



# MIXING CONSOLE

# MX12/6, 20/6

## Owner's Manual

Thank you for purchasing the YAMAHA MX12/6 or MX20/6 Mixing Console. Both the MX12/6 and MX20/6 mixers are designed to provide the user with an ideal balance of operability, functionality, and simplicity. In order to get the most out of your MX12/6 or MX20/6 mixer and its functions, and to enjoy years of trouble-free use, please read this Owner's Manual thoroughly and keep it in a safe place for future reference.

### Features

- The MX12/6 offers 12 input channels that can be mixed into stereo, monaural, or to four group outputs.
- The MX20/6 offers 20 input channels that can be mixed into stereo, monaural, or to four group outputs.
- A C-R/PHONES jack offers easy connection to a sub amp for monitoring. It allows monitoring of the main stereo output, TAPE IN input and the signals from groups 1/2, 3/4.
- The mixer is equipped with a highly efficient, built-in digital effects section. The built-in effects allow you to create professional sounding mixes without the need of additional equipment. An EFFECT SEND jack is also supplied to allow the use of external effectors.
- Two AUX SEND/RETURN jacks are provided. Two separate AUX buses can be used as sends for external effectors or a monitor system.
- The mixer supplies phantom power to provide easy connection of condenser microphones that require an external power source.
- The mixer is equipped with INSERT I/O jacks for input channels 1-4 (MX12/6) or 1-8 (MX20/6) allowing individual effects to be inserted into individual channels.
- Both XLR type mic input jacks and TRS phone line input jacks are provided on channels 1-8 (MX12/6) or 1-16 (MX20/6). Input channels 9-12 (MX12/6) or 17-20 (MX20/6) are equipped with stereo line input jacks. The MX12/6 and MX20/6 can handle a wide range of sources, from microphones to line level devices and stereo output synthesizers.
- TAPE IN jacks and REC OUT jacks offer easy connection of tape decks for playback and recording.

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### 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.

**WARNING: THIS APPARATUS MUST BE EARTHED**

### **IMPORTANT**

THE WIRES IN THIS MAINS LEAD ARE COLOURED IN ACCORDANCE WITH THE FOLLOWING CODE:

GREEN-AND-YELLOW :	EARTH
BLUE :	NEUTRAL
BROWN :	LIVE

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

The wire which is coloured GREEN and YELLOW must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol  $\perp$  or coloured GREEN and YELLOW.

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

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

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

# Important

## Read the following before operating the MX12/6, 20/6

### Warnings

- Do not place a container with liquid or small metal objects on top of this unit. Liquid or metal objects inside this unit are a fire and electrical shock hazard.
- Do not allow water to enter this unit or allow the unit to become wet. Fire or electrical shock may result.
- Connect this unit's power cord only to an AC outlet of the type stated in this Owner's Manual or as marked on the unit. Failure to do so is a fire and electrical shock hazard.
- Do not scratch, bend, twist, pull, or heat the power cord. A damaged power cord is a fire and electrical shock hazard.
- Do not place heavy objects, including this unit, on top of the power cord. A damaged power cord is a fire and electrical shock hazard. In particular, be careful not to place heavy objects on a power cord covered by a carpet.
- If you notice any abnormality, such as smoke, odor, or noise, or if a foreign object or liquid gets inside the unit, turn it off immediately. Remove the power cord from the AC outlet. Consult your dealer for repair. Using the unit in this condition is a fire and electrical shock hazard.
- Should this unit be dropped or the cabinet be damaged, turn the power switch off, remove the power plug from the AC outlet, and contact your dealer. If you continue using the unit without heeding this instruction, fire or electrical shock may result.
- If the power cord is damaged (i.e., cut or a bare wire is exposed), ask your dealer for a replacement. Using the unit with a damaged power cord is a fire and electrical shock hazard.
- Do not remove the unit's cover. You could receive an electrical shock. If you think internal inspection, maintenance, or repair is necessary, contact your dealer.
- Do not modify the unit. Doing so is a fire and electrical shock hazard.
- If lightning begins to occur, turn off the power switch of the unit as soon as possible, and unplug the power cable plug from the electrical outlet.
- If there is a possibility of lightning, do not touch the power cable plug if it is still connected. Doing so may be an electrical shock hazard.

### Cautions

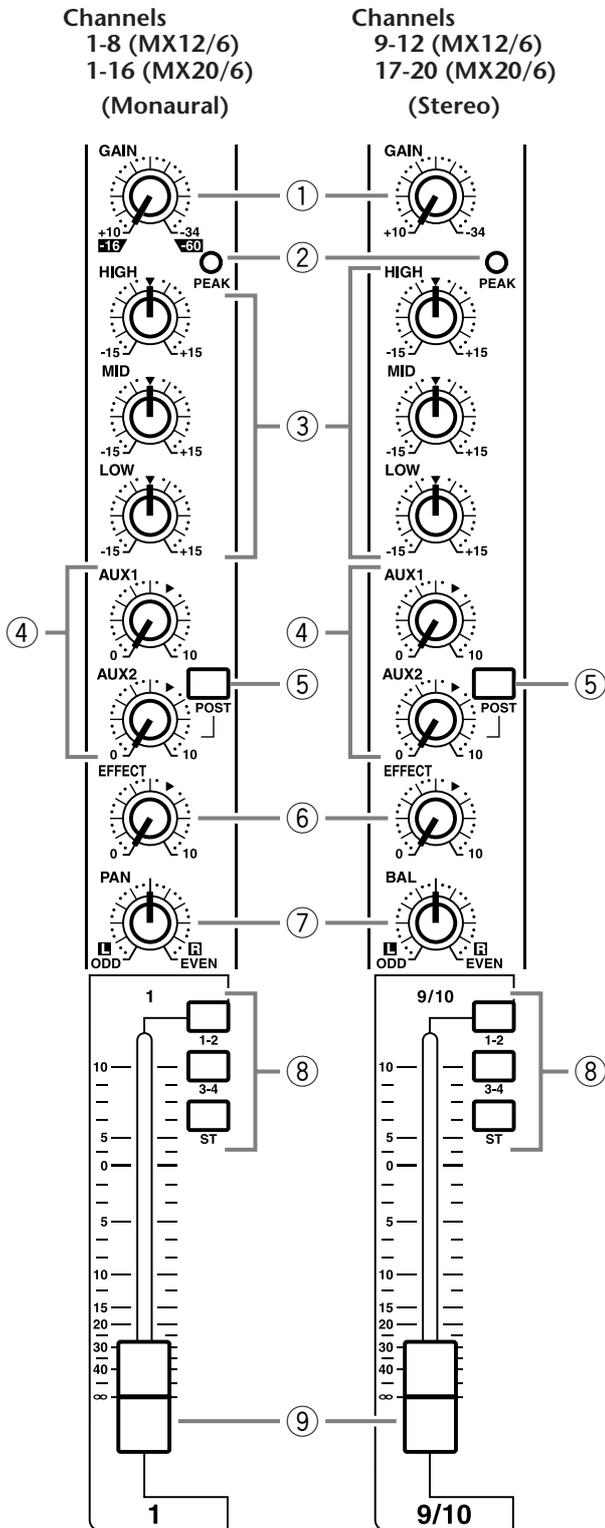
- Hold the power cord plug when disconnecting it from an AC outlet. Never pull the cord. A damaged power cord is a potential fire and electrical shock hazard.
- Do not touch the power plug with wet hands. Doing so is a potential electrical shock hazard.

