Roland®

V-Drums

PERCUSSION SOUND MODULE TD-20

Owner's Manual

We'd like to take a moment to thank you for purchasing the Roland Percussion Sound Module TD-20.

Before using this unit, carefully read the sections entitled: "IMPORTANT SAFETY INSTRUCTIONS" (p. 2), "USING THE UNIT SAFELY" (p. 3), and "IMPORTANT NOTES" (p. 5). 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, Owner's manual should be read in its entirety. The manual should be saved and kept on hand as a convenient reference.

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Kyoto Software Research

Fugue FLASH FILE SYSTEM

INSTRUCTIONS PERTAINING TO A RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS.

IMPORTANT SAFETY INSTRUCTIONS
SAVE THESE INSTRUCTIONS

WARNING - When using electric products, basic precautions should always be followed, including the following:

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with a dry cloth.
7. Do not block any of the ventilation openings. Install in accordance with the manufacturers instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. When the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Never use with a cart, stand, tripod, bracket, or table except as specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

USING THE UNIT SAFELY

INSTRUCTIONS FOR THE PREVENTION OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS

About ⚠ WARNING and ⚠ CAUTION Notices

⚠ **WARNING**	Used for instructions intended to alert the user to the risk of death or severe injury should the unit be used improperly.
⚠ **CAUTION**	Used for instructions intended to alert the user to the risk of injury or material damage should the unit be used improperly. * Material damage refers to damage or other adverse effects caused with respect to the home and all its furnishings, as well to domestic animals or pets.

About the Symbols

⚠	The △ symbol alerts the user to important instructions or warnings.The specific meaning of the symbol is determined by the design contained within the triangle. In the case of the symbol at left, it is used for general cautions, warnings, or alerts to danger.
🚫	The ⊘ symbol alerts the user to items that must never be carried out (are forbidden). The specific thing that must not be done is indicated by the design contained within the circle. In the case of the symbol at left, it means that the unit must never be disassembled.
🔌	The ● symbol alerts the user to things that must be carried out. The specific thing that must be done is indicated by the design contained within the circle. In the case of the symbol at left, it means that the power-cord plug must be unplugged from the outlet.

-------------------------------- **ALWAYS OBSERVE THE FOLLOWING** --------------------------------

⚠ WARNING

- Before using this unit, make sure to read the instructions below, and the Owner's Manual.

....

- Do not open or perform any internal modifications on the unit. (The only exception would be where this manual provides specific instructions which should be followed in order to put in place user-installable options; see p. 86, p. 88.)

....

- Do not attempt to repair the unit, or replace parts within it (except when this manual provides specific instructions directing you to do so). Refer all servicing to your retailer, the nearest Roland Service Center, or an authorized Roland distributor, as listed on the "Information" page.

....

- Never use or store the unit in places that are:
  - Subject to temperature extremes (e.g., direct sunlight in an enclosed vehicle, near a heating duct, on top of heat-generating equipment); or are
  - Damp (e.g., baths, washrooms, on wet floors); or are
  - Humid; or are
  - Exposed to rain; or are
  - Dusty; or are
  - Subject to high levels of vibration.

....

- Make sure you always have the unit placed so it is level and sure to remain stable. Never place it on stands that could wobble, or on inclined surfaces.

....

⚠ WARNING

- The unit should be connected to a power supply only of the type described in the operating instructions, or as marked on the bottom of unit.

....

- Use only the attached power-supply cord. Also, the supplied power cord must not be used with any other device.

....

- Do not excessively twist or bend the power cord, nor place heavy objects on it. Doing so can damage the cord, producing severed elements and short circuits. Damaged cords are fire and shock hazards!

....

- This unit, either alone or in combination with an amplifier and headphones or speakers, 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 immediately stop using the unit, and consult an audiologist.

....

- Do not allow any objects (e.g., flammable material, coins, pins); or liquids of any kind (water, soft drinks, etc.) to penetrate the unit.

....

⚠ WARNING

- Immediately turn the power off, remove the power cord from the outlet, and request servicing by your retailer, the nearest Roland Service Center, or an authorized Roland distributor, as listed on the "Information" page when:
  - The power-supply cord, or the plug has been damaged; or
  - If smoke or unusual odor occurs
  - Objects have fallen into, or liquid has been spilled onto the unit; or
  - The unit has been exposed to rain (or otherwise has become wet); or
  - The unit does not appear to operate normally or exhibits a marked change in performance.

....

- In households with small children, an adult should provide supervision until the child is capable of following all the rules essential for the safe operation of the unit.

....

- Protect the unit from strong impact. (Do not drop it!)

....

- Do not force the unit's power-supply cord to share an outlet with an unreasonable number of other devices. Be especially careful when using extension cords—the total power used by all devices you have connected to the extension cord's outlet must never exceed the power rating (watts/amperes) for the extension cord. Excessive loads can cause the insulation on the cord to heat up and eventually melt through.

....

- Before using the unit in a foreign country, consult with your retailer, the nearest Roland Service Center, or an authorized Roland distributor, as listed on the "Information" page.

....

- Always turn the unit off and unplug the power cord before attempting installation of the circuit board (SOUND & SYSTEM EXPANSION BOARD for TD-20).

....

- Do not put anything that contains water (e.g., flower vases) on this unit. Also, avoid the use of insecticides, perfumes, alcohol, nail polish, spray cans, etc., near the unit. Swiftly wipe away any liquid that spills on the unit using a dry, soft cloth.

....

⚠ CAUTION

- The unit should be located so that its location or position does not interfere with its proper ventilation.

....

- Always grasp only the plug on the power-supply cord when plugging into, or unplugging from, an outlet or this unit.

....

- At regular intervals, you should unplug the power plug and clean it by using a dry cloth to wipe all dust and other accumulations away from its prongs. Also, disconnect the power plug from the power outlet whenever the unit is to remain unused for an extended period of time. Any accumulation of dust between the power plug and the power outlet can result in poor insulation and lead to fire.

....

- Try to prevent cords and cables from becoming entangled. Also, all cords and cables should be placed so they are out of the reach of children.

....

- Never climb on top of, nor place heavy objects on the unit.

....

- Never handle the power cord or its plugs with wet hands when plugging into, or unplugging from, an outlet or this unit.

....

- Before moving the unit, disconnect the power plug from the outlet, and pull out all cords from external devices.

....

- Before cleaning the unit, turn off the power and unplug the power cord from the outlet.

....

- Whenever you suspect the possibility of lightning in your area, pull the plug on the power cord out of the outlet.

....

- Install only the specified circuit board (SOUND & SYSTEM EXPANSION BOARD for TD-20). Remove only the specified screws (p. 86, p. 88).

....

- Should you remove screws from the bottom panel of the unit (p. 17, p. 86, p. 88), make sure to put them in a safe place out of children's reach, so there is no chance of them being swallowed accidentally.

....

IMPORTANT NOTES

In addition to the items listed under "IMPORTANT SAFETY INSTRUCTIONS" and "USING THE UNIT SAFELY" on pages 2–4, please read and observe the following:

Power Supply

- Do not use this unit on the same power circuit with any device that will generate line noise (such as an electric motor or variable lighting system).

- Before connecting this unit to other devices, turn off the power to all units. This will help prevent malfunctions and/or damage to speakers or other devices.

- Although the LCD and LEDs are switched off when the POWER switch is switched off, this does not mean that the unit has been completely disconnected from the source of power. If you need to turn off the power completely, first turn off the POWER switch, then unplug the power cord from the power outlet. For this reason, the outlet into which you choose to connect the power cord's plug should be one that is within easy reach.

Placement

- Using the unit near power amplifiers (or other equipment containing large power transformers) may induce hum. To alleviate the problem, change the orientation of this unit; or move it farther away from the source of interference.

- This device may interfere with radio and television reception. Do not use this device in the vicinity of such receivers.

- 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.

- Do not expose the unit to direct sunlight, place it near devices that radiate heat, leave it inside an enclosed vehicle, or otherwise subject it to temperature extremes. Excessive heat can deform or discolor the unit.

- When moved from one location to another where the temperature and/or humidity is very different, water droplets (condensation) may form inside the unit. Damage or malfunction may result if you attempt to use the unit in this condition. Therefore, before using the unit, you must allow it to stand for several hours, until the condensation has completely evaporated.

Maintenance

- For everyday cleaning wipe the unit with a soft, dry cloth or one that has been slightly dampened with water. To remove stubborn dirt, use a cloth impregnated with a mild, non-abrasive detergent. Afterwards, be sure to wipe the unit thoroughly with a soft, dry cloth.

- Never use benzine, thinners, alcohol or solvents of any kind, to avoid the possibility of discoloration and/or deformation.

Repairs and Data

- Please be aware that all data contained in the unit's memory may be lost when the unit is sent for repairs. Important data should always be backed up on a DATA card, in another MIDI device (e.g., a sequencer), or written down on paper (when possible). During repairs, due care is taken to avoid the loss of data. However, in certain cases (such as when circuitry related to memory itself is out of order), we regret that it may not be possible to restore the data, and Roland assumes no liability concerning such loss of data.

Memory Backup

- This unit contains a battery which powers the unit's memory circuits while the main power is off. When this battery becomes weak, the message shown below will appear in the display. Once you see this message, have the battery replaced with a fresh one as soon as possible to avoid the loss of all data in memory. To have the battery replaced, consult with your retailer, the nearest Roland Service Center, or an authorized Roland distributor, as listed on the "Information" page.

"Backup Battery Low!"

Additional Precautions

- Please be aware that the contents of memory can be irretrievably lost as a result of a malfunction, or the improper operation of the unit. To protect yourself against the risk of loosing important data, we recommend that you periodically save a backup copy of important data you have stored in the unit's memory on a DATA card or in another MIDI device (e.g., a sequencer).

- Unfortunately, it may be impossible to restore the contents of data that was stored on a DATA card or in another MIDI device (e.g., a sequencer) once it has been lost. Roland Corporation assumes no liability concerning such loss of data.

- Use a reasonable amount of care when using the unit's buttons, sliders, or other controls; and when using its jacks and connectors. Rough handling can lead to malfunctions.

- Never strike or apply strong pressure to the display.

- When connecting / disconnecting all cables, grasp the connector itself—never pull on the cable. This way you will avoid causing shorts, or damage to the cable's internal elements.

- A small amount of heat will radiate from the unit during normal operation.

- To avoid disturbing your neighbors, try to keep the unit's volume at reasonable levels. You may prefer to use headphones, so you do not need to be concerned about those around you (especially when it is late at night).

- Since sound vibrations can be transmitted through floors and walls to a greater degree than expected, take care not to allow such sound to become a nuisance to neighbors, especially at night and when using headphones. Although the drum pads and pedals are designed so there is a minimal amount of extraneous sound produced when they're struck, rubber heads tend to produce louder sounds compared to mesh heads. You can effectively reduce much of the unwanted sound from the pads by switching to mesh heads.

- When you need to transport the unit, package it in the box (including padding) that it came in, if possible. Otherwise, you will need to use equivalent packaging materials.

- 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.

Before Using Cards

Using DATA Cards

- Carefully insert the DATA card all the way in—until it is firmly in place.
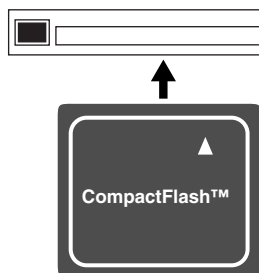
- Never touch the terminals of the DATA card. Also, avoid getting the terminals dirty.

- This unit's memory card slot accepts CompactFlash memory cards. Microdrive storage media by IBM are not compatible.

- CompactFlash cards are constructed using precision components; handle the cards carefully, paying particular note to the following.
  - To prevent damage to the cards from static electricity, be sure to discharge any static electricity from your own body before handling the cards.
  - Do not touch or allow metal to come into contact with the contact portion of the cards.
  - Do not bend, drop, or subject cards to strong shock or vibration.
  - Do not keep cards in direct sunlight, in closed vehicles, or other such locations (storage temperature: -25 to 85° C).
  - Do not allow cards to become wet.
  - Do not disassemble or modify the cards.

* *The explanations in this manual include illustrations that depict what should typically be shown by the display. Note, however, that your unit may incorporate a newer, enhanced version of the system (e.g., includes newer sounds), so what you actually see in the display may not always match what appears in the manual.*

Contents

Features

Everything Is New! Module—Stand—V-Hi-Hat—Pads

The TD-20 follows in the foot steps of the industry standard TD-10, taking advantage of even more powerful COSM technology. Velocity, position, and interval of each hit are detected precisely, providing real and natural dynamics. The new, dual trigger PD-125/105 pads give you superior feel, response and control of the sound. You can play both shallow and deep rim shots. 15 trigger inputs let you use lots of pads, leaving room for advanced Pad Switch applications. (p. 80)

> * *COSM (Composite Object Sound Modeling) is a Roland technology combining multiple sound modeling processes to create new sounds hots.*

> * *Positional detection is possible on snare drums (head/rim), toms (rim) and ride cymbals (bow).*

560 New Drum Sounds Expanded V-Editing

The onboard sound library was created for the TD-20, and designed to work with enhanced V-Editing. Besides being able to change heads, muffling types, shell depth, etc. you can also place one of two sizzle types on any cymbal, put a tambourine on the hi-hat, add snare buzz to the toms or kick, change the beater type and move the microphone position on all sounds (p. 32).

An Easy User Interface

The interface is very easy to navigate. With the many buttons on the top panel, you won't lose time searching for functions. Clear graphics, icons and menus guide you through the simple and complex operations. No matter where you are inside the TD-20, pushing the KIT button always brings you back to the main kit page. Even still, please read this manual.

High-speed triggering

Advances in trigger technology combined with new pad designs and V-Hi-Hat pads, provide natural response and feel. Even playing with brushes (plastic only) has improved.

Compact Flash Offers Perfect Data Organization

You can back up all of your kits into 8 different, nameable files on the CF card. Each one stores 50 kits, all patterns, percussion sets and global parameters (p. 70). You can copy FROM the card, the individual kits, instruments within a kit and percussion sets (p. 69). You can also save/load up to 100 individual patterns (p. 67).

Audio Signal Routing Stage or Studio

Flexibility of audio routing is important in the professional environment. The TD-20 lets you use all of the outputs in a very efficient way. Each sound of the drum kit can be assigned to one of the 10 individual outs. (Master out can be used as an individual pair. The Effects, Ambience, Backing parts, Click and even audio coming in the MIX input, can be assigned to individual outputs. Perfect for any situation.

Unique V-Hi-Hat VH-12

The VH-12 V-Hi-Hat, which mounts on just about any hi-hat stand on the market, lets you control the technology with the same movements and feel of an acoustic hi-hat. You can do foot splashes, "swish" sounds and even closing it tighter will create changes in the nuance and pitch of the sound (p. 26).

Cables Are Easy To Organize

The MDS-20 stand allows you to pass the cables through the pipes, making easy to transport and set up again. It streamlines the look as well.

Top Quality Signal Processing

Each instrument assigned to trigger 1–15 head and rim inputs has an individual three-band equalizer and compressor(p. 38). There is also a multi-effects unit with reverbs, delays, flanger, chorus, pitch shifter, phaser, ring modulator, overdrive, etc. (p. 40) There's also Ambience, with a new room "shape" feature in addition to being able to change wall materials, size, etc. (p. 40) A master Compressor/EQ lets you apply it to individual kits or for all of the kits (p. 43). All effects are simple to understand and use. Via the top panel, you can also turn all the effects on or off individually.

Functions For Stage

The group faders on the top panel let you make quick changes as needed during performance (p. 24). You can play drum kits in any desired order (Drum Kit Chain, p. 82). The +/- buttons are large enough to be pressed with a drum stick. (Don't HIT them!) Another very useful function allows you to send the click sound ONLY to the headphones if desired (p. 78). An audio input (stereo) for custom monitoring (MIX IN jack, p. 19) is also provided. The MIX EDIT function allows immediate editing of volume, Ambience send level, and MFX send level using the group faders (p. 37).

Sequencer

Recording and playing back patterns is very easy. The 6 part backing section, (including drums) can be used for live or recording performances. Recording directly from the pads to the percussion part is a great new feature, too (p. 75).

Advanced Tempo Functions

Each KIT can have it's own tempo setting. The visual indicator helps you count off the tempo of a song without needing to hear the click (p. 59). Tap Tempo function allows you to set tempo from all trigger inputs or the preview button (Tap tempo, p. 53).

Expansion Board

The TD-20's bottom panel provides the access for the future Expansion Board, which will not only add new sounds, but provides a system upgrade using Flash ROM (p. 86, p. 88).

MIDI Sound Module Potentials

Percussion sets are accessed on a different MIDI channel than the drums. They can be played from the internal sequencer or external MIDI source (SPD type pad etc.) and feature a 128 note map. And with 262 backing instruments available, there are sounds for all types of music (p. 98).

V-LINK function

V-LINK (**V-LINK**) is functionality promoted by Roland that allows linked performance of music and visual material. By using V-LINK-compatible video equipment, visual effects can be easily linked to, and made part of the expressive elements of a performance. By using the TD-20 and Edirol DV-7PR together, connected pads can be used to switch the Edirol DV-7PR's images (clips/palettes) (p. 84).

