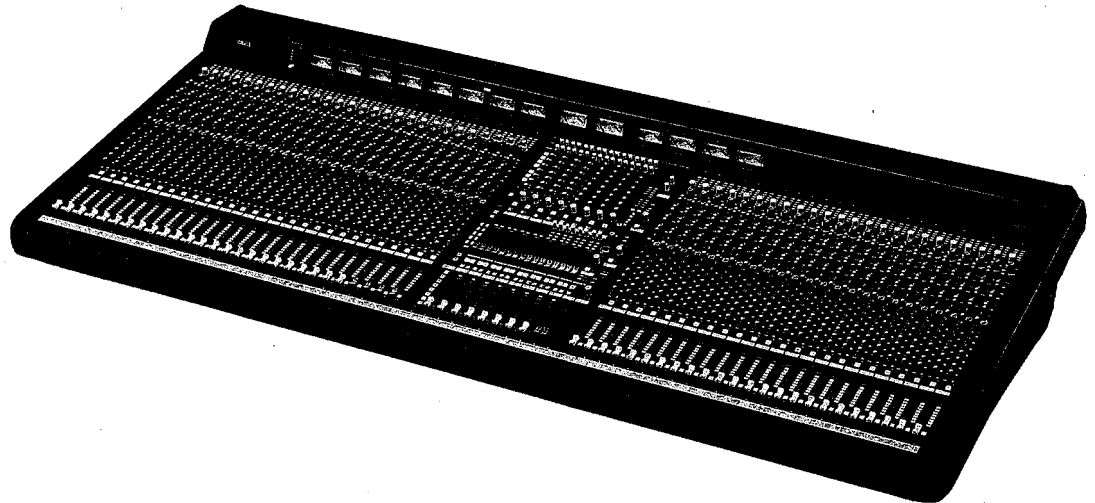


# MIXING CONSOLE

# PM3500

## SERVICE MANUAL



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IT3500 PARTS LIST	

PA 011260

19950120-4500000-24  
19950120-5700000-40

19950120-5100000-32  
19950120-6300000-48

**YAMAHA CORP.**

HAMAMATSU, JAPAN

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## IMPORTANT NOTICE

This manual has been provided for the use of authorized Yamaha Retailers and their service personnel. It has been assumed that basic service procedures inherent to the industry, and more specifically Yamaha Products, are already known and understood by the users, and have therefore not been restated.

**WARNING:** Failure to follow appropriate service and safety procedures when servicing this product may result in personal injury, destruction of expensive components and failure of the product to perform as specified. For these reasons, we advise all Yamaha product owners that all service required should be performed by an authorized Yamaha Retailer or the appointed service representative.

**IMPORTANT:** The presentation or sale of this manual to any individual or firm does not constitute authorization, certification, recognition of any applicable technical capabilities, or establish a principal-agent relationship of any form.

The data provided is believed to be accurate and applicable to the unit(s) indicated on the cover. The research, engineering, and service departments of Yamaha are continually striving to improve Yamaha products. Modifications are, therefore, inevitable and changes in specification are subject to change without notice or obligation to retrofit. Should any discrepancy appear to exist, please contact the distributor's Service Division.

**WARNING:** Static discharges can destroy expensive components. Discharge any static electricity your body may have accumulated by grounding yourself to the ground buss in the unit (heavy gauge black wires connect to this buss).

**IMPORTANT:** Turn the unit OFF during disassembly and parts replacement. Recheck all work before you apply power to the unit.

This product uses a lithium battery for memory back-up.

**WARNING:** Lithium batteries are dangerous because they can be exploded by improper handling. Observe the following precautions when handling or replacing lithium batteries.

- Leave battery replacement to qualified service personnel.
- Always replace with batteries of the same type.
- When installing on the PC board, solder using the connection terminals provided on the battery cells. Never solder directly to the cells. Perform the soldering as quickly as possible.
- Never reverse the battery polarities when installing.
- Do not short the batteries.
- Do not attempt to recharge these batteries.
- Do not disassemble the batteries.
- Never heat batteries or throw them into fire.

### ADVARSEL!

Lithiumbatteri. Eksplosionsfare.  
Udskiftning må kun foretages af en sagkyndig, og som beskrevet i servicemanualen.

## WARNING: CHEMICAL CONTENT NOTICE!

The solder used in the production of this product contains LEAD. In addition, other electrical/electronic and/or plastic (where applicable) components may also contain traces of chemicals found by the California Health and Welfare Agency (and possibly other entities) to cause cancer and/or birth defects or other reproductive harm.

**DO NOT PLACE SOLDER, ELECTRICAL/ELECTRONIC OR PLASTIC COMPONENTS IN YOUR MOUTH FOR ANY REASON WHAT SO EVER!**

Avoid prolonged, unprotected contact between solder and your skin! When soldering, do not inhale solder fumes or expose eyes to solder/flux vapor!

If you come in contact with solder or components located inside the enclosure of this product, wash your hands before handling food.

## SPECIFICATIONS

### PM3500 mixing console general specifications

<b>Total Harmonic Distortion (Master Output)</b>	< 0.1% (THD+N)	20Hz – 20kHz @ +14dBu, 600Ω
	< 0.01% (2nd to 10th harmonics)	20Hz – 20kHz @ +14dBu, 600Ω
<b>Frequency response (Master Output)</b>	0±1/3dB	20Hz – 20kHz @ +4dBu, 600Ω
<b>Hum and Noise (20Hz – 20kHz)</b> Rs=150Ω Input gain = Max. Input PAD = OFF Input sensitivity = -70dB Hum and noise <sup>a</sup> (20Hz – 20kHz) 48ch	-128dB	Equivalent input noise
	-98dB	Residual output noise
	-54dB (58dB S/N)	GROUP OUT Master fader and one channel fader at nominal
	-84dB (88dB S/N)	STEREO OUT Master fader at nominal and all channel assign switches off and all group to stereo switches off
	-81dB (85dB S/N)	AUX OUT Master fader at nominal and all channel AUX mix switches off
	-92dB (96dB S/N)	MATRIX OUT Master level control at nominal and all Matrix mix controls at minimum
	-85dB (89dB S/N)	GROUP OUT Master fader at nominal and all channel assign switches off
<b>Crosstalk</b>	-80dB @ 1kHz, -70dB @ 10kHz	adjacent inputs
	-80dB @ 1kHz, -70dB @ 10kHz	input to output
<b>Maximum voltage gain</b>	74dB	CH IN to CH INSERT OUT
	90dB	CH IN to AUX OUT (pre-fader)
	100dB	CH IN to AUX OUT (post-fader)
	84dB	CH IN to MONITOR OUT (INPUT CUE)
	64dB	TALKBACK IN to TALKBACK OUT
	10dB	SUB IN to OUT
	10dB	2TR IN to MONITOR OUT
	84dB	CH IN to DIRECT OUT
	94dB	CH IN to GROUP OUT
	94dB	CH IN to STEREO OUT (CH to ST)
	104dB	CH IN to STEREO OUT (GROUP to ST)
	104dB	CH IN to MATRIX OUT (GROUP to MATRIX)
	51dB	ST CH (ST) to GROUP OUT/STEREO OUT (CH to ST)
	47dB	ST CH (ST) to AUX OUT (pre-fader)
	54dB	ST CH IN (L MONO) to GROUP OUT/STEREO OUT (CH to ST)
	50dB	ST CH IN (L MONO) to AUX OUT (pre-fader)
44dB	ST CH IN to MONITOR OUT (ST INPUT CUE)	

<b>Mono input PAD switch</b>	30dB		
<b>Mono input gain control</b>	50dB variable		
<b>Stereo input gain control</b>	40dB variable		
<b>VCA cue gain trim</b>	20dB (-14dB to +6dB)		
<b>PFL (Input cue) gain trim</b>	20dB (-14dB to +6dB)		
<b>Input high-pass filter</b>	12dB/octave roll-off	below 20 – 400Hz at -3dB point	
<b>Channel equalization</b> ±15dB max	1kHz – 20kHz	HIGH (shelving/peaking, Q= 0.5 – 3)	
	400Hz – 8kHz	HIGH MID (peaking, Q= 0.5 – 3)	
	80Hz – 1.6kHz	LOW MID (peaking, Q= 0.5 – 3)	
	30Hz – 600Hz	LOW (shelving/peaking, Q= 0.5 – 3)	
<b>Talkback high-pass filter</b>	12dB/octave roll-off	80Hz at -3dB point	
<b>Oscillator/noise</b>	Sine wave @ 100Hz, 1kHz, 10kHz or pink noise	Sweepable from 0.2 to 2 times nominal frequency; less than 1% THD @ + 4dB output	
<b>Phantom power</b>	+48V DC applied to balanced inputs	via 6.8kΩ current-limiting isolation resistors. Rear-panel PHANTOM MASTER switch turns all on or off. When Master is ON, individual channels' phantom power may be switched with channels' PHANTOM switches	
<b>Channel indicators</b>	Built into each monaural and stereo input module (two each per stereo module)		
	<b>PEAK</b>	Red	Turns on when pre- or post-EQ level reaches 3dB below clip level
	<b>NOMINAL</b>	Orange	Turns on when post-EQ level reaches nominal level
	<b>SIGNAL</b>	Green	Turns on when post-EQ level reaches 20dB below nominal level
<b>Σ Peak indicators</b>	Red	In each GROUP, AUX and STEREO bus turns on when pre-fader level reaches 3dB below clip level	
<b>Scene memories</b>	Direct Recall	Memories 1 through 8	
	Switchable recall	Memories 1 through 128	
<b>VU meters</b>	2 large, 12 smaller	All switchable, all illuminated, with true VU ballistics	
<b>VU meter peak indicators</b>	In each meter (red LED)	Turns on when level reaches 3dB below clip level	

