

CRATE

GT-80 D ***QuadraDrive™*** ***Amplifier with*** ***Digital Sound Processing***



OWNER'S MANUAL



Congratulations!

You are now the proud owner of one of the newest and most innovative guitar amplifiers available, the Crate GT-80D **QuadraDrive™** with **Digital Sound Processing**. This versatile and compact amplifier features four separate, footswitchable Gain controls, with your choice of Tube or Solid State preamps for either the Clean or the Overdrive channel. Discrete tones and Master Level controls for each channel, along with Crate's exclusive Tube Driven Mosfet power amp, add even more flexibility and control.

The easy to operate Digital Sound Processing section offers you a wide variety of effects, from some of the finest reverb settings to the truly bizarre. A unique feature of the Digital Sound Processing is its ability to "remember" settings for each preamp and channel selection.

Like all Crate products, your GT-80D is proudly made in America, using only the best components. Extensive testing at the hands (and ears) of skilled technicians and musicians insures you that this amplifier is the absolute best it can be.

In order to get the most out of your new amplifier, we strongly urge you to go over the information contained in this manual before you begin playing

And ***thank you*** for choosing **CRATE®**

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| CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL. | ATTENTION: POUR REDUIRE D'ELECTROCUTION NE PAS ENLEVER LE COUVERCLE. AUCUNE PIECE INTERNE N'EST REPARABLE PAR L'UTILISATEUR. POUR TOUTE REPARATION, S'ADRESSER A UN TECHNICIEN QUALIFIE. | VORSICHT: ZUR MINIMIERUNG ELEKTRISCHER SCHLAGEGFAHR NICHT DEN DECKEL ABENHMEN. INTERNE TEILE KONNEN NICHT VOM BENUTZER GEWARTET WERDEN. DIE WARTUNG IS OQUALIFIZIERTEM WARTUNGSPERSONAL ZU UBERLASSEN. | | | | | | | | | | | | | | | | | | | | | | | | |
| THIS EQUIPMENT HAS BEEN DESIGNED AND ENGINEERED TO PROVIDE SAFE AND RELIABLE OPERATION. IN ORDER TO PROLONG THE LIFE OF THE UNIT AND PREVENT ACCIDENTAL DAMAGES OR INJURY, PLEASE FOLLOW THESE PRECAUTIONARY GUIDELINES: CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT OPEN CHASSIS; DO NOT DEFEAT OR REMOVE THE GROUND PIN OF THE POWER CORD; CONNECT ONLY TO A PROPERLY GROUNDED AC POWER OUTLET. WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE. CAUTION: NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL. CAUTION: THIS UNIT IS CAPABLE OF PRODUCING HIGH SOUND PRESSURE LEVELS. CONTINUED EXPOSURE TO HIGH SOUND PRESSURE LEVELS CAN CAUSE PERMANENT HEARING IMPAIRMENT OR LOSS. USER CAUTION IS ADVISED, AND EAR PROTECTION RECOMMENDED IF UNIT IS OPERATED AT HIGH VOLUME. THE CHART BELOW SHOWS THE U.S. GOVERNMENT'S OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REGULATIONS WHICH WERE IN EFFECT AT THE TIME OF THIS PUBLICATION FOR PERMISSIBLE NOISE EXPOSURE, PER 29CFR1910.95, TABLE G-16: | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1" style="margin: auto; border-collapse: collapse;"> <thead> <tr> <th style="font-size: x-small;">SOUND LEVEL DBA, SLOW RESPONSE</th> <th style="font-size: x-small;">DURATION PER DAY IN HOURS</th> <th style="font-size: x-small;">SOUND LEVEL DBA, SLOW RESPONSE</th> <th style="font-size: x-small;">DURATION PER DAY IN HOURS</th> </tr> </thead> <tbody> <tr> <td style="font-size: x-small;">90</td> <td style="font-size: x-small;">8</td> <td style="font-size: x-small;">102</td> <td style="font-size: x-small;">1 - 1 1/2</td> </tr> <tr> <td style="font-size: x-small;">92</td> <td style="font-size: x-small;">6</td> <td style="font-size: x-small;">105</td> <td style="font-size: x-small;">1</td> </tr> <tr> <td style="font-size: x-small;">95</td> <td style="font-size: x-small;">4</td> <td style="font-size: x-small;">110</td> <td style="font-size: x-small;">1/2</td> </tr> <tr> <td style="font-size: x-small;">97</td> <td style="font-size: x-small;">3</td> <td style="font-size: x-small;">115</td> <td style="font-size: x-small;">1/4 or less</td> </tr> <tr> <td style="font-size: x-small;">100</td> <td style="font-size: x-small;">2</td> <td></td> <td></td> </tr> </tbody> </table> | | | SOUND LEVEL DBA, SLOW RESPONSE | DURATION PER DAY IN HOURS | SOUND LEVEL DBA, SLOW RESPONSE | DURATION PER DAY IN HOURS | 90 | 8 | 102 | 1 - 1 1/2 | 92 | 6 | 105 | 1 | 95 | 4 | 110 | 1/2 | 97 | 3 | 115 | 1/4 or less | 100 | 2 | | |
| SOUND LEVEL DBA, SLOW RESPONSE | DURATION PER DAY IN HOURS | SOUND LEVEL DBA, SLOW RESPONSE | DURATION PER DAY IN HOURS | | | | | | | | | | | | | | | | | | | | | | | |
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| ACCORDING TO OSHA, ANY EXPOSURE IN EXCESS TO THESE AMOUNTS LISTED ABOVE COULD RESULT IN SOME HEARING LOSS. | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EXPLANATION OF GRAPHICAL SYMBOLS: = "DANGEROUS VOLTAGE" / "DANGER HAUTE TENSION" / "GEFAHLICHE SPANNUNG" = "IT IS NECESSARY FOR THE USER TO REFER TO THE INSTRUCTION MANUAL" / "REFERREZ-VOUS AU MANUAL D'UTILISATION" / "UNBEDINGT IN DER BETRIEBUNGSANLEITUNG NACHSCHLAGEN" | | | | | | | | | | | | | | | | | | | | | | | | | | |