Panel Descriptions

Top Panel
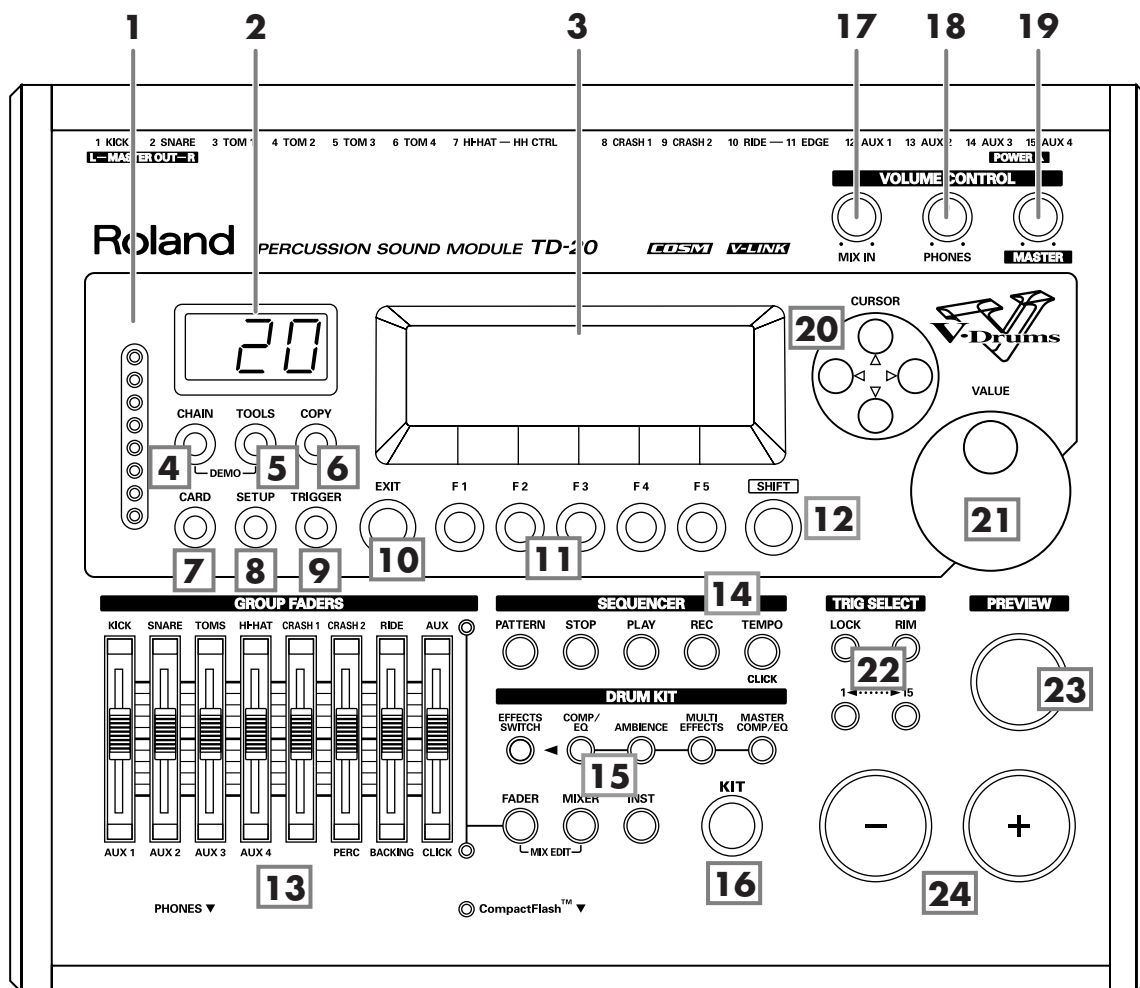
1. Trigger Level Indicator

This lights up and moves each time a trigger signal is received from a pad. It monitors the pad connection and is helpful when customizing trigger parameters.

2. LED Display

Displays the Kit number (currently selected drum kit).

3. Graphic Display

During normal performance, you see the kit name and other information. When editing, relative graphics and text will appear depending on the edit mode you are in.

*   In this owner's manual, this will be referred to as "the display."

4. CHAIN Button

A Chain allows you to set up a customized order for playing your kits. There are 16 Chains (32 steps each). Chains can be named also (p. 82).

5. TOOLS Button

Provides access to the Level Monitor, Memory status, and V-LINK on/off (p. 84).

6. COPY Button

Copy or exchange data between drum kits, instruments, etc. (p. 69)

7. CARD Button

For access to (Compact Flash) memory card functions such as saving/loading data etc. (p. 70)

8. SETUP Button

For access to functions that affect the TD-20 globally, such as MIDI parameters etc. (p. 74)

9. TRIGGER Button

For access to trigger parameters (p. 44).

10. EXIT Button

Press this to return to the previous screen. Repeated pressing takes you back to the "DRUM KIT" screen.

11. F1–F5 Buttons

These buttons change their function depending on the contents of the display. The lower part of the display will indicate the function of each button (p. 23).

12. SHIFT Button

Used in combination with other buttons. How this functions is explained in respective parts of this manual.

13. GROUP FADERS

The faders are switchable, allowing you to adjust the volume of the kick, snare, toms, hi-hat, cymbals, percussion and backing instruments, and the click sound (p. 24).

14. SEQUENCER

These provide access to and control of sequencer functions (pattern playback/recording, Percussion set) etc. (p. 51, p. 61)

15. DRUM KIT

These buttons take you to the screens for creating or editing a drum kit. (p. 31, p. 37, p. 38).

16. KIT Button

One touch brings you back to the basic display screen. It works from any Edit mode as well.

17. MIX IN Knob

Adjusts the level of the audio source connected to the MIX IN jack. This sound is output from the MASTER OUT jacks and/or the PHONES jack. Other possibilities (p. 78).

18. PHONES Knob

Adjusts the headphone volume. Plugging in headphones does not affect the master output (like other audio device.)

19. MASTER Knob

Adjusts the volume of the MASTER OUT jacks.

20. CURSOR Buttons

Used to move the cursor in the display (p. 23).

21. VALUE Dial

This dial functions like the + and - buttons. Use it to scroll quickly or make large changes in edited values (p. 23).

22. TRIG SELECT

Use the lower two buttons to select the trigger number (pad) you want to access. Press the RIM button to select the rim of a pad. (RIM button lights.) The PREVIEW button lets you audition the instrument assigned here, or you can hit a pad as well to select (p. 24).

23. PREVIEW Button

This velocity sensitive button allows you to audition an instrument after you have chosen it with the TRIG SELECT buttons or after you have played a pad/pedal (p. 24).

24. + Button, - Button

These buttons are used to switch drum kits or to change values when editing. The + button increases the value, and the - button decreases it (p. 23). You can also use the tip of your drum stick to press them. Never hit them with a stick as this can cause malfunctions.

Rear Panel
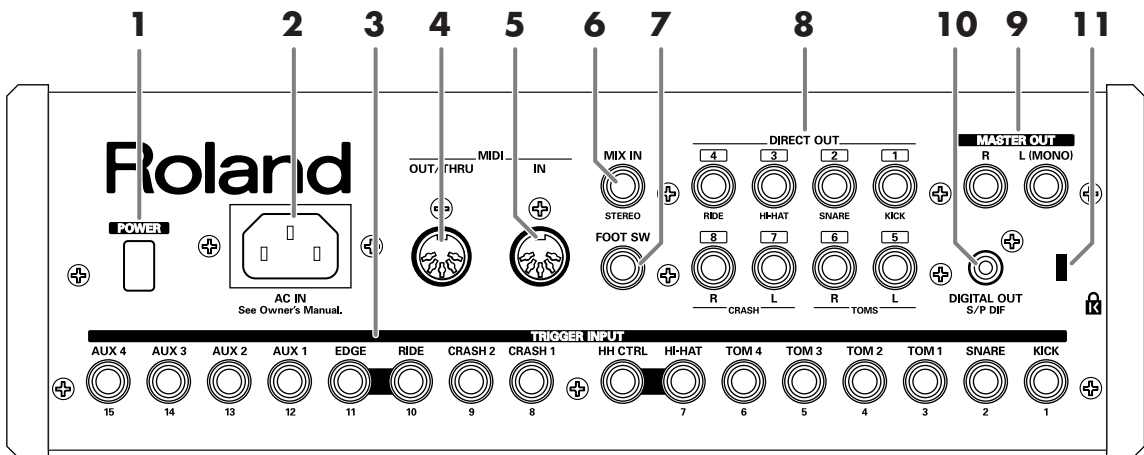
1. POWER Switch

This switch turns the power on/off.

2. AC Inlet

Connect the included AC power cable to this inlet.

* *For details on the power consumption, refer to p. 103.*

⚠ The unit should be connected to a power source only of the type marked on the bottom of the unit.

3. TRIGGER INPUT Jacks

Here is where you plug in pads, kick triggers, or acoustic triggers. With dual trigger pads (PD-125/120/105/80R/ 9/8/7), use a stereo (TRS) cable (p. 18).

4. MIDI IN Connector

To connect an external MIDI source (sequencer, pad controller, keyboard, computer, etc.) to play the TD-20's sounds, or to load data (pp. 74–77).

5. MIDI OUT/THRU Connector

For using the TD-20/pads to play sounds in an external MIDI sound module, or recording/saving data to an external MIDI sequencer (pp. 74–77).

6. MIX IN Jack

Used for connecting any external audio source (p. 19). This audio signal will be output from the MASTER OUT jacks and/or PHONES jack. Other signal routing possibilities (p. 78).

7. FOOT SWITCH Jack

Optional foot switches (such as BOSS FS-5U) give you access to a variety of functions like selecting drum kits, sequencer start/stop, etc. Using an optional PCS-31 cable (standard insert cable), two foot switches can be utilized at the same time (p. 79).

8. DIRECT OUT Jacks

Individual outputs have a variety of uses. The TD-20 offers many options. See the SETUP screen (p. 78).

9. MASTER OUT Jacks

For connecting to your amp/audio system. For monaural output, use the MASTER OUT L (MONO) jack.

10. DIGITAL OUT Connector

This coaxial-type digital out connector sends the same audio signal as is output from MASTER OUT jacks.

11. Security Slot (🔒)

For retail store use.
http://www.kensington.com/

Front Panel
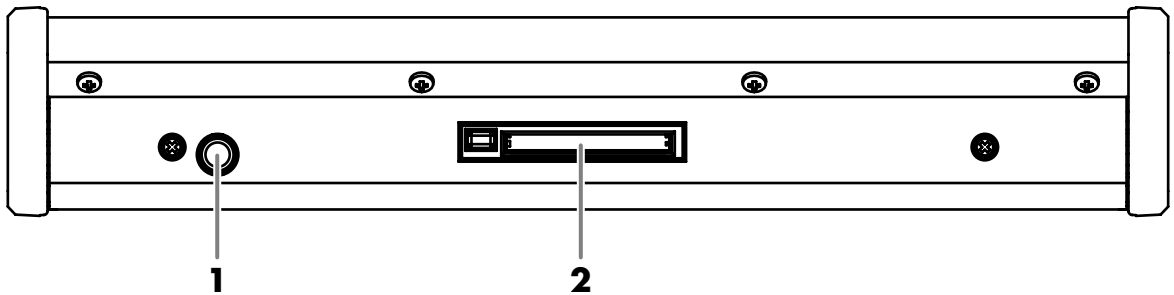
1. PHONES Jack

A pair of stereo headphones can be connected to this jack. Connecting the headphones will not mute the output from the MASTER OUT jacks (p. 19).

2. CompactFlash Card Slot

Accepts a CompactFlash memory card (optional). Each memory card can store all settings of the TD-20, such as drum kits and sequencer performance data, etc. (p. 70)

* *The CompactFlash is the only memory card can be used by the TD-20.*

Setting Up the Kit

Mounting the TD-20 on the Stand

1. Attach the stand holder (included with the optional drum stand) to the TD-20.

Using the screws attached to the bottom panel, attach the holder so the unit is oriented as shown in the diagram.

* *ONLY use the 8 mm screws (M5 x 8) provided with the TD-20. Other screws may damage the unit.*

Narrow

Wide
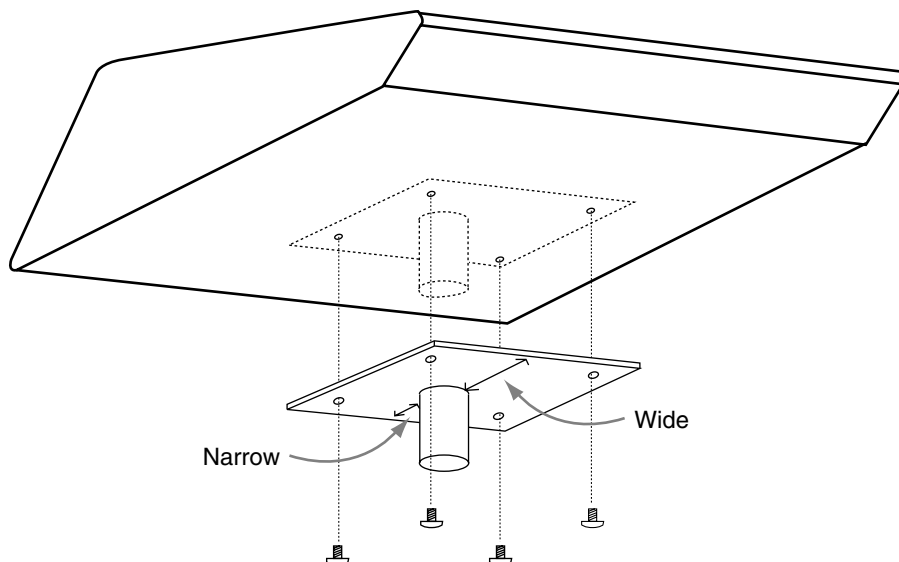
NOTE

• 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.

2. Attach the TD-20 and stand holder to the drum stand (such as the optional MDS-20BK).

See the owner's manual for the stand for details on assembling the drum stand and attaching the TD-20.

⚠ This unit should be used only with a stand that is recommended by Roland.

❗ When using the unit with a stand recommended by Roland, the rack or stand must be carefully placed so it is level and sure to remain stable. If not using a rack or stand, you still need to make sure that any location you choose for placing the unit provides a level surface that will properly support the unit, and keep it from wobbling.

⚠ This TD-20 for use only with Roland stand MDS series. Use with other stands is capable of resulting in instability causing possible injury.

MEMO

The optional APC-33 All Purpose Clamp can be attached to a pipe of 10.5–28.6 mm radius in case you want to mount the TD-20 on a cymbal stand or other such stand.

Connecting the Pads and Pedals

Using the provided cables, connect the pads, cymbals, hi-hat, and kick trigger.

  * *When mounting a TD-20 on an MDS-20 drum stand, use the built-in connection cables.*

Set Up Example

TD-20 Rear Panel

NOTE
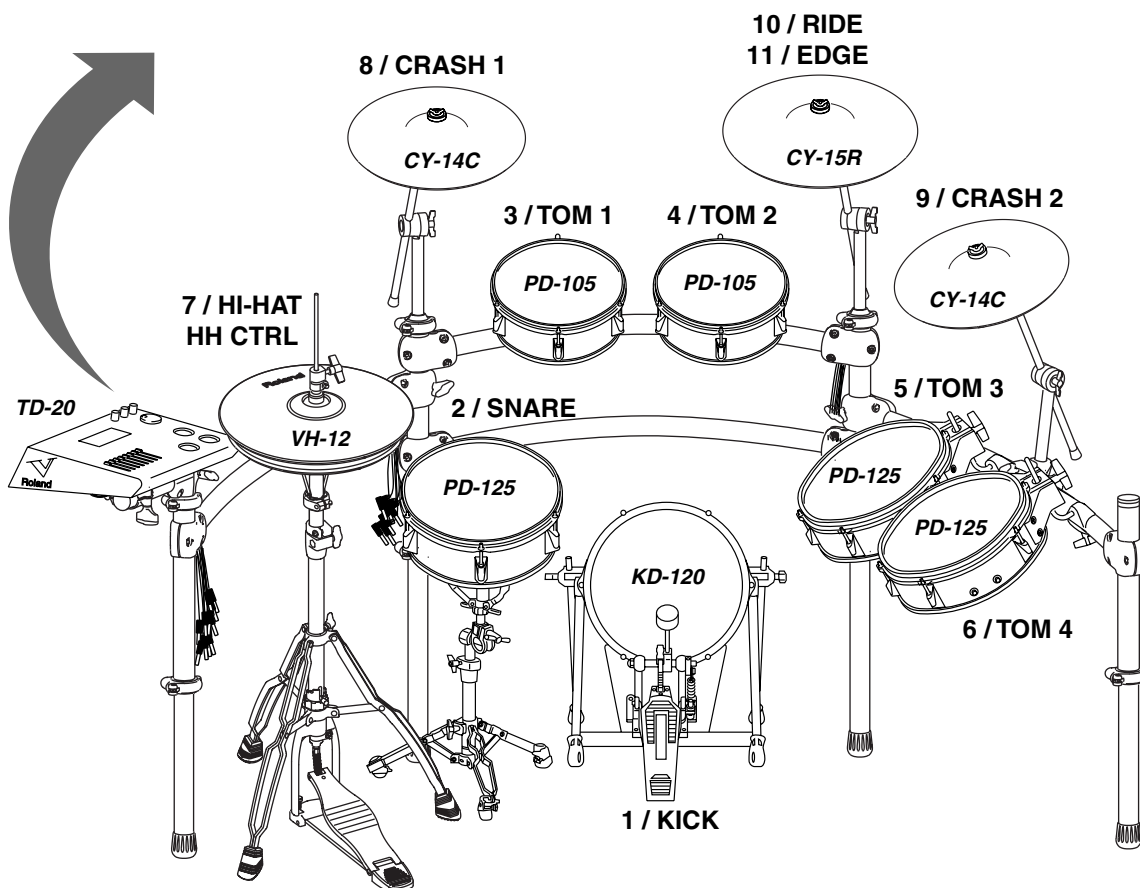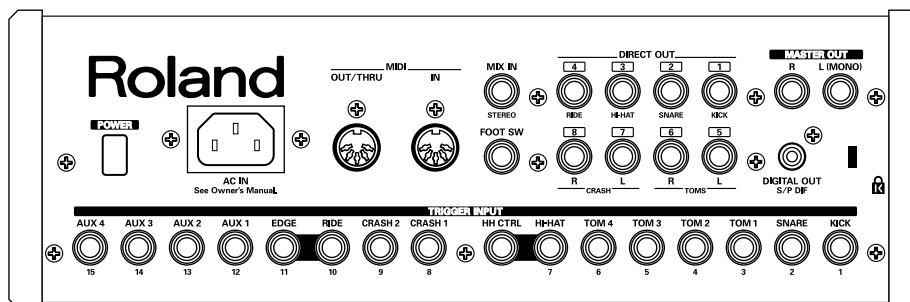
The HI-HAT and RIDE cymbal use two cables each. See p. 21 and p. 50.

