

## V12 mixing console



# mono input module



## direct output features

This section is intended for use in Front of House operations to provide a controlled feed to an external tape machine. It may also be used as a localized effects send or monitor output. When the console is being used for monitor mixing operations, this output is used as a dedicated send to the Matrix section to generate custom versions of the Matrix mix for monitor use by secondary artists such as horn sections or backing vocals.

DIRECT OUTPUT CONNECTOR - XLR Balanced Output - rear-panel

### mode switch

When not depressed, all controls within this block affect the direct output connector. When depressed, all front panel controls within this section affect the Pan and assignment section of the console.

### FDR pre switch

Selects the signal source of this section from its normal post fader source position to a Pre Fader signal source.

### EQ pre switch

Selects the Pre Fader signal source between its normal Post EQ source position to a Pre EQ signal source.

### level control

Controls the Direct Output level when the Mode switch is NOT depressed. When the Mode switch IS depressed, This level control will feed the Pan/Assignment section of the module in place of the normal post fader signal.

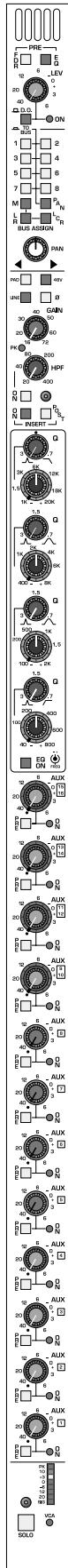
### push-on/push-off

Located on level control pot, turns this section on and off with its status displayed by the dual color LED next to this control.

### hidden functions

When the Mode switch is depressed, the Direct Output signal source is determined by internal jumpers. (Post Fader - Pre Fader - Pre EQ) An additional jumper determines whether or not the Pre Fader signals are controlled by the module's mute system.

# mono input module



## group assignment features

### discrete group assignment switches 1–8

Assignment of post fader signal to discrete group buses unless the pan switch is activated, in which case the signal is post pan pot. When the mode switch within the Direct Output section is depressed, the signal source disconnects from the channel's main fader and instead obtains its signal from the set of controls located above the assignment section.

### pan-switch

Configures the discrete bus assignment switches to follow the pan control with left assigned to odd and right assigned to even mix buses.

### mono assignment switch

Direct assignment of channel to mono mix bus. Normal signal source from post fader. (When the mode switch depressed, the signal is sourced from section above assignment area of console).

### left/right assignment switch

Assigns post pan pot signals to left and right mix buses. (When the Mode switch is depressed, the signal is sourced from section above assignment area of console).

### LCR switch

Reconfigures pan pot to LCR operation, requires the M and LR assignment switches to also be selected. LCR operation does not affect the pan to group buses

### pan control

Adjust panoramic image between the Left and Right outputs (Including groups when pan on is selected) When LCR is selected, provides true LCR panning between Left and Center and Center and Right buses. Signal to pan is selected by Mode Switch as normal post fader signal or, when switch is depressed, as a post direct level control source (Monitor Mode).

# mono input module



## input features

### pad switch

Inserts a 26dB pad into the microphone input circuit.

### 48-volt phantom power switch

Supplies 48 Volts to the microphone input. Will not operate if Line Input is selected.

### line input switch

Selects the line input circuitry using both the XLR and 1/4" phone jack. If a connector is plugged into the 1/4" jack, the line input signal from the XLR connector is defeated. (Note: Line input signal is NOT padded down as is common in many consoles, but rather fed into another set of electronics intended for line operation. The result is better noise performance compared to padding line level signal down and feeding the mic pre amplifier)

### ground-lift switch

Lifts pin 1 of XLR connector from chassis ground. (on rear panel of module)

### input gain control

Adjusts the gain of the input preamp for both mic and line sources.

### peak LED indicator

Red LED will illuminate if the pre-amplifier section comes within 3dB of overload.

### polarity reverse switch

Reverses the polarity of input signals (Both Mic and Line).

### insert-on switch

Activates Insert return connector. Signal is always fed to balanced insert send connector. Any equipment patched into the insert jacks will be inserted into the channel signal path.

### insert-post switch

Changes physical location of insert points from normal pre EQ position to post EQ position.

INSERT SEND AND RETURN CONNECTORS - SEPARATE 1/4" Balanced Send and Return connectors (on rear of module).

# mono input module



## EQ features

### high-pass filter on-switch

Turn on High Pass filter circuitry.

### continuously-variable high-pass filter control

Sweep control variable between 20Hz and 400Hz at a -18dB per octave rate.

### high-frequency Q-control with shelf-switch

Adjust the Q of the high frequency section between 3.0 (Full Counter Clockwise) and 0.7 (Clockwise). When turned beyond the widest bandwidth, the control has a switched position (Full Clockwise) that puts the high frequency section into shelving mode.

### high-frequency band amplitude and frequency controls

The inner-knob allows for up to  $\pm 15$ dB of boost/cut. The outer-knob determines the center frequency of the band—adjustable from 1KHz–20KHz.

### high-mid frequency Q-control

Adjust the Q of the high mid frequency section between 3.0 (Full Counter Clockwise) and 0.7 (Full Clockwise).

### high-mid frequency band amplitude and frequency controls

The inner-knob allows for up to  $\pm 15$ dB of boost/cut. The outer-knob determines the center frequency of the band—adjustable from 400Hz–8KHz.

### low-mid frequency Q-control

Adjust the Q of the low mid frequency section between 3.0 (Full Counter Clockwise) and 0.7 (Full Clockwise).

### low-mid frequency band amplitude and frequency controls

The inner-knob allows for up to  $\pm 15$ dB of boost/cut. The outer-knob determines the center frequency of the band—adjustable from 100Hz–2KHz.

### low-frequency Q-control with shelf-switch

Adjust the Q of the low frequency section between 3.0 (Full Counter Clockwise) and 0.7 (Clockwise). When turned beyond the widest bandwidth, the control has a switched position (Full Clockwise) that puts the low frequency section into shelving mode.

### low-frequency band amplitude and frequency controls

The inner-knob allows for up to  $\pm 15$ dB of boost/cut. The outer-knob determines the center frequency of the band—adjustable from 40Hz–800Hz.

### EQ on switch

Inserts EQ section into the input module's signal path. This switch has no effect on the High Pass filter system.

# mono input module



## aux features

### aux send section 9/10, 11/12, 13/14, 15/16

Four sets of dual concentric controls, each set having the following associated controls:

#### pre-fader switch

Selects the source of the signal for the dual concentric pair between the normal post fader signal source to a pre fader signal source.

#### push-on /push-off switch

Inner control of dual concentric pot acts as an On/Off switch for the auxiliary send pair of signals (odd and even)

#### dual-color on-indicator

Each dual concentric control has a dual color LED to indicate on/off/mute status. When the aux pair is off, the LED is not illuminated. When the aux pair is ON, the LED will illuminate GREEN. When the aux pair is ON but MUTED, the LED will illuminate RED.

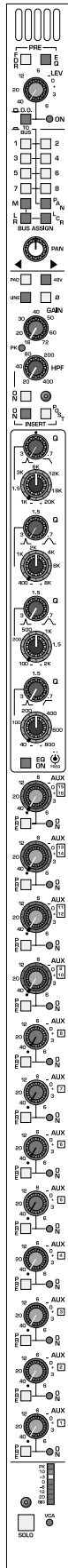
### invisible mono/stereo switch 9/10, 11/12, 13/14, 15/16

Electronic switching, controlled from within the master section, determines if odd and even pair aux sends are independent (Separate level controls) or configured as a stereo pair with the inner control providing level functions and the outer providing odd/even pan functions.

TWO INTERNAL JUMPERS - select pre fader source as pre EQ or post EQ for 9–12 and 13–16. Default setting is post EQ.

TWO INTERNAL DIP SWITCHES - set mute/no-mute functions for 9–12 and 13–16. Default setting is follow mute.

# mono input module



## aux features

### aux send section 5, 6, 7, 8

Four rotary controls, each having the following associated controls:

#### pre-fader switch

Individual switches for each aux send selects the source of the signal between the normal post fader signal source position to a pre fader signal source position. INTERNAL JUMPER - selects pre fader signals as pre or post EQ (post EQ is default) internal dip switch determines whether pre source follows channel mute or remains un-muted (follow mute is default).

#### push-on/push-off switch

Control pot acts as an On/Off switch for the associated auxiliary send.

#### dual-color on-indicator

Each control has a dual color status indicator indication of on/off/mute status. When the aux send is off, the LED is not illuminated. When the aux send is ON, the LED will illuminate GREEN. When the aux send is ON but MUTED, the LED will illuminate RED.

INTERNAL JUMPER - selects pre fader source as pre or post EQ (post EQ is default) and Mute/No Mute functions for all 4 aux sends within this block. Internal dip switch determines whether pre source follows channel mute or remains un-muted (follow mute is default).

### aux send section 1, 2, 3, 4

Four rotary controls, each having the following associated controls:

#### pre-fader switch

Individual switches for each aux send selects the source of the signal between the normal post fader signal source position to a pre fader signal source position. INTERNAL JUMPER - selects pre fader signals as pre or post EQ (post EQ is default) internal dip switch determines whether pre source follows channel mute or remains un-muted (follow mute is default).

#### push-on/push-off switch

Control pot acts as an On/Off switch for the associated auxiliary send.

#### dual-color on-indicator

Each control has a dual color status indicator indication of on/off/mute status. When the aux send is off, the LED is not illuminated. When the aux send is ON, the LED will illuminate GREEN. When the aux send is ON but MUTED, the LED will illuminate RED.

INTERNAL JUMPER - selects pre fader source as pre or post EQ (post EQ is default) and Mute/No Mute functions for all 4 aux sends within this block. Internal dip switch determines whether pre source follows channel mute or remains un-muted (follow mute is default).

# mono input module



## monitor features

### 8-segment channel meter

Monitors a pre or post fader signal level as determined by a Master Global POST switch within the master section of the console. Normally, a pre fader signal is monitored. When the Global master switch is depressed, ALL channel meters switch to a post fader monitor position to prevent confusion between pre and post channel metering. The 8 segments include a dynamic signal present LED indicator which varies in intensity to indicate the presence of any audio signal, and increases in intensity until it reaches full brightness. When signal level reaches -15dB, an additional LED will illuminate. Additional LED's indicate at channel signal levels of -6dB, -3dB, 0dB, +3dB and +8dB.

The top red segment samples signals at a pre EQ position, post EQ position, and a post fader position. When any of these points approach 3dB of clipping, this led will illuminate RED. This LED is NOT affected by the position of the Global Post Fader monitor switch.

### VCA-level LED

This LED glows green to indicate the amount of control voltage applied to the channel VCA; the greater the control voltage, the brighter the LED. Often, a channel may be assigned to more than one VCA master, and it is easy to overlook an assignment and wonder why a channel isn't on. This LED gives the operator a quick reference to the state of the channel VCA; if there is no LED indication, there is no VCA control voltage. The LED will turn from green to red when the control voltage limit of +20dB is reached as detailed above. This alerts the operator to unusual or incorrect gain settings and prevents any additional fader boost from being applied.

### solo switch

Will illuminate when manually selected in one of the console's many Solo modes. Controls within the master section determine if this switch will sample signal pre fader or post fader/post pan pot.

Additional switches will determine the operating characteristics of the Solo system. These may be selected from within the master section to be NORMAL (cumulative), LAST PRESSED (Only one switch will be on at a time. Selecting the next solo switch will automatically cancel the last switch selected) or MOMENTARY (Solo system on only while switch is held down). This Solo switch will also Solo and illuminate automatically if the VCA master group that the channel may be assigned to is put into SOLO.

The SOLO system displays selected channels on individual Solo Left and Solo Right meters. The signal also appears on separate Headphone and Monitor output channels. The solo signal may also be routed to the Alternate A/B and C/D outputs within the master section.

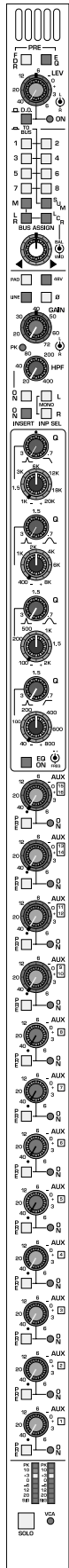
### write-on strip

In the area separating the angled upper portion of the console and the Fader bay area is a write in strip. This strip the primary module numbering, while providing write in area for customer use.





# stereo input module



## direct output features

This section is intended for use in Front of House operations to provide a controlled feed of the modules separate left and right signals to an external tape machine. It may also be used as a localized effects send or monitor output. When the console is being used for monitor mix operations, this output can be used as a dedicated send to the Matrix section to generate custom versions of the Matrix mix for monitor use.

**DIRECT OUTPUT CONNECTORS** - Separate Left and Right XLR Balanced Outputs—on module rear-panel.

### mode switch

When not depressed, all controls within this block affect the direct output connectors. When depressed, all front panel controls within this section affect the Balance and assignment section of the console.

### FDR pre switch

Selects the signal sources of this section from its normal post stereo fader source position to a Pre Fader stereo signal source.

### EQ pre switch

Selects the Pre Fader signal source between its normal Post EQ stereo source position to a Pre EQ stereo signal source.

### dual level control

Controls the amount of Left and Right signal feeding the dual direct output connectors when the Mode switch is NOT depressed. When the Mode switch IS depressed, this level control will feed the Balance/Assignment section of the module in place of the normal post fader signal.

### push-on/push-off

Located on the inside control of the dual concentric level control pot, it turns this section on and off with its status displayed by the dual color LED next to this control.

### hidden functions

When the Mode switch is depressed, the Direct Output signal source is determined by internal jumpers. (Post Fader - Pre Fader - Pre EQ) An additional jumper determines whether or not the Pre Fader signals are or controlled by the module's mute system.

# stereo input module



## group assignment features

### discrete group assignment switches 1–8

When the mode switch within the Direct Output section is depressed, the stereo signal source disconnects from the channel's post-fader point and instead obtains its signal from the set of stereo controls located above the assignment section.

### sum switch

Configures the bus assignment switches to mono. The stereo signal is normally assigned to the group buses with Left to odd, Right to even.

### mono assignment switch

Summed Mono Direct assignment of channel to Mono mix bus. Normal signal source is post fader. (When mode switch depressed, signal is sourced from section above assignment area of console).

### left/right assignment switch

Assigns stereo signals to Left and Right mix buses. (When mode switch depressed, signal is sourced from section above assignment area of console).

### LCR switch

Reconfigures center of dual concentric image control from LR balance to LCR Balance. Note: Left/Right and Mono assignment switches must also be depressed for proper operation.

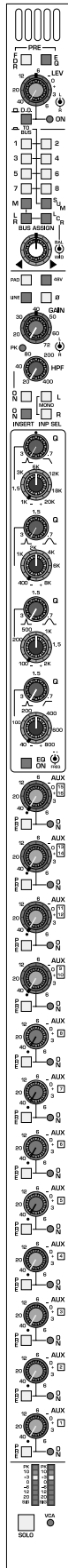
### image width control—WID

When the outside control of dual concentric pot is turned fully counter clockwise, signal is presented to Left and Right outputs as a standard stereo image. As the control is turned clockwise, the image decreases in apparent width while maintaining a constant power output. When the control is at its center detent a summed left/right signal results. As the control is turned further clockwise, the image begins to widen, but as a reverse image. When fully clockwise, the full stereo image exists, but is reversed: left source now feeds right side; right source feeds left side.

### image balance control

Center control of dual concentric pot controls balance of Left and Right stereo signals. When the LCR switch is depressed, a summed mono signal is fed to the center (mono) channel. Varying the center control will determine the proportion of LR signal to the mono center signal while maintaining a constant power output. Full CCW produces only L and R, full CW produces only Center (Mono).

# stereo input module



## input features

### pad switch

Inserts a 26dB pad into the left and right microphone input circuit.

### 48-volt phantom power switch

Turns 48 Volts on to the microphone inputs. Will not operate if Line Input is selected.

### line input switch

Inserts a 26dB pad in to the input paths and disables the phantom power.

### ground lift switch

Lifts pin 1 of XLR connectors from chassis ground (on rear panel of module).

### dual-concentric input gain control

Individually adjusts the gain of the input preamps. Left is inner control, right is outer.

### peak LED indicator

Red LED will illuminate if either of the pre-amplifier sections comes within 3dB of overload.

### polarity-reverse switch

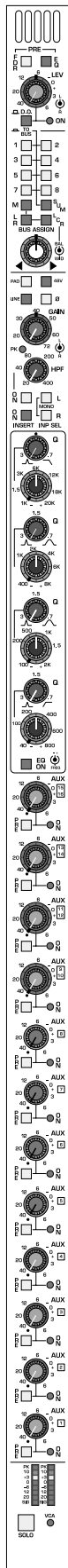
Reverses the polarity of the right input signal referenced to the left channel. An internal jumper can be reconfigured to reverse the polarity of both input reference to other input modules.

