Roland®

MS-1 DIGITAL SAMPLER

Owner's Manual

ADDITIONAL INFORMATIONS

* The volume setting automatically reverts to "80" each time power on the MS-1 is turned off, then on again.

* Sounds will not be layered as a result of pressing two pads while in any of the screens that can be called up by pressing the EDIT button.

* For samples in Banks C through E, a setting with a value near "0" (63 or less) cannot be made for the length of the loop region. (p. 14)

* In order to allow for the efficient editing of very long samples (while editing the loop point or end point), the unit will automatically switch to the region being edited, rather than starting from the Start point. (p. 14)

* Sounds produced by operating a footswitch will not be recorded while using the SEQ function.

* The Hold function cannot be used while recording with the SEQ function.If you want to obtain an effect equivalent to a hold, you can set the sample to "TRIG." (p. 15) Note, however, that any sample that has been set to "TRIG" needs to be played back from the start of the sequence if you expect it to sound correctly. (p. 16)

* The MS-1 sends a Bulk Dump with dividing the total amount of bulk data into seven smaller sized packets . But note that if the external device you are using for receiving a Bulk Dump does not have sufficient memory available to process one packet, it will not be able to successfully receive it.
(The external device can't be used to receive the Bulk Dump of the MS-1.)

* When you send a Bulk Dump data (p. 24),You may need to allow about 5 seconds of pause between the data packets to reserve a processing time. Please don't send the data consecutively.

CORRECTIONS

We regret that certain portions in the manual for the MS-1 contain misprints/errors. Items marked with an "✕" should read as shown in "○". We apologize for any inconvenience this may cause.

Right column p. 8, The third "*" item.
✕ "...setting to "LoopOFF" .(P.10) "
○ "...setting to "LoopOFF" .(P.9) "

Right column p. 8, The sixth "*" item.
✕ "...range of available gain (1-163) to..."
○ "...range of available gain (1-16) to..."

Right column p. 11, under "Internal memory" in the Sampling time graph.
✕ STANDARD 27.0   LONG2 54.0
○ STANDARD 28.4   LONG2 57.2
* For both the STANDARD and LONG2 grade, the actual time is lengthened by an amount similar to that shown above for the various card sizes as well.
* The same applies to Maximum Sampling Time under Specifications on p. 29

Right column p. 19, the sentence in italics, marked with "*" above "■What is Buf?".
✕ * If the card capacity is .... as possible.
○ * The range of BUF number which can be specified will vary depending on the capacity of the card being used.

Caution: When exiting Edit mode (when "Keep Power ON!" appears in the display), or executing sampling, you must never turn the power off.

In these situations, data is automatically being written. If the power is turned off during these times, data in internal or card memory may be lost. If you have lost data in this manner, you will need to perform an "Int All Clear" (p. 25) or reformat the card (p. 19).

About CD Products and the Distributors

The sample libraries featured on the supplied "Roland Sampling Showcase" CD are selected from products on pages 6 to 8 in the leaflet.
These products are available from the distributors listed below.

[U.K.]
Time+Space
Tel. (01442)870681   Fax. (01442) 877266
[U.S.A. and Canada]
East-West Soundwarehouse
Tel. (310)858 8797   Fax. (310) 858 8795

[Germany, Austria, and Switzerland]
Best Service
Tel. (089)345026   Fax. (089) 397396

For other territories, please contact Time+Space directly. They will put you in touch with your local distributor.

* *Before You use the "Roland Sampling Showcase" CD, please read all of the notes on the CD case carefully.*
* *The "Roland Sampling Showcase" is an audio CD for ordinary CD players. It does not include any CD-ROM type data.*

Memory Cards for the MS-1

The MS-1 is compatible with the following cards from Sundisk Corporation, as well as equivalent cards.

SDP5-1.8-101 (1.8 Mbytes type)
SDP5-2.5-101 (2.5 Mbytes type)
SDP5-5-101   (5 Mbytes type)
SDP5-10-101   (10 Mbytes type)
SDP5-20-101   (20 Mbytes type)

For details, please contact the nearest Roland distributor in your country.

Information

When you need repair service, call your local Roland Service Station or the authorized Roland distributor in your country as shown below.

U. S. A.
Roland Corporation U.S.
7200 Dominion Circle
Los Angeles, CA. 90040-3696, U. S. A.
TEL: (213) 685 5141

CANADA
Roland Canada Music Ltd.
(Head Office)
5480 Parkwood Way
Richmond B. C., V6V 2M4
CANADA
TEL: (604) 270 6626

Roland Canada Music Ltd.
(Montreal Office)
9425 Transcanadienne
Service Rd. N., St Laurent,
Quebec H4S 1V3, CANADA
TEL: (514) 335 2009

Roland Canada Music Ltd.
(Toronto Office)
346 Watline Avenue,
Mississauga, Ontario L4Z
1X2, CANADA
TEL: (416) 890 6488

AUSTRALIA
Roland Corporation
Australia Pty. Ltd.
38 Campbell Avenue
Dee Why West. NSW 2099
AUSTRALIA
TEL: (02) 982 8266

NEW ZEALAND
Roland Corporation (NZ) Ltd.
97 Mt. Eden Road, Mt. Eden,
Auckland 3, NEW ZEALAND
TEL: (09) 3098 715

UNITED KINGDOM
Roland (U.K.) Ltd.
Rye Close Ancells Business
Park Fleet, Hampshire GU13
8UY, UNITED KINGDOM
TEL: (0252) 816181

Roland (U.K.) Ltd.,
Swansea Office
Atlantic Close, Swansea
Enterprise Park, Swansea,
West Glamorgan SA79FJ,
UNITED KINGDOM
TEL: (0792) 700 139

IRELAND
The Dublin Service
Centre Audio
Maintenance Limited
11 Brunswick Place Dublin 2
Republic of Ireland
TEL: (01) 677322

ITALY
Roland Italy S. p. A.
Viale delle Industrie 8 20020
ARESE MILANO ITALY
TEL: (02) 93581311

SPAIN
Roland Electronics de
España, S. A.
Calle Bolivia 239 08020
Barcelona, SPAIN
TEL: (93) 308 1000

GERMANY
Roland Elektronische
Musikinstrumente
Handelsgesellschaft mbH.
Oststrasse 96, 22844
Norderstedt, GERMANY
TEL: (040) 52 60090

FRANCE
Guillard Musiques
Roland
ZAC de Rosarge Les Echets
01700
MIRIBEL FRANCE
TEL: (72) 26 5060

Guillard Musiques
Roland (Paris Office)
1923 rue Léon Geoffroy
94400 VITRY–SUR–SEINE
FRANCE
TEL: (1) 4680 86 62

**BELGIUM/HOLLAND/
LUXEMBOURG**
Roland Benelux N. V.
Houtstraat 1 B-2260 Oevel-
Westerlo BELGIUM
TEL: (014) 575811

DENMARK
Roland Scandinavia A/S
Langebrogade 6 Box 1937
DK-1023 Copenhagen K.
DENMARK
TEL: 31 95 31 11

SWEDEN
Roland Scandinavia A/S
Danvik Center 28 A, 2 tr.
S-131 30 Nacka SWEDEN
TEL: (08) 702 0020

NORWAY
Roland Scandinavia Avd.
Kontor Norge
Lilleakerveien 2 Postboks 95
Lilleaker N-0216 Oslo 2
NORWAY
TEL: (02) 73 0074

FINLAND
Fazer Musik Inc.
Länsituulentie POB 169,
SF-02101 Espoo FINLAND
TEL: (00) 43 5011

SWITZERLAND
Roland (Switzerland) AG
Musitronic AG
Gerberstrasse 5, CH-4410
Liestal, SWITZERLAND
TEL: (061) 921 1615

AUSTRIA
E. Dematte &Co.
Neu-Rum Siemens-Strasse 4
A-6040 Innsbruck P.O.Box
83
AUSTRIA
TEL: (0512) 26 44 260

GREECE
V. Dimitriadis & Co. Ltd.
20, Alexandras St. &
Bouboulinas 54 St. 106 82
Athens, GREECE
TEL: (01) 8232415

PORTUGAL
Caius - Tecnologias
Audio e Musica , Lda.
Rue de Catarina 131
4000 Porto, PORTUGAL
TEL: (02) 38 4456

HUNGARY
Intermusica Ltd.
Warehouse Area 'DEPO'
Pf.83 H-2046 Torokbalint,
Budapest HUNGARY
TEL: (1) 1868905

ISRAEL
D.J.A. International Ltd.
Twin Towers, 33 Jabntinsy St.
Room 211, Ramat Gan 52511
ISRAEL
TEL: (03) 751 8585

CYPRUS
Radex Sound Equipment
Ltd.
17 Diagorou St., P.O.Box
2046, Nicosia CYPRUS
TEL: (2) 453 426
      (2) 466 423

U.A.E
Zak Electronics &
Musical Instruments Co.
P.O. Box 8050
DUBAI, U.A.E
TEL: 360715

KUWAIT
Easa Husain Al-Yousifi
P.O. Box 126 Safat 13002
KUWAIT
TEL: 5719499

LEBANON
A. Chahine & Fils
P.O. Box 16-5857
Beirut, LEBANON
TEL: (01) 335799

TURKEY
Barkat Sanayi ve Ticaret
Siraselviler Cad. 86/6 Taksim
Istanbul, TURKEY
TEL: (0212) 2499324

EGYPT
Al Fanny Trading Office
9, Ebn Hagar Al Askalany
Street, Ard El Golf,
Heliopolis, Cairo, 11341
EGYPT
TEL: (02) 4171828
      (02) 4185531

QATAR
Badie Studio & Stores
P.O.Box 62,
DOHA Qatar
TEL: 423554

SYRIA
Technical Light & Sound
Center
Khaled Ebn Al Walid St.
P.O.Box 13520
Damascus - Syria
TEL: (11) 2235 384

BAHRAIN
Moon Stores
Bad Al Bahrain Road,
P.O.Box 20077
State of Bahrain
TEL: 211 005

BRAZIL
Roland Brasil Ltda.
R. Coronel Octaviano da
Silveira 203 05522-010
Sao Paulo BRAZIL
TEL: (11) 843 9377

MEXICO
Casa Veerkamp, s.a. de
c.v.
Mesones No. 21 Col. Centro
MEXICO D.F. 06080
TEL: (905) 709 3716

La Casa Wagner de
Guadalajara s.a. de c.v.
Av. Corona No. 202 S.J.
C.P.44100 Guadalajara,
Jalisco MEXICO
TEL: (36) 13 1414

VENEZUELA
Musicland Digital C.A.
Av. Francisco De Miranda,
Centro Parque de Cristal,
Nivel C2 Local 20 Caracas
VENEZUELA
TEL: (2) 285 9218

PANAMA
Productos Superiores,
S.A.
Apartado 655 - Panama 1
REP. DE PANAMA
TEL: 26 3322

ARGENTINA
Instrumentos Musicales
S.A.
Florida 638
(1005) Buenos Aires
ARGENTINA
TEL: (1) 394 4029

HONG KONG
Tom Lee Music Co., Ltd.
Service Division
22-32 Pun Shan Street, Tsuen
Wan, New Territories,
HONG KONG
TEL: 852 2 737 7688

KOREA
Cosmos Corporation
Service Station
261 2nd Floor Nak-Won
Arcade Jong-Ro ku, Seoul,
KOREA
TEL: (02) 742 8844

SINGAPORE
Swee Lee Company
BLOCK 231,
Bain Street #03-23
Bras Basah Complex,
Singapore 0718
TEL: 3367886

PHILIPPINES
G.A. Yupangco & Co.
Inc.
339 Gil J. Puyat Avenue
Makati, Metro Manila 1200,
PHILIPPINES
TEL: (02) 817 0013

THAILAND
Theera Music Co. , Ltd.
330 Verng Nakorn Kasem,
Soi 2, Bangkok 10100,
THAILAND
TEL: (02) 2248821

MALAYSIA
Bentley Music SDN BHD
No.142, Jalan Bukit Bintang
55100 Kuala Lumpur,
MALAYSIA
TEL: (03) 2443333

INDONESIA
PT CITRARAMA
BELANTIKA
Kompleks Perkantoran Duta
Merlin Blok E No.6—7
Jl. Gajah Mada No.3—5,
Jakarta 10130,
INDONESIA
TEL: (021) 3850073

TAIWAN
Siruba Enterprise
(Taiwan) Co., LTD.
Room. 5, 9fl. No. 112 Chung
Shan N.Road Sec.2 Taipei,
TAIWAN, R.O.C.
TEL: (02) 571 5860

SOUTH AFRICA
That Other Music Shop
(PTY) Ltd.
11 Melle Street (Cnr Melle
and Juta Street)
Braamfontein 2001
Republic of South Africa
TEL: (011) 403 4105

Paul Bothner (PTY) Ltd.
17 Werdmuller Centre
Claremont 7700
Republic of South Africa
TEL: (021) 64 4030

MS-1   00785045   As of Dec. 15. 1994

Roland®

DIGITAL SAMPLER
MS-1

OWNER'S MANUAL

Contents

Introduction

Thank you for purchasing the Roland MS-1 Digital Sampler.

Before using the MS-1, please read this manual carefully and understand the concepts and procedures that it explains. If you are using the MS-1 for the first time, read this manual from the beginning. Once you have become familiar with the MS-1, you can use the display index on p.32 to find the page you need to consult.

The MS-1 is a unique sampler that brings new convenience to sampling. Operation is simpler and quicker than previous types of sampler, allowing you to sample sounds more easily than ever before. Features like the following make the MS-1 suitable for use in music production, by DJ's, for playback of sound effects, and many other applications.

Main features of the MS-1

High audio quality unprecedented for a budget-priced sampler. The MS-1 allows stereo sampling at 44.1 kHz (maximum), a first in its class.

Allows for sample recording time of up to nearly one minute. When a memory card is used, extremely long sample times are possible. (A maximum of 48 minutes with the 20 Mbyte type card.)

Eight pads are provided so that you can play sounds using just the MS-1 by itself. In addition to being extremely compact and light as well as providing a mic connection, the unit will run on batteries for excellent portability.