Connecting Headphones, Audio Equipment, Amps, or Other Gear

Speakers with built-in amp, etc.

CD/MD player, etc.

Stereo set, etc.

Rear Panel

Stereo phone type

Phone type

Stereo phone type

Front Panel
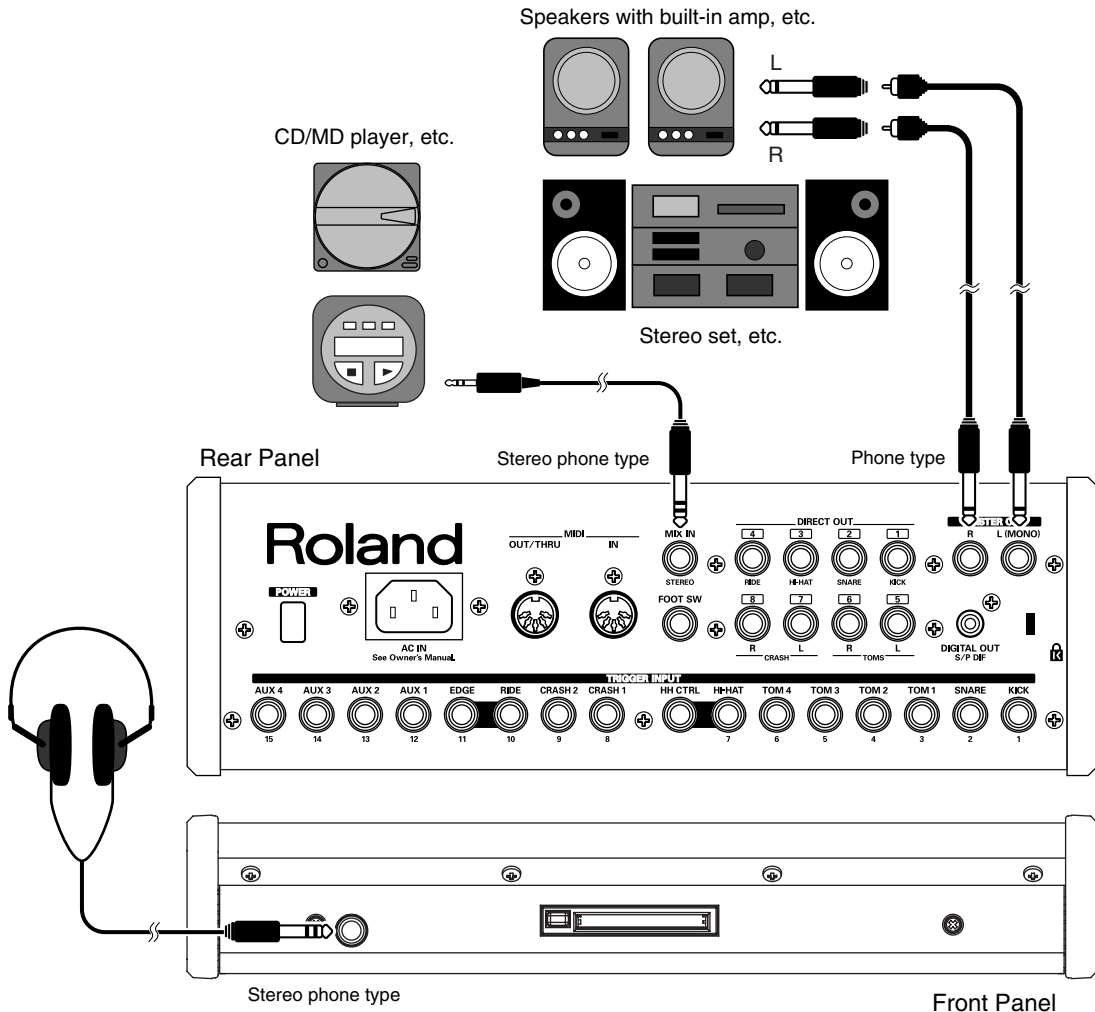
1. **Turn off the power of all devices before you make connections.**

   * *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.*

2. **Connect the MASTER OUT L (MONO) and R jacks on the rear panel to your audio system or amp. Headphones should ONLY be connected to the PHONES jack.**

3. **Connect the supplied power cord to the AC inlet.**

4. **Plug the power cord plug into a power outlet.**

MEMO

The TD-20's MIX IN jack allows you to play along with a CD or other audio sources.

- To adjust the volume of the device connected to the MIX IN jack, turn the [MIX IN] knob on the TD-20's top panel.

- The sound input from the MIX IN jack can be output from the MASTER OUT, PHONES, or DIRECT OUT 5–8 jacks (p. 78).

* *When connection cables with resistors are used, the volume level of equipment connected to the MIX IN jack may be low. If this happens, use connection cables that do not contain resistors, such as those from the Roland PCS series.*

Turning On/Off the Power

*   *Once the connections have been completed (p. 18, p. 19), 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.*

VOLUME CONTROL

MIX IN   PHONES   **MASTER**

1. **Turn the [MASTER] and [PHONES] completely to the left to lower the volume to "0."**

2. **Turn down the volume control on the connected amp or audio system.**

3. **Push the [POWER] switch on the TD-20's rear panel to turn on the power.**

POWER

Lower Position

ON

*   *This unit is equipped with a protection circuit. A brief interval (a few seconds) after power up is required before the unit will operate normally.*

Precautions When Turning on the Power

After the power is turned on, do NOT hit any pads or step on the pedals until the drum kit name (following figure) appears in the display. Doing so can cause triggering problems.

```
DRUM KIT
        VPro
    CMP EQ AMB MFX   MASTER
  LIST   FUNC   NAME        (XSTICK)
```

4. **Turn on the power to the connected amp or audio system.**

5. **While hitting a pad, gradually turn [MASTER] (or [PHONES]) to the right to adjust the volume level.**

No Sound When Hitting the Pads or Using the Pedals?

Check the following points.

When Using an Amp or Audio System

*   Is the amp or audio system connected to the TD-20's MASTER OUT jacks?
*   Is the input of the amp or audio system properly connected?
*   Is there a problem with any connection cables?
*   Is the volume turned down in the [GROUP FADERS] sliders?
*   Is [MASTER] turned completely to the left?
*   Have the input select settings of your audio system or amp been made correctly?
*   Is the amp or audio system volume setting correct?

When Using Headphones

*   Are the headphones connected to the PHONES jack?
*   Is [PHONES] turned completely to the left?

Turning Off the Power

1. **Completely turn down the volume of the TD-20 and any connected external devices.**

2. **Turn off the power to all external devices.**

3. **Push the [POWER] switch on the TD-20's rear panel to turn off the power.**

Connecting the Hi-Hat (VH-12) and Setting the "VH Offset"

Connecting the Hi-Hat

Clutch
screw

TRIGGER
OUTPUT
jack

CONTROL
OUTPUT
jack

to
TRIGGER INPUT
HI-HAT jack

to
HH CTRL jack
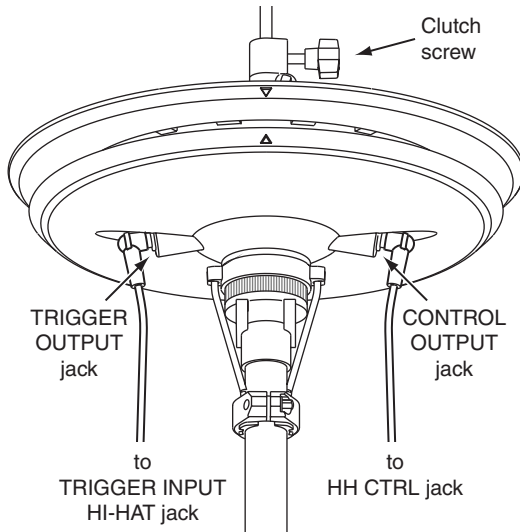
Adjusting the Offset

When using the VH-12, the "VH Offset" needs to be set up.

1. Loosen the clutch of the top hi-hat and let it sit on the bottom hi-hat.

* *Do NOT touch the hi-hats or the pedal.*

2. Hold down [KIT] and press [TRIGGER].

The "VH offset" parameter is set automatically. (approx. 3 seconds)

[TRIGGER] stops flashing and remains lit.

```
TRIGGER HI-HAT
            Hi-Hat Ctrl Type     VH
            Offset              -100
            Foot Splash Sens       0
            Noise Cancel           1
BANK    BASIC  HI-HAT  XTALK  ADVANCE
```

☞

If you need, make further adjustments to the parameters.
Hi-Hat Settings [F3 (HI-HAT)] (p. 46)

NOTE

If you do not make VH-12's setting correctly, it may cause malfunction. For details, refer to the VH-12 owner's manual.

Adjusting Mesh Head Tension (PD-125/105)

Heads MUST BE TUNED BEFORE PLAYING.

When adjusting, use a tuning key.

Like with an acoustic drum, accurate and equal head tension is needed for correct triggering response.

MEMO

On the PD-125/105, adjusting the head tension affects only the head response, and not the pitch of the sound, as it would on an acoustic drum.

1. Loosen the tuning bolts until a slight gap is produced.

2. Tighten all tuning bolts by fingers, as tightly as you can.

Tuning bolt

Washer

Slight gap

Hoop
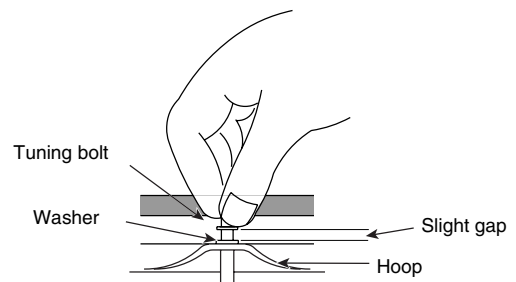
3. Using the tuning key, turn the tuning bolts two full revolutions each, thus tightening them.

Tighten each tuning bolt one by one, observing the numerical order shown in the figure.

1   3

5

6

4   2
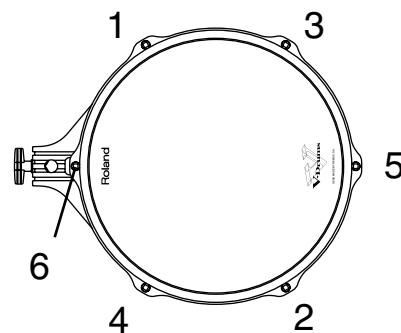
Listening to the Demo Song

The internal demo song features the TD-20's expressive capabilities and top quality sounds. The drums on this song were recorded from the TD-20 system to a sequencer in real time.

1. Press [CHAIN] and [TOOLS] simultaneously.

The "DEMONSTRATION" screen appears.

```
DEMONSTRATION
         Song "Cluster Hang"
         Kit  1    VPro
 DRUMS BACKING        STOP   PLAY
```
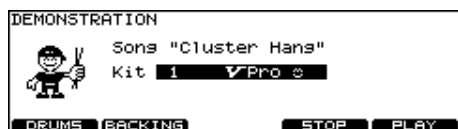
2. Press [F5 (PLAY)].

The demo song is played.

* *Press [F4 (STOP)] to stop the demo song.*

MEMO

You can use [+/-] or [VALUE] to switch the kit being used in the song, an easy way to check the sounds.

* *Preset drum kits are always selected to play the demo song.*

Function Buttons

[F1 (DRUMS)]

You can MUTE the enntire drum track.

[F2 (BACKING)]

You can MUTE all the backing instruments.

MEMO

- You can change the volume balance with [GROUP FADERS] (p. 24).
- Hold down [SHIFT] and press [TEMPO] to turn the metronome click (p. 59) on/off.
  The click sounds with the settings which you set before you enter the "DEMONSTRATION" screen.

3. Press [EXIT] or [KIT] to return to the "DRUM KIT" screen.

NOTE

Caution Concerning Volume

When playing back the demo song, turn [MASTER] and [PHONES] to the left (counterclockwise) to bring the volume level down. The sound levels (volume) of the instruments may be louder when the demo song is played back.

Demo Song

Cluster Hang   Copyright (C) 2004, Roland US

* *All rights reserved. Unauthorized use of this material for purposes other than private, personal enjoyment is a violation of applicable laws.*

* *No data for the music that is played will be output from MIDI OUT.*

Button Operation and Displays

Operations common to all aspects TD-20 operations.

Saving Your Settings

Every time you change a value during the editing process, it's automatically stored in the TD-20's memory. There's no "write/save" process. (except when using a memory card)

Buttons, Sliders, Dial and Knobs

References for top panel buttons, sliders, dial and knobs will be printed in square brackets [ ]; e.g., [SETUP].

Cursor
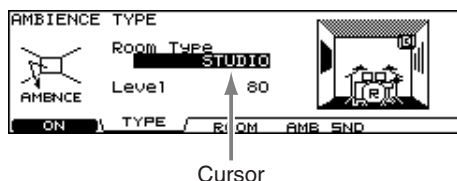
Cursor

Cursor refers to the highlighted characters indicating an on-screen parameter that can be set. When there is more than one possibility within the screen, use the [CURSOR] buttons to move it.
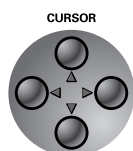
Function Buttons ([F1]–[F5])
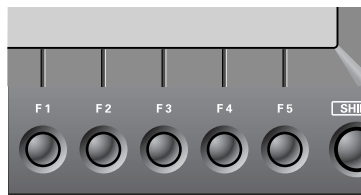
The [F1]–[F5] buttons are called "function buttons." The bottom part of the display will show the names of the functions available for [F1]–[F5]. For example, if this owner's manual makes reference to [INST] - [F2 (EDIT)], press [INST],

and then press [F2] (in this case, "EDIT" is displayed above [F2]).

Changing Data Values
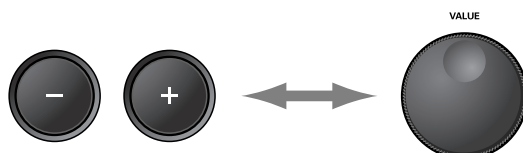
[+] and [-] (referred to in this manual as [+/-]) and the [VALUE] dial are both used to change the values of settings. Both methods have advantages.

[+/-]

• Each time [+] is pressed, the value increases. Each time [-] is pressed, the value decreases. This is convenient for fine adjustments.

• When making an on/off setting, [+] will turn the setting on and [-] will turn it off.

• If you hold down [+] and press [-], the value will increase rapidly. If you hold down [-] and press [+], the value will decrease rapidly.

[VALUE] dial

The dial allows you to make major changes to the value quickly. If you hold down [SHIFT] and turn [VALUE], the value will change even more rapidly.

Group Faders
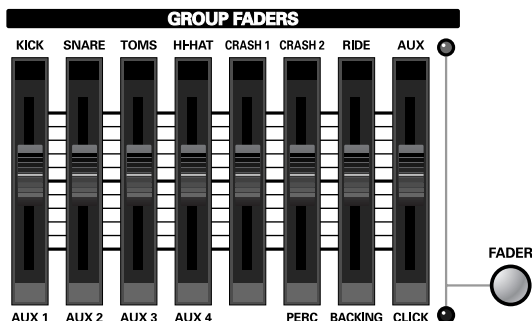
Use [GROUP FADERS] sliders to adjust the volume.

If you press the [FADER] button, the function of the faders will change as is explained in the chart below. An LED will light up at the upper and lower right of the faders to indicate which set of sounds is active.

• When upper indicator is lit, you can adjust the volume of following trigger inputs.

KICK	1 KICK
SNARE	2 SNARE
TOMS	3 TOM 1, 4 TOM 2, 5 TOM 3, 6 TOM 4
HI-HAT	7 HI-HAT
CRASH 1	8 CRASH 1
CRASH 2	9 CRASH 2
RIDE	10 RIDE, 11 EDGE
AUX	12 AUX 1, 13 AUX 2, 14 AUX 3, 15 AUX 4

• When lower indicator is lit, you can adjust the volume of following trigger inputs and sequencer parts.

AUX 1	12 AUX 1
AUX 2	13 AUX 2
AUX 3	14 AUX 3
AUX 4	15 AUX 4
PERC	Percussion part (p. 55)
BACKING	Backing part (p. 54)
CLICK	Metronome click (p. 59)

Example: Adjusting the Snare Volume

1. Press [FADER] so the upper indicator is lit.

2. Move the [GROUP FADERS] [SNARE] slider.

The slider position shows the current snare volume.