ABOUT THE GT-80D:

The Crate GT-80D **QuadraDrive™** with **Digital Sound Processing** is truly unique and versatile, offering you more performance and flexibility than **any** other compact amplifier.

Start with two completely separate preamp stages: **Solid State** and **Tube**. Then add the two channels: **Clean** and **Overdrive**. Put them together and you have your choice of some of the hottest contemporary sounds **and** the coolest vintage sounds available. For example, **Solid State Clean** gives you “today’s sound:” crisp highs and an ultra-tight bass response, while **Tube Clean** offers you that vintage tube sound, from ultra-clean to a bluesy crunch. **Solid State Overdrive** gives you all of the traditional Crate Mega-Gain hard rock sizzle and fire, with lots of definition and compression, and **Tube Overdrive** starts with a bluesy crunch and can deliver everything up to screaming, tube-driven lead distortion with plenty of sustain and total tone control.

But that’s not all. Now add Crate’s easy to operate **Digital Sound Processing**, with 31 preset effects including a variety of delays, backwards sampling, gated outputs and reverbs. Select an effect for each of the four preamp and channel combinations and the amplifier will “remember” each setting and recall it as you switch between preamps and channels. Add a footswitch and you can preset TWO settings per pre-amp/channel choice, for up to 8 instantly accessible effects. And the GT-80D’s memory is “non-volatile” which means that once you enter your settings, they’re in the memory until you change them!

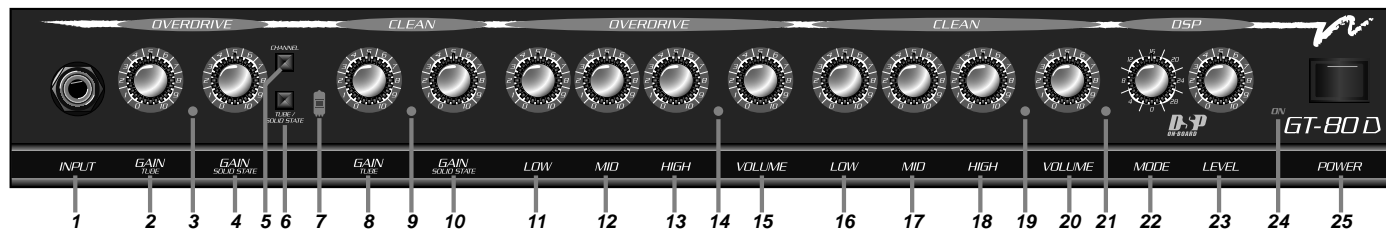
FEATURES OVERVIEW:

Given below is a quick overview of the GT-80DSP’s features and controls:

- **Two Completely Separate Channels:** Independent Gains, 3-band EQs, and Levels.
- **Four Gain Controls:** Tube Overdrive, Solid State Overdrive, Tube Clean, Solid State Clean.
- **Digital Sound Processing:** A wide variety of digital reverbs and effects. The ability to store settings for each of the four channel/preamp combinations. Footswitchable, with 2 settings per combinations.
- **Tube Driven Mosfet Power Amplifier:** Crate exclusive. No traditional solid state output devices means no chance of harsh “square wave” distortion.
- **Total Footswitch Control:** Channel and Preamp selection. Digital effects control.
- **External Speaker Jack:** Series connection means no chance of overloading the amplifier. Standard 1/4” mono phone jack.
- **Effects Loop:** 1/4” Line Out/Line In jacks. Allows external signal processor connection. Allows direct connection to external amplifier, mixer, recording console or whatever.



THE GT-80D FRONT PANEL:



1: INPUT: Connect your guitar here using a shielded instrument cable.