The MS-1's flash memory means that you can play sounds as soon as the power is turned on. Sample data is not lost when you change the batteries.

An audio CD with over 500 sampling sources is included, so you can start sampling as soon as you purchase the MS-1.

Precautions

Warning: Use of any AC adaptor other than one designated specifically as being for this unit can cause malfunction and/or damage.

Power Supply

● Before connecting this unit to other devices, turn off the power to all units; this will help prevent damage or malfunction.

● Do not use this unit on the same power circuit with any device that will generate line noise; an electric motor or variable lighting system for example.

● The AC power requirement for this unit is indicated on the AC adaptor. Ensure that the voltage in your installation meets this requirement.

● Avoid damaging the power cord: do not step on it, place heavy objects on it, etc.

● When disconnecting the AC adaptor from the power outlet, grasp the AC adaptor body; never pull on the cord.

● If the unit is to remain unused for an extended period of time, unplug the AC adaptor.

● Before installing/replacing batteries, please see "Changing Batteries" on the next page, as well as the illustration on p. 5.

Placement

● Do not subject the unit to temperature extremes (eg., direct sunlight in an enclosed vehicle). Avoid using or storing the unit in dusty or humid areas, or areas that are subject to high levels of vibration.

● Using the unit near power amplifiers (or other equipment containing large power transformers) may induce hum.

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

● Do not expose the unit to temperature extremes or install it near devices that radiate heat. Direct sunlight in an enclosed vehicle can deform or discolor the unit.

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 mild, non-abrasive detergent. Afterwards, be sure to wipe the unit thoroughly with a soft, dry cloth.

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

Additional Precautions

● Protect the unit from strong impact.

● Do not allow objects or liquids of any kind to penetrate the unit. In the event of such an occurrence, discontinue use immediately. Contact qualified service personnel as soon as possible.

● Never strike or apply strong pressure to the display.

● Should a malfunction occur, or if you suspect there is a problem, discontinue use immediately. Contact qualified service personnel as soon as possible.

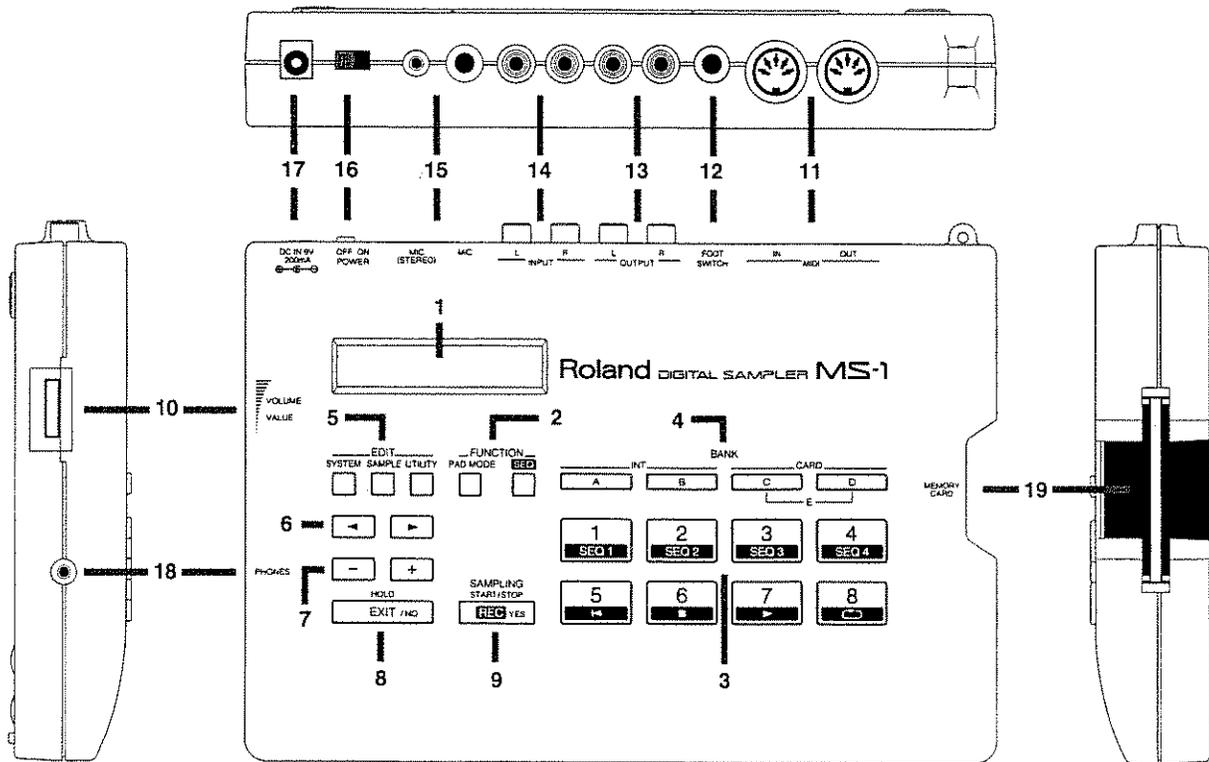● To avoid the risk of electric shock, do not open the unit.

Memory Backup

● Please be aware that the contents of memory may at times be lost; when the unit is sent for repairs or when by some chance a malfunction has occurred. Important data should be stored on a memory card, or other MIDI devices (if 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.

Changing Batteries

● Avoid using new batteries together with old ones. In addition, avoid mixing different types of batteries (eg., regular carbon and alkaline batteries).

● When replacing batteries, be sure to insert them correctly (to ensure correct polarity).

● Remove the batteries whenever the unit is to remain unused for an extended period of time.

Precautions when using the MS-1

● When you use MIDI to control the MS-1, each sample (pad) will be triggered by a specific note of the keyboard. (This is the way MIDI drum sound sources perform.) It is not possible to use a keyboard to play a scale using MS-1 sounds, as it would be on Roland S-series samplers or most MIDI sound sources.

● The MS-1 is able to produce up to 4 sounds simultaneously (stereo samples use 2 sounds). However if the Sample Grade (p.23) is set to "HIGH", it will not be possible to layer sounds by pressing multiple pads even if the total is less than 4 sounds. Also, please be aware that sounds contained in banks (C—E) cannot be layered together at the same time.

● There is a single master pitch setting (+10 — -20%) for the entire system, but you can change the master pitch while you sample. This can be used in a way similar to changing the speed of a multi-track tape recorder. (p.23)

● When exiting Edit mode (when "Keep Power ON!" appears in the display), or executing sampling, you must never turn the power off. In these situations, data is automatically being written. If the power is turned off during these times, data in internal or card memory may be lost.

● There may be times when an operational error or an accident may cause your sound data to be lost without the possibility of recovery. As a safeguard, be sure to save a backup copy of important sound data in a memory card, etc. (p.19)

● When you sample new data into bank A, the demo sample data that was in bank A when you purchased the unit will be lost. The same applies to the demo play data in SEQ1. Be aware that if the demo sample and demo play data is lost, automatic demo playback will no longer be possible. If you store this factory data in a memory card etc. before you overwrite these memories, you will always have the option to reload the data and listen to the automatic demo playback once again. (p.19)

● The included "Roland Sampling Showcase" CD is not sold separately. Be careful not to lose it or allow it to become scratched.

● When using the included CD, please read the notices printed on the CD case and in the liner notes.

DC IN 9V OFF ON MIC MIC   L   R   L   R   FOOT   IN   OUT
200mA POWER (STEREO)   INPUT   OUTPUT   SWITCH   MIDI

Roland DIGITAL SAMPLER MS-1

Front and rear panels

1. Display

This indicates the bank (BANK A—E) selected in Pad mode. When the SEQ function (the simple sequencer) is in use, it displays the sequence number (SEQ 1—4). During editing, it displays the current parameter and its setting. Error codes are also displayed here. (p.27)

2. FUNCTION buttons

When PAD MODE is pressed, you will enter Pad mode and can play the pads normally. When SEQ is pressed, the SEQ function (the simple sequencer) will be activated (p.18).

3. Pads (sample pads)

In Pad mode, pressing these pads will play the sample assigned to each pad. When the SEQ function is selected, the pads act to start/stop sequence playback and to select sequence patterns. (p.18)

4. Bank buttons

These buttons select sample banks. When the MS-1 is shipped you will be able to select banks A and B. When a memory card is used, you will also be able to select banks C, D, and E. To select bank E, simultaneously press both the C and D buttons. (p.19)

5. EDIT buttons

These buttons take you into edit mode, where you can make various settings. Edit mode is divided into System, Sample, and Utility. (p.32)

6. ◄ ► buttons

During editing, pressing these buttons once will advance to the next parameter or back up to the previous parameter. These buttons also move the cursor in a single display page that contains two or more settable items or in a numerical value with multiple digits. By pressing and holding these buttons, you can "rewind/fast-forward" through the display pages.

7. + - buttons

These buttons are used to increase or decrease a value in an editing display, or modify a setting. Pressing and holding a button will cause a continuous increase (or decrease). If while holding one of these buttons you then additionally press and hold the other button, the value will change more rapidly.

4

8. EXIT/NO button

Press this button to exit from an editing display. This button is also used to reply "no" in response to a message in the display, cancelling an operation.

In Pad mode, this button acts as the hold button. While the button is pressed, looped samples set to Gate (p.15) will continue to sound even after you remove your hand from the pad. (p.6)

9. (REC) YES button

In Pad mode this button is used to start/stop sampling. (p.8) While the SEQ function is being used, this button starts/stops recording (i.e., recording the sequence of pad operations). (p.18)

This button is also used to reply "yes" to a message in the display.

10. Volume/value knob

Use this volume knob to set the volume. In editing displays, this knob changes its function, acting like the +/- buttons so that you can use it to continuously change values or settings.

* This knob is a freely rotating type, allowing you to efficiently enter continuously changing values.

11. MIDI connectors

MIDI cables can be connected to these connectors. An IN and an OUT connector are provided, allowing you to use an external sequencer or keyboard to play the MS-1, or transmit data to an external device. (p.21)

12. Footswitch jack

When an external footswitch (DP-2, sold separately) is connected to this jack, you can use the footswitch to start/stop sampling or to control the SEQ function. (p.25)

13. Output jacks

These are stereo audio output jacks (RCA phone-type) for connection to the mixer/amp system through which you wish to listen to the sampled sounds. (p.6)

14. Input jacks

These are stereo audio input jacks (RCA phone-type) for connection to a CD player or other sound source from which you wish to sample sounds. (p.6)

15. Mic jacks

A mic can be connected to one of these jacks for sampling. Both a standard phone jack and a stereo mini jack are provided. The stereo mini jack has a built-in power supply (+1.5 V), so that commercially available stereo tie-clip type mics (plug-in power types) can be connected directly. (p.10)

16. Power switch

This switch turns the power of the entire unit on or off.

17. AC adaptor jack

The unit can be used with a separately sold AC adaptor connected here. (p.6, 29)

* Never use an AC adaptor other than the one specified. Doing so will cause malfunctions.

18. Headphone jack

A set of stereo mini-plug headphones can be connected to this jack to listen to the same sound as the output jacks.

19. Memory card slot

A memory card can be inserted in this slot to backup data from the MS-1's internal memory. A memory card will also allow you to record long samples that would not be possible using just the MS-1's memory alone. (p.19)

* To prevent damage, do not insert any memory cards other than those specified for use with this unit. (See the separate instruction sheet.)

* Always put the supplied card slot cap in place whenever the memory card slot is not being used. This way, you can keep the interior clean and free from foreign objects.

* Never pull out (or insert) a memory card while power is ON. If you do so, data may be lost.

Installing Batteries

Remove the cover on the battery compartment on the bottom of the unit. Carefully observe the polarity while you insert the batteries (refer to the diagram on the unit). Once in place, replace the cover.
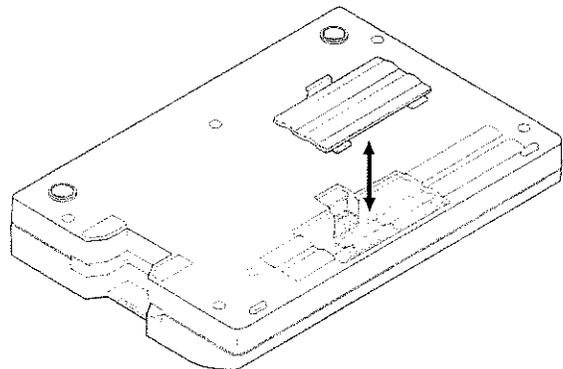
Chapter 1. Try out the MS-1

Connections

First, connect up your equipment. A typical setup is shown below.

How to play sounds

When you finish making connections, make sure that the volume controls of your amp and monitor speaker etc. are turned down, and follow the procedure given below to press the pads and play the sounds.

Procedure

1. Turn the power switch to "ON".

2. While you gradually raise the volume of your amp and monitor speaker, press pad 1.

3. When you hear sound, press pads 2—8 and notice the different sound that each pad produces.
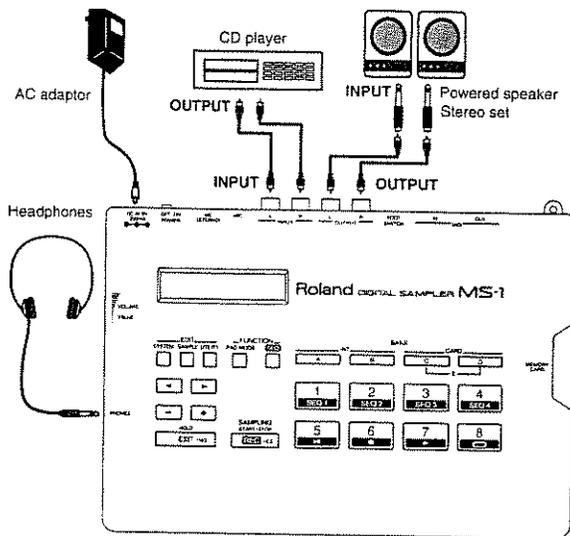
* In the above situation, the volume knob (the freely rotating dial) located at the left side of the MS-1 will also adjust the volume. When you do so, the volume value (0—100) will be shown at the right edge of the display.

