

YAMAHA[®]

**AUTHORIZED
PRODUCT MANUAL**

TG100

TONE GENERATOR

YAMAHA

GENERAL
MIDI
INSTRUMENT

TONE GENERATOR

TG100

GETTING STARTED MANUAL

1 Safety, Warnings & Notes

Please read the following information before operating your TG100.

Safety information

- Make sure the TG100 power supply adaptor's power cord is not located in a position where it is likely to be walked on and/or pinched by other equipment placed near to it.
- Do not expose the TG100 to extremes of humidity.
- Do not place the TG100 near water.
- Do not place the TG100 in areas subject to extremely low temperatures.
- Do not place the TG100 in locations subject to excessive dust.
- Do not place the TG100 in an area subject to vibration.
- Do not expose the TG100 to severe shocks.
- Do not place the TG100 in direct sunlight, close to heating units or in areas subject to high temperatures.
- The ambient temperature where the TG100 is located should be between 10°-35°C.

Warnings

- Use only the power supply adaptor supplied with the TG100.
- The TG100 power supply adaptor should only be connected to a power supply of the type described in this *Operating Manual* or as marked on the adaptor.
- Before connecting the adaptor to the TG100, make sure it is disconnected from the wall-power (mains) outlet. Always connect the adaptor to the TG100 and then plug the adaptor into the wall-power (mains) outlet.
- To reduce the risk of electric shock, do not remove the cover of the TG100.
- To reduce the risk of fire or electric shock, do not expose the TG100 to rain or moisture.
- The TG100 contains no user serviceable parts. Refer all servicing to qualified personnel.
- The TG100 uses digital circuits, which operate at high frequencies. When used close to TV and Radio equipment, reception may be affected. If this is the case, simply move the TG100 to a different location.
- If any of the following should occur, the TG100 should be serviced by qualified personnel:
 - The TG100 power supply adaptor's cord or plug becomes damaged in any way.
 - Metal objects or liquids get inside the TG100.
 - The TG100 is exposed to rain.
 - The TG100 is dropped and/or the enclosure is damaged.
 - The TG100 does not operate normally, or a marked change in performance is noticed.

2 Introduction

Welcome to the TG100

Thank you for purchasing the TG100. The TG100 is a 28-note polyphonic AWM (Advanced Wave Memory) tone generator. It contains 192 instrument voices and 8 drum kits. Up to 16 voices can be produced simultaneously. For details about all the TG100's features, see "TG100 features" on page 2 of the *Reference Manual*.

TG100 manuals

The TG100 has two operating manuals: This *Getting Started Manual* and a *Reference Manual*. This *Getting started Manual* will tell you all the things you need to know to be able to use the TG100 right away. It contains four tutorial setups:

- 1) Using the TG100 with a MIDI keyboard on page 4.
- 2) Using the TG100 with a computer that has a MIDI interface on page 7.
- 3) "Using the TG100 with a computer that does not have a MIDI interface (TO HOST)" on page 9.
- 4) Editing & Saving Voices on page 11.

The *Reference Manual* contains full details about all the TG100's functions.

We recommend that you begin with this *Getting Started Manual*. This will allow you to setup your TG100, start playing the voices and familiarize yourself with some of its functions.

As you read through this manual, keep the *Reference Manual* close by, so that if you want to know more about a certain function you can refer to it. The *Reference Manual* contains an index, which will allow you to locate information quickly, and also a glossary of TG100 terminology.

Unpacking

The TG100 packaging should contain the following items:

1	TG100 TONE GENERATOR	Serial No:
1	Power Supply Adaptor (PA-1505)	
1	Getting Started Manual	
1	Reference Manual	

Store the packaging materials for future use.

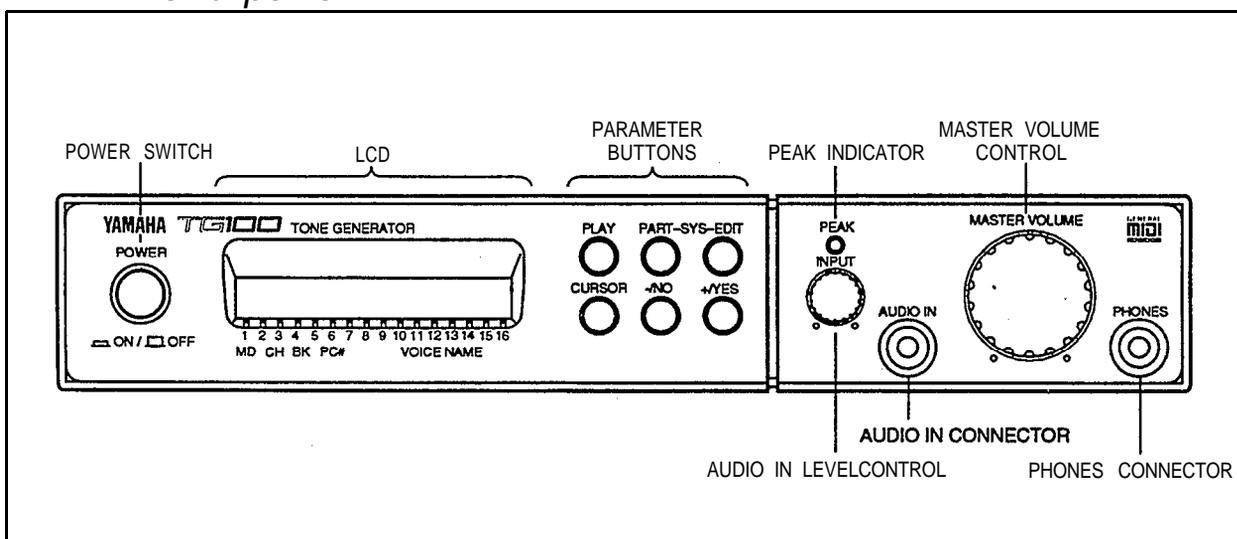
Installation

The TG100 is a "half-rack-size" unit. This is one of the standard sizes for audio equipment, and means that your TG100 can easily be installed with your other audio equipment. The TG100 should be placed on a flat, stable surface, somewhere that complies with the "Safety information" on page 1.

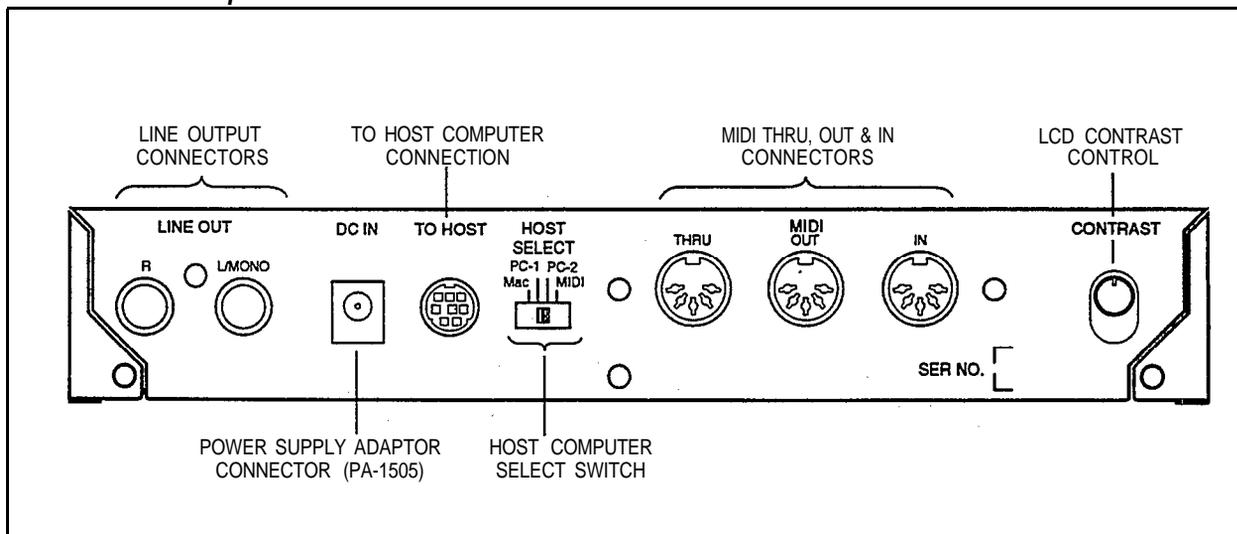
The TG100 can be mounted into a 19" rack (flightcase size) using one of the "half-rack-size" adaptors that are available. See "Rack mounting" on page 66 of the *Reference Manual*.

3 Controls & Connections

Front panel



Rear panel



4 Using the TG100 with a MIDI keyboard

In this tutorial the TG100 is used with a MIDI keyboard. This could be a MIDI master keyboard, or a synthesizer with MIDI facilities.

What you will need

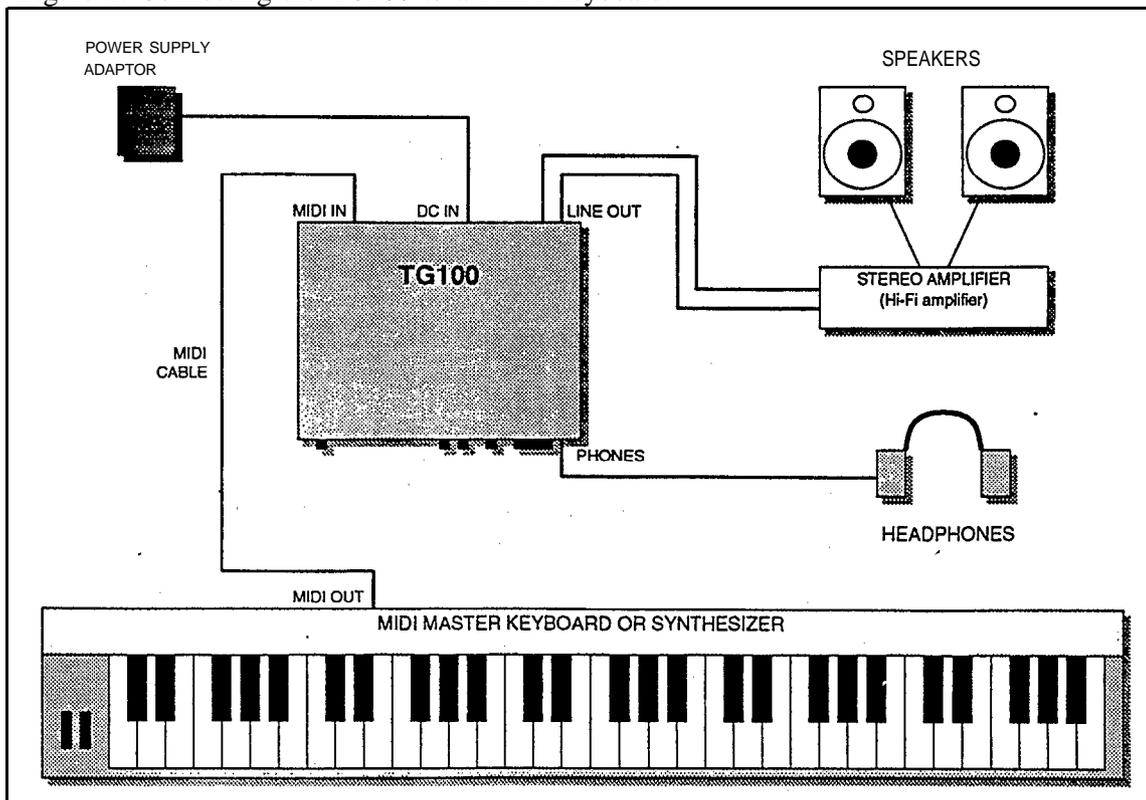
- 1) The TG100 and its power supply adaptor (PA-1505).
- 2) A MIDI master keyboard or synthesizer.
- 3) A stereo amplifier and connecting cable, or stereo headphones. If your headphones are fitted with a 1/4" (6.35mm) jack connector, you will need a stereo 3.5mm to 1/4" jack adaptor.
- 4) A MIDI connecting cable (available from your Yamaha dealer).

Making the connections

Before making any connections, make sure that all your equipment is switched off and the TG100's power supply adaptor is not plugged into the wall power outlet.

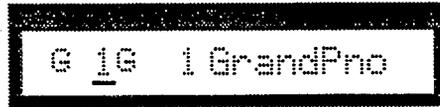
- 1) Connect the MIDI cable from your MIDI keyboard's "MIDI OUT" connector to the TG100's "MIDI IN" connector.
- 2) Connect the TG100's "LINE OUT", "R" and "L/MONO" connectors to the inputs of your amplifier (if your amplifier has only one input, connect only the TG100's "L/MONO" connector). Or, if you are using stereo headphones, connect them to the TG100's "PHONES" connector.
- 3) Connect the power supply adaptor to the TG100's "DC IN" connector.
- 4) Plug the power supply adaptor into a wall-power (mains) outlet.

Figure 1. Connecting the TG100 to a MIDI keyboard.



Switching on the power

- 1) Before switching on the power, set the “HOST SELECT” switch to “MIDI”.
- 2) Turn down the TG100’s “MASTER VOLUME” control, then press the TG100’s “POWER” switch. On the TG100’s LCD, the message “YAMAHA TG100” will be shown for a few seconds, then the LCD shown below will appear.



- 3) Switch on your MIDI keyboard.
- 4) Turn down your amplifier’s volume control, then switch on your amplifier.

Settings

- 1) For this tutorial, the TG100’s Sound module mode must be General MIDI. If the first letter of the above LCD is not “G”, the Sound module mode must be set. See “Selecting the sound module mode” on page 16 of the *Reference Manual*.
- 2) Set the input selector on your amplifier to the input that the TG100 is connected to.
- 3) Set your MIDI keyboard so that its MIDI transmit channel is “1”.
- 4) Set your amplifier’s volume control to the position used for normal listening.
- 5) Turn up the TG100’s “MASTER VOLUME” control while playing your MIDI keyboard.

If everything is OK, you will be playing, and hearing voice no. 1, Acoustic Grand piano.

If you don't hear anything, check the following.

- Is all your equipment switched on.
- Is your MIDI keyboard set to the correct MIDI channel.
- Check the audio, and MIDI connections.
- Is the TG100’s “HOST SELECT” switch set to MIDI.
- Make sure the TG100’s MASTER VOLUME control is turned up.
- Check the settings on your amplifier: input selector, volume, speakers, headphones, etc.
- See “Troubleshooting” on page 63 of the *Reference Manual*.

Selecting instrument voices

The TG100 has 192 preset instrument voices arranged into three voice banks.

G - General MIDI

D - DISK ORCHESTRA

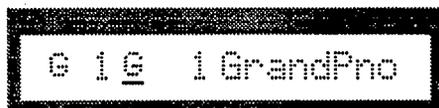
C - C/M

There is also an Internal voice bank, which contains the 64 voices that can be edited.

See “Voice bank table” on page 19 of the *Reference Manual*, or the “pullout” voice table card for a listing of all the TG100’s voices.

Selecting a voice bank

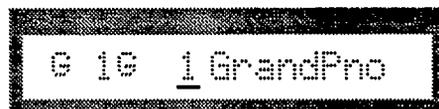
- 1) Repeatedly press the [CURSOR] button until the LCD cursor is positioned as shown below.



- 2) Use the [+1/YES] and [-1/NO] buttons to select a voice bank.

Selecting an instrument voice

- 1) Repeatedly press the [CURSOR] button until the LCD cursor is positioned under the "1", as shown below.



- 2) Use the [+1/YES] and [-1/NO] buttons to select an instrument voice.

Playing the drum kits

- 1) To play the TG100's drums kits you must change your MIDI keyboard's MIDI transmit channel to "10".

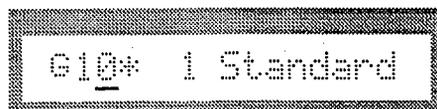
Each drum sound is assigned to a note on your MIDI keyboard. Drum sounds are arranged into 8 drum kits:

PC # No.	KIT NAME
1	Standard
9	Room
17	Power
25	Electronic
26	Analog
33	Jazz (same as the Standard kit)
41	Brush
49	Orchestra
126	Clavinov (Clavinova)
127	RX
128	C/M

See the drum kit layouts on page 25 to page 28 of the *Reference Manual*, or the "pullout" voice table card for a listing of all the TG100's drums sounds.

Selecting drum kits

- 1) Repeatedly press the [CURSOR] button until the LCD cursor is at the CH position.
- 2) Repeatedly press the [+1/YES] button until the following display is shown.



- 3) Press the [CURSOR] button once to position the LCD cursor at the PC# position.
- 4) Using the [+1/YES] and [-1/NO] buttons to select a drum kit.

5 *Using the TG100 with a computer that has a MIDI interface*

In this tutorial the TG100 is used with a computer that has a MIDI interface.

If you are not sure how to connect your computer, please consult your Yamaha dealer.

What you will need

- 1) The TG100 and its power supply adaptor (PA-1505).
- 2) A MIDI master keyboard or synthesizer.
- 3) A computer with a MIDI interface.
- 4) MIDI sequencing software.
- 5) A stereo amplifier and connecting cable, or stereo headphones. If your headphones are fitted with a 1/4" (6.35mm) jack connector, you will need a stereo 3.5mm to 1/4" jack adaptor.
- 6) Two MIDI connecting cables.

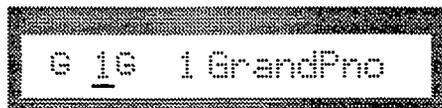
Making the connections

Before making any connections, make sure that all your equipment is switched off and the TG100's power supply adaptor is not plugged into the wall-power (mains) outlet.

- 1) Connect a MIDI cable from your MIDI keyboard's "MIDI OUT" connector to your computer's "MIDI IN" connector.
- 2) Connect a MIDI cable from your MIDI computer's "MIDI OUT" connector to the TG100's "MIDI IN" connector.
- 3) Connect the TG100's "LINE OUT", "R" and "L/MONO" connectors to the inputs of your amplifier (if your amplifier has only one input, connect only the TG100's "L/MONO" connector). Or, if you are using stereo headphones, connect them to the TG100's "PHONES" connector.
- 4) Connect the power supply adaptor to the TG100's "DC IN" connector.
- 5) Plug the power supply adaptor into a wall-power (mains) outlet.

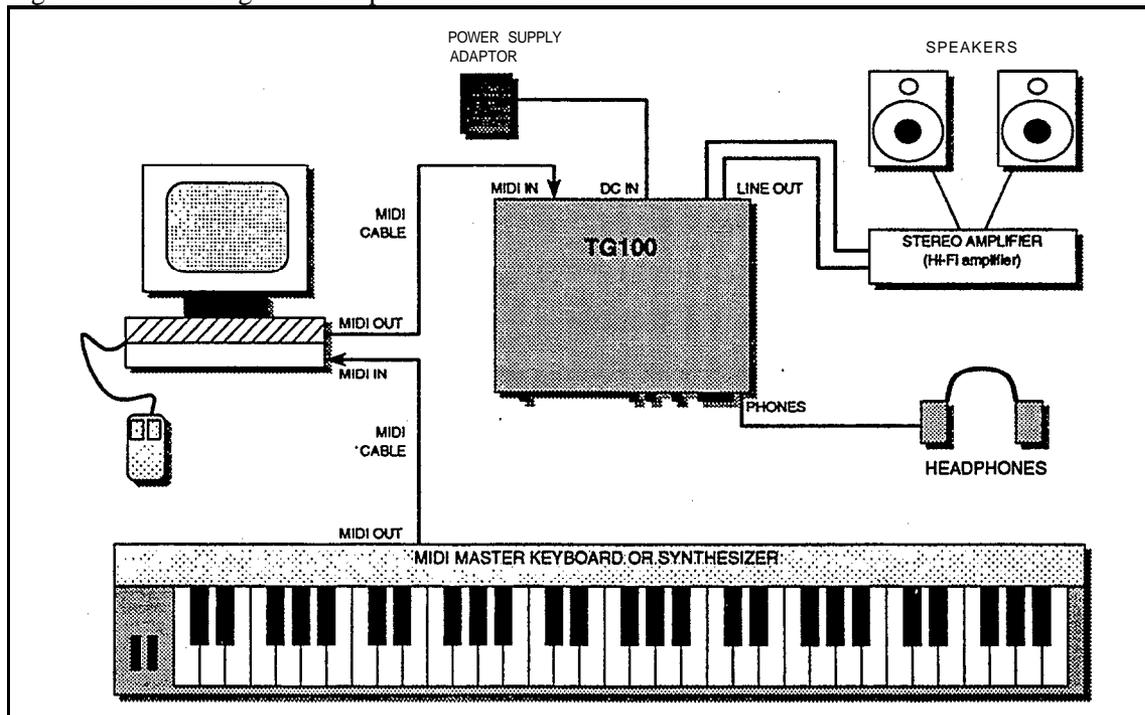
Switching on the power

- 1) Before switching on the power, set the "HOST SELECT" switch to "MIDI".
- 2) Turn down the TG100's "MASTER VOLUME" control, then press the TG100's "POWER" switch. On the TG100's LCD, the message "YAMAHA TG100" will be shown for a few seconds, then the LCD shown below will appear.



- 3) Switch on your MIDI keyboard.
- 4) Switch on your computer and load your MIDI sequencing software.
- 5) Turn down your amplifiers volume control, then switch on your amplifier.

Figure 2. Connecting to a computer that has a MIDI interface.



Settings

- 1) For this tutorial, the TG100's Sound module mode must be General MIDI. If the first letter of the above LCD is not "G", the Sound module mode must be set. See "Selecting the sound module mode" on page 16 of the *Reference Manual*.
- 2) Set the input selector on your amplifier to the input that the TG100 is connected to.
- 3) Set your MIDI keyboard so that its MIDI transmit channel is "1".
- 4) To simplify operation, set sequencer tracks 1 to 16 to MIDI channels 1 to 16. Now, track "1" corresponds to TG100 Part "1", track "2" to TG100 Part "2", etc.
- 5) Select sequencer track "1".
- 6) Set your amplifier's volume control to the position used for normal listening.
- 7) Turn up the TG100's "MASTER VOLUME" control while playing your MIDI keyboard.

If everything is OK, you will be playing, and hearing voice no. 1, Acoustic Grand piano.

If you don't hear anything, check the following.

- Is all your equipment switched on.
- Is your MIDI keyboard and sequencer set to the correct MIDI channel.
- Is the MIDI sequencer's "MIDI THRU" option turned on.
- Check the audio, and MIDI connections.
- Is the TG100's "HOST SELECT" switch set to MIDI.
- Make sure the TG100's MASTER VOLUME control is turned up.
- Check the settings on your amplifier: input selector, volume, speakers, headphones, etc.
- See "Troubleshooting" on page 63 of the *Reference Manual*.

Tracks can now be recorded and MIDI Program Change messages can be sent to the TG100 to select different voices for each of the TG100's Parts.

6 Using the TG100 with a computer that does not have a MIDI interface (TO HOST)

In this tutorial the TG100 is used with a computer that does not have a MIDI interface. If you are not sure how to connect your computer, please consult your Yamaha dealer.

What you will need

- 1) The TG100 and its power supply adaptor (PA-1505).
- 2) A MIDI master keyboard or synthesizer.
- 3) A computer with a serial port (RS-232C, or RS-422).
- 4) MIDI sequencing software that supports the TG100's TO HOST connection.
- 5) A stereo amplifier and connecting cable, or stereo headphones, If your headphones are fitted with a 1/4" (6.35mm) jack connector, you will need a stereo 3.5mm to 1/4" jack adaptor.
- 6) One MIDI connecting cable and a special "HOST" cable. See "Host computer connecting cables" on page 67 of the *Reference Manual*.

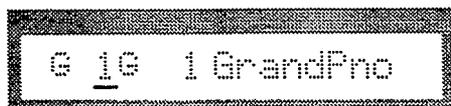
Making the connections

Before making any connections, make sure that all your equipment is switched off and the TG100's power supply adaptor is not plugged into the wall-power (mains) outlet.

- 1) Connect the MIDI cable from your MIDI keyboard's "MIDI OUT" connector to the TG100's "MIDI IN" connector.
- 2) Connect the "HOST" cable from the TG100's "TO HOST" connection to your computer's serial port.
- 3) Connect the TG100's "LINE OUT", "R" and "L/MONO" connectors to the inputs of your amplifier (if your amplifier has only one input, connect only the TG100's "L/MONO" connector). Or, if your are using stereo headphones, connect them to the TG100's "PHONES" connector.
- 4) Connect the power supply adaptor to the TG100's "DC IN" connector.
- 5) Plug the power supply adaptor into a wall-power (mains) outlet.

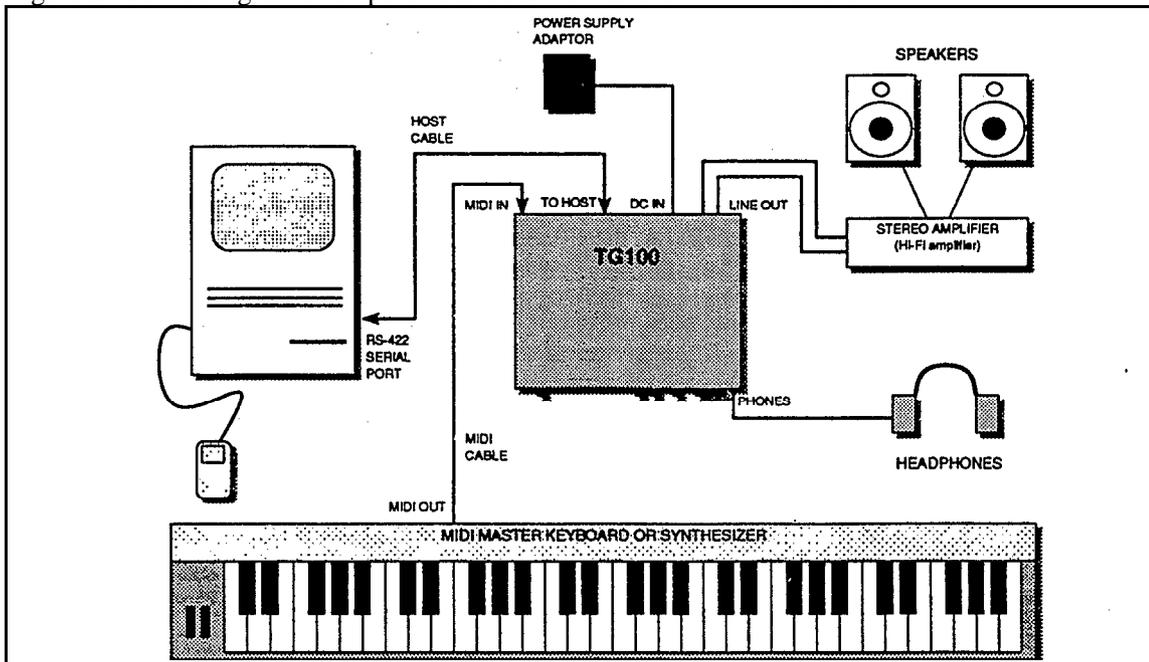
Switching on the power

- 1) Before switching on the power, set the "HOST SELECT" switch to the type of computer being used, either "Mac", "PC-1", or "PC-2". See "Connecting to a computer" on page 53 of the *Reference Manual* for full details.
- 2) Turn down the TG100's "MASTER VOLUME" control, then press the TG100's "POWER" switch. On the TG100's LCD, the message "YAMAHA TG100" will be shown for a few seconds, then the LCD shown below will appear.



- 3) Switch on your MIDI keyboard.
- 4) Switch on your computer and load your MIDI sequencing software.
- 5) Turn down your amplifiers volume control, then switch on your amplifier.

Figure 3. Connecting to a computer that does not have a MIDI interface.



Settings

- 1) For this tutorial, the TG100's Sound module mode must be General MIDI. If the first letter of the above LCD is not "G", the Sound module mode must be set. See "Selecting the sound. module mode" on page 16 of the *Reference Manual*.
- 2) Set the input selector on your amplifier to the input that the TG100 is connected to.
- 3) Set your MIDI keyboard so that its MIDI transmit channel is "1".
- 4) Your MIDI sequencer should be set to "Standard MIDI interface".
- 5) To simplify operation, set sequencer tracks 1 to 16 to MIDI channels 1 to 16. Now, track "1" corresponds to TG100 Part "1", track "2" to TG100 Part "2", etc.
- 6) Select sequencer track "1".
- 7) Set your amplifier's volume control to the position used for normal listening.
- 8) Turn up the TG100's "MASTER VOLUME" control while playing your MIDI keyboard.

If everything is OK, you will be playing, and hearing voice no. 1, Acoustic Grand piano.

If you don't hear anything, check the following.

- Is all your equipment switched on.
- Is your MIDI keyboard and sequencer set to the correct MIDI channel.
- Is the MIDI sequencer's "MIDI THRU" option turned on.
- Check the audio, and MIDI connections.
- Is the TG100's "HOST SELECT" switch set correctly.
- Make sure the TG100's MASTER VOLUME control is turned up.
- Check the settings on your amplifier: input selector, volume, speakers, headphones, etc.
- See "Troubleshooting" on page 63 of the *Reference Manual*.

Tracks can now be recorded and MIDI Program Change messages can be sent to the TG100 to select different voices for each of the TG100's Parts.

7 Editing & Saving Voices

In this tutorial we will edit a voice, give it a new name and then save it to a MIDI data recorder.

Important note about editing voices

Only voices in the Internal voice bank can be edited. When the TG100 is switched on, voices 1...64 from the General MIDI voice bank are copied into the Internal voice bank. To edit one of the other voices it must first be copied into the Internal voice bank.

When the TG100 is switched off, edited voices in the Internal Voice Bank will be lost. If you want to keep the voices that you have edited, they must be saved to a MIDI data recorder using the TG100's Dump All function.