### insert-on switch

Activates Insert return connectors. Signal is always fed to balanced insert send connector. Any equipment pated into the insert jacks will insrted into the channel signal path.

LEFT AND RIGHT INSERT SEND AND RETURN CONNECTORS - SEPARATE 1/4" Balanced Send and Return connectors—on rear-panel.

# stereo input module



## EQ features

### high-pass filter on-switch

Turn on High Pass filter circuitry.

### continuously-variable high-pass filter control

Sweep control variable between 20Hz and 400Hz at a 18dB per octave rate.

### high-frequency Q-control with shelf-switch

Adjust the Q of the high frequency section between 3.0 (Full Counter Clockwise) and 0.7 (Clockwise). When turned beyond the widest bandwidth, the control has a switched position (Full Clockwise) that puts the high frequency section into shelving mode.

### high-frequency band amplitude and frequency controls

The inner-knob allows for up to  $\pm 15$ dB of boost/cut. The outer-knob determines the center frequency of the band—adjustable from 1KHz–20KHz.

### high-mid frequency Q-control

Adjust the Q of the high mid frequency section between 3.0 (Full Counter Clockwise) and 0.7 (Full Clockwise).

### high-mid frequency band amplitude and frequency controls

The inner-knob allows for up to  $\pm 15$ dB of boost/cut. The outer-knob determines the center frequency of the band—adjustable from 400Hz–8KHz.

### low-mid frequency Q-control

Adjust the Q of the low mid frequency section between 3.0 (Full Counter Clockwise) and 0.7 (Full Clockwise).

### low-mid frequency band amplitude and frequency controls

The inner-knob allows for up to  $\pm 15$ dB of boost/cut. The outer-knob determines the center frequency of the band—adjustable from 100Hz–2KHz.

### low-frequency Q-control with shelf-switch

Adjust the Q of the low frequency section between 3.0 (Full Counter Clockwise) and 0.7 (Clockwise). When turned beyond the widest bandwidth, the control has a switched position (Full Clockwise) that puts the low frequency section into shelving mode.

### low-frequency band amplitude and frequency controls

The inner-knob allows for up to  $\pm 15$ dB of boost/cut. The outer-knob determines the center frequency of the band—adjustable from 40Hz–800Hz.

### EQ on switch

Inserts EQ section into the input module's signal path. This switch has no effect on the High Pass filter system.

# stereo input module



## aux features

### aux send section 9/10, 11/12, 13/14, 15/16

Four sets of dual concentric controls, each set having the following associated controls:

#### note:

Aux send 9 thru 16 are always fed as stereo:

left source feeds auxes 9, 11, 13, 15

right source feed auxes 10, 12, 14, 16 this remains true for pre or post signals.

### pre-fader switch

Selects the stereo source of the signal for the dual concentric control between the normal post fader signal source position to a pre fader signal source position.

### push-on /push-off switch

Inner control of dual concentric pot acts as an On/Off switch for the auxiliary send pair of signals (odd and even)

### dual-color on-indicator

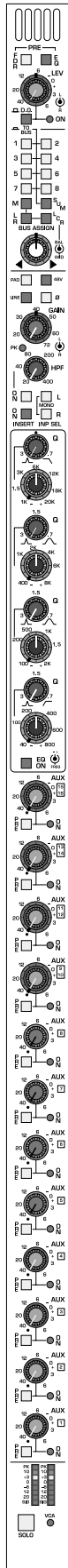
Each dual concentric control has a dual color LED to indicate on/off/mute status. When the aux pair is off, the LED is not illuminated. When the aux pair is ON, the LED will illuminated GREEN. When the aux pair is ON but MUTED, the LED will illuminated RED.

### invisible mono/stereo switch 9/10, 11/12, 13/14, 15/16

FET switching controlled from within the master section determines if the dual concentric pair is set up as Level/Level (default) or Level/Pan. When set for Lev/Pan, the inner knob controls Level, the outer knob pans between odd & even pairs.

INTERNAL JUMPER - selects pre fader stereo signals as pre or post EQ. Internal dip switch sets Mute/NoMute functions for all 8 (four-pairs) aux sends within this block. Default setting is post EQ, follow Mute.

# stereo input module



## aux features

### aux send section 5, 6, 7, 8

Four rotary controls, each having the following associated controls:

#### pre-fader switch

Individual switches for each aux send selects the source of the signal between the normal post fader signal or a pre fader signal.

#### push-on/push-off switch

Control pot acts as an On/Off switch for the associated auxiliary send.

#### dual-color on-indicator

Each control has a dual color LED to indicate on/off/mute status. When the aux send is off, the LED is not illuminated. When the aux send is ON, the LED will illuminate GREEN. When the aux send is ON but MUTED, the LED will illuminate RED.

### aux send section 1, 2, 3, 4

Four rotary controls, each having the following associated controls:

#### pre-fader switch

Individual switches for each aux send selects the source of the signal between the normal post fader signal or a pre fader signal.

#### push-on/push-off switch

Control pot acts as an On/Off switch for the associated auxiliary send.

#### dual-color on-indicator

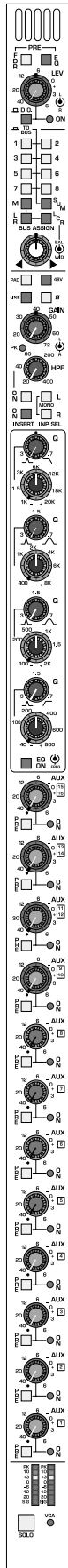
Each control has a dual color LED to indicate on/off/mute status. When the aux send is off, the LED is not illuminated. When the aux send is ON, the LED will illuminate GREEN. When the aux send is ON but MUTED, the LED will illuminate RED.

### aux send operation

In the default post fader condition, Auxes 1 thru 8 are normally fed as stereo pairs with left feeding odd Auxes (1,3,5,7) and right feeding even Auxes (2,4,6,8). Two internal jumpers allow changing this to a summed mono feed for both the odd Auxes and even Auxes.

INTERNAL JUMPERS allow the selection of pre or post EQ (post is default) for all 8 sends. Two additional jumpers determine whether the pre source remains as stereo (default) or is summed mono. An internal dip switch determines if the 8 Auxes follow the channel mute (default).

# stereo input module



## monitor features

### dual 8-segment channel meter

Separately monitors a left and right pre or post fader signal level as determined by a Master Global POST switch within the master section of the console. Without this switch depressed, a pre fader signal is monitored. When the Global master switch is depressed, ALL channel meters switch to a post fader monitor position to prevent confusion between pre and post channel metering. The dual 8 segment meters include separate dynamic signal present LED indicators which vary in intensity to indicate the presence of any audio signal, and increases in intensity until it reaches full brightness. When signal level reaches -15dB, an additional LED will illuminate. Additional LED's indicate at channel signal levels of -6db, -3db, 0db, +3db and +8db.

The left and right red segment LED's (Top left and right LED) sample signals at a pre EQ position, post EQ position, and a post fader position. When these independent signals approaches 3dB of clipping, the associated LED will illuminate RED. These LED's are NOT affected by the position of the Global Post Fader monitor switch.

### VCA-level LED

This LED glows green to indicate the amount of control voltage applied to the channel VCA; the greater the control voltage, the brighter the LED. Often, a channel may be assigned to more than one VCA master, and it is easy to overlook an assignment and wonder why a channel isn't on. This LED gives the operator a quick reference to the state of the channel VCA; if there is no LED indication, there is no VCA control voltage. The LED will turn from green to red when the control voltage limit of +20dB is reached as detailed above. This alerts the operator to unusual or incorrect gain settings and prevents any additional fader boost from being applied.

### solo switch

Will illuminate when manually selected in one of the consoles many Solo modes. Controls within the master section determine if this switch will sample signal pre or post fader/post balance control.

Additional switches will determine the operating characteristics of the Solo system. These may be selected from within the master section to be NORMAL (cumulative), LAST PRESSED (Only one switch will be on at a time. Selecting the next solo switch will automatically cancel the last switch selected) or MOMENTARY (Solo system on only while switch is held down). This Solo switch will also Solo and illuminate automatically if the VCA master group that the channel may be assigned to is put into SOLO.

The STEREO SOLO system displays selected channels on individual Solo Left and Solo Right meters. The signal also appears on separate Headphone and Monitor output channels. The solo signal may also be routed to the Alternate A/B and C/D outputs within the master section.

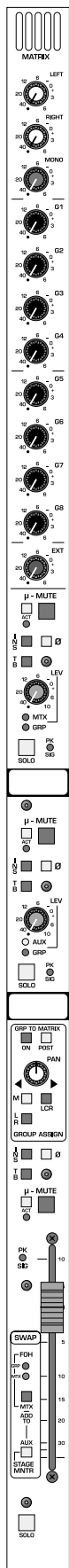
### write-on strip

In the area separating the angled upper portion of the console and the Fader bay area is a write in strip. This strip the primary module numbering, while providing write in area for customer use.





# group output module—matrix, aux, group



## mono-matrix features

This section is intended for use in Front of House operations to provide a matrixed mix to dedicated locations. When the console is being used for monitor mixing operations, this section can be used as a matrixed mix to feed generic mixes to various stage locations. When teamed with an external patch from an input module's direct output connector to the external input of the matrix module, a customized mix can be generated for supporting artists such as horn or background vocal sections. This is accomplished by mixing the artists individual microphone with up to 11 generic analog group mixes.

MATRIX OUTPUT CONNECTOR - XLR Balanced—on rear-panel.

INSERT SEND AND RETURN MATRIX CONNECTORS - SEPARATE 1/4" Balanced Send and Return connectors—on rear-panel.

EXTERNAL MATRIX INPUT CONNECTOR - XLR Balanced—on rear-panel.

### left to matrix

Controls the amount of Left signal fed to the matrix output. Signal is sourced pre or post fader as determined by a Pre/Post switch within the master fader bay located next to Left/Right/Mono output faders.

### right to matrix

Controls the amount of Right signal fed to the matrix output. Signal is sourced pre or post fader as determined by a Pre/Post switch within the master fader bay located next to Left/Right/Mono output faders.

### mono to matrix

Controls the amount of Mono signal fed to the matrix output. Signal is sourced pre or post fader as determined by a Pre/Post switch within the master fader bay located next to Left/Right/Mono output faders.

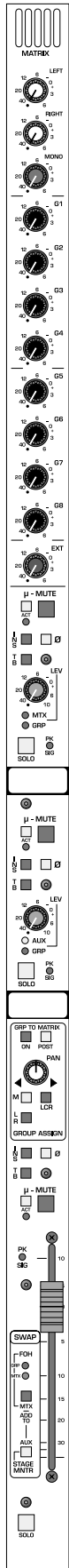
### group 1 to matrix

Controls the amount of Group 1 signal fed to the matrix output. Signal is sourced pre or post level control as determined by Pre/Post switch located within each of the Group's assignment sections.

### group 2, 3, 4, 5, 6, 7, 8 to matrix

Same as Group 1 above for each of the remaining groups.

# group output module—matrix, aux, group



## mono-matrix features

### external-in signal-level to matrix

Controls level of signal present on XLR input connector on each matrix module. It is this input that allows for customizing of backing artists generic mixes as this input can represent an artists individual microphone input.

UPPER CONTROL SECTION (Default Matrix Control)

### illuminated mute-switch

Controls local mute function of this output section - Default is matrix channel output. This switch illuminates red when this section is muted (Regardless of source).

### $\mu$ -mute switch

Sets and indicates microprocessor mute preset status. This illuminated switch will show current  $\mu$ -mute status preset as illuminated or not illuminated. It will show preview next status as either blinking illuminated or not illumination. Status of this  $\mu$ -mute can be toggled on or off by depressing this momentary switch. This switch may also be directly accessed by an external sequencer if operating in external control mode.

The status of the  $\mu$ -mute switch is stored in local memory for the current mute scene, next, and last mute scene without the need to store any changes to permanent memory. A snapshot of this switch in either active or next (preview) mode may be stored to permanent memory if desired from within the master microprocessor controller to any of the microprocessor storage locations in addition to the current location.

This switch has no effect on the channels actual mute status until the master channel mute switch is activated within the master section of the console. The  $\mu$ -mute may be loaded automatically by the microprocessor system allowing sequenced (Master mute switch on at all times) or pre selected mute control (Master mute switch on only when mute preset is needed). If no microprocessor control is required, the master mute switch may be selected to manual operation, allowing this system to be preset and to perform as any other manual mute preset.

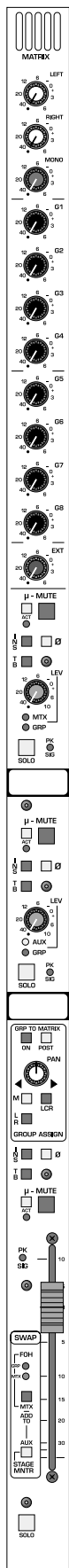
### $\mu$ -mute active-LED

Will illuminate RED when the  $\mu$ -Mute system is commanding this section to mute. The output master micro safe switch (located adjacent the master faders) determines whether or not the mute will actually occur. It is possible to disable the  $\mu$ -mutes for all outputs.

### polarity-reverse switch

Reverses the polarity of the output signal.

# group output module—matrix, aux, group



## mono-matrix features

### insert on-switch

Activates Insert return connector. Signal is always fed to balanced insert send connector.

### peak and signal-present LED

Dual color LED monitors the pre fader signal level and pre/post fader clip levels. This dynamic green intensity indicates pre fader signal level. The LED will turn RED if the section gets within 3dB of clipping.

### solo switch

Will illuminate when manually selected in one of the consoles many Solo modes. Controls within the solo master section determine if this switch will sample signal pre or post level control.

Additional switches will determine the operating characteristics of the Solo system. These may be selected from within the master section to be NORMAL (cumulative), LAST PRESSED (Only one switch will be on at a time. Selecting the next solo switch will automatically cancel the last switch selected) or MOMENTARY (Solo system on only while switch is held down). This Solo switch will also Solo and illuminate automatically if the VCA master group that the channel may be assigned to is put into SOLO.

The SOLO system displays selected channels on individual Solo Left and Solo Right meters. The signal also appears on separate Headphone and Monitor output channels. The solo signal may also be routed to the Alternate A/B and C/D outputs within the master section.

### talkback preset-switch

When selected will allow the Master Talkback Switch and system to access this particular output.

### output level-control (rotary pot)

Adjust the output level of this section, with a normal default as Matrix Out.

# group output module—matrix, aux, group

## mono-matrix features

### Mtx master and GRP master LED indicators

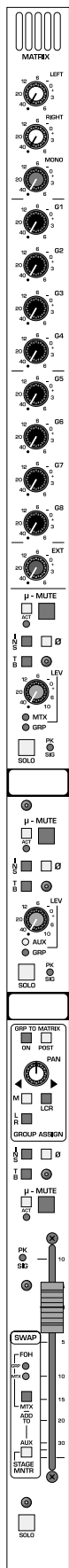
Indicates the operation of this set of controls within this output section. When the MTX MASTER LED (red) is illuminated, ALL of the controls within this Upper Control Section will affect the matrix output. If the GRP MASTER LED (Group) is illuminated (Only one LED will be illuminated), ALL of the controls within this Upper Control Section will affect the group output and feed to the Group Assignment section.

### write-on strip

Will provide a number for this group output as well as providing a write in area for the customer or a mounting surface for the customers masking tape labeling.



# group output module—matrix, aux, group



## aux master features

### illuminated mute-switch

Controls local mute function of this output section - Default is matrix channel output. This switch illuminates red when this section is muted (Regardless of source).

### μ-mute switch

Sets and indicates microprocessor mute preset status. This illuminated switch will show current μ-mute status preset as illuminated or not illuminated. It will show preview next status as either blinking illuminated or not illumination. Status of this μ-mute can be toggled on or off by depressing this momentary switch. This switch may also be directly accessed by an external sequencer if operating in external control mode.

The status of the μ-mute switch is stored in local memory for the current mute scene, next, and last mute scene without the need to store any changes to permanent memory. A snapshot of this switch in either active or next (preview) mode may be stored to permanent memory if desired from within the master microprocessor controller to any of the microprocessor storage locations in addition to the current location.

This switch has no effect on the channels actual mute status until the master channel mute switch is activated within the master section of the console. The μ-mute may be loaded automatically by the microprocessor system allowing sequenced (Master mute switch on at all times) or pre selected mute control (Master mute switch on only when mute preset is needed). If no microprocessor control is required, the master mute switch may be selected to manual operation, allowing this system to be preset and to perform as any other manual mute preset.

