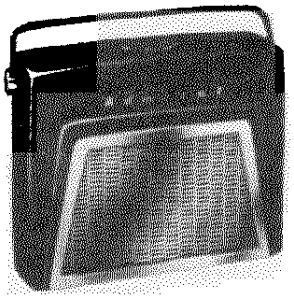


Models 4Y11 Ebony, 4Y12 Maroon, 4Y18 Green and 4Y19 Gray

SPECIFICATIONS

Circuit: Superheterodyne receiver with 4 miniature tubes and a selenium rectifier.

Frequency Range: Standard broadcast band, 535 to 1620 KC.

Intermediate Frequency: 455 KC.

Power Supply: This receiver will operate on 117 volt AC or DC or on one 67½ volt "B" battery and one 7½ volt "A" battery.

Power Consumption: 20 watts on 117 volt AC or DC line.

Antenna: Built-in Ferro-Scope (iron core) antenna.

Speaker: 3½" PM, with Alnico V magnet. Voice coil impedance, 3.2 ohms.

REPLACING BATTERIES

Note: Run-down batteries should be removed from the set. Corrosive material may leak from a run-down battery and parts of the chassis or the cabinet are likely to be damaged.

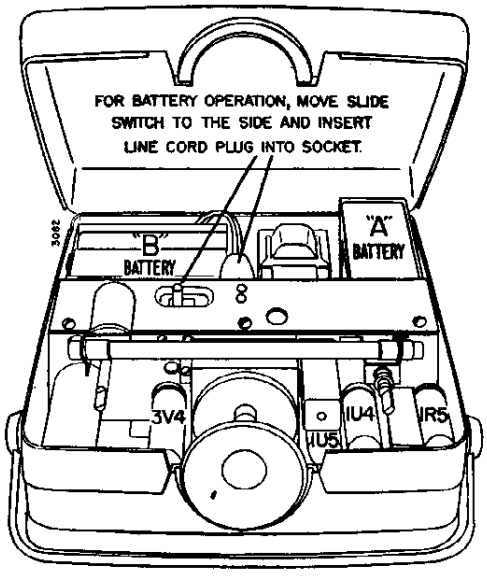
In normal use, batteries for this set should furnish about 40 operating hours. Batteries listed below, or an equivalent substitute may be used in this set.

"A" Battery (7½ volts): Burgess C5, Eveready 717 or equivalent.

"B" Battery (67½ volts): Burgess XX45, Eveready 467 or equivalent.

REPLACING TUBES

Any tube may be removed or replaced after the knurl knobs are pulled off the tuning and volume control shaf Some type of tube extracting device may be useful, or tube may be removed by carefully working a slend screwdriver between the base of the tube and its sock



Tube and Battery Location

REMOVING THE CHASSIS

The chassis need only be removed from the cabin when servicing the underside of the chassis.

To remove the chassis, proceed as follows:

(a) Remove one screw from the chassis to disconne the bead chain fastened to the cabinet.

(b) Remove and disconnect the "A" and "B" batterie remove the knurled tuning knob and the 1U4 tub

(c) Remove the chassis mounting screw located in ea battery case and behind the tubes. The enti chassis may be lifted out of the cabinet.

The chassis cover must be removed to align the

MODELS 4Y11, 4Y12, 4Y18, 4Y19, Ch. 4Y1

ALIGNMENT PROCEDURE

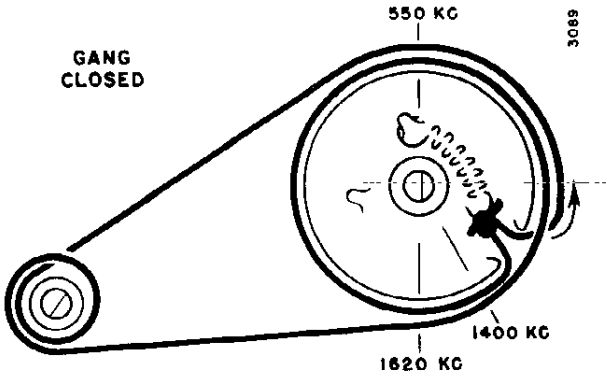
- Battery power is preferable for alignment; use FRESH batteries. If this set is to be aligned while operating on an AC power line, an isolation transformer should be used. If an isolation transformer is not available, connect a .1 mfd. capacitor in series with the signal generator low side to B minus (pin 7 of 1U5 tube.)
- The chassis cover must be removed to align trimmers A and C.
- Set volume control full on.
- Connect output meter across speaker voice coil.
- Use lowest setting of signal generator capable of producing adequate output meter indication.
- Use a non-metallic alignment tool for IF transformers.
- Repeat adjustments to insure good results.

