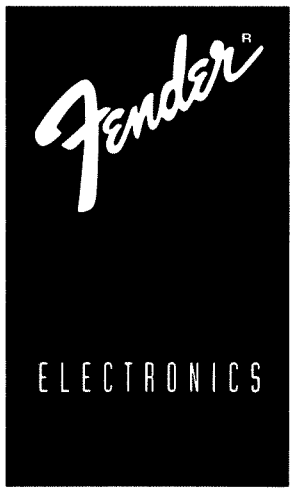
PROFESSIONAL MIXERS

From Fender Pro Audio

Owner's Manual for
MX-METERBRIDGE
P/N 049824



MX-5200 SERIES PROFESSIONAL

Your MX-Meterbridge is an invaluable reference tool designed to assist you in the art of audio production. The MX-Meterbridge allows you to visually monitor the audio output of your sound system. After all, it's not what you think you know that matters, it's what you do know that counts. Hearing the mix is only half the battle, you also need to "see" the mix-and seeing is believing.

With your MX-Meterbridge from Fender Pro Audio, your eyes can see what your ears may or may not have been telling you. The MX-Meterbridge allows you to visually monitor your console's four submasters, stereo masters, mono output, AFL/PFL outputs; important information which could potentially save your amplifiers, outboard gear or any other equipment attached to your sound system. Likewise, the MX-Meterbridge offers you the flexibility of adjusting the meters to suit your specific audio production applications.

Whether you need to isolate that bothersome hum, locate which submaster is overdriving or just want a visual reference of your audio mix, the MX-5200 Series Professional Meterbridge lets you see the music as it happens.

SPECIFICATIONS

Part Number:		071-5202-000	
Individual Meters:		004-9830-000	
Type:		PR 307	
Dimensions:	**Height:**	4.54 in	(11.53 cm)
	Width:	28.96 in	(73.55 cm)
	Depth:	1.69 in	(4.29 cm)
	Weight:	6 lbs	(2.72 kg)
Power for Meter Lamps Rated at:		12 volts, 50mA	
Meter Range:		-20 to +3 VU	
Meter Resistance:		600Ω	

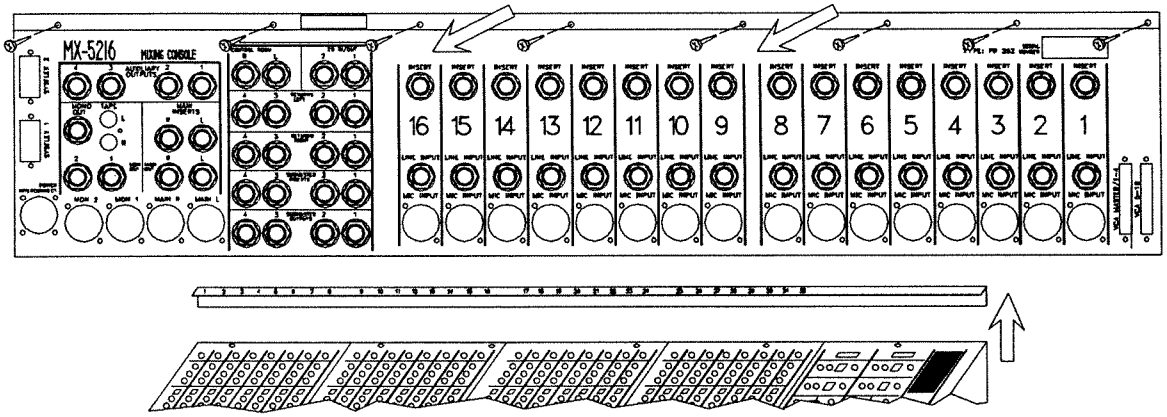
METERBRIDGE INSTALLATION PROCEDURE

VERY IMPORTANT! PLEASE READ BEFORE INSTALLING YOUR METERBRIDGE.