Editing the voice

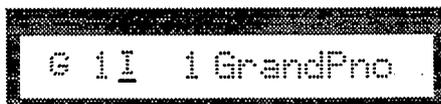
In this tutorial we will change the volume of an element used by voice No. 64, "Synthbrass 2".

- 1) Switch on the TG100 and your other equipment.
- 2) In play mode, move the cursor, using the [CURSOR] button, to the **BK** position.



G 1 1 GrandPno

- 3) Use the [-1/NO] and [+1/YES] buttons to select the Internal Voice Bank "I".



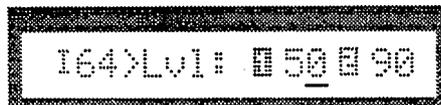
G 1 I 1 GrandPno

- 4) Move the cursor to the **PC#** position, then using the [+1/YES] button, select voice No. "64 Synbras2".



G 1 I 64 SynBras2

- 5) Repeatedly press the [EDIT] button until the following LCD display is shown.



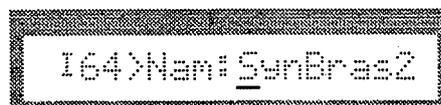
I64>Lvl: 50 90

- 6) Press the [-1/YES] button to change the value from 50 to 95. You have now created a new voice, based on the "64 Synbras2 voice.

Giving the edited voice a new name

Now that we have edited the "64 Synbras2 voice, we will give it a new name.

- 1) Repeatedly press the [EDIT] button until the following LCD display is shown.



I64>Name: SynBras2

- 2) Use the [CURSOR] button to position the cursor under the character that you want to change, and the [-1/NO] and [+1/YES] buttons to change the character. Characters that can be used for voice names are shown on page 44, “Naming voices”, in the *Reference Manual*
- 3) We’ve changed the voice name to “SynBras3”, as shown below.



- 4) Press the [PLAY] button to return to play mode.

Saving the edited voice

We’ve edited the voice and given it a new name. If we want to keep it we must save it to an MDR (MIDI data recorder) using the TG100’s Dump All function.

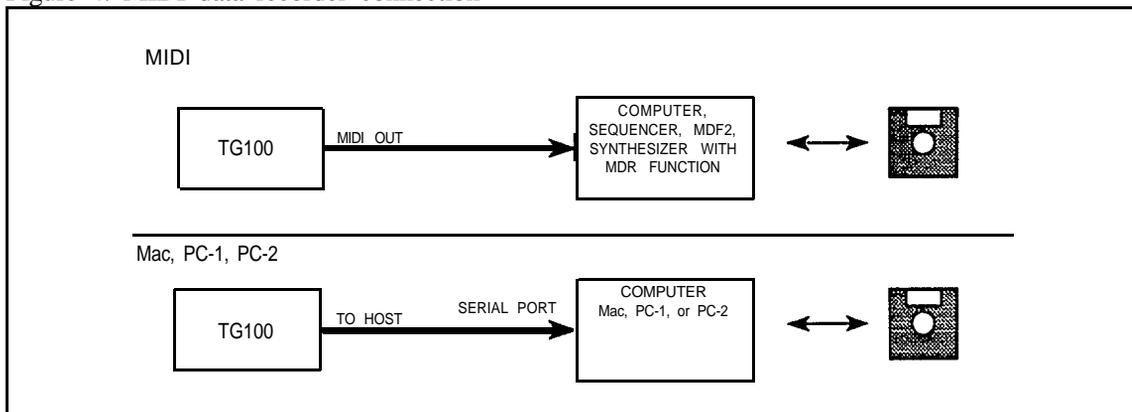
The MIDI data recorder (MDR), could be any one of the following:

- 1) A MIDI sequencer program that can save and load MIDI Bulk Dump data, running on a computer.
- 2) A MIDI librarian program, running on a computer.
- 3) A dedicated MIDI sequencer (Hardware sequencer) that can save and load MIDI Bulk Dump data, such as Yamaha’s QX3.
- 4) A dedicated MIDI data recorder, such as Yamaha’s MDF2.
- 5) A music synthesizer with an MDR (MIDI Data Recorder) function, such as Yamaha’s SY99 music synthesizer.

When the TG100’s bulk dump function is used, all 64 voices in the Internal Voice Bank are transmitted to the awaiting MIDI data recorder.

With the “HOST SELECT” switch set to “MIDI”, Internal Voice Bank data is transmitted via the “MIDI OUT” connection. With the switch set to “Mac”, “PC-1”, or “PC-2”, the data is transmitted via the “TO HOST” connection.

Figure 4. MIDI data recorder connection



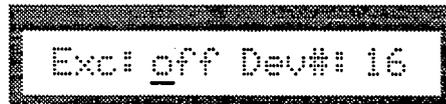
Before the Internal Voice Bank data can be transmitted, the TG100’s “MIDI Exclusive on/off parameter must be set to “ON”. With some MIDI data recorders, you may have to set the TG100 and the MIDI data recorder to the same MIDI device number. Check your MIDI data recorder’s *Operating Manual*.

- 1) With the cursor at the leftward position, as below, simultaneously press the [PART] and [EDIT] buttons.



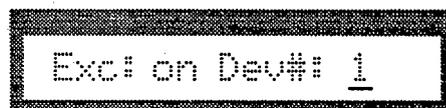
G 11 64 5Br3

- 2) Repeatedly press the [EDIT] button until the following LCD display appears.



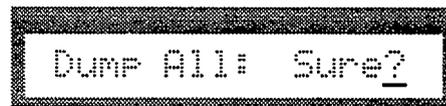
Exc: off Dev#: 16

- 3) Press the [+1/YES] button to switch “Exc: on”. Then, press the [CURSOR] button and use the [-1/NO] and [+1/YES] buttons to set the “Dev#:” number to “1” (the Dev number is the MIDI channel number).



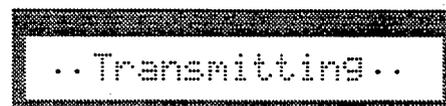
Exc: on Dev#: 1

- 4) Press the [EDIT] button once. The following LCD display will appear.



Dump All: Suree?

- 5) Press the [+1/YES] button to transmit the Internal Voice Bank data. The following LCD message will be shown during the transmission.



..Transmitting..

When the transmission is complete, and the MDR (MIDI data recorder) has received all the data, the MDR will allow you to save the data for future use.

The Internal Voice bank data can be transmitted back to the TG100 from the MIDI data recorder. See your MDR's *Operating Manual* for details.

You might use a different Internal Voice bank for all your compositions. Each TG100 setup could be saved with the same name as the composition. Then, when you want to do some more work on a composition, just reload the data that corresponds to that composition into the TG100, and you're ready to go.

NOTE: Although you can save the System Mode settings, Multi Common Edit settings, Sound Module mode setting and Part to Voice assignments as MIDI Bulk Dump data, they are actually stored by the TG100 when the power is turned off. For Multi Part Edit, only the selected voice bank, voice and MONO/POLY mode settings are stored when the power is turned off.

For details of software, please contact your nearest Yamaha/or the authorized distributor listed below.

Pour plus de détails sur les logiciels, veuillez-vous adresser au concessionnaire/distributeur pris dans la liste suivante le plus proche de chez vous.

Die Einzelheiten zu Software sind bei unseren unten aufgeführten Niederlassungen und Vertragshändlern in den jeweiligen Bestimmungsländern erhältlich.

Para detalles sobre el software, póngase en contacto con nuestra subsidiaria o distribuidor autorizado enumerados a continuación.

NORTH AMERICA

CANADA

Yamaha Canada Music Ltd.
135 Milner Avenue, Scarborough, Ontario,
M1S 3R1, Canada
Tel: 416-298-1311

U.S.A.

Yamaha Corporation of America,
Synthesizer, Guitar, and Drum Division
6600 Orangethorpe Ave., Buena Park, Calif. 90620,
U.S.A.
Tel: 1-800-443-2232

MIDDLE & SOUTH AMERICA

MEXICO

Yamaha De Mexico S.A. De C.V.,
Departamento de ventas
Javier Rojo Gomez No.1149, Col. Gpe Del
Moral, Deleg. Iztapalapa, 09300 Mexico, D.F.
Tel: 686-00-33

BRASIL

Yamaha Musical Do Brasil LTDA.
Ave. Reboucas 2636, São Paulo, Brasil
Tel: 55-11 853-1377

PANAMA

Yamaha De Panama S.A.
Edificio Interseco, Calle Elvira Mendez no.10,
Piso 3, Oficina #105, Ciudad de Panama, Panama
Tel: 507-69-5311

OTHER LATIN AMERICAN COUNTRIES AND CARIBBEAN COUNTRIES

Yamaha Music Latin America Corp.
6101 Blue Lagoon Drive, Miami, Florida 33126,
U.S.A.
Tel: 305-261-4111

EUROPE

THE UNITED KINGDOM/IRELAND

Yamaha-Kemble Music(U.K.) Ltd.
Mount Ave., Bletchley, Milton Keynes MK1 1JE,
England
Tel: 0908-371771

GERMANY/SWITZERLAND

Yamaha Europa GmbH.
Siemensstraße 22-34, D-2084 Rellingen, F.R. of
Germany
Tel: 04101-3030

AUSTRIA/HUNGARY

Yamaha Music Austria GmbH.
Schleiergasse 20, A-1100 Wien Austria
Tel: 0222-60203900

THE NETHERLAND

Yamaha Music Benelux B.V.,
Verkoop Administratie
Postbus 1441, 3500 BK, Utrecht, The Netherland
Tel: 030-308711

BELGIUM/LUXEMBOURG

Yamaha Music Benelux B.V.,
Brussels-office
Keiberg Imperiastraat 8, 1930 Zaventem, Belgium
Tel: 02-7258220

FRANCE

Yamaha Musique France, Division Produits
Professionnels
BP 70-77312 Marne-la-Vallée Cedex 2, France
Tel: 01-64-61-4000

ITALY

Yamaha Musica Italia S.P.A., Combo Division
Viale Italia 88, 20020 Lainate(Milano), Italy
Tel: 02-937-4081

SPAIN

Yamaha-Hazen Electronica Musical, S.A.
Jorge Juan 30, 28001, Madrid, Spain
Tel: 91-577-7270

PORTUGAL

Valentim de Carvalho CI SA
Estrada de Porto Salvo, Paco de Arcos 2780 Oeiras,
Portugal
Tel: 01-443-3398/4030/1823

GREECE

Philippe Nakas S.A.
Navarinou Street 13, P.Code 10680, Athens, Greece
Tel: 01-364-7111

SWEDEN

Yamaha Scandinavia AB
J. A. Wettergrens gata 1, Box 30053, 400 43
Göteborg, Sweden
Tel: 031-496090

DENMARK

Yamaha Scandinavia Filial Danmark
Finsensvej 86, DK-2000 Frederiksberg, Denmark
Tel: 31-87 30 88

FINLAND

Fazer Music Inc.
Länsituulentie 1A, SF-02100 Espoo, Finland
Tel: 90-435 011

NORWAY

Narud Yamaha AS
Østerdalen 29, 1345 Østerås
Tel: 02-24 47 90

ICELAND

Páll H. Pálsson
P.O. Box 85, Reykjavik, Iceland
Tel: 01-19440

EAST EUROPEAN COUNTRIES (Except HUNGARY)

Yamaha Europa GmbH.
Siemensstraße 22-34, D-2084 Rellingen, F.R. of
Germany
Tel: 04101-3030

AFRICA

MOROCCO

Yamaha-Hazen Electronica Musical, S.A.
Jorge Juan 30, 28001, Madrid, Spain
Tel: 91-577-7270

OTHER COUNTRIES

Yamaha Musique France, Division Export
BP 70-77312 Marne-la-Vallée Cedex 2, France
Tel: 01-64-61-4000

MIDDLE EAST ASIA

ISRAEL

R.B.X. International Co., Ltd.
P.O. Box 11136, Tel-Aviv 61111, Israel
Tel: 3-298-251

OTHER COUNTRIES

Yamaha Musique France, Division Export
BP 70-77312 Marne-la-Vallée Cedex 2, France
Tel: 01-64-61-4000

ASIA

HONG KONG

Tom Lee Music Co., Ltd.
15/F., World Shipping Centre, Harbour City,
7 Canton Road, Kowloon, Hong Kong
Tel: 3-722-1098

INDONESIA

PT. Yamaha Music Indonesia (Distributor)
Gedung Yamaha Music Center, Jalan Jend. Gatot
Subroto Kav. 4, Jakarta 12930, Indonesia
Tel: 21-520-2577

KOREA

Cosmos Corporation
131-31 Neung-dong, Sungdong-ku, Seoul, Korea
Tel: 2-466-0021-5

MALAYSIA

Yamaha Music Malaysia Sdn., Bhd.
16-28, Jalan SS 2/72, Petaling Jaya, Selangor,
Malaysia
Tel: 3-717-8977

PHILIPPINES

Yupangeo Music Corporation
339 Gil J. Puyat Avenue, Makati, Metro Manila
1200, Philippines
Tel: 2-85-7070

SINGAPORE

Yamaha Music Asia Pte., Ltd.
80 Tannery Lane, Singapore 1334, Singapore
Tel: 747-4374

TAIWAN

Kung Hsue She Trading Co., Ltd.
KHS Fu Hsing Building, 322, Section 1, Fu-Hsing
S. Road, Taipei 10640, Taiwan, R.O.C.
Tel: 2-709-1266

THAILAND

Siam Music Yamaha Co., Ltd.
933/1-7 Rama I Road, Patumwan, Bangkok,
Thailand
Tel: 2-215-0030

THE PEOPLE'S REPUBLIC OF CHINA AND OTHER ASIAN COUNTRIES

Yamaha Corporation, Asia Oceania Group
Nakazawa-cho 10-1, Hamamatsu, Japan 430
Tel: 81(Country Code)-53-460-2311

OCEANIA

AUSTRALIA

Yamaha Music Australia Pty. Ltd.
17-33 Market Street, South Melbourne, Vic. 3205,
Australia
Tel: 3-699-2388

NEW ZEALAND

Music Houses of N.Z. Ltd.
146/148 Captain Springs Road, Te Papapa,
Auckland New Zealand
Tel: 9-640-099

COUNTRIES AND TRUST

TERRITORIES IN PACIFIC OCEAN

Yamaha Corporation, Asia Oceania Group
Nakazawa-cho 10-1, Hamamatsu, Japan 430
Tel: 81(Country Code)-53-460-2311

YAMAHA

YAMAHA



tone generator

TG100

REFERENCE MANUAL

FCC INFORMATION (U.S.A.)

1. IMPORTANT NOTICE: DO NOT MODIFY THIS UNIT!

This product, when installed as indicated in the instructions contained in this manual, meets FCC requirements. Modifications not expressly approved by Yamaha may void your authority, granted by the FCC, to use the product.

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

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

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

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

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

If these corrective measures do not produce satisfactory results, please contact the local retailer authorized to distribute this type of product. If you can not locate the appropriate retailer, please contact Yamaha Corporation of America, Electronic Service Division, 6600 Orangethorpe Ave, Buena Park, CA 90620

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

Dette apparat overholder det gældende EF-direktiv vedrørende radiostøj.

Cet appareil est conforme aux prescriptions de la directive communautaire 87/308/CEE.

Diese Geräte entsprechen der EG-Richtlinie 82/499/EWG und/oder 87/308/EWG.

This product complies with the radio frequency interference requirements of the Council Directive 82/499/EEC and/or 87/308/EEC.

Questo apparecchio è conforme al D.M.13 aprile 1989 (Direttiva CEE/87/308) sulla soppressione dei radiodisturbi.

Este producto está de acuerdo con los requisitos sobre interferencias de radio frecuencia fijados por el Consejo Directivo 87/308/CEE.

YAMAHA CORPORATION

CANADA

THIS DIGITAL APPARATUS DOES NOT EXCEED THE "CLASS B" LIMITS FOR RADIO NOISE EMISSIONS FROM DIGITAL APPARATUS SET OUT IN THE RADIO INTERFERENCE REGULATION OF THE CANADIAN DEPARTMENT OF COMMUNICATIONS.

LE PRESENT APPAREIL NUMERIQUE N'EMET PAS DE BRUITS RADIOELECTRIQUES DEPASSANT LES LIMITES APPLICABLES AUX APPAREILS NUMERIQUES DE LA "CLASSE B" PRESCRITES DANS LE REGLEMENT SUR LE BROUILLAGE RADIOELECTRIQUE EDICTE PAR LE MINISTERE DES COMMUNICATIONS DU CANADA.

*This applies only to products distributed by YAMAHA CANADA MUSIC LTD.

IMPORTANT NOTICE FOR THE UNITED KINGDOM

Connecting the Plug and Cord

IMPORTANT: The wires in mains lead are coloured in accordance with the following code:

Blue : NEUTRAL
Brown : LIVE

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

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

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

Making sure that neither core is connected to the earth terminal of the three pin plug.

* This applies only to products distributed by YAMAHA KEMBLE MUSIC (U.K.) LTD.

SPECIAL MESSAGE SECTION

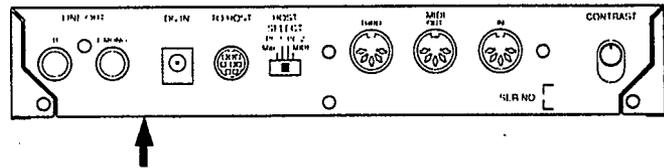
ELECTROMAGNETIC INTERFERENCE (RFI): Your Yamaha Digital Musical Instrument Product has been type tested and found to comply with all applicable regulations. However, if it is installed in the immediate proximity of other electronic devices, some form of interference may occur. For additional RFI information see FCC Information section located in this manual.

IMPORTANT NOTICE: This product has been tested and approved by independent safety testing laboratories in order that you may be sure that when it is properly installed and used in its normal and customary manner, all foreseeable risks have been eliminated. **DO NOT** modify this unit or commission others to do so unless specifically authorized by Yamaha. Product performance and/or safety standards may be diminished. Claims filed under the expressed warranty may be denied if the unit is/has been modified. Implied warranties may also be affected.

SPECIFICATIONS SUBJECT TO CHANGE: The information contained in this manual is believed to be correct at the time of printing. Yamaha reserves the right to change or modify specifications at any time without notice or obligation to update existing units.

NOTICE: Service charges incurred due to a lack of knowledge relating to how a function or effect works (when the unit is operating as designed), are not covered by the manufacturer's warranty. Please study this manual carefully before requesting service.

NAMEPLATE LOCATION: The following graphic indicates the location of the Name Plate on your Yamaha Digital Musical Instrument. The Model, Serial Number, Power requirements, etc., are indicated on this plate.



You should note the model, serial number and the date of purchase in the spaces provided below and retain this manual as a permanent record of your purchase.

Model _____

Serial No. _____

Purchase Date _____

STATIC ELECTRICITY CAUTION: Some Yamaha Digital Musical Instrument products have modules that plug into the unit to perform various functions. The contents of a plug-in module can be altered/damaged by static electricity discharges. Static electricity build-ups are more likely to occur during cold winter months (or in areas with very dry climates) when the natural humidity is low. To avoid possible damage to the plug-in module, touch any metal object (a metal desk lamp, a door knob, etc.) before handling the module. If static electricity is a problem in your area, you may want to have your carpet treated with a substance that reduces static electricity build-up. See your local carpet retailer for professional advice that relates to your specific situation.

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

Table of Contents

TG100 features	2	8 System Mode Functions.....	46
Conventions used in this manual	2	Master tuning.....	46
Cleaning the TG100	2	Velocity meter mode setting.....	47
Trademarks	2	MIDI Exclusive on/off, device number.....	49
1 What is the TG100	3	Using MIDI Dump to save data.....	50
Inside the TG100	5	Initialize All (reset to default settings).....	51
Menu functions	6	Playing the Demo song.....	52
Sound module modes	7	9 Connecting to a computer.....	53
Truncation	7	MIDI	53
MIDI	8	Mac.....	54
2 Controls & connections.....	11	PC-1	55
Front panel	11	PC-2	55
Rear panel	13	10 Other Functions.....	56
3 Play Mode	15	Adjusting the LCD contrast.....	56
The LCD	15	AUDIO IN connection.....	56
Selecting the sound module mode.....	16	11 Typical System	
4 Selecting instrument voices... 18		Configurations	57
Voice bank table	19	MIDI keyboard.....	57
Selecting drum kits (Part 10)	23	Computer sequencer.....	57
Standard, Room, Power & Electronic drum		Disk Orchestra system	57
kit layouts	25	Sequencer system	58
Standard, Analog, Brush & Orchestra drum		MIDI connection	58
kit layouts	26	TO HOST connection.....	59
RX drum kit layout	27	12 Appendix	60
Clavinova & C/M drum kit layouts	28	Internal voice bank table.....	60
5 Multi Common Edit Mode..... 29		TG100 Setup table	62
Selecting the type of reverb.....	29	Troubleshooting	63
Setting the reverb level.....	30	Glossary	64
6 Multi Part Edit Mode	31	13 TG100 specifications.....	66
Part volume	31	Technical specifications.....	66
Part panpot (stereo position)	32	Rack mounting.....	66
Part EG attack rate	34	Host computer connecting cables.....	67
Part EG release rate	35	14 Index	68
Part reverb send level	36	15 MIDI Data Format.....	70
Part MIDI receive channel	37	MIDI implementation chart.....	78
7 Voice edit mode	39		
Adjusting the volume of voice elements.....	41		
Detuning voice elements	42		
Panning voice elements	43		
Naming voices	44		
Copying voices	45		

TG100 features

- AWM (Advanced Wave Memory) sound sampling technology
- 192 instrument voices
- 10 drum kits
- 16 voices can be produced simultaneously
- 28-note polyphony (Dynamic allocation)
- DSP (Digital Signal Processor) for digital reverb effects
- Simple editing can be performed on the 64 voices in the Internal voice bank
- Host computer connection allows direct connection to a computer, without a MIDI interface
- External sound sources can be mixed with the TG100's sounds, using the stereo AUDIO IN facility, which provides an input level control and signal level peak indicator.
- Conforms to the General MIDI system Level 1 standard, allowing playback of MIDI songs recorded on other equipment
- Compatible with Yamaha's "Disk Orchestra Collection" range of music software
- Compatibility with CM-64 software
- Comprehensive MIDI implementation for external control via MIDI software
- Includes 1 demo song

Conventions used in this manual

To avoid confusion between the minus symbol (-) and a dash (-), the lower and upper limits of a parameter's adjustable range are separated by three full stops.

For example, EG Attack rate range -7...+7.

When the TG100's push-button switches are mentioned, the name of the button is enclosed in square brackets.

For example, [CURSOR] button.

Cleaning the TG100

If the TG100 should require cleaning use a soft, lightly moistened cloth. Stubborn marks can be removed using a mild detergent. Do not use abrasive cleaners or solvent based cleaning fluids, such as alcohol and benzene.

Trademarks

IBM®, PC-AT™ and PS/2™ are trademarks of International business Machines Corporation.

Apple® and Macintosh™ are trademarks of Apple Computer, Incorporated.

Atari® and ST™ are trademarks of Atari Corporation.

PC-9800™ is a trademark of NEC.

All other trademarks acknowledged.

1 *What is the TG100*

The TG100 is a 28-note polyphonic AWM (Advanced Wave Memory) tone generator. It contains 192 instrument voices and 10 drum kits. Up to 16 voices can be produced simultaneously.

The TG100 is best suited to work with a MIDI sequencer, but it can also be used with a synthesizer, for voice layering, etc.

To play the TG100 sound module, MIDI data must be input from either a MIDI keyboard, MIDI sequencer or MIDI data recorder. Data can be input using the TG100's MIDI connections or via the "TO HOST" connection, which allows direct connection to a computer that does not have MIDI inputs and outputs.

If there are any terms that you are not familiar with in the following text, please refer to the "Glossary" on page 64.

AWM (Advanced Wave Memory)

All the sounds in the TG100 are produced using AWM (Advanced Wave Memory). AWM is a technique developed by Yamaha for digitally sampling and reproducing naturally occurring sound.

Elements

Sound samples are stored as elements in the TG100's internal ROM (Read Only Memory).

Voices

Elements are used to form the voices, that is Electric Piano, Acoustic Guitar, etc. The TG100 is a "Multi-Timbral" device, which means that it can produce up to 16 different voices simultaneously. The TG100's 192 instrument voices are arranged into three voice banks: G - General MIDI, D - Disk Orchestra and C - C/M.

Parts

Voices are assigned to one of 16 Parts and can be controlled as 16 independent instruments. Each Part is set to receive controlling data on a different MIDI channel, that is, controlling data sent from your master keyboard or computer sequencer. Any number of Parts can be set to receive MIDI data on the same MIDI channel. This allows you to create complex sounds using a combination of voices, this technique is known as "Layering".

The following parameters can be adjusted for each Part; volume, pan position, attack rate, release rate and the amount of reverb.

Polyphony

The TG100 can play 28 elements simultaneously, which means that it is 28-note polyphonic.

The 28 available notes are dynamically divided among the 16 Parts. This means that notes are automatically allocated to Parts as and when required.

Drums

The TG100 contains 10 drum kits. Part 10 is dedicated to drums and has number one note priority. You cannot select a different type of voice for Part 10, but you can select any one of 10 drum kits: Standard, Room, Power, Electronic, Analog, Brush, Orchestral, Clavinova, RX and C/M.

The Clavinova, RX and C/M kits are related to the TG100's three sound module modes and basically provide compatibility with songs recorded using Yamaha's Clavinova, Yamaha's Disk Orchestra Collection and semi-compatibility for drum patterns recorded on Yamaha's RX range of drum machines and the CM-64. See "Sound module modes" on page 7 for more information.

Digital Reverb

The TG100 contains a DSP (Digital Signal Processor) that is used to generate eight different types of reverb effects: Hall 1 & 2, Room 1 & 2, Plate 1 & 2 and Delay 1 & 2. Reverb is the most commonly used effect for recording music, and usually makes the difference between "lifeless" sounds and the bright, professional sounds that you hear on record.

Editing voices

The TG100 has 64 (1...64) internal memory locations, which can be used for editing voices. When the TG100 is first switched on, preset voices 1...64 from the General MIDI voice bank are automatically copied into these internal memory locations. Simple editing functions can be performed on these 64 voices, such as, volume, detuning and pan. If a voice consists of two elements, independent editing of each element is possible.

To edit the other voices, they must first be copied into one of the 64 internal memory locations. Once a voice has been edited, a new name can be assigned to it.

The TG100 cannot store edited voices when the power is turned off, so if you want to keep your edited voices for future use, you must save them to an MDR (MIDI Data Recorder). This could be a MIDI computer sequencer; a librarian program; a dedicated MIDI data recorder, such as Yamaha's MDF2; or a synthesizer with an MDR function, such as Yamaha's SY99 music synthesizer.

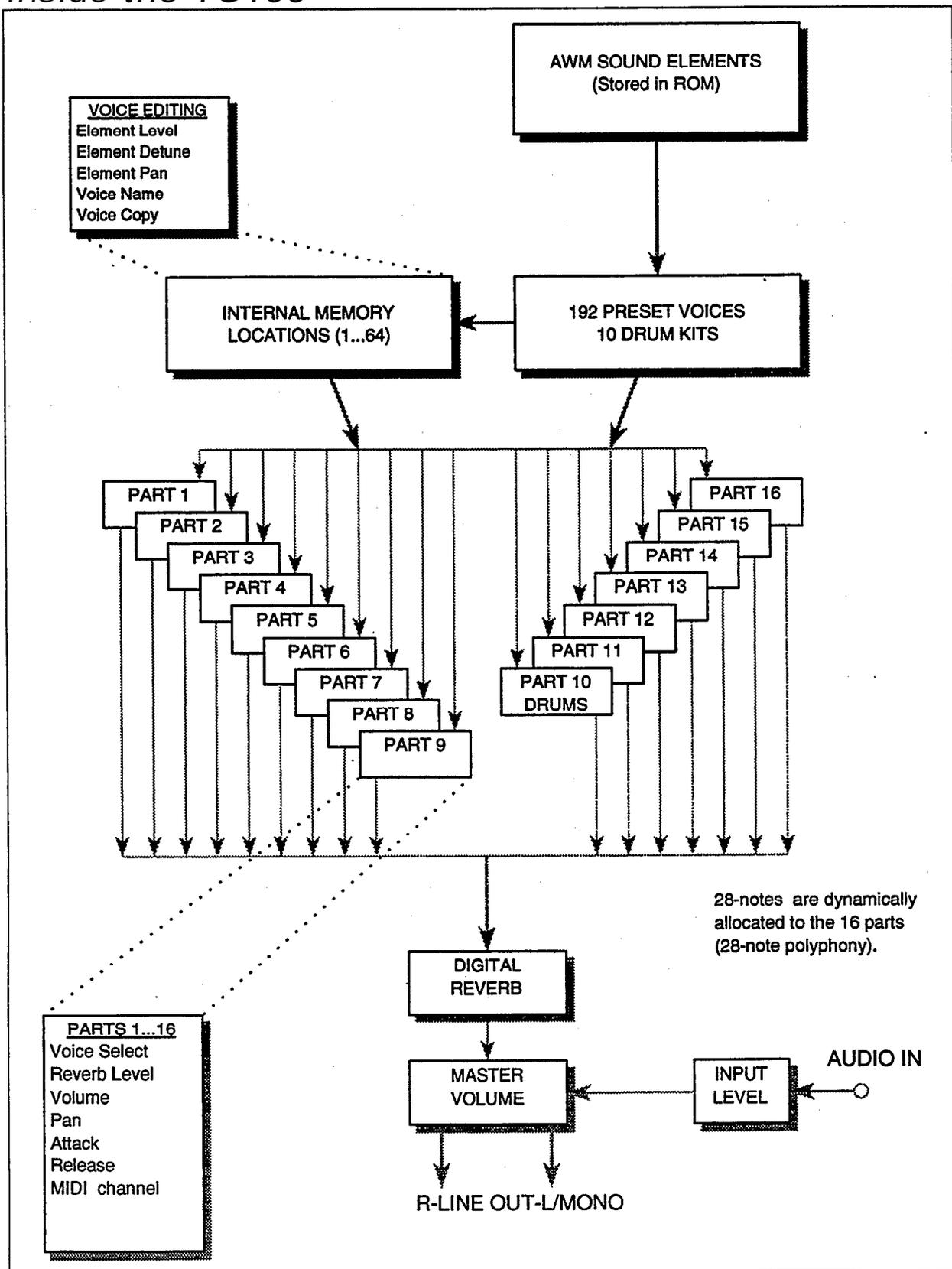
User setup tables

On page 60 of this manual there is an "Internal voice bank table" where you can keep details about the voices you have edited.

