YAMAHA

GUITAR AMPLIFIER
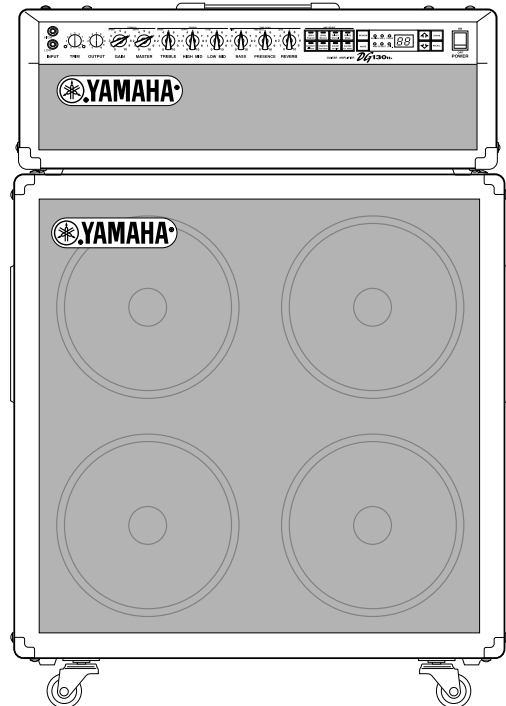# *DG*100-212A

GUITAR AMPLIFIER
*DG*80-210A
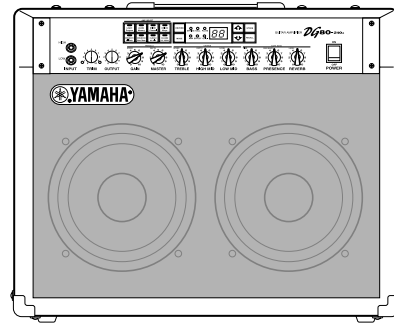
GUITAR AMPLIFIER
*DG*80-112A

SPEAKER ENCLOSURE
S112
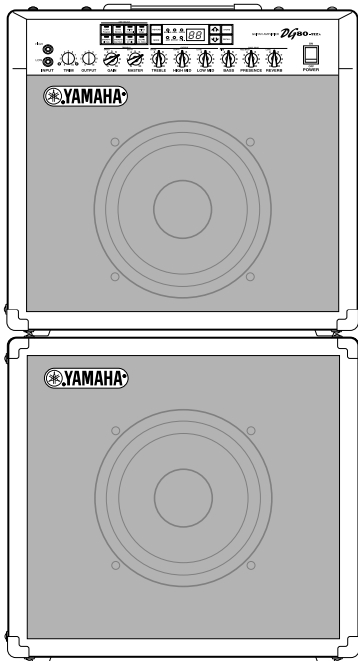
GUITAR AMPLIFIER HEAD
*DG*130HA

SPEAKER ENCLOSURE
S412V

FCC INFORMATION (U.S.A.)

1. **IMPORTANT NOTICE: DO NOT MODIFY THIS UNIT!**
   This product, when installed as indicated in the instructions contained in this manual, meets FCC requirements. Modifications not expressly approved by Yamaha may void your authority, granted by the FCC, to use the product.

2. **IMPORTANT:** When connecting this product to accessories and/or another product use only high quality shielded cables. Cable/s supplied with this product MUST be used. Follow all installation instructions. Failure to follow instructions could void your FCC authorization to use this product in the USA.

3. **NOTE:** This product has been tested and found to comply with the requirements listed in FCC Regulations, Part 15 for Class "B" digital devices. Compliance with these requirements provides a reasonable level of assurance that your use of this product in a residential environment will not result in harmful interference with other electronic devices. This equipment generates/uses radio frequencies and, if not installed and used according to the instructions found in the users manual, may cause interference harmful to the operation of other electronic devices. Compliance with FCC regulations does not guarantee that interference will not occur in all installations. If this product is found to be the source of interference, which can be determined by turning the unit "OFF" and "ON", please try to eliminate the problem by using one of the following measures:

Relocate either this product or the device that is being affected by the interference.

Utilize power outlets that are on different branch (circuit breaker or fuse) circuits or install AC line filter/s.

In the case of radio or TV interference, relocate/reorient the antenna. If the antenna lead-in is 300 ohm ribbon lead, change the lead-in to co-axial type cable.

If these corrective measures do not produce satisfactory results, please contact the local retailer authorized to distribute this type of product. If you can not locate the appropriate retailer, please contact Yamaha Corporation of America, Electronic Service Division, 6600 Orangethorpe Ave, Buena Park, CA90620

The above statements apply ONLY to those products distributed by Yamaha Corporation of America or its subsidiaries.

* This applies only to products distributed by YAMAHA CORPORATION OF AMERICA.

CANADA

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

• This applies only to products distributed by Yamaha Canada Music Ltd.
• Ceci ne s'applique qu'aux produits distribués par Yamaha Canada Musique Ltée.

ADVARSEL!
Lithiumbatteri—Eksplosionsfare ved fejlagtig håndtering. Udskiftning må kun ske med batteri af samme fabrikat og type. Levér det brugte batteri tilbage til leverandøren.

VARNING
Explosionsfara vid felaktigt batteribyte. Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren. Kassera använt batteri enlight fabrikantens instruktion.

VAROITUS
Paristo voi räjähtää, jos se on virheellisesti asennettu. Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

NEDERLAND / NETHERLAND

• Dit apparaat bevat een lithium batterij voor geheugen back-up.
• This apparatus contains a lithium battery for memory back-up.

• Raadpleeg uw leverancier over de verwijdering van de batterij op het moment dat u het apparaat ann het einde van de levensduur afdankt of de volgende Yamaha Service Afdeiing:
  Yamaha Music Nederland Service Afdeiing
  Kanaalweg 18-G, 3526 KL UTRECHT
  Tel. 030-2828425
• For the removal of the battery at the moment of the disposal at the end of the service life please consult your retailer or Yamaha Service Center as follows:
  Yamaha Music Nederland Service Center
  Address : Kanaalweg 18-G, 3526 KL UTRECHT
  Tel   : 030-2828425

• Gooi de batterij niet weg, maar lever hem in als KCA.
• Do not throw away the battery. Instead, hand it in as small chemical waste.

IMPORTANT NOTICE FOR THE UNITED KINGDOM
Connecting the Plug and Cord

WARNING: THIS APPARATUS MUST BE EARTHED
IMPORTANT. The wires in this mains lead are coloured in accordance with the following code:
        GREEN-AND-YELLOW : EARTH
        BLUE   : NEUTRAL
        BROWN   : LIVE
As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:

The wire which is coloured GREEN-and-YELLOW must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol or colored GREEN or GREEN-and-YELLOW.

The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured BLACK.

The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED.

• This applies only to products distributed by Yamaha-Kemble Music (U.K.) Ltd.

The exclamation point within the equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

The lightning flash with arrowhead symbol, within the equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electrical shock.

IMPORTANT SAFETY INSTRUCTIONS

INFORMATION RELATING TO PERSONAL INJURY, ELECTRICAL SHOCK, AND FIRE HAZARD POSSIBILITIES HAS BEEN INCLUDED IN THIS LIST.

WARNING- When using any electrical or electronic product, basic precautions should always be followed. These precautions include, but are not limited to, the following:

1. Read all Safety Instructions, Installation Instructions, Special Message Section items, and any Assembly Instructions found in this manual BEFORE making any connections, including connection to the main supply.

2. Do not attempt to service this product beyond that described in the user-maintenance instructions. All other servicing should be referred to qualified service personnel.

3. Main Power Supply Verification: Yamaha products are manufactured specifically for the supply voltage in the area where they are to be sold. If you should move, or if any doubt exists about the supply voltage in your area, please contact your dealer for supply voltage verification and (if applicable) instructions. The required supply voltage is printed on the name plate. For name plate location, please refer to the graphic found in the Special Message Section of this manual.

4. **DANGER**-Grounding Instructions: This product must be grounded and therefore has been equipped with a three pin attachment plug. If this product should malfunction, the ground pin provides a path of low resistance for electrical current, reducing the risk of electrical shock. If your wall socket will not accommodate this type plug, contact an electrician to have the outlet replaced in accordance with local electrical codes. Do NOT modify the plug or change the plug to a different type!

5. **WARNING:** Do not place this product or any other objects on the power cord or place it in a position where anyone could walk on, trip over, or roll anything over power or connecting cords of any kind. The use of an extension cord is not recommended! If you must use an extension cord, the minimum wire size for a 25' cord (or less) is 18 AWG. NOTE: The smaller the AWG number, the larger the current handling capacity. For longer extension cords, consult a local electrician.

6. Ventilation: Electronic products, unless specifically designed for enclosed installations, should be placed in locations that do not interfere with proper ventilation. If instructions for enclosed installations are not provided, it must be assumed that unobstructed ventilation is required.

7. Temperature considerations: Electronic products should be installed in locations that do not seriously contribute to their operating temperature. Placement of this product close to heat sources such as; radiators, heat registers etc., should be avoided.

8. This product was NOT designed for use in wet/damp locations and should not be used near water or exposed to rain. Examples of wet /damp locations are; near a swimming pool, spa, tub, sink, or wet basement.

9. This product should be used only with the components supplied or; a cart ,rack, or stand that is recommended by the manufacturer. If a cart, rack, or stand is used, please observe all safety markings and instructions that accompany the accessory product.

10. The power supply cord (plug) should be disconnected from the outlet when electronic products are to be left unused for extended periods of time. Cords should also be disconnected when there is a high probability of lightening and/or electrical storm activity.