### Operating Notes

- Using a mobile telephone near this unit may induce noise. If noise occurs, use the telephone away from the unit.
- XLR-type connectors are wired as follows:  
pin 1: ground, pin 2: hot (+), and pin 3: cold (-).
- Insert TRS phone jacks are wired as follows: sleeve: ground, tip: send, and ring: return.
- The performance of components with moving contacts, such switches, rotary controls, faders, and connectors, deteriorates over time. The rate of deterioration depends on the operating environment and is unavoidable. Consult your dealer about replacing defective components.

# Front & Rear Panels

## Channel Control Section



The MX12/6's panel is used for all following illustrations in this manual.

### ① GAIN Control

Adjusts the input level of the signal entering the mixer to an optimum level.

To obtain an optimum balance between the S/N ratio and dynamic range, adjust the level so that the peak indicator ② occasionally lights.

-60 to -16 indicates the MIC input adjustment level, -34 to +10 indicates the LINE input adjustment level.

### ② PEAK Indicator

The indicator detects peaks in the signal after it has passed the EQ.

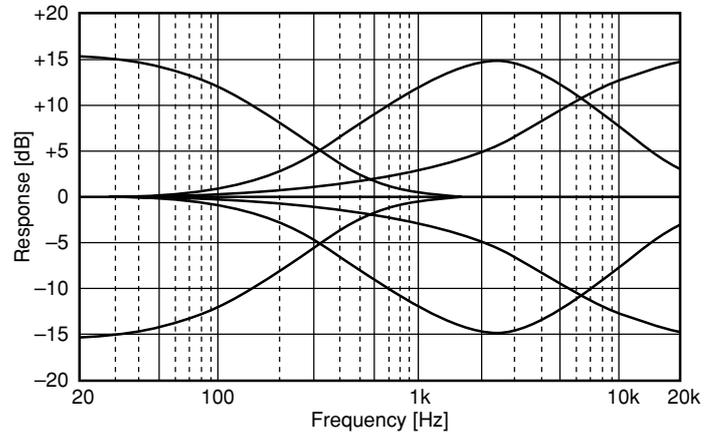
The indicator will light red when the level reaches +17dB to warn that clipping is imminent.

### ③ Equalizer

Provides +/-15dB of control over high, mid and low frequency ranges at the center frequencies listed below.

- HIGH : 10kHz (shelving)
- MID : 2.5 kHz (peaking)
- LOW : 100Hz (shelving)

Frequency response will be flat when the knob is positioned at "▼".



### ④ AUX1, AUX2 Controls

### ⑤ POST Switch

Individually controls the level of the signal sent from each channel to the AUX1 and AUX2 buses.

The signal taken from before the channel fader is sent to AUX1.

Depending upon the POST switch setting, the signal taken from either before (POST Switch = ) or after (POST Switch = ) the channel fader is sent to AUX2.

When a stereo channel is used, L and R signals are combined and sent to the AUX1 and AUX2 buses.

**⑥ EFFECT Control**

Controls the level of the signal sent from each channel to the EFFECT bus.

This control is located after the channel fader so its level will also be affected by the channel fader setting.

When a stereo channel is used, L and R channel signals are combined and sent to the EFFECT bus.

**⑦ PAN Control (MX12/6:CH1-8, MX20/6:CH1-16)  
BAL Control (MX12/6:CH9-12, MX20/6:CH17-20)**

The PAN control knobs set the position within the stereo field of each signal that is sent to the GROUP bus 1-2, GROUP bus 3-4 and STEREO bus L-R.

The BAL control knobs set the balance between left and right channels and assigns the signals that are received at INPUT L (MX12/6:CH9, 11, MX20/6:CH17, 19) to GROUP buses 1/3 or STEREO bus L, and the signals received at INPUT R (MX12/6:CH10, 12, MX20/6:CH18, 20) to GROUP buses 2/4 or STEREO bus R.