### μ-mute active-LED

Will illuminate RED when the μ-Mute system is commanding this section to mute. The output master micro safe switch (located adjacent the master faders) determines whether or not the mute will actually occur. It is possible to disable the μ-mutes for all outputs.

### polarity-reverse switch

Reverses the polarity of the output signal.

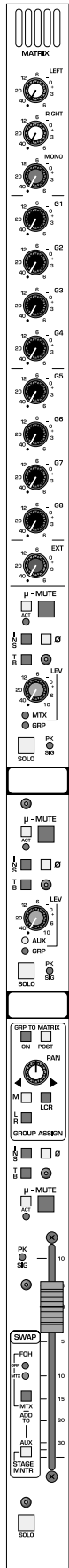
### insert on-switch

Activates Insert return connector. Signal is always fed to balanced insert send connector.

### peak and signal-present LED

Dual color LED monitors the pre fader signal level and pre/post fader clip levels. This dynamic green intensity indicates pre fader signal level. The LED will turn RED if the section gets within 3dB of clipping.

# group output module—matrix, aux, group



## aux master features

### solo switch

Will illuminate when manually selected in one of the consoles many Solo modes. Controls within the master section determine if this switch will sample signal pre or post level control.

Additional switches will determine the operating characteristics of the Solo system. These may be selected from within the master section to be NORMAL (cumulative), LAST PRESSED (Only one switch will be on at a time. Selecting the next solo switch will automatically cancel the last switch selected) or MOMENTARY (Solo system on only while switch is held down). This Solo switch will also Solo and illuminate automatically if the VCA master group that the channel may be assigned to is put into SOLO.

The SOLO system displays selected channels on individual Solo Left and Solo Right meters. The signal also appears on separate Headphone and Monitor output channels. The solo signal may also be routed to the Alternate A/B and C/D outputs within the master section.

### talkback preset-switch

When selected will allow the Master Talkback Switch and system to access this particular output.

### output level-control (rotary pot)

Adjust the output level of this section, with a normal default as Aux Out

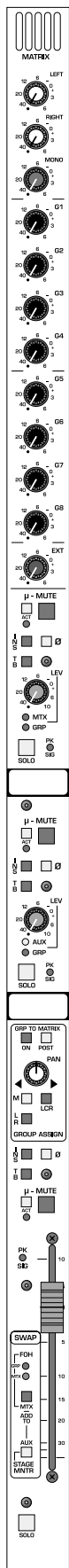
### AUX-master and GRP-master LED indicators

Indicates the operation of this set of controls within this middle output section. When the AUX MASTER LED (yellow) is illuminated, ALL of the controls within this Middle Control Section will affect the AUX output. If the GRP MASTER LED (green) is illuminated (Only one will be illuminated), ALL of the controls within this Upper Control Section will affect the group output and feed to the Group Assignment section.

### write-on strip

Will provide a number for this group output as well as providing a write in area for the customer or a mounting surface for the customers masking tape labeling.

# group output module—matrix, aux, group



## group-assignment features

This section always receives its signal from any output block acting as the Group Master Output. This may be the default Lower fader section or the mid or upper control sections as indicated by LED status indicator located within the individual output block sections. The swap controls near the fader define the output block section. Only one section can be designated as the Group Output section at one time.

### matrix post-switch

Changes the group to matrix source from the normal pre group level location to a post level send. This switch will affect the group send to all 12 matrix modules.

### group-to-matrix on-switch

Activates the group send signal to the matrix section of the console. This switch will affect the group send to all 12 matrix modules.

### mono-assignment switch

Direct assignment of post group level control to mono mix bus.

### left-/right-assignment switch

Assigns post pan pot signals to left and right mix buses.

### LCR switch

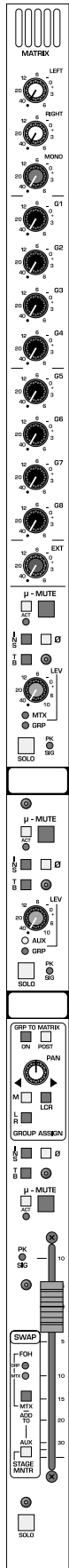
Reconfigures pan pot to LCR operation, requires the M and LR assignment switches to also be selected.

### pan control

Adjust panoramic image between the Left and Right output buses. When LCR is selected, provides true LCR panning between Left and Center and Center and Right buses.



# group output module—matrix, aux, group



## group-master features

### illuminated mute-switch

Controls local mute function of this output section - Default as matrix channel output. This switch illuminates red when this section is muted (Regardless of source).

### μ-mute switch

Sets and indicates microprocessor mute preset status. This illuminated switch will show current μ mute status preset as illuminated or not illuminated. It will show preview next status as either blinking illuminated or not illumination. Status of this μ mute can be toggled on or off by depressing this momentary switch. This switch may also be directly accessed by an external sequencer if operating in external control mode.

The status of the μ mute switch is stored in local memory for the current mute scene, next, and last mute scene without the need to store any changes to permanent memory. A snapshot of this switch in either active or next (preview) mode may be stored to permanent memory if desired from within the master microprocessor controller to any of the microprocessor storage locations in addition to the current location.

This switch has no effect on the channels actual mute status until the master channel mute switch is activated within the master section of the console. The μ mute may be loaded automatically by the microprocessor system allowing sequenced (Master mute switch on at all times) or pre selected mute control (Master mute switch on only when mute preset is needed). If no microprocessor control is required, the master mute switch may be selected to manual operation, allowing this system to be preset and to perform as any other manual mute preset.

### μ-mute active-LED

Will illuminate RED when the μ-Mute system is commanding this section to mute. The output master micro safe switch (located adjacent the master faders) determines whether or not the mute will actually occur. It is possible to disable the μ-mutes for all outputs.

### polarity-reverse switch

Reverses the polarity of the output signal.

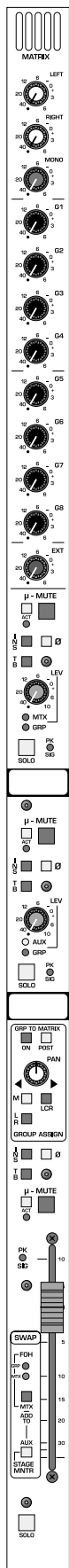
### insert on-switch

Activates Insert return connector. Signal is always fed to balanced insert send connector.

### peak and signal-present LED

Dual color LED monitors the pre fader signal level and pre/post fader clip levels. This dynamic green intensity indicates pre fader signal level. The LED will turn RED if the section gets within 3dB of clipping.

# group output module—matrix, aux, group



## group-master features

### solo switch

Will illuminate when manually selected in one of the consoles many Solo modes. Controls within the master section determine if this switch will sample signal pre or post level control.

Additional switches will determine the operating characteristics of the Solo system. These may be selected from within the master section to be NORMAL (cumulative), LAST PRESSED (Only one switch will be on at a time. Selecting the next solo switch will automatically cancel the last switch selected) or MOMENTARY (Solo system on only while switch is held down). This Solo switch will also Solo and illuminate automatically if the VCA master group that the channel may be assigned to is put into SOLO.

The SOLO system displays selected channels on individual Solo Left and Solo Right meters. The signal also appears on separate Headphone and Monitor output channels. The solo signal may also be routed to the Alternate A/B and C/D outputs within the master section.

### talkback preset-switch

When selected will allow the Master Talkback Switch and system to access this particular output.

### output level-control (100mm fader)

Adjust the output level of this section, with a normal default as Group Out

# group output module—matrix, aux, group



## module swap features

### mode switch (recessed)

Controls the assignment of output functions between the three output blocks. This switch toggles between FOH (Front of House) and MONITOR (AUX) operation of the lower fader area. When Monitor (Aux) is selected, the middle control section of the module takes over Group Operation.

### MTX switch (recessed)

The operation of this switch is determined by the above MODE switch.

When in FOH Mode, and this MTX switch is NOT depressed, this module is operating in default mode. Group output is controlled by the lower block with the Status LED indicating FOH SUB GRP. The Mid section LED status indicator indicates and operates as AUX MASTER, and the Upper block section LED status indicator indicates and operates as MATRIX MASTER.

When in FOH Mode, and this MTX switch IS depressed, this lower block and all of its functions will operate as the Matrix Control Section with the LED status indicator showing FOH MATRIX OUT. The Mid section LED status indicator still indicates and operates as AUX MASTER, and the Upper block section LED status indicator now indicates and operates as a GROUP MASTER.

When in STAGE MONITOR MODE, this lower block and all of its functions will operate as the MONITOR (AUX) Control Section with the LED status indicator showing MONITOR OUT. The Mid section LED status indicator indicates and operates as GROUP MASTER, and the Upper block section LED status indicator indicates and operates as a AUX MASTER.

When in STAGE MONITOR MODE and the MTX switch is depressed, a post matrix level signal is fed to the MONITOR (AUX) mix bus. An internal jumper allows the matrix to be sourced pre fader if desired. This allows generic mixes such as drums to be able to be mixed with the primary monitor outputs. When in this mode, only the MTX switch itself will illuminate, while the primary STAGE MONITOR MODE LED will remain illuminated.

### FOH group LED

Indicated that the lower fader block is controlling the ANALOG SUB GROUP output of this module.

### FOH matrix LED

Indicated that the lower fader block is controlling the MATRIX output of this module.

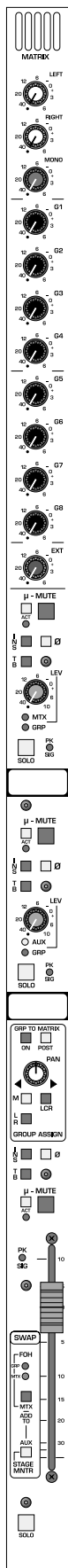
### STAGE MONITOR LED

Indicated that the lower fader block is controlling the MONITOR (AUX) output of this module.

### write-on strip

Will provide a number for this group output as well as providing a write in area for the customer or a mounting surface for the customers masking tape labeling.

# group output module—matrix, aux, group



## group rear-panel connectors

Always as labeled - Not affected by mode switch.

MATRIX OUTPUT CONNECTOR - XLR Balanced

INSERT SEND AND RETURN MATRIX CONNECTORS - SEPARATE 1/4" Balanced Send and Return connectors.

EXTERNAL MATRIX INPUT CONNECTOR - XLR Balanced

AUX (MONITOR) OUTPUT CONNECTOR - XLR Balanced

INSERT SEND AND RETURN Aux CONNECTORS - SEPARATE 1/4" Balanced Send and Return connectors.

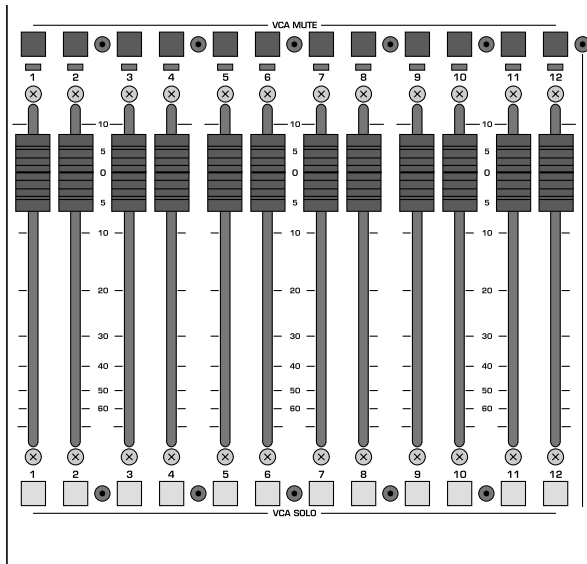
ANALOG GROUP OUTPUT CONNECTOR - XLR Balanced

INSERT SEND AND RETURN GROUP CONNECTORS - SEPARATE 1/4" Balanced Send and Return connectors.

# vca masters

## VCA MASTER

### FADER BAY MODULE FUNCTIONS



#### illuminated mute-switches (12)

Controls mutes of input channels assigned to the particular VCA Group. Internal jumper select between a input channel mute function (default) or as a VCA channel pull down.

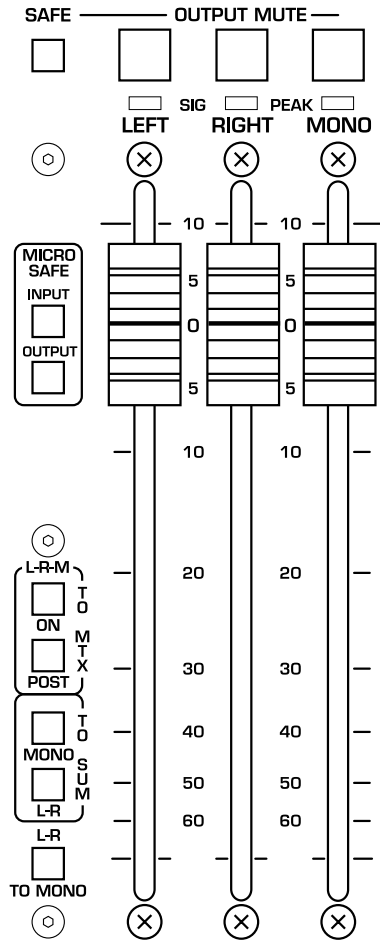
#### 100mm faders (12)

Very high quality conductive plastic fader are used in a 6 panel space area with double spacing (2 faders per standard channel width) A master DC voltage is generated and controlled by each VCA master section to control each input channel assigned to the particular VCA channel.

#### solo switches (12)

These will Solo ALL channels assigned to that VCA Master. Input channels that are assigned to the corresponding Master will illuminate as if individually soloed when the VCA Master Solo switch is selected.

# group output module—matrix, aux, group



## LEFT/RIGHT/MONO MASTER FADER BAY MODULE FUNCTIONS

### illuminated mute-switches (3)

Controls mutes of main outputs.

### output mute safe switch

Disables the Left, Right, and Mono Mute switches to prevent accidental activation during a performance.

### 100mm faders

3 Individual Left, Right, and Mono (Center) high quality conductive plastic faders are used.

### left, right and mono peak and signal-present LEDs

Dual color LED monitors the pre fader signal levels. Signal present indication is dynamic and varies with pre fader signal level. If signal approached 3dB of causing distortion, the LED will turn RED.

### left/right/mono to matrix on-switch

Activates the Left/Right/Mono send signal to the matrix section of the console. This switch will affect the Left/Right/Mono send to all 12 matrix modules.

### matrix-post switch

Changes the individual left/right/mono to matrix source from the normal pre level location to a post level send. This switch will affect the left/right/mono send to all 12 matrix modules (8 mono, 4 stereo).

### mono to sum-output switch

Will assign the post fader Mono (Center) signal to the SUM OUTPUT XLR rear panel Connector.

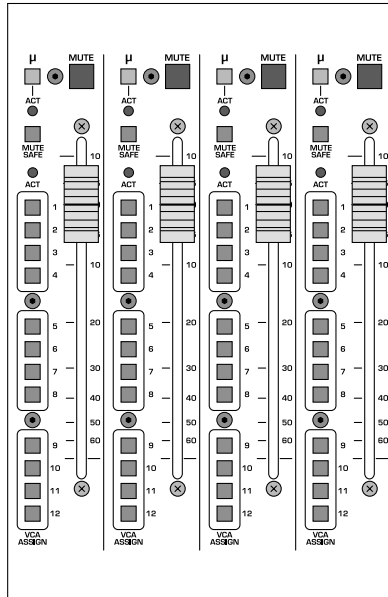
### L-R to sum-output switch

Will assign the post fader left and right signals to the SUM OUTPUT XLR rear panel connector.

### L-R to mono switch

Assigns the post (Internal Jumper for Pre) left and right signal to the Mono Mix Bus.

# input fader block



## LOWER MODULE CONSTRUCTION

### act LED ( $\mu$ -mute)

This red LED lights whenever a Mute command is issued from the Micro. This can be from any of the Sequenced or Manual Mute Scenes or from a received MIDI Note command. Whether or not the channel responds to that mute command is determined by the status of two SAFE switches: the global Input Micro Safe switch (near master faders), or the channel Mute Safe switch.

### mute safe

This switch "safes" the channel from external mute commands (micro, VCA, SIP). By default, the VCA and Solo-In-Place (SIP) mute commands are safed, but there are two jumpers located on each fader circuit board to exclude each of them. The micro mute commands (Man Mute, Seq Scene or MIDI mutes) are always affected by the safe.

