

Owner's Manual

Model

MP-1200
MP-800

POWERED MIXER



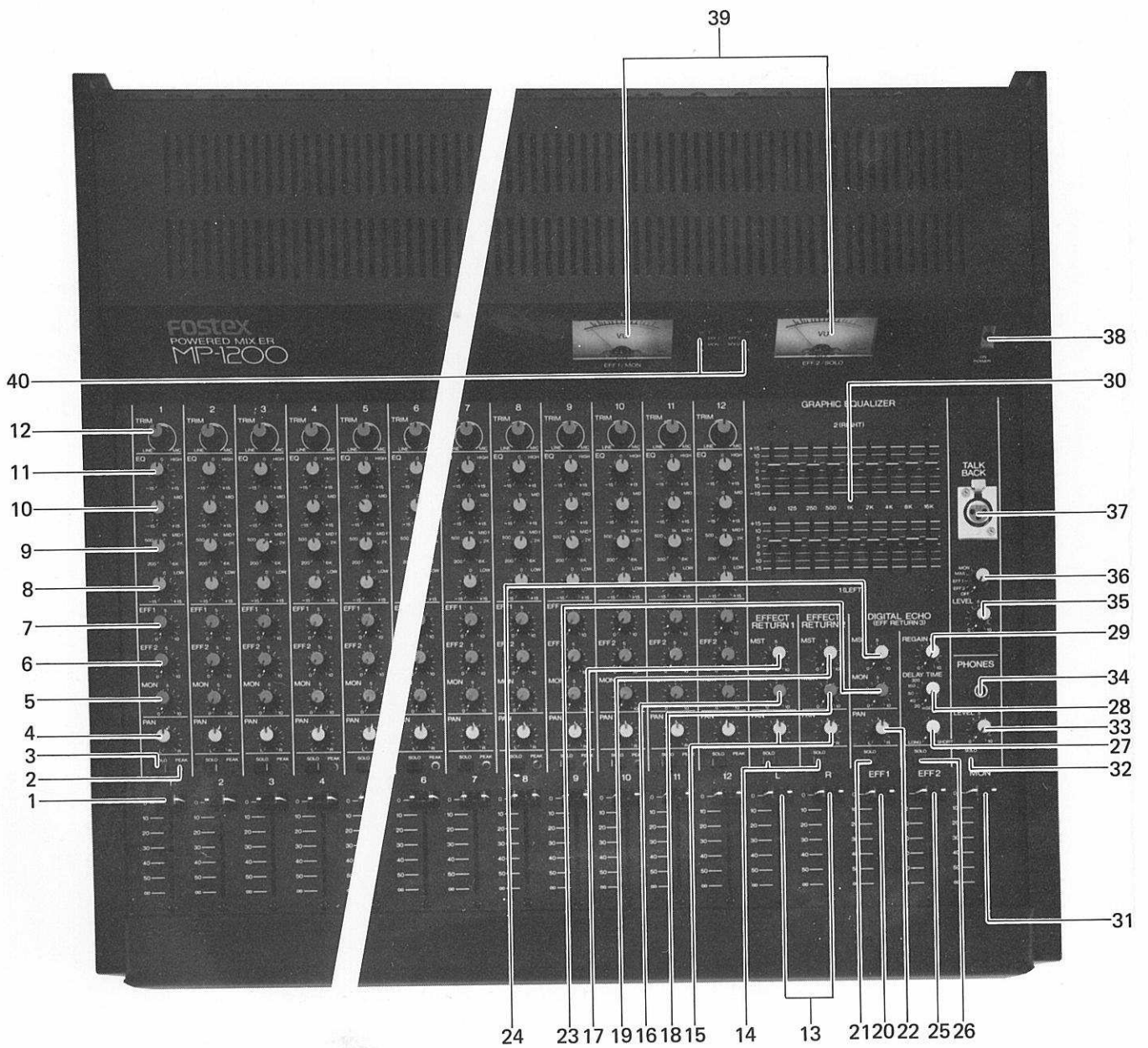
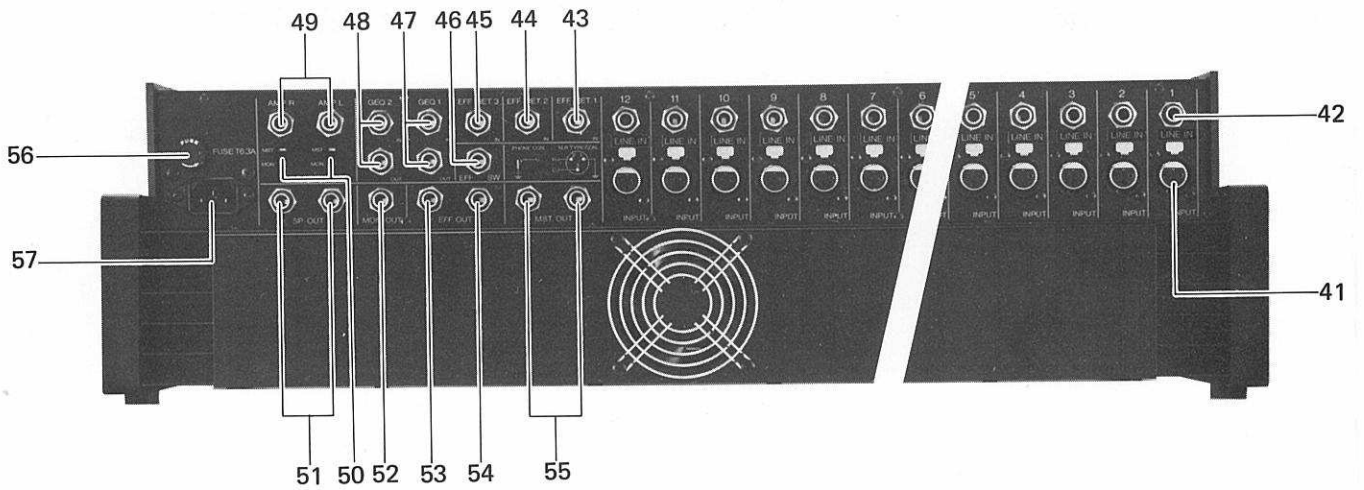
Fostex

