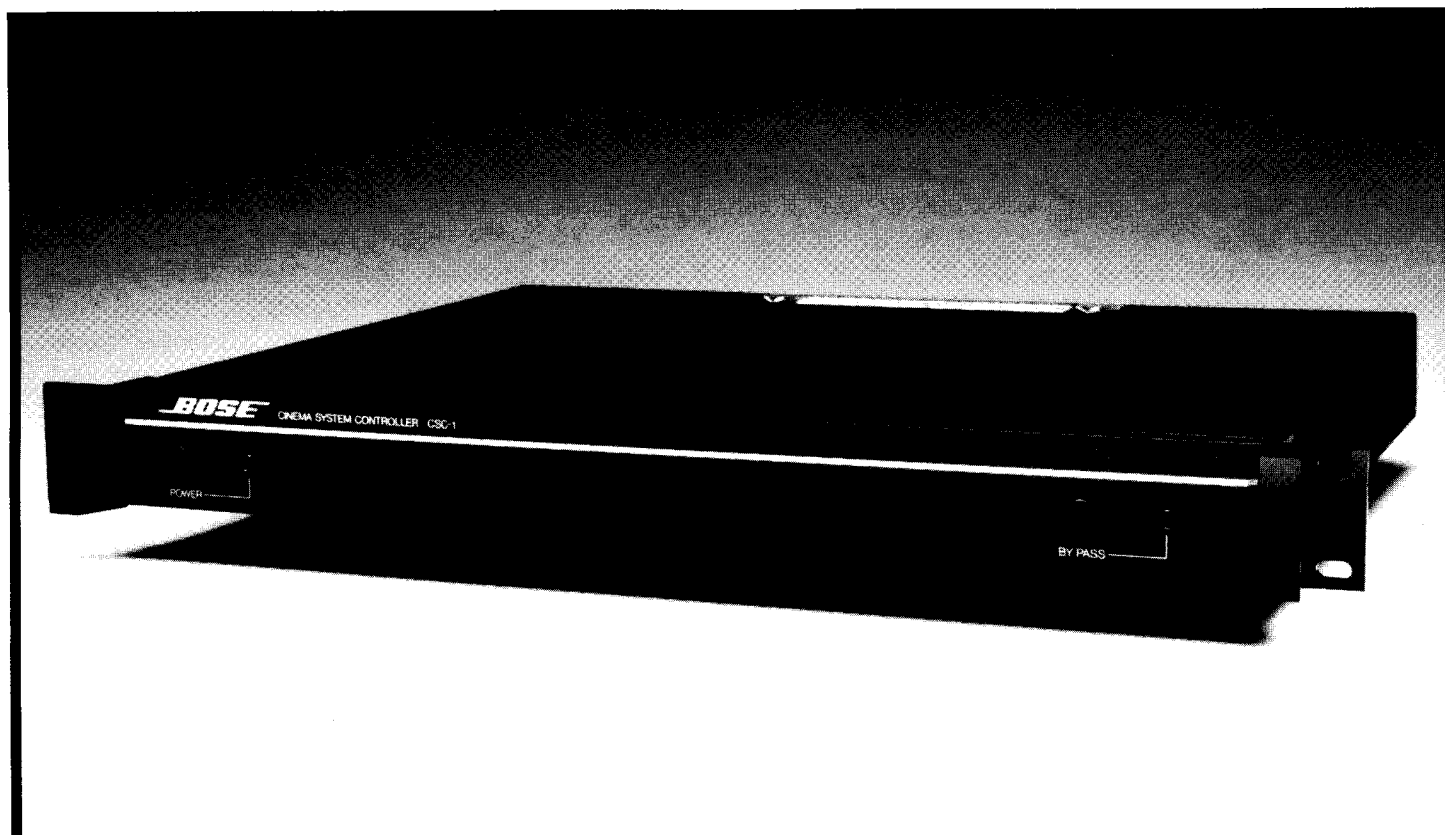


CINEMA SYSTEM CONTROLLER- Model CSC-1



SPECIFICATIONS

Input Impedance

4.0 K Ω , balanced
42 K Ω , Unbalanced

Output Impedance

600 Ω

Environmental

Temperature Range, 0° C to 70° C
Relative Humidity, 20% to 95%

Maximum Output

Into 600 Ω , 12.0 dBV (4.0 VRMS)
Into 10 K Ω , 18.0 dBV (8.0 VRMS)

Channel Separation

≥ 75 dBV

Dimensions

19" W x 1.73" H x 15.75" D
(48.4 cm x 4.4 cm x 40.0 cm)

Dynamic Range

> 113 dB

Bass Channel Gain

Adjustable: ± 6.0 dB

Noise ("A" Weighted)

≤ 20 μ V

Total Harmonic Distortion

≤ 0.06 %

Weight

3.3 lbs (1.5 Kg)

AWCS Compressor

Threshold: 40 V (200 W)
Compression: 15 dB
Attack Time: 2 mS
Release Time: 100 mS

Power Requirements

100 VAC, $\pm 10\%$; 50-60 Hz
120 VAC, $\pm 10\%$; 50-60 Hz
220/240 VAC, $\pm 10\%$; 50-60 Hz

Frequency Bands

Left/Right Channels, 125 Hz -20 KHz
Bass Channel, 25 -125 Hz
Surround Channel, 80 Hz -20 KHz

CINEMA SYSTEM CONTROLLER Model CSC-1

THEORY OF OPERATION

The Bose® Cinema System Controller (CSC-1) is a multi-channel, active equalizer for use in 35 mm Dolby® Stereo movie theaters. The CSC-1 is a part of the Bose Wave System which also includes; the Bose 802™, 102™ and Acoustic Wave® Cannon (AWCS) loudspeakers.

The CSC-1 consists of 5 input channels. The left, right and center channels are high-pass filtered, compensated for screen loss and equalized for reproduction through the 802's. The surround channel is equalized for reproduction through the 102's.

The Bass channel is derived from the summation of the bass, left, right and center channels. This summed signal is band-pass filtered from 28 Hz to 125 Hz and then equalized for reproduction through the Acoustic Wave Cannon System.

Because of variances in speaker placement, number of speakers and acoustic loading between movie houses, the CSC-1 permits matching of the bass channel output to the front channel output by means of a rear panel gain control.

The AWCS driver is protected by a feedback limiting circuit which monitors the amplifier output and turns on when the 40 Volt (200 W) threshold is exceeded.

An emergency, straight-wire bypass switch is provided. The switch will bypass every channel function in the controller and direct the input to the center channel output only.

NOTE: Attempt to recreate the customer's problem and note any discrepancies with the specifications given in the test procedure.

TEST PROCEDURE

Necessary Equipment: Signal (sine wave) Generator, Oscilloscope, Distortion Analyzer w/an "A" weighted filter, and a Voltmeter.

Note: If the distortion analyzer does not have an "A" weighted filter an external filter is needed.

Gain Test:

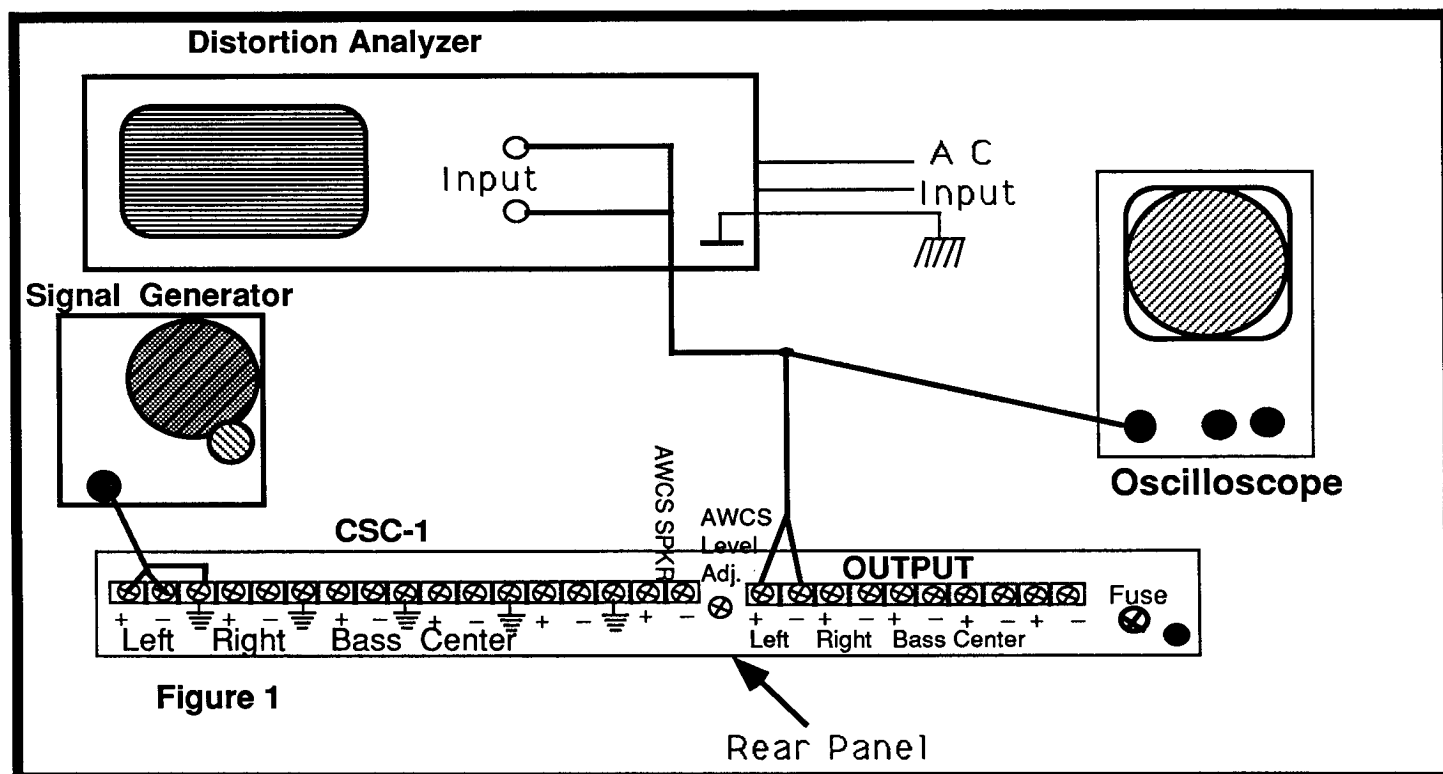
1. Connect the CSC-1 as in **Fig 1**.
2. Adjust the frequency of the signal generator to **750 Hz**.
3. Adjust the output level of the signal generator to **0.775 VRMS**.
4. Measure the gain at the left channel output.
Output: 0.8 VRMS \pm 0.2 VRMS.
5. Repeat steps (1 to 4) for the right and center channels.
6. Connect the signal generator to the bass channel input.
7. Adjust the frequency of the signal generator to **30 Hz**.
8. Adjust the output level of the signal generator to **100 mV**.
9. Turn the AWCS level adjust fully clockwise.
10. Measure the gain at the bass channel output.

Output: \geq 750 mV.

CINEMA SYSTEM CONTROLLER, Model CSC-1

11. Connect the signal generator to surround channel.
12. Adjust the frequency of the signal generator to 750 Hz.
13. Adjust the output level of the signal generator to 0.775 VRMS.
14. Measure the gain at the surround channel output.

Output: 0.8 VRMS ± 0.2 V



Frequency Response Test:

1. Connect the CSC-1 as in Fig 1.
2. Adjust the frequency of the signal generator to 750 Hz.
3. Adjust the signal generator's output level until the left channel output measures 0.775 VRMS.
This is 0 dB reference Level.
4. Refer to Table 1 and make the appropriate signal generator adjustments.
Verify the response with the Table below.

FREQUENCY

OUTPUT LEVEL

750 Hz	0 dB
100 Hz	-3.0 dB ± 1.5 dB
200 Hz	2.25 dB ± 1.5 dB
10.0 KHz	18.5 dB ± 2.0 dB
15.0 KHz	20.8 dB ± 2.0 dB
20.0 KHz	19.0 dB ± 3.0 dB

5. Repeat the previous steps in this test for right and center channels.
6. Verify the response with the Table above.
7. Connect the signal generator to bass channel input.

CINEMA SYSTEM CONTROLLER Model CSC-1

8. Turn the AWCS level adjust fully clockwise.
9. Connect the signal generator to the bass channel input.
10. Adjust the frequency of the signal generator to **60 Hz**.
11. Adjust the signal generator's output level until the left channel output measures **0.775 VRMS**.
This is 0 dB reference Level.
12. Refer to the Table below and make the appropriate signal generator adjustments.
13. Verify the response with the Table immediately below.

FREQUENCY

60 Hz
30 Hz
120 Hz

OUTPUT LEVEL

0 dB
5.5 dB ± 2.0 dB
-4.0 dB ± 2.0 dB

14. Connect the signal generator to the surround channel input.
15. Adjust the frequency of the signal generator to **1.0 KHz**.
16. Adjust the signal generator's output level until the surround channel output measures **0.775 VRMS**.
This is 0 dB reference Level.
17. Refer to the Table below and make the appropriate signal generator adjustments.
18. Verify the response with the Table below.

FREQUENCY

1.0 KHz
85 Hz
12 KHz

OUTPUT LEVEL

0 dB
14.5 dB ± 2.0 dB
15.5 dB ± 2.0 dB

Distortion Test:

1. Connect the CSC-1 as in **Figure 1**.
2. Adjust the frequency of the signal generator to **1.0 KHz**.
3. Adjust the signal generator's output level until the left channel output measures **1.0 VRMS**.
4. Measure the distortion at left channel output.
Output: $\leq 0.06\%$
5. Repeat steps (1 to 3) for right and center channels.
6. Measure the distortion at right and center channel outputs.
Output: $\leq 0.06\%$
7. Connect the signal generator to bass channel input.
8. Adjust the frequency of the signal generator to **30 Hz**.
9. Adjust the signal generator's output level until the bass channel output measures **1.0 VRMS**.
10. Measure the distortion at bass channel output.
Output: $\leq 0.06\%$
11. Repeat steps (1 to 4) for surround channel.
12. Measure the distortion at surround channel output.
Output: $\leq 0.06\%$

