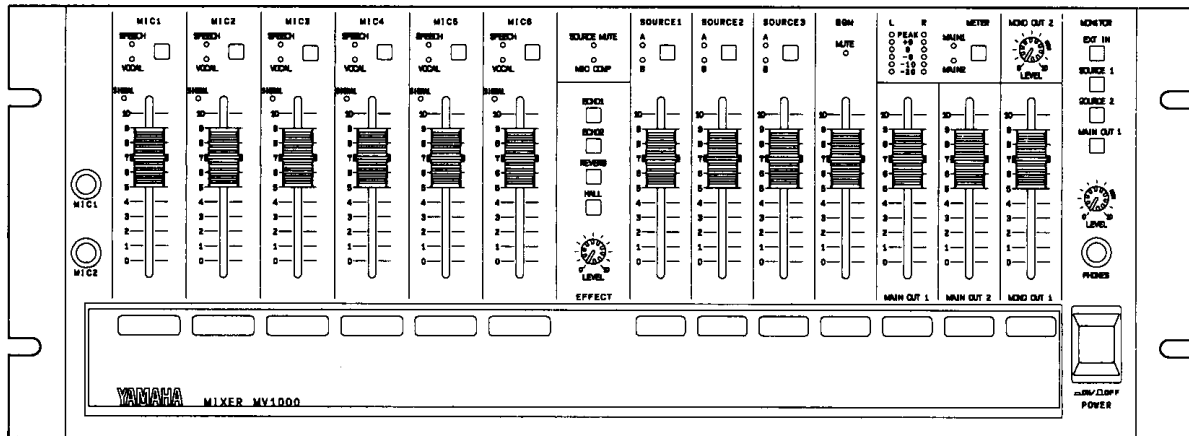


YAMAHA

MIXER

MV1000

OPERATING MANUAL
 MANUEL D'UTILISATION
 BEDIENUNGSHANDBUCH



FCC INFORMATION (U.S.A.)

- 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.
- 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.
- 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

IMPORTANT NOTICE FOR THE UNITED KINGDOM

Connecting the Plug and Cord

WARNING: THIS APPARATUS MUST BE EARTHED

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

GREEN-AND YELLOW	:	EARTH
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 GREEN-AND-YELLOW must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol or coloured GREEN or GREEN-AND-YELLOW.

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.

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.

Congratulations!

Your MV1000 is a first-class Yamaha product that will provide you years of high-quality mixing performance if cared for and operated properly.

This product is designed for a variety of event-type applications, with features geared towards mixing both speaking and music, and facilities for connecting video.

There are six microphone input channels, offering both balanced XLR, and phone jack connectors.

Each microphone channel has its own high and low EQ controls, and a SPEECH/VO-CAL switch which selects either a low-cut (rumble) filter or high quality digital echo effects.

Also, when NOISE GATE is turned on, each microphone will be noise gated. This automatically switches off the channel when no sound is going through it.

Microphone compression is provided with adjustable threshold and ratio to even out the levels of the microphones.

There are seven sets of stereo inputs for units such as CD players and tape decks, one of which is a specialized "Background Music" (BGM) channel.

When BGM MUTE is turned on, just by operating one of the stereo inputs (such as starting to play a tape), the background music (BGM channel) can automatically turn itself off, until the tape has finished.

A SOURCE MUTE system can automatically reduce the level of any background music (the SOURCE and BGM channels) while microphones 1 or 2 are being used (called "ducking", or "gain riding"), so DJ's or announcers can always be heard, no matter what other sound is going through the system while they are speaking.

There are two video inputs (for video cameras or players) and a video output, so the operator can switch between the video sources to make recordings while the event is occurring. Of course, the video will include a full stereo sound mix!

With two stereo MAIN OUT's, a stereo REC OUT, a stereo MONITOR OUT, two MONO OUT's and a headphone mix, the MV1000 has capability to provide output and monitoring for everyone involved, from the audience and the sound engineer, to the singers, musicians and speakers.

If this unit is going to be used by people other than yourself, please leave this manual near the MV1000 so that it can be referred to if necessary.

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Precautions

1. AVOID EXCESSIVE HEAT, HUMIDITY, DUST AND VIBRATION

Keep the unit away from locations where it is likely to be exposed to high temperatures or humidity—such as near radiators, stoves etc. Also avoid locations which are subject to excessive dust accumulation or vibration which could cause mechanical damage.

2. AVOID PHYSICAL SHOCKS

Strong physical shocks to the unit can cause damage. Handle it with care. If you are intending to move the unit around to different events, we would recommend that you invest in at least a 6U (6 rack-space) road case to house it, and any other rack mount gear you may be using, such as power amplifiers.

3. DO NOT OPEN THE UNIT, OR ATTEMPT REPAIRS OR MODIFICATIONS YOURSELF

This product contains no user-serviceable parts. Refer all maintenance to qualified Yamaha service personnel. Opening the unit and/or tampering with the internal circuitry will void the warranty.

4. MAKE SURE POWER IS OFF BEFORE MAKING OR REMOVING CONNECTIONS

Always turn the power off, on the MV1000 and all other attached equipment (especially power amplifiers), prior to connecting or disconnecting cables. This is important to prevent damage to the unit itself as well as other connected equipment, due to power surges.

If for some reason the MV1000 cannot be turned off, turn the input fader of the channel you are connecting right down first, and also the MAIN OUT 1, MAIN OUT 2, MONO OUT 1 and MONO OUT 2 faders.

5. HANDLE CABLES CAREFULLY

Always plug and unplug cables—including the AC cord—by gripping the connector, not the cord.

6. CLEAN WITH A SOFT DRY CLOTH

Never use solvents such as benzine or thinner to clean the unit. Wipe clean with a soft, dry cloth.

7. ALWAYS USE THE CORRECT POWER SOURCE

Make sure that the power source voltage specified on the rear panel matches your local AC mains supply:

U.S. & Canadian Model: 120V AC, 60Hz

U.K. Model: 240 V AC, 50Hz

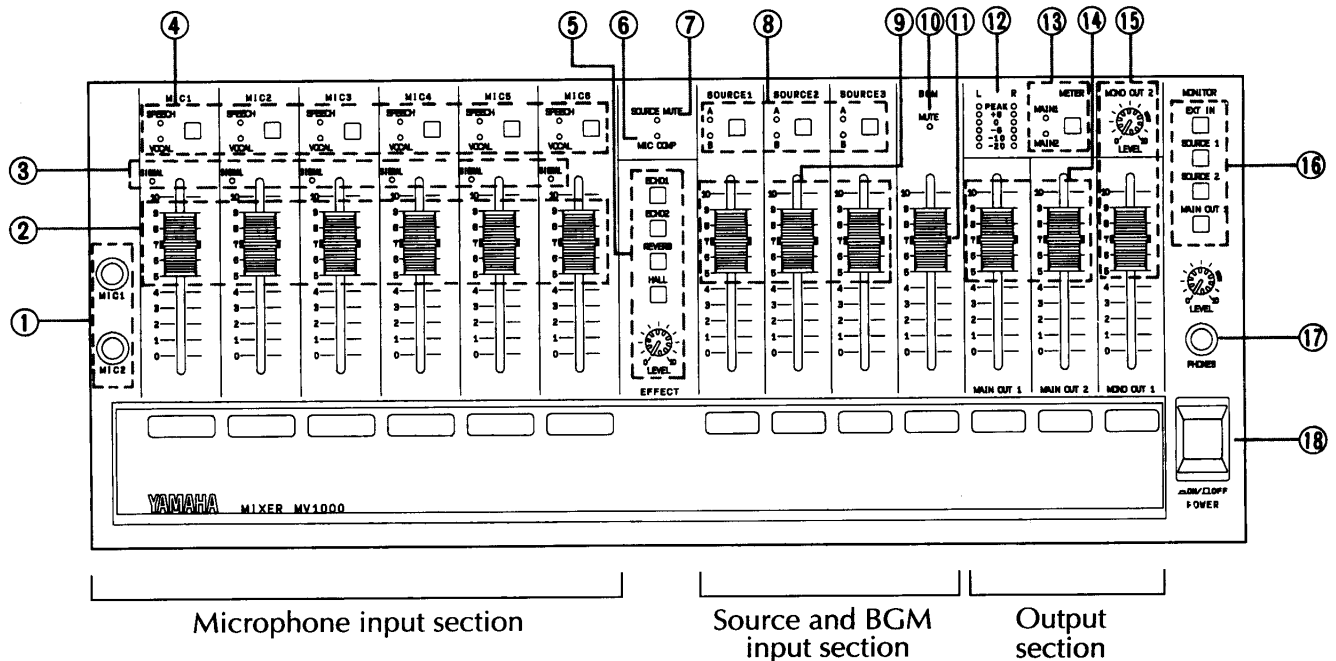
General Model: 230 V AC, 50Hz

8. TURN-ON PROCEDURE

Always turn the MV1000 power on before turning on the power to the power amplifier.