T A B L E O F C O N T E N T S

Section 1	CONTROLS, INDICATORS AND CONNECTORS	2
Section 2	INTRODUCTION	7
Section 3	OPERATION	8
3 - 1	BASIC SOUND REINFORCEMENT	8
3 - 2	LARGER SOUND REINFORCEMENT	10
3 - 3	TIPS ON SOUND REINFORCEMENT	13
Section 4	SPECIFICATIONS	14
Section 5	BLOCK DIAGRAM	16

One manual has been prepared for both models because they are identical except with regard to power and the number of input channels. Model MP-800 is rated at 180W per channel and has eight input channels; Model MP-1200 is rated at 250W per channel and has twelve input channels.

**WARNING: To avoid possible electric shock hazard,
do not expose this appliance to rain or moisture.
There are no user-serviceable parts inside.
Refer servicing to qualified service personnel.**



SECTION 1 CONTROLS, INDICATORS AND CONNECTORS

Input Channels

1. Input Fader. This 60mm slide pot works in conjunction with the Trim Control (12) to adjust the gain for that input channel (both mic and line). Depending on the signal present, the nominal operating position will be between the -10 and -20 settings.
2. Peak LED Indicator. When this light is on there is an overload condition at the input stage prior to the fader; therefore, adjust the Trim Control (12) and/or EQ Controls (8, 10, 11).
3. Solo Button. Push to isolate the sound of this input channel in the monitor circuit. These buttons are non-latching. Note that each buss may be isolated by the Solo Buttons in the Master Control Section.
4. Pan Control. Rotate completely CCW for Left only, completely CW for Right only, or anywhere in between.
5. Monitor Send. This rotary control adjusts the amount of gain for that input channel to be sent to the independent Monitor buss (mono mix).
6. Effects 2 Send. This rotary control adjusts the amount of gain for that input channel to be sent to the independent Effects 2 buss (mono mix).
7. Effects 1 Send. This rotary control adjusts the amount of gain for that input channel to be sent to the independent Effects 1 buss (mono mix). This is connected to the internal digital delay circuit.
8. Low EQ. The hinge point is fixed at 100Hz. The amount of boost (CW) or cut (CCW) is variable by 15dB with this rotary control. The center position (0) is flat.
9. Mid EQ Frequency. The hinge point is continuously variable from 200Hz (CCW) to 6KHz (CW) in the important midrange band.
10. Mid EQ Level. 15dB of boost (CW) or cut (CCW) is applied to the frequency range selected by the previous control (9) setting. Use

these controls together to control feedback, add presence, etc. The center position (0) is flat.

11. High EQ. The hinge point is fixed at 10KHz. The amount of boost (CW) or cut (CCW) is variable by 15dB with this rotary control. The center position (0) is flat.

12. Trim Control. Use this rotary control to set the best operating range for the input fader (1). Typically, line level signals (instruments direct) are adjusted CCW, microphones CW.

Master Control Section

13. Master Gain, L & R. These faders control the overall output level to L & R (51).

14. Solo, L & R. Solo buttons for the master output channels. However, L & R will not be effective when other solo buttons are depressed.

15. Pan. This is the pan control for the EFFECT RETURN 1 & 2.

16. Effects 1 Return, Mon. Level control for Effects 1 Return signal applied to the monitor buss.

17. Effects 1 Return, MST. Level control for Effects 1 Return signal applied to the master output channels.

18. Effects 2 Return, Mon. Level control for Effects 2 Return signal applied to the monitor buss.

19. Effects 2 Return, MST. Level control for Effects 2 Return signal applied to the master output channels.

20. Effects 1 Master. This fader controls the overall output (send) level for the Effects 1 buss.

21. Effects 1 Solo. This latching type button isolates the Effects 1 buss.

22. Digital Echo (EFF RETURN 3) Pan. Pan control for the Digital Echo signal.

23. Digital Echo (EFF RETURN 3) Mon. Level control for the amount of digital echo gain applied to the monitor buss.

24. Digital Echo (EFF RETURN 3) MST. Level control for the amount of digital echo gain applied to the master output channels.

25. Effects 2 Master. This fader controls the overall output (send) level for the Effects 2 buss.

26. Effects 2 Solo. This latching type button isolates the Effects 2 buss.

27. Variable Delay Select. This control lets you alter the amount of delay time selected for the digital echo effect by the control above (28). CW is Short, x 0.5 CCW is Long, x 2.0.