On page 62 there is a "TG100 Setup table" where you can keep TG100 setup information, such as multi common edit parameters, system mode parameters and multi Part edit parameters.

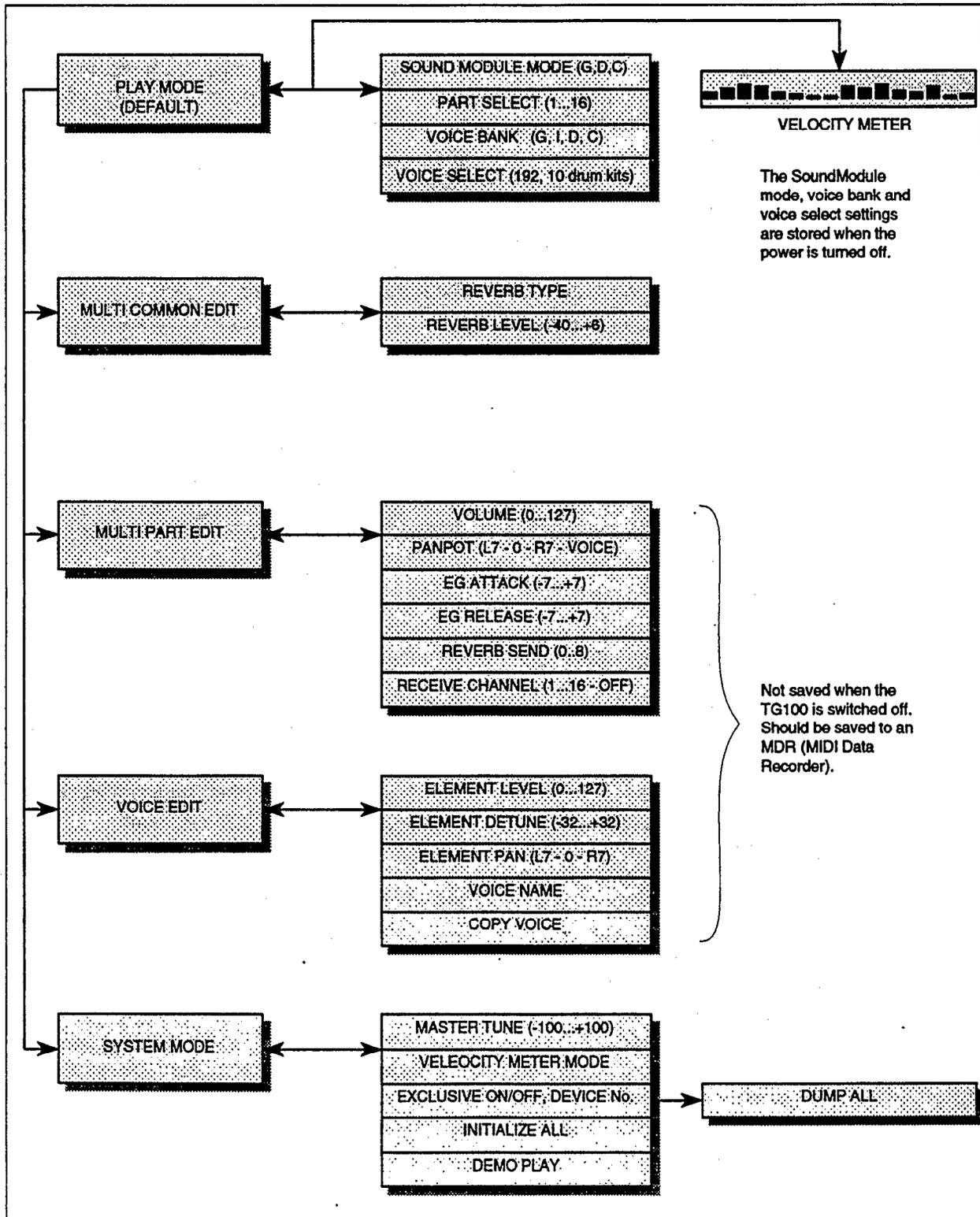
Feel free to photocopy these tables.

Inside the TG100



Menu functions

This diagram shows how the TG100's functions are organized.



Sound module modes

G - General MIDI Level 1

This is the default (factory) mode. General MIDI Level 1 is a recent addition to the MIDI standard. It standardizes the assignment of Program Change numbers to particular voices. For example, if MIDI Program Change number one is sent to a tone generator that complies with the General MIDI standard, the selected voice will always be an Acoustic Grand Piano.

The General MIDI standard gives MIDI song files greater compatibility when transferred between different manufacturers equipment. For example, you could send a MIDI song file, on a floppy disk, to another member of your band, or a friend. Even if he doesn't have the same MIDI instrument as you, so long as it complies with the General MIDI standard, he will quickly and easily be able to play back the song, without having to reassign voices, Parts and MIDI channels.

D - Disk Orchestra/Clavinova

The Disk Orchestra Collection is a series of music titles made by Yamaha, which are available on floppy disk. They cover popular music, classical music and study and each disk contains 7 or 8 pieces of music. Each song is stored as MIDI data in Yamaha's own "ESEQ" file format. These disks can be played using Yamaha's DRC-20, DOM-30 or MDF2.

In this mode, the TG100's Program Change and drum note assignments are set the same as those used by the Disk Orchestra Collection, allowing quick and easy playback, without having to reassign voices, Parts and MIDI channels.

C - C/M

This mode is similar in principle to the Disk Orchestra mode and provides semi-compatibility for songs recorded using a CM-64 sound module.

In this mode, the TG100's Program Change and drum note assignments are set the same as those used by the CM-64, allowing quick and easy playback, without having to reassign voices, Parts and MIDI channels.

NOTE: These sound module modes do not guarantee 100% compatibility for MIDI data files. Different tone generators use different sound generation processes. They also use different note priority systems and have different effects.

Truncation

If all 28 notes are being used simultaneously (sounding at the same time), some sort of priority system must be used to allow new notes to sound.

The TG100 does this by first giving note priority to Part 10, which is always used for drums. It does not matter which MIDI channel Part 10 is set to, Part 10 always has priority. Each drum sound requires one note. For the remaining 15 Parts, priority is given in ascending order of MIDI receive channel.

For example, all 28 notes are currently being used, then some new MIDI note data is received. The TG100 will check to see if any notes are being used by the Part assigned to MIDI channel 16. If yes, the required number of notes from that Part will stop sounding (be truncated) and the new notes will be heard. If no, the TG100 will check the Part assigned to MIDI channel 15, then 14 and so on, until all the new notes are sounding. Remember it doesn't matter which MIDI channel Part 10, drums, is assigned to, it will always have priority.

Effectively, priority means the order in which Parts are checked for available notes. For example, Part 10, drums, always has No. 1 priority, so the TG100 will always check the other 15 Parts before Part 10.

For most applications, 28 notes will be more than adequate, so you shouldn't have to worry about MIDI channel priority and notes being truncated. But, if nearly all 16 Parts are being used and you are using some large sustaining chords, it is a good idea to assign the more important Parts to the lower MIDI channels and to carefully plan your composition with regard to which voices sound at the same time.

Typical Part, voice & MIDI channel setup

The table below shows how the Part, voice and MIDI channels might be setup.

The important voices used in this particular composition are assigned to Parts 1 to 10. Part 10, the drum Part, having number one priority.

The "No. of notes used" column shows the maximum number of simultaneously played notes for each voice, the total being 34. Although we only have 28 notes available, this will not be a problem because at no point in the composition do we have more than 20 notes sounding simultaneously. This is where the TG100's dynamic note allocation function comes in, allocating notes to Parts as and when required.

Part	VOICE	MIDI CH	No. of notes used
1	Acoustic Piano	1	6
2	Electric Bass	2	2
3	String Ensemble 2	3	4
4	Electric Guitar (muted)	4	3
5	Alto Sax	5	2
6	Trumpet	6	2
7	Synth Pad1 (new age)	7	4
8	Synth Drum	8	1
9	Castanets	9	1
10	Room kit	10	3
11	Synth Effect FX3 (cystal)	11	1
12	Mallet	12	1
13	Triangle	13	1
14	Woodblock	14	1
15	Agogo	15	1
16	Guitar Fret Noice	16	1
			TOTAL 34

MIDI

Control data must be input to the TG100 for it to produce any sound. The format of this data is called MIDI (Musical Instrument Digital Interface). MIDI is quite a comprehensive subject, so here we will just look at the basics. A basic understanding of how MIDI works will help you to get the most out of your TG100. If you want to know more about MIDI, there are many good books available.

MIDI allows communication between electronic musical instruments. MIDI connections do not carry audio signals, they carry a digital, computer type signals. MIDI signals are processed in real-time, which means that when you press a key on your MIDI keyboard, MIDI data such as the note number and velocity (how hard the key was pressed) is transmitted to whatever MIDI device is connected via the keyboards MIDI OUT connection.

Connected MIDI instruments will only respond to the data if they are set to the same MIDI receive channel as the MIDI keyboards MIDI send channel. There are 16 MIDI channels.

MIDI data is divided into two types: Channel Messages and System Messages.

Channel messages

Channel Messages are sent on the individual MIDI channels. Only the instruments that are set to receive MIDI data on that particular MIDI channel will use the data. Instruments set to a different MIDI receive channel will ignore it. Channel Messages can be further divided into the following data types.

Voice Messages

These are the simplest type of MIDI messages and basically consist of note-on, velocity and note-off data. The TG100 recognizes all voice Messages.

Control Change

Control Change Messages consist of modulation, portamento time, volume, pan-pot, etc., data types. Not all MIDI instruments recognize the same Control Change Messages. See “MIDI implementation chart” on page 78 for details about which Control Change Messages the TG100 recognizes. The TG100’s voice banks are selected using this type of message.

Program Change

Program Change Messages are used to select instrument voices. In the TG100, these messages are used to select the voice used by each Part and the different drum kits for Part 10. For example, if the TG100 is set to Disk Orchestra mode and a MIDI song file from the Disk Orchestra Collection is sent to the TG100 via MIDI, at the beginning of the song, Program Change messages will be sent to each of the TG100’s Parts to select the correct voice. For example, a piano voice is selected for the Part that is receiving piano data, a bass voice for the Part that is receiving bass data, etc.

Pitch Bend

Pitch Bend data is sent when the pitch bend wheel on a MIDI keyboard is used.

Aftertouch

Aftertouch data is sent when you press down harder on a key, or number of keys, which are currently being held down. This data can control volume, vibrato, LFO, etc. and allows greater expression of sustaining notes. There are two types of Aftertouch Messages; Channel and Polyphonic. Channel applies to all notes on the same MIDI channel and Polyphonic applies to individual notes. The TG100 recognizes only Channel type Aftertouch.

Mode Messages

There are four types of mode messages. These messages determine how a MIDI instrument responds to MIDI data. With OMNI ON, an instrument will respond to all the MIDI data on all 16 channels. With OMNI OFF, an instrument will respond to data on its currently set MIDI receive channel only. “POLY” means polyphonic and “MONO” means monophonic. The TG100 is set to OMNI OFF, POLY (see “Mode 3 - OMNI OFF, POLY” on page 10).

Mode 1 - OMNI ON, POLY

The MIDI instrument will respond to all channel type messages regardless of the MIDI channel setting. Mainly used when two, or three synthesizers or tone generators are being used in unison. This allows new and interesting sounds to be created by having each synthesizer/tone generator set to a different voice, this

technique is known as “layering”.

Mode 2 - OMNI ON, MONO

The MIDI instrument will respond to all channel type messages regardless of the MIDI channel setting, but only one note can be played at a time.

Mode 3 - OMNI OFF, POLY

The MIDI instrument will respond to data on its currently set MIDI receive channel only. Mainly used with MIDI sequencers and multi-timbral type tone generators like the TG100. The TG100 is always set to Mode 3 - OMNI OFF, POLY and cannot be changed.

Mode 4 - OMNI OFF, MONO

The MIDI instrument will respond to data on its currently set MIDI receive channel only, but only one note can be played at a time. Mainly used with MIDI guitars and MIDI guitar controllers. Each string is assigned to a different MIDI channel and only one note is sent, per MIDI channel at a time.

System messages

These messages are sent regardless of MIDI channel settings and are used to control all the MIDI instruments connected in a MIDI system.

System Messages can be timing and control data sent from a MIDI sequencer to a MIDI drum machine. The sequencer tells the drum machine when to start playing, when to stop and continuously sends time-clock data so that the drum machine plays in time with the sequencer.

System Exclusive Messages are System Messages that correspond to individual manufacturers MIDI equipment. They allow remote editing of synthesizer, or tone generator voices using voice editing software that is available for most music computers.

Voice settings can be saved to a MIDI sequencer, librarian or MIDI data recorder using System Exclusive Messages. This is usually known as MIDI Bulk Dump.

The TG100 uses System Exclusive Messages to save (or recall) edited voices to an MDR (MIDI data recorder). See “Using MIDI Dump to save data” on page 50.

Although not recommended for the beginner, for the expert MIDI user, all the TG100’s parameters can be controlled via System Exclusive Messages. Many parameters that are not accessible using the TG100’s control panel, such as element editing are available. See “MIDI Data Format” on page 70.

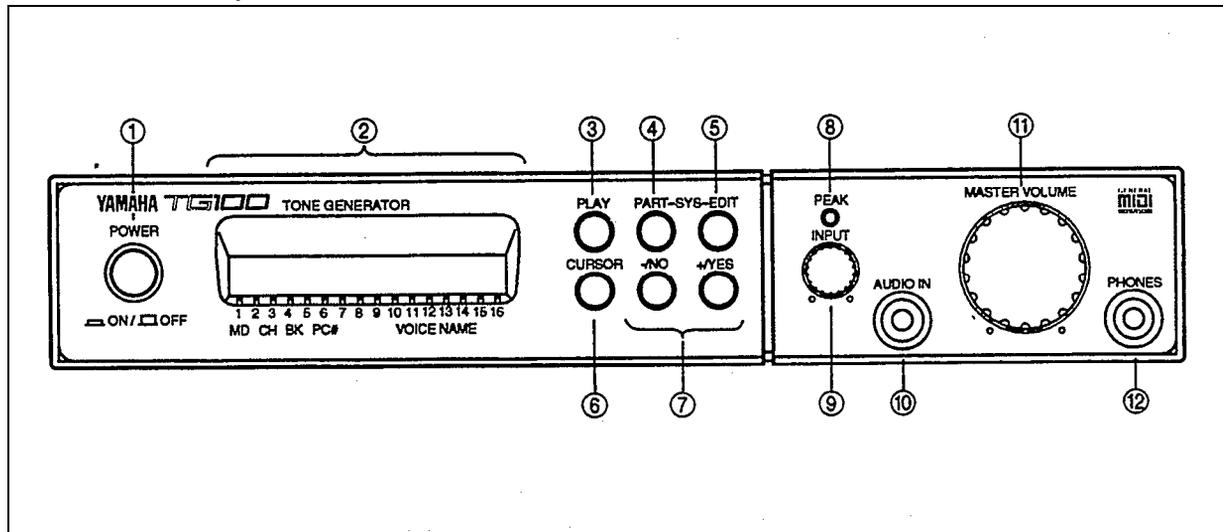
MIDI Song files

Until recently, most MIDI sequencers saved songs in different song file formats. So, transferring songs between sequencers was virtually impossible. The MIDI standard file format (MIDI SNG FILE) allows MIDI songs to be transferred between different sequencers. Most of the popular software and hardware based sequencers can now save and read song files in their own format and the MIDI standard file format. This makes it very easy to transfer MIDI songs between different manufacturers’ sequencers.

<p>NOTE: The Disk Orchestra Collection song files use Yamaha’s own “ESEQ” file format.</p>

2 Controls & connections

Front panel



① POWER switch

Used to turn the power on and off. Press once to switch on, press again to switch off.

② LCD

One line, 16 character LCD display.

③ [PLAY] button

Selects play mode. If pressed while in any of the edit modes or in system mode, play mode will be selected.

④ [PART] button

Used to select the 16 Parts. Pressed simultaneously with the [EDIT] button engages system mode.

⑤ [EDIT] button

Used to select one of the three edit modes; Multi Common Edit, Multi Part Edit and voice Edit. The selected edit mode depends on the LCD cursor position before the [EDIT] button is pressed.

⑥ [CURSOR] button

This button is used to move the LCD cursor. Each time it is pressed, the cursor moves one position to the right. When the cursor is positioned at the rightward side of the LCD, the next press of the [CURSOR] button will move the cursor to the leftward side of the LCD.

If the cursor is positioned at the rightward side of the LCD and an “→” symbol is shown, then pressing the [CURSOR] button will move to the next menu function. For example, in voice Edit mode, pressing the [CURSOR] button will change the menu function from “ELEMENT LEVEL” to “ELEMENT DETUNE”, etc.

If the cursor is positioned at the leftward side of the LCD and an “←” symbol is shown, then pressing the [CURSOR] button will move to the previous menu function.

⑦ [-1/NO] & [+1/YES] buttons

These buttons are used to adjust parameter values. The cursor must be positioned underneath the parameter value that is to be adjusted. Pressing the [-1/NO] button decreases the value and pressing the [+1/YES] button increases the value. If you press and hold down either button, the data value will change quickly.

These keys are also used when the TG100 requires a YES or NO answer from you. For example, “Demo Play Start ?”. Pressing the [+1/YES] button will start the demo song playing.

⑧ PEAK indicator

This indicator will light up when the maximum signal level which the TG100 can accept is applied to the AUDIO IN preamplifier. The INPUT level control should be adjusted so that this indicator does not light.

⑨ INPUT level control

This control adjusts the amount of signal gain that is applied to the AUDIO IN signal. It allows you to set the sound balance between the AUDIO IN signal and the TG100's sounds.

⑩ AUDIO IN connector

This is a stereo 3.5mm mini jack. Audio signals connected here are first fed to a pre-amplifier circuit, the gain of which is controlled by the INPUT level control, then mixed with the output signal of the TG100 and output to the LINE OUT connectors.

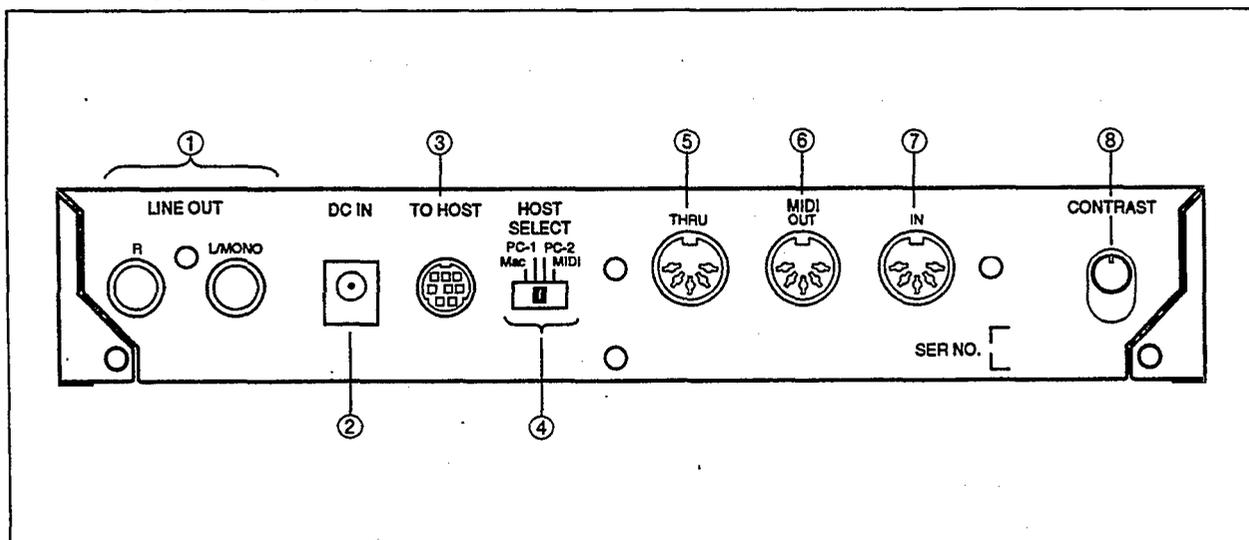
⑪ MASTER VOLUME control

This control adjusts the volume level of the signal appearing at the LINE OUT and PHONES connections (that is, the overall volume level, the TG100 sounds mixed with the AUDIO IN signal).

⑫ PHONES connector

A stereo 3.5mm mini jack, used for connecting headphones. The headphone volume is adjusted by using the MASTER VOLUME control.

Rear Panel



① LINE OUT (R, L/MONO) connectors

A pair of 1/4" mono jack sockets. These should be connected to the inputs of a stereo audio amplifier or an audio mixer. If the audio amplifier you are using is only mono, use only the L/MONO output.

② DC IN connector

The power supply adaptor (PA-1505) is connected here. Before connecting the adaptor, make sure it is disconnected from the wall-power (mains) outlet. Always connect the adaptor to the TG100 and then plug the adaptor into the wall-power (mains) outlet.

③ TO HOST connector

An 8-PIN mini DIN connector that allows direct connection to a computer that is running music software. This can be used when your computer does not have MIDI input and output connections. The TG100 is connected to one of the computer's "Serial Ports". See "Connecting to a computer" on page 53, for full details.

NOTE: Not all music software can use this type of connection, so please consult your Yamaha dealer before making a purchase.

④ HOST SELECT switch

This switch setting depends on the type of computer being used and how it is connected. See "Connecting to a computer" on page 53 for full details.

⑤ MIDI THRU

MIDI data appearing at the MIDI IN connection is buffered, then output from the MIDI THRU connector. That is, all MIDI data appearing at the MIDI IN connector is output to the MIDI THRU connector unaffected by the TG100.

This allows a “daisy chain” type connection of MIDI equipment. Each connected MIDI device receives all the data that is being transmitted, but only responds to data on its selected MIDI channel.

⑥ MIDI OUT

System Exclusive MIDI data is output from this connector. This is normally connected to the MIDI IN connection of an MDR (MIDI Data Recorder), such as a MIDI computer sequencer; a librarian program; a dedicated MIDI data recorder, such as Yamaha’s MDF2; or a synthesizer with an MDR function, such as Yamaha’s SY99 music synthesizer.

⑦ MIDI IN

The TG100 receives MIDI data via this connection. This is normally connected to the MIDI OUT of a MIDI keyboard, synthesizer, MIDI Sequencer or a MIDI data recorder.

See “Typical System Configurations” on page 57 for more details about connecting equipment to the TG100.

<p>NOTE: The operation of both the MIDI IN and MIDI OUT connections varies depending on the position of the HOST SELECT switch. See “Connecting to a computer” on page 53 for full details.</p>
--

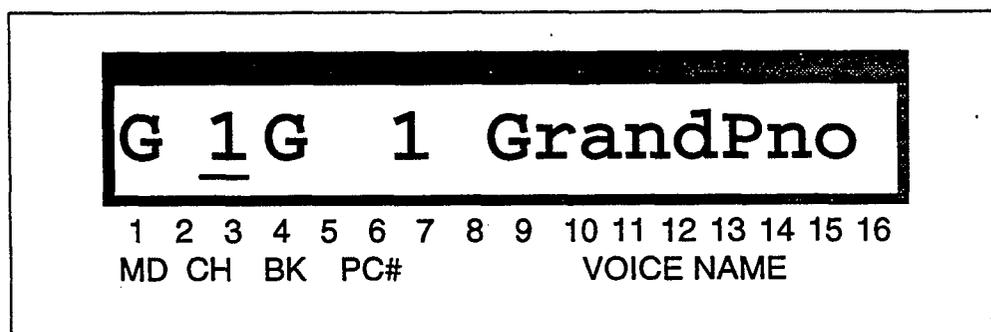
⑧ CONTRAST control

This control adjusts the contrast of the LCD display. This is used to optimize the readability of the LCD display when it is viewed from different angles (different heights).

3 Play Mode

When the TG100 is turned on for the first time, or after the INITIALIZE ALL function has been used, the sound module mode is General MIDI. All 16 Parts are assigned voice No. 1, Piano. The assignment of MIDI channels to the 16 Parts is shown on page 16.

The LCD



MD - Indicates the current sound module mode.

- G - General MIDI
- D - Disk Orchestra
- C - C/M

CH - Indicates the MIDI receive channel of the currently selected Part.

If a Part's MIDI receive channel is set to "OFF", "*" will be shown at the "CH" position.

When either the Disk Orchestra or C/M sound module mode is selected, the assignment of the MIDI channels to the 16 Parts will be different. See "Selecting the sound module mode" on page 16.

BK - Indicates the currently selected voice bank.

In the above example, "G" indicates that the General MIDI voice bank has been selected. Other available voice banks are, Internal, Disk Orchestra and C/M.

PC# - Indicates the MIDI Program Change number currently assigned to the selected voice. Remember that the Program Change number currently assigned to a particular voice will depend on the selected sound module mode.

In the LCD shown above, Grand Piano, which is voice number 1, is currently assigned to Program Change number "1". If you look at the "Voice bank table" on page 19, you will see that this is correct for General MIDI mode.

VOICE NAME - Shows the name and number of the voice that is assigned to the currently selected Part.

Selecting the sound module mode

Summary:

Select a sound module mode. This affects how the MIDI channels are assigned to the 16 Parts and how MIDI Program Change numbers are assigned to the TG100's voices.

For a description of each mode, see "Sound module modes" on page 7.

Options:

- G - General MIDI
- D - Disk Orchestra
- C - C/M

Procedure:

- 1) In play mode, move the cursor, using the [CURSOR] button, to the MD position.
- 2) Press either the [-1/NO] or [+1/YES] button to select one of the three options.

Details:

When a different sound module mode is selected the following are affected.

- 1) The assignment of MIDI channel numbers to the 16 Parts.

PART No.	General MIDI	Disk Orchestra	C/M
	MIDI RECEIVE CHANNEL		
1	1	1	OFF
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9
10 (DRUMS)	10	15	10
11	11	OFF	11
12	12	OFF	12
13	13	OFF	13
14	14	OFF	14
15	15	10	15
16	16	OFF	16

Once a sound module mode has been selected, the MIDI receive channel assigned to each Part can be changed, see "Part MIDI receive channel" on page 37.

As well as changing the MIDI receive channel, you can also turn a Part off. As you can see in the above table, some Parts are turned off when Disk Orchestra mode is selected.

You may want to turn a TG100 Part off when a different MIDI instrument in your system is being used to play that particular Part.

You may need to change some of the TG100's MIDI receive channel assignments if

you have other MIDI instruments using those MIDI channels.

It should be remembered however, that the reason for having these different sound module modes, with their preset MIDI channel assignments, etc., is to provide a degree of compatibility for MIDI songs, that will allow you to transfer songs between different MIDI systems. Obviously, the more you change these settings, the less compatible your MIDI songs will be with other MIDI song file users.

2) The voice bank selected for each part.

When a sound module mode is selected the corresponding voice bank is selected for all 16 parts.

For example, if Disk Orchestra is selected as the sound module mode, all 16 parts automatically switch to the Disk Orchestra voice bank.

3) The selected voices for Parts 1 to 9, 11 to 16 and the selected drum kit for Part 10.

PART No.	General MIDI	Disk Orchestra	C/M
	VOICE		
1	GrandPno	GrndPno2	GrandPno
2	GrandPno	GrndPno2	SlapBas1
3	GrandPno	GrndPno2	Ensmble1
4	GrandPno	GrndPno2	BrasSect
5	GrandPno	GrndPno2	SprnoSax
6	GrandPno	GrndPno2	Rain
7	GrandPno	GrndPno2	El.Grand
8	GrandPno	GrndPno2	Bottle
9	GrandPno	GrndPno2	Orch Hit
10 (DRUMS)	Standard kit	Clavinova kit	C/M kit
11	GrandPno	GrndPno2	Fretless
12	GrandPno	GrndPno2	AahChor2
13	GrandPno	GrndPno2	GrandPno
14	GrandPno	GrndPno2	DrawOrgn
15	GrandPno	GrndPno2	Mute Gt2
16	GrandPno	GrndPno2	Trumpet

- It might seem a little strange to have 15 Parts assigned to the same voice. Remember that this is only the initial setting, when a MIDI song starts playing MIDI Program Change Messages are sent to each Part and the correct voice is selected.

4) The TG100's pitch bend range.

	General MIDI	Disk Orchestra	C/M
PITCH BEND RANGE	± 2 semitones	± 3 semitones	± 12 semitones (± 1 octave)

The above table shows how the TG100 responds to pitch bend data in each mode. For example, with your pitch bend wheel turned fully up, in General MIDI mode the pitch will increase by 2 semitones. In Disk Orchestra mode, with the pitch bend wheel turned fully up, the pitch will increase by 3 semitones.

For MIDI experts, the pitch bend range can be changed by sending an RPN (Registered Parameter Change number) MIDI message. See "RPN (Registered Parameter Number)" on page 72.

4 Selecting instrument voices

Summary:

Select an instrument voice for Parts 1 to 9 and 11 to 16. See also, “Selecting drum kits (Part 10)” on page 23.

