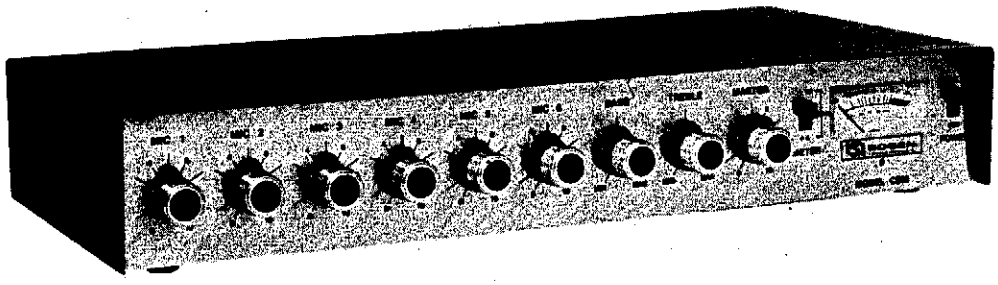
BOGEN®

A DIVISION OF LEAR SIEGLER, INC.

MIXER-PREAMPLIFIER

Model CDM



Your new Bogen Model CDM Active Mixer-Preamplifier is a rugged, professional-quality unit manufactured to exacting standards and designed to give you many years of reliable, trouble-free service.

The CDM has six balanced, low-impedance, transformer-isolated microphone inputs. Each is preceded by a fixed attenuator pad (switch-selectable on the rear panel) enabling Channels 1 through 4 to also accept 0 dBm, 600-ohm line inputs or high level (up to 1 volt rms) instrument mic inputs, and Channels 5 and 6 to also accept high-impedance auxiliary inputs. Additionally, Channel 6 will accommodate a magnetic phonograph input. All inputs are combined on an active mixing bus, essentially eliminating interaction between channel gain controls, minimizing residual mixing bus noise and providing constant preamplifier gain (constant input sensitivity) as channels are added.

The Model CDM has a rated output (transformer-isolated) of +18 dBm into a 600-ohm load at less than 1% THD, and a frequency response of ±1 dB, 20-20,000 Hz at rated output. Microphone sensitivity is 300 μV and noise is 57 dB below rated output.

Separate bass and treble controls provide up to 12 dB cut or boost at 50 Hz and 15,000 Hz, respectively. A booster level output is incorporated to drive high-impedance booster amplifier inputs. The illuminated VU meter has a meter range switch to set the zero VU indicator at either +4 dBm or +10 dBm. An acoustic equalizer or reverb may be inserted before the final amplifier circuits via the rear panel accessory jacks.

A built-in circuit provides precedence and/or remote volume control over Channels 5 and 6. The master volume level may also be remotely controlled. The six channel input connections are made via 3-pin female microphone connectors. Terminal strips accommodate the 600-ohm output and auxiliary dc power connections. RCA phone jacks are provided for the mag phono input, booster level output and the accessory connection. The CDM operates from either 120/240 Vac, 50/60 Hz or +24-28 Vdc power sources.

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TECHNICAL SPECIFICATIONS

Rated output	+18 dBm (6.1V) 20 to 20,000 Hz, @ less than 1% THD
Output	600 ohm, transformer-isolated, center tapped, balanced or unbalanced
Booster output	600 mV, into 50,000 ohms
Frequency response	20-20,000 Hz, ± 1 dB at rated output
Sensitivity (for rated output)	Microphones: 300 μV; Mag phono: 5mV; Line: 25mV; Aux: 150mV
Dynamic range	40 dB
Noise	-57 dB at rated mic sensitivity
Attenuator pads	Channels 1-4: 38 dB, Zin = 10,000 ohm Channels 5-6: 54 dB, Zin = 50,000 ohm
Mixing	Active mixing; minimal gain change with added inputs
Control interaction	Less than .2 dB
Semiconductors	4 ICs, 18 transistors, 7 diodes
Controls	Input gain (6); attenuator pad switch (6); master volume; bass and treble (±12 dB); meter range switch (+4 or +10 dBm); on-off power
Output display	Illuminated VU meter
Precedence	Channels 5 and 6; built-in
Remote volume control	Master gain control; Ch5/Ch6; built-in
Power consumption	120 volts ac, 50/60 Hz @ 70 mA or 24-28 Vdc @ 100 mA 240 volts ac, 50/60 Hz @ 35 mA
Input/output connections	3-pin female connector (cable termination Cannon XLR-3-12C): MIC, LINE and AUX inputs. RCA-type phono jacks: ACCESSORY, MAG PHONO inputs, BOOSTER LEVEL output. Screw terminals: +18 dBm line output, remote volume control, precedence, dc power connections.
Dimensions	2-7/8" high x 16-3/4" wide x 8-3/4" deep (7.3 cm x 42.5 cm x 22.2 cm)
Weight	10 lb. (4.5 kg) net)

INSTALLATION

UNPACKING

Your CDM was carefully checked before leaving the factory. Inspect both the unit and its shipping container carefully for indications of improper handling. Report any damage immediately to the distributor from whom your unit was purchased. It if was shipped to you, notify the shipping carrier without delay and place your claim.