11. Care should be taken that objects do not fall and liquids are not spilled into the enclosure through any openings that may exist.

12. Electrical/electronic products should be serviced by a qualified service person when:
    a. The power supply cord has been damaged; or
    b. Objects have fallen, been inserted, or liquids have been spilled into the enclosure through openings; or
    c. The product has been exposed to rain; or
    d. The product does not operate, exhibits a marked change in performance; or
    e. The product has been dropped, or the enclosure of the product has been damaged.

13. This product, either alone or in combination with an amplifier and headphones or speaker/s, may be capable of producing sound levels that could cause permanent hearing loss. DO NOT operate for a long period of time at a high volume level or at a level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should consult an audiologist.

IMPORTANT: The louder the sound, the shorter the time period before damage occurs.

14. Some Yamaha products may have benches and/or accessory mounting fixtures that are either supplied as a part of the product or as optional accessories. Some of these items are designed to be dealer assembled or installed. Please make sure that benches are stable and any optional fixtures (where applicable) are well secured BEFORE using. Benches supplied by Yamaha are designed for seating only. No other uses are recommended.

PLEASE KEEP THIS MANUAL

92-469-3

Thank you for purchasing a Yamaha DG Series Guitar Amplifier.

The DG Series Digital Guitar Amplifiers were initially conceived and entirely developed by Yamaha. These digital guitar amps deliver powerful tube amp sounds and offer superior stability compared to other tube amplifiers. With eight different amp type settings from which to choose, the DG Series Guitar Amplifiers allow you to create a wide variety of original sounds. A total of 128 sound settings can be stored in their internal memory and freely recalled using the panel buttons or a MIDI foot controller. Also, the DG Series Guitar Amplifiers are equipped with four on-board digital effects (reverb, tremolo, chorus and tape echo) that can be utilized to add sonic color to your tonal creations, and a speaker simulator to add realistic speaker simulation to the line out signal. Its high level of quality and easy to use controls will enable you to create a wide variety of tonal colors.

The S412V enclosure is equipped with four 30 cm Celestion "Vintage 30" speakers and has a power rating of 240 watts.

The S112 enclosure is equipped with a 30 cm Celestion "G12H-100" speaker and has a power rating of 100 watts.

To get the best results and longest life out of your DG Series Guitar Amplifier, we recommend that you carefully read this manual, and keep it in a safe place for future reference.

Contents

Precautions

● Avoid using your amplifier and speaker in the following locations to prevent possible damage:
- In direct sunlight or next to heating equipment.
- Extremely cold or hot locations.
- Locations exposed to high humidity or excessive dust.
- Locations subject to strong shocks or vibration.

● Before making any connections, make sure that the power on the amplifier and any external devices is switched OFF.

● To protect the speaker from possible damage, always set the OUTPUT knob to "0" before switching the power ON/OFF.

● When connecting a speaker to this unit make sure to turn OFF the power first.

● Do not apply excessive force to the switches and controls.

● Your Yamaha guitar amplifier is a precision musical instrument. Handle it with care and avoid dropping or bumping it.

● Operating temperatures will rise during use. Make sure the amplifier is used in a well-ventilated area. The DG130HA should be placed in a position were there is at least 30 cm (12") clearance from the wall on the sides, top and back of the amplifier.

● For safety, always remove the power plug from the AC wall outlet if there is any danger of lightning striking in your area.

● Keep the amplifier away from neon signs or fluorescent lighting to prevent noise pickup.

● To prevent damage and possibly electrical shock, never open the case and tamper with the internal circuitry.

● Never use benzene, thinner or other volatile liquids for cleaning, as these chemicals may cause damage or discoloration to the finish. Always use a dry, soft cloth to wipe off dust and dirt.

About the Backup Battery (DG series Guitar Amplifiers)

A backup battery (lithium battery) is used to keep internal data (settings) from being lost, even when the power cord is unplugged. Internal data will be lost when battery power is depleted, so it is recommended that data be stored to an external data recorder such as the Yamaha MIDI Data Filer MDF3 (→ page. 12), or keep records of settings in memo form. The average battery life span is about 3 years. When replacement becomes necessary contact the music store where the unit was purchased, or a qualified service representative, to perform the replacement.

- *Do not attempt to replace the backup battery by yourself.*
- *Keep the backup battery out of reach of children.*
- *"$E\,b$" appears in the display when the battery becomes depleted. Internal data may be lost.*
- *Data may be lost if the unit is improperly handled or if repairs are performed.*

The Panel Controls

■ Front Panel

The DG100-212A is shown in the illustration.
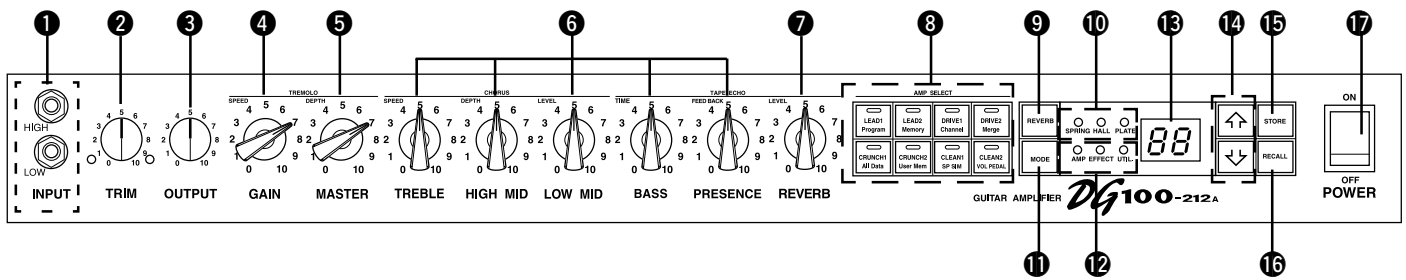
❶ Input Jack (INPUT HIGH, LOW)

Connect the guitar to this jack. Guitars with a high output level should be connected to the LOW jack. Those with low output levels should be connected to the HIGH jack.

* *Switch the power OFF before connecting the guitar.*

❷ Trim Control (TRIM)

Used to match the guitar's output level to the pre-amp's input level. (→ page 9.)

* *TRIM level settings are not stored in memory.*

❸ Output Level Control (OUTPUT)

Used to control the output volume of the power amp.
Sets the amount of output of sound created by the preamp's GAIN, MASTER, Tone Controls, etc. The volume is controlled without changing the tonal quality of the amp.

* *Output level settings are not stored in memory.*
* *Has no affect on the level (volume) of the LINE OUT ㉔ jack.*

❹ Gain Volume (GAIN)

Used to control the amount of distortion.

* *Sound is not produced if the GAIN is set to 0, even when the MASTER VOLUME ❺ is turned up.*

When the Effect Mode is engaged, the GAIN knob is used to adjust the tremolo's SPEED setting. (→ page 9.)

❺ Master Volume (MASTER)

Used to control the overall volume of GAIN and tone control settings. It also controls the output level of the preamp.

* *Master level settings are stored in memory.*

When the Effect Mode is engaged, the MASTER knob is used to adjust the tremolo's DEPTH setting. (→ page 9.)

❻ Tone Controls (TREBLE, HIGH MID, LOW MID, BASS, PRESENCE)

Used to control the levels of their respective frequencies.
When the effect mode is engaged, it is possible to make the following adjustments; (→ page 9.)
• TREBLE, HIGH MID, LOW MID → chorus' SPEED, DEPTH, LEVEL
• BASS, PRESENCE → tape echo's TIME, FEED BACK

❼ Reverb Volume (REVERB)

Used to control the amount of the reverb. (→ page 9.)
When the Effect Mode is engaged, the REVERB knob is used to adjust the tape echo's LEVEL setting. (→ page 9.)

❽ Amp Select Button/Amp Select Display (LEAD 1, 2/DRIVE 1, 2/CRUNCH 1, 2/CLEAN 1, 2)

Used to select one of the eight preset amp types. The currently selected amp type is shown on the display. (→ page 9.)
When the Utility Mode is engaged, these switches are used to switch MIDI functions and the Speaker Simulator ON or OFF, etc. (→ page 12.)

* *When the Amp Select button is pressed, knobs ❹ – ❻ return to their preset positions (GAIN and MASTER =7, Tone Controls all = 5). The position of the REVERB knob does not change.*

❾ Reverb Type Select Button (REVERB)
❿ Reverb Type Display Lamp (SPRING, HALL, PLATE)

Press the REVERB button to select the reverb type. The lamp corresponding to the selected reverb type will light. (→ page 9.)

⓫ Mode Select Button (MODE)
⓬ Mode Display Lamp (AMP/EFFECT/UTIL.)

Displays the currently selected mode.

• **AMP (Amp Mode)**
  Normal playing mode. All knobs and buttons on the panel function as marked. (Dual function knobs and buttons will function according to their lower indications.)
  This mode is automatically engaged whenever a memory is recalled.

• **EFFECT (Effect Mode)** → page 9
  The Effect (tremolo, chorus, tape echo) setting mode.
  When in the Amp Mode, press the MODE button once and quickly release to enter the Effect Mode.

• **UTIL. (Utility Mode)** → page 12
  This mode is used to set MIDI functions, switch Speaker Simulation ON or OFF and set Volume Pedal position. When in the Amp Mode or Effect Mode, press the MODE button and hold for about one second to enter the Utility Mode.

⓭ Display

Displays Memory Numbers, Program Change Numbers, the MIDI Channel, etc.