Step	Dummy Antenna in Series with Signal Generator	Connection of Signal Generator (High Side)	Signal Generator Frequency	Receiver Gang Setting	Trimmer Description	Trimmer Designation	Type of Adjustment
1	.001 mfd. when using AC. .1 mfd. when using Battery.	Stator of antenna tuning capacitor	455 KC	Gang fully open	2nd IF 1st IF	*A, B *C, D	Maximum output
2	.001 mfd. when using AC. .1 mfd. when using Battery.	Stator of antenna tuning capacitor	1620 KC	Gang fully open	Oscillator (on gang)	E	Maximum output
Install the metal chassis cover removed during IF Alignment.							
3	Loop of several turns of wire, or place generator lead close to receiver for adequate signal pickup.	No actual connection (signal by radiation)	1400 KC	Tune in generator signal.	Antenna (on gang)	F	Maximum output

*Adjustments A and C are made from underside of chassis. To avoid splitting the slotted head of powdered iron tuning slug in IF transformers, use an alignment tool with a blade 3/32" wide.

ceiver or check voltages, etc. Remove the remaining two screws which hold the cover on the chassis. Press the switch button to disengage the chassis cover.

When replacing the chassis cover, press the switch button to permit the cover to fit on the chassis at all points. Three tabs on the chassis cover must fit in slots along the edge of the chassis at either side of the speaker. Caution: Be sure the lead wires from the output transformer (on the speaker) are not caught between the chassis and the cover.

