

YAMAHA

MIXING CONSOLE
CONSOLE DE MIXAGE

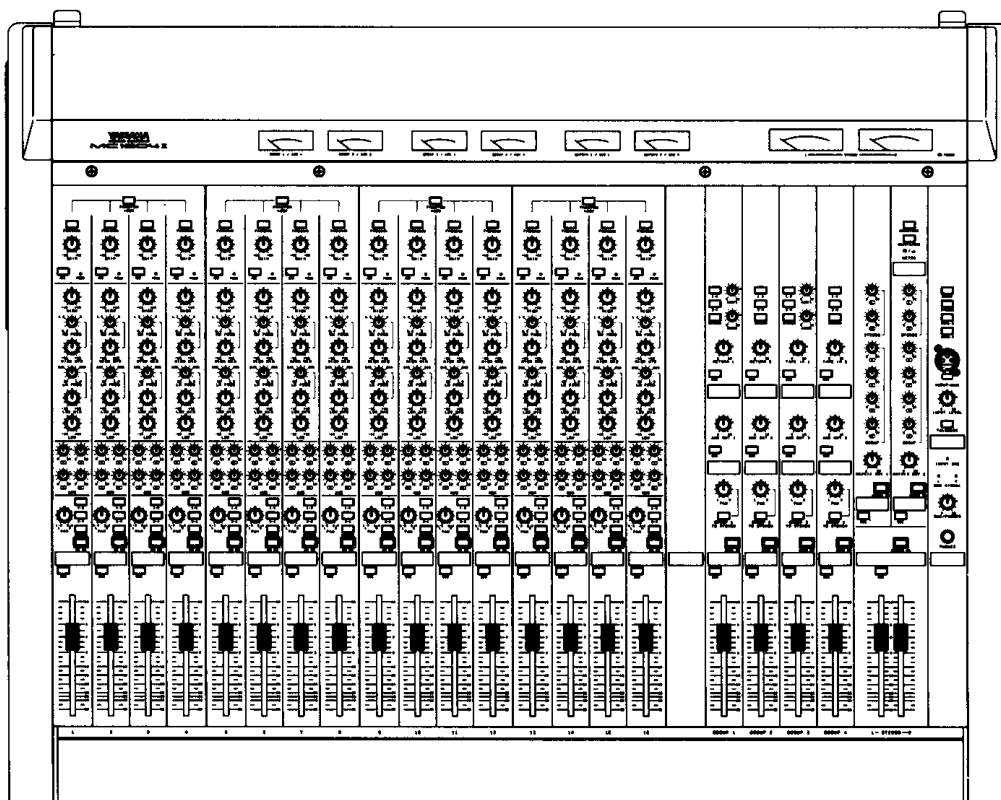
MC1204II

MC1604II

MC2404II

MC3204II

OPERATION MANUAL
MANUEL D'INSTRUCTIONS
BEDIENUNGSANLEITUNG



Thank you for purchasing a YAMAHA MC04 II series mixing console.

Your YAMAHA MC04 II series mixing console is a new type of mixer featuring stable performance and superior operability combined with high reliability. All of the mixing consoles, the 1204 II with 12 channel inputs, the 1604 II with 16 channels, the 2404 II with 24 channels, and the 3204 II with 32 channels, are equipped with 4 group outputs, stereo outputs (L, R), 4 auxiliary outputs, and 2 matrix outputs. Other convenient IN/OUT features include tape inputs for two systems, allowing direct input of audio sources (DAT recorder, cassette deck, CD player, etc.), recording outputs for direct connection to a DAT recorder or a cassette deck for sound recording, and a cue signal indicator that allows confirmation whether the input signal is being supplied to each input section.

Major input/output sections are provided with XLR type connectors. Furthermore, to allow flexible use of effects, each channel is equipped with its own insert. The mixer also features a talkback circuit and VU meters with built-in peak indicators.

A very special feature are the double-sided PCBs being used for the first time in this type of equipment. The advantages of this design concept are an ideal circuit layout, which could not be realized using conventional boards, and a reduction of noise caused by external equipment. A new power supply configuration greatly improves voltage drop characteristics, keeping hum and noise generation at a minimum even if the power supply voltage drops. In spite of the built-in power supply, the mixer is of lightweight and slim design.

The MC04 II series mixing console is ideally suited for use as main mixer at concerts and other events.

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PRECAUTIONS

1. Avoid Excessive Heat, Humidity, Dust and Vibration

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

2. Avoid Physical Shocks

Strong physical shocks to the unit can cause damage. Handle it with care.

3. Do Not Open The Case Or Attempt Repairs Or Modifications Yourself

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

4. Make Sure Power Is Off Before Making Or Removing Connections

Always turn the power OFF prior to connecting or disconnecting cables. This is important to prevent damage to the unit itself as well as other connected equipment.

5. Handle Cables Carefully

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

6. Clean With a Soft Dry Cloth

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

7. Always Use the Correct Power Supply

Make sure that the power supply voltage specified on the rear panel matches your local AC mains supply. Also make sure that the AC mains supply can deliver more than enough current to handle all equipment used in your system.

Dette apparat overholder det gældende EF-direktiv vedrørende radiostøj.

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

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

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

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

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

YAMAHA CORPORATION

IMPORTANT NOTICE FOR THE UNITED KINGDOM

Connecting the Plug and Cord

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

BLUE : NEUTRAL
BROWN : LIVE

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

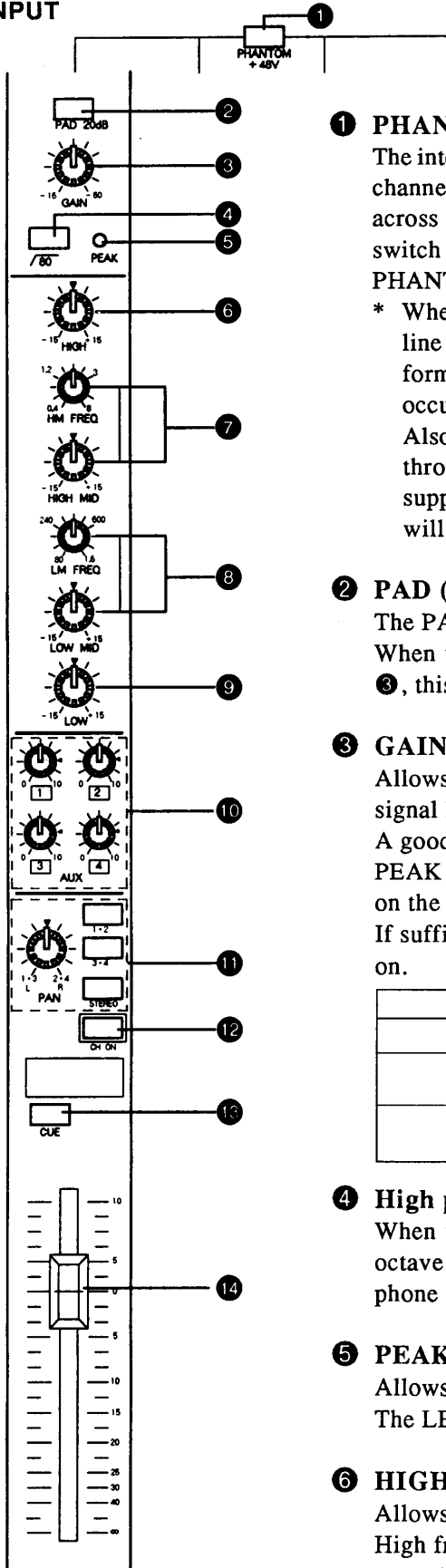
The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured BLACK.

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

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

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

INPUT



1 PHANTOM switch

The internal phantom power supply can be switched on (☐) and off (■) in 4-input-channel sections. When the PHANTOM switch is on (☐), 48 volts DC is applied across pins 2 and 3 of the corresponding INPUT connectors. Be sure to turn the switch off (■) when phantom power is not used.

PHANTOM power is not supplied to the high-impedance (HI-Z) terminals.

* When the PHANTOM switch is on (☐), balanced dynamic microphones or line sources can be connected. However, when unbalanced sources or transformers with earthed center taps are connected, hum and malfunctions may occur.

Also note, that the LO-Z inputs of each 4-channel group are connected through a resistor when the switch is off (■). Therefore, if one channel is supplied with external phantom power, the other three channels in the group will also be supplied with phantom power.

2 PAD (INPUT attenuator) switch

The PAD switch can be used to lower the input signal level by 20 dB.

When the input signal level is too high for adjustment using the GAIN control **3**, this switch should be pressed (☐).

3 GAIN control

Allows continuous adjustment of the input sensitivity for an optimum input signal level.

A good setting with optimum S/N ratio and dynamic range is obtained, when the PEAK indicator **5** lights from time to time with the channel fader **10** set to "0" on the scale.