Dimensions		
Height		335mm (13.2in)
		all models
Depth		900mm (35.4 in)
		all models
Width		1322mm (52.0 in)
		1562mm (61.5in)
		1822mm (71.7 in)
		2062mm (81.2 in)
Weight		90kg (198.4 lb)
		106kg (233.7 lb)
		124kg (273.4 lb)
		140kg (308.6 lb)
Supplied accessories	PW4000 power supply	
	Umbilical cable for power supply	
	Label (ST,CH)	

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

● Input characteristics

Connection	PAD	Gain Trim	Actual load impedance	For use with nominal	Input level <sup>a</sup>			Connector in Mixer <sup>b</sup>
					Sensitivity <sup>c</sup>	Nominal	Max. before clip	
CH IN (1 through ch# <sup>d</sup> )	0	-70	3kΩ	50Ω – 600Ω mics and 600Ω lines	-90dB (24.5μV)	-70dB (245μV)	-48dB (3.09mV)	XLR-3-31 type
	30				-60dB (775μV)	-40dB (7.75mv)	-18dB (97.6mV)	
	0	-20			-40dB (7.75mV)	-20dB (77.5mV)	+2dB (976mV)	
	30				-10dB (245mV)	+10dB (2.45V)	+32dB (30.9V)	
ST CH IN (1 – 4) [L, R]	-30	+10	5kΩ	600Ω lines	-50dB (2.45mV)	-30dB (24.5mV)	-8dB (309mV)	XLR-3-31 type
	+10				-10dB (245mV)	+10dB (2.45V)	+32dB (30.9V)	
TALKBACK IN			3kΩ	50Ω – 600Ω mics	-70dB (245μV)	-50dB (2.45mV)	-28dB (30.9mV)	XLR-3-31 type
2TR IN (1, 2) [L, R]			10kΩ	600Ω lines	-6dB (388mV)	+4dB (1.23V)	+26dB (15.5V)	XLR-3-31 type
GROUP (1 through 8) SUB IN			10kΩ	600Ω lines	-6dB (388mV)	+4dB (1.23V)	+26dB (15.5V)	XLR-3-31 type
STEREO [L, R] SUB IN								
AUX (1 through 8) SUB IN								
MATRIX [L, R] SUB IN								
CUE [L, R] SUB IN								

Connection	PAD	Gain Trim	Actual load impedance	For use with nominal	Input level <sup>a</sup>			Connector in Mixer <sup>b</sup>
					Sensitivity <sup>c</sup>	Nominal	Max. before clip	
CH (1 through ch#) INSERT IN			10k $\Omega$	600 $\Omega$ lines	-16dB (123mV)	+4dB (1.23V)	+26dB (15.5V)	Phone jacks (TRS) <sup>e</sup>
ST CHN (1 through 4) [L, R] INSERT IN								
GROUP (1 through 8) INSERT IN								
STEREO [L, R] INSERT IN		-6dB (388mV)						
AUX (1 through 8) INSERT IN								

- a. In these specifications, when dB represents a specific voltage, 0dB is referenced to 0.775Vrms
- b. All XLR connectors are balanced
- c. Sensitivity is the lowest level that will produce an output of +4dB (1.23V) or the nominal output level when the unit is set to maximum level
- d. 24 channels, 32 channels, 40 channels or 48 channels
- e. All phone jacks are balanced (T=hot, R=cold, S=Gnd)

● Output characteristics

Connection	Actual Source Impedance	For use with nominal	Output level <sup>a</sup>		Connector in mixer
			Nominal	Max before clip	
GROUP (1 through 8) OUT STEREO [L,R] OUT AUX (1 through 8) OUT ST-MATRIX (1 through 4) [L, R] OUT MATRIX (1 through 4) OUT MONITOR (A, B) [L, R] OUT TALKBACK OUT OSC OUT	150 $\Omega$	600 $\Omega$ lines	+4dB (1.23V)	+24dB (12.3V)	XLR-3-32 type <sup>b</sup>
CH DIRECT OUT (1 through ch# <sup>c</sup> )	150 $\Omega$	600 $\Omega$ lines	+4dB (1.23V)	+24dB (12.3V)	Phone jack (TRS) <sup>d</sup>
CH (1 through ch#) INSERT OUT ST CH (1 through 4) [L, R] INSERT OUT GROUP (1 through 8) INSERT OUT STEREO [L, R] INSERT OUT AUX (1 through 8) INSERT OUT	150 $\Omega$	10k $\Omega$ lines	+4dB (1.23V)	+24dB (12.3V)	Phone jack (TRS) <sup>d</sup>
PHONES (1, 2) [L, R] OUT	15 $\Omega$	8 $\Omega$ phones	75mW	150mW	Stereo phone jack <sup>e</sup>
		40 $\Omega$ phones	65mW	150mW	

- a. In these specifications, when dB represents a specific voltage, 0dB is referenced to 0.775Vrms
- b. All XLR connectors are balanced
- c. 24 channels, 32 channels, 40 channels or 48 channels
- d. Phone jacks are balanced (T=hot, R=cold, S=Gnd)
- e. Stereo phone jacks are unbalanced

● Optional equipment and parts for the PM3500 console

Part description	Part number	Part description	Part number
Monaural input module	MN3500	Stereo master module	STM3500
Stereo input module	ST3500	Monitor module	MON3500
Monaural input rear panel	MNRP3500	Control module	CNT3500
Stereo input rear panel	STRP3500	Input transformer	IT3500
Group master module 1 (AUX)	GRM3500-1	Blank module	BL3500
Group master module 2 (GROUP)	GRM3500-2		

Contact your PM3500 supplier for details of availability of these parts. These parts are not available for servicing.