CINEMA SYSTEM CONTROLLER, Model CSC-1

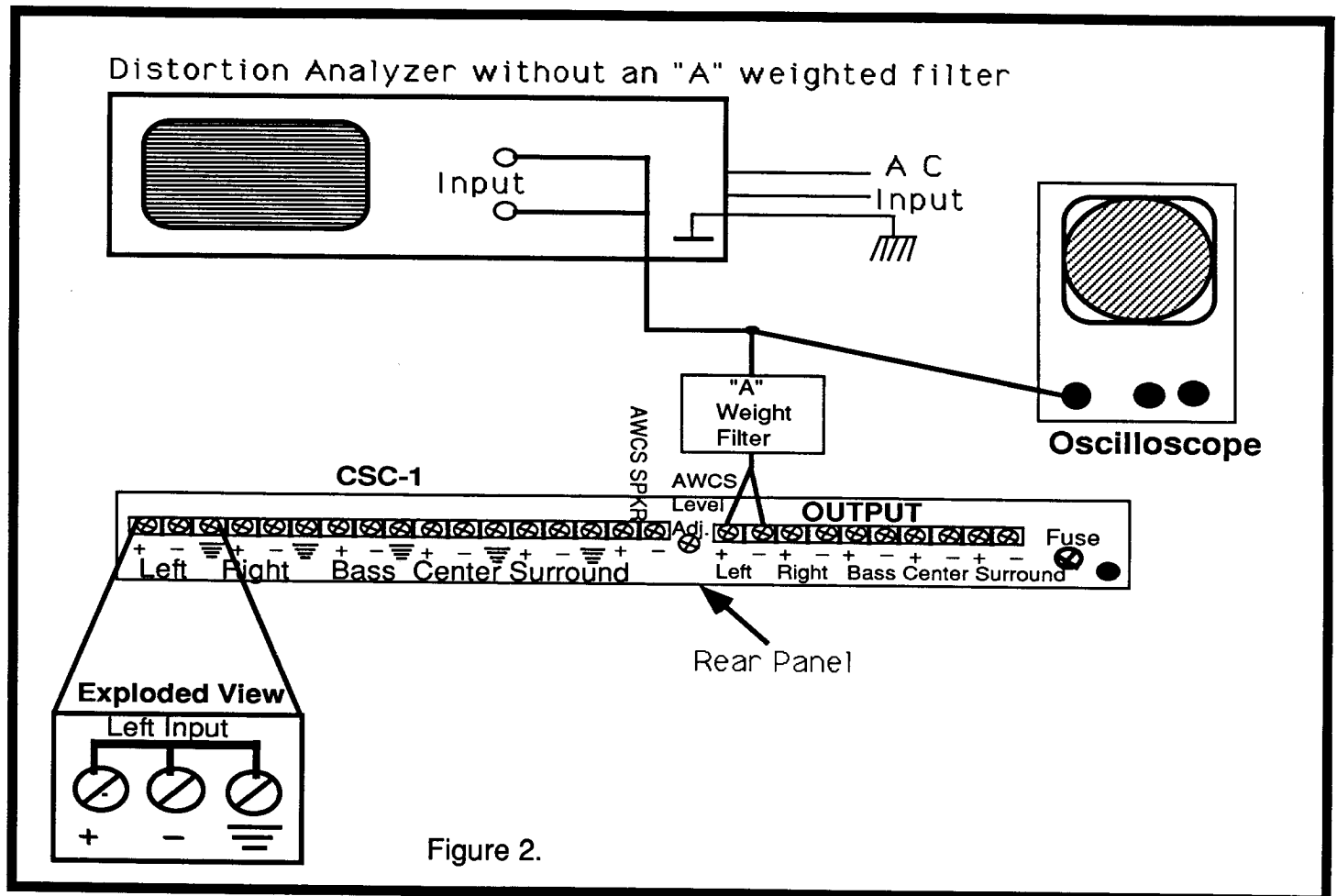


Figure 2.

"A" Weighted Noise Test:

1. Connect the CSC-1 as seen in Figure 2.
2. Short the positive (+) and negative (-) inputs to ground as in Figure 2 (exploded view).
3. Measure the noise at left channel output.

Output: $\leq 20 \mu\text{V}$

4. Repeat steps (1 to 2) for the right, center, and surround channels.
5. Verify the above noise specification.

AWCS Protection Circuit Test:

1. Connect the CSC-1 as seen in Figure 3.

NOTE: Power Amplifier must be able to deliver 400 watts into an 8Ω resistive load.

2. Adjust the signal generator to **30 Hz**.
3. Adjust the signal generator's output level until the power output measures **22.5 Volts**.
4. NOTE the input level to the CSC-1 and increase this level by **20 dB**.
5. Measure the signal level at the amplifier's output.

Output: $\leq 50 \text{ Volts}$

CINEMA SYSTEM CONTROLLER, Model CSC-1

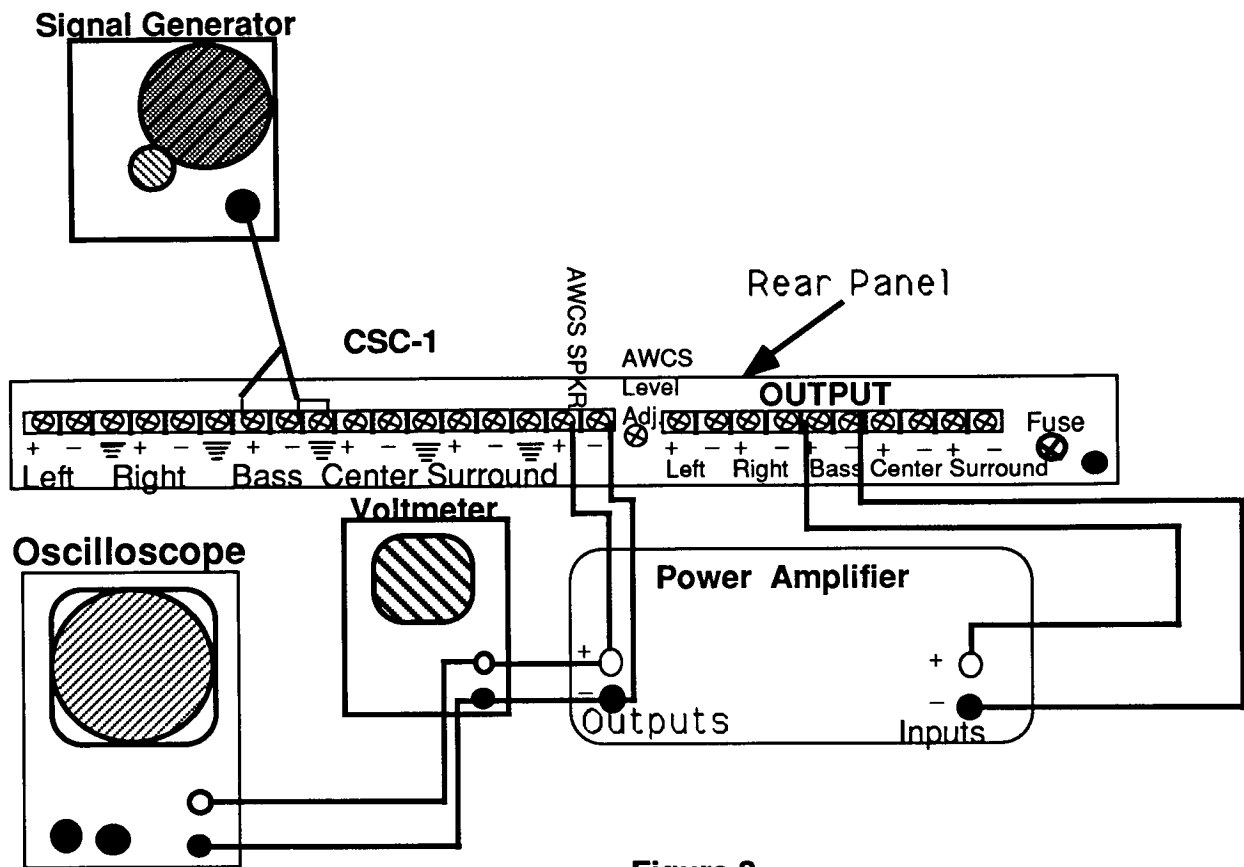


Figure 3.

COMPONENT TROUBLESHOOTING

1. Remove the unit cover [refer to Cover Removal in the Disassembly Procedure], verify that all internal screws are secured and the wiring is intact and undamaged.
2. Check the PC boards for any evidence of charred components.
3. Pin-pointing frequency response problems may be made easier by measuring the output of each EQ. stage and comparing it with the appropriate response given in Figure 4.
4. Check the power supplies. ± 15.0 volts should be evident at the output of the power supplies and at all the op. amps.
5. Check for a "virtual ground" (i.e. 0 volts) at the op. amp. inputs. Also check for DC offset and excessive noise at the op. amp. outputs.
6. Op. amp. thermal problems may be easily checked by carefully touching each of the op. amps to verify proper operating temperature.

CINEMA SYSTEM CONTROLLER Model CSC-1

DISASSEMBLY PROCEDURE

COVER REMOVAL:

Locate and remove the four(4) screws(002D) securing the top cover(001D) to the chassis (001G) using a Phillips #2 screwdriver.

REAR PANEL REMOVAL:

Locate and remove the four(4) screws(901G) securing the rear panel (900G) to the chassis (001G) using a Phillips #1 screwdriver.

RACK HANDLE REMOVAL:

Locate and remove the four (4) screws(011G) securing both handle racks(010B) to the front panel(020B) using a Phillips #1 screwdriver.

FRONT PANEL REMOVAL:

Locate and remove the six (6) screws[3 (005G) & 3 (006G)] securing the front panel(002B) to the front bracket(002G) and the chassis(001G) using a Phillips #1 screwdriver.