For a fuller explanation, see “Turning the power on” on page 8.

Upper panel controls



① Microphone 1&2 input phone jacks

These jacks can be balanced (tip/ring/sleeve) or unbalanced. There are also balanced XLR inputs for microphones 1&2 on the connection panel (see 38-a). The front jacks have priority over the MIC 1&2 inputs on the connection panel. If anything is plugged into the front MIC 1 and/or MIC 2 inputs, the MIC 1 and/or MIC 2 inputs on the connection panel will be ignored.

② Microphone faders

③ Signal indicators

These light up when there is sound going through the corresponding microphone.

④ Speech / vocal selectors

SPEECH sends input signals through a low-cut (rumble) filter, and VOCAL sends them through the digital effects unit to add echo or reverb.

⑤ Digital effects unit

Choose one of the four digital effects by pressing one of the four buttons, and adjust the amount of echo or reverb with the LEVEL knob.

⑥ Microphone compression indicator

Lights up when microphone compression is occurring.

⑦ Source mute indicator

Lights up when source muting ("ducking") is occurring.

⑧ Source select (A,B) buttons

These select either source A or source B for each SOURCE channel.

⑨ Source faders

⑩ BGM muting indicator

Lights up when the BGM is being muted by one of the other sources.

⑪ BGM fader

⑫ Level meters

These show the sound level going through either main output 1 or 2.

⑬ Meter selector

This selects whether the meter will show main output 1 or 2.

⑭ Faders for main outputs 1 & 2

⑮ Faders for mono outputs 1 & 2

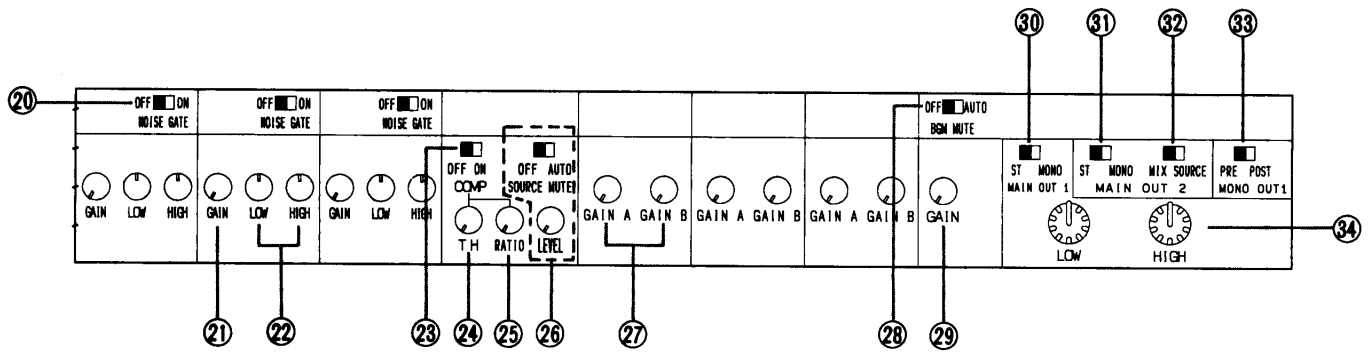
⑯ Monitor selector

These buttons select what will be sent to the monitor output and the headphones. Only one of the buttons can be selected at a time. Attempting to press more than one button at a time may cause damage to the unit.

⑰ Headphone jack

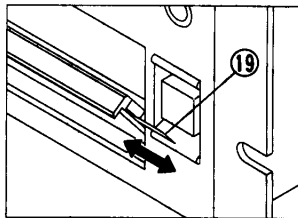
⑱ Power switch

Lower panel controls



19 Channel label card and holder

You can label each of the channels on this card, then slide it into the holder, as shown:



20 Noise gate switch

21 Microphone gain adjustment

22 Microphone high and low EQ controls

23 Compressor ON/OFF

This turns on compression for all microphone channels.

24 Compressor threshold adjustment

This adjusts the microphone level where compression will cut in.

25 Compressor ratio adjustment

This adjusts the amount of compression that will occur.

26 Source mute switch and adjustment

The SOURCE MUTE OFF/AUTO switch turns “ducking” on and off.

The LEVEL knob adjusts the volume that the sound will go down to when “ducking” occurs.

27 Source gain adjustment

28 BGM mute switch

This switch turns BGM muting off, or to automatic.

29 BGM gain adjustment

30 MAIN OUT 1 stereo/mono switch

31 MAIN OUT 2 stereo/mono switch

32 MAIN OUT 2 source switch

MAIN OUT 2 can either output the same as MAIN OUT 1 but without the master EQ controls (MIX), or it can output only the sound from the BGM channel and source channels (SOURCE).

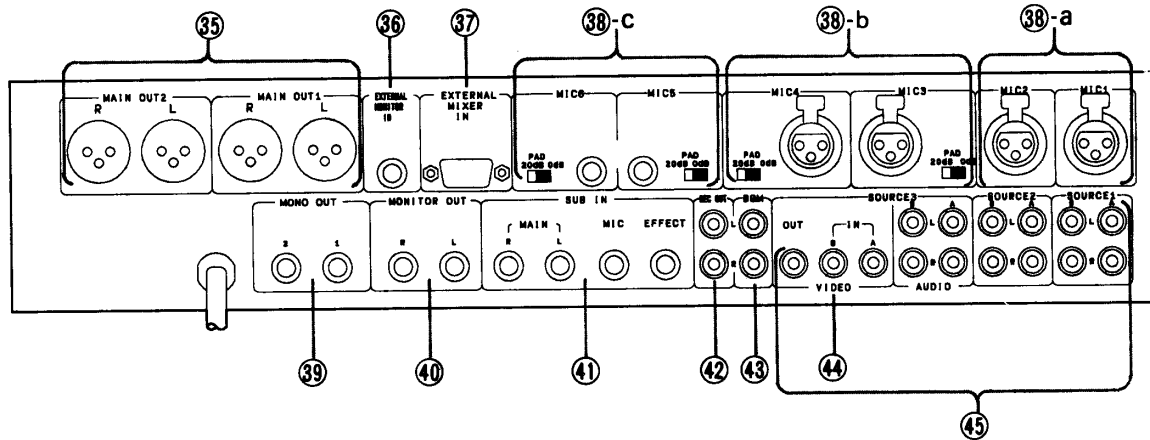
33 MONO OUT 1 source switch

MONO OUT 1 can either output the same sound as MAIN OUT 1 except in mono (POST), or bypass the master faders and EQ controls (PRE).

34 Master high and low EQ controls

These do not affect MAIN OUT 2, the monitor outputs, or the REC OUT (recording) outputs.

