to control your effects, not to control the audio output of the guitar. Also nothing is connected to the MidiUp audio out since the unit is not passing a signal. The instrument itself is connected directly to your effects. This way, all parameters are controlled by the foot pedal.

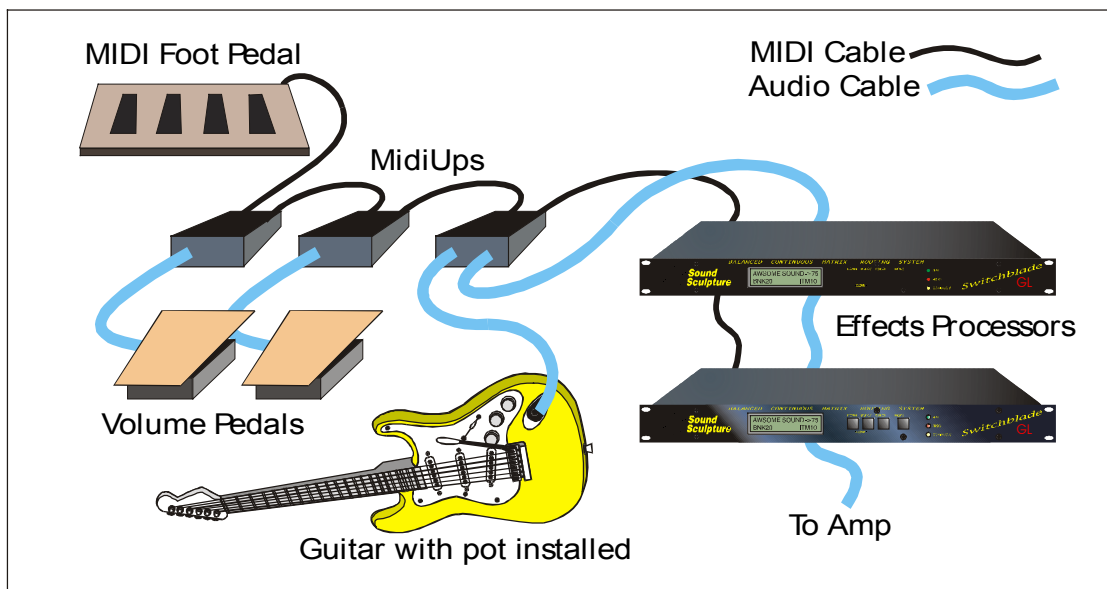
## SETUP USING A USER INSTALLED POT



The MidiUp can be controlled by a user installed pot in the guitar by connecting a stereo cable between the modified guitar and the MidiUp. To install the pot in the guitar, the guitar should be modified by a competent guitar technician (or by you if you are handy with a soldering iron). The modification involves either installing an additional pot or freeing up one of the pots (either a tone or volume control) inside the guitar, inserting a stereo jack in place of the mono jack that is in your guitar, and wiring the pot to the extra pin on the jack. Most guitars only require the removal and connection of a couple of wires to complete the operation. Notice that if you use one of the tone controls as the pot, then of course you no longer will have any control over the tone of the pickup it is tied to, but instead the pot will control a much larger array of sound, including tone, by using your multi-effect system, so you will probably not miss it. You can also use a volume control, but again, if you use a volume control inside the guitar for this purpose, then you will not be able to control the volume of that pickup except through your effects. The other volume and tone controls in your guitar are not affected.

If you choose to install a new pot instead of using one of the current pots in your guitar, you have the advantage of retaining all of the volume and tone control operation as originally intended during times you may not be using the MidiUp. The disadvantage of this method of course is that you need to drill an extra hole into the pickguard or wood of the guitar to add the pot. Not a big deal, but possibly not something you want to do to your favorite vintage.

## USING MULTIPLE MIDIUP DEVICES



There may be occasion when you need to have different volume pedals controlling different effects parameters or different effects at the same time. By using several MidiUp units together you can expand to have both a pot in your guitar and a volume pedal controlling different effects or parameters of the same effect. Each additional Midiup can accommodate another volume pedal. You can only have one pot in your guitar unless you make special cabling arrangements.