If sufficient attenuation cannot be obtained, the PAD switch **2** should be turned on.

Input source	GAIN control position
Low level microphone (dynamic type)	-60 ~ -50
High level microphone (condenser type)/ electric, electronic instruments	-35
Low level line (general audio equipment)/ electric, electronic instruments	-20

4 High pass filter ($\sqrt{80}$) switch

When this switch is pressed (☐), the signal is cut below 80 Hz with a 12 dB/octave roll-off. The high pass filter can be used to eliminate wind noise, microphone "popping" and AC mains hum.

5 PEAK indicator

Allows monitoring of the pre-fader peak level.

The LED lights in red whenever the peak level comes within 3 dB of clipping.

6 HIGH equalizer control

Allows equalization in the high frequency range.

High frequencies below the cutoff frequency of 10 kHz can be boosted or cut by up to 15 dB. The response is flat at the center position "▼".

7 HM FREQ and HIGH MID equalizer controls

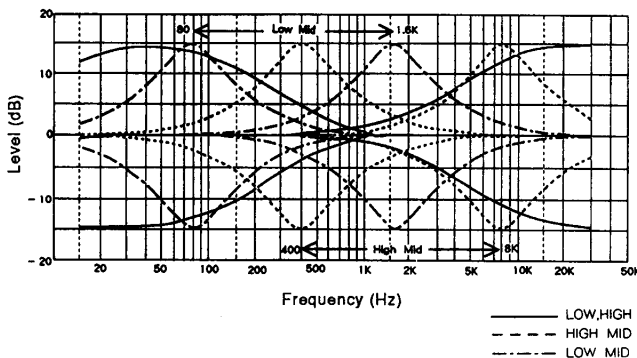
Used for equalization in the high-mid frequency range.

The center frequency can be set between 400 Hz and 8 kHz using the HM FREQ control, while the HIGH MID control is used to boost or cut the frequencies by up to 15 dB. The response is flat at the center position “▼”.

8 LM FREQ and LOW MID equalizer controls

Used for equalization in the low-mid frequency range.

The center frequency can be set between 80 Hz and 1.6 kHz using the LM FREQ control, while the LOW MID control is used to boost or cut the frequencies by up to 15 dB. The response is flat at the center position “▼”.



9 LOW equalizer control

Allows equalization in the low frequency range.

Low frequencies above the cutoff frequency of 100 Hz can be boosted or cut by up to 15 dB. The response is flat at the center position “▼”.

10 AUX 1, 2, 3, 4 controls

Determine the level of the signals sent to the AUX mix busses.

AUX 1, 2 send a pre-fader, pre-EQ and pre-HPF signal, and AUX 3, 4 send a post-fader signal.

The “◀” position corresponds to the rated output level.

11 PAN (panpot) control and Assignment switches (1-2, 3-4, STEREO)

Allow assignment of the input signal to group bus 1-2, group bus 3-4 and the stereo bus for sound imaging between the respective groups or channels.

When the corresponding assignment switch is engaged, the input signal controlled by the channel fader can be panned between groups 1 and 2, 3 and 4, or stereo channels L and R.

12 CH ON switch

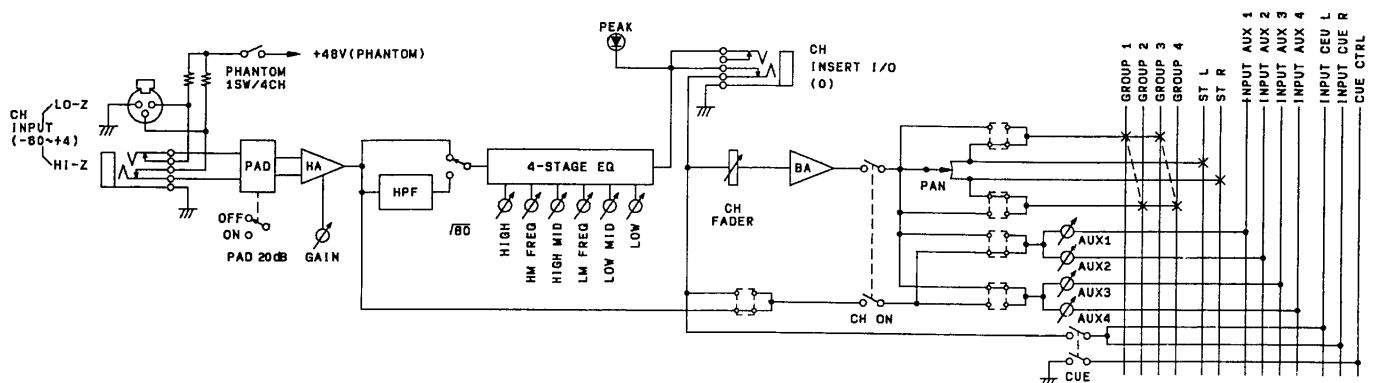
The CH ON switch turns the respective channel on or off. When this switch is turned off (■), the output signal to the mix bus is muted completely.

13 CUE switch

Pressing the CUE switch (■) on any channel permits monitoring only the selected channel signal via the headphone output. Monitoring is possible regardless of the setting of the corresponding CH ON switch.

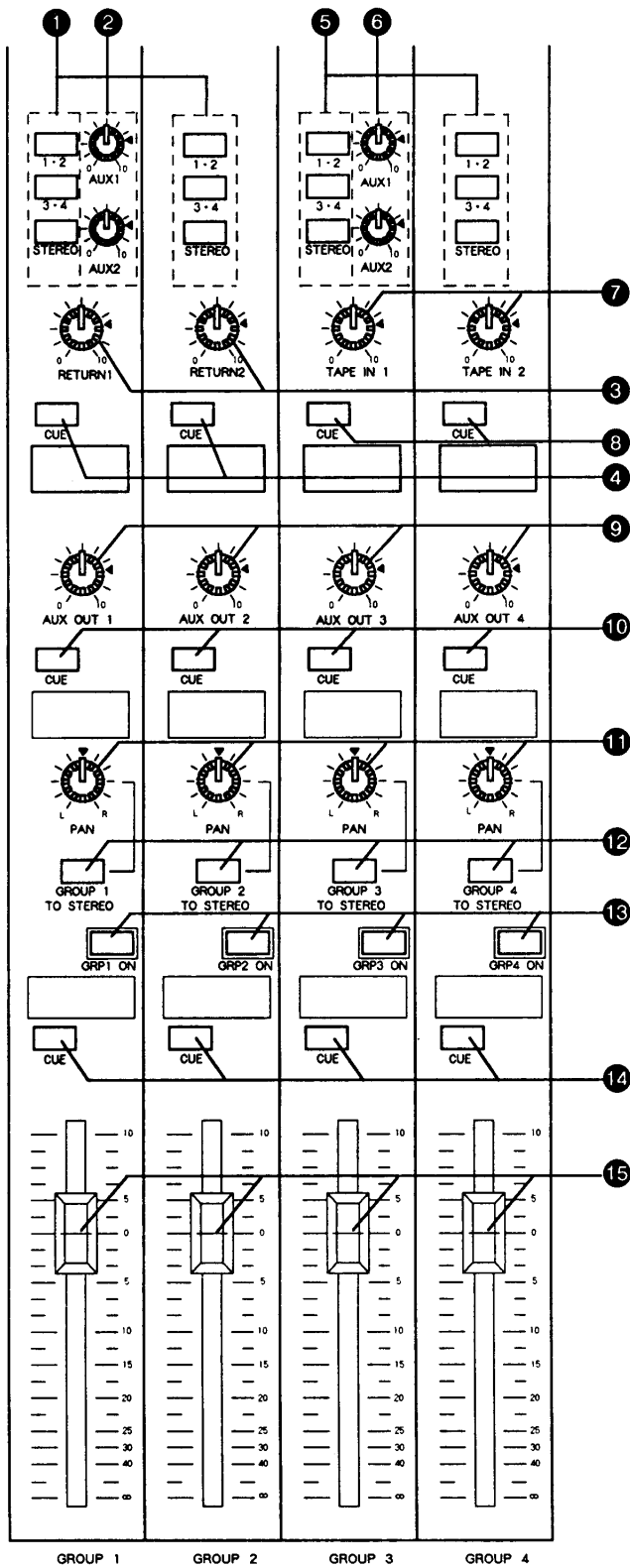
14 Channel Fader

Controls the signal output levels of each channel. Rated output (nominal) level is achieved with the fader set at “0” on the scale.



GROUP 1 — 4 MASTER OUT SECTIONS

GROUP 1 — 4 MASTER OUT



1 Assignment switches (1-2, 3-4, STEREO)

These switches are used to send the signal input to RETURN 1 and 2 to the GROUP 1-2, GROUP 3-4 and STEREO L-R busses.

