

Owner's Manual

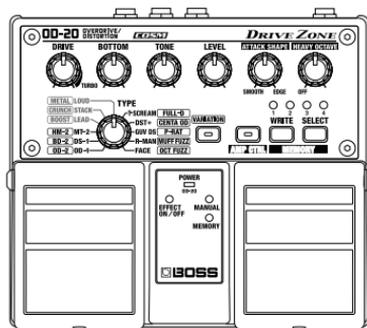
Thank you, and congratulations on your choice of BOSS OD-20 Overdrive/Distortion.

Before using this unit, carefully read the sections entitled: "USING THE UNIT SAFELY" and "IMPORTANT NOTES" (separate sheet).

These sections provide important information concerning the proper operation of the unit. Additionally, in order to feel assured that you have gained a good grasp of every feature provided by your new unit, this manual should be read in its entirety. The manual should be saved and kept on hand as a convenient reference.

Main Features

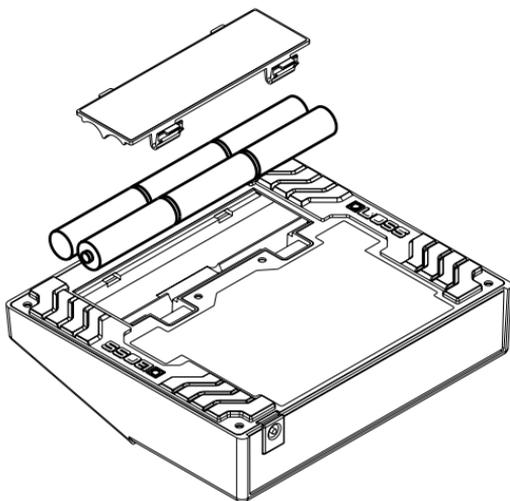
- Thanks to COSM technology, this distortion pedal delivers some of the most powerful distortion you've ever heard. You get 22 different kinds of distortion sound, from vintage classics to new, original sounds.
- Features ATTACK SHAPE for changing the picking expression, and a HEAVY OCTAVE feature, which produces a fat octave sound, allowing you to create an even wider variety of sounds.
- With four Memories plus Manual, you can use the pedal to switch through a total of five sounds.
- Built-in Amp Control feature makes it possible to switch amp channels and perform other controls that make your setup even more powerful when combined with an amp.



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Installing Batteries

Batteries are supplied with the unit. The life of these batteries may be limited, however, since their primary purpose was to enable testing. Insert the included batteries as shown in figure, being careful to orient the batteries correctly.



NOTE

- When turning the unit upside-down, get a bunch of newspapers or magazines, and place them under the four corners or at both ends to prevent damage to the buttons and controls. Also, you should try to orient the unit so no buttons or controls get damaged.
- When turning the unit upside-down, handle with care to avoid dropping it, or allowing it to fall or tip over.
- Make sure the “+” and “-” ends of the batteries are oriented correctly.
- When the batteries run down, the POWER indicator gets dim. If this happens, replace with new batteries.
- When replacing the batteries, use six AA type.
- Avoid using new batteries together with used ones. In addition, avoid mixing different types of batteries. Doing so can result in fluid leakage.
- Battery life can vary depending on battery type.

MEMO

Continuous usage time under battery power is about 20 hours with alkaline batteries and about 8 hours with carbon batteries. (This may vary according to usage conditions.)

Making the Connections

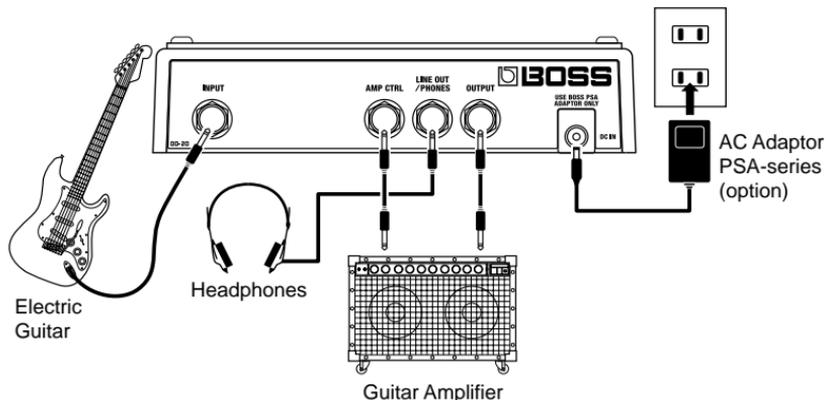
NOTE

- When the unit is running on battery power, the power comes on when you insert the connector plug into the INPUT jack.
- The use of an AC adaptor is recommended as the unit's power consumption is relatively high. Should you prefer to use batteries, please use the alkaline type.
- Noise may be produced if wireless communications devices, such as cell phones, are operated in the vicinity of this unit. Such noise could occur when receiving or initiating a call, or while conversing. Should you experience such problems, you should relocate such wireless devices so they are at a greater distance from this unit, or switch them off.
- Use a cable from Roland to make the connection. If using some other make of connection cable, please note the following precautions.
 - Some connection cables contain resistors. Do not use cables that incorporate resistors for connecting to this unit. The use of such cables can cause the sound level to be extremely low, or impossible to hear. For information on cable specifications, contact the manufacturer of the cable.
- To prevent malfunction and/or damage to speakers or other devices, always turn down the volume, and turn off the power on all devices before making any connections.
- If there are batteries in the unit while an AC adaptor is being used, normal operation will continue should the line voltage be interrupted (power blackout or power cord disconnection).
- Once the connections have been completed, turn on power to your various devices in the order specified. By turning on devices in the wrong order, you risk causing malfunction and/or damage to speakers and other devices.