**⑧ GROUP, ST Select Switches**

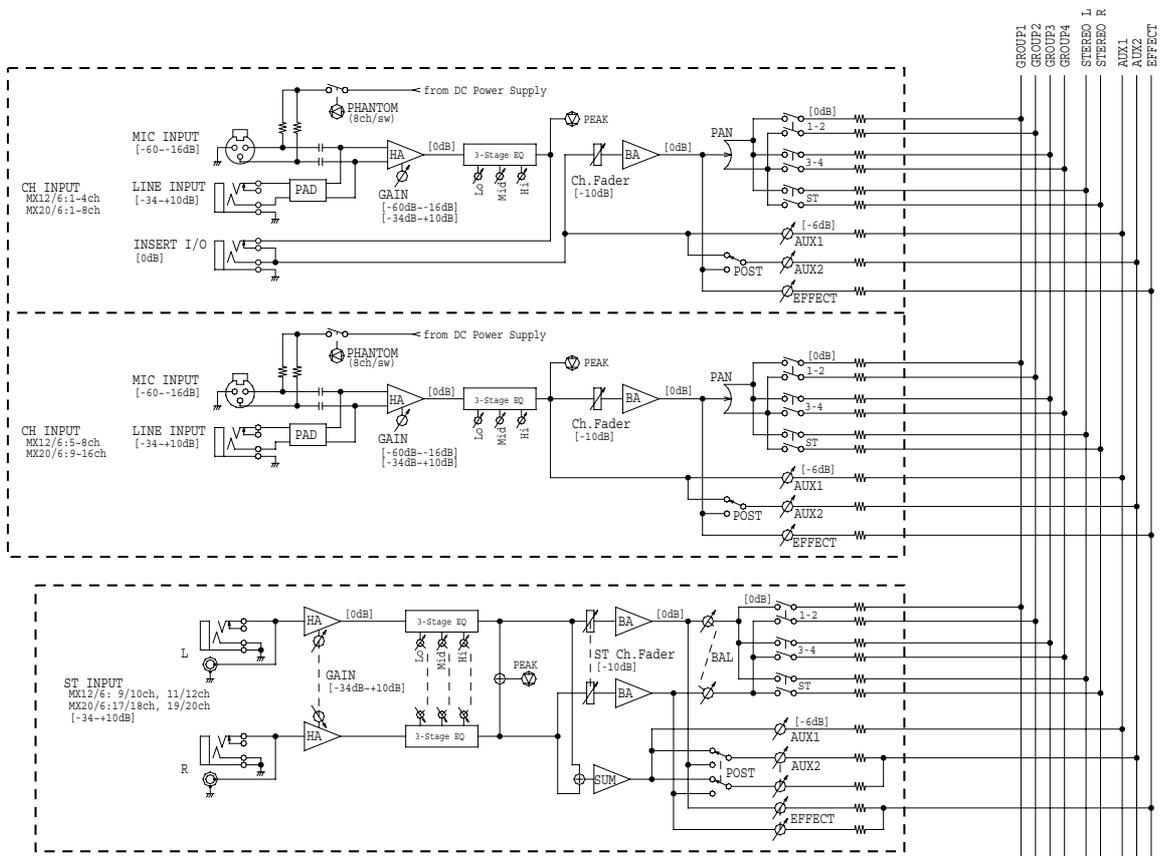
Used to send the signal of each channel to the GROUP bus 1-2, GROUP bus 3-4 and STEREO bus L-R.

When the switch is ON (—), the signal is sent to the relative bus.

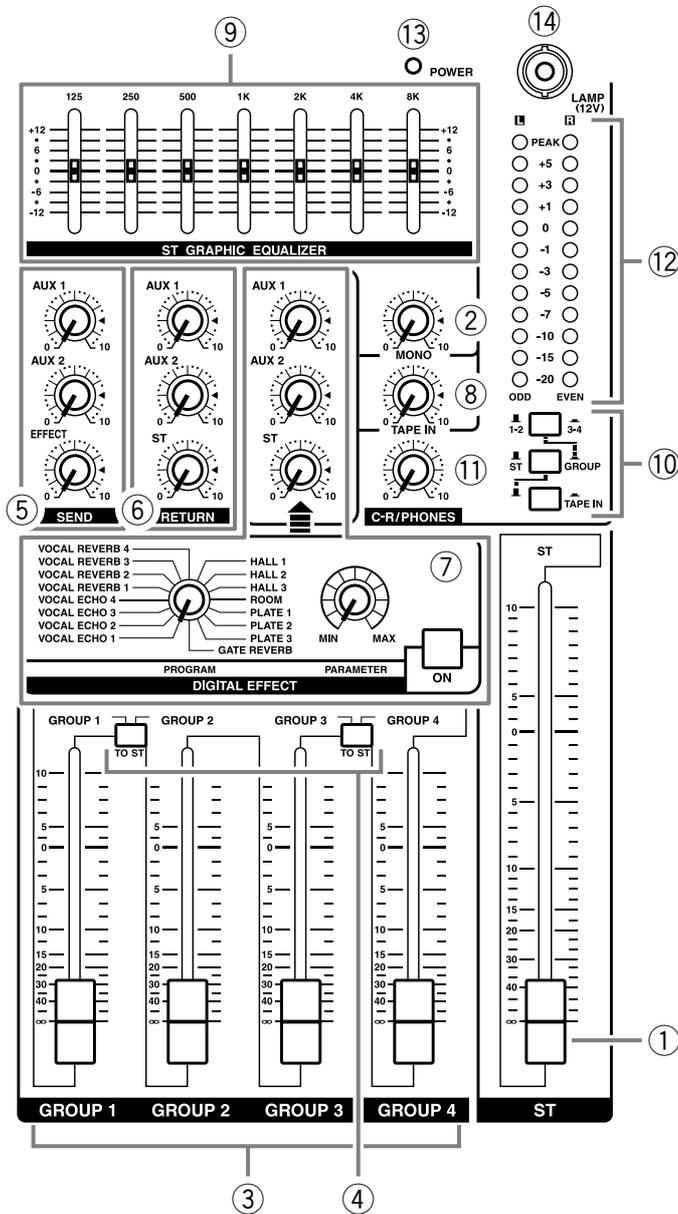
**⑨ Channel Fader**

Controls the output level of the input channel signal and adjusts the volume balance between channels.

\* Levels of unused faders should be lowered.



# Master Control Section



① **ST Master Fader**

Controls the level of the signal that is sent to the ST OUT jacks.

② **MONO Control**

Controls the level of the signal (the monaural signal that is formed by combining the signals from the STEREO bus) that is sent to the MONO OUT jack.

③ **GROUP 1-4 Faders**

④ **TO ST Switch**

Controls the level of the GROUP 1-4 signals, and sends the signals to their respective GROUP OUTPUT 1-4 jacks.

Also, when the TO ST switch is ON (—), the signals whose levels are controlled by the GROUP faders are also sent to the STEREO bus.

⑤ **SEND**

• **AUX1, AUX2 Controls**

Controls the individual levels of the AUX1 and AUX2 signals that are sent to the AUX1 SEND jack and AUX2 SEND jack.

• **EFFECT Control**

Controls the level of the EFFECT bus signal that is sent to the EFFECT SEND jack.

\* This control is not related to, and has no affect on the signal that is sent from the EFFECT bus to the built-in digital effects.

⑥ **RETURN**

• **AUX1, AUX2 Controls**

Controls the levels of the signals (mixed, L with R) that are sent to the AUX1 and AUX2 buses from the RETURN L (MONO) and R jacks.

• **ST Control**

Controls the level of the signal that is sent from the RETURN L(MONO), R jacks to the STEREO bus.