If the input signal is from a stereo source*, the L channel signal will be sent to groups 1-3 and STEREO L, and the R channel signal to groups 2-4 and STEREO R. If the signal is from a monaural source*, the same signal will be sent to each bus.

Note: "Stereo source" means connection to both L and R RETURN jacks, while "monaural source" refers to a connection to either the L or the R jack.

2 AUX controls

Control the output level of the signal input to RETURN 1 and sent to the AUX 1 and 2 busses. The L and R signals from the stereo source* are mixed and sent to the AUX 1 and 2 busses. When the L signal and R signal are identical the rated output can be obtained with the control set at "◀". If the signal is from a monaural source*, the same signal is sent to the AUX 1 and 2 busses, and the rated output can be obtained at the "◀" position.

The levels of the signals sent to AUX 1 and 2 are further controlled simultaneously by the RETURN controls 3.

Note: "Stereo source" means connection to both L and R RETURN jacks, while "monaural source" refers to a connection to either the L or the R jack.

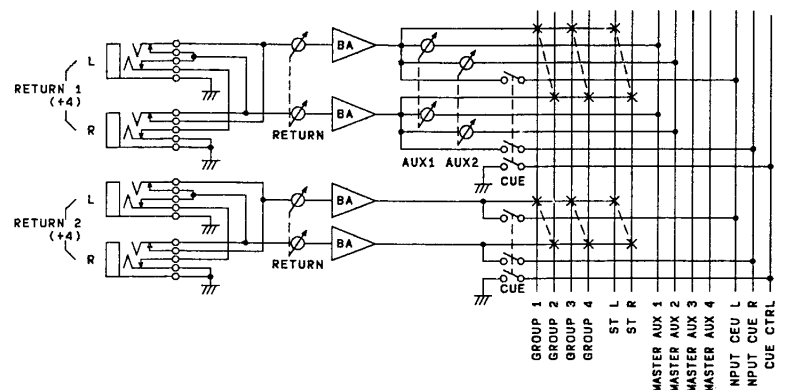
3 RETURN controls

Control the output level of the signals input to RETURN 1 and 2 to be sent to each bus.

Rated output is obtained with the controls set at "◀".

4 CUE switches

Pressing the CUE switch permits monitoring the signal after the RETURN control 3 via the headphone output.



5 Assignment switches (1-2, 3-4, STEREO)

These switches are used to assign the signal input to TAPE IN 1 and 2 to the GROUP 1-2, 3-4 and the STEREO L-R.

The L signal will be sent to groups 1-3 and STEREO L, and the R signal to groups 2-4 and STEREO R.

6 AUX controls

Control the output level of the signal input to TAPE IN 1 and to be sent to the AUX 1 and 2 busses. L and R signals from the stereo source are mixed and sent to the AUX 1 and 2 busses. If the L signal and R signals are identical the rated output is obtained with the controls set at “◀”.

The levels of the signals sent to AUX 1 and 2 are further controlled simultaneously by the TAPE IN controls 7.

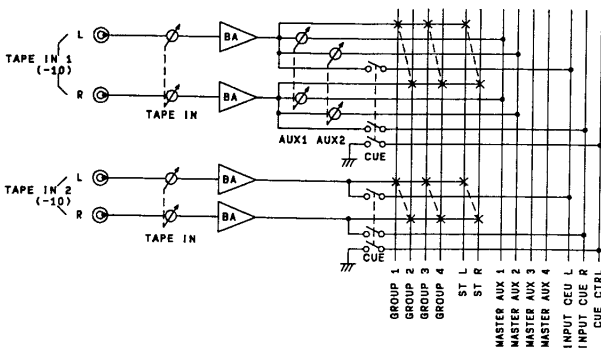
7 TAPE IN controls

Control the output level of the signal input to TAPE IN and to be sent to each bus.

Rated output is obtained with the controls set at “◀”.

8 CUE switches

Pressing the CUE switch permits monitoring the signal after the TAPE IN control 7 via the head-phone output.



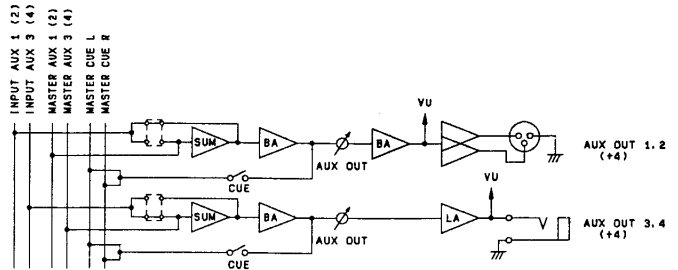
9 AUX OUT controls

Control the output levels of the signals mixed at the AUX mix bus and to be sent to the AUX OUT terminals.

Rated output is obtained with the controls set at “◀”.

10 CUE switches

Pressing the CUE switch permits monitoring the mix of the corresponding AUX signal via the head-phone output.



11 PAN controls

The controls allow sound imaging of each group signal between the STEREO L and R channels. The group signals controlled by each group master fader are panned using these controls and sent to the STEREO mix bus.

However, the signal is only sent to the mix bus if the corresponding GROUP TO STEREO switch is engaged (—).

12 GROUP TO STEREO switches

When this switch is pressed (—), the PAN control output is sent to STEREO mix bus.

13 GRP(GROUP) ON switches

When this switch is pressed (—), the signal will be output from the corresponding GROUP OUT terminal.

14 CUE switches

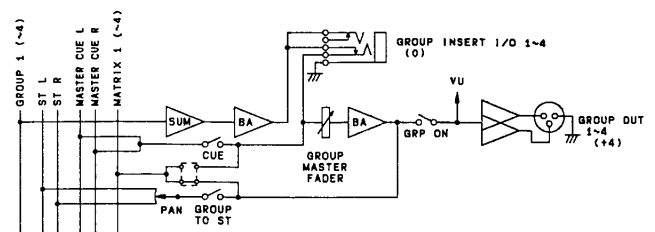
Pressing the corresponding CUE switch permits monitoring the mix of the group signal via the headphone output.

Monitoring is possible regardless of the setting of the GROUP ON switch.

15 Group master faders

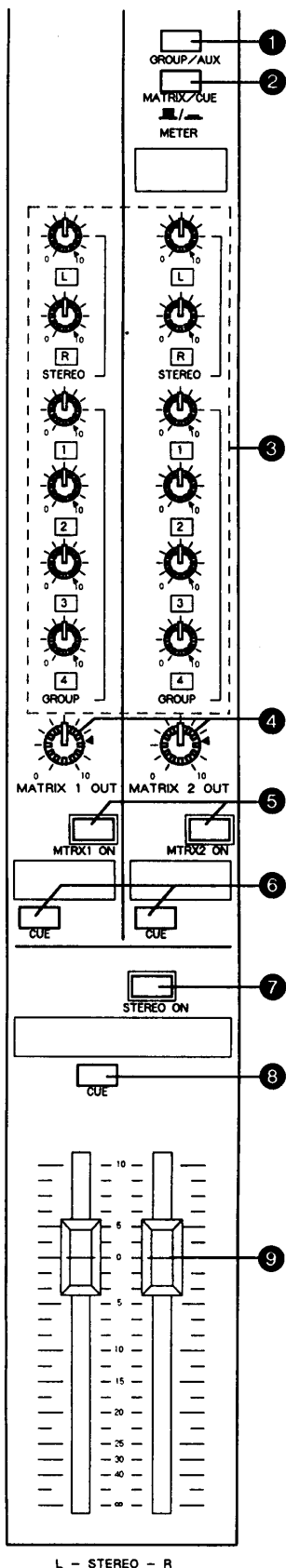
Control the output levels of the signals mixed at the group busses to be sent to the GROUP OUT terminals.

Rated output is obtained with the faders set at “0”



STEREO OUT SECTIONS

STEREO OUT



1 GROUP/AUX meter select switch

Used for selection of the signals to be monitored on the four GROUP/AUX VU meters.

When the switch is off (■), the GROUP signals are selected, and when it is on (—), the AUX signals are selected. All four VU meters are switched simultaneously.

2 MATRIX/CUE meter select switch

Allows selection of the signals to be monitored on the two MATRIX/CUE VU meters.

When the switch is off (■), the MATRIX signals are selected, and when it is on (—), the CUE signals are selected. Both VU meters are switched simultaneously.

3 STEREO L-R, GROUP 1 — 4 mix level controls

Control the levels of the signals from the STEREO and GROUP faders to be sent to the MATRIX.

Rated output is obtained with the controls set at “◀”.

4 MATRIX OUT controls

The signals from STEREO L-R and groups 1 — 4 are mixed at the MATRIX stages, resulting in two monaural signals. The output levels of the mixed signals, which will be fed to the MATRIX OUT terminals, are adjusted using these controls.

