Thank you very much for purchasing the ZOOM MS-60B.
Please read this manual carefully to learn about all the functions of
the MS-60B so that you will be able to use it fully for a long time.
Keep this manual in a convenient place for reference when necessary.

If the MS-60B is not used for 10 hours, it will turn off automatically by default.
If you want the power to stay ON all the time, please see "4 To set the Power Management function" on page 19 and set the value to OFF.
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Terms used in this manual

Patch memory
The ON/OFF status and the parameter settings of each effect are stored as “patch memories.” The MS-60B can store 50 patch memories.

Effect unit
The MS-60B can use between 1 and 4 effects at a time and you can change the number used as you like. Each one of these is called an “effect unit.”

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Note: All trademarks and registered trademarks mentioned in this manual are for identification purposes only and are not intended to infringe on the copyrights of their respective owners.
SAFETY PRECAUTIONS

In this manual, symbols are used to highlight warnings and cautions that you must read to prevent accidents. The meanings of these symbols are as follows:

⚠️ **Warning**
Something that could cause serious injury or death.

⚠️ **Caution**
Something that could cause injury or damage to the equipment.

Other symbols

⚠️ **Warning**
Required (mandatory) actions

⚠️ **Caution**
Prohibited actions

⚠️ **Warning**
Operation using an AC adapter

⚠️ Use only a ZOOM AD-16 AC adapter with this unit.

⚠️ Do not use do anything that could exceed the ratings of outlets and other electrical wiring equipment.

**Operation using batteries**

⚠️ Use 4 conventional 1.5-volt AA batteries (alkaline or nickel-metal hydride).

⚠️ Always close the battery compartment cover when using the unit.

**Alterations**

⚠️ Never open the case or attempt to modify the product.

⚠️ **Precautions**

**Product handling**

⚠️ Do not drop, bump or apply excessive force to the unit.

⚠️ Be careful not to allow foreign objects or liquids to enter the unit.

**Operating environment**

⚠️ Do not use in extremely high or low temperatures.

⚠️ Do not use near heaters, stoves and other heat sources.

⚠️ Do not use in very high humidity or near splashing water.

⚠️ Do not use in places with excessive vibrations.

⚠️ Do not use in places with excessive dust or sand.

**AC adapter handling**

⚠️ When disconnecting the AC adapter from an outlet, always pull the body of the adapter itself.

**Battery handling**

⚠️ Install the batteries with the correct +/- orientation.

⚠️ Use a specified battery type. Do not mix new and old batteries or different brands or types at the same time. When not using the unit for an extended period of time, remove the batteries from the unit.

⚠️ If a battery leak should occur, wipe the battery compartment and the battery terminals carefully to remove all battery residue.

**Connecting cables with INPUT and OUTPUT jacks**

⚠️ Always turn the power OFF for all equipment before connecting any cables.

**Volume**

⚠️ Do not use the product at a loud volume for a long time.

**Usage Precautions**

**Cleaning**

Use a soft cloth to clean the panels of the unit if they become dirty. If necessary, use a damp cloth that has been wrung out well.

**Malfunction**

If the unit becomes broken or malfunctions, immediately disconnect the AC adapter, turn the power OFF and disconnect other cables. Contact the store where you bought the unit or ZOOM service with the following information: product model, serial number and specific symptoms of failure or malfunction, along with your name, address and telephone number.
**DC9V AC adapter jack**
To power the unit from an outlet, connect an AD-16 adapter here (→P6).

**OUTPUT jacks**
Connect to an amp or another effector. Use the MONO jack for a mono connection.

**ON/OFF indicator**
Lights when the current effect is ON. Does not light when the effect is OFF (→P8).

**Cursor keys**
(→P5)

**USB connector**
Use to connect to a computer and update firmware (→P23).

**INPUT jack**
Connect a bass guitar.

**Display**
Shows the currently selected effect and various other screens (→P7).

**Parameter knobs**
(→P5)

**Footswitch**
Turns the effect shown on the display ON and OFF (→P8). Press and hold for 1 second to open the Tuner or Tap Tempo (→P14, 16).
From the left

**Parameter knob 1 [ ]**

Turn left and right to adjust the parameter. Press to open the MENU where you can remove and rearrange effects and make various settings (→P12, 18). You can also check the firmware version (→P22).

