

CRATE

GX-40C+ / GX-40D AMPLIFIER



OWNER'S MANUAL

Congratulations!

You are now the proud owner of the versatile and powerful Crate GX-40C+/40D amplifier with Stereo Chorus and Digital Sound Processing (GX-40D only). This amplifier offers you more features and better sound than virtually any amp in its class: True Stereo Chorus. A Stereo Effects Loop. Stereo Headphones / Line Out jack. Stereo External Speaker jacks. A front-panel insert jack to add even more effects. Each of the two extraordinary channels have their own Level controls and tones: the Overdrive channel features separate Gain and Level controls along with Crate's exclusive Shape control for quick and precise tone setting, *plus* a Mid Shift switch for even more control over your sound. Switch over to the Clean channel, with its own separate Gain and Level controls plus three-band EQ for dialing in just the right sounds.

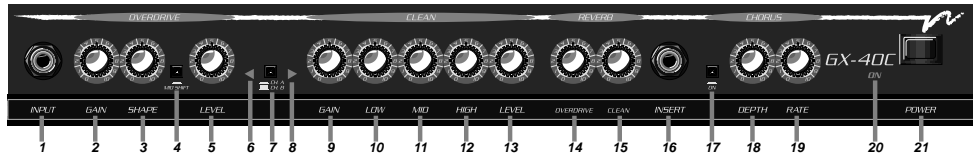
Like all Crate products, your GX-40C+/40D is Musician Made in the U.S.A., using only the best components. Extensive testing at the hands (and ears) of skilled technicians and musicians insures you that this amplifier is the absolute best it can be.

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**[®]

CRATE[®] GX-40C+/40D Amplifier

FRONT PANEL:



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

OVERDRIVE CHANNEL: *A high gain channel giving you sounds from a slight edge to serious overdrive.*

2: GAIN: Sets the amount of compression and distortion for the Overdrive channel with this control. Rotating the control towards the right increases the intensity of overdrive distortion. Crate's exclusive "Flex-Wave" circuitry uses Sequential Cascading Gains to deliver distortion which is rich in harmonics and responsive to your touch. Use the Gain control along with the Shape and Level (#3 and 5) to create a wide variety of lead sounds.

3: SHAPE: Quickly "dial in" just right lead sounds with this control which adjusts the "shape" of the distortion wave, producing a wide variety of tone combinations. Basically, rotating the control towards the left enhances the mid frequencies; rotating it towards the right enhances more of the low and high frequencies simultaneously, with a myriad of tonal variations in between.

4: MID SHIFT: Engaging this switch deepens the notch at the clockwise position of the Shape control (#3).

5: LEVEL: Sets the output volume for the Overdrive channel with this control: in the far-left position there is no output; as you rotate the control to the right the output level increases.

6. OVERDRIVE CHANNEL LED: This LED glows red when the Overdrive channel is selected.

7: CHANNEL SELECT: Press this switch IN to activate the Overdrive channel; press it again to the OUT position for the Clean channel. This switch can also be used in conjunction with the DSP section (#14 and 15, GX-40D only) to change your digital reverb mode (see "The DSP Section" on the far right panel). A footswitch (see #26) overrides this control.

8. CLEAN CHANNEL LED: This LED glows green when the Clean channel is selected.

CLEAN CHANNEL: *A normal gain channel designed to give you crystal clear sounds to medium distortion.*

9: GAIN: Set the amount of overdrive to the Clean channel with this control. At lower settings the sound will be crystal clear. Rotate towards the right to increase the amount of distortion, with a fat, bluesy sound in the full clockwise position. Use the Gain control along with the Tone and Level controls (#10 thru 13) to create a wide variety of rhythm sounds.

10: LOW: Adjust the low frequency output level of the Clean channel with this control: turning the control to the left reduces the low frequency output; turning it to the right increase the low frequency output. The Low control allows a total range of ± 22 dB of boost or cut at 80Hz. Due to the large amounts of low end available, you may want to roll off the bass at high volume levels.

11: MID: Adjust the mid frequency output level of the Clean channel with this control: the center position is "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 allows a total range of ± 14 dB of boost or cut at 800Hz.

12: HIGH: Adjust the high frequency output level of the Clean channel with this control: the center position is "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 allows a total range of ± 20 dB of boost or cut at 8kHz.