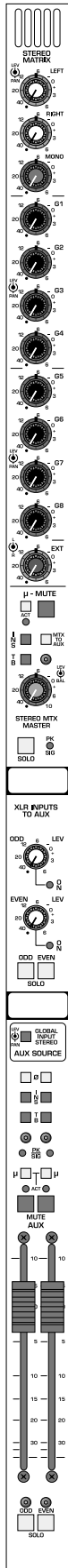
### act LED (VCA)

This red LED lights whenever a mute command is coming from an assigned VCA. Each VCA Master has an associated Mute switch. When depressed, any channels assigned to that VCA Master will go to a fader full-down condition (max attenuation), and the channel mute will be activated. A jumper in the VCA Master fader block can defeat the mute function; in that case, the channels still go to fader full-down, but the channel mute is not activated.

### VCA assign

These 12 lit switches are used to assign a channel to any of the 12 VCA Masters. The channel gain is controlled by the sum of the voltages of the local fader and any of the assigned VCA Masters. The VCA control circuitry is designed so that even if a channel is assigned to all 12 masters, and those masters are all at +10dB boost (total of +120dB theoretical gain!), the local fader (or any Master fader), when pulled down, has enough electrical over-travel to fully attenuate the channel. Furthermore, the control voltage is electrically limited to a maximum of +20dB gain to prevent excessive channel boost.

# stereo matrix / aux out module



## stereo-matrix features

This section is intended for use in Front of House operations to provide a matrixed stereo mix to dedicated locations. When the console is being used for monitor mixing operations, this section can be used as a matrixed stereo mix to feed generic mixes to various stage locations. When teamed with an external patch from an input modules direct output connectors to the external input of the matrix module, a customized mix can be generated for supporting artists such as horn or background vocal sections. This is accomplished by mixing the artists individual microphone input with up to 11 generic analog group mixes.

MATRIX OUTPUT CONNECTORS - XLR Balanced

INSERT SEND AND RETURN MATRIX CONNECTORS - SEPARATE left and right 1/4" Balanced Send and Return connectors.

EXTERNAL MATRIX INPUT CONNECTORS - Separate left and Right XLR Balanced inputs.

### left to matrix

Controls the amount of Left signal fed to the matrix output. Signal is sourced pre or post fader as determined by a Pre/Post switch within the master fader bay located next to Left/Right/Mono output faders. This signal may be repositioned anywhere in the stereo image using a standard Pan Control.

### right to matrix

Controls the amount of Right signal fed to the matrix output. Signal is sourced pre or post fader as determined by a Pre/Post switch within the master fader bay located next to Left/Right/Mono output faders. This signal may be repositioned anywhere in the stereo image using a standard Pan Control.

### mono to matrix

Controls the amount of Mono signal fed to the matrix output. Signal is sourced pre or post fader as determined by a Pre/Post switch within the master fader bay located next to Left/Right/Mono output faders. This signal may be positioned anywhere in the stereo image using a standard Pan Control.

### group 1 to matrix

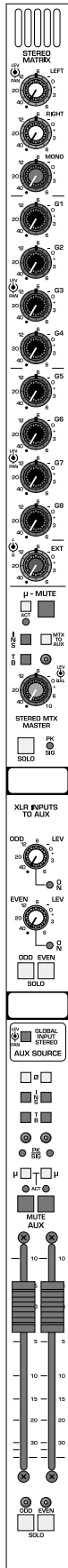
Controls the amount of Group 1 signal fed to the matrix output. Signal is sourced pre or post level as determined by the Pre/Post switch located within each Groups assignment section. This signal may be repositioned anywhere in the stereo image using a standard Pan Control.

### group 2, 3, 4, 5, 6, 7, 8 to matrix

Same as Group 1 above for each of the remaining groups.



# stereo matrix / aux out module



## stereo-matrix features

### external-in left and right signal-level to matrix

Dual Concentric level control pair with center controlling left XLR line input to left matrix output and the outside controlling the right XLR line input to the right matrix output. It is this set of inputs that allows for customizing of backing artists generic mixes, as these inputs can represent an artists microphone inputs.

### illuminated mute-switch

Controls local mute function of this stereo matrix output. This switch illuminates red when this section is muted (Regardless of source).

### $\mu$ -mute switch

Sets and indicates microprocessor mute preset status of this stereo matrix output. This illuminated switch will show current  $\mu$ -mute status preset as illuminated or not illuminated. It will show preview next status as either blinking illuminated or not illumination. Status of this  $\mu$ -mute can be toggled on or off by depressing this momentary switch. This switch may also be directly accessed by an external sequencer if operating in external control mode.

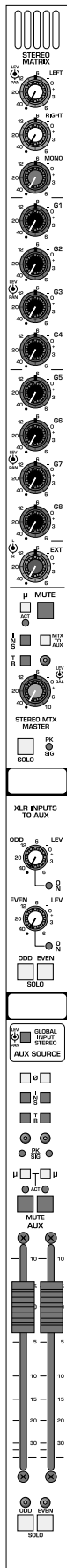
The status of the  $\mu$ -mute switch is stored in local memory for the current mute scene, next, and last mute scene without the need to store any changes to permanent memory. A snapshot of this switch in either active or next (preview) mode may be stored to permanent memory if desired from within the master microprocessor controller to any of the microprocessor storage locations in addition to the current location.

This switch has no effect on the stereo matrixes actual mute status until the master output mute switch is activated within the master section of the console. The  $\mu$ -mute may be loaded automatically by the microprocessor system allowing sequenced (Master mute switch on at all times) or pre selected mute control (Master mute switch on only when mute preset is needed). If no microprocessor control is required, the master mute switch may be selected to manual operation, allowing this system to be preset and to perform as any other manual mute preset.

### $\mu$ -mute active-LED

Will illuminate RED when the  $\mu$ -Mute system is commanding this section to mute. The output master micro safe switch (located adjacent the master faders) determines whether or not the mute will actually occur. It is possible to disable the  $\mu$ -mutes for all outputs.

# stereo matrix / aux out module



## stereo-matrix features

### mtx to aux

When this switch is depressed, a post stereo matrix level signal is fed to the modules left and right Aux (Monitor) mix buses. An internal jumper allows the matrix to be sourced pre fader if desired. This allows generic mixes such as drums to be able to be mixed with the primary aux monitor outputs.

### insert-on switch

Activates the stereo Insert return connector. Signal is always fed to the stereo balanced insert send connector.

### peak and signal-present LED

A single dual color LED monitors pre level control stereo signal levels. Dynamic level indications are by varying the intensity of the green element of the dual color LED. The LED will turn RED if signal approaches 3dB of causing clipping of the left or right outputs.

### stereo matrix solo-switch

Will illuminate when manually selected in one of the consoles many Solo modes. Controls within the master section determines if this switch will sample signal pre or post level control.

Additional switches will determine the operating characteristics of the Solo system. These may be selected from within the master section to be NORMAL (cumulative), LAST PRESSED (Only one switch will be on at a time. Selecting the next solo switch will automatically cancel the last switch selected) or MOMENTARY (Solo system on only while switch is held down).

### talkback preset-switch

When selected will allow the Master Talkback Switch and system to access the associated Stereo output matrix.

### stereo matrix output-level control

Adjust the left and right output levels of this section.

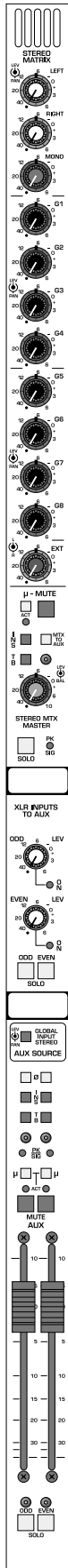
### stereo matrix output-balance control

Adjusts the balance between the left and right outputs.

### write-on strip

Will provide a number for this group output as well as providing a write in area for the customer or a mounting surface for the customers masking tape labeling.

# stereo matrix / aux out module



## dual-aux output features

This section controls aux outputs number 9 through 16. It is intended to operate as individual aux outputs, or when the module's stereo mode switch is depressed, as a stereo output. In stereo configuration, this output pair may be used to generate dedicated broadcast or cart machine feeds, or when used as a monitor console, to generate stereo wedge or "In the Ear" monitor feeds.

### XLR-input odd-level control with push-on/push-off switch

Controls the contents of the associated left XLR aux bus input level into the associated (odd numbered) mix bus. This may be used to return effects returns into the aux system when used for "In the Ear" type monitoring systems, or simply to expand the number of inputs available. Pushing this control will turn the input source on and off and is indicated by a status LED indicator located next to the control.

### XLR-input even-level control with push-on/push-off switch

Controls the contents of the associated right XLR aux bus input level into the associated (odd numbered) mix bus. This may be used to return effects returns into the aux system when used for "In the Ear" type monitoring systems, or simply to expand the number of inputs available. Pushing this control will turn the input source on and off and is indicated by a status LED indicator located next to the control.

### solo-left and solo-right

Will individually, or when both are depressed as a stereo pair, monitor the contents of the XLR INPUT returns.

### global-input stereo switch

Reconfigures the associated input modules dual concentric aux controls from dual mono mode to a level and pan pot configuration to enable simple construction of stereo mixes.

### polarity-reverse switch (one odd channel, one even channel)

Reverses the polarity of the aux output signals.

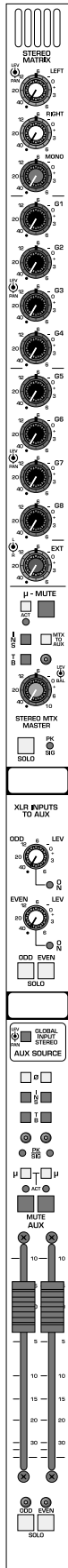
### insert-on switch (one odd channel, one even channel)

Activates Insert return connector. Signal is always fed to balanced insert send connector.

### peak and signal-present LED (one odd channel, one even channel)

A single dual color LED monitors pre fader signal levels. Dynamic level indications are by varying the intensity of the green element of the dual color LED. The LED will turn RED if signal approaches 3dB of clipping of the left or right outputs.

# stereo matrix / aux out module



## dual-aux output features

### talkback preset-switch (one odd channel, one even channel)

When selected will allow the Master Talkback Switch and system to access this particular output.

### μ-mute switch

Sets and indicates microprocessor mute preset status. This illuminated switch will show current μ mute status preset as illuminated or not illuminated. It will show preview next status as either blinking illuminated or not illumination. Status of this μ mute can be toggled on or off by depressing this momentary switch. This switch may also be directly accessed by an external sequencer if operating in external control mode.

The status of the μ mute switch is stored in local memory for the current mute scene, next, and last mute scene without the need to store any changes to permanent memory. A snapshot of this switch in either active or next (preview) mode may be stored to permanent memory if desired from within the master microprocessor controller to any of the microprocessor storage locations in addition to the current location.

This switch has no effect on the channels actual mute status until the master channel mute switch is activated within the master section of the console. The μ mute may be loaded automatically by the microprocessor system allowing sequenced (Master mute switch on at all times) or pre selected mute control (Master mute switch on only when mute preset is needed). If no microprocessor control is required, the master mute switch may be selected to manual operation, allowing this system to be preset and to perform as any other manual mute preset.

### μ-mute active-LED

Will illuminate RED when the μ-Mute system is commanding this section to mute. The output master micro safe switch (located adjacent the master faders) determines whether or not the mute will actually occur. It is possible to disable the μ-mutes for all outputs.

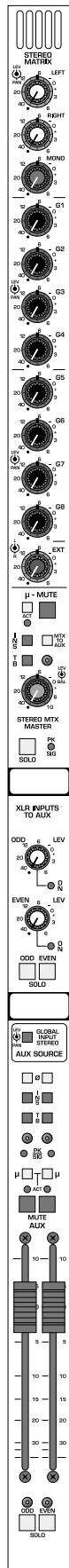
### illuminated mute-switch

Controls local mute function of this output. This switch illuminates red when this section is muted (Regardless of source).

### 100mm output fader (one per odd channel, one per even channel)

High quality fader per each aux output.

# stereo matrix / aux out module



## dual-aux output features

### solo switch

Will illuminate when manually selected in one of the consoles many Solo modes. Controls within the master section determine if this switch will sample signal pre or post level control.

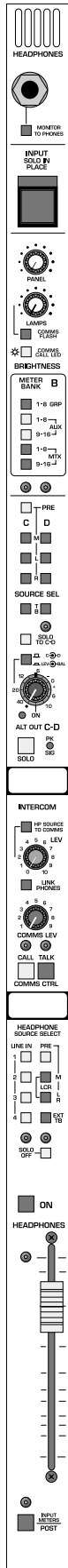
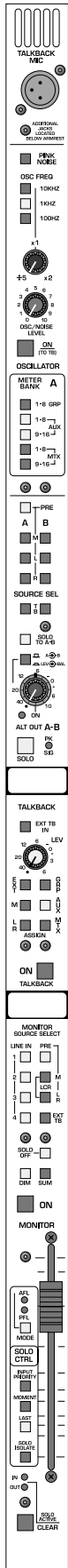
Additional switches will determine the operating characteristics of the Solo system. These may be selected from within the master section to be NORMAL (cumulative), LAST PRESSED (Only one switch will be on at a time. Selecting the next solo switch will automatically cancel the last switch selected) or MOMENTARY (Solo system on only while switch is held down). This Solo switch will also Solo and illuminate automatically if the VCA master group that the channel may be assigned to is put into SOLO.

The SOLO system displays selected channels on individual Solo Left and Solo Right meters. The signal also appears on separate Headphone and Monitor output channels. The solo signal may also be routed to the Alternate A/B and C/D outputs within the master section.

### write-on strip

Will provide a number for this group output as well as providing a write in area for the customer or a mounting surface for the customers masking tape labeling.

# master modules—M1, M2



## oscillator features

### pink-noise switch

When depressed will generate Pink Noise in place of a sine wave signal as the signal generator output.

### 10kHz, 1kHz, 100Hz switches

Selects the center point of the oscillator frequency control pot.

### frequency control

Will adjust frequency output of the section over a 10 to 1 range with the center frequency chosen with the above switches.

### oscillator level-control

Controls amplitude of signal level output of the oscillator section.

### oscillator on-switch

Turns on the oscillator and assigns signals through the talkback section of the console. The oscillator does not have a dedicated output as it can be assigned to every output of the console through the talkback system.

# master modules—M1, M2

## meter-view features

### meters-A/meters-B switch bank

(One set per module - Left master module switch bank controls left 8 meters, Right master module switch bank controls right 8 meters)

GROUP 1-8

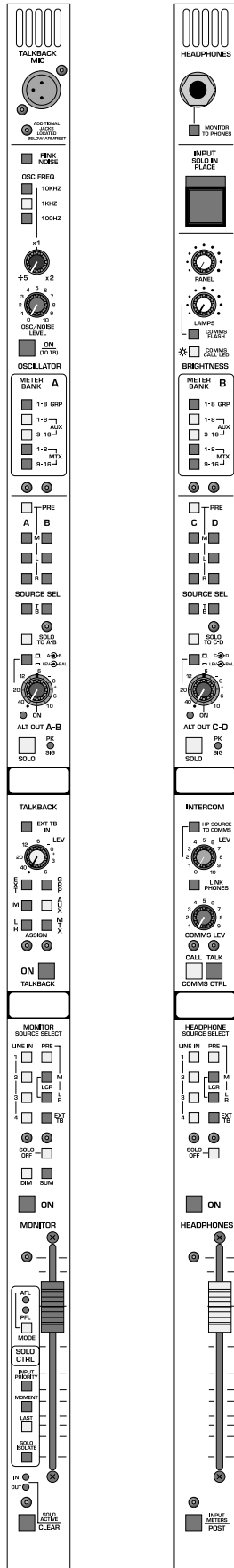
AUX 1-8

AUX 9-16

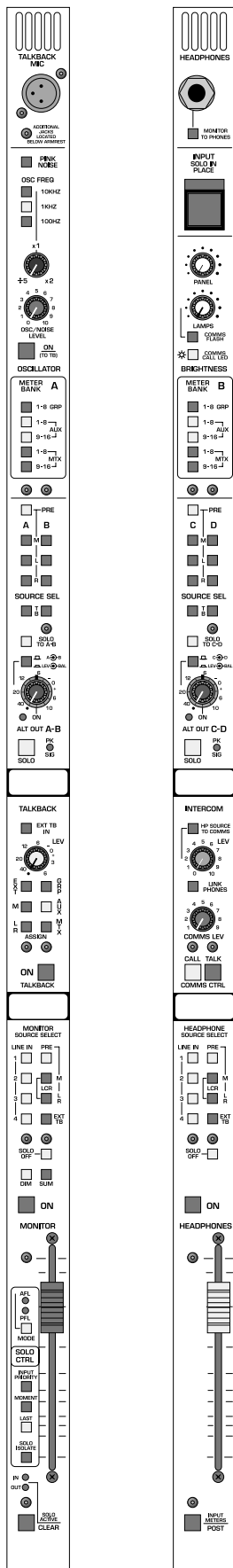
MTX 1-8

MTX 9-16

Interlocking switches selects the display function of the left or right meter banks. In addition to illumination of these switches, an indicator in the meter area shows what functions the 8 left and 8 right meters are displaying.