**Parameter knob 2 [ ]**

Turn left and right to adjust the parameter. Press to open the MEMORY screen where you can select and save patch memories, and change patch memories using the footswitch (→P10, 11).

**Parameter knob 3 [ ]**

Turn left and right to adjust the parameter. Press to change the parameter page (→P9).

**Up and down cursor keys [ ]**

Press to change the effect type. Press and hold for 1 second to select the effect category (→P8).

**Left and right cursor keys [ ]**

Press to show the effect to the left or right. Press and hold for 1 second to add a new effect left or right of the current effect (→P12).
1. To turn the power ON

1. Lower the amplifier’s volume all the way.

2. Power the unit with batteries or an adapter.

   **<When using batteries>**
   
   Open the cover on the bottom of the unit and insert batteries in the compartment.

   Bottom of the unit

   **<When using an adapter>**
   
   Connect an AD-16 adapter.

3. Plug a guitar cable into the INPUT jack.

4. Connect to an amp, then turn the amp on and raise the volume.

   **HINT**
   
   - When using batteries, the power will turn on when the cable is connected to the INPUT jack.
2 Display information

The Home Screen shows the current effect

- The positions of the virtual knobs change with the parameter values.

Edit Screen shows parameter being edited

- If there are 4 or more parameters that can be adjusted, multiple page tabs will be shown.
Confirm that the Home Screen is shown.

1 | To turn an effect ON and OFF

Press


NOTE

- When an effect is ON, the footswitch LED lights.
- When an effect is OFF, the footswitch LED is unlit.

2 | To select an effect type

Press either

HINT

- Press and hold to select the effect category.
  See step 2 of "To add an effect". (See page 12.)

3 | To adjust parameters

Turn
Effect processing limit

The **MS-60B** allows you to combine 4 effects as you like. However, if you combine effect types that require great amounts of processing power (amp models, for example), the available processing capacity might not be enough. If the processing required for an effect exceeds the available capacity, the effect is bypassed and a “DSP Full!” message appears. This can be avoided by changing 1 or more of the effect types or setting them to THRU.

**NOTE**

- An effect requires the same amount of processing power whether it is ON or OFF.

**HINT**

- Press and hold the button for at least 1 second to immediately set an effect to THRU.
Selecting and Saving Patch Memories

Confirm that the Home Screen is shown.

1. To select a patch memory

When shipped from the factory, the automatic patch memory saving function is active. As soon as a parameter is adjusted this change is automatically saved.

1. Open the MEMORY list.
   
2. Select a patch memory.
   
2. To save a patch memory with a new name

1. Open the MEMORY list.

2. Select the patch memory to be saved with a new name.

3. Change the name and select where to save the patch memory.

   - Turn to move the cursor:
   - Turn to change the character:
   - Press to change the type of character/symbol
   - Turn to select where to save the patch memory

4. Save the patch memory with the new name.

Press
Confirm that the Home Screen is shown.

1. Open the MEMORY list.

2. Select a patch memory to add to or remove from the footswitch (A/B) list.

3. Add or remove it.

HINT
- Press and hold to remove all patch memories from the footswitch list.

2. To cycle through patch memories in the list in order using the footswitch

1. Open the MEMORY list.

2. Change the patch memory.

HINT
- In the example on the right, pressing the footswitch cycles through the patch memories in alphabetical order like this.

- [04:Flanger] [01:160Comp] [02:RackCmp] [04:Flanger] [01:160Comp] ...
Confirm that the Home Screen is shown.

1 | To add an effect

1. Open the ADD EFFECT UNIT screen.
   - Press and hold either for 1 second

2. Select the effect category.
   - Press any
   - Press

HINT
- Select EXIT to return to the Home Screen without adding any effect.