## ■ 総合仕様

Total Harmonic Distortion (Master Output)	Less than 0.1%, 20Hz~20kHz @ +14dB 600ohms Less than 0.01%, 20Hz~20kHz @ +14dB 600ohms	Ch Nominal Indicators	LED (orange) built into each CH input and ST CH input module turns on when post-EQ level reaches nominal level.
Frequency Response (Master Output)	+1, -3dB 20Hz~20kHz @ +4dB 600ohms	Ch Signal Indicators	LED (green) built into each CH input and ST CH input module turns on when post-EQ level reaches 20dB below nominal level.
Hum & Noise (48CH) (20Hz~20kHz) Rs=150ohms Input Gain=Max. Input Pad=OFF Input sensitivity=-70dB Hum & Noise (48CH) (20Hz~20kHz)	-128dB Equivalent Input Noise	Σ Peak Indicators	LED (red) built into each GROUP, AUX and ST Buss turns on when pre-Fader level reaches 3dB below clipping.
	-98dB Residual Output Noise	Scene Memory	Direct Scene Memory recall switches (1~8) Switchable Scene Memory recall (1~128)
	-54dB (58dB S/N) GROUP OUT Master fader and one Ch fader at nominal level.	VU Meters	(0VU = +4dB output @ 600ohms load) 2 large, illuminated meters; STEREO L,R 12 smaller, illuminated meters; all switchable. # 1; GROUP1/MTRX1 L/AUX1 # 2; GROUP2/MTRX1 R/AUX2 # 3; GROUP3/MTRX2 L/AUX3 # 4; GROUP4/MTRX2 R/AUX4 # 5; GROUP5/MTRX3 L/AUX5 # 6; GROUP6/MTRX3 R/AUX6 # 7; GROUP7/MTRX4 L/AUX7 # 8; GROUP8/MTRX4 R/AUX8 # 9; CUE L/MTRX5 # 10; CUE R/MTRX6 # 11; TB OUT/MTRX7 # 12; OSC OUT/MTRX8
	-84dB (88dB S/N) STEREO OUT Master fader at nominal level and all Ch assign SW's off and all G to ST SW's off.	VU Meter Peak Indicators	LED (red) built into each VU meter turns on when output signal is above the level 3dB lower than clipping level.
	-81dB (85dB S/N) AUX OUT Master fader at nominal level and all Ch Aux mix SW's off.	Phantom Power	+48V DC is applied to balanced inputs (via 6.8kohms 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 on each input module.
	-92dB (96dB S/N) MATRIX OUT Master level control at nominal level and all Matrix Mix controls at minimum level.	Dimension	Height 335mm Depth 900mm Width 24ch:1322mm 32ch:1562mm 40ch:1822mm 48ch:2062mm
	-85dB (89dB S/N) GROUP OUT Master fader at nominal level and all Ch assign SW's off.	Weight	24ch: 90kg 32ch: 106kg 40ch: 124kg 48ch: 140kg
Maximum Voltage Gain	74dB CH IN to CH INSERT OUT 90dB CH IN to AUX OUT (Pre Fader) 100dB CH IN to AUX OUT (Post Fader) 84dB CH IN to MONITOR OUT (INPUT CUE) 64dB TB IN to TB OUT 10dB SUB IN to OUT 10dB 2TR IN to MONITOR OUT 84dB CH IN to DIRECT OUT 94dB CH IN to GROUP OUT 94dB CH IN to STEREO OUT (CH to ST) 104dB CH IN to STEREO OUT (GROUP to ST) 104dB CH IN to MATRIX OUT (GROUP to MATRIX) 51dB ST IN (ST) to GROUP OUT/STEREO OUT (CH to ST) 47dB ST IN (ST) to AUX OUT (Pre Fader) 54dB ST IN (L MONO) to GROUP OUT/STEREO OUT (CH to ST) 50dB ST IN (L MONO) to AUX OUT (Pre Fader) 44dB ST IN to MONITOR OUT (ST INPUT CUE)	Supplied Accessories	PW4000 power supply 電源用多芯ケーブル ラベル (ST CH)
Channel Equalization	±15dB maximum HIGH 1k~20kHz (shelving/peaking, Q=0.5~3) HI-MID 0.4k~8kHz (peaking, Q=0.5~3) LO-MID 80Hz~1.6kHz (peaking, Q=0.5~3) LOW 30~600Hz (shelving/peaking, Q=0.5~3)		
Input High Pass Filter	12dB/octave roll-off below 20~400Hz at -3dB point.		
Crosstalk	-80dB @ 1kHz, -70dB @ 10kHz adjacent inputs. -80dB @ 1kHz, -70dB @ 10kHz input to output.		
Oscillator/Noise	Switchable sine wave @ 100Hz, 1kHz or 10kHz (×0.2~×2.0, Less than 1% T.H.D @ +4dB output), or pink noise.		
TB High Pass Filter	12dB/octave roll-off 80Hz at -3dB point.		
Mono Input PAD SW	30dB		
Mono Input Gain control	50dB variable		
ST Input Gain control	40dB variable		
VCA Cue Gain trim	20dB (-14~+6dB) variable		
PFL Gain trim (Input Cue)	20dB (-14~+6dB) variable		
Channel Peak Indicators	LED (red) built into each CH input and ST CH input module turns on when pre-EQ level or post-EQ level reaches 3dB below clipping.		

## ■入力仕様

コネクション	PAD	GAIN Trim	実効入力インピーダンス	ソースインピーダンス	入力レベル**			使用コネクタ**
					感度*2	ノミナルレベル	MAX(クリップ時)	
CH IN *1~*ch	0	-70	3k $\Omega$	50~600 $\Omega$ Mics & 600 $\Omega$ Lines	-90dB(25 $\mu$ V)	-70dB(245 $\mu$ V)	-48dB(3.09mV)	XLR-3-31type
	30				-60dB(775 $\mu$ V)	-40dB(7.75mV)	-18dB(97.6mV)	
	0	-20			-40dB(7.75mV)	-20dB(77.5mV)	+2dB(976mV)	
	30				-10dB(245mV)	+10dB(2.45V)	+32dB(30.9V)	
ST CH IN 1~4ch (L,R)		-30 +10	5k $\Omega$	600 $\Omega$ Lines	-50dB(2.45mV) -10dB(245mV)	-30dB(24.5mV) +10dB(2.45V)	-8dB(309mV) +32dB(30.9V)	XLR-3-31type
SUB IN								
GROUP (1~8) STEREO (L,R) AUX (1~8) CUE (L,R) MTRX (L,R)			10k $\Omega$	600 $\Omega$ Lines	-6dB(388mV)	+4dB(1.23V)	+26dB(15.5V)	XLR-3-31type
TALKBACK IN			3k $\Omega$	50~600 $\Omega$ Mics	-70dB(245 $\mu$ V)	-50dB(2.45mV)	-28dB(30.9mV)	XLR-3-31type
2TR IN 1,2 (L,R)			10k $\Omega$	600 $\Omega$ Lines	-6dB(388mV)	+4dB(1.23V)	+26dB(15.5V)	XLR-3-31type
INSERT IN								
CH*1~*ch ST CH1~4ch (L,R)			10k $\Omega$	600 $\Omega$ Lines	-16dB(123mV)	+4dB(1.23V)	+26dB(15.5V)	Phones Jack(TRS)
GROUP (1~8) STEREO (L,R) AUX (1~8)			10k $\Omega$	600 $\Omega$ Lines	-6dB(388mV)	+4dB(1.23V)	+26dB(15.5V)	Phones Jack(TRS)

\*1 PM3500 -24:24ch, -32:32ch, -40C:40ch, -48C:48ch

\*2 規定出力レベル (+4dB=1.23V) の出力を得るために必要な最小の入力レベル

\*3 全てのXLRコネクタおよびフォンジャックはバランスタイプ (T=+, R=-, S=GND)

\*4 0dB=0.775Vrms

## ■出力仕様

コネクション	実効ソースインピーダンス	ノミナルレベル時	出力レベル**		使用コネクタ**
			ノミナルレベル	MAX(クリップ時)	
GROUP OUT (1~8) STEREO OUT (L,R) MTRX OUT (1~4) ST MTRX L,R OUT (1~4) AUX OUT (1~8) MONITOR A,B OUT (L,R) TALKBACK OUT OSC OUT	150 $\Omega$	600 $\Omega$ Lines	+4dB (1.23V)	+24dB (12.3V)	XLR-3-32type
CH DIRECT OUT*1 1~*CH					
CH INSERT OUT*1 1~*CH ST CH L,R INSERT OUT 1~4ch GROUP INSERT OUT (1~8) STEREO INSERT OUT (L,R) AUX INSERT OUT (1~8)	150 $\Omega$	10k $\Omega$ Lines	+4dB (1.23V)	+24dB (12.3V)	Phone Jack(TRS)
PHONES L,R OUT (1,2)					

\*1 PM3500 -24:24ch, -32:32ch, -40C:40ch, -48C:48ch

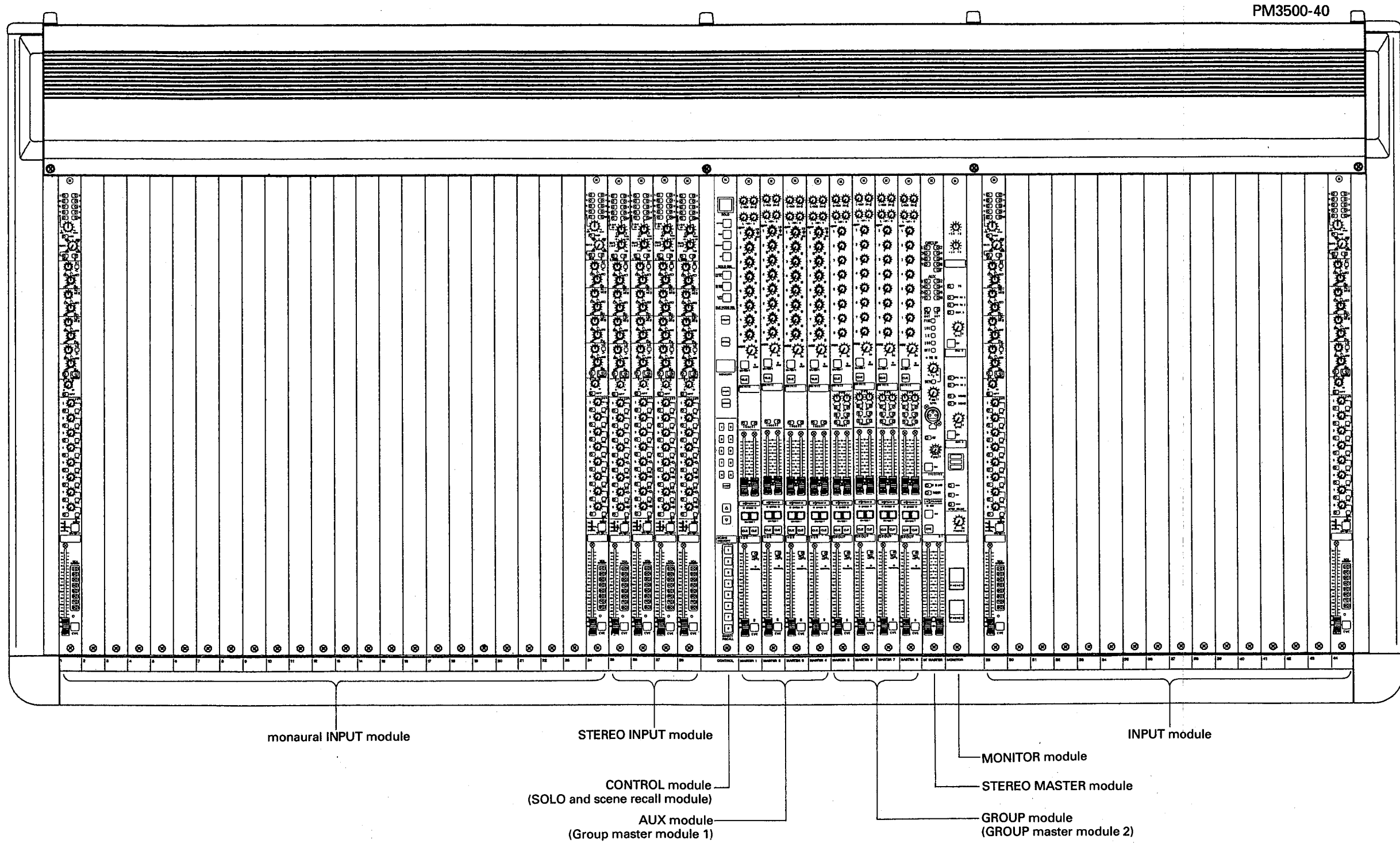
\*2 全てのXLRコネクタおよびフォンジャックはバランスタイプ (T=+, R=-, S=GND)

