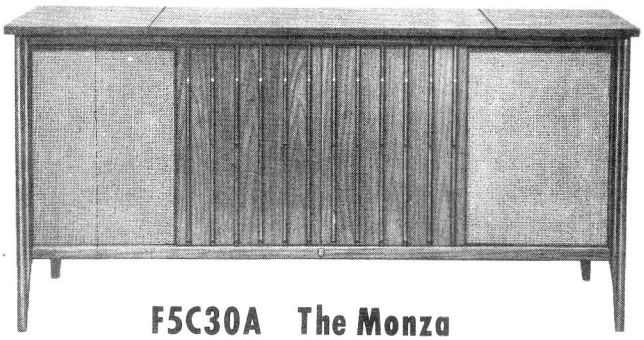
PHILIPS SERVICE MANUAL

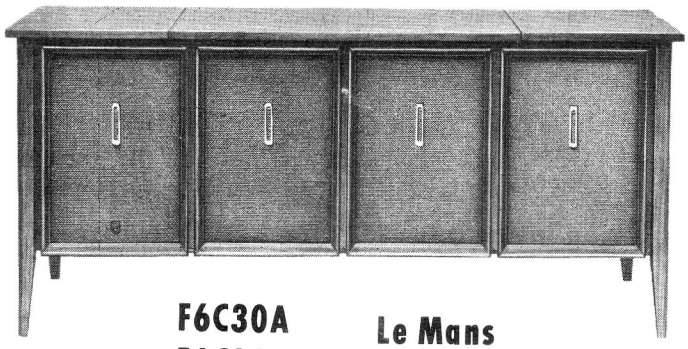
HF.5001-8-63

AM/FM STEREO HIGH FIDELITY MULTIPLEX COMBINATIONS

F5C30A
F6C30A F6C30A-R
F7C30A F7C30A-R



F5C30A The Monza



F6C30A
F6C30A-R Le Mans

F7C30A
F7C30A-R Le Grand Prix

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AM-FM STEREO
HIGH FIDELITY MULTIPLEX COMBINATIONS
F5C30A, F6C30A, F6C30A-R, F7C30A, F7C30A-R

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AM-FM STEREO
HIGH-FIDELITY MULTIPLEX COMBINATIONS
F5C30A, F6C30A, F6C30A-R, F7C30A, F7C30A-R

1.0 DESCRIPTION

1.1 GENERAL

This equipment will receive AM broadcasts, FM monophonic and FM stereophonic broadcasts. The design includes push-pull output stages for the audio amplifiers and an AFC circuit. It also contains an automatic switching circuit which selects and indicates either monophonic or stereophonic FM signals.

A MULTIPLEX BEACON glows when the equipment is tuned to an FM-Stereo station of sufficient strength to enable satisfactory stereophonic reproduction.

The MASTER CONTROL PANEL, contains twelve push-button switches. For functions, refer to Schematic Diagram.

1.2 PRESENCE CONTROL SPATIAL AM OR REVERBERATION

a) SPATIAL AM (Used only on models not equipped with reverberation). When this control is turned full left, the sound produced in both left and right channel speakers has the same frequency range. When the control is turned full right, the low frequencies are produced in one channel and the high frequencies are produced in the other channel achieving a more realistic effect to the overall performance.

b) REVERBERATION (used only on models not equipped with Spatial AM Control). Some models are equipped with reverberation. The Reverberation control is used to add reverberation as required, and is effective for all pushbutton selections, except when the Speech Filter Button and/or the Internal Speakers Off Button are depressed.

NOTE: For models equipped with Reverberation the Spatial AM control is deleted. However, the Spatial AM feature has been maintained, so that for AM radio reproduction the low frequencies are automatically produced in one channel and the high frequencies in the other.

1.3 STEREOSCOPE (Models F7C30A & F7C30A-R only)

The Stereoscope is a visual indicator for observing:

1. The LOUDNESS LEVEL of both channels individually and combined.

2. The BALANCE condition of the two stereo channels.

3. The SEPARATION or the stereo content of the sound heard.

For set-up, refer to Section 6, Mechanical Adjustments page 11.

2.0 TECHNICAL CHARACTERISTICS

2.1 GENERAL

Line Voltage:	117 Volts
Line Frequency:	60 cps.
Current Consumption:	1.5 amps.

2.2 RECORD CHANGERS

	Type
Model F5C30A	AG1015/47
Models F6C30A, F6C30A-R)	AG1025/47
Models F7C30A, F7C30A-R)	

For service information etc., on Record Changers, refer to Service Manuals 34244000 for AG1015/47 and RP3002-6-63 for AG1025/47.

2.2.1 CARTRIDGES

		Stylus
F5C30A	AG3305	Diamond LP. and Sapphire 78
F6C30A and AR) F7C30A and AR)	AG3310	Diamond LP. and Sapphire 78

2.3 VACUUM TUBES

V1	6AJ8/ECH81	AM. Mixer Osc. - FM. IF. Amp.
V2	6DC8/EBF89	FM. IF. Amp.
V3	6BL8/ECF80	Composite Stereo Sig. Amp. & Freq. Doubler
V4	6AQ8/ECC85	Mixer Osc.
V5, V6	6CA4/EZ81	Power Rectifiers
V7	12AX7/ECC83	1st AF. Amp.
V8, V10	6GW8/ECL86	2nd AF. Amp. and AF. Power Output
V9, V11	6GW8/ECL86	Phase Inv. and AF. Power Output
V12	3AMPIA/DG7-32/01	Stereoscope Indicator

2.4 DIODES

D1	1N542	Ratio Detector
D2	1N542	Stereo Detector
D3	1N542	Automatic Signal Switching
D4	1N542	AFC

2.5 TECHNICAL CHARACTERISTICS (Audio Section)

Power Output:	2 x 8 W ± 0.5 db.	(Line voltage maintained at 117V. 60 cps.) Conditions: Measured at 1000 cps. and 5% distortion, load 2 x 10 ohms. Reverberation Delay unit not connected.
Hum Level:	less than 10 mV. each channel	Conditions: Measured across 10 ohm load LOUDNESS and BASS control fully c.w., input open.

3.0 TESTS

3.1 GENERAL

Both output transformer secondaries must be loaded during all tests using a 10 Ω Output Meter across one secondary and a 10 Ω, 10 Watt resistor across the other or a 10 Ω, 10 Watt resistor across each secondary and a AF. VTVM used as an indicator. The transformer secondaries are connected to the Octal Speaker Socket, left channel terminal #1 "Cold" and #13 "Hot", right channel terminals #8 "Cold" and #6 "Hot".
Depress the TAPE button.

Connect an audio generator to the TAPE INLET for the channel to be tested. Proceed with the following, observing that the instrument indications are within the limit shown on chart.