* *After switching with [FADER], the values for the [GROUP FADERS] sliders may not reflect the actual volume of the sound assigned to that fader. So after switching, be sure to move the faders a bit before making your setting.*

* *This will NOT affect the independent volume balance for each kit in: Mixer Settings (p. 37).*

Choosing Pads from the TD-20's Top Panel
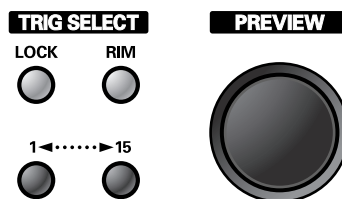
The ([TRIG SELECT]) buttons can be used to select the pad / trigger input to be edited without needing to hit a pad. When you press [1], the next lower-numbered trigger will be selected. When you press [15], the next higher-numbered trigger will be selected. When using a rim capable pad, [RIM] lets you know you're editing the rim. [PREVIEW] plays the sound in the display. So it's easy to edit with only the TD-20 and a pair of headphones.

* *When you select the hi-hat (trigger number 7), you can sound the closed hi-hat by holding down [SHIFT] and pressing [PREVIEW].*

How to Play Patterns

PATTERN   ♩=120
Drums POP   ▶▷▷▷
[■STOP] P   1   MEAS **001**
         ↻   ML ES EK PC OR
LIST   EDIT   NEW

Pressing [PATTERN]. The basic screen for the sequencer appears.

Press [+/-] or turn [VALUE] in this screen to choose a pattern.
Or press [F1 (LIST)] to choose from the pattern list.

SEQUENCER
PATTERN STOP PLAY REC TEMPO
  ○   ○   ○   ○   ○
                           CLICK
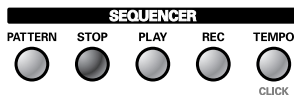
Press [PLAY] to start playback of the pattern.
Press [STOP] to stop playback.
Press [STOP] again to return to the top of the pattern.

How to Turn the Metronome (Click) On/Off

Hold down [SHIFT] and press [TEMPO] to turn ON and OFF.

*   *The [TEMPO] indicator can also be used as a visual metronome (p. 59).*

How to Adjust the Tempo

TEMPO
♩=120   ☞   🎵
               REF   CLICK
CLICK   SYNC   TAP   OFF   OFF
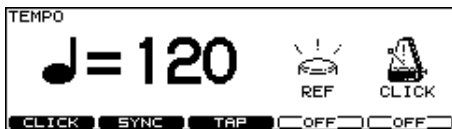
To adjust the tempo of the sequencer and click, use [+/-] or [VALUE] in the screen displayed by pressing [TEMPO].

Adjusting the Display Contrast

Display contrast can be influenced by location and lighting.
When needed, adjust the display contrast by:
holding down [KIT] and turning [VALUE].

*   *You can also adjust it in the screen displayed by pressing [SETUP] - [F4 (OPTION)] - [F5 (LCD)] (p. 81).*

About the Display in the Upper Right of the Screen

INST EDIT   H 2 [SNARE]
HEAD
Material   STEEL
Shell Depth   5.0"
SHELL   HEAD   MUFFLE   MIC   CH & R
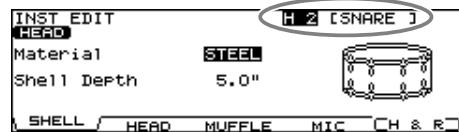
Many edit screens require you to hit a pad or the [PREVIEW] button to access the parameters you want. The upper right of the display will show the number and trigger input jack name of the corresponding pad. The first character ("H" or "R") stands for Head or Rim. ([RIM] lights up when played.)
You can use the TRIGGER SELECT buttons and [PREVIEW] to get the same results. In cases where settings for the head and rim can be edited separately, the following characters will also be displayed.

INST   H 1 [KICK]
HEAD   ∇EDIT
Group   KICK
Inst   1 22"Birch   K
LIST   EDIT   CONTROL DEFAULT CH & R

About the Preset Drum Kits

The TD-20 is shipped from the factory with 50 pre-loaded drum kits. After changing the settings, you can restore the factory settings at any time (p. 69). These drum kits are referred to as **Preset Drum Kits**.

Playing Methods

Pad (PD-125/105)

Head Shot

Hit only the head of the pad. With certain snare sounds, playing position will change the nuance of the sound.
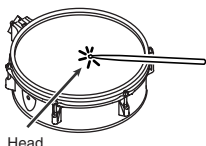
Rim Shot

Strike the head and the rim of the pad simultaneously.
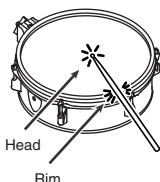
Cross Stick

Only strike the rim of the pad. Depending on the instrument assigned to the rim you can play rim shots and/or cross stick sounds.
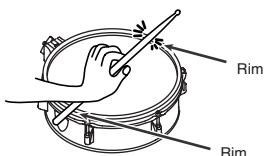
  * *To play the cross stick, be sure that you only strike the rim of the pad. Placing your hand on the head of the pad might prevent the cross stick sound from being played properly.*

Change the Nuance of the Rim Shot

With certain snare and tom sounds, slight changes in the way you play rim shots changes the nuance.

Normal Rim Shot (Open Rim Shot)

Strike the head and rim simultaneously.
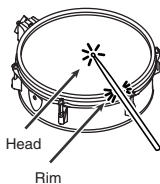
Shallow Rim Shot

Simultaneously strike the head near the rim and the rim itself.
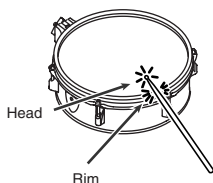
Hi-Hat (VH-12)

Open/Closed

The hi-hat tone changes smoothly and continuously from open to closed in response to how far the pedal is pressed. You can also play the foot closed sound (playing the hi-hat with the pedal completely pressed down) and foot splash sound (playing the hi-hat with the pedal fully pressed and then instantly opening it).

Pressure

When you strike the hi-hat while pressing on the pedal with the hi-hat closed, you can then change the closed tone in response to the pressure you place on the pedal.

Bow Shot

This playing method involves striking the middle area of the top hi-hat. It corresponds to the sound of the "head-side" of the connected trigger input.
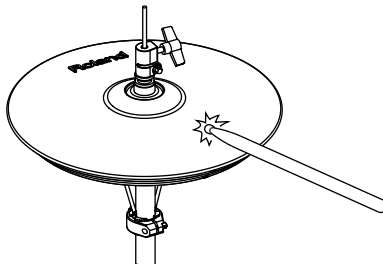
Edge Shot

This playing method involves striking the edge of the top hi-hat with the shoulder of the stick. When played as shown in the figure, the "rim-side" sound of the connected trigger input is triggered.
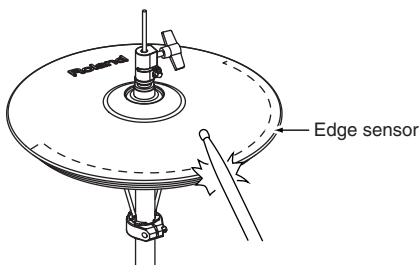
  * *Do not strike the bottom hi-hat or the underside of the top hi-hat.*

An Overview of the TD-20

Cymbal (CY-15R/14C)

Bow Shot

This is the most common playing method, playing the middle area of the cymbal. It corresponds to the sound of the "head-side" of the connected trigger input.
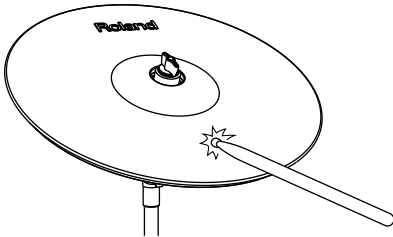
Edge Shot

This playing method involves striking the edge with the shoulder of the stick. When played as shown in the figure, the "rim-side" sound of the connected input is triggered.

Edge sensor
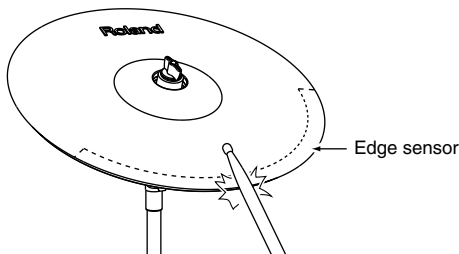
Bell Shot (CY-15R)

This playing method involves striking the bell. On the CY-15R, when played as shown in the figure, the "rim-side" sound of the connected input is triggered.
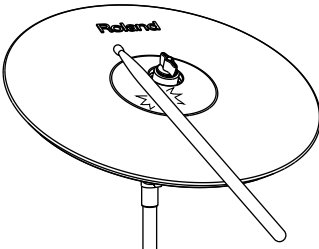
* *Strike the bell somewhat strongly with the shoulder of the stick.*

* *On the CY-14C, bell shots are not supported.*

Choke Play

Choking (pinching) the cymbal's edge with the hand immediately after hitting the cymbal makes the sound stop. Choke the location of the edge sensor shown in the figure. If you choke an area where there is no sensor, the sound does not stop.

Roland logo

Edge sensor
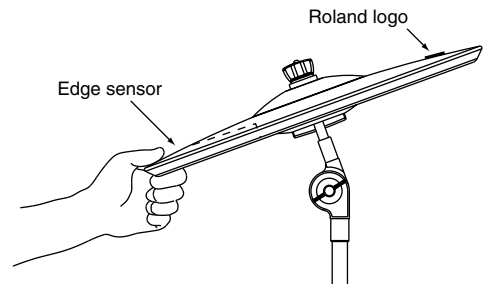
Positional Sensing
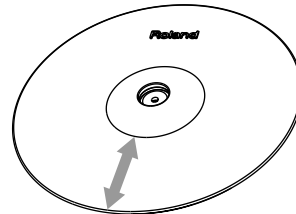
With certain ride sounds, playing position will change the nuance of the sound.

* *Only TRIGGER INPUT 10 RIDE corresponds to the positional sensing.*

☞

About the instruments corresponding to each playing method, refer to p. 95.

Chapter 1. Drum Kit Settings [KIT]

Choosing a Drum Kit

1. Press [KIT].

[KIT] lights, and the "DRUM KIT" screen appears.

```
DRUM KIT
          VPro    🧑
    CMP EQ AMB MFX    MASTER
  LIST    FUNC    NAME        (XSTICK)
```

2. Use [+/-] or [VALUE] to select drum kits.

HINT

Foot switches or pads can be programmed to make selections (p. 79, p. 80).

MEMO

The selected or current kit number is indicated at all times in the LED display at the left of the LCD display.

About the "DRUM KIT" Screen

```
DRUM KIT
          VPro    🧑           A
    CMP EQ AMB MFX    MASTER
  LIST    FUNC    NAME        (XSTICK)
           B
```

A: Drum Kit Name
B: Overall Kit Effects On/Off status (p. 38)

MEMO

Pressing [KIT] always takes you back to the "DRUM KIT" screen, from any Edit mode in the TD-20.

Selecting a Drum Kit from the List [F1 (LIST)]

You can select a drum kit by accessing the list of available kits.

```
DRUM KIT LIST
  1  VPro  🎵    6  Titanium
  2  Slamin' 🎵  7  RotoKit 🎵
  3  METAL  🎵   8  UNIVERSE
  4  JazzCombo   9  Skanky
  5  OverDrive 🎵 10 Brushes
  ◀ PAGE   PAGE ▶
```
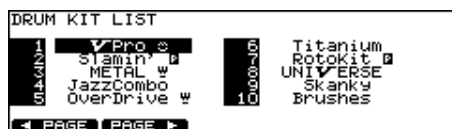
1. Press [KIT] - [F1 (LIST)].
The "DRUM KIT LIST" screen appears.

2. Use [VALUE], [+/-], or [CURSOR] to select a drum kit.

Function Buttons

[F1 (< PAGE)]

The previous page of the list appears.

[F2 (PAGE >)]

The next page of the list appears.

3. Press [EXIT] (or just press [KIT]) to return to the "DRUM KIT" screen.

Kit Parameters [F2 (FUNC)]

1. **Press [KIT] - [F2 (FUNC)].**

2. **Press [F1]–[F3] and [CURSOR (up/down)] to select the parameter.**

3. **Use [+/-] or [VALUE] to make settings.**

Adjusting the Volume [F1 (VOLUME)]

Parameter	Value	Description
Kit Volume	0–127	Volume of the entire drum kit
Pedal HH Volume	0–127	Volume of the hi-hat's foot closed sound
XStick Volume	0–127	Volume of cross stick sound

Assigning a Tempo for Each Kit [F2 (TEMPO)]

Each kit can have an individual tempo setting.

When you select a kit of which Kit Tempo is set to "ON," the tempo you define here will be set automatically.

Parameter	Value	Description
Kit Tempo	OFF, ON	**OFF:** tempo is not defined **ON:** tempo is defined
Tempo	20–260	defined tempo

MEMO

When you select a kit of which Kit Tempo is set to "ON," the defined tempo appears in the upper right of the display.

Playing Brushes [F3 (BRUSH)]

In each kit, you can choose whether sticks or brushes will be used.

Parameter	Value	Description
Brush Switch	OFF, ON	**OFF:** for using sticks **ON:** for using brushes

MEMO

When Brush Switch is set to "ON," the brush icon appears in the "DRUM KIT" screen.

Output Level Monitor [F5 (MONITOR)]

You can check the output level from the selected jacks.

Use [+/-] or [VALUE] to choose the jacks.

Choose from: Master, Phones, and separate stereo outs.
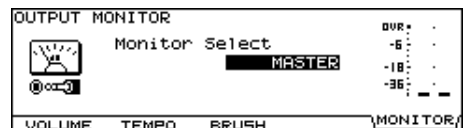
Naming a Drum Kit [F3 (NAME)]

Each kit's name can use up to 12 characters.

1. **Press [KIT] - [F3 (NAME)].**

   The "DRUM KIT NAME" screen appears.

2. **Press [CURSOR (left/right)] to move the cursor to the character to be changed.**

3. **Use [VALUE], [+/-], or [CURSOR (up/down)] to change the character.**

Function Buttons

[F1 (INSERT)]

   A blank space is inserted at the cursor position, and characters after this point are moved to the right one space.

[F2 (DELETE)]

   Character at the cursor position is deleted, and characters after this point are moved to the left one space.

[F3 (SPACE)]

   Character at the cursor position is replaced by a blank space.

[F4 (CHAR)]

   Type of character at the cursor position changes between uppercase/lowercase alphabet, or numbers and symbols.

Playing Cross Stick [F5 (XSTICK)]

In each kit, you can choose to use/not use cross stick by pressing [F5 (XStick)] in the "DRUM KIT" screen.

• Cross stick can be played

• Cross stick not possible

30

Chapter 2. Drum Instrument Settings [INST]

Here's how to select and edit sounds, such as the snare drum and kick drum.

Choosing a Pad to Edit

There are two basic ways to select the sound you want to edit.

Choose by Hitting a Pad

1. Press [INST].

[INST] lights, and the "INST" screen appears.

```
INST                    H 1 [KICK   ]
HEAD  RIM          V EDIT
Group    KICK
Inst HEAD  1 22"Birch    K
     RIM   1 22"Birch    K
  LIST  I EDIT ICONTROLIDEFAULT I H & R
```

2. Strike a pad.

The settings screen for the struck pad appears.

To select a pad's rim, strike the rim.

Choose with the Trigger Select Buttons

1. Press [INST].

[INST] lights, and the "INST" screen appears.

2. Press TRIG SELECT [1] or [15] to select the trigger input number.

The trigger input number is indicated in the upper part of the screen.

3. Press TRIG SELECT [RIM] to select the head or rim.

Head: [RIM] is unlit.

Rim: [RIM] is lit.

```
INST                    R 2 [SNARE ]
      RIM          V EDIT
Group    SNARE
Inst     72 RoundBdge SR
         POSI INTRVL XSTK
  LIST  I EDIT ICONTROLIDEFAULT H & R
```

MEMO

When MIDI Note Number corresponding to a pad is received, the pad is selected and shown in the screen.

Lock the Pad You are Editing (EDIT LOCK)

When editing instruments, you can prevent the screen from being switched inadvertently even if you hit another pad.

1. Select the pad to be locked.

The settings screen for the pad appears.

2. Press TRIG SELECT [LOCK] to make it light.

The pad is locked and other pads cannot be selected.

3. To release the lock, press [LOCK] to make it go off.

   * *You can change the pad to be locked by pressing TRIG SELECT [1] or [15] even if the [LOCK] is lit.*

Assign an Instrument to a Pad

All the TD-20 sounds are referred to as instruments (**INST**).

```
INST                    H 1 [KICK   ]
HEAD  RIM          V EDIT
Group    KICK
Inst HEAD  1 22"Birch    K
     RIM   1 22"Birch    K
  LIST  I EDIT ICONTROLIDEFAULT I H & R
```

1. Press [INST].

[INST] lights, and the "INST" screen appears.

"Group": Type of instrument (Inst Group)

"Inst":   Name of instrument (Inst Name)

2. Strike a pad.

The settings screen for the struck pad appears.

3. Press [CURSOR (up/down)] to move the cursor to "Group" or "Inst."

4. Use [+/-] or [VALUE] to select the Inst group/ instrument.

5. Press [EXIT] to return to the "DRUM KIT" screen.

MEMO

Pressing [F5 (H & R)], you can choose to set the head and rim simultaneously or individually. When you select the head and rim simultaneously, the rim's instrument number is one bigger than head.

Selecting an Instrument from the List [F1 (LIST)]

Here you can select from the list of all available instruments.
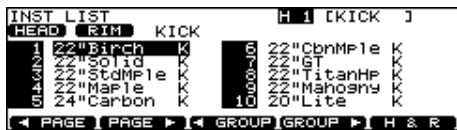
1. **Press [INST] - [F1 (LIST)].**
   The "INST LIST" screen appears.

2. **Strike a pad.**
   The settings screen for the struck pad appears.

3. **Use [VALUE], [+/-], or [CURSOR] to select the instrument.**

Function Buttons

[F1 (< PAGE)]
   The previous page of the list appears.

[F2 (PAGE >)]
   The next page of the list appears.

[F3 (< GROUP)], [F4 (GROUP >)]
   Selects the Inst Group.