Connection panel



- 35 MAIN OUT jacks (1 & 2)**
Balanced XLR connectors.
- 36 EXTERNAL MONITOR IN jack**
An external source can be connected here which can be listened to through the monitor section.
- 37 EXTERNAL MIXER IN connector**
An optional EXMV1000 external input unit can be connected here, giving an additional two microphone channels.
- 38 Microphone inputs**

 - 38-a MIC 1 and MIC 2 jacks**
Balanced XLR connectors. Balanced/unbalanced phone jacks are also provided on the front panel for MIC 1 and MIC 2. The front MIC 1 and MIC 2 jacks have priority over the MIC 1&2 inputs on the connection panel. If anything is plugged into the front MIC 1 and/or MIC 2 jacks, the MIC 1 and/or MIC 2 inputs on the connection panel will be ignored.
 - 38-b MIC 3 and MIC 4 jacks**
Balanced XLR connectors only. Switches are provided to apply 20dB of muting to each microphone.
 - 38-c MIC 5 and MIC 6 jacks**
Balanced/unbalanced phone jacks only. Switches are provided to apply 20dB of muting to each microphone.
- 39 MONO OUT jacks (1 & 2)**
Unbalanced phone jacks.
- 40 MONITOR OUT jacks (L and R)**
Unbalanced phone jacks.
- 41 SUB IN section**
An external mixer can be connected here using phone jacks.
- 42 REC OUT jacks**
Unbalanced RCA connectors.
- 43 BGM input jacks**
Unbalanced RCA connectors.
- 44 VIDEO IN / OUT jacks**
Two sets of video inputs can be connected here. Using the SOURCE 3 A/B selector switch (8) allows you to select which of the two sources will be output from VIDEO OUT.
- 45 Source input section**
Sources 1, 2 and 3 can each accept two sets of inputs—A and B. These use RCA connectors.

Simple use

In this section, you will learn the basics of how to use your MV1000. The topics covered are:

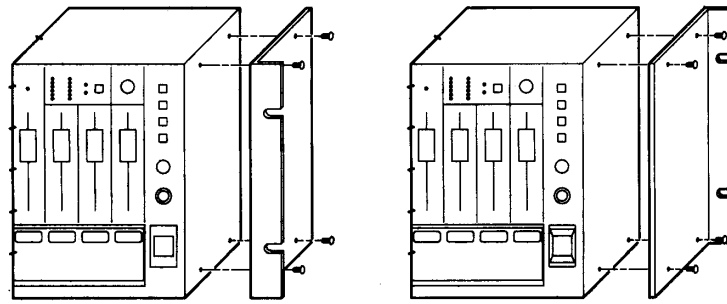
Setting up: finding a suitable place for your MV1000, connecting output from the MV1000, connecting input to the MV1000, and turning the power on.

Using the MV1000: Testing the microphone channels, setting up the effects unit, testing the source and BGM channels, and sound mixing.

Setting up

Finding a suitable place for your MV1000

As mentioned in the Precautions section at the beginning of this manual, find a place away from high temperature and humidity, and somewhere where the unit will be stable. The use of a rack or road case is strongly recommended, for maximum protection. To install the rack “ears”, attach the screws (supplied) as shown in the diagram below. It is possible to install the “ears” facing the back of the unit as well as the front.



The connection panel, which is initially installed at the rear of the MV1000, can also be moved to the top of the unit, where the connectors can be reached more easily. This operation is described in “Moving the connection panel” on page 10.

However, **PLEASE DO NOT PERFORM THIS OPERATION YOURSELF**. Please take your MV1000 to your local Yamaha dealer, the retailer where you bought the product, or an electrical service technician to perform the operation.

Connecting the output from the MV1000

A. Main speaker systems

Connect the MAIN 1 and/or MAIN 2 outputs to one or more amplifiers.

- The MAIN 1 and MAIN 2 outputs (35) use cannon (XLR) connectors.
- The main speaker system/amplifier is usually connected MAIN OUT 1, and other amplifiers to MAIN OUT 2.
- If using only a mono (1 channel) amplifier, you can connect it to the L (or R) output channel of the MV1000, but you must open the lower panel and set MAIN OUT 1 to MONO.

B. Extra speaker systems

Connect MONO OUT 1 or MONO OUT 2 (39) to an amplifier, and attach the extra speakers to that amplifier.

- MONO OUT 1&2 use 1/4" phone jacks.
- The extra speakers can be used as monitors (foldback) for the performers, or put in other rooms such as dressing rooms. The MONO OUT jacks can also be used to connect to a sub-woofer speaker system.

C. Monitor speakers

Connect a power amp to one or both of the MONITOR outputs (40), and the monitor speakers to the power amp. If you are using powered monitor speakers, you can connect them directly to the MONITOR outputs.

- The MONITOR outputs (40) use 1/4" phone jacks.
- The monitor outputs are supplied to provide a monitoring system for the sound operator. Because both L and R outputs are provided, you can monitor in stereo.

Connecting the input to the MV1000

A. Microphones/wireless mics/electronic instruments (up to 6)

- It is best to make these connections/disconnections while the MV1000 is turned off. If this is not possible, make sure the fader for the channel is all the way down.
- Because each pair of the inputs have different connectors, choose which input you use according to which connector it has.
- Normal (not wireless) microphones can be connected to any of the 6 microphone inputs (38), and if the input has a PAD switch, switch it to "0 dB".
 - (1) If the microphone has an XLR connector, use inputs 1, 2, 3 or 4 on the connection panel.
 - (2) If the microphone has a phone type plug, connect it to inputs 1 or 2 on the front panel, or inputs 5 or 6 on the connection panel. Note that you cannot use inputs 1 and 2 on the front and the connection panel at the same time.
- Wireless microphones and electronic instruments (e.g. synthesizers) can be connected to inputs 3, 4, 5 or 6. When connecting them, switch the PAD switch next to the connector to "20 dB".

B. Music sources

- The SOURCE inputs (45) are intended for stereo music sources such as tape decks, CD players, Laserdisc players, and VCRs. In fact, nearly anything that uses RCA plugs can be connected.
- It is best to connect/disconnect these sources while the MV1000 is turned off. If this is not possible, make sure the source fader for the channel is all the way down.
- If there is one unit (e.g. CD player) that is used primarily for background music, connect it to the BGM inputs. Otherwise, connect the units to the three A inputs first, then the three B inputs.

NOTE: If you connect two sources to SOURCE 1 A and B, or SOURCE 2 A and B, or SOURCE 3 A and B, then you won't be able to listen to them both at the same time.

Turning the power on

Please use the following order when turning on the MV1000.

- 1) Turn the power on for any wireless mic receivers, or electronic instruments, and anything connected to the SOURCE inputs.
- 2) Turn on the MV1000.
- 3) Turn on the power amplifier(s).

If you must turn on or connect any of the sources or microphones while the MV1000 is turned on, bring the fader for that channel right down first.

Using the MV1000

Before you have to use the mixer, it is wise to test out each of the inputs in turn. This will allow you to set all the levels correctly, and make other necessary settings.

Testing the microphone channels

- 1) Bring the MAIN OUT 1 fader (14) up to around "7".
- 2) For each MIC channel, select whether it is for speech or vocal (includes electronic instruments).
- 3) Getting someone to speak into or tap gently on the microphone, or play on the instrument, bring up the corresponding MIC fader until the sound can be clearly heard.
- 4) IF THE MIC CHANNEL DOESN'T SEEM TO WORK PROPERLY, CHECK:
 - (a) Does the correct SIGNAL indicator light up when the microphone is being used?
 - (b) Is the MV1000 connected to an amplifier and speakers, and are these all turned on and set up correctly? (see "Setting up")
 - (c) Is the MAIN OUT fader turned up enough?
 - ▼ If it is a microphone, check:
 - (a) Is it plugged in?
 - (b) Does the microphone have a switch that needs turning on?
 - ▼ If it is an electronic instrument, check:
 - (a) Is it connected to the MV1000?
 - (b) Is the instrument turned on, and the volume turned up enough?
- 5) If you can hear sound from the microphone/instrument, but at very high or very low levels:
 - (a) Check that the microphone/instrument is connected to a suitable input, and the PAD switch setting is correct (see "Setting up").
 - (b) You may need to adjust the GAIN knob for the channel (see "Advanced use").

Setting up the effects unit

Each microphone channel that is set to "VOCAL" is sent to the effects unit (5). The effects can make music sound much more professional. Select which effect type you want, by pressing either ECHO 1, ECHO 2, REVERB or HALL.

While somebody is using one of the microphones, adjust the effect LEVEL knob until there is the right balance of voice and effect for the room you are in.

Testing the SOURCE and BGM inputs

- 1) Start the source playing that you wish to test.
- 2) Make sure the SOURCE select switch (8) above the fader is set to the same as the jacks the source you are testing is connected to (either A or B).