When powering up: Turn on the power to your guitar amp **last**.

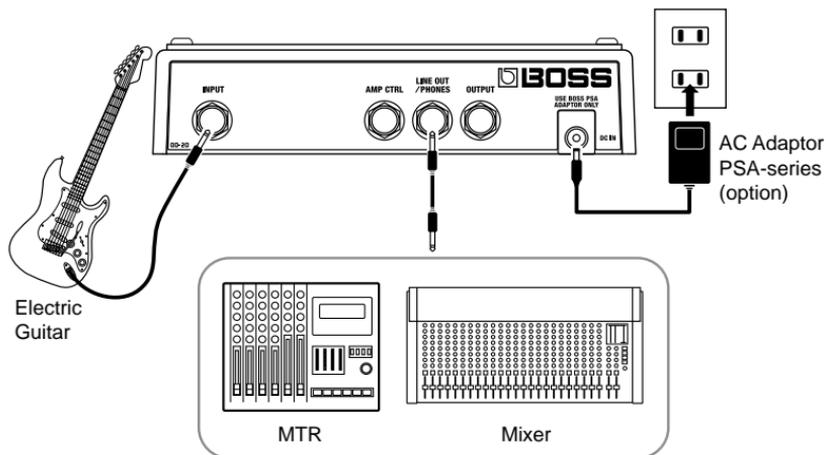
When powering down: Turn off the power to your guitar amp **first**.
- Always make sure to have the volume level turned down before switching on power. Even with the volume all the way down, you may still hear some sound when the power is switched on, but this is normal, and does not indicate a malfunction.
- When operating on battery power only, the unit's indicator will become dim when battery power gets too low. Replace the battery as soon as possible.

Connecting to the Guitar Amp



With a standard guitar amp, it may be a good idea to set all the tone controls (BASS, MIDDLE, and TREBLE) to their central positions first, then adjust from there.

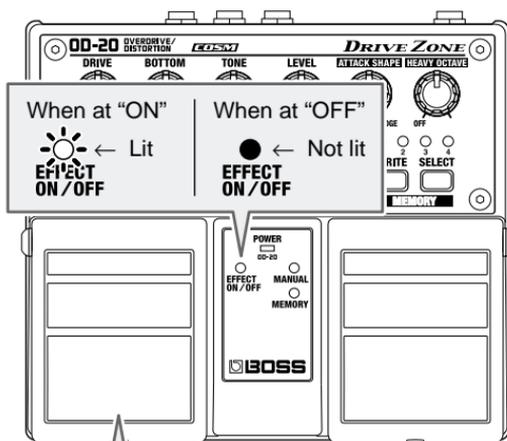
Connecting to an MTR (with No Internal Guitar Amp Simulator) or Mixer



Operation

“MANUAL” and “EFFECT ON” are selected when the power is turned on.

EFFECT ON/OFF Pedal Operation



Each press of the EFFECT ON/OFF pedal switches effects on or off. When effects are off, the sound coming in through the INPUT jack is output unchanged.

MANUAL/MEMORY Pedal Operation

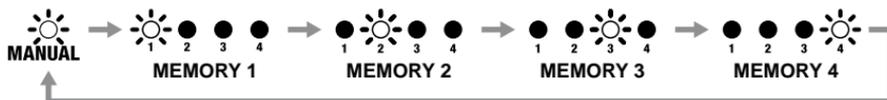
The Pedal mode (1-3) changes the function of the MANUAL/MEMORY pedal (or the MANUAL/MEMORY pedal used with the EFFECT ON/OFF pedal). Use the most appropriate setting for your particular application.

At the factory settings, Pedal mode is set to “1.”

When changing the Pedal mode settings, refer to p. 7.

Pedal mode: 1

Pressing the MANUAL/MEMORY pedal cycles you through a series of selections, in this order: MANUAL → MEMORY 1 → MEMORY 2 → MEMORY 3 → MEMORY 4 → MANUAL. This convenient feature makes it easier to switch memories in songs in which multiple memories are used.



Pedal mode: 2

Pressing the MANUAL/MEMORY pedal switches you between MANUAL and the selected memory (shown by the lit indicator). This is convenient when you want to switch two effect sounds (MANUAL and MEMORY) instantly.

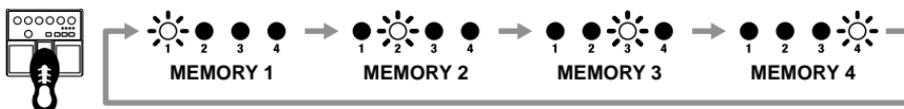


Pedal mode: 3

Pressing the MANUAL/MEMORY pedal toggles you between MANUAL and the selected memory (shown by the lit indicator).



You can also select among Memories 1-4 by pressing the MANUAL/MEMORY pedal and EFFECT ON/OFF pedal simultaneously. This is convenient for both switching two effect sounds (MANUAL and MEMORY), and switching memories between songs.



Changing the Pedal Mode Settings

Use the following procedure when changing the Pedal mode settings.

