

Randall

RM 12-3 & RM 8-3 Owner's Manual



RM 8-3 AND RM 12-3 FEATURES

The RM 8-3 and RM 12-3 have eight and twelve channels respectively. Each has balanced line low impedance input as well as high impedance input capabilities.

Each channel has an input attenuator to allow the acceptance input signals of almost any magnitude without causing input clipping. An LED indicator light in each channel lights 5 dB before clipping occurs.

Each channel has, in addition to the input attenuator control, hi and lo EQ controls, reverb send control, monitor send control, pan A & B control and slider fader control. EQ knobs are color coded.

The hi and low EQ in each channel are active filter networks thus allowing the maximum equalization without inter-action.

A unique and important feature of these mixers is the ability to change the direct output to post fader or pre fader or pre EQ. The monitor bus can be changed from post EQ to pre EQ. These changes are made simply by changing a jumper connection on each pre amp board.

The effects send and/or monitor send may be used as sub mix busses.

The pan control A to B causes only a maximum .75 dB shift in reference level.

Each channel is provided with a direct output jack.

Output connections to both A and B master sections and monitor section is either by XLR connectors or ¼" phone plugs.

The master sections have effects/auxiliary gain controls, master reverb controls, hi and lo EQ controls and fader controls.

The monitor section has hi and lo EQ controls and fader control.

Both master sections and monitor have ten light LED bar indicators calibrated in 3 dB steps from -15 to +12 VU.

Both of these units have reverb built in plus the capability of accepting any external effects signals.

The overall appearance is as professional as its performance with its black pebbly finish, grey trim and markings, rich simulated walnut side panels and hand or arm rest.

A look at the technical specifications will prove conclusively that it is truly one of the most flexible mixers on today's market and at an extremely competitive price.

SPECIFICATIONS FOR RM 8-3 & RM 12-3

FREQUENCY RESPONSE	± 1.5 dB 20 to 20 KHZ, — 1.5 dB @ 20 Hz 0 dB @ 20 KHZ
NOISE	Unmeasurable, all faders @ ∞, -90 dB master fader @ 20
MAXIMUM GAIN	63 dB lo Z input, 40 dB hi Z input
CROSS TALK	-60 dB A to B
MAXIMUM INPUT	7 V RMS lo Z input, 20 V RMS hi Z input
INPUT CLIP LITE	LED indicator lights 5 dB before pre amp clipping
INPUT IMPEDANCE	150 to 600 ohms balanced input, 50K ohms hi Z input
EQ CONTROLS	Channel and master EQ controls lo ± 6 dB @ 100 Hz, ± 12 dB @ 4 KHZ, hi ± 15 dB @ 4 KHZ, ± 17 dB @ 10 KHZ
CHANNEL FADER INTERACTION	0 dB
DISTORTION	.16 THD @ 1 KHZ @ 6 VU output
DIRECT OUTPUT	680 ohms, 0 to 6 V RMS, 0 dB nominal
MASTER OUTPUT	7.5 V RMS maximum into 600 ohms — Both XLR and ¼" phone jack connections
LED LIGHT BAR GRAPH	-15 VU = (.245 V RMS) to + 12 VU (4.89 V RMS)
RANGE-A-B-MONITOR	0 VU = 1.23 V RMS or + 4 dB
EFFECTS OUTPUT	700 mV @ 5K ohms — ¼" phone jack
EFFECTS/AUXILIARY INPUT	Master A and B ¼" phone jack, 250 mV minimum input for 0 VU output 22K ohms input impedance minimum
DIRECT MONITOR BUSS	250 mV minimum input for 0 VU output 22K ohms input impedance, ¼" phone jack
NUMBER OF CHANNELS	RM 8-3 8 RM 12-3 12
NUMBER OUTPUT BUSSES	4, Both the RM 8-3 and RM 12-3 have 2 master output busses A and B plus monitor effects busses
SIZE	RM 8-3 19" W x 14" D x 5" H RM 12-3 25½" W x 16½" D x 5" H

OWNERS MANUAL FOR RM 12-3 AND RM 8-3

The RM 12-3 and RM 8-3 are both exceedingly high quality stereo mixers. They feature the ultimate in flexibility, fidelity, mechanical and electrical integrity at a very conservative price. These mixers will compare favorably with mixers costing a great deal more and more often than not they will out perform the competition. They are extremely quiet while, at the same time, providing very high gain.