OVERDRIVE Gains:

2: TUBE GAIN: This serves as the gain control for the Overdrive Channel's Tube preamp section, giving you control over the compression and overdrive characteristics of the GT-80DSP's input tubes. Use this control along with the Overdrive Channel's volume control (#15) to create a wide variety of sounds at any volume level. (Some suggested settings can be found on page 12.) With the control to the full-left position, no signal passes through. As you bring the control towards center you increase the signal level and the tube compression, with maximum tube distortion towards the full-right position.

3: OVERDRIVE LED: This LED glows red when the Overdrive Channel is chosen, and along with LED #14 gives you a visual sign that the Overdrive gains, tone controls and volume control are active.

4: SOLID STATE GAIN: This serves as the gain control for the Overdrive channel's Solid State preamp section. Use this control along with the Overdrive Channel's volume control (#15) to create a wide variety of sounds at any volume level. (Some suggested settings can be found on page 13.) With the control to the full-left position, no signal passes through. As you bring the control towards center you increase the signal level and compression, reaching maximum distortion in the full-right position.

5: CHANNEL: Select either the Overdrive channel (switch in the IN position) or the Clean Channel (switch OUT) with this pushbutton switch. The channel indicator LEDs (#3 and 14 for Overdrive, #9 and 19 for Clean) work with this switch as a visual guide.

NOTE: When a footswitch is connected to the Channel Select footswitch jack (see #29, rear panel) the front-panel switch will have no control over which channel is selected.

6: TUBE/SOLID STATE: Select either the Tube preamp (switch IN) or the Solid State preamp (switch OUT) for either channel with this pushbutton switch. The Tube LED (#7) works with this switch as a visual guide: it glows when the tube section has been selected.

NOTE: When a footswitch is connected to the Channel Select footswitch jack (which also serves as the Tube/Solid State select; see #29, rear panel) the front-panel switch will have no control over which preamp section is selected.

7: TUBE LED: This tube-shaped symbol glows orange when the Tube preamp section is selected, giving you a quick visual reference as to which preamp section is active.

CLEAN Gains:

8: TUBE GAIN: This serves as the gain control for the Clean Channel's Tube preamp section, giving you control over the compression and overdrive characteristics of the GT-80D's preamp tube. Use this control along with the Clean Channel's volume control (#20) to create a wide variety of sounds at any volume level. (Some suggested settings can be found on pages 12 and 13.) With the control to the full-left position, no signal passes through. As you bring the control towards center you increase the signal level and the tube compression, with a bluesy tube crunch coming to life as you approach a setting of 8 and thicker tube distortion in the full-right position.



9: CLEAN LED: This LED glows green when the Clean Channel is chosen, and along with LED #19, gives you a visual sign that the Clean gains, tone controls and volume control are active.

10: SOLID STATE GAIN: This serves as the gain control for the Clean Channel's Solid State preamp section. Use this control along with the Clean Channel's volume control (#20) to create a wide variety of sounds at any volume level. (Some suggested settings can be found on pages 12 and 13.) With the control to the full-left position, no signal passes through. As you bring the control to the right you increase the signal level, which stays clean all the way up to the full-right position.

OVERDRIVE CHANNEL:

11: LOW: Adjust the Overdrive Channel's low frequency output with this control: the center position is "flat," that is, no boost or cut. By turning the control to the left you reduce the low frequency output; turning it to the right increases the low frequency output. The Low control covers a range of 24dB at 100Hz.

12: MID: Adjust the Overdrive Channel's midrange output with this control: in the center position the midrange output will be "flat" (no boost or cut). Turning the control to the left reduces the midrange output; turning it to the right increases the midrange output. The Mid control covers a range of 10dB at 1kHz, which affects the "voice" of your guitar's sound.

13: HIGH: Adjust the Overdrive Channel's high frequency output with this control: in the center position the high frequency output will be "flat" (no boost or cut). Turning the control to the left reduces the high frequency output; turning it to the right increases the high frequency output. The High control covers a range of 20dB at 5kHz, which allows you to adjust the crispness or the "bite" of your guitar.

14: OVERDRIVE LED: This LED glows red when the Overdrive Channel is chosen, and along with LED #3, gives you a visual sign that the Overdrive gains, tone controls and volume control are active.

15: VOLUME: Adjust the output level of the Overdrive Channel with this control: in the full-left position there is no output. As you rotate the control to the right you increase the strength of the Overdrive Channel's signal going into the power amp, thus increasing the output volume. The signal level for the Line Out jack (see #32, rear panel) is simultaneously affected by this control.

CLEAN CHANNEL:

16: LOW: Adjust the Clean Channel's low frequency output with this control: the center position is "flat," that is, no boost or cut. By turning the control to the left you reduce the low frequency output; turning it to the right increases the low frequency output. The Low control covers a range of 23dB at 100Hz.

17: MID: Adjust the Clean Channel's midrange output with this control: in the center position the midrange output will be "flat" (no boost or cut). Turning the control to the left reduces the midrange output; turning it to the right increases the midrange output. The Mid control covers a range of 14dB at 800Hz, which affects the "voice" of your guitar's sound.