## AUTO CALIBRATION

The MidiUp has the ability to automatically calibrate to any pot that's used within the usual range of audio pots (250K to 1M Ohm). This section describes the auto calibration procedure.

### When used with a guitar pot:

To calibrate the MidiUp to the guitar pot being used, be sure a mono cable is connected to the Audio Output jack on the MidiUp and that the stereo cable is connected to between the MidiUp and the guitar. Apply power to the MidiUp after these connections are made. After power is applied rotate the pot on the guitar to it's lowest and highest extremes. It does not matter which way the pot is turned first, just so long as you get to both min and max positions. This completes the calibration.

You can test that the MidiUp is calibrated by rotating the pot a second time to it's extreme position and watching the HI/LO LED on the panel of the MidiUp. The LED should come on when the pot is both near it's lowest position and near it's highest position. There will be a small amount of rotation left over on both sides of the pot which is normal.

If power is already applied to the MidiUp and you wish to recalibrate without having to remove power then simply unplug the stereo cord from the guitar and plug it back in again. Rotate the pot as described above after plugging the cord back in and the MidiUp will again calibrate. **BE SURE TO UNPLUG THE CORD AT THE GUITAR AND NOT AT THE MIDIUP OR CALIBRATION WILL NOT OCCUR. ALSO THE MONO CORD MUST BE CONNECTED TO THE OUTPUT JACK AS WELL FOR CALIBRATION TO OCCUR.**

### When used with a volume control:

To calibrate the MidiUp when used with a volume control, essentially the same procedure is followed as with a guitar pot. Have everything connected up before applying power to the MidiUp. After power is applied, move the volume pedal to both of it's extreme positions. You can then check calibration is complete by watching the HI/LO LED.

If power is already applied to the MidiUp and you wish to recalibrate without having to remove power then simply unplug the mono cord from the volume pedal and plug it back in again. Move the pedal to it's extremes and the MidiUp will again calibrate. **BE SURE TO UNPLUG THE CORD AT THE VOLUME PEDAL AND NOT AT THE MIDIUP OR CALIBRATION WILL NOT OCCUR. ALSO THERE MUST BE NO CORD CONNECTED TO THE OUTPUT OF THE MIDIUP FOR CALIBRATION WITH A VOLUME PEDAL TO OCCUR.** When used with a volume pedal a cord is never attached to the output of the MidiUp since no audio is passes through the MidiUp.

## USING THE MIDIUP WITHOUT A FOOT CONTROLLER

If you do not use a foot controller with your MIDI equipment then you must use the default setup in the MidiUp. The default transmits Control Change 0 over channel 1. Therefore you must set the MIDI unit that you are controlling with the MidiUp to channel 1 in order for it to respond to the MidiUp. In addition you need to program the the unit to respond to Control Change number 0. Refer to the manual that came with the gear for instructions on how to do this.

## USING THE MIDIUP WITH A MIDI FOOT CONTROLLER

If you have a MIDI foot controller then you can use it to instruct the MidiUp to transmit other Control Change Numbers and over other channels. To do this you will need to program your foot controller to transmit a MIDI Program Change message to the MidiUp. **The channel that the foot controller transmits over must match the MidiUp channel. The channel in the MidiUp is set by a switch inside the unit and is factory set to Channel 16.**

This channel number is the MidiUp channel number and should not be confused with the channel that the MidiUp will transmit over which will likely be different. Use the chart on the next page to determine what Program Change number needs to be loaded into the foot controller for the desired result. Refer to the Appendix for information on how to set the unit channel to a new value if required for special circumstances.