Rated output is obtained with the controls set at “◀”.

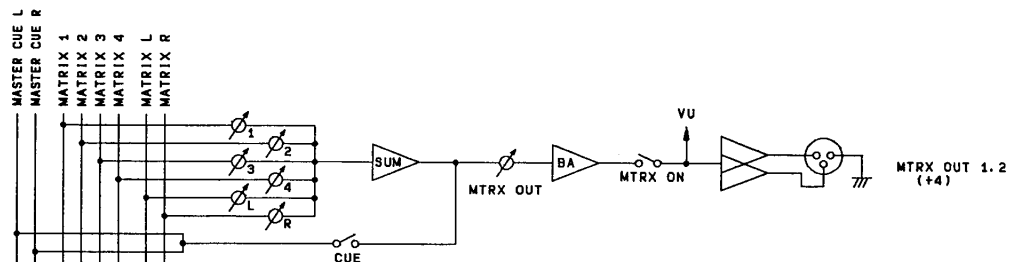
5 MTRX (MATRIX) ON switches

With the switch engaged (—), the corresponding signal is output from the MATRIX OUT terminal.

6 CUE switches

Pressing the corresponding CUE switch permits monitoring the mixing status of the matrix signal via the headphone output.

Monitoring is possible regardless of the setting of the MTRX ON switch.



7 STEREO ON switch

When the switch is engaged (—), the signal is output from the STEREO OUT terminals.

8 CUE (STEREO CUE) switches

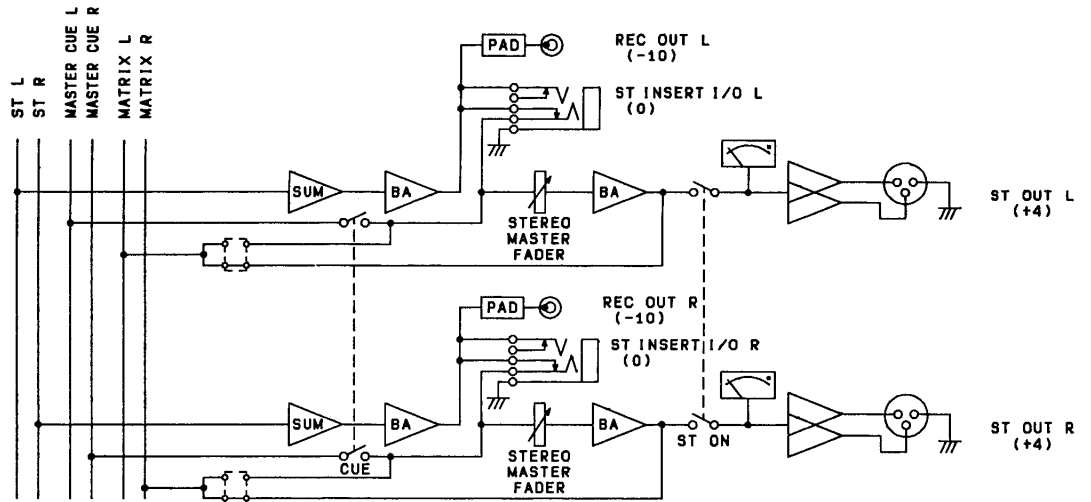
Pressing this CUE switch permits monitoring the STEREO mix via the headphone output.

Monitoring is possible even if the STEREO ON switch is off (—).

⑨ Stereo master fader

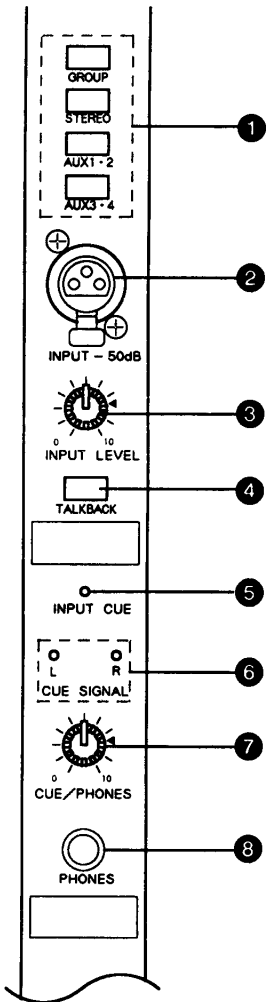
Controls the output level of the signals mixed at the STEREO mix bus and sent to the STEREO OUT terminals.

Rated output is obtained at the fader position "0", and the output level can be monitored on the VU meter.



PHONES & TALKBACK SECTIONS

PHONES & TALKBACK

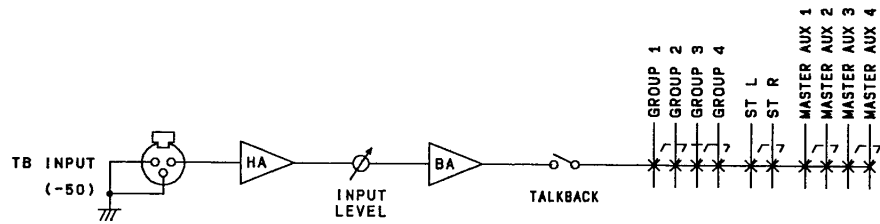


1 Assignment switches (GROUP, STEREO, AUX1-2, AUX3-4)
 These switches are used to specify the output destination (mix bus) of the talkback signal.

2 INPUT (talkback) – 50 dB
 Here a low impedance microphone can be connected for talkback. Rated input level/impedance is – 50 dB/50 ~ 600 Ω.

3 INPUT LEVEL control
 Controls the level of the talkback signal.
 Rated output is obtained with the control set at “◀”.

4 TALKBACK switch
 When this switch is pressed (■), communication is possible using the microphone connected to the INPUT (talkback) terminal.

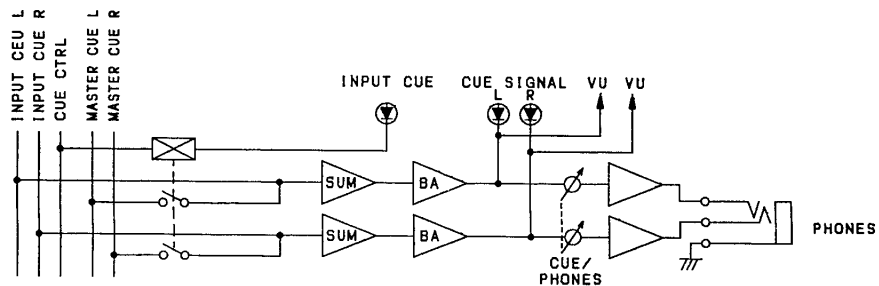


5 INPUT CUE indicator
 This indicator lights up when the INPUT channel CUE switch, the RETURN CUE switch and/or the TAPE IN CUE switch is pressed.
 In this condition, even if the CUE (master CUE) switch of the MASTER OUT section is pressed, only the CUE signal of the INPUT section will be output to the headphones.

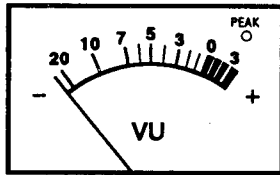
6 CUE SIGNAL indicator
 This indicator lights at CUE signal levels exceeding 20 dB below the rated level. The indicator can be used to confirm if a signal is present at each input section.

7 CUE/PHONES control
 Controls the volume level of the headphones.
 Rated output is obtained at the control position “◀”.

8 PHONES
 Connect the stereo headphones to this jack. The headphones are used for monitoring the CUE signals.



VU METER



VU meters

All VU meters feature a built-in PEAK indicator. The VU meters can be used to display the GROUP 1 — 4, STEREO OUT L and R, AUX OUT 1 — 4, MATRIX OUT 1 and 2, and CUE L and R output levels. A VU meter reading of 0 VU corresponds to rated output.

VU meter reading	-20VU	-10VU	-5VU	0VU	+3VU
+ 4 dB output level	-16dB (123mV)	-6dB (388mV)	-1dB (691mV)	+4dB (1.23V)	+7dB (1.74V)

The PEAK indicators light 3 dB below the maximum output.

PEAK Indicator ON level	
AUX OUT 3-4	+17dB
Other than above	+21dB

* Note that if an XLR type balanced output terminal is used for unbalanced output, the maximum output level is approx. 20 dB, and clipping of the output signal may occur before the PEAK indicator lights.