POWER AND GROUNDING

Primary AC power. The ac line cord has a three-prong plug which should be plugged into a three-wire, grounded 120V, 60 Hz outlet. It is important to ground the unit. If such an outlet is not available install an adapter (Leviton No. 5017, for example), and connect the pigtail lead to the grounded wall-plate mounting screw. If this screw is not grounded, connect a wire from the ground terminal of your unit to a conduit pipe or other electrical system ground.

Auxiliary DC power. The CDM may be powered from an external 24 to 28 VDC supply that need not be disconnected when the unit is operated from an AC source. The front panel power switch will disconnect both sources when switched to off. Connect DC source to EXT DC terminals on rear panel terminal strip.

Caution

Observe polarity on DC power connections. Unit will not function if polarity is reversed.

240-volt conversion. The CDM has a power transformer which permits operation from a 240 Vac, 50/60 Hz power source. To convert to 240V operation, locate the power circuit, cut brown and yellow wires, and solder both to the vacant tie strip. Refer to Note 2, Figure 4.

INPUT CONNECTIONS

MICROPHONE/LINE/AUXILIARY

Up to six low-impedance microphones may be connected via the three-pin, quick- connect sockets on the rear panel. Channels 1 through 4 alternately accept 600-ohm line inputs or high level instrument mic inputs and Channels 5 and 6 will accomodate high- impedance auxiliary inputs. Move the selector switch located above each input receptacle to MIC, LINE or AUX, as required.

Use two-conductor cable terminated in a three-pin male connector (use single- conductor shielded cable for aux inputs). Refer to figure 1 for connecting balanced or unbalanced lines.

MAG PHONO

The output of a phonograph using a magnetic cartridge may be connected via the MAG PHONO jack to Channel 6. Use single-conductor shielded cable terminated in an RCA phono plug. An internal adjustment is required when a mag phono is connected. Remove the top cover and locate switch S1 on the printed circuit board. Move the switch to the PHONO position. Replace the cover. The phono output is regulated by the front-panel MIC 6 control knob.

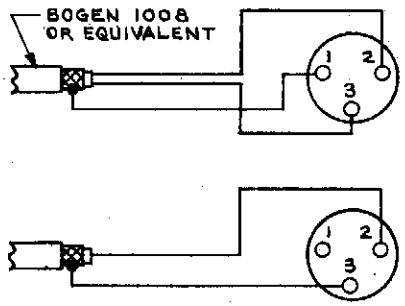
ACCESSORY

Accessory equipment, such as an equalizer, reverberator, etc. may be connected at the rear panel ACCESSORY input jacks. Remove the link and connect input and output leads of accessory equipment with single-conductor cable terminated in RCA phono plugs. All inputs to the CDM will be affected by the accessory unit.

OUTPUT CONNECTIONS

LINE

A +18 dBm transformer-isolated output is available at the terminal strip marked +18 dBm OUTPUT on the rear panel. For balanced lines, connect two-conductor shielded cable to the HI and LO 600-ohm terminals. The center tap (CT) terminal should be grounded. For unbalanced lines, connect cables to the HI and LO terminals and connect the LO side to the ground terminal.



For input use Cannon XLR-3-12C, or equivalent.

1. For balanced lines, connect pin 1 to shield; connect signal wires to pins 2 & 3.

2. For unbalanced lines, connect signal wire to pin 2 and shield to pin 3 (pin 1 is not used).

Figure 1 - Mic/line/aux input connections

BOOSTER

Use single-conductor shielded cable terminated in an RCA phono plug to connect high-impedance input of booster amplifiers such as Bogen Model MT-60A, MT-125B or MT-250. Ground the LO side of the 600-ohm output when the BOOSTER output is used. Output is rated at 600 mV into 50,000 ohms.

OTHER CONNECTIONS

REMOTE VOLUME CONTROL

For remote control of MASTER volume or Channel 5 or 6 volume, connect a 250K ohm control to the MASTER VOL (or CHAN 5/6) and GROUND terminals on the REMOTE/PERCEDENCE terminal strip. Use two-conductor 22 AWG cable to a maximum length of 1,000 ft.