[F5 (H & R)]
   Switches to select the head and rim instruments simultaneously or individually.

4. **Press [EXIT] to return to the "INST" screen.**

About the Display at the Lower of the Instrument Name

POSI: Instrument marked with "*P" (p. 95)
   You can select the effect on/off with pressing [F3 (CONTROL)] - [F3 (MIDI)] "Position Ctrl."
   It can be correspond only to some special inputs (p. 44)

INTRVL: Instrument marked with "*I" (p. 95)

XSTK: Instrument marked with "*X" (p. 95)

   * *These appear only when [F5 (H & R)] is off.*

Editing Drum Sounds [F2 (EDIT)]

Editing methods differ according to the type of instrument.

Editing an Acoustic Drum Kit (V-EDIT)

V-EDIT allows you to select a head type, shell depth, muffling, etc. Please see the charts on next page.

When V-EDIT Can Be Used

V-EDIT is possible in the following instrument groups "KICK," "SNARE," "TOM," "HI-HAT," "CRASH," "SPLASH," "CHINA," or "RIDE."

The following icon appears to indicate instruments which are V-EDIT compatible.

Editing Other Instruments

Other instruments only allow "Pitch" and "Decay Time" adjustment.

Editing Procedure

1. **Press [INST] - [F2 (EDIT)].**
   The "INST EDIT" screen appears.

2. **Strike a pad.**
   The settings screen for the struck pad appears.

3. **Use [F1]–[F4] and [CURSOR (up/down)] to select the parameter.**

4. **Use [+/-] or [VALUE] to adjust the setting.**

5. **When finished, press [EXIT] to return to the "INST" screen.**

KICK

```
INST EDIT              H 1 [KICK ]
HEAD  RIM
Shell Depth    NORMAL
Beater Type    FELT

 SHELL /  HEAD   MUFFLE   MIC   H & R
```
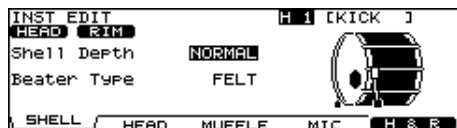
Parameter	Value
[F1 (SHELL)]	
Shell Depth	NORMAL, DEEP1–2
Beater Type	FELT, WOOD, PLASTIC
[F2 (HEAD)]	
Head Type	CLEAR, COATED, PINSTRIPE
Head Tuning	-480–+480
[F3 (MUFFLE)]	
Muffling	OFF, TAPE1–2, BLANKET, WEIGHT
Snare Buzz	OFF, 1–8
[F4 (MIC)]	
Mic Position	OUTSIDE2–1, STANDARD, INSIDE1–2

SNARE

```
INST EDIT              H 2 [SNARE ]
HEAD  RIM
Material       STEEL
Shell Depth    5.0"

 SHELL /  HEAD   MUFFLE   MIC   H & R
```

Parameter	Value
[F1 (SHELL)]	
Material	WOOD, STEEL, BRASS
Shell Depth	1.0"–20.0"
[F2 (HEAD)]	
Head Type	CLEAR, COATED, PINSTRIPE
Head Tuning	-480–+480
[F3 (MUFFLE)]	
Muffling	OFF, TAPE1–2, DOUGHNUTS1–2
Strainer Adj.	OFF, LOOSE, MEDIUM, TIGHT
[F4 (MIC)]	
Mic Position	OUTSIDE2–1, STANDARD, INSIDE1–2

TOM

```
INST EDIT              H 3 [TOM1 ]
HEAD  RIM
Shell Depth    NORMAL

 SHELL /  HEAD   MUFFLE   MIC   H & R
```
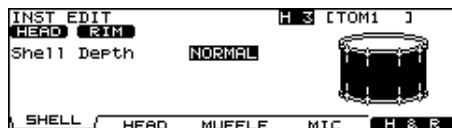
Parameter	Value
[F1 (SHELL)]	
Shell Depth	NORMAL, DEEP1–2
[F2 (HEAD)]	
Head Type	CLEAR, COATED, PINSTRIPE
Head Tuning	-480–+480
[F3 (MUFFLE)]	
Muffling	OFF, TAPE1–2, FELT1–2
Snare Buzz	OFF, 1–8
[F4 (MIC)]	
Mic Position	OUTSIDE2–1, STANDARD, INSIDE1–2

* *PINSTRIPE is a registered trademark of Remo Inc., U.S.A.*

HI-HAT

```
INST EDIT              H 7 [HI-HAT]
HEAD  RIM
Size           14"

 SIZE /  TAMB   FIXED   MIC   H & R
```
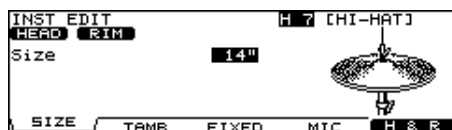
Parameter	Value
[F1 (SIZE)]	
Size	1"–40"
[F2 (TAMB)]	
Add Tambourine	OFF, ON
[F3 (FIXED)]	
Fixed Hi-Hat	NORMAL, FIXED1–4
[F4 (MIC)]	
Mic Position	OUTSIDE2–1, STANDARD, INSIDE1–2

* **NORMAL:** *The gap between the top and bottom hi-hat is controlled by the pedal.*
FIXED: *The gap is fixed.*

Chapter 2
[INST]

CRASH/SPLASH/CHINA/RIDE

```
INST EDIT          H 8 [CRASH1]
HEAD  RIM
Size              18"
  SIZE   SIZZLE SUSTAIN  MIC    H & R
```

Parameter	Value
[F1 (SIZE)]	
Size	1"–40"
[F2 (SIZZLE)]	
Sizzle Type	OFF, RIVET, CHAIN
[F3 (SUSTAIN)]	
Sustain	-31–+31
[F4 (MIC)]	
Mic Position	OUTSIDE2–1, STANDARD, INSIDE1–2

Other Instruments

```
INST EDIT          H15 [AUX4  ]
HEAD  RIM
Pitch              0
Decay Time         0
                          H & R
```
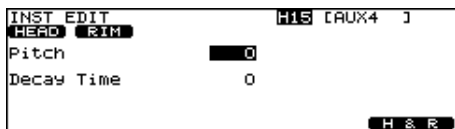
Parameter	Value
Pitch	-480–+480
Decay Time	-31–+31

MEMO

You can edit the instruments of the head and rim simultaneously. Pressing [F5 (H & R)], you can choose to set the head and rim simultaneously or individually.

* *When the instruments assigned to the head and rim are not in the same Inst Group, you only can set the head and rim individually even if [F5 (H & R)] is set to ON.*

MEMO

You can restore the settings for each instrument to the standard values by pressing [F4 (DEFAULT)] - [F5 (EXECUTE)] in the "INST" screen.

NOTE

For some instruments, raising or lowering the value beyond a certain point may not produce further change.

• KICK/SNARE/TOM: "Head Tuning"
• CRASH/SPLASH/CHINA/RIDE: "Sustain"
• Other Instruments: "Pitch" and "Decay"

NOTE

Some instruments have the parameters cannot be edited.

• SNARE: "Material" and "Strainer Adj."

Using Pads/Pedal as Controllers [F3 (CONTROL)]

1. Press [INST] - [F3 (CONTROL)].

2. Strike a pad.

The settings screen for the struck pad appears.
You can select by using [TRIG SELECT].

3. Press [F1]–[F5] and [CURSOR (up/down)] to select the parameter.

4. Use [+/-] or [VALUE] to adjust settings.

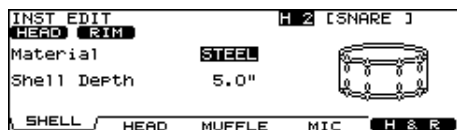**5. When finished, press [EXIT] to return to the "INST" screen.**

Parameter	Value	Description
[F1 (PATTERN)]		
Pad Pattern	OFF, P 1–100, U 101–200	Refer to **Playing a Pattern by Hitting a Pad (Pad Pattern) [F1 (PATTERN)]** (p. 35).
Pad Ptn Velocity	OFF, ON	
Tap Ptn Mute Grp	OFF, 1–8	
[F2 (PDLBEND)]		
Pedal Bend Range	-24–0– +24	Refer to **Changing the Pitch with the Hi-Hat Pedal [F2 (PDLBEND)]** (p. 35).
[F3 (MIDI)]		
Tx Channel	CH1–CH16, GLOBAL	Refer to **MIDI Settings for Each Pad [F3 (MIDI)]** (p. 36).
Note No.	0 (C -)–127 (G9), OFF	
Gate Time	0.1–8.0 (s)	
Position Ctrl Sw	OFF, ON	
[F4 (HH MIDI)]		
Note No.	0 (C -)–127 (G9), OFF	Refer to **MIDI Note Numbers transmitted by Hi-Hat [F4 (HH MIDI)]** (p. 36).
Gate	0.1–8.0 (s)	
[F5 (BR MIDI)]		
Brush Note No.	0 (C -)–127 (G9), OFF	Refer to **MIDI Note Number transmitted by Brush Sweep/Cross Stick [F5 (BR MIDI)]** (p. 36).
XStick Note No.	0 (C -)–127 (G9), OFF	

Playing a Pattern by Hitting a Pad (Pad Pattern) [F1 (PATTERN)]

This function starts playback of a pattern when a pad is struck. This function provides a very convenient way to use patterns during a live performance.

If different patterns have been assigned to two or more pads, striking another pad while a pattern is playing back will cause pattern playback to switch to the newly selected pattern.

* *Performances using the Pad Pattern function cannot be recorded to sequencers.*

Pad Pattern: OFF, P 1–100, U 101–200

Selects the played back pattern when the pad is struck.

* *If all pads are set to "OFF,"* icon appears.

Pad Ptn Velocity: OFF, ON

OFF:
The pattern plays back at the velocity set for the pattern, regardless of the strength with which the pad is struck.
ON:
The pattern plays back with the velocity changing in response to the strength with which the pad is struck.

Tap Ptn Mute Grp: OFF, 1–8

In Tap playback (p. 58), if one sound (pattern) is set to play before the previous sound (pattern) has finished playing, this setting allows you to either have the previous sound stop and the subsequent sound start playing or have the two sounds layered.

Patterns set to the same number:
The previous sound stops while in progress, and the subsequent sound (pattern) starts playing.
Patterns set to the different numbers:
The previous sound continues to play to the end, while the subsequent sound (pattern) is superimposed on it.

Changing the Pitch with the Hi-Hat Pedal [F2 (PDLBEND)]

This setting allows you use the hi-hat pedal as a pitch bender for sounds assigned to any pad or rim.
Specified in semitone steps.

Pedal Bend Range: -24–0– +24

MIDI Settings for Each Pad [F3 (MIDI)]

Tx Channel: CH1–CH16, GLOBAL

MIDI transmit channel for each pad.

GLOBAL: Transmits on the same channel as the drum kit part (p. 74).

Note No.: 0 (C -)–127 (G 9), OFF

OFF: Note messages are not transmitted.

Gate Time: 0.1–8.0 (s)

See the column.

Position Ctrl: OFF, ON

This can be set for trigger inputs SNARE (Head, Rim), TOM (Rim), RIDE (Bow), and AUX (Rim).

This turns the changing of the sound by strike position/ rim shot nuance ON or OFF.

SNARE (Head):	Strike position
SNARE (Rim):	Rim shot nuance
TOM (Rim):	Rim shot nuance
RIDE (Bow):	Strike position
AUX (Rim):	Rim shot nuance

MIDI Note Numbers transmitted by Hi-Hat [F4 (HH MIDI)]

Open (Bow):	Bow shot of open hi-hat
Closed (Bow):	Bow shot of closed hi-hat
Open (Edge):	Edge shot of open hi-hat
Closed (Edge):	Edge shot of closed hi-hat
Pedal:	Pedal hi-hat (Foot closed)

Note No.: 0 (C -)–127 (G 9), OFF

OFF: Note messages are not transmitted.

Gate: 0.1–8.0 (s)

See the column.

MIDI Note Number transmitted by Brush Sweep/Cross Stick [F5 (BR MIDI)]

Brush Note No.: 0 (C -)–127 (G 9), OFF

OFF: Note messages are not transmitted.

XStick Note No.: 0 (C -)–127 (G 9), OFF

OFF: Note messages are not transmitted.

When Setting Multiple Pads to the Same Note Number

When the note number is set to be more than one pad received, the instrument assigned to the pad with the lowest TRIGGER INPUT number is played. When note numbers for the head and rim are duplicated, the head instrument is played.

HINT

An asterisk (*) appears at the right of the note number for TRIGGER INPUTS that are not sounded.

Example:

Note number "38 (D 2)" is set for the head and rim of TRIGGER INPUT 2 (SNARE) and the head of TRIGGER INPUT 3 (TOM 1). In this case, when Note Number "38" is received, the instrument assigned to the head of TRIGGER INPUT 2 (SNARE) is played.

About the Gate Time

Percussion sound modules normally produce sound only in response to "Note on" messages, and ignore "Note off" messages. However general-purpose sound modules or samplers do receive the note-off messages that are transmitted and respond by turning off the sound.
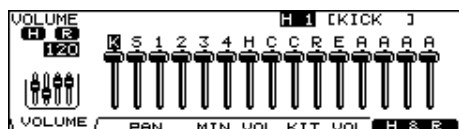
For example, if you are triggering a "loop" in a sampler, or other sounds then the gate time parameter is very important. With the factory defaults (preset values), the transmitted gate time is set to the minimum value.

Chapter 3. Mixer Settings

Mixer Parameters [MIXER]

Here you can adjust the volume, pan, etc.

```
VOLUME        H 1 [KICK  ]
H R       K S 1 2 3 4 H C C R E A A A A
120
VOLUME / PAN  MIN VOL KIT VOL  H & R
```

1. **Press [MIXER].**

   [MIXER] lights.

2. **Use [F1]–[F5] or [CURSOR (up/down)] to select the parameter.**

3. **Use TRIG SELECT [1], [15], [RIM], or [CURSOR (left/right)] to select the instrument you wish to set.**

   You can also select the instrument by striking a pad.

4. **Use [+/-], [VALUE], or [CURSOR (up/down)] to make the setting.**

Parameter	Value	Description
[F1 (VOLUME)]		
Volume	0–127	Volume of each trigger input
[F2 (PAN)]		
Pan	L15–CTR–R15	Pan of each trigger input
[F3 (MIN VOL)]		
Minimum Volume	0–10	Minimum volume of each trigger input (This is used to narrow the dynamic range.)
[F4 (KIT VOL)]		
Kit Volume	0–127	Volume of the entire drum kit
Pedal HH Volume	0–127	Volume of the hi-hat's foot closed sound
XStick Volume	0–127	Volume of cross stick sound

*   *Pressing [F5 (H & R)] in the [F1 (VOLUME)], [F2 (PAN)], or [F3 (MIN VOL)] setting screen, you can choose to set the head and rim simultaneously or individually.*

5. **Press [EXIT] to return to the "DRUM KIT" screen.**

Using Group Faders to Edit (MIX EDIT)

You can use the GROUP FADERS to make adjustments.

```
VOLUME    MIX EDIT    H 1 [KICK  ]
H R       K S 1 2 3 4 H C C R E A A A A
120
VOLUME / AMB SND MFX SND
```
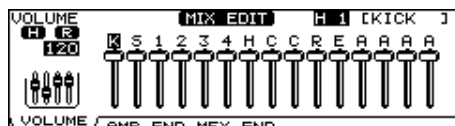
1. **Press [MIXER] and [FADER] simultaneously.**

   [MIXER] lights, and [FADER] flashes.

2. **Press [F1]–[F4] to select the parameter.**

3. **Move the fader which corresponds to the TRIGGER INPUT you wish to adjust.**

*   *You can also use [+/-], [VALUE], or [CURSOR (up/down)].*

Parameter	Value	Description
[F1 (VOLUME)]		
Volume	0–127	Volume of each trigger input
[F2 (AMB SND)]		
AMB SEND LEVEL	0–127	Send level to the ambience for each trigger input
[F3 (MFX SND)]		
MFX SEND LEVEL	0–127	Send level to the multi-effects for each trigger input

*   *These settings are always common to the head and rim.*

4. **Press [EXIT] or [FADER] to return to the "DRUM KIT" screen.**

*   *After pressing [EXIT] or [FADER], the values for the [GROUP FADERS] sliders may not reflect the actual volume of the sound assigned to that fader. Be sure to move the faders a bit before making your setting.*

Chapter 4. Effect Settings

Effects On and Off Switches [EFFECTS SWITCH]

These switches allow you to turn all individual effects and master effects on/off within each drum kit.
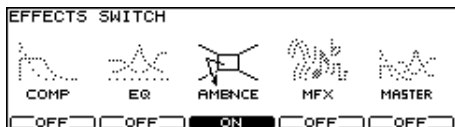
1. Press [EFFECTS SWITCH].

[EFFECTS SWITCH] lights, and the "EFFECTS SWITCH" screen appears.

2. Press [F1]–[F5] to turn the following on/off.

[F1]: Pad Compressor (*1)

[F2]: Pad Equalizer (*1)

[F3]: Ambience

[F4]: Multi-effects

[F5]: Master Effects

3. Press [EXIT] to return to the "DRUM KIT" screen.

> * Effect on/off status appears in the "DRUM KIT" screen.

ON   OFF

> * 1: All pad compressors or pad equalizers are turned on/off simultaneously.

Using the Compressor and EQ [COMP/EQ]

An individual Compressor and EQ can be applied to every sound assigned to a trigger input.

1. Press [COMP/EQ].

[COMP/EQ] lights.

2. Strike the pad you wish to set.

3. Press [F2], [F3], or [CURSOR] to select the parameter.

Function Buttons

[F2 (COMP)]

Pad compressor parameters appear.

