



MIXING CONSOLE

M3000A



Owner's Manual
Mode d'emploi
Bedienungsanleitung

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 coaxial 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

The above statements apply **ONLY** to those products distributed by Yamaha Corporation of America or its subsidiaries.

ADVARSEL!

Lithiumbatteri—Eksplosionsfare ved fejlagtig håndtering. Udskiftning må kun ske med batteri af samme fabrikat og type. Levér det brugte batteri tilbage til leverandoren.

VARNING

Explosionsfara vid felaktigt batteribyte. Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren. Kassera använt batteri enligt fabrikantens instruktion.

VAROITUS

Paristo voi räjähtää, jos se on virheellisesti asennettu. Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

NEDERLAND

- Dit apparaat bevat een lithium batterij voor geheugen back-up.
- Raadpleeg uw leverancier over de verwijdering van de batterij op het moment dat u het apparaat aan het einde van de levensduur afdankt of de volgende Yamaha Service Afdeling:
Yamaha Music Nederland Service Afdeling
Kanaalweg 18-G, 3526 KL UTRECHT
Tel. 030-2828425
- Gooi de batterij niet weg, maar lever hem in als KCA.

THE NETHERLANDS

- This apparatus contains a lithium battery for memory back-up.
- For the removal of the battery at the moment of the disposal at the end of the service life please consult your retailer or Yamaha Service Center as follows:
Yamaha Music Nederland Service Center
Address: Kanaalweg 18-G, 3526 KL
UTRECHT
Tel: 030-2828425
- Do not throw away the battery. Instead, hand it in as

Introduction

Thank you for purchasing the Yamaha M3000A mixing console. The M3000A is based on Yamaha's experience with the PM series, and features superb sound quality with a full range of functionality such as VCA faders, scene memory, and GA diversity. In order to take full advantage of the M3000A's performance and enjoy long and trouble-free use, please read this manual carefully.

Note: This manual assumes that you are thoroughly familiar with basic operation of mixing consoles and their terminology.

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Precautions

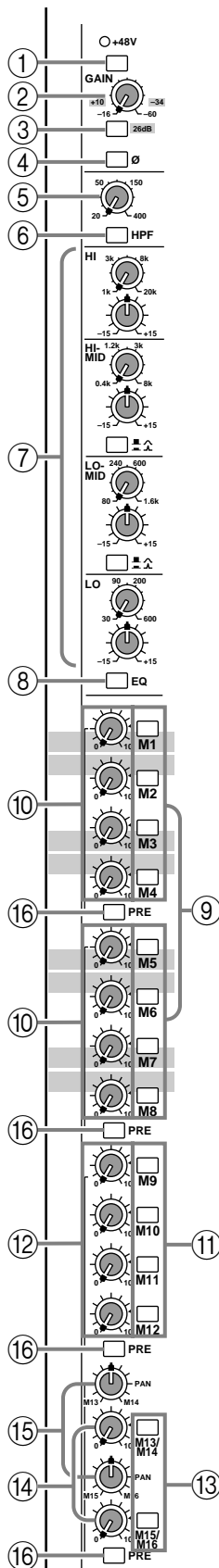
- Connect the mixer power cord only to the power supply unit, and connect the power supply unit to an AC outlet of the type stated in this *Owner's Manual* or as marked on the power supply unit. Failure to do so is a fire and electrical shock hazard.
- Do not locate the mixer in a place subject to excessive heat or in direct sunlight. This could be a fire hazard.
- Do not place the mixer in a place subject to excessive humidity or dust. This could be a fire and electrical shock hazard.
- Do not plug several devices into the same AC outlet. This may overload the AC outlet, and could be a fire and electrical shock hazard. It may also affect the performance of some equipment.
- Do not place heavy objects on the power cord. A damaged power cord is a potential fire and electrical shock hazard.
- If the power cord is damaged (i.e., cut or a bare wire is exposed), ask your dealer for a replacement. Using the mixer in this condition is a fire and shock hazard.
- Hold the power cord plug when disconnecting from an AC outlet. Never pull the cord. Damaging the power cord in this way is a potential fire and electrical shock hazard.
- Do not place small metal objects on top of the mixer. Metal objects inside the mixer are a fire and electrical shock hazard.
- Do not try to modify the mixer. This could be a fire and electrical shock hazard.
- The mixer operating temperature is between 5°C and 35°C (41°F and 95°F).
- Turn off all audio devices and speakers when connecting to the mixer. Refer to the owner's manual for each device. Use the correct cables and connect as specified.
- If you notice any abnormality—such as smoke, odor, or noise—turn off the mixer immediately. Remove the power cord from the AC outlet. Confirm that the abnormality is no longer present. Consult your dealer for repair. Using the mixer in this condition is a fire and shock hazard.
- If a foreign object or water gets inside the mixer, turn it off immediately. Remove the power cord from the AC outlet. Consult your dealer for repair. Using the mixer in this condition is a fire and electrical shock hazard.
- If you plan not to use the mixer for a long period of time, remove the power cord from the AC outlet. Leaving the mixer connected is a fire hazard.
- Do not use benzene, thinner, cleaning detergent, or a chemical cloth to clean the mixer. Use only a soft, dry cloth.
- The mixer is a heavy piece of equipment. Always grip the underneath, not the side panels, when lifting.
- The mixer uses high-frequency digital circuits that may cause interference on radios and televisions placed close to it. If interference does occur, relocate the affected equipment.

Features of the system

- The M3000A provides a generous number of input modules; 4 stereo and monaural (the M3000A-56C provides 56 monaural, the M3000A-40C provides 40 monaural, the M3000A-32 provides 32 monaural, and the M3000A-24 provides 24 monaural). Stereo output, 16 mix outputs, and 8 matrix outputs are provided in addition. The M3000A is suitable for use in a wide range of applications, such as the main mixer for sound reinforcement, as a monitor mixer, or in building installations.
- The GA Diversity function allows each pair of MIX buses 1/2–7/8 to be switched between group bus (fixed output level from the input channels) and AUX bus (variable output level from the input channels). Bus configuration can be set up as needed.
- The Scene Memory function allows the on/off status of the mono/stereo input channels, MIX OUT 1–16, and STEREO A OUT to be saved as one of 128 “scenes.” Scenes can be selected from the front panel, or by MIDI program change messages from an external device. In addition, MIDI control change messages transmitted from an external device can be used to switch the individual on/off status of input channels or bus outputs channels.
- By modifying internal settings, Scene Memory numbers 1–8 can be used as mute groups. In this case, up to eight mute (on/off) settings can be added/defeated individually.
- Eight VCA master faders allow the gain of multiple input channels to be controlled as a group. By grouping the desired input channels and assigning them to a VCA master fader, you can adjust the mix as appropriate for the on-state action using the VCA master faders alone.
- The mono input channels provide a 26 dB pad, HPF, phase switch, four-band parametric EQ, and 100 mm full stroke faders as well as DIRECT OUT jacks. Phantom power is also provided, and can be switched on/off individually.
- The M3000A-40C/M3000A-56C features a center master design that places the master section in the middle of the mixer for superior operability.
- All input channels provide a PFL switch, and an AFL switch is provided for MATRIX OUT 1–8/MIX OUT 1–16/STEREO A OUT/STEREO B OUT. This makes it easy to check your input/output sources.
- Eight independent matrices are provided. The signals from MIX OUT 1–16/STEREO A OUT and dedicated input jacks can be mixed at the desired levels, and output from MATRIX OUT jacks 1–8. This capability can be used for foldback or as a mix for individual speakers/amps.
- All mono input channels, stereo buses, and MIX buses provide an INSERT I/O jack. External effect processors can be inserted as necessary.
- The talkback signal and test tone oscillators can be sent to any of the MIX buses 1-2–13/16 or the stereo buses.
- As monitor sources for the monitor output, you can select (in addition to STEREO A OUT), PFL from the input channels, AFL/PFL from MATRIX OUT 1–8/MIX OUT 1–16/STEREO A OUT/STEREO B OUT, or 2TR IN 1/2.

Control panel

Input channel section



Mono input channels

The M3000A-56C provides 56 input channels, the M3000A-40C provides 40 input channels, the M3000A-32 provides 32 input channels, and the M3000A-24 provides 24 input channels. All input channels have the same specifications.

- ① **Phantom power switch/+48 V indicator**
This switch turns the +48 V phantom power on/off for each channel. When phantom power is on, the +48 V indicator located above the switch will light. If you wish to use phantom power, first make sure that the PHANTOM MASTER switch (page 28) located on the rear panel is turned on.
 - ② **GAIN control**
This control adjusts the input sensitivity. Levels supported are -16dB ~ -60 dB when the Pad switch (③) is off, and +10dB ~ -34dB when the switch is on.
 - ③ **26 dB pad switch**
This switch attenuates the input signal by 26 dB. When the switch is pressed (), the pad is on.
 - ④ **∅(phase) switch**
This switch reverses the phase of the input signal. When the switch is pressed (), the phase is reversed.
 - ⑤ **HPF (high pass filter) control**
This controls the cutoff frequency of the high pass filter. The range is 20Hz-400Hz.
 - ⑥ **HPF switch**
This switch turns the high pass filter on/off. When the switch is pressed (), the high pass filter is on, and the signal component below the frequency specified by the HPF control (⑤) will be attenuated by 12 dB/oct.
 - ⑦ **EQ control**
This is a four-band equalizer which can boost/cut each band over range of ±15 dB. HI-MID and LOW-MID provide switches that let you change between two settings of Q (filter steepness). The center frequency, Q value, and gain range of each band are as follows.
- | Band | Center frequency | Q | Gain |
|--------|------------------|-----------|--------|
| HI | 1 kHz-20 kHz | 0.667 | ±15 dB |
| HI-MID | 0.4 kHz-8 kHz | 1.41/2.88 | |
| LO-MID | 80 Hz-1.6 kHz | 1.41/2.88 | |
| LO | 30 Hz-600 Hz | 0.667 | |
- ⑧ **EQ switch**
This switches the equalizer on/off. When the switch is pressed (), the equalizer is on.

⑨ **M1–M8 switches**

These switch on/off the signal which is sent from the input channel to MIX buses 1–8.

Note: If these switches are off, no signal will be sent to the corresponding MIX bus from this input channel, regardless of the switch setting of the variable/fixed select section (page 13).

⑩ **M1–M8 mix level controls**

These controls send the signal from the input channel to MIX buses 1–8. When the control is in the “▲” position, the level is nominal (0 dB). Use the PRE switch (⑩) to switch between pre/post fader.

Note: For MIX bus pairs for which the variable/fix select section (page 13) switch is set to FIX, the output level which is sent from each input channel to the bus will be fixed, and therefore the mix level control setting will have no effect.

⑪ **M9–M12 switches**

These are on/off switches for the signals that are sent from the input channel to MIX buses 9–12.

⑫ **M9–M12 mix level controls**

These controls send the signal from the input channel to MIX buses 9–12. When the control is in the “▲” position, the level is nominal (0 dB). Use the PRE switch (⑩) to switch between pre/post fader.

⑬ **M13/M14, M15/M16 switches**

These are on/off switches for the signals that are sent from the input channel to MIX buses 13–16. M13 and 14, and M15 and M16 are stereo pairs, and each pair is turned on/off by one switch. Use the PRE switch (⑩) to switch between pre/post fader.

⑭ **M13/M14, M15/M16 mix level controls**

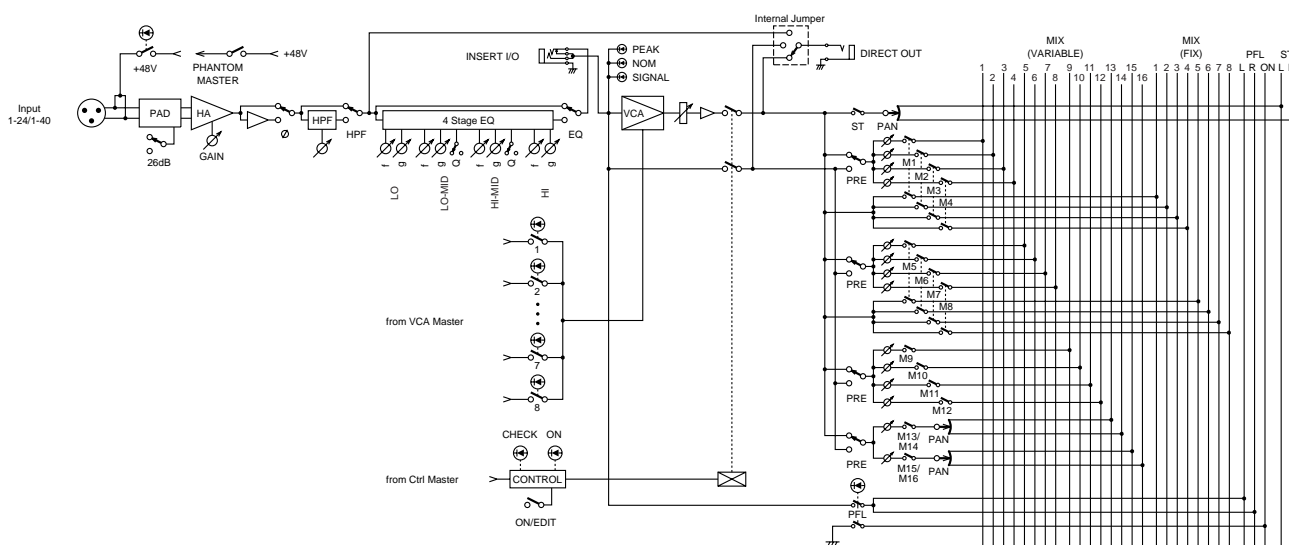
These controls send the signal from the input channel to MIX buses 13–16. When the control is in the “▲” position, the level is nominal (0 dB). M13 and M14, and M15 and M16 are stereo pairs, and the output level of each pair is controlled by one knob. Use the PRE switch (⑩) to switch between pre/post fader.

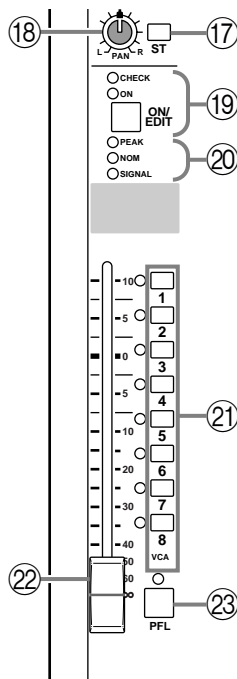
⑮ **M13/M14, M15/M16 pan controls**

These controls set the panning of the signals that are sent from the input channel to MIX buses 13/14 or MIX buses 15/16. When the control is in the center position, an equal amount of signal will be sent to both buses.

⑯ **PRE switches**

These are pre-fader/post-fader switches for the signals that are sent from the input channel to MIX buses 1–16. Pre/post can be switched independently for each group of MIX buses: 1–4, 5–8, 9–12, and 13–16. When the switch is pressed (■), the post-EG/pre-fader signal will be sent to the corresponding group of MIX buses.





⑰ **ST (stereo) switch**

When this switch is on, the signal of the input channel will be sent to the (ST) stereo bus.

⑱ **PAN control**

This sets the panning of the signal that is sent from the input channel to the ST bus.

⑲ **ON/EDIT switch/ON, CHECK indicators**

The function of this switch and these indicators will depend on the mode of the M3000A.

● **In normal mode**

The ON/EDIT switch will turn on the input channel. When on, the ON indicator will light. Channels which are turned off will send no signal to the ST bus or the MIX buses. However even in this case, you can use the PFL switch (⑳) to monitor the channel from the MONITOR OUT jacks or the PHONE jack.

● **In check mode**

In check mode (page 33), you can use the CHECK indicators to view the on/off status of each channel stored in a scene before you actually recall the scene. This is convenient when you wish to verify the status of each channel before you recall a scene.

In check mode, you can also use the ON/EDIT switches to change only the lit/dark status of the CHECK indicators. (The actual on/off setting will not be affected.) Use this when you wish to maintain the current mix settings, and store partially modified settings as a scene.

⑳ **PEAK/NOM/SIGNAL indicators**

Three indicators show the level of the input channel signal after it passes through the EQ.

• **PEAK indicator**

This will light when the signal exceeds the nominal level by 18 dB.

• **NOM (nominal) indicator**

This will light when the signal reaches nominal level (0 dB).

• **SIGNAL indicator**

This will light when the signal reaches 10 dB below the nominal level.

21 **VCA GROUP** select switches

These switches select the VCA master fader(s) which will control the signal output level of this channel. When you select a VCA group 1–8, the indicator located at the left of each switch will light, and the corresponding VCA master fader (VCA master section 3) will control the channel. It is possible to select two or more VCA groups for one input channel, or to control two or more input channels by the same VCA group.

● **Channels for which a VCA group is selected**

The signal output level of the channel can be controlled both by the corresponding VCA master fader(s) and by the channel fader (22). The settings of all corresponding VCA master faders are summed with the setting of the channel fader to specify the signal output level of that channel.

● **Channels for which a VCA group is not selected**

The signal output level of the channel can be controlled only by the channel fader (22).

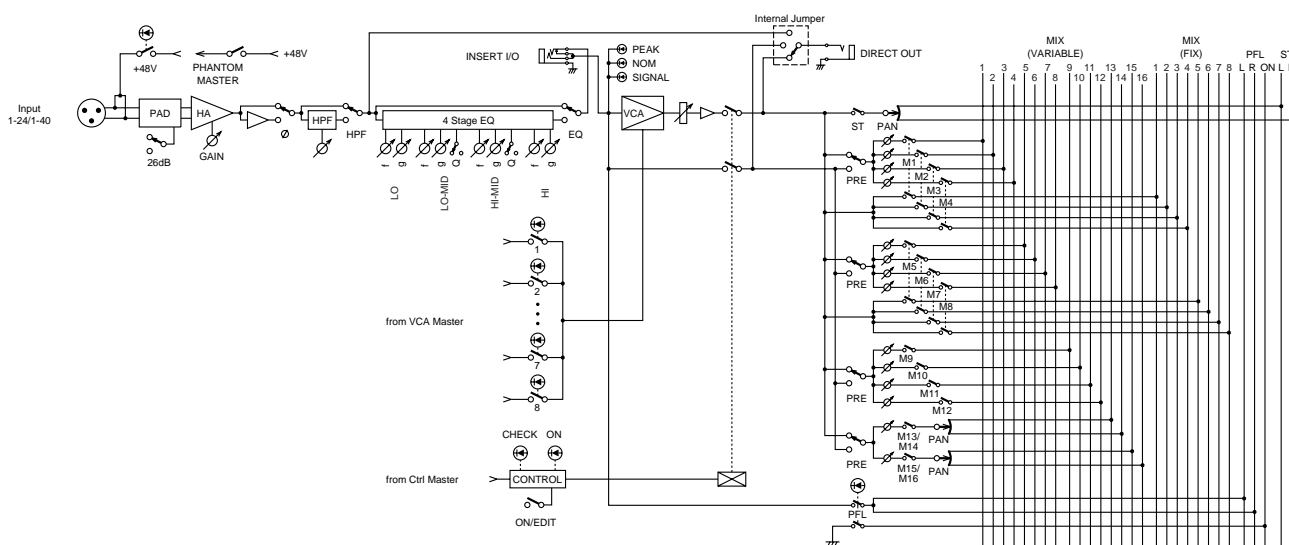
Note: For details on VCA functions, refer to page 38.