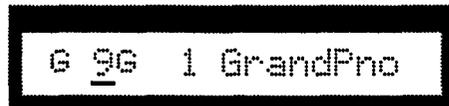
Options:

For Parts 1 to 9 and 11 to 16, voices can be selected from one of four voice banks:

- G - General MIDI (128 voices)
- I - Internal (64 voices)
- D - Disk Orchestra (72 voices)
- C - C/M (128 voices for parts 1 to 9 and 64 voices for parts 11 to 16)

Procedure:

- 1) Use the [CURSOR] button to position the cursor at the **CH** position.
- 2) Use the [-1/NO] and [+1/YES] buttons to select the required Part.



- 3) With the required Part selected, move the cursor, using the [CURSOR] button, to the **BK** position.
- 4) Press either the [-1/NO] or [+1/YES] button, to select the required voice bank.
- 5) Now move the cursor to the **PC#** position, using the [CURSOR] button.
- 6) Press either the [-1/NO] or [+1/YES] button, to select the required voice. The Program Change number of the selected voice will be shown at the “**PC#**” position on the LCD.

Details:

- The voices available from banks “G”, “D” and “C” can be seen in the “Voice bank table” on page 19.
- The C/M voice bank is different for Parts 1 to 9, (with 128 voices) and Parts 11 to 16 (with 64 voices).
- The Internal voice bank, “I” which can hold 64 voices, is where your edited voices are kept. Every time the TG100 is switched on, voices 1..64 from the “G” voice bank are copied into the internal voice bank. These can then be edited. See “Voice edit mode” on page 39 for full details about editing voices.
- The TG100’s voices are numbered from 1 to 192, but these numbers do not actually appear on the LCD. The number that identifies each voice is actually the MIDI Program Change number shown at the PC# position.
- The pitch rate scaling (interval between notes) of voices 116..128, excluding voice 122, is not 100%. In other words, if you play a C Major chord using voice 124, “Bird Tweet”, the intervals between the notes will not be the same as if it were a Piano voice.
- Voice banks can be selected using MIDI Controllers 0 and 32. See “Control Change” on page 71. If the sound module mode is set to Disk Orchestra or C/M, voice bank select messages are ignored.

Voice bank table

Voice No.	Voice name	LCD	Elements	Voice bank Program Change number assignments			
				General MIDI	Disk Orchestra	C/M	
						Parts 1...9	Parts 11...16
Piano							
1	Acoustic Grand Piano	GrandPno	1	1		1	1,2,5
2	Bright Acoustic Piano	BritePno	1	2		2	6,7
3	Electric Grand Piano	El.Grand	2	3	52	4,5	3
4	Honky-tonk Piano	HnkyTonk	2	4	50	8	4
5	Electric Piano 1	EIPiano1	2	5	51	7	8,9,10
6	Electric Piano 2	EIPiano2	2	6		3,6	
7	Harpsichord	Harpsich	1	7	15	17,18,19	
8	Clavi.	Clavi.	1	8	19	20,21,22	
Chromatic Percussion							
9	Celesta 1	Celesta	1	9		23,24	
10	Glockenspiel	Glocken	1	10	20	102	
11	Music Box	MusicBox	2	11			
12	Vibraphone	Vibes	1	12	17	98,99	
13	Marimba	Marimba	1	13	18	105	
14	Xylophone	Xylophon	1	14		104	
15	Tubular Bells	TubulBel	1	15		103	
16	Dulcimer	Dulcimer	2	16			
Organ							
17	Drawbar Organ	DrawOrgn	1	17		9	38,39,42,43
18	Percussive Organ	PercOrgn	1	18		10,11	40,44
19	Rock Organ	RockOrgn	1	19		12	
20	Church Organ	ChrcOrgn	1	20	77	13,15	
21	Reed Organ	ReedOrgn	1	21		14	
22	Accordion	Acordion	2	22	8	16	
23	Harmonica	Harmnica	1	23	42	88	
24	Tango Accordion	TangoAcdd	2	24			
Guitar							
25	Acoustic Nylon Guitar	NylonGtr	1	25	25	60	
26	Acoustic Steel Guitar	SteelGtr	1	26	54	61	11,12
27	Electric Jazz Guitar	Jazz Gtr	1	27	26,73	62	
28	Electric Clean Guitar	CleanGtr	1	28	27,55,70	63	
29	Electric muted Guitar	Mute Gtr	1	29	71		
30	Overdriven Guitar	Ovrdrive	1	30			
31	Distortion Guitar	Distortd	1	31			
32	Guitar Harmonics	Harmnics	1	32			
Bass							
33	Acoustic Bass	WoodBass	1	33	29,72	65,66	29
34	Electric Bass fingered	FngrBass	1	34	30	67	24
35	Electric Bass picked	PickBass	1	35		68	26
36	Fretless Bass	Fretless	1	36		71,72	28
37	Slap Bass 1	SlapBas1	1	37		69	
38	Slap Bass 2	SlapBas2	1	38		70	
39	Synth Bass 1	SynBass1	1	39		29,31	
40	Synth Bass 2	SynBass2	1	40	32	30,32	
Strings							
41	Violin	Violin	1	41	10,76	53	
42	Viola	Viola	1	42		54	
43	Cello	Cello	1	43		55,56	
44	Contrabass	Contra	1	44		57	
45	Tremolo Strings	TremStrg	1	45			

Voice No.	Voice name	LCD	Elements	Voice bank			
				Program Change number assignments			
				General MIDI	Disk Orchestra	C/M	
Parts 1...9	Parts 11...16						
46	Pizzicato Strings	Pizzicto	1	46	57	52	
47	Orchestral Harp	Harp	1	47	58	58,59	
48	Timpani 1	Timpani	1	48		113	
	Ensemble						
49	String Ensemble1	Ensmble1	1	49		49	35
50	String Ensemble2	Ensmble2	1	50	75	50	34
51	Synth Strings 1	SynStrg1	2	51		51	
52	Synth Strings 2	SynStrg2	2	52			
53	Choir Aahs	AahChoir	1	53	43,64		31
54	Voice Oohs	OohChoir	1	54			
55	Synth Voice	SynChoir	1	55			
56	Orchestral Hit	Orch Hit	1	56		123	64
	Brass						
57	Trumpet	Trumpet	1	57	2	89,90	47,48
58	Trombone	Trombone	1	58		91,92	49,50,51
59	Tuba	Tuba	1	59		95	
60	Muted Trumpet	MuteTrum	1	60	41		
61	French Horn	FrenchHr	1	61	3	93,94	
62	Brass Section	BrasSect	1	62		96,97	59
63	Synth Brass 1	SynBras1	2	63		25,27	
64	Synth Brass 2	SynBras2	2	64		26,28	
	Reed						
65	Soprano Sax	SprnoSax	1	65		79	55
66	Alto Sax	Alto Sax	1	66		80	56
67	Tenor Sax	TenorSax	1	67		81	57
68	Baritone Sax	Bari Sax	1	68		82	58
69	Oboe	Oboe	1	69	6	85	
70	English Horn	EnglHorn	1	70		86	
71	Bassoon	Bassoon	1	71	81	87	
72	Clarinet	Clarinet	1	72	5	83,84	
	Pipe						
73	Piccolo	Piccolo	1	73		75,76	
74	Flute	Flute	1	74		73,74	
75	Recorder	Recorder	1	75		77	
76	Pan Flute	PanFlute	1	76		78	
77	Bottle Blow	Bottle	2	77		111	
78	Shakuhachi	Shakhchi	2	78		108	
79	Whistle	Whistle	1	79		109,110	
80	Ocarina	Ocarina	1	80			
	Synth Lead						
81	Lead 1 (square)	SquareLd	2	81		48	
82	Lead 2 (saw tooth)	Saw Ld	2	82			
83	Lead 3 (calliope)	CaliopLd	2	83			
84	Lead 4 (chiff)	Chiff Ld	2	84			
85	Lead 5 (charang)	CharanLd	2	85			
86	Lead 6 (voice)	Voice Ld	2	86			
87	Lead 7 (fifths)	Fifth Ld	2	87			
88	Lead 8 (bass+lead)	Bass &Ld	2	88			
	Synth Pad						
89	Pad 1 (new age)	NewAgePd	2	89		33	
90	Pad 2 (warm)	Warm Pd	2	90			
91	Pad 3 (polysynth)	PolySyPd	2	91			
92	Pad 4 (choir)	Choir Pd	2	92		35	

Voice No.	Voice name	LCD	Elements	Voice bank Program Change number assignments			
				General MIDI	Disk Orchestra	C/M	
						Parts 1...9	Parts 11...16
93	Pad 5 (bowed)	Bowed Pd	2	93		36	
94	Pad 6 (metallic)	Metal Pd	2	94			
95	Pad 7 (halo)	Halo Pd	2	95			
96	Pad 8 (sweep)	Sweep Pd	2	96			
	Synth Effect						
97	SFX 1 (rain)	Rain	2	97		42	
98	SFX 2 (soundtrack)	SoundTrk	2	98		37	
99	SFX 3 (crystal)	Crystal	2	99			
100	SFX 4 (atmosphere)	Atmosphr	2	100		38	
101	SFX 5 (brightness)	Bright	2	101			
102	SFX 6 (goblins)	Goblin	2	102			
103	SFX 7 (echoes)	Echoes	2	103			
104	SFX 8 (sci-fi)	SciFi	2	104			
	Ethnic						
105	Sitar	Sitar	1	105	28	64	
106	Banjo	Banjo	1	106	56		
107	Shamisen	Shamisen	1	107			
108	Koto	Koto	1	108		106	
109	Kalimba	Kalimba	1	109			
110	Bag pipe	Bagpipe	2	110			
111	Fiddle	Fiddle	1	111			
112	Shanai	Shanai	1	112			
	Percussive						
113	Tinkle Bell	TnklBell	2	113			
114	Agogo	Agogo	1	114			
115	Steel Drums	Stl Drum	2	115	59		
116	Woodblock	WoodBlok	1	116			
117	Taiko Drum	TaikoDrm	1	117		118	
118	Melodic Tom	MelodTom	1	118		114	
119	Synth Drum	SynthTom	1	119		116	
120	Reverse cymbal	RevCymb1	1	120			
	Sound Effects						
121	Guitar Fret Noise	FretNoiz	1	121			
122	Breath Noise	BrthNoiz	1	122			
123	Seashore	Seashore	2	123			
124	Bird Tweet	Tweet	2	124			
125	Telephone Ring	Telephone	1	125		124	
126	Helicopter	Helicptr	2	126			
127	Applause	Applause	2	127			
128	Gun Shot	Gunshot	1	128			
	Various						
129	SynHarmo	SynHarmo	2			34	
130	SynWarm	SynWarm	2			39	
131	SynFunny	SynFunny	1			40	
132	SynEcho1	SynEcho1	2			41	
133	SynOboe	SynOboe	2			43	
134	SynEcho2	SynEcho2	2			44	
135	SynSolo	SynSolo	2			45	
136	SynReedOrgan	SynRdOrg	2			46	
137	SynBell	SynBell	2			47	
138	MalletSy	MalletSy	1			100	
139	MalletWind	MalletWin	2			101	
140	Sho	Sho	1			107	

Voice No.	Voice name	LCD	Elements	Voice bank			
				Program Change number assignments			
				General MIDI	Disk Orchestra	C/M	
Parts 1...9	Parts 11...16						
141	Breathy	Breathy	2			112	
142	DeepSnare	DeepSnar	1			115	
143	Syn Tom2	Syn Tom2	1			117	
144	TaikoRim	TaikoRim	1			119	
145	Cymbal	Cymbal	1			120	
146	Castanet	Castanet	1			121	
147	Triangle	Triangle	1			122	
148	Bird	Bird	1			125	
149	Jam	Jam	2			126	
150	EffectWater	EfctWatr	2			127	
151	EffectJungle	EfctJngl	2			128	
152	Acoustic Steel guitar 2	SteelGt2	2				13
153	Electric muted guitar 2	Mute Gt2	2				14
154	Electric muted guitar 3	Mute Gt3	1				15
155	Slap Bass 3	SlapBas3	2				16
156	Slap Bass 4	SlapBas4	2				17
157	Slap Bass 5	SlapBas5	2				18,22
158	Slap Bass 6	SlapBas6	2				19
159	Slap Bass 7	SlapBas7	2				20
160	Slap Bass 8	SlapBas8	2				21
161	Slap Bass 9	SlapBas9	2				23
162	Electric Bass fingered 2	FngrBas2	2				25
163	Electric Bass picked 2	PickBas2	2				27
164	Choir Aah 2	AahChor2	1				30
165	Choir Aah 3	AahChor3	2				32
166	Choir Aah 4	AahChor4	2				33
167	String Ensemble 3	Ensmble3	2				36,37
168	Percussive Organ 2	PrcOrgn2	2				41,45,46
169	Brass section 2	BrasSec2	2				54,61,62,63
170	Electric Piano DX	EIPno DX	1		14		
171	Synth Piano	SynPiano	2		53		
172	Celesta 2	Celesta2	1		16		
173	Clavinova tone	Clavnova	2		69		
174	Jazz Organ	JazzOrgn	2		12,66,83		
175	Combo Organ	CombOrgn	2		44		
176	Pipe Organ	PipeOrgn	2		11,65		
177	Slap Bass 10	SlpBas10	2		31		
178	Brass section 3	BrasSec3	2		1,61		53
179	Pop Brass	PopBrass	1		74		52,60
180	Synth Brass 3	SynBras3	2		21,67		
181	Saxophone 1	Sax 1	2		4,68		
182	Saxophone 2	Sax 2	2		78		
183	Synth crystal	SynCrstl	2		23		
184	Synth Wood	Syn Wood	2		45		
185	String Ensemble 4	Ensmble4	2		9,63		
186	Synth Strings 3	SynStrg3	2		46		
187	Synth Choir 2	SynChor2	2		47		
188	Flute 2	Flute 2	1		7,62,80		
189	Acoustic Grand piano 2	GrndPno2	1		13,49		
190	Bright Acoustic piano 2	BritePn2	1		48		
191	Timpani 2	Timpani2	1		24		
192	Electric bass Heavy	Hvy Bass	2		79		

Selecting drum kits (Part 10)

Summary:

Select a drum kit for Part 10.

Options:

PC#No.	KIT NAME
1	Standard
9	Room
17	Power
25	Elctrnic (Electronic)
26	Analog
33	Jazz (same as the standard kit)
41	Brush
49	Orchestra (Orchestra)
126	Clavinov (Clavinova)
127	RX
128	C/M

Procedure:

- 1) Use the [CURSOR] button to position the cursor at the **CH** position.
- 2) Repeatedly press the [+1/YES] button to select Part 10.



- 3) Use the [CURSOR] button to position the cursor at the **PC#** position.
- 4) Use the [-1/NO] or [+1/YES] buttons, to select one of the drum kits listed above.

Details:

- The PC# number is the MIDI Program Change number.
- The Standard kit is the main drum kit and the other kits are basically variations of it. If you look at the drum/keyboard layouts, on the following pages, you will see that the other drum kits have some different drum sounds. For example, the “Orchestra Kit” has some tuned timpani and the “Room Kit” has some “room-sound” tom-toms.
- The Jazz kit is the same as the Standard kit.
- If the sound module mode is set to Disk Orchestra or C/M, Part 10 drums ignores Program Change messages.

Clavinova - kit corresponds to the Disk Orchestra Collection.

C/M - provides semi-compatibility for MIDI song files recorded using a CM-64.

RX - kit provides semi-compatibility for MIDI drum patterns recorded on one of Yamaha's RX drum machines.

The main difference between these kits is the way that MIDI note numbers are assigned to each drum sound. Unlike the first 8 drum kits, where the difference is in the choice of drum sound, in the last three kits the MIDI note assignments are completely different.

Page 16, "Selecting the sound module mode", shows which drum kit is selected when the sound module mode is changed.

Using the drum/keyboard layouts

The following drum/keyboard layouts show the drum sounds that are in each drum kit and which keyboard note each drum sound is assigned to.

The Jazz kit is the same as the Standard kit, so there is no Jazz kit layout. When the Jazz kit is selected, please refer to the Standard kit layout.

The Standard kit layout is shown twice, once before the room, Power and Electronic kits, and also before the Analog, brush and Orchestra kit. This is because drum sounds that are not changed between the kits remain the same as the Standard kit layout.

For example, we have selected the "Power kit". For note "A0 (33)" there is no drum sound listed. If we look at the "Standard kit" we can see that the "Metronome click" drum sound is assigned to that note.

If we look at note "C1 (36)", the drum sound is "MONDO kick". This has replaced the "Bass Drum 1" that is used by the Standard kit.

The Clavinova, C/M and RX drum/keyboard layouts show which keyboard note each drum sound is assigned to for the Clavinova, RX and C/M drum kits.

Standard, Room, Power & Electronic drum kit layouts

		Standard Kit	Room Kit	Power Kit	Electronic Kit
		PC No. 1	PC No. 9	PC No. 17	PC No. 25
	D#0 (27)				
E0 (28)					
F0 (29)		Scratch Push			
	F#0 (30)	Scratch Pull			
G0 (31)		Stick			
	G#0 (32)	Click Noise			
A0 (33)		Metronome Click			
	A#0 (34)	Metronome Bell			
B0 (35)		Acoustic Bass Drum			
C1 (36)		Bass Drum 1		MONDO kick	Elec BD
	C#1 (37)	Side Stick			
D1 (38)		Acoustic Snare		Gated SD	Elec SD
	D#1 (39)	Hand Clap			
E1 (40)		Electric Snare			Gated SD
F1 (41)		Low Floor Tom	Room Low Tom 2	Room Low Tom 2	Elec Low Tom 2
	F#1 (42)	Closed Hi-Hat			
G1 (43)		High Floor Tom	Room Low Tom 1	Room Low Tom 1	Elec Low Tom 1
	G#1 (44)	Pedal Hi-Hat			
A1 (45)		Low Tom	Room Mid Tom 2	Room Mid Tom 2	Elec Mid Tom 2
	A#1 (46)	Open Hi-Hat			
B1 (47)		Low-Mid Tom	Room Mid Tom 1	Room Mid Tom 1	Elec Mid Tom 1
C2 (48)		Hi-Mid Tom	Room Hi Tom 2	Room Hi Tom 2	Elec Hi Tom 2
	C#2 (49)	Crash Cymbal 1			
D2 (50)		High Tom	Room Hi Tom 1	Room Hi Tom 1	Elec Hi Tom 1
	D#2 (51)	Ride Cymbal 1			
E2 (52)		Chinese Cymbal			Reverse Cymbal
F2 (53)		Ride Bell			
	F#2 (54)	Tambourine			
G2 (55)		Splash Cymbal			
	G#2 (56)	Cowbell			
A2 (57)		Crash Cymbal 2			
	A#2 (58)	Vibraslap			
B2 (59)		Ride Cymbal 2			
C3 (60)	MIDDLE C	Hi Bongo			
	C#3 (61)	Low Bongo			
D3 (62)		Mute Hi Conga			
	D#3 (63)	Open Hi Conga			
E3 (64)		Low Conga			
F3 (65)		High Timbale			
	F#3 (66)	Low Timbale			
G3 (67)		High Agogo			
	G#3 (68)	Low Agogo			
A3 (69)		Cabasa			
	A#3 (70)	Miracas			
B3 (71)		Short Whistle			
C4 (72)		Long Whistle			
	C#4 (73)	Short Guiro			
D4 (74)		Long Guiro			
	D#4 (75)	Claves			
E4 (76)		Hi Wood Block			
F4 (77)		Low Wood Block			
	F#4 (78)	Mute Cuica			
G4 (79)		Open Cuica			
	G#4 (80)	Mute Triangle			
A4 (81)		Open Triangle			
	A#4 (82)	Shaker			
B4 (83)					
C5 (84)					
	C#5 (85)	Castanets			
D5 (86)		Taiko-Drum High			
	D#5 (87)	Taiko-Drum Low			

Standard, Analog, Brush & Orchestra drum kit layouts

	Standard Kit	Analog Kit	Brush Kit	Orchestra Kit
	PC No. 1	PC No. 26	PC No. 41	PC No. 49
	D#0 (27)			Closed Hi-Hat
E0 (28)				Pedal Hi-Hat
F0 (29)		Scratch Push		Open Hi-Hat
	F#0 (30)	Scratch Pull		Ride Cymbal
G0 (31)		Stick		
	G#0 (32)	Click Noise		
A0 (33)		Metronome Click		
B0 (35)	A#0 (34)	Metronome Bell		
		Acoustic Bass Drum		
C1 (36)		Bass Drum 1	Analog Bass Drum	Concert BD
	C#1 (37)	Side Stick		
D1 (38)		Acoustic Snare	Analog Snare Drum	Concert SD
	D#1 (39)	Hand Clap		Castanets
E1 (40)		Electric Snare		Concert SD
F1 (41)		Low Floor Tom	Analog Low Tom 2	Timpani F
	F#1 (42)	Closed Hi-Hat	Analog CHH	Timpani F#
G1 (43)		High Floor Tom	Analog Low Tom 1	Timpani G
	G#1 (44)	Pedal Hi-Hat	Analog CHH	Timpani G#
A1 (45)		Low Tom	Analog Mid Tom 2	Timpani A
B1 (47)	A#1 (46)	Open Hi-Hat	Analog OHH	Timpani A#
		Low-Mid Tom	Analog Mid Tom 1	Timpani B
C2 (48)		Hi-Mid Tom	Analog Hi Tom 2	Timpani C
	C#2 (49)	Crash Cymbal 1		Timpani C#
D2 (50)		High Tom	Analog Hi Tom 1	Timpani D
	D#2 (51)	Ride Cymbal 1		Timpani D#
E2 (52)		Chinese Cymbal		Timpani E
F2 (53)		Ride Bell		Timpani F
	F#2 (54)	Tambourine		
G2 (55)		Splash Cymbal		
	G#2 (56)	Cowbell		
A2 (57)		Crash Cymbal 2		Crash Cymbal
B2 (59)	A#2 (58)	Vibraslap		
		Ride Cymbal 2		Concert Cymbal
C3 (60)	MIDDLE C	Hi Bongo		
	C#3 (61)	Low Bongo		
D3 (62)		Mute Hi Conga	Analog Hi Conga	
	D#3 (63)	Open Hi Conga	Analog Mid Conga	
E3 (64)		Low Conga	Analog Low Conga	
F3 (65)		High Timbale		
	F#3 (66)	Low Timbale		
G3 (67)		High Agogo		
	G#3 (68)	Low Agogo		
A3 (69)		Cabasa		
B3 (71)	A#3 (70)	Maracas		
		Short Whistle		
C4 (72)		Long Whistle		
	C#4 (73)	Short Guiro		
D4 (74)		Long Guiro		
	D#4 (75)	Claves	Analog Claves	
E4 (76)		Hi Wood Block		
F4 (77)		Low Wood Block		
	F#4 (78)	Mute Cuica		
G4 (79)		Open Cuica		
	G#4 (80)	Mute Triangle		
A4 (81)		Open Triangle		
B4 (83)	A#4 (82)	Shaker		
C5 (84)				
	C#5 (85)	Castanets		
D5 (86)		Taiko-Drum High		
	D#5 (87)	Taiko-Drum Low		

RX drum kit layout

RX Kit
 PC No. 127

	D#0 (27)	
E0 (28)		Bass Drum 1
F0 (29)		Bass Drum 1
	F#0 (30)	Bass Drum 1
G0 (31)		Bass Drum 1
	G#0 (32)	Bass Drum 1
A0 (33)		Bass Drum 1
B0 (35)	A#0 (34)	Bass Drum 1
		Acoustic Bass Drum
C1 (36)		Bass Drum 1
	C#1 (37)	Bass Drum 1
D1 (38)		Acoustic Bass Drum
	D#1 (39)	Bass Drum 1
E1 (40)		Low Floor Tom
F1 (41)		High Floor Tom
	F#1 (42)	Low Tom
G1 (43)		Hi Mid Tom
	G#1 (44)	Acoustic Bass Drum
A1 (45)		Bass Drum 1
B1 (47)	A#1 (46)	Acoustic Snare
		Low Floor Tom
C2 (48)		High Floor Tom
	C#2 (49)	Acoustic Snare
D2 (50)		Low Tom
	D#2 (51)	Side Stick
E2 (52)		Acoustic Snare
F2 (53)		Hi Mid Tom
	F#2 (54)	Hand Clap
G2 (55)		Cowbell
	G#2 (56)	Cabasa
A2 (57)		Closed Hi Hat
B2 (59)	A#2 (58)	Tambourine
		Open Hi-Hat
C3 (60)	MIDDLE C	Crash Cymbal 1
	C#3 (61)	Chinese Cymbal
D3 (62)		Ride Bell

	D#3 (63)	
E3 (64)		Ride Cymbal 1
F3 (65)		Low Conga
	F#3 (66)	Open Hi Conga
G3 (67)		Mute Hi Conga
	G#3 (68)	Low Bongo
A3 (69)		Hi Bongo
B3 (71)	A#3 (70)	Low Timbale
		High Timbale
C4 (72)		
	C#4 (73)	Claves
D4 (74)		Low Aqogo
	D#4 (75)	High Aqogo
E4 (76)		
F4 (77)		
	F#4 (78)	Short Whistle
G4 (79)		
	G#4 (80)	
A4 (81)		
B4 (83)	A#4 (82)	
C5 (84)		Electric Snare
	C#5 (85)	Electric Snare
D5 (86)		Electric Snare
	D#5 (87)	Acoustic Snare
E5 (88)		Acoustic Snare
F5 (89)		Acoustic Snare
	F#5 (90)	Acoustic Snare
G5 (91)		Acoustic Snare
	G#5 (92)	Acoustic Snare
A5 (93)		Acoustic Snare
B5 (95)	A#5 (94)	Acoustic Snare
		Electric Snare
C6 (96)		Acoustic Snare
	C#6 (97)	Electric Snare
D6 (98)		Electric Snare

Clavinova & C/M drum kit layouts

Clavinova Kit			C/M Kit		
PC No. 126			PC No. 128		
F0 (29)		BRUSH ROLL	A0 (33)		
G0 (31)	F#0 (30)		B0 (35)	A#1 (34)	Acoustic B Drum
A0 (33)	G#0 (32)	HH closed-heavy	C1 (36)		Acoustic B Drum
B0 (35)	A#0 (34)	Crash CYM-light	D1 (38)	C#1 (37)	Rim Shot
C1 (36)		BD-light	E1 (40)		Acoustic S Drum
D1 (38)	C#1 (37)	SD+RIM-heavy	F1 (41)	D#1 (39)	Hand Clap
E1 (40)		RIDE CYM-cup	G1 (43)		Electric S Drum
F1 (41)	D#1 (39)	SD+RIM-light	F1 (41)	F#1 (42)	Acoustic L Tom
G1 (43)	F#1 (42)	BRUSH CYMBAL	G1 (43)	G#1 (44)	Closed High Hat
A1 (45)	G#1 (44)	SD echo 2	A1 (45)	A#1 (46)	Acoustic L Tom
B1 (47)	A#1 (46)	BD-normal	B1 (47)		Open Hi-Hat 2
C2 (48)		RIMSHOT	C2 (48)		Acoustic N Tom
D2 (50)	C#2 (49)	SD-heavy	D2 (50)	C#2 (49)	Open Hi-Hat 1
E2 (52)		BRUSH SHOT	E2 (52)		Acoustic M Tom
F2 (53)	F#2 (54)	SD-light	F2 (53)	F#2 (54)	Acoustic H Tom
G2 (55)	G#2 (56)	HH-pedal	G2 (55)	G#2 (56)	Crash Cymbal
A2 (57)	A#2 (58)	SD-echo	A2 (57)	A#2 (58)	Acoustic H Tom
B2 (59)		TOM-4	B2 (59)		Ride Cymbal
C3 (60)	MIDDLE C	HH-closed-normal	C3 (60)	MIDDLE C	
D3 (62)	C#3 (61)	TOM-3	D3 (62)	C#3 (61)	Tambourine
E3 (64)	D#3 (63)	HH-open	E3 (64)		
F3 (65)		TOM-2	F3 (65)	F#3 (66)	Cowbell
G3 (67)	G#3 (68)	TOM-1	G3 (67)	G#3 (68)	
A3 (69)	A#3 (70)	RIDE CYM-normal	A3 (69)	A#3 (70)	High Bongo
B3 (71)		E.TOM 3	B3 (71)		Low Bongo
C4 (72)	C#4 (73)	Crash CYM-normal	C4 (72)		Mute Hi Conga
D4 (74)	D#4 (75)	E.TOM 2	D4 (74)	D#4 (75)	Open Hi Conga
E4 (76)		Crash CYM-normal	E4 (76)		Low Conga
F4 (77)	F#4 (78)	E.TOM 1	F4 (77)	F#4 (78)	High Timbale
G4 (79)	G#4 (80)	CONGA-low	G4 (79)	G#4 (80)	Low Timbale
A4 (81)	A#4 (82)	CABASA	A4 (81)		High Agogo
B4 (83)		CONGA-high	B4 (83)		Low Agogo
		METRONOME			Cabasa
		BONGO-high			Maracas
		TIMBALE-low			Short Whistle
		CLAVES			Long Whistle
		TIMBALE-high			Quijada
		CASTANETS			
		CUICA-low			Claves
		COWBELL			
		CUICA-high			
		HANDCLAPS			
		AGOGO-low			
		AGOGO_high			
		BONGO-low			
		CUICA-low			
		TAMBOURINE			
		Crash CYM-normal			
		TRIANGLE-closed			
		NOISE			
		TRIANGLE-open			

5 Multi Common Edit Mode

Selecting the type of reverb

Summary:

Select the type of reverb effect.

Options:

Hall 1, Hall 2

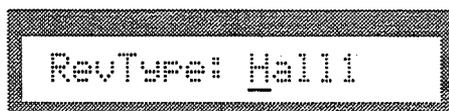
Room 1, Room 2

Plate 1, Plate 2

Delay 1, Delay 2

Procedure:

- 1) In play mode, move the cursor, using the [CURSOR] button, to the **MD** position.
- 2) Repeatedly press the [EDIT] button until the LCD display shown below appears.