[F3 (EQ)]

Pad equalizer parameters appear.

4. Use [+/-] or [VALUE] to adjust the setting.

5. Press [F1] and/or [F4] to turn on the compressor/equalizer for each trigger input.

[F1]: Turns the pad compressor on/off

[F4]: Turns the pad equalizer on/off

CMP ON , **EQ ON**

COMP/EQ setting is ON, EFFECTS SWITCH is ON

Effect applies.

(CMP ON) , **(EQ ON)**

COMP/EQ setting is ON, EFFECTS SWITCH is OFF

Effect does not apply.

OFF

COMP/EQ setting is OFF

Effect does not apply.

> * Pressing [F5 (H & R)], you can choose to set the head and rim simultaneously or individually.

NOTE

The sound may be distorted in a certain setting.

Compressor (COMP)

A compressor adjusts the envelope (changes in the volume over time) and changes the character of the sound in response to playing dynamics.

```
PAD COMPRESSOR        H 2 [SNARE ]
H R     Attack  EMPHASIS
        Type  COMP MED 1   Time  SNARE1
        Gain(dB)   +2  Atck(ms)   25
COMP    Thre(dB)   -9  Hold(ms)   40
        Ratio   2.5:1  Rels(ms)   20
CMP ON \ COMP  /   EQ   [ OFF ] H & R
```
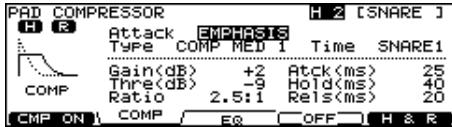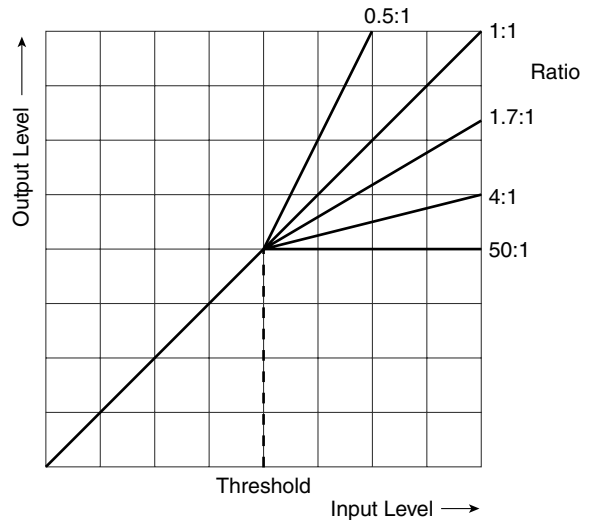
Parameter	Value	Description
Attack	EMPHASIS, CRUSH	**EMPHASIS** Emphasizes the attack of the sound. **CRUSH** Press the attack.
Type	COMP SOFT 1–2, COMP MED 1–3, COMP HARD 1–2, LIMITER 1–2, EXPANDER 1–3	This changes Thre and ratio values.
Time	KICK 1–3, SNARE1–3, TOM 1–3, CYM 1–2, OTHER1–3	This changes Atck, Hold, and Rels values.

For more detailed setting, adjust the parameters below.

Parameter	Value	Description
Gain	-15– +20 (dB)	Output level of the compressor
Thre (Threshold)	-30–0 (dB)	Volume level at which compression begins
Ratio	0.5:1–50:1	Compression ratio
Atck (Attack)	0–255 (ms)	Time from when the volume goes up the threshold level until the compressor effect applies
Hold	2–9999 (ms)	Time compression is kept
Rels (Release)	2–9999 (ms)	Time from when the volume falls below the threshold level until the compressor effect no longer applies

About Threshold and Ratio

As shown in the diagram below, these parameters determine how the volume is to be compressed.

Equalizer (EQ)

You can use three-band equalizers (for high, middle, and low frequency ranges) to adjust the sound.

```
PAD EQ               H10 [RIDE  ]
H R            LOW    MID    HIGH
        Q             0.5
EQ      Freq   630   3.15k    4k
        Gain    -4     0      +4
[ OFF ]  COMP \  EQ  / EQ ON I H & R
```
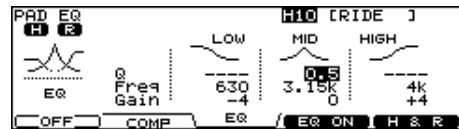
Parameter	Value	Description
Q	0.5–8.0 (only for MID)	Width of the frequency range A higher Q narrows the affected area.
Freq (Frequency)	20–1k (LOW), 20–8k (MID), 1k–8k (HIGH)	Point at which the boost/cut will occur
Gain	-15– +15 (dB)	Amount of boost/cut

Chapter 4 [EFFECTS]

Ambience [AMBIENCE]

You can choose the type of room where the drums are to be played and modify the sound.

1. **Press [AMBIENCE].**

   [AMBIENCE] lights.

2. **Press [F2]–[F4] or [CURSOR] to select the parameter.**

3. **Use [+/-] or [VALUE] to adjust the setting.**

4. **Press [F1] to turn the ambience on.**

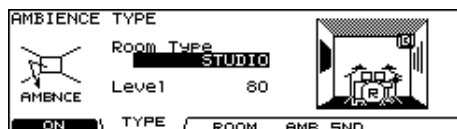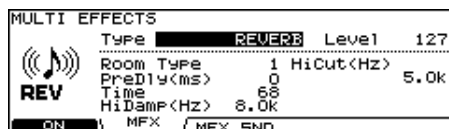| Parameter	Value	Description
[F2 (TYPE)]		
Room Type	BEACH, LIVING ROOM, BATH ROOM, STUDIO, GARAGE, LOCKER ROOM, THEATER, CAVE, GYMNASIUM, DOME STADIUM	Location where the drums are played
Level	0–127	Total ambience level
[F3 (ROOM)]		
Room Size	TINY, SMALL, MEDIUM, LARGE, HUGE	5 size available
Wall Type	WOOD, PLASTER, GLASS	Wall material
Mic Position	LOW, HIGH	Ambience mic position
Room Shape	0–100	Shape of the room
[F4 (AMB SND)]		
Send Level	0–127	Ambience send level for each instrument

* *Pressing [F5 (H & R)] in the [F4 (AMB SND)] setting screen, you can choose to set the head and rim simultaneously or individually.*

Multi-Effects [MULTI EFFECTS]

The multi-effects allow you to further customize your sound and also provides a choice of output configurations.

1. **Press [MULTI EFFECTS].**

   [MULTI EFFECTS] lights.

2. **Press [F2], [F3], or [CURSOR] to select the parameter.**

3. **Use [+/-] or [VALUE] to adjust the setting.**

4. **Press [F1] to turn the multi-effects on.**

Parameter	Value	Description
[F2 (MFX)]		
Type	REVERB, GATE REVERB, DELAY, PANNING DELAY, BEAT DELAY, FLANGER, PHASER, CHORUS, ENHANCER, PITCH SHIFT, OVERDRIVE, DISTORTION, LO-FI, RING MOD	Type of multi-effects
Level	0–127	Total effect level
[F3 (MFX SND)]		
Send Level	0–127	Effect SEND level for each instrument

* *Pressing [F5 (H & R)] in the [F3 (MFX SND)] setting screen, you can choose to set the head and rim simultaneously or individually.*

Multi-Effects Parameters

REVERB

Adds reverberation to the sound, simulating an acoustic space.

Parameter	Value	Description
Room Type	1–5	Type of reverb 1: Lite 2: Medium 3: Deep 4: Shallow 5: Thin
PreDly	0–100.0 (ms)	Time until the reverb is heard
Time	0–127	Duration of reverberation
HiDamp	4.0k–12.5k (Hz), THRU	Frequency above which the reverb is reduced in level
HiCut	160–12.5k (Hz), THRU	Frequency above which the high-frequency content of the reverb sound is filtered out

GATE REVERB

This is a special type of reverb in which the reverb is cut off without being allowed to decay naturally.

Parameter	Value	Description
Room Type	1–5	Type of reverb 1: Lite 2: Medium 3: Deep 4: Shallow 5: Thin
Time	0–127	Duration of reverberation
HiCut	160–12.5k (Hz), THRU	Frequency above which the high-frequency content of the reverb sound is filtered out
HiDamp	4.0k–12.5k (Hz), THRU	Frequency above which the reverb is reduced in level
Thre (Threshold)	-60– +12 (dB)	Volume level at which the reverb starts to be gated
Hold	0.05–2.00 (s)	Time from when the reverb level falls below the Threshold until the gate starts to close

Parameter	Value	Description
Rels (Release)	0–200 (ms)	Time from the start to the completion of the gate closing process

DELAY

Adds the delay sound.

Parameter	Value	Description
Time	0–2000 (ms)	Time until the delay sound is heard
Feedback	-98–98 (%)	Amount of the delay sound that is fed back into the effect (minus: inverts the phase)

PANNING DELAY

This is a delay effect with echoes that pan left and right.

Parameter	Value	Description
TimeL TimeR	0–1500 (ms)	Time until the delay sound is heard
Level L Level R	0–127	Volume level of the delay sound
Feedback	-98–98 (%)	Amount of the delay sound that is fed back into the effect (minus: inverts the phase)

BEAT DELAY

This is a delay effect that synchronizes with a tempo in sequencer.

Parameter	Value	Description
Time	32th note–half note	Time until the delay sound is heard
Shift	-half note–0–+half note	Time of shifting the interval between the 1st and 2nd delay
Level 1 Level 2	0–127	Volume level of the delay sound
Pan 1 Pan 2	L15–CTR–R15	Stereo position of the delay sound
Feedback	-98–98 (%)	Amount of the delay sound that is fed back into the effect (minus: inverts the phase)

*   *If you set Tempo, Time, and Shift to make the delay time over 1500 ms, the delay time cannot be more than 1500 ms.*

FLANGER

Produces a metallic resonance that rises and falls somewhat like a jet airplane taking off or landing.

Parameter	Value	Description
Delay	0–15.0 (ms)	Tone of the flanger
LFO Rate	1–128	Frequency of modulation
Depth	0–127	Depth of modulation
Feedback	-98–98 (%)	Amount of the flanger sound that is fed back into the effect (minus: inverts the phase)
Phase	0–180	Spatial spread of the sound

PHASER

Adds a phase-shifted sound to the original sound, producing a swirling modulation.

Parameter	Value	Description
Freq	100–8000 (Hz)	Basic frequency at which the sound will be modulated
LFO Rate	1–128	Frequency of modulation
Depth	0–127	Depth of modulation
Resonance	0–127	Amount of feedback

CHORUS

Gives richness and spaciousness to the sound.

Parameter	Value	Description
Delay	8.0–30.0 (ms)	Tone of the chorus
LFO Rate	1–128	Frequency of modulation
Depth	0–127	Depth of modulation
Phase	0–180	Spatial spread of the sound

ENHANCER

Controls the overtone structure of the high frequencies, adding sparkle and brightness to the sound.

Parameter	Value	Description
Sens	0–127	Sensitivity of the enhancer
LF Level	0–127	Volume level of the low frequency range of the direct sound

PITCH SHIFT

Shifts the pitch of the original sound.

Parameter	Value	Description
Mode	1–5	Setting a higher value results in a slower response, but steadier pitch.
Delay	0–100.0 (ms)	Time until the pitch-shifted sound is heard
Coarse	-24–12	Amount of pitch shift (semitone steps)
Fine	-100–100	Amount of pitch shift (2-cent steps)
Feedback	-98–98 (%)	Amount of the pitch-shifted sound that is fed back into the effect (minus: inverts the phase)

OVERDRIVE

Creates a soft distortion similar to that produced by vacuum tube amplifiers.

Parameter	Value	Description
Drive	0–127	Amount of distortion
HF Level	0–127	Level of high frequency range
LF Bypass	OFF, ON	Bypass for the low frequency range When this is set to "OFF," the low frequency range also has a distortion sound.
Expanse	OFF, ON	Adding the spatial spread of the sound

DISTORTION

Produces a more intense distortion than Overdrive.

Parameter	Value	Description
Gain	0–127	Amount of distortion
HF Level	0–127	Level of high frequency range
LF Bypass	OFF, ON	Bypass for the low frequency range When this is set to "OFF," the low frequency range also has a distortion sound.
Expanse	OFF, ON	Adding the spatial spread of the sound

LO-FI

Intentionally degrades the sound quality for creative purposes.

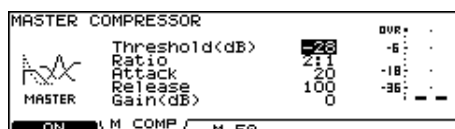| Parameter	Value	Description
Fs Rate	OFF, 1/2–1/32	Sample rate
Bit	OFF, 15–1	Number of bits in data
BPF Cutoff	0–100	Cutoff frequency of the BPF (Band Pass Filter)
BPF Mix	0–127	Amount of mixing the sound that goes through the BPF

RING MOD

Applies amplitude modulation (AM) to the input signal, producing bell-like sounds.

Parameter	Value	Description
Freq	0–127	Frequency at which modulation is applied

Master Effects [MASTER COMP/EQ]

A stereo compressor (limiter)/three-band equalizer provides final audio touches to the total sound of the TD-20. Can be used for each kit and/or all kits.

1. **Press [MASTER COMP/EQ].**

   [MASTER COMP/EQ] lights.

2. **Press [F2], [F3], or [CURSOR] to select the parameter.**

3. **Use [+/-] or [VALUE] to adjust the setting.**

4. **Press [F1] to turn the master effects on.**

Parameter	Value	Description
[F2 (M COMP)]		
Threshold	-60–0 (dB)	Volume level at which compression begins
Ratio	1:1–100:1	Compression ratio
Attack	0–100	Time from when the volume goes up the threshold level until the compressor effect applies

Parameter	Value	Description
Release	0–100	Time from when the volume falls below the threshold level until the compressor effect no longer applies
Gain	-60– +12 (dB)	Output volume of compressor
[F3 (M EQ)]		
Type	SHELV (Shelving), PEAK (MID: fixed to "PEAK")	**SHELVE:** Entire range above/below the selected frequency range is boosted/cut **PEAK:** The vicinity of the selected frequency range is boosted/cut
Q	0.5–8.0 (only when Type is set to "PEAK")	Width of the frequency range A higher Q narrows the affected area.
Freq (Frequency)	20–1k (LOW), 20–16K (MID), 1k–16k (HIGH)	Point at which the boost/cut will occur
Gain	-12– +12	Amount of boost/cut

NOTE

The sound may be distorted in a certain setting.

☞

Chapter 5. Trigger Settings [TRIGGER]

Selecting the Pad Type [F1 (BANK)]

To be sure the TD-20 accurately receives signals sent from the pads, select the **trigger type** (the type of pads being used) for each trigger input.
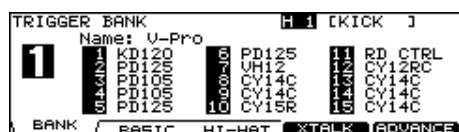
Trigger Type

A **trigger type** is a group of trigger settings with values optimally adjusted for a particular pad. Indications such as "KD120," "PD125," or "VH12," etc. in the above display correspond to this. When you select a trigger type for a connected pad, each of the parameters is set to the most appropriate values for that pad, allowing you to play it without encountering problems with the settings. Only when factors unrelated to the selection of the proper trigger type prevent you from getting good results in performance should you fine-tune the individual parameters for the pad you are using.

Trigger Bank

Trigger Banks allow you to store the 15 trigger settings as a single unit of information. The large number at the left edge of the above display is the Trigger Bank number. Move the cursor to this area to select the Trigger Bank.

1. **Press [TRIGGER] - [F1 (BANK)].**

   [TRIGGER] lights, and the "TRIGGER BANK" screen will appear.

2. **Press [CURSOR (left)] to move the cursor to the Trigger Bank number.**

3. **Use [+/-] or [VALUE] to select the Trigger Bank.**

4. **Press [CURSOR (right)] to move the cursor to a trigger type.**

5. **Strike the pad you wish to set.**

   The cursor will move to the trigger type for the struck pad.

   You can also select by using [CURSOR] or [TRIG SELECT].

6. **Use [+/-] or [VALUE] to select the trigger type.**

Trigger Type	Used Model
PD125	PD-125
PD120	PD-120
PD105	PD-105
PD100	PD-100
PD80R	PD-80R, PD-80
PD9	PD-9
PD8	PD-8
PD7	PD-7
PD6	PD-6
KD120	KD-120
KD80	KD-80
KD8	KD-8
KD7	KD-7
CY15R	CY-15R
CY12RC	CY-12R/C
CY14C	CY-14C
CY8	CY-8
CY6	CY-6
CY12H	CY-12H
VH12	VH-12
KICK	When using a non-Roland kick trigger
PAD1	When using a non-Roland pad
PAD2	
RT7K	RT-7K
RT5S	RT-5S
RT3T	RT-3T

* *When you select the trigger type, the trigger parameters (except the crosstalk cancel parameters) are automatically set to the most efficient values for each pad. Make settings for the parameter as needed.*

* *When 3Way Trigger (p. 50) is set to ON, "RD CTRL" is displayed for the trigger type for TRIGGER INPUT 11 EDGE. It cannot be changed.*

Trigger Inputs and Pad/Playing Methods corresponding chart

Trigger Input	Dual Trigger Mesh Pad	Positional Sensing	Rim Shot Nuance
KICK	x	x	x
SNARE	o	o	o
TOM 1–4	o	x	o
HI-HAT	x	x	x
CRASH 1, 2	x	x	x
RIDE	x	o	x
EDGE	x	x	x
AUX 1–4	o	x	o

* *Brush sweep and Cross Stick can be used only SNARE.*

* *Each playing method can be used with the instruments corresponding to it (p. 95).*

Setting the Pad Sensitivity [F2 (BASIC)]

When you are using pads made by other manufacturers, try adjusting the following parameters.