The RM 12-3 and RM 8-3 are engineered to provide dependable and long lasting service under the most difficult conditions.

The RM 12-3 and RM 8-3 are the same in operation except the 12-3 has four more channels. Each channel has a hi and lo input connector. The XLR connectors are the low impedance inputs and have a nominal input impedance of 3,000 ohms. The hi impedance inputs are 50,000 ohms and use a standard ¼" phone jack. The clip light at the top of each channel indicates clipping in the pre amp. The clip light actually will indicate 5 dB before clipping.

The input attenuator on each channel has an indicator arrow at approximately 2 o'clock. This arrow is a starting place for setting up the board. If clipping occurs at this position or any position, turn the input attenuator control counter clockwise until the lamp does not come on.

The hi EQ is a shelving type equalization control and provides plus or minus 15 dB at 10 KC. The lo EQ control is a shelving type circuit that provides plus or minus 15 dB at 100 cycles. The reverb control is a reverb or effects send, and mixing can be accomplished by turning the knob from zero to ten as the individual reverb or effects are required. The monitor control sets the level on the monitor buss.

The pan control pans from A to B master sections. When the pan control is centered (12 o'clock) an equal amount of signal is being fed to both A and B master sections which is the mono position.

The slider on each channel regulates the level of signal to A and B master depending on the position of the pan control.

The reverb control on each channel is prewired post fader and the monitor is prewired for pre EQ. It is possible to change the monitor to post EQ by merely changing a jumper on each channel P.C. board. The reverb effects send can also be wired pre fader by changing a jumper on the P.C. board of channel desired. See illustration.

The master section is comprised of three separate sections: A, B and monitor. The A, B and monitor sections each has an output level LED bar graph indicator. At zero on the bar graph, the mixer's output is 1.2 volts RMS which is sufficient to drive any power amplifier or recording system. The bar graph lights are calibrated in 3 dB steps. The A and B master sections each have an effects auxiliary jack on the rear of the mixer which allows other sub mixers to be plugged in. An external echo unit can be driven from the effects send buss. The output can be fed into the effects auxiliary jack and the gain of the effects would be regulated by the effects auxiliary gain control on the A or B master section.

The reverb control on A and B is the master reverb control after the reverb has been mixed through the various channels. The built in reverb will operate even if an external echo or effects is being used.

A, B and monitor each have a hi EQ and lo EQ control. Again, the hi EQ is plus or minus 15 dB at 10 KC and the lo EQ control is plus or minus 15 dB at 100 cycles.

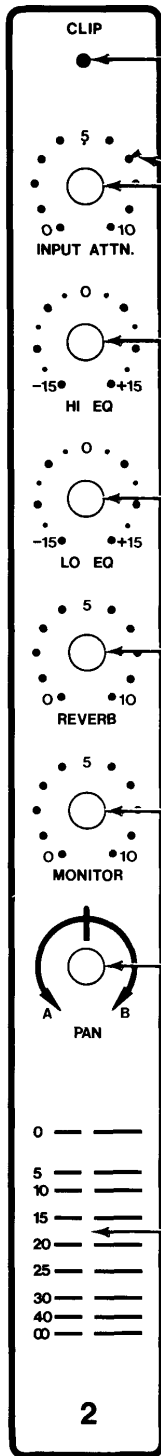
The fader at the bottom of each section of the master section raises and lowers the output level of the unit. The output of the mixer is available through either the XLR connectors or ¼" phone jacks mounted on the rear of the chassis and labeled (Output A) (Output B) (Output Monitor). Each channel has a direct output ¼" jack on the rear of the chassis. Direct output is post fader and approximately 600 ohms output impedance. The direct output is capable of driving other effects. The direct output can be used for recording direct 8 channel discrete tapes. Also on the rear panel is an effects output. This jack is an output that is mixed through the reverb controls on the individual channels. There is also a "direct to monitor bus" jack. This ¼" phone jack allows a signal from an outside source to be fed directly to the monitor buss.

The on/off switch located just above the hi EQ control in the monitor section is the power switch for the mixer and the red LED above it is the pilot light and remains on when the mixer is in use.