* Striking the pads with unnecessary force will cause malfunctions. (Striking the pads of the MS-1 strongly will not make the sound any louder.)

* If the display is difficult to read, adjust the contrast. (p.26)

■ Banks

A group of eight sounds (samples) assigned to the pads are referred to as a "bank." If there is no memory card, two banks will be available; A and B.

When the power is turned on, the eight samples of bank A are selected. You can switch to bank B by pressing the BANK-B button. (However when the MS-1 is shipped, the bank B samples are empty, so pressing the pads will not produce sound.)

■ Sounds that repeat (loops)

Samples can be played in two ways.

(1) Loop ON samples: The sound will repeat as long as you continue pressing the pad, and will stop when you release the pad.

(2) Loop OFF samples: Even if you continue pressing the pad, the sound will be played only once.

By setting the Loop parameter, you can change the way in which a sample is played. (There are two types of Loop ON; [LoopS-E] and [LoopL-E]. For details refer to p.14.)

■ The Hold function

Normally, the sound will stop the instant you release the pad. However you can use the "Hold function" to make the sound continue playing even after you release the pad. The Hold function is assigned to the EXIT/NO button, and is used as follows. (This example assumes that the unit still has its factory settings.)

1. Press pad 1 to play a loop sample.

2. Before you release the pad, press the EXIT/NO (Hold) button.

3. Hold will be turned on, and the sample will continue playing even after you release the pad.

4. When you press the EXIT/NO (Hold) button once again, the sound will stop.

* It is not possible to turn on Hold for two or more pads in a single operation.

* While Hold is on, the display will indicate "HOLD".

* The instant that Hold is turned off, all sounds (including the sounds not affected by Hold) will stop.

* By changing the "Gate/Trig" setting (p.15) you can get the same effect without having to press the Hold button. "Gate/Trig" can be set independently for each pad.

■ Maximum simultaneous notes and note priority

The MS-1 is able to play up to 4 notes at once. A stereo sample uses 2 notes. However, in the case of a sample that has a Grade setting (p.23) of "HIGH", the MS-1 will be able to play only 1 sound or 1 stereo pair.

Depending on how you press the pads, there will be times that the MS-1 is being requested to play more notes than it is able to produce. In such cases, "last-note priority" is used, and an older note will be turned off to make way for the newly requested note. Samples with a setting of Loop ON will take priority over samples with a setting of Loop OFF.

* The samples on a card (Bank C, D, or E) cannot be sounded together at the same time.

Listen to the demo performance

When the MS-1 is shipped from the factory, it contains a demo performance that uses the SEQ function (simple sequencer function, p.18). Use the following procedure to hear the demo performance.

Procedure for playing the demo performance

1. Press the SEQ button in the FUNCTION section to select the SEQ function. The display will indicate "SEQ:1" (sequence 1). When the MS-1 is shipped, SEQUENCE 1 contains the demo performance.

2. Start: Press pad [____▶____] to start the demo performance.

3. Stop: Press pad [____■____] to stop the demo performance.

4. To exit the sequencer function and return to normal operation, press the PAD MODE button in the FUNCTION section. (The display will show the bank name.)

* The demo performance uses the samples that are contained in bank A when the unit is shipped. If you sample other data into bank A, the demo samples in bank A will be lost. This also applies to the demo play data in SEQ 1. Be aware that if this is lost, the automatic demo playback will no longer be possible.

By itself, the MS-1 has no way to restore the original bank A demo samples if they are lost.

You can save the original factory data on a memory card etc. so that you can reload it whenever you wish to hear the demo performance (p.19). Although it takes a bit more time, you can also use a MIDI sequencer or personal computer to store MS-1 data on a floppy disk, etc. (p.23).

Chapter 2. Sample some sounds

This chapter explains how to sample (record) sounds using the MS-1. We will start by recording sounds from the audio CD included with the MS-1, and then record sounds from a mic.

* Except for samples which will be used solely for private, personal enjoyment, relevant laws in most countries prohibit the sampling and use of copyrighted materials (CDs, records, tapes, videos, radio/TV broadcasts, and the like) without obtaining permission beforehand from the copyright holder.

Sampling sound from a CD (line recording)

■ Connections

Use a commercially available stereo cable (RCA phone-type) to connect the line output jacks (AUX OUT, etc.) of your CD player or CD cassette radio to the INPUT (L, R) of the MS-1. Turn on the power of your CD player, and set it to standby, ready to playback the included sample CD. (p.6)

Since the 8 pads of bank B are empty when the MS-1 is shipped, we will record samples into bank B in this example.

Sampling procedure

1. Turn on the power, and press the BANK-B button to select bank B.

2. Press the red REC button. The display will indicate "Select PAD1—8", so press one of the pads to select it. In this example, select pad 1.

3. After indicating "Select PAD1", the display will show the gain setting (GAIN).

4. Start the CD playback, and the sound will be heard from the headphones or amp connected to the MS-1. Operate the CD player to find the sound you wish to sample.

5. When you find the desired sound, use the + button and - button to adjust the gain value so that the " ✳ " in the meter lights occasionally.

6. Just before the desired sound begins, press the REC (SAMPLING START/STOP) button. Sampling will begin, and the remaining amount of memory will be indicated graphically. Press the REC button once again to end sampling and return to the display of step 1.

When you press pad 1, the sound (sample) you just recorded will be played back as a loop (repeated).

* If a sample already exists for the pad you select in step 2, you will be asked "Delete Sample?". If it is ok to delete the existing sample, press the (REC) YES button and proceed to step 3. If you wish to keep the existing sample, either press EXIT/NO, or press a different pad to select it and then proceed to step 3.

* If you wish to exit the procedure, press the EXIT/NO button.

* The 'start/stop sampling' operations in step 6 can also be performed from an external footswitch. (p.25)

* If you wish to adjust the point at which the sound will begin playing ... set the Start Point. (p.14)

* If you want the sound to playback only once rather than as a loop ... after sampling, set Loop to "OFF" (p.14). Or, you can set the default setting to "LoopOFF". (p.10)

* If there is no more remaining memory, the display will show "Memory Full!", and sampling will stop automatically. Since bank A already contains demo sample data when the MS-1 is shipped, recording time will be shorter than otherwise.

* When the MS-1 is shipped, mono recording is selected. If you wish to record a stereo sample, change the input selection to stereo. (p.9)

* If the level is too high the sound will be distorted, and if the level is too low the sound quality will be less than it should be. In step 5, adjust the gain to be as high as possible without causing distortion. (Use the meter display as a general indication.) Levels will differ widely depending on the input device (tape deck, mic, etc.), so use the entire range of available gain (1—163) to find the most appropriate level.

* If you are recording sounds into two or more pads to be played together, there may be times when you wish to make the lengths of each sample match. In such cases, adjust the Master Pitch (p.23) as you playback the existing samples to match their length with the sound you wish to record. (This technique is similar to adjusting the speed control on a multi-track tape.)

■ Bank protect (prevent accidental erasure)

With the factory settings, selecting bank A and pressing the REC button in step 1 of the above procedure will result in a display of "Bank Protected!", and you will not be able to proceed to record a sample. This is because bank A is protected. If you turn off protect using the procedure given on page 26, you will be able to erase the contents of bank A and record new samples there.
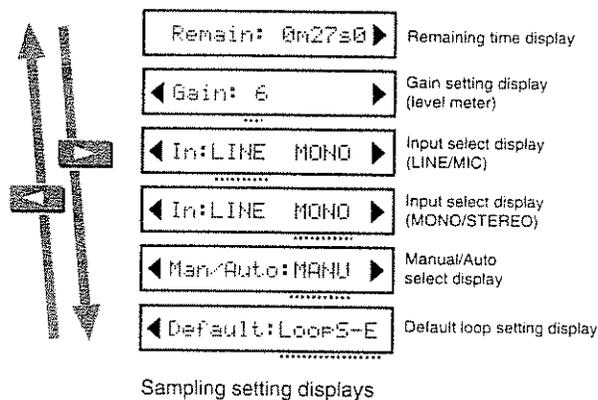
* The demo samples that are in bank A when you purchase the MS-1 will be lost when you sample other data into bank A. Be aware that if these demo samples are lost, you will no longer be able to hear the demo playback. (p.7)

Various settings related to sample recording

In the procedure above, you changed the gain setting. There are other such settings that you can make while the MS-1 is standing by for sampling.

■ Procedure for settings related to sample recording

1. With the bank name displayed, press the REC button, and when the "Select PAD1—8" display appears, select the desired pad. The gain setting (level meter) display will appear.

2. At this time if you press the ◀ or ▶ button, a display like the following will appear.

Remain: 0m27s0 ▶	Remaining time display
◀ Gain: 6 ▶	Gain setting display (level meter)
◀ In:LINE MONO ▶	Input select display (LINE/MIC)
◀ In:LINE MONO ▶	Input select display (MONO/STEREO)
◀ Man/Auto:MANU ▶	Manual/Auto select display
◀ Default:LoopS-E	Default loop setting display

Sampling setting displays

* For the settings in each display and their significance, refer to the explanations following.

3. Use the -/+ buttons to modify the value or setting.

4. When you have finished making the desired settings, press the REC button to begin sampling.

* You can also start sampling from any display in step 2.

5. To stop sampling, press the REC button once again. The bank name display will reappear.

* The settings you make for these items are remembered until the next time you record a sample. There is no need to re-set them each time.

■ Explanation of each settable item in the sampling display

The following items can be set while you are in the sampling display.

Remain (remaining time)

This displays the remaining amount of memory. The time is calculated automatically, based on the settings for Grade and Master Pitch, and the Stereo/Mono selection. For example if there is 1 minute 15.7 seconds left of recording time, the display will indicate "Remain: 1m15s7". This display is for information only, and it is not possible to use the +/- buttons to change the setting.

* The remaining time indicator is provided as a convenient reference. It is not designed to be absolutely accurate in all situations. (p.19)

Gain (gain setting, level meter) 1—16

Here you can adjust the level for recording, using the meter as a guide.

In:LINE ___, MIC ___ (line/mic selection)

Selection for whether the stereo phono jacks (LINE) or the MIC jack (on the rear panel) is to be used for input.

In: ___ MONO, ___ STEREO (mono/stereo selection)

Here you can specify whether the input signal will be sampled in stereo or in mono.

* Stereo recording time will be half the length of the mono recording time. Samples recorded in stereo cannot be converted to mono later.

Man/Auto:MANU. (manual/auto selection) MANU, AT-L1—8

This determines whether sampling will be started automatically or manually. Normally you will leave this set to MANU (manual). If you have changed this from MANU to "AT-L1—8" (automatic level 1—8), selecting a pad and then pressing the REC button will not cause recording to begin immediately. Instead, the MS-1 will enter recording standby mode, and sample recording will begin at the moment that the audio input exceeds the specified level. The lower the setting (automatic level), the lower the input level at which recording will start. The higher the setting, the higher the input level must be before recording will start.

* In either case, press the REC button manually to end sampling.

Default:LoopS-E (initial loop setting display) LoopOFF, LoopS-E, LoopL-E

This determines what the loop setting of the newly-recorded sample will be.

* You are also free to change the loop setting after sampling. For the procedure and an explanation of the difference between "S-E" and "L-E", refer to page 14.

Sampling sound from a mic

The MS-1 provides two mic jacks; a standard phone jack, and a stereo mini jack. Commercially available dynamic microphones or condenser microphones can be directly connected here.

■ Sampling procedure when using a mic

First connect the mic. The procedure is essentially the same as when sampling from a CD, so refer to the procedure and notes on page 9 together with the procedure given below.

1. Press the BANK-A or B button to select the bank you wish to use for sampling.

2. Press the REC button to get the "Select PAD1—8" display, and select the desired pad.

3. When the gain setting meter (GAIN) display appears, press the ▶ button once.

4. The display will indicate "In:LINE STEREO". "LINE" will blink, indicating that line input (the stereo jacks) is currently selected.

5. Press the + button to set the input to MIC (microphone), and press the ◀ button to return to the meter display.

6. Use the + button and the - button to set the recording level (1—16). While continuing to input the sound, adjust the level so that the " ✳ " in the meter lights occasionally.

7. To start sampling, press the REC (SAMPLING START/STOP) button. The amount of remaining memory will be displayed graphically.

To stop sampling, press the REC button once again. The display of step 1 will reappear.

About plug-in power microphones

Some tie-clip sized mics do not contain a battery, but draw their power supply from the jack of the device they are plugged into. (These are referred to as plug-in power mics.) The MS-1 is compatible with such mics, and they can be connected directly.

Chapter 3. How banks are organized

How banks and samples are related

The basic unit of sound handled by the MS-1 is the "sample." The internal memory of the MS-1 can hold 16 samples and a memory card can hold 24 samples, for a total of 40 samples (maximum) that can be played immediately by pressing the pads.

The MS-1 has eight "pads," and to each pad is assigned a sample that will sound when that pad is pressed. A group of eight samples is referred to as a "bank." The MS-1 contains two banks (A and B), and a memory card can contain three more (C, D, and E) for a total of five banks that can be selected by pressing buttons.

Pads 1—8 (samples)
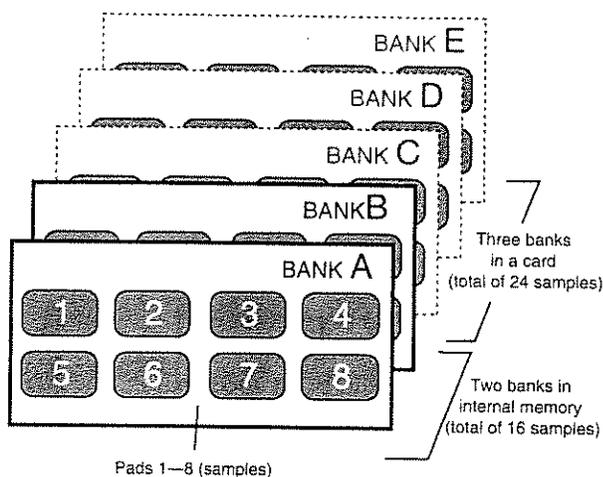
How the Banks are organized

■ How to select a bank

Immediately after the power is turned on, the display will indicate "Bank:A" (bank A). If you now press the BANK B button, the display will change to bank B, and you can play and sample sounds in bank B. Press the BANK A button to return to bank A.