- 3) Bring the corresponding source fader up until the sound can be clearly heard.
- 4) IF THE SOURCE or BGM CHANNEL DOESN'T SEEM TO BE WORKING PROPERLY, CHECK:
 - (a) Is the MV1000 connected to an amplifier and speakers, and are these all turned on and set up correctly? (see "Setting up")
 - (b) Is the MAIN OUT fader turned up enough?
 - (c) Is the SOURCE A/B selector ⑧ for the source you are using set to the correct position?
 - (d) Are SOURCE MUTE ②⑥ or BGM MUTE ②⑧ on? (Even if you want to use SOURCE MUTE or BGM mute, they may be interfering with your testing. Push the bottom panel open, and switch them both to OFF.)
- 5) If you can hear sound from the source, but at a very high or very low levels, you may need to adjust the GAIN knob ②⑦ for the source (See "Advanced use").

Sound mixing with the MV1000

Once the MV1000 has been set up, basic sound mixing very easy to perform.

Each of the MIC 1 to MIC 6 faders controls the level of the corresponding microphone/instrument.

If you want to listen to a CD or cassette, or anything connected to the SOURCE inputs, simply start the component playing, and bring up its fader.

The overall volume can be controlled with the MAIN OUT faders (1 or 2, depending on which you have the amplifier connected to).

If extra speakers have been connected to MONO OUT 1 or 2, (perhaps for another room, or for the performers), the levels can be adjusted with the MAIN OUT 1 fader, and can be further adjusted with the MONO OUT 1 fader and MONO OUT 2 knob.

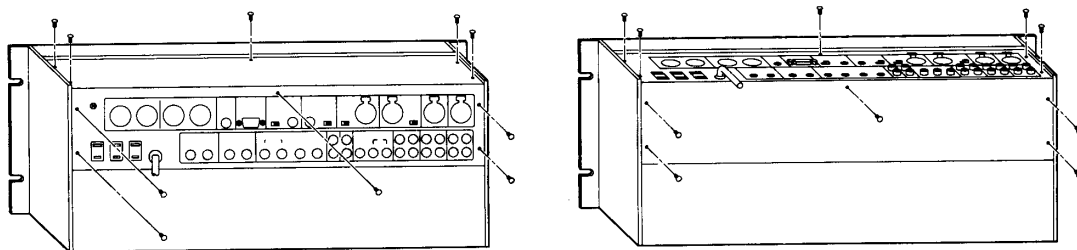
There are other functions possible on the MV1000 too, which are covered in the section "Advanced use".

Moving the connection panel

As explained on page 7, **PLEASE DO NOT PERFORM THIS OPERATION YOURSELF.**

To move the connection panel, remove the five screws from the cover plate, and the five screws from the connection panel, swap the cover plate and the connection panel, then replace the screws.

Ensure that no internal wires become trapped between the unit and the connection panel.



Advanced use

Microphone functions

Gain

On each of the faders on your MV1000, you will see that marker “7” has a wider line than the other markers. Marker 7 is called the *nominal* level. That is, during normal use, the best sound can be achieved if the faders are set near this level.

With the fader at *nominal*, if the sound through the channel is too loud or too soft during normal use, adjust the level with the GAIN knob (21). Once this is set correctly, you can go back to using the fader to adjust the level.

This procedure allows you to compensate for microphones or electronic instruments that have abnormal levels.

High and low EQ controls

Each microphone channel has its own high and low EQ controls (22), which will boost or cut the high and/or low frequencies by up to 15 dB.

Noise gate

The NOISE GATE switch (20) is found below each fader, on the lower panel.

The noise gate is a function which turns off the microphone channel when there is only a small amount of sound going through it. This is useful, for example, to cut out background noise from microphones that are not being used.

You may find that in some situations, that having the noise gate on while the microphone is being used for speech results in the speech sounding “clipped”—that is, the noise gate turns the channel off then on between words. If this happens, turn the noise gate off for that channel.

Source muting (“ducking”)

The SOURCE MUTE switch (26) is found below the effects section, on the lower panel.

The source mute reduces the level of sound going through the source or BGM sections, when microphone channels 1 or 2 are used. Whenever the source mute is activated, the source mute indicator (7) will light up.

The exact level that the sound from the sources or BGM will drop to is governed by the SOURCE MUTE LEVEL knob (below the SOURCE MUTE switch (26)). If this is set to minimum (fully counterclockwise), the sound from the sources and the BGM will be cut out completely when microphone channels 1 or 2 are used. If it is set to maximum (fully clockwise) there will be no effect.

If source muting does not seem to be working even when the SOURCE MUTE switch is set to AUTO, the SOURCE MUTE LEVEL may need to be turned down.

Compression

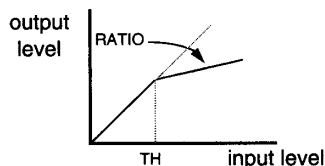
The compressor controls (23, 24, 25) are found next to the source mute controls.

Compression is a technique used to even out sound levels, so that louder parts are softened slightly. When used for speech, it allows the overall level to be turned up, without the risk of louder sounds being too loud.

When compression is turned on, all microphone channels are affected.

The compression threshold knob (TH) adjusts the sound level where compression will start to take effect.

The compression ratio knob (RATIO) adjusts the amount of compression that will take place (see the diagram below).



Experiment with the compression controls to find the combination that sounds best in your situation.

The SOURCE section, and BGM MUTE

Like the microphone channels, each source and BGM channel has a GAIN adjustment, to compensate for sources with particularly high or low output levels.

When the BGM MUTE switch (28) is set to OFF, the BGM channel acts identically to the other source channels.

When the BGM MUTE switch is set to AUTO, the BGM channel and the source channels become mutually exclusive—that is, turning on any of the source channels will mute the BGM channel. The BGM channel will remain muted for around 6 seconds after sound from the source channels stops.

Using video

The MV1000 provides two video inputs, and one video output (44). The video output will always echo either what is connected to video input A or B.

To switch between video source A and video source B, use the SOURCE 3 A/B selector switch. Of course, this will also switch which audio source is sent to source fader 3.

There are two main uses for the video section. One is in video recording, and the other in video playback.

If two video cameras are connected to the video inputs, and a video recorder to the video output, the sound operator can switch which camera is being recorded, with the SOURCE 3 A/B selector switch.

If two video players are connected to the video inputs, and a monitor to the video output, then the sound operator can select which of the two videos are watched (useful for presentations).

The monitor section

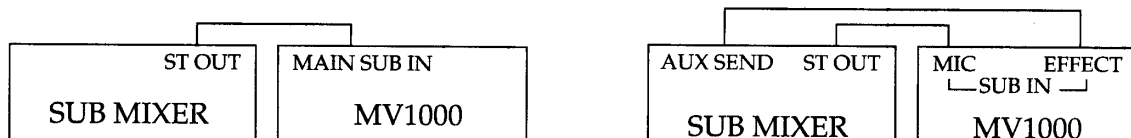
The monitor section is provided so that the sound operator can listen to different parts of the system without altering the sound from the main outputs. The monitor can be listened to through headphones, or through an amplifier and speakers connected to the MONITOR OUT jacks (40).

It is possible to connect an external sound source to the monitor section, through the EXTERNAL MONITOR IN jack (36). Connection possibilities include sound from another mixer, or as a communication link with a cameraman.

Use the monitor selector buttons (16) to select what you want to listen to—either MAIN OUT 1 (main output 1), EXT IN (the external source), or SOURCE 1 or 2 (the source inputs).

SUB IN, and EXTERNAL MIXER IN

Using the SUB IN section ④1, you can connect an external mixer to the MV1000 to give you even more input channels. Connect the master outputs of the external mixer to the SUB IN MAIN L and R jacks (or the MIC IN jack), and the AUX SEND or EFFECTS SEND of the external mixer to the SUB IN EFFECTS jack, as shown.



The EXTERNAL MIXER IN ③7 is provided to allow connection to the EXMV1000 external input unit using a Dsub 9-pin connector. The EXMV1000 gives a further two microphone channels, each with a gain control, speech/vocal selector and fader.

Recording

To make a stereo recording of the output, connect a recording device to the REC OUT jacks ④2. Note that the REC OUT jacks are not affected by the main output volume, or the master EQ controls, so your recording device should have a recording level control.

If you are making a video recording through the MV1000, you can connect the REC OUT jacks ④2 to the audio inputs of the video recorder.