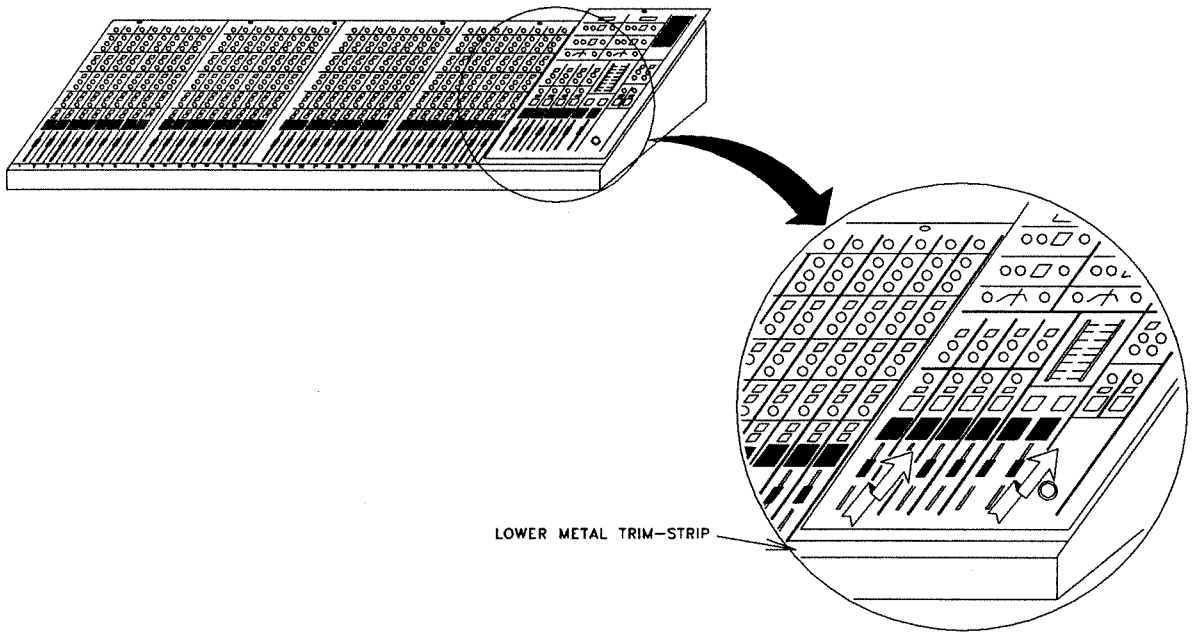
Proper installation of your mx-meterbridge requires some modification to existing circuitry on the Master I/O board. This modification involves cutting of delicate conductive traces and soldering of an added wire. The work should only be done by qualified technical personnel and it is recommended that the installation be done by a Fender authorized electronics service center. Installations performed by persons other than Fender authorized technicians are done at the owner's risk and full responsibility with respect to product performance, reliability and possible liability.

PLEASE BE ADVISED THAT THE PRODUCT'S WARRANTY IS RENDERED NULL AND VOID WHEN SERVICED OR MODIFIED BY NON-FENDER AUTHORIZED SERVICE CENTERS OR TECHNICIANS.

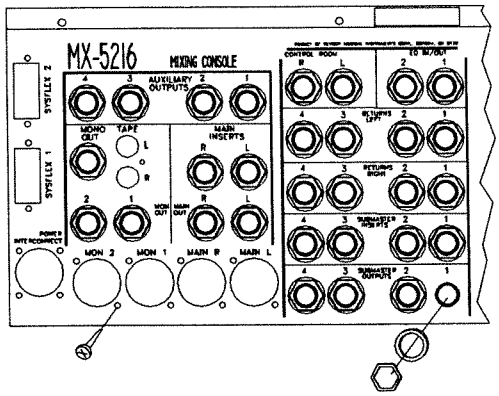
1) Remove the screws from metal trim strip located on the top and the back of the chassis. Gently remove the metal trim strip away from the mixer. Store the trim strip and screws in a safe place for later use.

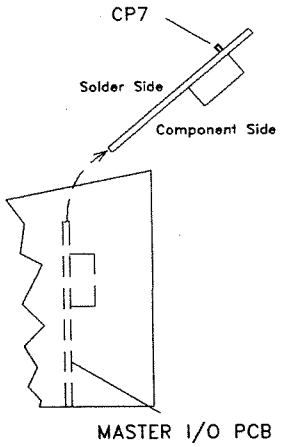


2) **Very carefully** open the master module panel by **very slowly** sliding it towards the top of the mixer, then **very slowly and gently** lift the panel up. Watch from the rear of the console to ensure that the numerous interconnecting cables running from the master module to the Master I/O PCB and the input modules are not unplugged or damaged.