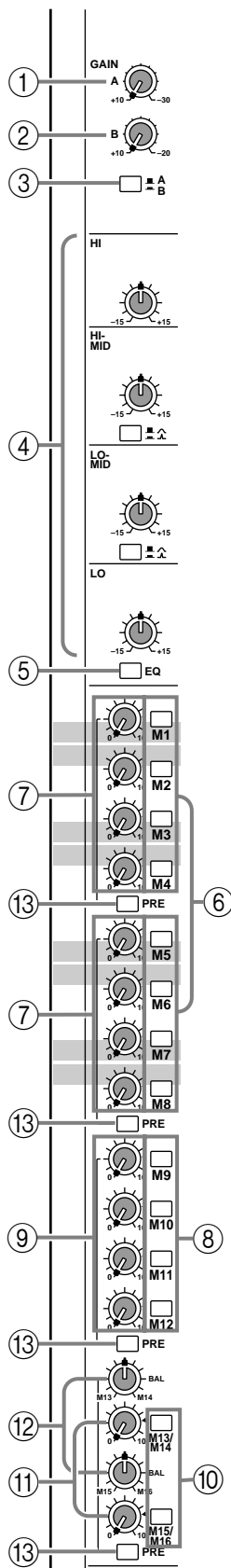
22 **Channel fader**

This fader adjusts the signal output level of the input channel. This fader will affect the level of the signal that is sent to the ST bus and to the MIX buses (if the PRE switch is off). If one or more VCA groups are selected by the VCA GROUP select switches (21), the signal output level of that channel will also be affected by the corresponding VCA master fader(s).

23 **PFL (pre-fader listen) switch**

When this switch is on (—), the indicator will light, and the pre-fader/post-EQ signal of this input channel will be sent to the PFL bus, allowing it to be monitored from the MONITOR OUT jacks or the PHONES jack.





Stereo input channels

The M3000A provides four stereo input channels. Stereo sound sources such as sub-mixers, effect processor, or CD players can be input to the INPUT A jacks (XLR connectors) or INPUT B jacks (RCA phono connectors) located on the rear panel.

- ① **GAIN A control**
This control adjusts the input sensitivity of the signal that is input from the XLR connector INPUT A jack (rear panel ④). The level range is +10~ -30 dB. When the A/B select switch (③) is in the B position (), this control will have no effect.
 - ② **GAIN B control**
This control adjusts the input sensitivity of the signal that is input from the RCA phono connector INPUT B jack (rear panel ⑤). The level range is +10~ -20 dB. When the A/B select switch (③) is in the A position (), this control will have no effect.
 - ③ **A/B select switch**
This switch selects the input jacks that the stereo input channel will use. When the switch is in the upward position () the INPUT A jack can be used. When the switch is in the downward position () the INPUT B jacks can be used.
 - ④ **EQ controls**
This is a four-band equalizer which allows ± 15 dB of boost/cut for each band. The HI-MID and LOW-MID bands allow you to switch between two settings of Q (steepness). The center frequency, Q values, and gain range for each band is as follows.
- | Band | Center frequency | Q | Gain |
|--------|------------------|-----------|-------------|
| HI | 20 kHz | 0.667 | ± 15 dB |
| HI-MID | 3 kHz | 1.41/2.88 | |
| LO-MID | 800 Hz | 1.41/2.88 | |
| LO | 50 Hz | 0.667 | |
- ⑤ **EQ switch**
This switches the equalizer on/off. The equalizer is on when the switch is pressed down ().
 - ⑥ **M1–M8 switches**
These switch on/off the signal which is sent from the stereo input channel to MIX buses 1–8.
- Note:** If these switches are off, no signal will be sent to the corresponding MIX bus from this input channel, regardless of the switch setting of the variable/fixed select section (page 13).

- ⑦ **M1–M8 mix level controls**
These controls combine the stereo signal from the stereo input channel into a mono signal, and send it to MIX buses 1–8. When the control is in the “▲” position, the level is nominal (0 dB). Use the PRE switch (⑬) to switch between pre/post fader.

Note: For MIX bus pairs for which the variable/fix select section (page 13) switch is set to FIX, the output level which is sent from each input channel to the bus will be fixed, and therefore the mix level control setting will have no effect.

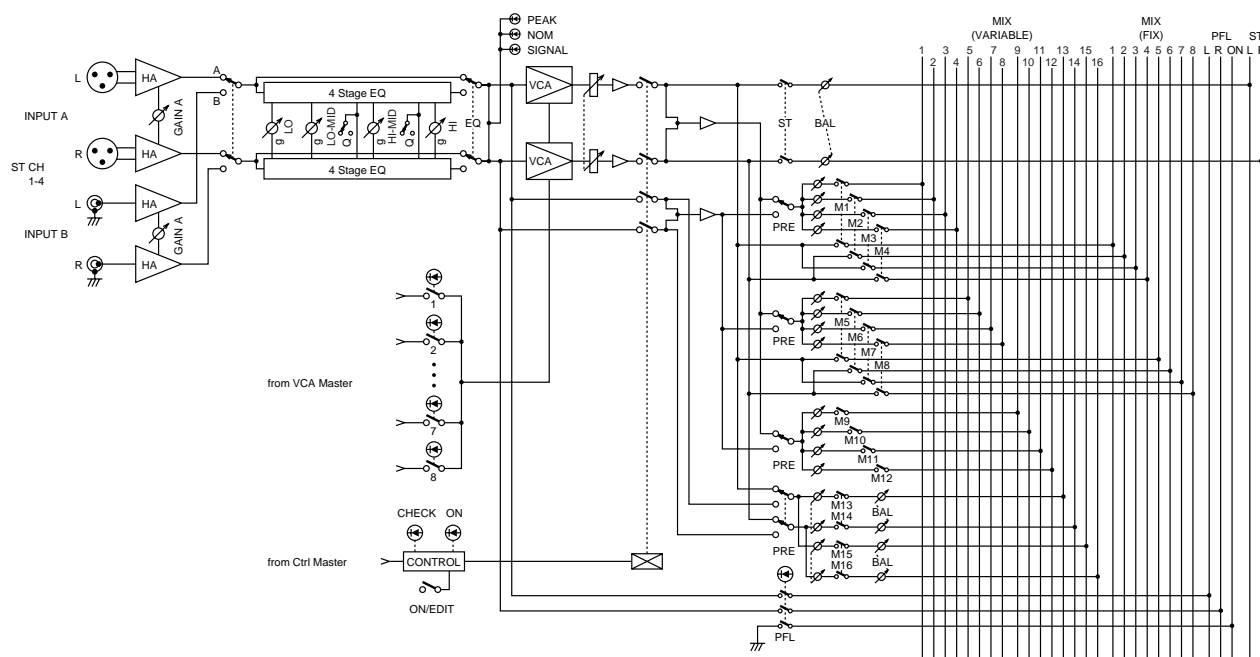
- ⑧ **M9–M12 switches**
These are on/off switches for the signals that are sent from the stereo input channel to MIX buses 9–12.
- ⑨ **M9–M12 mix level controls**
These controls combine the stereo signal from the stereo input channel into a mono signal, and send it to MIX buses 9–12. When the control is in the “▲” position, the level is nominal (0 dB). Use the PRE switch (⑬) to switch between pre/post fader.

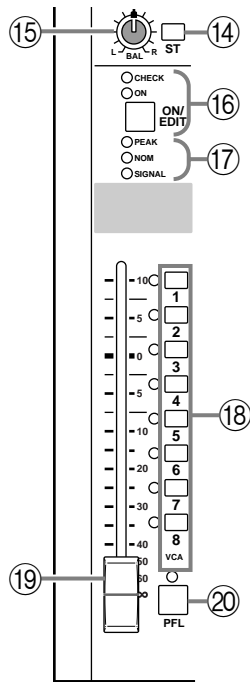
- ⑩ **M13/M14, M15/M16 switches**
These are on/off switches for the signals that are sent from the stereo input channel to MIX buses 13–16. M13 and 14, and M15 and M16 are stereo pairs, and each pair is turned on/off by one switch.

- ⑪ **M13/M14, M15/M16 mix level controls**
These controls send the stereo signal from the stereo input channel to MIX buses 13/14, 15/16. When the control is in the “▲” position, the level is nominal (0 dB). M13 and M14, and M15 and M16 are stereo pairs, and the output level of each pair is controlled by one knob. Use the PRE switch (⑬) to switch between pre/post fader.

- ⑫ **M13/M14, M15/M16 BAL (balance) controls**
These controls set the left/right balance of the signals that are sent from the stereo input channel to MIX buses 13/14 or MIX buses 15/16.

- ⑬ **PRE switches**
These are pre-fader/post-fader switches for the signals that are sent from the stereo input channel to the MIX buses. Pre/post can be switched independently for each group of MIX buses: 1–4, 5–8, 9–12, and 13–16. When the switch is pressed (■), the pre-fader/post-EQ signal will be sent to the corresponding group of MIX buses.





14 ST (stereo) switch

When this switch is on, the signal of the input channel will be sent to the (ST) stereo bus.

15 BAL (balance) control

This sets the left/right balance of the signal that is sent from the input channel to the ST bus.

16 ON/EDIT switch/ON, CHECK indicators

The function of this switch and these indicators will depend on the mode of the M3000A.

● In normal mode

The ON/EDIT switch will turn on the stereo input channel. When on, the ON indicator will light. Channels which are turned off will send no signal to the ST bus or the MIX buses. However even in this case, you can use the PFL switch (20) to monitor the channel from the MONITOR OUT jacks or the PHONE jack.

● In check mode

You can use the CHECK indicators to view the on/off status of each channel stored in a scene before you actually recall the scene. This is convenient when you wish to verify the status of each channel before you recall a scene.

In check mode, you can also use the ON/EDIT switches to change only the lit/dark status of the CHECK indicators. (The actual on/off setting will not be affected.)

For details on Check mode, refer to page 33.

17 PEAK/NOM/SIGNAL indicators

Three indicators show the level of the stereo input channel signal after it passes through the EQ.

• PEAK indicator

This will light when the sum of the L and R signals exceeds the nominal level by 18 dB.

• NOM (nominal) indicator

This will light when the sum of the L and R signals reaches nominal level (0 dB).

• SIGNAL indicator

This will light when the sum of the L and R signals reaches 10 dB below the nominal level.

18 VCA GROUP select switches

These switches select the VCA master fader(s) which will control the signal output level of this stereo input channel. When you select a VCA group 1–8, the indicator located at the left of each switch will light, and the corresponding VCA master fader (VCA master section 3) will control the channel. It is possible to select two or more VCA groups for one stereo input channel, or to control two or more channels by the same VCA group.

● Stereo input channels for which a VCA group is selected

The signal output level of the channel can be controlled both by the corresponding VCA master fader(s) and by the channel fader (19).

● Stereo input channels for which a VCA group is not selected

The signal output level of the stereo input channel can be controlled only by the channel fader (19).

Note: For details on VCA functions, refer to page 38.

19 Channel fader

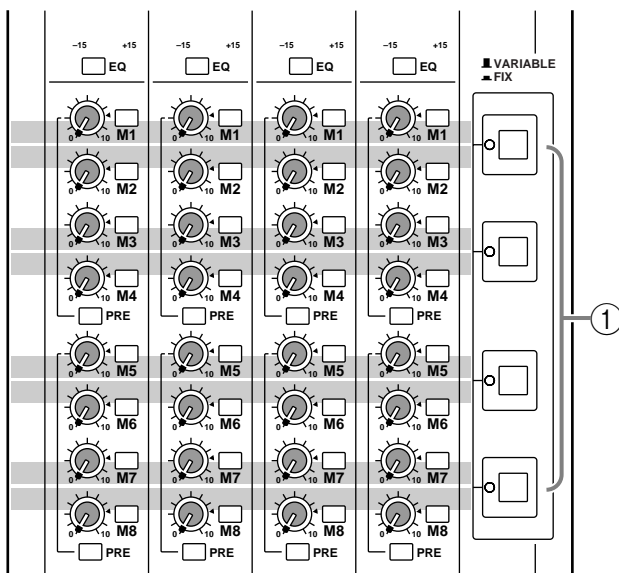
This fader adjusts the signal output level of the stereo input channel. This fader will affect the level of the signal that is sent to the ST bus and to the MIX buses (if the PRE switch is off). If one or more VCA groups are selected by the VCA GROUP select switches (18), the signal output level of that channel will also be affected by the corresponding VCA master fader(s).

20 PFL (pre-fader listen) switch

When this switch is on (■), the indicator will light, and the pre-fader/post-EQ signal of this stereo input channel will be sent to the PFL bus, allowing it to be monitored from the MONITOR OUT jacks or the PHONES jack.

Variable/fixed select section

The M3000A's GA (Group/Aux) diversity function allows MIX buses 1–8 to function either as group buses or as AUX buses. In this section, you can switch each pair of MIX buses (1/2, 3/4, 5/6, 7/8) between functioning as group buses or as AUX buses.



① Variable/fixed select switches

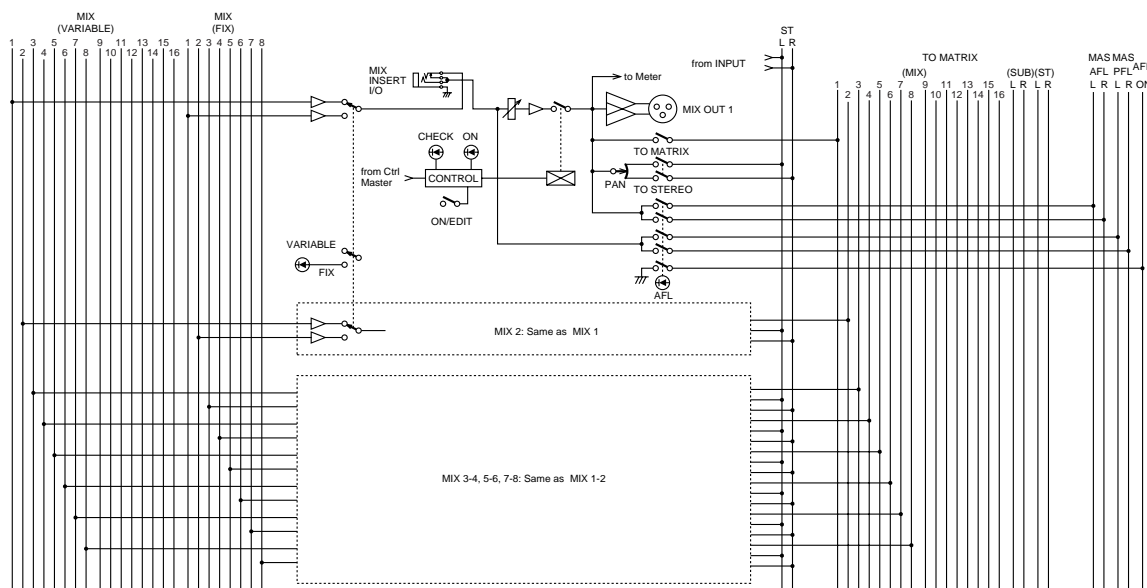
These switches select whether the level of the signals sent from the input channels to MIX buses 1–8 will be fixed (FIX) or variable (VARIABLE). From top to bottom, these switch MIX buses 1/2, 3/4, 5/6 and 7/8.

●When FIX (FIX) is selected

The corresponding pair of MIX buses (1/2, 3/4, 5/6, 7/8) will function as a group bus, and the signal of the MIX (FIX) bus will be output to the corresponding mix channel. In this case, the settings of the mix level controls M1–M8 (mono input channels ⑩, stereo input channels ⑦) will have no effect.

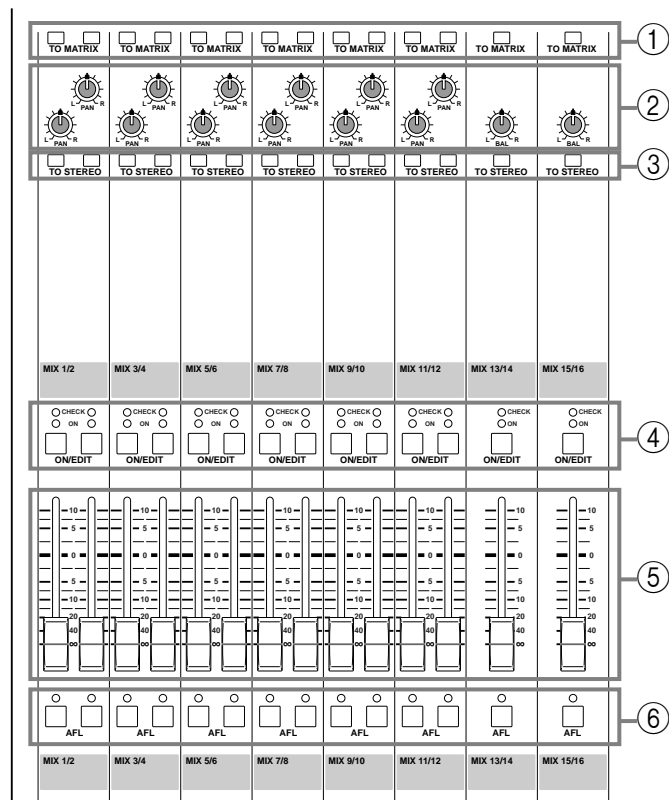
●When VARIABLE (VARIABLE) is selected

The corresponding pair of MIX buses (1/2, 3/4, 5/6, 7/8) will function as an AUX bus, and the signal of the MIX (VARIABLE) bus will be output to the corresponding mix channel. In this case, the mix level controls M1–M8 (mono input channels ⑩, stereo input channels ⑦) will take effect just as they are set.



Mix section

These output channels control the signals of MIX buses 1–16. MIX buses 13/14 and 15/16 are controlled as stereo pairs respectively. The signal that passes through these output channels is output individually from the MIX OUT 1–16 jacks (page 27), and can also be sent to the MAS AFL bus, MAS PFL bus, ST bus, and the matrix.



① TO MATRIX switches

When these switches are on (), the signal of the corresponding MIX OUT will be sent to the matrix.

② PAN controls/BAL controls

These controls specify the pan (MIX OUT 1–12) or left/right balance (MIX OUT 13–16) when the MIX OUT signal is sent to the ST bus.

③ TO STEREO switches

When these switches are on (), the signal of the corresponding MIX OUT will be sent to the ST bus.

④ ON/EDIT switches

The function of these switches and indicators will depend on the mode of the M3000A.

● In normal mode

The ON/EDIT switches will turn each MIX OUT on/off. When on, the ON indicator will light. MIX OUTs which are turned off will send no signal to the MIX OUT 1–16 jacks, the MAS AFL bus, the ST bus or the matrix. However even in this case, you can turn on the AFL switch (⑥) to monitor the pre-fader signal from the MONITOR OUT jacks or the PHONE jack.

● In check mode

You can use the CHECK indicators to view the on/off status of each MIX OUT stored in a scene before you actually recall the scene.

In check mode, you can also use the ON/EDIT switches to change only the lit/dark status of the CHECK indicators. (The actual on/off setting will not be affected.)