28. Delay Time Select. This stepped control sets the amount of delay desired from the digital echo circuit: 20, 40, 80, 160, 320 msec. Used in conjunction with the control below (27) the delay time can be set from 10msec ~ 640msec.

29. Digital Regain. Controls the echo feedback.

30. Graphic Equalizer. Independent 9-band graphic equalizers for the master output channels, L and R. 63, 125, 250, 500 Hz; 1, 2, 4, 8, 16 KHz, ± 15 dB. The center detent position is off.

31. Monitor Master. This fader controls the overall level for the output of the monitor buss.

32. Monitor Solo. This latching type button isolates the monitor buss.

33. Headphone Level. This control sets the level for the headphones.

34. Phones. Standard 1/4" phone jack for headphones.

35. Talkback level. This control adjusts the gain of the talkback mic.

36. Talkback Select. This control determines which buss the talkback mic will be on -- Monitor, Master, Effects 1, or Effects 2. The last position is off.

37. Talkback. Connect a mic to this input for the talkback function.

38. Power. It's always a good idea to check the settings of the master output level controls before you turn the unit on. A sudden power surge could damage your loudspeakers.

39. VU Meters. Level indicators may be switched to read the master output channels, the Effects 1 and 2 busses or the monitor buss and the solo buss.

40. Meter Select Switches. The left meter can be switched to read the Master Left (top), Effects 1 Send (middle) or Monitor level (bottom). The right meter can be switched to read the Master Right (top), Effects 2 Send (middle) or Monitor level (bottom).

When each solo button is depressed, the right hand meter will automatically switch to solo.

Rear Panel

41. Input connector. XLR input for mic or line.

42. Line In. Standard 1/4" phone jack.

43. Effects 1 Return. Standard phone jack input to L, R & Monitor bus.

44. Effects 2 Return. Standard phone jack input to L, R & Monitor bus.

45. Effects 3 Return. Standard phone jack input to L, R & Monitor bus. Also, when a plug is inserted to Effects 3 Return, the internal digital echo will be cut off.

46. Effects 3 Footswitch. Standard phone jack for remote footswitch control of the Effects 3 buss.

47. GEQ 1 In and Out. Standard phone jack for buss-in (before) and buss-out (after) the graphic equalizer on the Left master buss.

48. GEQ 2 In and Out. Standard phone jacks for buss-in (before) and buss-out (after) the graphic equalizer on the Right master buss.

Note: The Master Outputs, L & R (55) are normalled to GEQ inputs, GEQ outputs are normalled to Amplifier L & R inputs (49). See the block diagram on Page 16.

49. Amplifier L & R Inputs. Standard phone jacks for buss inputs just prior to the power amplifier stage.

50. MST/MON Select. These switches determine the flow of the main input signals. Select MST for the stereo master buss, MON for the monophonic monitor buss.

51. Speaker Out, L & R. Standard phone jacks for connecting the main speakers. These jacks carry the amplifier signal of the stereo master buss.

52. Monitor Out. Standard phone jack for connection to a power amplifier for the monitor speaker (mono).

53. Effects 2 Out. Standard phone jack for buss output.

54. Effects 1 Out. Standard phone jack for the buss output.

55. Master Outputs, L & R. Standard phone jacks for buss outputs prior to the graphic equalizer stage.

56. Fuse. Check this fuse (MP-800, 12A; MP-1200, 15A) periodically.

57. AC Connector. Always use grounded lines with the proper connectors. Make sure the unit is off (38) before connecting the AC cord.

SECTION 2 INTRODUCTION

Your Fostex Stereo Powered Mixer is well suited to any number of applications: television and theatrical productions, audio post production, and audio recording and mixdown.

Most applications, however, will involve sound reinforcement in one of two general ways: either as the main mixer in a small to medium-sized club, hall, church or meeting room, or as one of several mixers in a large arena (a keyboard sub-mixer or a stage monitor mixer).

If your application is the latter, we must assume that the descriptions in Section 1, the Block Diagram on Page 16 and the specifications on Page 14 contain all the information you're likely to need.

The balance of this manual is for users who will normally only need to use one mixer for their application.

The transducers you use on either end of this mixer - the microphones and speakers - will have a pronounced effect on the sound of your system. A large part of the equalization circuitry of your mixer may be used to compensate for mic/speaker response in whatever room you happen to be.

Hearing is everything in sound reinforcement. Visual references are minimal, and Murphy's Law means that textbook theory will never apply to your specific situation. The people in the band need to hear their music differently. The drummer, for example, might want to hear a lot more bass than the keyboard player.

The people in the audience want an overall, blended sound, with lead vocals and solos prominent.

Speakers want a reinforcement system that allows them to use their vocal skills.