PCB REMOVAL:

Note: The PCBs interface with each other via a connective cord and the headers on each connective cord are soldered to the PCBs.

General: De-solder the terminal pins to remove the headers from the PCBs.

1. Locate and remove the six (6) screws(002G) securing the PCB(**PE00**) to the chassis(001G) using a Phillips #1 screwdriver.

Note: PCBs(**PP00**, **PV50**, **PW50** & **PW00**) are secured to terminal strips(**JV01** & **JV03**).

2. Locate and remove the two (2) screws(903G) securing the **terminal strip** (to the appropriate PCB) to the rear panel(900G) using a Phillips #1 screwdriver.
Carefully remove the appropriate **terminal strip** from the rear panel(900G).

3. Locate and remove the screw(904G) securing PCB(**PH50**) to the rear panel(900G) using a Phillips #1 screwdriver.

4. Locate and remove the two (2) screws(907G) securing PCB(**PW60**) to the rear panel(900G) using a Phillips #1 screwdriver.

Note: The PCBs(**P850** & **P860**) are both secured to the heatsink(040G) and the chassis(001G).

5. Locate and remove the screw(041G) securing the appropriate **voltage regulator** to the chassis (001G) using a Phillips #1 screwdriver.

6. Locate and remove the two (2) screws(026G) securing PCB(**PP50**) to the chassis(001G) using a Phillips #1 screwdriver.

7. Locate and remove the screw(009G) securing the PCB(**P870**) using a Phillips #1 screwdriver.

8. Locate and remove the two (2) screws(009G) securing the power switch(**PP00**) using a Phillips #1 screwdriver.

CINEMA SYSTEM CONTROLLER. Model CSC-1

TRANSFORMER REMOVAL:

Locate and remove the four (4) screws(009G) securing the **voltage regulator**(L001) using a Phillips #1 screwdriver.

REASSEMBLY PROCEDURE

COVER REPLACEMENT:

Align the top cover(001D) to the chassis(001G) and secure with the four (4) screws using a Phillips #2 screwdriver.

REAR PANEL REPLACEMENT:

Align the rear panel(900G) to the chassis(001G) and secure with the four (4) screws using a Phillips #1 screwdriver.

RACK HANDLE REPLACEMENT:

Align the appropriate rack handle(0101B) to the front bracket(002G) and secure with the four (4) screws using a Phillips #1 screwdriver.

FRONT PANEL REPLACEMENT:

Align the front panel(002B) to the chassis(001B) and front bracket(002G), then secure with the six (6) screws using a Phillips #1 screwdriver.

PCBs REPLACEMENT:

Note: The headers on each connective cord must be soldered to the PCBs.

General: Solder the terminal pins to the replacement Pcb.

1. Align PCB(**PE00**) to the chassis(001G) and secure the four screws using a Phillips #2 screwdriver.

Note: PCBs(PV50, & PW00) are secure to terminal strips (JV01 & JV03).

2. Align the **appropriate terminal strip** to the rear panel(900G) and secure the four screws using a Phillips #1 screwdriver.

3. Align PCB(**PH50**) to the rear panel(900G) and secure the screw using a Phillips #2 screwdriver.

4. Align PCB(**PW60**) to the rear panel(900G) and secure the two (2) screws using a Phillips #2 screwdriver.

Note: The PCBs(**P850 & P860**) must be secured to the heatsink(040G) and the chassis.

5. Align the **appropriate voltage regulator** to the chassis(001G) and secure the screw using a Phillips #1 screwdriver.

6. Align PCB(**PP50**) to the chassis(001G) and secure the two (2) screws using a Phillips #1 screwdriver.

7. Align PCB(**P870**) to chassis(001G) and secure the screw using a Phillips #1 screwdriver.

8. Align the power switch(**PP00**) to chassis(001G) and secure the two (2)screws using a Phillips #1 screwdriver.

CINEMA SYSTEM CONTROLLER. Model CSC-1

TRANSFORMER REPLACEMENT:

Align the power transformer(L001) to chassis(001G) and secure the four (4)screws using a Phillips #1 screwdriver.

PARTS LIST

NOTE: PLEASE REFER TO COMPONENT LOCATION FOR ASSISTANCE IN FINDING ELECTRONIC COMPONENTS.

Part Number	Description	Qty	Ref. Desig.
141607	Front Panel		002B
141608	Knob, Power		003B
141609	Bushing		004B
141610	Handle, Rack		010B
141611	B.H. Tapped Screw	B3 x 10	011B
141612	Lid, Top Cover		001D
141613	B.T. Screw	B4 x 8	002D
141614	Chassis, Main		001G
141615	Bracket, Front		002G
141616	F.H. Taptite Screw	F3 x 6	006G
141617	Clamper		008G
141618	P.H. Taptite Screw	P3 x 6	012G
141619	Clamper		013G
141620	H.Head Bolt, S.F	H4 x 8	020G
141621	B.H.M. Screw	B3 x 6	5 005G,09G,25G,26G, 904G
141622	Lug		030G
139454	B.H. Tapped Screw	B4 x 6	031G
141623	HeatSink		040G
141624	B.H.M Screw	B3 x 12	041G
141625	Hexagon Nut		042G
141626	Buffer		050G
141627	Rear Panel [U]		900G
141628	Rear Panel [N]		900G
139447	B.H. Tapped Screw	B3 x 8	901G
141629	Bushing, AC Power Cord		902G
141630	B.H. Tapped Screw	B4 x 15	903G
141631	F.H Taptite Screw	F3 x 8	905G
141633	Label, Caution [U]		001R
141634	Label, Caution [N]		002R
141635	Label, Caution [N]		003R
139486	Label [N]		006R
141636	Label [U]		007R
141637	Indicator, Serial No. [U]		009R
141638	Indicator, Serial No. [N]		009R
141639	Label		010R
141646	Packing Case		001S
141647	Cushion		002S
141648	Reinforcing		004S
141649	Polyethylene Bag		005S
141650	Polyethylene Sheet		006S

<u>Part Number</u>	<u>Description</u>	<u>Qty</u>	<u>Ref. Desig.</u>
141651	Leg		007S
141652	Polyethylene Bag	2	008S,011S
141653	P.H.M. Screw, inch		010S
141654	B.H.M. Screw	B6 x 12	
141655	Label, Bar Cord		011R
141656	Indicator, Serial No.		012R
141640 Δ	Fuse, 0.5A/250 V [U]		F001
141641 Δ	Fuse, 315 mA/250 V [N]		F001
141642 Δ	Jack, Fuse Holder [U]		J001
141643 Δ	Jack, Fuse Holder [N]		J001
141644 Δ	Power Transformer [U]		L001
141645 Δ	Power Transformer [N]		L001
127395 Δ	A.C. Power Cord [U]		W001
127394 Δ	A.C. Power Cord [N]		W001
142052	Terminal, 17P		JV01
142053	Terminal, 10P		JW03
139163	Resistor, 220 Ω , $\pm 5\%$	2	RW02,07
139164	Resistor, 1.0 K Ω , $\pm 5\%$, 1/2 W	2	RN01,02
139170	Resistor, 332.0 K Ω	3	RG42,RH42,RJ42
139176	Resistor, 10.0 K Ω	23	RG12,20,RH17,19,20,23,24,27, 28,31,35,37,RJ08,09,14,RK12, 15-18,R801-3
139177	Resistor, 4.7 K Ω , $\pm 5\%$		RW05
139184	Resistor, 61.9 Ω		RH16
139185	Resistor, 22.0 K Ω , $\pm 5\%$	3	RG33,RH30,RJ20
139347	Resistor, 1.0 k Ω	24	RG01-04,10,11,16,18,43,44, RH01-04,13,43,44, RJ01-04,43, 44,RW08
139348	Resistor, 86.6 K Ω		RG09
139372	Resistor, 511 Ω	3	RG32,RH29,RJ19
139374 Δ	Resistor, 10 Ω , $\pm 5\%$	14	RG34,35,43,44, RH01-04, 40,41, RJ21,22, RK19,20
141453	Resistor, 12.1 K Ω		RG07
141455	Resistor, 13.3 K Ω	5	RG19,RH11,12,25,26
141465	Resistor, 56.2 K Ω	6	RH07-10,RH21,22
141713	Resistor, 46.4 k Ω , $\pm 5\%$	3	RG05,RH05,RJ05
141714	Resistor, 1.91 k Ω	3	RG06,RH06,RJ06
141715	Resistor, 237 K Ω		RG08
141716	Resistor, 20.5 K Ω	2	RG13,RK11
141717	Resistor, 2.74 K Ω		RG14
141718	Resistor, 23.7 K Ω	2	RG15,31
141719	Resistor, 4.64 K Ω	8	RG17,RH18,32,RJ10-12,15,RK14
141720	Resistor, 6.81 K Ω		RG21
141721	Resistor, 17.8 K Ω	2	RG22,24
141722	Resistor, 162.0 K Ω		RG23
141723	Resistor, 22.6 K Ω	3	RG25,RJ07,13
141724	Resistor, 2.05 K Ω	2	RG26,28
141725	Resistor, 464 Ω		RG27
141726	Resistor, 8.25 K Ω	3	RG29,RJ16,17
141727	Resistor, 133.0 K Ω		RG30
141728	Resistor, 154 K Ω		RH14
141847	Resistor, 121 K Ω		RH15
141877	Resistor, 82.5 K Ω		RJ18
141878	Resistor, 100 K Ω		RK13
141848	Resistor, 220 K Ω , $\pm 5\%$		RW01
141849	Resistor, 33 Ω , $\pm 5\%$		RW04
141854	Resistor, Variable 20 K Ω		RH51
141879 Δ	Resistor, 100 Ω , $\pm 5\%$, 1/6 W		RN04