The master section

Master high and low EQ controls ③4

The master high and low EQ controls give you control over high and low frequency sound in the main mix (MAIN 1, and MONO OUT 1&2 only). They do not affect the monitor section, or MAIN 2.

MAIN OUT 1&2 ST/MONO ③0 and ③1

Both MAIN OUT 1 and MAIN OUT 2 can be made mono. If you are using stereo sound systems (discrete left and right channels), then set the appropriate switches to ST (stereo). If you are using the left and right outputs to drive separate mono systems, set the appropriate switches to MONO (mono).

MONO OUT 1 PRE/POST ③3

When this switch is set to PRE, the MAIN 1 fader and master EQ controls will not affect MONO OUT 1.

When it is set to POST, sound will be sent out of MONO OUT 1 after going through the MAIN 1 fader, and the master EQ controls. (This always happens for MONO OUT 2).

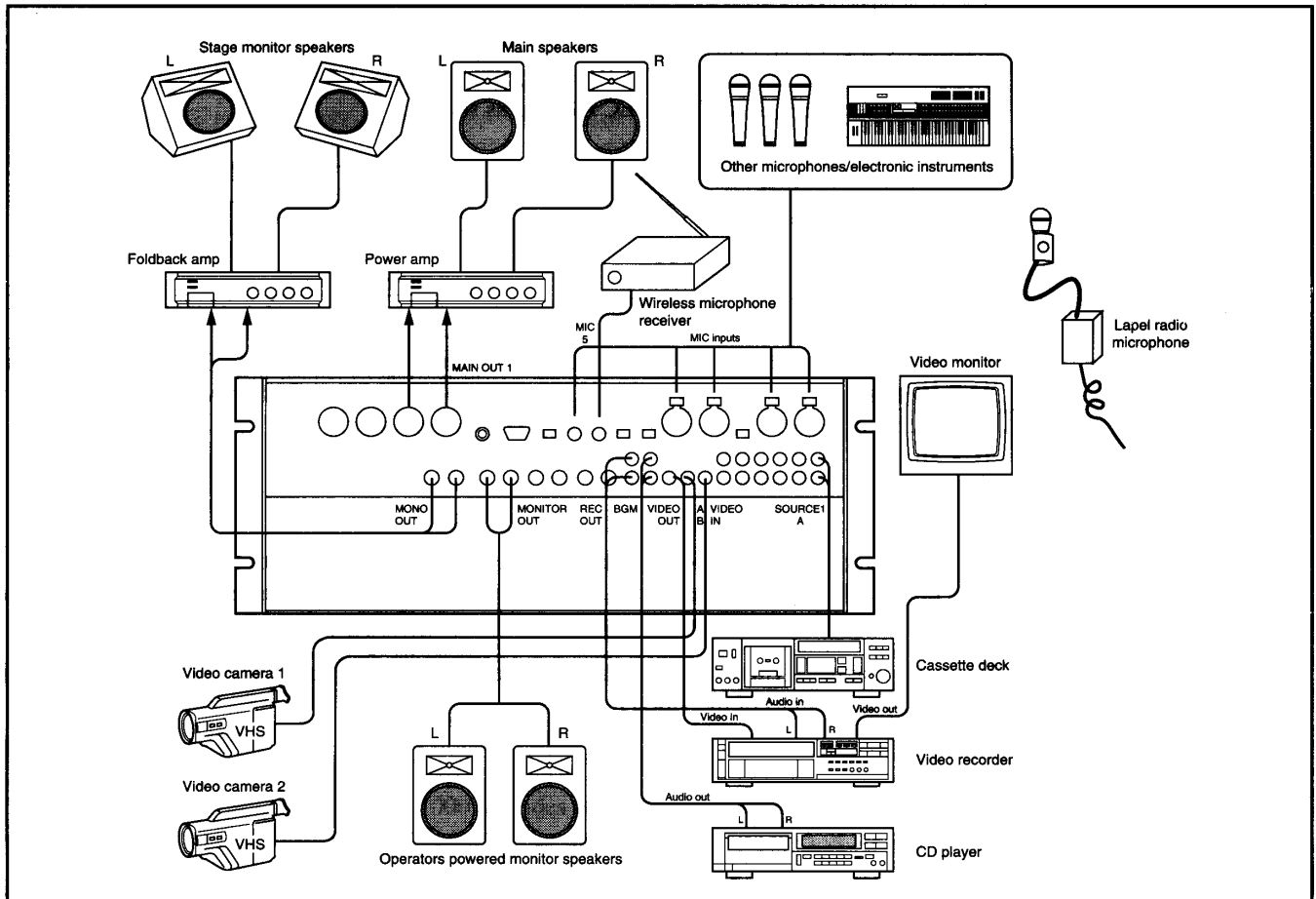
MAIN OUT 2 MIX/SOURCE ③2

When this switch is set to MIX, MAIN OUT 2 will output the same as MAIN OUT 1, except without the master EQ controls.

When it is set to SOURCE, MAIN OUT 2 will only output sound coming from the SOURCE/BGM section. This will be affected by BGM mute, but will not be affected by "ducking".

System examples

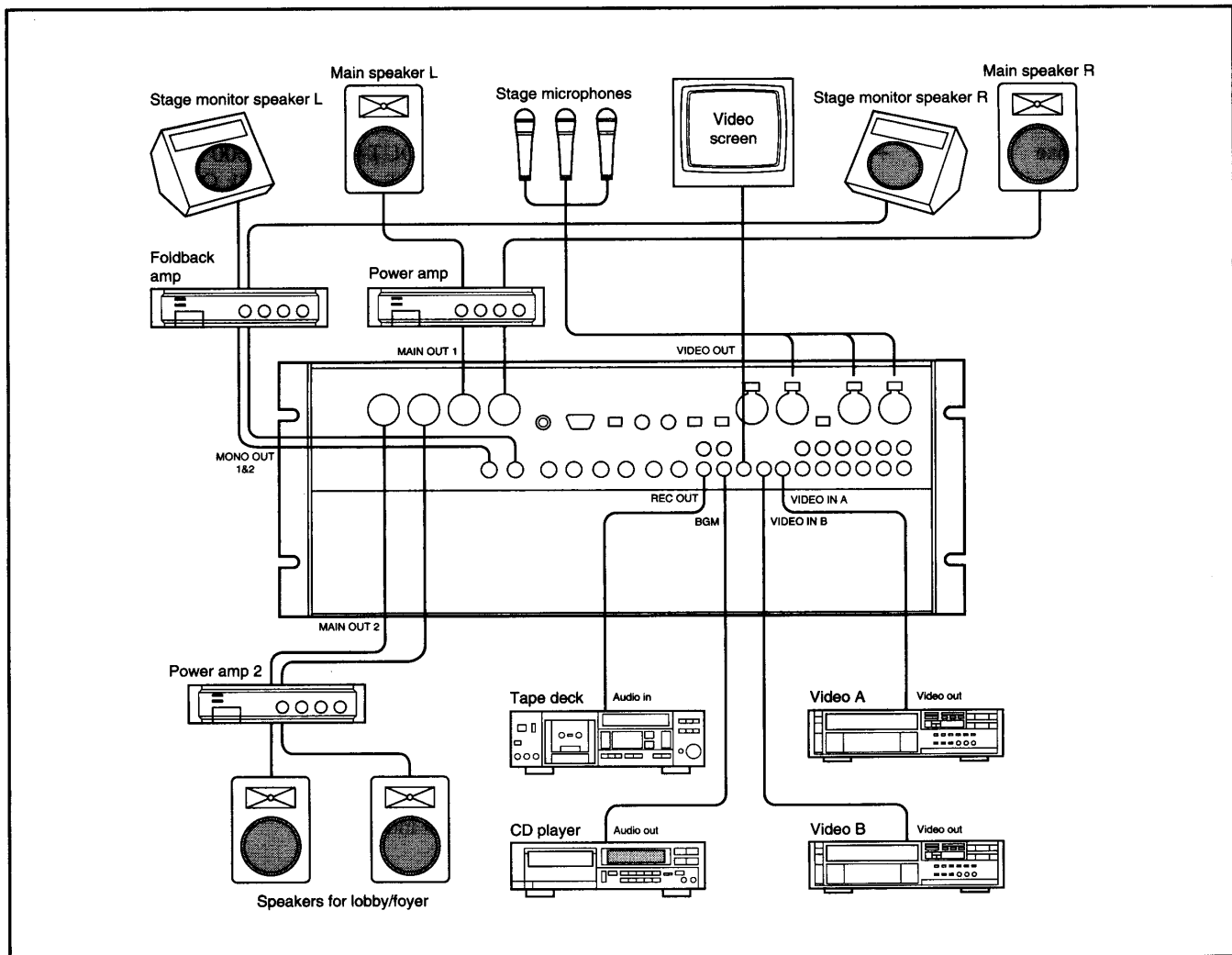
Wedding ceremony



An example of a system setup for a wedding ceremony is shown. Notice the following points:

- The PAD switch for the radio microphone is set to 20 dB. The PAD switches for other microphones are set to 0 dB
 - The CD player provides the background music before, after and during certain parts of the ceremony.
 - The cassette deck has a recording of a wedding march, to be played as the bride and groom leave.
 - So that the background music stops automatically when the wedding march plays, switch BGM MUTE (on the lower front panel) on.
 - Additional speakers (e.g. for the foyer) can be connected to MAIN OUT 2.
 - The sound operator can switch between the two video cameras with the SOURCE 3 A/B switch on the front panel. The picture will be recorded with stereo sound, and can be monitored through the video monitor.
- ▼ On the front panel (not pictured):
- (a) BGM mute is on.
 - (b) Mics are set to SPEECH if used for speech, and VOCAL if used for singing.
 - (c) Compression and/or noise gating can be used if desired.
 - (d) Source muting can be used if people will be speaking over the BGM.

Business conference



An example of a system setup for a business conference is shown. Notice the following points:

- The PAD switches are set to 0dB when using normal (not radio) microphones.
 - For video presentations, the sound operator can switch between the two video players. As the sound from the videos is also going through SOURCE 3 A and B, the sound will be switched too.
 - If the presenter wishes to speak while the video is playing, source muting can be turned on, so that the presenter will be heard more clearly.
 - An audio recording of the entire conference is made by the cassette deck connected to the REC OUT jacks.
 - The speakers connected to MAIN OUT 2 could be positioned in the foyer, or lobby.
- ▼ On the front panel (not pictured):
- (a) All microphone channels are set to SPEECH
 - (b) Noise gating is recommended and compression is optional.
 - (c) It is possible to stop sound from the microphones going to the second pair of speakers, by switching the MAIN OUT 2 MIX/SOURCE switch to SOURCE. In this case, the BGM will still be sent.

Specifications

Total harmonic distortion	Less than 0.1% 20 Hz~20 kHz (Master fader nominal, one channel fader nominal)	@ MAIN OUT+14 dB into 600 Ω @ REC OUT-10 dB into 47k Ω others +14 dB into 10k Ω
Frequency response	+1, -3 dB 20Hz~20kHz	@ MAIN OUT+ 4 dB into 600 Ω @ REC OUT-10 dB into 47k Ω others +4 dB into 10k Ω
Hum & noise*1 (Rs=150 Ω, Input gain=max, Input pad=0 dB, Input sensitivity= -80 dB (20 Hz ~ 20 kHz))	-97 dB residual output noise -128 dB equivalent input noise -64 dB (68 dB S/N) MAIN OUT (Master fader nominal, one channel fader nominal, others minimum) -80 dB (84 dB S/N) MAIN OUT (Master fader nominal, all channel faders minimum)	
Crosstalk (@ 1 kHz)	70 dB adjacent input channels 70 dB input to output *2	
Maximum voltage gain	84 dB MIC IN to MAIN OUT, MIC IN to MONO OUT 1 80 dB MIC IN to MONO OUT 2, MIC IN to MONITOR OUT 44 dB SOURCE IN to MAIN OUT, SOURCE IN to MONO OUT 1 40 dB SOURCE IN to MONO OUT 2, SOURCE IN to MONITOR OUT 14 dB SUB IN to MAIN OUT	
Mic Input channels (CH 1-6)	Gain control Pad switch EQ controls VOCAL/SPEECH Noise gate	44 dB (-60 ~ -16) continuously variable 0/20 dB attenuation (ch 3,4,5,6) ±15 dB maximum boost/cut in 2 bands: High: 10 kHz shelving Low: 100 Hz shelving Low-cut filter (<80 Hz) off/on and effect send on/off with LED indicators On/off
Source input channels (CH 1-3)	Gain control A/B select	24 dB (-20 ~ +4) continuously variable
BGM input channel	Gain control BGM mute	24 dB (-20 ~ +4) continuously variable AUTO/OFF
	When BGM MUTE is set to AUTO, the BGM will be muted whenever one of the source input channels exceeds -50 dB. When it is set to OFF, the BGM channel acts as a fourth SOURCE channel.	
Digital effects unit	Program selector 90 dB dynamic range	4 set programs: Echo 1, Echo 2, Reverb, Hall
Compressor	ON/OFF switch Ratio Threshold	
Source mute	Mute level AUTO/OFF switch	
	When AUTO is selected, SOURCE and BGM channels are muted by MIC 1 or 2 input signals.	
MAIN 1 EQ controls	±15 dB maximum boost/cut in 2 bands High: 10 kHz shelving Low: 100 Hz shelving	

Signal indicators	Green LED within each MIC input channel. Turns on when post-EQ, post-gain signal exceeds noise gate threshold.	
Compressor indicator	Orange LED built into compressor circuit. Turns on when compressor is activated.	
Source mute indicator	Red LED built into source mute circuit. Turns on when SOURCE signal is muted.	
BGM mute indicator	Red LED built into BGM mute circuit. Turns on when BGM signal is muted.	
Level meters (MAIN OUT 1/2)	Stereo 6 element LED meters. (-20, -10, -6, 0, +6, PEAK) Top element turns on when the main input signal reaches 3dB below clipping.	
Phantom power	Not supplied	
Power requirements	USA/Canada	120V 60 Hz
	UK	240V 50 Hz
	General	230V 50 Hz
Power consumption	USA/Canada	50W
	UK,General	50W
Dimensions	Height/Depth/Width	179.2 / 124.3 / 480 mm
	Weight	7 kg
Option	External input unit EXMV1000 (provides further two microphone channels)	

*1 Hum & noise are measured with a 6 dB/octave filter @ 12.7 kHz; equivalent to a 20 kHz filter with infinite dB/octave attenuation.

*2 "Input to output" crosstalk measured with gain trim at minimum level on source and BGM channels.

Input characteristics

Input terminals	PAD ^{*4}	GAIN	Actual load impedance	For use with nominal	Input level ^{*8}			Connector in console
					Sensitivity ^{*1}	Nominal	Max. before clip	
MIC INPUT CH1-CH6	0	-60	10 kΩ	50-600 Ω mics & 600 Ω lines	-80 dB (0.078 mV)	-60 dB (0.775 mV)	-40 dB (7.75 mV)	XLR-3-31 type ^{*2} or phone jack (TRS) ^{*3}
	0	-16			-36 dB (12.3 mV)	-16 dB (123 mV)	+4 dB (1.23 V)	
	20				-16 dB (123 mV)	+4 dB (1.23 V)	+24 dB (12.3 V)	
SOURCE INPUT A,B CH1-CH3 [L,R]		-20	10 kΩ	600 Ω lines	-40 dB (7.75 mV)	-20 dB (77.5 mV)	0 dB (775 mV)	RCA pin jack ^{*5}
		+4			-16 dB (123 mV)	+4 dB (1.23 V)	+24 dB (12.3 V)	
BGM INPUT [L,R]		-20	10 kΩ	600 Ω lines	-40 dB (7.75 mV)	-20 dB (77.5 mV)	0 dB (775 mV)	RCA pin jack ^{*5}
		+4			-16 dB (123 mV)	+4 dB (1.23 V)	+24 dB (12.3 V)	
MAIN BUS SUB IN [L,R]			10 kΩ	600 Ω lines	-10 dB (245 mV)	0 dB (775 mV)	+20 dB (7.75 V)	phone jack ^{*6}
MIC BUS SUB IN					-10 dB (245 mV)	0 dB (775 mV)	+20 dB (7.75 V)	phone jack ^{*6} Dsub 9PIN (female) ^{*7}
EFFECT BUS SUB IN					-10 dB (245 mV)	0 dB (775 mV)	+20 dB (7.75 V)	
EXTERNAL MONITOR IN					-6 dB (388 mV)	0 dB (775 mV)	+20 dB (7.75 V)	phone jack ^{*6}
VIDEO IN (SOURCE 3 A/B)			75 Ω	75 Ω	-	1 Vpp	-	RCA pin jack ^{*5}