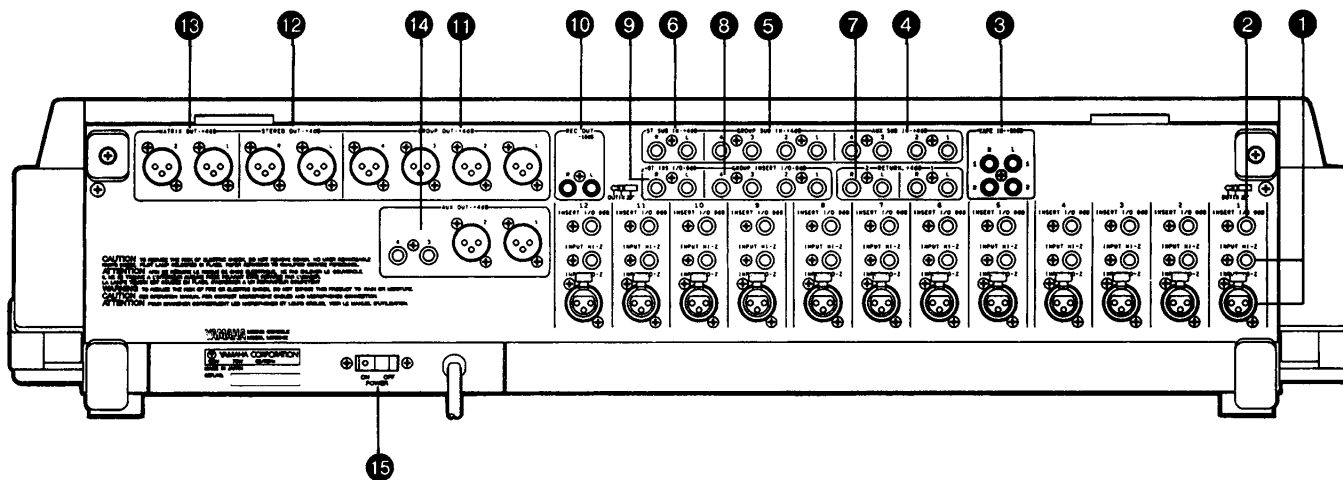
MODIFYING THE MIXER

The layout of internal jumper connections and resistors can be changed as shown below. If required, please ask an authorized dealer to perform the necessary modification.

Unit name	Signal name	Modification	Factory setting
① Input module	AUX 1,2	PRE/POST FADER	PRE
② Input module	AUX 3,4	PRE/POST FADER	POST
③ Input module	AUX1 — 4 PRE FADER	PRE/POST HPF, EQ, INSERT	PRE
④ Input module	GROUP 1 — 4	PRE/POST PAN	POST
⑤ Master module	GROUP TO MTRX	PRE/POST MASTER FADER	POST
⑥ Input connector board (CH INPUT connector section)	PHANTOM POWER (+ 48 V)	Continuously off, regardless of PHANTOM ON/OFF switch.	4 channels simultaneously ON/OFF.

* Please note, that ① through ④ require the same setting for all channels.

REAR PANEL



1 Channel INPUT (LO-Z, HI-Z)

Each channel input is equipped with a balanced low-impedance (LO-Z) input terminal and a balanced high-impedance (Hi-Z) input terminal. The rated input level is -60 dB to $+4$ dB, corresponding to $50 \sim 600 \Omega$ microphone or 600Ω line sources.

In internal phantom power supply is provided for phantom-powered condenser microphones.

The HI-Z terminals are not supplied with phantom power.

In case of connection to both the LO-Z and HI-Z terminals the HI-Z terminal has priority.

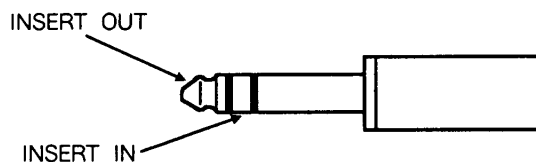
MICROPHONE CABLES AND MICROPHONES CONNECTION

TO PREVENT HAZARD OR DAMAGE, ENSURE THAT ONLY MICROPHONE CABLES AND MICROPHONES DESIGNED TO THE IEC268-15A STANDARD ARE CONNECTED.

2 Channel INSERT I/O . 0 dB

These are unbalanced input/output terminals patched between the head amplifier and the equalizer of the INPUT section.

The IN line accepts a 0 dB/ 600Ω signal, and the OUT line can be connected to 0 dB/ 10 k Ω equipment. The inserts can be used for a wide range of applications.



3 TAPE IN. -10 dB

These pin jack inputs can be used to input various kinds of audio sources (DAT recorder, cassette deck, CD player etc.).

Rated input level/impedance is -10 dB/ 600Ω .

4 AUX SUB IN . $+4$ dB

5 GROUP SUB IN . $+4$ dB

6 ST(stereo) SUB IN . $+4$ dB

This can be used to increase the number of channels by connecting a second mixer.

These are all unbalanced inputs with a matching level/impedance of $+4$ dB/ 600Ω .

7 RETURN. $+4$ dB

These are unbalanced input terminals used to input the return signal from effect units.

The matching input level/impedance is $+4$ dB/ 600Ω .

Although these are stereo inputs, they can be used as monaural inputs by connection to either the L or the R channel.

(Refer to GROUP 1 — 4 MASTER OUT SECTIONS 1 on page 4.)

⑧ **GROUP INSERT I/O. 0 dB**

⑨ **ST INS (stereo insert) I/O. 0 dB**

These are unbalanced input/output terminals patched between the mix bus and the master fader.

The IN line accepts a 0 dB/600 Ω signal, and the OUT line can be connected to 0 dB/10 kΩ equipment. The inserts can be used for a wide range of applications.

The pin assignment is identical to the ② Channel INSERT I/O. 0 dB connectors.

⑩ **REC OUT. - 10 dB**

These pin jacks output a pre-stereo master fader signal and can be used for connection to a DAT recorder or a cassette deck for recording.

The rated output level/impedance is - 10 dB/47 kΩ.

⑪ **GROUP OUT. + 4 dB**

⑫ **STEREO OUT. + 4 dB**

⑬ **MATRIX OUT. + 4 dB**

Balanced output terminals for connection of a power amp (speaker system) or a tape deck for recording. The rated output level/impedance is + 4 dB/600 Ω.

⑭ **AUX OUT. + 4 dB**

Output terminals for connection of a foldback speaker amp or a delay or reverb effect unit etc.

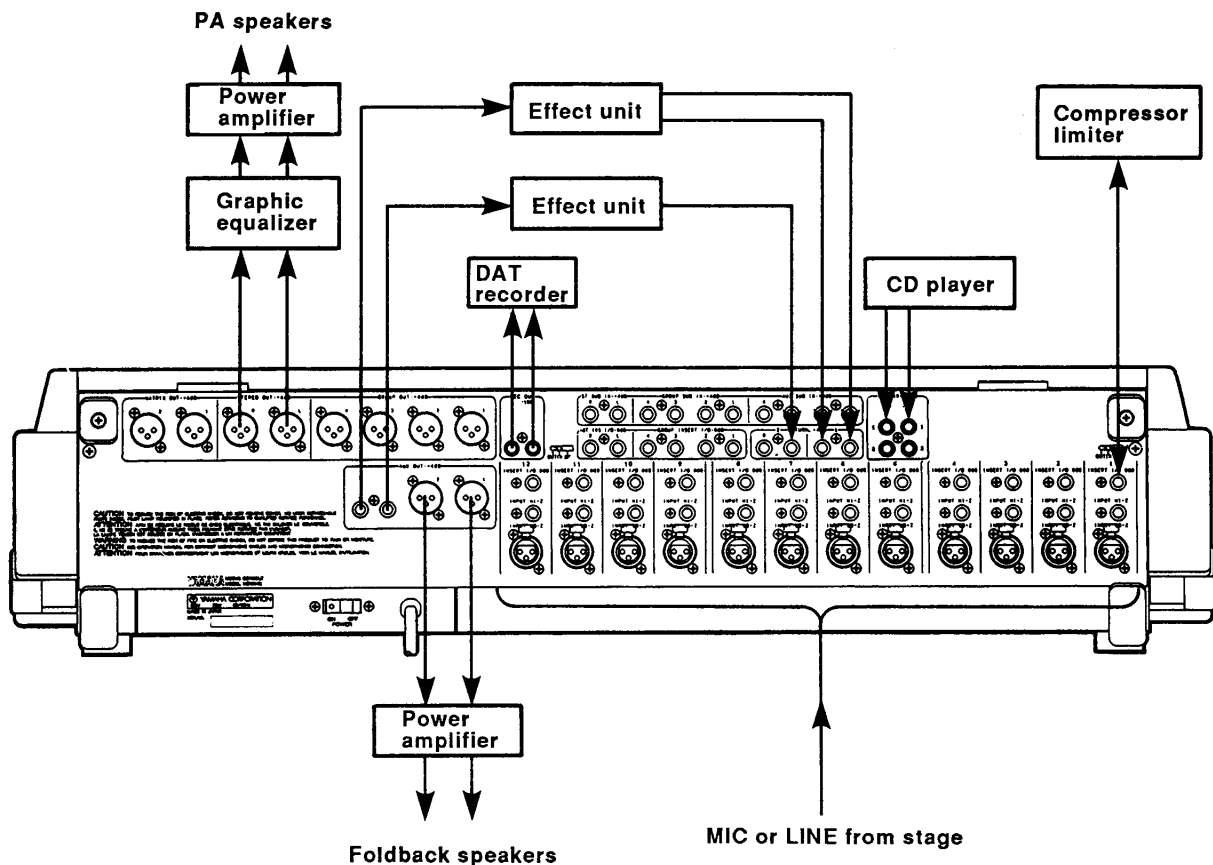
AUX OUT 1, 2 are balanced outputs, and AUX OUT 3, 4 are unbalanced outputs.