<u>Part Number</u>	<u>Description</u>	<u>Qty</u>	<u>Ref. Desig.</u>
141862 ▲	Resistor, 35.7 Ω , 1/6W		RN03
142048	Resistor, 680 Ω , $\pm 5\%$		RH33
142049	Resistor, 330 Ω , $\pm 5\%$		RH36
142054 ▲	Resistor, 100 Ω , $\pm 5\%$, 1W		RW06
139158 ▲	Capacitor, Ceramic, 0.01 μ F/400V	3	CP01,51,52
139417	Capacitor, Ceramic, 220 pF, $\pm 10\%$	10	CE25,26,CG25,26,CH25,26, CF25,26,CJ25,26 CN01
141861	Capacitor, Elect. 10 μ F/50 V		DE01-04,DF01-04, DG01-04, DH01-04,DJ01-04
127376	Diode, 1SS133	20	DK05
141880 ▲	Zener, Diode, MA1160M		DK51
141886	L.E.D., GL-5PR5		DW01,D801-04,DN01-04
132660 ▲	Diode, DSF10C	9	QE01-03,QF01-03,QG01-03, QH01-03,QJ01,02
141851	IC, NJM5532SD	14	QH04
127374	IC, CA3080E		QK02
141881	IC, NJM4560SD	2	Q851
141870	IC, NJM79M15FA		Q861
141868	IC, NJM78M15FA		D871
141872	L.E.D. GL-5PG5		QK03
141882	Transistor, 2SC536SP		QW01
136316 ▲	Transistor, 2SA1246		QW02
136317 ▲	Transistor, 2SC3114		LW01-03
141852	Relay, SZ-2104	3	SK01
141883	Push Switch, By Pass		J804,JP55
139149	Terminal, Earth	2	PH50
141853	P.W. Board, Bass Level Adj.		JH52
141855	Terminal, GND		WH51,WF01,WN01,W851, W861
141856	Connective Cord, 3P	5	PK50
141884	P.W. Board, BY Pass Ind.		WK51,WE01
141885	Connective Cord, 3P	2	PP00
141857	P.W. Board, Power Switch		SP01
141858	Push Switch, Power		PP50
141859	P.W. Board, Primary Connection		PV00
141887	P.W. Board, Input Terminal		WG01
141888	Connective Cord, 2P		WH01
141889	Connective Cord, 3P		PV50
141860	P.W. Board Input, Input Terminal/Comp		QN01
142055	Photo Unit, PC817		WJ01
142051	Connective Cord, 3P		PW00
141864	P.W. Board, Output Terminal		WW01
141866	Connective Cord, 6P		PW50
141890	P.W. Board, Output Terminal		WW02
141891	Connective Cord, 4P		P850
141867	P.W. Board, Positive Supply		Q860
141869	P.W. Board, Negative Supply		P870
141871	P.W. Board, Power Ind.		W871
141873	Connective Cord, 3P		

QJ01, P #8

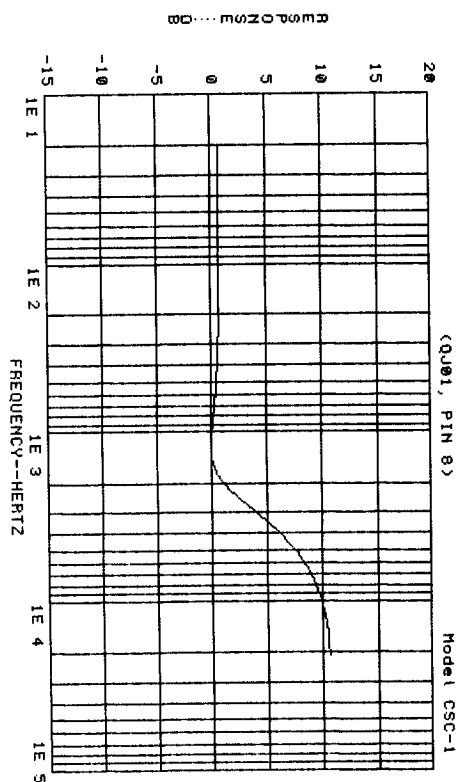


Figure 4a

QJ02, P #2

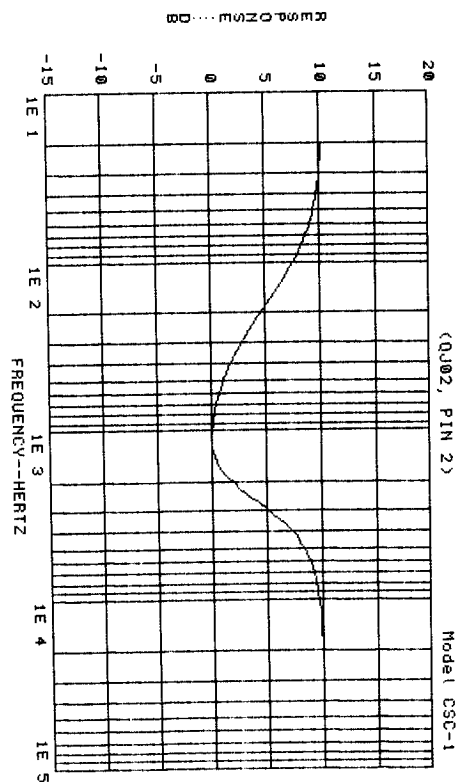
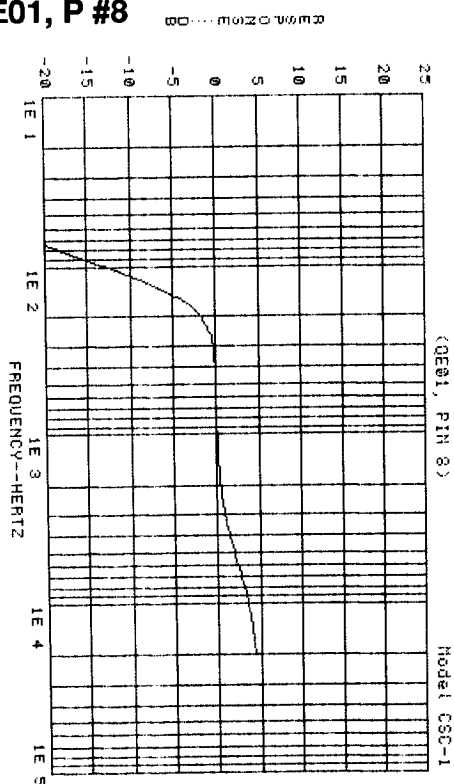