NOTE

It should also be noted that in setting up the sound system using power amplifiers, electronic crossovers, mixers and other effects that the mixer should be turned on first; the electronic crossover, if used, should be turned on second and the last thing in the system to be turned on should be the power amp. The reason for this is any turn on thumps or pops created by the mixer, electronic crossover, etc., will not come through the speakers and cause cone or horn damage.

Channel Control Functions



LED Light at the top of each channel indicates clipping in the pre amp. The light actually will come on 5 dB before clipping.

The input attenuator on each channel has an indicator arrow at approximately two o'clock. In initially setting up the board, the knob indicator should be set to the arrow. If clipping occurs at this position or any position, turn the input attenuator control counter clockwise until the LED does not light.

The hi EQ is a shelving type equalization control and is plus or minus 15 dB at KHz.

The lo EQ control is shelving type circuit with plus or minus 15 dB at 100 Hz.

The reverb control is a reverb or effects send, and mixing can be accomplished by turning the knob from zero to ten as the reverb or effects are required.

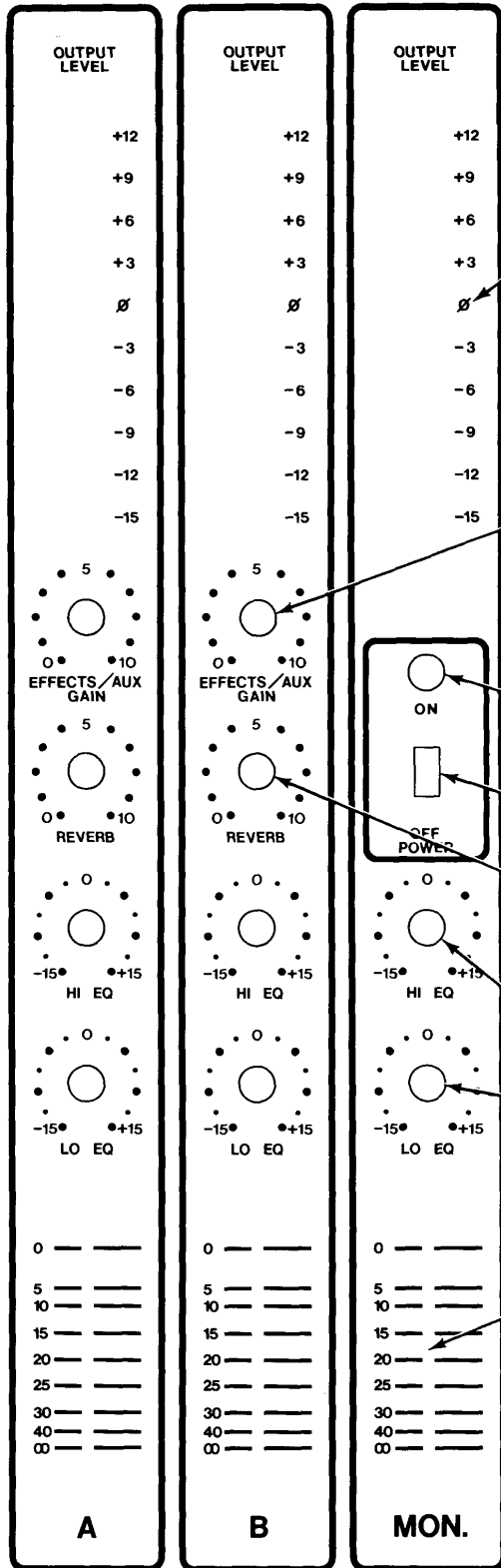
Monitor control sets the level on the monitor buss.

The pan control pans from A to B master sections. Center position allows an equal amount of signal to be fed to both A and B channels.

The fader on each channel regulates the level of signal to A or B channel depending on the setting of the pan control.

The reverb control on each channel is prewired post fader and the monitor is prewired for pre EQ. It is possible to change the monitor to post EQ by merely changing a jumper on each channel P.C. board. The reverb effects send can also be wired pre fader by changing a jumper on the desired channel P.C. board. See illustration.

Master Section Controls



The master section is comprised of three sections: A, B and monitor. The A, B and monitor sections each have an output level bar graph indicator system. At zero on the bar graph, the mixer's output is 1.2 volts RMS which is sufficient to drive any power amplifier or recording system.