2 | To remove an effect

1. Open the MENU.
   - Press

2. Select DELETE EFFECT UNIT.
   - Turn
   - Press

3. Select YES.
   - Turn
   - Press
3. **To scroll through the effects shown**

When multiple effects are in use, scroll to change the visible one.

Press either

- Shows the effect number counting from the right.
- Shows how many effects are in this direction.

4. **To change the order of effects**

1. Open the MENU.

- Press

2. Select EFFECT CHAIN.

- Turn (Select)
- Press (Lift)

**HINT**

- Effects that are OFF appear gray.

3. Select the effect to move and "lift" it.

- Turn (Select)
- Press (Lift)

4. Select the new location for the effect and "drop" it.

- Turn (Select)
- Press (Drop)

5. To complete these procedures

- Press
1 To activate the Tuner

Press and hold for 1 second

NOTE

- A setting must be changed to make pressing and holding the footswitch activate Tap Tempo. (See page 18.)

2 To end tuning

Press

3 To change the tuner’s standard pitch

Confirm that the Tuner Screen is open.

Press

Turn

4 To select the tuner type

Confirm that the Tuner Screen is open.

Press

Turn
CHROMATIC
The chromatic tuner shows the nearest pitch name (semitone) and how far the input sound is from that pitch.

BASS
The nearest string name and how far the sound input is from that pitch are shown.

5 To use a drop tuning

Confirm that the Tuner Screen is open.

Press

Turn

NOTE

• Drop tuning is not possible when the TYPE is set to CHROMATIC.

6 To tune a bass guitar

Play the open string that you want to tune and tune it.

■ Chromatic tuner
The name of the nearest note and the pitch accuracy are shown.

■ Bass tuner
The number of the nearest string and the pitch accuracy are shown.
Delay effects and some modulation and filter effects can be synchronized to the tempo. Select an effect that can be synchronized, and set its Time, Rate or other parameter that can be synchronized to a ∆ or ∆ note value. The tempo can be set by tapping the footswitch or a knob.

1. **To set the tempo by tapping the footswitch**

   **NOTE**
   - By default, when pressed and held, the footswitch is set to activate the Tuner. To tap the tempo with the footswitch, the setting must be changed so that it activates Tap Tempo when pressed and held. (See page 18.)

   1. Open the Tap Tempo Screen.

      Press and hold for 1 second

      The ON/OFF indicator flashes in time with the tempo.

   2. Tap the footswitch 2 or more times at the desired tempo.

      ![](image)

      Press and hold for 1 second

   3. Complete the setting.

      **NOTE**
      - If you press the footswitch when the effect is ON, the ON/OFF indicator becomes unlit and the effect turns OFF for 1 second.
2. To tap tempo by hand

1. Open an effect that can be synchronized to the tempo on the Home Screen. (See page 8, 24.)

2. Open the parameter editing screen.

Press

3. Tap the knob 2 or more times at the desired tempo.

Press

The ON/OFF indicator flashes in time with the tempo.

NOTE

- Tempo settings are saved separately for each patch memory.
1. To change various settings

1. Open the MENU.

Press

2. Select SETTINGS.

Press

1. Select HOLD FOR TUNER/TAP from the SETTINGS menu.

2. Set the function activated by pressing and holding the footswitch continuously for 1 second to TUNER or TAPTEMPO.

Set the function activated by pressing the footswitch continuously for 1 second to TUNER or TAPTEMPO.

1. Select HOLD FOR TUNER/TAP from the SETTINGS menu.

2. Set the function activated by pressing and holding the footswitch

Press

NOTE

- These settings are shared by all patch memories.

HINT

- TUNER: Activates the Tuner (default setting).
- TAP TEMPO: Activates Tap Tempo.
Changing Various Settings

3 To set the tuner mode

1. Select BYPASS/MUTE TUNER from the SETTINGS menu.

   Turn
   ▼
   Press

2. Set the tuner mode

   Turn
   ▼
   Press

HINT

- BYPASS: The effects are bypassed when the tuner is being used.
- MUTE: The output is muted when the tuner is being used.