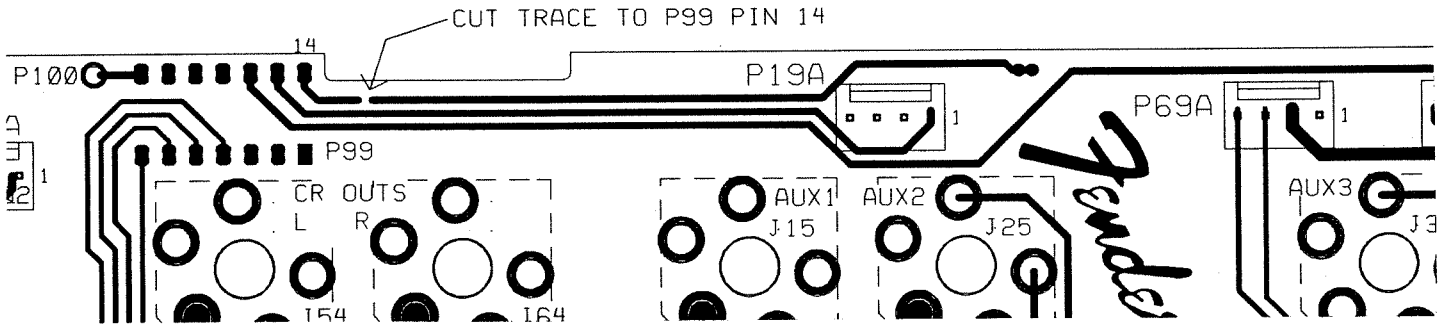
3) From the rear of the console, remove all washer/ nut pairs and screws from the Master I/O PCB. Very gently and very carefully lift and remove the Master I/O PCB until it is outside the mixer's chassis. In removing the Master I/O PCB, it may be necessary to disconnect the lead from CP7 only. **DO NOT** disconnect or remove any other wires or ribbon cables from the Master I/O PCB.



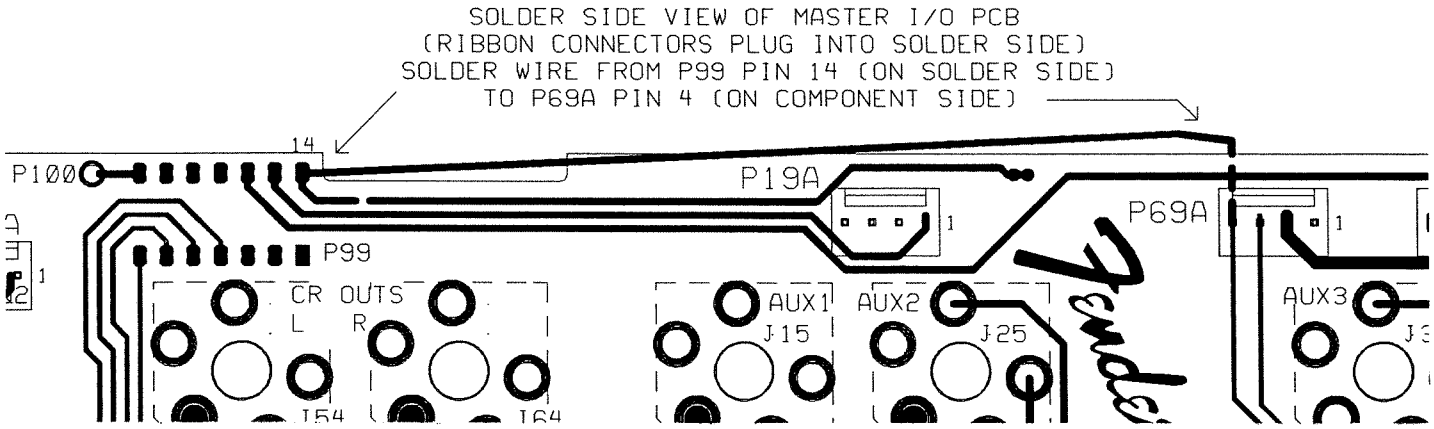


4) On the Master I/O board, **very carefully** cut the top trace from P99 Pin #14.

