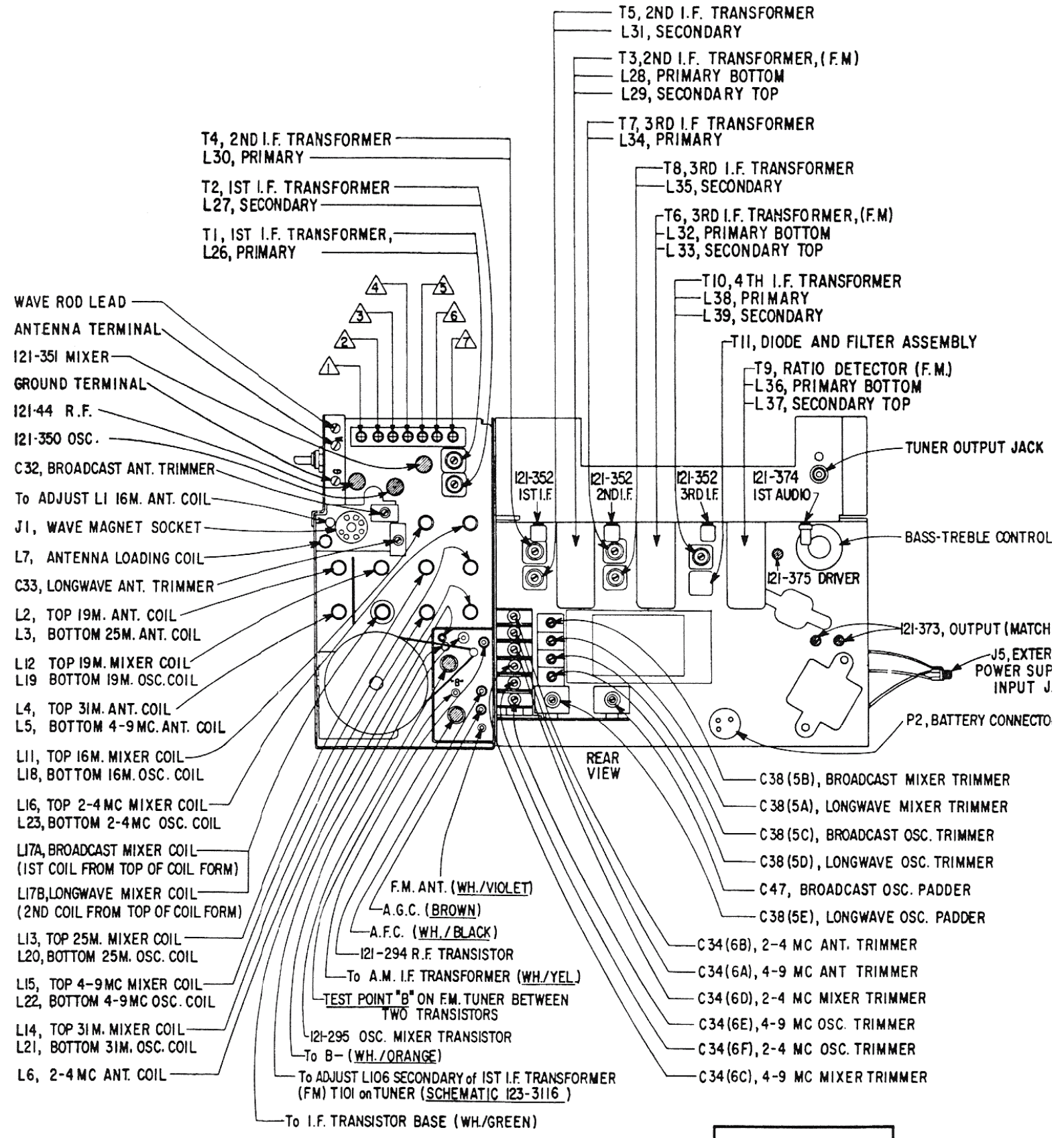
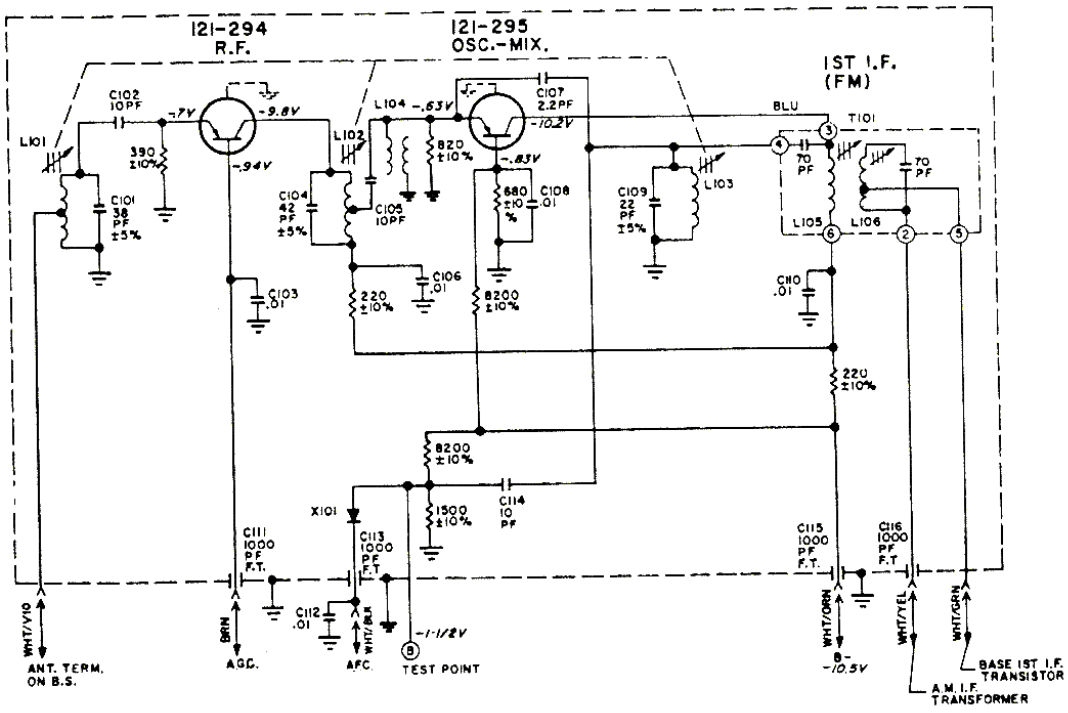
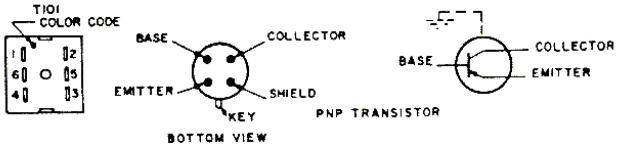