The rated output level/impedance is + 4 dB/600 Ω.

⑮ **POWER switch**

When this switch is pressed, the power turns on, and the front panel power indicator and the VU meters light.

SYSTEM EXAMPLES



SPECIFICATIONS

Frequency Response

20Hz — 20 kHz, 0 + 1/- 3 dB (@ 600 Ω, + 4 dB)

Total Harmonic Distortion

Less than 0.1% (20 Hz — 20 kHz, @ 600 Ω, + 14 dB)

Noise Level *

Equivalent Input Noise - 128 dB (Rs = 150 Ω)

Residual Noise - 97 dB

GROUP OUT

- 80 dB Master Faders → nominal
All CH Assign Switches → off

- 64 dB Master Faders → nominal
One CH Fader → nominal

STEREO OUT

- 79 dB Master Faders → nominal
All CH Assign Switches → off

- 64 dB Master Faders → nominal
One CH Fader → nominal

AUX OUT

- 77 dB AUX OUT control → nominal
All Input CH AUX control → minimum

- 64 dB AUX OUT control → nominal
One Input CH AUX control → nominal

MATRIX OUT

- 92 dB MATRIX OUT control → nominal
All MATRIX Mix controls → minimum

Maximum Voltage Gain

CH IN → GROUP OUT	84 dB
CH IN → STEREO OUT (CH to STEREO)	84 dB
CH IN → STEREO OUT (GROUP to STEREO)	94 dB
CH IN → AUX OUT (Pre Fader)	76 dB
CH IN → AUX OUT (Post Fader)	86 dB
CH IN → CH INSERT OUT	60 dB
TAPE IN → GROUP OUT	30 dB
RETURN → GROUP OUT	16 dB
TALKBACK IN → GROUP OUT	70 dB
SUB IN → GROUP, STEREO	10 dB
SUB IN → AUX OUT	6 dB

Gain Control 44 dB variable

PAD Switch 0/20 dB

Equalizer Characteristics

HIGH-EQ	± 15 dB (10 kHz Shelving)
HIGH-MID-EQ	± 15 dB (400 Hz — 8 kHz Peaking)
LOW-MID-EQ	± 15 dB (80 Hz — 1.6 kHz Peaking)
LOW-EQ	± 15 dB (100 Hz Shelving)

High Pass Filter 12 dB/octave roll-off 80 Hz

Crosstalk (1 kHz) - 70 dB @ adjacent input
- 70 dB @ input to output

VU Meters

GROUP1/AUX1, GROUP2/AUX2,
GROUP3/AUX3, GROUP4/AUX4

MATRIX1/CUE L, MATRIX2/CUE R,
STEREO L . R

(0VU = + 4 dB)

Indicators

CH PEAK Lights 3 dB below clipping level
(Post EQ)

CUE SIGNAL Lights at signal levels exceeding 20 dB
below rated level

PHANTOM Power Supply + 48 V (DC)

Power Requirements

U.S. & Canadian Models:	120 V, 60 Hz
British Model:	240 V, 50 Hz
General Model:	230 V, 50 Hz

Power Consumption 80 W

Dimensions (W x H x D)

MC1204 II	782.5 x 185 x 739 mm (30-13/16" x 7-5/16" x 29-1/8")
MC1604 II	923 x 185 x 739 mm (36-5/16" x 7-5/16" x 29-1/8")
MC2404 II	1204 x 185 x 739 mm (47-3/8" x 7-5/16" x 29-1/8")
MC3204 II	1485 x 185 x 739 mm (58-7/16" x 7-5/16" x 29-1/8")

Weight

MC1204 II	25 kg (55 lbs. 2 oz)
MC1604 II	29 kg (63 lbs. 15 oz)
MC2404 II	37 kg (81 lbs. 9 oz)
MC3204 II	45 kg (99 lbs. 3 oz)

- * Measured with a - 6 dB/octave LPF, @ 12.7 kHz
- 0 dB = 0.775 Vr.m.s.
- Specifications subject to change without notice.

■ INPUT CHARACTERISTICS

Input terminals	Input level		Input impedance	Source impedance	Input level			Connector
	PAD	GAIN			Sensitivity * 1)	Rated level	Max. non-clipping level	
CH INPUT MC1204 II 1 — 12 MC1604 II 1 — 16 MC2404 II 1 — 24 MC3204 II 1 — 32	0dB	-60dB	(LO-Z) 5 kΩ	50 — 600 Ω Microphones & 600 Ω Lines	-80 dB (0.08 mV)	-60 dB (0.78 mV)	-40 dB (7.75 mV)	(LO-Z) XLR-3-31 type (Balanced)
	0dB	-16dB	(HI-Z) 10 kΩ		-36 dB (12.3 mV)	-16 dB (0.123 V)	+4 dB (1.23 V)	(HI-Z) Phone Jack (Balanced) (TRS) * 4)
	20dB				-16 dB (0.123 V)	+4 dB (1.23 V)	+24 dB (12.3 V)	
CH INSERT IN MC1204 II 1 — 12 MC1604 II 1 — 16 MC2404 II 1 — 24 MC3204 II 1 — 32			10 kΩ	600 Ω Lines	-20 dB (77.5 mV)	0 dB (0.775 V)	+20 dB (7.75 V)	Phone Jack (TRS) * 2)
INSERT IN GROUP (1 — 4) STEREO (L, R)			10 kΩ	600 Ω Lines	-10 dB (0.245 V)	0 dB (0.775 V)	+20 dB (7.75 V)	Phone Jack (TRS) * 2)
RETURN (1, 2) [L, R]			20 kΩ * 3)	600 Ω Lines	-12 dB (0.195 V)	+4 dB (1.23 V)	+24 dB (12.3 V)	Phone Jack (Unbalanced)
SUB IN GROUP 1 — 4 STEREO [L, R] AUX 1 — 4			10 kΩ	600 Ω Lines	-6 dB (0.338 V)	+4 dB (1.23 V)	+24 dB (12.3 V)	Phone Jack (Unbalanced)
TALKBACK IN			10 kΩ	50 — 600 Ω Microphones	-66 dB (0.39 mV)	-50 dB (2.45 mV)	-24 dB (48.9 mV)	XLR-3-31 type (Unbalanced)
TAPE IN (1, 2) [L, R]			47 kΩ	600 Ω Lines	-26 dB (38.8 mV)	-10 dB (0.245 V)	+20 dB (7.75 V)	RCA PIN Jack (Unbalanced)

* 1) Sensitivity is the lowest level that will produce the nominal GROUP output level when the unit is set to maximum level.

* 2) Insert Phone Jacks (T = OUT, R = IN, S = GND)

* 3) 10 kΩ when using either L or R.

* 4) HI-Z CH INPUT Phone Jacks (T = HOT, R = COLD, S = GND)

* 0 dB = 0.775 Vrms.