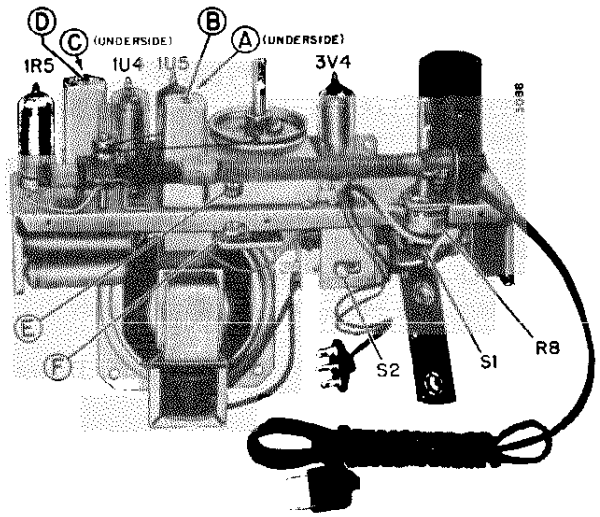


Dial Cord Stringing

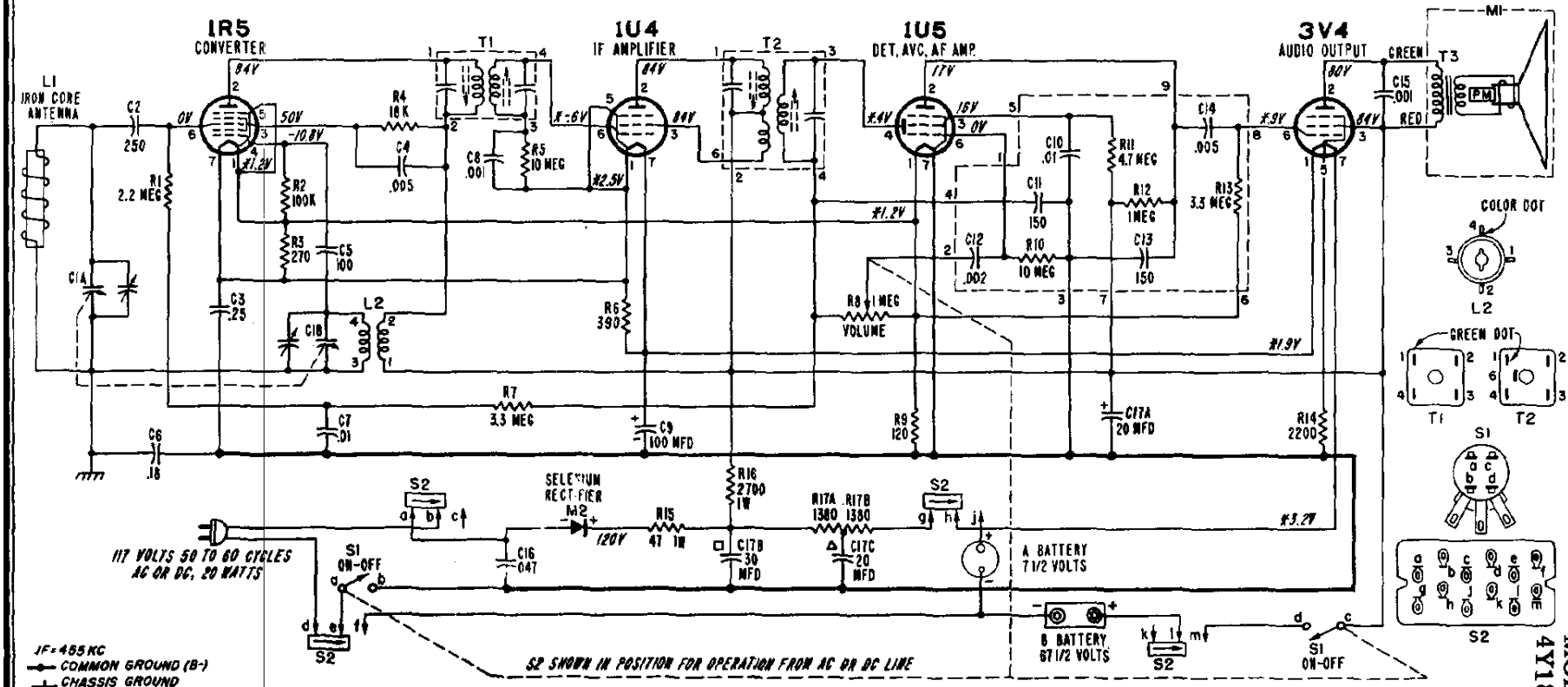
DIAL CORD STRINGING

To string the dial cord, close the tuning gang. Start stringing at the tension spring and run the dial cord in the direction indicated by the arrow. See illustration below. Draw the dial cord tight to apply tension on the spring and prevent slipping at the tuning shaft.

TUBE AND TRIMMER LOCATION



Adjustments A and C are made from underside of chassis.



*These voltage readings will be either lower or practically zero if taken with a 1000 ohms-per-volt meter.

VOLTAGE DATA

Voltages shown on schematic diagram.

- All voltages taken between tube socket terminals and B minus (pin 7 of 1U5 tube).
- Dial set at low frequency end; volume control at minimum.
- Voltages measured on 117 volts AC with vacuum-tube voltmeter

MODELS 4Y11, 4Y12, 4Y18, 4Y19, Ch. 4Y1

RESISTORS

Symbol	Description	Part No.
R1	2.2 megohms, ½ watt	60B 8-225
R2	100,000 ohms, ½ watt	60B 8-104
R3	270 ohms, ½ watt	60B 8-271
R4	18,000 ohms, ½ watt	60B 8-183
R5	10 megohms, ½ watt	60B 8-106
R6	390 ohms, ½ watt	60B 8-391
R7	3.3 megohms, ½ watt	60B 8-335
R8	1 megohm, Volume control (Includes On-Off switch S1)	75C 1-57
R9	120 ohms, ½ watt	60B 8-121
†R10	10 megohms, ½ watt	
†R11	4.7 megohms, ½ watt	
†R12	1 megohm, ½ watt	
†R13	3.3 megohms, ½ watt	
R14	2,200 ohms, ½ watt	60B 8-222
R15	47 ohms, 1 watt	60B 14-470
R16	2,700 ohms, 1 watt	60B 14-272
R17A	1380 ohms } 5 watt tapped	
R17B	1380 ohms } Candohm	61A 5-7