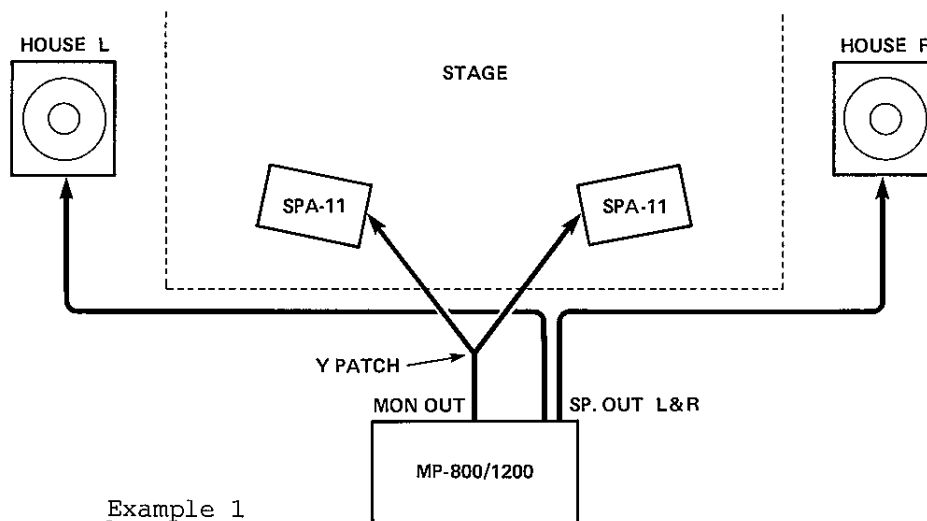
Fostex makes a wide range of microphones, loudspeakers and loudspeaker systems specifically designed for sound reinforcement. Whatever your needs, large or small, chances are there's a Fostex transducer made

just for the job at hand.

The rest of this manual contains representative examples of the many ways in which your stereo powered mixer can function.

SECTION 3 OPERATION

3-1 BASIC SOUND REINFORCEMENT



Example 1

SYSTEM

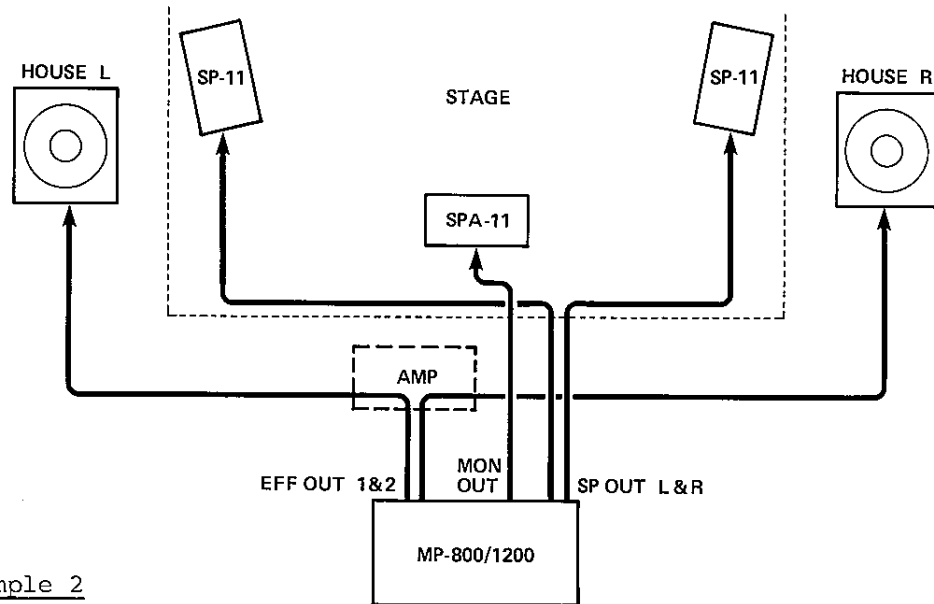
- 1 MP-800 or MP-1200 Powered Mixer
- 2 SPA-11 Powered Monitors
- 2 House speakers (SP-20)

Microphones and line level signals from instruments are connected to the mixer inputs. When two inputs are connected to one channel, the 1/4" phone jack AUX IN will take precedence over the XLR input.

Connect Speaker Out L & R to the main house speakers. Then connect MON OUT to a pair of Fostex SPA-11 powered monitors (or equivalent) for the stage monitors.

Use the fader, trim control and solo button for each channel during the sound check to make sure the various gain stages are operating in balance with each other.

You might want to add some digital echo to the house mix (master), but chances are good that the musicians on stage will want the monitor mix dry.



Example 2

SYSTEM

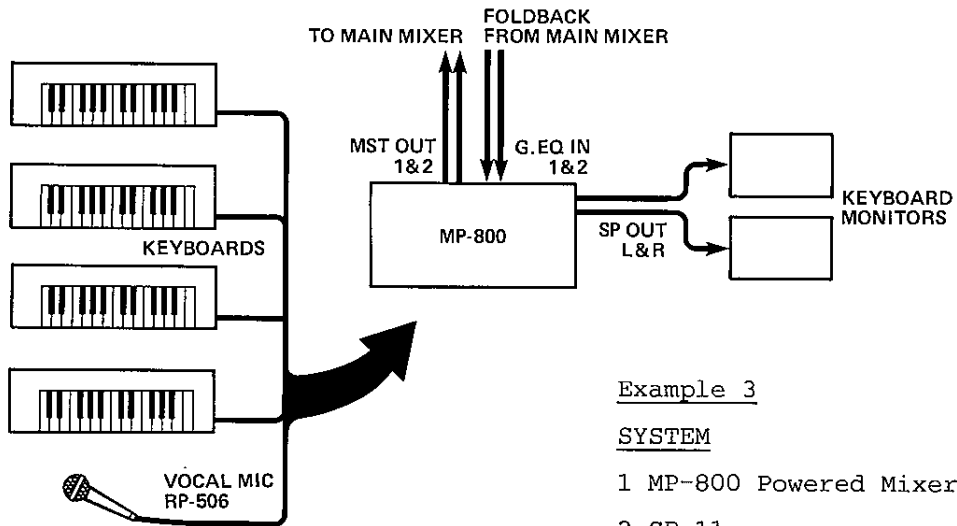
- 1 MP-800 or MP-1200 Powered Mixer
- 2 SP-11 Stage Monitors
- 1 SPA-11 Powered Monitor
- 2 House speakers (w/AMP)