13. LEVEL: Set the output volume for the Rhythm channel with this control: in the far-left position there will be no output; as you rotate the control to the right the output level increases.

GX-40C+ (shown above):

14, 15: REVERB, OVERDRIVE / REVERB, CLEAN: Set the amount of reverberation for the appropriate channel with these controls: in the far left position the signal will be "dry" (without any reverb). As you rotate the control to the right the amount of reverberation increases.

GX-40D (not shown):

14: DSP MODE: Select the type of digital sound processing effect with this control. Each channel and chorus setting will "remember" its effect, allowing you to switch between channels and chorus on/off without having to reset the Mode control.

15: DSP LEVEL: Adjust the amount of digital signal processing effect with this control: in the full-left position the signal is "dry" (no reverb/effect); rotating the control to the right increases the amount of effect.

16: INSERT: This jack allows you to add a footpedal or mono effect into the amp loop, after the tone controls, prior to the chorus and amplifier sections. The jack is a stereo 1/4" phone jack, wired as follows: Tip = signal out, ring = signal in, sleeve = common ground. (Refer to the illustration on the panel to the right.)

17: CHORUS ON: Activate the Stereo Chorus section by pressing this switch IN; press it again to release it to the OUT position to turn the Chorus effect off. This switch can also be used in conjunction with the DSP section (GX-40D only) to change your digital reverb mode (see "The DSP Section" on the far right panel). A footswitch (see #26) overrides this control.

18: DEPTH: Set the intensity of the Stereo Chorus effect with this control: in the far left position there will be almost no chorus; as you rotate the control to the right the amount of effect increases.

19: RATE: Set the speed of the Stereo Chorus effect with this control: to the left for slow, smooth "phasing" sounds, to the right for faster "vibrato" sounds.

20: ON LED: The word "ON" glows red when you turn the amplifier on, showing you that it is powered up and ready to play.

21: POWER SWITCH: This heavy-duty rocker-type switch turns the amplifier ON in the left position, OFF in the right position. The ON LED (#20) works with this switch as a visual indicator.

CRATE[®] GX-40C+/40D Amplifier

REAR PANEL:



22: POWER CORD: This heavy-duty, grounded, three wire power cord is to be plugged into ONLY a safely-wired, grounded 120 volt 60 cycle AC power outlet. DO NOT attempt to defeat the ground connection of this cable! If your amplifier was purchased outside of the United States, see its rear panel for the proper power rating.

23: EXTERNAL SPEAKERS: You may connect the outputs of the GX-40C+/D to your external speakers having a rated impedance of at least 2 ohms each, using these jacks. When connecting speakers, use a matched pair: two with the same impedances, to insure optimum performance from the amplifier. Since these are series connections, there is no chance of damaging the amplifier with too small of an impedance load.

24: STEREO HEADPHONE / LINE OUT JACK: This dual-function stereo jack provides you with a means to connect a pair of stereo headphones for private practice sessions, or to obtain a stereo line-level output signal to send to a recording console, mixing board or to another pair of power amplifiers. The internal speakers are muted whenever a plug is inserted into this jack. The wiring for the jack is as follows:

- Tip: Right channel
- Ring: Left channel
- Sleeve: Common ground

WARNING: DO NOT attempt to use headphones in the Speaker jacks! Permanent hearing damage could result!

25: STEREO EFFECTS LOOP: Connect the SEND jack to the inputs of your stereo effects device to send a post-EQ, post-chorus, pre-amplified signal for processing. Connect the outputs of the effects device to the RETURN jack to return the processed signal to the amplifier. The jacks are stereo 1/4" phone jacks, wired as follows:

- Tip: Right channel
- Ring: Left channel
- Sleeve: Common ground

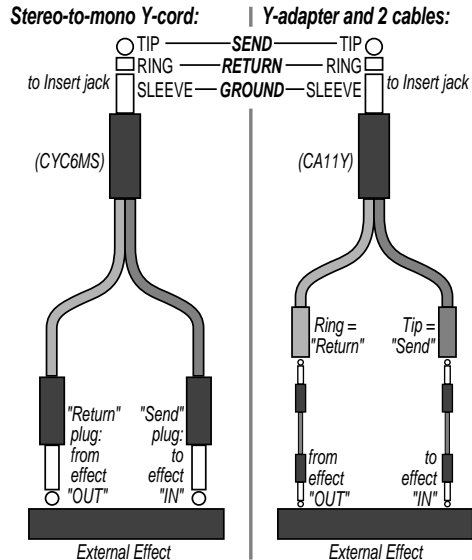
If your effects device has stereo input and output jacks, use a pair of three-conductor stereo patch cords to connect it. If the device has separate left and right jacks, use a pair of one-stereo-male to two-mono-female Y-adapters to make the connections.