- 3) Press either the [-1/NO] or [+1/YES] button, to select the required reverb type.
- 4) Press the [PLAY] button to return to play mode.

Details:

- If you cannot hear the reverb effect, check the master Reverb Send level setting. See "Setting the reverb level" on page 30. The amount of reverb effect applied to each Part can also be adjusted. See "Part reverb send level" on page 36.

The table below provides details about the different reverb types.

Effect	Description	Detail	Reverb time (sec)	Left delay (ms)	Right delay (ms)
Hall 1	Reverb characteristics of a concert hall	Medium size hall	2.4	30	-
Hall 2	As above	Large size hall	3.2	60	-
Room 1	Reverb characteristics of a room	Large room	0.6	8	-
Room 2	As above	Slightly smaller than Room 1, but with solid walls	0.9	12	-
Plate 1	Reverb characteristics of a steel plate type reverb unit	Short	3	16	-
Plate 2	As above	Hard	6	20	-
Delay 1	Delay and reverb used in parallel	Stereo delay effect	1.2	150	300
Delay 2	Delay and reverb used in series, first delay then reverb	Delay reverb effect	2	190	380

Setting the reverb level

Summary:

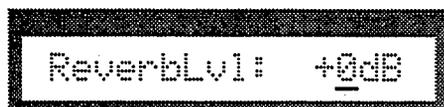
Set the overall volume level of the reverb effect.

Settings:

-40...+6dB

Procedure:

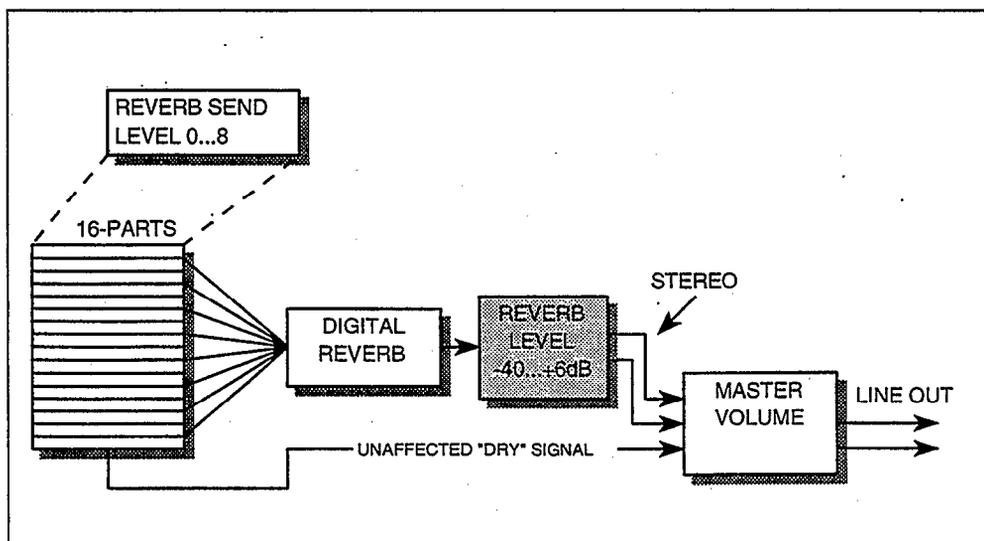
- 1) In play mode, move the cursor, using the [CURSOR] button, to the **MD** position.
- 2) Repeatedly press the [EDIT] button until the LCD display shown below appears.



- 3) Use the [-1/NO] or [+1/YES] button, to adjust the level.
- 4) Press the [PLAY] button to return to play mode.

Details:

- This setting, affects the overall volume of the reverb effect. The reverb volume for each Part can be set independently. See "Part reverb send level" on page 36.
- To select the reverb type, see "Selecting the type of reverb" on page 29.
- The diagram below shows the position of this function in relation to the 16 Parts and the master volume control. The direct connection from the 16 Parts to the master volume control, is the unaffected "dry" signal path. At the master volume control, the unaffected "dry" signal and the reverb signal are mixed together.



6 Multi Part Edit Mode

NOTE: Multi Part edit mode settings are not stored when the TG100 is switched off. If you want to keep the settings they must be saved to an MDR (MIDI Data Recorder). See “Using MIDI Dump to save data” on page 50.

Part volume

Summary:

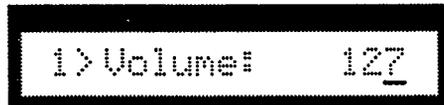
Adjust the volume level of each Part.

Settings:

0...127

Procedure:

- 1) In play mode, move the cursor, using the [CURSOR] button, to the **CH** position.
- 2) Repeatedly press the [EDIT] button until the LCD display shown below appears.



- 3) The number at the leftward side of the display shows the currently selected Part. Repeatedly press the [PART] key to select the Part whose volume you want to adjust.
- 4) Use the [-1/NO] and [+1/YES] buttons, to adjust the volume level.
- 5) Press the [PLAY] button to return to play mode.

Details:

- Using this function, you can balance the volume level of the 16 Parts just like a mixing console.
- When a Part's volume is set to “0”, no sound will be produced by that Part.
- The maximum volume level of each Part is affected by the volume level of the elements used by the voice, which is assigned to the Part. See “Adjusting the volume of voice elements” on page 41.
- MIDI Control change expression data also affects the maximum volume level of a Part. So if the maximum volume level is not being produced, it could be that MIDI Control change expression data is being input to the TG100 from your MIDI master keyboard, synthesizer or MIDI controller.
- Remember, an instrument's volume level is also controlled by MIDI note velocity data.

Part panpot (stereo position)

Summary:

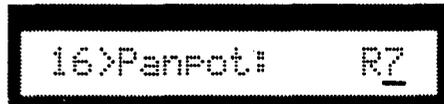
Set the pan position of each Part.

Settings:

L7-L6-L5-L4-L3-L2-L1-0-R1-R2-R3-R4-R5-R6-R7-VOICE

Procedure:

- 1) In play mode, move the cursor, using the [CURSOR] button, to the **CH** position.
- 2) Repeatedly press the [EDIT] button until the LCD display shown below appears.



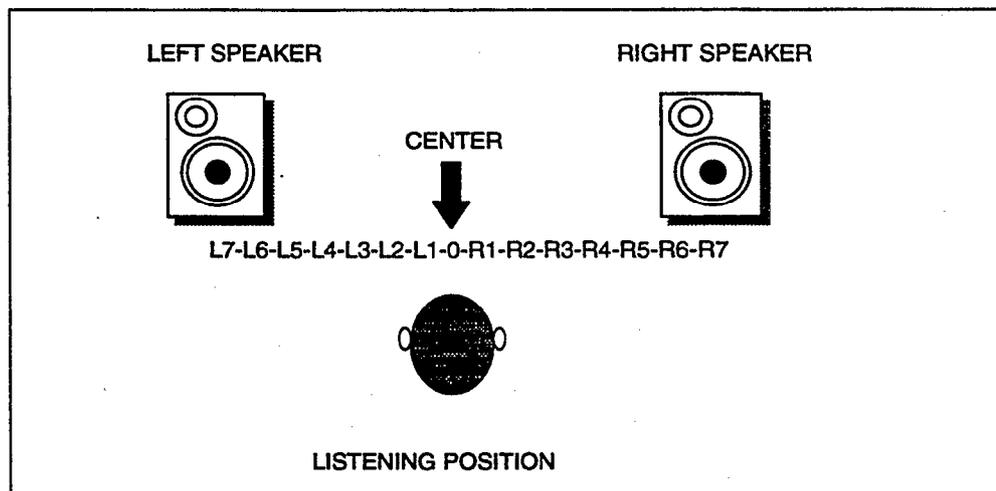
- 3) The number at the leftward side of the display shows the currently selected Part. Repeatedly press the [PART] key to select the Part whose volume you want to adjust.
- 4) Use the [-1/NO] button to select a leftward setting and the [+1/YES] button to select a rightward setting.
- 5) Press the [PLAY] button to return to play mode.

Details:

- This function allows you to position sounds any where between your left and right speakers, and stereo headphones. It works like the balance control found on most hi-fi systems. Effectively, the TG100 has 15 balance controls, one for each Part (Part 10, drums, cannot be panned).
- A pan setting of “0” will position the sound centrally between the speakers. A setting of “L7” will position the sound to the left, a setting of “R7”, to the right.
- For a more subtle panning effect, sounds can be positioned at any one of the 15 positions between the left L7 and right R7 positions.
- The pan function does not affect Part 10, drums. When Part 10 is selected, the LCD will show "***_".
- Many of the drum sounds are already set at various pan positions, try playing the tom-toms from high to low and see how they sweep from right to left.

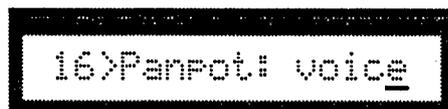
NOTE: The pan positions set by this function and those set by the voice edit mode's element pan function, are ignored if only the “L/MONO” output connection is used.

The following diagram shows the pan positions relative to the left and right speakers.



The "voice" setting

- There is one more setting at the far right, just after setting "R7". This is called "voice". If "voice" is selected, using the [+1/YES] button, the LCD display shown below appears.



This allows you to use the pan position set by the voice edit mode's element pan function, on page 43.

Why use panning

Panning is a very useful function and all stereo recordings use panning to position sounds between the left and right speakers.

If your composition contains a lot of instruments, or if you have some instruments playing notes that are close in range, for example, two guitar parts playing similar riffs. Things might start to sound a bit crowded and some instruments might be heard only when other instruments have stopped playing.

Using this pan function, you can position instruments between the speakers giving each instrument its own space.

Studio engineers often compare the process of positioning sounds to that of painting a picture. With the left speaker being at the left side of the canvas and the right speaker being at the right side of the canvas. Sounds can then be positioned at the edges of the canvas or anywhere in-between, effectively building a sound picture.

Part EG attack rate

Summary:

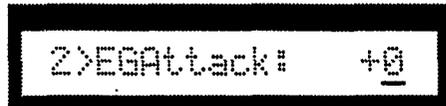
Set the attack rate for each Part.

Settings:

-7...+7

Procedure:

- 1) In play mode, move the cursor, using the [CURSOR] button, to the **CH** position.
- 2) Repeatedly press the [EDIT] button until the LCD display shown below appears.



- 3) The number at the leftward side of the display shows the currently selected Part. Repeatedly press the [PART] key to select the Part whose attack rate you want to adjust.
- 4) Press the [-1/NO] button to select minus values and the [+1/YES] button to select plus values.
- 5) Press the [PLAY] button to return to play mode.

Details:

- This function allows you to set the speed at which the volume of a Part rises when a key is pressed.
 -7 produces a slow attack.
 +7 produces a fast attack.
 +0 is the default setting.
- Although the attack rate for the TG100's preset voices has already been set, you may want to adjust those settings to suit your own taste.
- Some of the preset voice's attack rates are already set to the fastest or slowest setting. In this case further adjustment is not possible. You can change the value, but no change will be heard.
- This attack rate function does not affect Part 10, drums. When Part 10 is selected, the LCD will show "****_".
- The letters "EG" on the LCD display stand for "Envelope Generator". Attack rate is one of the TG100's internal envelope generator parameters. Release rate is also a parameter of the envelope generator. See "Part EG release rate" on page 35.

Part EG release rate

Summary:

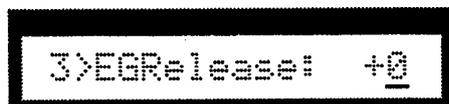
Set the release rate for each Part.

Settings:

-7...+7

Procedure:

- 1) In play mode, move the cursor, using the [CURSOR] button, to the **CH** position.
- 2) Repeatedly press the [EDIT] button until the LCD display shown below appears.



- 3) The number at the leftward side of the display shows the currently selected Part. Repeatedly press the [PART] button to select the Part whose release rate you want to adjust.
- 4) Press the [-1/NO] button to select minus values and the [+1/YES] button to select plus values.
- 5) Press the [PLAY] button to return to play mode.

Details:

- This function allows you to set the speed at which the volume of a Part falls when a key is released.
 - 7 produces a slow release.
 - +7 produces a fast release.
 - +0 is the default settings.
- Although the release rate for the TG100's preset voices has already been set, you may want to adjust those settings to suit your own taste.
- Some of the preset voice's release rates are already set to the fastest or slowest setting. In this case further adjustment is not possible. You can change the value, but no change will be heard.
- This release rate function does not affect Part 10, drums. When Part 10 is selected, the LCD will show "***_".
- The letters "EG", on the LCD display stand for "Envelope generator". Release rate is one of the TG100's internal envelope generator parameters. Attack rate is also a parameter of the envelope generator. See "Part EG attack rate" on page 34.

Part reverb send level

Summary:

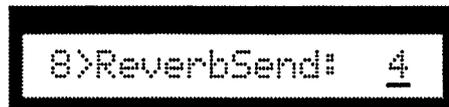
Set the reverb send level for each Part.

Settings:

0...8

Procedure:

- 1) In play mode, move the cursor, using the [CURSOR] button, to the **CH** position.
- 2) Repeatedly press the [EDIT] button until the LCD display shown below appears.



- 3) The number at the leftward side of the display shows the currently selected Part. Repeatedly press the [PART] key to select the Part whose reverb send level you want to adjust.
- 4) Use the [-1/NO] and [+1/YES] buttons, to adjust the level.
- 5) Press the [PLAY] button to return to play mode.

Details:

- This function allows you to set the amount of reverb effect applied to each Part.
- When set to “0”, no reverb is applied to a Part.
- The overall volume level of the reverb effect is set independently, so if you set a Part’s reverb level to 8, but can’t hear any reverb, see “Setting the reverb level” on page 30.

Using reverb

Reverb is an exciting effect and can really bring sounds to life. However, a common mistake is to apply it to all instruments in a composition. This leads to a “washy” sound with little definition between instruments.

Reverb can be used just for effect, to make sounds appear bigger, or to simulate naturally occurring reverb.

Reverb can also be used to create depth in what is effectively a “one dimensional” system, that is two speakers on the same axis. As we mentioned earlier, “Part panpot (stereo position)” on page 32, the area between the left and right speakers can be thought of as a sound picture. Using reverb we can position sounds in front of and behind that picture, creating a more realistic “two dimensional” sound.

Basically, a sound with little, or no reverb will appear closer to the listener than a sound with reverb.

Part MIDI receive channel

Summary:

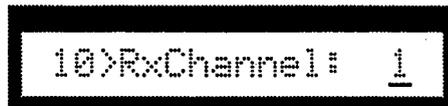
Set the MIDI receive channel for each Part.

Settings:

1...16 - OFF

Procedure:

- 1) In play mode, move the cursor, using the [CURSOR] button, to the **CH** position.
- 2) Repeatedly press the [EDIT] button until the LCD display shown below appears.



- 3) The number at the leftward side of the display shows the currently selected Part. Repeatedly press the [PART] key to select the Part whose MIDI receive channel you want to change.
- 4) Use the [-1/NO] and [+1/YES] buttons, to select MIDI receive channel, or off.
- 5) Press the [PLAY] button to return to play mode.

Details:

- When a Part is set to off, it does not respond to any MIDI channel Messages. See “Channel messages” on page 9.
- On Page 16, “Selecting the sound module mode”, the assignment of MIDI receive channels to Parts for each of the sound module modes is shown.
- The MIDI receive channel affects the way note-priority is given to each Part. Basically, priority is given in ascending order of MIDI receive channel. See also, “Truncation” on page 7.
- The following two tables, show the relationship between MIDI receive channels and note allocation priority.

- In the following table, General MIDI sound module mode has been selected. As you can see, priority is given to Parts by ascending order of MIDI receive channel, except for Part 10, Drums, which always takes number one priority.

PART No.	MIDI RECEIVE CHANNEL	PRIORITY
1	1	2
2	2	3
3	3	4
4	4	5
5	5	6
6	6	7
7	7	8
8	8	9
9	9	10
10 (DRUMS)	10	1
11	11	11
12	12	12
13	13	13
14	14	14
15	15	15
16	16	16

- In the following table, all the MIDI receive channel to Part assignments have been changed. As you can see, priority is still given to Parts by ascending order of MIDI receive channel, except for Part 10, drums. Although it is set to MIDI receive channel "15", it still has number one priority.

PART No.	MIDI RECEIVE CHANNEL	PRIORITY
1	16	16
2	7	8
3	8	9
4	9	10
5	10	11
6	11	12
7	12	13
8	13	14
9	14	15
10 (DRUMS)	15	1
11	1	2
12	2	3
13	3	4
14	4	5
15	5	6
16	6	7

7 Voice edit mode

Summary:

Edit the one of the 64 voices in the Internal voice bank.

Settings:

- Element level (see "Adjusting the volume of voice elements" on page 41).
- Element detune (see "Detuning voice elements" on page 42).
- Element pan (see "Panning voice elements" on page 43).
- Voice name (see "Naming voices" on page 44).

Procedure:

- 1) In play mode, move the cursor, using the [CURSOR] button, to either the **BK** or **PC#** position.
- 2) Press the [EDIT] button.
If the currently selected Part is assigned a voice from the Internal voice bank, voice edit mode will engaged.
If the currently selected Part's voice is not from the Internal voice bank, the Voice Copy function will appear. This allows you to copy the voice into the Internal voice bank, where it can then be edited. See "Copying voices" on page 45.
- 3) Once voice edit mode is entered, repeated pressing of the [EDIT] button allows you to select the editing functions listed above, under "Settings".
- 4) Once editing is completed, press the [PLAY] button to return to play mode.

Details:

- While in voice edit, the number of the internal voice being edited is shown at the leftward side of the LCD display, as shown below.



- If you edit an internal voice, but then decide you preferred the original, use the Voice Copy function to copy the original voice bank into the internal voice bank.
- While in voice edit mode, the [PART] button cannot be used to select different Parts. To edit another Part's voice, return to play mode, select the Part, using the [PART] button, then re-enter voice edit mode.
- If you return to voice edit mode from play mode, the edit function that was used before you returned to play mode will be shown.

Elements

Some voices consist of two elements, some of one. If a voice consists of two elements, individual level, detune and pan editing is possible for each element.

When a voice with only one element is selected for editing, the LCD display will show "***", at the position used by element number two. Also, the [CURSOR] button will not function.

The "Voice bank table" on page 19 shows which voices consist of two elements.

When the TG100 is switched on

Every time the TG100 is switched on, voices 1..64 from the General MIDI voice bank are copied into the Internal voice bank. If you want to edit the other voices, use the "COPY VOICE" function to copy the voice into the Internal voice bank. See "Copying voices" on page 45.

Storing voices

The TG100 does not contain any internal memory for storing edited voices, so when the power is turned off your edits will be lost. If you wish to save edited voices, they must be transferred to an MDR (MIDI Data Recorder). This could be a MIDI computer sequencer; a librarian program; a dedicated MIDI data recorder, such as Yamaha's MDF2; or a synthesizer with an MDR function, such as Yamaha's SY99 music synthesizer.

Drums

The drum voices cannot be edited. When Part 10 drums is selected, the [EDIT] button does not work.

User setup tables

On page 60 of this manual there is an "Internal voice bank table" where you can keep details about the voices you have edited.

On page 62 there is a "TG100 Setup table" where you can keep TG100 setup information. Such as, multi common edit parameters, System mode parameters and multi Part edit parameters.

Feel free to photocopy these tables.

Adjusting the volume of voice elements

Summary:

Adjust the volume of voice element(s).

Settings:

0...127

Procedure:

- 1) Enter voice edit mode, as described on page 39.
- 2) Repeatedly press the [EDIT] button until the LCD display shown below appears.



- 3) Use the [CURSOR] button to select the element whose volume level you want to adjust, "1" or "2"
- 4) Use the [-/NO] button to decrease the volume and the [+1/YES] button to increase the volume.
- 5) Press the [PLAY] button to return to play mode, or the [EDIT] button to select another voice edit function.

Details:

- This function allows you to balance the volume between the two elements. As the volume level of one element is reduced, the tonal characteristics of the voice will change.
- If a voice uses only one element, this function will effectively work as a volume control.
- When an element's volume level is set to "0", no sound is produced by that element.
- The maximum volume level is also affected by the Part volume level setting. So if both elements are set to 127, but the maximum volume level is not being produced, check the Part's volume level setting. See "Part volume" on page 31. MIDI Control change expression data also affects the maximum volume level of a Part. So if the maximum volume level is not being produced, it could be that MIDI Control change expression data is being input to the TG100 from your MIDI master keyboard, synthesizer or MIDI controller.

Detuning voice elements

Summary:

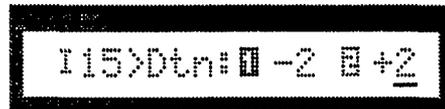
Detune voice element(s).

Settings:

-32...+32 cents

Procedure:

- 1) Enter voice edit mode, as described on page 39.
- 2) Repeatedly press the [EDIT] button until the LCD display shown below appears.



- 3) Use the [CURSOR] button to select the element you want to detune, "1" or "2".
- 4) Use the [-1/NO] button to decrease the value and the [+1/YES] button to increase the value.
- 5) Press the [PLAY] button to return to play mode, or the [EDIT] button to select another voice edit function.

Details:

- By detuning one of the elements, a chorus type effect can be produced.
- If a voice uses only one element, you could still detune it a little. The voice will then be slightly out of tune relative to the rest of the voices. Maybe you want to simulate that guitarist who is never quite in tune with the rest of the band.
- To produce a chorus type effect with voices that use only one element, you could select the same voice for two Parts. Set the Parts to the same MIDI receive channel, then detune one of the voice elements of one Part.

Panning voice elements

Summary:

Set the pan position of an element.

Settings:

L7-L6-L5-L4-L3-L2-L1-0-R1-R2-R3-R4-R5-R6-R7

Procedure:

- 1) Enter voice edit mode, as described on page 39.
- 2) Repeatedly press the [EDIT] button until the LCD display shown below appears.



- 3) Use the [CURSOR] button to select the element you want to detune, "1" or "2".
- 4) Use the [-1/NO] button to select a leftward setting and the [+1/YES] button to select a rightward settings.
- 5) Press the [PLAY] button to return to play mode, or the [EDIT] button to select another voice edit function.

Details:

- For more details about panning, see "Part panpot (stereo position)" on page 32.
- This function is affected by the setting of a Part's pan position.

When a Part's pan position is set to one of the 15 positions, from L7-0-R7, the elements pan position settings are ignored.

When a Part's pan position is set to "voice", the Part's pan position setting is ignored and the element's pan position is used.

NOTE: The pan positions set by this function and those set by the Multi Part edit mode's pan function, see "Part panpot (stereo position)" on page 32, are ignored if only the "L/MONO" output connection is used

Naming voices

Summary:

Give a name to a voice that you have edited.

Settings:

space	!	"	#	\$	%	&	'	()	*	+	.	-	.	/
0	1	2	3	4	5	6	7	8	9	:	:	<	=	>	?
@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
P	Q	R	S	T	U	V	W	X	Y	Z	[¥]	^	_
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p
q	r	s	t	u	v	w	x	y	z	{		}	→	←	

Procedure:

- 1) Enter voice edit mode, as described on page 39.
- 2) Repeatedly press the [EDIT] button until the name of the voice that you are currently editing appears on the LCD display. Example below.



- 3) Use the [CURSOR] button to select the character that you want to change.
- 4) Use the [-/NO] and [+1/YES] button to change the character.
- 5) Press the [PLAY] button to return to play mode, or the [EDIT] button to select another voice edit function.

Details:

- Voice names can be up to eight characters long.
- When you have edited a voice, it's a good idea to give it a new name, That way you won't get it confused with the preset voices.

Copying voices

Summary:

Copy a voice from any voice bank into the Internal voice bank.

Settings:

Voices can be copied into any one of the Internal voice bank's 64 memories.

Procedure:

- 1) Enter voice edit mode, as described on page 39.

This function appears automatically if the currently selected Part's voices is not from the Internal voice bank.

- 2) The LCD display shown below will appear.



- 3) Use the [-1/NO] and [+1/YES] buttons to select the destination where you want to copy the voice to (1...64).
- 4) Press the [CURSOR] button. The following LCD display will appear.



- 5) Press the [+1/YES] button to copy the voice, or the [-1/NO] button to cancel the operation.
Any Parts that were using the voice at the copy destination, will now use the new voice.
The previous LCD display will be shown.
- 6) Press the [PLAY] button to return to play mode, or the [EDIT] button to select another voice function.

Details:

- As well as copying preset voices into the Internal voice bank, you can also copy voices already in the Internal voice bank to different locations (1...64).

8 System Mode Functions

Master tuning

Summary:

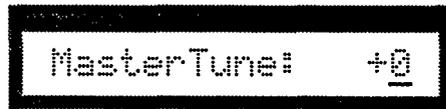
Set the overall tuning for the TG100.

Settings:

-100...+100 cents (± 1 semitone)

Procedure:

- 1) Simultaneously press the [PART] and [EDIT] buttons.
- 2) Repeatedly press the [EDIT] button until the LCD display shown below appears.



- 3) Use the [-1/NO] button to decrease the value and the [+1/YES] button to increase the value.
- 4) Press the [PLAY] button to return to play mode, or the [EDIT] button to select another system function.

Details:

- This function sets the overall tuning of the TG100, that is all voices.
- When individual voice elements are detuned, that detuning is relative to this master tuning setting.
- This function may be used when you are playing with another instrument that is not tuned to A3 (440Hz).

Velocity meter mode setting

Summary:

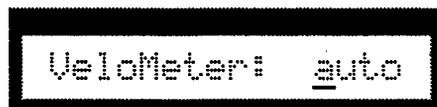
Select the LCD MIDI note velocity meter mode.

Settings:

off-auto-on

Procedure:

- 1) Simultaneously press the [PART] and [EDIT] buttons.
- 2) Repeatedly press the [EDIT] button until the LCD display shown below appears.



- 3) Use the [-1/NO] and [+1/YES] buttons to select the mode.
- 4) Press the [PLAY] button to return to play mode, or the [EDIT] button to select another system function.

off mode

The velocity meter does not function.

auto mode

- In play mode, if a MIDI note-on message is received, the velocity meter appears.
- If no MIDI note-on messages are received for more than 10 seconds the play mode display appears.
- If one of the TG100's front panel buttons is pressed while the velocity meter is displayed, the play mode display will appear. If after two seconds, a MIDI note-on message is received, the velocity meter display will appear.
- If a Part receives a Program Change message, while the velocity meter is being shown, the play mode display will appear. Indicating the Part, voice bank, Program Change number and the voice name. If after two seconds, a MIDI note-on message is received, the velocity meter display will appear.

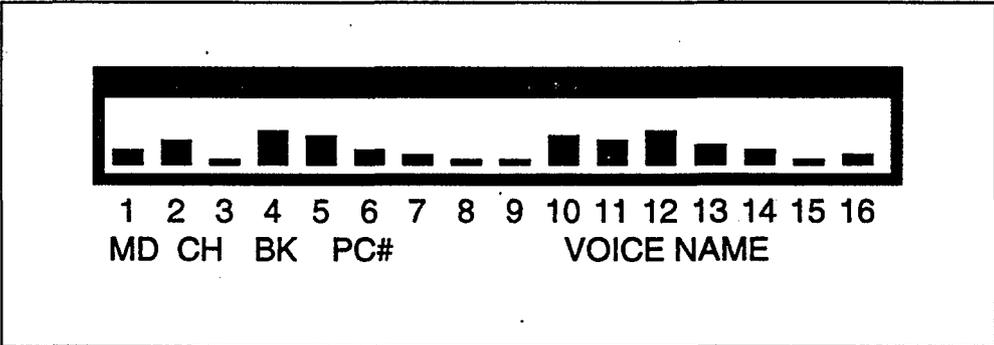
on mode

- In play mode, the velocity meter is shown.
- If one of the TG 100's front panel buttons is pressed while the velocity meter is displayed, the play mode display will appear. If after two seconds, a MIDI note-on message is received, the velocity meter display will appear.
- If a Part receives a Program Change message, while the velocity meter is being shown, the play mode display will appear. Indicating the Part, voice bank, Program Change number and the voice name. If after two seconds, a MIDI note-on message is received, the velocity meter display will appear.

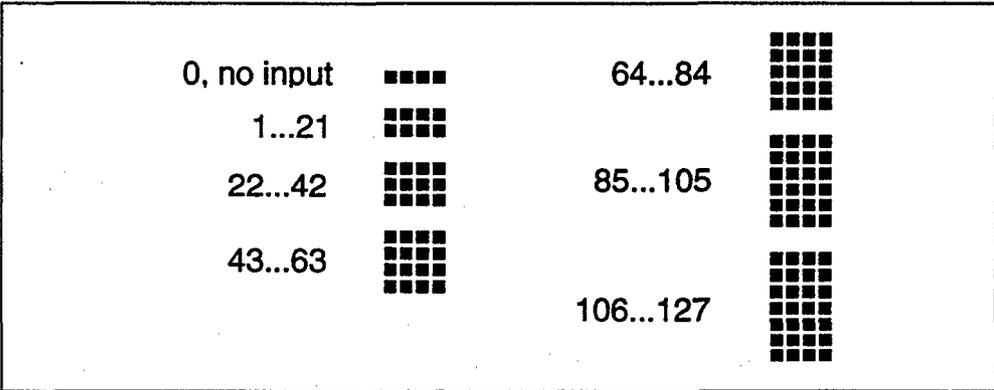
Details:

- The velocity meter does not show the audio volume level of each Part, it shows the MIDI note velocity currently being received on each MIDI channel.
- If a MIDI receive channel is set to "OFF", velocity information will not be shown for that MIDI channel.
- The velocity meter can also be used for troubleshooting. For example, if a Part is not producing any sound, but the velocity meter indicates that MIDI note data is being received, maybe the Parts volume level is turned down.