* *The pedal mode setting is stored in memory when the power is switched off.*

1. Switch off the power.

- **When running on battery power:**

Disconnect the connection plug from the INPUT jack.

- **When running on power from an AC adaptor:**

Disconnect the plug from the AC ADAPTOR jack.

2. While holding down the MEMORY SELECT button, switch on the power.

- **When running on battery power:**

Insert the connection plug into the INPUT jack.

- **When running on power from an AC adaptor:**

Insert the AC adaptor plug into the AC ADAPTOR jack.

When you release the button, the MANUAL and MEMORY indicators light.

At the same time, the Memory number indicator corresponding to the settings of the current pedal mode blinks.

3. Set the pedal mode (1–3) pressing the MEMORY SELECT button.

Pedal mode 1: MEMORY 1 indicator blinks.

Pedal mode 2: MEMORY 2 indicator blinks.

Pedal mode 3: MEMORY 3 indicator blinks.

4. Press the WRITE button.

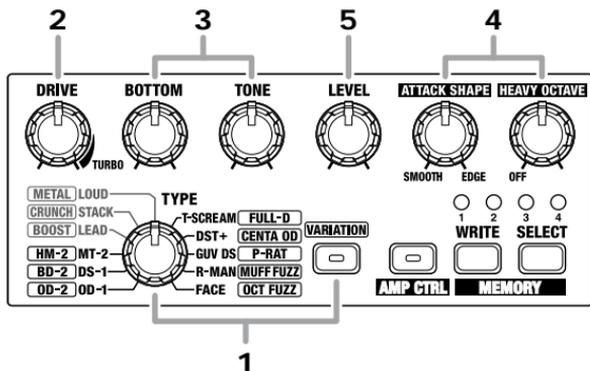
After the MEMORY Number indicator begins blinking rapidly, the setting is stored in memory and the unit returns to its ordinary state.

* *To cancel the setting change, operate the EFFECT ON/OFF pedal or the MANUAL/MEMORY pedal before pressing the MEMORY WRITE button. The unit will return to its ordinary state.*

Pedal Mode	EFFECT ON/OFF Pedal	EFFECT ON/OFF Pedal + MANUAL/MEMORY Pedal	MANUAL/MEMORY Pedal
1	effect on/off	–	Switches MANUAL/MEMORY 1/2/3/4
2	effect on/off	–	Switches MANUAL/MEMORY
3	effect on/off	Selects from MEMORY 1–4	Switches MANUAL/MEMORY

Panel Operation

In order to follow along with the instructions given here, you should start out by having effects switched ON (press the EFFECT ON/OFF pedal and confirm that the EFFECT ON/OFF indicator has lighted), and press the MANUAL/MEMORY pedal to switch MANUAL (MANUAL indicator has lighted).



1. Select the distortion type with the TYPE knob and the VARIATION button.
2. Turn the DRIVE knob to adjust the amount of distortion.
3. Turn the TONE and BOTTOM knobs to adjust the tone.
4. Turn the ATTACK SHAPE and HEAVY OCTAVE knobs to adjust effects other than distortion.
5. Adjust the volume with the LEVEL knob.

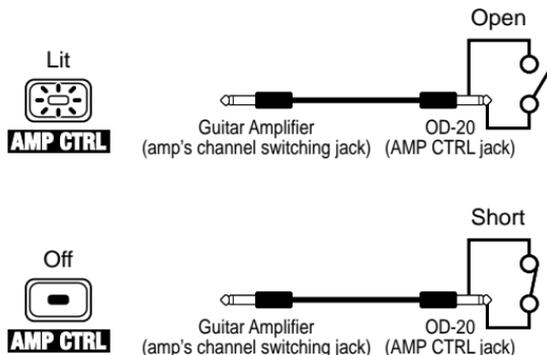


It may be a good idea to switch on or off using the EFFECT ON/OFF pedal and adjust the volume to about the same level.

Using Guitar Amp Channel Switching (Amp Control)

By connecting your guitar amp's channel switching jack to the OD-20's AMP CTRL jack, you can then use the AMP CTRL button to switch the amp channel.

This combining of the OD-20 and the amp channels allows you to get an even wider variety of distortion sounds.



- * To determine how the amp channels are switched when the circuit is open and shorted, refer to the amp owner's manual, or actually confirm the sounds by operating the amp.
- * You can set the Amp Control independently of the effect On/Off settings.
- * You can store separate Amp Control settings to each memory. For more on this procedure, refer to "Storing Settings (Write Operation)" (p. 10).



With Amp Control, not only can you switch amp channels, you can also use it to switch the amp's effects on and off, like a foot switch controller.

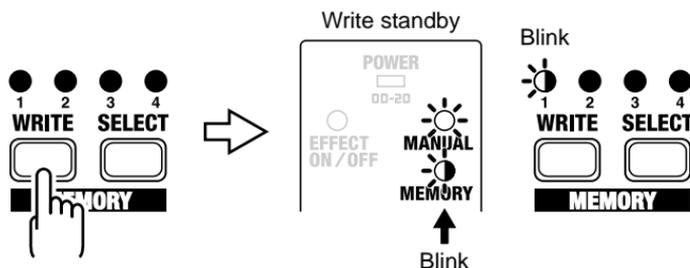
Storing Settings (Write Operation)

Storing the “MANUAL” Sound in Memory

NOTE Do not switch off the power while a write operation is in progress.