⓮ ⬆/⬇ Buttons

Increases or decreases the memory number by 1. Also, increases or decreases values by 1. In the Utility Mode increases/decreases values by 1 or sets the function ON/OFF. Values change continuously when the button is pressed and held.

⓯ Store Button (STORE)

Press this button to save current sound settings to internal memory. (→ page 10.) Also, used to carry out MIDI Bulk Out operations. (→ page 12.)

⓰ Recall Button (RECALL)

Recalls the settings stored in memory. Use the ⬆/⬇ buttons to select a memory number (01 – 128), then press the RECALL button to recall those settings from memory. (→ page 10.)
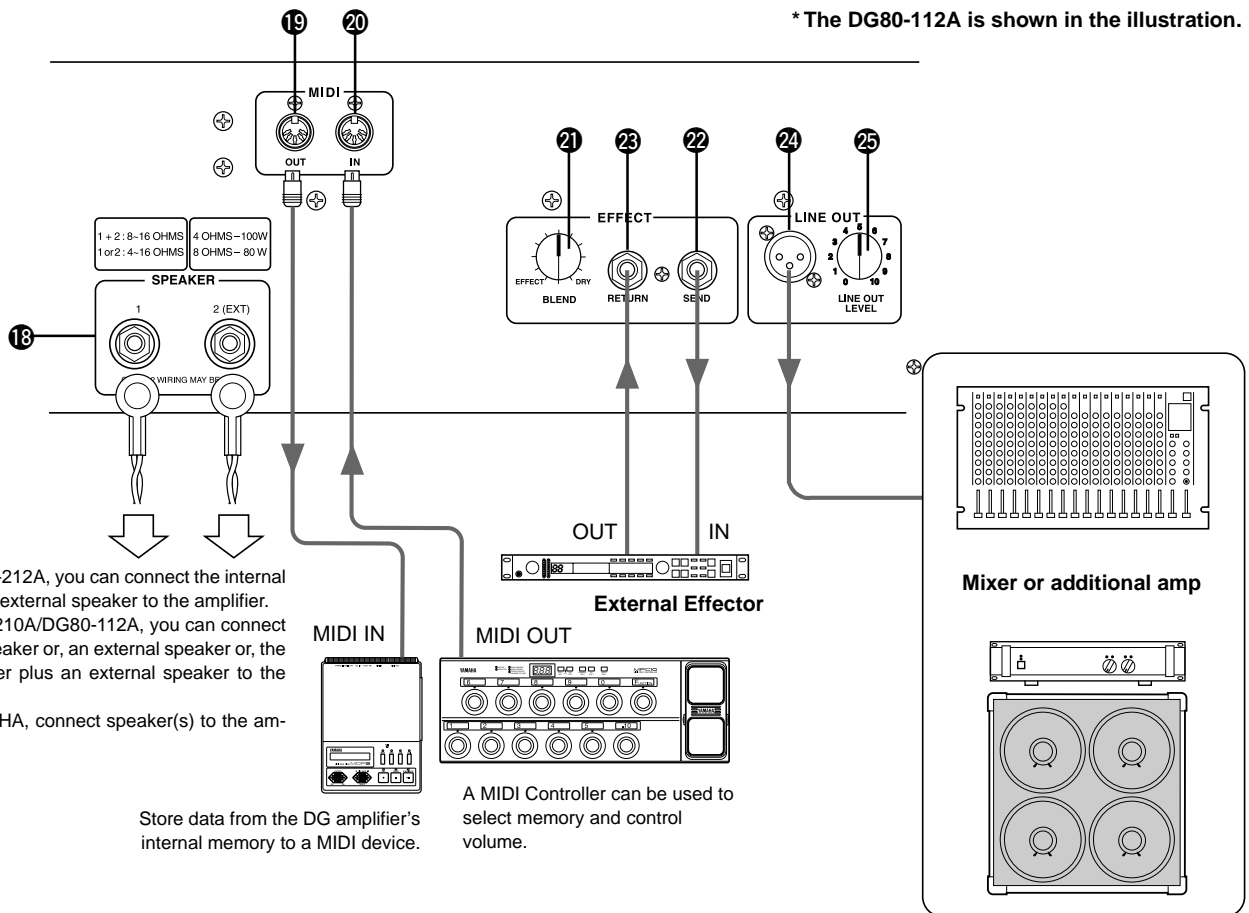
⓱ Power Switch (POWER)

The power switch for the amplifier.

* *To protect the speakers from possible damage, always set the OUTPUT ❸ volume to "0" before turning the power ON/OFF.*

The Panel Controls

■ Rear Panel

Before making any connections, make sure that the power on the DG amplifier and any external devices is switched OFF.

* The DG80-112A is shown in the illustration.

On the DG100-212A, you can connect the internal speaker or, an external speaker to the amplifier.
On the DG80-210A/DG80-112A, you can connect the internal speaker or, an external speaker or, the internal speaker plus an external speaker to the amplifier.
On the DG130HA, connect speaker(s) to the amplifier.

MIDI IN

MIDI OUT

External Effector

Mixer or additional amp

Store data from the DG amplifier's internal memory to a MIDI device.

A MIDI Controller can be used to select memory and control volume.

⓲ Speaker Jack (SPEAKER)

DG100-212A: The internal speaker is connected to the amp.
DG80-210A/DG80-112A: Equipped with 2 speaker jacks. The internal speaker is connected to the SPEAKER 1 jack.
DG130HA: Equipped with 2 speaker jacks.

Refer to the "Connecting Speakers" section on page 8 for instruction on the connection of speakers to the amp.

⓳ MIDI OUT Jack

Connect this jack to the MIDI IN jack of a device that can save MIDI data. The data stored in the DG amplifier's internal memory can then be transmitted to an external MIDI device for storage. (→ page 12: MIDI Bulk Out)
Also, transmits MIDI data received by the MIDI IN jack ⓴, to an external device when MIDI Merge is set to ON. (→ page 12.)

⓴ MIDI IN Jack

Connect this jack to a MIDI Foot Controller's MIDI OUT jack, and the external foot controller can be used to control the DG amplifier. Memory selection, volume control, effects can all be controlled via an external foot controller. (→ page 11.)
Also, memory data stored in an external storage device can be re-loaded into any DG amplifier's internal memory. (→ page 12 MIDI Bulk In)

㉑ Effect Blend Control (EFFECT BLEND)
㉒ Effect Send Jack (EFFECT SEND)
㉓ Effect Return Jack (EFFECT RETURN)

An external effector can be inserted into the signal circuit between the SEND/RETURN jacks. This allows further processing of the tone signal, created by the main unit, by an external effector. Use the BLEND knob to control the balance level between the external effector's sound (EFFECT) and the sound created by the DG amplifier (DRY). Rotating the knob fully to the EFFECT position allows only the sound produced by the external effector to be heard. Rotating the knob fully to the DRY position allows only the internal sound created by the amp to be heard, without the added coloration of the external effector.

* Connecting a plug to the RETURN jack disconnects the internal circuit. The signal returning from the effector enters the internal circuit here, where it goes on to the power amp → speaker. When the RETURN jack is not in use, the BLEND knob will have no affect.

Also, the SEND jack can function as a pre-out jack, and the RETURN jack can function as a main-in jack.

㉔ Line Out Jack (LINE OUT)
㉕ Line Out Level Control (LINE OUT LEVEL)

The same signal that is sent to the speaker output jack ⓲, is also sent to the LINE OUT jack at a line level (+4 dBm / 600 Ω). The amp also has an internal Speaker Simulator (can be switched ON/OFF → page 13.), the output level can be controlled with the LINE OUT LEVEL knob. The line signal can be sent to a mixer and can be used as an output jack to an external amp.

Connecting Speakers

Before connecting speakers to the speaker jack(s) check the power rating and impedance of the speaker and make sure they meet or are within the requirements recommended for the equipment.

■ For the DG100-212A

The amplifier's internal speaker (4 Ω) is connected to the speaker jack.
If it is necessary, you can disconnect the internal speaker and connect an external speaker to the speaker jack.
When an external speaker is used, make sure the speaker(s) meets the following requirements.
• A power rating of at least 100 W, impedance of 4 – 8 Ω.

■ For the DG80-210A/DG80-112A

The amp's internal speaker (8 Ω) is connected to the SPEAKER 1 jack. The SPEAKER 2 (EXT) jack can be used to add an external speaker(s). Also, if necessary, you can disconnect the internal speaker to connect 2 external speakers directly to the amp. The two speaker jacks are connected in parallel. When external speakers are used, make sure the speakers meet the following requirements.

● **When one speaker jack is used.**
  • A power rating of at least 100 W, impedance of 4 – 16 Ω.
  • The total impedance for the speakers in a circuit must not be less than 4 Ω.

● **When both speaker jacks are used.**
  • Speakers connected to each jack must have a power rating of at least 100 W, and impedance of 8 – 16 Ω.
  • The total impedance for the speakers in a circuit must not be less than 4 Ω.

■ For the DG130HA

The amp is equipped with two speaker jacks. The two speaker jacks are connected in parallel. Make sure the speakers meet the following requirements.

● **When one speaker jack is used.**
  • Power rating of at least 130 W, impedance of 4 – 16 Ω.
  • The total impedance for the speakers in a circuit must not be less than 4 Ω.