TEST POINT VOLTAGES
(NO SIGNAL)

	FM	AM
1	-.08	-1.06
2	-.88	0
3	-.88	-.78
4	0	-.05
5	-.38	10.2
6	-.41	-6.9
7	-.55	-6.7

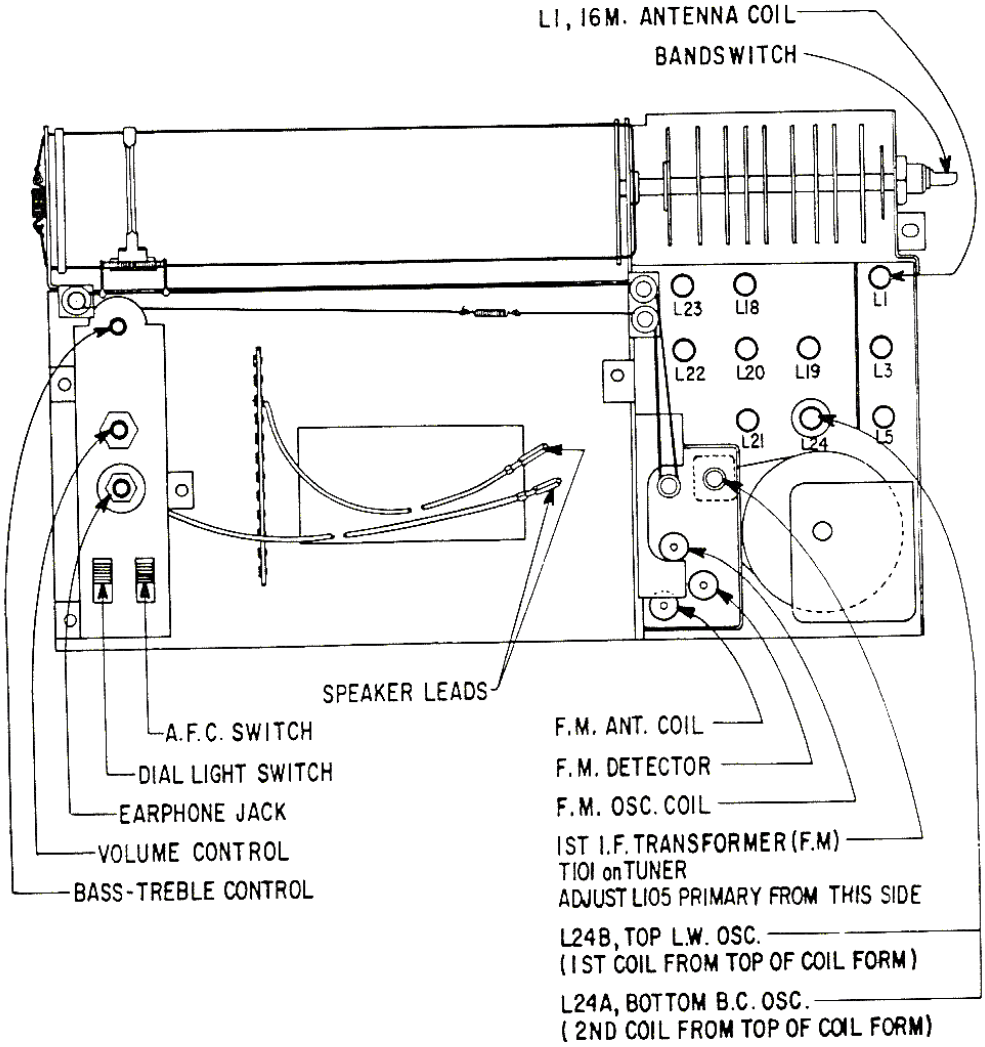




NOTES:

1. ALL RESISTORS ±20% TOLERANCE, 1/4 WATT, CARBON UNLESS OTHERWISE SPECIFIED.
2. RESISTANCE VALUES IN OHMS, CAPACITANCE IN MICROFARADS UNLESS OTHERWISE SPECIFIED.
3. ALL VOLTAGES ARE D.C. UNLESS OTHERWISE SPECIFIED.
4. D.C. VOLTAGES SHOWN ARE MEASURED WITH NO SIGNAL USING A VACUUM TUBE VOLT METER.
5. NO SIGNAL DRAIN IS 5 MA.

DENOTES CHASSIS



FM (88 - 108 MC) ALIGNMENT PROCEDURE

OPER.	INPUT SIGNAL FREQUENCY	CONNECT GENERATOR TO	SET DIAL AT	ADJUST TRIMMERS	PURPOSE	PLACE V.T.V.M. METER
1.	10.7 MC modulated	* Test Point "B"	98 MC	L105, L106, L28, L29, L32, L33, L-36	For I.F. alignment	Across voice coil & reduce input so output is not greater than .4 volts.
2.	10.7 MC modulated	* Test Point "B"	98 MC	Adjust L37 for zero DC reading on center indicating DC VTVM	Align ratio detector	Place probe on pin 6 of Ratio Detector & adjust L37 to zero after determining that there is a symmetrical swing around this zero point.
3.	98 MC modulated	** FM antenna terminals	98 MC	L103	Set oscillator to dial scale.	Across voice coil
4.	98 MC modulated	** FM antenna terminals	98 MC	L101, L102	Align antenna & detector stages	Across voice coil.

* Probe from generator should be isolated through A .05 MFD. capacitor.