# master modules—M1, M2



## alternate output features

Alternate output A-B are located on the left master module and Alternate output C-D are located on the right master module. Controls provided on the left and right module alternate outputs are identical. This section is intended for miscellaneous signal outputs including dressing room feeds, broadcast production monitor feeds, sub output feeds, delay speaker stacks, back of stage feeds, etc. Each module contains the following controls:

### source-pre

Selects between the default post fader signal level and a pre fader level. This switch will affect both the odd and even signal sources.

### left-select switch

Selects the Left main signal. Separate switches to A (C) and B (D) outputs. This allows for generation of summed and reversed signal outputs.

### right-select switch

Selects the Right main signal. Separate switches to A (C) and B (D) outputs. This allows for generation of summed and reversed signal outputs.

### mono-select switch

Selects the Mono main signal. Separate switches to A (C) and B (D) outputs. This allows for generation of summed LCR and reversed image signal outputs.

### solo to A-B (C-D)

Puts the contents of the Solo bus on outputs A-B and/or C-D.

### stereo switch

Reconfigures the dual concentric level control from dual mono function to Stereo level and Balance control.

### peak and signal-present indicator

Monitors signal levels of the pair of outputs. Green signal present LED indicator is dynamic and varies in intensity. Should any signal level approach 3dB of clipping, the red Peak LED indicator will illuminate.



# master modules—M1, M2

## alternate output features

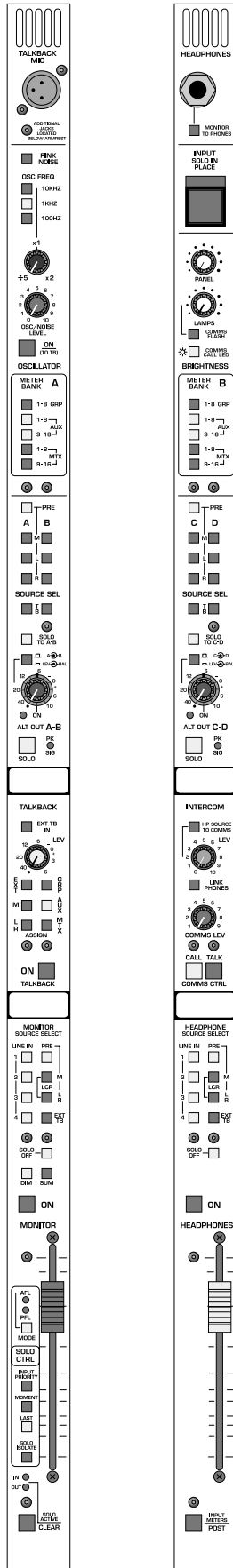
### solo switch

Will illuminate when manually selected in one of the consoles many Solo modes. Controls within the master section determine if this switch will sample signal pre or post level control.

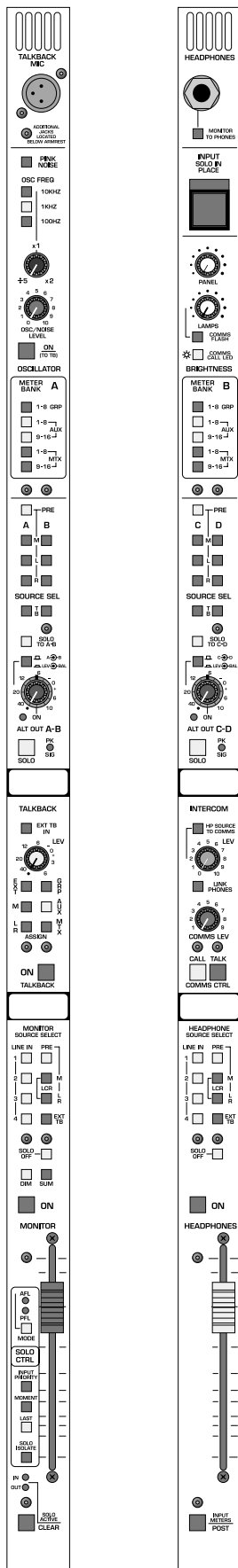
The SOLO system is designed that if the Alternate output is soloed, it will display its contents on the Solo meters, but it will not feed Solo signal to the Alternate output section, avoiding a potential source of a feedback loop.

### write-on strip

Provides an area to label the alternate outputs usage.



# master modules—M1, M2



## talkback master features

### group talkback master-switch

Allows talkback to all group outputs that have their talkback preset switch selected when the MASTER Talkback switch is depressed. No communications is permitted to Group Outputs unless this master switch is depressed.

### aux talkback master-switch

Allows talkback to all Aux outputs that have their talkback preset switch selected when the MASTER Talkback switch is depressed.. No communications is permitted to Aux Outputs unless this master switch is depressed.

### matrix talkback master-switch

Allows talkback to all Matrix outputs that have their talkback preset switch selected when the MASTER Talkback switch is depressed.. No communications is permitted to Matrix Outputs unless this master switch is depressed.

### mono talkback master-switch

Allows talkback to the Mono Output when the master Talkback switch is activated.

### left/right talkback master-switch

Allows talkback to the Left and Right Outputs when the master Talkback switch is activated.

### talkback out

Allows talkback to a rear panel XLR connector when the master Talkback switch is activated.

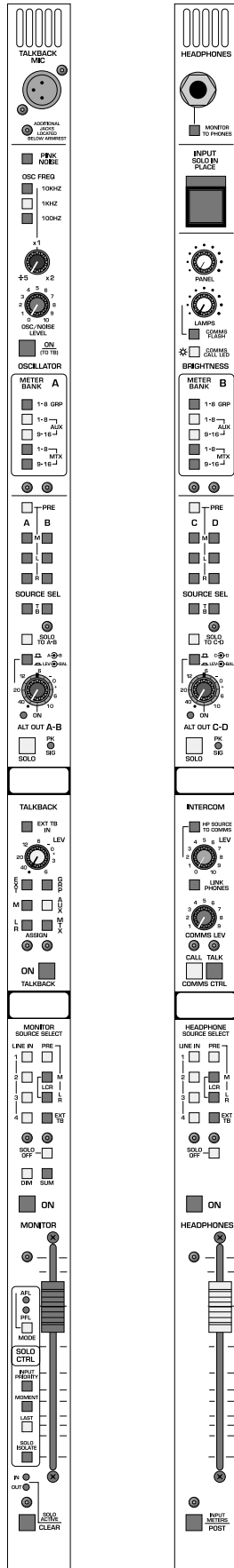
### talkback level-control

Adjusts the overall volume of the talkback system.

### external talkback-in assignment

Allows the contents of the XLR Talkback in connector to have access to all of the consoles talkback systems. This switch activates the Talkback system for this signal source only without the need to depress the master Talkback switch.

# master modules—M1, M2



## intercom interconnect features

The console is designed to interconnect with a ClearCom compatible intercom system. Three-pin male and female XLR's are located on the console rear-panel for intercom hookup and loop-thru. A separate four pin XLR connector is located under the arm rest for connection to a standard intercom headset.

### console-to-intercom level and switch

Controls the amount of console signal fed to the intercom system as selected by the source selection switches located within the headphone system.

### link headphone/intercom switch

Allows both intercom and console signals to be monitored on the high quality system headphones AND the intercom headset.

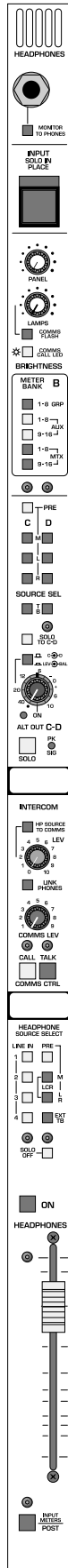
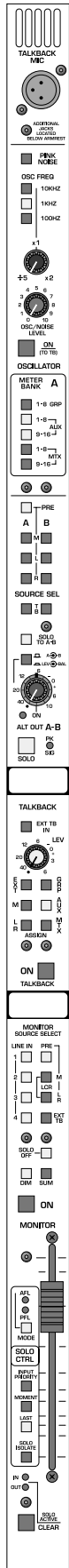
### comms level

This control determines the level of the intercom signal in the COMMS headset or, if the link phones switch is depressed, the amount of intercom signal mixed into the console headphones.

### call button

Sends an intercom call command when pressed, and will also illuminate to indicate a call signal is being received. The operator also has the option, by way of the COMMS FLASH switch, of having the console Little-Lites flash upon receiving a call signal. Additionally, hi-intensity blue LEDs in the meter bridge will flash when a call signal is received. Their brightness is controlled by the COMMS CALL LED switch in the upper section of the module.

# master modules—M1, M2



## monitor output features

MONITOR OUTPUT CONNECTORS - XLR balanced line level outputs on the rear panel plus 1/4" headphone connector under the arm rest area with a hinged cover preventing confusing with the regular headphone system.

### line 1 input-switch

Monitor source of XLR Stereo Pair of balanced line level inputs.

### line 2 input-switch

Monitor source of XLR Stereo Pair of Balanced line level inputs.

### line 3 input-switch

Monitor source of 1/4" Balanced/Unbalanced line level inputs in mono or stereo. If only a single connector is plugged in, signal is monitored in mono.

### line 4 input-switch

Monitor source of 1/4" Balanced/Unbalanced line level inputs in mono or stereo. If only a single connector is plugged in, signal is monitored in mono.

### mono-output switch

Monitors mono output signal.

### left/right output switch

Monitors left and right output signals.

### LCR output monitoring

When both Left/Right and Mono switches are depressed, a LCR signal mix can be monitored on a pair of monitor outputs.

### external talkback-in

Allows direct monitoring of the external talkback input (Closed loop system).

# master modules—M1, M2

## monitor output features

### sum

Combines the Left and Right signals into a summed mono signal with the same signal appearing on the left and right output connectors and in headphones.

### dim

Drops the XLR signal output level by 20db while depressed.

### 100mm fader level-control

Adjust output level of the monitor output.

### solo defeat

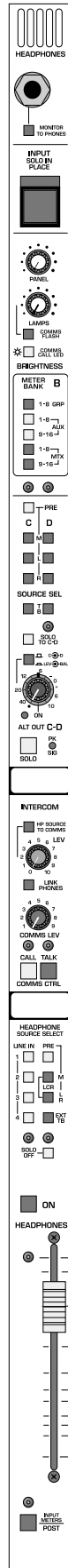
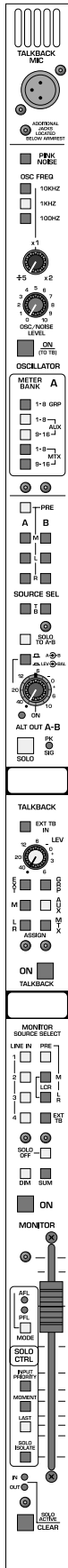
Normally the Solo system will override any monitor switches that have been selected. When the Solo Defeat switch is selected, no solo signal will appear on this output.

### on-switch

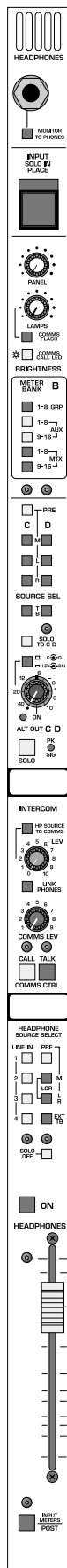
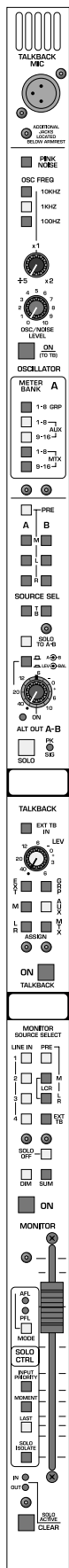
Turns on the output of the monitor section to both rear panel XLR connectors and to monitor headphone outputs.

### foot pedal monitor-level control

A rear panel 1/4" jack is provided to allow monitor level to be controlled by a foot pedal.



# master modules—M1, M2



## headphone output features

**HEADPHONE OUTPUT CONNECTORS** - 1/4" headphone connector under the arm rest area as well as on the top module panel.

**HEADPHONE INSERT CONNECTORS** - Separate left and right insert send and return connectors for the purpose of inserting external delay devices. In addition, as these points are located after the master headphone level control, the insert send can be used to feed an external higher powered amplifier.

### line 1 input-switch

Monitor source of XLR Stereo Pair of balanced line level inputs to headphones.

### line 2 input-switch

Monitor source of XLR Stereo Pair of Balanced line level inputs to headphones.

### line 3 input-switch

Monitor source of 1/4" Balanced/Unbalanced line level inputs in mono or stereo to headphones. If only a single connector is plugged in, signal is monitored in mono.

### line 4 input-switch

Monitor source of 1/4" Balanced/Unbalanced line level inputs in mono or stereo to headphones. If only a single connector is plugged in, signal is monitored in mono.

### mono-output switch

Monitors mono output signal to headphones.

### left-/right-output switch

Monitors left and right output signals to headphones.

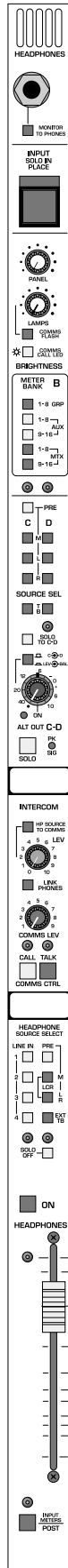
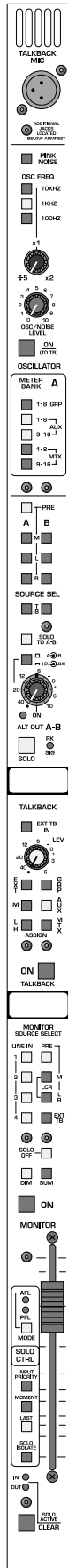
### LCR output-monitoring

When both Left/Right and Mono switches are depressed, a LCR signal mix can be monitored on headphones.

### external talkback-in

Allows direct monitoring of the external talkback input (closed loop system) on headphones.

# master modules—M1, M2



## headphone output features

### solo defeat

Normally the Solo system will override any monitor switches that have been selected. When the Solo Defeat switch is selected, no solo signal will appear on headphones.

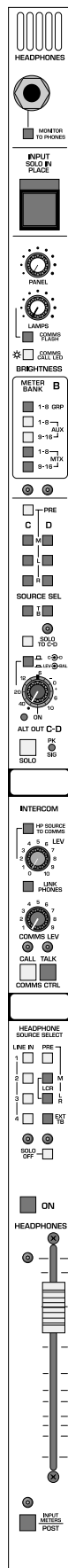
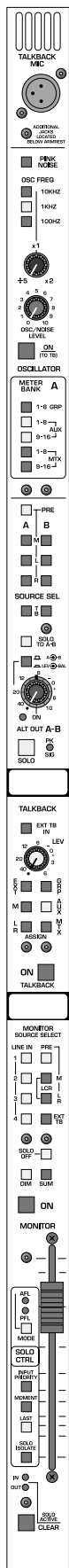
### on-switch

Turns on the headphone output. The prevents leakage of headphone signal to noise sensitive rooms by being able to turn off headphones before they are removed.

### 100mm headphone level-control

Adjusts the level of the consoles headphone output level. When the intercom and console system headphone systems are linked, the level controls remain independent for their fused usage. Intercom level control always controls intercom level and headphone level controls consoles headphone monitor level regardless of the headphone type being used.

# master modules—M1, M2



## solo system features

### solo-clear switch

When any input or output solo switch is active, depressing the SOLO CLEAR switch will cancel all soloed channels. When in Input Priority mode, this switch will only cancel only input channel solo functions.

### solo-select switch

Will select operation of the solo system to monitor either pre fader signals or post fader/post pan pot signals. Mono signals are monitored in mono, stereo signals are monitored in stereo. This switch may be changed while in use.

### input-priority switch

When in this mode, soloing an input channel will take priority over an output channel only while the input solo switches are depressed. When the input channel is no longer selected, the console goes back to the previous output solo condition. When in this mode, the first press of the SOLO CLEAR switch will clear input channels only; a second, longer press will clear the output solos.

### solo-momentary switch

In this mode, solo switches are active only while they are held down.