● **When both speaker jacks are used.**
  • Speakers connected to each jack must have a power rating of at least 100 W, and impedance of 8 – 16 Ω.
  • The total impedance for the speakers in a circuit must not be less than 4 Ω.
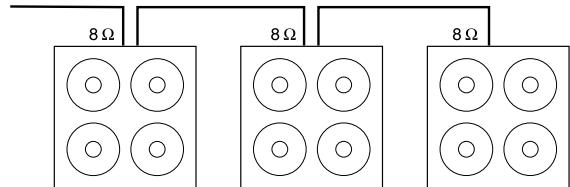
Total Impedance

If two or more speakers are to be connected, you must take into consideration the total impedance of the speakers.
Speakers normally have an impedance of 4, 8 or 16 Ω. When two or more speakers are used together, the total impedance will change according to the manner in which the speakers are connected.

● **Connecting in a series**
The total impedance equals the impedance of the 1st speaker + 2nd speaker + 3rd speaker + …
When three speakers are connected in a series, as shown below, the total impedance will be 24 Ω.

● **Connecting in a parallel series**

$$\text{The total impedance} = \cfrac{1}{\cfrac{1}{1^{st}\,\text{Speaker}} + \cfrac{1}{2^{nd}\,\text{Speaker}} + \cfrac{1}{3^{rd}\,\text{Speaker}} + \cdots}$$

When three speakers are connected in a parallel series, as shown below, the total impedance will be about 2.7 Ω.
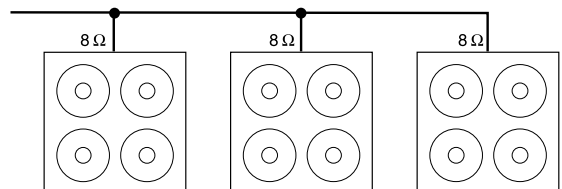
For the DG80-210A/DG80-112A
The two speaker jacks are connected in a parallel circuit internally therefore, adding a 4 Ω external speaker to the 8 Ω internal speaker results in a total impedance of 2 Ω. In order to maintain a minimum impedance of 4 Ω, an 8 Ω speaker or greater must be used as an external speaker.

Internal Speaker 8 Ω   External Speaker
                         Greater that 8 Ω
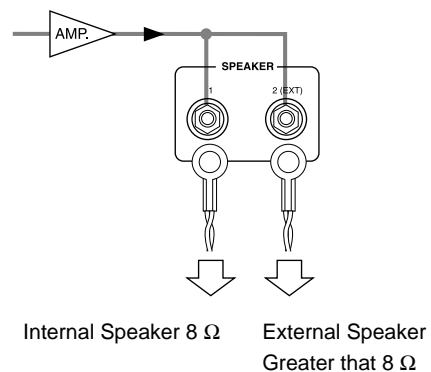
How to use your DG Series Amplifier

> To protect the speaker from possible damage, always set the OUTPUT knob to "0" before switching the power ON/OFF.

■ First, achieve sound output

1. With the DG amplifier's power switched OFF, connect your guitar to the INPUT jack on the front panel. To start with, try using the LOW jack.

2. With the OUTPUT knob set to "0", switch the power ON.

3. As a starting point, set the TRIM level to "5" and strum the guitar. Then, gradually raise the OUTPUT level.

4. Once you have sound output, proceed to set the TRIM level as described in the following section.

■ Adjust the TRIM level

The TRIM level allows you to set the output level of the guitar to an optimum level that matches the DG amplifier's INPUT jack. With a well adjusted TRIM level, subtle picking nuances and the attack of a strong strum can be clearly heard. An improperly adjusted trim level will result in noise, feedback, and/or a cut up sound.

* *The output level between guitars does vary. Whenever you switch guitars, it will be necessary to readjust the trim level to match the guitar.*

* *HIGH and LOW input levels are different. Even if the same guitar is used, make sure the TRIM level is readjusted whenever a different input jack is used.*

* *Even when creating distortion, make sure that the TRIM level is properly adjusted, and use the GAIN control to produce distortion.*

1. Set the guitar's volume to its maximum level and powerfully strum the guitar. Begin to adjust the TRIM level.
   An optimum level is achieved when the Green LED is lit.

2. Continue rotating the TRIM knob to the right, so long as the Red LED does not light. Set the TRIM level to "10" if the Red LED does not light.

   * *If the Red LED still does not light, lower the TRIM level, connect the guitar to the HIGH input jack and repeat the previous procedure.*

■ Sound Settings

Choose one of the DG amplifier's eight preset amp types, then use the GAIN+MASTER, and tone controls to shape the guitar's sound.

1. Choose an amp type using one of the AMP SELECT buttons. The selected amp type button's LED will light.

2. Use the GAIN, MASTER, and the five tone controls to shape the guitar's sound.

HINT **OUTPUT knob and MASTER knob**

Turning either knob will change the volume. The MASTER knob controls the preamp's master volume. This setting is stored in memory. The OUTPUT knob controls the power amp's volume. This setting is not stored in memory. Volume levels for individual memory settings should be set with the MASTER knob. The speaker's output level should be controlled with the OUTPUT knob.

---

* *When an AMP SELECT button is pressed, all knobs (except TRIM, OUTPUT and REVERB) will return to their preset positions. (GAIN and MASTER = 7, all tone controls = 5. To save edited settings, refer to the "Store Settings" section on page 10.)*

■ Reverb Settings

1. Press the REVERB button to select a reverb type. Each time the REVERB button is pressed, the type will cycle through SPRING → HALL → PLATE settings. The lamp for the selected reverb type will light.

2. Use the REVERB knob to adjust the amount of reverb.

* *Reverb settings (type and REVERB knob settings) will remain in affect, even if the AMP SELECT button is pressed to change the amp type. When a different memory number is recalled, the reverb settings for that memory number will then be in affect.*

■ Effect (Tremolo, Chorus, Tape Echo) Settings

1. Press the MODE button so that the EFFECT lamp is lit.
   When the EFFECT mode is entered each knob, GAIN — REVERB, will rotate to the positions set in the memory.

2. Use the GAIN — REVERB knobs to adjust the amount of each effect as needed.

   ● **Tremolo Effect**
   • **GAIN (SPEED: Tremolo Speed)**
     Sets the speed of the Tremolo Effect (the speed at which the effect's volume is increased and decreased). Rotate the knob to the right to increase the speed.
   • **MASTER (DEPTH: Tremolo Depth)**
     Sets the depth of the Tremolo Effect (the upper and lower limits of the effect's volume). Rotate the knob to the right to produce more effect.

   ● **Chorus Effect**
   • **TREBLE (SPEED: Chorus Speed)**
     Sets the speed of the Chorus Effect (the speed at which the effect's pitch is raised and lowered). Rotate the knob to the right to increase the speed.
   • **HIGH MID (DEPTH: Chorus Depth)**
     Sets the depth of the Chorus Effect (the upper and lower limits of the effect's pitch). Rotate the knob to the right to produce more effect.
   • **LOW MID (LEVEL: Chorus Level)**
     Sets the mix level of the Chorus Effect.

   ● **Tape Echo Effect**
   • **BASS (TIME: Echo Time)**
     Sets the amount of time between the sounding of the string and the echo sound (the amount of time it takes between one echo and the next). Rotate the knob to the right to increase the amount of time.
   • **PRESENCE (FEEDBACK)**
     Sets the length of time that the echo will repeat. Rotate the knob to the right to increase the length of time. Rotating the knob too much can result in uncontrollable feedback, please use caution.
   • **REVERB (LEVEL: Echo Level)**
     Sets the echo's volume level.

3. When the setting procedure is complete, press the MODE or REVERB button and the AMP lamp will light.
   Each of the GAIN — REVERB knobs will revert to the positions they were to prior to entering the EFFECT mode.

* *Effect settings will remain in effect even if the AMP SELECT button is pressed to select another amp type. When you recall a different memory number with the "Recall Memory" function (refer to page 10), the settings for that memory number's effect will then be in affect.*

With the procedures on this page, you can create an original sound (settings), and along with the reverb and effect settings they can be stored in the DG amplifier's internal memory for instant recall at anytime. The procedure for storing data in memory is explained on the next page.

Recall and Store

Preset setting data, specially created by Yamaha for the DG Series Amplifiers, is installed in memory numbers 1-80 when the amplifier is shipped from the factory. (Refer to the "Patch List" on page 83.)

Setting data contains Amp Type and its settings (GAIN, MASTER, Tone Control, Reverb, Tremolo, Chorus and Tape Echo) that you can recall freely and use at any time. Motor drives in the knobs will automatically set the knobs to the corresponding positions. Also, any settings that you create can be saved (store) to any of the memory numbers 1 – 128. After creating a favorite sound, try saving it.
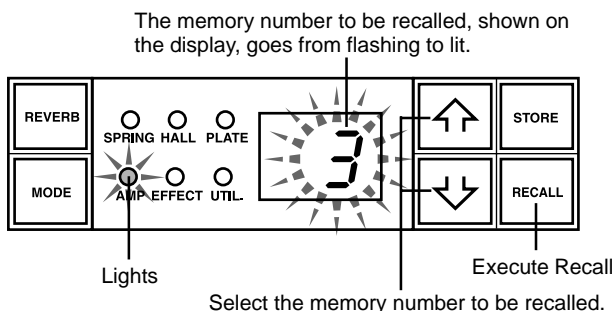
■ Recall Memory (Recall)

Sound settings stored in memory can easily be recalled by selecting a memory number.