Each light is in 3 dB steps. For example, at zero indication the next light above is plus 3 which is 3 dB gain above zero light.

The A and B channels each have an effects auxiliary gain. There is an effects auxiliary jack on the rear of the mixer where other sub mixers could be plugged in. An external echo unit can be driven from the effects send buss. The output can be fed into the effects auxiliary jack in the rear and the gain of the effects would be regulated by the effects auxiliary gain control on the A and B master section.

The red LED above the switch is the pilot light and remains on when the mixer is in use.

The on/off switch, located just above the hi EQ in the monitor section and is the power switch for the mixer.

The reverb controls on A and B are the master reverb controls after the reverb has been mixed through the channels. The built in reverb will operate even if an external echo or effects are being used in the effects auxiliary jacks.

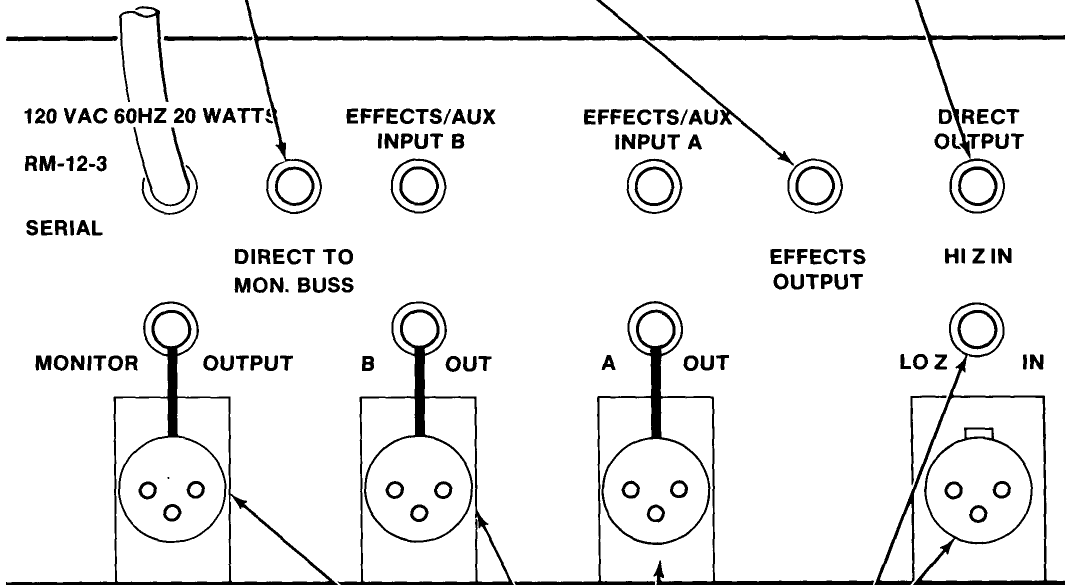
A, B and monitor each have a hi EQ and lo EQ control. Again, the hi EQ is plus or minus 15 dB at 10 KC and the lo EQ control is plus or minus 15 dB at 100 cycles.

The fader at the bottom on each section of the master sections raises and lowers the level of output. The output is then fed into the XLR connectors on the rear of the mixer; also the output level will appear at the 1/4" phone jack labeled "output A and B monitor".

"Direct to monitor buss" jack. This 1/4" phone jack allows a signal from an outside source to be fed directly to the monitor buss.

On the rear panel is an effects output. This jack provides an output signal that is mixed through the reverb controls on the individual channels.