### last-pressed switch

Takes the console out of its normal cumulative mode and puts it into LAST PRESSED mode. When a solo switch is already depressed, depressing the second solo switch will cancel the previous solo switch. When a VCA solo is activated, this is treated as a single solo switch and all associated channels are monitored.

### solo-isolate switch

When used with consoles linked together, will isolate the solo output of the slaved console from the master console. This allows for independent monitoring of linked consoles when desired.

### solo active in and out LED's

Will illuminate if any input or output solo switch is selected and active.

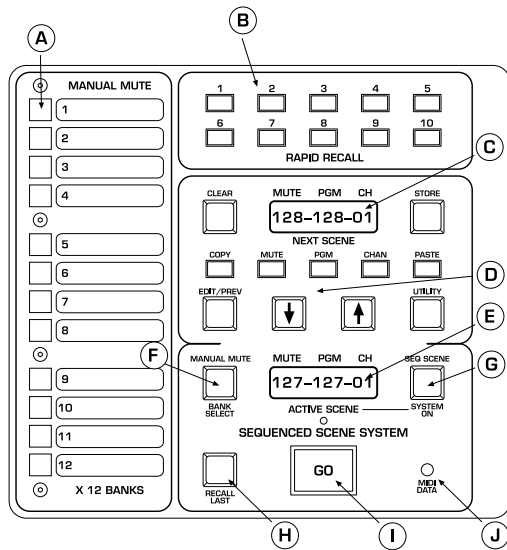
### input meter post-switch

Selects operation for all input channel eight-segment metering between the input pre fader monitor point to a post fader monitor point. The selection between pre and post fader meter selection is uniform across the console.





# micro mute system



## micro panel features

The V-12 is equipped with a microprocessor based muting and control system. This system allows the operator to control the channel and output mutes of the console using pre-set manual mute scenes, pre-programmed sequenced scenes or through MIDI based external sequencers. The V-12 micro system can also be configured to send MIDI Show Control commands. With these commands, a compatible external sequencer can be used to control various aspects of a show by controlling different pieces of outboard gear. The system can be set up to the operator's preference by using the comprehensive utility functions. MIDI status, Mute Scene operation, display brightness and password protection are a few of the utilities provided. Here is a basic overview of the system, followed by a more detailed explanation of each section.

### A manual mute buttons

These 12 switches are used to set-up and control the manual scene mutes. 12 banks of scenes are available, any 1 of the 12 banks are active at one time, selected by the BANK SELECT key and the Scroll keys. The Manual Mutes can be configured to operate in single-scene mode (1 of 12 scenes only), or cumulative mode (any or all of 12 scenes).

### B rapid recall buttons

These 10 keys can be used to jump to any of the 128 sequenced mute scenes. The operator can use these as bookmarks to quickly get to a point in the program. The Rapid Recall keys can be configured to set either the Next Scene or the Active Scene.

### C next-scene display

This 10 character display normally shows the info for the sequenced mute scene that will become active when the GO button is pressed. The data presented is the Mute Scene number (1-128), the MIDI Program Change number (1-128 or 0-127) and the MIDI channel (1-16). Any of these numbers can be changed by selecting the matching key below the display (MUTE, PGM, CHAN) and then using the scroll keys to step up or down from the current value. When in Utility Mode, this display shows the value or setting of the utility function being viewed.

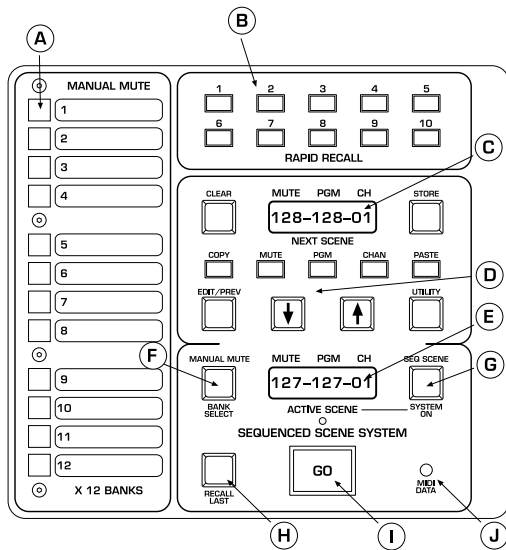
### D edit/command buttons

The eleven buttons surrounding the upper display are used to either put the system into another mode (EDIT or UTILITY), select a setting to edit (MUTE, PGM, CHAN), change a value or setting (Scroll UP/DOWN) or to perform an operation on a scene (COPY, PASTE, CLEAR, STORE).

### E active-scene display

This 10 character display normally shows the info for the sequenced mute scene that is currently active. The data shown is the Mute Scene number (1-128), the MIDI Program Change number (0-127 or 1-128) and the MIDI channel. When in Utility Mode, this display shows the utility function being viewed or edited.

# micro mute system



## micro panel features

### F manual mute-bank select

When this button is held down, the lower display shows the current Manual Mute bank. Using the Scroll Keys along with this button, the bank can be changed to any one of the twelve possible. An asterisk (\*) will show in the last position of the display to indicate a changed bank. The bank change won't occur, however, until the operator presses a Man Mute button or the GO button.

### G sequence scene-system on

The button activates the Sequenced Mutes. When the key is lit, the mute data shown in the lower display (Active Scene) is active and the MIDI data is transmitted. Turning this button on & off will activate/deactivate the sequenced mutes and re-transmit the MIDI info every time the button comes on.

### H recall last

This key restores the previous active scene. It can be used as an undo or "oops" key to cancel a prematurely activated GO. The active data is sent back to the next display and the prior active data is restored. The function is only available when lit; only one level of undo is possible

### I go button

This is the main control for the Seq Scene System. Every time it is pressed, the data from the Next Scene is transferred to the Active Scene and the Next Scene is incremented by one. Repeatedly pressing this button will step through the entire sequence list from 1 to 128. At any time, the operator can use the Scroll or Rapid Recall keys to change the value of the Next Scene to affect the order of the sequence. A foot switch jack is available on the rear of the Console which allows remote operation of the GO function (momentary switch closure).

### J midi data

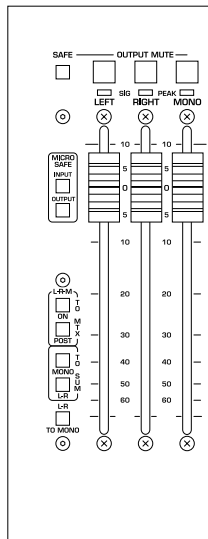
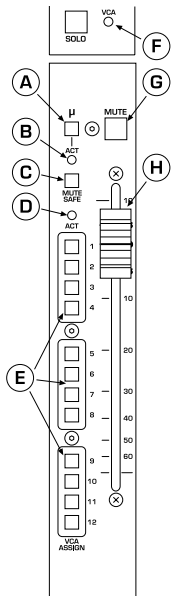
This LED will blink when MIDI data is being received. There is no filtering on this indicator, the MIDI data being received does not necessarily have any bearing on the control of the console.

# micro mute system

## channel fader features

V-12 Channel Fader

V-12 Master Faders



### A $\mu$ -button

This momentary switch is used to program the channel mutes when the Micro is in EDIT Mode. Pressing this switch will assign/un-assign it to a mute scene (either Sequenced or Manual), the internal yellow LED will blink to show an assignment. The operator uses these blinking LEDs to review the mute pattern being edited. These buttons are also used to send MIDI mute info when the Micro is in normal operation mode and MIDI Mutes is ON (see Utility). Pressing this switch sends a Note On/Off command that can be recorded on an external MIDI sequencer. If a corresponding Note On/Off command is received, the yellow LED lites up steady, and a mute command is issued to the channel.

### B act LED ( $\mu$ -mute)

This red LED lites whenever a Mute command is issued from the Micro. This can be from any of the Sequenced or Manual Mute Scenes or from a received MIDI Note command. Whether or not the channel responds to that mute command is determined by the status of two SAFE switches: the global Input Micro Safe switch (near master faders), or the channel Mute Safe switch.

### mute safe

C This switch "safes" the channel from external mute commands (micro, VCA, SIP). By default, the VCA and Solo-In-Place (SIP) mute commands are safed, but there are two jumpers located on each fader circuit board to exclude each of them. The micro mute commands (Man Mute, Seq Scene or MIDI mutes) are always affected by the safe.

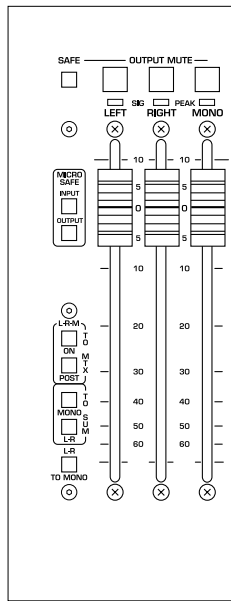
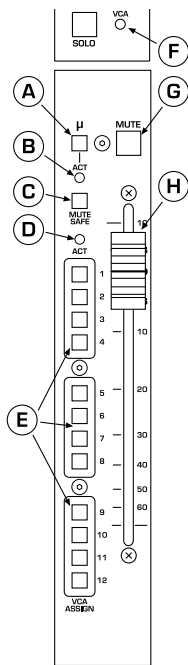
### act LED (VCA)

D This red LED lights whenever a mute command is coming from an assigned VCA. Each VCA Master has an associated Mute switch. When depressed, any channels assigned to that VCA Master will go to a fader full-down condition (max attenuation), and the channel mute will be activated. A jumper in the VCA Master fader block can defeat the mute function; in that case, the channels still go to fader full-down, but the channel mute is not activated.

### VCA assign

E These 12 lit switches are used to assign a channel to any of the 12 VCA Masters. The channel gain is controlled by the sum of the voltages of the local fader and any of the assigned VCA Masters. The VCA control circuitry is designed so that even if a channel is assigned to all 12 masters, and those masters are all at +10dB boost (total of +120dB theoretical gain!), the local fader (or any Master fader), when pulled down, has enough electrical over-travel to fully attenuate the channel. Furthermore, the control voltage is electrically limited to a maximum of +20dB gain to prevent excessive channel boost.

# micro mute system



## channel fader features

### VCA LED (on module)

- F This LED glows green to indicate the amount of control voltage applied to the channel VCA; the greater the control voltage, the brighter the LED. Often, a channel may be assigned to more than one VCA master, and it is easy to overlook an assignment and wonder why a channel isn't on. This LED gives the operator a quick reference to the state of the channel VCA; if there is no LED indication, there is no VCA control voltage. The LED will turn from green to red when the control voltage limit of +20dB is reached as detailed above. This alerts the operator to unusual or incorrect gain settings and prevents any additional fader boost from being applied.

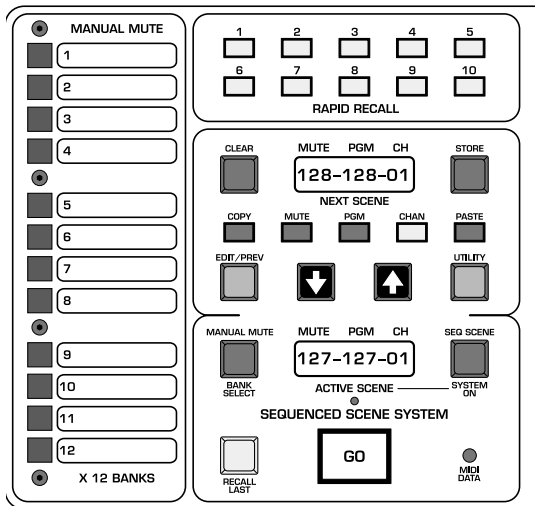
### mute button

- G This latching switch is the local mute switch for the channel. If this switch is depressed, the channel will mute regardless of anything else. The internal red LED is the mute indicator for the channel. This will light when the channel is muted from any source (manual, micro, VCA, SIP).

### channel fader

- H This hi-quality, 100mm fader generates the local control voltage for the channel. Its voltage is summed with any of the assigned VCA Master voltages to control the audio level of the VCA in the channel.

# micro mute system



## micro operation

### normal operation mode

- 1 These switches are normally lit and available for use.

GO Switch

BANK SELECT

Scroll UP

Scroll DOWN

1 of 3 from Next Scene: Mute(default), Pgm, Chan

Upper Display shows Next Scene and Lower display shows Active Scene.

Both displays show data in the following format : mmm ppp cc

mmm= Scene # [001 to 128]

ppp= MIDI Pgm # [(OFF), 001 to 128] or [(OFF), 000 to 127]  
(Set by Utility Function- MIDI BASE)

cc= MIDI Chan # [01 to 16]

### mute scene operation

- 2 The Console has the ability to mute its channels and outputs by the use of Mute Scenes. There are 13 possible Mute Scene sources: 12 Manual Mutes (1-12), and the Sequenced Scene. There are 3 possible states the console can operate in as detailed below. Normally the console is set so that all 13 of the possible Mute sources can be used at the same time. This state is set by the Utility Function –SCENE OPER.

**cummulative** (default)

13 of 13 Scenes possible: Any of 12 Manual Mutes and Seq Scene

**single all**

Only 1 of 13 Scenes possible: 1 of 12 Man Mutes or Seq Scene

**single man**

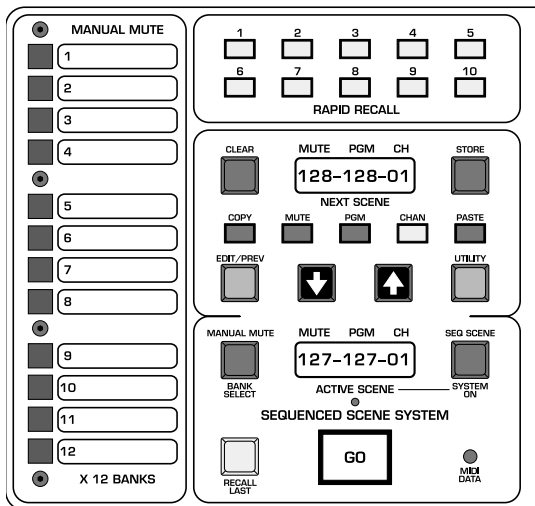
2 of 13 Scenes possible: 1 of 12 Manual Mutes and Seq Scene

### edit mode

- 3 This mode allows the operator to set-up, preview or edit any of the Micro Mute Scenes. There are (14) possible edit sources: (1)Next Scene [including Rapid Recalls], (12)Man Mutes 1-12 [x12 Banks] and (1)Active Scene.

The  $\mu$ -Mute switches on each channel and each output are used to assign/un-assign a mute from the Scene being edited. A momentary press on the  $\mu$ -Mute switch will start/stop it from blinking yellow; the blinking indicates that a mute is assigned to that Scene. Any or all channels and outputs can be assigned to any Mute Scene. While in Edit Mode, the current mute state of the console is maintained, the edits made will not necessarily affect the current mutes unless the Scene you are editing was active when you entered Edit Mode. The following steps describe how to use the Edit Mode.

# micro mute system



## Select Scene to edit

Press EDIT/PREV key- It starts blinking indicating Edit Mode.

Next Scene is the default Edit selection:

MUTE (Next Scene) begins blinking.

Any Chan or Outputs assigned to that Next Scene Mute- their  $\mu$ -Mutes begin blinking.

Any one of the 14 above listed sources can be selected for editing. Next Scene (Mute) is the default, but, also within Next Scene, the MIDI Pgm or Channel can also be edited. Press PGM or CHAN- it blinks when selected. Use the Scroll Up/Down keys to change its value to the new setting. An \* will show up in the display between the Pgm and Chan numbers, indicating a change is pending and the STORE sw lites up. If STORE is pressed, the change is written into memory and the \* goes away.

## performing clear/edit/store

While in Edit Mode, select the source to edit. Next Scene (Mute) is the default selection, press any of the Manual Mutes (1-12) if desired, or Seq Scene if you want to edit the Active Scene.

The selected source begins blinking, and any m-Mutes associated with that scene also blink. (The mute data has been loaded into an edit buffer at this time).

When any  $\mu$ -Mute sw is toggled (Scene changed from original), the STORE switch lites up indicating that a change to the original Scene has occurred- The change is temporary so far- only the Edit buffer has been affected. If editing Next Scene or Active Scene, an \* shows up to the right of the scene number in the display showing that something has changed.

If user re-presses the selected (blinking) Scene, the STORE turns off (Edit buffer reloaded with original scene) and the \* after the Mute # in the display is removed

If CLEAR pressed, the Edit Buffer is cleared & CLEAR turns off and STORE lites up. Again, the change is temporary so far- only the Edit buffer has been affected.