> **When a memory is recalled, the current settings will be changed. If you want to keep the settings, use the Store operation, described on the right side of this page, to store settings to memory.**

1. **Press the** MODE **button, the AMP or EFFECT mode display will light.**

2. **Use the** ⬆ **/** ⬇ **buttons to select the memory number you want to recall. The memory number will appear on the display (flashing).**

3. **Press the** RECALL **button. The flashing memory number will light. Each of the knobs, and the Amp Select Display will change according to the data recalled from memory.**

   * *Settings will not change until the* RECALL *button is pushed.*
   * *TRIM and OUTPUT knob settings will not change with the Recall operation.*
   * *It takes anywhere from 1 – 10 seconds for the knobs to change to their set positions however, internal settings (sound) will change instantly.*
   * *"E 1" will appear on the display if the volume knob does not go to its assigned position, or the device does not recognize the recall command after 20 seconds has elapsed from the start of the recall operation. Continued use of the device in this condition may result in fire or electrical shock. Take the unit to the music dealer where you purchased it, or to the nearest Yamaha Service Center for repair.*

The memory number to be recalled, shown on the display, goes from flashing to lit.

Lights

Select the memory number to be recalled.

Execute Recall

> **A MIDI foot controller or other external MIDI device can be used to select and recall memory. Refer to the following page to page 13 for details.**

▰▰ Initialize the memory ▰▰

While holding both the LEAD 1 button and RECALL button, turn the Power Switch ON, the initialize to factory preset operation will be carried out and the entire memory will be returned to its factory preset condition.

When the initialize operation is carried out, data in memory numbers 1-80 will be re-written with data in the Patch List and the data in memory numbers 81 – 128 will also be reset to their factory preset condition. Any data you have saved to memory will be erased, so we strongly recommend that you save any important data to an external MIDI device or document the settings before carrying out the operation.

■ Store Settings

1. **Use the procedure on page 9 and create a sound using the eight preset amp types and control knobs on the front panel.**

   * *Each of the Utility Mode's settings cannot be stored in individual memory. When the power is switched OFF, each memory's settings are stored in memory as common settings. When the power is turned ON, those settings are recalled.*

2. **Press the** MODE **button, the AMP or EFFECT mode display lamp will light.**

3. **Using the** ⬆ **/** ⬇ **buttons, select a memory number to which the settings will be saved. The memory number will flash in the display.**

   * *Press and hold either of the* ⬆ */* ⬇ *buttons makes memory numbers cycle rapidly.*
   * *The third digit of the memory number (100 – 128) is represented by a dot between the two digits.*

   Example) 128 is displayed as → *2.8*

4. **Press and hold the** STORE **button for about one second, until "8.8" appears on the display.**
   Release the button, the flashing memory number will then light indicating the setting is saved to memory.

   * *TRIM and OUTPUT settings cannot be stored in memory. Use the MASTER knob to set backing and soloing levels.*

The memory number to be stored.
Flashing → *8.8.* → Lights

Execute Store

Lights

Select the memory number.
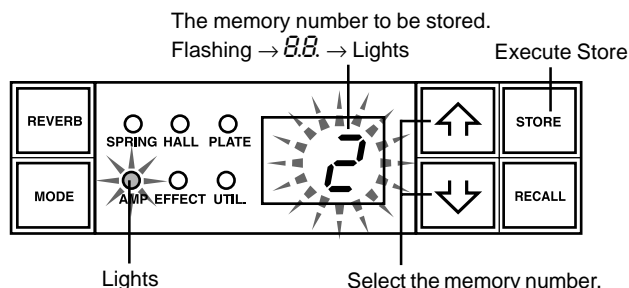
> **Data stored in memory (1 – 128) can be saved to an external MIDI storage device. Refer to page 12 for details.**

HINT Some hints on storing memory numbers

When storing data to memory numbers, divide the memory numbers 1 – 128 into several groups.
Recalling memory numbers from these groups is much more convenient. For example:

• Create groups according to the amp type used (LEAD1, DRIVE 1, etc.).
• Create groups based on sound types (Distortion, Clean, etc.)
• Create groups based on live performance song lists.
• Create groups based on the type of guitar used (humbucker, etc.).

It is also a good idea to keep a chart handy listing the types of sounds are stored in memory numbers.

Easy to Use Functions

MIDI commands can be used to select memory numbers, control the reverb, tremolo, chorus and tape echo effects, and control volume on the DG amplifier. A speaker simulator can also be applied to the LINE OUT signal.

What is MIDI? MIDI is the acronym for Musical Instruments Digital Interface. MIDI is a world-wide standard communication interface that allows MIDI compatible musical instruments, computers and other MIDI devices to share musical information and control one another regardless of instrument type or maker.

■ Using MIDI to Recall Memory

Program changes sent from a Yamaha MIDI Foot Controller MFC10, etc., or an external MIDI device can be used to recall settings in the DG amplifier's memory.

1. **With a MIDI cable, connect the DG amplifier's MIDI IN jack to the MIDI OUT jack on an external MIDI device.**

   * *Use only a standard MIDI cable that is less than 15 meters in length. Use of a longer cable may result in abnormal operation.*

External MIDI Device
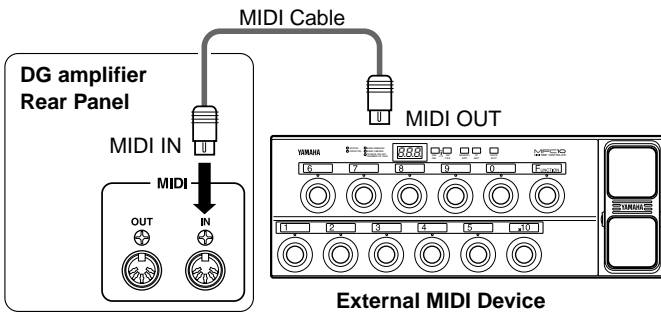
2. **Set the DG amplifier's MIDI receive channel and the MIDI transmit channel on the external device to the same MIDI channel number (the factory preset channel number is 1).**

   → For setting instructions see page 12 "Set the MIDI Receive Channel".

3. **Create a program change table*[1]. (The factory preset is, program change number = memory number).**

   → For setting instructions see page 12 "Creating a Program Change Table".

   [1] *For example, "the received program change number 1, recalls the DG amplifier's memory number 5". To achieve this, the received program change number must be assigned to the corresponding memory number.*

4. **When program memory data is transmitted from an external MIDI device, data in the corresponding memory assigned to the program change table will be recalled.**

   * *For instructions on how to transmit program change data, check the owner's manual of the external MIDI device you are using.*

■ Using MIDI to Control Volume

You can control the DG amplifier's overall volume from an external MIDI device using a number 7 control change message (main volume) sent from the MIDI OUT jack of an external MIDI device to the DG amplifier's MIDI IN jack. By connecting a Yamaha MIDI Foot Controller MFC10, etc., or a MIDI device equipped with a foot pedal, you can use the foot pedal to control the volume during performance. Using the following three positions, you can select the control position as to where the volume is changed.

- "*bP*" : Before Pre Amp. Controls the volume before the preamp.
- "*AP*" : After Pre Amp. Controls the volume after the preamp.
- "*Ar*" : After REVERB: Controls the volume after the reverb.
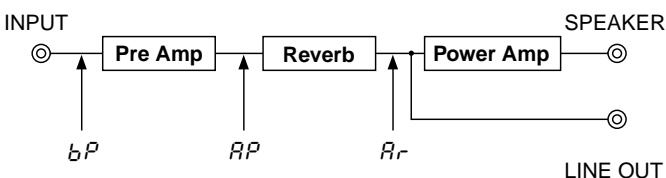
1. **Using procedures 1. and 2. in the previous "MIDI Memory Recall" section, connect the external MIDI device and set the MIDI receive channel.**

2. **Next, select the volume control position.**

   → For instructions on the setting procedure, refer to page 13 "Set the Volume Pedal Position".

3. **In this condition, number 7 control change data transmitted from an external MIDI device will now control the DG amplifier's volume.**

   * *The DG amplifier does not except MIDI control changes other than numbers 7 and 91 to 94.*

   * *For more information on transmitting control data, refer to your external MIDI device's owner's manual.*

   * *Even if another memory number is selected, main volume data will not change.*

   * *When the power is switched ON, main volume data is set to its maximum level.*

   * *After the main volume data is changed, and the external MIDI device is disconnected, the volume level may be insufficient. In this case, transmit the volume change again or, turn the power OFF and then ON again.*

■ Controlling Reverb, Tremolo, Chorus and Tape Echo via MIDI

You can adjust the Reverb Level (No. 91), Tremolo Depth (No. 92), Chorus Level (No. 93) and Tape Echo Level (No. 94) settings by transmitting control change messages from an external MIDI device's MIDI OUT jack to the DG Guitar Amp's MIDI IN jack.

1. **Connect an external MIDI device as described steps 1 and 2 of the "Using MIDI to Recall Memory" section on this page and set the MIDI receive channel.**

2. **Transmit the parameter control change number and control change data from the external MIDI device and you can control the effect parameters listed above.**

   * *For further information regarding the transmission of control change data, refer to your external MIDI device's owner's manual.*

■ Speaker Simulator

The DG amplifier's speaker simulator provides the line signal with a realistic simulation of the natural sound of a speaker. The speaker simulator can be used on the line signal when the LINE OUT jack is connected to a mixer or recorder.

   → For setting instructions, refer to the "Speaker Simulator ON/OFF" section in this manual.

Utility Mode

The Utility Mode is used to perform MIDI settings, set the speaker simulator and volume pedal position settings. To enter the Utility Mode, press and hold the MODE button for more than one second, the "UTIL." mode display lamp will light. Each of the settings will be stored in memory, even when the power to the amp is turned off. To exit from the Utility Mode, press the MODE button, the "AMP" (amp mode) display lamp will light.