\* When only the RETURN L (MONO) jack is used, the same signal is also sent to the STEREO bus L, R.

## ⑦ DIGITAL EFFECT

### • PROGRAM Select Switch

Selects a program from the built-in digital effects.

VOCAL ECHO 1	VOCAL REVERB 1	HALL 1	PLATE 1
VOCAL ECHO 2	VOCAL REVERB 2	HALL 2	PLATE 2
VOCAL ECHO 3	VOCAL REVERB 3	HALL 3	PLATE 3
VOCAL ECHO 4	VOCAL REVERB 4	ROOM	GATE REVERB

### • PARAMETER Control

Controls parameters (effect level, speed, etc.) of the selected effect program.

### • ON Switch

Switches the built-in digital effect ON (☐) or OFF (■). When set to OFF, the signal from the built-in effect is not sent.

### • AUX1, AUX2 Control

Controls the level of the signal that is sent from the built-in digital effects to the AUX1 and AUX2 buses.

### • ST Control

Controls the level of the signal that is sent from the built-in digital effects to the STEREO bus.

## ⑧ TAPE IN Control

Controls the level of the signal that is sent from the TAPE IN jack to the STEREO bus.

## ⑨ ST GRAPHIC EQUALIZER

A stereo 7-band graphic equalizer that offers tone adjustment to the signal that is output to the ST OUT jacks.

A +/-12dB boost or cut is provided at each of the frequency bands 125, 250, 500, 1k, 2k, 4k and 8kHz.

## ⑩ C-R/PHONES Output and Meter Select Switch

Selects the signal that is sent to the C-R/PHONES jack and the level meter.

The three switches are used in combination to select TAPE IN, ST, GROUP 1-2 and GROUP 3-4 signals.

Signal	Switch			
	■ 1-2	☐ 3-4	■ ST	☐ GROUP
TAPE IN	N/A		N/A	☐ TAPE IN
ST	N/A		■ ST	■
GROUP 1-2	■ 1-2		☐ GROUP	■
GROUP 3-4	☐ 3-4		☐ GROUP	■

## ⑪ C-R/PHONES Control

Controls the level of the signal that is sent to the C-R/PHONES jack.

## ⑫ LEVEL Meter

The LEDs indicate the output level of the signal selected with the C-R/PHONES output and Meter Select Switch ⑩. "0" indicates a nominal level, and the PEAK indicator will light when clipping is imminent.

## ⑬ POWER Indicator

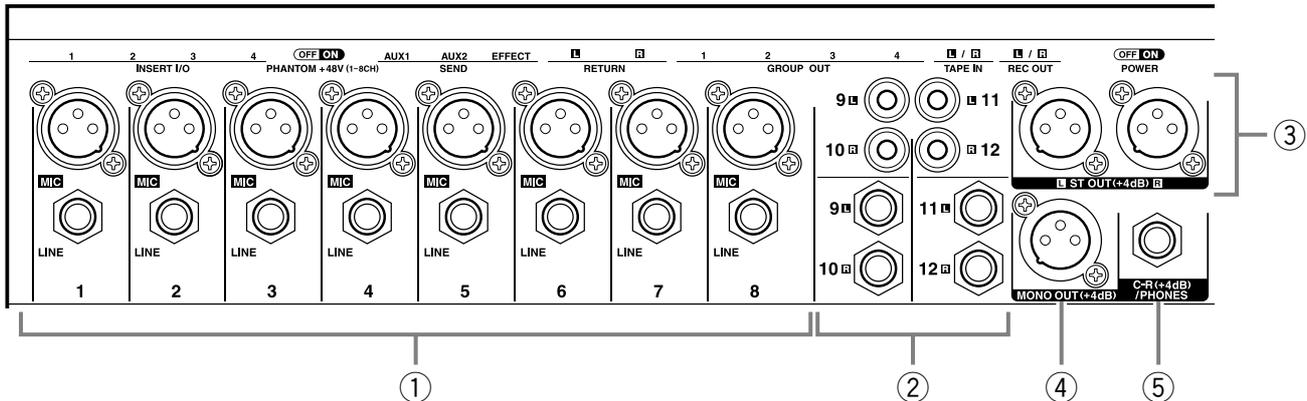
The indicator will light when the main unit's power is ON.

## ⑭ LAMP Connector

A BNC type lamp (AC or DC12V, 0.5A Max) can be attached here.

Refer to the Block Diagram on page 13.

## Connector Section



### ① INPUT Jacks (MX12/6:CH1-8, MX20/6:CH1-16)

- **MIC** Balanced XLR type microphone input jacks (1:Ground, 2:Hot, 3:Cold). These input jacks are compatible with 50-600 $\Omega$  microphones.
- **LINE** Balanced TRS phone type line input jacks (T:Hot, R:Cold, S:Ground). These input jacks are compatible with 600 $\Omega$  line level devices. Unbalanced phone plugs can be connected but noise may enter the signal if the cables are too long or if the location is susceptible to electromagnetic interference.

*NOTE:* It is not possible to simultaneously use both the MIC INPUT jack and the LINE INPUT jack on any individual channel. Please use only one or the other jack.

### ② INPUT Jacks (MX12/6:CH9-12, MX20/6:CH17-20)

Unbalanced phone type and RCA pin type stereo line input jacks.  
These inputs are compatible with 600 $\Omega$  line level devices.

*NOTE:* It is not possible to simultaneously use both the phone type and RCA pin type jacks for an individual input channel. Please use only one or the other jack.

### ③ ST OUT (L, R) Jacks

Balanced XLR type output jacks with a nominal output/impedance of +4dB/600 $\Omega$ .

These jacks deliver stereo output of the mixed signal and are connected to a power amplifier, etc. that drives the main speakers.

The outputs can also be used for recording with the level of the signal controlled by the ST Master Fader.

### ④ MONO OUT Jack

Balanced XLR type output jack with a nominal output/impedance of +4dB/600 $\Omega$ .

This signal is the monaural mix of the STEREO bus's stereo signal. Its level is controlled with the MONO control.