Note

Remote control cables may be subject to RF pickup when located near a signal source. If this should occur, use a 2.5mH RF choke in series with the cables at the REMOTE/ PRECEDENCE terminal strip.

CHANNEL 5 / CHANNEL 6 PRECEDENCE

For precedence over Channel 5 and/or Channel 6, connect a momentary switch between desired terminal (s) and GROUND terminal on the REMOTE/PRECEDENCE terminal strip. Use two-wire No.22 AWG cable to a maximum length of 1,000 ft.

BRIDGING

Two units may be bridged together, using either the BOOSTER output into a 'Y' connector, or using the +18dBm OUTPUT with an 1800-ohm 'T' pad. Refer to figure 2 for connection diagrams.

OPERATION

Power switch. Slide switch controls both ac and dc power.

Meter lamp (VU meter). Illuminates when ac power is applied. Not functional with dc power source.

VU Range switch. Selects meter range for zero indication at either +4 or +10 dBm.

Master volume. Determines overall output level. To set, rotate MASTER knob clockwise to 6 or 7. Rotate individual MIC controls to highest expected levels. Return MASTER control to desired output level as indicated on VU meter.

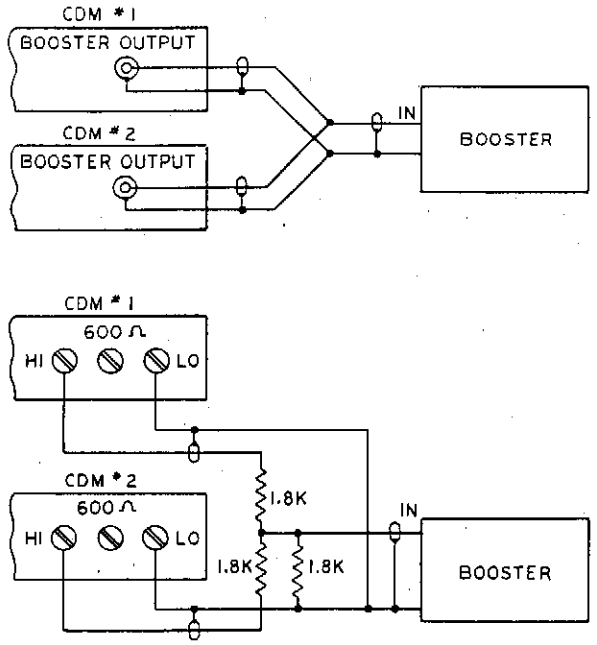


Figure 2 - Bridging options

Bass/treble. Provides up to 12 dB cut or boost at 50 Hz and 15,000 Hz, respectively. Rotate clockwise to increase, counter-clockwise to decrease.

Input (MIC) volume. Sets output level of corresponding input channel.

Attenuator switches (rear panel). Insert or delete attenuator in corresponding input channel.

Mag phono. If the output for a phonograph using a magnetic cartridge is connected to the CDM, an enabling switch on the PC board must be moved to MAG PHONO position. Remove the top cover to locate the switch. Mag phono level will be regulated by the channel 6 control knob.

Caution

To prevent electric shock, do not remove cover. No user-serviceable parts inside. Refer servicing to qualified service personnel. To reduce the risk of fire or electric shock, do not expose this appliance to rain or moisture.

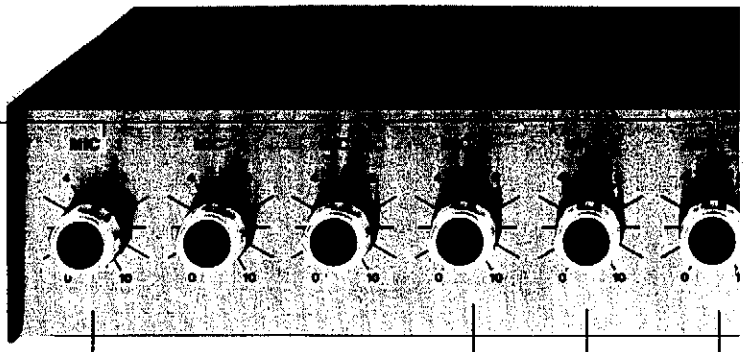
ACCESSORIES

RPK-38 RACK PANEL

The Bogen Model RPK-38 Rack Panel is available to mount the CDM in standard 19-inch sound racks. The RPK-38 is fabricated from 1/16 cold-rolled steel and is finished in grey metalustre. Overall height is 3 1/2 inches (8.89 cm).

BASS/TREBLE●
Provide up to 12dB boost or attenuation.