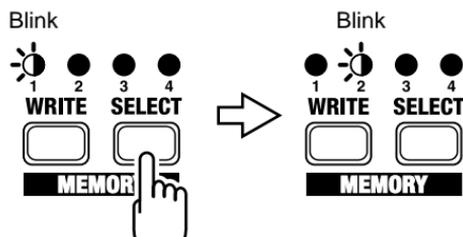
1. Create the sound you want when set to “MANUAL.”
2. Press the **MEMORY WRITE** button.

The **MEMORY** indicator and the indicator for the currently selected memory blink, and the OD-20 is put into write standby.



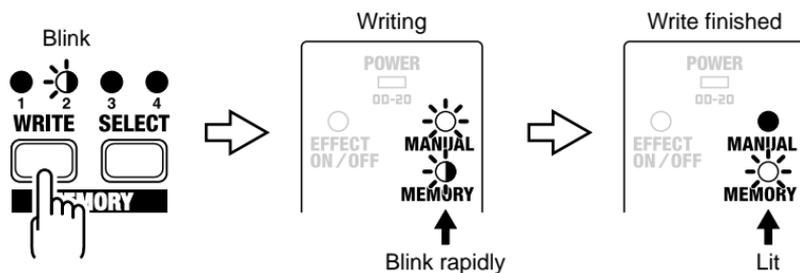
3. Press the **MEMORY SELECT** button to select the memory (number) to which you want to store the sound.

The indicator for the selected **MEMORY** number blinks.



4. Press the MEMORY WRITE button.

The write operation finishes after the MEMORY indicator and the indicator for the write-destination memory have begun to blink more rapidly.



* To cancel the write operation, operate a knob or the MANUAL/MEMORY pedal before you press the WRITE button.

Changing and Storing the “MEMORY” Sound

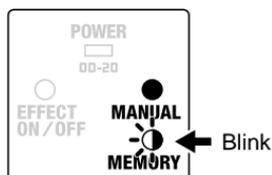


Do not switch off the power while a write operation is in progress.

1. Press the **MANUAL/MEMORY** pedal or the **MEMORY SELECT** button to change to the “MEMORY” sound.
2. Operate the knobs to change the sound.

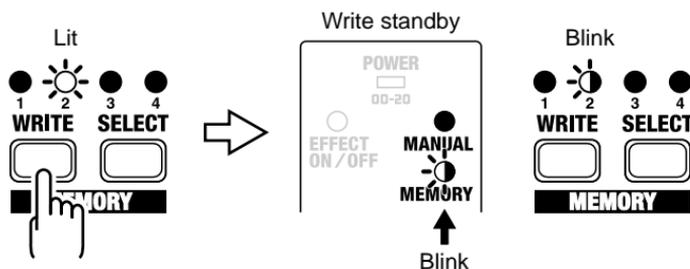
* To avoid sudden inadvertent changes in sound, the **DRIVE**, **BOTTOM**, **TONE**, **LEVEL**, **ATTACK SHAPE**, and **HEAVY OCTAVE** knobs are designed so that the setting does not change unless the knob is first turned as far as the stored setting value. Once the position of the knob matches the setting value stored in memory, the sound starts to change.

When a setting changes, the **MEMORY** indicator blinks automatically.



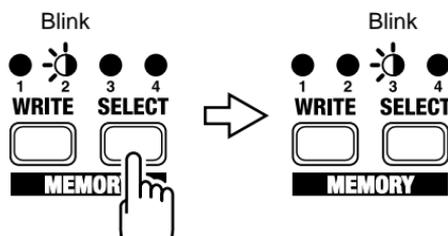
3. Press the **MEMORY WRITE** button.

The **MEMORY** indicator and the indicator for the currently selected **MEMORY** number start to blink, and the **OD-20** is put into write standby.



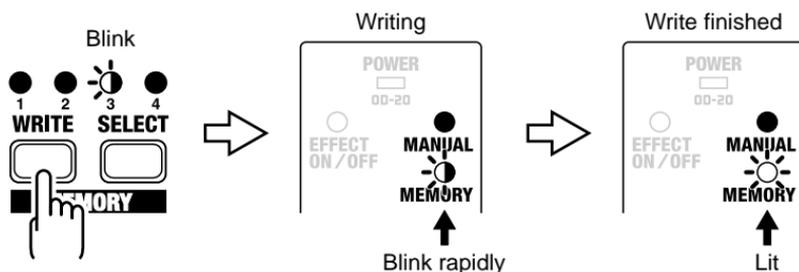
4. Press the MEMORY SELECT button to select the memory (number) to which you want to store the sound.

The indicator for the selected MEMORY number blinks.



5. Press the MEMORY WRITE button.

The write operation finishes after the MEMORY indicator and the indicator for the write-destination memory have begun to blink more rapidly.



* To cancel the write operation, operate a knob or the MANUAL/MEMORY pedal before you press the WRITE button. And the OD-20 is returned to the status in effect in Step 2.

Part Names and Functions

Front Panel

BOTTOM Knob

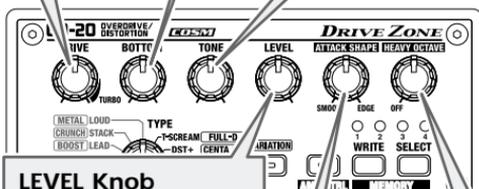
Adjusts the low frequency range. Turning the knob to the left (counterclockwise) cuts the low end more; the low frequencies are boosted as the knob is turned to the right. Optimized for the distortion selected with "TYPE."