** Probe from generator should be terminated with proper resistor to match 72 ohm line impedance.

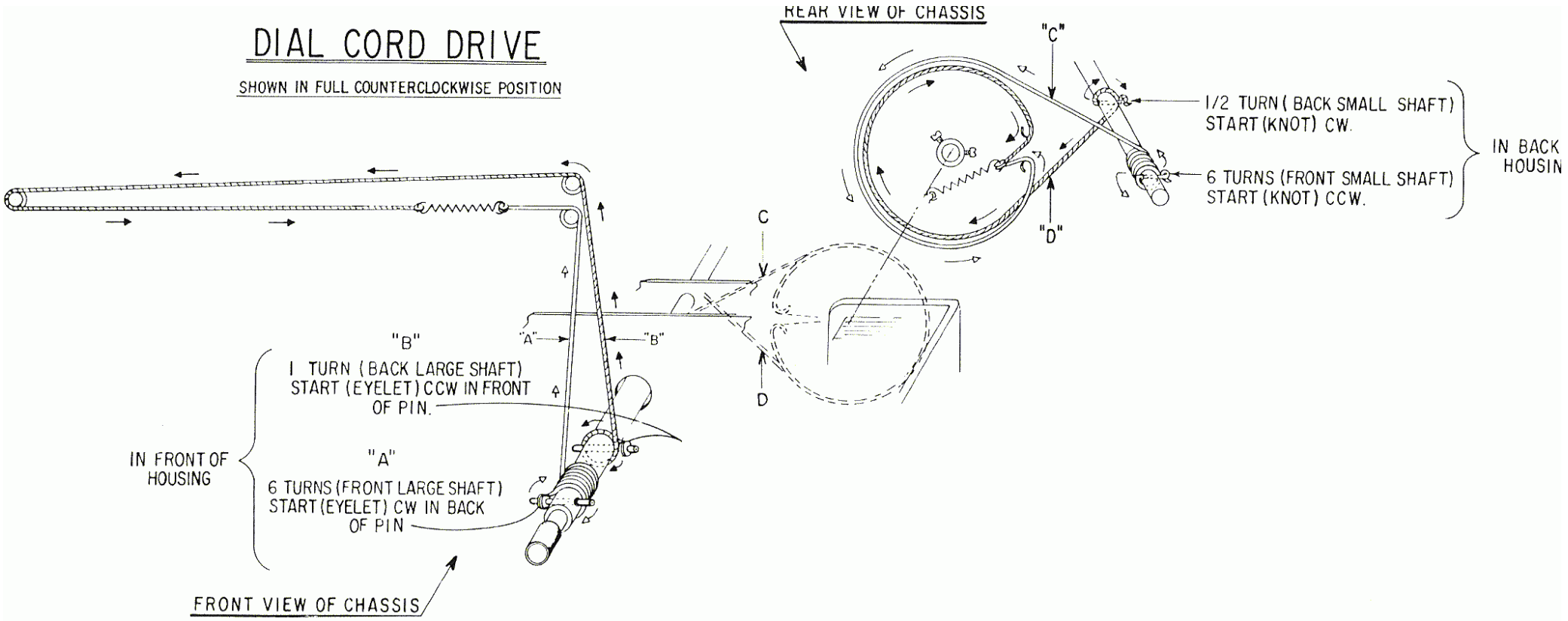
AM ALIGNMENT PROCEDURE

OPER.	CONNECT GEN. TO DUMMY ANTENNA	INPUT SIG. FREQUENCY	BAND	SET DIAL AT	TRIMMERS	PURPOSE
1	One turn loop coupled loosely to Broadcast Wavemagnet	455 Kc	BC	1600 Kc	T1, T2, T4, T5, T7, T8, T10	Align I.F.
*2	One turn coupled loosely to Long Wave Wavemagnet	160 Kc	LW	160 Kc	Rock Gang, Adjust 5E	Alignment of LW at 160 Kc
*3	One Turn Loop Loosely to Long Wave Wavemagnet	400 Kc	LW	400 Kc	5D	Set osc. to scale
4		REPEAT OPERATIONS 2 & 3				
*5		160 Kc	LW	160 Kc	Rock, adjust L17B	Alignment LW mixer at 160 Kc
*6		375 Kc	LW	375 Kc	5A	Alignment LW mixer
7		REPEAT OPERATIONS 5 & 6				
*8		375 Kc	LW	375 Kc	C33	Alignment of LW antenna
*9	One turn loop coupled loosely to Broadcast Wavemagnet	600 Kc	BC	600 Kc	Rock Gang, Adjust C47	Alignment of BC at 600 Kc
10		1600 Kc	BC	1600 Kc	5C	Set osc. to scale
11	One Turn Loop Coupled Loosely to Broadcast Wavemagnet	REPEAT OPERATIONS 9 & 10				
*12		600 Kc	BC	600 Kc	Rock, adjust L17A	Alignment of BC mixer at 600 Kc
13		1400 Kc	BC	1400 Kc	5B	Alignment BC mixer
14		REPEAT OPERATIONS 12 & 13				
15		1400 Kc	BC	1400 Kc	C32	Alignment of BC antenna
*16	3 Feet of Wire Approximately 1 Foot and Parallel from Extended Waverod	2.1 Mc	2-4 Mc	2.1 Mc	Rock L23, L17, L6	Alignment of SW osc., mixer & antenna
17		3.9 Mc	2-4 Mc	3.9 Mc	6F, 6D, 6B	Alignment of SW osc., mixer & antenna
18		REPEAT OPERATIONS 17 & 18				
* 19		4.25 Mc	4-9 Mc	4.25 Mc	Rock L22, L15, L5	Alignment of Short Wave Oscillator, Mixer and Antenna
20		8.75 Mc	4-9 Mc	8.75 Mc	6E, 6C, 6A	
21		REPEAT OPERATIONS 20 & 21				
22		9.7 Mc	31 meters	9.7 Mc	L21, L14, L4	
23		11.8 Mc	25 meters	11.8 Mc	L20, L13, L3	
24		15.2 Mc	19 meters	15.2 Mc	L19, L12, L2	
25		17.8 Mc	16 meters	17.8 Mc	L18, L11, L1	

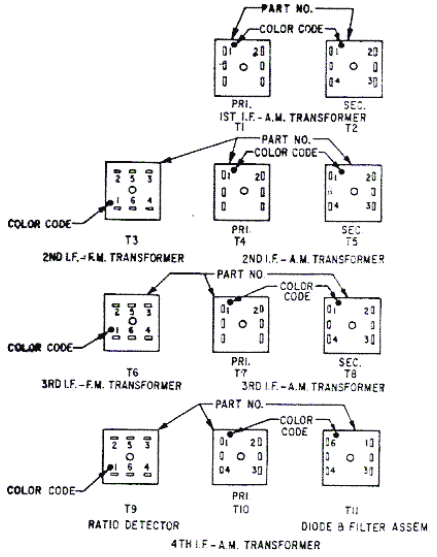
* NOTE: Rock tuning condenser when making alignment under Operations 2, 3, 5, 6, 8, 9, 12, 16 & 19.