\*3 0dB=0.775Vrms

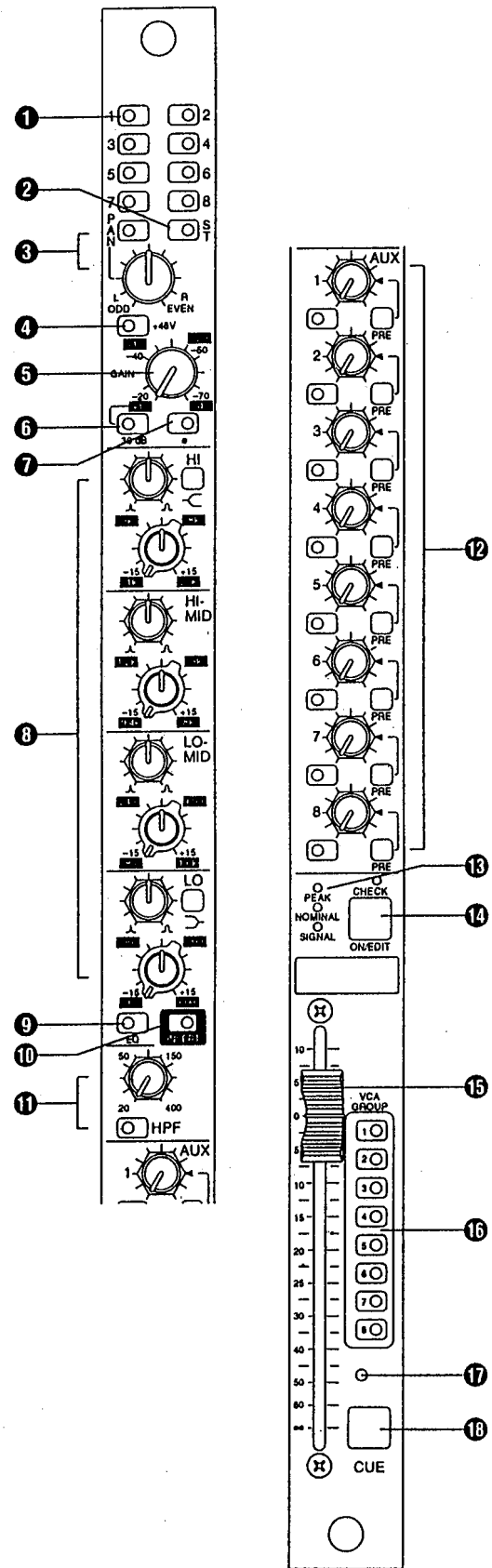


# ■ PANEL LAYOUT (パネルレイアウト)

- Control Panel (コントロールパネル)



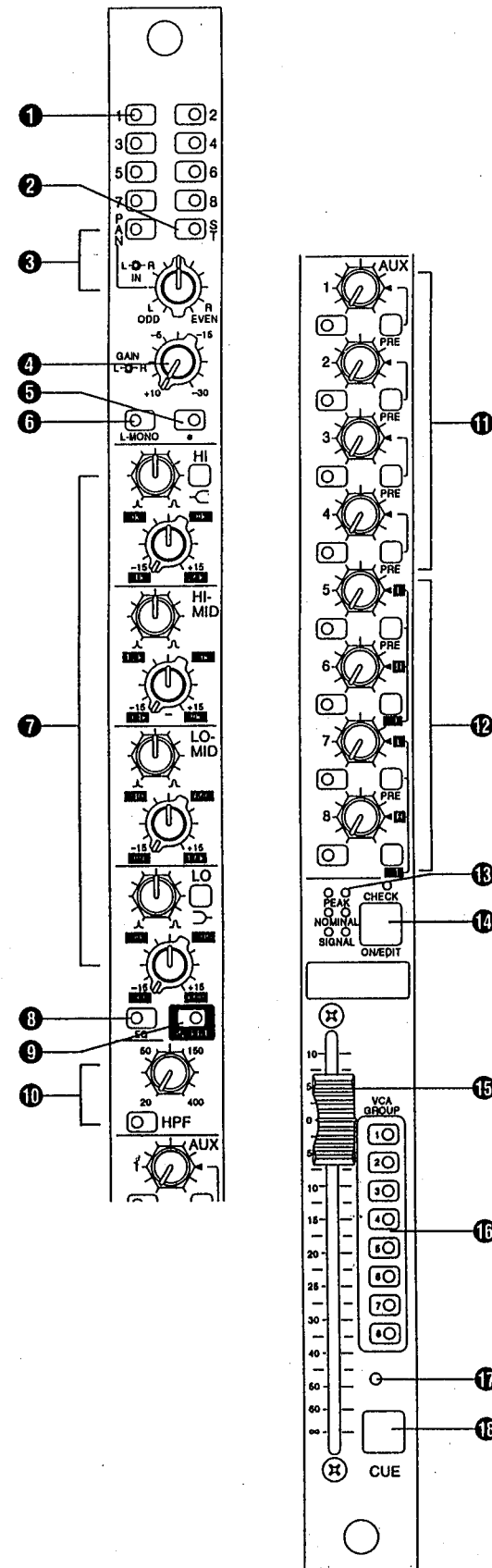
• monaural INPUT modules (INPUTモジュール)



- ① 1 2 3 4 5 6 7 8 (ASSIGN switches)
- ② ST (Stereo) switch
- ③ PAN (switch and rotary control)
- ④ +48 (phantom power) switch
- ⑤ GAIN control
- ⑥ 30dB (pad switch)
- ⑦  $\phi$  (Phase) switch
- ⑧ Equalizer (HI, HI-MID, LO-MID, LO)
- ⑨ EQ switch
- ⑩ INSERT switch
- ⑪ HPF (switch and control)
- ⑫ AUX 1-8 (AUX ON/OFF and PRE/POST switches, and level controls)
- ⑬ PEAK, NOMINAL and SIGNAL indicators
- ⑭ ON/EDIT switch and CHECK indicator
- ⑮ Fader
- ⑯ VCA GROUP (1through 8) switches
- ⑰ SOLO SAFE switch
- ⑱ CUE switch

- ① 1~8 GROUP OUT ASSIGN (グループアウト選択) スイッチ
- ② ST (STEREO OUT) 選択スイッチ
- ③ PAN (パンポット ON/OFF) スイッチ、コントロール
- ④ +48V (ファントム) スイッチ
- ⑤ GAIN (入力感度) コントロール
- ⑥ 30dB (パッドスイッチ)
- ⑦  $\phi$  (位相切り替え) スイッチ
- ⑧ イコライザー (HIGH, HI-MID, LO-MID, LO)
- ⑨ EQ (EQ ON/OFF) スイッチ
- ⑩ INSERT スイッチ
- ⑪ HPF (ハイパスフィルタ ON/OFF) スイッチ、カットオフ周波数コントロール
- ⑫ AUX 1~8 (AUX バス送出レベル/PRE, POST) コントロール/スイッチ
- ⑬ PEAK, NOMINAL, SIGNAL インジケータ
- ⑭ ON/EDIT スイッチと CHECK インジケータ
- ⑮ チャンネルフェーダー (VCA コントロール)
- ⑯ 1~8 VCA GROUP ASSIGN (VCA グループ選択) スイッチ
- ⑰ SOLO SAFE (ソロ機能解除) スイッチ
- ⑱ CUE スイッチ