Sometimes the monitoring needs of the musicians are so demanding that you will use the Master Busses (L & R) for two different stage mixes (Left and/or Right, via the Pan controls), plus the Monitor Buss for a third, center stage mix.

In this case, use the Effects 1 and Effects 2 Busses to drive the main house system.

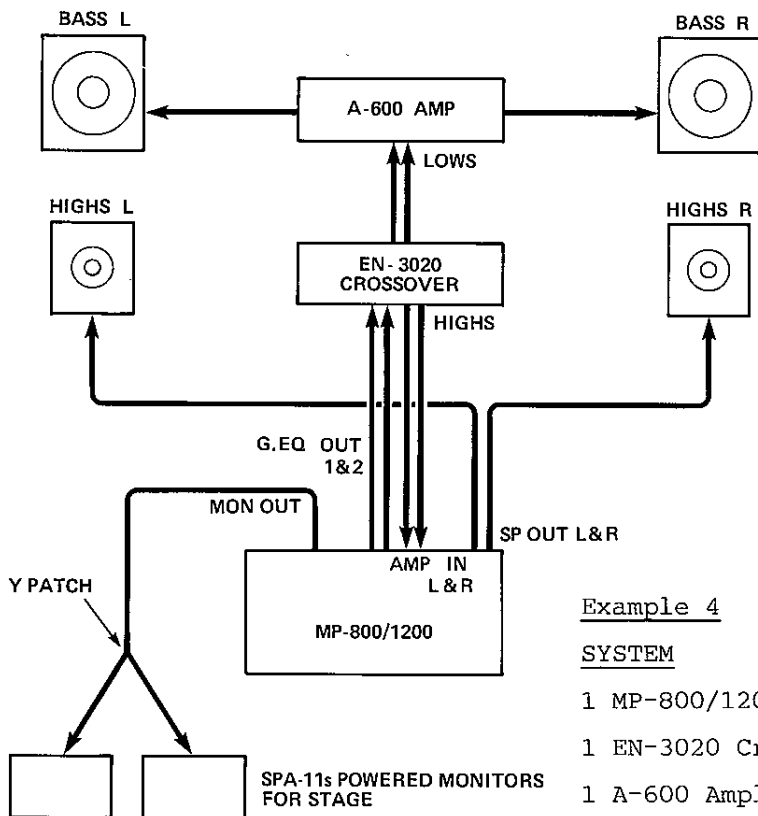
The MP-800 makes a heavy-duty keyboard/on-stage mixer. Typically, the Master Outs L & R are connected to the main mixer, and the foldback returns are then connected to the MP-800's Graphic EQ IN 1 & 2, respectively. The Speaker Outputs L & R are connected to the keyboard stage monitors (SP-11s).

This way, the main mixer receives a clean sub-mix, while the musician



is free to use the graphic equalizers to their fullest capability in order to compensate for the rigors of on-stage monitoring.