1. Press [TRIGGER] - [F2 (BASIC)].

[TRIGGER] lights, and the "TRIGGER BASIC" screen will appear.

```
TRIGGER BASIC      H 1 [KICK  ]
        Trig Type    KD120
        Sensitivity   11
        Threshold      5
        Curve      LINEAR
                            SENS
  BANK \ BASIC / HI-HAT  XTALK  ADVANCE
```

2. Use [CURSOR (up/down)] to select the parameter.

3. Strike the pad you wish to set.

The setting screen for the struck pad will appear.
You can also select by using [TRIG SELECT].

4. Use [+/-] or [VALUE] to adjust the setting.

5. When you're finished, press [EXIT] to return to the "DRUM KIT" screen.

Parameter	Value	Description
Trig Type	refer to p. 44	
Sensitivity	1–32	Pad sensitivity
Threshold	0–31	Minimum level for the pad
Curve	LINEAR, EXP1, EXP2, LOG1, LOG2, SPLINE, LOUD1, LOUD2	How playing dynamics changes the volume

Pad Sensitivity

You can adjust the sensitivity of the pads to accommodate your personal playing style.
This allows you to have more dynamic control over the sound volume, based on how hard you play.

Sensitivity: 1–32

Higher sensitivity allows the pad to produce a loud volume even when played softly.

Lower sensitivity will keep the pad producing a low volume even when played forcefully.

Minimum level for the pad (Threshold)

This setting allows a trigger signal to be received only when the pad is above a determined force level (velocity). This can be used to prevent a pad from sounding because of vibrations from other pads.
In the following example, B will sound but A and C will not sound.
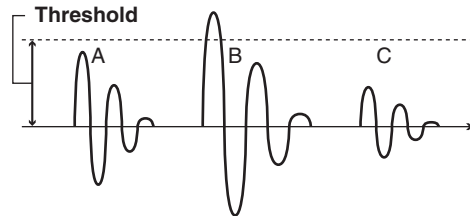
Threshold: 0–31

When set to a higher value, no sound is produced when the pad is struck lightly.
Gradually raise the "Threshold" value while striking the pad. Check this and adjust accordingly. Repeat this process until you get the perfect setting for your playing style.

How Playing Dynamics Changes the Volume (Velocity Curve)

This setting allows you to control the relation between playing velocity (striking force) and changes in volume. Adjust this curve until the response feels as natural as possible.
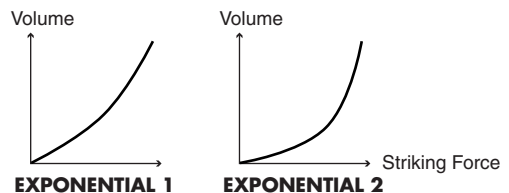
Curve: LINEAR

The standard setting. This produces the most natural correspondence between playing dynamics and volume change.
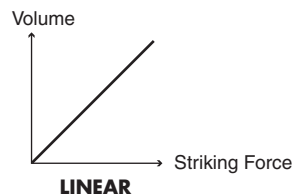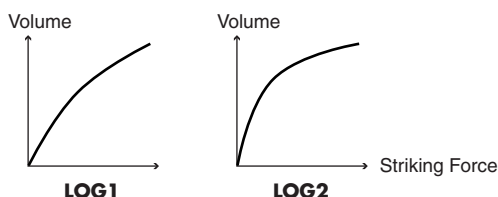

LINEAR

Curve: EXP1, EXP2

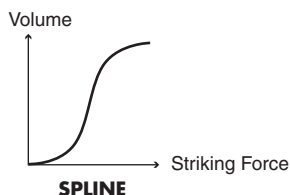Compared to LINEAR, strong dynamics produce a greater change.

EXPONENTIAL 1   **EXPONENTIAL 2**

Chapter 5 [TRIGGER]

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Curve: LOG1, LOG2

Compared to LINEAR, a soft playing produces a greater change.

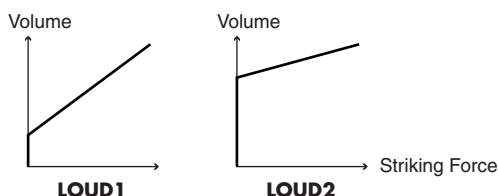**LOG1**   **LOG2**

Curve: SPLINE

Extreme changes are made in response to playing dynamics.
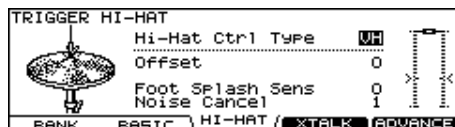

SPLINE

Curve: LOUD1, LOUD2

Very little dynamic response, making it easy to maintain strong volume levels. If using drum triggers, these settings help maintain stable levels.

LOUD1   **LOUD2**

Hi-Hat Settings [F3 (HI-HAT)]

1. Press [TRIGGER] - [F3 (HI-HAT)].

[TRIGGER] lights, and the "TRIGGER HIHAT" screen will appear.

2. Use [CURSOR (up/down)] to select the parameter.

3. Use [+/-] or [VALUE] to adjust the setting.

4. When you're finished, press [EXIT] to return to the "DRUM KIT" screen.

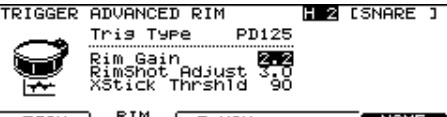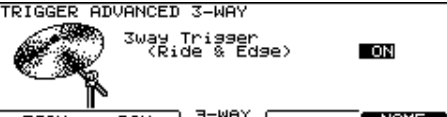| Parameter	Value	Description
Hi-Hat Ctrl Type	VH, FD	Used Hi-Hat Controller **VH:** VH-12 **FD:** FD-7/8
When HH Ctrl Type is set to "VH"		
Offset	-100– +100	Extent of Opening Hi-Hat The bigger the value is, the wider the opening extent is.
Foot Splash Sens	-10– +10	Amount of how easy to make the Foot Splash
Noise Cancel	1–3	Amount of strength to cancel the bow and edge noise when you play "Foot Close." The bigger the value is, the more difficult to have a noise excluding the "Foot Close."
When HH Ctrl Type is set to "FD"		
CC Max	90, 127	Amount of Control Change that is transmitted in stepping the pedal down completely. (*1)
CC Resolution	NORMAL, HIGH	Amount of Data Resolution that is transmitted from Hi-Hat Pedal. (*2)

*1: The bigger you set the value, the stronger the pressure effect is when you step the pedal down completely.

*2: When you control the pitch by Hi-Hat Pedal (p. 35), the pitch can be changed smoothly if you set "High."

HINT

You can adjust the "Offset" of VH-12 automatically (p. 21).

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Eliminate Crosstalk Between Pads [F4 (XTALK)]

When two pads are mounted on the same stand, hitting one pad may trigger the sound from another pad unintentionally. (This is called **crosstalk**.) Eliminate this by adjusting Xtalk Cancel on the pad that is sounding inadvertently.

HINT

In some cases, you can prevent crosstalk between two pads by increasing the distance between them.

1. **Press [TRIGGER] - [F4 (XTALK)].**

2. **Use [F1]–[F3] to select the parameter.**

3. **Strike the pad you wish to set.**

   The cursor will move to the trigger input number for the struck pad.
   You can also select by using [CURSOR] or [TRIG SELECT].

4. **Use [+/-] or [VALUE] to adjust the setting.**

5. **When you're finished, press [EXIT] to return to the "DRUM KIT" screen.**

[F1 (XTALK)]: XTALK CANCEL

[F2 (MOUNT)]: MOUNT TYPE

Select the pad mount type here.

PAD: Using a pad mount
CYMBAL: Using a cymbal mount

[F3 (GROUP)]: XTALK GROUP

Crosstalk Cancel affects the pads set to the same number.

Crosstalk Example: If you hit the snare pad and the tom 1 also sounds

Set the snare and tom 1 to the same group. Raise the "XTALK CANCEL" for the pad being used for the tom 1. The tom 1 pad will be less prone to receive crosstalk from other pads. With a setting "OFF," crosstalk prevention will not work.

* *If the value is set too high, and two pads are played simultaneously, the one that is struck less forcefully may not sound. Be careful and set this parameter to the minimum value required to prevent crosstalk.*

Chapter 5
[TRIGGER]

Advanced Trigger Parameters [F5 (ADVANCE)]

The following parameters (Advanced Trigger Parameters) are automatically set to the most efficient values for each pad when you select the Trigger Type (p. 44), and don't require adjustment, except if you experience any of the problems that are discussed in the explanation of each parameter.

1. **Press [TRIGGER] - [F5 (ADVANCE)].**

2. **Use [F1]–[F3] and [CURSOR (up/down)] to select the parameter.**

3. **Strike the pad you wish to set.**
   The setting screen for the struck pad will appear.
   You can also select by using [TRIG SELECT].

4. **Use [+/-] or [VALUE] to adjust the setting.**

5. **When you're finished, press [EXIT] to return to the "DRUM KIT" screen.**

Parameter	Value	Description
[F1 (SCAN)]		

```
TRIGGER ADVANCED SCAN   H 1 [KICK   ]
              Trig Type    KD120
              Scan Time<ms>   2.0
              Retrig Cancel      6
              Mask Time<ms>     10
                                     SCANTIME
   SCAN      RIM     3-WAY        NAME
```

Parameter	Value	Description
Trig Type	refer to p. 44	
Scan Time	0–4.0 (ms)	Trigger signal detection time
Retrig Cancel	1–16	Detecting trigger signal attenuation
Mask Time	0–64 (ms)	Double triggering prevention (p. 49)
[F2 (RIM)]		

```
TRIGGER ADVANCED RIM    H 2 [SNARE ]
              Trig Type    PD125
              Rim Gain      2.2
              RimShot Adjust 3.0
              XStick Thrshld  90
   SCAN      RIM     3-WAY        NAME
```

Parameter	Value	Description
Trig Type	refer to p. 44	
Rim Gain	0–3.2	Rim/Edge dynamic response (p. 49)
RimShot Adjust	0–8.0	Rim shots response (p. 49)
XStick Thrshld	0–127	Cross stick response (p. 49)
[F3 (3-WAY)]		

```
TRIGGER ADVANCED 3-WAY
              3way Trigger
              <Ride & Edge>      ON
   SCAN      RIM     3-WAY        NAME
```

Parameter	Value	Description
3Way Trigger (Ride & Edge)	OFF, ON	Playing Bow/Bell/Edge (p. 50)
[F5 (NAME)]	Trigger Bank Name (p. 50)	

Trigger Signal Detection Time (Scan Time)

Since the rise time of the trigger signal waveform may differ slightly depending on the characteristics of each pad or acoustic drum trigger (drum pickup), you may notice that identical hits (velocity) may produce sound at different volumes. If this occurs, you can adjust the "Scan Time" so that your way of playing can be detected more precisely.
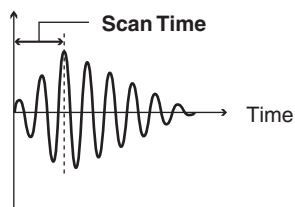

Scan Time: 0–4.0 (ms)

While repeatedly hitting the pad at a constant force, gradually raise the Scan Time value from 0 msec, until the resulting volume stabilizes at the loudest level. At this setting, try both soft and loud strikes, and make sure that the volume changes appropriately.

* *As the value is set higher, the time it takes for the sound to be played increases. Set this to the lowest value possible.*

Detecting Trigger Signal Attenuation (Retrigger Cancel)

Important if you are using acoustic drum triggers. Such triggers can produce altered waveforms, which may also cause inadvertent sounding at Point A in the following figure (**Retrigger**).
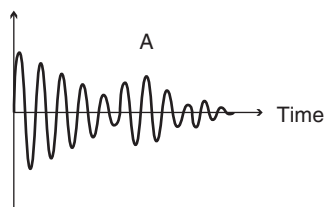
This occurs in particular at the decaying edge of the waveform. Retrigger Cancel detects such distortion in and prevents retriggering from occurring.

Retrig Cancel: 1–16

While repeatedly striking the pad, raise the "Retrig Cancel" value until retriggering no longer occurs.

* *Although setting this to a high value prevents retriggering, it then becomes easy for sounds to be omitted when the drums played fast (roll etc.). Set this to the lowest value possible while still ensuring that there is no retriggering.*

MEMO

You can also eliminate this problem of retriggering with the Mask Time setting. Mask Time does not detect trigger signals if they occur within the specified amount of time after the previous trigger signal was received. Retrigger Cancel detects the attenuation of the trigger signal level, and triggers the sound after internally determining which trigger signals were actually generated when the head was struck, while weeding out the other false trigger signals that need not trigger a sound.

Double Triggering Prevention (Mask Time)

When playing a kick trigger the beater can bounce back and hit the head a second time immediately after the intended note—with acoustic drums sometimes the beater stays against the head—this causes a single hit to "double trigger" (two sounds instead of one). The Mask Time setting helps to prevent this. Once a pad has been hit, any additional trigger signals occurring within the specified "Mask Time" (0–64 msec) will be ignored.
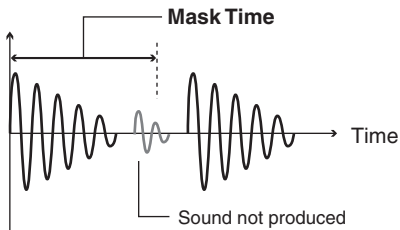
Mask Time: 0–64 (ms)

Adjust the "Mask Time" value while playing the pad.

When using a kick trigger, try to let the beater bounce back and hit the head very quickly, then raise the "Mask Time" value until there are no more sounds made by the beater rebound.

   * When set to a high value, it will be difficult to play very quickly. Set this to as low a value as you can.*

MEMO

If two or more sounds are being produced when you strike the head just once, then adjust Retrig Cancel.

Rim/Edge Dynamic Response (Rim Gain)

When a PD-125/120/105, PD-80R, PD-9/8/7, CY series pad, VH-12, or RT-5S (trigger) is connected, you can adjust the relation between your playing velocity (force) on the rim/edge and the resulting volume level.

Rim Gain: 0–3.2

Higher value allows the rim/edge to produce a loud volume even when played softly. Lower value will keep the rim/edge producing a low volume even when played forcefully.

Rim Shots Response (Rim Shot Adjust)

When a PD-125/120/105/80R or RT-5S (trigger) is connected, you can adjust the sensitivity of the rim response.

RimShot Adjust: 0–8.0

There are some cases that you have a rim sound unexpectedly when you hit the head strongly. You can improve this situation with decreasing the value of "RimShot Adjust."

   * When you set the value too small, it might be difficult to play the rim sound.*

Cross Stick Threshold (XStick Thrshld)

When a PD-125/120/105/80R or RT-5S (trigger) is connected, you can determine the "cross over point" between the cross stick and a rim shot sounds.

XStick Thrshld: 0–127

Setting this to a higher value makes it easier to get cross stick sounds. When set to "0," playing a cross stick produces the open rim shot sound.

   * Increasing the value excessively may cause the cross stick to sound as well when the open rim shot is played.*

Chapter 5
[TRIGGER]
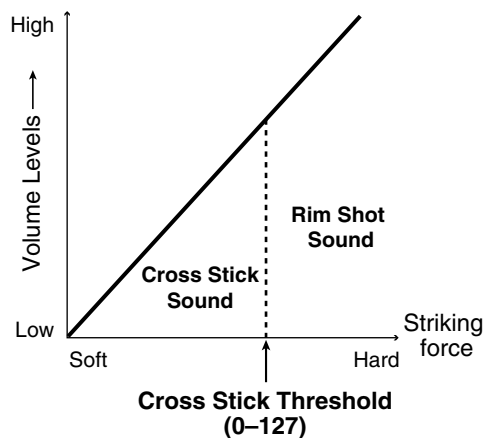
Playing Bow, Bell, and Edge (3-Way Triggering)

When using the CY-15R or CY-12R/C for the RIDE, you can three way triggering (bow, bell, and edge shot) performance are possible.

3Way Trigger: OFF, ON

Connect as shown below, set 3Way Trigger to "ON."

Correspondences Between Playing Method and Trigger Input

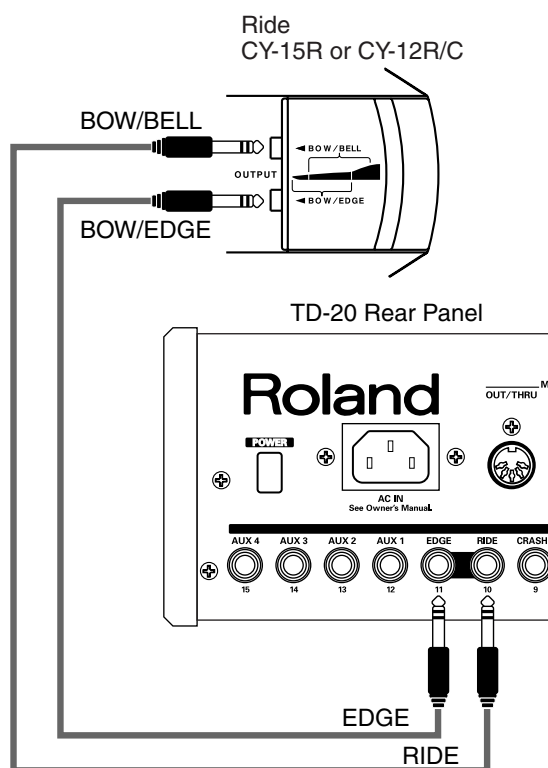| Playing Method	TD-20 TRIGGER INPUT
Bow Shot	10 RIDE head
Bell Shot	10 RIDE rim
Edge Shot	11 EDGE rim

*   *Head-side tone for the TRIGGER INPUT 11 EDGE cannot be sounded.*

*   *When 3Way Trigger is set to "ON," "RD CTRL" is displayed for the trigger type for TRIGGER INPUT 11 EDGE. It cannot be changed.*

Naming a Trigger Bank [F5 (Name)]

Each trigger bank can be named (up to 12 characters).