For details on check mode, refer to page 33.

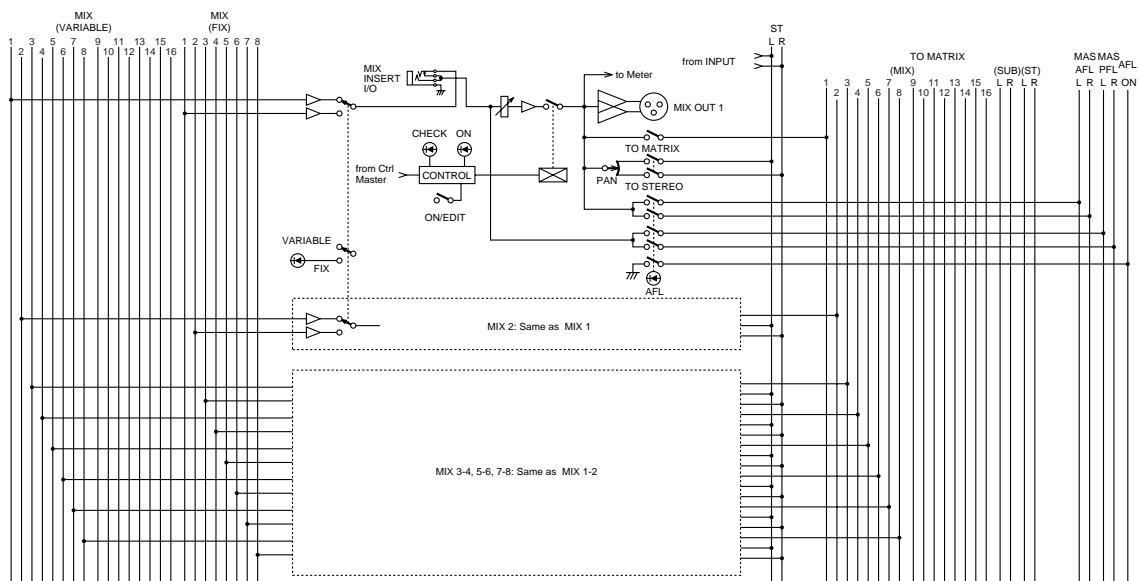
⑤ Mix master faders

These faders adjust the output level of MIX OUT 1–16. These faders affect the signal which is sent to the MIX OUT 1–16 jacks, the MAS AFL bus, the ST bus, and the matrix.

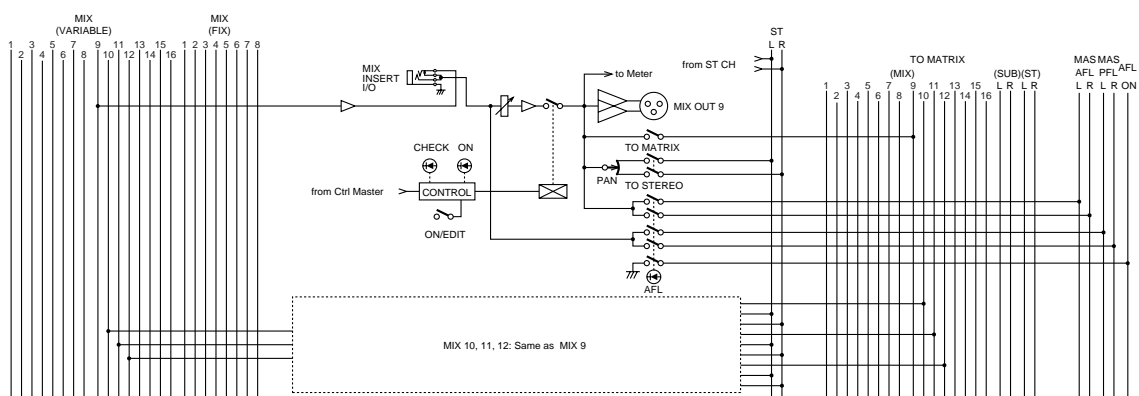
⑥ AFL (after fader listen) switches

These switches allow the signals from MIX OUT to be monitored from the MONITOR OUT jacks or PHONES jack. When these switches are on (), the indicator will light, and the pre-fader signal of the corresponding MIX bus will be sent to the MAS PFL bus, and the post-fader signal will be sent to the MAS AFL bus, allowing you to monitor from the MONITOR OUT jacks or the PHONES jacks. The signal of the MAS AFL bus can be monitored when the MASTER PFL switch (page 19) of the monitor section is off, and the signal of the MAS PFL bus can be monitored when this switch is on. However while even one of the PFL switches of the input channels is on, the signal of the PFL bus will take precedence, meaning that it will not be possible to monitor MIX OUT.

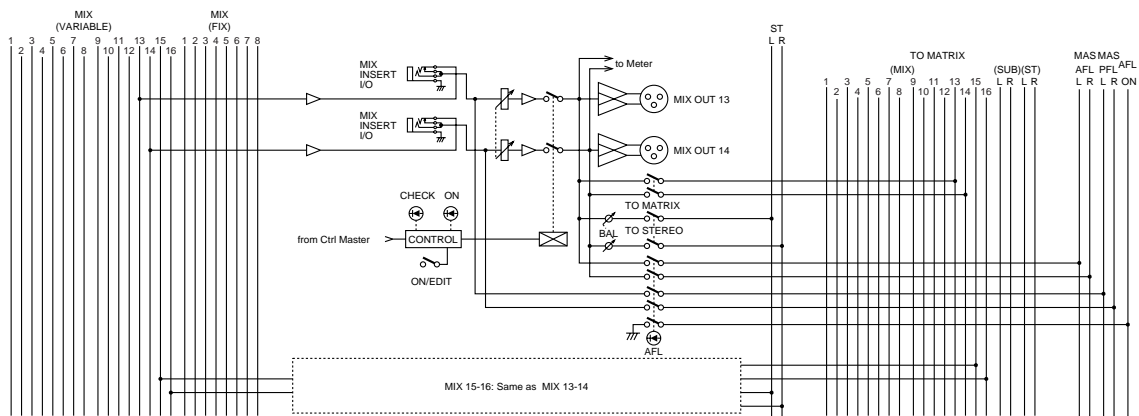
MIX buses 1-8



MIX buses 9-12

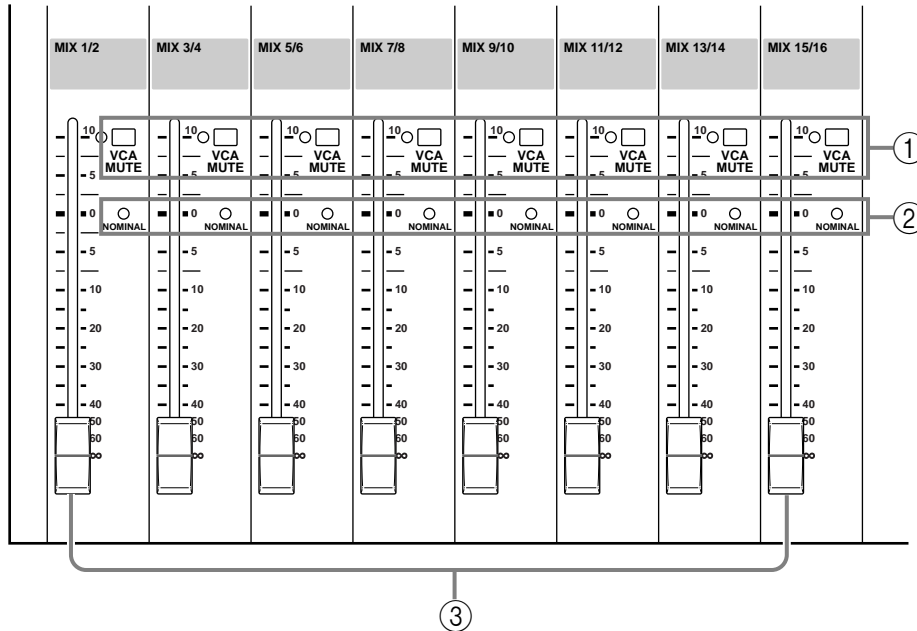


MIX buses 13-16



VCA master fader section

The VCA master fader section allows the gain of input channels assigned to a VCA group to be controlled as a whole by the corresponding VCA fader. The VCA group(s) to which each input channel is assigned is specified by the VCA GROUP select switches (mono input channels (21)), stereo input channels (18).



① **VCA MUTE switches**

When these switches are turned on (the indicator at left will light), the VCA master fader (3) will be shut down completely. At this time, the post-fader signal of all input channels assigned to the corresponding VCA group will be muted.

② **NOMINAL indicators**

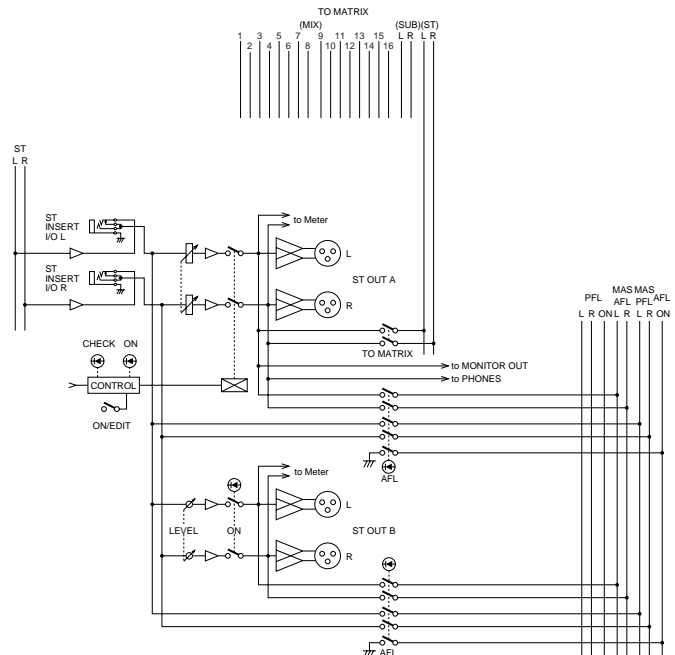
These indicators will light when the corresponding VCA master fader is in the nominal (0 dB) position. In this position, the VCA master fader will not affect the gain.

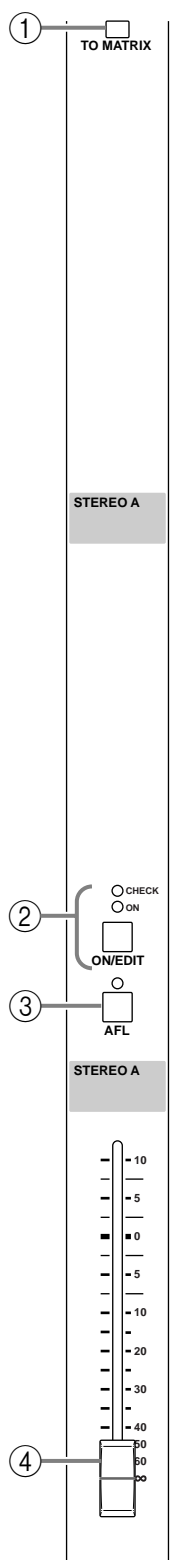
③ **VCA master faders**

These faders control the gain of the input channels assigned to the corresponding VCA group. If you wish to use the VCA master faders, make sure that the rear panel VCA MASTER/SLAVE select switch (page 28) is set to the MASTER position.

STEREO A section

This section controls the signal that is output from the rear panel ST OUT jacks (page 27). The signal level which is sent from ST OUT A to the matrix is also controlled by this section.





① TO MATRIX switch

When this switch is on (), the ST OUT A post-fader signal is sent to the matrix.

② ON/EDIT switch

The function of this switch and indicator will depend on the mode of the M3000A.

● In normal mode

The ON/EDIT switch will turn ST OUT A on/off. When on, the ON indicator will light. When off, no signal will be sent to the ST OUT A jacks, MONITOR OUT jacks, PHONES jack, MAS AFL bus, or the matrix. However even in this case, you can turn on the AFL switch (③) to monitor the pre-fader signal from the MONITOR OUT jacks or the PHONE jack.

● In check mode

You can use the CHECK indicator to view the on/off status of ST OUT A stored in a scene before you actually recall the scene.

In check mode, you can also use the ON/EDIT switch to change only the lit/dark status of the CHECK indicator. (The actual on/off setting will not be affected.)

③ AFL switch

This switch allows the ST OUT A signal which is sent to the ST OUT A jacks or to the matrix to be monitored from the MONITOR OUT jacks or from the PHONES jack. When this switch is on (), the indicator will light, and the pre-fader signal will be sent to the MAS PFL bus and the post-fader signal will be sent to the MAS AFL bus, allowing you to monitor them from the MONITOR OUT jacks or the PHONES jack.

When the master section MASTER PFL switch (page 19) is off you can monitor the signal of the MAS AFL bus, and when it is on you can monitor the signal of the MAS PFL bus. However if even one of the PFL switches of the input channels is turned on, the signal of the PFL bus will take priority for monitoring, and it will not be possible to monitor ST OUT A.

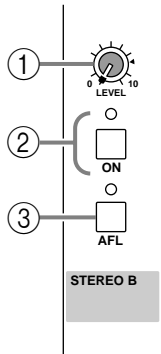
④ ST (stereo) fader

This fader adjusts the final output level of ST OUT A. This fader affects the level of the signal which is sent to the ST OUT A jacks, the MONITOR OUT jacks, the PHONES jack, the MAS AFL bus, and the matrix.

STEREO B section

This section controls the signal which is output from the rear panel ST OUT B jacks (page 27)

Note: This section is not affected by the on/off switching of scene memory.



① LEVEL control

This controls the output level of the signal which is sent from the ST OUT B jacks. It does not affect the signal which is output from the ST OUT A jacks. When the control is in the “▲” position the level is nominal (0 dB).

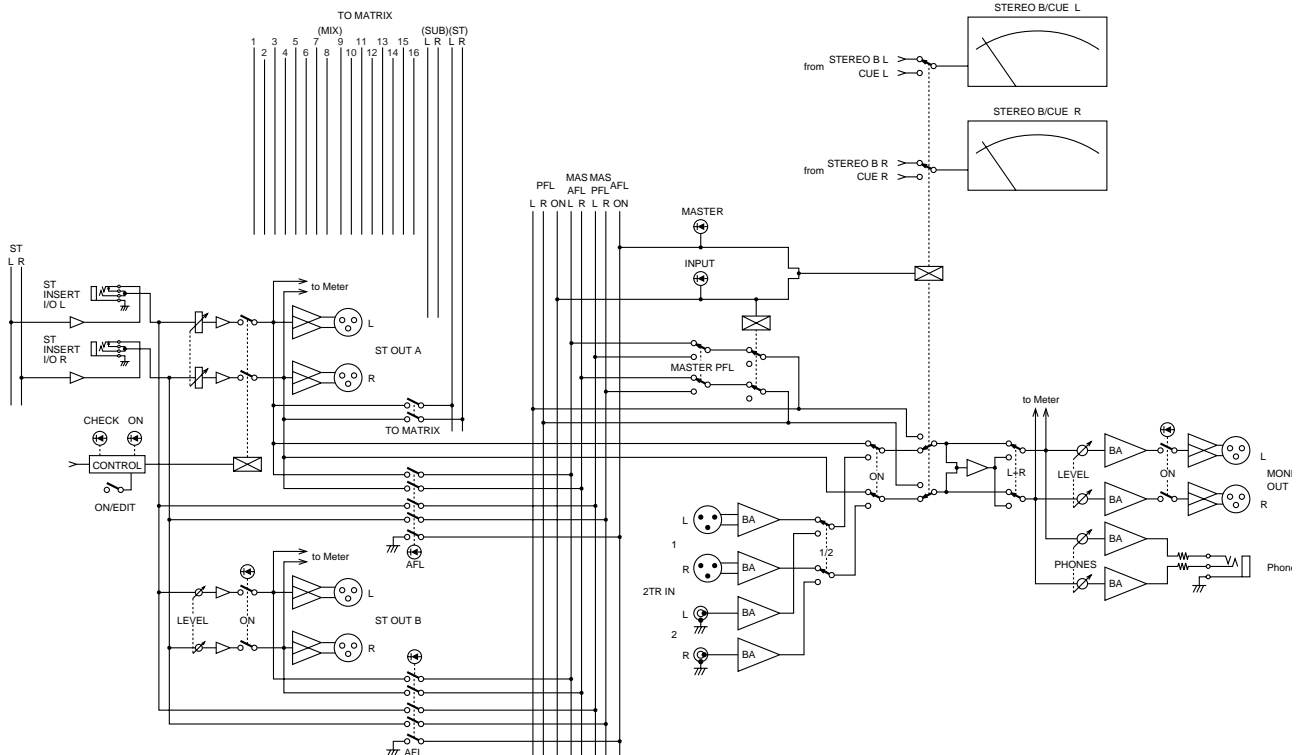
② ON switch

This is an on/off switch for the signal which is output from the ST OUT B jacks. It does not affect the signal which is output from the ST OUT A jacks. When this switch is turned off, the indicator will go dark, and no signal will be output from the ST OUT B jacks. However even in this case, the signal sourced before passing through the LEVEL control can be monitored from the MONITOR OUT jacks or the PHONES jack by turning on the AFL switch (③).

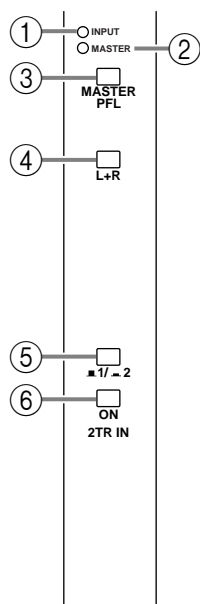
③ AFL switch

This switch allows the signal which is sent from the ST OUT B jacks to be monitored from the MONITOR OUT jacks or PHONES jack. When this switch is on (▲), the indicator will light, and the signal before passing through the LEVEL control will be sent to the MAS AFL bus and the signal after passing through the LEVEL control will be sent to the MAS AFL bus, and can be monitored from the MONITOR OUT jacks or the PHONES jack.

If the master section MASTER PFL switch (page 19) is off, the MAS AFL bus signal can be monitored. If this switch is on, the MAS PFL bus signal will be monitored. However if even one of the input channel PFL switches are on, the PFL bus signal will take priority for monitoring, and ST OUT B cannot be monitored.



Monitor section



In this section you can select the signal which will be monitored from the MONITOR OUT jacks and the PHONES jack. The following signals can be selected as monitor sources.

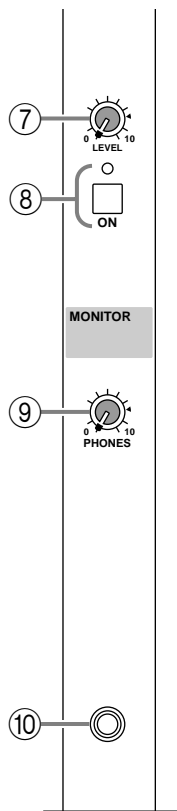
Signals which can be selected as monitor sources

Signals SW	CH PFL	MASTER AFL	ST OUT A	2TR IN
CH PFL	○	×	×	×
MASTER AFL	N/A	○	×	×
2TR IN	N/A	N/A	×	○

(Note) N/A: There is no ON/OFF condition.