■ OUTPUT CHARACTERISTICS

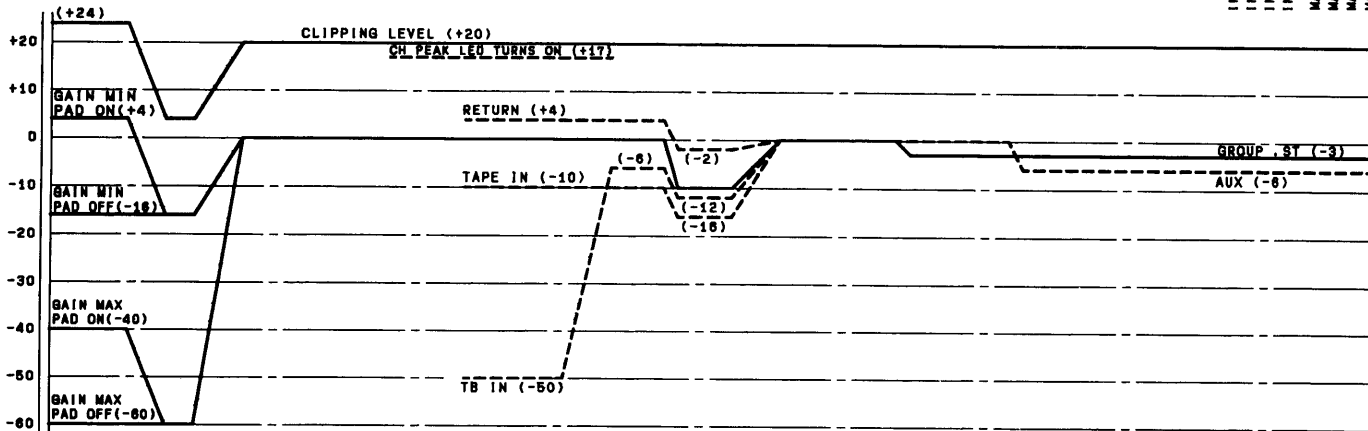
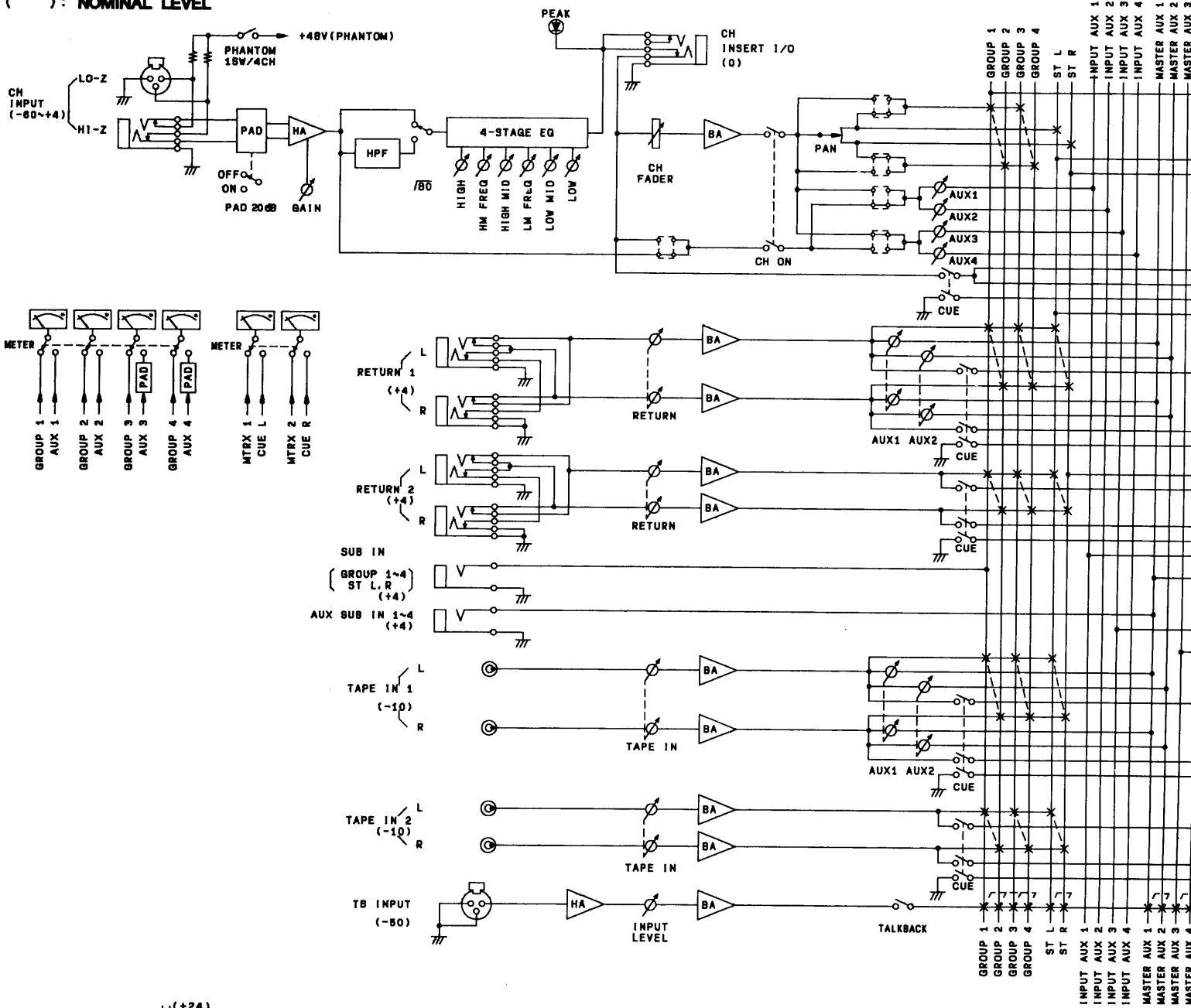
Output terminals	Output impedance	Load impedance	Output level		Connector
			Rated level	Max. non-clipping level	
GROUP OUT (1 — 4)	150 Ω	600 Ω Lines	+4 dB (1.23 V)	+24 dB (12.3 V)	XLR-3-32 type (Balanced)
STEREO OUT (L, R)	150 Ω	600 Ω Lines	+4 dB (1.23 V)	+24 dB (12.3 V)	XLR-3-32 type (Balanced)
AUX OUT (1, 2)	150 Ω	600 Ω Lines	+4 dB (1.23 V)	+24 dB (12.3 V)	XLR-3-32 type (Balanced)
AUX OUT (3, 4)	75 Ω	600 Ω Lines	+4 dB (1.23 V)	+20 dB (7.75 V)	Phone Jack (Unbalanced)
MATRIX (1, 2)	150 Ω	600 Ω Lines	+4 dB (1.23 V)	+24 dB (12.3 V)	XLR-3-32 type (Balanced)
CH INSERT OUT	600 Ω	10 kΩ Lines	0 dB (0.775 V)	+20 dB (7.75 V)	Phone Jack (TRS) * 1)
INSERT OUT GROUP (1 — 4) STEREO (L, R)	600 Ω	10 kΩ Lines	0 dB (0.775 V)	+20 dB (7.75 V)	Phone Jack (TRS) * 1)
REC OUT (L, R)	600 Ω	47 kΩ Lines	-10 dB (0.245 V)	+10 dB (2.45 V)	RCA PIN Jack (Unbalanced)
PHONES OUT (L, R)	100 Ω	8 Ω Phones	1 mW	20 mW	Stereo Phone Jack
		40 Ω Phones	3 mW	75 mW	

* 1) Insert Phone Jacks (T = OUT, R = IN, S = GND)