MIC 1 - MIC 6●
Set output level of corresponding microphone input channels when switched to MIC.

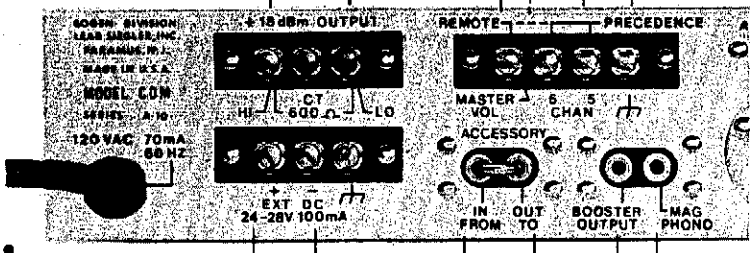


LINE 1 - LINE 4 ●
Set output level of 600-ohm line inputs or high-level instrument mic inputs when switched to LINE.

AUX 5 & 6 ●
Set output level of Hi-Z auxiliary inputs when switched to AUX.

REMOTE VOLUME ●
For remote control of Master volume or Channel 5/6 volume.

600 OHM OUTPUT ●
Transformer-isolated output rated at +18dBm into 600 ohms, balanced or unbalanced. May be used for bridging (see text).

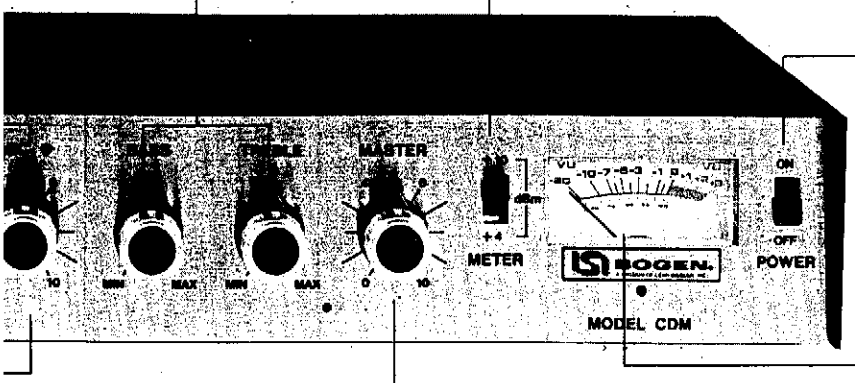


AUXILIARY DC INPUT ●
For external 24-28 VDC power supply.

ACCESSORY INPUT ●
Remove link to connect accessory equipment. Use single-conductor cable terminated in RCA phono plugs.

BOOSTER OUTPUT ●
High impedance, high level output. Ground the LO side of 600-ohm output when used.

Figure 3 - Front and



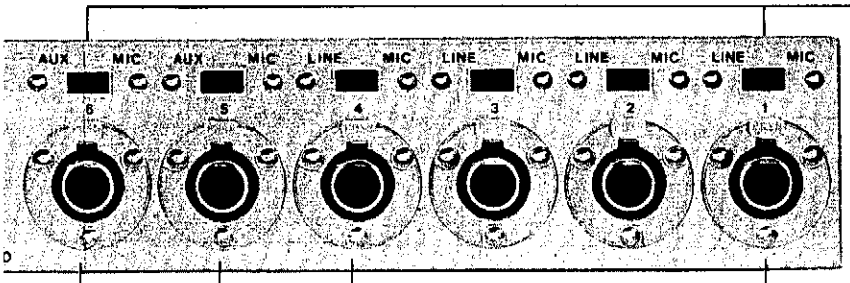
• VU RANGE SWITCH
Sets the zero VU meter indicator at either +4 or +10 dBm.

• POWER SWITCH
Turns unit on and off; controls both AC and DC power sources.

• VU METER
Illuminates when AC power is applied (lamp not functional with DC power source).

• MASTER VOLUME
Controls overall output level.

• PRECEDENCE
Provides precedence over Channel 5 and/or Channel 6. Requires external momentary switch.