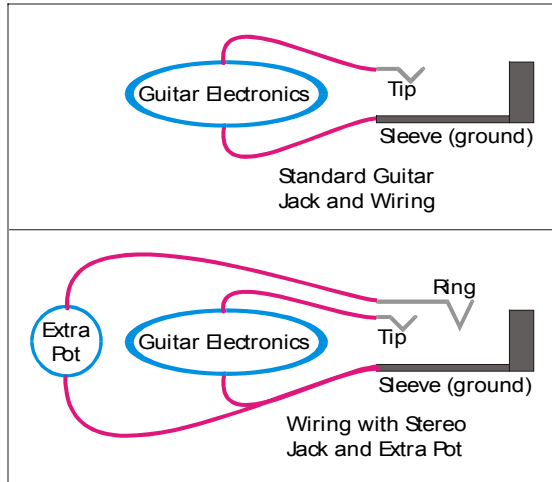
In the chart, “Program” refers to the Program Change Number to program into your MIDI foot controller and “CCN CH” refer to the resulting Control Change Number and Channel that the MidiUp will transmit over once it receives the message. The Program numbers assume your MIDI devices refer to the range of 0-127. Some devices refer to the range of 1-128. If so then simply add 1 to the number in the program list

Program	Ch	CCN	Program	Ch	CCN	Program	Ch	CCN	Program	Ch	CCN
0	1	0	32	3	0	64	5	0	96	7	0
1	1	1	33	3	1	65	5	1	97	7	1
2	1	2	34	3	2	66	5	2	98	7	2
3	1	3	35	3	3	67	5	3	99	7	3
4	1	4	36	3	4	68	5	4	100	7	4
5	1	5	37	3	5	69	5	5	101	7	5
6	1	6	38	3	6	70	5	6	102	7	6
7	1	7	39	3	7	71	5	7	103	7	7
8	1	8	40	3	8	72	5	8	104	7	8
9	1	9	41	3	9	73	5	9	105	7	9
10	1	10	42	3	10	74	5	10	106	7	10
11	1	11	43	3	11	75	5	11	107	7	11
12	1	12	44	3	12	76	5	12	108	7	12
13	1	13	45	3	13	77	5	13	109	7	13
14	1	14	46	3	14	78	5	14	110	7	14
15	1	15	47	3	15	79	5	15	111	7	15
16	2	0	48	4	0	80	6	0	112	8	0
17	2	1	49	4	1	81	6	1	113	8	1
18	2	2	50	4	2	82	6	2	114	8	2
19	2	3	51	4	3	83	6	3	115	8	3
20	2	4	52	4	4	84	6	4	116	8	4
21	2	5	53	4	5	85	6	5	117	8	5
22	2	6	54	4	6	86	6	6	118	8	6
23	2	7	55	4	7	87	6	7	119	8	7
24	2	8	56	4	8	88	6	8	120	8	8
25	2	9	57	4	9	89	6	9	121	8	9
26	2	10	58	4	10	90	6	10	122	8	10
27	2	11	59	4	11	91	6	11	123	8	11
28	2	12	60	4	12	92	6	12	124	8	12
29	2	13	61	4	13	93	6	13	125	8	13
30	2	14	62	4	14	94	6	14	126	8	14
31	2	15	63	4	15	95	6	15	127	8	15

## INSTALLING A POT INSIDE THE GUITAR

This section describes how to install a new pot inside of your guitar. The installation will generally follow these steps and will be explained in detail.

1. Drill a hole into the pickguard or guitar body where the pot is to be located.
2. Disconnect the wires going to the stock audio jack and remove the jack
3. Install the stereo jack and reconnect the jack wires to the tip and sleeve of the new jack.
4. Add 2 wires from the new pot to the ring and ground of the jack.
5. Install the pot in the hole and close up the guitar.



This diagram shows the wiring inside a factory wired guitar. All electronics including the pickups, the switches, and the pot eventually end up connected between the Tip and the Sleeve of the audio jack.

This diagram shows how the guitar is wired after the stereo jack and additional pot are installed. The guitar electronics is still connected between the Tip and the Sleeve as before, and the pot is connected between the Ring on the stereo jack and the Sleeve.

### Drilling a hole in the pickguard

If you have a Stratocaster style or similar guitar that has all of the pots mounted to the removable pickguard then you will want to find a location on the pick guard where you can mount the pot. Keep in mind it must be in an area where there is a recess in the body of the guitar so the pot will fit when the pickguard is replaced.