If user re-presses selected (blinking) Mute, STORE turns off (Edit buffer reloaded with original scene). The CLEAR lite comes back on

If STORE pressed:

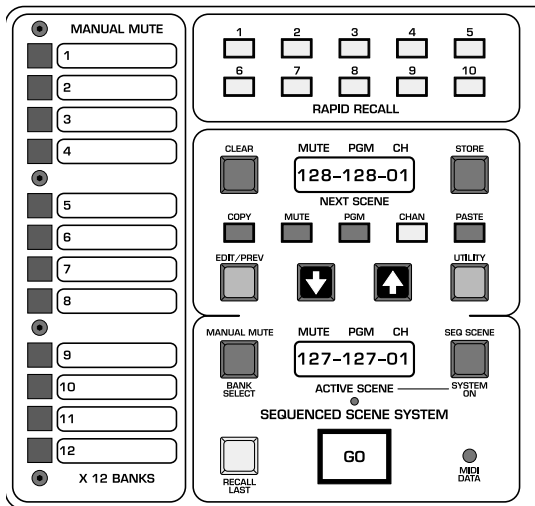
Current edited or cleared Edit buffer is written back to selected scene- STORE turns off, and the \* in the display is removed. Any edited changes have now written over the original Scene memory.

## performing copy-and-paste

The Copy and Paste buttons are used within Edit Mode to allow the operator to copy mute patterns between different scenes and also set the Rapid Recall keys to new values. (The default values for the Rapid Recall keys are RR#1=10, RR#2=20 ... RR#10=100. This allows the operator to quickly get to any place within the 128 scenes).

The Copy/Paste operation is modeled after the typical operation you would perform on your computer. A copy of the current desired pattern is created by using the Copy key- (the edit/copy buffer is used for this storage). The user then selects the desired destination scene and pastes the data into it, this replaces the previous data with the data from the copy buffer. The micro then returns back to the original edit scene for further operations. The Copy/Paste operation is only good for one destination. If

# micro mute system



additional destinations are desired for the same copy data, additional copy/paste cycles are required.

To copy a mute pattern, press the lit COPY key.

CLEAR turns off, the PASTE sw comes on, the selected edit Mute lite goes from Blink to steady on.

The User must now either select a paste destination or cancel the copy operation.

Paste:

User can select any Manual Mute or Next Scene-Mute as paste destination. The Active Scene is not allowed as a destination. Select the destination source by pressing one of the Manual Mute buttons or the Next Scene-Mute button. If a copy/paste is being performed within the 128 Seq Scenes, press the now steady MUTE sw to select it as the source. It will now start blinking, use the scroll keys to step to the desired destination.

The selected destination Mute blinks and PASTE changes to blink and CLEAR comes on.

Pressing PASTE writes the Copy data into the destination.

After Paste performed, the system returns back to beginning of the Edit cycle with original selected scene.

Some limits exist because of the different source and destination data types:

Only mute data is transferred between Manual Mutes and Sequenced Scenes.

Cancel:

To cancel a Copy operation, the User can press PASTE before selecting a destination or can press the original source mute again or can press CLEAR. Any of these will result in the copy operation being cancelled and the system returning to the edit mode.

## edit/preview rapid recall

Edit/View:

Rapid Recall can be edited or viewed when Next Scene is selected for edit.

With Next Scene(Mute) selected and flashing, pressing any of the 10 RR buttons transfers the info to the Next Scene display. Since these are just pointers to the 128 Mute Scenes, this is no different than scrolling up or down to the scene. Once there, normal editing can take place. The user can use the RR as jumps to the different scenes instead of having to scroll.

Changing RR:

The value of the 10 RR locations can be changed by using the copy/paste buttons.

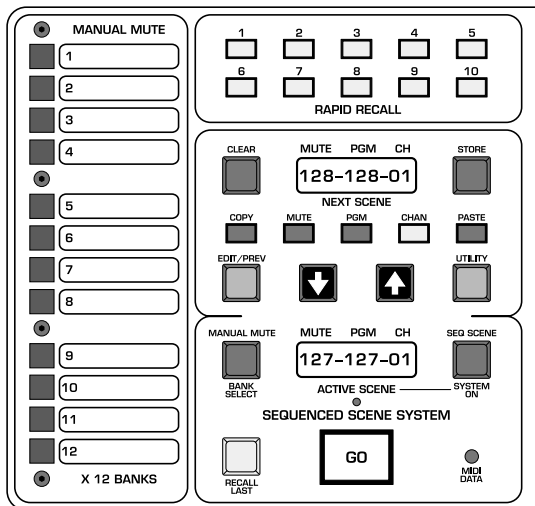
NOTE: The default settings are RR#1=10, RR#2=20, ...RR#10=100

When in Edit Mode, scroll the Next Scene display to the desired Mute Scene.

Press COPY; PASTE lites up- waiting for a destination. (Normally, a destination Mute would be pressed and it would blink with PASTE). For RR change, press the desired RR # 1-10. PASTE goes out, and the Next Display shows " RR STORED". The paste light goes off and Edit Mode returns to its previous state.



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## Exiting Edit Mode

The normal way to exit from Edit Mode is to Press the blinking EDIT key. The Console returns to Normal Operation Mode:

## Other ways to exit Edit Mode:

If editing Next Scene(Mute/Pgm/Chan): Pressing GO puts the edited scene into Active Scene and then does a normal exit from Edit Mode into Operation Mode. Any \* in the Next Scene display are maintained and also transferred to the Active Scene. This exit actually doesn't change the data in the Next Scene memory (if STORE wasn't pressed first), the edit buffer is transferred into the Active Scene, the original Next Scene data remains intact. This is useful for making a temporary change to a mute scene without affecting the stored info.

## 4 Recall Last:

The RECALL LAST key is used to bring back the previous Active Scene. This is useful when the operator jumps a cue and needs to get back to where he was before pressing that GO button. There is a "last buffer" data storage area that receives the contents of the previous Active Scene when GO is pressed. This buffer is over-written each time GO is used; it is only good for one recall at a time. The RECALL LAST sw will only be lit if there is data available to use. If it is lit and then pressed, it will perform its function and then turn off until the buffer is again valid (next time GO is pressed).

Pressing RECALL LAST does the following:

1. The current Active Scene is transferred into the Next Scene Display.
2. The previous Active Scene is recalled from last buffer and put into Active Scene.
3. Any edits that were performed on the previous Active Scene (if edited when it was active) or on the current Active Scene are kept during this transfer (i.e. Asterisks are kept as flags for changes).
4. MIDI info is sent if present.

This is the sequence of events that happens when the GO button or the RECALL LAST key is used:

Press GO:

Current Active Scene (with edits & flags) is placed into Last Buffer storage

Next Scene Buffer is placed into Active Scene

Next Scene increments up, RECALL LAST sw comes on

MIDI data of new Active Scene is omitted

Press RECALL LAST (if lit):

Current Active Scene (with edits & flags) is placed into Next Scene buffer

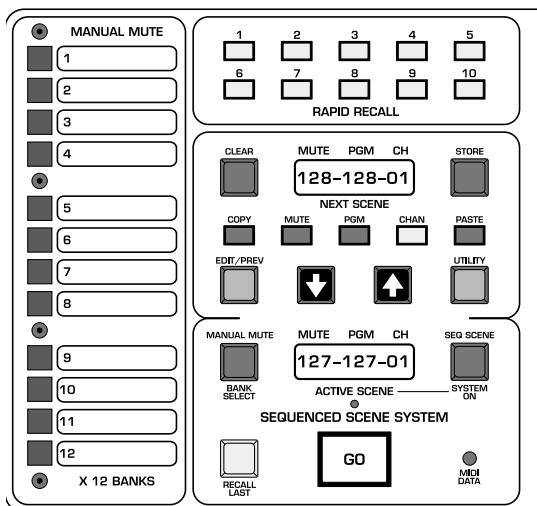
Last Buffer is placed into Active Scene

LAST lite goes off (Next Scene # is previous Active Scene #).

RECALL LAST sw now disabled.

MIDI data of new Active Scene is omitted

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If an Active Scene had been edited and then RECALL LAST is pressed, the edited Active Scene is transferred up to the Next Scene display. The only thing that could have been edited on the Active Scene was the mute pattern. The Mute Scene number would have remained the same. The restored Next Scene now is showing an \* to the right of the Mute #. If the user presses EDIT to enter Edit Mode, the STORE lite will come on indicating that this data is changed from what is stored in that Mute Scene. Pressing STORE will write the edited data into the scene and the \* will go away and the STORE lite will go out.

## Utility Mode

- 5 A number of Utility Functions are provided for the user.

A more detailed list follows the set-up description.

From Operation Mode: Press UTILITY key- it starts blinking, indicating Utility Mode.

Lower display shows Utility Function (MIDI Chan, Base #, Mute Mode, etc)

Upper Display shows value/setting (0-16, 0-1, CUMULATIVE, etc).

Scroll Up/Dwn steps through the functions in the lower display,

upper display shows it's current value.

To change a value/setting:

Press EDIT button- it lites up and now Up/Dwn scrolls through possible settings in upper display.

If applicable to the setting, the CLEAR or STORE sw lites up.

Once scrolled away from the current setting, the STORE button lites up.

User must press STORE to set new value, or press EDIT (lite goes off) and use the Up/Dwn to select another function in lower display.

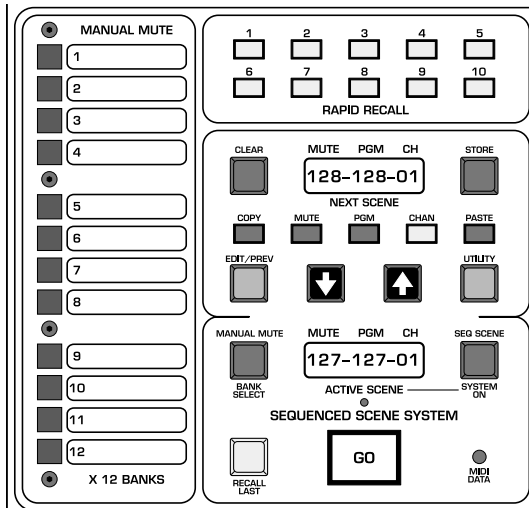
Once STORE is pressed, the new value is set and EDIT goes off as above. Up/Dwn now select next function.

To Exit- user presses UTILITY. It stops blinking and the Console returns to Operation Mode.

## Utilities:

Function Name (In Lower Display)	Value (default is listed in first column) (In Upper Display)	
MIDI Utilities		
MIDI_CHAN	1	1-16
MIDI_BASE	BASE 1	BASE 0
MIDI_PCHNG	SEND	RECEIVE BOTH OFF
MIDI_MUTES	ON	OFF
MIDI_LOAD	DISABLED	ENABLED
MIDI_DUMP	PRESS_STOR	

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## Clear Utilities

CLR_SEQ_MT	PRESS_CLR
CLR_SEQ_PC	PRESS_CLR
CLR_MM_BNK	PRESS_CLR
CLR_MM_ALL	PRESS_CLR

## Show Control

SHOW_CTRL	OFF ON
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## General Controls

BRIGHTNESS	BRIGHT=_5 1-7
REV_LEVEL	REV_0.94

## Micro Utilities

MAIN_MICRO	ON	OFF
MAN_MUTES	ON	OFF
SEQ_SCENES	ON	OFF
SCENE_OPER	CUMULATIVE	SINGLE_ALL
SINGLE_MAN		
RPD_RECALL	TO_NEXT	TO_ACTIVE TO_ACT+NEXT
PASSWORD	SET_PASSWORD	CLR_PASSWORD

## UTILITY DETAILS

### MIDI Utilities

MIDI CHAN Sets Default MIDI Channel –Used for MIDI Mutes, PgmChng and Dump. Chan for Next Scene defaults to this; user can change Chan per Scene.

MIDI BASE Pgm Change Range 1-128 or 0-127

MIDI PCHNG Sets mode of MIDI Pgm Change. Pgm Change received only if on correct MIDI channel (set above)

SEND PgmChng sent (if present in Scene)

when loading Active Scene (GO, RR or LAST)

RECEIVE Incoming PgmChng command on correct MIDI chan sets Active Scene.

Display shows XXX RCVD (XXX=Pgm # in selected MIDI base)

BOTH Send and Receive both active

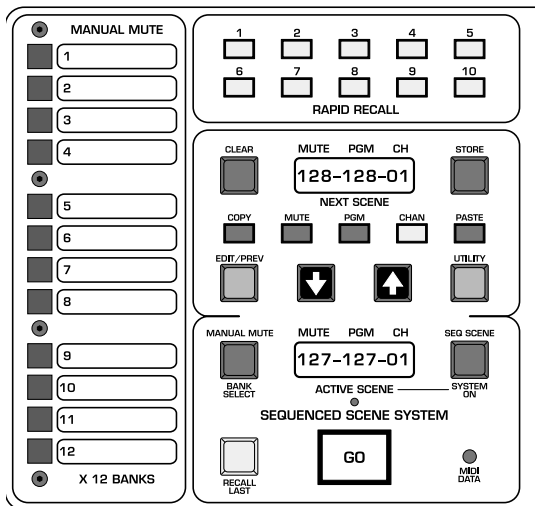
OFF No Pgm Chng sent or received (Overrides individual Scene settings)

MIDI MUTES Sets mode of individual MIDI Mutes (Note On/Note Off).

Note: MIDI Mutes not active while in Edit Mode.

ON MIDI Note info sent when a  $\mu$ -Mute is pressed.

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MIDI Note info received on correct MIDI chan controls Chan mutes(for play-back from MIDI sequencer)

OFF No Note info sent or received

MIDI LOAD Reloads Mute Scenes & Manual Mutes.

Uses Sysex command for dump and load.

MIDI DUMP Dumps all 128 Mute Scenes and all banks of Manual Mutes.

## Clear Utilities

CLR SEQ MT Clears all mutes in the 128 Seq Scene memories

CLR SEQ PC Clears (sets to off) all MIDI Pgm Chngs in the 128 Scenes- MIDI channel set back to default

CLR MM BNK Clears all Manual Mutes in current Bank

CLR MM ALL Clears all Manual Mutes in all Banks

## Show Control

SHOW CTRL NOTE: If Show Control is ON, the V-12 Micro is put into Show Control Mode. The GO button no longer controls Next Scene to Active Scene transfer. The Manual Mutes will still function, but the Sequenced Scene system is disabled (no GO command) along with the Edit Mode.

Currently, this is the list of MSC data that the V-12 supports (V-12 software Rev 0.94)

The V-12 only sends MSC data (Note: MSC = MIDI Show Control)

- OFF Normal Console Operation
- ON Lower Display reads "SHOW CTRL "
- Upper Display reads "STOP RSM"
- Pressing GO sends MIDI Show Ctrl "GO" command
- Pressing MUTE sends MSC "STOP" Command
- Pressing CHAN sends MSC "RESUME" command
- Pressing UP ARROW sends MSC "Standby +" command
- Pressing DOWN ARROW sends MSC "Standby -" command
- Pressing RECALL LAST sends MSC "LAST" command

## General Controls

BRIGHTNESS Sets brightness of both Next and Active displays.

REV LEVEL Show current Software Revision level: (This info correct for REV 0.94)

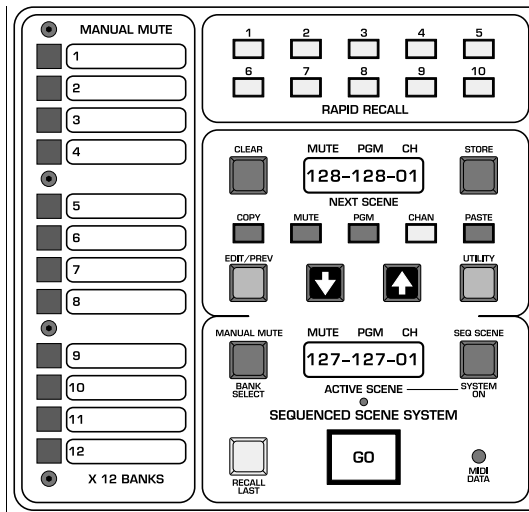
MUTE MODE Sets how many of the possible 13 Mute Scenes can be active at the same time:

12 Man Mutes, 1 Seq Mute

CUMULATIVE 13 of 13 Scenes possible: Any Manual Mutes and Seq Scene

SINGLE\_ALL Only 1 of 13 Scenes possible: 1 of 12 Man Mutes or Seq Scene

# micro mute system



SINGLE\_MAN 2 of 13 Scenes possible: 1 of 12 Manual Mutes and Seq Scene

## Micro Utilities

**MAIN MICRO** If set to OFF, completely disables Micro section. Both displays and all buttons are turned off.

Note: If this setting is selected, upon exiting Util Mode, the micro will appear to be non-functioning. No lites or displays will be on. The only button that will do anything is the UTILITY key. Press this key to get back into UTILITY Mode. If Password is set along with Main Micro Off, the only way for someone to restore any micro function is to enter the correct password and change the Micro setting.