4 To set the Power Management function

1. Select POWER MANAGEMENT from the SETTINGS menu.

   Turn
   ▼
   Press

2. Set the Power Management function.

   Turn
   ▼
   Press

HINT

- ON (default): The Power Management function is enabled. If left unused for 10 hours, it turns off automatically.
- OFF: The Power Management function is disabled.
Changing Various Settings

**5 To set the Auto Save function**

1. Select AUTO SAVE from the SETTINGS menu.
   - Turn
   - Press
   - SETTINGs
     - HOLD FOR TUNER/TAP
     - BYPASS/MUTE TUNER
     - POWER MANAGEMENT
     - AUTO SAVE

2. Set the Auto Save function.
   - Turn
   - Press
   - AUTO SAVE
     - OFF
     - ON

**HINT**
- ON (default): Changes to presets are automatically saved.
- OFF: Changes to presets are not saved until they are saved manually. (See page 10.)

**6 To select the battery type**

1. Select BATTERY TYPE from the SETTINGS menu.
   - Turn
   - Press
   - SETTINGs
     - HOLD FOR TUNER/TAP
     - BYPASS/MUTE TUNER
     - POWER MANAGEMENT
     - AUTO SAVE
     - BATTERY TYPE

2. Set the type of batteries used.
   - Turn
   - Press
   - BATTERY TYPE
     - ALKALINE
     - NI-MH

**HINT**
- You can confirm the remaining battery charge on the MENU.
- "Low Battery!" appears when the batteries need to be changed.
7. To set the amount of time until the backlight dims

1. Select LCD BACKLIGHT from the SETTINGS menu.

2. Set the amount of time until the backlight dims.

8. To adjust the display contrast

1. Select LCD CONTRAST from the SETTINGS menu.

2. Adjust the display contrast.
9 To view the firmware versions

1. Open the MENU.
   Press

2. Select VERSION.
   Turn
   Press
   The firmware version is shown.

<table>
<thead>
<tr>
<th>MENU</th>
</tr>
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<tbody>
<tr>
<td>System</td>
</tr>
<tr>
<td>Effect Chain</td>
</tr>
<tr>
<td>Version</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>VERSION</th>
</tr>
</thead>
<tbody>
<tr>
<td>System : 1.00</td>
</tr>
<tr>
<td>Preset  : 1.00</td>
</tr>
<tr>
<td>Boot    : 1.00</td>
</tr>
</tbody>
</table>

HINT

- Check the ZOOM website (http://www.zoom.co.jp) for the latest firmware versions.
1. To update the firmware

1. While pressing both the up and down cursor keys, use a USB cable to connect the USB connector to the computer.

While pressing both

The FIRMWARE UPDATE screen appears.

2. Launch the firmware update application on your computer, and execute the update.

**NOTE**
- Do not disconnect the USB cable while the firmware is being updated.

**HINT**
- See the ZOOM website for instructions about how to use the application.

3. Confirm that the firmware has been updated.

When the **MS-60B** has finished updating, “Complete!” appears on the display.

Disconnect the USB cable.