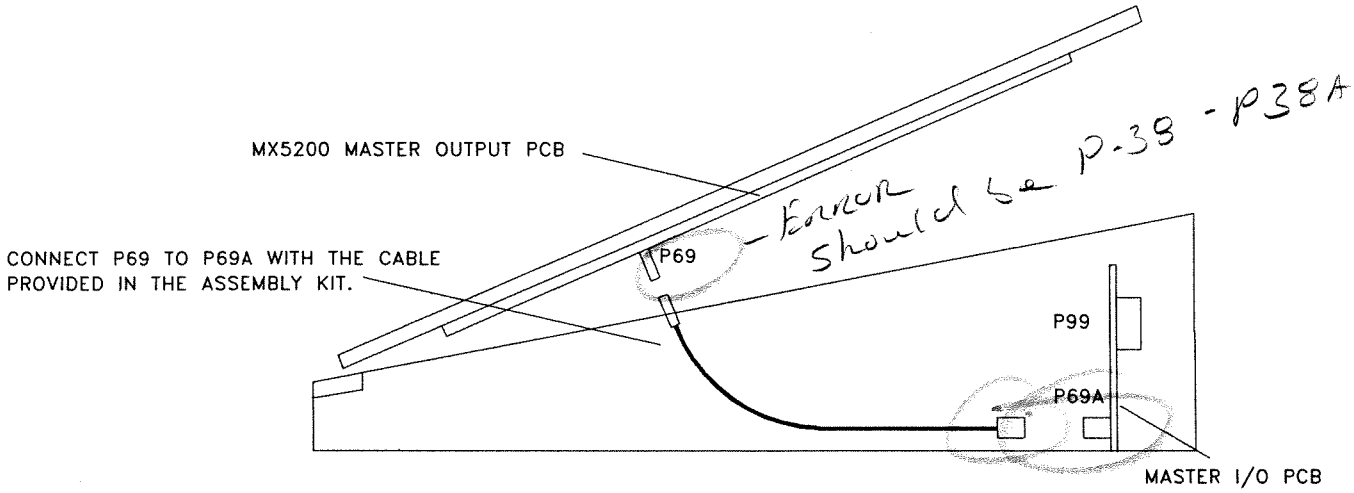
SOLDER SIDE VIEW OF MASTER I/O PCB
(RIBBON CONNECTORS PLUG INTO SOLDER SIDE)



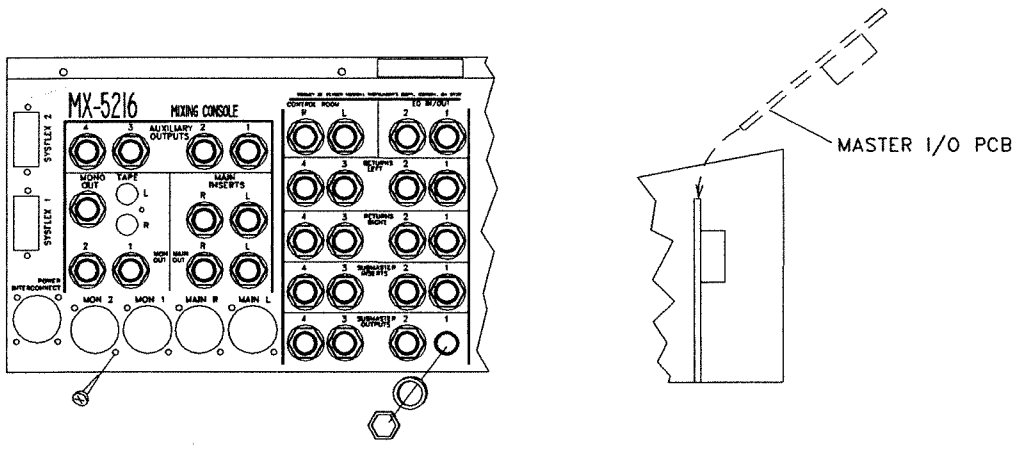
5) Next, solder a wire from P69A Pin #4 located on the outside of the Master I/O board to Pin #14 P99 located on the inside of the Master PCB.