3.1.1 AUDIO MEASUREMENTS

Step	Control Position	Audio Generator Freq.	Audio Generator Output	Power Output Reading Power Output Meter	AF VTVM
1.	Loudness full c.w. Bass full c.w. Treble full c.w. Balance full c.w. for right channel Balance full c.c.w. for left channel	1000 cps.	42 mV. to 60 mV. Adjust for output of 200 mW. or 1.4 V.	200 mW.	1.41 V.
2.	As in step 1.	100 cps. Bass Boost		1.4W - 2.8W.	3.75-5.3V.
3.	As in step 1. Depress Speech Filter Button	100 cps. Bass Filter		50 mW. -200 mW.	0.7V-1.41V.
4.	Release Speech Filter Button				
5.	As in step 1.	10000 cps. Treble Boost		0.9W. -1.8W.	3.0V. -4.25V.
6.	As in step 1. Depress Scratch Filter Button	10000 cps. Treble Filter		9 mW. -45mW.	0.3V. -0.67V.
7.	Release Scratch Filter Button				
8.	Turn Bass or Treble Controls full c.c.w.	10000 cps. Treble Cut		10 mW. -25 mW.	0.316-0.5V.
9.	Turn Bass or Treble Controls full c.c.w.	100 cps.		10 mW. -25 mW.	0.316-0.5V.

Keep audio input lever constant after initial 1000 cps. adjustment as in (1).

NOTE: All references to c.w., refer to clockwise rotation of the control shaft i.e., turn full right.
All references to c.c.w., refer to the counter-clockwise rotation i.e., turn to the left.
Bass and treble controls full c.w. for bass and treble boost.
Bass and treble controls full c.c.w. for bass and treble cut.

3.1.2 SPATIAL AM AF RESPONSE

For output indicators, refer to 2.5 Audio Section.
Remove IF. tube 6CD8/EBF89.
Connect audio generator between test point TP2 on IF. panel and chassis frame.
Depress AM. button.

Controls	Audio Generator Freq.	Output	Power Output Readings Left Channel		Right Channel	
Loudness full c.w. Bass full c.w. Treble full c.w.			Output Meter	AF. VTVM	Output Meter	AF. VTVM
Presence full c.c.w. Adjust Balance Control for equal Output right and left channels.	100 cps.	60mV.	60-120 mW.	0.775-1.1V.	60-120mW.	0.775-1.1V.
Presence full c.w.	100cps.	60mV.	150-300 mW.	1.22-1.73V.	10-20mW.	0.316-0.445V
Presence full c.c.w.	10,000 cps.	60mV.	10-30 mW.	0.316-0.55V.	10-30mW.	0.316-0.55V.
Presence full c.w.	10,000 cps.	60mV.	0.3-1.0 mW.	0.033-0.01V.	42-82mW.	0.65-0.91V.

4.0 ALIGNMENTS

4.1 AM ALIGNMENT

For test point and speaker connection refer to Schematic Diagram
During alignment, terminate audio output using a 5, 10 or 15 Ω resistor.
The peak voltage indicated by VTVM should be about 50 mV. Reduce output of RF. signal generator as required.
Set loudness control fully c.c.w.
Depress AM. button.
Connect audio VTVM to test point TP2. (VTVM input greater than 2 Meg. ohms).

4.2 AM ALIGNMENT-IF (455Kc/s)

1. Connect 455 Kc/s. RF. generator to test point TP1.
2. Turn tuning knob fully c.w. (AM tuning capacitor at minimum capacitance).
3. Adjust L6, L7, L15 and L16 for peak indication on VTVM.

4.3 AM ALIGNMENT-RF (600Kc/s and 1450 Kc/s)

Sensitivity, less than 50 μV.

1. Connect dummy antenna of RF. generator to test point TP1, or place "HOT" lead of generator near antenna rod.
2. Turn tuning knob fully c.c.w.
3. Adjust pointer to AM-FM START.
4. Turn tuning knob until the pointer is at the 600Kc/s. line on alignment scale.
5. Set RF. generator to 600 Kc/s. and adjust L11 (oscillator) for peak output.
6. Loosen wax holding Ferroxcube rod in antenna coil assembly and adjust L1 (antenna coil inductance) for peak output by sliding the rod in the coil form.
7. Turn tuning knob until the pointer is at the 1450 Kc/s. line on the alignment scale.
8. Set RF. generator to 1450 Kc/s. and adjust C19 and C9 for peak output.
9. Repeat (4) to (8) until a 600 Kc/s. signal can be tuned in when the pointer is at the 600 Kc/s. line.

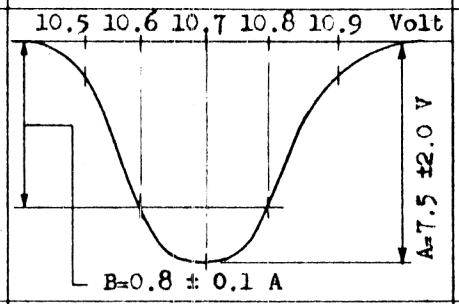
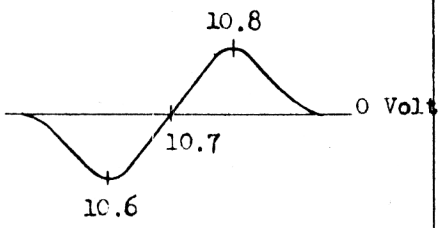
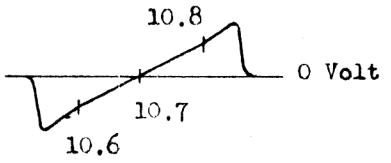
4.4 FM ALIGNMENT-IF (Sweep Generator Method)

1. Terminate the audio outputs of the equipment using 5, 10 or 15 ohms resistors (refer to the Schematic Diagram for connections).
2. Set LOUDNESS control fully counterclockwise and depress FM button.
3. Insulate the shield of V4 from the grounding clips and replace it in position over V4. Connect the 10.7 Mc/s. (sweep) output from a sweep generator to the tube shield; connect the generator ground lead to the tuner frame.
4. Rotate the equipment tuning control to set the dial pointer to 96 Mc/s.
5. Disconnect the negative side (body) of C27 from test point TP3 and connect the input of an oscilloscope to this test point (via a 47 K. resistor probe); oscilloscope ground lead should be connected to chassis.
6. Adjust L61, L5, L8, L9, L12 to obtain maximum amplitude of the response curve at 10.7 Mc/s.

NOTE If slight stagger tuning is necessary, adjust L8, L9, L12 for maximum deflection of the 10.7 Mc/s. marker and L5, L61 for deflection of the 10.6 Mc/s. and/or 10.8 Mc/s. markers to obtain maximum 10.7 Mc/s. output with optimum symmetry.

7. Connect the oscilloscope probe to test point TP4 and adjust L13 to obtain an "S curve" response with the 10.7 Mc/s. marker coincident with the zero axis crossing.
8. Connect the oscilloscope probe to test point TP3 and carefully repeat step 6 to obtain a flat and level-topped 10.7 Mc/s. bandpass curve.
9. Connect oscilloscope probe to test point TP4; re-connect the free end of C27 to test point TP3.
10. Observe the "Z curve" and re-adjust L13 so that the 10.7 Mc/s. marker is coincident with the zero axis crossing. L12 may be slightly adjusted to center the "Z curve" around the 10.7 Mc/s. marker without sacrificing linearity.
11. Remove the test equipment, and the insulation from the shield can of V4.

NOTE: Tuning of L5 and L61 may be interchanged if this gives better results.