Figure 4b

QE01, P #8



QE02, P #2

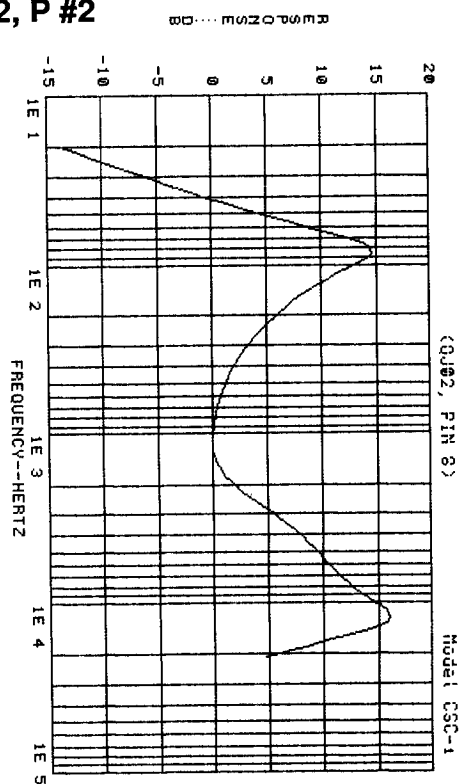


Figure 4d

Figure 4c

QJ02, P #8

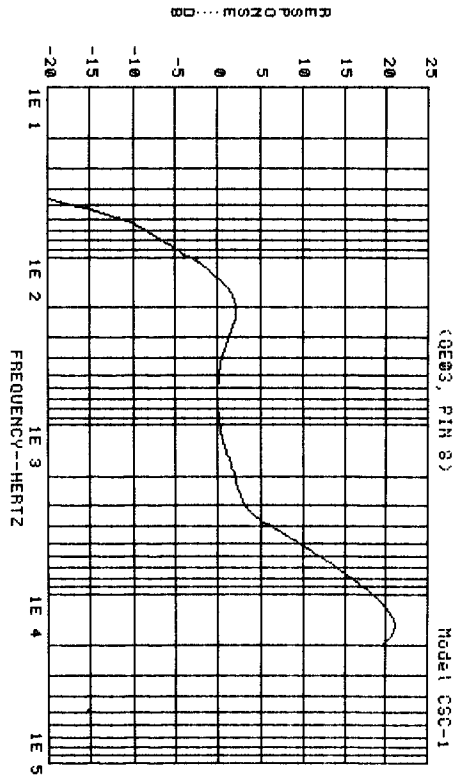


Figure 4e

QE02, P #8

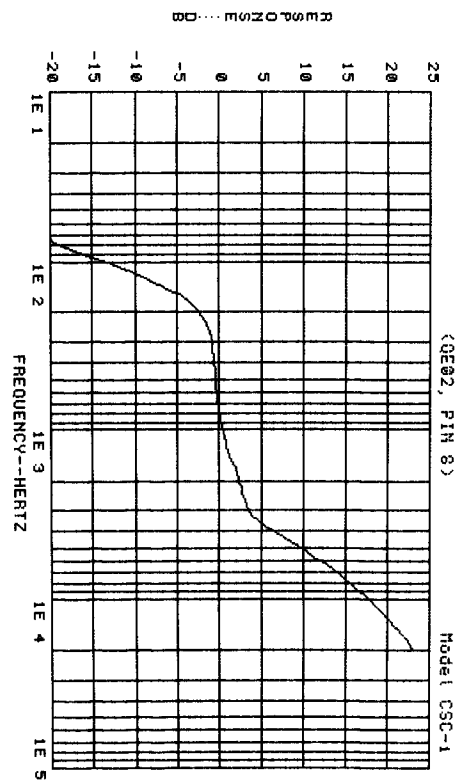


Figure 4f

QE03, P #2

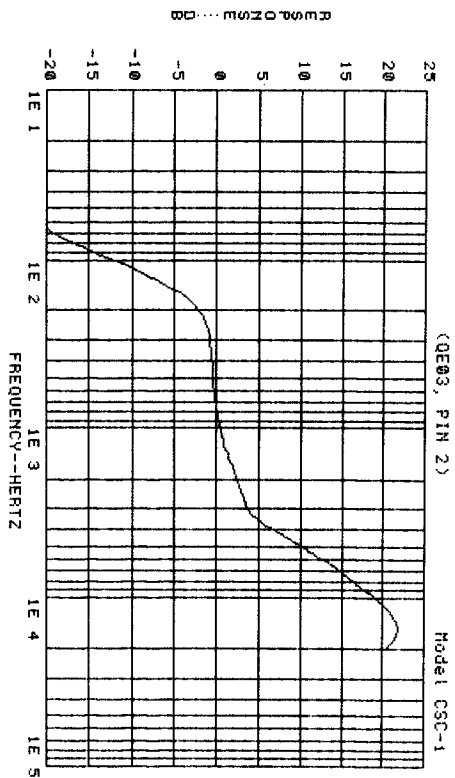


Figure 4g

QE02, P #2

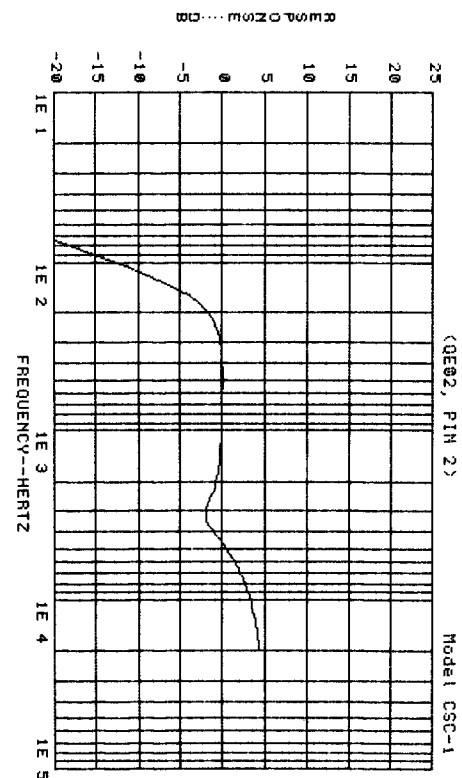
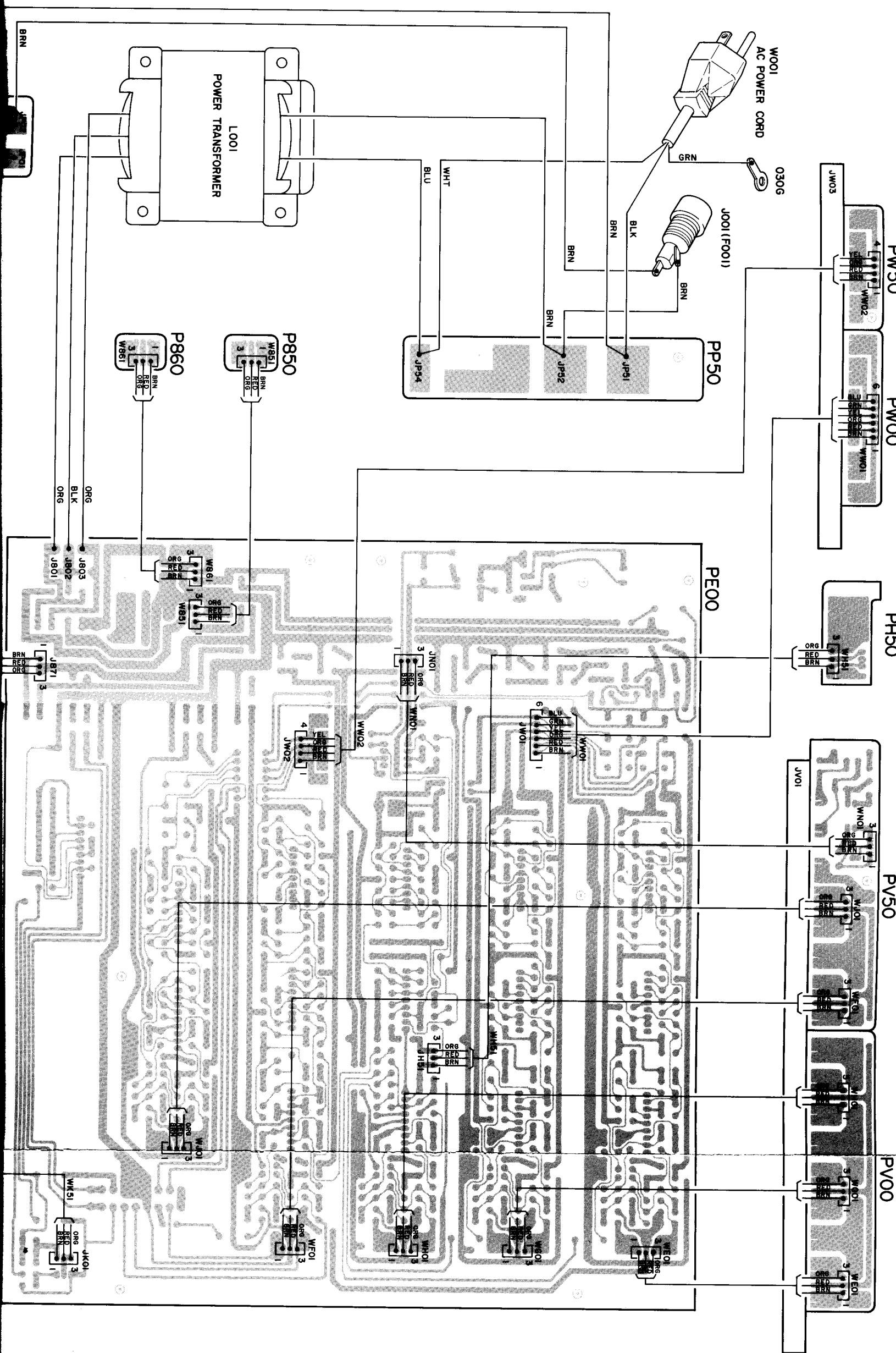