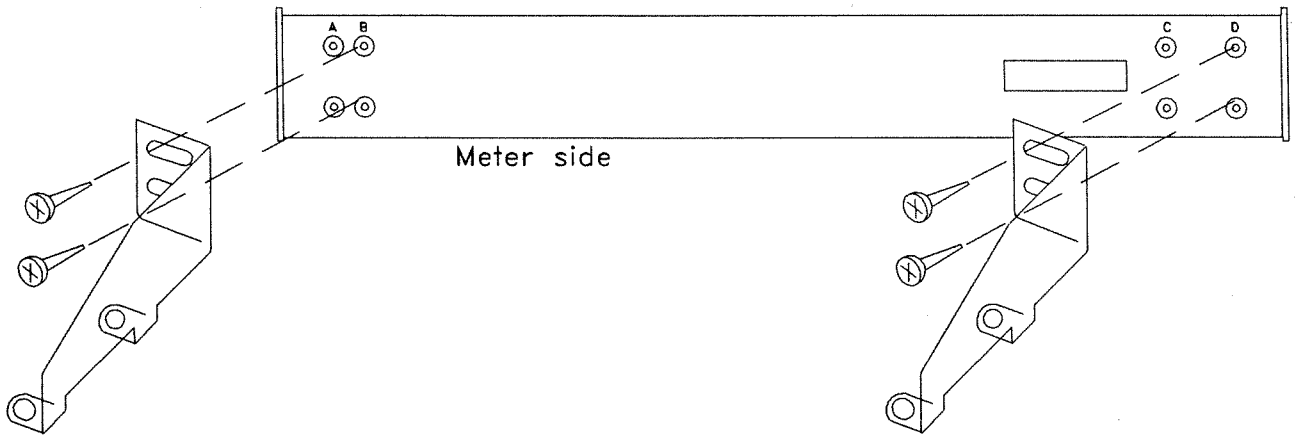
6) Using the ribbon cable provided in the Meterbridge assembly kit, connect P69 located on the underside of the Master Output Panel to P69A located on the Master I/O PCB.



7) **Very gently** and **very carefully,** reinsert the Master I/O PCB and secure it using the washer/nut pairs and screws previously removed in step 3. Reconnect the lead to CP7.