STANDARD OUTPUT FROM SWEEP GENERATOR	50 m Vpp	-
10.7 BANDPASS		A : 5.5 - 9.5 Volt B : 0.7 A - 0.9 A
S - CURVE		-
Z - CURVE		LINEAR from 10.6 to 10.8 Mc 10.7 Mc MARKER TO BE ON 0 VOLT LINE

TYPICAL FM-IF RESPONSE CURVE

4.5 FM ALIGNMENT - IF (Alternative Method)

1. Terminate the audio outputs of the equipment using 5, 10 or 15 ohm resistors (refer to Schematic Diagrams for connections).
2. Set LOUDNESS control fully counter-clockwise and depress FM. button. Rotate tuning control to place the dial pointer at 96 Mc/s.
3. Disconnect the negative side (body) of capacitor C27 from test point TP3 and connect a DC VTVM across the diode load R13 (test point TP3 and ground).
4. Insulate the shield of V4 from the grounding clips and replace it lightly in position over V4. Connect the 10.7 Mc/s. unmodulated output of an RF. generator to the tube and ground.
5. Adjust L61, L5, L8, L9 and L12 to obtain a maximum VTVM reading at 10.7 Mc/s. Then adjust the following coils as indicated:
   L8, L9, L12 for maximum VTVM Indication at 10.7 Mc/s.
   L5 for maximum VTVM Indication at 10.6 Mc/s.
   L61 for maximum VTVM Indication at 10.8 Mc/s.

NOTE: Tuning frequencies of L5 and L61 may be interchanged if this gives better results (i.e., maximum 10.7 Mc/s. output with optimum symmetry at 10.6 Mc/s. and 10.8 Mc/s.).

6. Connect the VTVM to test point TP4 and adjust L13 to obtain an "S curve" response with 10.7 Mc/s. coincident with the zero axis crossing (this can be best accomplished by making spot frequency checks from 10.6 Mc/s. to 10.8 Mc/s. with the VTVM set at center zero).
7. Connect the VTVM to test point TP3 and repeat step(5).
8. Connect VTVM to test point TP4 and re-connect the free end of C27 to test point TP2. Readjust L13 so that 10.7 Mc/s. is coincident with the zero axis crossing. L12 may be slightly adjusted to centre the "Z curve" around 10.7 Mc/s. without sacrificing linearity.
9. Remove the test equipment and the insulation from the shield of V4.

4.6 FM - STEREO ALIGNMENT

1. Terminate the audio outputs of the equipment using 5, 10 or 15 ohms resistors (refer to Schematic Diagram for connections). Depress FM. button.
2. Connect an AC. VTVM to test point TP1. Tune in a stereo-broadcast which can be received with a signal strength of at least 300 μV. rf across the antenna terminals.
3. Adjust L20, L21 and L19 (in that order) to obtain maximum indication on VTVM (3.5 to 7.0 V.). This adjustment should be carefully repeated and, since any programme modulation tends to obscure the VTVM reading (unsteady needle movement), it can be done more accurately during a moment of no programme modulation from the station.
4. The 67 Kc/s. trap can be set if the broadcast station is transmitting an SCA carrier, by adjusting L22 for minimum audible interference. This interference is similar to the output of a tape recorder which is playing back a recorded tape at a faster speed than it was recorded.
5. This Stereo alignment procedure gives satisfactory results with approximately 20 db. or better channel separation.
6. For optimum channel separation, the carrier has to be re-inserted in its correct phase relationship. Due to R-C3 (100 K. and 100 μfd.) correct phasing occurs when the 19/38 Kc/s. band-pass network, L20 and L21 are peak tuned.

4.7 FM SENSITIVITY

Sensitivity: Less than 20 μV. from 88 to 108.
Conditions: FM. 90%, 1 Kc., only for 50 mV. at test point TP2. VTVM input greater than 2 Meg.

5.0 SPECIAL CIRCUITRY (FM STEREO)

5.1 AUTOMATIC SWITCHING CIRCUIT

The FM. section of this unit incorporates a MONO-STEREO switching circuit which automatically selects monophonic or stereophonic reproduction of the received FM. signal. It will select monophonic reproduction under the following conditions:

a) when tuned to an FM. monophonic transmission.
b) when tuned to an FM stereophonic transmission that is received with insufficient strength to provide noise-free reception.

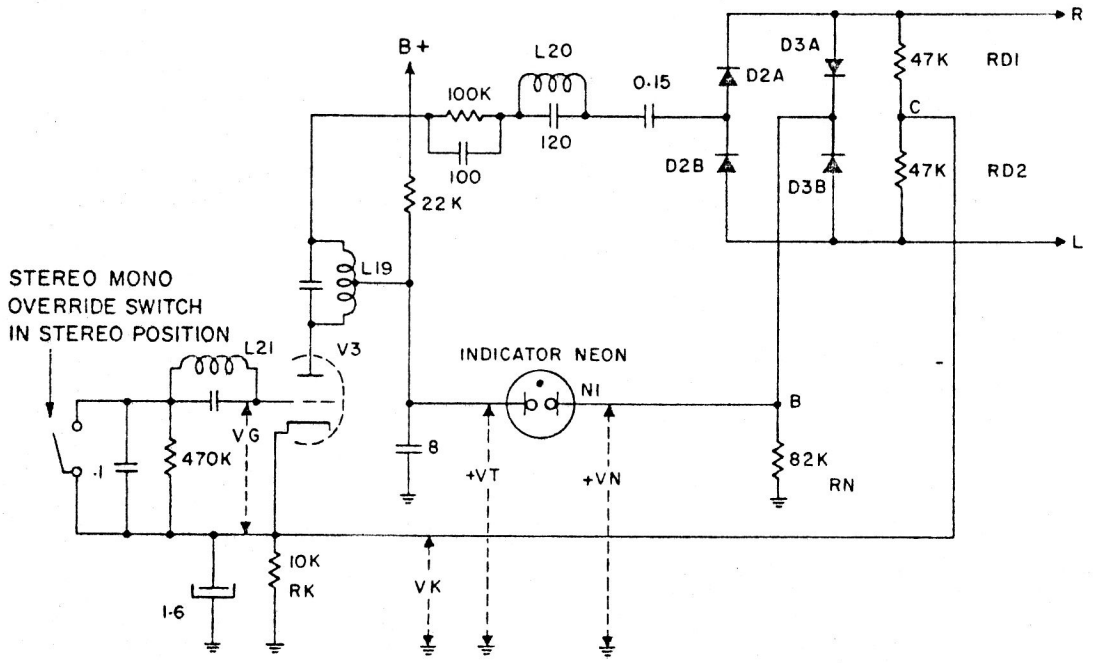
It will select stereophonic reproduction whenever the received FM. transmission contains stereophonic programming and is of sufficient strength to provide noise-free reception.

The operation of this circuit is described as follows: In the absence of a 19 Kc/s. pilot carrier (i.e., no stereo signal), grid leak bias "VG" is not developed. Under these conditions,the triode V3, conducts heavily and a large voltage, "+VK", is developed across the cathode resistor "RK". The plate voltage of V3, (+VT), falls to a value which is too low for the neon lamp N1 to ignite.

The potential "+VK" causes current to flow from point C via (RD1, D3A) and (RD2, D3B) and via "RN" to ground. This current forward biases the diodes D3A and D3B which will conduct to effectively bridge the right and left channel outputs and permit monaural signals to be passed.