- * When all switches are turned off, you can monitor AFL signals from ST OUT A.
- * When MASTER PFL (③) is turned on, the MASTER AFL signal becomes a PFL signal,

- ① **INPUT indicator**
This indicator will light if even one of the input channel PFL switches are turned on.
- ② **MASTER indicator**
This indicator will light if even one of the AFL switches of the mix section, STEREO A section, STEREO B section, or matrix section (page 24) are turned on.
- ③ **MASTER PFL switch**
This switch selects the master signal (the signal of either the MAS AFL bus or the MAS PFL bus) which will be monitored by the MONITOR jacks or PHONES jack. When the MASTER PFL switch is on (○) the signal of the MAS PFL bus will be monitored. When this switch is off (■), the signal of the MAS AFL bus will be monitored.
- ④ **L+R switch**
When this switch is on (■), the monitor signal which is output from the MONITOR OUT jacks and the PHONES jack will be mixed to a monaural signal.
- ⑤ **1/2 select switch**
This switches between the two sets of 2TR IN jacks located on the rear panel. When the switch is in the upward position (■) the 2TR IN 1 jacks are selected, and when the switch is in the downward position (○) the 2TR IN 2 jacks are selected.
- ⑥ **ON switch**
This switch sends the input signal from the set of 2TR IN jacks selected by the 1/2 select switch to the MONITOR jacks and PHONES jack. When this switch is pressed (■), the input signal from the selected pair of 2TR IN jacks will be sent to the MONITOR jacks and PHONES jack.



⑦ **LEVEL** control

This control adjusts the level of the signal which is output from the MONITOR OUT jacks. It does not affect the PHONES jack.

⑧ **ON** switch

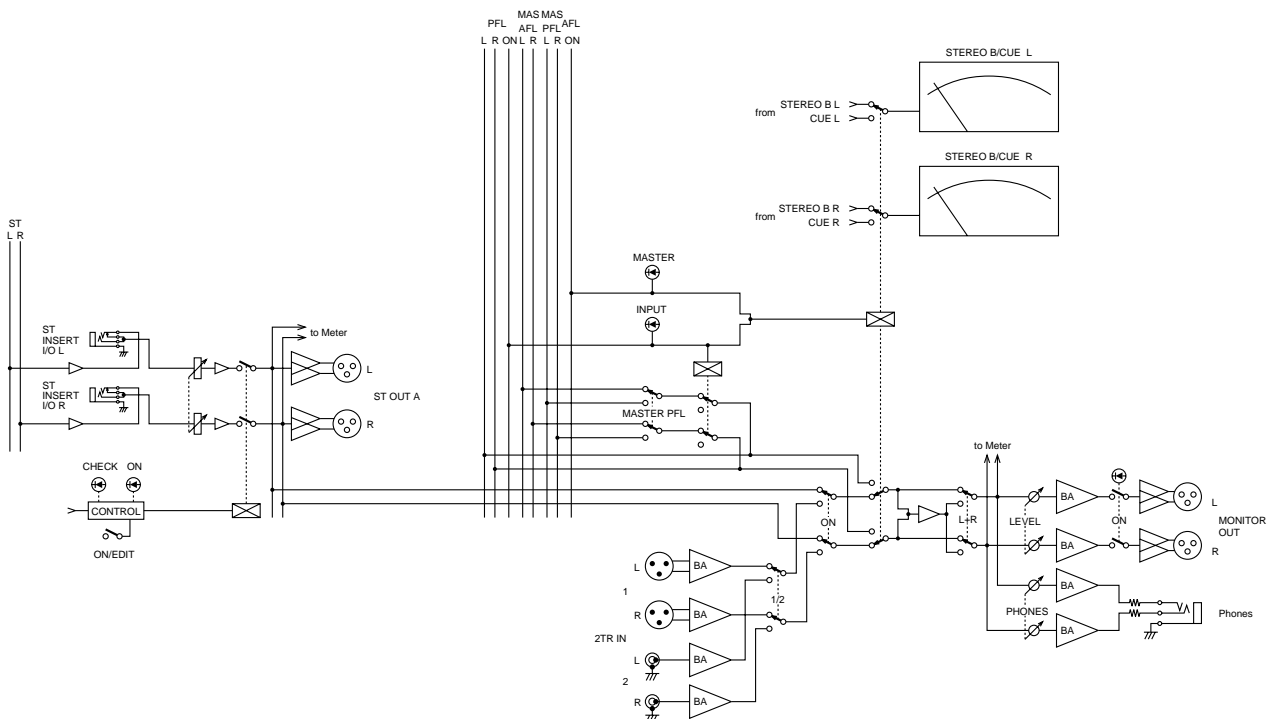
This is an on/off switch for the signal which is output from the MONITOR OUT jacks. When this is on, the indicator located above the switch will light. This switch does not affect the PHONES jack.

⑨ **PHONES** (headphone) control

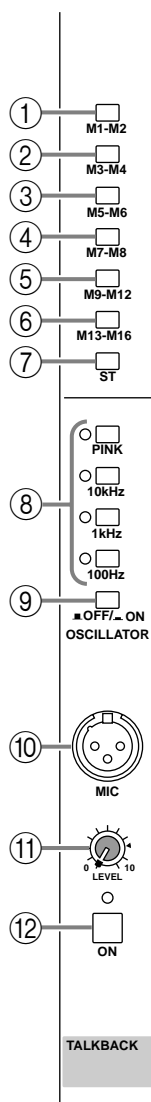
This control adjusts the level of the signal which is output from the PHONES jack. It does not affect the MONITOR OUT jacks.

⑩ **PHONES** jack

A set of headphones can be connected to this jack for monitoring.



Talkback section



- ① **M1–M2** switch
- ② **M3–M4** switch
- ③ **M5–M6** switch
- ④ **M7–M8** switch
- ⑤ **M9–M12** switch
- ⑥ **M13–M16** switch
- ⑦ **ST** switch

These switches send the talkback or test tone oscillator signal to MIX buses 1–2, MIX buses 3–4, MIX buses 5–6, MIX buses 7–8, MIX buses 9–12, MIX buses 13–16, or the ST bus. The switches can be turned on/off individually.

⑧ **OSCILLATOR** select switch
 These switches select the type of test oscillator, and begin oscillation. Only one can be selected at a time. The corresponding indicator will light to indicate the switch which is currently on.

● **PINK** switch
 Pink noise will be produced.

● **10 kHz/1 kHz/100 Hz** switches
 A sine wave of the corresponding frequency will be produced.

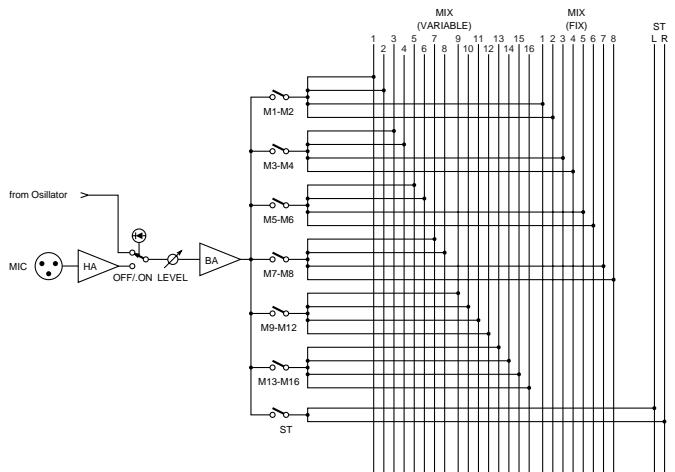
Note: The oscillator cannot be used in conjunction with talkback. In order to use the oscillator, you must turn off the talkback ON switch (⑫).

⑨ **OSCILLATOR** OFF/ ON switch
 This is an off/on switch for the oscillation of the oscillator.

⑩ **MIC** jack
 This is an XLR-3-31 input jack (unbalanced) for connecting a talkback mic. It can be used with mics of 50–600 ohms impedance.

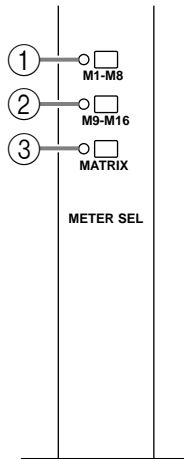
⑪ **LEVEL** control
 This control adjusts the level of talkback or the oscillator.

⑫ **ON** switch
 This switch turns talkback on/off. When this is on, the indicator located above the switch will light. If you wish to use the oscillator, turn this switch off.



Meter select section

In this section you can select the source whose level will be shown in the meter bridge section. Only one of the sources ①–③ can be selected.



① M1–M8 switch

When this switch is turned on, the M1/M9/MATRIX1–M8/M16/MATRIX8 meters (page 25) will show the output levels of MIX OUT 1–8. At this time, the indicator located at the left of the switch will light.

② M9–M16 switch

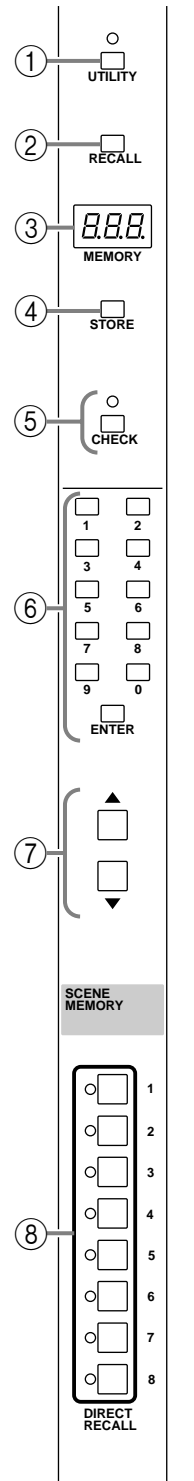
When this switch is turned on, the M1/M9/MATRIX1–M8/M16/MATRIX8 meters (page 25) will show the output levels of MIX OUT 9–16. At this time, the indicator located at the left of the switch will light.

③ MATRIX switch

When this switch is turned on, the M1/M9/MATRIX1–M8/M16/MATRIX8 meters (page 25) will show the output levels of MATRIX OUT 1–8. At this time, the indicator located at the left of the switch will light.

Control section

On the M3000A, on/off settings for the mono/stereo input channels, the output channels of the mix sections, and STEREO A OUT can be stored as a “scene” (memory numbers 1–128 can be rewritten, and 129–130 are read-only). In this section you can save and read scene memories. (For details on using scene memories, refer to page 31.)



① UTILITY switch

Press this switch to enter Utility mode, where you can make settings for scene memories and MIDI, etc. When you are in Utility mode (refer to page 34), the indicator located above the switch will light.

② RECALL switch

Use this switch to recall scenes from scene memory. If you select a scene which has not been stored and attempt to recall it, the MEMORY display (③) will indicate “*no d*” (No data) for approximately two seconds.

③ MEMORY display

This is a three-digit LED display. In normal mode and in check mode, it displays a scene memory number 1–130.

Concerning the decimal point display



This will light if the display number contains no data. If all memories contain no data, this dot will light when the M3000 is powered-on.

This will light when bulk data is being received from the MIDI IN connector.

In normal mode, this will light when you have modified the settings of the last-recalled scene. In check mode, this will light when you have modified the settings of the selected scene.

In utility mode, utility-related parameters are displayed here (for details refer to page 34).

④ STORE key

Use this key to store a scene into scene memory. When you press this switch once, the display will indicate “*St r*,” notifying you that the scene may now be stored. At this time press the button once again to execute the Store operation. If you decide not to store the scene, simply press any other button. Before storing a scene memory, make sure that the Memory Protect setting (page 34) is turned OFF.

⑤ CHECK switch

Use this to switch from normal mode to check mode (refer to page 33). In check mode, the indicator located above the switch will light.

⑥ 0–9/ENTER buttons

Use these to numerically specify a scene memory number. Use the 0–9 switches to enter a value, and press the ENTER button to finalize that value.

⑦ ▲/▼ switches

Use these to step through scene memory numbers consecutively. However, the read-only scenes in memory numbers 129/130 cannot be selected by these switches, and must be selected using the 0–9/ENTER buttons (⑥).

These switches are also used to select parameters in Utility mode. However in Utility mode when the oP (recall operation) parameter is set to “*U r P*,” scenes in memory numbers 1–8 cannot be selected by these switches, and must be selected using the 0–9/ENTER buttons.

If either switch is held for longer than one second, the value will change rapidly. (For details on parameter content, refer to page 34.)

⑧ DIRECT RECALL 1–8 switches

The DIRECT RECALL 1–8 switches can be used in one of two ways, depending on the Utility mode setting. With the factory settings, they will function as “direct recall” switches that will select the scenes of memory numbers 1–8 at a single touch. By modifying the Utility mode settings, you can also use these as “mute group” switches that will simultaneously select or defeat the mute (off) settings saved in memory numbers 1–8. (For details on direct recall and mute groups, refer to page 36.)

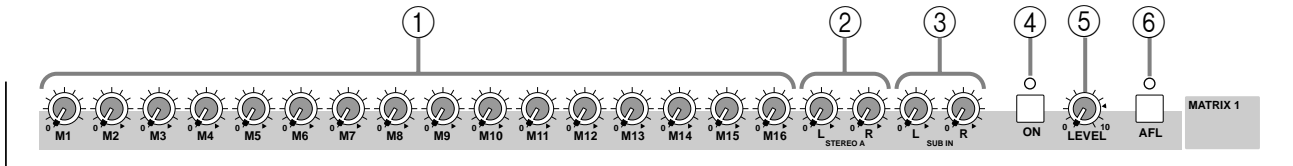
Note: Even if you press a DIRECT RECALL switch, the scene will not change if no data has been saved in the corresponding memory number. If this occurs, the MEMORY display will indicate “*no d*” (No Data) for several seconds.

Note: Be aware that if you press a DIRECT RECALL switch in check mode, check mode will be forced off, and the scene will recalled.

Matrix section

The M3000A provides eight matrices which allow output signals from the MIX buses 1–16 or the ST bus, or input signals from MATRIX SUB IN to be mixed at the desired level.

Matrix 1–8 are output in mono from MATRIX OUT jacks 1-8 respectively (page 27), and can be used as foldback or for an individual monitor system.



① M1–M16 controls

When the TO MATRIX switch of the mix section is on, these controls adjust the level of the signal which is input from the corresponding MIX OUT to the matrix. The “▲” position is nominal level (0 dB).

② STEREO A L/R controls

When the TO MATRIX switch of the STEREO A section is on, these controls adjust the level of the signal which is input to the matrix from ST OUT A. The “▲” position is nominal level (0 dB).

③ SUB IN L/R controls

These controls adjust the level of the signal which is input to the matrix from the rear panel MATRIX SUB IN jacks (page 27). The “▲” position is nominal level (0 dB).

④ ON switch

When this switch is turned off, the indicator will go dark, and no signal will be output from the MATRIX OUT jacks. However even in this case, the signal sourced before passing through the LEVEL control can be monitored from the MONITOR OUT jacks or the PHONES jack by turning on the AFL switch (⑥).

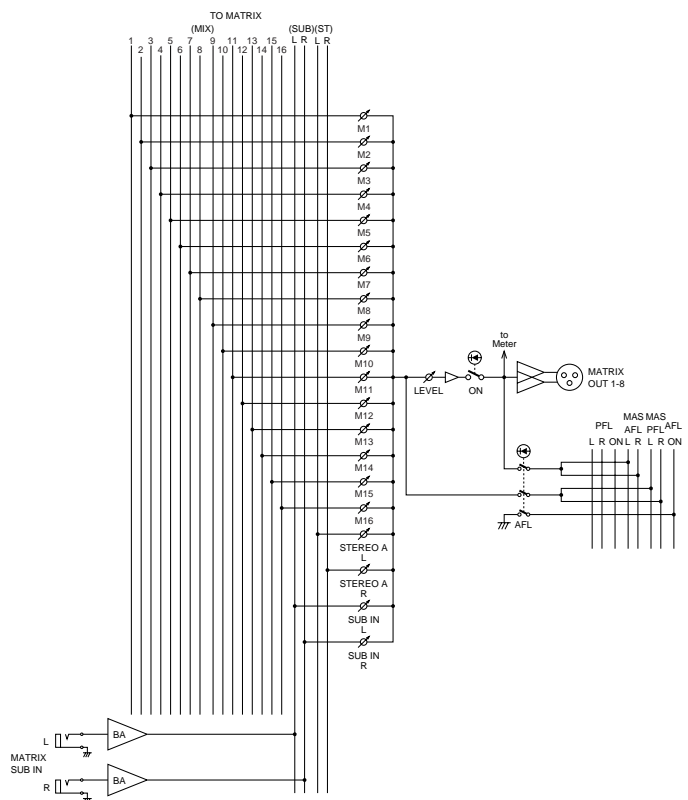
⑤ LEVEL control

This adjusts the final output level of the corresponding matrix 1–8. The “▲” position is nominal level (0 dB).

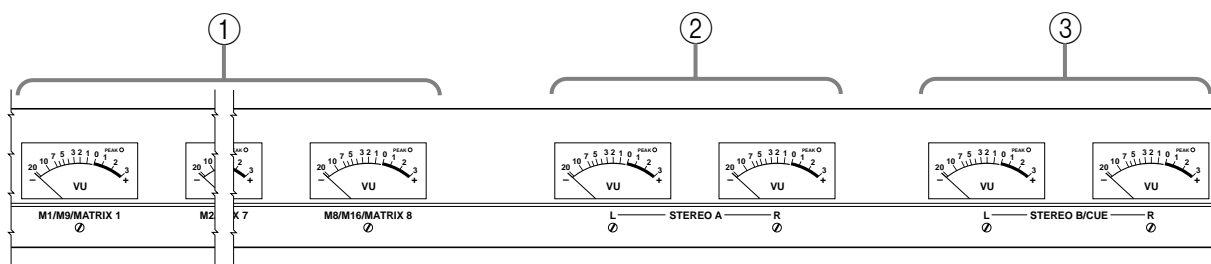
⑥ AFL switch

This switch allows the output signal of the corresponding matrix 1–8 to be monitored from the MONITOR OUT jacks or the PHONES jack. When this switch is on (▲), the indicator will light, and the signal before passing through the level control will be sent to the MAS PFL bus, and the signal after passing through the LEVEL control will be sent to the MAS AFL bus, allowing you to monitor them from the MONITOR OUT jacks or the PHONES jack.

When the monitor section MASTER PFL switch (page 19) is off, you can monitor the signal of the MAS AFL bus. When the MASTER PFL switch is on, you can monitor the signal of the MAS PFL bus. However if even one of the input channel PFL switches is on, the PFL bus will be given priority for monitoring, meaning that it will not be possible to monitor the matrix.



Meter bridge



① M1/M9/MATRIX1–M8/M16/MATRIX8 level meters

As selected by the switch settings of the METER SEL section (page 22), these meters indicate the output levels of MIX OUT 1–8/MIX OUT 9–16/MATRIX OUT 1–8. Each meter has a PEAK indicator which lights 3 dB before peak level.