26: FOOTSWITCH: Plug a dual footswitch (such as the Crate model FS-60) here to control channel selection and chorus on/off. This stereo 1/4" phone jack is wired as follows:

- Tip: Channel select
- Ring: Chorus on/off
- Sleeve: Common ground

Connecting to the Insert jack:

The Insert jack (#16) lets you patch external effects into the amplifier just prior to its power amp stage. Use Crate's CYC6MS stereo-to-mono Y-cord or an adapter such as Crate's CA11Y and 2 1/4" mono signal cables to connect to the effect as shown below.



CRATE® GX-40C+/40D Amplifier

THE DSP SECTION (GX-40D only):

The DSP's 32 position Mode control allows you to instantly access the exact type of effect you want – from classic reverb to radical “backwards sounds – for any of the Channel/Chorus combinations. The setting of the Mode control will determine the type of effect for whatever Channel/Chorus combination the amp is set to at the time you adjust the Mode control. Once set, the GX-40D'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 the Clean channel. Now set the Mode control to “12” (gated reverb, medium). Strike a chord on your guitar and listen to the sound of the effect. Press in the Channel switch to choose the Overdrive channel, then set the Mode control to “27” (large hard surface echo). Strike a chord and listen to the results. Now press the Channel switch 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: With the Channel Select and Chorus being switchable, you can program each of the four Channel/Chorus combinations with their own Mode settings. If you want to control Reverb on/off with the Chorus footswitch, for example, set the Mode to “0” (bypass), hit the footswitch and set Mode to “5” (large hall, bright). 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 channel selections, for *the most* flexibility and versatility possible!

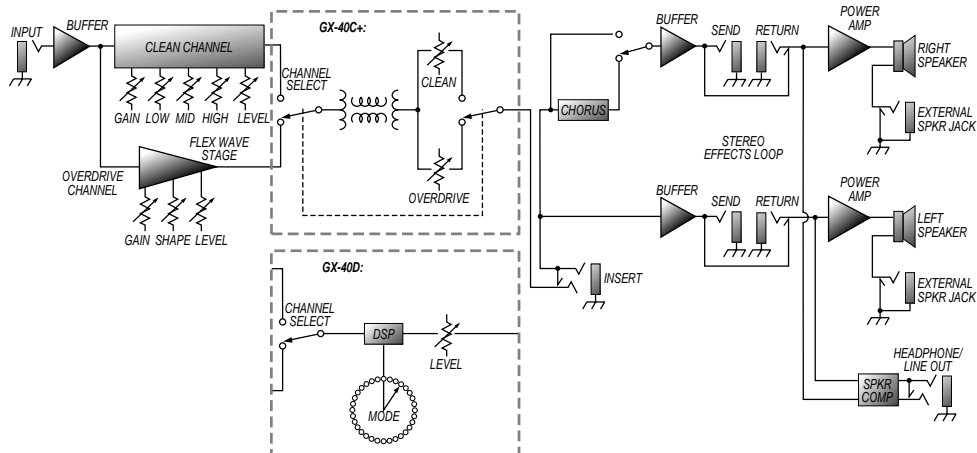
THE DSP SETTINGS:			
#	Name	Type	Description
0	Off	None	Bypass—no signal processing occurs.
1	Sm Rm, Bright	Small Reverb	8' x 8' empty room with hardwood floors.
2	Sm Rm, Dark	Small Reverb	8' x 8' carpeted room with up to four people.
3	Sm Hall, Bright	Small Reverb	20' x 40' Rehearsal Hall, wood floors, hard walls.
4	Sm Hall, Dark	Small Reverb	20' x 40' carpeted Rehearsal Hall with draped walls and up to 30 people.
5	Lg Hall, Bright	Large Reverb	50' x 100' empty Rehearsal Hall, 20' ceilings.
6	Lg Hall, Dark	Large Reverb	50' x 100' Rehearsal Hall with up to 50 friends and crew.
7	Avg Club, Bright	Large Reverb	500 capacity empty club, wood floors, afternoon sound check.
8	Avg Club, Dark	Large Reverb	500 capacity club, wood floors, stuffed with people.
9	Cncrt Hall, Brt	Large Reverb	5,000-seat Concert hall, hard back wall, afternoon sound check.
10	Cncrt Hall, Dark	Large Reverb	5,000-seat Concert hall, SRO at back wall, sold out show.
11	Stadium	Large Reverb	40,000-seat round Stadium, afternoon sound check, 100 crew & VIPs only.
12	Gated Rev, Med	Special Reverb	Studio Effect—Engineer cuts off reverb slightly after each note. (220ms Gate)
13	Gated Rev, 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 Rev	Special Reverb	Studio Effect—Simulates old-fashioned multi-spring tube reverb unit.
16	Slapback, Short	Delay	125ms delay + small reverb; Elvis' favorite.
17	Slapback, Med	Delay	350ms delay + small reverb; Rockabilly special.
18	Slapback, Long	Delay	557ms delay only, 630' travel time of sound.
19	Sh Md Surf Echo	Echo	85ms delay with 14.2% regen. & small reverb.
20	Sh Hd Surf Echo	Echo	85ms delay with 27.3% regeneration.
21	Sh/Med Md Surf	Echo	280ms delay with 21.8% regen & small reverb.
22	Md Sft Surf Echo	Echo	335ms delay with 12.5% regeneration.
23	Md Hd Surf Echo	Echo	335ms delay with 26.5% regen. & small reverb.
24	Md Glass Echo	Echo	335ms delay with 43.7% regeneration.
25	Lg Sft Surf Echo	Echo	485ms delay with 7.8% regeneration.
26	Lg Md Surf Echo	Echo	485ms delay with 20.3% regeneration.
27	Lg Hd 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,...)