**HINT**
- Updating the firmware will not erase saved patch memories.
<table>
<thead>
<tr>
<th>Category</th>
<th>Effect type</th>
<th>Effect explanation</th>
<th>Tempo sync.</th>
</tr>
</thead>
<tbody>
<tr>
<td>DYN/FLTR</td>
<td>D Comp</td>
<td>This compressor in the style of the MXR Dyna Comp.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>M Comp</td>
<td>This compressor provides a more natural sound.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OptComp</td>
<td>This compressor is in the style of an APHEX Punch FACTORY.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>160 Comp</td>
<td>This compressor is in the style of the dbx 160A.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Limiter</td>
<td>This is a limiter that suppresses signal peaks above a certain reference level.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SlowATTCK</td>
<td>This effect slows the attack of each note, resulting in a violin-like performance.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ZNR</td>
<td>ZOOM's unique noise reduction cuts noise during pauses in playing without affecting the tone.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
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<th>Tempo sync.</th>
</tr>
</thead>
<tbody>
<tr>
<td>DYN/FLTR</td>
<td>LineSel</td>
<td>Sound input into the LineSel effect is sent directly to the OUTPUT jacks when OFF and to the next effect in order when ON.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ba GEQ</td>
<td>This 7-band graphic equalizer is suitable for the bass frequency range.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ba PEQ</td>
<td>This 2-band parametric equalizer is suitable for the bass frequency range.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Splitter</td>
<td>This effect divides the signal into two bands (high/low) and lets you freely adjust the mix ratio of the two bands.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bottom B</td>
<td>Emphasizes the low and high frequencies.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Exciter</td>
<td>This exciter is in the style of the BBE Sonic Maximizer.</td>
<td></td>
</tr>
<tr>
<td>Category</td>
<td>Effect type</td>
<td>Effect explanation</td>
<td></td>
</tr>
<tr>
<td>----------</td>
<td>-------------</td>
<td>--------------------</td>
<td></td>
</tr>
<tr>
<td>DYN/FLTR</td>
<td>BaAutoWah</td>
<td>You can adjust the mix of this bass guitar auto-wah with the original signal.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ZTron</td>
<td>This is like a Q-Tron Envelope Filter in LP mode.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>M-Filter</td>
<td>This envelope filter with Moog MF-101 Low Pass Filter favor can be set in a wide range.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A-Filter</td>
<td>This is a resonance filter with a sharp envelope.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ba Cry</td>
<td>This talking modulator is suitable for the bass frequency range.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SeqFLTR</td>
<td>The sequence filter has the flavor of a Z.Vex SeekWah.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Category</th>
<th>Effect type</th>
<th>Effect explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ba Boost</td>
<td>This is a simulation of the Xotic EP Booster, which is warm and firm.</td>
</tr>
<tr>
<td></td>
<td>Bass OD</td>
<td>Simulates the ODB-3 overdrive bass machine from BOSS.</td>
</tr>
<tr>
<td></td>
<td>Bass Muff</td>
<td>This is a simulation of the Electro-Harmonix Bass Big Muff.</td>
</tr>
<tr>
<td></td>
<td>Ba Dist 1</td>
<td>This BOSS DS-1 emulation has an added parameter that allows you to adjust the volume balance between the original and distorted sounds.</td>
</tr>
<tr>
<td></td>
<td>Ba Metal</td>
<td>This BOSS Metal Zone emulation has an added parameter that allows you to adjust the volume balance between the original and distorted sounds.</td>
</tr>
<tr>
<td></td>
<td>BassDrive</td>
<td>Simulation of the SansAmp BASS DRIVER DI, highly popular among bass players.</td>
</tr>
</tbody>
</table>
## Effect Types

<table>
<thead>
<tr>
<th>Category</th>
<th>Effect type</th>
<th>Effect explanation</th>
<th>Tempo sync.</th>
</tr>
</thead>
<tbody>
<tr>
<td>OD/DIST</td>
<td>D.I Plus</td>
<td>This is a simulation of the MXR Bass D.I.+，which has both clean and distortion channels.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bass BB</td>
<td>This is a simulation of the Xotic Bass BB Preamp, which has a tube-like, thick sound.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>DI5</td>
<td>This simulates the AVALON DESIGN U5 preamp.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bass Pre</td>
<td>This is a preamp model with a semi-parametric equalizer for the mid-range.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>AC Bs Pre</td>
<td>This is a preamp model with a graphic equalizer.</td>
<td></td>
</tr>
</tbody>
</table>