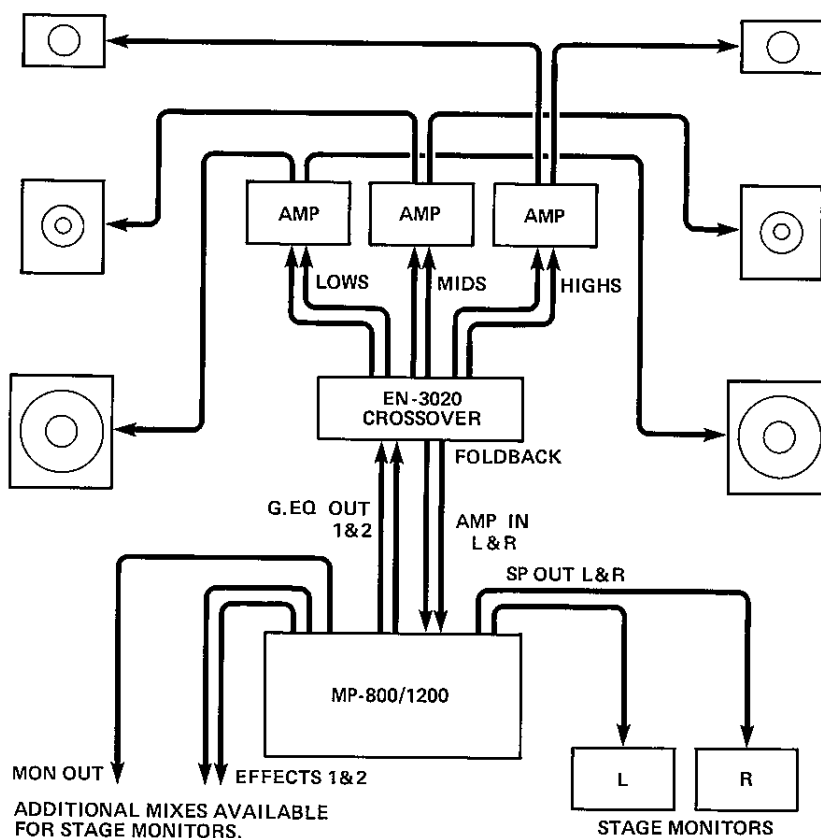
3-2 LARGER SOUND REINFORCEMENT



When you need more coverage for the house, consider bi-amping as a practical alternative to stacking. Patch the Master Outputs L & R to an electronic crossover (Fostex Model EN 3020), then to a power amp (Fostex Model A-600), driving the Bass Speakers L & R.

Now connect the high frequency outputs of the electronic crossover to the Graphic EQ Inputs 1 & 2 (and thereby the internal power amp to drive the high frequency units).

For stage monitoring, three independent mono mixes are available, using the Effects 1 & 2 Busses and the Monitor Buss. Connect these outputs to powered monitors like the Fostex SPA 11s.



Example 5

SYSTEM

1 MP-800/1200 Powered Mixer

1 EN-3020 Crossover

Tri-amplified house system

Stage monitors

When even more sound coverage is called for, tri-amp the house and use the powered outputs of the Fostex to feed the stage monitoring system.

Connect the Master Outputs L & R to an electronic crossover (Fostex Model EN-3020), then to the amplifier racks, and on to the house mains.

Use the Speaker Outputs L & R to feed the main stage monitors, and use any or all of the Effects 1 & 2 and Monitor Busses to augment the reinforcement for the stage. The graphics should prove especially useful in this configuration.

SECTION 4 SPECIFICATIONS

Model MP-800 Specifications
8 Channel Stereo Powered Mixer

Power Amp Section

Output power 180 W / 180 W into 4 ohms
Frequency response 20Hz to 20kHz, ± 1 dB at 100 watts
THD Less than 0.1% at 1 kHz, 180W into 4 ohms
Input sensitivity $+12$ dB (3V) at maximum power

Mixer section

Frequency response 20Hz to 20kHz, $+1$ dB/ -3 dB
THD Less than 0.1% at 1 kHz, $+12$ dB (3V)
Equivalent input noise -128 dB weighted (Terminated by 150 ohm)

Maximum gain

Mic in to
master out L & R 65dB ± 2 dB

Mic in to
effect 1 & 2 output 65dB ± 2 dB

Mic in to
monitor output 65dB ± 2 dB

Effect return to
master out 24dB ± 2 dB

Effect return to
monitor out 22dB ± 2 dB

Maximum output level $+21$ dB (9V), 1kHz at master out & monitor out

Input channel equalizations

Low ... $+15$ dB ~ -15 dB at 100Hz
Mid ... $+15$ dB ~ -15 dB, 200Hz to 6kHz
High .. $+15$ dB ~ -15 dB at 10kHz

Master graphic equalizations

Center frequencies 63/125/250/500/1k/2k/4k/8k/16k

Max. boost/cut $+15$ dB/ -15 dB

Crosstalk 60dB at 1 kHz (Adjacent input channel)

Digital echo Frequency response ... 50Hz to 6.8kHz, $+1$ dB/ -3 dB
Delay time ... 10 to 640mSec.

Headphone output 100mW into 8 \sim 40 ohms

Power requirements 120V, 60Hz, 600W

Dimensions 510 (W) x 600 (D) x 180 (H) [mm]

Weight 20Kg.