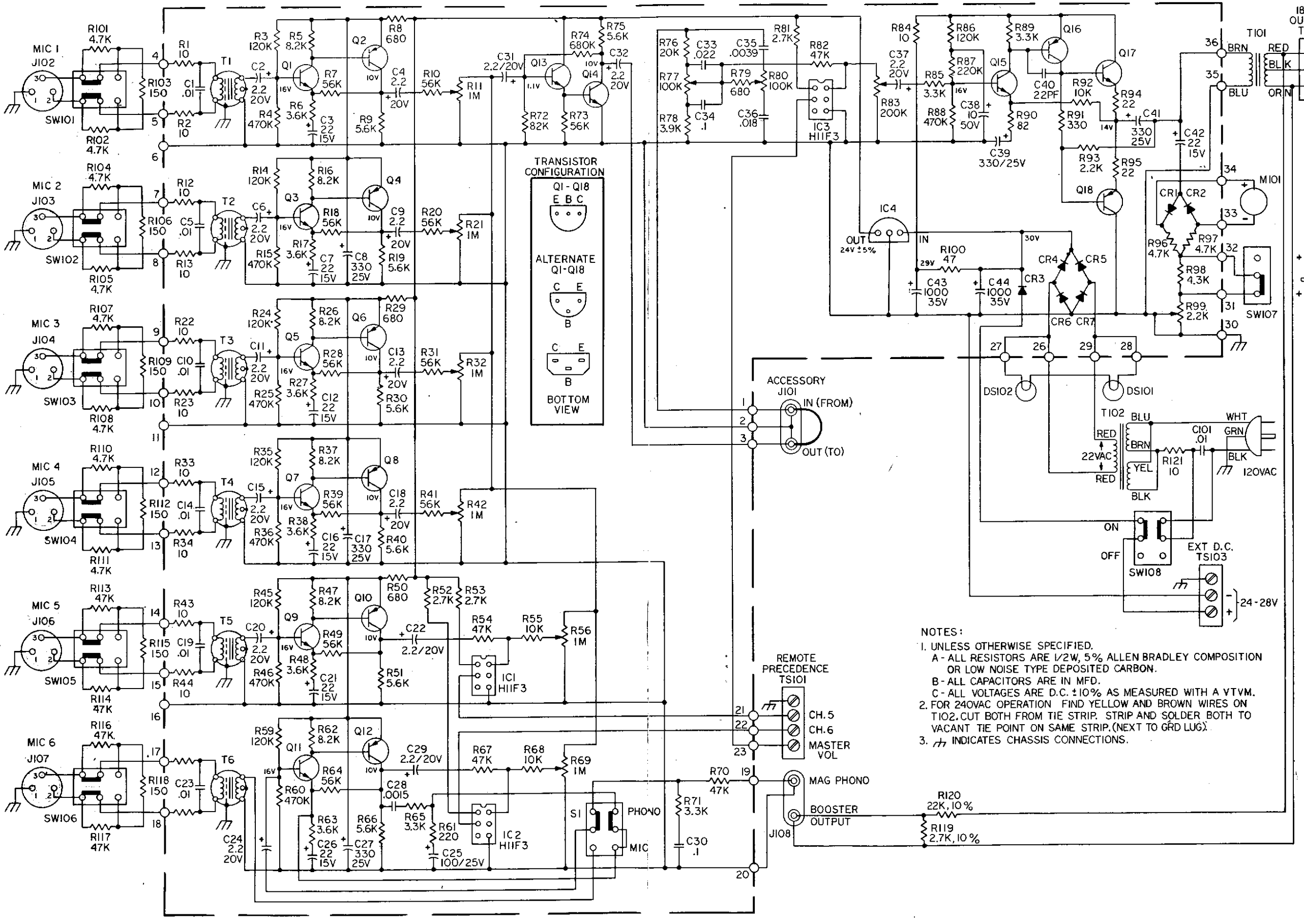
• LINE INPUTS
Accept OdBm, 600-ohm line, or high level instrument mic inputs when switched to LINE position.

• MIC INPUTS
Accept a low-impedance microphone when switched to the MIC position. Quick-connect, 3-pin connectors. Use Cannon XLR-312C male plugs or equivalent.

• AUX INPUTS
Accommodate high-impedance auxiliary inputs when switched to AUX.

• MAG PHONO
Accepts output of phonograph with magnetic cartridge. Regulated by front-panel MIC 6 control (requires internal adjustment—see text).

and rear panels, Model CDM



NOTES:

1. UNLESS OTHERWISE SPECIFIED.
   A - ALL RESISTORS ARE 1/2W, 5% ALLEN BRADLEY COMPOSITION OR LOW NOISE TYPE DEPOSITED CARBON.
   B - ALL CAPACITORS ARE IN MFD.
   C - ALL VOLTAGES ARE D.C. ±10% AS MEASURED WITH A VTVM.
2. FOR 240VAC OPERATION FIND YELLOW AND BROWN WIRES ON T102. CUT BOTH FROM TIE STRIP. STRIP AND SOLDER BOTH TO VACANT TIE POINT ON SAME STRIP. (NEXT TO GRD LUG).
3. ⏚ INDICATES CHASSIS CONNECTIONS.

Figure 4 - Schematic diagram