Typical velocity meter display.



The following diagram shows how MIDI note velocity values between 0 and 127 are represented on the LCD.



MIDI Exclusive on/off, device number

Summary:

Turn the MIDI Exclusive function on or off and set the device number.

Settings:

Exclusive-on/off. Device No. 1...16, or all.

Procedure:

- 1) Simultaneously press the [PART] and [EDIT] buttons.
- 2) Repeatedly press the [EDIT] button until the LCD display shown below appears.



- 3) Use the [CURSOR] button to select either "Exc" or "Dev".
- 4) Use the [-1/NO] and [+1/YES] buttons to change the settings.
- 5) Press the [PLAY] button to return to play mode, or the [EDIT] button to select another system function.

Exclusive on/off

on:

- MIDI System Exclusive Messages can be received and sent.

off:

- MIDI System Exclusive Messages cannot be received or sent.

Device number

- The device number is actually the MIDI channel that will be used for receiving and sending System Exclusive Messages (MIDI dump).
- For correct operation, both the sending and the receiving devices must be set to the same device number.
- If "all" is selected, the TG100 can receive System Exclusive Messages sent on any MIDI channel (1...16). The TG100 will send System Exclusive Messages on MIDI channel 1.

Details:

- If the Exclusive is set to "off", the next function, "Using MIDI Dump to save data" on page 50, cannot be used.
- The Exclusive is automatically turned "on" when the Sound Module mode is changed.

Using MIDI Dump to save data

Summary:

Save the following data to a computer or MDR (MIDI Data Recorder).

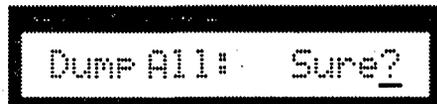
- System mode settings
- Multi Common Edit settings
- Multi Part edit mode settings
- Drum setup
- Internal voice bank data (1..64)

Settings:

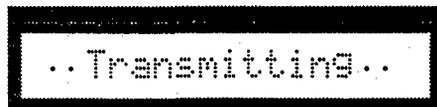
Dump All: Yes or No.

Procedure:

- 1) Simultaneously press the [PART] and [EDIT] buttons.
- 2) Repeatedly press the [EDIT] button until the LCD display shown below appears.



- 3) Press the [+1/YES] button to send all the data listed above as a System Exclusive (Bulk dump) Message to an awaiting MIDI device.
Or, press the [-1/NO] button to cancel this function and return to play mode.
- 4) While the TG100 is sending data, the LCD display shows the following message.



- 5) When data sending is complete, the TG100 returns to play mode.

Details:

- If the Exclusive function is set to off, see "MIDI Exclusive on/off, device number" on page 49, the "Dump All" function will not appear on the LCD.
- Before using this function, see "MIDI Exclusive on/off, device number" on page 49.
- If the "HOST SELECT" switch is set to "MIDI", the System Exclusive Messages will be sent via the "MIDI OUT" connector.
- If the "HOST SELECT" switch is set to either "Mac", "PC-1", or "PC-2", the System Exclusive Messages will be sent via the "TO HOST" connector.
- See "Editing & Saving Voices" on page 11 of the *Getting Started Manual* for more details.

Initialize All (reset to default settings)

Summary:

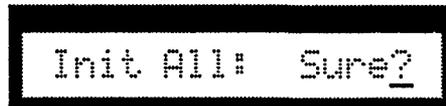
Reset all internal parameters to the default (factory) settings.

Settings:

Initialize All: Yes or No.

Procedure:

- 1) Simultaneously press the [PART] and [EDIT] buttons.
- 2) Repeatedly press the [EDIT] button until the LCD display shown below appears.



Init All: Sure?

- 3) Press the [+1/YES] button to reset all internal parameters to the default (factory) settings.
Or, press the [-1/NO] button to cancel this function and return to play mode.
- 4) While the TG100 is resetting its parameters, the LCD display shows the following message.



.. Initializing..

- 5) When initialization is complete, the TG100 returns to play mode.

Details:

- This function is useful when you want to create a new setup starting with the default parameter settings.

Playing the Demo song

Summary:

Play the TG100's internal demonstration song.

Settings:

Start-Stop

Procedure:

- 1) Simultaneously press the [PART] and [EDIT] buttons.
- 2) Repeatedly press the [EDIT] button until the LCD display shown below appears.

The image shows a rectangular LCD display with a black border. Inside, the text "Demo Play: Start?" is displayed in a pixelated font. The word "Start" is underlined.

- 3) Press the [+1/YES] button to start the demo song playing.
Or, press the [-1/NO] button to cancel this function and return to play mode.
- 4) While the demo song is playing, the LCD display shows the following message.

The image shows a rectangular LCD display with a black border. Inside, there are musical notes on the left and right sides, and the text "(NO to Stop)" in the center, all in a pixelated font.

- 5) Press the [-1/NO] button to stop the demo song.
- 6) Press the [+1/YES] button to start the demo song playing again, or the [PLAY] button on return to play mode.

Details:

- The demo song is stored inside the TG100's internal ROM circuit.
- The demo song lets hear the TG100's voices in action.
- While the demo song is playing, the MIDI and HOST connections do not function.
- The demo song will stop playing if the HOST SELECT select switch is adjusted.

NOTE: When the demo song is played, some of the TG100's Part and voice assignments are changed. This means that your original settings will be lost, unless you have saved them using the MIDI Bulk Dump function.

9 Connecting to a computer

The TG100 can be connected to all computers that are used with MIDI music software.

As well as the standard MIDI IN, OUT and THRU connections, the TG100 also has a "TO HOST" connection. This allows direct connection to computers that do not have a built-in MIDI interface and to computers that are not fitted with an optional MIDI interface card.

The TG100 has four interface modes: MIDI, Mac, PC-1 and PC-2. These are explained below.

Select the mode that is most appropriate for your computer and music software. If you are not sure, please consult your Yamaha dealer.

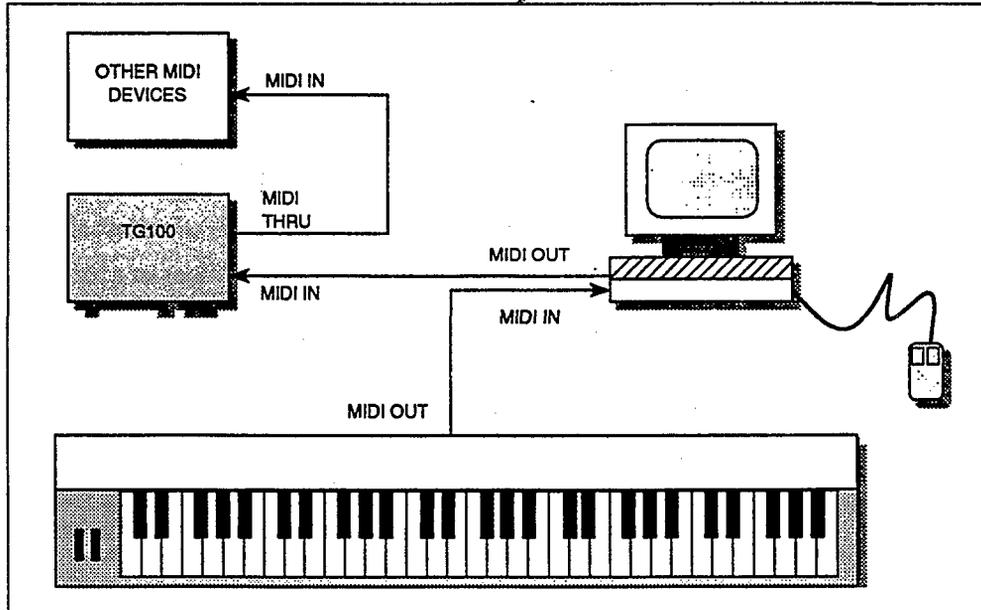
MIDI

This mode is for use with a computer that has a MIDI interface. That is, a computer with a built-in MIDI interface, such as the Atari ST™ range of computers, an Apple Macintosh™ computer with an external MIDI interface unit, or a PC-9800 or PC-AT compatible type computer fitted with an MPU-401, or compatible MIDI interface.

Most MIDI music software can be used with this type of connection.

The "HOST SELECT" switch should be set to MIDI.

The connecting MIDI cable should be of the type described in the "Host computer connecting cables" on page 67. To use the TG100's bulk dump function, the TG100's MIDI OUT should be connected to the computer's MIDI IN.



The table below explains how the MIDI data signals are handled in MIDI mode.

Connector	Function
TO HOST: IN	No function.
:OUT	No function.
MIDI IN	MIDI data is input and processed.
MIDI OUT	System Exclusive data is output.
MIDI THRU	Data appearing at the MIDI IN port is fed directly to the MIDI THRU port.

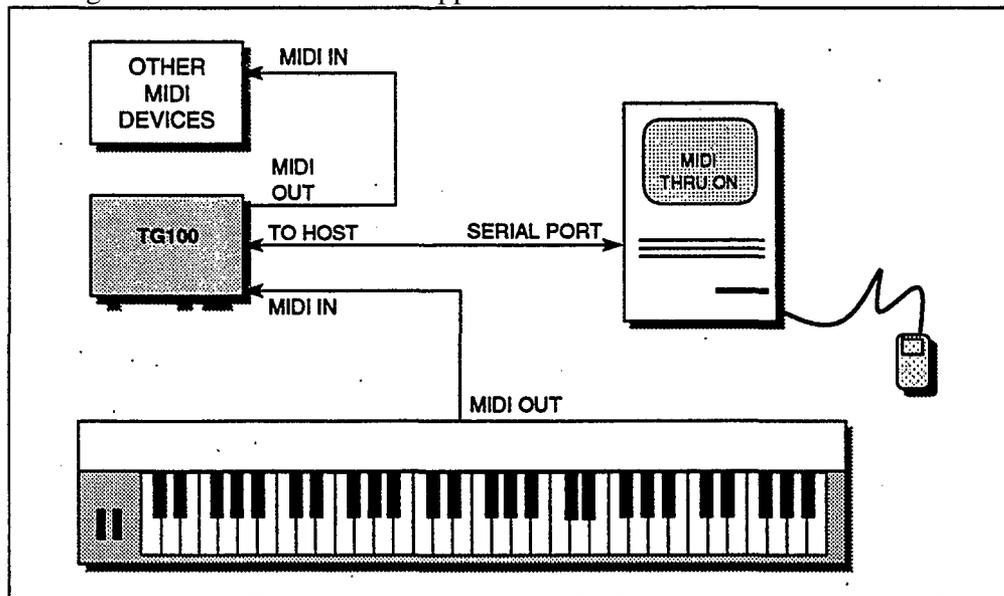
Mac

This mode is for use with an Apple Macintosh™ computer, which is not connected to an external MIDI interface unit. The TG100 can be connected directly to one of the Apple Mac's serial (RS-422) ports.

- 1) Connect the TG100's "TO HOST" connector to one of the Apple Mac's serial ports using the "Mac" connecting cable shown on page 67.
- 2) Switch on your Apple Mac.
- 3) Switch on the TG100.
- 4) Set the TG100's "HOST SELECT" switch to **Mac**.
- 5) Start your Apple Mac music software.

Your music software will probably require you to specify the type of MIDI interface you are using. You should specify "Standard MIDI interface", or if it has a "MIDI Time Piece option", turn it off. If your software also requires you to specify the data rate, select 1MHz.

If your Apple Mac is not switched on, or your music software is not running, the message "HOST is Offline !" will appear on the TG100's LCD.



The table below explains how the MIDI data signals are handled in "Mac" mode. MIDI data is carried to and from the computer using the "TO HOST" connection.

Connector	Function	Details
TO HOST: IN	MIDI data is input, processed, then fed to the MIDI OUT port.	Synchronized. Data format: 8 bit, 1 stop bit, no parity. 1MHz clock from TG100 to serial ports' HSKi data pin.
:OUT	MIDI data received at the MIDI IN port is output.	When System Exclusive Message is sent, data from the MIDI IN port is not output.
MIDI IN	MIDI data received is output to the TO HOST port.	The TG100 does not respond to the MIDI data appearing at the MIDI IN port, but to the MIDI data FROM HOST.
MIDI OUT	MIDI data received at the HOST IN port is output.	
MIDI THRU	MIDI data appearing at the MIDI IN port is fed directly to the MIDI THRU.	

PC-1

This mode is for use with a PC-9800 type computer. The PC-9800 is a very popular computer in Japan. The specifications are the same as those for "PC-2", mode except for the baud rate. See "Technical specifications" on page 66.

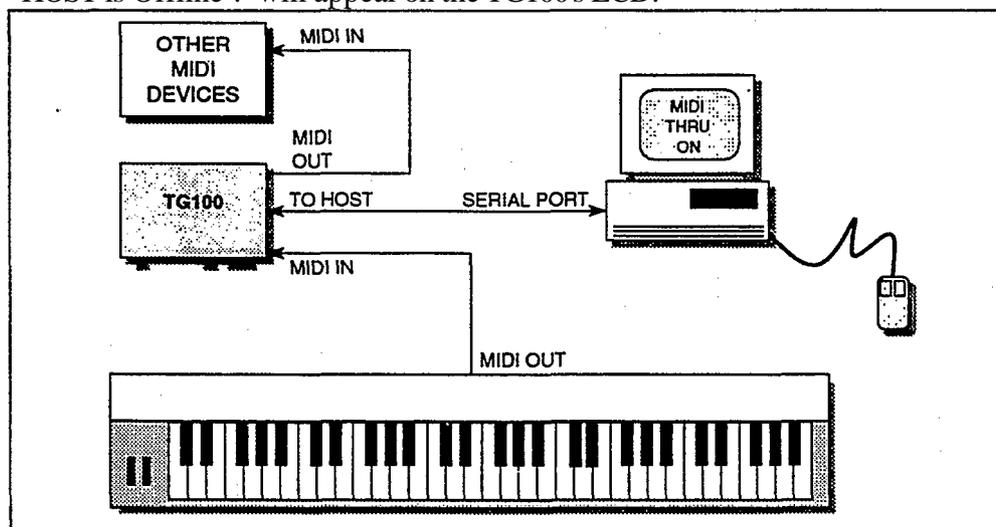
PC-2

This mode is for use with an IBM-PC, PC-AT compatible and PS/2 type computer, which does not have a MIDI interface card installed. The TG100 can be connected directly to the computers serial (RS-232C) port.

The music software used must be able support the TG100's "TO HOST" connection. Please consult your Yamaha dealer for more details. If your software does not support the "TO HOST" connection, the TG100 can still be connected to this type of computer by installing a MIDI interface card (MPU-401, or compatible) in the computer.

- 1) Connect the TG100's "TO HOST" connector to one of the PC's serial ports using the "PC-2" connecting cable shown on page 67.
- 2) Switch on your PC.
- 3) Switch on the TG100.
- 4) Set the TG100's "HOST SELECT" switch to **PC-2**.
- 5) Start your PC music software.

If your PC is not switched on, or your music software is not running, the message "HOST is Offline !" will appear on the TG100's LCD.



The table below explains how the MIDI data signals are handled in PC-2 mode. MIDI data is carried to and from the computer using the "TO HOST" connection.

Connector	Function	Details
TO HOST: IN	MIDI data is input, processed, then fed to the MIDI OUT port.	Synchronized. Data format: 8 bit, 1 stop bit, no parity.
:OUT	MIDI data received at the MIDI IN port is output.	When System Exclusive Message is sent, data from the MIDI IN port is not output.
MIDI IN	MIDI data received is output to the TO HOST port.	The TG100 does not respond to the MIDI data appearing at the MIDI IN port, but to the MIDI data FROM HOST.
MIDI OUT	MIDI data received at the HOST IN port is output.	
MIDI THRU	MIDI data appearing at the MIDI IN port is fed directly to the MIDI THRU.	

10 Other Functions

Adjusting the LCD contrast

- The contrast control, on the TG100's rear panel, should be adjusted so that the LCD display is easy to read.
- When the LCD display is viewed from a different height or angle, the contrast may need to be adjusted.

AUDIO IN connection

Summary:

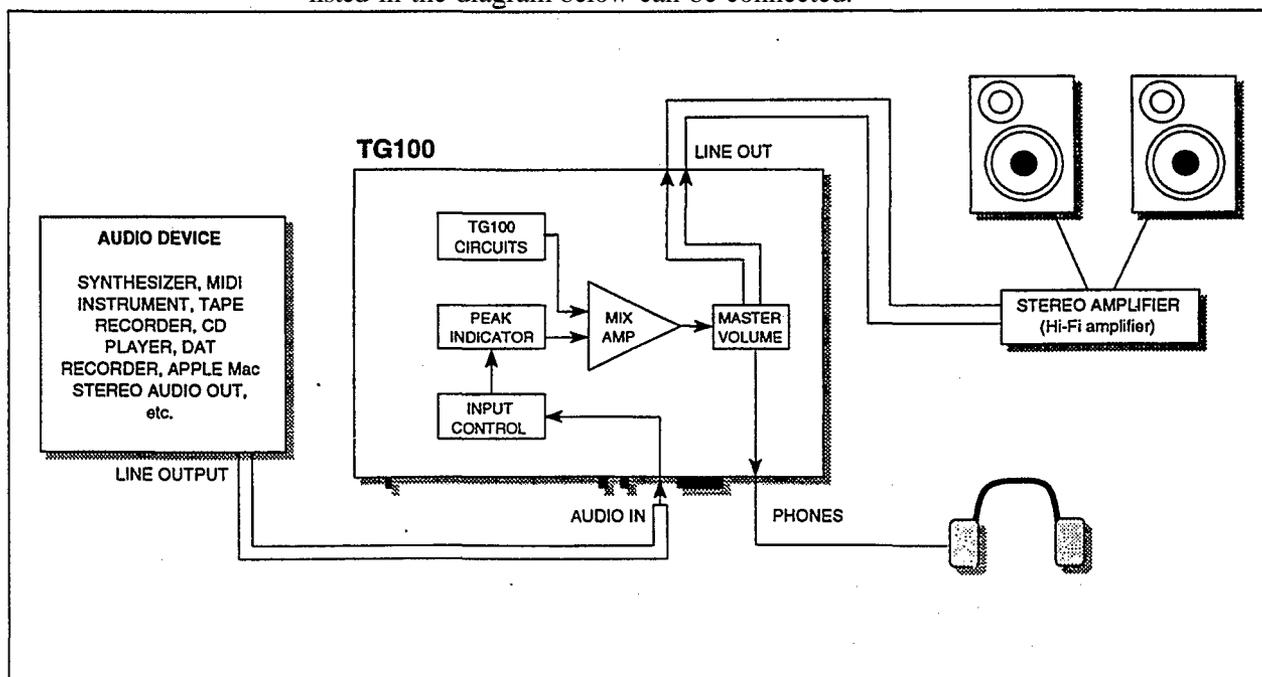
This function allows you to mix sounds from another instrument or audio device with the TG100's sounds.

Procedure:

- 1) Connect the line output of the other instrument, or audio device to the "AUDIO IN" connector on the TG100's front panel.
The TG100's AUDIO IN connection is stereo. It uses a 3.5 mm mini jack, so you might need to buy a connecting cable, or some connector adaptors.
- 2) Use the "INPUT" level control to set the sound balance between the AUDIO IN sound and the TG100's sounds. When the control is set to minimum, a small amount of AUDIO IN sound can still be heard, this is normal.
- 3) If the "PEAK" indicator lights up, turn down the "INPUT" level control, otherwise the input signal will be distorted.

Details:

- This function is useful if you don't have an audio mixer. Any of the audio devices listed in the diagram below can be connected.



11 Typical System Configurations

MIDI keyboard

MIDI keyboard, this could be a MIDI master keyboard, a synthesizer or any electronic keyboard instrument that can transmit MIDI data. See "Using the TG100 with a MIDI keyboard" on page 4 of the *Getting Started Manual*.

Computer sequencer

See "Using the TG100 with a computer that has a MIDI interface" on page 7 and "Using the TG100 with a computer that has a MIDI interface" on page 7 of the *Getting Started Manual*.

Disk Orchestra system

Yamaha's Disk Orchestra Collection can be played using one of the following Yamaha products:

DRC-20 Disk player

DOM-30 Disk Orchestra Module

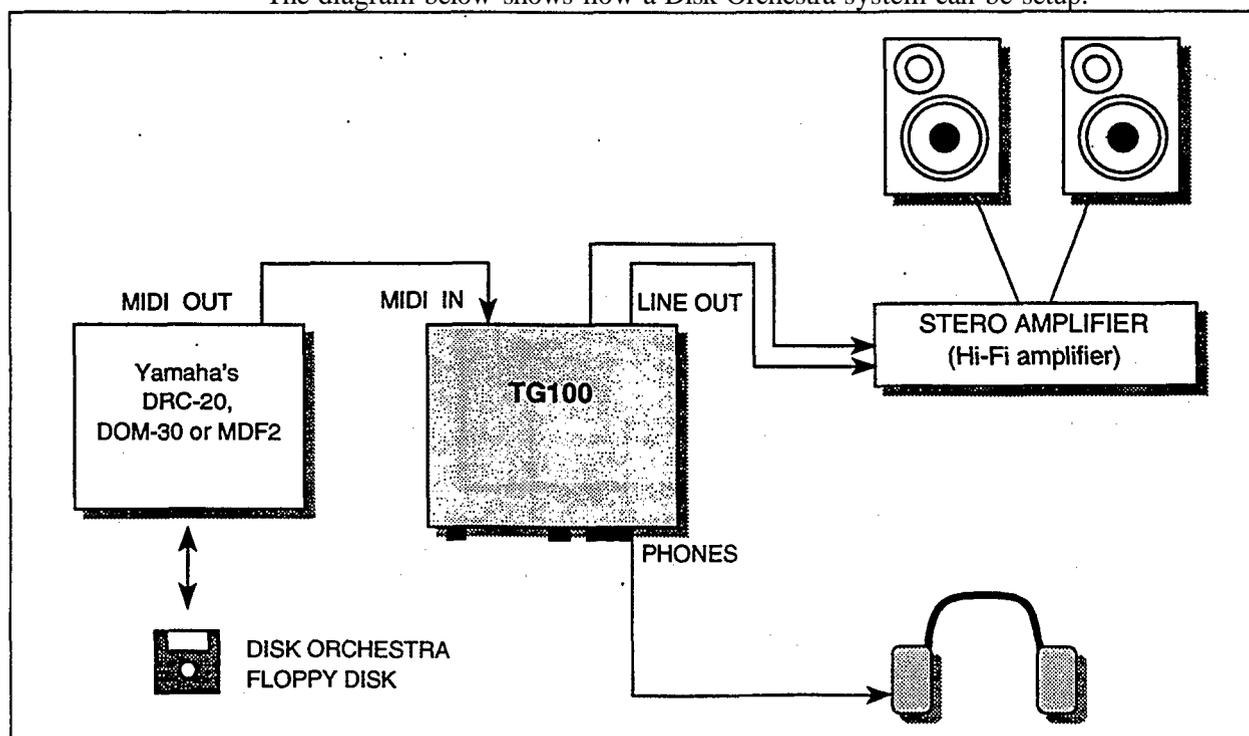
MDF2 MIDI data recorder.

The TG100 should be set to "Disk Orchestra mode". This will automatically select the Clavinova drum kit and the correct voice to Program Change number assignments.

As well as playing the Disk Orchestra Collection's disks, the DOM-30 works as a multi-timbral tone generator too. So, you could use some voices from the TG100 and some from the DOM-30. In this case, the unused Part's MIDI receive channel should be set to OFF.

The audio output of the DOM-30 could be connected to the TG100's AUDIO IN facility, allowing you to mix the sound output of both tone generators.

The diagram below shows how a Disk Orchestra system can be setup.

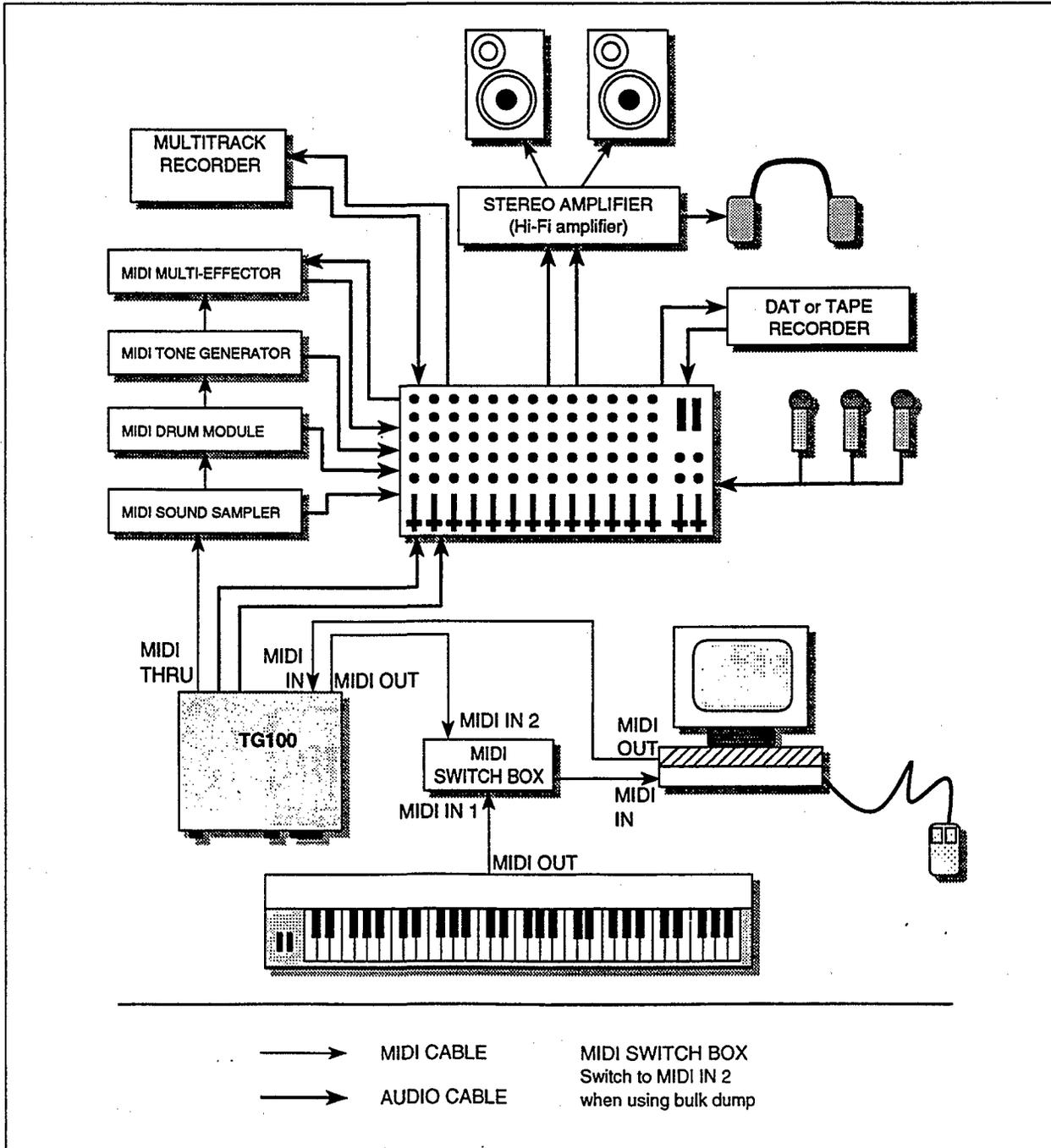


Sequencer system

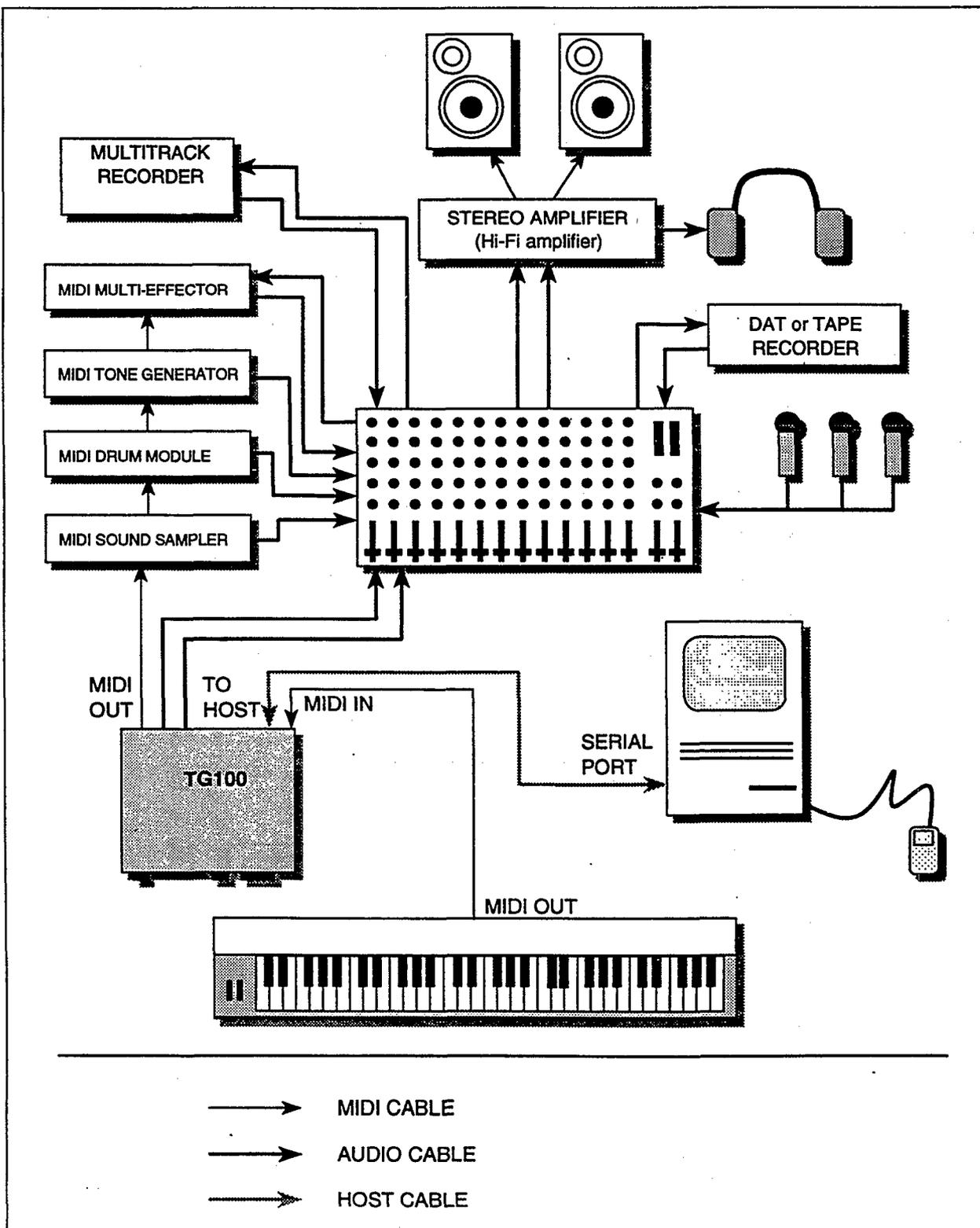
The following system is quite an advanced MIDI music production system. It is intended to show how your MIDI system can be expanded and the benefits of having a TG100 tone generator at the heart of your system.