DRIVE Knob

Adjusts the amount of distortion. Turning the knob to the right (clockwise) creates a stronger distortion and increases the volume. Turning this all the way to the TURBO range increases the effect even more.

STONE Knob

Adjusts the tone. Turning the knob to the left creates a milder sound; a sharper sound is produced as the knob is turned to the right. Optimized for the distortion selected with "TYPE."



LEVEL Knob

Adjusts the volume.

ATTACK SHAPE Knob

Changes the tone of the attack portion. Turning the knob to the left of the center position results in a smoother tone; a tone with a more prominent edge is created when the knob is turned to the right of center.

HEAVY OCTAVE Knob

Adds sound an octave below what is performed by the guitar when playing in the low registers. Turning the knob to the right raises the level of the octave sound. Output of the octave sound ceases when the knob is turned completely to the left.

* No octave sound is added when you play in the high-middle registers.

TYPE Knob VARIATION Button

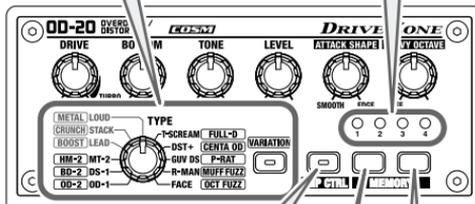
Select the distortion type with the TYPE knob, then press the VARIATION button to select the variation. The button's indicator lights up when a variation is selected.



“TYPE List” (p. 16)

MEMORY Number Indicator (1-4)

The indicator for the currently selected MEMORY number (1-4) lights. The indicator flashes while the OD-20 is in write standby; the indicator flashes more rapidly while the write operation is in progress.



AMP CTRL (amp control) Button

This switches the amp channel when you have the guitar amp's channel switching jack connected to the OD-20's AMP CTRL jack.

MEMORY WRITE Button

Press this to store settings in “MEMORY.”

MEMORY SELECT Button

Use this to select a Memory (1-4), and to specify the write destination when carrying out the write procedure.

** When “1” is selected as the Pedal mode (p. 6), you can switch between “Manual” and “Memory (1-4).”*

TYPE List

* All product names mentioned in this document are trademarks or registered trademarks of their respective owners.

Those companies are not affiliated with BOSS and have not licenced or authorized BOSS's OD-20. Their marks are used solely to identify the equipment whose sound is simulated by BOSS's OD-20.

 VARIATION  Not lit		 VARIATION  Lit	
OD-1	Models the BOSS OD-1.	OD-2	Models the BOSS OD-2.
DS-1	Models the BOSS DS-1.	BD-2	Models the BOSS BD-2.
MT-2	Models the BOSS MT-2.	HM-2	Models the BOSS HM-2.
LEAD	OD-20 original distortion. Produces a distortion sound with both the smoothness of an overdrive along with a distortion's depth.	BOOST	OD-20 original booster.
STACK	OD-20 original distortion. A fat sound with an added element of a stack amp's distortion.	CRUNCH	OD-20 original distortion. A lustrous crunch sound with an added element of amp distortion.
LOUD	OD-20 original distortion. A heavy distortion with a boosted low end.	METAL	OD-20 original distortion. An intense, radical distortion sound.
T-SCREAM	Models the Ibanez TS-808 TUBESCREAMER.	FULL-D	Models the Fulltone FULL-DRIVE 2.
DST+	Models the MXR DISTORTION+.	CENTA OD	Models the KLON CENTAUR.
GVV DS	Models the Marshall GOV'NOR.	P-RAT	Models the Proco RAT. * When set to P-RAT, turning the TONE knob to the right cuts the high frequencies.
R-MAN	Models the ROCKMAN.	MUFF FUZZ	Models the Electro-Harmonix Big Muff π .
FACE	Models the FUZZFACE.	OCT FUZZ	Models the ACETONE FUZZ.

POWER Indicator

This lights up when the power is on. If this gets dim or fails to light up when the unit is running on battery power, it means that the batteries are depleted. Replace promptly with fresh batteries.

EFFECT ON/OFF Indicator

This lights up when effects are on.

EFFECT ON/OFF Pedal

Each press of the pedal switches the effects on or off.

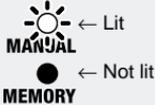
MANUAL Indicator

This lights up when set to "MANUAL."

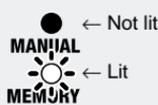
MEMORY Indicator

This lights up when set to "MEMORY" (1-4). This blinks when you turn a knob to change the value of a setting, or put the OD-20 into write standby while a memory is selected, and blinks rapidly while data is being written.

When at "MANUAL"



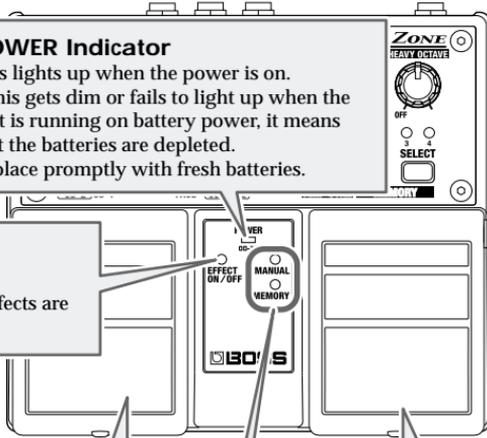
When at "MEMORY"



MANUAL/MEMORY Pedal

You can press the pedal to switch between "Manual," where the sound is output according to the settings of the panel knobs and switches, and your selection of a "Memory" (1-4), which contain stored settings.