 * *MIDI messages cannot be received when in the Utility Mode so, refer to the "Using MIDI to Recall Memory", "Using MIDI to Control Volume", "Controlling Reverb, Tremolo, Chorus and Tape Echo via MIDI" and "MIDI Bulk In" sections in this manual to perform the corresponding MIDI operations.*

■ Creating a Program Change Table

With this procedure, a specific memory number in the DG amplifier's internal memory can be recalled with a program change number received from an external MIDI device.

 * *Factory Preset: Program Change Number = Memory Number.*

1. **Press and hold the MODE button for more than one second. The "UTIL." mode display lamp will light. (Utility Mode)**

2. **Press the LEAD 1 button.**

3. **Using the ⬆ / ⬇ buttons, select the program change number (*1 – 28*) that will be sent by the external device. The number will appear on the display.**

4. **Press the LEAD 2 button.**

5. **Using the ⬆ / ⬇ buttons, select the memory number (*1 – 28*) to be recalled from the DG amplifier's internal memory. The number will appear on the display.**

6. **Depending upon your particular needs, repeat steps 2 through 5 as needed.**

■ Set the MIDI Receive Channel

Set the DG amplifier's MIDI receive channel.

 * *To transmit and receive MIDI data between MIDI devices, the MIDI channel on both devices must be the same or data will not be successfully transferred. (The factory preset is channel 1.)*

1. **Press and hold the MODE button for more than one second. The "UTIL." mode display will light. (Utility Mode)**

2. **Press the DRIVE 1 button. The currently set MIDI receive channel will appear on the display.**

3. **Use the ⬆ / ⬇ button to select a MIDI receive channel (*1 – 16* , *All,oF*).**

 * *With the "All" setting omni is set to on.*

■ Set the MIDI Merge

If you want the MIDI signal received by the DG amplifier's MIDI IN jack to be transmitted on to other MIDI devices via the DG amplifier's MIDI OUT jack, set the MIDI Merge to "*on*" (ON). If you don't want the data to be transmitted, set to "*oF*" (OFF).
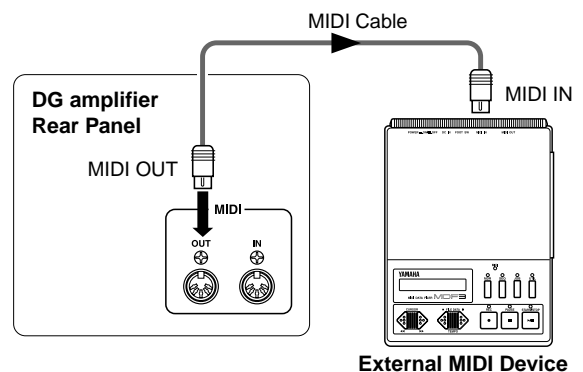
1. **Press and hold the MODE button for more than one second. The "UTIL." mode display will light.**

2. **Press the DRIVE 2 button. The currently set MIDI merge setting will appear in the display.**

3. **Use the ⬆ / ⬇ button to select either "*on*" or "*oF*".**

■ MIDI Bulk Out

You can back up the data stored in the DG amplifier's internal memory by saving the data to an external MIDI storage device (Yamaha MDF3, etc.).

1. **With a MIDI cable, connect the DG amplifier's MIDI OUT jack to the MIDI IN jack on the external MIDI storage device.**

2. **Press the MODE button for more than one second. The "UTIL." mode display lamp will light.**

3. **To transmit all memory (128 memory, plus Utility setting data) with the Bulk Out operation:**
   → Press the CRUNCH 1 button. "*All*" will appear in the display.
   To transmit a single memory:
   → Press the CRUNCH 2 button. Use the ⬆ / ⬇ button to select the memory number (*1 – 128, All*) that you want to save with the Bulk Out operation.

   * *When "All" is selected in the Bulk Out operation, all memory data (128 memory) will be transmitted.*

4. **Press the STORE button to execute the Bulk Out operation. Press the MODE button to cancel the operation.**

 * *The device number is the same as that of the MIDI receive channel. If the MIDI receive channel is set to "All" (Omni ON) the device number will be 1.*

MIDI Cable

DG amplifier Rear Panel

MIDI OUT

MIDI IN

MIDI

OUT   IN

External MIDI Device

■ MIDI Bulk In

With a MIDI cable, connect the DG amplifier's MIDI IN jack to the MIDI OUT jack on an external MIDI device. Return your MIDI back up data to the DG amplifier.

 * *The MIDI Bulk In operation is carried out in the AMP or EFFECT modes only. It can not be carried out in the Utility Mode.*

 * *The device number is the same as that of the MIDI receive channel. If the MIDI receive channel is set to "All" (Omni On), the MIDI channel will be set to 1. The DG amplifier will not receive data if the MIDI channel is set to "oF" (OFF).*

 * *"Ld" is shown on the display while the MIDI Bulk In operation is being executed.*

MIDI Cable

DG amplifier Rear Panel

MIDI IN

MIDI OUT

MIDI

OUT IN

External MIDI Device
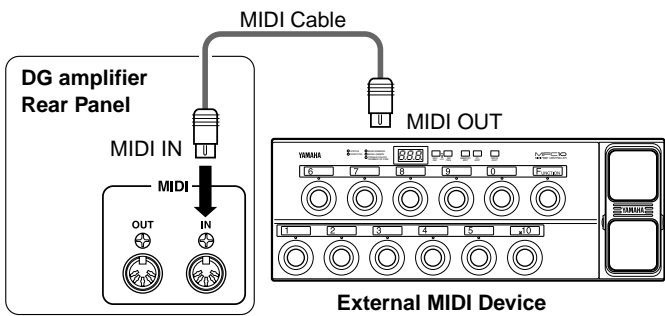
■ MIDI Transmission/Reception between DG series amplifiers.

You can use the MIDI bulk out/bulk in functions to copy memory and utility setup data from one DG series guitar amplifier (DG100-212A/DG80-210A/DG80-112A/DG130HA) to another.

* Make sure the receiving DG amplifier is in the AMP mode or EFFECT mode.

■ Speaker Simulator ON/OFF

The DG amplifier's speaker simulator provides the line signal with a realistic simulation of the natural sound of a speaker. The speaker simulator can be used on the line signal when the LINE OUT jack is connected to a mixer or recorder.

1. **Press the MODE button for more than 1 second. The "UTIL." mode display lamp will light.**
2. **Press the CLEAN1 button. The current setting will be shown on the display.**
3. **Use the ⬆ / ⬇ buttons to select either "*on*" or "*oF*" (ON/OFF).**

■ Set the Volume Pedal Position

Set the position for where control of the volume, via MIDI, will take place. (Refer to the "Using MIDI to Control Volume" section on page 11 for more information on Volume Pedal Position.)

1. **Press the MODE button for more than 1 second. The "UTIL." mode display lamp will light.**
2. **Press the CLEAN2 button. The current setting will be shown on the display.**
3. **Use the ⬆ / ⬇ buttons to select the volume control position (*bP*, *AP*, *Ar*).**

EX.) Copy the memory from a DG100-212A to a DG130HA.

MIDI Cable

MIDI Bulk Out

MIDI OUT

MIDI

DG100-212A Rear Panel

OUT IN

MIDI Bulk In

MIDI IN

MIDI

OUT IN

DG130HA Rear Panel
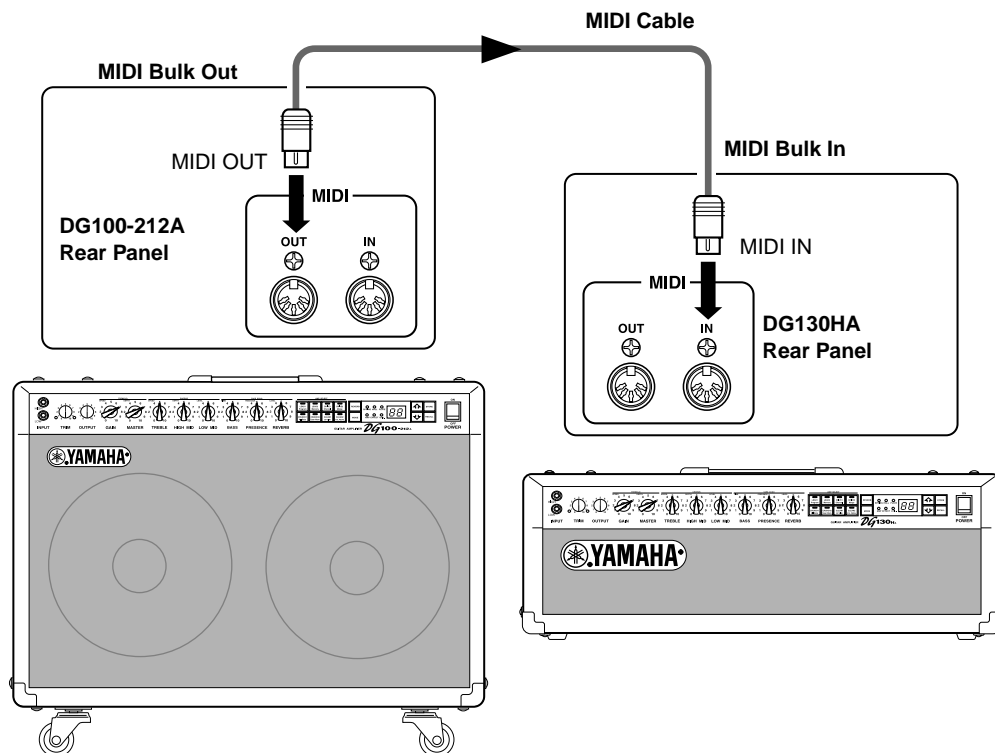
Error Messages

If an error occurs during operation, one of the following error message numbers will appear on the display.