* Banks C, D, and E exist only on a card, so a separately sold memory card is required in order to use these banks (p.19). Pressing the BANK C or D buttons will select banks C or D, and simultaneously pressing both the BANK C and D buttons will select bank E.

■ About sampling time length

Up to eight samples can be created in each bank, A—E. However the total time length available for sample recording in the internal memory and in the card is fixed, and cannot exceed the values given in the following chart. If this is exceeded, further sampling is not possible even if there are still pads to which no sample has been assigned. In sampling standby mode, the "Remain" display allows you to check the sampling time that remains. (p.9)

Sampling time graph (Unit:second)

GRADE	Internal memory	2.5M Card	5M Card	10M Card
HIGH	19.6	127.3	258.0	519.6
STANDARD	27.0	175.4	355.7	716.1
LONG 1	39.2	254.6	516.0	1039.2
LONG 2	54.0	350.9	711.3	1432.2

GRADE → P.23

* The value in the graph is for when Master Pitch adjustment = 0%.

* For stereo sampling, the available sampling time will be half the length shown above.

* Since samples for the demo performance are already in bank A when the MS-1 is shipped, the available sampling time will be less than shown above. If necessary, you can execute All Clear (p.25). If you execute All Clear, you will no longer be able to playback the demo sequence.

* A 20M card will provide approximately twice the sampling time of a 10M card. (The BUF number [p. 19] can be a maximum of 20.)
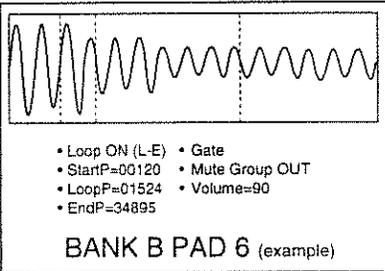
Waves and Samples

Samples consist of a Wave (the sound waveform itself) together with various settings and an assignment of the pad that will play that sound. (See the following diagram.)
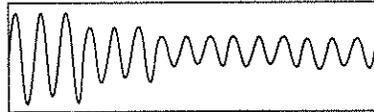
Wave
Just an audio waveform
(mono or stereo) stored
in internal or card memory

Sample
Various settings added
to the Wave, and
assigned to a Pad
(the data takes this form
as soon as it is sampled)

- Loop ON (L-E) • Gate
- StartP=00120   • Mute Group OUT
- LoopP=01524   • Volume=90
- EndP=34895

BANK B PAD 6 (example)

"Waves" and "Samples"

■ Sample settings can be freely changed

The settings added to a wave to make it a sample (settings listed in the diagram, such as volume or loop on/off) can be freely changed or reset to their original value after sampling.

* To modify these settings, press the EDIT Sample button, use the ◄ and ► buttons to select the item you wish to change, and use the +/- buttons to modify the setting. To return to the normal display (bank display) press the EXIT button. When you press the EXIT button the modified values will be written into internal memory, and will be preserved even if the power is turned off.*

■ The Wave itself can also be modified

Separately from the changes that can be made to sample settings (as discussed in the previous paragraph), it is also possible to perform operations such as Delete or Divide on the wave itself. However you should be aware that once one of these operations have been executed, it is not possible to restore the wave to its original state.
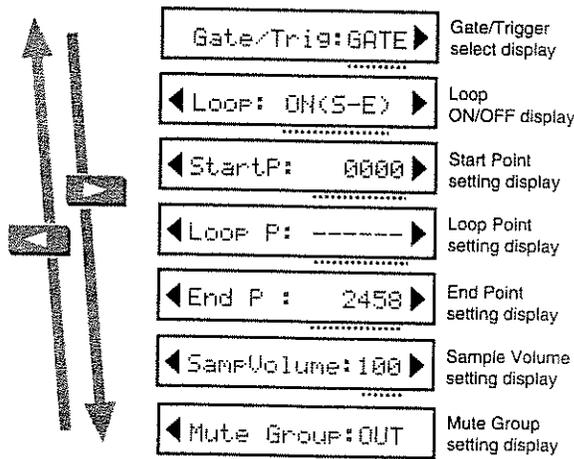
* These operations are included in the functions accessed by pressing the EDIT UTILITY button. For details refer to p.16—17.*

Chapter 4. Various ways to change the sound (Sample editing)

Common procedure for sample parameter editing

Items that you can set independently for each sample are called "sample parameters." These can be modified (edited) freely after sampling. By editing the sample parameters, you can make various changes in the way that the sample will sound when you press the pad.

1. Press the desired bank button (A, B...), and select the pad to which is assigned the sample you want to edit.

2. Press the pad containing the sample you wish to edit, and check the sound.

3. Press the EDIT SAMPLE button. A display such as "Selected PAD1" will briefly appear to indicate the pad you selected in step 2, and then the display will change to the sample parameter display (diagram below). Press the ◄ or ► button to change display pages and select the parameter you wish to change.

Display	Description
Gate/Trig:GATE ►	Gate/Trigger select display
◄ Loop: ON(S-E) ►	Loop ON/OFF display
◄ StartP: 0000 ►	Start Point setting display
◄ Loop P: ------ ►	Loop Point setting display
◄ End P : 2450 ►	End Point setting display
◄ SampVolume:100 ►	Sample Volume setting display
◄ Mute Group:OUT	Mute Group setting display

Edit Sample displays

For details on the function of the various settings for each item, please refer to the following sections of this chapter.

4. After selecting the desired sample parameter display, use the +/- buttons to modify the setting.

5. If you wish to continue editing another sample, press the bank button and then the pad of the desired sample. A display such as "Selected B-5" will appear for about 1 second, and then the parameter setting display will reappear. Now you can use the ◄ and ► buttons and the +/- buttons to edit the parameters of the selected sample.

6. When you press the EXIT button, you will return to the bank name display. At this time, the new settings will be written into internal memory or card so that they will be preserved even if the power is turned off.

During the brief time that the settings are being written into memory (i.e., while the display indicates "Keep Power ON!"), be very careful not to turn the power off. If the power is turned off during this time, data saved in internal memory or the card could be destroyed. If you do not wish to save the modified settings, turn the power off at step 6 without pressing the EXIT/NO button.

■ "Fast-forwarding" setting values and parameter displays

Fast-forwarding setting values

While editing, it is possible to use the +/- buttons to fast-forward through the values. (The same is possible not just in sample parameter edit displays, but also in System and Utility displays as well.)

1. Pressing the + button will increase the value by 1.

2. Holding down the + button will cause the value to change continuously.

3. While continuing to hold down the + button, press the - button to make the value change more rapidly.

If you are decreasing the value, reverse the operations of the + and - buttons.

In the System, Sample, and Utility editing modes, values can be modified not only by using the +/- buttons, but also by using the Volume/Value knob.

Fast-forwarding parameter displays

While editing, you can use the ◄ and ► buttons to page through the parameter displays. Each time you press the ◄ or ► button, the previous or next display will appear. If you continue holding the button, the displays will change in succession, allowing you to "fast-forward" through the displays. (You can do the same thing not only in the Sample parameter select displays, but also in the System and Utility parameter displays as well.)

If the value being set is a number with two or more decimal places, the ◄ and ► buttons will also move through the decimal places within the display. In the blinking part of the display, the decimal place indicated by an underline can be modified.

Store volume settings to create a balance between sounds

The MS-1 is able to play up to 4 samples (maximum) simultaneously. The volume of each sample can be adjusted independently, and the setting can be stored. This allows you to adjust the playback volume balance.

Volume can be adjusted over a range of 0—100. The initial setting is 100. In general, you should use as high as volume setting as possible, and reduce the volume for sounds that are too loud. This will insure the best sound quality.

Procedure

1. From normal operation (i.e., when the bank name is displayed), press the pads to find the sample whose volume you wish to reduce.

2. Press the EDIT SAMPLE button, and press the pad of the sample you wish to turn down.

3. Use the ◄ ► buttons to get the "SampVolume: 100" display, and while pressing the pad to check the sound, use the +/- buttons to set an appropriate volume.

4. If you press another pad, you will switch to editing that pad. Pressing that pad once again will play the sample assigned to that pad, so you can check the volume balance between pads.

5. When you press the EXIT button you will return to the bank name display. At the same time, your new settings will be written into memory so that they will be preserved even when the power is turned off.

In the moments immediately after you press EXIT (i.e., while "Keep Power ON!" is displayed), be very careful not to turn off the power. Doing so could destroy the data in internal or card memory.

Turning Loop on/off, and setting the Start, Loop, and End points

■ Start Point and End Point

The Samples used in the MS-1 contain settings (parameters) that determine the points in the Wave at which the sound will start playing and stop playing. The point in the Wave at which playback will start is the "Start Point" and the point at which playback will end is the "End Point."

By making these settings, you can skip (for example) a blank space at the beginning of a sound so that the desired sound starts immediately, or avoid playing all the way through an unwanted portion at the end of a Wave. You can Use the procedure given below to set these points. These points are expressed on a scale in which 0 is the beginning of the wave, and the end of the wave is a integer of up to 7 digits.

■ Loop ON(S-E) / OFF / ON(L-E) and Loop Point

As was mentioned in chapter 1 (p.6), each sample can be set to Loop ON or Loop OFF, as appropriate for you situation.

If Loop is set ON (S-E), the sound will (initially) be played repeatedly from the Start Point to the End Point.
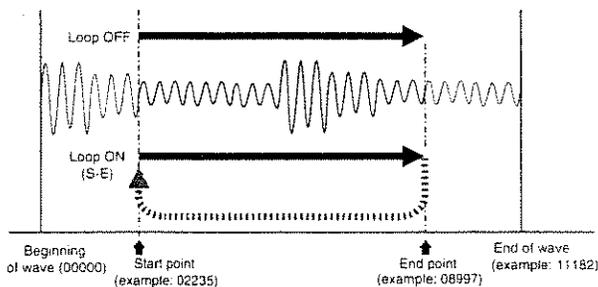
"Loop ON(S-E)" and "Loop OFF"

However depending on the situation and the sound, you may want the playback to begin repeating from a point different than the Start Point. You can do this by setting the Loop Point parameter. For the Loop Point parameter to have an effect, the Loop parameter must be set to "ON (L-E)." (The Loop Point will have no effect if Loop is set to "OFF" or "ON (S-E).")

If the Loop Point is set to a value greater than the Start Point, the second and subsequent playbacks of the loop will begin at a point later than the Start Point. Conversely, if the Loop Point is set to a value less than the Start Point, the second and subsequent playbacks of the loop will begin before the Start Point.
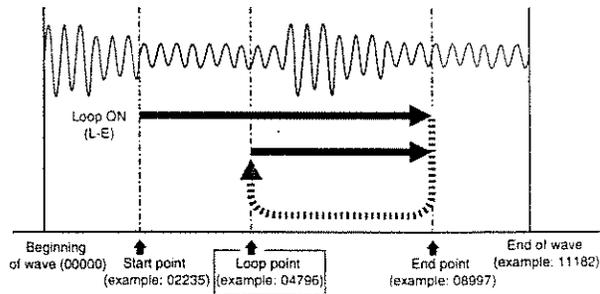
How "Loop ON (L-E)" will sound
(with Loop Point)

Procedure for turning Loop on/off and setting the points

1. From normal operation (i.e., when the bank name is displayed), press the EDIT SAMPLE button, and then press the pad whose sample you wish to edit.

2. Use the ◄ ► buttons to select the "Loop:ON (S-E)" display, and use the +/- buttons to select either Loop ON (S-E), OFF, or ON (L-E).

It will not be possible to set the Loop Point with a setting other than ON (L-E).

3. Press the ► button once to get the "StartP:" display (the Start Point setting). Initially, a value of 0 will be displayed.

4. Press the desired pad to check the sound, and use the +/- buttons to set the point at which the Wave will begin playing back.

5. Press the ◄ ► button to get the "End P:" display (the End Point setting). In the same way as you did in step 4, check the sound while you use the +/- buttons to set the point at which the Wave will stop playing back.

6. If you selected "ON (L-E)" in step 2, press the ◄ button to return to the "LoopP:" display (Loop Point setting), and set it in the same way as you set Start and End.

7. Press the EXIT button to return to the bank name display. At the same time, your new settings will be written into memory so that they will be preserved even when the power is turned off.

In the moments immediately after you press EXIT (i.e., while "Keep Power ON!" is displayed), be very careful not to turn off the power. Doing so could destroy the data in internal or card memory.

The numerical value of each point will be a number of up to 7 digits. Use the ◄ ► buttons to move the cursor (underline), and increase/decrease each digit. As with other parameters, you can also use the VALUE knob to edit the value.

Setting the pad response (Gate and Trigger)

As mentioned in chapter 1, the basic way in which the MS-1's pads operate is; "press to start the sound" and "release to stop the sound." If you want the sound to continue after you release the pad, you can use the Hold function. (p.6)

However you may sometimes wish to apply Hold to a specific pad. In such cases, change the "Gate/Trig" (gate/trigger switch) sample parameter from the normal "GATE" setting to "TRIG" (trigger). Samples for which Trigger is selected will playback as follows; "start sounding when pad is pressed, continue sounding even when pad is released", and "stop sounding when pad is pressed once again."

In addition to "GATE" and "TRIG", you can also use the "DRUM" setting. When "DRUM" is selected, the sample will play all the way to its End Point when the MS-1 receives a MIDI Note On message. (The timing of MIDI Note Off messages will have no effect on how the sound ends.) Even if looping is turned on, the sound will be played only once. The "DRUM" setting is convenient when you have connected a MIDI drum pad to the MS-1.

Whether its pads are pressed or MIDI Note messages are received, this unit's behavior with respect to producing sound is identical.

Be aware that when "DRUM" is selected it is not possible to interrupt the sound during playback, so be carefully about selecting "DRUM" for extremely long samples.