② STEREO A level meters

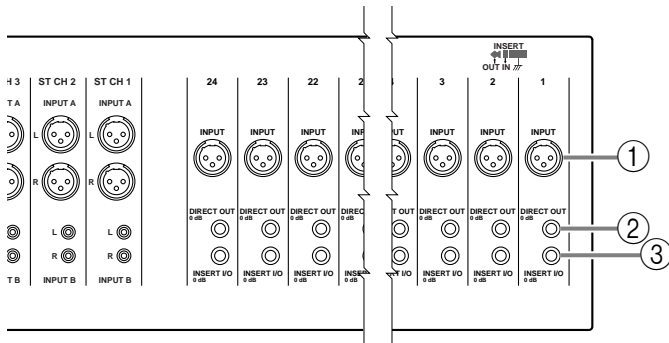
These meters indicate the output levels of the signal which is output from the STEREO OUT A jacks. Each meter has a PEAK indicator which lights 3 dB before peak level.

③ STEREO B/CUE level meters

Normally, these meters indicate the output levels of the signal which is output from the STEREO OUT B jacks. However if the PFL switch of an input channel or an AFL switch in the mix section or matrix section etc. has been pressed and you are monitoring the PFL bus, the MAS PFL bus, or the MAS AFL bus, these meters will indicate the level of the signal which is being monitored. Each meter has a PEAK indicator which lights 3 dB before peak level.

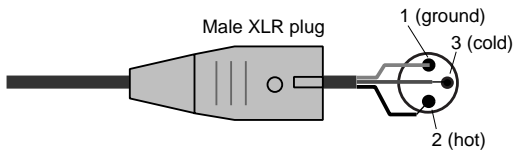
Rear panel

Mono input channel input/output jacks



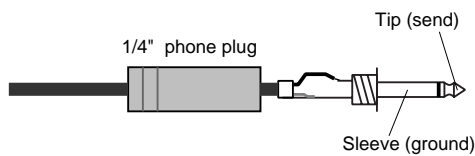
① INPUT jacks

These are XLR-3-31 type input jacks (balanced). Nominal input level is $-16\text{ dB} \sim -60\text{ dB}$ when the 26 dB pad switch (page 6) is off, or $+10\text{ dB} \sim -34\text{ dB}$ when the pad switch is on. When the rear panel PHANTOM MASTER switch and the phantom power switches for the corresponding input channel are on, $+48\text{ V}$ phantom power is supplied. Pin wiring is as follows.



② DIRECT OUT jacks

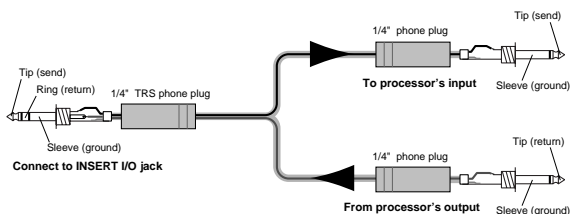
These are 1/4" phone jack direct outputs (unbalanced). Nominal output level is 0 dB. Pin wiring is as follows.



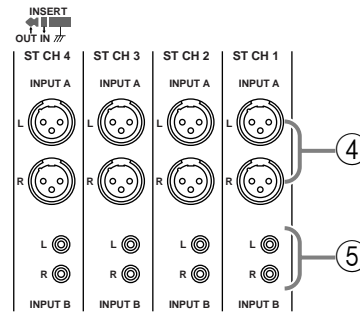
With the factory settings, the post-fader signal is output. However by changing internal jumpers, you can switch this so that the pre-EQ or pre-fader/post EQ signal is output. If you wish to change internal jumper settings, please contact your dealer.

③ INSERT I/O jacks

These are TRS phone jacks which allow an external effect processor to be inserted into each mono input channel. Nominal level is 0 dB. Pin wiring is as follows.

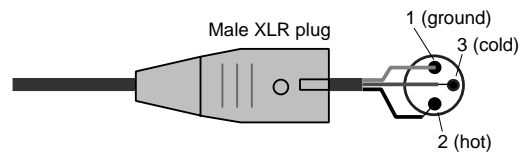


Stereo input channel input/output jacks



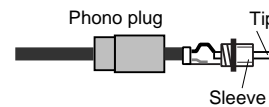
④ INPUT A jacks

These are XLR-3-31 type input jacks (balanced). Nominal input level is $+10\text{ dB} \sim -30\text{ dB}$. To use these jacks, you must set the A/B select switch of the corresponding stereo input channel to the A position. Pin wiring is as follows.

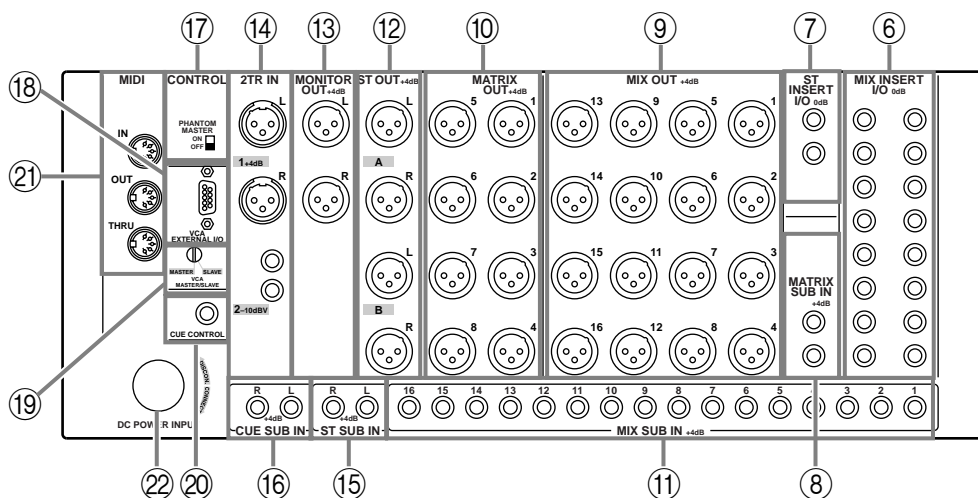


⑤ INPUT B jacks

These are RCA phono input jacks (unbalanced). Nominal input level is $+10\text{ dB} \sim -20\text{ dB}$. To use these jacks, you must set the A/B select switch of the corresponding stereo input channel to the B position. Pin wiring is as follows.

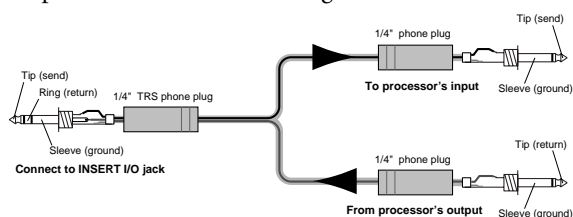


Master section input/output jacks



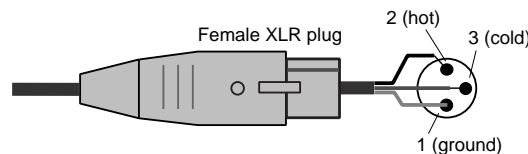
⑥ MIX INSERT I/O jacks

These are TRS phone jacks for inserting external signal processors into MIX buses 1–16. Nominal input/output level is 0 dB. Pin wiring is as follows.



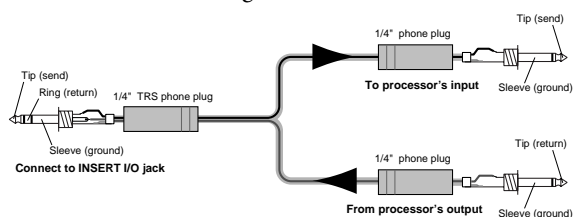
⑨ MIX OUT jacks

These are XLR-3-32 output jacks (balanced) for individually outputting the signals of MIX buses 1–16. Nominal output level is +4 dB. Pin wiring is as follows.



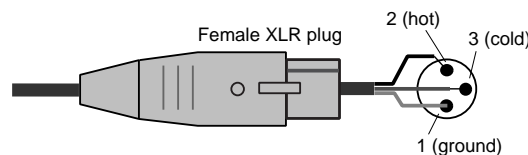
⑦ STEREO INSERT I/O jacks

These are TRS phone jacks for inserting external signal processors into the ST bus. Nominal input/output level is 0 dB. Pin wiring is as follows.



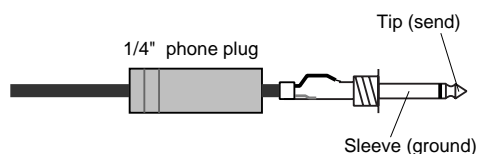
⑩ MATRIX OUT jacks

These are XLR-3-32 output jacks (balanced) for individually outputting the signals of matrix 1–8. Nominal output level is +4 dB. Pin wiring is as follows.



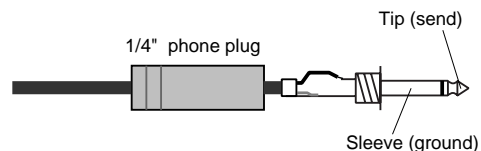
⑧ MATRIX SUB IN jacks

These are 1/4" phone jacks (unbalanced) for mixing the signals of external devices into matrix 1–8. Nominal input level is +4 dB. Pin wiring is as follows.



⑪ MIX SUB IN jacks

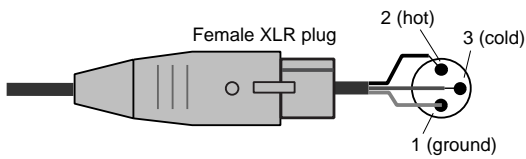
These are 1/4" phone jacks (unbalanced) for individually mixing signals from external devices into MIX buses 1–16. Nominal output level is +4 dB. Pin wiring is as follows.



⑫ ST OUT A/B jacks

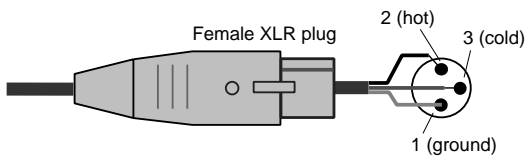
These are XLR output jacks (balanced) for outputting the signals from the STEREO A/B sections. Nominal output level is +4 dB for both sections. Pin wiring is as

follows.



13 MONITOR OUT jacks

These are XLR output jacks (balanced) for monitoring the monitor source selected on the control panel. Nominal output level is +4 dB. Pin wiring is as follows.

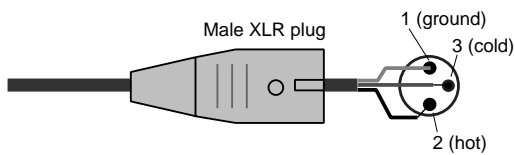


14 2TR IN jacks

These jacks are for connecting line-level external devices.

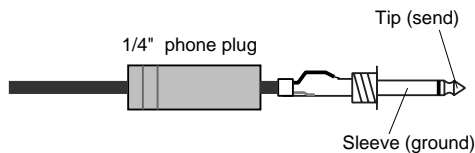
● 2TR IN 1 jacks

These are XLR balanced input jacks. Nominal input level is +4 dB. Pin wiring is as follows.



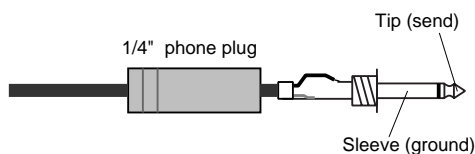
● TR IN 2 jacks

These are 1/4" phone unbalanced input jacks. Nominal input level is -10 dBV. Pin wiring is as follows.



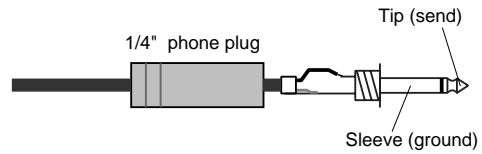
15 ST SUB IN jacks

These are 1/4" phone jacks (unbalanced) for mixing the signal from an external device into the ST bus. Nominal input level is +4 dB. Pin wiring is as follows.



16 CUE SUB IN jacks

These are 1/4" phone jacks (unbalanced) for mixing the signal from an external device into the PFL bus. Nominal input level is +4 dB. Pin wiring is as follows.



17 PHANTOM MASTER switch

This is the master switch for the +48V phantom power supply.

18 VCA EXTERNAL I/O connector

This connector can be connected to an external device which has a VCA control function. This allows the VCA control functionality of the other device to which this connector is connected to be controlled from a single console. If the M3000A is to be the master for the VCA control, set the VCA MASTER/SLAVE switch (14) to the MASTER position. If the M3000A is to be the slave, set the VCA MASTER/SLAVE switch to the SLAVE position. Pin wiring is as follows.

Pin#	Assignment
1	VCA control 1
2	VCA control 2
3	VCA control 3
4	VCA control 4
5	VCA control 5
6	VCA control 6
7	VCA control 7
8	VCA control 8
9	Ground

19 VCA MASTER/SLAVE switch

When an external device with VCA control functionality is connected to the VCA EXTERNAL I/O connector, this switch determines whether or not the M3000A will be the master for the VCA control. If the M3000A is to be the VCA control master, set this switch to the MASTER position. If the M3000A is to be the slave, set this switch to the SLAVE position.

20 CUE CONTROL jack

When using two M3000A consoles, connect their respective CUE CONTROL jacks with a standard unbalanced shielded cable. If this is done, turning on the PFL switch of one M3000A to select the PFL bus as the monitor source will allow you to monitor the PFL bus of the other console as well.

②① MIDI IN/OUT/THRU connectors

These are standard five-pin MIDI connectors. By connecting a sequencer or personal computer to these connectors, you can select scenes remotely, or backup scene memories. If two or more M3000A consoles are connected via MIDI, a scene selection on one M3000A can simultaneously switch the scene on the other M3000A(s).

●MIDI IN connector

MIDI messages are received at this connector. Use a MIDI cable to connect the MIDI OUT connector of the external MIDI device to this connector.

●MIDI OUT connector

MIDI messages are transmitted from this connector. Use a MIDI cable to connect the MIDI IN connector of the external MIDI device to this connector.

●MIDI THRU connector

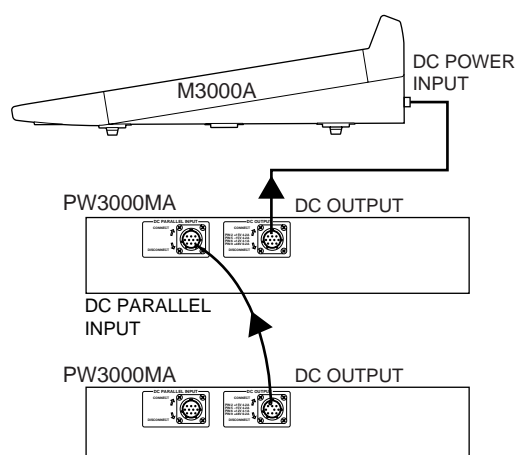
Messages received at the MIDI IN connector are re-transmitted without change from this connector. For example if three or more M3000A consoles are connected via MIDI, you would connect the MIDI OUT connector of the first unit (the master) to the MIDI IN connector of the second unit (slave), and connect the THRU connector of the second unit to the MIDI IN connector of the third unit. With these connections, selecting a scene on the first M3000A will cause the scene to change on the second and third units in the same way.

②② DC POWER INPUT connector

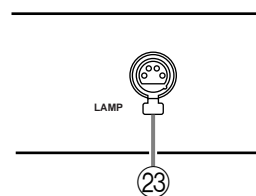
Connect the included PW3000MA power supply to this connector to supply power to the M3000A.

Note: Make sure that the PW3000MA is powered-off before connecting or disconnecting the power supply cable.

It is also possible to connect two PW3000MA units in parallel as shown in the following diagram. In this case, the two PW3000MA units will each supply 50% of the power in normal operation. Even in the unlikely event that one of the PW3000MA units failed, the other PW3000M will supply 100% of the power, ensuring an uninterrupted power supply.



Output connector for illumination power supply



②③ LAMP connector

This is a four-pin female XLR type output connector. It supplies power to the optional lamp.

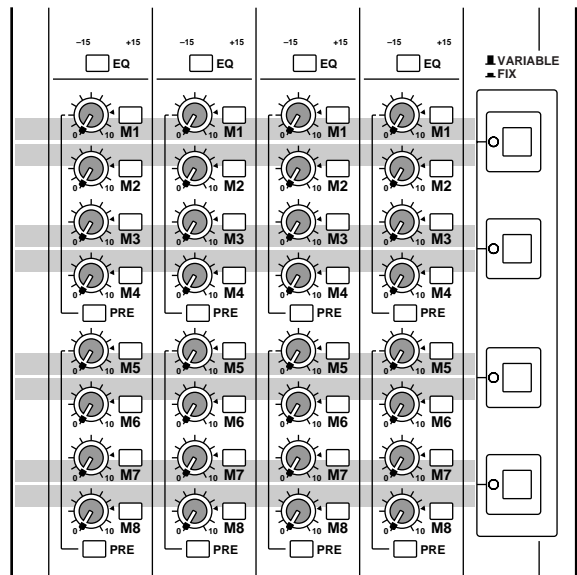
About the GA Diversity functionality

The GA Diversity functionality of the M3000A allows you to switch the MIX buses 1–8 between acting as group buses (output level from the input channels will be fixed) or acting as AUX buses (output level from the input channels will be variable).


This functionality lets you use MIX bus pairs 1/2, 3/4, 5/6, or 7/8 either as group buses or as AUX buses, and gives you the flexibility to configure the console as 8 group buses/8 AUX sends, 4 group/12 AUX send, or 16 AUX send, etc.

Note: MIX buses 9–16 always function as AUX buses.

be fixed. At this time, M1–M8 controls of the input channels will have no effect.




Using MIX buses 1–8 as group buses

1. Of the four switches in the variable/fix select section (page 13), set the switches to the FIX position () for the MIX buses that you wish to use as group buses.

From top to bottom, the switches of the variable/fix select section correspond to MIX buses 1/2, 3/4, 5/6, and 7/8. For MIX buses whose switch is in the FIX position, the output level from the input channels will

2. To send the signal from an input channel to that MIX bus, turn on the M1–M8 ON switch for the corresponding MIX bus.
The post-fader signal of the input channel will be sent to the corresponding MIX bus (FIX).

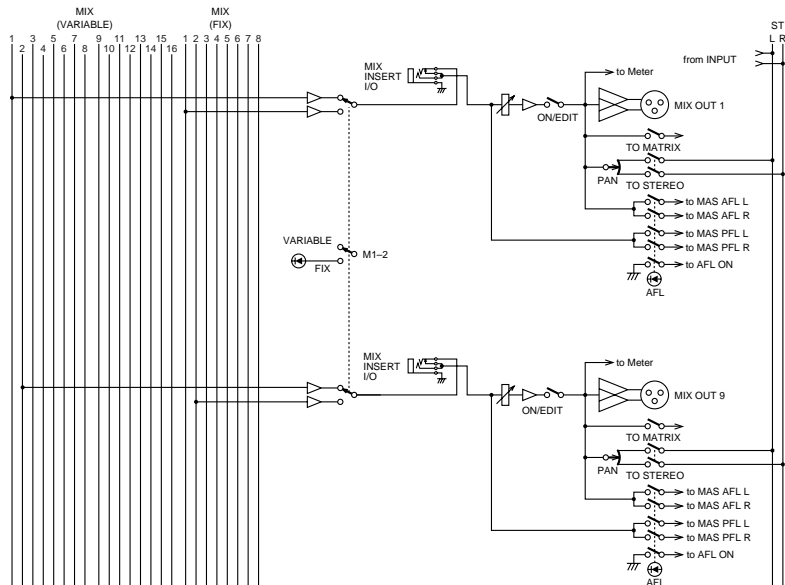
Using MIX buses 1–8 as AUX buses

1. In the variable/fix select section (page 13), set the desired switch(es) M1–M4 to the VARIABLE position () for the MIX buses that you wish to use as AUX buses.