THE GT-80D FRONT PANEL - CON'T:

* * * *Please refer to the illustration on page 4.* * * *

18: HIGH: Adjust the Clean Channel's high frequency output with this control: in the center position the high frequency output will be "flat" (no boost or cut). Turning the control to the left reduces the high frequency output; turning it to the right increases the high frequency output. The High control covers a range of 30dB at 10kHz, which allows you to adjust the crispness or the "bite" of your guitar.

19: CLEAN LED: This LED glows green when the Clean Channel is chosen, and along with LED #9, gives you a visual sign that the Clean gains, tone controls and volume control are active.

20: VOLUME: Adjust the output level of the Clean Channel with this control: in the full-left position there is no output. As you rotate the control to the right you increase the strength of the Clean Channel's signal going into the power amp, thus increasing the output volume. The signal level for the Line Out jack (see #31, rear panel) is simultaneously affected by this control.

The Digital Sound Processor (DSP):

Given below is a brief description of the Digital Sound Processor's controls. For complete information on the use and functions of the Digital Sound Processor, please see pages 8 through 11.

21: LED: This LED indicator glows when the Digital Sound Processor is active, indicating the presence of a processed signal.

22: MODE: Select the **type** of digital sound processing effect with this control. Each preamp and channel setting will "remember" its setting, allowing you to switch between channels and preamps (Tube/Solid State) without having to reset the Mode control. **For a complete listing of the different effects and their corresponding settings, see "Using the Mode Control" on page 8.**

23: LEVEL: Adjust the **amount** of digital sound processing effect with this control: in the full-left position the output signal is "dry" (no reverb or effect); rotating the control to the right increases the amount of effect.

24: ON LED: The word "ON" will glow red when you turn the GT-80D on, showing you that the amplifier is activated and ready to play.

25: POWER: This heavy-duty rocker-type switch is used to turn the amplifier ON in the left position, OFF in the right position. The ON LED (#24) works with this switch as a visual indicator.



THE GT-80D REAR PANEL:



26: POWER CORD: Firmly plug the supplied, heavy-duty grounded power cord into this receptacle. When in use, be sure this cord is properly plugged into a safely-wired, grounded 120 volt, 60 cycle AC power outlet. **DO NOT** attempt to defeat the ground connection on this cable!

If your GT-80D was purchased outside of the United States, see the unit's rear panel for its power rating and follow the above guidelines.

27: FUSE: This protects the amplifier against damages caused from a faulty AC power source or other problems. If the fuse blows, replace it **ONLY** with the same size and type use. If the fuse blows repeatedly check the AC source: if it's okay, contact your Crate dealer for service information.

28: EXTERNAL SPEAKER: Allows you to connect the output of the GT-80D to an external speaker, placing it in series with the 12" speaker inside the amplifier. Since this is a series connection, there is no chance of damaging the amplifier with too low an impedance load.

29: CHANNEL SELECT FOOTSWITCH: A dual footswitch can be plugged in here to give you remote control for the selection of the Overdrive/Clean channels **AND** the Tube/Solid State preamp sections. When connected, the footswitch overrides the front panel switches for these functions.

NOTE: This is a STEREO 1/4" jack: "ring" controls the preamp sections, "tip" controls channel selection, "sleeve" is ground for both. Use only a stereo-plug equipped footswitch (such as the Crate CFP-2), or a three-way footswitch (such as the Crate CFP-3) to control Reverb as well - see #30.

30: REVERB FOOTSWITCH: A single footswitch can be plugged in here to give you remote control for the Digital Sound Processing Mode for all channels. The footswitch offers you a choice of two Mode settings per channel: presetting one of the choices to "bypass" gives you the traditional "on/off" control. For additional information please see "Using the Mode control" on page 8.

31: EFFECTS LOOP LINE IN: Connecting an external signal processor, such as digital delay or echo, can be accomplished through the Line In and Line Out jacks. Connect the **OUTPUT** of the external device to the Line In jack using a shielded cable with mono 1/4" phone plugs. This sends the line-level signal **IN** to the GT-80D's internal power amplifier. The Line In jack is Post-Master EQ and Post-Master Level.

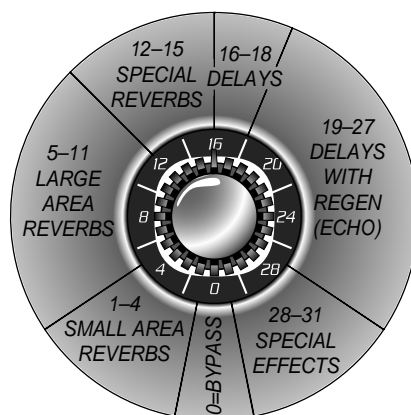
32: EFFECTS LOOP LINE OUT: This carries a pre-amplified, post-EQ signal to an external effects device, amplifier, mixing console or recorder. Connect the Line Out jack to the **INPUT** of the device using a shielded cable with mono 1/4" phone plugs. This sends a line-level signal **OUT** from the GT-80D. The Line Out jack is Post-Master EQ and Post-Master Level, therefore its tone and output level are governed by the settings of the amplifiers controls. The Line Out jack is an unbalanced mono 1/4" type.