Procedure for setting Gate/Trigger

1. From normal operation (i.e., when the bank name is displayed), press the EDIT SAMPLE button, and then press the pad whose sample you wish to edit.

2. Use the ◄ ► buttons to select the "Gate/Trig:" display, and use the +/- buttons to select either GATE, TRIG, or DRUM.

3. If you press another pad, you will switch to editing that pad. You can use the +/- buttons to make settings for other pads in the same way.

4. When you press the EXIT button you will return to the bank name display. At the same time, your new settings will be written into memory so that they will be preserved even when the power is turned off.

In the moments immediately after you press EXIT (i.e., while "Keep Power ON!" is displayed), be very careful not to turn off the power. Doing so could destroy the data in internal or card memory.

Samples that you don't want to sound simultaneously (Mute Group)

Sometimes there will be two or more samples within a bank that you do not want or need to be playing simultaneously. In such cases, you can set the Mute Group parameter to "IN" for these samples, to place these samples in the Mute Group. Simultaneous playback will be prohibited for these samples, so that when you play a sample in the Mute Group, any other sample in the Mute Group that may be already sounding will be turned off automatically.

Procedure for setting Mute Group

1. From normal operation (i.e., when the bank name is displayed), press the EDIT SAMPLE button, and then press the pad whose sample you wish to edit.

2. Use the ◄ ► buttons to select the "Mute Group" display, and use the +/- buttons to select either OUT or IN.

3. If you press another pad, you will switch to editing that pad. You can use the +/- buttons to set other pads to OUT or IN.

4. When you press the EXIT button you will return to the bank name display. At the same time, your new settings will be written into memory so that they will be preserved even when the power is turned off.

In the moments immediately after you press EXIT (i.e., while "Keep Power ON!" is displayed), be very careful not to turn off the power. Doing so could destroy the data in internal or card memory.

■ Ways to use the Mute Group

When the number of simultaneously notes that the MS-1 can produce is exceeded, previously-sounding notes will be turned off. You can use the Mute Group to avoid such turn-offs as far as possible. Select "Mute Group: IN" for the samples that do not need to be sounding simultaneously. This will reduce the number of notes being used, so that other samples that you wish to continue playing are not turned off.

Also, if you are playing two or more loop samples with a Trigger setting, switching from one loop sample to another will require you to press one pad to stop it at the same instant that you press another pad to start it. To avoid such complicated operations, you can simply place these samples in the Mute Group so that all you have to do is press the pad of the next desired sample. The previously-sounding sample will be turned off automatically.

Chapter 5. Various editing functions

Erasing a sample (Delete)

When using a single MS-1 to sample many sounds, the memory capacity will eventually reach its limit, and further sampling will become impossible. In such cases, you can erase previously recorded samples to make room for new samples.

To erase a sample/wave, use the Delete function explained below.

Delete procedure

1. Press the EDIT UTILITY button, and use the ◄ ► buttons to select "Delete? : A-1".

2. Press a BANK button (A—E), and then press a pad to select the sample you wish to delete. (You can also use the +/- buttons to select a sample.) The display will show (for example) "Delete? : A-3".

3. Press the (REC) YES button, and the specified bank or sample will be deleted. Please be aware that samples once deleted cannot be recovered.

* *Delete is not possible if Protect is turned on for the bank of the sample you wish to delete. If necessary, turn Protect off. (p.26)*

* *If you wish to cancel the operation without deleting, press EXIT/NO.*

* *In step 2, you can also select "AB" or "CDE" by pressing the - button . If you select AB you will be deleting all 16 samples for Banks AB, and with CDE selected, all 24 samples for Banks C though E will be erased.*

Cut away unwanted parts at the beginning or end of a wave (Truncate)

When you record a sample, there will usually be short sections of unwanted sound (or blank space) at the beginning or end of the recorded sample. By cutting away these sections you can use the memory most efficiently, and make room for additional sampling. To cut away unwanted sections of a sample, use the Truncate function explained below.

■ Sections removed by the Truncate function

The Truncate function cuts away the unplayed sections of the sample. This affects the following two sections.
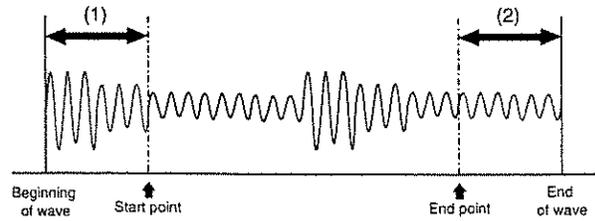
Sections cut away by Truncate

(1) From the beginning of the wave to the Start Point.
(2) From the End point to the end of the wave.

However if Loop on/off (p.14) is set to "ON (L-E)", the section cut away for (1) above will instead be "From the beginning of the wave to either the Start Point or the Loop Point, whichever is closer to the beginning of the wave."

Truncate procedure

1. Before you begin this procedure you need to make loop settings for the sample you intend to Truncate. (p.14)

2. Press the EDIT UTILITY button, and use the ◄ ► buttons to select the "Truncate?:A1" display.

3. Press a BANK button (A—E), and then press a pad to select the sample you wish to Truncate.

4. Press the (REC) YES button, and the unused sections of the selected sample will be cut away.

* *If you decide to cancel the procedure, press EXIT/NO. In step 2, you can also use the +/- buttons to select the bank and sample you wish to Truncate.*

* *Truncate is not possible if Protect is turned on for the bank of the sample you wish to truncate. If necessary, turn Protect off. (p.26)*

* *Be aware that once Truncate is executed, it is not possible to restore the wave to its original state. If you intend afterward to make fine adjustments to the Start Point etc., it is a good idea to slightly increase the spacing of the Start Point and End Point before you execute Truncate, so that you will have some room in which to make adjustments.*
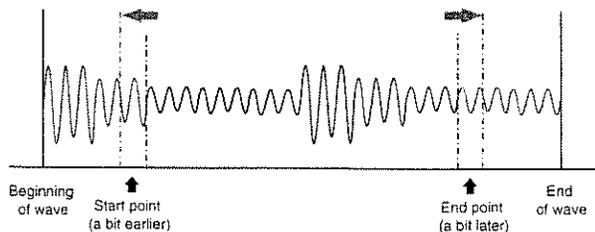
Truncate with extra space at beginning and end

Divide a sample (wave) and assign it to two pads

After recording a long sample, you may sometimes wish to split the sample into two parts, and assign the second part to a different pad. This can be done using the Divide function. This function is convenient when you wish to initially record a long sample, and then assign each piece to a different pad as you progressively divide it into smaller pieces. The division will be made at the End Point (p.14) of the original sample.
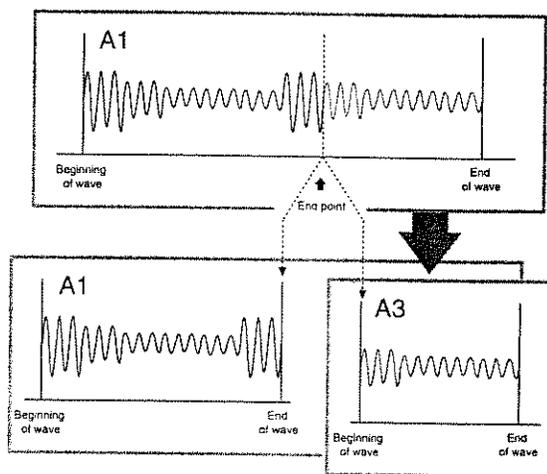
Example of Divide (from sample A1 to A3)

Divide procedure

1. Before you begin this procedure, set the End Point of the original sample at the location where you want the division to be made. (p.14)

2. Press the EDIT UTILITY button, and use the ◄ ► buttons to select the "Divide?:A1→A2" display.
   The pad number of the original sample is shown at the left of the "→", and the pad number into which the newly divided sample will be placed is shown at the right.

3. Use the ◄ ► buttons to move the cursor (blinking), use the bank buttons to specify the bank, and press a pad to specify the pad number.

4. Press the (REC) YES button to execute the Divide operation. A new sample consisting of the wave after the End Point of the original sample will be created in the specified pad.

If a sample already exists in the pad specified at the right side of "→" in step 3, you will get a message of "Sample exists." and you cannot execute Divide.

* It is not possible to Divide a sample from INT (banks A, B) into CARD (banks C, D, E). Nor is the reverse possible.

Chapter 6. Using the sequencer function

About the SEQ function (Simple sequencer)

The MS-1 has a very simple built-in sequencer function for use only with the internal sound source. By using this function, you can record a sequence of pad operations (i.e., which pads were played in what order for how long), and play back the sequence at the press of a button. (The demo performance you heard when you purchased the MS-1 (p.7) was created using this SEQ function.)

The SEQ function of the MS-1 has the following capabilities.

• You can record four sequences (songs); SEQ1—4.

• A maximum total of approximately 900 pad operations can be recorded.

• The sequence can be started or stopped using an external footswitch.

• The Repeat Play function can be used to repeatedly play-back the same sequence.

• Since the sequencer is only for the internal sound source, it cannot control external MIDI sound sources.

• Unlike most MIDI sequencers, the tempo cannot be changed.

When you press the FUNCTION [SEQ] button, the sequence number display will appear, and the SEQ function will be activated. When the SEQ function is active, the eight pads will change their function from playing samples to controlling the built-in sequencer. (During recording is an exception.)

When you do not wish to use the SEQ function, press the PAD MODE button to switch the MS-1 back to normal operation (the display will indicate the current bank).

Recording and playback

Use the following procedure to record and playback using the SEQ function.

Recording procedure

1. Press the FUNCTION [SEQ] button to activate the SEQ function.

2. Press one of the upper row of pads (SEQ1—4) to select the sequence you wish to record.

3. Press the REC button to enter record standby mode.

However if sequence data already exists in the selected sequence, you will get a message such as "Overwrite SEQ1?", asking whether it is ok to delete the existing sequence. If it is ok to delete the existing sequence, press (REC) YES, and proceed to step 4. If you do not wish to delete, press EXIT/NO to exit recording, and select a different sequence.

* With the factory settings, SEQ1 contains a demo sequence. This demo

sequence is protected against accidental erasure, so before deleting it you will need to turn off the protect using the same procedure as before erasing a bank (p.26).

4. Recording will begin the instant that you press one of the pads. All further pads that you press (including the bank buttons) will be recorded.

5. Recording will end when you press the REC button once again.

* Be aware that if you edit the samples used in a recording, the playback will be affected.

* If you run out of memory while recording, a message of "Memory Full!" will appear, and recording will stop.

* If you wish to want only to "delete a sequence," use the above procedure to select a sequence, and at step 4 press the EXIT button to exit recording without pressing a pad.

Procedure for playing back a sequence

1. Press the FUNCTION [SEQ] button to activate the SEQ function.

2. Press one of the upper row of pads (SEQ1—4) to select the sequence you wish to playback.

3. When you press the Play pad [▶] , the selected sequence will begin playing.

4. The sequence will stop when it plays to the end or when you press the Stop pad [■] .

5. Press Reset pad [◄] to return to the top of the sequence.

Repeat playback

If in the above procedure, you press the Repeat pad [◁] instead of the Play pad in step 2, the sequence will continue repeating from the beginning when it reaches the end (the location where you stopped recording). To stop repeat playback, press the Stop pad.

■ Saving to a card

When you use the Save function (p.20) to backup internal memory to a card, the four sequences SEQ1—4 will also be saved on the card.

* When a backup file saved on a card is loaded back into the MS-1, sequences that were previously in internal memory will be lost. If the sequences in internal memory are protected, it will not be possible to load a backup file. (p.20, 26)

* The settings for Grade and Master Pitch (p. 23) in effect at the time of recording will be stored as part of whatever you record for SEQ1-SEQ4. When you later play the sequence, these settings will be put in effect.

Chapter 7. Using a memory card

How to format and use a memory card

The MS-1 has a card slot located on the right side which can accommodate memory cards (FlashDisk cards) of the manufacturers and models listed in the separate instruction sheet. By using one of these memory cards, the following two capabilities are gained.

(1) You will be able to save all data (samples, etc.) from internal memory into a card, and later load it back into the MS-1 when necessary.

(2) In addition to the internal banks A and B, you will be able to use the free area of the card for banks C, D, and E.

If a formatted card is left in the slot, you will be able to select, sample, and play banks C, D, and E by pressing the corresponding bank button, in the same way as internal banks A and B. (To select bank E, simultaneously press the BANK C and BANK D buttons.) This means that the number of samples assigned to the pads will be expanded from 16 samples to 40 samples. If a high-capacity memory card is used for banks C—E, you will be able to sample for several minutes even with high-grade stereo recording.

Be aware that it is not possible to simultaneously play samples that are in banks of C, D, and E. You may however simultaneously play samples (up to the maximum number of simultaneous sounds) that are in banks A and B, or samples that are in banks A and B together with samples that are in banks C, D, or E.

Be sure that the power is turned off before inserting or removing a card.

When the unit is shipped, a card-shaped cap is inserted in the card slot. In order to prevent foreign objects from entering the card slot, leave this cap inserted whenever a memory card is not inserted.

■ Before using a new card (Formatting)

Before a newly purchased card can be used with the MS-1 it must be "formatted." This process prepares the card for use with the MS-1. When you format a card, all data that may have been on that card will be lost. This means that you can also use this formatting operation to completely erase a card that you have already been using with the MS-1.

When formatting a card, you will also specify the maximum number of BUF's (backup files) that the card will be prepared to contain.

Do not use any other card than those listed on the separate instruction sheet.

Formatting procedure

1. Turn the power off, insert the card that you wish to format into the card slot, and turn the power on once again.

2. From the normal playing mode (the display shows the bank name), press the EDIT UTILITY button, and use the ◄ ► buttons to get the "C.Format?: 2 BUF" display.

This display is asking "Is it ok to format the card to accommodate a maximum of 2 backup files?"

3. If necessary, use the +/- buttons to change the number of BUF's (backup files).

4. When you press the (REC) YES button, the display will indicate "Formatting...", and the card will be formatted.

5. When formatting is completed, the display will indicate "Completed!", and the normal display will reappear automatically.