### AMP

<table>
<thead>
<tr>
<th>Category</th>
<th>Effect type</th>
<th>Effect explanation</th>
<th>Tempo sync.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SVT</td>
<td>Simulation of the ultimate rock bass amp, the Ampeg SVT.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>B-Man</td>
<td>Simulation of the Fender BASSMAN 100.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>HRT3500</td>
<td>Simulation of the Hartke HA3500 famous for its aluminum cone.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>acoustic</td>
<td>Simulation of the acoustic 360 well known for its gutsy midrange.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ag Amp</td>
<td>Simulation of the Aguilar DB 750 famous for its powerful sound.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mark B</td>
<td>This simulates the Italian Markbass Little Mark III.</td>
<td></td>
</tr>
<tr>
<td>Category</td>
<td>Effect type</td>
<td>Effect explanation</td>
<td></td>
</tr>
<tr>
<td>-----------</td>
<td>-------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>MOD/ SFX</td>
<td>Tremolo</td>
<td>This effect varies the volume at a regular rate.</td>
<td></td>
</tr>
<tr>
<td>MOD/ SFX</td>
<td>Phaser</td>
<td>This effect adds a phasing variation to the sound.</td>
<td></td>
</tr>
<tr>
<td>MOD/ SFX</td>
<td>Ba Chorus</td>
<td>You can cut the low frequencies of this bass chorus effect sound.</td>
<td></td>
</tr>
<tr>
<td>MOD/ SFX</td>
<td>Ba Detune</td>
<td>By mixing a small amount of the pitch-shifted effect sound with the original sound, a natural bass chorus effect is achieved.</td>
<td></td>
</tr>
<tr>
<td>MOD/ SFX</td>
<td>Ba Ensmbl</td>
<td>This bass chorus ensemble features a sense of three-dimensional movement.</td>
<td></td>
</tr>
<tr>
<td>MOD/ SFX</td>
<td>Ba Flanger</td>
<td>Modeled after the ADA Flanger, this effect has an added parameter that allows you to adjust the volume balance between the original and effected sounds.</td>
<td></td>
</tr>
<tr>
<td>MOD/ SFX</td>
<td>Ba Octave</td>
<td>This effect adds sound one octave below the original sound.</td>
<td></td>
</tr>
<tr>
<td>MOD/ SFX</td>
<td>PitchSHFT</td>
<td>This effect shifts the pitch up or down.</td>
<td></td>
</tr>
<tr>
<td>MOD/ SFX</td>
<td>Ba Pitch</td>
<td>This pitch shifter was designed specifically for playing single notes in the bass frequency range.</td>
<td></td>
</tr>
<tr>
<td>MOD/ SFX</td>
<td>Ba Synth</td>
<td>This effect produces the sound of a monophonic (single-note playing) bass synthesizer that detects the pitch of the input signal.</td>
<td></td>
</tr>
<tr>
<td>MOD/ SFX</td>
<td>StdSyn</td>
<td>ZOOM original bass synthesizer sound.</td>
<td></td>
</tr>
<tr>
<td>MOD/ SFX</td>
<td>SynTlk</td>
<td>This effect produces a synthesizer sound similar to a talking modulator producing vowels.</td>
<td></td>
</tr>
<tr>
<td>MOD/ SFX</td>
<td>Z-Syn</td>
<td>This bass synthesizer sound adds analog synth fatness.</td>
<td></td>
</tr>
<tr>
<td>MOD/ SFX</td>
<td>Defret</td>
<td>Turns the sound from any bass guitar into a fretless bass sound.</td>
<td></td>
</tr>
<tr>
<td>Category</td>
<td>Effect type</td>
<td>Effect explanation</td>
<td>Tempo sync.</td>
</tr>
<tr>
<td>----------</td>
<td>-------------</td>
<td>--------------------------------------------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>DLY/REV</td>
<td>Delay</td>
<td>This long delay has a maximum length of 4000 ms.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>StompDly</td>
<td>By turning the feedback up on this stomp-style delay, you can make it self-oscillate.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ModDelay2</td>
<td>You can adjust the depth of this modulation delay effect.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>HD Hall</td>
<td>This is a dense hall reverb.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Room</td>
<td>This reverb effect simulates the acoustics of a room.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Plate</td>
<td>This simulates a plate reverb.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ModReverb</td>
<td>This reverb generates fluctuating echoes.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SlapBack</td>
<td>This reverb creates a repeating echo effect.</td>
<td></td>
</tr>
</tbody>
</table>
1. To execute the All Initialize function

The All Initialize function restores all the factory default settings.