Model MP-1200 Specifications

12 Channel Stereo Powered Mixer

Power amp section

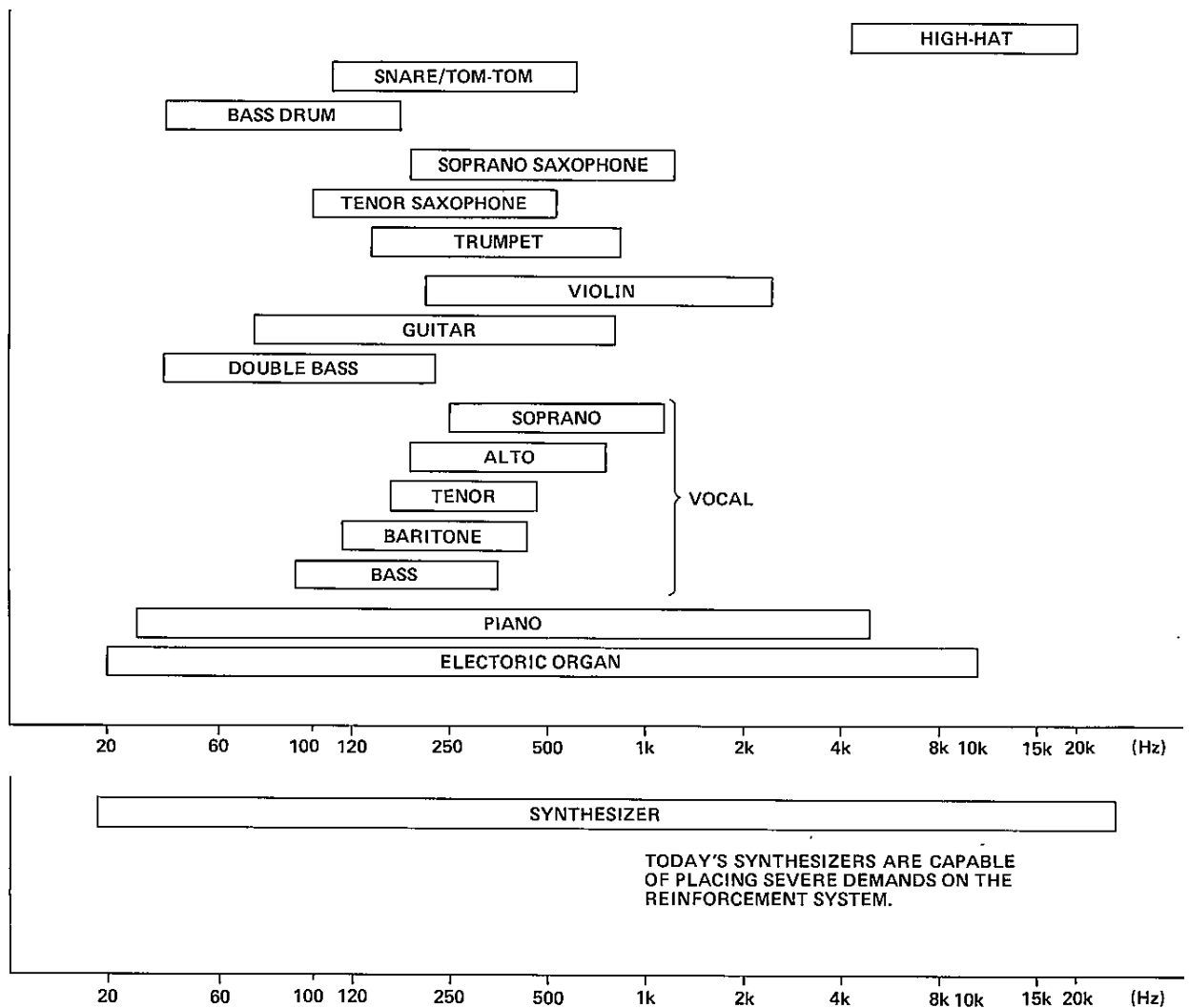
Output power 250 W / 250 W into 4 ohms
Frequency response 20Hz to 20kHz, ± 1 dB at 100 watts
THD Less than 0.1% at 1 kHz, 250 W into 4 ohms
Input sensitivity +12dB (3V) at maximum power