Specifying a larger number of maximum BUF's when formatting will allow you to save more sets of internal data on a card, but will also reduce the total amount of sampling time available for banks C—E. Specify a number of BUF's appropriate for the size of the card and your purposes. Immediately after formatting, you can access the "remaining sampling time" display from banks C—E (p.9). If the sampling time for banks C—E is not what you want, change the number of BUF's and format once again.

If the card capacity is insufficient to accommodate the number of backup files you specified, it will be formatted with as many backup files as possible.

■ What is a "BUF"?

Separately from the card memory area used for bank C—E samples, part of the card can be used to save entire sets of data from the internal memory of the MS-1 (the samples in banks A and B, four sequences, and the system settings). These "sets of internal memory data" are called "backup files" (BUF's). The maximum number of BUF's that a card can accommodate is determined by the capacity of the card and by the number you specify when formatting the card. (You may specify a number from 0—20.)

If you have used the Save function to create a backup file, you will later be able to load the backup data back into the MS-1 even if you have erased banks A and B by sampling new data. This means that you will be able to efficiently store larger numbers of samples.

A card can also be used to quickly copy an entire set of data from one MS-1 to another.

Saving procedure

1. From the normal display (the bank name display), press the EDIT UTILITY button, and use the ◄ ► buttons to get the "Save? :BUF1" display. (This display is asking: "ok to save internal data to BUF1?")

2. Use the +/- buttons to change the "BUF1" display to select the backup file into which you want to save the internal data.

3. Press the (REC) YES button to execute the Save operation.

4. When saving is completed, the display will indicate "Completed!", and the normal display will reappear automatically.

If data already exists in the backup file you select in step 2, you will be asked "Overwrite SURE?" in step 3. ("Are you sure you want to overwrite the old data in the BUF?") If it is ok to overwrite the old data, press the (REC) YES button once again, and Save will be executed. If you wish to keep the old data, press EXIT/NO to cancel the operation, or select a different backup file and then proceed to step 3.

Backup files can be saved up to the maximum number of BUF's you specified when formatting the card. If you use up the specified number of BUF's, you will no longer be able to save newly sampled data. Be aware of this if you have formatted a card with a small number of BUF's.

Loading procedure

1. From the normal display (the bank name display), press the EDIT UTILITY button, and use the ◄ ► buttons to get the "Load? :BUF1" display. (This display is asking: "ok to load BUF1 into internal memory?")

2. Use the +/- buttons to select the BUF you wish to load. (The number of files available will depend on the maximum number of BUF's you specified when formatting the card.)

3. Press the (REC) YES button, and loading will be executed. (At this time, all samples and sequences that were in internal memory will be irrecoverably lost. If you wish to keep this data, be sure to save it to a different BUF beforehand.)

4. When loading is completed, the display will indicate "Completed!", and the normal display will automatically reappear.

If protect is turned on for any part of the data in internal memory (bank A or B, or SEQ1-4), this will be indicated by a display such as "BANK Protected!" etc., and loading will not be executed. (p.26)

Chapter 8. Using the MIDI functions

About MIDI

"MIDI" stands for Musical Instrument Digital Interface; a world-wide standard for letting electronic musical instruments and devices transmit and receive musical performance data and sound data. The MS-1 has two MIDI connectors; MIDI IN and MIDI OUT. These connectors can be connected to other MIDI devices to provide a variety of capabilities.

Playing the MS-1 from an external keyboard (MIDI channel and key/pad settings)

By connecting a MIDI drum pad or a MIDI keyboard etc. to the MS-1 you can use these devices to play MS-1 samples. To do this, use a MIDI cable to connect the MIDI OUT of the other device to the MIDI IN of the MS-1.

You also need to use the following procedure to set the MIDI channel to match the MIDI channel of the transmitting device.

■ Setting the MIDI channel

1. From the normal playing mode (the bank name display), press the EDIT SYSTEM button, and use the ◀ ▶ buttons to get the "MIDI Ch :" display.

2. Use the +/- buttons to select the channel 1—16 that matches the channel of the transmitting device.

3. Press the EXIT button to return to the bank name display. At this time, the new setting will be written into memory, and will be remembered even if the power is turned off.

* In the moments immediately after you press EXIT (i.e., while "Keep Power ON!" is displayed), be very careful not to turn off the power. Doing so could destroy the data in internal or card memory.

* If you select "OFF" (which appears after 1—16), the MS-1 will neither receive nor transmit MIDI data.

■ Assigning keyboard notes to MS-1 pads

When the MS-1 is shipped from the factory, the notes on an external MIDI keyboard will play the sounds of the MS-1 pads as shown in the following diagram.

PAD	1	2	3	4	5	6	7	8
BANK A	36	38	40	41	43	45	46	47
B	48	50	52	53	55	57	58	59
C	60	62	64	65	67	69	70	71
D	72	74	76	77	79	81	82	83
E	84	86	88	89	91	93	94	95

MIDI note numbers
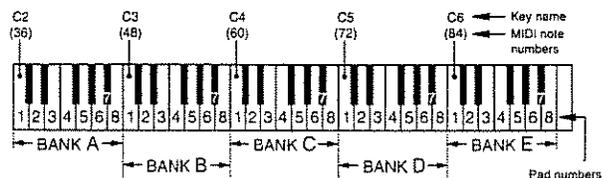
How a standard 61-note keyboard corresponds to MS-1 pads
(with the factory settings)

You are free to change these assignments using the EDIT SYSTEM setting "key : Pad :" to specify how keyboard notes are assigned to MS-1 pads.

Changing key/pad assignments

1. From normal playing mode (the bank name display) press the EDIT SYSTEM button, and use the ◀ ▶ buttons to get the "Key: C2 Pad:A1" display.

2. Use the +/- buttons to select the keyboard note you wish to assign. You can also do this by pressing a note on the keyboard connected to the MS-1.

3. Press a bank button and then a pad to specify the sample that will be played by that keyboard note.

4. As desired, select other keyboard notes and specify the sample for each note by repeating steps 2—3. When you finish, press the EXIT button to return to the bank name display. At this time, the new settings will be written into memory, and will be remembered even if the power is turned off.

* In the moments immediately after you press EXIT (i.e., while "Keep Power ON!" is displayed), be very careful not to turn off the power. Doing so could destroy the data in internal or card memory.

* Even if two or more keyboard notes are assigned to the same MS-1 sample, the sample will play at the same pitch regardless of the note you play.

Using the MS-1 with an external sequencer

The SEQ function (simple sequencer) built into the MS-1 is a convenient way to record and playback the order and timing with which you press the pads. (p.18)

However when the MS-1 is used together with a more powerful external MIDI sequencer (a device that records and plays back MIDI data), you can use the MS-1 to add vocals or sound effects to the performance of other MIDI sound sources. In such cases, make connections as shown in the following diagrams.
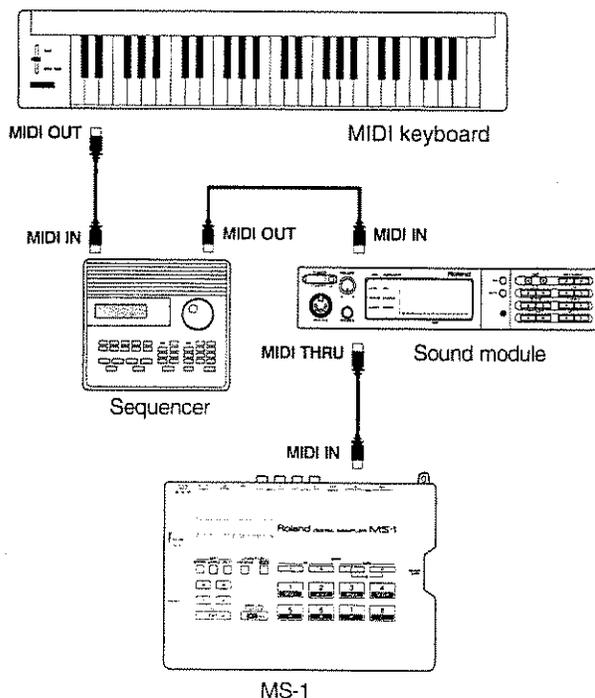
Diagram A
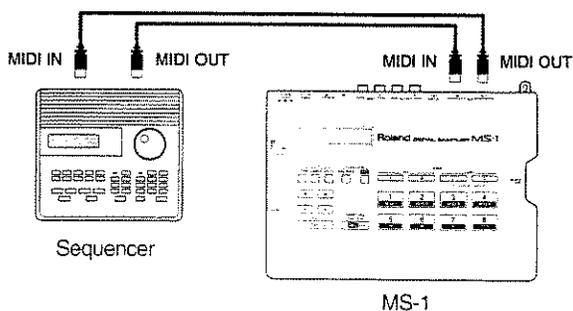
Diagram B

Procedure for inputting and playing performance data on an external MIDI sequencer

1. If you will be using a MIDI keyboard to input sequence data, make connections as shown in diagram A. If you will be using the pads of the MS-1, make connections as shown in diagram B.

2. Press the EDIT SYSTEM button, use the ◄ ► buttons to get the "MIDI Ch:" display, and use the +/- buttons to select the MIDI channel you wish to use on the external sequencer.

In diagram A, you will also need to set the transmit channel of the keyboard to match the channel you set for the MS-1.

3. If you are using the connections of diagram B, while still in EDIT SYSTEM press the ► button to get the "MIDI Local:" display, and press the - button to select "OFF", turning MIDI Local control off.

4. Press the EXIT button to exit editing.

5. On your external sequencer, turn on the "Thru to MIDI OUT" function (or the function that corresponds to this).

* With this setting, MIDI data that is received at the MIDI IN of the external sequencer will be immediately re-transmitted from its MIDI OUT.

6. Make sure that playing the keyboard (or an MS-1 pad, if you are using the connections of diagram B) will produce sound, and if the setup is correct, start recording on your external sequencer.

7. When you finish recording, playback the external sequencer to check the result.

About MIDI Local Off

The setting in which the MS-1's sound source is internally connected to its pads is called "Local On." When you selected "Local Off" in step 4 of the above procedure, the MS-1's sound source was disconnected from its pads. This means that the sound source will respond only to MIDI messages received from outside; i.e., pressing the pads will not produce sound. However pressing the pads will still transmit MIDI messages from the MS-1's MIDI OUT.

The purpose for doing this is to avoid conflict that would otherwise occur between the musical messages that would arrive from both the pads and MIDI IN.

Chapter 8. Using the MIDI functions
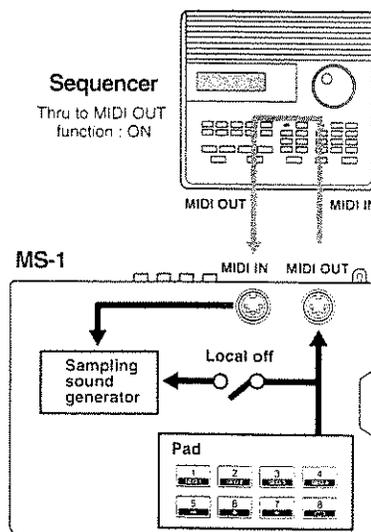
Chapter 9. Other functions

Setting the Sampling Grade

You can choose from four levels of Sampling Grade to suit your purposes and whether or not a memory card is inserted.

HIGH	The highest sound quality / lowest noise recording. (Internal memory recording time = 19.6 seconds)
STANDARD	Standard quality recording. (Internal memory recording time = 27.0 seconds)
LONG 1	Longer recording time than standard. (Internal memory recording time = 39.2 seconds)
LONG 2	Longest recording time. (Internal memory recording time = 54.0 seconds)

* *Stereo sampling is possible at all grades. Recording time will be half that of mono recording.*

* *The above figures are for a Master Pitch setting of 0%.*

Procedure for changing the Grade setting

1. From normal playing mode (the bank name display), press the EDIT SYSTEM button, and use the ◄ ► buttons to get the "Grade:" display.

2. Use the +/- buttons to select the desired grade; HIGH, STANDARD, LONG1 or LONG2.

3. Press the EXIT button to return to the bank name display. At this time, the new setting will be written into memory and will be preserved even if the power is turned off.

* *In the moments immediately after you press EXIT (i.e., while "Keep Power ON!" is displayed), be very careful not to turn off the power. Doing so could destroy the data in internal or card memory.*

* *If you select "HIGH", the number of maximum simultaneous sounds will be restricted to one mono sound or one stereo pair.*

* *Be aware that when you change the Grade setting, the playback pitch of previously recorded samples will change. The Grade setting applies to the entire MS-1. It is not possible to use different Grade settings for each sample.*

Changing the overall play-back pitch

The MS-1 allows you to freely set the "Master Pitch" of the entire system regardless of whether you are playing back or sampling. By changing the master pitch, you can raise or lower the playback pitch of samples, for an effect similar to changing the speed on a multi-track tape recorder. As when you change the speed of a tape recorder, lowering the pitch will result in a longer playback sound.

Procedure for adjusting Master Pitch

1. From normal playing mode (the bank name display), press EDIT SYSTEM, and use the ◄ ► buttons to get the "Pitch: 0%" display (the Master Pitch setting).

2. Use the +/- buttons to adjust the Master Pitch. The setting can be adjusted in a range of -20%—+10%.

3. Press the EXIT button to return to the bank name display. At this time, the new setting will be written into memory and will be preserved even if the power is turned off.

* *In the moments immediately after you press EXIT (i.e., while "Keep Power ON!" is displayed), be very careful not to turn off the power. Doing so could destroy the data in internal or card memory.*

* *If you lower the Master Pitch before sampling, the higher frequencies will not be reproduced as well. If you raise the Master Pitch before sampling, you will have less sampling time. Normally you should leave this set at 0%.*

■ An example of using changes in Master Pitch

Suppose that you have a phrase sample consisting of 1 measure of a bass guitar phrase, and another phrase sample taken from a different source consisting of 1 measure of a percussion phrase. You want to make the length (tempo) of these two phrases match.