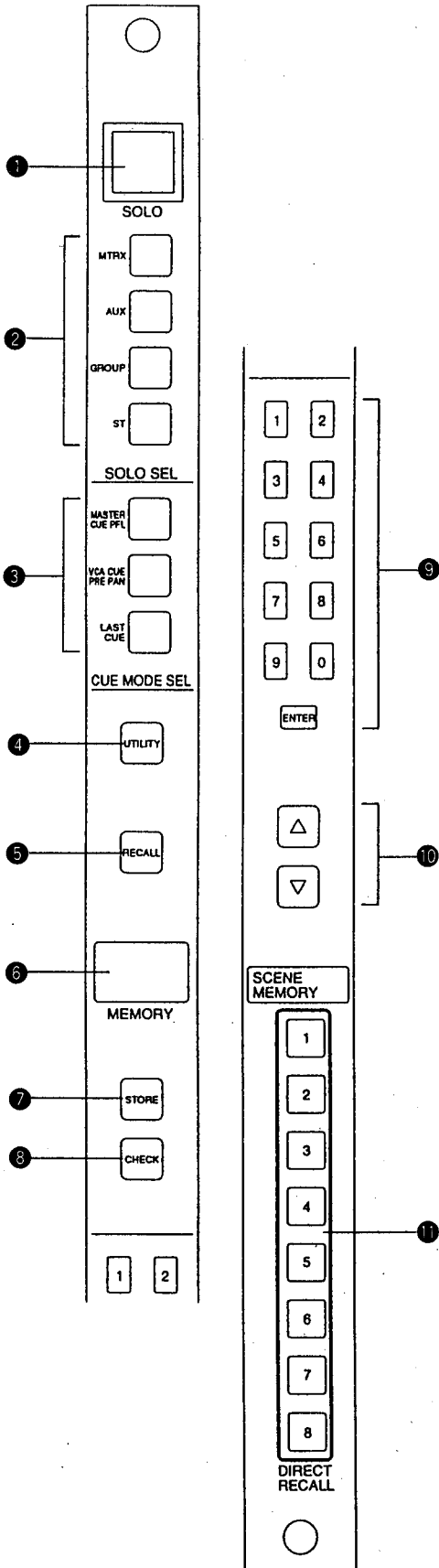
• STEREO INPUT modules (ST INモジュール)



- ① 1 2 3 4 5 6 7 8 (ASSIGN switches)
- ② ST (Stereo) switch
- ③ PAN (switch and rotary control)
- ④ GAIN control
- ⑤  $\phi$  (Phase) switch
- ⑥ L-MONO switch
- ⑦ Equalizer (HI, HI-MID, LO-MID, LO)
- ⑧ EQ switch
- ⑨ INSERT switch
- ⑩ HPF (switch and control)
- ⑪ AUX send 1-4 controls
- ⑫ AUX send 5-8 controls
- ⑬ PEAK, NOMINAL and SIGNAL indicators
- ⑭ ON/EDIT switch and CHECK indicator
- ⑮ Fader
- ⑯ VCA GROUP (1through 8) switches
- ⑰ SOLO SAFE switch
- ⑱ CUE switch

- ① 1~8 GROUP OUT ASSIGN (グループアウト選択) スイッチ
- ② ST (STEREO OUT) 選択スイッチ
- ③ PAN (パンポット ON/OFF) スイッチ、コントロール
- ④ GAIN (入力感度) コントロール
- ⑤  $\phi$  (位相切り替え) スイッチ
- ⑥ L-MONO スイッチ
- ⑦ イコライザー (HIGH, HI-MID, LO-MID, LO)
- ⑧ EQ (EQ ON/OFF) スイッチ
- ⑨ INSERT スイッチ
- ⑩ HPF (ハイパスフィルタ ON/OFF) スイッチ、カットオフ周波数コントロール
- ⑪ AUX 1~4 (AUX バス送出レベル/PRE, POST) コントロール/スイッチ
- ⑫ AUX 5~8 (AUX バス送出レベル/PRE, POST) コントロール/スイッチ
- ⑬ PEAK, NOMINAL, SIGNAL インジケータ
- ⑭ ON/EDIT スイッチと CHECK インジケータ
- ⑮ チャンネルフェーダー (VCA コントロール)
- ⑯ 1~8 VCA GROUP ASSIGN (VCA グループ選択) スイッチ
- ⑰ SOLO SAFE (ソロ機能解除) スイッチ
- ⑱ CUE スイッチ

● CONTROL module = SOLO and scene recall module (CTRLモジュール)



**SOLO section**

- ① SOLO switch
- ② SOLO SEL - MTRX, AUX, GROUP, ST (solo select switches)
- ③ CUE MODE SEL - MASTER CUE PFL, VCA CUE PRE PAN, LAST CUE (cue mode selector switches)

**SCENE MEMORY section**

- ④ UTILITY key
- ⑤ RECALL key
- ⑥ MEMORY display
- ⑦ STORE key
- ⑧ CHECK key
- ⑨ Number keys (1 2 3 4 5 6 7 8 9 0) and ENTER key
- ⑩ UP/DOWN keys (▲ / ▼)
- ⑪ DIRECT RECALL switches (1 through 8)

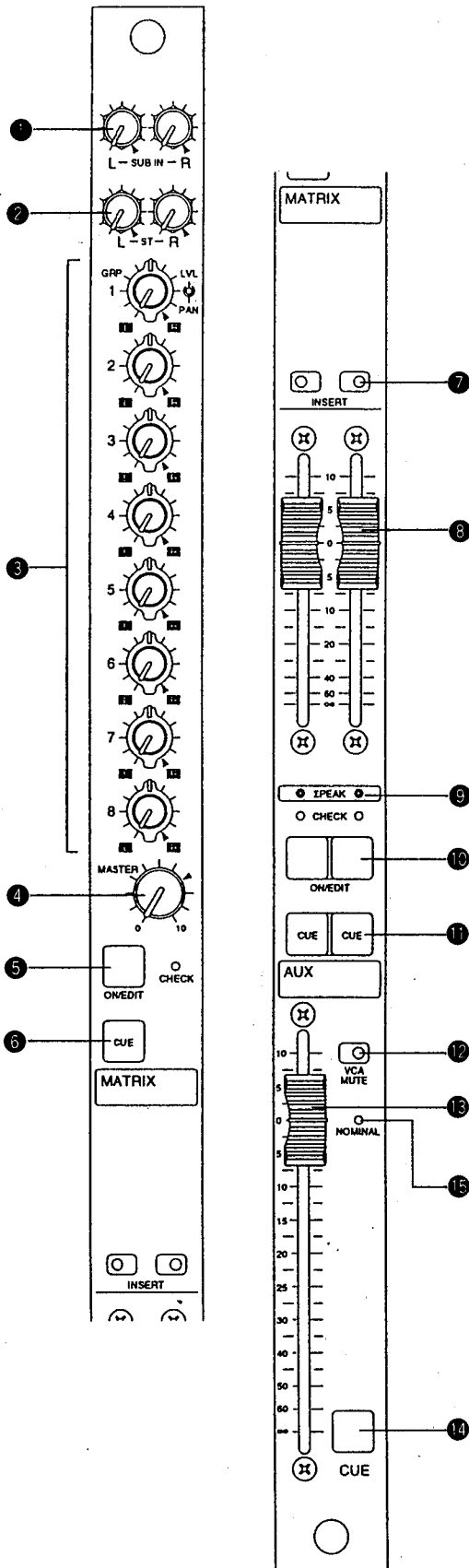
**CUE/SOLO セクション**

- ① SOLO MODE (ソロモード選択) スイッチ
- ② SOLO SEL (MTRX, AUX, GROUP, ST) スイッチ
- ③ CUE MODE SEL スイッチ (MASTER CUE PFL, VCA CUE PRE PAN, LAST CUE)

**SCENE MEMORY セクション**

- ④ UTILITY スイッチ
- ⑤ RECALL スイッチ
- ⑥ MEMORY ディスプレイ
- ⑦ STORE スイッチ
- ⑧ CHECK スイッチ
- ⑨ 0~9 TEN、ENTER スイッチ
- ⑩ ▲/▼ スイッチ
- ⑪ 1~8 DIRECT RECALL スイッチ

● **AUX modules = Group Master modules 1**  
 (AUXモジュール = Group Masterモジュール1)



**MATRIX section**

- ① SUB IN L and R controls
- ② ST L and R controls
- ③ 1 through 8 LVL (level) and PAN controls
- ④ MASTER control
- ⑤ ON/EDIT key and CHECK indicator
- ⑥ CUE (matrix cue) switch