When a 19 Kc/s. pilot carrier is received (i.e., stereo signal) grid leak bias at V3, will be developed. The plate current of V3 will be reduced and the voltage +VK will be small.

The plate voltage of V3 (+VT) will rise sufficiently to cause the neon lamp N1 to strike. Current will now pass through the neon and the 82K. resistor RN, developing a voltage at point B (+VN) which will be larger than the voltage at point C (+VK). The diodes D3A and D3B will now be reverse biased making them high impedance devices which will not effectively short out the R and L signals and consequently stereo can be reproduced.



NOTE: A click may be heard at the output whenever the circuit automatically switches in or out of operation.

Details on the principle of FM. Multiplexing are given in the Philips Service Manual for FM. Stereo Adapter Model A2C05A.

5.2 MULTIPATH INTERFERENCE

Multipath interference, visible on TV sets and known as ghosts, becomes audible on FM. receivers as distortion. It will - if present - be more noticeable during stereo reception because of the much wider spectrum occupied by the stereo signal.

Multipath interference is not common in residential districts, but occurs mostly in downtown areas with their prevalence of high buildings or steel structures; it sometimes occurs in apartment houses.

It can be reduced or eliminated by the use of a more suitable antenna such as a highly directional outdoor FM. antenna (yagi). It should be installed (directed) so as to minimize the reception of the reflected waves.

If multipath interference cannot be eliminated by the methods suggested it may be necessary to disable the stereo reception function of the receiver, this is accomplished by placing the switch marked STEREO-MONO (immediately above the ANTENNA TERMINAL PANEL) to MONO.

6.0 MECHANICAL ADJUSTMENTS

6.1 STEREOSCOPE ADJUSTMENTS

The stereoscope chassis is to be rotated in order to align the display on the CR tube with the graticule.

a) Depress the TAPE button and adjust the centering device until the spot on the CR tube is in the center of the graticule.
b) Depress the MONO TO BALANCE button.
c) Depress the AM or FM button and tune in a station.
d) Loosen the screws in the bottom of the stereoscope chassis.
e) Turn the balance control full left, and adjust loudness control until the length of the trace is approximately the same as the north-west lines on the graticule.
f) Rotate the stereoscope chassis until the CR tube trace is parallel to and under the north-west line of the graticule. Turn the BALANCE control full right. The trace should now be parallel to and under the north-east line of the graticule. If the trace is not directly under the north-east line, the stereoscope chassis should be turned slightly until the difference between the left trace and right trace is equal, in relation to the north-east and north-west lines of the graticule.
g) Tighten screws in bottom of stereoscope chassis.
h) Turn balance control until the trace on CR tube is parallel to the north-south line on graticule and release MONO TO BALANCE button.
i) Depress the TAPE button and check the position of the spot in relation to center of graticule. If necessary slightly readjust the centering device.

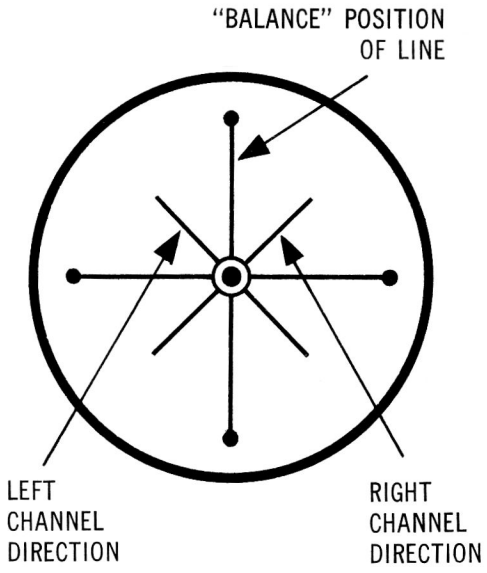


DIAGRAM OF GRATICULE 670-822

6.2 SWITCHES

6.2.1 FUNCTION SWITCHES : MAIN AND SUPPLEMENTARY

Switches 1 to 6 are interlocking types. When tracing a circuit on the schematic diagram IT IS IMPORTANT TO TAKE NOTICE OF THE INTER-LOCKING ACTION. DEPRESSING ANY SWITCH RELEASES A PREVIOUSLY DEPRESSED SWITCH. When any button #2 to #6 is depressed, S1 is automatically switched on.

The Schematic Diagram shows all switches in the OFF position. Switch #1 shows the power supply and the B+ to tuner sections switches off. This is also the position of S1 when the record changer switches are used for automatically switching the complete unit off.

6.2.2 CIRCUITS CONNECTED TO LOUDNESS CONTROLS

For AF. signals from the various sources, the switches are wired in a series arrangement. For example, pushbutton for switch #5 is called TAPE, examination of the circuit will show that the phono input is wired to terminals #5 of this switch. The circuit from Phono Input to Loudness control may be traced from the phono receptacle to S5 terminal 5 through S5 terminal 6 to S2 terminal 5, through S2 terminal 6 to S3 terminal 5, through S3 terminal 6 to S4 terminal 5, through S4 terminal 6 to TAPE OUTLET and from there to S7, (REVERSE SPEAKERS) and S8, (MONO TO BALANCE) and to loudness controls.

If the PHONO button is depressed, the phono circuit from S5 to loudness control is not changed, but the TAPE INLETS are grounded. Depressing the TAPE button connects the TAPE INLETS through S5 terminals 7 and 6 to LOUDNESS Controls, while the phono receptacles are disconnected. If S4 is depressed the signal from AM. detector goes to the loudness controls via the TAPE OUTLETS.

6.2.3 B + TO RF CIRCUITS

Some series wiring is used for B + circuits. If S1 is switched on, the B+ terminal 4 is connected through terminal 2 to S6 terminal 1, through S6 terminal 2 to S5 terminal 2. If either S6 or S5 is depressed the B+ to S4, S3, S2 is switched off.

6.2.4 SPATIAL CONTROL

By tracing the wiring it will be seen that the **SPATIAL** control is connected for operation only when **S4 (AM.)** is depressed.

6.2.5 REVERBERATION

Reference to S10, S11 will show that for a receiver equipped with reverberation the input to the Reverberation Delay Unit is shorted to ground when S11 (Internal Speaker Off) and S10 (Speech Filter) buttons are depressed