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SUGGESTED STARTING SETTINGS:



SYSTEM BLOCK DIAGRAM:









The GX-40C+/40D is covered with a durable black Tolex material; wipe it clean with a lint-free cloth. Never spray cleaning agents onto the cabinet. Avoid abrasive cleansers which would damage the finish.

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GX-40C+/40D TECHNICAL SPECIFICATIONS

Output Power Rating	>20 watts/channel, 4 ohms, 120VAC
Gain, Lead Channel	88dB @ 1kHz
Gain, Rhythm Channel	60dB @ 1kHz
Equalization, Overdrive Channel	Crate's exclusive Shape control, Mid Shift switch
Equalization, Clean Channel	Low: ±22dB range @ 80Hz Mid: ±14dB range @ 800Hz High: ±20dB range @ 8kHz
Input Impedance	1M ohms
Signal To Noise Ratio, Overdrive Channel	64dB (Gain, Shape @ "0", Level @ "10")
Signal To Noise Ratio, Clean Channel	54dB (Gain, Level @ "10", Tones @ "5")
Maximum Input Signal Level Accepted	3 volts, peak-to-peak
Internal Speakers	2 - 8" Crate Custom Design, 4 ohm
Power Requirements	Domestic: 120 VAC, 60Hz, 55VA Export: 100/115VAC, 50/60Hz, 55VA 230VAC, 50/60Hz, 55VA
Cabinet Size and Weight	15.5" H x 20.75" W x 8.75" D, 32 lbs.