**AUX section**

- ⑦ INSERT (AUX send insert switches)
- ⑧ AUX send faders
- ⑨ Σ PEAK indicators
- ⑩ ON/EDIT keys and CHECK indicators
- ⑪ CUE (AUX send cue) switch

**VCA group section**

- ⑫ VCA MUTE switch
- ⑬ VCA MASTER fader
- ⑭ CUE switch
- ⑮ NOMINAL indicator

**MATRIX セクション**

- ① SUB IN L/R コントロール
- ② ST L/R コントロール
- ③ GROUP 1~8 レベル/PAN コントロール
- ④ MATRIX MASTER コントロール
- ⑤ ON/EDIT スイッチと CHECK インジケータ
- ⑥ CUE スイッチ

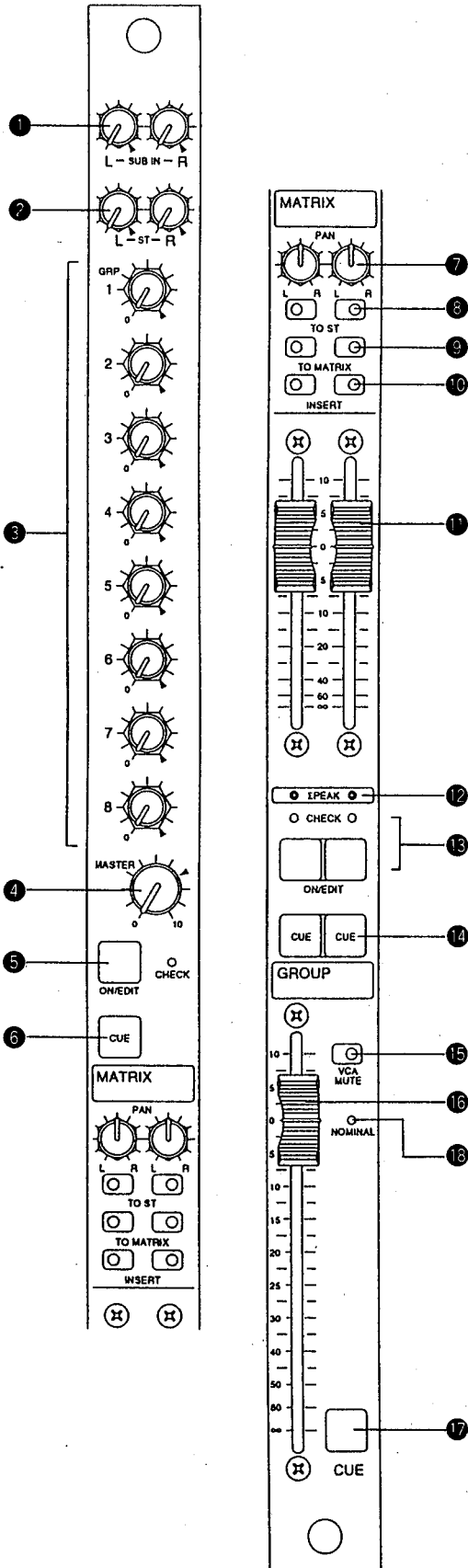
**AUX セクション**

- ⑦ INSERT (AUX インサート ON/OFF) スイッチ
- ⑧ AUX OUT ODD/EVEN マスターレベルコントロール
- ⑨ Σ PEAK インジケータ
- ⑩ ON/EDIT スイッチと CHECK インジケータ
- ⑪ CUE スイッチ

**VCA GROUP セクション**

- ⑫ VCA MUTE (VCA ミュート機能) スイッチ
- ⑬ VCA マスターフェーダー
- ⑭ CUE スイッチ
- ⑮ NOMINAL インジケータ

● **GROUP modules = Group Master modules 2**  
 (GROUPモジュール = Group Masterモジュール2)



**MATRIX section**

- ① SUB IN L and R controls
- ② ST L and R controls
- ③ GRP 1 through 8 matrix level controls
- ④ MASTER control
- ⑤ ON/EDIT key and CHECK indicator
- ⑥ CUE (matrix cue) switch

**GROUP section**

- ⑦ Main channel group STEREO panpots
- ⑧ TO ST (to Stereo) switches
- ⑨ TO MATRIX switches
- ⑩ INSERT (group insert switches)
- ⑪ GROUP faders
- ⑫ Σ PEAK indicators
- ⑬ ON/EDIT keys and CHECK indicators
- ⑭ CUE (group cue) switch

**VCA group section**

- ⑮ VCA MUTE switch
- ⑯ VCA MASTER fader
- ⑰ CUE switch
- ⑱ NOMINAL indicator

**MATRIX セクション**

- ① SUB IN L/R コントロール
- ② ST L/R コントロール
- ③ GROUP 1~8 レベルコントロール
- ④ MATRIX MASTER コントロール
- ⑤ ON/EDIT スイッチと CHECK インジケータ
- ⑥ CUE スイッチ

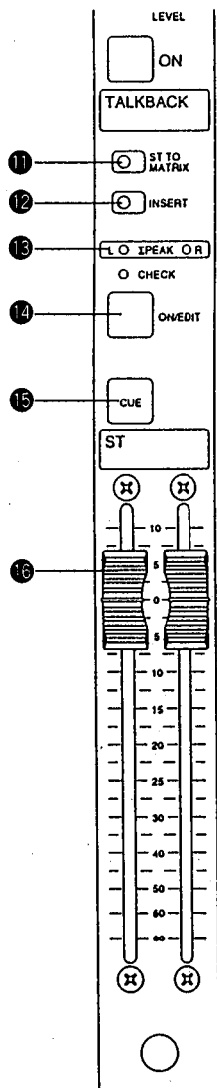
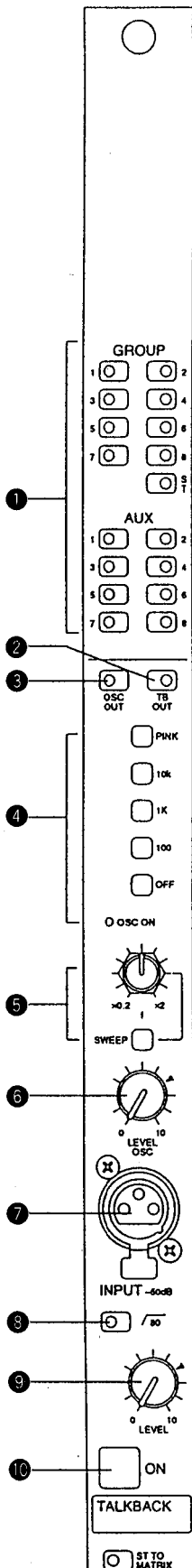
**GROUP セクション**

- ⑦ PAN コントロール
- ⑧ TO ST スイッチ
- ⑨ TO MATRIX スイッチ
- ⑩ INSERT (GROUP インサート ON/OFF) スイッチ
- ⑪ GROUP OUT ODD/EVEN マスターレベルコントロール
- ⑫ Σ PEAK インジケータマスター
- ⑬ ON/EDIT スイッチと CHECK インジケータ
- ⑭ CUE スイッチ

**VCA GROUP セクション**

- ⑮ VCA MUTE (VCA ミュート機能) スイッチ
- ⑯ VCA マスターフェーダー
- ⑰ CUE スイッチ
- ⑱ NOMINAL インジケータ

● STEREO MASTER module (ST MASモジュール)



**TALKBACK and OSCILLATOR section**

- ① **GROUP** and **ST** (talkback to group and stereo routing switches)  
**AUX** (talkback to AUX routing switches)
- ② **TB OUT** (talkback output) switch
- ③ **OSC OUT** (oscillator output) switch
- ④ **PINK, 10k, 1k, 100, OFF** and **OSC ON**  
(oscillator switches and indicator)
- ⑤ **SWEEP** (oscillator sweep control and switch)
- ⑥ **LEVEL OSC** (oscillator level) control
- ⑦ **INPUT -50dB** (talkback input) terminal
- ⑧ **/80** (80Hz bass roll-off talkback filter) switch
- ⑨ **LEVEL** (TB input) control
- ⑩ **ON** (Talkback ON switch)

**STEREO section**

- ⑪ **ST TO MATRIX** (stereo to matrix switch)
- ⑫ **INSERT** (stereo insert) switch
- ⑬ **Σ PEAK L and R** indicators
- ⑭ **ON/EDIT** key and **CHECK** indicator
- ⑮ **CUE** (stereo cue) switch
- ⑯ **Faders** (stereo faders)