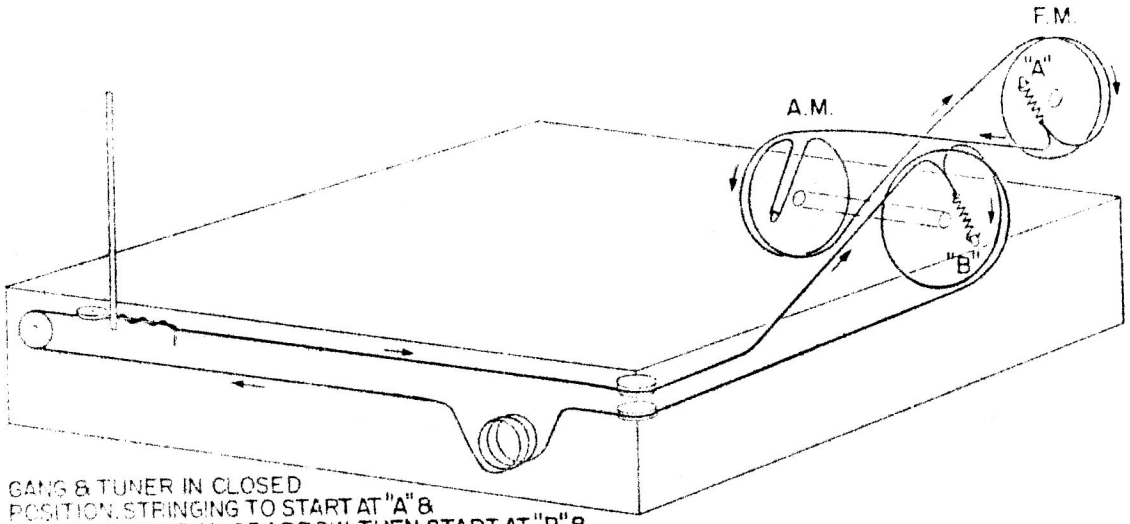
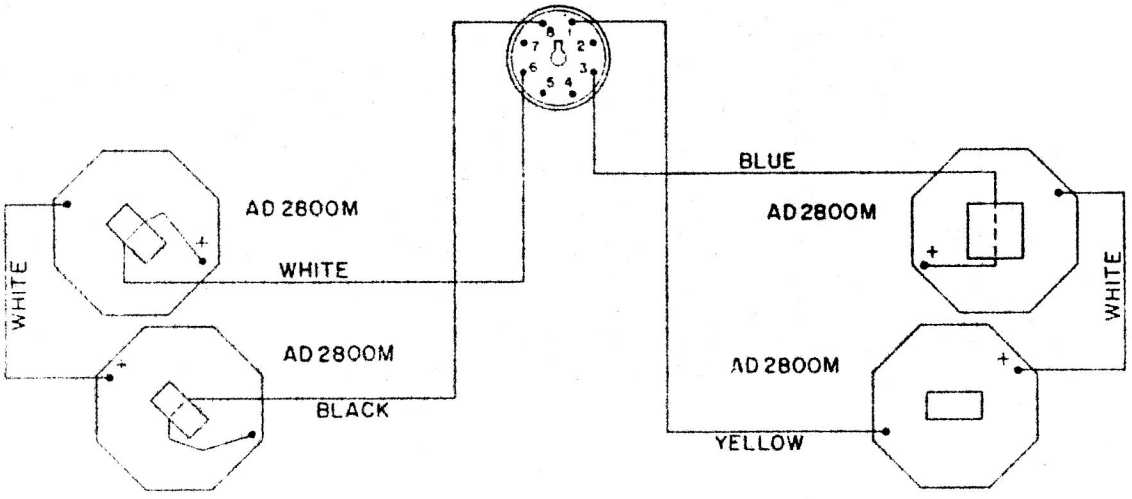


DIAGRAM DIAL CORD STRINGING 34402500

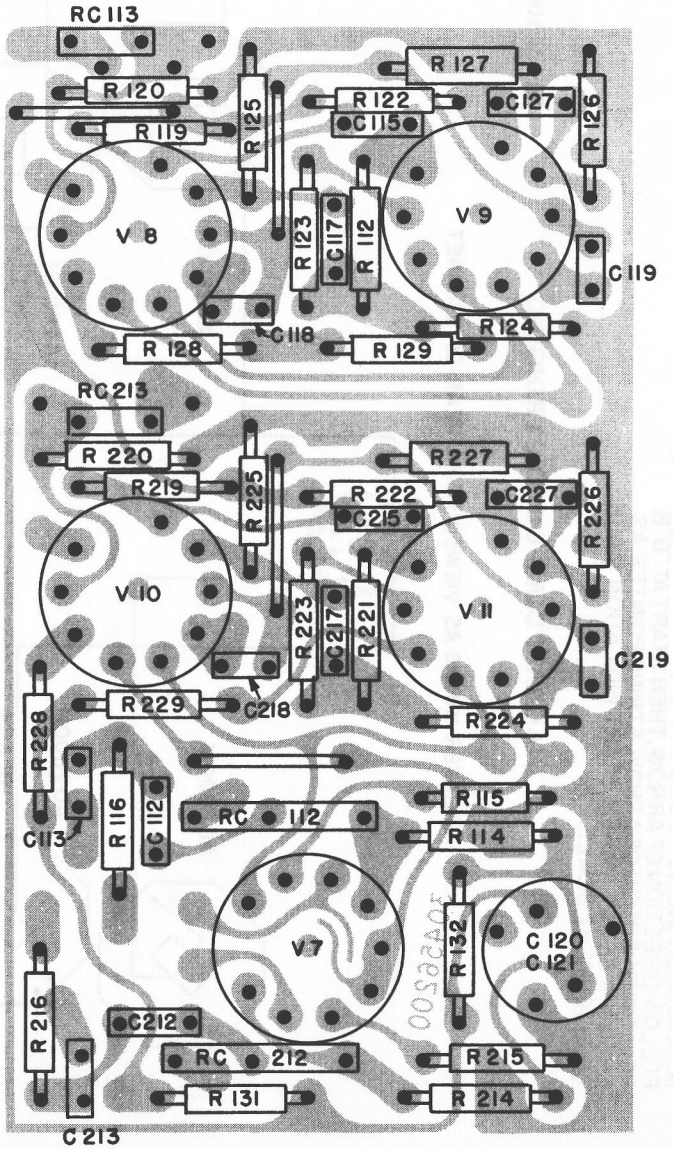
SPEAKER WIRING AS VIEWED FROM REAR OF CABINET