Mixer section

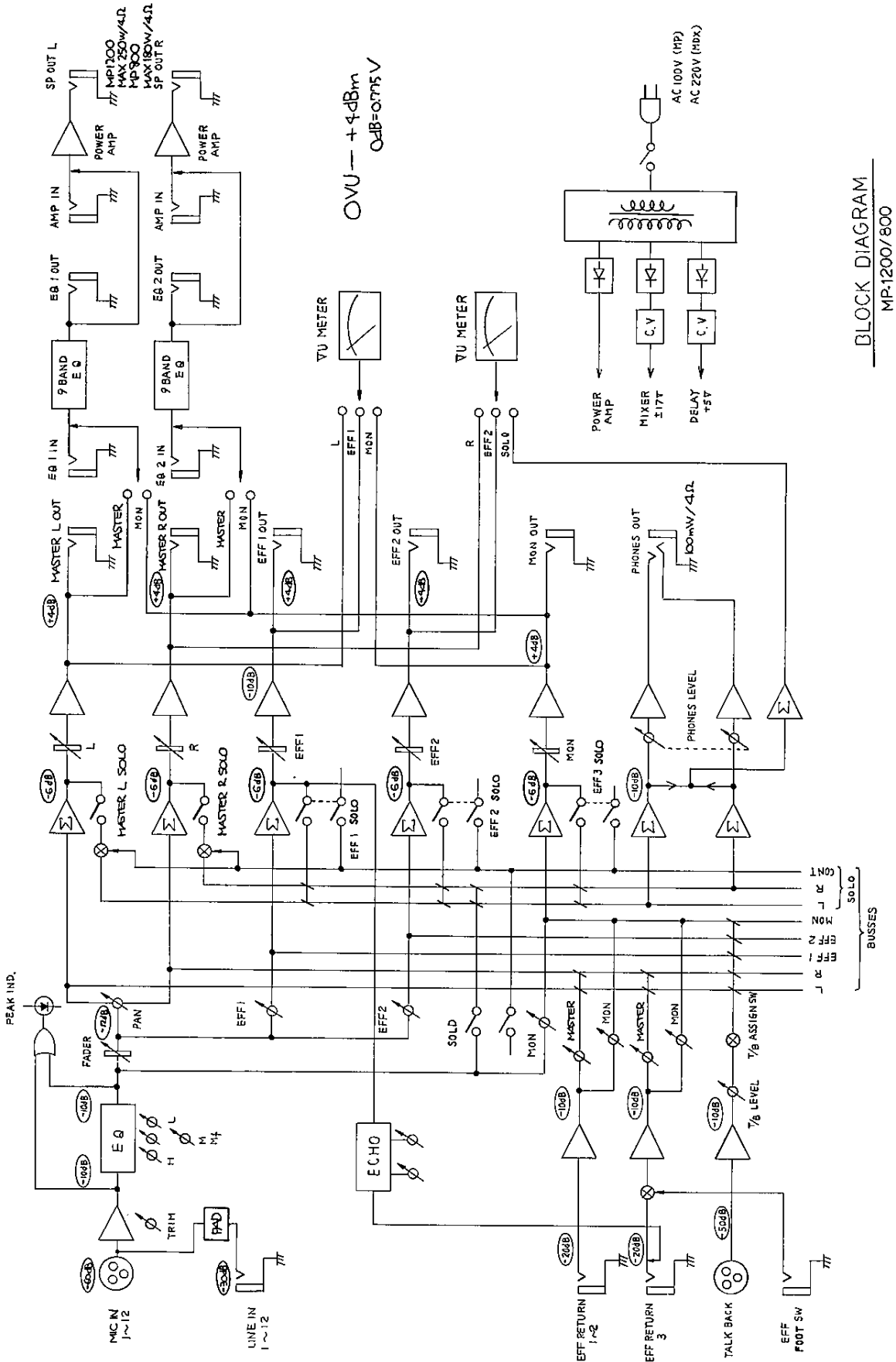
Frequency response 10Hz to 20kHz, +1dB/-3dB
THD Less than 0.1% at 1 kHz, +12dB (3V)
Equivalent input noise -128dB weighted (Terminated by 150 ohm)
Maximum gain
 Mic in to
 master out L & R 65dB ± 2 dB
 Mic in to
 effect 1 & 2 output 65dB ± 2 dB
 Mic in to
 monitor output 65dB ± 2 dB
 Effect return to
 master out L & R 24dB ± 2 dB
Maximum output level +21dB (9V), 1kHz at master out & monitor out
Input channel equalizations
 Low ... +15dB \sim -15dB at 100Hz
 Mid ... +15dB \sim -15dB, 200Hz to 6kHz
 High .. +15dB \sim -15dB at 10kHz
Master graphic equalizations
 Center frequencies 63/125/250/500/1k/2k/4k/8k/16k
 Max. boost/cut +15dB/-15dB
Crosstalk 60dB at 1 kHz (Adjacent input channel)
Digital echo Frequency response ... 50Hz to 6.8kHz, +1dB/-3dB
 Delay time ... 10 to 640mSec.
Headphone output 100mW at 8 \sim 40 ohms
Power requirements 120VAC, 60Hz, 700W
Dimensions 650 (W) x 600 (D) x 180 (H) [mm]
Weight 24kg.

3-3 TIPS ON SOUND REINFORCEMENT

- * Keep your limiting separate. Don't allow the lead vocal to modulate the kick drum.
- * Operate with as much headroom as possible. The difference between amateur and professional sound reinforcement is usually reduced to the relative understanding of operating system headroom and balanced gain stages.
- * Sub-mix and bi-amp. Group your sound activities and become more efficient with your system design. Get all the sound you paid for, but don't pay for more than you need.
- * Triple check the AC. If it's really an important show, have a back-up system at least on stand-by if not on-hand.
- * Insist that the monitor sound satisfy each member of the band within reason. That's where the music's coming from.
- * Your ear is always the final guide, but remember some of these basic EQ parameters:



SECTION 5 BLOCK DIAGRAM



BLOCK DIAGRAM
MP-1200/800

SAFETY INSTRUCTIONS

WARNING

“READ BEFORE OPERATING”

1. Read Instructions—All the safety and operating instructions should be read before the appliance is operated.
2. Retain Instructions—The safety and operating instructions should be retained for future reference.
3. Heed Warnings—All warnings on the appliance and in the operating instructions should be adhered to.
4. Follow Instructions—All operating and use instructions should be followed.
5. Water and Moisture—The appliance should not be used near water—for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc.
6. Ventilation—The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or, placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.
7. Heat—The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.
8. Power Sources—The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.
9. Power-Cord Protection—Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.
10. Cleaning—The appliance should be cleaned only as recommended by the manufacturer.
11. Nonuse Periods—The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.
12. Object and Liquid Entry—Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
13. Damage Requiring Service—The appliance should be serviced by qualified service personnel when:
 - A. The power-supply cord or the plug has been damaged; or
 - B. Objects have fallen, or liquid has been spilled into the appliance; or
 - C. The appliance has been exposed to rain; or
 - D. The appliance does not appear to operate normally or exhibits a marked change in performance; or
 - E. The appliance has been dropped, or the enclosure damaged.
14. Servicing—The user should not attempt to service the appliance beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.

Fostex

FOSTEX CORPORATION 560-3, Miyazawa-cho, Akishima, Tokyo, Japan

FOSTEX CORPORATION OF AMERICA 15431, Blackburn Ave., Norwalk, CA 90650, U.S.A.

©PRINTED IN JAPAN FEB. 1986 8688 0130 00