### Disconnect the jack wires and remove the jack

The jack will have the signal wire or wires attached to the tip of the jack and will also have one or more ground wires attached to the sleeve of the jack. Remove both of these groups of wires and then remove the jack.

### Install the stereo jack and reconnect the wires

After installing the new stereo (tip-ring-sleeve) jack, replace the wires that were removed by connecting them to the tip and ground lugs on the jack. This leaves the lug for the ring (the middle connector) still unconnected.

### Connect up the new pot

Attach a wire from the ring of the new jack to the center terminal of the pot. Attach a second wire from the ground of the jack (or any place connected to the guitar ground) to the end terminal. Choose the end that is to the right if you are looking at the shaft end of the pot and the terminals are pointing up. You may twist these two wires together if it helps to keep the wiring neat.

**Close up the guitar**

Install the pot into the pickguard if you haven't already done so and close up the guitar

**MODIFYING A POT ALREADY IN THE GUITAR**

You may wish to use a pot already installed inside the guitar such as an unused volume or tone control as the pot for the MidiUp to avoid having to install a new one. Most pots used in guitars are of the 250K to 1M ohm variety so will work with the MidiUp. It is highly recommended that unless you are familiar with guitar electronics, that you leave this particular modification to your guitar repair shop.

Although guitar wiring varies greatly from guitar to guitar which makes it impossible to offer specific instructions, generally speaking, the following rules will apply:

**Bypassing the volume control**

The volume control connects between the signal (from the pickups or selector switch) and ground and the center tap goes to the output (or to the selector switch). Therefore to bypass the volume control, leave the end that is connected to ground alone and remove the wires that are connected to the other two terminals and connect them directly together. Leaving two empty lugs on the pot and no unconnected wire. Then take a single wire and solder it between the center lug on the volume control and the ring (center connector) on the stereo pot.

**Bypassing the tone control**

Bypassing a tone control usually just means disconnecting all of the wires from the pot and not connecting the removed wires either to each other or to anything else. There is usually a capacitor connected to the pot and this should be removed completely. Once the pot is disconnected from the circuit, then you can wire it up in the same way as described in the last section for wiring up a new pot.

**TESTING THE MODIFICATIONS**

After closing up the guitar connect the guitar to the input of the MidiUp using a high quality stereo (TRS to TRS) cable. Connect a regular mono instrument cable (TS to TS) from the output of the MidiUp to the guitar amp. If you get sound from the guitar to the amp, you know that part of the connection is wired correctly.

Now turn the pot for the MidiUp from one extreme position to the other and check that the HI/LO LED on the front panel lights when the pot is at one extreme and then at the other. There will be a small amount of rotation left over on either side of the pot after the LED lights. This is normal.

If these two checks work out, then you have successfully completed the job.

## APPENDIX A: SETTING THE MIDIUP CHANNEL NUMBER

The MidiUp is factory set at channel 16. This channel will work fine for most applications. If you need to change the channel number to a value other than this you will need to change the settings of the channel switch inside the unit.

A situation that would require this is if you are using more than one MidiUp together in which case one should be left at the factory setting, the next set to another channel such as channel 15 and so on.

To access the switch, remove the two screws on the front of the unit and slide the cover away from the front panel to expose the circuit board. The switch is labeled with the numbers 8 4 2 1 below the switch. Refer to the following chart to set the values. Note 0 = switch off. 1 = switch on. In the chart "CHAN" represents the desired channel and "8 4 2 1" refers to the settings of the 4 switches.

CHAN	8	4	2	1	CHAN	8	4	2	1	CHAN	8	4	2	1	CHAN	8	4	2	1
1	0	0	0	0	5	0	1	0	0	9	1	0	0	0	13	1	1	0	0
2	0	0	0	1	6	0	1	0	1	10	1	0	0	1	14	1	1	0	1
3	0	0	1	0	7	0	1	1	0	11	1	0	1	0	15	1	1	1	0
4	0	0	1	1	8	0	1	1	1	12	1	0	1	1	16	1	1	1	1