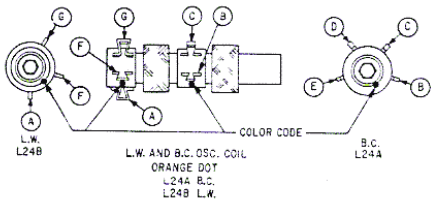
DIAL CORD DRIVE

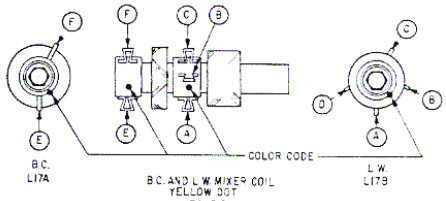
SHOWN IN FULL COUNTERCLOCKWISE POSITION

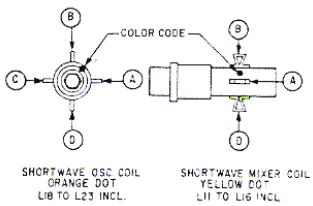


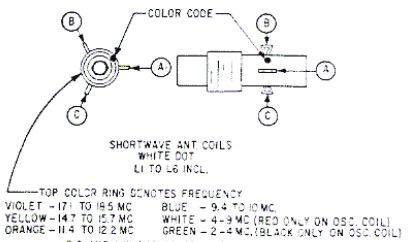
Chassis 12KT40Z8	F.M.-RF.	FM-Osc. Mixer	AM-RF	AM-Mixer	AM-Oscillator	AM-FM 1st IF.	AM-FM 2nd IF.	AM-FM 3rd IF.	1st Audio	Driver	Output Matched Pair	Supplier
Zenith Part No.	121-294	121-295	121-44	121-351	121-350	121-352	121-352	121-352	121-374	121-375	121-373	Amperex
EIA No.	2N2654	2N2654	2N2089	2N2092	2N2089	2N2089	2N2089	2N2089	2N2439	2N2438	2N2431	