1. **In the "TRIGGER BANK" screen, select the trigger bank you want to name.**

2. **[F5 (ADVANCE)] - [F5 (NAME)].**
    The "TRIGGER BANK NAME" screen appears.

3. **[CURSOR (left/right)] to move the cursor to the character to be changed.**

4. **Use [VALUE], [+/-], or [CURSOR (up/down)] to change the character.**

Function Buttons

[F1 (INSERT)]
    A blank space is inserted at the cursor position.

[F2 (DELETE)]
    Character at the cursor position is deleted.

[F3 (SPACE)]
    Character at the cursor position is replaced by a blank space.

[F4 (CHAR)]
    Character at the cursor position changes between uppercase/lowercase alphabet, or numbers and symbols.

5. **When finished, Press [EXIT].**

Chapter 6. Sequencer (Playback)

The TD-20's sequencer organizes music into six parts. The Drum Kit part is used to record/play back what is played on the pads. Additionally, Melody Part, Bass Part, Backing 1 Part, and Backing 2 Part are the four backing instrument parts, and there is another Percussion part.

The collective performance of these six parts is called a **pattern**.

Preset Patterns (Pattern P 1–100)

Settings in Preset patterns cannot be modified. These patterns are provided for use in practicing or live performances.

User Patterns (Pattern U 101–200)

These are patterns for you to use as you wish. You can record directly from the pads or an external MIDI keyboard in real time (p. 61). User pattern settings are saved automatically.

Using Preset Patterns

As you cannot record over a preset pattern, the following appears in the display if you press [REC].
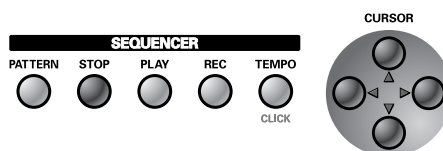
```
PATTERN                    ♩=120
           WARNING
        ⚠   Preset Pattern!
```

If you want to change, edit, or record any Preset pattern settings, copy them to a User pattern (p. 64).

Basic Operation

[PATTERN]:
> Selects patterns. This displays the basic screen for the sequencer.

[STOP]
> Stops playback of the pattern. When pressed while the pattern is stopped, this returns you to the beginning of the pattern.

[PLAY]
> Starts playback of the pattern.

[REC]
> Enters record-standby mode.

[TEMPO]
> Sets the Tempo (p. 53).

[CURSOR (up)]
> When pressed while the pattern is stopped, this returns you to the beginning of the pattern.

[CURSOR (left)]
> When pressed while the pattern is stopped, this returns you to the previous measure in the pattern.

[CURSOR (right)]
> When pressed while the pattern is stopped, this advances you to the next measure in the pattern.
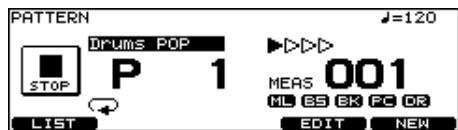
[CURSOR (down)]
> When pressed while the pattern is stopped, this advances you to the end of the pattern.

* *[CURSOR] cannot be used while the pattern is played back.*

Choosing a Pattern [PATTERN]

PATTERN screen image showing: Drums POP, P 1, MEAS 001, ♩=120, STOP, LIST, EDIT, NEW, ML BS BK PC OR

1. Press [PATTERN].

[PATTERN] lights, and the "PATTERN" screen appears.

2. Use [+/-] or [VALUE] to select the pattern.

* *If you press [F5 (NEW)], an empty pattern with the lowest number is called up.*

About the "PATTERN" screen.

PATTERN screen image with labels C, D, B, A, F, E, G pointing to elements: Drums POP, P 1, MEAS 001, ♩=120
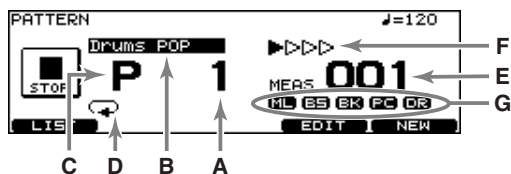
A: Pattern Number

Currently selected pattern number.

B: Pattern Name

The name of the currently selected pattern.

C: Pattern Type

"P" is displayed for preset patterns, and "U" is displayed for user patterns. When choosing an empty pattern, an asterisk (*) appears.

D: Pattern Playback Type (p. 58)

E: Measure Number

Playback begins from the measure indicated here when [PLAY] is pressed.

F: Beat

G: Part Mute Status (p. 54)

HINT

When you have finished making the settings, press [PATTERN] to bring up this screen. This prevents data from being overwritten inadvertently during performance.

Select a Pattern from the List [F1 (LIST)]

Here you can select patterns from a list of pattern names.

Pattern number, pattern name, beat, measure length, pattern playback type, and tempo are displayed.

PATTERN LIST screen showing:
No.	Name	Beat	Len	Type	♩=
1	Drums POP	4/ 4	10	LOOP	120
2	Drums JAZZ	4/ 4	13	LOOP	180
3	Drums BALLAD	12/ 8	9	LOOP	100
4	Drums H.ROCK	4/ 4	9	LOOP	152
5	Rockin' Hard	4/ 4	18	LOOP	95

PAGE ▲ PAGE ▼ NEW

1. Press [PATTERN] - [F1 (LIST)].

The "PATTERN LIST" screen appears.

2. Use [VALUE], [+/-], or [CURSOR (up/down)] to select the pattern.

Function Buttons

[F1 (▲ PAGE)]

The previous page of the list appears.

[F2 (PAGE ▼)]

The next page of the list appears.

[F5 (NEW)]

An empty pattern with the lowest number is called up.

3. Press [EXIT] to return to the "PATTERN" screen.

Playing Back a Pattern [PLAY]

PATTERN screen showing: Drums POP, P 1, MEAS 005, ♩=120, PLAY, LIST, EDIT, NEW, ML BS BK PC OR
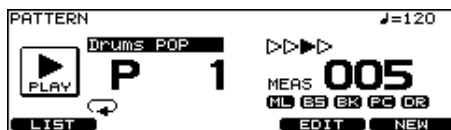
1. Select the pattern to play.

2. Press [PLAY].

[PLAY] lights, and playback of the pattern begins.

3. Press [STOP] to stop playback of the pattern.

[PLAY] goes off, and returns to the beginning of the measure played at that moment.

4. Press [STOP] once again to return to beginning of the pattern.

Tempo Adjustment

1. **Press [TEMPO].**

2. **[TEMPO] lights, and the "TEMPO" screen appears.**

3. **Use [+/-] or [VALUE] to select the tempo.**

4. **Press [EXIT] to return to the "DRUM KIT" screen.**

Setting the Tempo by Hitting a Pad (Tap Tempo)

You can set the tempo by hitting a pad or [PREVIEW] **two or more times** at **quarter-note intervals** of the desired tempo.
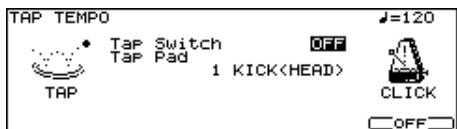
1. **Press [TEMPO].**

   [TEMPO] lights, and the "TEMPO" screen appears.

2. **Press [F3 (TAP)].**

   The "TAP TEMPO" screen appears.

3. **Press [CURSOR (up)] to move the cursor to "Tap Switch."**

4. **Use [+/-] or [VALUE] to set to "ON."**

5. **Press [CURSOR (down)] to move the cursor to "Tap Pad."**

6. **Use [+/-] or [VALUE] to select the pad (or [PREVIEW]) to use for Tap Tempo function.**

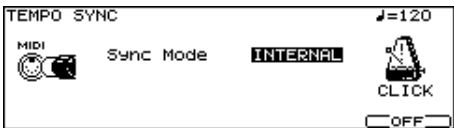7. **Press [KIT] to return to the "DRUM KIT" screen.**

When you hit the pad (or [PREVIEW] selected in the step 5, the tempo is displayed at the upper right of the display.

Synchronizing with an External MIDI Device

This section discusses the settings that allow an external MIDI sequencer and the TD-20's sequencer to be synchronized. The device that is playing back is called the "master" and the device that is synchronizing to the playback is called the "slave."

1. **Press [TEMPO].**

   [TEMPO] lights, and the "TEMPO" screen appears.

2. **Press [F2 (SYNC)].**

   The "TEMPO SYNC" screen appears.

3. **Use [+/-] or [VALUE] to make settings.**

4. **Press [KIT] to return to the "DRUM KIT" screen.**

Parameter	Value	Description
Sync Mode	INTERNAL, EXTERNAL, AUTO, REMOTE	See below.

INTERNAL:
   The TD-20's tempo setting will be used for playback/recording. When shipped from the factory, this setting is selected.

EXTERNAL:
   The TD-20's sequencer will operate in accordance with tempo data (MIDI Clock) from the external device.

AUTO:
   This is a convenient setting that combines features of both the INTERNAL and EXTERNAL settings. When no synchronization signal is being received, the TD-20's tempo setting will be used for playback/recording. When a synchronization signal is being received from an external device, the TD-20 will sync to that signal.

REMOTE:
   The TD-20 will obey start/pause/stop messages from an external device, but will playback according to its own tempo setting.

Synchronizing to the playback of an external sequencer

In this case, the TD-20 will be the slave and an external sequencer will be master.

1. **Connect the TD-20's MIDI IN connector with a MIDI cable to the MIDI OUT connector of the external sequencer.**

2. **Set Sync Mode to "EXTERNAL."**

3. **Begin playback on the external sequencer.**
   Synchronized playback will begin.

Part Settings [F2 (PART)]

PATTERN PART screen (Only for User Pattern)

Muting a Specific Part [F1 (MUTE)]

You can mute specific parts in user patterns.

1. Press [PATTERN] - [F2 (PART)].

The "PATTERN PART" screen appears.

2. Press [F1 (MUTE)].

The "PART MUTE" screen appears.

3. Press [F1]–[F5] to turn each part muted or played.
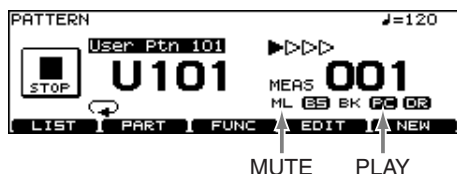
[F1]: Melody Part

[F2]: Bass Part

[F3]: Backing 1 Part + Backing 2 Part

[F4]: Percussion Part

[F5]: Drum Kit Part

4. Press [PATTERN] to return to the "PATTERN" screen.

* *You can check the part mute status in the "PATTERN" screen.*

MUTE   PLAY

Make Settings for the Backing Part [F2 (BACKING)]

Here you can select the instrument used for the backing parts (other parts than drum kit part and percussion part), etc.

1. Press [PATTERN] - [F2 (PART)].

The "PATTERN PART" screen appears.

2. Press [F2 (BACKING)].

The "MELODY (BASS, BACKING1, BACKING2)PART" screen appears.

3. Press [F1]–[F4] to select the part you wish to set.

[F1]: Melody Part

[F2]: Bass Part

[F3]: Backing 1 Part

[F4]: Backing 2 Part

4. Press [CURSOR (up/down)] to select the parameter.

5. Use [+/-] or [VALUE] to make settings.

| Parameter	Value	Description
Inst	Refer to **Backing Instrument List** (p. 98)	Part Instrument
Key Shift	-24–0– +24	Shifts the overall pitch (in semitone steps).
Bend Range	0– +24	Amount of change in pitch with pitch bend at the maximum level (in semitone steps).

Instrument Numbers/Instrument Names

You can change the tone by changing the instrument number. Selecting different variations within each instrument number changes the instrument name, with a different tone being selected.

Instrument numbers correspond to the program numbers (1-128).

Variation Tones

These are slightly varied tone types found in an instrument number. The number of variation tones varies with the instrument number.
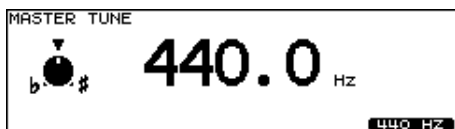

Instrument Name   Number of Variation Tones
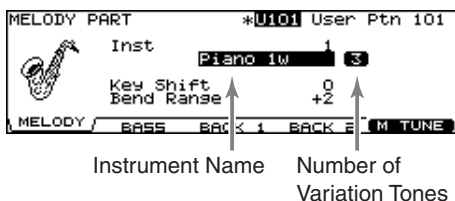
Master Tuning

Here you can adjust the overall tuning for the Melody, Bass, Backing 1, and Backing 2 part.

1. Press [PATTERN] - [F2 (PART)] - [F2 (BACKING)] - [F5 (M TUNE)].

The "MASTER TUNE" screen appears.

2. Use [+/-] or [VALUE] to make setting.

Master Tune: 415.3–466.2Hz

   * *You can set this to 440.0 Hz by pressing [F5 (440 Hz)].*

Percussion Part Settings [F3 (PERC)]

Choosing a Percussion Set

An assembled group of different **percussion instruments** is called a **percussion set**. There are 8 percussion sets, with percussion instruments assigned to each note number (128). So multiple instruments can be used at one time. They can be edited and use the effects unit of the backing instruments.

1. Press [PATTERN] - [F2 (PART)].

The "PATTERN PART" screen appears.

2. Press [F3 (PERC)].

The "PERCUSSION PART" screen appears.

3. Use [+/-] or [VALUE] to select the percussion set.

Percussion Set Settings

1. In the "PERCUSSION PART" screen, press [F5 (EDIT)].

The "PERCUSSION SET EDIT" screen appears.

2. Make settings of the percussion set.

3. When finished, press [EXIT] to return to the "PERCUSSION PART" screen.

Selecting a Percussion Instrument

Select an instrument for each note number.

1. Press [CURSOR (up/down)] to select the note number you wish to set.

2. Use [VALUE] or [+/-] to select the instrument.

MEMO

You can listen the sound of instrument by pressing [PREVIEW].

Selecting a Percussion Instrument from the List [F1 (LIST)]

Here you can select from the list of all available instruments.

1. **Press [CURSOR (up/down)] to select the note number you wish to set.**

2. **Press [F1 (LIST)].**

    The "PERCUSSION SET INST LIST" screen appears.

    ```
    PERCUSSION SET INST LIST
    Note No.   0(C -)
    541 TapeStop      546 Vocoder2
    542 TapeRewind    547 TeknoHit
    543 Voice OK      548 PhillyHit
    544 Voice Yeah    549 FunkHit
    545 Vocoder1      550 Bass Gliss
    ◄ PAGE   PAGE ►              OFF
    ```

3. **Use [VALUE], [+/-], or [CURSOR] to select the instrument.**

Function Buttons

[F1 (< PAGE)]

Previous page of the list appears.

[F2 (PAGE >)]

The next page of the list appears.
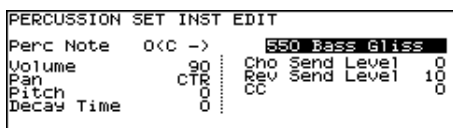
[F5 (OFF)]

Selects the instrument #561 (OFF).

4. **Press [EXIT] to return to the "PERCUSSION SET EDIT" screen.**

Making the Settings for Each Percussion Instrument [F2 (EDIT)]

Set the volume, pan, pitch, decay, etc. for each percussion instrument.

1. **Press [F2 (EDIT)].**

    The "PERCUSSION SET EDIT" screen appears.

    ```
    PERCUSSION SET INST EDIT
    Perc Note   0(C -)       550 Bass Gliss
    Volume         90   Cho Send Level    0
    Pan           CTR   Rev Send Level   10
    Pitch           0   CC                0
    Decay Time      0
    ```

2. **Press [CURSOR] to select the parameter.**

3. **Use [+/-] or [VALUE] to make settings.**

Parameter	Value	Description
Perc Note	0 (C -)–127 (G 9)	Note number to be set
(Inst)	Refer to **Drum Instrument List** (p. 92).	Instrument
Volume	0–127	–

Parameter	Value	Description
Pan	L15–CTR–R15	Stereo position
Pitch	-480–+480	–
Decay Time	-31–+31	–
Cho Send Level	0–127	Amount of chorus
Rev Send Level	0–127	Amount of reverb
CC	0–127	See below.

CC: Specifies how the instrument which changes the tone like a snare (striking position) or hi-hat (pedal position) sounds.

4. **Press [EXIT] to return to the "PERCUSSION SET EDIT" screen.**

Naming a Percussion Set [F3 (NAME)]

Each percussion set can be named (up to 12 characters).

```
PERCUSSION SET NAME
PercSet1
ABCDEFGHIJKLMNOPQRSTUVWXYZ
 INSERT   DELETE   SPACE    CHAR
```

1. **Press [F3 (NAME)].**

    The "PERCUSSION SET NAME" screen appears.

2. **Press [CURSOR (left/right)] to move the cursor to the character to be changed.**

3. **Use [VALUE], [+/-], or [CURSOR (up/down)] to change the character.**

Function Buttons

[F1 (INSERT)]

A blank space is inserted at the cursor position.

[F2 (DELETE)]

Character at the cursor position is deleted.

[F3 (SPACE)]

Character at cursor position is replaced by a blank space.

[F4 (CHAR)]

Character at the cursor position changes between uppercase/lowercase alphabet, or numbers and symbols.

4. **Press [EXIT] to return to the "PERCUSSION SET EDIT" screen.**