** The Pedal mode (1-3) changes the function of the MANUAL/MEMORY pedal (or the MANUAL/MEMORY pedal used with the EFFECT ON/OFF pedal). Use the most appropriate setting for your particular application. (p. 6)*



Rear Panel

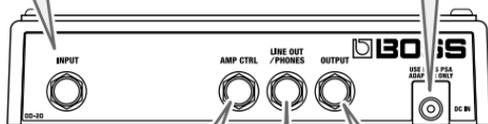
INPUT Jack

This is the input jack for connecting to the output of an electric guitar or other instrument or effects processor.

** The INPUT jack also doubles as the power switch when the unit is running on battery power. The power comes on when a plug is inserted into the INPUT jack, and goes off when it is unplugged. Unplug any connected cords when the unit is not in use.*

AC Adaptor Jack

This jack is for connecting an AC adaptor (BOSS PSA-series, sold separately). Using an AC adaptor makes possible long performances with no worry about batteries going dead.



AMP CTRL (amp control) Jack

This jack is used when connecting to remote jacks, such as a guitar amp's channel switching jack.

OUTPUT Jack

This jack is for connection to a guitar amp or another effects processor.

LINE OUT/PHONES Jack

Headphones, or a multitrack recorder or mixer that has no amp simulator can be connected to this output jack.

Changing How Memory Numbers Are Indicated

Not only can you confirm the currently selected memory merely by checking the lit MEMORY Number indicators, you can also change the pattern in which the indicators light up. Select the pattern that provides the easiest way to check the memory in any particular environment.



When using the OD-20 in dimly lit surroundings, you can confirm memory numbers more easily by using the Lighting Pattern 2 setting.

Lighting Pattern 1 (Normal):

Only the indicator for the selected memory lights up (or blinks).

Lighting Pattern 2:

The number of indicators lighting up (or blinking) corresponds to the selected memory number.

When MEMORY 1 is selected: Indicator 1 lights up.

When MEMORY 2 is selected: Indicators 1 and 2 light up.

When MEMORY 3 is selected: Indicators 1, 2, and 3 light up.

When MEMORY 4 is selected: Indicators 1, 2, 3, and 4 light up.

You can select the indicator lighting pattern by means of the following procedure.

1. Switch off the power.

• When running on battery power:

Disconnect the connection plug from the INPUT jack.

• When running on power from an AC adaptor:

Disconnect the plug from the AC ADAPTOR jack.

2. While holding down the MEMORY WRITE button and the MEMORY SELECT button, switch on the power.

• When running on battery power:

Insert the connection plug into the INPUT jack.

• When running on power from an AC adaptor:

Insert the AC adaptor plug into the AC ADAPTOR jack.

When the button is released, either the No. 1 indicator alone blinks, or all indicators from 1 through 4 blink.

3. Press the MEMORY SELECT button to set the MEMORY indicator lighting pattern.

Lighting Pattern 1: Indicator 1 alone blinks.

Lighting Pattern 2: Indicators 1–4 all blink.

4. Press the MEMORY WRITE button.

After the MEMORY Number indicator(s) begins blinking rapidly, the setting is stored in memory and the unit returns to its ordinary state.

* To cancel the setting change, operate the EFFECT ON/OFF pedal or the MANUAL/MEMORY pedal before pressing the MEMORY WRITE button. The unit will return to its ordinary state.

Returning Settings to Their Factory Defaults

You can restore the memories (1–4), pedal mode settings, and the MEMORY Number Indication to their original factory values.

Memory Settings	Memory 1 (p. 23)	LOUD
	Memory 2 (p. 24)	LEAD
	Memory 3 (p. 24)	OD-1
	Memory 4 (p. 24)	STACK
Pedal Mode (p. 7)		1 (MANUAL → MEMORY 1 → MEMORY 2 → MEMORY 3 → MEMORY 4 → MANUAL)
MEMORY Number Indication (p. 19)		Lighting Pattern 1 (Only the indicator for the selected memory lights up.)



Carrying out the following procedure completely clears the content currently stored in the memories (1–4).

1. Switch off the power.

• When running on battery power:

Disconnect the connection plug from the INPUT jack.

• When running on power from an AC adaptor:

Disconnect the plug from the AC ADAPTOR jack.

2. While holding down the WRITE button, switch on the power.

• When running on battery power:

Insert the connection plug into the INPUT jack.

• When running on power from an AC adaptor:

Insert the AC adaptor plug into the AC ADAPTOR jack.

When you release the button, the MEMORY Number indicators blink.

3. Press the MEMORY WRITE button.

After the MEMORY Number indicators begin blinking rapidly, the setting is stored in memory and the unit returns to its ordinary state.

* *To cancel the setting change, operate the EFFECT ON/OFF pedal or the MANUAL/MEMORY pedal before pressing the MEMORY WRITE button. The unit will return to its ordinary state.*

Troubleshooting

The power doesn't come on.

- **Is the guitar connected correctly to the INPUT jack?**
 - Check the connections again (p. 3–4).
 - * *When running on batteries, the unit won't switch on until a plug is inserted into the INPUT jack. This helps conserve the batteries.*
- **Have the batteries run down?**
 - Replace with fresh batteries (p. 2).
- **Is the specified AC adaptor (PSA-series sold separately) connected correctly?**
 - Check the connections again (p. 3–4).