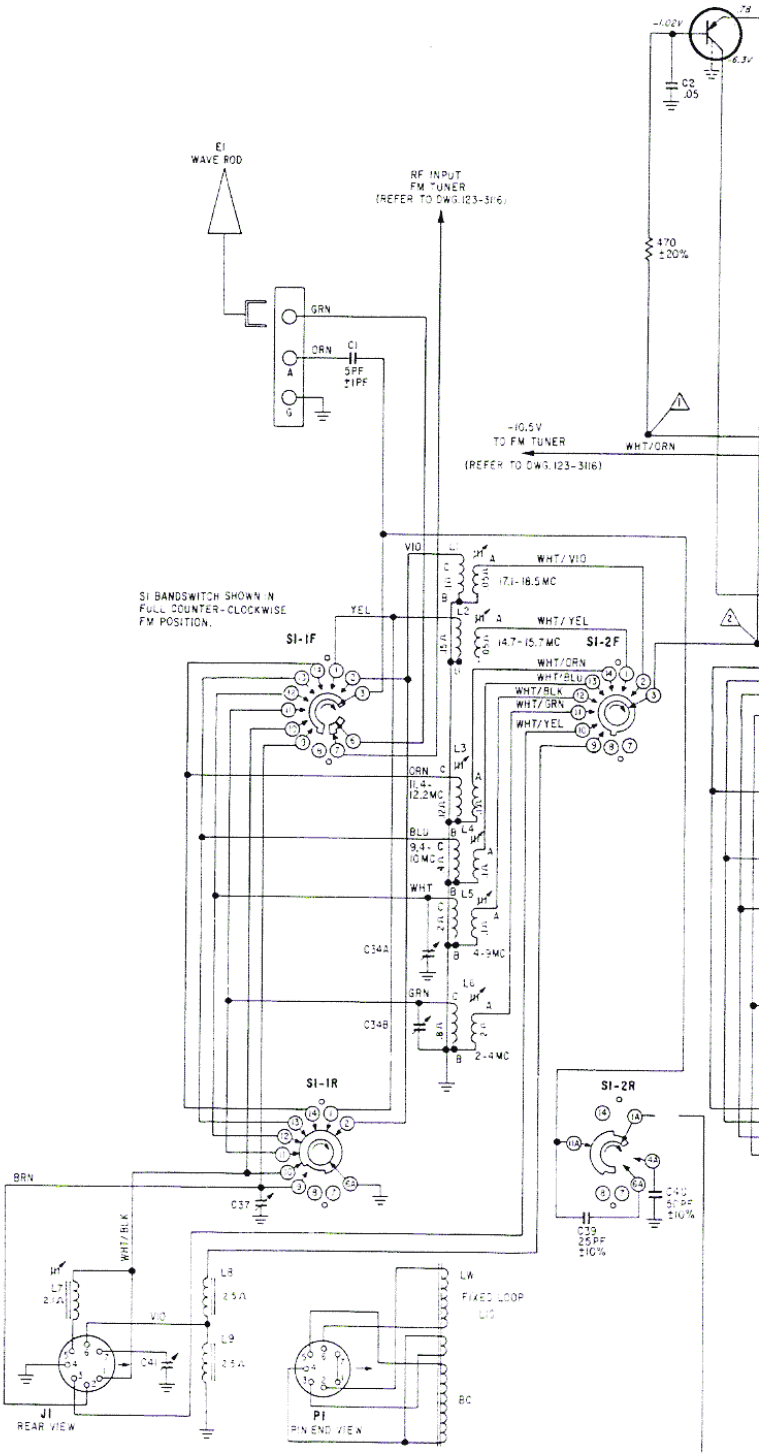

PART NO.
COLOR CODE
PRI.
SEC.
1ST I.F.-A.M. TRANSFORMER
T1
T2
COLOR CODE
T3
2ND I.F.-F.M. TRANSFORMER
PRI.
T4
SEC.
T5
2ND I.F.-A.M. TRANSFORMER
T6
3RD I.F.-F.M. TRANSFORMER
PRI.
T7
SEC.
T8
3RD I.F.-A.M. TRANSFORMER
T9
RATIO DETECTOR
PRI.
T10
T11
DIODE & FILTER ASSEM
4TH I.F.-A.M. TRANSFORMER