### ⑤ C-R/PHONES Jack

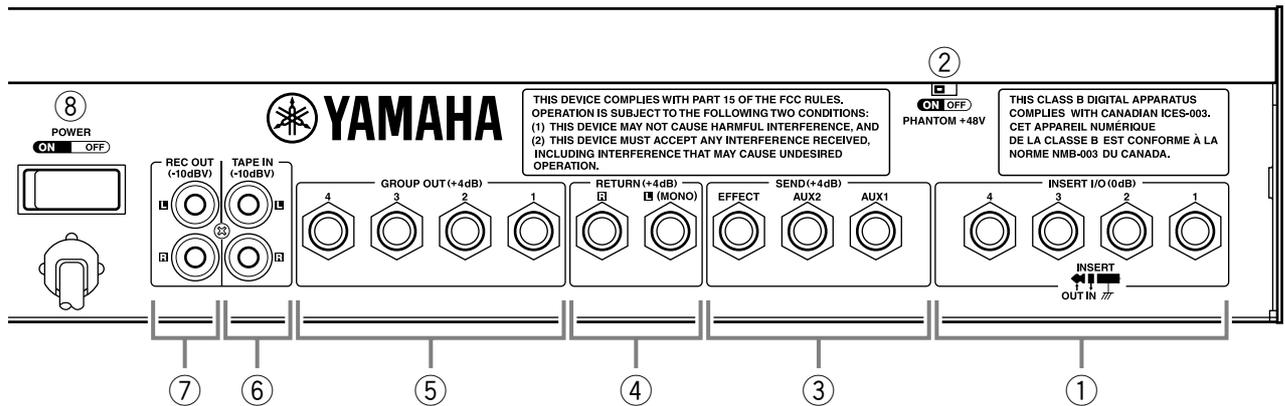
Stereo phone type output jack for connecting a set of headphones (nominal output/impedance of 3mW/40 $\Omega$ ).

It can also be used as a stereo phone type output jack for connecting a monitor system (nominal output/impedance of +4dB/10k $\Omega$ ).

The source that is monitored with this jack is selected with the C-R/PHONES Output and Meter Select Switch (Master Control Section).

*NOTE:* When this jack is connected to a monitor system, an insertion cable (optional YAMAHA insertion cable YIC025/050/070, etc.) may be used. (Tip:L, Ring:R, Sleeve:Ground)

## Rear Panel



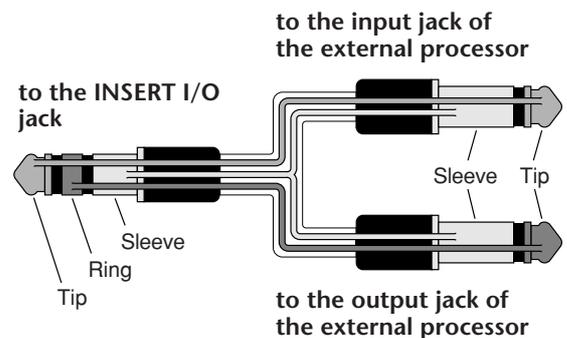
### ① INSERT I/O Jack (MX12/6:CH1-4, MX20/6:CH1-8)

These are input/output jacks that are positioned between the equalizer and fader of the input channel.

They have a nominal input/impedance of 0dB/600Ω and a nominal output/impedance of 0dB/10kΩ.

These jacks can be used to connect devices such as a graphic equalizer, compressor, noise filter, etc.

The TRS type phone jack allows bi-directional connection with the INSERT I/O jack. Connecting a device to these jacks will require a special insertion cable like the one shown in the diagram on the right. Please use an optional YAMAHA Insertion Cable YIC025/050/070, etc.



### ② PHANTOM +48V Switch

Turns the phantom power ON/OFF for all channels 1-8.

The MX20/6 has an additional PHANTOM switch for channels 9-16.

Turn the switch ON when you are using condenser microphones, etc.

When the switch is ON, +48V DC is supplied to pins 2 and 3 of the XLR type MIC INPUT connectors.

If phantom power is not required, make sure the switch is set to the OFF position.

*NOTE:* With this switch turned ON, it is not a problem to connect balanced dynamic microphones or line level devices however, hum or malfunction may occur when connecting unbalanced devices or devices for which the center of the transformer is ungrounded.

### ③ SEND Jack

#### • AUX1, AUX2

These are impedance balanced phone type output jacks with a nominal output/impedance of +4dB/600Ω.

The AUX1, 2 bus signals are output from their respective jacks. The jacks can be used to send the signal to a monitor system such as a cue-box.

• **EFFECT**

This is an impedance balanced phone type output jack with a nominal output/impedance of +4dB/600Ω.

The EFFECT bus signal is sent from this jack. This jack is used to send the signal to an external effector, etc.

④ **RETURN L (MONO), R Jacks**

These are unbalanced phone type line input jacks with a nominal input/impedance of +4dB/600Ω.

The signal received by these jacks is sent to the STEREO bus, AUX1 and AUX2 buses.

These jacks are normally used to receive a return signal from an external effector such as reverb, delay, etc., but they can also be used as an auxiliary stereo input. If only the L (MONO) jack is used, the same signal will be sent to both the R and L jacks for monaural input.

⑤ **GROUP OUT (1-4) Jacks**

These are impedance balanced phone type output jacks that deliver the GROUP bus 1-4 signals, with a nominal output/impedance of +4dB/600Ω.

These jacks are normally connected to the input jacks on an MTR or external mixer.

⑥ **TAPE IN (L, R) Jacks**

These are line input jacks for monitoring an external DAT recorder or CD player. The signal received by these jacks is sent to the STEREO bus. In this case, the TAPE IN control is used to adjust the input level of the signal. You can also monitor directly from the C-R/ PHONES jack by making the appropriate selection with the C-R/PHONES Output and Meter Select Switch (Master Control Section).

⑦ **REC OUT (L, R) Jacks**

With an external DAT recorder or cassette recorder connected to these jacks, you can record the same signal that is sent from the ST OUT jacks.

The signal sent from these jacks is not affected by the ST Master Fader or Graphic EQ settings. Make recording level adjustments on the recording device.

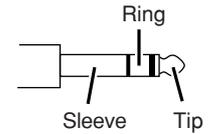
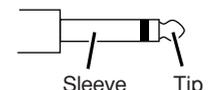
⑧ **POWER Switch**

When the switch is in the ON position, the unit is powered.

When turning the power ON, first turn on the mixing console, then turn on the power amp or powered speakers that are connected to the mixer.