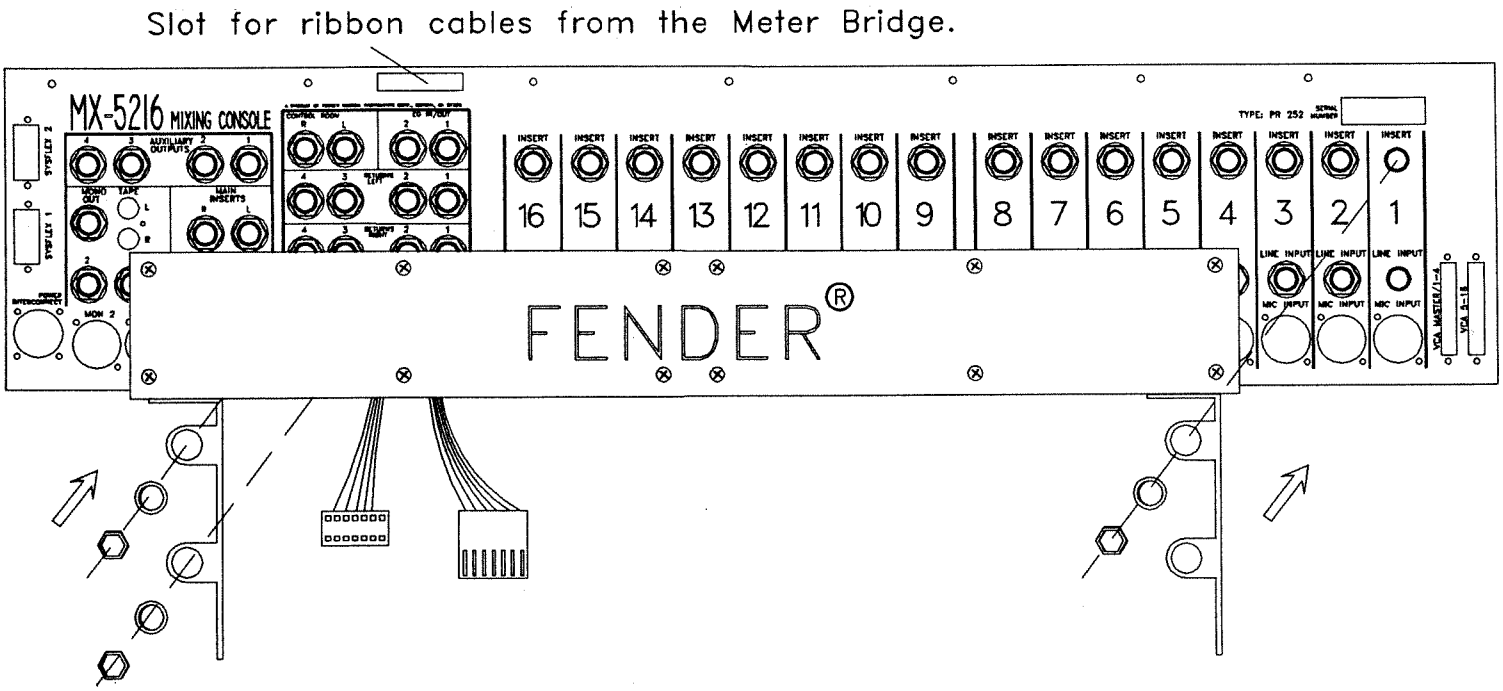
8) Attach the brackets to the base of the meterbridge as follows. If you have an **MX-5216**, use **hole pairs A and C**. If you have an **MX-5224**, use **hole pairs B and D**. If you have an **MX-5232**, use **hole pairs B and C**.



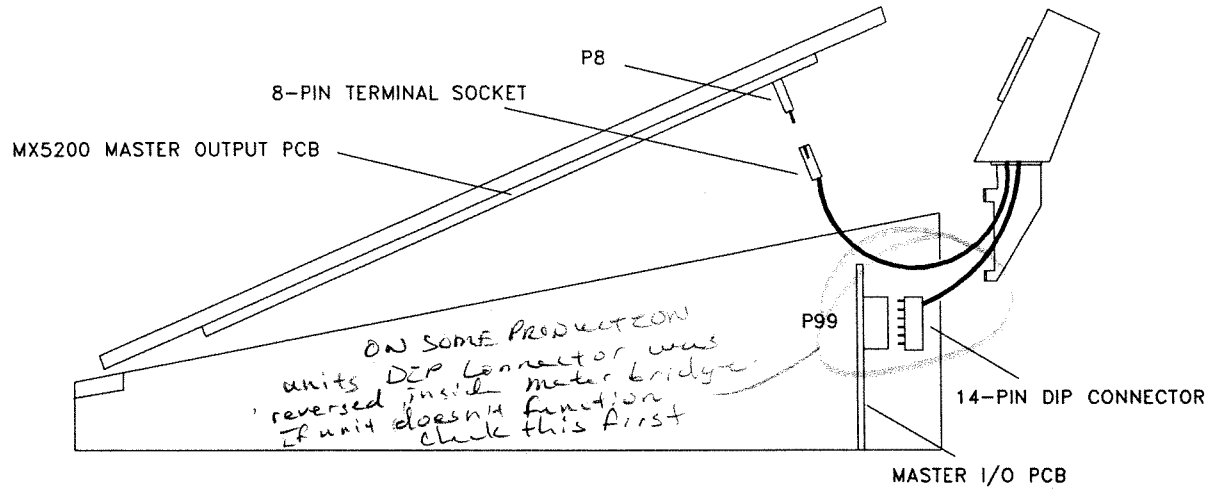
9) Remove the washer and nut pair for your mixer, as indicated below.