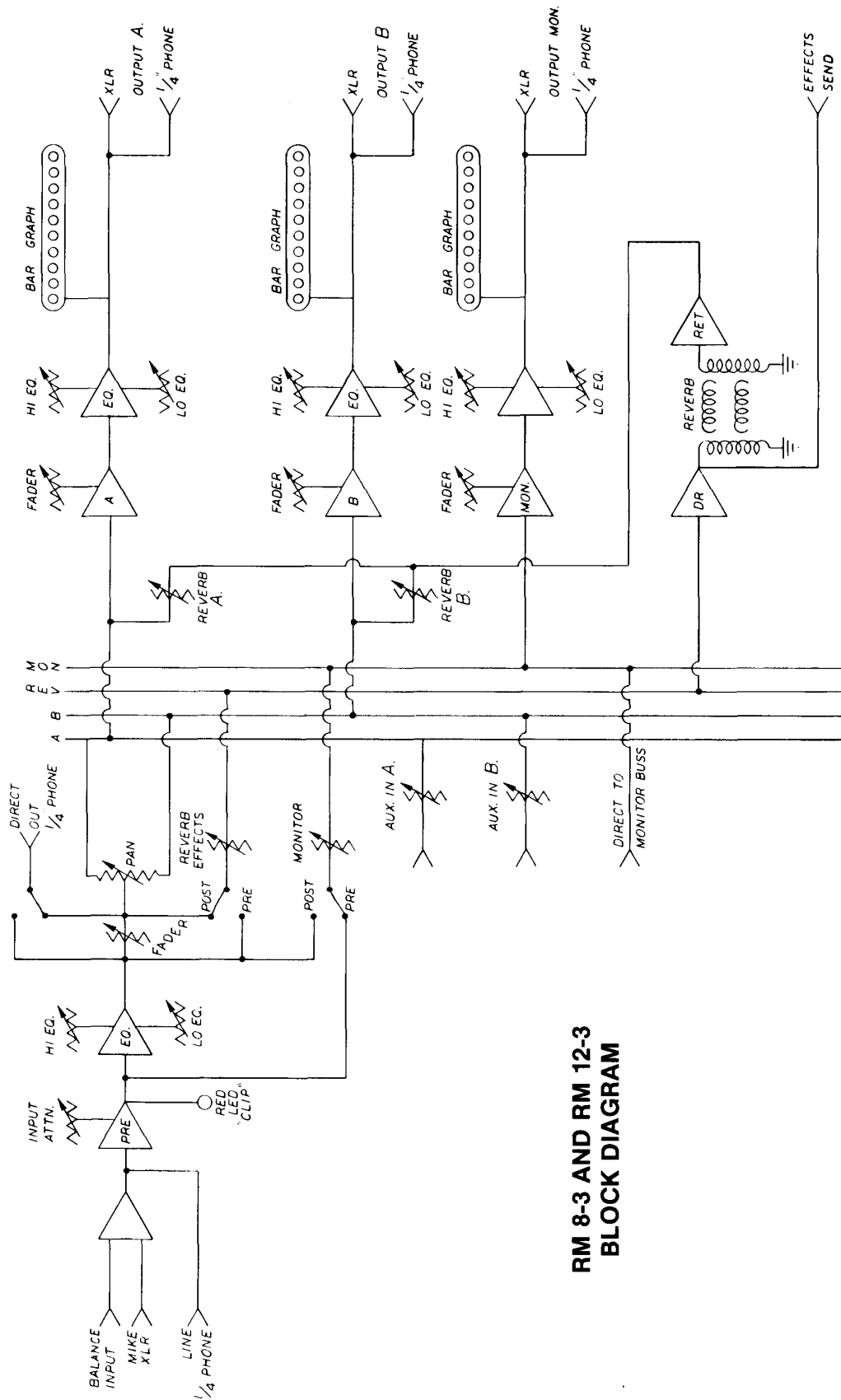
On the back panel there are direct output jacks from each channel. These are a 1/4" phone jacks near the top of the rear panel. Direct output is post fader and approximately 600 ohms output impedance. The direct output is capable of driving other effects. The direct output can be used for recording direct 8 channel discrete tapes. The direct output can be changed to pre fader by changing a jumper on the channel board.



It should be noted that when setting up the sound system using power amplifiers, electronic crossovers, mixers and other effects that the mixer should be turned on first; the electronic crossover, if used, should be turned on next and the last thing in the system to be turned on should be the power amp. The reason for this is that any turn on thumps or pops created by the mixer, electronic crossover, etc., will not be fed to the speakers which might cause cone or horn damage.

Each channel has a hi and lo impedance input connector. The XLR connector is for lo impedance. The lo input impedance is 3,000 ohms balacede and 50,000 ohms for the hi impedance input. The hi impedance input is a 1/4" phone jack.

Each main output, A, B and monitor has one 1/4" phone jack and one XLR connector. Both the 1/4" phone jack and the XLR connector are lo impedance and are identical in output level.



**RM 8-3 AND RM 12-3
BLOCK DIAGRAM**