Connecting the TG100 to a computer with a MIDI interface and connecting to a Mac, PC-1 or PC-2 type computer without a MIDI interface, using the TG100 as the MIDI interface, is a little different. So, for the sake of clarity the system is shown twice; first, with a MIDI host connection, second, with the TO HOST connection.

MIDI connection



TO HOST connection



As you can see from the above diagram, not only does the TG100 work as a MIDI interface for the other MIDI devices, it also eliminates the need for a MIDI switcher box when the bulk dump function is used.

12 Appendix

Internal voice bank table

Voice No.	Voice name	PC No.	Element 1			Element 2		
			LEVEL	DETUNE	PAN	LEVEL	DETUNE	PAN
1		1						
2		2						
3		3						
4		4						
5		5						
6		6						
7		7						
8		8						
9		9						
10		10						
11		11						
12		12						
13		13						
14		14						
15		15						
16		16						
17		17						
18		18						
19		19						
20		20						
21		21						
22		22						
23		23						
24		24						
25		25						
26		26						
27		27						
28		28						
29		29						
30		30						
31		31						
32		32						

Voice No.	Voice name	PC No.	Element 1			Element 2		
			LEVEL	DETUNE	PAN	LEVEL	DETUNE	PAN
33		33						
34		34						
35		35						
36		36						
37		37						
38		38						
39		39						
40		40						
41		41						
42		42						
43		43						
44		44						
45		45						
46		46						
47		47						
48		48						
49		49						
50		50						
51		51						
52		52						
53		53						
54		54						
55		55						
56		56						
57		57						
58		58						
59		59						
60		60						
61		61						
62		62						
63		63						
64		64						

Troubleshooting

Symptom	What to do
No sound	Check all your equipment is switched on.
	Check the audio connections, including cables.
	Make sure the TG100's master volume control is turned up.
	Check the settings on your amplifier, or mixer; input select, volume, speakers, headphones, etc.
	Start the demo song, see page 52. If you still have no sound, the problem must be somewhere between the TG100's outputs and your speakers.
The demo song plays OK, but the TG100 does not respond to your MIDI keyboard.	Check the MIDI connections.
	Make sure your MIDI keyboard's MIDI transmit channel matches that of the TG100 Part you want to play, see page 37.
	Set the Velocity meter mode to ON, see page 47. This will tell you whether or not the TG100 Part is receiving MIDI data.
	Make sure that the "HOST SELECT" switch is set correctly.
Velocity meter is registering MIDI data, but no sound is heard.	Make sure the TG100's master volume control is turned up.
	Check the Part's volume setting, see page 31.
	Check the Part's voice element volume, see page 41.
Sound is produced from only one speaker.	Check the audio connections, including cables.
	Check the Part's pan setting, page 32.
	If the Part pan is set to "voice", check the voice element pan setting, page 43.
The voice elements pan position has been edited, but the effect cannot be heard.	Make sure that the Part's pan setting is "voice", see page 32.
Two or more voices are playing the same thing.	Check the Parts' MIDI channel assignment, see page 37.
The bulk dump function does not appear on the LCD.	Turn the MIDI Exclusive function ON, see page 49.
Bulk dump messages cannot be sent or received.	Check the MIDI connections.
	Make sure that the TG100's device number matches the transmitting or receiving unit's device number, see page 49.
The reverb effect cannot be heard.	Check that the overall reverb volume level setting, see page 30.
	Check the Part reverb send level, see page 36.
MIDI program change numbers don't select the correct voices.	Check the sound module mode, see page 16.
The pitch sounds wrong.	Check the master tuning, see page 46.
	Check the voice element's detuning, see page 42.

Glossary

Attack rate: The speed at which a sound reaches its maximum initial volume.

AWM: Advanced Wave Memory, a technique developed by Yamaha for digitally sampling and reproducing naturally occurring sound.

Bulk dump: The transfer of a MIDI instrument's setup data to a music computer or MDR (MIDI Data Recorder).

Channel messages: MIDI messages that are received and sent on the individual MIDI channels. Only MIDI instruments set to the same receive channel number as the transmitting device's transmit channel number will respond to the data. Channel messages consist of voice, Control Change, Program Change, pitch bend, Aftertouch and mode data.

C/M: One of the TG100's sound module modes, which provides semi-compatibility with the CM-64 and associated equipment.

Default: Sometimes known as the "factory" setting. It's the value of a parameter that is set when the unit is manufactured.

Detune: The detuning of one voice element to produce a chorus type effect.

Disk Orchestra Collection: A series of songs, available on floppy disk, for use with Yamaha's Clavinova instruments. Each song is stored as MIDI data in Yamaha's own "ESEQ" file format. Disks can be played using Yamaha's DRC-20, DOM-30 or MDF2.

DSP: Digital Signal Processor, an IC (Integrated Circuit) designed specifically for digital audio data processing. The TG100 uses a DSP to create its reverb effects.

Dynamic allocation: The automatic allocation of notes to Parts as and when required.

Element: A TG100 sound sample. Some voices consist of one element, some of two.

General MIDI: An addition to the MIDI 1.0 standard that provides greater compatibility for MIDI song files when they are transferred between different manufacturers' MIDI equipment.

Host connection: For connecting the TG100 directly to a computer, running music software, that does not have a MIDI interface. Connection is made directly to the computer's serial port (RS-422, or RS-232).

Internal voice bank: The TG100 voice bank where voices can be edited. It contains 64 voices.

MDR: MIDI Data Recorder, a device that can record MIDI data. This could be a MIDI computer sequencer; a librarian program; a dedicated MIDI data recorder, such as Yamaha's MDF2; or a synthesizer with an MDR function, such as Yamaha's SY99 music synthesizer.

MIDI: Musical Instrument Digital Interface. MIDI allows electronic musical instruments to communicate with each other.

MIDI Song File: A computer type file, which contains MIDI song data. A lot of MIDI equipment can use this type of file.

Multi-timbral: The name generally applied to a MIDI instrument that can produce many different voices (sounds) at the same time.

Music computer: A computer that can use MIDI music software.

Panning: The positioning of instruments between the left and right speakers to produce a stereo effect.

Part: The TG100 has 16 Parts. Each Part is assigned a voice and receives MIDI data on its own channel. The volume, pan position, attack rate, release rate, reverb level and MIDI receive channel can be independently set for each Part.

Polyphony: The maximum number of notes that can be played simultaneously. The TG100 is 28-note polyphonic. Sometimes other manufacturers refer to this as the number of voices that can sound simultaneously (28-voice polyphonic).

Program Change message: A MIDI channel message used to select a different voice for a Part.

RAM: Random Access Memory, a type of memory IC that contains data which can be edited, but requires a continuous electrical supply to be able to store the data. The TG100's internal voice bank is stored in RAM. If you want to keep the internal voice bank data, it must be saved to a music computer or MDR (MIDI Data Recorder) before the TG100 is switched off.

ROM: Read Only Memory, a type of memory IC whose data cannot be edited, but does not need a continuous electrical supply to store data. The TG100's voice elements are stored in ROM.

RX: The prefix given to Yamaha's drum machines: RX8, RX7, etc. The TG100 has an RX drum kit that provides semi-compatibility for drum patterns and drum sequences recorded on an RX drum machine.

Release rate: The speed at which a sound decreases to zero volume.

Serial Port: A computer connection that can receive and transmit digital data serially (RS-232C or RS-422).

Sound module mode: The TG100 has three sound module modes: General MIDI, Disk Orchestra Collection and C/M. Each mode uses the same voices, but the Program Change number assignments are different.

System Exclusive messages: A type of MIDI message sent exclusively to an individual MIDI device. These messages contain information such as manufacturer and product type. Bulk dump messages are a type of System Exclusive message.

System messages: MIDI messages that are received from and sent to MIDI devices regardless of MIDI channel assignments. System messages consist of time information, for synchronizing MIDI devices; start, stop commands, for drum machines and sequencers and System Exclusive messages.

Split point: A position on a keyboard where notes either side of the split point can play a different voice and transmit MIDI data on different channels. Some MIDI keyboards allow 2, 3 or 4 split points.

Techno-fear: A human phobia brought on when confronted by a complex, technical piece of equipment. Not associated with Yamaha equipment.

Timbre: The characteristics of a voice that differentiates it from other voices.

Truncation: When notes are cut off to allow new notes to sound. Used if all the TG100's 28 notes are sounding simultaneously.

Voice: The TG100 contains 192 instrument voices. Some manufacturers refer to these as sounds.

Voice bank: The TG100's 192 instrument voices are arranged into four voice banks: General MIDI, Disk Orchestra and C/M. Sixty four editable voices are held in the internal voice bank.

13 TG100 specifications

Technical specifications

Internal ROM voices	192 instrument voices and 10 drum kits
Internal RAM voices	64 Internal voice
Polyphony	28-note (Dynamically allocated)
Multi-timbral	16 voices simultaneous (voices assigned to 16 Parts)
Sound sampling	AWM (Advanced Wave Memory)
Reverb effect	Yamaha custom DSP (Digital Signal Processor)
Sound module mode	General MIDI LEVEL1
	Disk Orchestra (Yamaha)
	C/M (CM-64 semi-compatible)
Demo song	1 (not editable, stored in ROM)
Controls	MASTER VOLUME, INPUT, CONTRAST
Buttons	PLAY, PART, EDIT, CURSOR, -1/NO, +1/YES
Indicators	PEAK
LCD display	1-line 16-character
Audio connections	
LINE OUT	1/4" (6.35mm) mono jack socket x2
AUDIO IN	3.5mm stereo mini jack x1
PHONES	3.5mm stereo mini jack x1
MIDI connections	
TO HOST	8-PIN mini DIN socket
Host computer selection and data transfer rate	MIDI - 31,250 bps (bits per second)
	Mac - 31,250 bps
	PC-1-31,250 bps
	PC-2 - 38,400 bps
Power supply voltage	15V, 500mA
DC IN connection	2.1 mm mini power type (for use with PA-1505 adaptor)
Dimensions	220 x 196.5 x 40.6 mm (8.6" x 7.7" x 1.6") W x D x H
Weight	1.0kg
Supplied accessories	PA-1505 power supply adaptor
Optional accessories	RK101 19" rack mounting adaptor

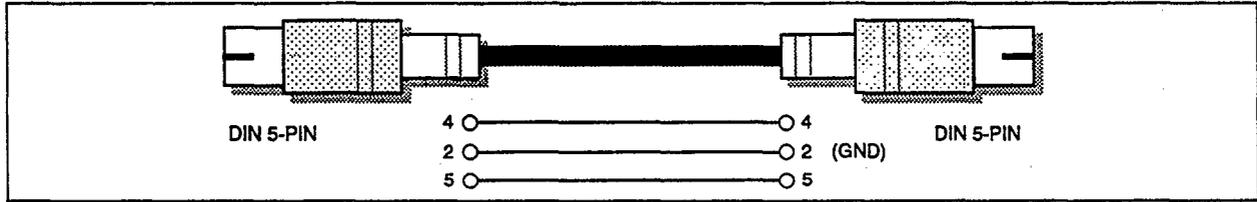
Rack mounting

The TG100 can be rack-mounted using one of the "half-rack-size" adaptors that are available (i.e. Yamaha RK101). The TG100 is supplied with two screws for fixing it to an adaptor. Use either these screws, or the screws supplied with the adaptor. Screws must be M3 x 8mm.

Host computer connecting cables

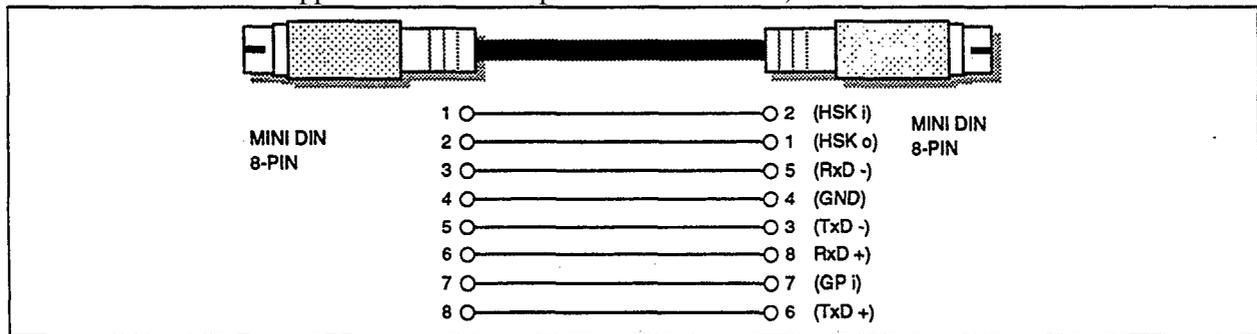
MIDI

Standard MIDI cable. Maximum length 15 metres.



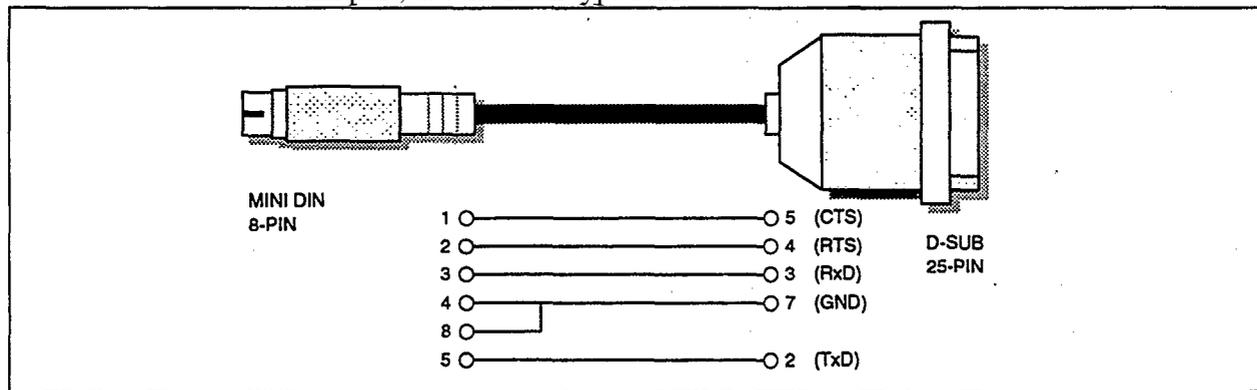
Mac

Apple Macintosh Peripheral cable "M0197).



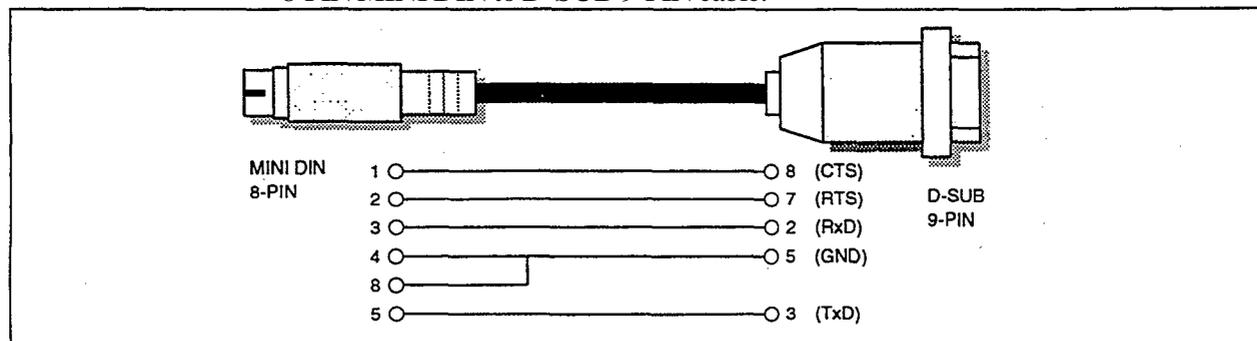
PC-1

8-PIN MINI DIN to D-SUB 25-PIN cable. If your PC-1 type computer has a 9-PIN serial port, use the PC-2 type cable.



PC-2

8-PIN MINI DIN to D-SUB 9-PIN cable.



14 Index

A

Appendix 60
 Apple Mac computer, connecting 54
 Audio in
 connector 12
 input level, setting 56
 peak indicator 56
 using 56
 AWM, what is it 3

B

BK, on the LCD 15

C

C - C/M voice bank
 explained 18
 Parts 1...9 19
 Parts 11... 16 19
 voice table 19

C/M mode

 a summary 7
 C/M drum kit 24
 default voice/Part assignment 17
 how it works 16
 MIDI channel/Pan assignment 16
 pitch bend range 17
 selecting 16

Cables, computer connection 67

CH, on the LCD 15

Channel messages, MIDI 71

Clavinova

 drum kit 24
 See "Disk Orchestra mode"

Cleaning the TG100 2

CM-64 7

Computer connecting cables 67

Computer sequencer, connecting to 57

Computer, connecting 53

 Apple Mac 54
 MIDI computer 53
 PC-9800 55
 PC-AT compatible 55
 PS/2 55

Connecting to a computer 53

Connecting to:

 computer with a MIDI interface
 (*Getting Started Manual*) 7
 computer without a MIDI interface
 (*Getting Started Manual*) 7
 MIDI keyboard (*Getting Started Manual*) 4
 synthesizer (*Getting Started Manual*) 4

Contrast control 14

Controls & connections
 (*Getting Started Manual*) 3
 this manual 11

Copying voices, how to 45

Cursor button 12

D

D - Disk Orchestra voice bank
 explained 18
 voice table 19

DC IN connection 13

Demo song, playing 52

Detuning voice elements 42

Device number setting 49

Digital Reverb

 a summary 4
 See also "Reverb"

Disk Orchestra mode

 a summary 7
 default voice/Part assignment 17
 how it works 16
 MIDI channel/Part assignment 16
 pitch bend range 17
 selecting 16

Disk Orchestra system 57

Drums

 a summary 4
 Analog, Brush & Orchestra kit layouts
 26
 C/M kit layout 28
 clavinova kit layout 28
 Program Change numbers 23
 RX kit layout 27
 selecting 23
 Standard, Room, Power & Electronic
 kit layouts 25

DSP, what is it 4

Dump all, saving data 50

Dynamic note allocation 3

E

Edit button 11

Editing voices

See "Voice Edit Mode"
 a summary 4
 a tutorial (*Getting Started Manual*) 11
 how to 39
 naming 44
 saving data 50

Effects

See "Reverb"

EG attack rate, Part setting 34

EG release rate, Part setting 35

Elements

 detuning 42
 editing 40
 pan position, setting 43
 volume, setting 41
 what are they 3

Exclusive on/off, setting 49

F

Features of the TG100 2

Front panel, an explanation 11

G

G - General MIDI voice bank

 explained 18
 voice table 19

General MIDI mode

 a summary 7
 default voice/Part assignment 17
 how it works 16
 MIDI channel/Part assignment 16
 pitch bend range 17
 selecting 16

Glossary 64

H

Headphone connection 12

Host computer connecting cables 67

Host computer, connecting 53

Host select switch 13

I

I - Internal voice bank

 explained 18
 voice table 60

IN connection 14

Initializing default settings 51

Input level control 12

Inside the TG100 5

Installation (*Getting Started Manual*) 2

Instrument voices

See "Voices"

L

LCD display 11

 contrast, adjusting 56
 MIDI messages 74
 voice name table 19
 what does it display 15

Line out connection 13

M

Mac computer, connecting 54

Manuals

 conventions 2
 explained (*Getting Started Manual*) 2

Master tuning 46

Master volume control 12

MD, on the LCD 15

MDF2, saving data (*Getting Started Manual*)
 12

MDR

 saving data 50
 saving data (*Getting Started Manual*)
 12

Menu function diagram 6

MIDI

- an explanation 8
- channel messages 71
- channel, Part setting 37
- computer connection 53
- connectors 14
- data format 70
- data saving 50
- device number, setting 49
- exclusive on/off, setting 49
- implementation chart 78
- IN, OUT & THRU 14
- LCD messages 74
- Program Change number to voice assignment table 19
- song files 10
- System Exclusive data 72

MIDI keyboard system 57
(*Getting Started Manual*) 4

Multi Common Edit Mode 29
selecting reverb type 29
setting reverb level 30

Multi Part Edit Mode 31
EG attack rate, setting 34
EG release rate, setting 35
MIDI receive channel, setting 37
panpot position, setting 32
reverb level, setting 36
volume setting 31

Multi-timbral, what is it 3

N

Naming edited voices 44

O

OUT connection 14

P

Pan

- element, setting 43
- Part, setting 32

Parameter buttons

- +1/YES button 12
- 1/NO button 12

Part 10

See "Drums"

Part button 11

Parts

- EG attack rate, setting 34
- EG release rate, setting 35
- MIDI receive channel, setting 37
- panpot position, setting 32
- reverb level, setting 36
- selecting 18
- volume, setting 31
- what are they 3

PC#, on the LCD 15

PC-1, computer type 55

PC-2 computer, connecting 55

PC-9800 computer, connecting 55

PC-AT computer, connecting 55

Peak indicator 12
using 56

Phones connector 12

Pitch bend

- range 17
- range change via MIDI 17

Pitch rate scaling 18

Play button 11

Play Mode 15

Polyphony, what is it 3

Power supply connection 13

Power switch 11

Priority, note allocation 37

Program Change number to voice assignments 19

PS/2 computer, connecting 55

Q

QX3, saving data (*Getting Started Manual*) 12

R

Rack mounting 66

Rear panel, an explanation 13

Reverb

- characteristics 29
- level, setting 30
- options 29
- Part level, setting 36
- selecting the type 29
- using 36

RX drum kit 24

S

Safety (*Getting Started Manual*) 1

Saving data 50

See also (Getting Started Manual) 12

Sequencer systems 58

MIDI connection 58

To host connection 59

Setup tables 62

Sound module mode

selecting 16

Specifications 66

Storing data 50

SY99, saving data (*Getting Started Manual*) 12

Synthesizer, connecting to (*Getting Started Manual*) 4

System Configurations 57

System Exclusive messages 72

System mode functions

- 46
- demo song, playing 52
- device number, setting 49
- initialize all, using 51

master tuning 46

MIDI exclusive on/off 49

saving data 50

velocity meter, setting 47

T

TG100

- internal block diagram 5
- menu functions 6
- what is it 3

THRU connection 14

To host connector 13

Troubleshooting 63

Truncation

how it works 7

MIDI channel priority 37

Tuning 46

U

Unpacking (*Getting Started Manual*) 2

User setup tables 62

V

Velocity meter, setting 47

Voice bank

- selecting via MIDI 18
- table 19

Voice Edit Mode 39

- element detuning 42
- element level, setting 41
- pan position, setting 43
- selecting a voice to edit 39
- voice naming 44

VOICE NAME, on the LCD 15

Voices

- copying 45
- internal voice bank table 60
- naming edited voices 44
- Program Change numbers 19
- saving data 50
- See "Voice Edit Mode"*
- See also (Getting Started Manual) 11*
- selecting 18
- voice bank table 19
- what are they 3

Volume

- audio in, setting 56
- element, setting 41
- master volume 12
- Part, setting 31

W

Warnings (*Getting Started Manual*) 1

Welcome (*Getting Started Manual*) 1

15 MIDI Data Format

1. GENERAL

1.1 Application

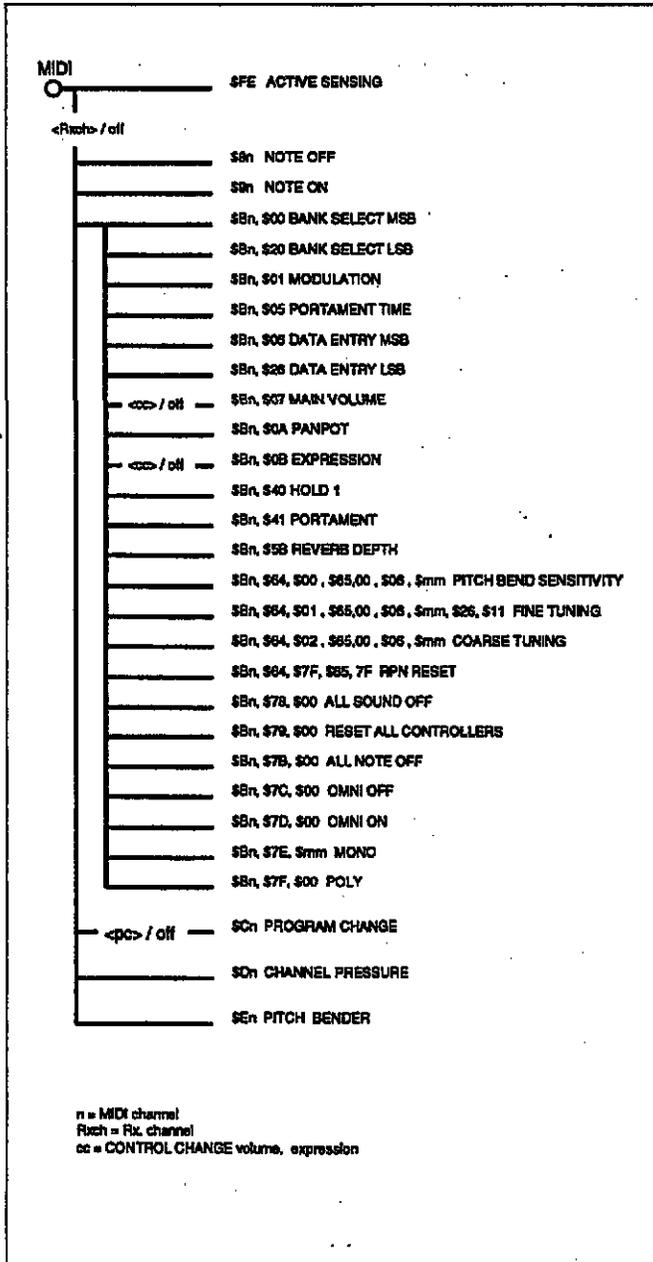
The following MIDI data and specifications apply to the TG100.

1.2 Applied standards

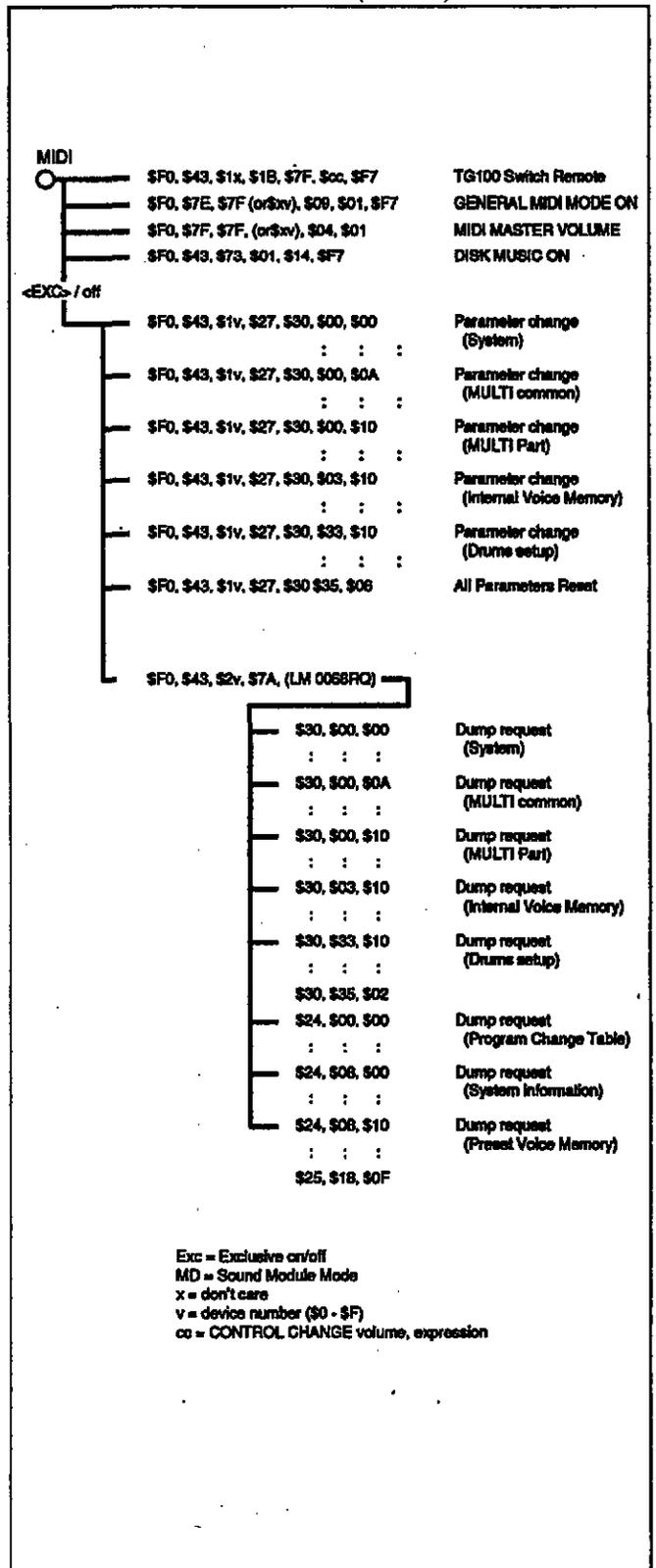
MIDI 1.0 standard.