E 1: **Motor Drive Error**

CAUSE: The volume knob has not returned to its assigned position after 20 seconds has elapsed from the start of the recall operation or, the device does not recognize the recall command.

SOLUTION: Turn off the power and return the device to the music dealer where you purchased it, or to the nearest Yamaha Service Center for repair.

E 2: **MIDI Receive Buffer Full**

CAUSE: Too much MIDI data is being received by the DG amplifier at one time.

SOLUTION: Try reducing the amount of data being sent or, break the data into smaller blocks.

E 3: **Communication Error.**

CAUSE: An abnormality is detected during MIDI communications.

SOLUTION: Check all connections, etc. and try again.

E 4: **Bulk Receive Check Sum Error.**

CAUSE: The check sum does not match the received MIDI bulk data.

SOLUTION: Check all connections and data, and try again.

E 5: **Bulk Receive Data Abnormality.**

CAUSE: An abnormality is detected in the received MIDI bulk data.

SOLUTION: Check all connections and data, and try again.

E 6: **Backup Battery Error.**

CAUSE: Backup battery power is depleted.

SOLUTION: Continued use of the device will result in the loss of data. Return the device to the music dealer where you purchased it or, the nearest Yamaha Service center and have the battery replaced.

Specifications

Digital Section

Complete Digital Signal Processing
Internal 8 Channel Preset
Digital Reverb (SPRING/HALL/PLATE)
Digital Effects (Tremolo, Chorus, Tape Echo)
Speaker Simulator (LINE OUT)

Analog Section

DG100-212A : 100 W (4 Ω) Solid State Power Amp
30 cm Speaker (Celestion Vintage 30) x 2

DG80-210A : 80 W (8 Ω) Solid State Power Amp
25 cm Speaker (V10-60) x 2

DG80-112A : 80 W (8 Ω) Solid State Power Amp
30 cm Speaker (Celestion G12H100) x 1

DG130HA : 130 W (4 Ω) Solid State Power Amp

MIDI Function

Receive : Program change, Control Change (No. 7, 91, 92, 93, 94),
Bulk In

Transmit : Bulk Out, Merge Out

Controller/Switch

Front Panel : TRIM, OUTPUT, GAIN (TREMOLO SPEED),
MASTER (TREMOLO DEPTH), TREBLE (CHORUS SPEED),
HIGH MID (CHORUS DEPTH), LOW MID (CHORUS LEVEL),
BASS (TAPE ECHO TIME), PRESENCE (TAPE ECHO FEED
BACK), REVERB (TAPE ECHO LEVEL)

Rear Panel : LINE OUT volume, EFFECT BLEND

Switch : AMP SELECT (LEAD1, LEAD2, DRIVE1, DRIVE2,
CRUNCH1, CRUNCH2, CLEAN1, CLEAN2), REVERB,
MODE, ⇧, ⇩, STORE, RECALL

Display

AMP SELECT display LED x 8
MODE display LED x 3
REVERB type display x 3
7 segment LED x 2 digits

Indicator

Trim Level Display LED (Green)
Trim Clip Display LED (Red)

Connection Jacks

INPUT HIGH/LOW: Standard Phone Mono Jack
SPEAKER (DG100-212A: x 1, DG80-210A: x 2, DG80-112A:
x 2, DG130HA: x 2): Standard Phone Mono Jack
EFFECT SEND/RETURN: Standard Phone Mono Jack
LINE OUT: Cannon Jack
MIDI IN, MIDI OUT: 5 pin DIN

A/D Converter	20 bit
D/A Converter	20 bit
Sampling Frequency	48 kHz
Memory Number	128

Input Level/Impedance

INPUT HIGH: –30 dBm (THRU) / 1 MΩ
INPUT LOW: –20 dBm (THRU) / 1 MΩ
EFFECT RETURN: 0 dBm / 120 kΩ

Output Level/Impedance

DG100-212A
SPEAKER: 100 W RMS / 4 Ω
LINE OUT: +4 dBm / 600 Ω
EFFECT SEND: 0 dBm / 2.2 kΩ

DG80-210A/DG80-112A
SPEAKER: 80 W RMS / 8 Ω, 100 W RMS / 4 Ω
LINE OUT: +4 dBm / 600 Ω
EFFECT SEND: 0 dBm / 2.2 kΩ

DG130HA
SPEAKER: 130 W RMS / 4Ω
LINE OUT: +4 dBm / 600 Ω
EFFECT SEND: 0 dBm / 2.2 kΩ

Power Requirements

U.S. and Canadian models : 120 V, 60 Hz
General model : 230 V, 50 Hz

Power Consumption

DG100-212A : 100 W
DG80-210A : 100 W
DG80-112A : 100 W
DG130HA : 140 W

Dimensions (W x H x D)

DG100-212A : 712 x 574 x 284 mm (28" x 22.6" x 11.2") w/Caster
DG80-210A : 595 x 471 x 284 mm (23.4" x 18.5" x 11.2")
DG80-112A : 542 x 510 x 284 mm (21.3" x 20.1" x 11.2")
DG130HA : 711 x 250 x 284 mm (28" x 9.8" x 11.2")

Weight

DG100-212A : 33.5 kg (73 lbs 13 oz)
DG80-210A : 26.0 kg (57 lbs 5 oz)
DG80-112A : 25.0 kg (55 lbs 2 oz)
DG130HA : 18.0 kg (39 lbs 11 oz)

* Specifications and design may change without notice.

Using the S412V/S112

S412V

The S412V is a speaker enclosure equipped with four Celestion "Vintage 30" speakers.

* **The power rating is 240 W. Use an amp head with a power output of less than 240 W.**
* **The impedance is 8Ω. Check the amp head's impedance and make sure it meets the speaker's requirements.**
* **If you use more than two speakers, make sure the total impedance meets the amp head's requirements. See "Connecting Speakers" section on page 8.**

■ Specifications

Speakers	30 cm speaker (Celestion "Vintage 30") x 4
Power Rating	240 W
Impedance	8 Ω
Dimensions	765 x 820 x 359 mm
(WxHxD)	(30.1" x 32.2" x 14.1") (w/casters)
Weight	44.0 kg (97 lbs) (w/casters)
Accessory	Speaker Cable

● Speaker

Speaker Size	30 cm (12")
Voice Coil Size	44ø mm
Magnet	Ferrite 1.42 kg (50 oz)
Frequency Range	70 Hz – 5 kHz
Sensitivity	100 dB (1 m/W)
Power Rating	60 W (RMS)
Nominal Impedance	8 Ω
Fundamental Frequency	70 Hz

* Specifications and external appearance are subject to change without notice.

S112

The S112 is a speaker enclosure equipped with a Celestion "G12H-100" speaker.

* **The power rating is 100 W. Use an amp head with a power output of less than 100 W.**
* **The impedance is 8Ω. Check the amp head's impedance and make sure it meets the speaker's requirements.**
* **If you use more than two speakers, make sure the total impedance meets the amp head's requirements. See "Connecting Speakers" section on page 8.**

■ Specifications

Speaker	30 cm speaker (Celestion "G12H-100") x 1
Power Rating	100 W
Impedance	8 Ω
Dimensions	542 x 510 x 284 mm
(WxHxD)	(21.3" x 20" x 11.2")
Weight	16.0 kg (35 lbs 4.4 oz)
Accessory	Speaker Cable

● Speaker

Speaker Size	30 cm (12")
Voice Coil Size	44ø mm
Magnet	Ferrite 1.42 kg (50 oz)
Frequency Range	82 Hz – 5.5 kHz
Sensitivity	100 dB (1 m/W)
Power Rating	100 W (RMS)
Nominal Impedance	8 Ω
Fundamental Frequency	82 Hz

* Specifications and external appearance are subject to change without notice.

■ Connecting

1. **Turn the amp's power OFF and set the volume to "0".**

   * Connecting the speaker with the power ON or the volume turned up may result in damage to the speaker or amp.