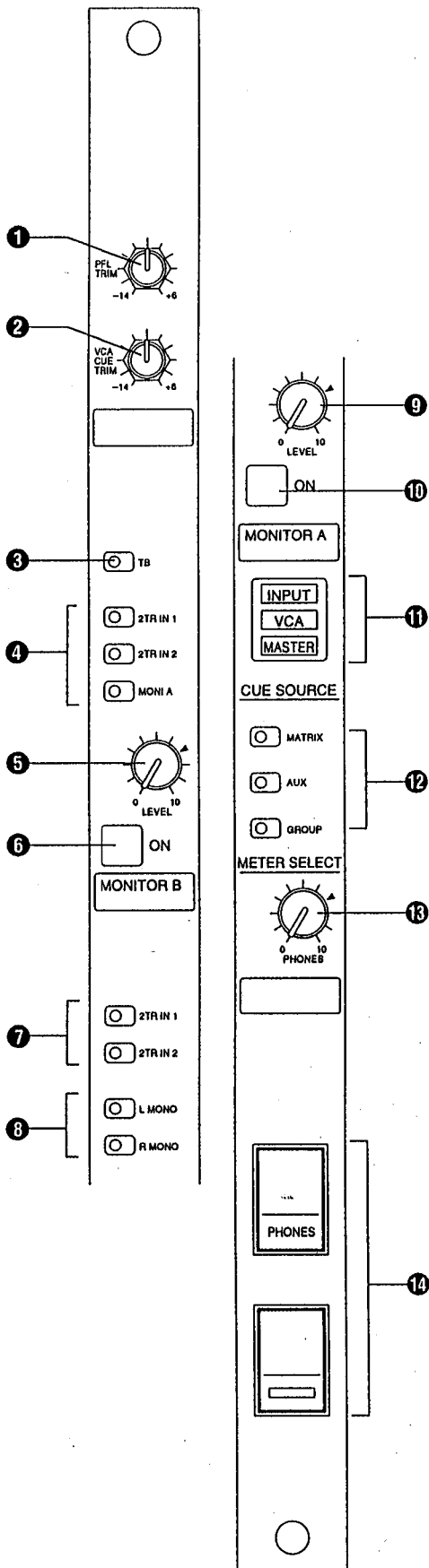
**TALKBACK セクション**

- ① **GROUP 1~8, AUX 1~8** TB/OSC アウトプット
- ② **TB OUT** スイッチ
- ③ **OSC OUT** スイッチ
- ④ **OSC** モード、周波数選択スイッチ (PINK, 10k, 1k, 100, OFF) .  
**OSC ON** インジケータ
- ⑤ **SWEEP** スイッチ/SWEEP コントロール
- ⑥ **LEVEL OSC** (発振器出力レベル) コントロール
- ⑦ トークバックインプット端子
- ⑧ **/80** スイッチ
- ⑨ **LEVEL** (TALKBACK IN レベル) コントロール
- ⑩ **ON** (TALKBACK ON/OFF) スイッチ

**STEREO MASTER セクション**

- ⑪ **ST TO MATRIX** スイッチ
- ⑫ **INSERT** (STEREO インサート ON/OFF) スイッチ
- ⑬ **Σ PEAK** インジケータマスター
- ⑭ **ON/EDIT** スイッチと **CHECK** インジケータ
- ⑮ **CUE** スイッチ
- ⑯ **ステレオマスターフェーダー**

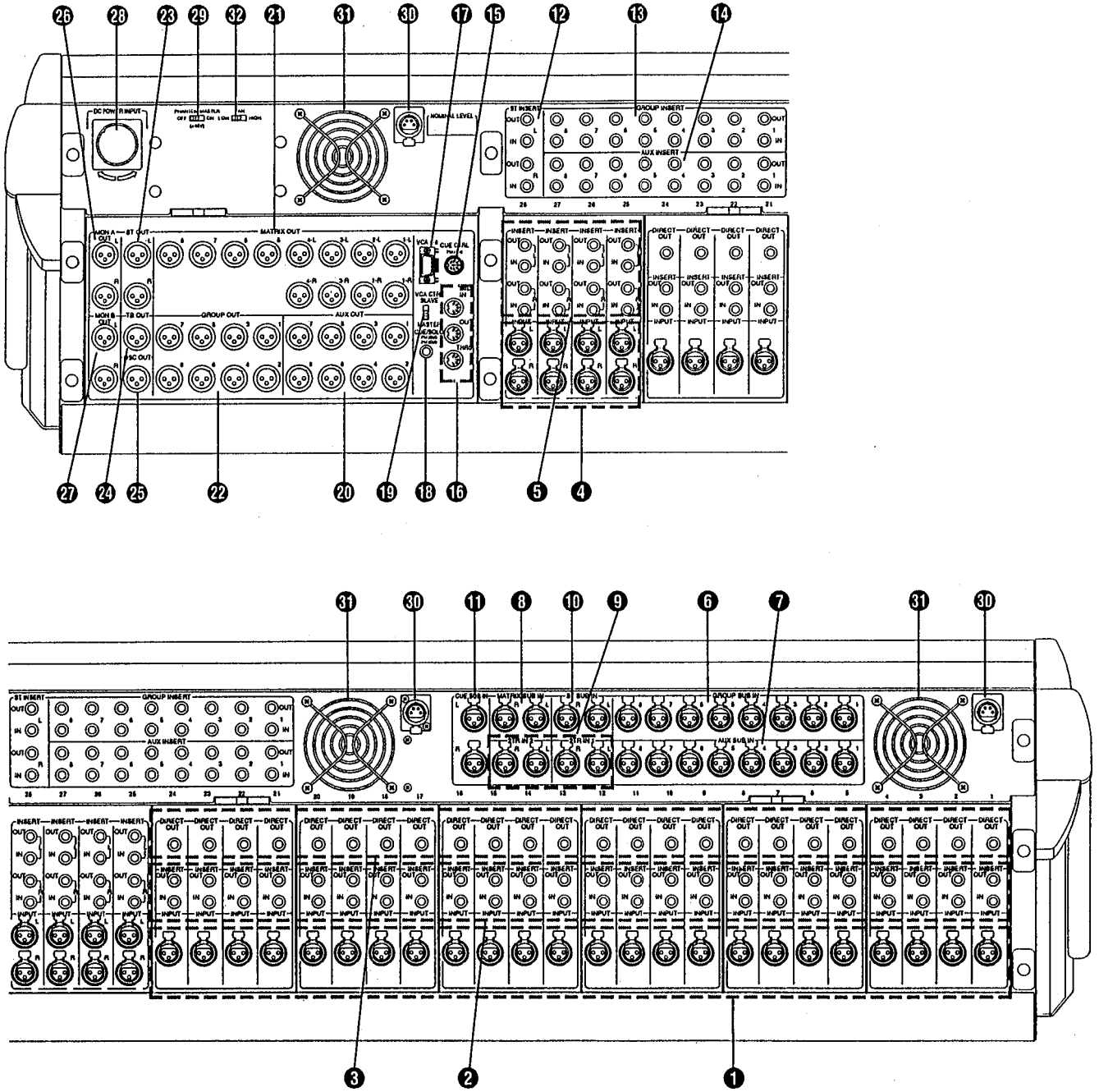
● MONITOR module (MONモジュール)



- ① PFL TRIM control
- ② VCA CUE TRIM control
- ③ TB (monitor B selector switch)
- ④ 2TR IN 1, 2TR IN 2, MONI A (monitor B selector switches)
- ⑤ LEVEL (MONITOR B level control)
- ⑥ ON (MONITOR B switch)
- ⑦ 2TR IN 1, 2TR IN 2 (monitor A selector switches)
- ⑧ L MONO, R MONO (monitor A selector switches)
- ⑨ LEVEL (MONITOR A level control)
- ⑩ ON (MONITOR A switch)
- ⑪ INPUT, VCA, MASTER (cue source indicators)
- ⑫ MATRIX, AUX, GROUP (meter selection switches)
- ⑬ PHONES (headphone level control)
- ⑭ PHONES connectors

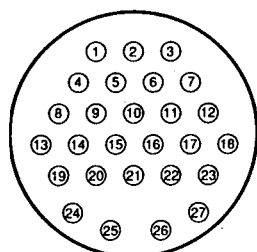
- ① PFL TRIM レベルコントロール
- ② VCA CUE TRIM レベルコントロール
- ③ TB スイッチ
- ④ INPUT ASSIGN (MONITOR B) セレクトスイッチ (2TR IN 1, 2TR IN 2, MONI A)
- ⑤ LEVEL (MONITOR B レベル) コントロール
- ⑥ ON (MONITOR B 出力 ON/OFF) スイッチ
- ⑦ INPUT ASSIGN (MONITOR A) セレクトスイッチ (2TR IN 1, 2TR IN 2)
- ⑧ L MONO/R MONO スイッチ
- ⑨ LEVEL (MONITOR A レベル) コントロール
- ⑩ ON (MONITOR A 出力 ON/OFF) スイッチ
- ⑪ CUE SOURCE インジケータ (INPUT, VCA, MASTER)
- ⑫ METER SELECT (メーターセレクト) スイッチ (MATRIX, AUX, GROUP)
- ⑬ PHONES (ヘッドフォンレベル) コントロール
- ⑭ PHONES (ヘッドフォンアウト) 端子

• Rear Panel (リアパネル)