NOTE: + DENOTES THE RED CODED TERMINAL

MODELS
F5C30A - F6C30A - F7C30A
F6C30A-R - F7C30A-R

COMPONENT VIEW AF PANEL



PRINTED WIRING VIEW AF PANEL

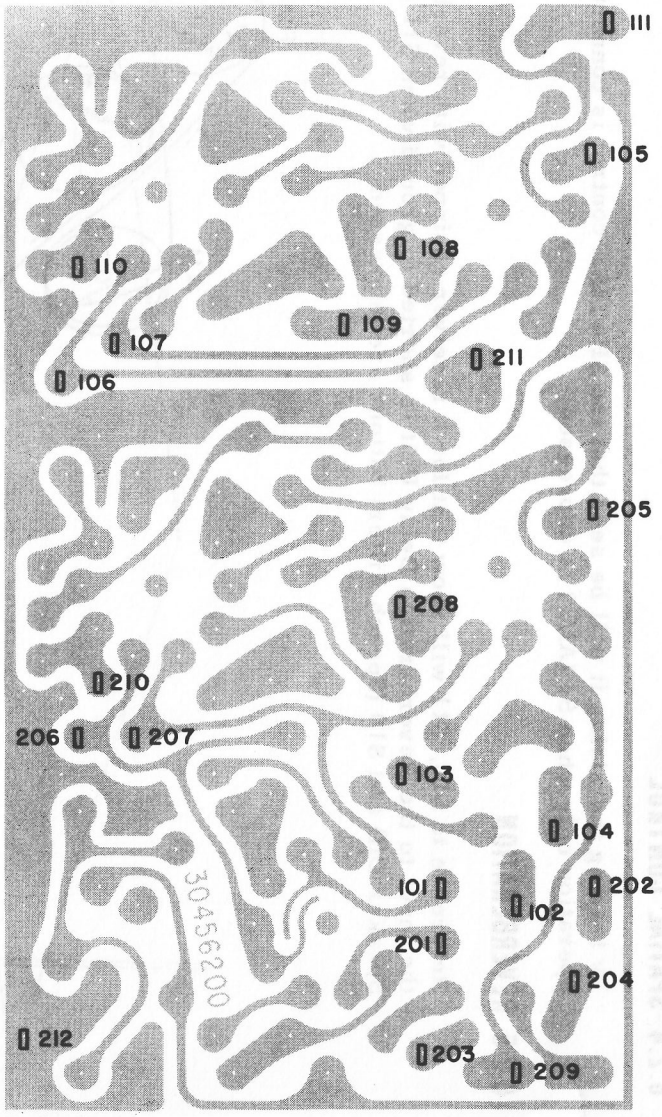
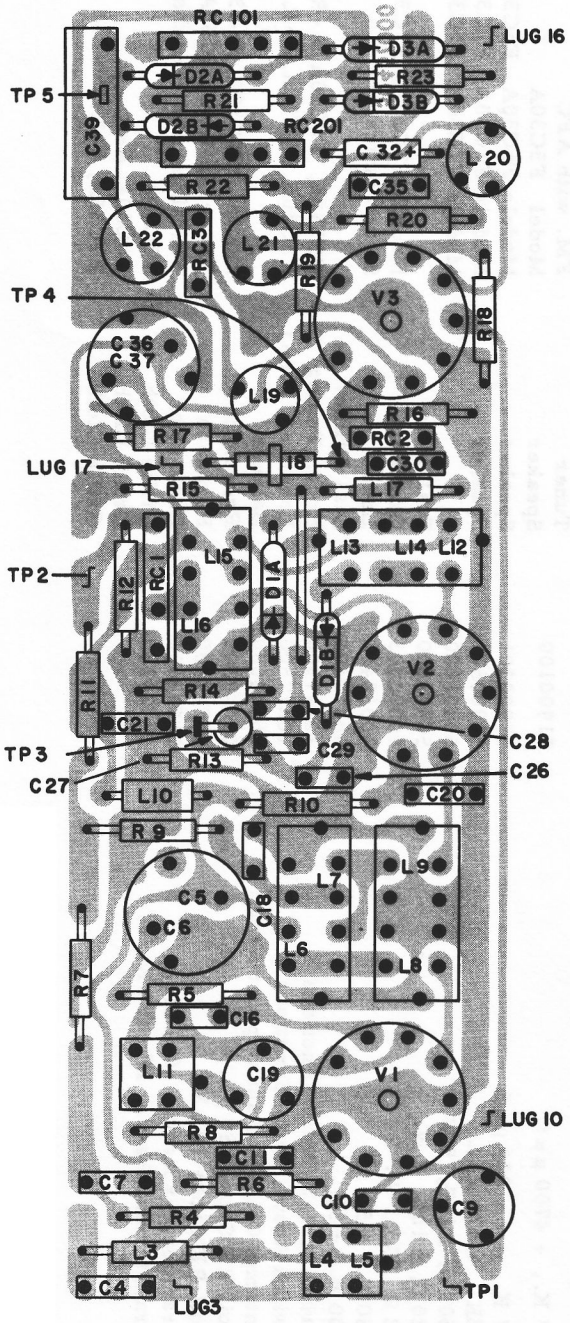


DIAGRAM LAYOUT OF COMPONENTS
AND PRINTED WIRING - AF

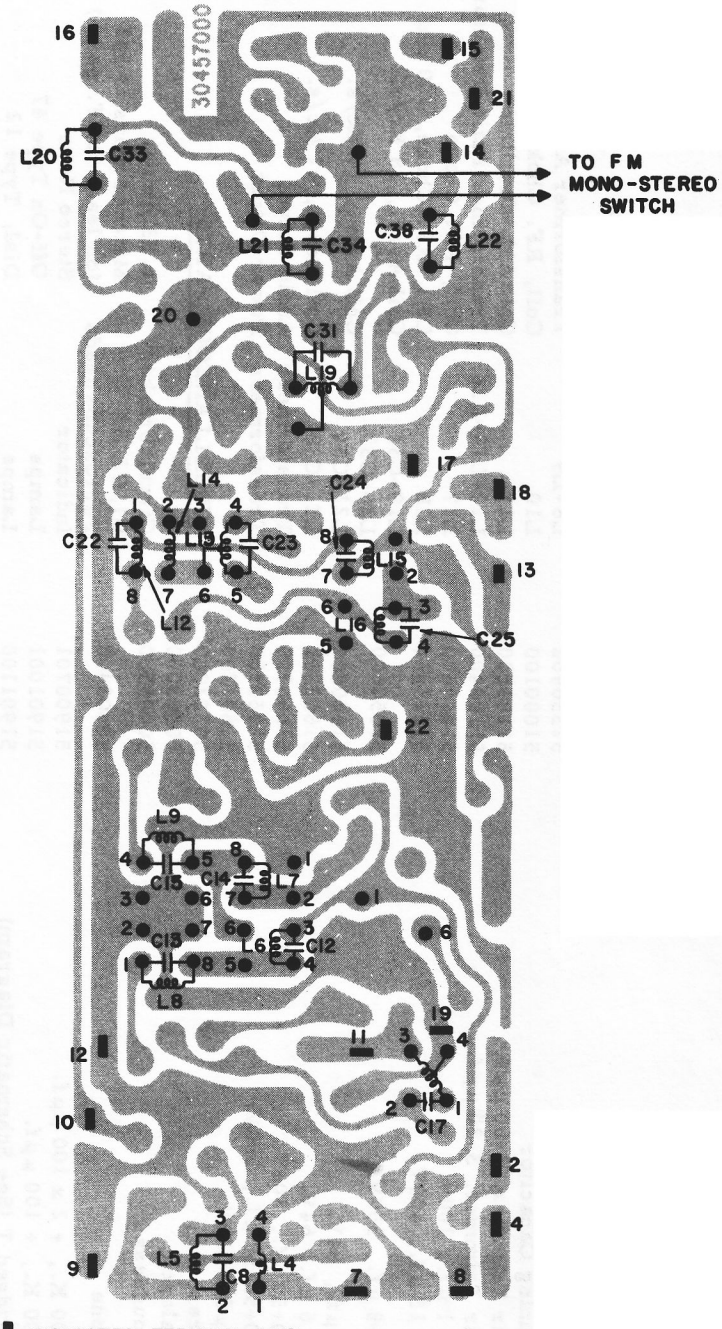
34491800 (1 & 2)

MODELS
F5C30A - F6C30A - F7C30A
F6C30A-R - F7C30A-R

COMPONENT VIEW



PRINTED WIRING VIEW



▮ INDICATES TERMINAL LUG.
● INDICATES CONNECTION TO TERMINAL OF PART.