2. MIDI receive & send diagrams

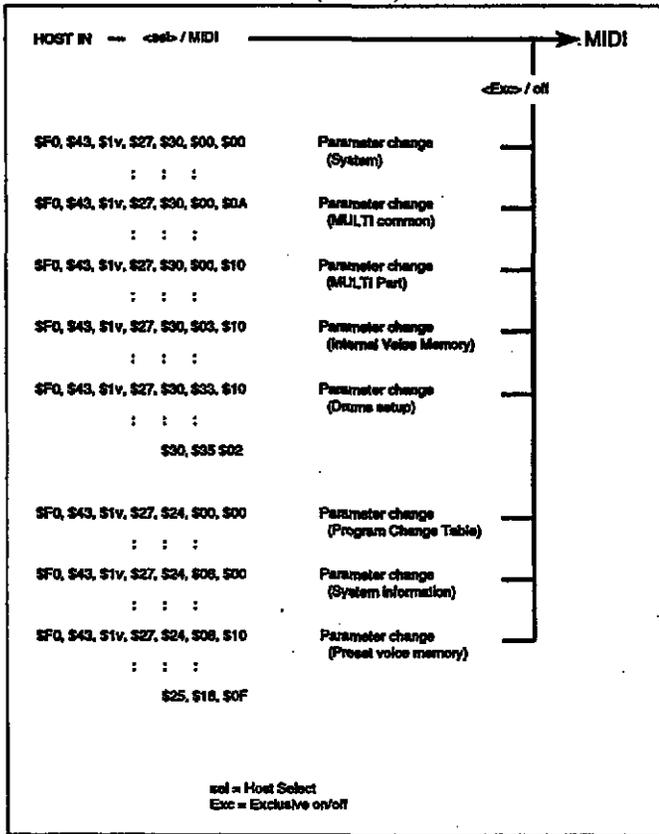
MIDI receive conditions (1 of 2)



MIDI receive conditions (2 of 2)



MIDI send conditions (1 of 2)



- *1 Used to select parameter value specified by, "3.2.7RPN (Registered Parameter Number)" on page 72.
- *2 Portamento work as follows:
 - When a key of a higher pitch than the currently held key is played the pitch sweeps up from a value 100 cents below the key's pitch.
 - When a key of a lower pitch than the currently held key is played the pitch sweeps down from a value 100 cents above the key's pitch.
- *3 Used to select the unit's voice banks shown below.

MSB	LSB	Bank Name
0..63	0	General MIDI
64..111	0	INTERNAL
112..126	0	DISK ORCHESTRA
127	0	C/M(CM-64)

If a Program Change Message is received immediately after a Bank Select Message has been received, the Program Change number will correspond to the selected voice bank.

- *4 When a Part's PANPOT setting is VOICE, the pan position is adjusted relative to the pan position of the elements used by the voice.

When a Part's PANPOT position is not set to VOICE, the elements pan position is ignored and complete adjustment of pan position is possible.

3.2.3 Program Change

You can select one of two Program Change receive modes.

- 1) off: Ignore Program Changes.
- 2) on: respond to Program Changers.

In Disk Orchestra mode, if a Program Change number that is not assigned to a voice is received, it is ignored.

In Disk Orchestra, and C/M modes, Program Change numbers are ignored by the drum Pan 10.

3.2.4 Pitch Bend

Responds to 14-bit pitch bend data (-8192...+8191).

3.2.5 Channel Pressure

3.2.6 Channel mode Message

The following Channel Mode messages can be received.

2nd byte	3rd byte	
120	0	All Sound Off
121	0	ResetAllController
123	0	All Note Off
124	0	Omni Off
125	0	Omni On
126	0..16	Mono
127	0	Poly

3.2.6.1 All Sound Off

Any sound being produced is stopped. However, parts that are receiving Channel Messages such as Note-on, Hold-on etc., will continue.

3. Channel Messages

3.1 Send

Channel Messages not sent.

When the Host Select switch is set to anything other than "MIDI", MIDI data is echoed back as follows.

HOST IN → MIDI OUT

MIDI IN → HOST OUT

3.2 Receive

3.2.1 Note on/off

Noterange=C-2...G88

Velocity range 1..127 (only applies to note-on)

3.2.2 Control Change

The following parameters can be controlled using MIDI Control Change messages.

CntrlNo.	Parameter	Data range	
0	Bank Select MSB	0..127	*3
32	Bank Select LSB	0..127	*3
1	Modulation	0..127	
5	Portamento Time	0..127	
6	Data Entry MSB	0..127	*1
38	Data Entry LSB	0..127	*1
7	Main Volume	0..127	
10	Panpot	0..127	*4
11	Expression	0..127	
64	Hold1	0..127	
65	Portamento	0..127	*2
91	Reverb Depth	0..127	

3.2.6.2 Reset All Controllers

Controllers are set to the following values.

Controller	Reset Value
Pitch Bend	±0 (neutral)
Channel Pressure	0 (off)
Modulation	0 (off)
Expression	127 (maximum)
Hold1	0 (off)
Portamento	0 (off)
RPN	Not set. Internal data does not change.

3.2.6.3 All Note Off

All Notes currently on will be turned off. However, if Hold 1 is on, sound generation will not stop until Hold 1 stops.

3.2.6.4 Omni Off

Processing is the same as that for "All Note Off".

3.2.6.5 Omni On

Processing is the same as that for "All Note Off".

3.2.6.6 Mono

Processing is the same as that For "All Note Off". If the 3rd byte (Mono value) is between 0...16, the relevant Part is set to Mode 4 (m=1).

3.2.6.7 Poly

Processing is the same as that for "All Note Off". The relevant Part will be set to Mode 3.

3.2.7 RPN (Registered Parameter Number)

Select the control parameter, giving RPN MSB and RPM LSB, then put the parameter value in the Data Entry.

The unit responds to the following RPN.

RPN MSB LSB	Data Entry MSB LSB	
S00 S00	\$mm--	Pitch bend sensitivity mm: \$00...\$18 (0...24 semitones). ---:don't care. A range of 2 octaves can be selected. At switch on range is set to 2 semitones.
S00 S01	\$mm\$I	Master fine tuning (mm, I): (\$00, \$00)...(\$40, 400)...(\$7F, \$7F) (-8192 x 100/8192...0...+8191 x 100/8192 cents)
S00 S02	\$mm--	Master course tuning mm: \$28...\$40...\$58 (-24...0...+24 semitones) ---: don't care
S7F S7F	--- ---	RPN reset ---:don'tcare RPN Not set. Internal data does not change

4. System Exclusive Message

4.1 Parameter Change

The unit works with the following parameter changes.

- 1) System Data Parameter Change
- 2) Multi Common Data parameter change
- 3) Multi Part Data parameter change
- 4) Internal Voice Memory parameter change
- 5) Drums Setup Data parameter change
- 6) Preset Voice Memory parameter change
- 7) Program Change Table parameter change
- 8) System Information
- 9) All Parameter Reset
- 10) TG100 Switch remote
- 11) General MIDI Mode On
- 13) MIDI Master Volume
- 13) Disk Music On

Parameter change transmission is switched off only when Exclusive is set to off.

The parameter change format is as follows

```

11110000  F0      = Exclusive status
01000011  43      = YAMAHA ID
0001nnnn  nnnn    = Device number
00100111  27      = Model ID
0aaaaaaa  aaaaaa  = Start Address b20 - b14
0aaaaaaa  aaaaaa  = Start Address b13 - b7
0aaaaaaa  aaaaaa  = Start Address b6 - b0
0ddddddd  ddddddd = Data
    
```

```

0ccccccc  ccccccc = Check-sum
11110111  F7      = End of exclusive
    
```

Data is correctly processed if the Dump request receive address corresponds with the Start Address and the Dump Request's byte count is correct.

For the Start Address and byte count, see the tables on page 6 to page 8.

The sending device must add the header to each parameter. For example, when sending System and Multi parameters with only one header, the receiver can only identify System parameters. Therefore, the sending device must not skip these characters.

- System
- Multi
- Internal voice
- Drums Part
- All parameters reset

Do not send more than 256 bytes in one transmission.

If you have a Dump request of more than 256 bytes, split It into sections, then transmit them at 30ms intervals.

The check sum's lowest 7-bit value is zero after adding the Start Address, Data and check sum.

While sending the data, the "HOST" in echo back does not function

4.1.1 System Data Parameter Change

Refer to "Parameter base address" on page 6 and "MIDI Parameter Change table (System)" on page 6.

4.1.2 Multi Common Data parameter change

Refer to "Parameter base address" on page 6 and "MIDI Parameter Change table (MULTI common)" on page 6.

4.1.3 Multi Part Data parameter change

The actual address value = the start address + the offset address.

Refer to "Parameter base address" on page 75 and "MIDI Parameter Change table (MULTI Part)" on page 75.

4.1.4 Drums Setup Data parameter change

The actual address value = the address at the top of each block + the offset address.

If a different Drum kit is selected, the Drum Setup parameters are initialized.

Refer to "Parameter base address" on page 75 and "MIDI Parameter Change table (Drums Setup)" on page 76.

4.1.5 Internal Voice Memory parameter change

The actual address value = the address at the top of each block + the offset address.

Refer to "Parameter base address" on page 75 and "MIDI Parameter Change table (VOICE Memory)" on page 76.

4.1.6 Preset Voice Memory parameter change

This data can be sent, but it is ignored if received.

The actual address value = the address at the top of each block + the offset address.

Refer to "Parameter base address" on page 75 and "MIDI Parameter Change table (VOICE Memory)" on page 76.

4.1.7 Program Change Table parameter change

This data can be sent, but it is ignored if received.

Refer to "Parameter base address" on page 75 and "MIDI Parameter Change table (Program change table)" on page 77.

4.1.8 System Information parameter change

This data can be sent, but it is ignored if received.

Refer to "Parameter base address" on page 75 and "MIDI Parameter Change table (System information)" on page 77.

4.1.9 All Parameters Reset

```

11110000 F0 = Exclusive status
01000011 43 = YAMAHA ID
0001nnnn nnnn = Device Number
00100111 27 = Model ID
00110000 30 = Start Address b20 - b14
00111001 35 = Start Address b13 - b7
00000100 06 = Start Address b6 - b0
00000000 00 = Data
00010011 15 = Check-sum
11110111 F7 = End of exclusive

```

Reset the system. All internal parameters are reset to the default (factory) settings.

4.1.10 TG100 Switch remote

```

11110000 F0 = Exclusive status
01000011 43 = YAMAHA ID
0001xxxx xxxx = don't care
00011011 1B = Switch remote ID
01111111 7F = Switch remote sub ID
0ddddddd ddddddd = Data
11110111 F7 = End of exclusive

```

The LCD screen will show the same as when the power is turned on.

The following data is received even if the Exclusive is turned off.

Data	Switch
0	PLAY
1	PART
2	EDIT
3	CURSOR
4	-1/NO
5	+1/YES

4.1.11 General MIDI Mode On

```

11110000 F0 = Exclusive status
01111110 7E = Universal Non-Real time
01111111 7F = ID of target device
00001001 09 = Sub-ID No.1=General MIDI
Message
00000001 01 = Sub-ID No.2=General MIDI On
11110111 F7 = End of exclusive
OR:
11110000 F0 = Exclusive status
01111110 7E = Universal Non-Real time
0xxxxnnn nnnn = Device Number, xxx=don't care
00001001 09 = Sub-ID No.1=General MIDI
Message
00000001 01 = Sub-ID No.2=General MIDI On
11110111 F7 = End of exclusive

```

The Sound Module mode changes to General MIDI mode when the ON data is received.

The above data is received even if the Exclusive is set to off.

4.1.12 MIDI Master Volume

```

11110000 F0 = Exclusive status
01111111 7F = Universal Real time
01111111 7F = ID of target device
00000100 04 = Sub-ID No.1=Device Control
Message
00000001 01 = Sub-ID No.2=Master Volume
01111111 11 = Volume LSB
0mmmmmmm mm = Volume MSB
11110111 F7 = End of exclusive
OR:
11110000 F0 = Exclusive status
01111111 7F = Universal Real time
0xxxxnnn nnnn = Device Number, xxx=don't care
00000100 04 = Sub-ID No.1=Device Control
Message
00000001 01 = Sub-ID No.2=Master Volume
01111111 11 = Volume LSB
0mmmmmmm mm = Volume MSB
11110111 F7 = End of exclusive

```

When the "Volume MSB" is received, the Master Volume is set.

The above data is received even if the Exclusive is set to off.

4.1.13 Disk Music On

```

11110000 F0 = Exclusive status
01000011 43 = YAMAHA ID
01110011 73 = Instrument Classified
(CLAVINOVA)
00000001 01
00010100 14 = Disk Music On
11110111 F7 = End of exclusive

```

The Sound Module mode changes to Disk Orchestra when the ON data is received.

The above data is received even if the Exclusive is set to off.

1.1 Parameter base address

Parameter change			
Start Address (H)		Description	
30	00	00	System
30	00	0A	Multi common
30	00	10	Multi Part 10
30	00	28	Multi Part 1
:	:	:	:
30	02	60	Multi Part 15
30	02	78	Multi Part 16
30	03	10	Internal voice 0
30	03	70	Internal voice 1
:	:	:	:
30	31	50	Internal voice 62
30	32	30	Internal voice 63
30	33	10	Drums Part key No.27
30	33	13	Drums Part key No.28
:	:	:	:
30	35	00	Drums Part key No.107
30	35	08	Drums Part key No.108
30	35	06	All parameters reset
<Program change table>			
24	00	00	General MIDI LEVEL 1
24	02	00	DISK ORCHESTRA
24	04	00	C/M TYPE 1
24	06	00	C/M TYPE 2
24	08	00	System Information
24	08	10	Preset voice 0
24	08	70	Preset voice 1
:	:	:	:
25	16	50	Preset voice 190
25	17	30	Preset voice 191

Voice Memory

Parameter change			
Offset Address (H)		Description	
00	00	Common parameter	
00	18	Element 1 parameter	
00	3C	Element 2 parameter	

The actual address value = the address at the top of each block + the offset address.

1.2 MIDI Parameter Change table (System)

Address (H)	Size (H)	Data (H)	Parameter	Description	Default value (H)
30 00 00	02	1C-E4	MASTER TUNE	-100...+100(cent)	08 00 (80)
30 00 01#				1st b3-0 → b7-4 2nd b3-0 → b3-0	
30 00 02	01	28-58	TRANSPOSE	-24...+24 semitones	40
30 00 03	01	00-10	DEVICE NUMBER	0...15, 16: all	10
30 00 04	01	00-01	EXCLUSIVE	0: off, 1: on	01
30 00 05	01	00-01	PROGRAM CHANGE	0: off, 1: on	01
30 00 08	01	00-01	CONTROL CHANGE	0: off, 1: on	
			VOLUME,		01
			EXPRESSION		

Address (H)	Size (H)	Data (H)	Parameter	Description	Default value (H)
30 00 07	01	00-7F	SOUND MODULE MODE	0: General MIDI 1: Disk Orchestra 2: C/M	00
30 00 08	01	00-7F	MASTER VOLUME	0...127 (=F0 7F 7F 04 01 xx vv F7)	7F
30 00 09	01	00-02	VELOCITY METER	0: off 1: auto 2: on	01
TOTAL SIZE		0A			

REMARKS:

The address marked with "#", cannot be used as the "Start address".

1.3 MIDI Parameter Change table (MULTI common)

Address (H)	Size (H)	Data (H)	Parameter	Description	Default value (H)
30 00 0A	01	00-07	REVERB TYPE	0: Hall 1 1: Hall 2 2: Room 1 3: Room 2 4: Plate 1 5: Plate 2 6: Delay 1 7: Delay 2	00
30 00 0B	01	03-36	REVERB TIME	3...54	21
30 00 0C	01	18-46	REVERB OUTPUT LEVEL	-40...+6dB	3E
TOTAL SIZE		08			

1.4 MIDI Parameter Change table (MULTI Part)

Offset Address (H)	Size (H)	Data (H)	Parameter	Description	Default value (H)
00 00 02	00-7F		VOICE BANK	0...63 General MIDI 64...111: INTERNAL 112...126: DISK ORCHESTRA 127: C/M (=Bx 00 vv 20 00)	38
00 01#	00-7F		PC VALUE	(=Cx vv)	00
00 02	01	00-10	RX.CHANNEL	0...15 16: off	n
00 03	01	00-01	MONO/POLY MODE	0: Mono (Bx 7E 01) 1: Poly (=Bx 7F 00)	01
00 04	02	1C-E4	DETUNE	-100...+100(cent)	08 00 (80)
00 05#				1st b3-0 \$ b7-4 2nd b3-0 \$ b3-0 (=Bx 64 01 65 00 08 vv 26 vv)	
00 06	01	28-58	NOTE SHIFT	-24...+24 semitones (=Bx 64 02 65 00 08 vv)	40
00 07	01	00-7F	VOLUME	0...127 (=Bx 07 vv)	64
00 08	01	00-0F	VELOCITY SENSE	0...15	08
00 09	01	00-0F	PANPOT	8: voice 9: left : 15: left center 0: center	08

Offset Address (H)	Size (H)	Data (H)	Parameter	Description	Default value (H)
				: 7: right (=Bx 0A vv' except vv')	
00 0A	01	00 - 7F	NOTE LIMIT LOW	C-2...G8	00
00 0B	01	00 - 7F	NOTE LIMIT HIGH	C-2...G8	7F
00 0C	01	00 - 08	REVERB SEND DEPTH	0: min : 8: max (=Bx 5B vv')	04
00 0D	01	39 - 47	LFO SPEED	-7...+7	40
00 0E	01	31 - 4F	LFO DEPTH	-15...+15	40
00 0F	01	00 - 7F	LFO DELAY	-64...+63	40
00 10	01	39 - 47	EG.ATTACK RATE	-7...+7	40
00 11	01	39 - 47	EG.RELEASE RATE	-7...+7	40
00 12	01	00 - 18	PITCH BEND RANGE	0...24 semitones (=Bx 64 00 65 00 06 vv')	02
00 13	01	00 - 0F	MOD LFO PITCH DEPTH	0...15	0F
00 14	01	00 - 7F	don't care	0...127	00
00 15	01	28 - 58	CAF PITCH CONTROL	-24...+24 (semitone)	40
00 16	01	00 - 0F	CAF LFO PITCH DEPTH	0...15	00
00 17	01	00 - 7F	don't care	0...127	00
TOTAL SIZE	18				

REMARKS:

n: block number (0 - F) Part 1 n=I
:
Part 9 n=9
Part 10 n=0
Part 11 n=A
:
Part 16 n=F

x: MIDI channel number (0 - F)

When n = 0 (Drums), the following parameters are ignored.

- PC VALUE
- VOLUME
- PANPOT
- REVERB SEND DEPTH

vv' After conversion, it will be written.

The address marked with "#", cannot be used as the "Start address".

The actual address value = the address at the top of each block + the offset address.

1.5 MIDI Parameter Change table (Drums Setup)

Offset Address (H)	Size (H)	Data (H)	Parameter	Description
00 00	01	00 - 7F	LEVEL	0...127
00 01	01	00 - 0F	PANPOT	8: left : 15: left center 0: center : 7: right
00 02	01	00 - 08	REVERB DEPTH	0: min : 8: max
TOTAL SIZE	03			

REMARKS:

The actual address value = the address at the top of each block + the offset address.

1.6 MIDI Parameter Change table (VOICE Memory)

1) Common parameter

Offset Address (H)	Size (H)	Data (H)	Parameter	Description	Default value (H)
00 00	01	00 - 01	VOICE MODE	0: 1 element 1: 2 element	00
00 01	01	00 - 7F	ELEMENT1 LEVEL	0...127	7F
00 02	01	00 - 7F	ELEMENT2 LEVEL	0...127	7F
00 03	01	20 - 5F	ELEMENT1 DETUNE	-32...+31	40
00 04	01	20 - 5F	ELEMENT2 DETUNE	-32...+31	40
00 05	01	00 - 7F	PORTAMENTO TIME	0...127	01
00 06	01	00 - 0F	MOD LFO PITCH DEPTH	0...15	0F
00 07	01	00 - 7F	don't care	0...127	00
00 08	01	00 - 0F	CAF LFO PITCH DEPTH	0...15	00
00 09	01	00 - 7F	don't care	0...127	00
00 0A	01	00 - 05	ELEMENT 1 PITCH RATE SCALING	0: 100% 1: 50% 2: 20% 3: 10% 4: 5% 5: 0%	00
00 0B	01	00 - 7F	ELEMENT 1 PITCH RATE SCALING CENTER NOTE	0...127 (C-2...G8)	3C
00 0C	01	28 - 58	ELEMENT 1 NOTE SHIFT	-24...+24 semitones	40
00 0D	01	28 - 58	ELEMENT 2 NOTE SHIFT	-24...+24 semitones	40
00 0E	01	00 - 05	ELEMENT 2 PITCH RATE SCALING	0: 100% 1: 50% 2: 20% 3: 10% 4: 5% 5: 0%	00
00 0F	01	00 - 7F	ELEMENT 2 PITCH RATE SCALING CENTER NOTE	0...127 (C-2...G8)	3C
00 10	01	20 - 7F	VC NAME1	ASCII character	
00 11	01	20 - 7F	VC NAME2	ASCII character	
00 12	01	20 - 7F	VC NAME3	ASCII character	
00 13	01	20 - 7F	VC NAME4	ASCII character	
00 14	01	20 - 7F	VC NAME5	ASCII character	
00 15	01	20 - 7F	VC NAME6	ASCII character	
00 16	01	20 - 7F	VC NAME7	ASCII character	
00 17	01	20 - 7F	VC NAME8	ASCII character	
TOTAL SIZE	18				

Remarks:

The actual address value = the address at the top of each block + the offset address.

2) Element parameter

Offset Address (H)	Size (H)	Data (H)	Parameter	Description	Default value (H)
00 00	02	00 - 8B	WAVEFORM	0: 139	00 00 (00)
00 01#				1st b3-0 → b7-4 2nd b3-0 → b3-0	
00 02	01	31 - 4F	EG AR	-15...+15	40
00 03	01	31 - 4F	EG RR	-15...+15	40
00 04	01	00 - 7F	LEVEL SCALING	C-2...G8	40
			BREAK POINT1		
00 05	01	00 - 7F	BREAK POINT2	C-2...G8	40
00 06	01	00 - 7F	BREAK POINT3	C-2...G8	40
00 07	01	00 - 7F	BREAK POINT4	C-2...G8	40
00 08	02	00 - FF	LEVEL SCALING	-128...+127	08 00 (80)
00 09#			OFFSET1	1st b3-0 → b7-4 2nd b3-0 → b3-0	
00 0A	02	00 - FF	OFFSET2	-128...+127	08 00 (80)
00 0B#				1st b3-0 → b7-4 2nd b3-0 → b3-0	
00 0C	02	00 - FF	OFFSET3	-128...+127	08 00 (80)
00 0D#				1st b3-0 → b7-4 2nd b3-0 → b3-0	
00 0E	02	00 - FF	OFFSET4	-128...+127	08 00 (80)
00 0F#				1st b3-0 → b7-4 2nd b3-0 → b3-0	
00 10	01	00 - 0F	PANPOT	9: left : 15: left center 0: center : 7: right	00
00 11	01	00 - 07	LFO SPEED	0...7	04
00 12	01	00 - 7F	LFO DELAY	0...127	00
00 13	01	00 - 7F	don't care	0...127	00
00 14	01	00 - 0F	LFO PITCH MOD DEPTH	0...15	00
00 15	01	00 - 07	LFO AMP MOD DEPTH	0 - 7	00
00 16	01	00 - 01	PITCH LFO WAVE	0: triangle 1: sample & hold	00
00 17	01	00 - 02	P-EG RANGE	0: 1/2 oct 1: 1 oct 2: 2 oct	01
00 18	01	00 - 01	P-EG VELOCITY SWITCH	0: on 1: off	01
00 19	01	00 - 07	P-EG RATE SCALING	0...7	00
00 1A	01	00 - 3F	P-EG R1	0...63	3F
00 1B	01	00 - 3F	P-EG R2	0...63	3F
00 1C	01	00 - 3F	P-EG R3	0...63	3F
00 1D	01	00 - 3F	P-EG RR	0...63	3F
00 1E	01	00 - 7F	P-EG LO	-64...+63	40
00 1F	01	00 - 7F	P-EG L1	-64...+63	40
00 20	01	00 - 7F	P-EG L2	-64...+63	40
00 21	01	00 - 7F	P-EG L3	-64...+63	40
00 22	01	00 - 7F	P-EG RL	-64...+63	40
00 23	01	00 - 07	VELOCITY CURVE	0: curve-1 1: curve-2 2: curve-3 3: curve-4	00

Offset Address (H)	Size (H)	Data (H)	Parameter	Description	Default value (H)
				4: curve-5 5: curve-6 6: curve-7 7: curve-8	
TOTAL SIZE	24				

REMARKS:

The address marked with "#", cannot be used as the "Start address".

In Disk Orchestra mode, the voice velocity curve setting is ignored. It is always set to "curve-8".

The actual address value = the address at the top of each block + the offset address.

1.7 MIDI Parameter Change table (Program change table)

Offset Address (H)	Size (H)	Data (H)	Parameter	Description
00 00	02	00 - FF	SERIAL VOICE# TO	0...191, 255:off voice
00 01#			PC#1	
:			:	
:			:	
01 7E	02	00 - FF	SERIAL VOICE# TO	0...191, 255:off voice
01 7F#			PC#128	
TOTAL SIZE	100			

REMARKS:

The address marked with "#", cannot be used as the "Start address".

The actual address value = the address at the top of each block + the offset address.

1.8 MIDI Parameter Change table (System information)

Address (H)	size (H)	Data (H)	Parameter	Description
24 08 00	10	23	STRING	ASCII '#'
24 08 01#		30	STRING	ASCII '0'
24 08 02#		30	STRING	ASCII '0'
24 08 03#		36	STRING	ASCII '6'
24 08 04#		38	STRING	ASCII '8'
24 08 05#		20	STRING	ASCII ''
24 08 06#		20	STRING	ASCII ''
24 08 07#		56	STRING	ASCII 'V'
24 08 08#		45	STRING	ASCII 'E'
24 08 09#		52	STRING	ASCII 'R'
24 08 0A#		3D	STRING	ASCII 'A'
24 08 0B#		31	STRING	ASCII 'I'
24 08 0C#		2E	STRING	ASCII '.'
24 08 0D#		30	STRING	ASCII '0'
24 08 0E#		30	STRING	ASCII '0'
24 08 0F#		20	STRING	ASCII ''
TOTAL SIZE	10			

REMARKS:

The top address must be the same as the "Start address".

Function . . .	Transmitted	Recognized	Remarks
Basic Default	: x	: 1 - 16	: memorized
Channel Changed	: x	: 1 - 16	:
Mode Default	: x	: 3	:
Mode Messages	: x	: 3,4 (m = 1) *2	:
Mode Altered	: *****	: x	:
Note Number : True voice	: x	: 0 - 127	:
Velocity Note ON	: x	: o 9nH,v=1-127	:
Velocity Note OFF	: x	: x	:
After Key's	: x	: x	:
Touch Ch's	: x	: o	:
Pitch Bender	: x	: o 0-24 semi	: 12bit resolution:
Control Change	0,32 : x 1 : x 5 : x 6,38 : x 7 : x 10 : x 11 : x 64 : x 65 : x 91 : x 100,101 : x 120 : x 121 : x	: o MSB only : o : o : o : o : o : o : o : o : o (Reverb) : o : o : o	: Bank Select : Modulation Wheel : Portamento Time : Data Entry *1 : Volume : Panpot *1 : Expression : Hold 1 : Portamento : Effect Depth 1 : RPN LSB, MSB : All Sound Off : Reset All Cntrls:
Prog Change : True #	: x : *****	: o 0-127	*1 :
System Exclusive	: o	*3 : o	*3 :
System : Song Pos.	: x	: x	:
System : Song Sel.	: x	: x	:
Common : Tune	: x	: x	:
System : Clock	: x	: x	:
Real Time : Commands	: x	: x	:
Aux : Local ON/OFF	: x	: x	:
Aux : All Notes OFF	: x	: o(123-127)	:
Mes- : Active Sense	: x	: o	:
sages:Reset	: x	: x	:
Notes: *1	; receive if switch is on.		
*2	; m is always treated as " 1 " regardless of its value.		
*3	; transmit/receive if exclusive switch is on.		

SERVICE

This product is supported by YAMAHA's worldwide network of factory trained and qualified dealer service personnel. In the event of a problem, contact your nearest YAMAHA dealer.

YAMAHA

YAMAHA[®]

Yamaha Corporation of America
6600 Orangethorpe Avenue, P.O. Box 6600, Buena Park, CA 90622-6600

TG100 OM

7/22/98 29313



TG100 OM



Recyclable



Recycled