## • DC POWER INPUT Connector Pin Assignments (DC POWER INPUTのピン配列)



CONNECTOR PINS  
(FEMALE)

PIN N°	FUNCTION	PIN N°	FUNCTION
1	-19V	15	±19V GND
2	-19V	16	±19V GND
3	FRAME GND	17	+12V GND
4	-19V	18	+12V GND
5	-19V	19	PM CAUTION (+)
6	FRAME GND	20	+48V
7	FRAME GND	21	+48V GND
8	+19V	22	+12V
9	+19V	23	+12V
10	±19V GND	24	PW CAUTION (-)
11	±19V GND	25	REMOTE
12	+12V GND	26	REMOTE
13	+19V	27	+12V
14	+19V		

### Standard (monaural) input modules

- ① INPUT connectors
- ② INSERT OUT and INSERT IN jacks
- ③ DIRECT OUT jacks

### Stereo input modules

- ④ INPUT L and R connectors
- ⑤ INSERT (L) and (R) INSERT IN and OUT jacks

### SUB IN connectors

- ⑥ GROUP SUB IN (1 through 8) connectors
- ⑦ AUX SUB IN (1 through 8) connectors
- ⑧ MATRIX SUB IN (L and R) connectors
- ⑨ 2TR IN 1 and 2TR IN 2 (L and R) connectors
- ⑩ ST SUB IN (stereo sub inputs) connectors
- ⑪ CUE SUB IN (L and R) connectors

### INSERT points

- ⑫ ST INSERT L and R (OUT/IN) (stereo insert points) jacks
- ⑬ GROUP INSERT 1 through 8 (OUT/IN) jacks
- ⑭ AUX INSERT 1 through 8 (OUT/IN) jacks

### Control functions

- ⑮ CUE CONTROL IN/OUT (8-pin DIN connector)
- ⑯ MIDI IN, MIDI OUT, MIDI THRU connectors
- ⑰ VCA 1-8 CONTROL connector
- ⑱ INPUT CUE/SOLO jack
- ⑲ VCA CTRL MASTER/SLAVE switch

### OUTPUTS

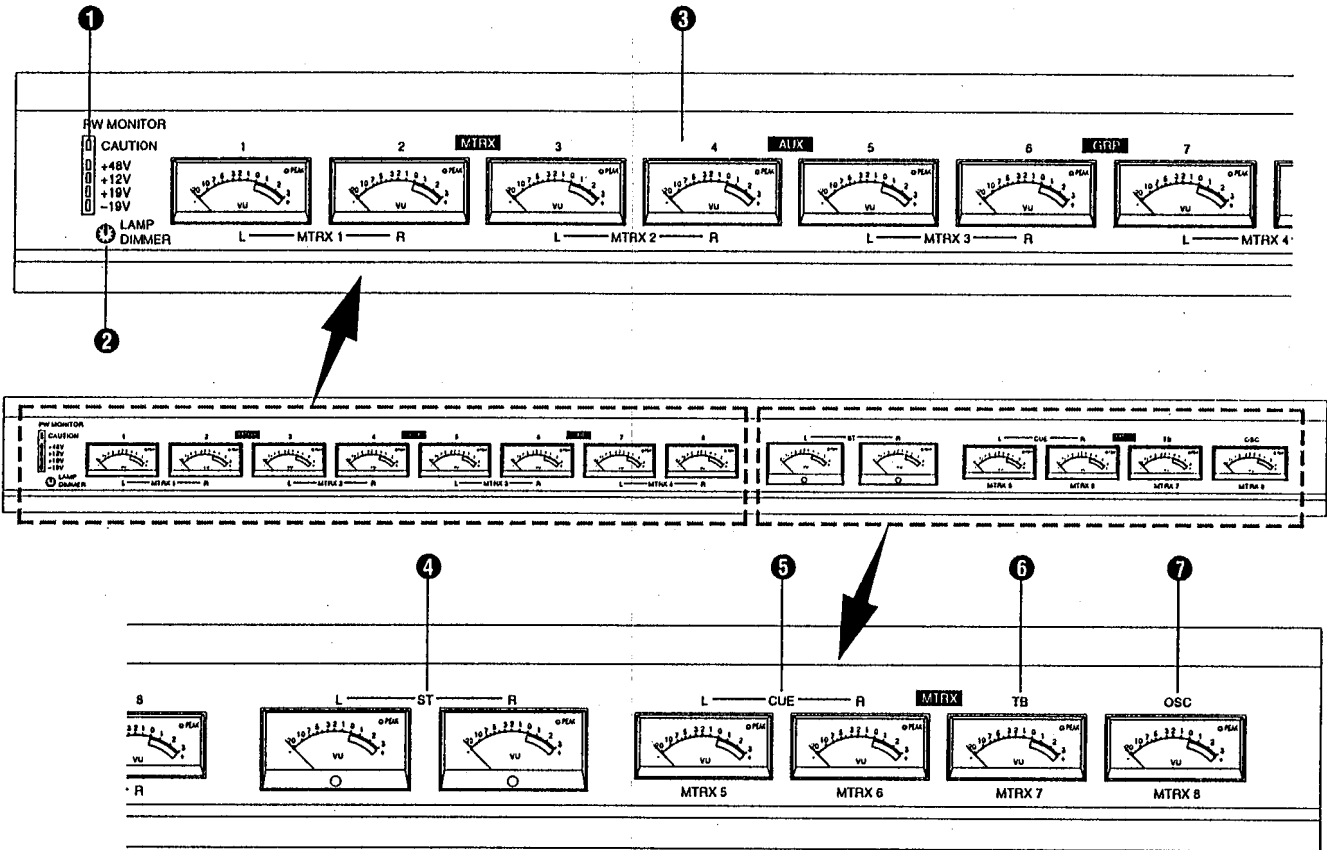
- ⑳ AUX OUT (1 through 8) connectors
- ㉑ ST MATRIX OUT (1 through 8) connectors
- ㉒ GROUP OUT (1 through 8) connectors
- ㉓ ST OUT (L and R) connectors
- ㉔ TALKBACK OUT connector
- ㉕ OSC OUT connector
- ㉖ MONITOR A (L and R) connectors
- ㉗ MONITOR B (L and R) connectors

### Others

- ㉘ DC POWER INPUT connector
- ㉙ PHANTOM MASTER switch
- ㉚ Lamp connectors
- ㉛ Cooling fans
- ㉜ FAN LOW/HIGH switch

- ① INPUT コネクター
- ② INSERT IN/OUT ジャック
- ③ DIRECT OUT ジャック
- ④ ST CH INPUT (L, R) コネクター
- ⑤ ST CH INSERT IN/OUT (L, R) ジャック
- ⑥ GROUP SUB IN (1~8) コネクター
- ⑦ AUX SUB IN (1~8) コネクター
- ⑧ MATRIX SUB IN (L, R) コネクター
- ⑨ 2RT IN1/IN2 (L, R) コネクター
- ⑩ ST SUB IN (L, R) コネクター
- ⑪ CUE SUB IN (L, R) コネクター
- ⑫ ST INSERT L/R (OUT, IN) ジャック
- ⑬ GROUP INSERT 1~8 (OUT, IN) ジャック
- ⑭ AUX INSERT 1~8 (OUT, IN) ジャック
- ⑮ CUE CTRL (DIN-8P) コネクター
- ⑯ MIDI ジャック (IN/OUT/THRU)
- ⑰ VCA 1~8 コネクター
- ⑱ CUE/SOLO ジャック
- ⑲ VCA CTRL (MASTER/SLAVE) スイッチ
- ⑳ AUX OUT 1~8 コネクター
- ㉑ MATRIX OUT 1~8 コネクター
- ㉒ GROUP OUT 1~8 コネクター
- ㉓ ST OUT (L, R) コネクター
- ㉔ TB OUT コネクター
- ㉕ OSC OUT コネクター
- ㉖ MONITOR OUT A L, R コネクター
- ㉗ MONITOR OUT B L, R コネクター
- ㉘ DC POWER INPUT コネクター
- ㉙ PHANTOM POWER MASTER スイッチ
- ㉚ LAMP (ランプ) コネクター
- ㉛ 冷却ファン
- ㉜ FAN HIGH/LOW (冷却ファン切り替え) スイッチ

• Meter Bridge (メーターパネル)



- ① PW CAUTION, +48, +12, +19, -19  
(power supply indicators)
- ② LAMP DIMMER control
- ③ GROUP/AUX/MTRX (meters and indicators)
- ④ ST L, R meters
- ⑤ CUE L, R meters
- ⑥ TB meter
- ⑦ OSC meter

- ① PW MONITOR インジケーター
- ② LAMP DIMMER (ランプ調光器)
- ③ GROUP/AUX/MTRX メーター、モードインジケーター
- ④ ST L/R VU メーター
- ⑤ CUE L/R メーター
- ⑥ TB メーター
- ⑦ OSC メーター