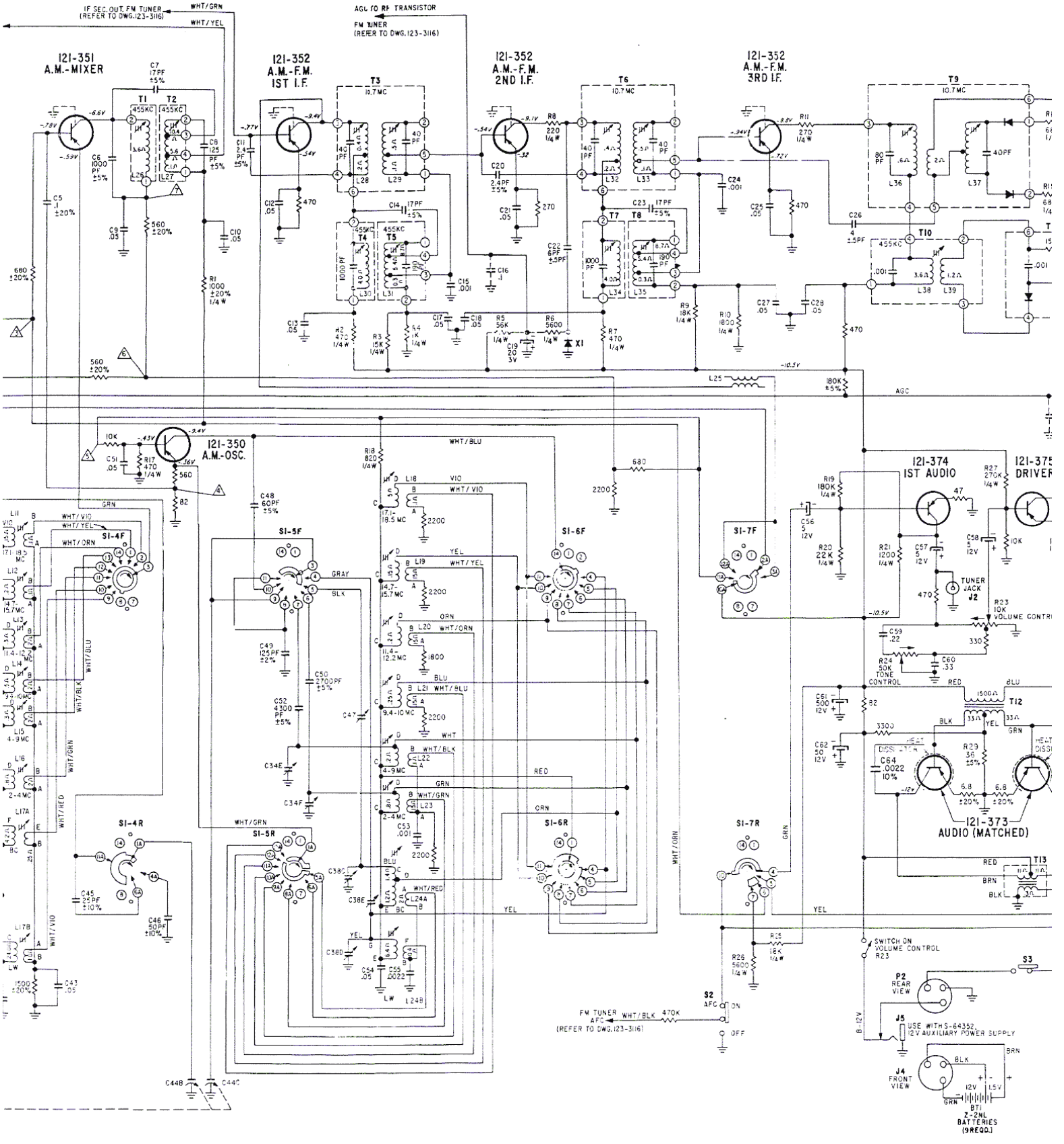

L.W.
L24B
L.W. AND B.C. OSC. COIL
ORANGE DOT
L24A B.C.
L24B L.W.
COLOR CODE
B.C.
L24A

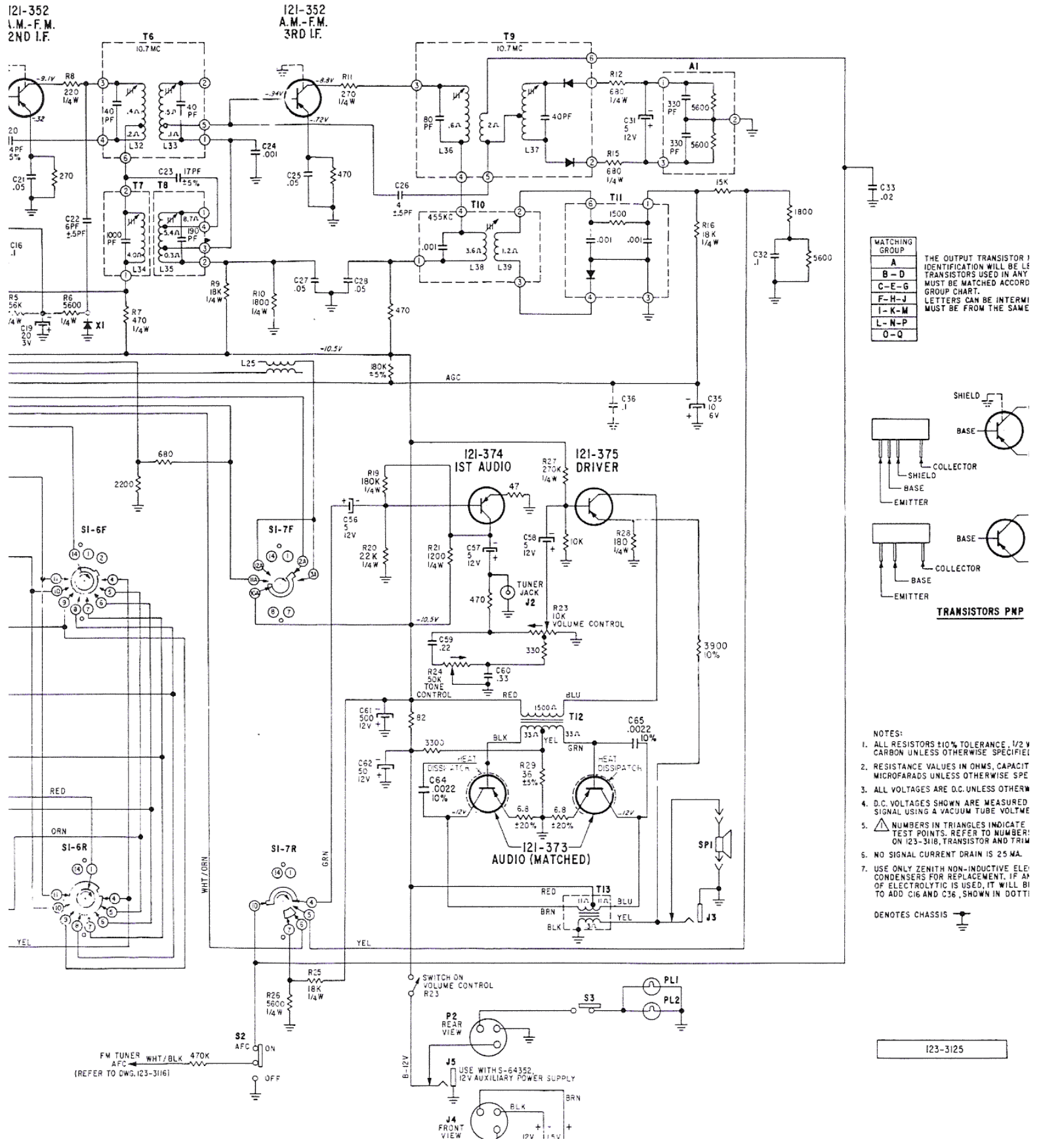

B.C.
L17A
B.C. AND L.W. MIXER COIL
YELLOW DOT
L17A B.C.
L17B L.W.
COLOR CODE
L.W.
L17B


COLOR CODE
SHORTWAVE OSC. COIL
ORANGE DOT
L18 TO L23 INCL.
SHORTWAVE MIXER COIL
YELLOW DOT
L11 TO L16 INCL.