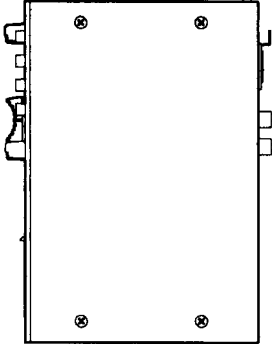
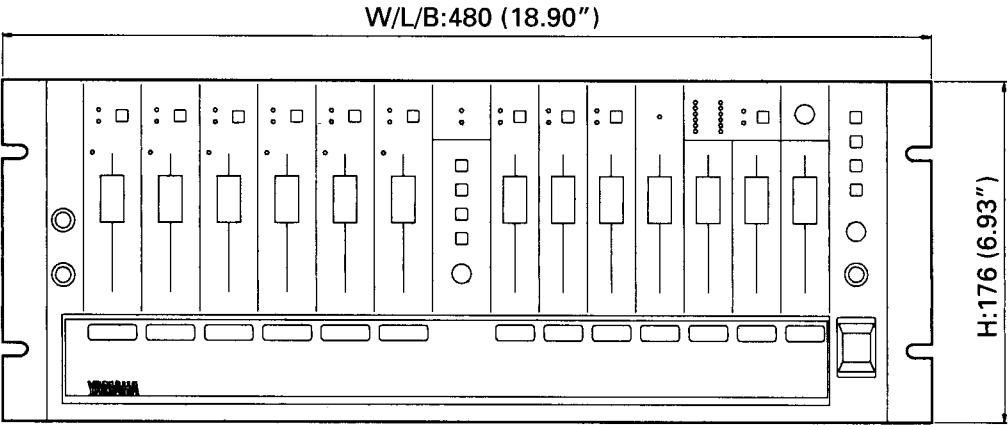
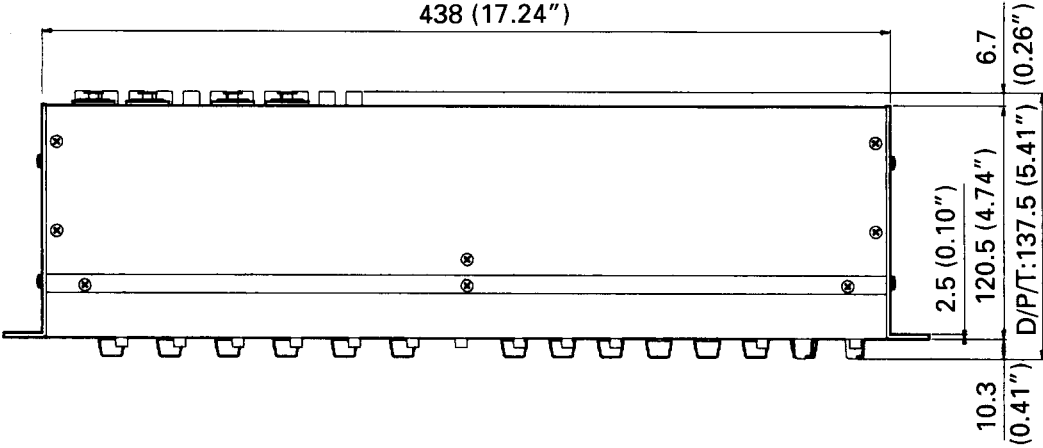
- *1 Sensitivity is the lowest level that will produce an output of +4 dB(1.23 V) or the nominal output level when the unit is set to maximum gain. (All faders and level controls are maximum position.)
- *2 XLR type connectors are balanced. (1=GND, 2=HOT, 3=COLD / CH 1, 2, 3, 4)
- *3 MIC INPUT phone jacks are balanced, but can be used as unbalanced. (Tip =HOT, Ring=COLD, Sleeve=GND / CH 1, 2, 5, 6,)
- *4 MIC INPUT PADs are available only in CH3, 4, 5, 6 for wireless microphones and electronic instruments.
- *5 All pin jacks are unbalanced.
- *6 All phone jacks except MIC INPUTs are unbalanced.
- *7 Dsub 9pin connector includes mic & effect sub inputs and DC power supply.
- *8 In these specifications, when dB represents a specific voltage, 0 dB is referenced to 0.775 volts RMS.

Output characteristics

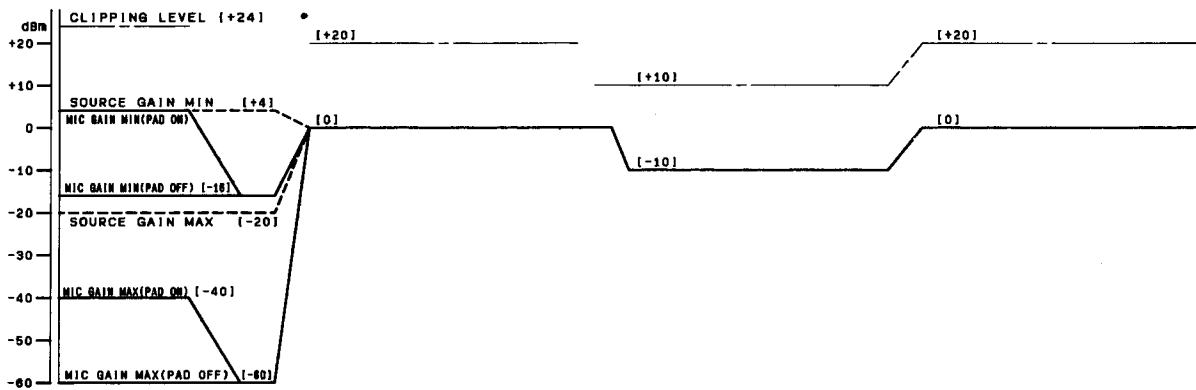
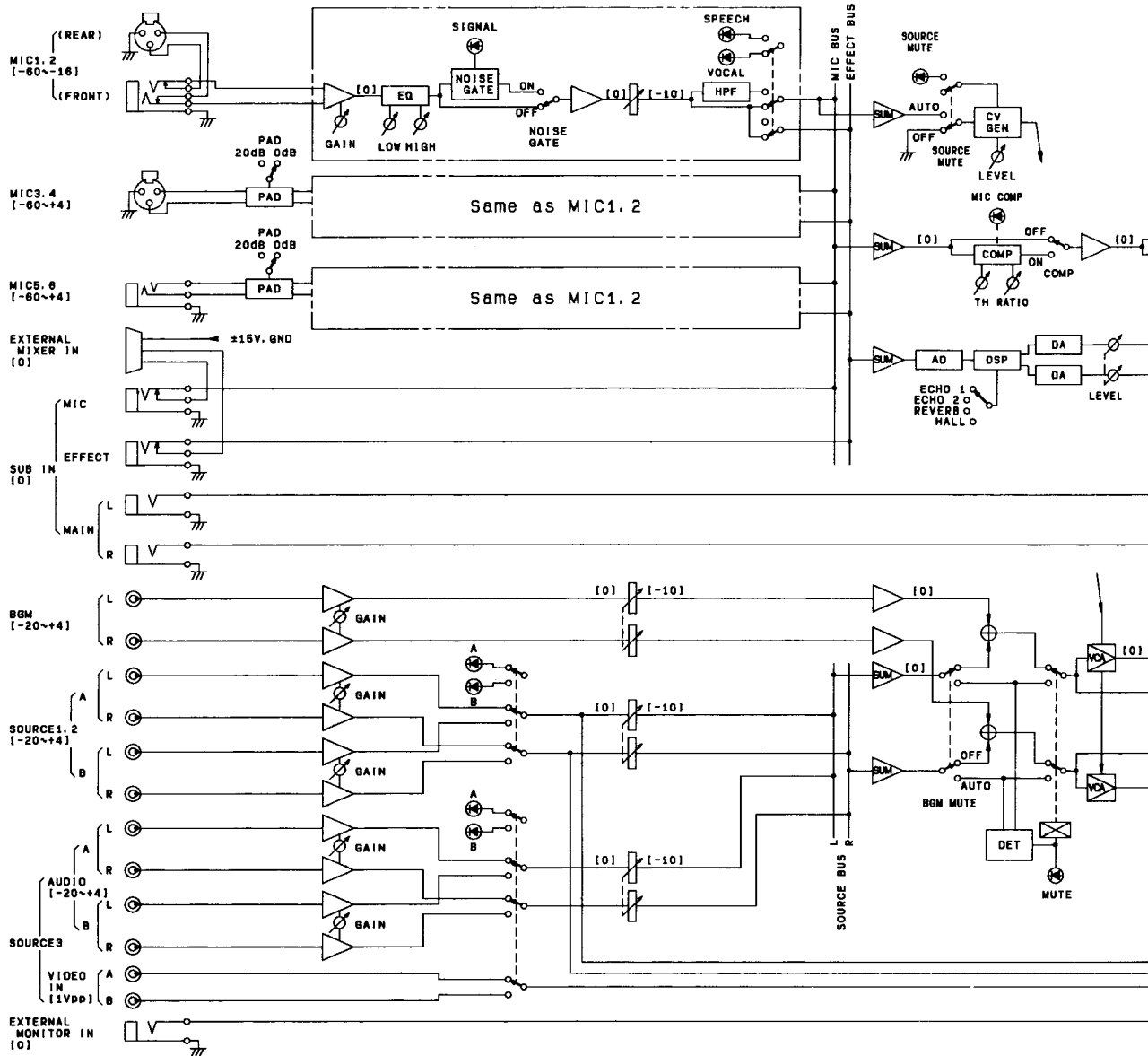
Output terminals	Actual source impedance	For use with nominal	Output level ^{*4}		Connector in console
			Nominal	Max. before clip	
MAIN OUTPUT 1,2 (L,R)	150 Ω	600 Ω lines	+4 dB (1.23 V)	+24 dB (12.3 V)	XLR-3-32 type ^{*1}
MONO OUT 1,2	600 Ω	10 kΩ lines	+4 dB (1.23 V)	+20 dB (7.75 V)	phone jack ^{*2}
MONITOR OUT (L,R)	600 Ω	10 kΩ lines	+4 dB (1.23 V)	+20 dB (7.75 V)	phone jack ^{*2}
REC OUT (L,R)	600 Ω	47 kΩ lines	-10 dB (245 mV)	+6 dB (1.55 V)	RCA pin jack ^{*3}
PHONES	100 Ω	8 Ω phones	1 mW	20 mW	stereo phone jack ^{*2}
		40 Ω phones	3 mW	75 mW	
VIDEO OUT (SOURCE 3)	75 Ω	75 Ω	1 Vpp	-	RCA pin jack ^{*3}