With this setting, the output level from the input channels to the corresponding MIX bus can be adjusted.

2. To send the signal from the input channel to the desired MIX bus, turn on the M1–M8 ON switch for the corresponding MIX bus. Then adjust the M1–M8 control(s) for the desired mix bus(es) to the appropriate level.

The post-fader signal from the input channel will pass through the M1–M8 controls, and will be sent to the corresponding MIX bus (VARIABLE).



About the Scene Memory function

What is scene memory?

Scene memory is a function which stores the on/off status of the mono/stereo input channels and of MIX buses 1–12, 13/14, 15/16 and ST A as one of 128 “scenes.” A scene that has been stored can be recalled instantly at a touch of a switch.

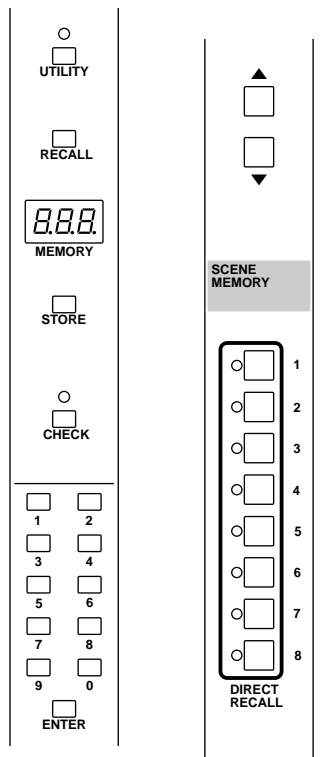
It is also possible to select scenes remotely from an external device connected to the M3000A’s MIDI IN, or conversely to transmit a scene recall operation from the MIDI OUT connector as a MIDI program change message.

With the factory settings, the M3000A’s scene memories are set as follows. However, the scenes of memory numbers 1–128 can be rewritten as desired.

Memory number 1	all on
Memory number 2	all off
Memory number 3	all on
Memory number 4	all off
Memory number 5	all on
Memory number 6	all off
Memory number 7	all on
Memory number 8	all off
Memory numbers 9–128	no data
Memory number 129	all on
Memory number 130	all off

Note: With the factory settings, memory 1 will be selected when the power is first turned on.

Scene memory operations are performed in the Control section.



About the modes of the Scene Memory function

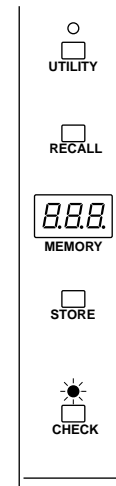
The Scene Memory function has the following three modes.

●Normal mode (refer to page 32)

In this mode you can recall and store scenes normally. When the M3000A is in Normal mode, the CHECK switch and UTILITY switch indicators of the control section will be dark.

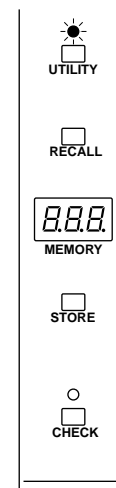
●Check mode (refer to page 33)

In this mode you can confirm the settings of a scene before you actually recall it, or edit the on/off settings of each input channel or mix bus before storing a scene. When the M3000A is in Check mode, the indicator of the CHECK switch in the control section will light.



●Utility mode (refer to page 34)

In this mode you can make various settings related to scene memory and MIDI. When the M3000A is in Utility mode, the indicator of the UTILITY switch in the control section will light.



Operations in normal mode

Storing a scene (normal mode)

1. Make sure that the M3000A is in normal mode, and use the ON/EDIT switches of the mono/stereo input channels, the mix section and the STEREO A section to make the desired on/off settings.

Note: In normal mode, operation of all ON/EDIT switches will affect the signal which is actually output. If you are conducting a rehearsal or actual performance and wish to make on/off settings without affecting the signals that are being output, use Check mode.

2. Use the control section ▲/▼ switches or the 0–9/ENTER buttons of the control section to make the MEMORY display indicate the memory number (1–128) into which you wish to store the scene. (Memory numbers 129/130 are read-only, and cannot be selected.)

The selected memory number will blink in the MEMORY display. Scenes which are stored in memory numbers 1–8 can be selected at one touch using the DIRECT RECALL 1–8 switches. If you need one-touch access to a scene memory, it is convenient to store it in one of these memory numbers.

Note: When you perform the Store operation, the contents that were previously in that memory number will be erased, and cannot be recovered. Be aware of this as you select of a store destination.

3. Press the STORE switch.
The MEMORY display will blink “*ST*,” indicating that the M3000A is ready to store the scene.
4. To execute the Store operation, press the STORE switch once again.
If you decide not to store, you can cancel the operation by pressing any switch other than STORE.

Note: If memory protect is on, the MEMORY display will indicate “*PR*,” and it will not be possible to execute the Store operation. Disable memory protect, and execute the Store operation once again. (For details on disabling memory protect, refer to page 34.)

Note: STEREO B OUT is not affected by scene memories.

Recalling a scene (normal mode)

1. Use the control section ▲/▼ switches or the 0–9/ENTER buttons of the control section to make the MEMORY display indicate the memory number (1–130) that you wish to recall.

The selected memory number will blink. Read-only memory numbers 129/130 can be selected only by the 0–9/ENTER buttons. When a mute group is being used, memory numbers 1–8 can be selected only by the 0–9/ENTER buttons.

2. Press the RECALL switch.
The selected scene memory will be recalled.

Note: If no data has been stored in the selected scene, the MEMORY display will indicate “*no d*,” and the scene will not be recalled.

3. To instantly recall a memory number 1–8, press the desired DIRECT RECALL 1–8 switch.

With the factory settings, the scenes of memory numbers 1–8 can be recalled directly by the DIRECT RECALL 1–8 switches. (This is referred to as “direct recall.”) In this case, it is not necessary to press the RECALL switch, and the scene will change instantly. If you press the ▲/▼ switches following a direct recall operation, the scene memory number which had been selected before you pressed the DIRECT RECALL 1–8 switch will blink in the display. This allows you to quickly return to the previous scene number even if you used direct recall while selecting consecutive scene memories.

Note: The DIRECT RECALL 1–8 switches can also be used as mute group switches to add/defeat mute groups. If they are being used as mute group switches, the DIRECT RECALL function will be disabled. For details, refer to page 36.

Operations in check mode

In check mode you can verify the settings of a scene before recalling it, or edit the on/off status of the ON/EDIT keys without affecting the internal audio signals. To move from normal mode to check mode, press the CHECK switch in the control section.

Verifying a scene before you recall (Check mode)

1. If the M3000A is in normal mode, press the control section CHECK switch.
The CHECK switch LED will light, and the M3000A will enter check mode.
2. Use the control section ▲/▼ switches or the 0–9/ENTER buttons to make the MEMORY display indicate the scene number that you wish to check. (If you use the 0–9 buttons to change the number, your selection will not be finalized until you press the ENTER button.)
The CHECK indicators of the input channels, mix section, and STEREO A section will indicate the on (lit)/off (dark) status of that scene. This allows you to verify the settings of each channel before actually recalling that scene.
3. To recall the selected scene, press the RECALL switch.
The scene will be recalled, and you will simultaneously exit check mode and return to normal mode. (In this case, the operation of step 4 is not necessary.)
4. To exit check mode without changing the scene, press the CHECK switch once again.
The M3000A will return to normal mode, and the CHECK indicator will go dark.

Note: Check mode cannot be used together with the DIRECT RECALL 1–8 switches. When the M3000A is in check mode, pressing a DIRECT RECALL 1–8 switch will cause the corresponding scene to be recalled immediately, and the M3000A will forcibly return to normal mode.

Storing after editing a scene (Check mode)

In check mode, you can edit the on/off state of the ON/EDIT switches without affecting the actual on/off settings. This is convenient when you wish to store a scene for later use while maintaining the current on/off settings.

1. When the M3000A is in normal mode, press the control section CHECK switch.
The CHECK switch LED will light, and the M3000A will enter check mode.
2. Use the ▲/▼ switches of the control section or the 0–9/ENTER buttons to make the MEMORY display indicate the scene number for the desired storing destination. (If you press a 0-9 button to change the number, it will be confirmed when you press the ENTER button.)
The CHECK indicators of the input channels, mix section, and STEREO A section will be lit or dark to indicate the on/off status of that scene.
3. Use the CHECK indicator ON/EDIT switches of the input channels, mix sections, and STEREO A section to edit the on/off state.
In check mode, the ON/EDIT switches will edit the on/off state of the scene, but will not affect the actual on/off state. If even one point of the on/off state of the scene is modified, a decimal point will light in the lower right of the MEMORY display.
4. To store the edited on/off settings in the scene, press the STORE switch twice.
In check mode, the STORE switch functions in the same way as in normal mode. You can cancel the Store operation by pressing a different switch before pressing the STORE switch the second time.
5. To exit check mode, press the CHECK switch once again. Alternatively, you can recall the scene that you stored.
The M3000A will return to normal mode, and the CHECK indicator will go dark.

Note: If the M3000A receives MIDI program change messages in check mode, check mode will be cancelled.

Operations in utility mode

In utility mode you can modify various settings related to scene memory operations. Operations such as Bulk Out and Bulk Dump Request are also performed in this mode.

Basic operation in utility mode

1. When the M3000A is in normal mode, press and immediately release the control section UTILITY switch.

The UTILITY switch indicator will light, and the M3000A will enter utility mode. At this time, the MEMORY display will alternately show the currently selected utility item and the current parameter value.

Note: If you continue holding the UTILITY switch for approximately one second or longer, you will exit utility mode and return to normal mode.

2. Press the UTILITY switch repeatedly until the desired item appears in the MEMORY display. For the available items, refer to the section "Utility items" below.
3. Use the control section ▲/▼ switches to modify the setting of the currently selected item. For the available values of each item, refer to the section "Utility items" below.
 - If you select Bulk Out or Bulk Dump Request parameters, or if you select the Memory Initialize parameter, the function will be executed when you press the STORE switch.
4. To exit utility mode, press and hold the UTILITY switch for one second or longer. The M3000A will return to normal mode. If the display shows "br" (bulk request), you can also return to normal mode by pressing the UTILITY switch once again.

Note: If the M3000A receives MIDI program change messages in utility mode, it will return to normal mode.

Utility items

Utility mode includes the following items and parameter settings.

Utility item	Parameter values
bL (battery check)* (*.* is voltage value)
This indicates the voltage of the internal battery. If the voltage drops to 2.5V or less, the indicator will show "L" and the voltage alternately. If an abnormal voltage occurs, the indicator will show "L" and "-."	

alternately. If either of these displays appears, immediately contact your dealer or a Yamaha service center to have the battery replaced.

P (memory protect) on/off
(Factory setting: off)

This is a memory protect function to prevent important data from being overwritten. When this is turned on, it will not be possible to modify or save scene data. Also, even if a bulk dump is received from an external MIDI device, the contents of memory will not be rewritten.

oP (recall operation) dir/GrP
(Factory setting: dir)

This changes the operation of the DIRECT RECALL 1-8 switches. When this is set to "dir", the DIRECT RECALL 1-8 switches will function as direct recall switches which directly recall memory numbers 1-8. When this is set to "GrP", the DIRECT RECALL 1-8 switches will function as mute group switches to add/defeat mute groups 1-8. (For details on mute groups, refer to page 36.)

in (memory initialize) ALL/1-128

This erases all scene memories (ALL) or an individual scene memory (1-128). After selecting "ALL" or "1" ~ "128", press the STORE switch to erase the specified scene memory(s). Be aware that once a scene memory is erased, it cannot be recovered. If the "P" item is turned on, you cannot initialize the memory.

CH (MIDI channel) 1-16 (Factory setting: 1)

This specifies the MIDI channel on which MIDI messages will be transmitted and received via the MIDI IN/OUT connectors.

PE (program change transmission/reception) off/on/LoC (Factory setting: on)

This specifies whether or not program changes will be transmitted and received via the MIDI IN/OUT connectors. If this is set to "off", program changes will not be transmitted or received. If this is set to "on", program changes 0-127 received from an external device will select scenes 1-128 that were saved in the M3000A's scene memory. (However if the oP parameter is set to "GrP", incoming program changes 0-7 will be ignored.) Also, when a scene for which data has been saved is recalled by an operation on the M3000A, the corresponding program change message will be transmitted. (When the oP parameter is set to "GrP", program changes 0-7 can be output from the MIDI OUT connector by using the 0-9/ENTER buttons and the REC ALL key.) If this is set to "LoC" (local), the corresponding program change will be transmitted even when you select a scene for which data has not been saved, thus allowing you to select programs on an external device.

CC (control change transmission/reception)
oFF/GrP/on (Factory setting: on)

This specifies whether or not control change messages will be transmitted and received via MIDI IN/OUT. If this is set to “oFF,” control change messages will not be transmitted or received. If this is set to “on,” control changes 1–104 received from an external device will switch the corresponding channel on/off. (If mute groups can be used, control changes 105–112 can also be used to switch mute groups 1–8 on/off.) Also, when the ON/EDIT switches of the M3000A are operated, the corresponding control change will be transmitted. If this is set to “GrP,” only control change numbers (105–112) which correspond to mute groups will be transmitted.

Po (program change reception omni on/off)
on/oFF (Factory setting: oFF)

This specifies whether or not the MIDI channel specified by the CH (MIDI channel) parameter will be valid. When this setting is “on,” program changes will be received on all MIDI channels. When this setting is “oFF,” program changes will be received only on the MIDI channel specified by the CH (MIDI channel) parameter.

Eb (echo back)on/oFF (Factory setting: oFF)

When this parameter is “on,” messages received at the MIDI IN connector will be retransmitted from the MIDI OUT connector. However if a bulk dump request is received, bulk dump data will be output, and the bulk dump request message itself will not be retransmitted (echoed).

bo (bulk out)ALL/1–128

This operation transmits all scene memories (ALL) or a specified scene memory (1–128) as MIDI bulk dump data from the MIDI OUT connector. Select “ALL” or “1” ~ “128” and then press the STORE switch to begin transmission. During transmission, the display will indicate “- - -”

br (bulk dump request)ALL/1–128

This operation transmits a request for a bulk dump from the MIDI OUT connector. If the respective MIDI IN/OUT connectors of two M3000A units are connected, such a request will cause all scene memories (ALL) or the specified scene memory (1–128) of the other M3000A to overwrite the scene memory (or memories) of this M3000A. After selecting “ALL” or “1” ~ “128,” press the STORE switch to transmit the bulk dump request MIDI message.

Control change table

The following table shows the M3000A channel/bus to which each control number is assigned. If the CC (control change) item is turned ON in utility mode, a control change message with a value of 64-127 will turn on the corresponding channel/bus, and a control change message with a value of 0-63 will turn it off. In the same way, operating the ON/EDIT switches of the M3000A will transmit the corresponding control change message from the MIDI OUT connector. Also, if mute groups can be used (refer to page 36), control change numbers 105–112 can be used to switch mute groups 1–8 on/off.

Control No.	ON/EDIT Switch	Control No.	ON/EDIT Switch
0		30	CH INPUT 30
1	CH INPUT 1	31	CH INPUT 31
2	CH INPUT 2	32	CH INPUT 32
3	CH INPUT 3	33	CH INPUT 33
4	CH INPUT 4	34	CH INPUT 34
5	CH INPUT 5	35	CH INPUT 35
6	CH INPUT 6	36	CH INPUT 36
7	CH INPUT 7	37	CH INPUT 37
8	CH INPUT 8	38	CH INPUT 38
9	CH INPUT 9	39	CH INPUT 39
10	CH INPUT 10	40	CH INPUT 40
11	CH INPUT 11	41	CH INPUT 41
12	CH INPUT 12	42	CH INPUT 42
13	CH INPUT 13	43	CH INPUT 43
14	CH INPUT 14	44	CH INPUT 44
15	CH INPUT 15	45	CH INPUT 45
16	CH INPUT 16	46	CH INPUT 46
17	CH INPUT 17	47	CH INPUT 47
18	CH INPUT 18	48	CH INPUT 48
19	CH INPUT 19	49	ST INPUT 1
20	CH INPUT 20	50	ST INPUT 2
21	CH INPUT 21	51	ST INPUT 3
22	CH INPUT 22	52	ST INPUT 4
23	CH INPUT 23	53	CH INPUT 49
24	CH INPUT 24	54	CH INPUT 50
25	CH INPUT 25	55	CH INPUT 51
26	CH INPUT 26	56	CH INPUT 52
27	CH INPUT 27	57	CH INPUT 53
28	CH INPUT 28	58	CH INPUT 54
29	CH INPUT 29	59	CH INPUT 55

Control No.	ON/EDIT Switch	Control No.	ON/EDIT Switch
60	CH INPUT 56	90	
61	MIX 1 OUT	91	
62	MIX 2 OUT	92	
63	MIX 3 OUT	93	
64	MIX 4 OUT	94	
65	MIX 5 OUT	95	
66	MIX 6 OUT	96	
67	MIX 7 OUT	97	
68	MIX 8 OUT	98	
69	STEREO A OUT	99	
70		100	
71		101	
72		102	
73	MIX 9 OUT	103	
74	MIX 10 OUT	104	
75	MIX 11 OUT	105	MUTE GROUP 1
76	MIX 12 OUT	106	MUTE GROUP 2
77	MIX 13/14 OUT	107	MUTE GROUP 3
78	MIX 15/16 OUT	108	MUTE GROUP 4
79		109	MUTE GROUP 5
80		110	MUTE GROUP 6
81		111	MUTE GROUP 7
82		112	MUTE GROUP 8
83		113	
84		114	
85		115	
86		116	
87		117	
88		118	
89		119	

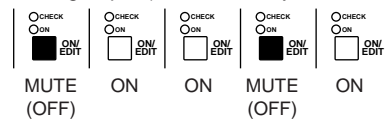
- If the CC (control change) parameter of utility mode is set to “G r P” (mute group), only control change numbers (105–112) which correspond to mute groups will be transmitted or received.

Using mute groups

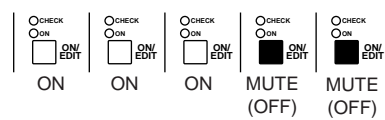
When the utility mode oP (recall operation) parameter is set to “G r P” (refer to page 34), the DIRECT RECALL 1–8 switches will function as “mute group” switches, and the scenes of memory numbers 1–8 can be used as mute groups. If two or more DIRECT RECALL switches are turned on, channels or buses which are off (muted) in the corresponding scenes will be turned off (while the ON status stored in these scenes is ignored).

The following diagram shows the difference in operation between when the oP parameter is set to “d ir” (direct recall) and “G r P” (Mute group). If the oP parameter is set to “d ir,” recalling a new scene will cause the channels or buses to be switched on/off according to the settings saved in that scene. In contrast if this parameter is set to “G r P,” two or more DIRECT RECALL 1–8 switches can be turned on, and all channels or buses which are muted (off) in any of the mute groups will be muted.