MIXERS	INSTRUCTIONS
MX-5216	Remove the washers and nuts from CHANNEL 1 INSERT and LINE INPUT and AUXILIARY OUTPUT 4 and MON OUT 2 jacks.
MX-5224	Remove the washers and nuts from CHANNEL 5 INSERT and LINE INPUT and AUXILIARY OUTPUT 1 and MAIN OUT L jacks.
MX-5232	Remove the washers and nuts from CHANNEL 9 INSERT and LINE INPUT and CHANNEL 32 INSERT and LINE INPUT jacks.

10) Place the meter bridge assembly on the rear chassis of the mixer at the indicated locations and secure it using the washer and nut pairs previously removed.

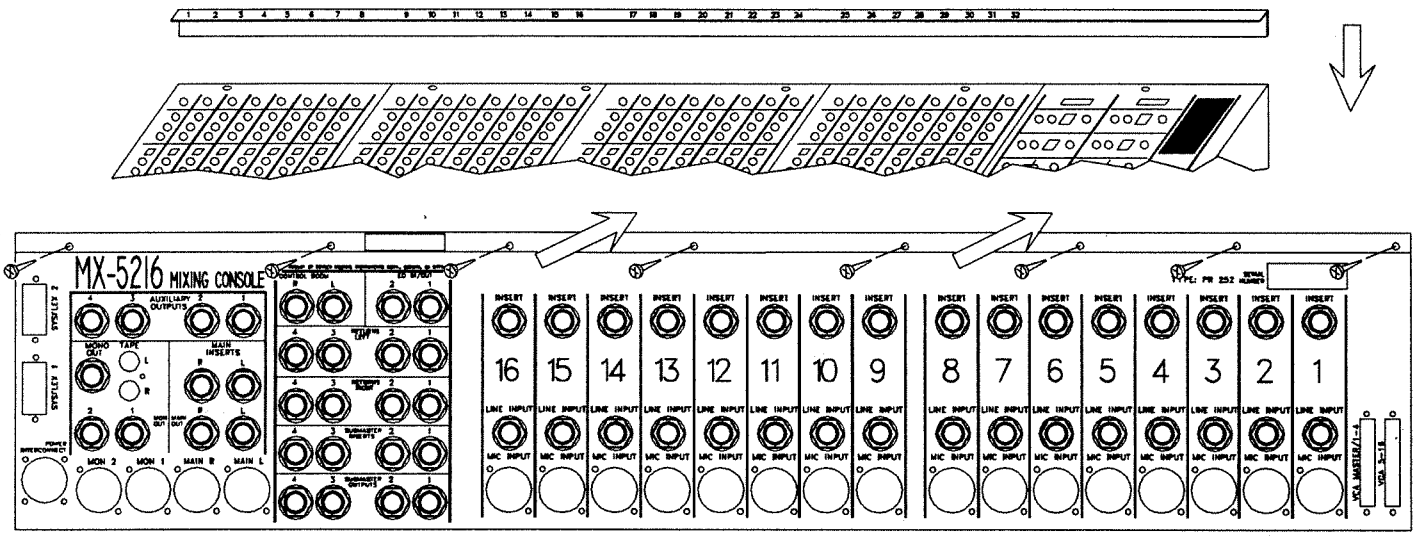


11) Slip the 14-pin DIP connector and the 8-pin terminal socket from the Meterbridge through the mixer's back panel and attach the connectors as follows. Place any excess cable length inside the mixer. From the Meterbridge, connect the 8-pin terminal socket to P8 located on the underside of the Master Module Panel. From the Meterbridge, connect the 14-pin DIP connector to P99 located on the Master I/O board.



*NOTE: Carefully fold the ribbon cable when re-installing the trim strip. Tie the excess cable-length and place it inside the mixer. PLEASE DO NOT LET ANY LOOSE CABLE HANG OUTSIDE THE MIXER.