ABOUT THE DIGITAL SOUND PROCESSOR:

Using the Mode Control

The Digital Sound Processor's 32 position Mode control allows you to instantly access the exact type of effect you want - from classic reverberation to radical "backwards" sounds - for any of the preamp or channel settings. The diagram below illustrates where each "family" of effects is located. Use this diagram along with the table on the facing page to familiarize yourself with the locations of the many different sound effects possible from your GT-80D.



The setting of the Mode Control will determine the type of effect for whichever preamp/channel combination the amp is set to at the time you adjust the Mode control. Once set, the GT-80D's non-volatile memory retains the setting until you reset it.

Example: Plug in your guitar and turn on the amplifier. Set Channel Select to Clean, Tube/Solid State Select to Tube. Now set the Mode Control to "12" (medium gated reverb). Strike a chord on your guitar and listen to the sound of the effect. Press in the Channel Select switch to choose the Overdrive Channel, then set the Mode Control to 26 (large hard surface echo). Strike a chord and listen to the results. Now press Select again to get back to the Clean Channel and strike a chord - even though you haven't changed the setting of the Mode Control, the amplifier "remembered" that you had programmed in setting "12" and kept the effect as you left it.

There's more: When a Reverb footswitch is used, you can program each of the four channel/preamp combinations with **two** Mode settings. If you want to control reverb on/off with the footswitch, for example, set the Mode to "0" (bypass), hit the footswitch and set Mode to "5" (large bright hall). Now you have the ability to switch the reverb on and off with the footswitch.

With the footswitch you have a choice of two reverb settings for each of the four preamp/channel combinations, for **the most** flexibility and versatility possible!



ABOUT THE DIGITAL SOUND PROCESSOR:

Table of Settings:

The table below lists each of the 32 settings of the GT-80D's Mode control, along with a brief explanation of each effect.

| NO. | NAME | TYPE | DESCRIPTION |
|-----|---------------------------|----------------|---|
| 0 | OFF | NONE | Bypass—no signal processing occurs. |
| 1 | SMALL ROOM, BRIGHT | SMALL REVERB | 8' x 8' empty room with hardwood floors. |
| 2 | SMALL ROOM, DARK | SMALL REVERB | 8' x 8' carpeted room with up to four people. |
| 3 | SMALL HALL, BRIGHT | SMALL REVERB | 20' x 40' Rehearsal Hall, wood floors, hard walls. |
| 4 | SMALL HALL, DARK | SMALL REVERB | 20' x 40' carpeted Rehearsal Hall with draped walls and up to 30 people. |
| 5 | LARGE HALL, BRIGHT | LARGE REVERB | 50' x 100' empty Rehearsal Hall, 20' ceilings. |
| 6 | LARGE HALL, DARK | LARGE REVERB | 50' x 100' Rehearsal Hall with up to 50 friends and crew. |
| 7 | AVERAGE CLUB, BRIGHT | LARGE REVERB | 500 capacity empty club, wood floors, afternoon sound check. |
| 8 | AVERAGE CLUB, DARK | LARGE REVERB | 500 capacity club, wood floors, stuffed with people. |
| 9 | CONCERT HALL, BRT | LARGE REVERB | 5,000-seat Concert hall, hard back wall, afternoon sound check. |
| 10 | CONCERT HALL, DARK | LARGE REVERB | 5,000-seat Concert hall, sold out show. |
| 11 | STADIUM | LARGE REVERB | 40,000-seat round Stadium, afternoon sound check, 100 crew & VIPs only. |
| 12 | GATED REVERB, MEDIUM | SPECIAL REVERB | Studio Effect—Engineer cuts off reverb slightly after each note. (220ms Gate) |
| 13 | GATED REVERB, LONG | SPECIAL REVERB | Studio Effect—Engineer lets note ring, then cuts it off. (350ms Gate) |
| 14 | PLATE REVERB | SPECIAL REVERB | Studio Effect—Simulates Steel Plate Reverb. |
| 15 | TRADITIONAL REVERB | SPECIAL REVERB | Studio Effect—Simulates old-fashioned multi-spring tube reverb unit. |
| 16 | SLAPBACK, SHORT | DELAY | 125ms delay + small reverb; Elvis' favorite. |
| 17 | SLAPBACK, MEDIUM | DELAY | 350ms delay + small reverb; Rockabilly special. |
| 18 | SLAPBACK, LONG | DELAY | 557ms delay only, 630' travel time of sound. |
| 19 | SHORT MEDIUM SURFACE ECHO | ECHO | 85ms delay with 14.2% regen. & small reverb. |
| 20 | SHORT HARD SURF ECHO | ECHO | 85ms delay with 27.3% regeneration. |
| 21 | SHORT/MEDIUM MEDIUM SURF | ECHO | 280ms delay with 21.8% regen & small reverb. |
| 22 | MEDIUM SOFT SURFACE ECHO | ECHO | 335ms delay with 12.5% regeneration. |
| 23 | MEDIUM HARD SURFACE ECHO | ECHO | 335ms delay with 26.5% regen. & small reverb. |
| 24 | MEDIUM GLASS ECHO | ECHO | 335ms delay with 43.7% regeneration. |
| 25 | LARGE SOFT SURFACE ECHO | ECHO | 485ms delay with 7.8% regeneration. |
| 26 | LARGE MEDIUM SURFACE ECHO | ECHO | 485ms delay with 20.3% regeneration. |
| 27 | LARGE HARD SURF ECHO | ECHO | 485ms delay with 39.2% regen & small reverb. |
| 28 | INFINITE DELAY | SPECIAL EFFECT | 506ms delay with over 90% regeneration. |
| 29 | THICKENER | SPECIAL EFFECT | 33ms-based sound fattener @ selected freqs. |
| 30 | MULTI-TAP | SPECIAL EFFECT | Multi-thickener with some subtle delays added. |
| 31 | REVERSE | SPECIAL EFFECT | "Backwards masking" effect (number nine, number nine,...) |