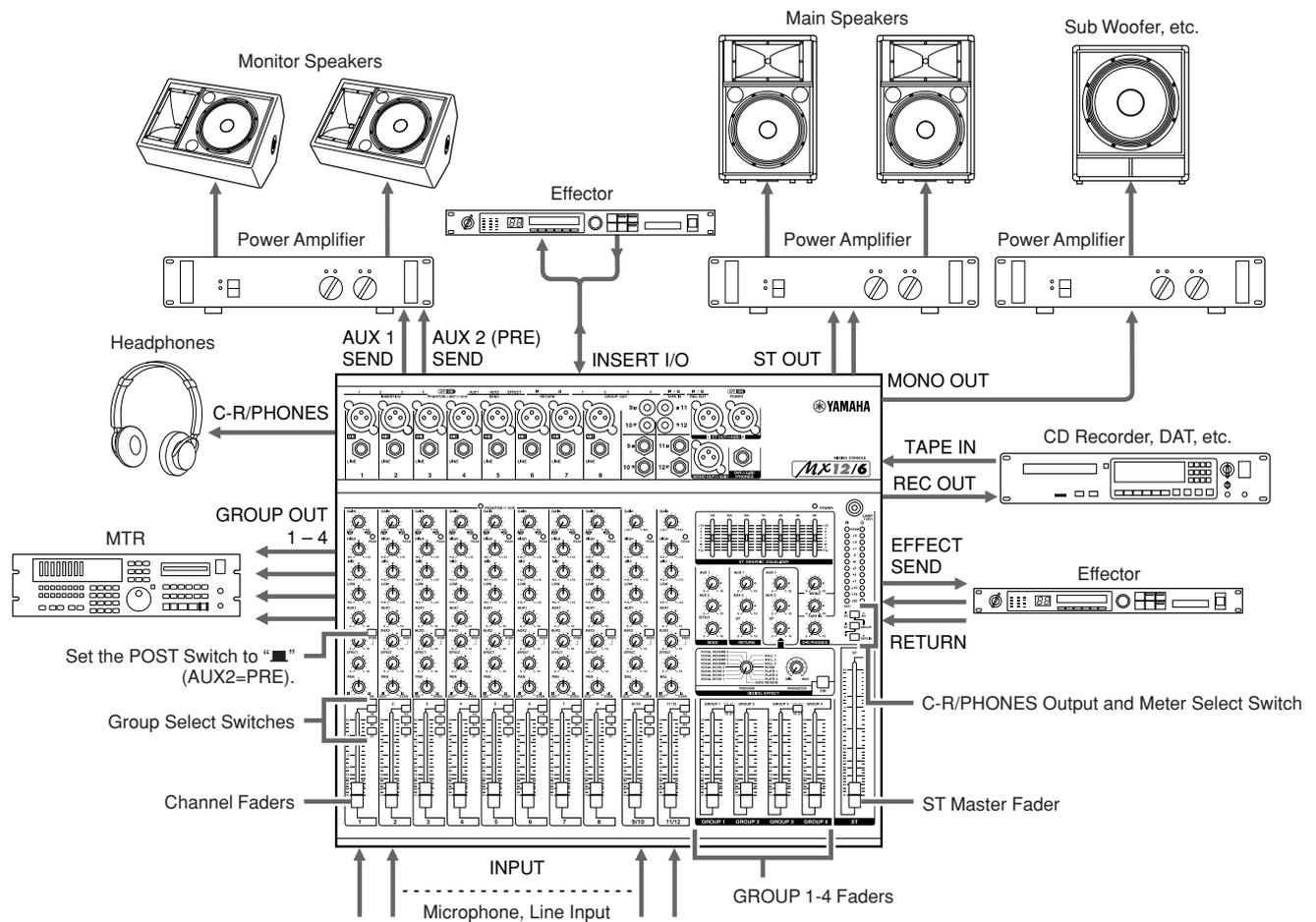
Also, when turning the power OFF, turn off the power amp or powered speakers before turning off the mixing console.

**Connector polarity**

		INPUT	OUTPUT
MIC INPUT, ST OUT, MONO OUT	Pin 1: ground Pin 2: hot (+) Pin 3: cold (-)		
LINE INPUT, GROUP OUT, AUX 1/AUX 2/EFFECT SEND	Tip: hot (+) Ring: cold (-) Sleeve: ground		
INSERT I/O	Tip: Output Ring: Input Sleeve: ground		
C-R/PHONES	Tip: L Ring: R Sleeve: ground		
STEREO INPUT, RETURN	Tip: hot Sleeve: ground		

# Applications

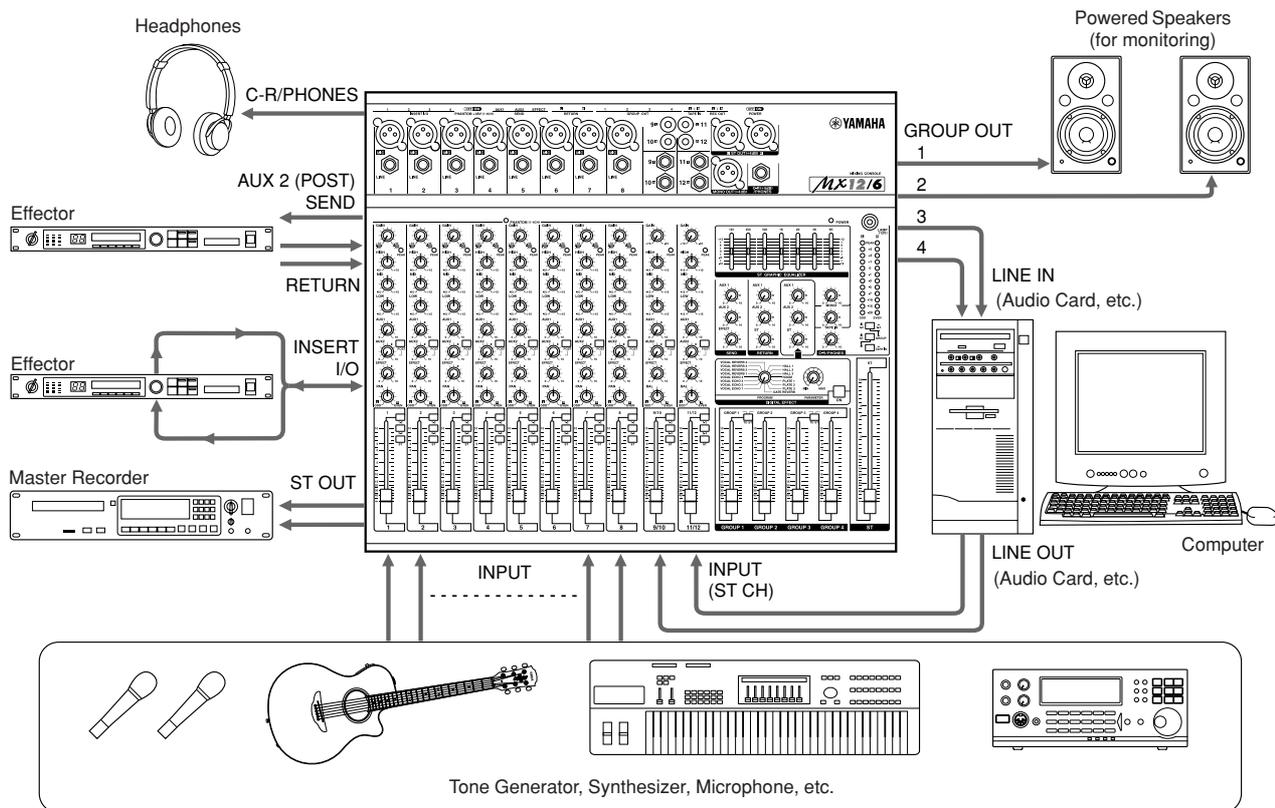
## Example 1) Sound Reinforcement for a live performance