There is no sound/volume is too low.

- **Is the other equipment connected correctly?**
 - Check the connections again (p. 3–4).
- **Is the volume turned down on the connected guitar amp, effects processor, or other device?**
 - Check the settings on the connected equipment (p. 3–4).

Noise is produced.

- **Is the guitar connected correctly to the INPUT jack?**
 - When you are using the AC adaptor, the power comes on even when a connector is not plugged into the INPUT jack. This means that noise may be produced when nothing is connected to the INPUT jack. Make sure everything is connected properly before switching on the power to your equipment.

Cannot switch amp channels

properly

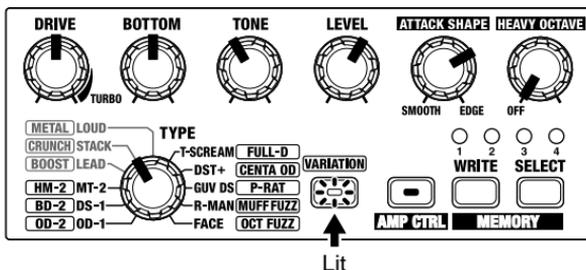
- **Is the amp's channel switching jack correctly connected to the OD-20's AMP CTRL jack?**
 - Check the connections again.
- **Does the amp's channel switch match the polarity of the OD-20's Amp Control?**
 - The OD-20's Amp Control is shorted when the indicator is off, and open when the indicator is lit (p. 9). Confirm how amp's channels are switched when the circuit is open or shorted.

The volume level of the instrument connected to INPUT jack is too low.

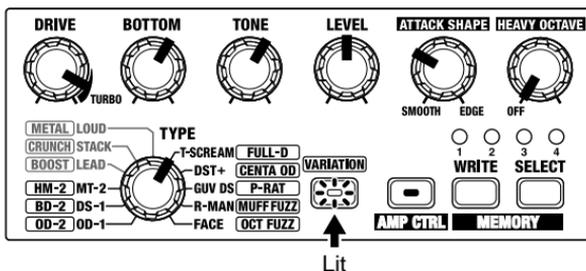
- **Could you be using a connection cable that contains a resistor?**
 - Use a connection cable that does not contain a resistor.

Sample Settings

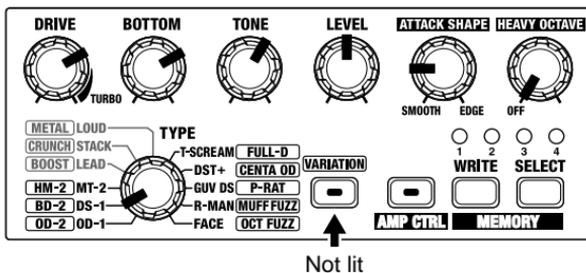
Crunch with mild amp distortion



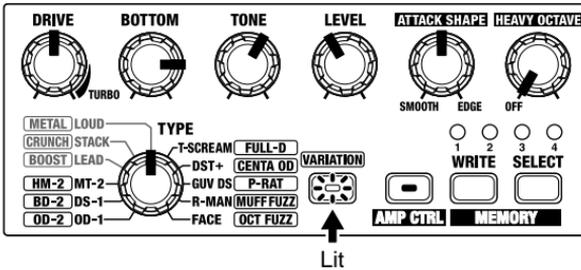
Overdrive with heavy distortion



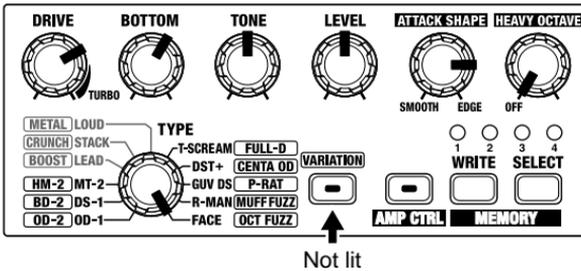
Fat distortion sound



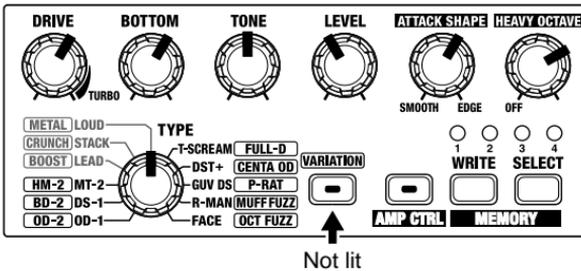
Fairly bright metal sound



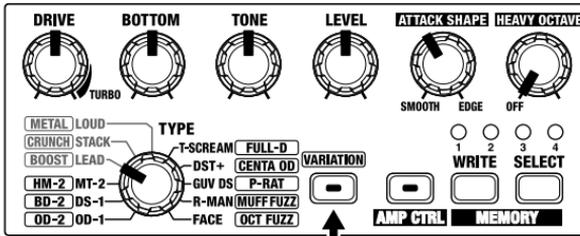
Radical fuzz



LOUD (Factory Default Memory 1)

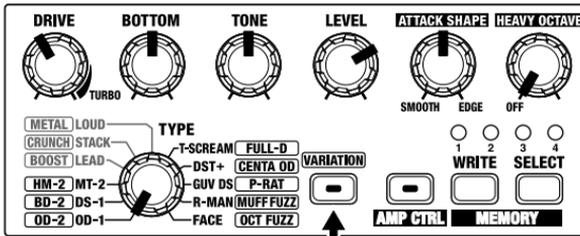


LEAD (Factory Default Memory 2)