- *1 XLR type connectors are balanced. (1=GND, 2=HOT, 3=COLD / CH 1, 2, 3, 4)
- *2 All phone jacks are unbalanced
- *3 All pin jacks are unbalanced
- *4 In these specifications, when dB represents a specific voltage, 0 dB is referenced to 0.775 volts RMS.

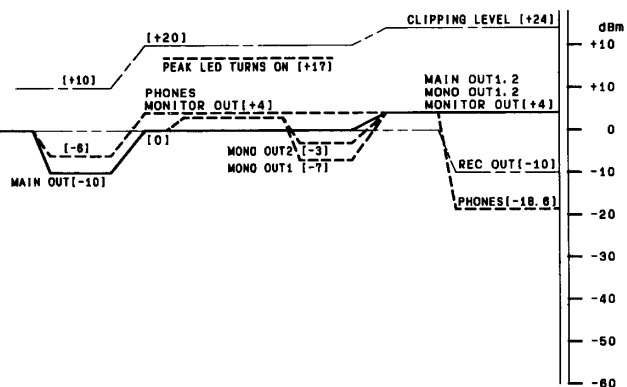
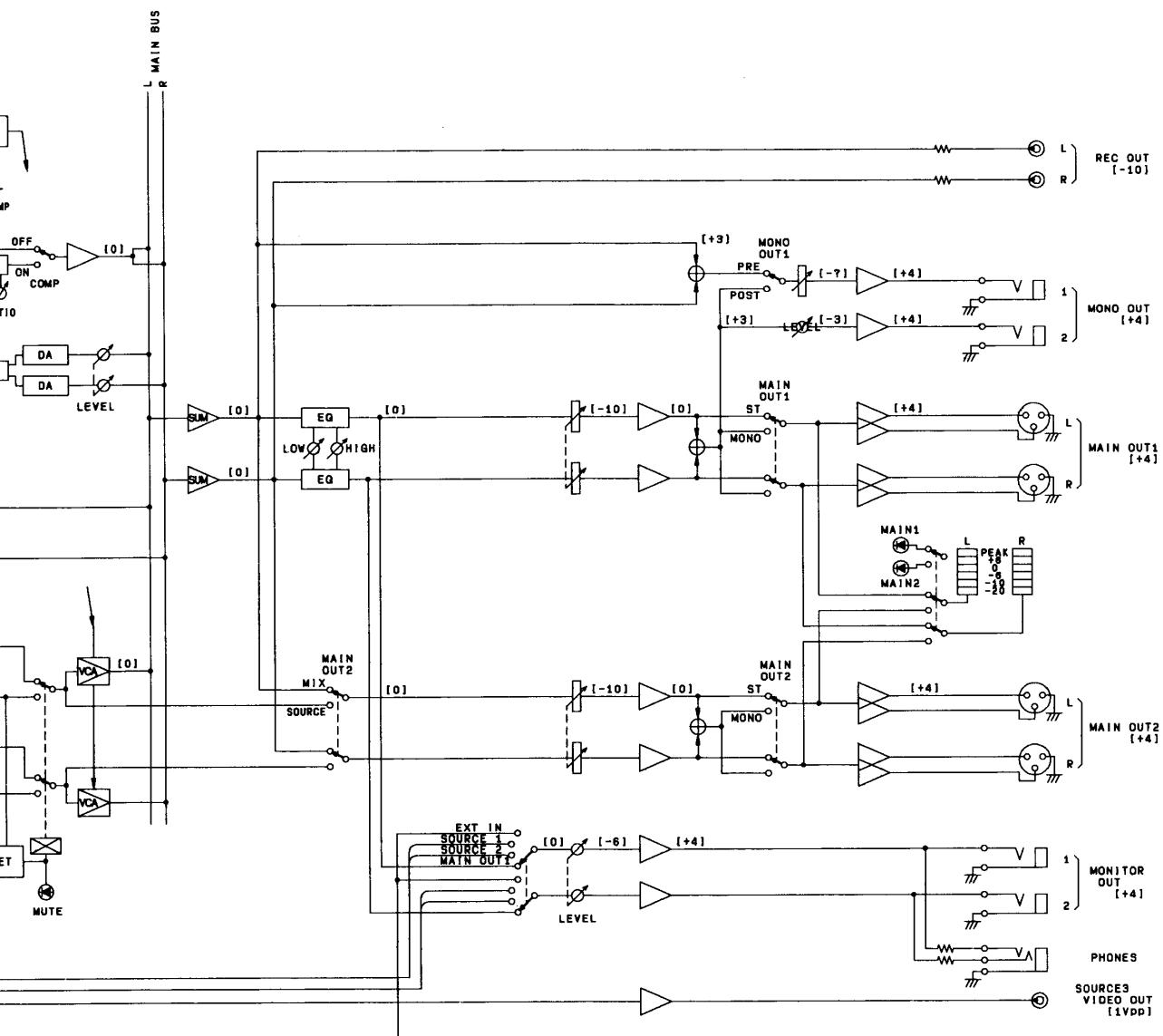
Dimensions/Abmessungen



Block & level diagrams/Schémas de principe/Block- und Pegeldiagramm



Diagramme



YAMAHA

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