## Procedure

- ① Connect line input devices or microphones to the INPUT jacks and connect a power amp, that is connected to the main speakers, to the ST OUT Jacks.
- ② Use the GAIN Control on each channel to adjust the level of the input signal from the device or microphone that is connected to the input channel (refer to page 2), and use the Channel Fader to adjust the level of the output signal that is sent to the Master Section. Basically, you should set the Channel Fader close to the "0" position.
- ③ Press each channel's "ST" GROUP Select Switch.
- ④ Use the ST Master Fader to adjust the level of the signal sent to the power amplifier. Basically, you should set the Master Fader close to their "0" position.
- ⑤ Use the volume control(s) on the power amp to adjust the volume of the speakers.  
If necessary, use a monitoring device (a pair of headphones, monitor speakers, etc.), a recording device, effector, etc.

## Example 2) Home Recording



## Procedure

### <Preparations>

- ① Connect a tone generator, synthesizer, microphone, etc. to the INPUT jacks, and connect a master recorder such as an MD or CD to the ST OUT jacks.
- ② Connect a computer's audio card's LINE IN jack to the GROUP 3, 4 jacks and connect a pair of powered speakers, etc. for monitoring to the GROUP 1, 2 jacks.
- ③ Connect the computer's LINE OUT jack to the stereo INPUT channel jack.
- ④ Use the GAIN Control to adjust the level of the input signal from the tone generator, synthesizer, microphone, etc. that is connected to each input channel (refer to page 2), and use the Channel Fader to adjust the level of the output signal that is sent to the Master Section. Basically, you should set the Channel Fader close to the "0" position.

### <Recording>

- ① Select the channels you want to record to the computer by pressing their "3-4" GROUP Select Switches. Also, select the channels you want to monitor by pressing their "1-2" GROUP Select Switches.\*
- ② Use the GROUP 3, 4 Faders to adjust the level of the signal sent to the computer.

\* Do not press the "3-4" GROUP Select Switches on the channels that carry the signal from the computer. Doing so will result in a loop which may cause feedback.

### <Mix Down>

- ① Select the channels you want to send to the master recorder by pressing their GROUP Select Switches ST. Also, select the channels you want to simultaneously monitor by pressing their GROUP Select Switches 1-2.
- ② Use the ST Master Fader to adjust the level of the signal output to the master recorder.

# Supplement

## Specifications

### ■ General specifications

<b>Frequency response</b> (CH MIC INPUT to ST, GROUP OUT/AUX, EFFECT SEND)	20Hz—20kHz +1dB, -3dB @+4dB, 600Ω (Input Gain control at minimum level)	
<b>Total harmonic distortion</b> (CH MIC INPUT to ST, GROUP OUT/AUX, EFFECT SEND)	<0.1% (THD+N) @+14dB, 20Hz—20kHz, 600Ω	
<b>Hum &amp; Noise</b> (Rs=150Ω, 20Hz—20kHz, INPUT GAIN=Max., Input Sensitivity=-60dB)  * Measured with 12.7kHz, -6dB/oct. low pass filter. (Equivalent to 20kHz, -∞dB/oct. filter.)	-128dB	Equivalent input noise
	-95dB	Residual output noise
	-64dB (68dB S/N)	ST OUT: Master fader and one channel fader at nominal level, channel assign switch ON.
	-88dB (92dB S/N)	ST OUT: Master fader at nominal level, all channel assign switches OFF, all GROUP to ST switches OFF.
	-89dB (93dB S/N)	GROUP OUT: Master fader at nominal level, all channel assign switches OFF.
	-82dB (86dB S/N)	AUX SEND, EFFECT SEND: Master level control at nominal level, all channel send controls at minimum level.
<b>Maximum voltage gain</b>	60dB CH MIC INPUT to CH INSERT OUT 84dB CH MIC INPUT to GROUP OUT 84dB CH MIC INPUT to ST OUT (CH to ST) 94dB CH MIC INPUT to ST OUT (GROUP to ST) 76dB CH MIC INPUT to AUX1 SEND, AUX2 SEND (PRE) 86dB CH MIC INPUT to AUX2 SEND (POST), EFFECT SEND 58dB CH LINE INPUT to ST OUT (CH to ST) 58dB ST INPUT to ST OUT (CH to ST)	
<b>Monaural INPUT Gain control</b>	44dB variable	
<b>Stereo INPUT Gain control</b>	44dB variable	
<b>Crosstalk at 1kHz</b>	-70dB adjacent input -70dB input to output (CH INPUT)	
<b>Input channel equalization</b>	±15dB Maximum  HIGH 10kHz shelving MID 2.5kHz peaking LOW 100Hz shelving  * Turn over/Roll off frequency of shelving: 3dB below maximum variable level.	
<b>Monaural and Stereo INPUT Peak Indicators</b>	Red: Each channel, when the level of the post EQ signal for each channel exceeds +17dB the indicator will light.	
<b>Meters</b>	12 points LED x2	
<b>Graphic equalizer</b>	7 bands (125, 250, 500, 1k, 2k, 4k, 8kHz) ±12 dB Maximum	
<b>Internal digital effect</b>	16 types	
<b>Phantom power</b>	+48V (balanced) : Supplied when the PHANTOM +48V switch is ON.	
<b>Lamp Connector</b>	BNC type (Lamp Compatibility: AC or DC12V, 0.5A Max)	
<b>Option</b>	Rack Mount Kit RK124 (for MX12/6)	
<b>Power supply</b>	USA and Canadian: 120V AC 60Hz General: 230V AC 50Hz	
<b>Power consumption</b>	MX12/6: 45W	MX20/6: 55W
<b>Dimensions (W x H x D)</b>	MX12/6: 438 x 85 x 384 mm	MX20/6: 658 x 85 x 384 mm
<b>Weight</b>	MX12/6: 7.0kg	MX20/6: 9.5kg