In such cases, sample the bass guitar at a Master Pitch setting of "0%", since pitch is more critical for this sound. Then listen to the source (CD, etc.) containing the percussion phrase, and adjust the Master Pitch of the MS-1 so that the length of the bass guitar sample matches the length of the percussion phrase. When the lengths of the two phrases match, sample the percussion phrase into the same bank as the bass guitar phrase, and finally set the Master Pitch back to 0%.

■ Monitoring output while setting Master Pitch

Monitoring-use output of signals input to the INPUT jack is provided from the OUTPUT jack not only when sampling, but also when in the Master Pitch setting screen (p. 23). This feature allows you to conveniently compare the length of samples and adjust the pitch before sampling.

Transmitting and receiving wave and parameter data

All the wave, sequence and parameter data in the MS-1's internal memory can be transmitted via MIDI to an external device. This function is called the "Bulk Dump," and is useful in the following situations.

• When you have no card, and wish to use a MIDI sequencer or personal computer to store MS-1 sample or sequence data on a floppy disk, etc.

• When you want to transmit sample data etc. from one MS-1 to another MS-1.

* *It is not possible to transmit data from a card via MIDI.*

Procedure for bulk dump (transmission/reception)

* To cancel the operation press the EXIT/NO button.

■ Storing MS-1 output data on an external MIDI sequencer

1. Use the MIDI cable to connect the MS-1's MIDI OUT to the external MIDI sequencer's MIDI IN.

2. From normal playing mode (the bank name display), press the EDIT UTILITY button, and use the ◄ ► buttons to get the "Bulk Dump?" display.

3. Start realtime recording on your external MIDI sequencer.

4. Press the MS-1's (REC) YES button, and the display will indicate "Sending..." Data will be transmitted from MIDI OUT.

5. After a while, the display will indicate "Pause. next=YES," and data transmission will pause. Immediately press the YES button, and the display will once again indicate "Sending..." and the next packet of data will be sent.

6. When steps 4—5 have been repeated 7 times, the display will indicate "Finished.", indicating that all data has been transmitted. The normal playing mode display will reappear automatically.

7. Stop realtime recording on your external MIDI sequencer, assign an appropriate name to the data, and execute the save command of the MIDI sequencer to save the data to floppy disk, etc.

If the amount of data exceeds the capacity of the MIDI sequencer

During Bulk Dump, the data in internal memory is divided into 7 packets of the same size, and transmitted with a pause between each packet. However since the data includes wave data, the total size is quite large, and some MIDI sequencers may not be able to accommodate all the data as a single song.

For example if, while receiving the fourth data packet in step 6, your MIDI sequencer gives a warning message that its memory capacity has been exceeded, you will have to stop recording on the MIDI sequencer after every third packet and save the data to floppy disk. Then return to step 5. Save each group of data packets under a different name, until all the bulk data has been saved.

■ Returning the data from the MIDI sequencer back to the MS-1

* Be aware that when you execute step 3 of this procedure, all sample and sequence data that existed in the internal memory of the MS-1 will be erased. If any bank or sequence in internal memory is protected (p.26), this procedure cannot be executed.

1. Use a MIDI cable to connect the external MIDI sequencer's MIDI OUT to the MS-1's MIDI IN.

2. From normal play mode (the bank display), press the EDIT UTILITY button, and use the ◄ ► buttons to get the "Bulk Receive" display.

3. Load the song containing the MS-1 data into the external MIDI sequencer, and start playback.

4. The MS-1 will indicate "Receiving...", and will receive the data into internal memory.

5. When all the data has been received from the MIDI sequencer, the MS-1 will indicate "Completed!" The normal play mode display will reappear automatically.

* If the data from the MS-1 was saved in two or more songs by the MIDI sequencer, be sure to transmit them in the same order in which they were received. (In step 5 of the above procedure, the MS-1 will indicate "Waiting next" while the MIDI sequencer is stopped.)

■ Transmitting data from one MS-1 to another

* When you execute this procedure, all sample and song data that existed in the internal memory of the receiving MS-1 will be erased. If any bank or sequence in the receiving MS-1's internal memory is protected (p.26), this procedure cannot be executed.

1. Use a MIDI cable to connect the transmitting MS-1's MIDI OUT to the receiving MS-1's MIDI IN.

2. Press the EDIT UTILITY button of the transmitting MS-1, and use the ◄ ► buttons to get the "Bulk Dump?" display.

3. Press the EDIT UTILITY button of the receiving MS-1, and use the ◄ ► buttons to get the "Bulk Receive" display.

4. Press the transmitting MS-1's (REC) YES button, and the display will show "Sending..." to indicate that data is being transmitted from MIDI OUT.

5. After a while, the transmitting MS-1 will indicate "Pause. next=YES" and transmission will be paused. Press the transmitting MS-1's (REC) YES button, and the "Sending..." display will reappear, indicating that transmission has resumed.

6. Repeat steps 4—5 seven times, and the display will show "Finished." indicating that all data has been transmitted. The normal play mode display will then reappear automatically.

The display of the receiving MS-1 will indicate "Completed!", and will then automatically return to the normal play mode display. This completes data transmission.

Erasing all data from the entire system (All Clear)

If you wish to erase all data from internal banks A and B and the sequencer memory, initializing the entire system, use the "All Clear" function. When this operation is executed, all samples and data in internal memory will be lost. If necessary, you should first save important data to a card etc.

This operation will not bring back the demo data that was in internal memory when you purchased the MS-1 (the demo samples and SEQ data). (p.7)

Procedure for All Clear (Erasing all internal memory)

1. From the normal playing mode (the bank name display), press the EDIT UTILITY button, and use the ◄ ► buttons to get the "Int All Clear?" display. (This display is asking: "ok to clear all internal memory?")

2. Press the (REC) YES button.

3. After the memory has been initialized, the normal play mode display will reappear.

To initialize a card, use the formatting command which is also found in EDIT UTILITY. (p.19)

Setting the footswitch function

There is a footswitch jack located on the rear panel of the MS-1 to which a footswitch such as DP-2 (sold separately) can be connected. One of the following functions can be assigned to the footswitch.

- Start and stop sampling
- Start and stop the SEQ function
- Play a specified sample

In addition, the foot switch jack can also be set to function as a GPI jack.

Procedure for setting the footswitch function

1. From the normal play mode (the bank name display), press the EDIT SYSTEM button, and use the ◄ ► buttons to get the "F-Sw:SAMPLING" display.

2. Use the +/- buttons to select the function. (For details on each choice, see below.)

3. Press to EXIT button to return to the normal play mode display. At this time, the new setting will be written into memory and will be preserved even if the power is turned off.

In the moments immediately after you press EXIT (i.e., while "Keep Power ON!" is displayed), be very careful not to turn off the power. Doing so could destroy the data in internal or card memory.

Explanations of each choice in step 2

"SAMPLING" ... Start and stop sampling

The footswitch will function in the same way as the (REC) YES button in step 6 of "Sampling procedure" (p.8). When you wish to sample a guitar etc. that you yourself are playing, it is convenient to start and stop sampling using a footswitch.

"SEQUENCE" ... Start and stop the SEQ function

The footswitch will function in the same way as alternate presses on the Start pad and Stop pad when the SEQ function is active.

"SOUND A1" ... Play sample (A1)

"SOUND A2" ... Play sample (A2)

   :   :

"SOUND E8" ... Play sample (E8)

The footswitch will play the specified sample (A1—E8); i.e., you can use your foot to play a sample instead of using your hand to press a pad.

Procedure for selecting the footswitch input

Normally, you will connect a Roland DP-2 to the footswitch jack, but if you use the following procedure to change the setting, the jack will function as a GPI (General Purpose Interface; see explanation below) jack.

1. From the normal play mode (the bank name display), press the EDIT SYSTEM button, and use the ◄ ► buttons to get the "F-SW Sel: DP-2" display (foot switch input select).

2. Use the +/- buttons to change "DP-2" to "GPI".

3. Press the EXIT button to leave edit mode.

4. Now you must turn the power off, and then on once again.

This setting does not become valid until the next time that the power is turned on.

About GPI

GPI (General Purpose Interface) is a control jack found on commercial and consumer video-related devices such as video editors and super-imposers. When the MS-1 is connected to GPI-compatible devices, the function assigned to the pedal (sample playback or starting the SEQ function) can be controlled from an external device.

Protecting Bank or Sequence data

To prevent samples or data from being written or received from an external MIDI device and accidentally overwriting data currently in memory, you can turn on Protect for the data area you wish to protect. If Protect has been turned on, an attempt to execute the following operations will display a message such as "BANK Protected !", and the operation will not be executed.

■ Operations prohibited when a Bank is protected

• New sampling to a pad in that bank
• Accessing the Sample Edit display
• Executing utility functions such as Delete (p.16) or Truncate (p.16) that rewrite wave data

■ Operations prohibited when a Sequence is protected

• New recording to that sequence (p.18)

■ Operations prohibited when either Bank A or B or a Sequence is protected

• Loading a backup file from a card (p.20)
• Receiving MIDI bulk data from an external device (p.24)
• "Int All Clear" of UTILITY (p.25)

Procedure for turning Protect on/off for a Bank or Sequence

1. From normal play mode (the bank name display) press the EDIT SYSTEM button, and use the ◀ ▶ buttons to get the "Protect A :ON" display.

2. Use the BANK A—E buttons to select the bank you wish to protect.

The "A" in the display will change to indicate the selected bank A—E. In the same way, press one of the upper row of pads (SEQ1—4) to select the sequence you wish to protect. The "A" in the display will change to indicate S1—S4.

3. Press the + button to turn Protect on, or the - button to turn Protect off.

4. Press the EXIT button, and the bank name display will reappear. At this time, the new setting will be written into memory and will be preserved even if the power is turned off.

* In the moments immediately after you press EXIT (i.e., while "Keep Power ON!" is displayed), be very careful not to turn off the power. Doing so could destroy the data in internal or card memory.

Adjusting the contrast of the display

If necessary, use the following procedure to adjust the display contrast (the viewing angle).

1. From normal play mode (the bank name display) press the EDIT SYSTEM button, and use the ◀ ▶ buttons to get the "LCD Contrast:8" display.

2. Use the +/- buttons to select the setting (1—8) that is easiest for you to see.

3. Press the EXIT button, and the bank name display will reappear. At this time, the new setting will be written into memory and will be preserved even if the power is turned off.

* In the moments immediately after you press EXIT (i.e., while "Keep Power ON!" is displayed), be very careful not to turn off the power. Doing so could destroy the data in internal or card memory.

Importing performance data created by an external sequencer and using it with the SEQ function

1. Carry out, up until step 3, the instructions for "Recording" that appear in the lower-left part of page 18.

2. Get your sequencer to start playing its recorded sequence data (route it into the MS-1's MIDI IN). All the Note On/Off messages that arrive will be processed and stored in the MS-1.

3. When the transmitting device (MIDI sequencer) has finished sending the data, press the (REC) YES button to stop recording.

* Be aware that while recording in the above manner, the MS-1 may not be able to sound each note. This is because of the extra processing burden that is being placed on it. (It will sound everything correctly when playing the data back, however.)

Chapter 10. Reference

■ Explanation of the error messages

```
No Card!
```

There is no memory card inserted. The operation could not be executed.

```
Keep Power ON!
```

Data is being written. Be careful not to turn the power off at this time.

```
Batteries Low..
```

The batteries have run down. To prevent data from being lost should the batteries fail during operation, replace the batteries as soon as possible. (p.5)

```
Batteries End!
```

The batteries have run down completely, and operation has been halted. For further use, you must either replace the batteries or use an AC adaptor.

```
Bank Protected!
```

Since the specified bank is protected (against accidental erasure), the operation could not be executed. (p.26)

```
SEQ Protected!
```

Since the specified sequence is protected (against accidental erasure), the operation could not be executed. (p.26)

```
Not Formatted!
```

The card has not been formatted for use with the MS-1. Please format the card. (p.19)

```
Wrong Card!
```

The card is of a manufacturer and type that cannot be used with the MS-1. Please use only the specified types of card. (See the separate instruction sheet)

```
No Sample!
```

There is no sample at that location to be edited. Choose a pad that has a sample.

```
MIDI Over Flow!
```

The amount of MIDI data received from an external device was more than the MS-1 was able to process. Reduce the amount of data transmitted from the external MIDI device.

```
MIDI Error
```

A problem was encountered during transmission/reception of MIDI data. Check the cable connections you have, and make sure the procedures you took were correct.

■ Troubleshooting

Pressing the pads does not produce sound.

Are the audio cables, amp, headphones, etc. connected and set correctly?
→ Check connections and settings. (p.6)

Is the volume setting of the MS-1 turned down?
→ Use the volume knob to raise the volume to an appropriate level.

Is the volume setting of the sample turned down?
→ Press the EDIT SAMPLE button, select the Sample Volume display, and raise the volume to an appropriate level. (p.13)

Is the MS-1 set to MIDI Local Off?
→ Set the MS-1 to MIDI Local On. (p.22)

Have you selected a bank that contains no sounds?
→ Use the bank buttons to select a bank that contains sounds.

While you are editing a sample, there will be no sound the first time that you press the pad of a different sample, since this action selects the new sample for editing.

Power does not turn on even though batteries are new.

Are the batteries inserted in the correct direction?
→ Check the diagram on the bottom panel, and insert the batteries correctly.

The MS-1 is shipped with new batteries, but please be aware that the life of the batteries may differ slightly depending on shipping and storage time length.

Volume knob can be rotated continuously and does not stop.

The volume knob of the MS-1 is a continuously rotating type that can also be used for data entry.
→ This is not a malfunction.

Sampled sound is distorted.

Is the gain setting too high, resulting in an excessive recording level?
→ Lower the gain setting. (p.8)

Level meter (p.8) does not move when sound is input for sampling.

Is the gain setting (in the same display) set too low?

→Raise the gain setting. (p.8)

Is the mic/line input setting incorrect?

→Press the ► button, and use the +/- buttons to make the correct settings. (p.8)

Is there a problem with the mic you are using?

→If your mic uses batteries, the batteries may be dead.

Sampled sound is noisy.

Is the gain setting too low, resulting in an insufficient recording level?