ABOUT THE DIGITAL SOUND PROCESSOR:

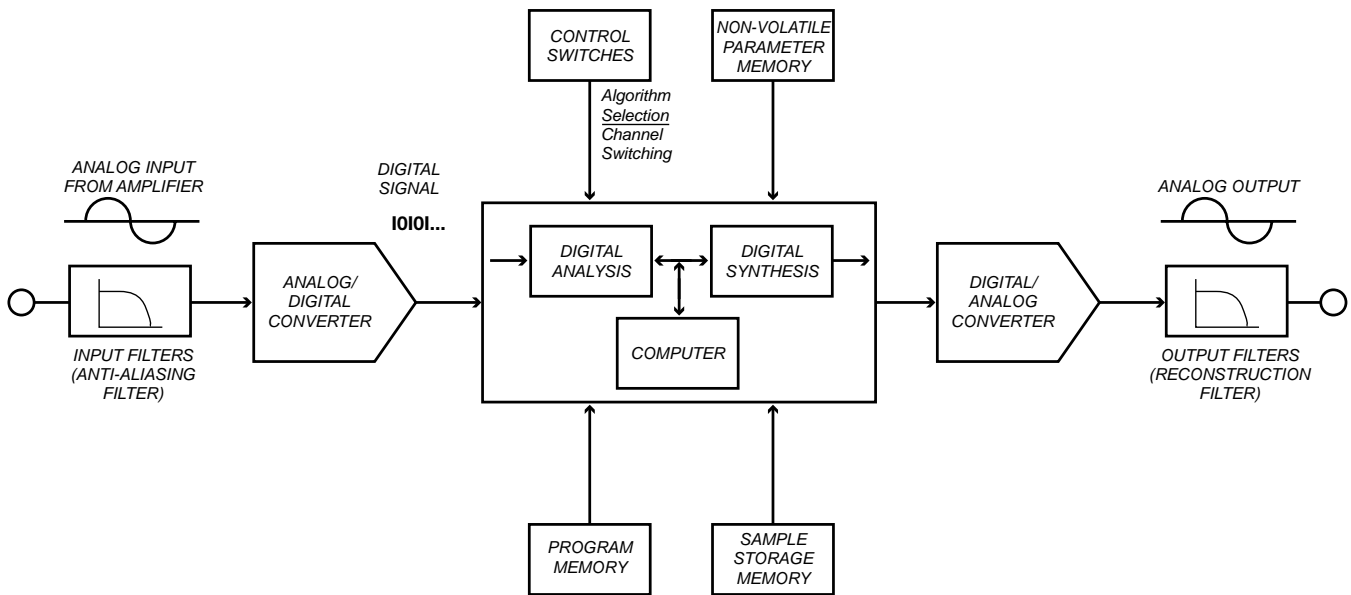
(Semi-) Technical Description:

“What is reverb, anyway?”

Imagine yourself seated in a small, lightly furnished room, about to enjoy a private performance by your favorite guitarist. The guitarist picks up an acoustic guitar and sharply strikes a single chord, then immediately mutes the strings with his strumming hand. Sound waves instantaneously travel from the guitar’s sound hole through the air to your ears, where your brain processes the waves into the musical sounds you know so well. At the same time, reflected sound waves are bouncing all around the room: off the walls, ceiling and floor, off of the musician, off of you; off of everything in the room. These multiple reflections occur so fast and in such large numbers that your ears perceive them as one sound: reverb. Without these reflections the sound from the guitar would seem lifeless, dry and unnatural.

Different rooms produce different reflections, thus producing different sounding reverbs. The same guitarist’s single-chord performance in a large concert hall would sound different than it did in the intimate surroundings described above, due to the different reflections produced - thus, the different sounding reverb.