For European Model  
Purchaser/User Information specified in EN55103-1 and EN55103-2.  
Inrush Current: 10A  
Conformed Environment: E1, E2, E3 and E4

0dB=0.775Vrms

### Input Specifications

Input connectors	Gain Control	Input impedance	Nominal impedance	Input level			Connector type
				Sensitivity *1	Nominal	Max. before clipping	
MIC INPUT (1-n *5)	-60	5kΩ	50-600Ω mics	-80 dB (0.078mV)	-60 dB (0.775mV)	-40 dB (7.75mV)	XLR-3-31 type *2
	-16			-36 dB (12.3mV)	-16 dB (123mV)	+4 dB (1.23V)	
LINE INPUT (1-n *5)	-34	50kΩ	600Ω lines	-54 dB (1.55mV)	-34 dB (15.5mV)	-14 dB (155mV)	Phone jack (TRS) *2
	+10			-10 dB (245mV)	+10 dB (2.45V)	+30 dB (24.5V)	
ST INPUT (*7)	-34	10kΩ	600Ω lines	-54 dB (1.55mV)	-34 dB (15.5mV)	-14 dB (155mV)	RCA phono jack Phone jack *3
	+10			-10 dB (245mV)	+10 dB (2.45V)	+30 dB (24.5V)	
RETURN (L, R)		10kΩ	600Ω lines	-12 dB (195mV)	+4 dB (1.23V)	+20 dB (7.75V)	Phone jack *3
TAPE IN (L, R)		10kΩ	600Ω lines	-26 dBV (50.1mV)	-10 dBV (316mV)	+10 dBV (3.16V)	RCA phono jack
CH INSERT IN (1-n *6)		10kΩ	600Ω lines	-20 dB (77.5mV)	0 dB (0.775V)	+20 dB (7.75V)	Phone jack (I/O) *4

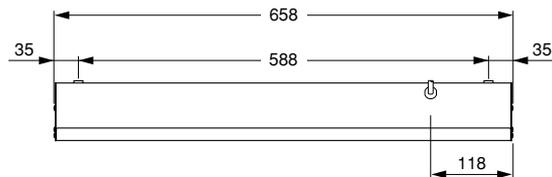
- \*1 Input sensitivity: the lowest level that will produce the nominal output level when the unit is set to maximum gain.
- \*2 XLR type connector, phone jack (TRS) (T=Hot, R=Cold, S=Gnd): balanced type.
- \*3 Phone jack: unbalanced type.
- \*4 Phone jack (I/O) (T=Out, R=In, S=Gnd): unbalanced type.
- \*5 n=8 (MX12/6), n=16 (MX20/6)
- \*6 n=4 (MX12/6), n=8 (MX20/6)
- \*7 9/10, 11/12 (MX12/6), 17/18, 19/20 (MX20/6)
- 0dB=0.775Vrms, 0dBV=1Vrms

### Output Specifications

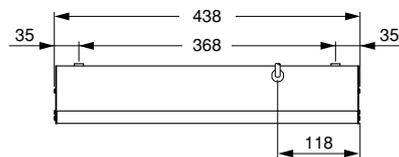
Output connectors	Output impedance	Nominal impedance	Output level		Connector type
			Nominal	Max. before clipping	
ST OUT (L, R) , MONO OUT	150Ω	600Ω lines	+4 dB (1.23V)	+24 dB (12.3V)	XLR-3-32 type *1
GROUP OUT (1-4) AUX SEND (1, 2) EFFECT SEND	75Ω	600Ω lines	+4 dB (1.23V)	+20 dB (7.75V)	Phone jack (TRS) *2
C-R/PHONES (L, R)	100Ω	10kΩ lines	+4 dB (1.23V)	+20 dB (7.75V)	ST phone jack (TRS) *3
		40Ω phones	3mW	75mW	
REC OUT (L, R)	600Ω	10kΩ lines	-10 dBV (316mV)	+10 dBV (3.16V)	RCA phono jack
CH INSERT OUT (1-n *5)	600Ω	10kΩ lines	0 dB (0.775V)	+20 dB (7.75V)	Phone jack (TRS) *4

- \*1 XLR type connector: balanced type.
- \*2 Phone jack (TRS) (T=Hot, R=Cold, S=Gnd): impedance balanced type.
- \*3 ST phone jack (TRS) (T=L, R=R, S=Gnd): unbalanced type.
- \*4 Phone jack (I/O) (T=Out, R=In, S=Gnd): unbalanced type.
- \*5 n=4 (MX12/6), n=8 (MX20/6)
- 0dB=0.775Vrms, 0dBV=1Vrms

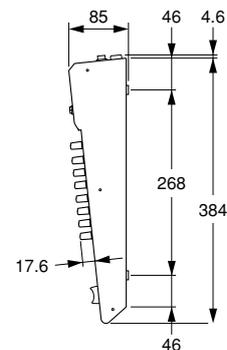
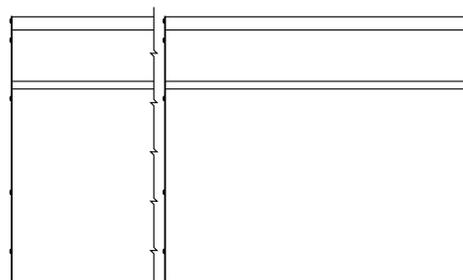
## Dimensions



< MX20/6 >



< MX12/6 >



Units: mm

Specifications are subject to change without prior notice.

# Block and Level Diagrams