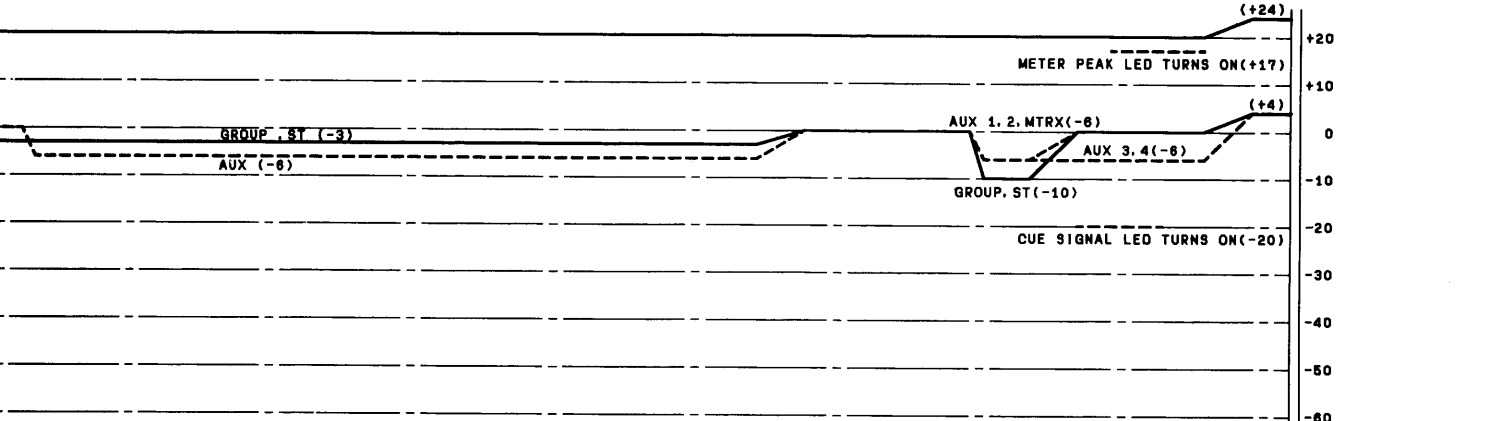
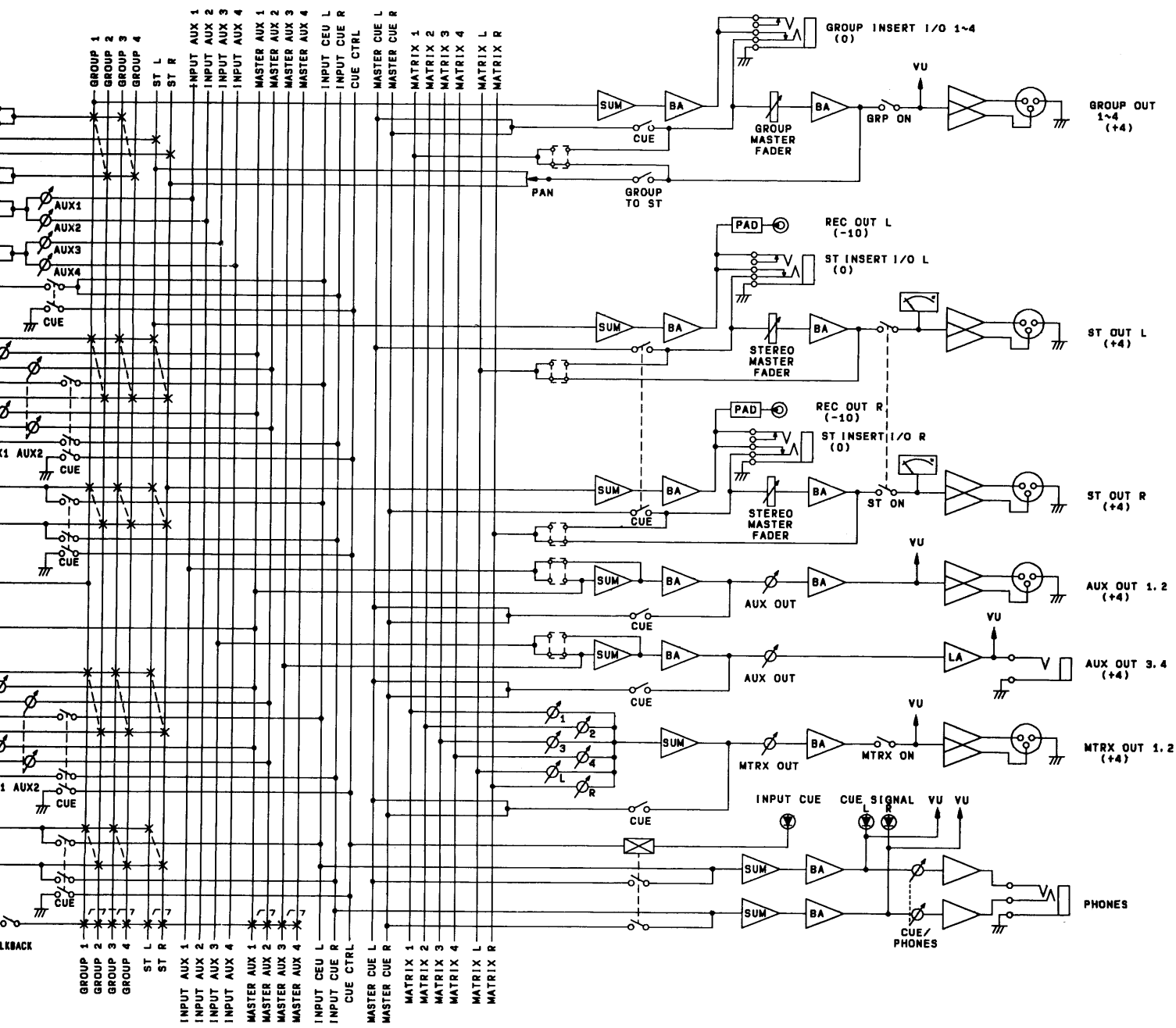
* 0 dB = 0.775 Vrms.

BLOCK & LEVEL DIAGRAM / SCHEMA DE PRINCIPE ET DIAGRAMME DE NIVEAU

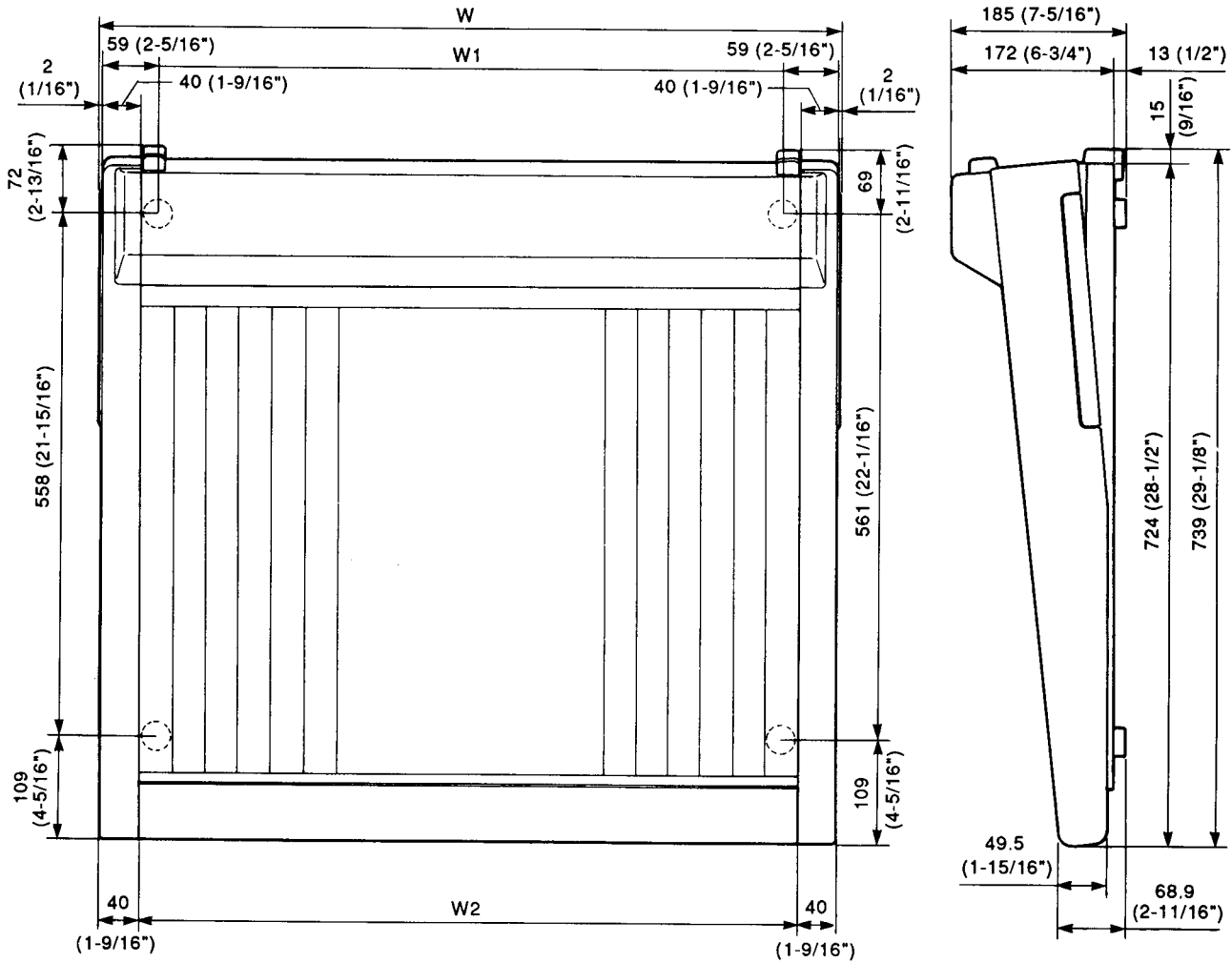
() : NOMINAL LEVEL



GRAMME DE NIVEAU / BLOCKSCHALTBIKD UND PEGELDIAGRAMM



DIMENSIONS / DIMENSIONS / ABMESSUNGEN



	W	W1	W2
MC1204II	782.5 (30-13/16")	660.5 (26")	698.5 (27-1/2")
MC1604II	923 (36-5/16")	801 (31-9/16")	839 (33-1/16")
MC2404II	1204 (47-3/8")	1082 (42-5/8")	1120 (44-1/8")
MC3204II	1485 (58-7/16")	1363 (53-11/16")	1401 (55-3/16")

Unit: mm (inch)

Unité: mm (pouce)

Einheit: mm (zoll)

SERVICE

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

ENTRETIEN

L'entretien de cet appareil est assuré par le réseau mondial YAMAHA de personnel d'entretien qualifié et formé en usine des concessionnaires. En cas de problème, prendre contact avec le concessionnaire YAMAHA le plus proche.

KUNDENDIENST

Für dieses Gerät steht das weltweite YAMAHA Kundendienstnetz mit qualifiziertem, werksgeschultem Personal zur Verfügung. Bei Störungen und Problemen wenden Sie sich bitte an Ihren YAMAHA-Händler.

YAMAHA