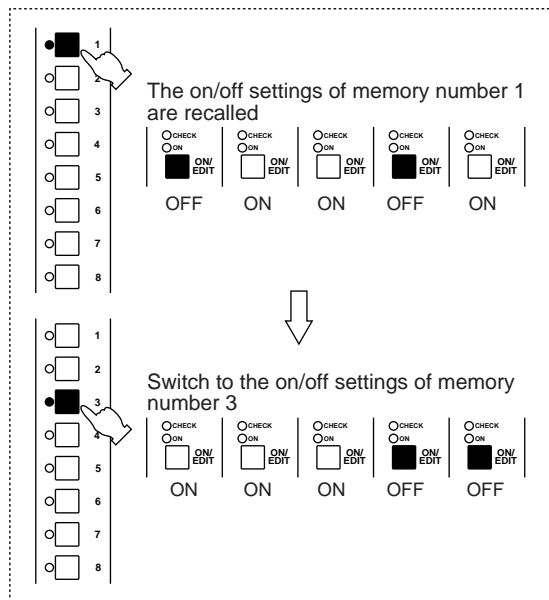
Mute group 1 (scene memory number 1)



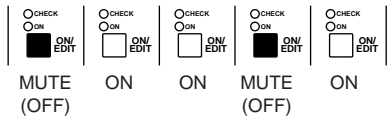
Mute group 3 (scene memory number 3)



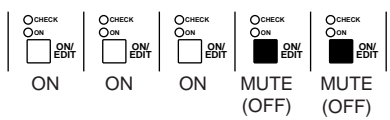
When Direct Recall is used



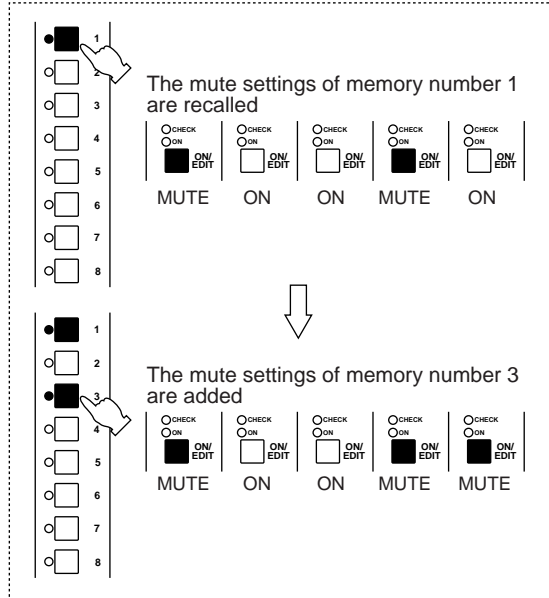
Mute group 1 (scene memory number 1)



Mute group 3 (scene memory number 3)



When Mute Group is used



Adding/defeating mute groups

1. Store the channel or bus mute settings that you wish to use as a mute group in a memory number 1–8.
2. In utility mode, select the oP (recall operation) item, and switch the display to “URP.” (For details refer to page 34.)
3. Either press and hold the UTILITY switch for one second or more, or press the UTILITY switch repeatedly to return to normal mode.
Even if the Utility mode item oP is set to “URP,” you can edit scenes 1–8 either by using the 0–9/ENTER buttons to specify the scene number or by entering check mode.
4. Press a DIRECT RECALL 1–8 switch.
The corresponding mute group will become active, and the channels or buses which are turned off (muted) in that scene will be muted.
5. As desired, press other DIRECT RECALL 1–8 switches.
Mute groups will be added, and channels or buses which are turned off (muted) on those scenes will be muted.

6. If you wish to defeat a mute group, press the corresponding DIRECT RECALL 1–8 switch.
The mute group will be canceled.

Note:

- The mute settings used in a mute group are the same as the on/off settings of the scenes stored in memory numbers 1–8.
- Even while using mute groups, you can use the ▲/▼ switches or 0–9/ENTER buttons to recall memory numbers 9–128. However in this case, the currently-muted channels or buses will not change until you defeat the applicable mute groups.
- If you use the 0–9/ENTER buttons to recall memory number 129 (all on) or 130 (all off), the mute group settings of the DIRECT RECALL 1–8 switches will be defeated.

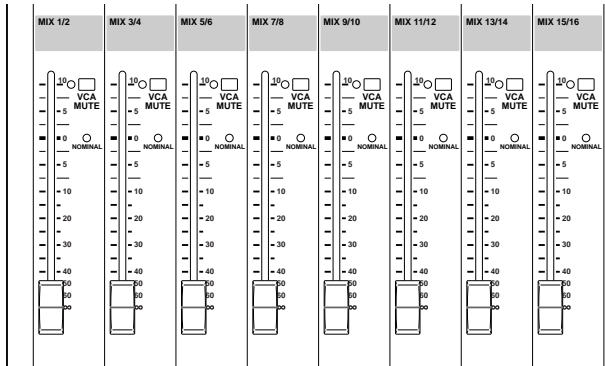
About the local control circuit

If an error occurs in the system of the M3000A, the on/off control of each input channel and bus will automatically switch from the scene memory circuit to the local control circuit, allowing you to operate the M3000A like a conventional analog mixer. In this case, the ON/EDIT switch of each input channel or mix channel will function like a conventional ON/OFF (mute) switch. However, the MEMORY display will go dark, and the switches for the Scene Memory functionality cannot be operated.

Note: If the cause of the system error lies in the power supply, it may not be possible to use the local control circuit either.

About the VCA functionality

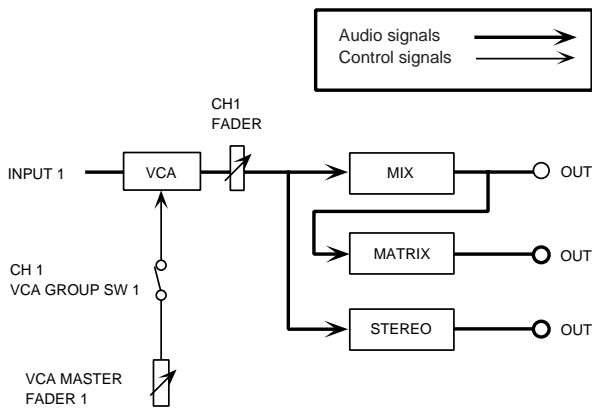
The VCA master section of the M3000A contains eight VCA master faders. These VCA master faders 1–8 can be used to control the overall input level of input channels assigned to the corresponding VCA groups 1–8.



If you wish to use the VCA functionality, set the rear panel VCA MASTER/SLAVE switch to the MASTER position.

Basic function of the VCA master faders

The VCA master faders control the gain of the pre-fader signal of input channels which are assigned to the corresponding VCA group. The following diagram shows the flow of audio signals and control signals (CV) when input channel 1 is assigned to VCA group 1.

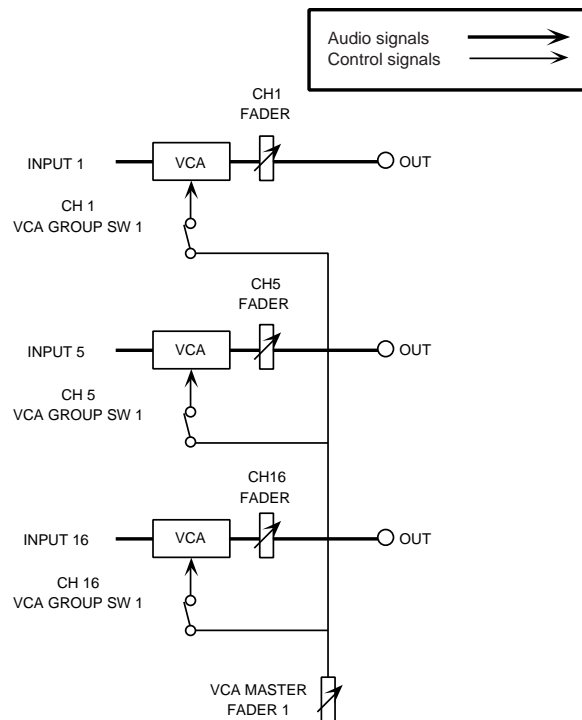


- The gain of an input channel which is assigned to a VCA group can be controlled both by the channel fader and by the VCA master fader. For example if the channel fader is set to 0 dB and the VCA master fader is set to -10 dB, the gain will be $0\text{ dB} + (-10\text{ dB}) = -10\text{ dB}$.
- When you operate a VCA master fader, it will affect all MIX buses (except for MIX buses set to pre-fader), matrix, and STEREO bus to which a signal is being sent from the corresponding channel.
- When a VCA master fader is in the 0 dB position (the NOMINAL indicator of that fader will be lit) it is in unity gain, and that VCA will produce no boost or cut.

- When the VCA MUTE switch of a VCA master fader is turned on (the indicator beside the switch will be lit), no control signal will be sent from that VCA master fader, and the post-fader signal of input channels assigned to that VCA group will be muted.

Using a single VCA master fader to control multiple channels

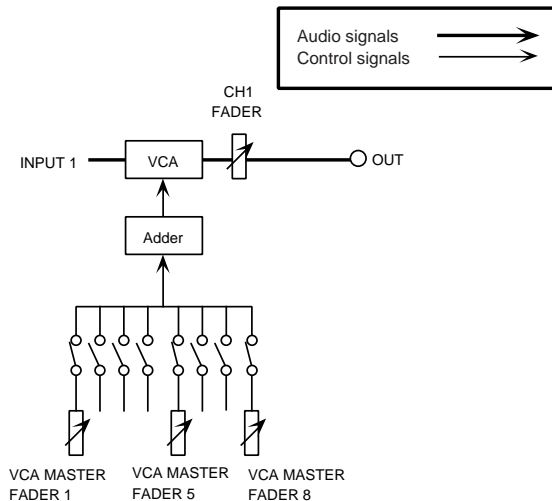
If two or more channels are assigned to the same VCA group, you can use a single VCA master fader to control them. The following diagram shows an example of the signal flow when VCA GROUP select switch 1 is turned on for input channels 1, 5, and 16.



- If two or more input channels are assigned to a VCA group, the gain of each channel can be controlled both by the channel fader and by the VCA master fader.
- When you operate a VCA master fader, it will affect all MIX buses (except for MIX buses set to pre-fader), matrix, and STEREO buses to which the input channel assigned to that VCA group is being sent.
- When a VCA master fader is in the 0 dB position (the NOMINAL indicator of that fader will be lit) it is in unity gain, and that VCA will produce no boost or cut.
- When the VCA MUTE switch of a VCA master fader is turned on (the indicator beside the switch will be lit), the post-fader signal of all input channels assigned to that VCA group will be muted.

Using two or more VCA master faders to control a single channel

As the opposite of the example on the previous page, it is also possible to assign a channel to two or more VCA groups. The following diagram shows an example of signal flow when channel 1 is assigned to VCA groups 1, 5, and 8.

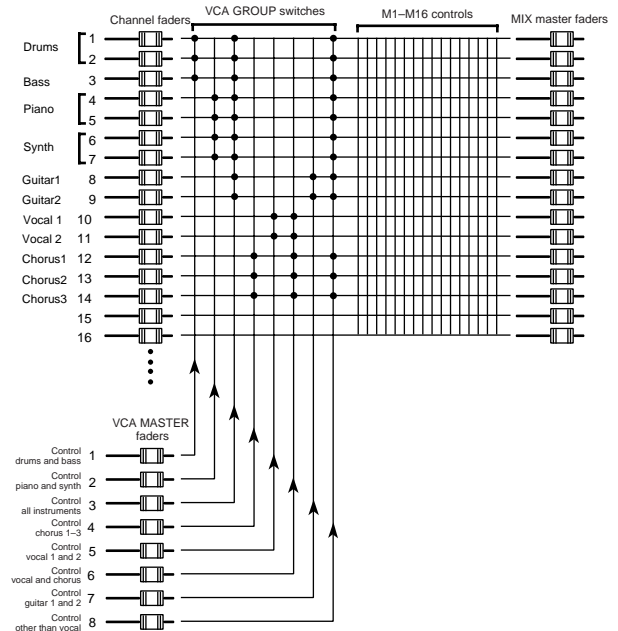


- If an input channel is assigned to two or more VCA groups, the gain of that channel can be controlled both by the channel fader and by the corresponding VCA master faders. For example if the channel fader is set to 0 dB and VCA master faders 1, 5, and 8 are respectively set to -10 dB, the gain will be $0\text{ dB} + (-10\text{ dB}) + (-10\text{ dB}) + (-10\text{ dB}) = -30\text{ dB}$. However the control signal from the VCA is limited so that the gain will not exceed +20 dB at maximum.
- Operating any of the VCA master faders to which the input channel is assigned will affect the MIX buses (except for MIX buses set to pre-fader), matrix, and STEREO buses to which the signal of that channel is being sent.
- If the VCA MUTE switch of the VCA master fader is turned on (the indicator beside the switch will be lit), the post-fader signal of all input channels assigned to that VCA group will be muted. This is convenient when you wish to mute/un-mute multiple channels without operating the fader.
- The VCA of the input channel is supplied with a signal which sums the control signals from all corresponding VCA master faders. If a VCA master fader is in the 0 dB position (the NOMINAL indicator of that fader will be lit), the gain will be unity, and that VCA will produce no boost or cut.

Using multiple VCA master faders to control multiple channels (overlapping VCA)

In sound reinforcement mixing it is often necessary to mix the same inputs at different levels as the on-stage performance progresses. In such situations, you can assign multiple input channels to multiple VCA groups (this is referred to as “overlapping VCA”), and control most levels using only the eight VCA master faders.

The following diagram is an example of multiple input channels being controlled by multiple VCA master faders; VCA master fader 1 controls the drums and bass of inputs 1–3, VCA master fader 2 controls the piano and synth of inputs 4–7, and so on.



Even in this case, you will use the mix section or matrix section to specify the output mix and the output destination speakers, but you can perform most of the actual level changes using only the VCA master faders; for example when you wish to raise or lower only the vocals you can use VCA master fader 5, and when you wish to control both vocals and chorus you can use VCA master fader 6.

- The gain of each channel can be controlled both by the channel fader and by the corresponding VCA master faders. For example in the above example if you set the channel faders for vocal 1/2 (inputs 10/11) to 0 dB, and set VCA master faders 5 and 6 to -5 dB respectively, the gain would be $0\text{ dB} + (-5\text{ dB}) + (-5\text{ dB}) = -10\text{ dB}$.
- The faders of VCA groups which do not need to be adjusted must be set to unity gain (the 0 dB position). (The NOMINAL indicator of these faders will light.)

- If the VCA MUTE switch of a VCA master fader is turned on (the indicator beside the switch will light), the post-fader signal of all input channels assigned to that VCA group will be muted. This is convenient when you wish to simultaneously mute or un-mute multiple channels without operating the faders.
- By using this in conjunction with the Scene Memory function, you can also mute only specific inputs within a VCA group. In the above example, if you recall a scene in which chorus 1–3 (inputs 12–14) are turned off, chorus 1–3 will be muted from VCA groups 4, 6, and 8.

Error messages

One of the following error messages may appear in the MEMORY display while operating the M3000A or when the power is turned on. If this occurs, refer to the following explanations and take the appropriate action.

<i>rEr</i>	An error occurred while receiving MIDI data. If an error occurs while received MIDI data, this error message will be displayed for several seconds.
<i>bFL</i>	While transmitting or receiving MIDI data, the memory buffer became full. If the memory buffer becomes full while MIDI data is being transmitted or received, this error message will be displayed for several seconds. If this error is displayed while transmitting or receiving MIDI data, turn the <i>Eb</i> (MIDI echo back) parameter in Utility mode off (OFF).
<i>Pro</i>	Since memory protect is turned on, it is not possible to store data or receive a bulk dump. This error message will be displayed for several seconds if you attempt to store into memory or receive a bulk dump when the memory is protected.
<i>CHE</i>	A check sum error has occurred during a bulk dump. This error message will be displayed for several seconds if a check sum error occurs while receiving bulk dump MIDI data. Check the MIDI connections and whether the transmitting device is set appropriately.

<i>Lo</i>	The internal battery voltage has fallen below 2.5V or is an abnormal value (in this case the display will indicate “-.-”). This error message will be displayed when the power is turned on or when the Utility mode <i>bE</i> (battery check) parameter is selected. If this message appears, contact your dealer or a Yamaha service center to have the battery replaced as soon as possible. If this error message appears when the power is turned on, press any switch to return to the normal display.
<i>nod</i>	You attempted to recall a scene memory which contained no data. This error message will be displayed for several seconds if the scene memory you attempted to recall contains no data.
<i>non</i>	There is no data in any scene memory. This will be displayed if all scene memories have been erased in utility mode, or if the power was turned on in that condition and you attempted to store without specifying a number.
<i>E*</i>	A system error has occurred. If this error message appears, the M3000A will not function correctly. Contact a nearby Yamaha service center to have the unit repaired.

(* is an error number)

Specifications

General specifications

0 dB is referenced to 0.775 Vrms.