DIAGRAM LAYOUT OF COMPONENTS
AND PRINTED WIRING - IF

34402300

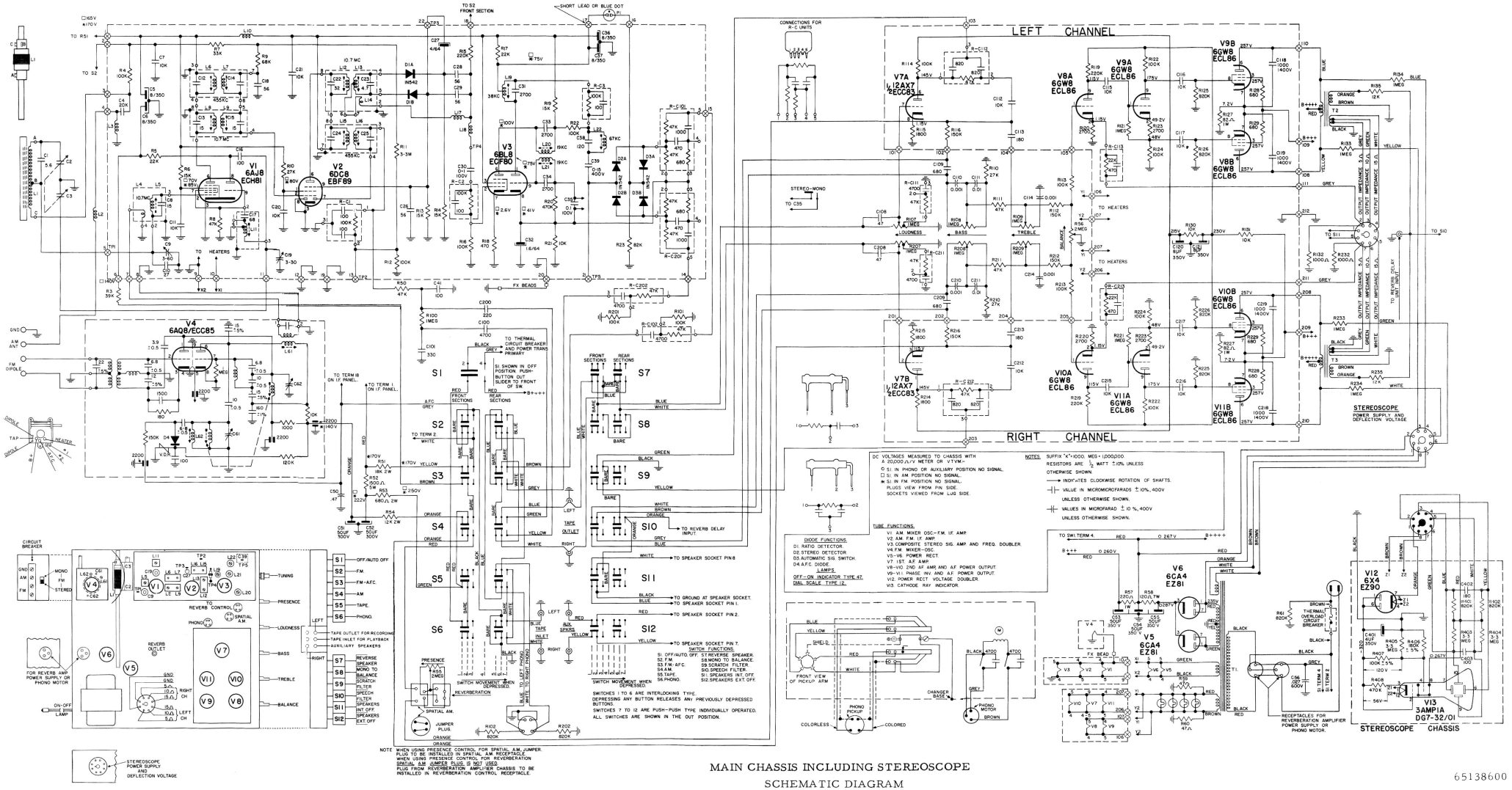
34402400

7.0 LIST OF SPECIAL PARTS FOR MODELS F5C30A, F6C30A, F7C30A, F6C30A-R, F7C30A-R

Ref. No.	Description	Part Number
C1	5.6 μf.	51356902
C2-C3	Tuning Capacitor	51000100
C9	Air Trimmer, 3-60 μμf.	51101500
C19	Air Trimmer, 3-30 μμf.	51100400
C30, 35	0.1 μf., 100V.	51410400
C39	0.15 μf., 400V.	51515404
C5-6, C36-37, C120-121	8+8 μf., 350V.	51650600
C27	4 μf., 64V.	51600802
C32	1.6 μf., 64V.	51602301
C51-52	50+50 μf., 300V.	51650700
C53-54-55	50+50+50 μf., 350V.	51650200
C401	4 μf., 350V.	51601200
R55	Presence	50502900
R56	Balance	50503000
R107-207	Loudness	50603500
R108-208, R109-209	Tone	50603400
R-C1	100 K., + 2 x 100 μμf.	51900701
R-C2, 3	100 K., + 100 μμf.	51901001
R-C101, 201	Bridged T (See Schematic Diagram)	51901100
R-C102, 202, R-C111, 211	47 K., + 4700 μμf.	51900100
R-C112, 212	47 K., + 2 x 820 μμf.	51900301
R-C113, 213	22K., + 470 μμf.	51900801
R52	1500 Ω, ± 10%, 5 W.	50401600
R58	120 Ω, ± 10%, 7 W.	50402000
R127, 227	82 Ω, 5%, 1 W.	50082003
R406	180 K., ± 5%	50018404
R407	100 K., ± 5%	50010405
S1 to S6	Switch Assy., Main Functions	10217500
S7 to S12	Switch Assy., Aux. Functions	10217600
L1	Antenna Coil, Rod and Support Assy.	06044000
L2	Coil RF Choke 180 μh.	07048500
L3	Coil RF Choke 10 μh.	07047400
L4, L5	Transformer Assy., 10.7 Mc/s.	06044100
L6-7, L15-16	Transformer Assy., IF. 455 Kc/s.	06039100
L8-L9	Transformer Assy., IF. 10.7 Mc/s.	06042101
L10	Coil, RF. Choke	07045201
L11	Coil AM. Oscillator	06043300
L12-L13-L14	Transformer Ratio Detector 10.7 Mc/s.	06042000
L17	Coil, RF. Choke	07045800
L18	Coil, RF. Choke, 100 μh.	07044400
L19-C31	Coil Assy., 38 Kc/s.	07045000
L20-C33, L21-C34	Coil Assy., 19 Kc/s.	07044900
L22-C38	Coil Assy., 67 Kc/s.	07045100
Transformers	Audio Output	05045901
Transformers	Power Output	05049800

MISCELLANEOUS PARTS

Circuit breaker	1.53 Amps.	08024900
D1, D2, D3	Matched pairs 1N542	642-098
Ferroxcube beads	(on leads to IF. panel)	609-034
Indicator	Stereo Neon	643-037
Lamps	Off-On Type 47	643-002
Lamps	Dial, Type 12	64302300
Tuner	FM. with AFC	13039300
Speaker	Model F5C30A	04128500
Speaker	Models F6C30A, F6C30A-R	04128500
Speaker	Models F7C30A, F7C30A-R 12 inch	04131000
	Models F7C30A, F7C30A-R 6 inch	04128700
Dial Scale		33133400
Graticule	Models F7C30A, F7C30A-R	33133200
Lens	Stereo Indicator	33207600
Dial Pointer		12005104
Knob, Tuning)	F5C30A, F6C30A, A-R, F7C30A, A-R	57269600
Loudness, Tone, Balance)	F5C30A, F6C30A, A-R, F7C30A, A-R	57269602
Presence	Spatial, F5C30A, F6C30A, F7C30A	57269604
Presence	Reverberation, F6C30A-R, F7C30A-R	57269603
Pushbutton	For Main, Aux. Switches	57269700
Grille Cloth	F5C30A	627-336
Grille Cloth	F6C30A, A-R	627-342
Grille Cloth	F7C30A, A-R	627-335