→Raise the gain setting. (p.8)

* Due to the internal processing of the MS-1, slight amounts of noise may be noticeable when recording some types of audio. As the Grade setting (p.23) is set toward "High" this noise will be minimized. Also, extremely low settings of Master Pitch (p.23) will result in poorer noise characteristics.

When using Auto Sampling, the beginning of the sound is lost.

Is the auto level setting (AT_L1—8) set to a high value?

→Try using a lower setting. (p.9)

The sampling time is shorter than given in the operating manual.

Are you using stereo sampling?

→If stereo sampling is not necessary, use mono sampling. (p.9)

Has the Master Pitch setting been raised?

→Normally this should be set to 0%. (p.23)

When formatting a card, did you specify a large number of BUF's? (for banks C—E)

→When formatting a card that will be used to record long samples, specify a lower number of BUF's. (p.19)

Sampling stops soon after starting.

Has the memory been used up?

→Check the remaining time display. (p.19)

Cannot sample into banks C, D, or E.

Is a formatted (p.19) card inserted all the way in the correct direction?

→Check that the card is inserted correctly.

* A memory card must be inserted in order to use banks C, D, and E.

Cannot format a card.

Are you using a flash memory card of a manufacturer and type that the MS-1 is able to accept?

→Be sure to use one of the cards specified on the separate instruction sheet.

When formatting a card, fewer BUF's (p.19) than you specified were actually created.

Does the card you are using have sufficient capacity?

→The maximum number of BUF's is 6 for a 2.5M card, 12 for a 5M card, and 20 for a 10M card.

When you attempt to playback a sound on top of an already-playing sound, the previous sound stops, or the later sound does not play.

Is the MS-1's maximum number of simultaneous sounds (4 sounds) being exceeded?

→Check the number of notes (stereo samples use 2 notes).

Is the Grade (p.23) set to "HIGH"?

→With a setting of "HIGH", only single sounds or single stereo pairs can be played.

Are you attempting to layer card sounds (banks C, D, E)?

→Card samples cannot be layered with each other. If you wish to layer sounds, make sure that one of them is a sample from bank A or B.

Is the Mute Group (p.15) setting "IN"?

→If you do not need to use the Mute Group, set it to "OUT".

Demo playback is no longer possible.

Have you sampled into bank A, or recorded into SEQ1 of the SEQ function?

→Be aware that if either of these operations are performed, the demo playback data will be lost and cannot be recovered. (p.7)

A footswitch (DP-2) is connected but does not function correctly.

Is the DP-2/GPI selection (p.25) for the footswitch jack set to "GPI"?

→Set this to "DP-2", and turn the power off once.

When the SEQ function started from mid-way through a sequence, some samples do not play.

The SEQ function does not record the sound. It records the timing with which pads were pressed and released. If you stop a sequence at a point after a pad was pressed, and then resume playback, the sample will not start playing from mid-way through.

→As necessary, press the reset button [⏮] to return the sequence to the beginning before starting playback.

When using the MS-1 with other MIDI devices

Cannot play the MS-1 from an external MIDI keyboard, etc.

Are the MIDI connections (p.22) correct?

Do the MIDI channels (p.21) of both devices match?

→Check connections and channel settings.

Are you playing a range of notes to which pads are not assigned?

→If necessary, change the pad/note assignments. (p.21)

Are MIDI messages being sent correctly to the MS-1?

→Check the MIDI transmission settings of the external MIDI device.

When playing the MS-1 from a MIDI drum pad (SPD-11 etc.), sounds are interrupted, or cannot be played in rapid succession.

Is the Gate/Trig setting (p.15) set to "DRUM"?

→In this situation, you should usually use a setting of "DRUM".

Specifications

Model: Digital Sampler MS-1

● **Maximum Polyphony**   4 voices

* When using the HIGH grade for sampling, only one note of polyphony, or one stereo pair will be available.

* The samples on a card (Bank C, D, or E) cannot be sounded together at the same time.

● **Data Format:** MS-1 Original format (R-DAC)

● **Signal Processing**

   A/D Conversion   16 bit

   D/A Conversion   16 bit

   Available to stereo sampling.

● **Sampling Frequency**

   Grade "HIGH"   44.1 kHz to 32.07 kHz

   Grade "STANDARD"   32 kHz to 23.27 kHz

   Grade "LONG 1"   22.05 kHz to 16.04 kHz

   Grade "LONG 2"   16 kHz to 11.64 kHz

* These frequencies will vary depending on the setting of master pitch.

● **Internal Memory**

   Bank   2 (A, B)

   Sample   16

   Sequence   4

● **External Card Memory**

   Bank   3 (C, D, E)

   Sample   24

   Backup File   20 (Maximum)

● **Maximum Sampling Time** (at Monaural Sampling)

Internal

   (at "STANDARD" Grade) approx. 27 seconds

   (at "LONG2" Grade) approx. 54 seconds

External Card

   2.5M bytes Card

   (at "STANDARD" Grade) approx. 175 seconds

   (at "LONG2" Grade) approx. 354 seconds

   20M bytes Card

   (at "STANDARD" Grade) approx. 24 minutes

   (at "LONG2" Grade) approx. 48 minutes

*Maximum sampling time will vary depending on the master pitch.

● **SEQ Function** (Simple Sequencer)

   Track   1

   Sequence   4

   Recording method   Realtime only

   Note Capacity   approx. 900 notes

                       (totals of SEQ1 to SEQ4)

   Control   Play, Stop, Reset, Repeat

● **Display:** 16 characters, 1 line (LCD)

● **Connectors**

   Output Jacks (stereo L, R)

   Input Jacks (stereo L, R)

   Mic Jacks (1/4 inch phone x 1, Stereo miniature phone x 1)

   Foot Switch Jack

   MIDI Connectors (in ,out)

   Phones Jack

   AC Adaptor Jack (DC 9V)

● **Normal Input Level**   -10 dBm

● **Normal Output Level**   -10 dBm

                     (0 dbm = 0.775v)

● **Input Impedance**

   Line   40 kΩ

   Mic   7 kΩ

● **Output Impedance**   1.6 kΩ

● **Power Supply**   DC 9 V

Dry Batteries (R6(AA) type) x 6 or AC Adaptor

● **Current Draw**   200 mA

   Expected battery life under continous use:

   Carbon   3 hours

   Alkaline   10 hours

   (Battery life will vary depending on the actual conditions of use.)

● **Demensions**

   218(W) x 156(D) x 36.5(H) mm

   8-5/8(w) 6-3/16(D) 1-7/16(H) inches

● **Weight**

   650g / 1 lb 7 oz (including batteries)

● **Accessories**

   Alkaline Dry Batteries (LR6(AA) type) x 6

   Owner's Manual

   Sampling Source CD

   Card Slot Cap

● **Options**

   AC Adaptor : BOSS PSA series

*You can use only the memory cards that Roland specifies for data backup and the expansion of the sampling time. See the separate instruction sheet.

Digital Sampler
Model MS-1

MIDI Implementation Chart

Date : Nov. 16, 1994

Version : 1.00

	Function...	Transmitted	Recognized	Remarks
Basic Channel	Default Changed	1 — 16 1 — 16	1 — 16 1 — 16	Memorized
Mode	Default Messages Altered	Mode 3 X **************	Mode 3 X	
Note Number :	True Voice	21 — 108 **************	21 — 108	* 1
Velocity	Note ON Note OFF	X 9n v = 112 X 9n v = 0	O X	
After Touch	Key's Ch's	X X	X X	
Pitch Bend		X	X	
Control Change	0 — 120	X	X	
Prog Change	: True #	X **************	X	
System Exclucive		O	O	
System Common	: Song Pos : Song Sel : Tune	X X X	X X X	
System Real Time	: Clock : Commands	X X	X X	
Aux Message	: Local ON/OFF : All Notes OFF : Active Sense : Reset	X X X X	X X X X	
Notes		* 1 Not sent when the SEQ function is active.		

Mode 1 : OMNI ON, POLY Mode 2 : OMNI ON, MONO O : Yes

Mode 3 : OMNI OFF, POLY Mode 4 : OMNI OFF, MONO X : No

Chapter 10. Reference

Index of MS-1 screen displays
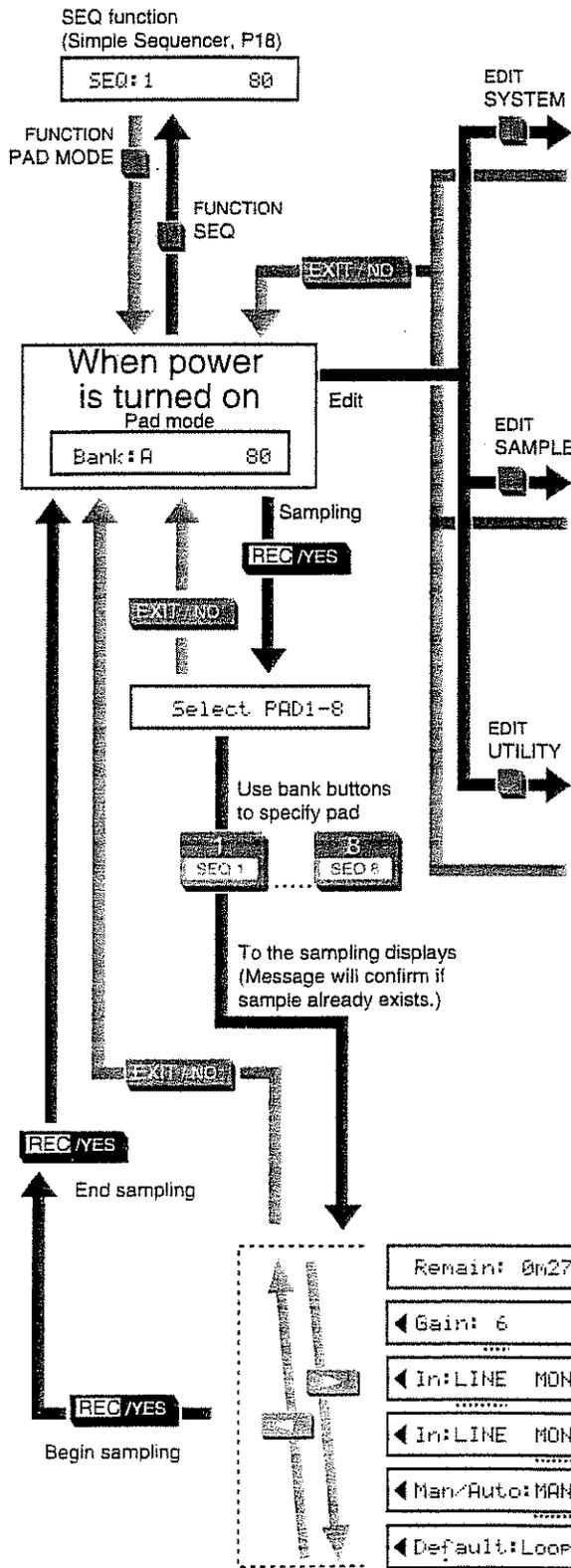
Display	Description
`Pitch: 0%` ▶	Master Pitch adjustment display (P23)
◀ `Grade:STANDARD` ▶	Grade select display (P23)
◀ `Protect A:OFF` ▶	Protect setting display (P26)
◀ `LCD Contrast:8` ▶	LCD Contrast adjustment display (P26)
◀ `Key: C4 Pad:C1` ▶	Key/Pad assignment display (P21)
◀ `MIDI Ch : 16` ▶	MIDI Channel setting display (P21)
◀ `MIDI Local:ON` ▶	MIDI Local ON/OFF display (P21)
◀ `F-Sw:SAMPLING` ▶	Foot Switch function setting display (P25)
◀ `F-Sw Sel.:DP-2` ▶	Foot Switch Jack DP-2/GPI select display (P25)

EDIT SYSTEM

SEQ function (Simple Sequencer, P18)

`SEQ:1    80`

FUNCTION PAD MODE

FUNCTION SEQ

When power is turned on
Pad mode

`Bank:A    80`

Edit

EXIT/NO

EDIT SAMPLE

Display	Description
`Gate/Trig:GATE` ▶	Gate/Trigger select display (P15)
◀ `Loop: ON(S-E)` ▶	Loop ON/OFF display (P14)
◀ `StartP: 0000` ▶	Start Point setting display (P14)
◀ `Loop P: ----` ▶	Loop Point setting display (P14)
◀ `End P : 2458` ▶	End Point setting display (P14)
◀ `SampVolume:100` ▶	Sample Volume setting display (P13)
◀ `Mute Group:OUT`	Mute Group setting display (P15)

Sampling

REC/YES

EXIT/NO

`Select PAD1-8`

Use bank buttons to specify pad

`SEQ 1` ..... `SEQ 8`

To the sampling displays (Message will confirm if sample already exists.)

EXIT/NO

REC/YES

End sampling

EDIT UTILITY

Display	Description
`Delete? :A-1` ▶	Delete display (P16)
◀ `Truncate?:A-1` ▶	Truncate (cut away) display (P16)
◀ `Divide?: A1→A1` ▶	Divide display (P17)
◀ `Save? :BUF1` ▶	Save (save to card) display (P20)
◀ `Load? :BUF1` ▶	Load Backup File (from card) display (P20)
◀ `Int All Clear?` ▶	Clear All Internal Data display (P25)
◀ `Bulk Dump?` ▶	MIDI Bulk Dump Internal Data display (P24)
◀ `Bulk Receive` ▶	MIDI Bulk Receive display (P24)
◀ `C.Format?: 2BUF`	Card Format display (P19)

REC/YES

Begin sampling

Display	Description
`Remain: 0m27s0` ▶	Remaining time display (P9)
◀ `Gain: 6` ▶	Gain setting display (level meter) (P9)
◀ `In:LINE MONO` ▶	Input select display (LINE/MIC) (P9, 10)
◀ `In:LINE MONO` ▶	Input select display (MONO/STEREO) (P9)
◀ `Man/Auto:MANU` ▶	Manual/Auto select display (P9)
◀ `Default:LoopS-E`	Default loop setting display (P9)

Roland Corporation

Roland®

70459901

Roland®