 CAUTION RISK OF ELECTRIC SHOCK DO NOT OPEN	<p>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:</p> <p>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.</p> <p>WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.</p> <p>CAUTION: NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.</p> <p>CAUTION: OUR AMPLIFIERS ARE 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 IS RECOMMENDED IF UNIT IS OPERATED AT HIGH VOLUME.</p>	<p>ESTE APARATO HA SIDO DISEÑADO Y CONSTRUÍDO PARA PROVEER AÑOS DE OPERACIÓN SEGURA Y CONFIABLE. PARA PROLONGAR LA VIDA DE ESTE APARATO E IMPEDIR DANOS ACCIDENTALES POR FAVOR SIGA ESTAS INSTRUCCIONES PREVENTIVAS:</p> <p>PRECAUCIÓN: PARA DISMINUIR EL RIESGO DE DESCARGAS ELÉCTRICAS: (1) NO ABRA LA CUBIERTA, (2) NO ES RECOMENDABLE REMOVER O DESACTIVAR LA PATA DEL POLO A TIERRA DEL CABLE DE CORRIENTE. CONECTE CORRECTAMENTE A UNA TOMA DE CORRIENTE A TIERRA.</p> <p>ADVERTENCIA: PARA EVITAR DESCARGAS ELÉCTRICAS O PELIGRO DE INCENDIO, NO DEJE ESTE APARATO EXPUESTO A LA LLUVIA O HUMEDAD.</p> <p>PRECAUCIÓN: NO HAY PIEZAS ADENTRO QUE EL USUARIO PUEDE REPARAR. DEJE TODO MANTENIMIENTO A LOS TÉCNICOS CALIFICADOS.</p> <p>PRECAUCIÓN: NUESTROS AMPLIFICADORES PUEDEN PRODUCIR NIVELES DE PRESIÓN DE SONIDO ALTO. EXPOSICIÓN CONTINUADA A LOS NIVELES DE PRESIÓN DE SONIDO ALTO PUEDE CAUSAR DAÑO PERMANENTE A SU OÍDO. ES ACONSEJADO QUE USE PRECAUCIÓN AL USUARIO Y ES RECOMENDADO PROTECCIÓN PARA LOS OÍDOS SI LA UNIDAD ES OPERADA A VOLUMEN ALTO.</p>	<p>CET ÉQUIPEMENT AVAIT ÉTÉ INVENTÉ ET ARRANGÉ POUR POURVOIR DES ANNÉES D'USAGE SAUF ET SÛR. POUR PROLONGER LA VIE DE CET APPAREIL ET POUR ÉVITER LES DOMMAGES ET LES TORTS ACCIDENTELS, SUIVEZ LES INSTRUCTIONS DE PRÉCAUTION.</p> <p>AVERTISSEMENT: POUR RÉDUIRE LES RISQUES D'ÉLECTROCUTION: (1) N'OUVREZ PAS LE CHÂSSIS, (2) NE PAS ESSAYER DE SUPPRIMER LA BROCHE CORRESPONDANT À LA TERRE.</p> <p>ATTENTION: POUR RÉDUIRE LES RISQUES D'UN FEU OU D'ÉLECTROCUTION, N'EXPOSEZ PAS L'APPAREIL À LA PLUIE OU À LA MOÏTEUR.</p> <p>ATTENTION: IL N'Y A PAS D'ÉLÉMENTS RÉPARABLES DANS L'APPAREIL. CONSULTEZ UN TECHNICIEN QUALIFIÉ POUR LES RÉPARATIONS.</p> <p>ATTENTION: NOS AMPLIFICATEURS SONT CAPABLES DE LA PRODUCTION DES NIVEAUX DE SON D'UNE HAUTE PRESION. L'EXPOSITION CONTINUE AUX CES NIVEAUX PEUT CAUSER LA SURDITÉ PERMANENTE. LA PRUDENCE EST ADVISÉ À UTILISATEUR ET LA PROTECTION DES OREILLES EST RECOMMANDÉ SI L'APPAREIL EST UTILISÉ À UN HAUT NIVEAU DE VOLUME.</p>
 PRECAUCION RIESGO DE CORRIENTAZO NO ABRA			
 ATTENTION RISQUE D'ELECTROCUTION NE PAS OUVRIIR			
 VORSICHT ELEKTRISCHE SCHLÄGGEFAHR NICHT OFFENEN			
<p>EXPLANATION OF GRAPHICAL SYMBOLS: EXPLICATION DE SIMBOLOS GRAFICOS: EXPLICATION DES SYMBOLES GRAPHIQUES:</p>	<p> = "DANGEROUS VOLTAGE" "VOLTAJE PELIGROSO" "DANGER HAUTE TENSION" "GEFAHLICHE SPANNUNG"</p>	<p> = "IT IS NECESSARY FOR THE USER TO REFER TO THE INSTRUCTION MANUAL." "ES NECESARIO QUE EL USUARIO SE REFIERA AL MANUAL DE INSTRUCCIONES." "REFEREZ-VOUS AU MANUEL D'UTILISATION" "UNBEDINGT IN DER BEDIENUNGSANLEITUNG NACHSCHLAGEN"</p>	

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



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