Total Harmonic Distortion (Master output)	Less than 0.1% (THD+N) 20 Hz–20 kHz @ +14 dB 600 Ω
Frequency Response (Master Output)	0+1, –3 dB 20 Hz–20 kHz @ +4 dB 600 Ω
Hum & Noise (20 Hz–20 kHz)*1 Rs = 150 Ω	–128 dB Equivalent Input Noise. –97 dB Residual Output Noise. (MATRIX OUT)
Input Gain = Max. Input Pad = OFF	–99 dB Residual Output Noise. (OTHERS)
Input sensitivity=–60 dB	
–64 dB(68 dB S/N)	MIX OUT Master Level control and one Ch fader at nominal level.
–80 dB(84 dB S/N)	STEREO OUT Master fader at nominal level and all Ch assign SW's off and all MIX to ST SW's off.
–75 dB(79 dB S/N)	MIX OUT(VARIABLE) Master Level control at nominal level and all Ch assign SW's off.
–81 dB(85 dB S/N)	MIX OUT(FIX) Master Level control at nominal level and all Ch assign SW's off.
–90 dB(94 dB S/N)	MATRIX OUT Master level control at nominal level and all Matrix Mix controls at minimum level.
Crosstalk	–80 dB @ 1 kHz adjacent inputs. –70 dB @ 1 kHz input to output.(CH INPUT) –50 dB @ 1 kHz input to output.(ST CH INPUT)
Maximum Voltage Gain	
70 dB	CH INPUT to DIRECT OUT
60 dB	CH INPUT to CH INSERT OUT
80 dB	CH INPUT to MIX OUT(VARIABLE, Pre Fader)
90 dB	CH INPUT to MIX OUT(VARIABLE, Post Fader)
84 dB	CH INPUT to MIX OUT(FIX;1–8, Post Fader)
84 dB	CH INPUT to STEREO A OUT(CH to ST)
80 dB	CH INPUT to STEREO B OUT(CH to ST)
100 dB	CH INPUT to STEREO A OUT(VARIABLE, MIX;Post Fader) (via MIX to ST)
96 dB	CH INPUT to MATRIX OUT(VARIABLE, MIX;Post Fader)(via MIX to MATRIX)
70 dB	CH INPUT to MONITOR OUT(PFL)
47 dB	ST CH A INPUT to MIX OUT(VARIABLE;1–12, Pre Fader)
54 dB	ST CH A INPUT to MIX OUT(FIX;1–8)
44 dB	ST CH B INPUT to MIX OUT(FIX;1–8)
70 dB	TALKBACK IN to MIX OUT
6 dB	SUB IN to STEREO B OUT, MONITOR OUT, MATRIX OUT
10 dB	SUB IN to STEREO A OUT, MIX OUT
6 dB	2TR IN 1 to MONITOR OUT
17.8 dB	2TR IN 2 to MONITOR OUT
CH INPUT PAD SW	26 dB
CH INPUT GAIN control	44 dB variable
ST CH INPUT GAIN control	40 dB variable (ST CH A INPUT) 30 dB variable (ST CH B INPUT)
CH INPUT High Pass Filter	12 dB/octave roll-off below 20–400 Hz at –3 dB point.
CH INPUT Equalization	
+15, –15 dB maximum	
HIGH	1k– 20 kHz (peaking, Q=0.667)
HIGH-MID	400– 8 kHz (peaking, Q=1.41/2.88)
LOW-MID	80–1.6 kHz (peaking, Q=1.41/2.88)
LOW	30– 600 Hz (peaking, Q=0.667)

ST CH INPUT Equalization		
+15, –15 dB maximum		
HIGH	20 kHz (peaking, Q=0.667)	
HIGH-MID	3 kHz (peaking, Q=1.41/2.88)	
LOW-MID	800 Hz (peaking, Q=1.41/2.88)	
LOW	50 Hz (peaking, Q=0.667)	
Phantom Power	+48V	DC is applied to balanced inputs (via 6.8 kΩ current-limiting/isolation resistors) for powering condenser microphones ; may be turned ON or OFF via rear-panel phantom Master switch. When Master is ON, individual channels may be turned ON or OFF via +48V switches(with red LED) on each input channel.
CH LED Indicators		
PEAK		LED(red) built into each CH INPUT turns on when pre-Fader level reaches +18 dB.
NOM		LED(yellow) built into each CH INPUT turns on when pre-Fader level reaches 0 dB.
SIGNAL		LED(green) built into each CH INPUT turns on when pre-Fader level reaches –10 dB.
ST CH LED Indicators		
PEAK		LED(red) built into each ST CH INPUT turns on when pre-Fader [L+R] level reaches +18 dB.
NOM		LED(yellow) built into each ST CH INPUT turns on when pre-Fader [L+R] level reaches 0 dB.
SIGNAL		LED(green) built into each ST CH INPUT turns on when pre-Fader [L+R] level reaches –10 dB.
Oscillator/Noise		Switchable sine wave @ 100 Hz, 1 kHz or 10 kHz(1% T.H.D. @ +4 dB output), or pink noise.
Scene Memory		Direct Scene Memory recall switches (1–8) Switchable Scene Memory recall (1–128)
VU Meters		12 illuminated meters (0VU=+4 dB output @ 600 Ω load) #1 ; MIX1 / MIX9 / MATRIX1 #2 ; MIX2 / MIX10 / MATRIX2 #3 ; MIX3 / MIX11 / MATRIX3 #4 ; MIX4 / MIX12 / MATRIX4 #5 ; MIX5 / MIX13 / MATRIX5 #6 ; MIX6 / MIX14 / MATRIX6 #7 ; MIX7 / MIX15 / MATRIX7 #8 ; MIX8 / MIX16 / MATRIX8 #9 ; STEREO A L #10; STEREO A R #11; STEREO B L / CUE L #12; STEREO B R / CUR R
VU Meter Peak Indicators		LED(red) built into each VU meter turns on when output signal is above the level 3 dB lower than clipping level.
Dimension	Height Depth Width	265 mm 874 mm 2571 mm(56C), 2043 mm (40C), 1779 mm (32), 1515 mm(24)
Weight		128 kg (56C), 108 kg (40C), 95 kg (32), 85 kg(24)

*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.

For European Model
Purchase/User information specified in EN55103-1 and EN55103-2.
Conformed Environment: E1, E2, E3 and E4.

Input/output characteristics

Input specifications

Connection	PAD	Gain Trim	Actual Load Impedance	For Use With Nominal	Input Level			Connector In Mixer
					Sensitivity *6	Nominal	Max before Clip	
CH INPUT (1~24) (1~32) (1~40) (1~56)	0	-60	3 k Ω	50-600 Ω Mics & 600 Ω Lines	-86 dB(0.039 mV)	-60 dB(0.775 mV)	-40 dB(7.75 mV)	XLR-3-31 type *1
	26				-60 dB(0.775 mV)	-34 dB(15.5 mV)	-14 dB(155 mV)	
	0	-16			-42 dB(6.16 mV)	-16 dB(123 mV)	+4 dB(1.23 V)	
	26				-16 dB(123 mV)	+10 dB(2.45 V)	+30 dB(24.5 V)	
ST CH A INPUT [L, R] (1~4)		-30	5 k Ω	600 Ω Lines	-56 dB(1.23 mV)	-30 dB(24.5 mV)	-10 dB(245 mV)	XLR-3-31 type *1
		+10			-16 dB(123 mV)	+10 dB(2.45 V)	+30 dB(24.5 V)	
ST CH B INPUT [L, R] (1~4)		-20	10 k Ω	600 Ω Lines	-46 dB(3.88 mV)	-20 dB(77.5 mV)	0 dB(0.775 V)	Phono Jack *3
		+10			-16 dB(123 mV)	+10 dB(2.45 V)	+30 dB(24.5 V)	
TALKBACK IN			10 k Ω	50-600 Ω Mics	-66 dB(0.388 mV)	-50 dB(2.45 mV)	-20 dB(77.5 mV)	XLR-3-31 type *2
2TR IN 1 [L, R] 2TR IN 2 [L, R]			10 k Ω	600 Ω Lines	-2 dB(0.616 V)	+4 dB(1.23 V)	+24 dB(12.3 V)	XLR-3-31 type *1
					16 dB(158 mV)	-10 dBV(316 mV)	+10 dBV(3.16 V)	Phono Jack *3
CUE SUB IN [L, R] MATRIX SUB IN [L, R]			10 k Ω	600 Ω Lines	-2 dB(0.616 V)	+4 dB(1.23 V)	+24 dB(12.3 V)	Phone Jack(TRS) *4
STEREO SUB IN [L, R] MIX SUB IN (1~16)					-6 dB(388 mV)			
CH INSERT IN (1~24, 32, 40, 56)			10 k Ω	600 Ω Lines	-26 dB(38.8 mV)	0 dB(0.775 V)	+20 dB(7.75 V)	Phone Jack(TRS) *5
STEREO INSERT IN [L, R] MIX INSERT IN (1~16)					-10 dB(245 mV)			

• 0 dB=0.775 Vrms, 0 dBV=1Vrms.

*1 XLR connectors are balanced.

*2 XLR connector is unbalanced.

*3 Phono Jacks are unbalanced.

*4 SUB IN Phone Jacks(TRS) are unbalanced(T=SIGNAL, R=GND, S=GND).

*5 INSERT Phone Jacks(TRS) are unbalanced(T=OUTPUT, R=INPUT, S=GND).

*6 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 level.

Output specifications

Connection	Actual Source Impedance	For Use With Nominal	Output Level		Connector In Mixer
			Nominal	Max before Clip	
STEREO A OUT [L, R] STEREO B OUT [L, R] MIX OUT (1~16) MONITOR OUT [L, R] MATRIX OUT (1~8)	150 Ω	600 Ω Lines	+4 dB(1.23 V)	+24 dB(12.3 V)	XLR-3-32 type *1
CH DIRECT OUT (1~24, 32, 40, 56) CH INSERT OUT (1~24, 32, 40, 56)	600 Ω	10 k Ω Lines	0 dB(0.775 V)	+20 dB(7.75 V)	Phone Jack(TRS) *2
					Phone Jack(TRS) *3
STEREO INSERT OUT [L, R] MIX INSERT OUT (1~16)	600 Ω	10 k Ω Lines	0 dB(0.775 V)	+20 dB(7.75 V)	Phone Jack(TRS) *3
PHONES OUT [L, R]	100 Ω	8 Ω Phones	10 mW	20 mW	Stereo Phone Jack *4
		40 Ω Phones	30 mW	75 mW	

• 0 dB=0.775 Vrms.

*1 All XLR connectors are balanced.

*2 CH DIRECT OUT Phone Jacks(TRS) are unbalanced(T=SIGNAL, R=GND, S=GND).

*3 INSERT Phone Jacks(TRS) are unbalanced(T=OUTPUT, R=INPUT, S=GND).

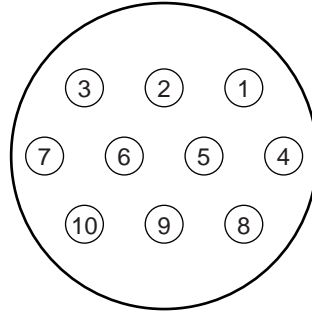
*4 Stereo Phone Jack is unbalanced.

Other

Connector wiring

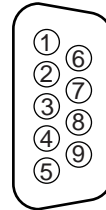
DC POWER INPUT

Pin No.	Signal name
1	Power supply remote
2	+15 V
3	±15 V GND
4	+48 V GND
5	-15 V
6	+12 V
7	+12V GND/ power supply remote
8	Power supply remote
9	+48 V
10	FRAME GND



VCA EXTERNAL I/O

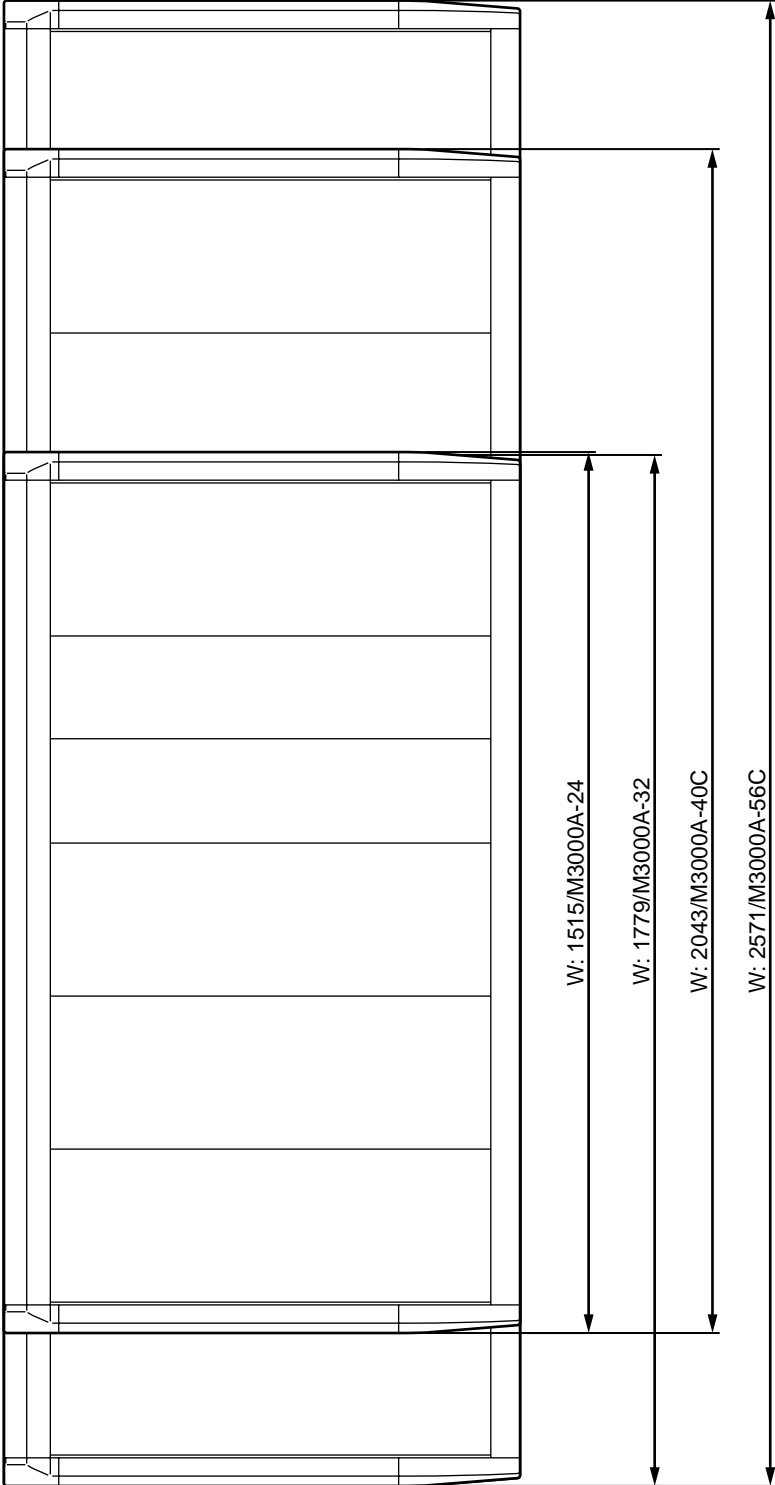
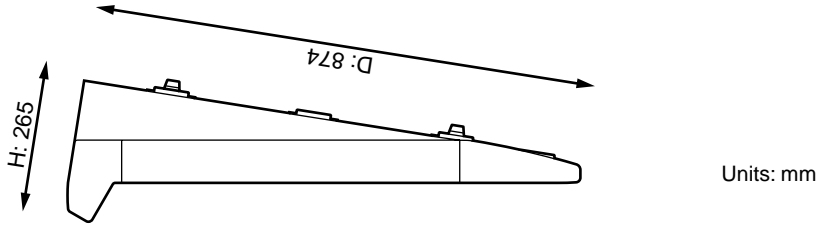
Pin No.	Signal name
1	VCA GROUP 1
2	VCA GROUP 2
3	VCA GROUP 3
4	VCA GROUP 4
5	VCA GROUP 5
6	VCA GROUP 6
7	VCA GROUP 7
8	VCA GROUP 8
9	GND



Included items

Power supply connection cable (3 m, 10 pin)

Dimensions



MIDI data format

1. MIDI Channel

The same channel is used for transmission and reception. Select from channel numbers 1–16.

2. MIDI Program Change

Program change numbers 0–127 correspond to Scene Memory numbers 1–128. This correspondence cannot be changed. However when Mute Group is selected, program change numbers 0–7 cannot be transmitted or received. (Since memory numbers 1–8 will not correspond to program change numbers 0–7.)

In the case of OMNI [on], program changes of all MIDI channels are received.

Transmission/reception can be switched [LoC/on/off]. When [LoC] is selected, program changes will be transmitted to control an external MIDI device even when a scene memory with no data is recalled.

3. MIDI Control Change

Control change messages correspond to the various ON/EDIT switches and to the DIRECT RECALL switches. This correspondence cannot be changed. However, control change numbers 105–112 correspond to the DIRECT RECALL 1–8 switches only when MUTE GROUP is selected.

Transmission/reception can be switched [on/GrP/off]. When [GrP] is selected, only control change messages corresponding to mute groups will be transmitted or received.

MIDI Control Change No.	ON/EDIT switch Assign
1–48	CH INPUT(1–48)
49–52	ST CH INPUT(1–4)
53–60	CH INPUT(49–56)
61–68	MIX(1–8) OUT
69	STEREO A OUT
73–76	MIX(9–12) OUT
77, 78	MIX(13/14, 15/16) OUT
105–112	DIRECT RECALL(1–8) =MUTE GROUP(1–8)

4. MIDI Echo Back

The Echo Back function can be switched [on/off]. However if the internal transmission buffer overflows because a long exclusive message is being echoed back etc., echo back will be halted, and internal data will be transmitted. Bulk Dump Request messages will not be echoed back – bulk data will be transmitted instead.

5. Bulk Out, Bulk Dump Request

The following bulk messages can be transmitted and received.

(1) SCENE MEMORY No. BULK OUT FORMAT

```

STATUS          11110000 F0h System Exclusive Message
ID No.          01000011 43h Manufacturer's ID No.(YAMAHA)
SUB STATUS      0000xxxx 0nh n=0~15(MIDI Channel)
FORMAT No.     01111110 7Eh Universal Bulk Dump
BYTE COUNT(HIGH) 00000000 00h 39(29+10)bytes
BYTE COUNT(LOW) 00100111 27h
                01001100 4Ch 'L'
                01001101 4Dh 'M'
                00100000 20h ' '
                00100000 20h ' '
                00111000 38h '8'
                01000010 42h 'B'
                00110011 33h '3'
                00110001 31h '1'
DATA NAME       01001101 4Dh 'M'
                0xxxxxxx mmh mm=0~127(MEMORY No.)
DATA STATUS     0000xxxx 0nh n=0:no data, n=f:valid data.
DATA            0000xxxx d01 ON/OFF DATA assigned Control
                : :
                0000xxxx d28 ON/OFF DATA assigned Control
                Change 112-109
CHECK SUM       0xxxxxxx eeh
                ee=(INVERT('L'+ 'M'+...+d01+...+d28))+1
                AND 7Fh
EOX             11110111 F7h End Of Exclusive
    
```

(2) SCENE MEMORY No. BULK REQUEST FORMAT

```

STATUS          11110000 F0h System Exclusive Message
ID No.          01000011 43h Manufacturer's ID No.(YAMAHA)
SUB STATUS      0010xxxx 2nh n=0~15(MIDI Channel)
FORMAT No.     01111110 7Eh Universal Bulk Dump
                01001100 4Ch 'L'
                01001101 4Dh 'M'
                00100000 20h ' '
                00100000 20h ' '
                00111000 38h '8'
                01000010 42h 'B'
                00110011 33h '3'
                00110001 31h '1'
DATA NAME       01001101 4Dh 'M'
                0xxxxxxx mmh mm=0~127(MEMORY No.)
EOX             11110111 F7h End Of Exclusive
    
```

Function...		Transmitted	Recognized	Remarks
Basic Channel	Default Changed	1 - 16 1 - 16	1 - 16 1 - 16	Memorized
Mode	Default Messages Altered	x x *****	OMNI off/OMNI on x x	Memorized
Note Number :	True voice	x *****	x x	
Velocity	Note ON Note OFF	x x	x x	
After Touch	Key's Ch's	x x	x x	
Pitch Bend		x	x	
Control Change	1-69	o	o	*1
	73-78	o	o	
	105-112	o	o	
Program Change :	True #	o 0 - 127 *****	o 0 - 127 1 - 128	
System Exclusive		o	o	*2
Common :	Song Pos Song Sel Tune	x x x	x x x	
System Real Time :	Clock Commands	x x	x x	
Aux Messages :	Local ON/OFF All Notes OFF Active Sense Reset	x x o x	x x x x	
Notes		*1 : See Control Change chart. *2 : Bulk Dump/Request		

Mode 1 : OMNI ON, POLY
Mode 3 : OMNI OFF, POLY

Mode 2 : OMNI ON, MONO
Mode 4 : OMNI OFF, MONO

o : Yes
x : No