2. **Using the supplied speaker cord, connect the phone jack located on the back of the S412V/S112 cabinet to the amp head's speaker output jack (the SPEAKER jack on the DG Series Amplifier).**
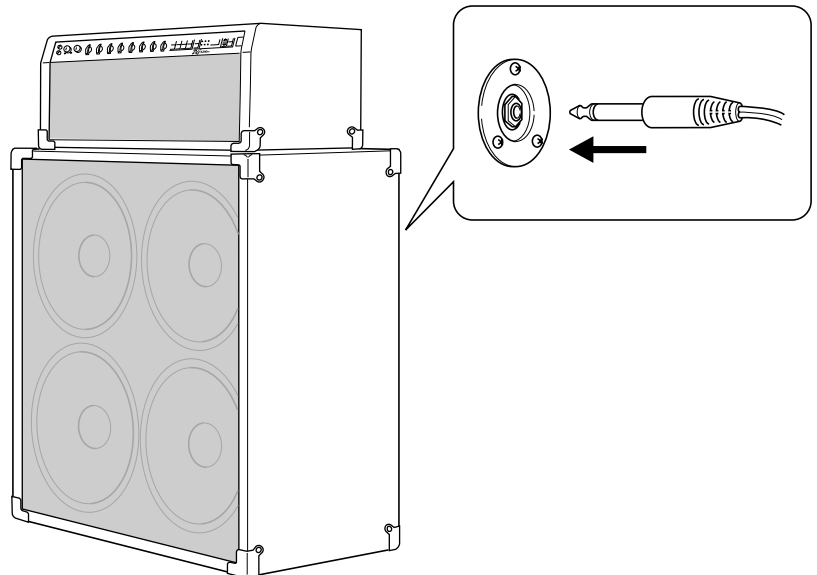
Function ...		Transmitted	Recognized	Remarks
Basic Default		x	1 - 16, off	memorized
Channel Changed		x	1 - 16, off	
Mode Default		x	1,3	memorized
Mode Messages		x	x	
Altered		**************	x	
Note		x	x	
Number : True voice		**************	x	
Velocity Note ON		x	x	
Note OFF		x	x	
After Key's		x	x	
Touch Ch's		x	x	
Pitch Bender		x	x	
Control Change	0 - 6	x	x	
	7	x	o	Main Volume
	8 - 90	x	x	
	91	x	o	Reverb Level
	92	x	o	Tremolo Depth
	93	x	o	Chorus Level
	94	x	o	Tape Echo Level
	95 - 127	x	x	
Prog		x	o 0 - 127	Program Change
Change : True #		**************		Number 1-128
System Exclusive		o	o	Bulk Dump
System : Song Pos.		x	x	
: Song Sel.		x	x	
common : Tune		x	x	
System :Clock		x	x	
Real Time :Commands		x	x	
Aux :All Sound OFF		x	x	
:Reset All Cntrls		x	x	
:Local ON/OFF		x	x	
:All Notes OFF		x	x	
Mes- :Active Sense		o	x	
sages:Reset		x	x	

Mode 1 : OMNI ON, POLY   Mode 2 : OMNI ON, MONO   o : Yes
Mode 3 : OMNI OFF, POLY   Mode 4 : OMNI OFF, MONO   x : No

Patch List

PRESET	NAME	DESCRIPTION	STYLE
1	BRITISH LOVE	Lead 2 + Chorus + Long Delay + Hall Reverb	Hard Rock/Heavy Metal
2	LUSH CHORUS	Clean 1 + Chorus + Hall Reverb	Texture Rhythm
3	VIBE-BRO	Clean 1 + Tremolo + Hall Reverb	American Blues
4	ZZ BLUE	Lead 2 + Short Delay	Texas Rock
5	GAMMA MAN	Drive 2 + Long Delay	San Fransisco Rock
6	DEEP SWELLS	Clean 2 + Chorus + Long Delay + Hall Reverb	Texture/Soundtrack
7	MERCY BUS	Drive 2 + Plate Reverb	Texas/Southern Rock
8	NY FUSE	Clean 2 + Chorus + Medium Delay + Hall Reverb	Fusion
9	FOREVER CLEAR	Crunch 2	Punk/Pop
10	SOUL FOOD	Clean 1 + SlapDelay	Funk/Soul
11	JAZZIN	Clean 1	New York Fingerstyle
12	BLUE- Z	Drive 2 + Tremolo + Short Delay + Spring Reverb	Cool Blues
13	TREM-PIPE	Clean 1 + Fast Tremolo + Short Delay	Surf/Blues
14	POP CRUNCH	Crunch 1 + Chorus + Short Delay + Plate Reverb	Rock/Pop
15	CRAZY DIAMOND	Crunch 1 + Chorus + Long Delay + Hall Reverb	ArtRock Ballad
16	TWANG THANG	Clean 2 + Slapback Delay + Spring Reverb	Country
17	FLYING DREAM	Lead 2 + Chorus + Long Delay + Hall Reverb	Rock Instrumental
18	WIRED TWIN	Clean 1 + Short Delay	British Jazz/Rock
19	FAT GRUNGE	Crunch 2 + Tremolo + Medium Delay + Hall Reverb	Grunge Rock
20	70's CRUNCH	Crunch 2 + Medium Delay	British Blues Rock
21	SHAKIN	Lead 2 + Short Delay	Australia Hard Rock
22	MATCHBOX	Drive 2 + Slow Tremolo + Spring Reverb	American Blues/Pop
23	SWEET GYPSY	Drive 2 + Long Delay	Vintage Blues/Rock
24	BRITISH TREM	Drive 2 + Fast Tremolo	British Rock/Pop
25	LITTLE NEMO	Lead 2 + Plate Reverb	British 70's Rock
26	LA GREASE	Lead 2 + Chorus + Medium Delay + Hall Reverb	LA Studio Rock
27	LONESTAR	Drive 2 + Slapback Delay + Hall Reverb	Texas Blues
28	FUTURE TREM	Crunch 2 + Fast Tremolo + Hall Reverb	Modern Rock
29	VIBE-DRIVE	Lead 2 + Chorus + Tremolo + Hall Reverb	Modern Rock
30	METALHEAD	Lead 2 + Hall Reverb	Dallas Metal
31	ROCKIN MAN	Lead 1 + Chorus + Medium Delay + Hall Reverb	80's Radio Rock
32	SURF KING	Clean 1 + Fast Tremolo + Short Delay	Malibu Surf Rock
33	TEXAS BLUES	Drive 2 + Short Delay	Texas Blues
34	MEMPHIS TREM	Clean 1 + Tremolo + Spring Reverb	Memphis Country Blues
35	BLUE JEANS	Drive 2 + Spring Reverb	Texas Rock Ballad
36	CHICAGO DOG	Crunch 1	Chicago Blues
37	WARM STACK	Lead 1 + Hall Reverb	Classic Rock
38	PRINCE-TONE	Clean 1	American Rock/Blues
39	CUTTING EDGE	Clean 1 + Long Delay	Irish Rock/Pop
40	ALIEN	Crunch 2 + Fast Chorus + Fast Tremolo + Long Delay + Hall Reverb	Experimental
41	LATIN MAGIC	Crunch 2 + Medium Delay + Spring Reverb	San Fransisco Rock
42	SMOOTH SAND	Lead 1 + Short Delay + Hall Reverb	Fusion
43	NEON METAL	Lead 2 + Long Delay	80's Metal
44	ETERNAL	Crunch 2 + 2 Second Delay with Long Feedback	Experimental
45	SPIN	Clean 1 + Chorus + Tremolo + Delay + Spring Reverb	Experimental
46	LOST CAVERN	Clean 1 + Chorus + Long Delay + Hall Reverb	Experimental
47	ZAPPED	Drive 2 + Medium Delay + Spring Reverb	Austin Rock
48	DRY ECHO	Clean 1 + Long Delay w/ 1 Repeat	Experimental
49	MIRRORS	Lead 2 + Long Delay + Plate Reverb	Experimental
50	FUNK 48	Drive 2 + Plate Reverb	Classic Rock
51	CLASSIC BOP	Clean 1 + Hall Reverb	Jazz
52	FINGERS	Clean 2 + Chorus + Hall Reverb	Rock Pop Fingerstyle
53	PROG-ROCK	Lead 2 +Chorus + Medium Delay + Hall Reverb	Art Rock
54	SOUTHERN STEP	Clean 1 + Plate Reverb	Southern Rock
55	TEJAS	Crunch 2 + Tremolo	Texas Blues
56	SHUFFLIN	Crunch 2	Blues
57	WARM CHORUS	Clean 2 + Chorus	Experimental
58	MID-BOOST	Drive 2 + Spring Reverb (Mids Boosted)	British Rock/Pop
59	T-BOOST	Drive 2 (Highs Boosted)	British Rock/Pop
60	NASHVILLE CAT	Crunch 1 + Slapback Delay	Country
61	RISING SON	Lead 2 + Delay	Swedish Metal
62	FUSION ACE	Crunch 2 + Chorus + Medium Delay + Spring Reverb	Fusion
63	HYBRID	Clean 1 + Tremolo + Chorus	Fusion
64	TAPPIN	Lead 1 + Medium Delay + Hall Reverb	LA Metal
65	FUNK-A	Clean 1	Detroit Funk
66	ROCK FUSION	Lead 1 + Medium Delay + Hall Reverb	British Jazz/Rock
67	GROWLIN	Drive 2 + Tremolo + Short Delay	Rock
68	SHIMMER	Clean 1 + Chorus + Plate Reverb	Rock
69	METAL CHORUS	Lead 1 + Heavy Chorus + Plate Reverb	Metal
70	DR PUNK	Drive 1 + Slapback Delay	Punk
71	90's SHINE	Lead 2 + Delay + Hall Reverb	90's Pop/Rock
72	BACKROOM	Lead 1 + Short Chorus + Short Delay	Rock
73	PAGEBREAKER	Lead 2 + Plate Reverb	Classic Rock
74	NERVES	Crunch 1 + Chorus + Tremolo + Short Delay	Experimental
75	FAT NECK	Drive 1 + Slapback Delay	Seattle Blues
76	CRYIN WIND	Lead 2 + Chorus + Medium Delay + Spring Reverb	Seattle Blues
77	VOODOO	Lead 1 + Long Delay + Hall Reverb	Seattle Blues/Rock
78	ANTHEM RUSH	Drive 1 + Chorus + Medium Delay + Hall Reverb	Canadian ArtRock
79	SHADES	Clean 2 + Chorus + Tremolo + Delay + Hall Reverb	Experimental
80	CHICK-N-PICK	Clean 1 + Slapback Delay	British Country