**MAN MUTES** If set to OFF, disables the Man Mutes from being accessed or edited. Man Mute & Bank Sel Switches all off.

**SEQ SCENES** If set to OFF, disables the Seq Mutes from being accessed or edited. Next Scene and Active Scene Displays off, NEXT, LAST, SEQ SCENE all off.

**RPD RECALL** Determines what happens when a Rapid Recall (RR) button is pressed in Operating Mode.

**TO NEXT** RR Scene# is placed into Next Scene Display, Active Scene unaffected

**TO ACTIVE** RR Scene # is sent directly to Active Scene. Next Scene is unaffected.

**TO ACT+NXT** RR Scene # is sent directly to Active Scene. Next Scene is set to value of RR Scene# +1.

**PASSWORD SET\_PSWORD** Allows the user to set a password to control access to the Utility functions. Password comes up as last option in Utility menu by default. If no password is currently set, SET\_PSWORD shows in the upper display and the STORE key is lit. Pressing STORE changes upper display to ENTR\_PSWRD and the lower display to PSWRD=???? . RR keys 1-10 are used to enter the password, 4 digits only. Each press of a RR key changes a "?" to an "\*" . When initially setting a password, the user is prompted to enter it twice to insure that it is correct. Once a password has been successfully entered, the system exits Utility mode.

**PSWRD=????** Once a password has been set, the user is asked to enter a password whenever the Utility Mode is selected. ENTR\_PSWRD shows in the upper display, and PSWRD=???? is on the lower display. Further access to Utilities is locked out unless the correct password is entered. Each press of a RR key changes a "?" to an "\*" .

Once 4 digits are entered:

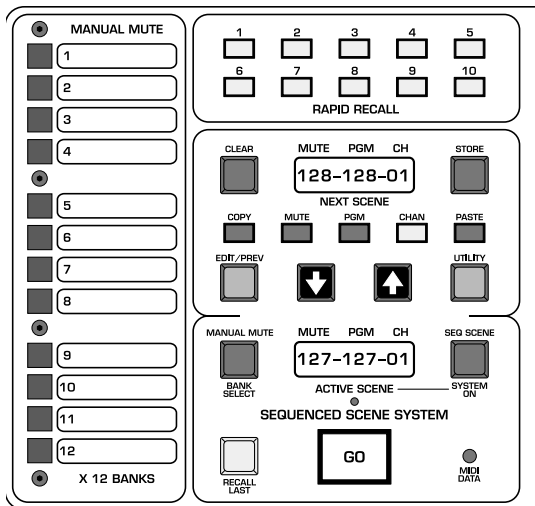
If incorrect- Display shows: "TRY \_AGAIN". There is no limit to the amount of entry attempts.

If correct- User is allowed access to Utilities- first function in Utility list is then displayed.

Note: The password remains active until it is cleared (with the CLR\_PSWORD function).

**CLR\_PSWORD** Once a correct password has been entered, the user has the option of clearing the password (returns password to default OFF state)

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when he scrolls to PASSWORD again before leaving the Utility Mode. Press CLEAR to clear the password to Off.

## RESETTING THE MICRO:

The V-12 micro is designed for reliable, trouble-free operation, but it is, after all, a computer. There may be situations where it misbehaves. If this occurs, a reset is probably the best course of action. There are two types of reset: a normal, maintained reset; and a second, more encompassing reset- the Initialization Reset:

The first type occurs every time the V-12 powers up. The micro does some housekeeping, counts the number of channels present, and restores the Console's mutes to their state prior to the last power-down. It does this in less than a second. All mute and scene information is retained along with any utility settings.

The second type of reset completely clears out the micro. In addition to clearing out all micro scratch memory, all utility functions are reset to their starting values and all mute and scene memories are cleared. This takes about a second, and you will be left with a console with no preset mutes and all settings at their factory defaults.

There are two methods to initiate a maintained reset:

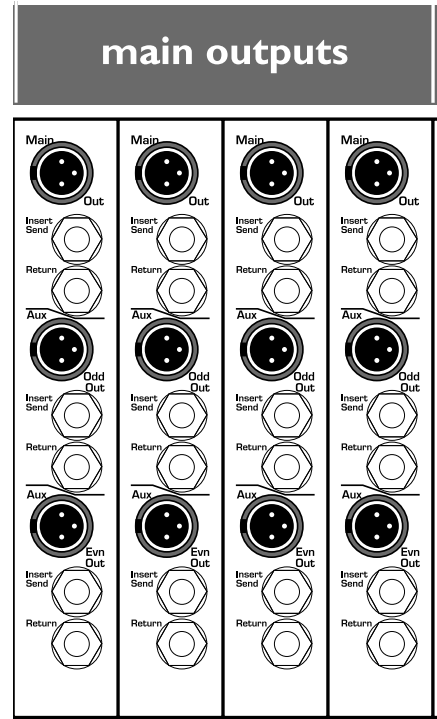
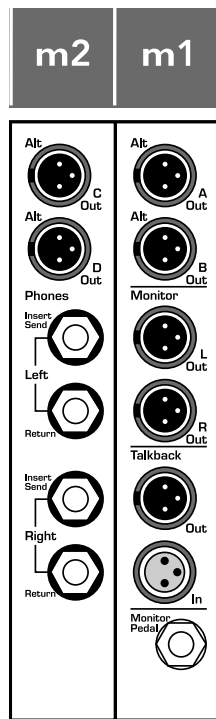
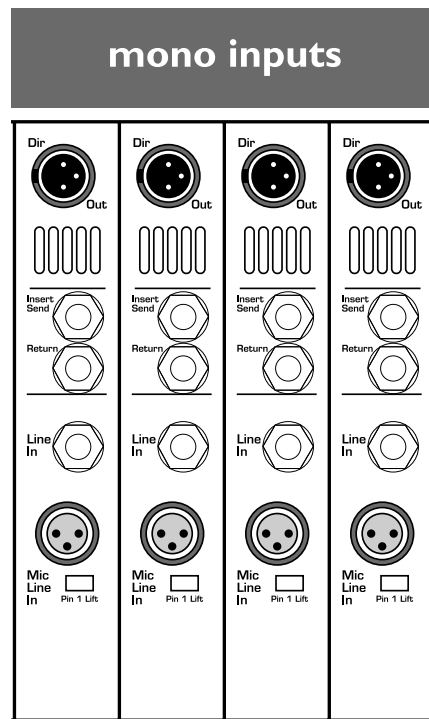
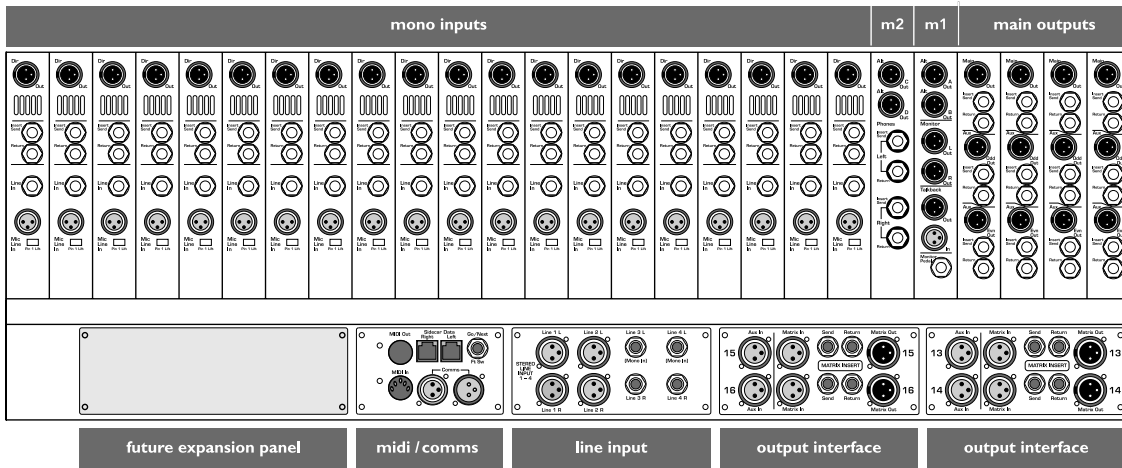
The first is by powering the console down, waiting a second or so, and then back up. This method will, of course, cause audio discontinuities. The V-12 has power-up/down, anti-pop circuitry on all main balanced outs, but there will be a delay while the power supply comes up to spec and the main outs are muted.

The second method is to use the reset hole located below the Active Scene display. A straightened paper clip or push-pin can be used to trip the recessed reset switch. This will cause the micro to go through its normal power-up sequence- it will be ready to go in a flash (you may not even see the displays blink). The power supply is not involved, so normal audio operation is maintained.

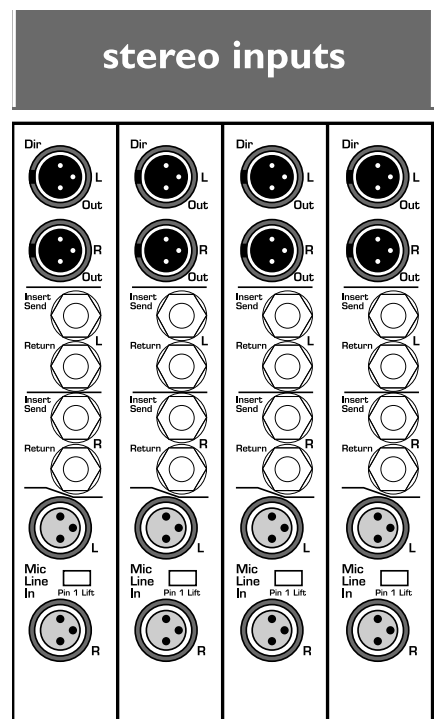
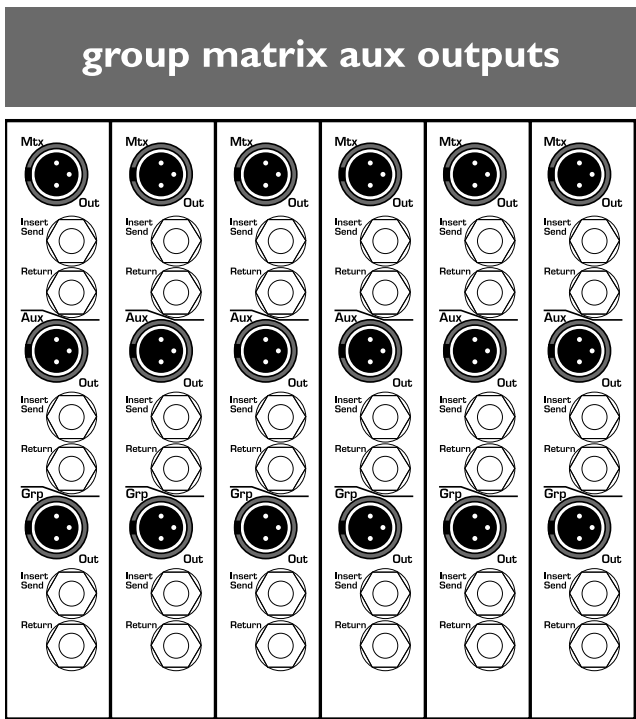
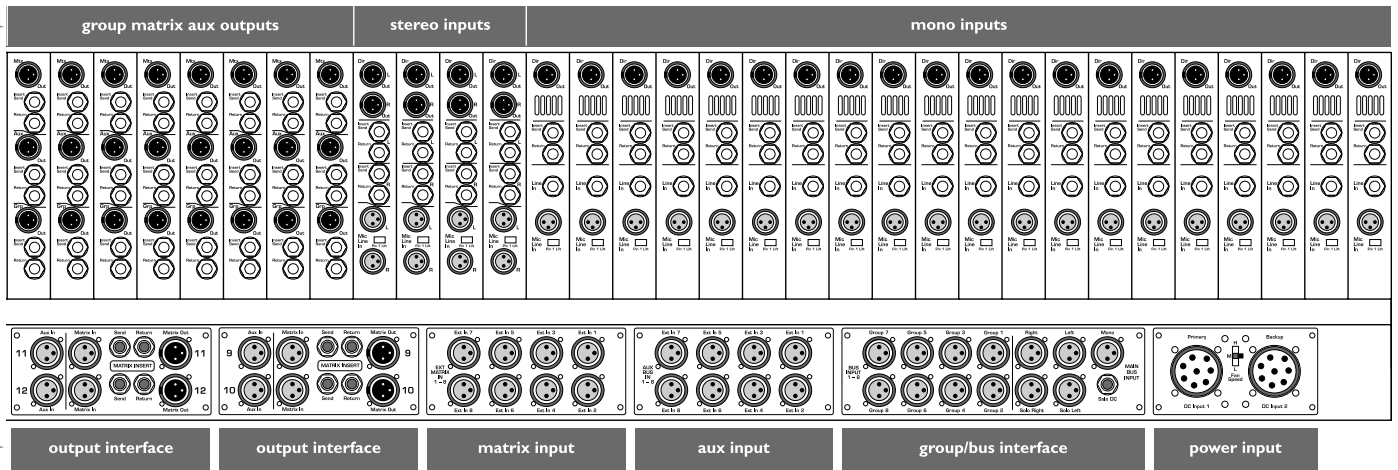
To perform a Initialization Reset, two buttons are held down on the keypad while the micro is going thru a normal reset. You can do this when the console is powering up or you can start it by pressing the reset switch. Hold down the CLEAR and EDIT keys while a reset is performed. The displays will clear out, and MEM INIT will appear in the upper display. Continue to hold the keys down until the normal Next/Active Scene displays show up. The V-12 is set to this state when it leaves the factory. There is no danger (other than data loss with the Init Reset) in doing either of these resets, the only warning involves audio that may become un-muted as a result. Please use caution if you are working on a live system.



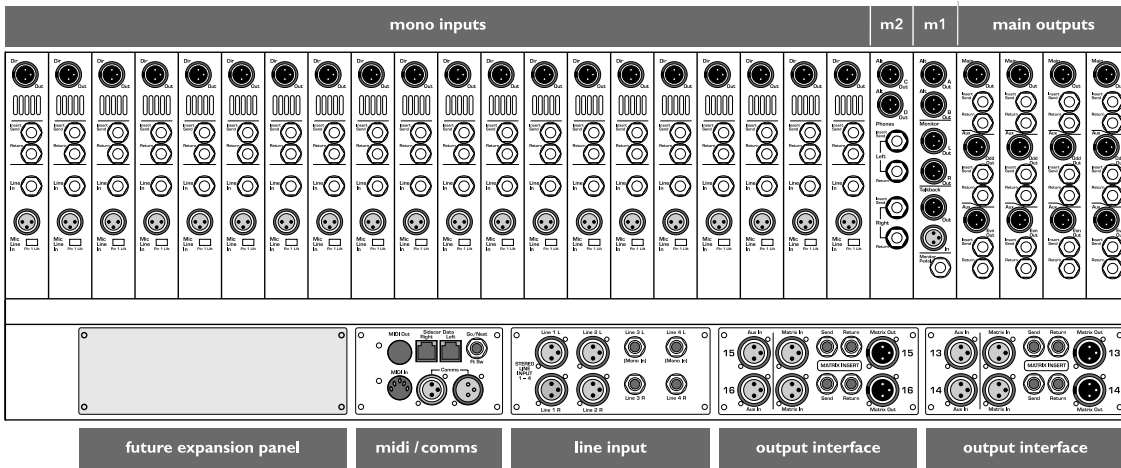
# V12 rear views







# V12 rear views



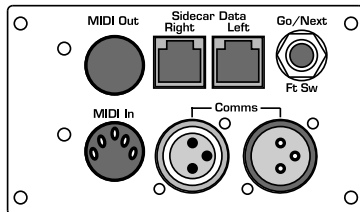
future expansion panel

midi / comms

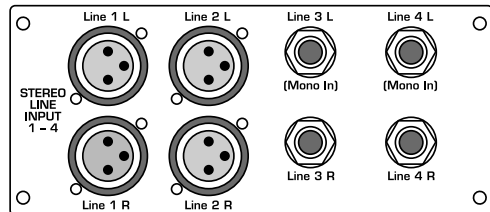
line input

output interface

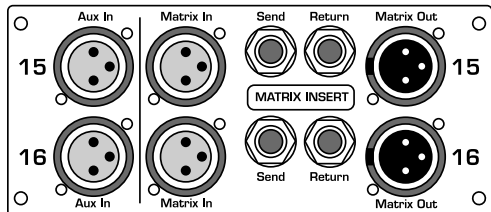
output interface



midi / comms



line input



output interface