Figure 4h

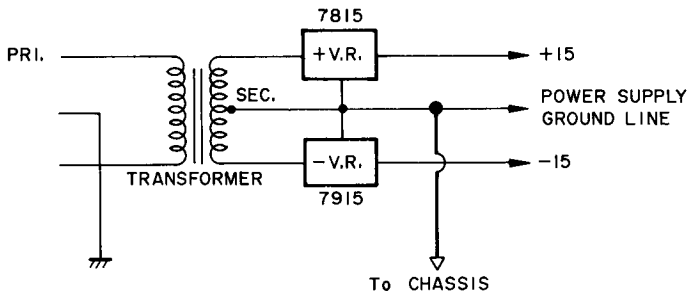
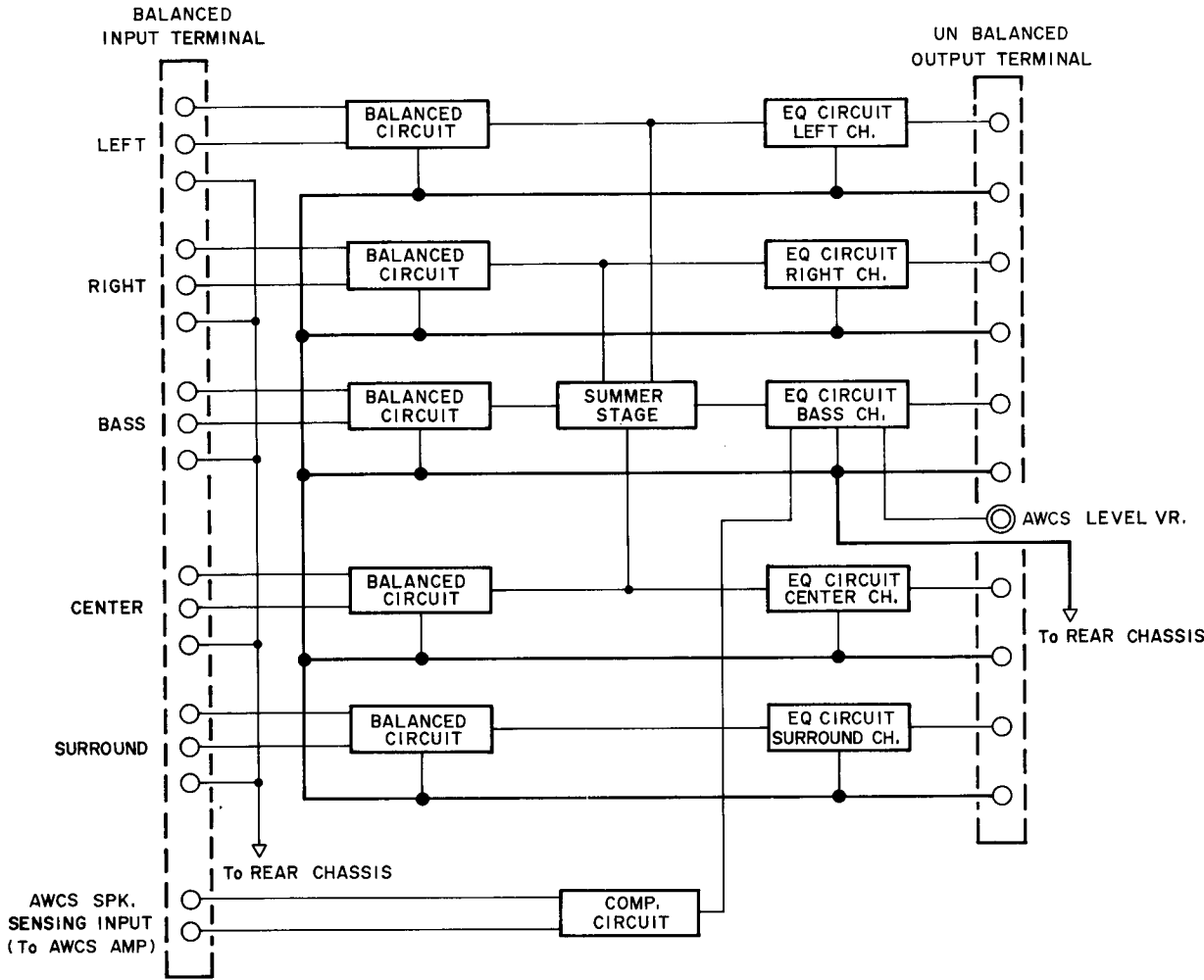
This diagram illustrates the exploded view of a mechanical assembly, showing the relationship between various components. The parts are labeled with alphanumeric codes, and arrows indicate the assembly sequence and direction.

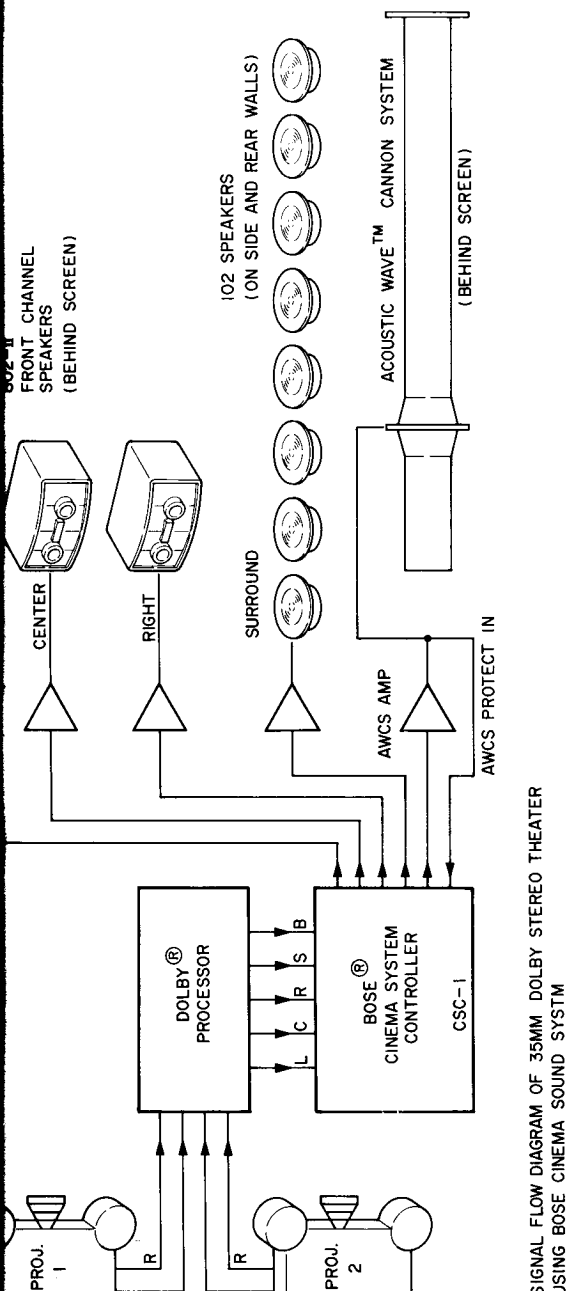
Key Components and Labels:

- Top Panel:** 001R, 006R, 002D, 003R, 001D, 002G, 003G, 004G, 005G, 006G, 007G, 008G, 009G, 010G, 011G, 012G, 013G, 014G, 015G, 016G, 017G, 018G, 019G, 020G, 021G, 022G, 023G, 024G, 025G, 026G, 027G, 028G, 029G, 030G, 031G, 032G, 033G, 034G, 035G, 036G, 037G, 038G, 039G, 040G, 041G, 042G, 043G, 044G, 045G, 046G, 047G, 048G, 049G, 050G, 051G, 052G, 053G, 054G, 055G, 056G, 057G, 058G, 059G, 060G, 061G, 062G, 063G, 064G, 065G, 066G, 067G, 068G, 069G, 070G, 071G, 072G, 073G, 074G, 075G, 076G, 077G, 078G, 079G, 080G, 081G, 082G, 083G, 084G, 085G, 086G, 087G, 088G, 089G, 090G, 091G, 092G, 093G, 094G, 095G, 096G, 097G, 098G, 099G, 100G, 101G, 102G, 103G, 104G, 105G, 106G, 107G, 108G, 109G, 110G, 111G, 112G, 113G, 114G, 115G, 116G, 117G, 118G, 119G, 120G, 121G, 122G, 123G, 124G, 125G, 126G, 127G, 128G, 129G, 130G, 131G, 132G, 133G, 134G, 135G, 136G, 137G, 138G, 139G, 140G, 141G, 142G, 143G, 144G, 145G, 146G, 147G, 148G, 149G, 150G, 151G, 152G, 153G, 154G, 155G, 156G, 157G, 158G, 159G, 160G, 161G, 162G, 163G, 164G, 165G, 166G, 167G, 168G, 169G, 170G, 171G, 172G, 173G, 174G, 175G, 176G, 177G, 178G, 179G, 180G, 181G, 182G, 183G, 184G, 185G, 186G, 187G, 188G, 189G, 190G, 191G, 192G, 193G, 194G, 195G, 196G, 197G, 198G, 199G, 200G, 201G, 202G, 203G, 204G, 205G, 206G, 207G, 208G, 209G, 210G, 211G, 212G, 213G, 214G, 215G, 216G, 217G, 218G, 219G, 220G, 221G, 222G, 223G, 224G, 225G, 226G, 227G, 228G, 229G, 230G, 231G, 232G, 233G, 234G, 235G, 236G, 237G, 238G, 239G, 240G, 241G, 242G, 243G, 244G, 245G, 246G, 247G, 248G, 249G, 250G, 251G, 252G, 253G, 254G, 255G, 256G, 257G, 258G, 259G, 260G, 261G, 262G, 263G, 264G, 265G, 266G, 267G, 268G, 269G, 270G, 271G, 272G, 273G, 274G, 275G, 276G, 277G, 278G, 279G, 280G, 281G, 282G, 283G, 284G, 285G, 286G, 287G, 288G, 289G, 290G, 291G, 292G, 293G, 294G, 295G, 296G, 297G, 298G, 299G, 300G, 301G, 302G, 303G, 304G, 305G, 306G, 307G, 308G, 309G, 310G, 311G, 312G, 313G, 314G, 315G, 316G, 317G, 318G, 319G, 320G, 321G, 322G, 323G, 324G, 325G, 326G, 327G, 328G, 329G, 330G, 331G, 332G, 333G, 334G, 335G, 336G, 337G, 338G, 339G, 340G, 341G, 342G, 343G, 344G, 345G, 346G, 347G, 348G, 349G, 350G, 351G, 352G, 353G, 354G, 355G, 356G, 357G, 358G, 359G, 360G, 361G, 362G, 363G, 364G, 365G, 366G, 367G, 368G, 369G, 370G, 371G, 372G, 373G, 374G, 375G, 376G, 377G, 378G, 379G, 380G, 381G, 382G, 383G, 384G, 385G, 386G, 387G, 388G, 389G, 390G, 391G, 392G, 393G, 394G, 395G, 396G, 397G, 398G, 399G, 400G, 401G, 402G, 403G, 404G, 405G, 406G, 407G, 408G, 409G, 410G, 411G, 412G, 413G, 414G, 415G, 416G, 417G, 418G, 419G, 420G, 421G, 422G, 423G, 424G, 425G, 426G, 427G, 428G, 429G, 430G, 431G, 432G, 433G, 434G, 435G, 436G, 437G, 438G, 439G, 440G, 441G, 442G, 443G, 444G, 445G, 446G, 447G, 448G, 449G, 450G, 451G, 452G, 453G, 454G, 455G, 456G, 457G, 458G, 459G, 460G, 461G, 462G, 463G, 464G, 465G, 466G, 467G, 468G, 469G, 470G, 471G, 472G, 473G, 474G, 475G, 476G, 477G, 478G, 479G, 480G, 481G, 482G, 483G, 484G, 485G, 486G, 487G, 488G, 489G, 490G, 491G, 492G, 493G, 494G, 495G, 496G, 497G, 498G, 499G, 500G, 501G, 502G, 503G, 504G, 505G, 506G, 507G, 508G, 509G, 510G, 511G, 512G, 513G, 514G, 515G, 516G, 517G, 518G, 519G, 520G, 521G, 522G, 523G, 524G, 525G, 526G, 527G, 528G, 529G, 530G, 531G, 532G, 533G, 534G, 535G, 536G, 537G, 538G, 539G, 540G, 541G, 542G, 543G, 544G, 545G, 546G, 547G, 548G, 549G, 550G, 551G, 552G, 553G, 554G, 555G, 556G, 557G, 558G, 559G, 560G, 561G, 562G, 563G, 564G, 565G, 566G, 567G, 568G, 569G, 570G, 571G, 572G, 573G, 574G, 575G, 576G, 577G, 578G, 579G, 580G, 581G, 582G, 583G, 584G, 585G, 586G, 587G, 588G, 589G, 590G, 591G, 592G, 593G, 594G, 595G, 596G, 597G, 598G, 599G, 600G, 601G, 602G, 603G, 604G, 605G, 606G, 607G, 608G, 609G, 610G, 611G, 612G, 613G, 614G, 615G, 616G, 617G, 618G, 619G, 620G, 621G, 622G, 623G, 624G, 625G, 626G, 627G, 628G, 629G, 630G, 631G, 632G, 633G, 634G, 635G, 636G, 637G, 638G, 639G, 640G, 641G, 642G, 643G, 644G, 645G, 646G, 647G, 648G, 649G, 650G, 651G, 652G, 653G, 654G, 655G, 656G, 657G, 658G, 659G, 660G, 661G, 662G, 663G, 664G, 6



GROUND CIRCUIT DIAGRAM (CSC-1)





SIGNAL FLOW DIAGRAM OF 35MM DOLBY STEREO THEATER USING BOSE CINEMA SOUND SYSTM

CINEMA SYSTEM CONTROLLER BLOCK DIAGRAM (CSC-1)