12) Replace the Master Module Panel and secure it. Replace the metal trim strip and secure it with the screws removed in step 1. *Please note: The top screws of the Master Output module must be securely fastened for proper grounding and operation of the console.*



METERBRIDGE CALIBRATION

Your MX-Meterbridge is equipped with variable trim pots offering you the flexibility of adjusting the VU meters to the desired (multiple) industry standard operating levels. Located beneath each VU meter is a calibration trim pot used for adjusting each VU meter. The meters can be calibrated to other standards, but this procedure should only be undertaken by a qualified serviceperson. **Do not** try to adjust the meterbridge unless you have a thorough knowledge in the use of sophisticated audio test equipment, audio operating levels and audio matching. *Please note: your MX-Meterbridge has been preset at the factory for 0.775 volts = 0 dBu.*

If you wish to calibrate your meterbridge for a reference standard other than 0 dBu, you will need a signal generator and an RMS reading digital multimeter or AC voltmeter (or VTVM) that reads in decibels or RMS volts. The chart below lists other common reference standards.

REFERENCE VALUE VOLTAGES

Reference	Voltage
-10 dBv	0.315 Volts RMS
0 dBu	0.775 Volts RMS
+4 dBu	1.23 Volts RMS
+8 dBu	1.95 Volts RMS

Caution: Always unbalance the output being measured by plugging a ***mono*** 1/4 inch plug into the output during measurements, otherwise incorrect meter readings may result from balanced outputs.

PERFORMING THE CALIBRATION IN THE FOLLOWING SEQUENCE WILL ENSURE OPTIMUM PERFORMANCE FROM YOUR METERBRIDGE.

SUBMASTERS

1) Plug a 1 kHz sine wave into the LINE INPUT of any channel of your mixing console. The input signal level should be between .5 and 1V RMS. Read the signal output from the SUBMASTER OUTPUT 1, located at the rear of the console.

2) Place the channel TRIM control at the MIN position. Place the channel PAN pot at the L position and push the SUB 1-2 button. Slide the channel fader to 0.

3) Raise the SUBMASTER 1 fader until SUBMASTER OUTPUT 1 reads 0.775V (or the desired reference value voltage from the above table) on your multimeter. If necessary, raise or lower the channel fader and/or TRIM control in order to achieve the desired output level. *Caution: Make sure none of the PEAK LED's on either the channel or the master section are illuminated. If any PEAK LED's are lit, re-adjust the faders and/or TRIM controls until the led's are no longer lit.*

4) Adjust the trim control on the SUBMASTER 1 meter until it reads 0 VU.

5) Read the signal level at SUBMASTER OUTPUT 2, located at the rear of the console. Place the channel PAN pot at the R position and raise the SUBMASTER 2 fader until the output reads 0.775V (or the desired reference value voltage from the above table) on your multimeter.

6) Adjust the trim control on the SUBMASTER 2 meter until it reads 0 VU.

7) Repeat this procedure for Submasters 3-4, by assigning the channel SUBMASTER 3-4 button.

MAIN L & R

1) Leave the input signal set up and read the signal at the MAIN OUT L jack located at the rear of the console. Release the channel SUBMASTER 1-2 and SUBMASTER 3-4 assign buttons. Assign the input channel to the mains.

2) Place the channel PAN pot at the L position and raise the LEFT MAIN fader until the output reads 0.775V (or the desired reference value voltage from the table) on your multimeter.

3) Adjust the trim control on the MAIN L LED bargraph meter to read 0. The yellow LED should just come on and stay on.

4) Adjust the MAIN L VU meter trim control on the meterbridge until it reads 0 VU.

5) Repeat steps 3 & 4 for MAIN R LED bargraph meter and MAIN R VU meter by panning the PAN pot to R, and reading the signal at the MAIN OUT R jack.

MONO

1) Leave the Main L & R set up and read the signal at the MONO OUT jack located at the rear of the console.

2) Raise the MONO LEVEL control until the output reads 0.775V (or the desired reference value voltage from the table) on your multimeter.

3) Adjust the trim control on the MONO meter until it reads 0 VU.

AFL/PFL SOLO

1) Leave the Mono set up (Mono steps 1,2 and 3 above) and turn the SOLO LEVEL control to MAX. Make sure the ENABLE STEREO IN PLACE SOLO and the 2 TRACK PLAYBACK buttons are not depressed.

2) Press the SOLO button in the Mono section.

3) The bar graph LED L meter should read 0. Adjust the trim control on the AFL/PFL SOLO meter until it reads 0 VU.

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