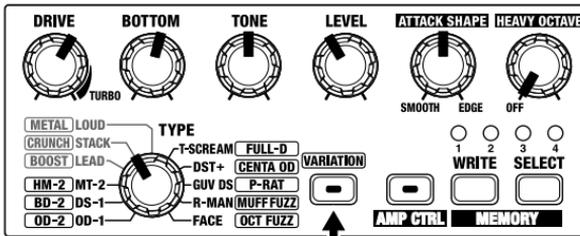
Not lit

OD-1 (Factory Default Memory 3)



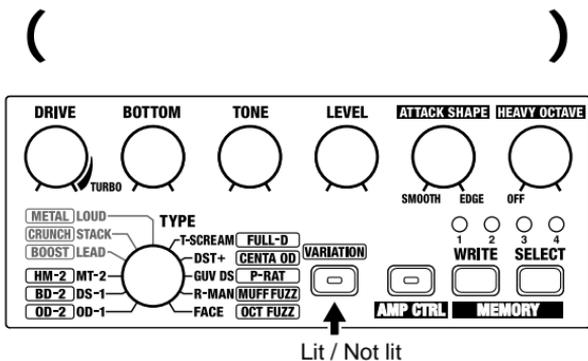
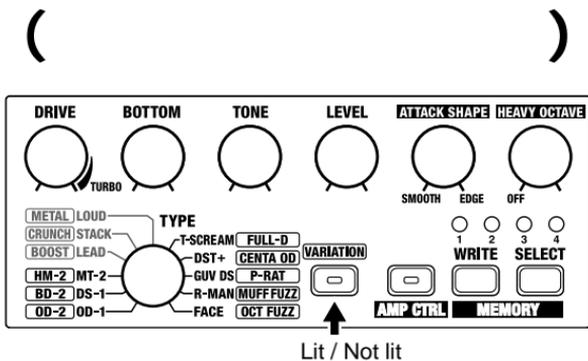
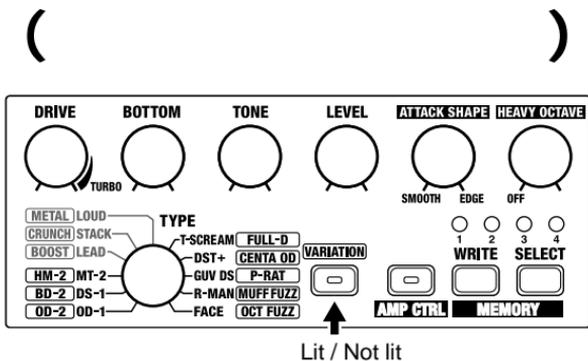
Not lit

STACK (Factory Default Memory 4)



Not lit

Setting Memo



Specifications

OD-20: Overdrive/Distortion

Nominal Input Level

20 dBu

Input Impedance

1 M Ω

Nominal Output Level

20 dBu

Output Impedance

1 k Ω

Recommended Load Impedance

10 k Ω or greater

Dynamic Range

102 dB (IHF-A typ.)

Controls

EFFECT ON/OFF Pedal

MANUAL/MEMORY Pedal

DRIVE Knob

BOTTOM Knob

TONE Knob

LEVEL Knob

ATTACK SHAPE Knob

HEAVY OCTAVE Knob

TYPE Knob

VARIATION Button

AMP CTRL (amp control) Button

MEMORY WRITE Button

MEMORY SELECT Button

Indicators

POWER Indicator (serves also as battery check indicator)

EFFECT ON/OFF Indicator

MANUAL Indicator

MEMORY Indicator

VARIATION Indicator

AMP CTRL (amp control) Indicator

MEMORY Number Indicator (1-4)

Connectors

INPUT Jack

AMP CTRL (amp control) Jack

LINE OUT/PHONES Jack

OUTPUT Jack

AC Adaptor Jack (DC 9 V)

Power Supply

DC 9 V: Dry Battery (R6/LR6 (AA) type) x 6

AC Adaptor

Current Draw

85 mA (9 V max.)

* *Expected battery life under continuous use:*

Carbon: 8 hours

Alkaline: 20 hours

These figures will vary depending on the actual conditions of use.

Dimensions

173 (W) x 158 (D) x 57 (H) mm

6-13/16 (W) x 6-1/4 (D) x 2-1/4 (H) inches

Weight

1.1 kg / 2 lbs 7 oz (including batteries)

Accessories

Owner's Manual

Leaflet ("USING THE UNIT SAFELY,"

"IMPORTANT NOTES," and "Information")

Dry battery (LR6 (AA) type) x 6

* *We recommend that alkaline batteries be used when replacing the batteries.*

Options

AC Adaptor (PSA-series)

* *0 dBu = 0.775 Vrms*

* *In the interest of product improvement, the specifications and/or appearance of this unit are subject to change without prior notice.*



This product complies with the requirements of European Directive 89/336/EEC.

For EU Countries

FEDERAL COMMUNICATIONS COMMISSION RADIO FREQUENCY INTERFERENCE STATEMENT

For the USA

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

Unauthorized changes or modification to this system can void the users authority to operate this equipment.
This equipment requires shielded interface cables in order to meet FCC class B Limit.

For Canada

NOTICE

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

AVIS

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