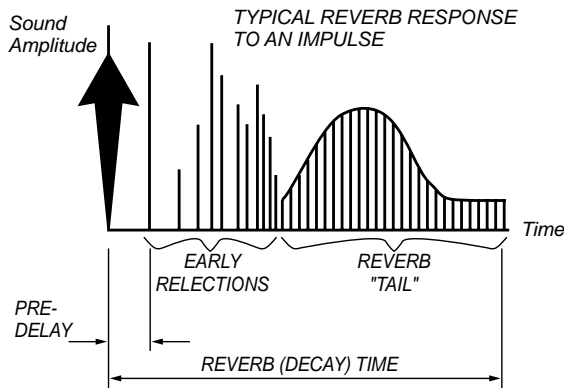
What can be produced by nature can be simulated through the use of the GT-80D’s highly sophisticated digital electronics circuitry. The GT-80D has many different reverbs available, as well as some unique digital effects, not found in nature.



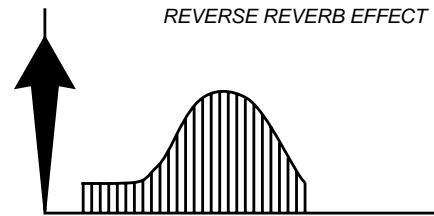


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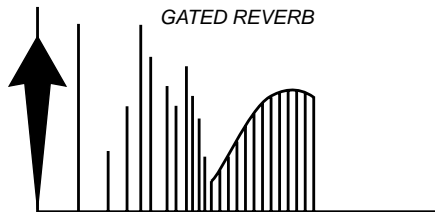
Block Diagrams:



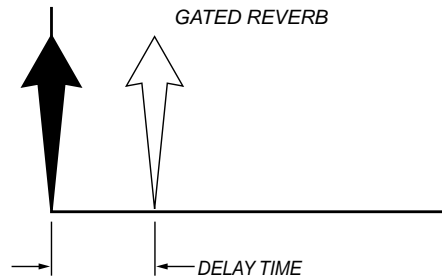
Time domain response of a typical reverb, impulse input. Early reflections and reverb "tail" combined with room characteristics determine the sound of the effect.



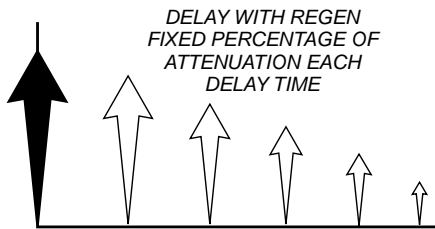
Time domain response of a reverse reverb, impulse input. Reverb effect is digitally reversed to produce the opposite sound pattern of natural (or digital) reverb.



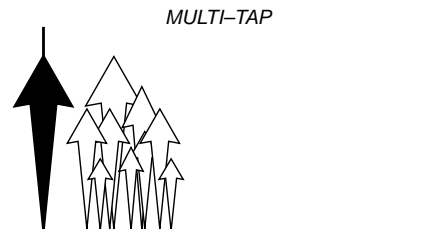
Time domain response of a gated reverb, impulse input. Reverb "tail" is digitally cut off just past its peak.



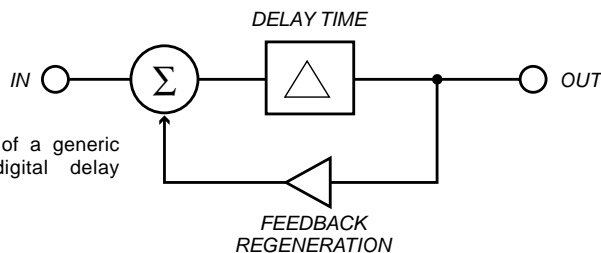
Time domain response of a slapback effect, impulse input. Secondary signal is a reproduction of the original input signal (similar amplitude).



Time domain response of a delay effect, impulse input. Secondary signals are reproductions of the original signal, diminishing in amplitude over a fixed time period.



Time domain response of a multi-tap effect, impulse input. Secondary signals are reproductions of the original signal, differing in amplitude, at nearly the same time.



Block diagram of a generic regenerative digital delay circuit.



SOME SUGGESTED SETTINGS:

SPARKLING CLEAN:



FUNKY CLEAN:



WARM TUBE:



BLUESY DIRT:





WARM TUBE CRUNCH:



HOT TUBE LEAD:



SOLID STATE LEAD:

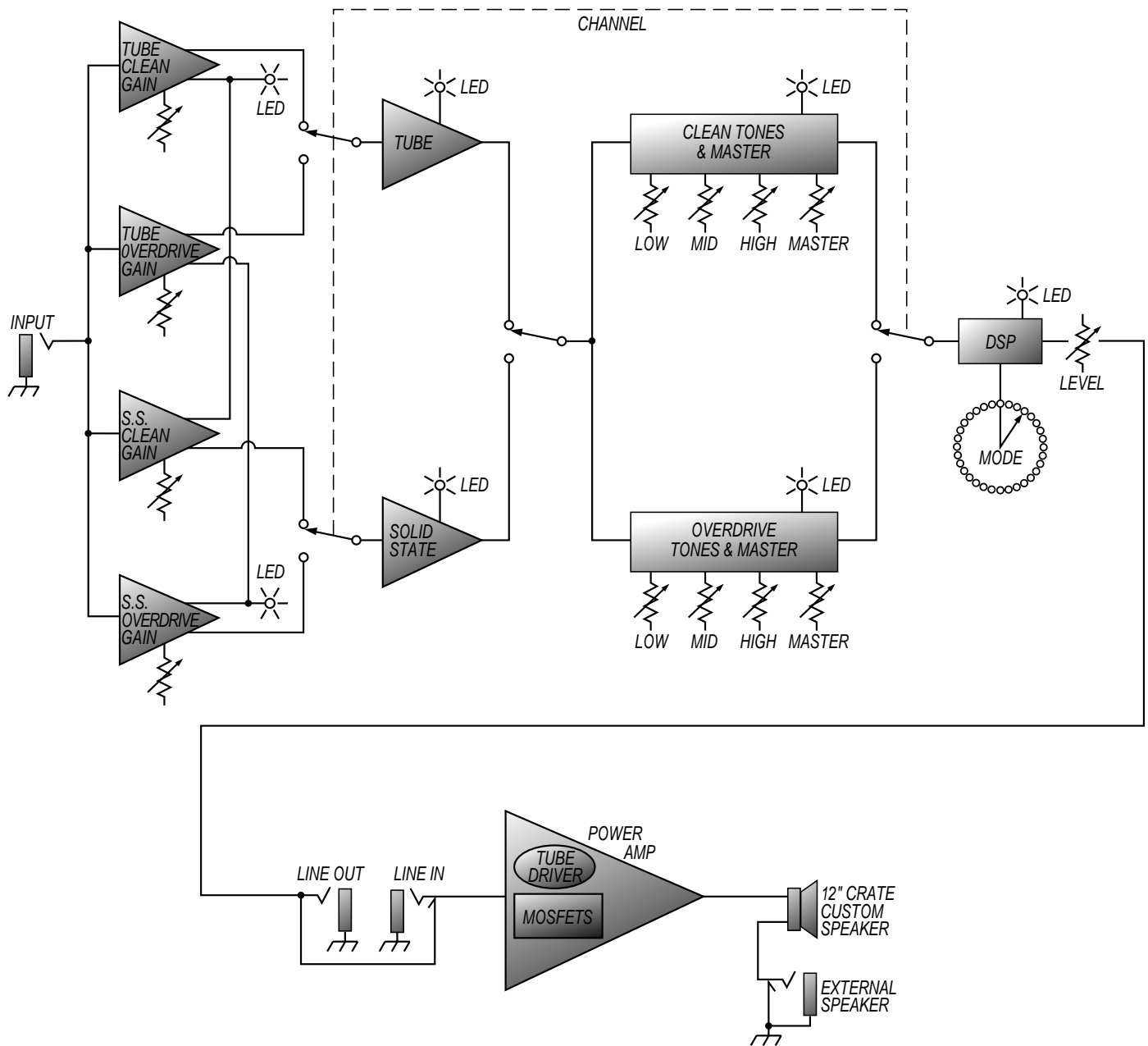


SOLID STATE CRUNCH:





SYSTEM BLOCK DIAGRAM:





**TECHNICAL SPECIFICATIONS:**

| | |
|--------------------------------|--|
| Output Power Rating | 80 watts RMS @ 5% THD 8 ohm load, 120 VAC |
| Gain | 88dB, tones @ "5" @ 1kHz |
| Tone Control Range | |
| Overdrive Channel | |
| Low | 24dB range @ 100Hz |
| Mid | 10dB range @ 1kHz |
| High | 20dB range @ 5kHz |
| Clean Channel | |
| Low | 23dB range @ 100Hz |
| Mid | 14dB range @ 800Hz |
| High | 30dB range @ 10kHz |
| Signal To Noise Ratio | |
| Overdrive Channel | |
| Solid State | 61dB |
| Tube | 57dB |
| Clean Channel | |
| Solid State | 81dB |
| Tube | 72dB |
| Input Impedance | 1M ohm |
| Maximum Signal Accepted | 3V peak to peak |
| Driver Tube Type | 12AX7A (1), 12AU7 (2) |
| Output Device Type | MOSFETs |
| Line Out Level | 0.7V RMS nominal |
| Internal Speaker | |
| Size | 12" |
| Type | Crate Custom-L |
| Magnet | 34 oz |
| Voice Coil | 1.75" |
| RMS Rating | 80 watts |
| Impedance | 8 ohms |
| Power Requirements | 115V 60Hz, 100VA 100/115VAC, 50/60Hz, 100VA 230VAC, 50/60Hz, 100VA |
| Size and Weight | 17"H x 21.25"W x 10.75"D, 40 lbs. |

Crate continually develops new products, as well as improves existing ones. For this reason, the specifications and information in this manual are subject to change without notice.

The GT-80D is covered with a durable black Tolex® material. To keep the cabinet in top condition, wipe it clean with a damp lint-free cloth to remove dirt and road film. Never spray cleaning agents directly onto the cabinet, and stay away from abrasive cleansers which could damage the finish.



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