**NOTE**

- Executing the All Initialize function will restore all the settings of the **MS-60B**, including its patch memories, to factory defaults. Do not use this function unless you are certain that you want to do this.

1. While pressing and holding turn the power ON.

The All INITIALIZE screen appears.

2. Press the footswitch to execute it.
The unit will not turn ON

- When running on batteries, connect a cable to the INPUT jack to start the unit.

No sound or very low volume

- Check the connections (→P6).
- Adjust the levels of the effects being used (→P8).
- Confirm that unit is not in mute mode (→P19).

There is a lot of noise

- Check shielded cables for defects.
- Use only a genuine ZOOM AC adapter (→P6).

An effect is not working

- If the effect processing capacity is exceeded, “DSP Full!” appears on the effect graphic. In this case, the effect is bypassed (→P9).

Batteries lose their charge quickly

- Confirm that you are not using manganese batteries. Alkaline batteries should provide about 7 hours of continuous operation.
- Check the battery setting (→P6). Set the type of battery being used to enable the remaining charge to be shown more accurately (→P20).
- Due to the characteristics of the batteries, they might be used more quickly in cold.
### Specifications

<table>
<thead>
<tr>
<th>Effect types</th>
<th>58 types</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum number of simultaneous effects</td>
<td>4</td>
</tr>
<tr>
<td>Number of patch memories</td>
<td>50</td>
</tr>
<tr>
<td>Sampling frequency</td>
<td>44.1kHz</td>
</tr>
<tr>
<td>A/D conversion</td>
<td>24-bit with 128x oversampling</td>
</tr>
<tr>
<td>D/A conversion</td>
<td>24-bit with 128x oversampling</td>
</tr>
<tr>
<td>Signal processing</td>
<td>32-bit floating point &amp; 32-bit fixed point</td>
</tr>
<tr>
<td>Frequency characteristics</td>
<td>20Hz-20kHz (+1dB/−3dB) (10kΩ load)</td>
</tr>
<tr>
<td>Display</td>
<td>LCD</td>
</tr>
<tr>
<td>Input</td>
<td>Standard monaural phone jack</td>
</tr>
<tr>
<td></td>
<td>Rated input level: –20dBm, Input impedance 1MΩ</td>
</tr>
<tr>
<td>Output</td>
<td>Standard monaural phone jack x 2</td>
</tr>
<tr>
<td></td>
<td>Maximum output level: Line +5dBm (with output load impedance of 10 kΩ or more)</td>
</tr>
<tr>
<td>Power</td>
<td>AC adapter</td>
</tr>
<tr>
<td></td>
<td>DC9V (center minus plug), 500 mA (ZOOM AD-16)</td>
</tr>
<tr>
<td></td>
<td>Batteries</td>
</tr>
<tr>
<td></td>
<td>About 7 hours of continuous operation using 2 AA alkaline batteries</td>
</tr>
<tr>
<td></td>
<td>USB</td>
</tr>
<tr>
<td>Dimensions</td>
<td>130.3mm(D) x 77.5mm(W) x 58.5mm(H)</td>
</tr>
<tr>
<td>USB</td>
<td>Firmware update</td>
</tr>
<tr>
<td>Weight</td>
<td>350g</td>
</tr>
</tbody>
</table>

- 0dBm=0.775Vrms
FCC regulation warning (for U.S.A.)

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 to 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.

For EU Countries

Declaration of Conformity:

Disposal of Old Electrical & Electronic Equipment
(Applicable in European countries with separate collection systems)
This symbol on the product or on its packaging indicates that this product shall not be treated as household waste. Instead it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product. The recycling of materials will help to conserve natural resources. For more detailed information about recycling of this product, please contact your local city office, your household waste disposal service or the shop where you purchased the product.