COLOR CODE
SHORTWAVE ANT COILS
WHITE DOT
L1 TO L6 INCL.
TOP COLOR RING DENOTES FREQUENCY
VIOLET - 17.1 TO 18.5 MC
YELLOW - 14.7 TO 15.7 MC
ORANGE - 11.4 TO 12.2 MC
BLUE - 9.4 TO 10 MC
WHITE - 4-9 MC (RED ONLY ON OSC. COIL)
GREEN - 2-4 MC (BLACK ONLY ON OSC. COIL)
B.C. AND L.W. (NO COLOR RING)


E1
WAVE ROD
RF INPUT
FM TUNER
(REFER TO DWG. 123-3116)
GRN
ORN
C1
5PF ±1PF
-10.5V
TO FM TUNER
(REFER TO DWG. 123-3116)
WHT/ORN
-1.02V
79
6.3V
C2
.05
470
±20%
VIO
WHT/VIO
17.1-18.5MC
YEL
WHT/YEL
14.7-15.7MC
SI-1F
SI-2F
SI BANDSWITCH SHOWN IN
FULL COUNTER-CLOCKWISE
FM POSITION.
WHT/ORN
WHT/BLU
WHT/BLK
WHT/GRN
WHT/YEL
ORN
11.4-12.2MC
BLU
9.4-10MC
WHT
4-9MC
2-4MC
C34A
C34B
SI-1R
SI-2R
C37
C39
25PF
±10%
BRN
WHT/BLK
L7
2.2Ω
L8
2.5Ω
L9
2.5Ω
VIO
LW
FIXED LOOP
L10
BC
J1
REAR VIEW
P1
PIN END VIEW


121-351
A.M.-MIXER
121-352
A.M.-F.M.
IST I.F.
121-352
A.M.-F.M.
2ND I.F.
121-352
A.M.-F.M.
3RD I.F.
121-350
A.M.-OSC.
121-374
IST AUDIO
121-375
DRIVER
121-373
AUDIO (MATCHED)
IF SEC. OUT. FM TUNER
(REFER TO DWG. 123-3116)
AGC TO RF TRANSISTOR
FM TUNER
(REFER TO DWG. 123-3116)
TUNER
JACK
J2
VOLUME CONTROL
TONE
CONTROL
SWITCH ON
VOLUME CONTROL
R23
S1-4F
S1-5F
S1-6F
S1-7F
S1-4R
S1-5R
S1-6R
S1-7R
S2
AFC
ON
OFF
S3
P2
REAR
VIEW
J5
USE WITH S-64352,
12V AUXILIARY POWER SUPPLY
J4
FRONT
VIEW
BT1
2-2NL
BATTERIES
(9REQD.)
FM TUNER AFC
(REFER TO DWG. 123-3116)
AGC
L25
X1
T1
T2
T3
T4
T5
T6
T7
T8
T9
T10
T12
T13


121-352
A.M.-F.M.
2ND I.F.
121-352
A.M.-F.M.
3RD I.F.
T6
10.7MC
T9
10.7MC
A1
T7
T8
T10
T11
455KC
121-374
1ST AUDIO
121-375
DRIVER
121-373
AUDIO (MATCHED)
TUNER JACK J2
R23 10K VOLUME CONTROL
R24 50K TONE CONTROL
SI-6F
SI-7F
SI-6R
SI-7R
T12
T13
HEAT DISSIPATOR
SPI
J3
S1
S2
S3
PL1
PL2
P2 REAR VIEW
J4 FRONT VIEW
J5 USE WITH S-64352 12V AUXILIARY POWER SUPPLY
SWITCH ON VOLUME CONTROL R23
FM TUNER AFC (REFER TO DWG. 123-3116)
WHT/BLK
470K
AGC
-10.5V
8-12V
RED
BLU
YEL
GRN
BRN
BLK
ORN
WHT/ORN
MATCHING GROUP
A
B - D
C - E - G
F - H - J
I - K - M
L - N - P
O - Q
THE OUTPUT TRANSISTOR
IDENTIFICATION WILL BE LS
TRANSISTORS USED IN ANY
MUST BE MATCHED ACCORD
GROUP CHART.
LETTERS CAN BE INTERMI
MUST BE FROM THE SAME
SHIELD
BASE
COLLECTOR
EMITTER
TRANSISTORS PNP
NOTES:
1. ALL RESISTORS ±10% TOLERANCE, 1/2 W
CARBON UNLESS OTHERWISE SPECIFIE
2. RESISTANCE VALUES IN OHMS, CAPACIT
MICROFARADS UNLESS OTHERWISE SPE
3. ALL VOLTAGES ARE D.C. UNLESS OTHERW
4. D.C. VOLTAGES SHOWN ARE MEASURED
SIGNAL USING A VACUUM TUBE VOLTME
5. NUMBERS IN TRIANGLES INDICATE
TEST POINTS. REFER TO NUMBERS
ON 123-3118, TRANSISTOR AND TRIM
6. NO SIGNAL CURRENT DRAIN IS 25 MA.
7. USE ONLY ZENITH NON-INDUCTIVE ELE
CONDENSERS FOR REPLACEMENT. IF AN
OF ELECTROLYTIC IS USED, IT WILL BE
TO ADD C16 AND C36, SHOWN IN DOTTE
DENOTES CHASSIS
123-3125