MAIN CHASSIS INCLUDING STEREOSCOPE
SCHEMATIC DIAGRAM
FOR MODELS

F5C30A - F6C30A - F7C30A
F6C30A-R - F7C30A-R

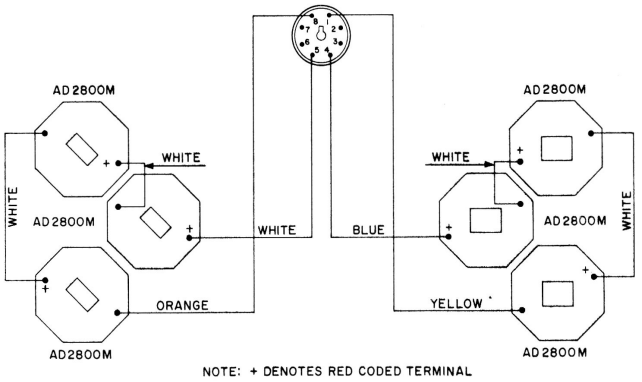
65138600

PARTS LIST

REVERBERATION AMPLIFIER

REF. NO.	DESCRIPTION	PART NO.
V1	1st and 2nd AF. Amplifier	12AX7/ECC83
V2	Power Output	6BQ5/EL84
V3	Rectifier	6X4/EZ90
C2, C4	64 µf., 10V.	51600100
C5, C6, C7	50+50+50 µf., 30V.	51650100
	Audio Output Transformer	05043900
	Power Transformer	05044300
	Speaker AD3500 5"	041-198
	Reverberation Unit Delay Line	13035500

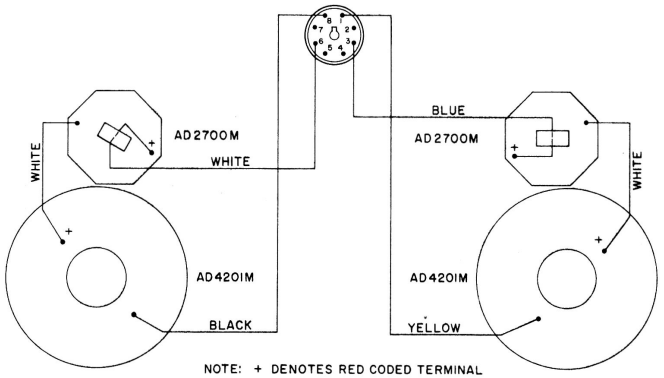
SPEAKER WIRING AS VIEWED FROM REAR OF CABINET



NOTE: + DENOTES RED CODED TERMINAL

670-767

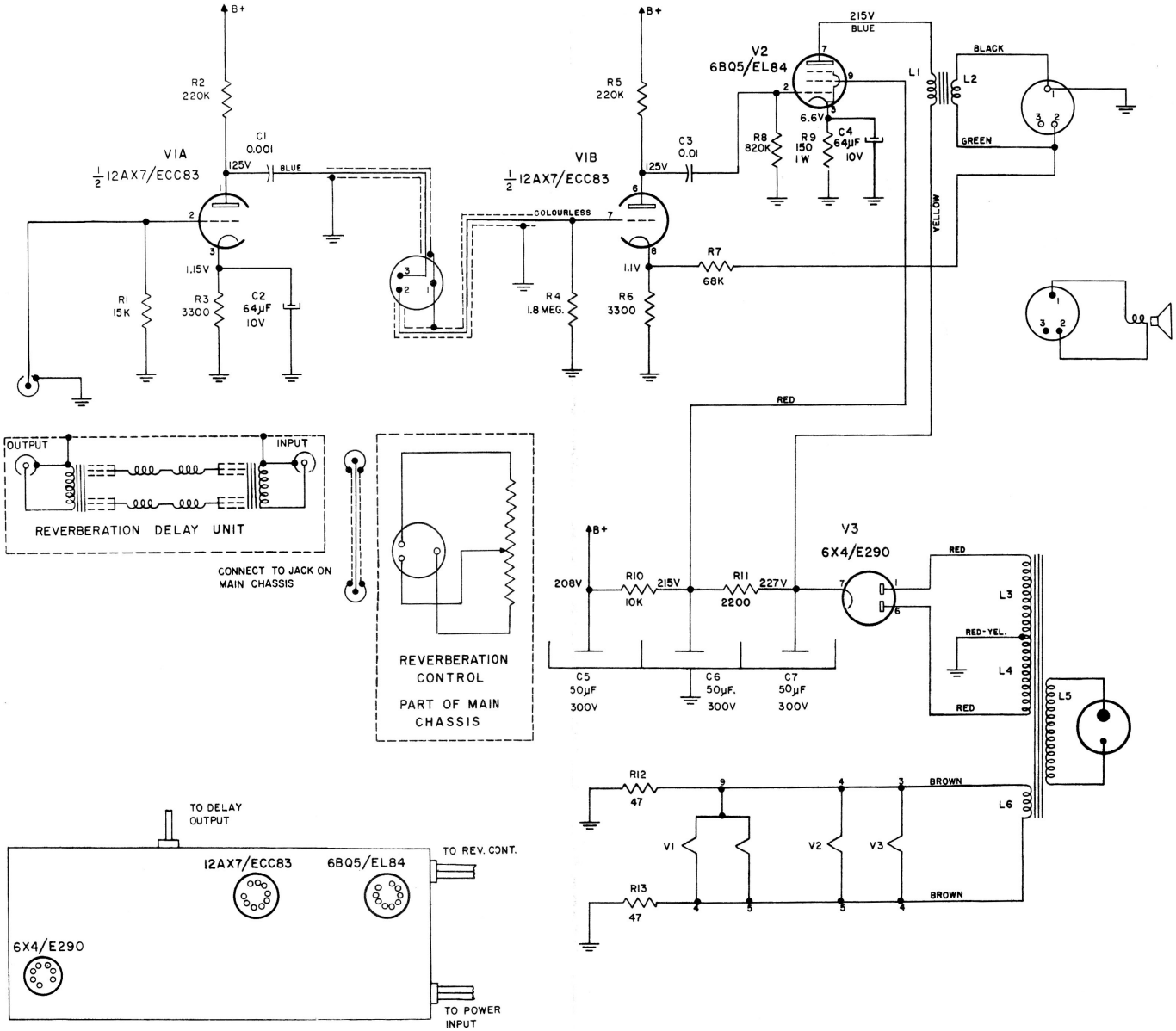
F6C30A, F6C30A-R



NOTE: + DENOTES RED CODED TERMINAL

670-768

F7C30A, F7C30A-R



SCHEMATIC DIAGRAM
REVERBERATION UNIT
MODEL F6C30A-R,
F7C30A-R

65134200

34253800