CAPACITORS

Symbol	Description	Part No.
C1A	272 mmfd, max. Ant. } gang	68B 57
C1B	107 mmfd, max. Osc. }	
C2	250 mmfd, ceramic	65C 6-5
C3	.25 mfd, 200 volts, paper	64B 1-28
C4	.005 mfd, ceramic	65C 10-5
C5	100 mmfd, ceramic	65C 6-3
C6	.18 mfd, 200 volts, paper	64A 2-2
C7	.01 mfd, 400 volts, paper	64B 1-25
C8	.001 mfd, ceramic	65C 6-41
C9	100 mfd, 25 volts, electrolytic	67A 4-6
†C10	.01 mfd, ceramic	
†C11	150 mmfd, ceramic	
†C12	.002 mfd, ceramic	
†C13	150 mmfd, ceramic	
†C14	.005 mfd, ceramic	
C15	.001 mfd, ceramic	65C 6-41
C16	.047 mfd, 400 volts, paper	65A 13-5
C17A	20 mfd, 150 volts } elect.	67C 7-41
C17B	30 mfd, 150 volts } elect.	67C 7-41
C17C	20 mfd, 150 volts } elect.	67C 7-41

COILS, TRANSFORMERS, ETC.

Symbol	Description	Part No.
L1	Antenna, Iron Core	69B 167-1
L2	Coil, Oscillator	69A 39-7
T1	Transformer, 1st IF	72B 28-1
T2	Transformer, 2nd IF	72B 28-62
T3	Transformer, Output	98A 21
M1	Speaker (3½" PM) and Output Trans.	78B 58-2
M2	Rectifier, Selenium	93A 1-4
S1	Switch, On-Off	Part of R8
S2	Switch, Power Change	77A 46
	Couplate (includes R10, R11, R12, R13, C10, C11, C12, C13, C14)	63B 6-6

MISCELLANEOUS PARTS

Description	Part No.
Bracket, Antenna Support (Includes fiber insulator support)	A3911
Chassis Cover (Includes "A" and "B" battery cases)	A3904
Clip, IF Transformer Mounting	72B 28-10
Connector	
"A" Battery	90A 7-1
"B" Battery	90A 5-3
Dial Cord (13" length needed)	50A 1-3
Drum, Tuning, and Hub	A3906
Insulator, Fiber (for mtg. rectifier)	32A 137
Insulator Support, Fiber (for mtg. ant.)	32A 195
Line Cord Clamp	11A 9-2
Plate, Fiber (for mtg. Electrolytic)	67A 2-1
Retainer, Fiber (for "B" Battery)	32A 191
Screw	
for mtg. chassis cover (#6-32 x ¼ S.T.)	1A 52-10-24
for mtg. speaker (#6-32 x ⅛ B.H.M.S.)	265-250-C2-24
for mtg. tuning drum (#6-32 x ⅛ Allen Set)	1A 43-7
Shaft, Tuning	28A 69
Socket, Tube	87A 3-7
Spring, Dial Cord	19C 1-5
Washer	
"C", for mtg. tuning shaft	4A 4-5
for mtg. tuning shaft	4A 6-13

CABINET PARTS

Description	Part No.
Button, Handle Ornament	20A 18
Cabinet, Front	
ebony	34E 65-1
maroon	34E 65-3
green	34E 65-5
gray	34E 65-7
Cabinet, Rear	
ebony	34E 65-2
maroon	34E 65-4
green	34E 65-6
gray	34E 65-8
Carton and Fillers	44C 287
Chain, Bead	31A 1-2
Clip,	
for mtg. baffle	15A 922
Fuse, for cabinet catch	84A 10-16
Latch, for cabinet catch	18A 80
Eyelet, for mtg. fuse clip	6B 3-43
Grille Cloth and Baffle	AA227-8
Grille, Metal	36B 44
Grille Trim, Metal for front and rear of cabinet	23C 147
Handle, Plastic Covered	
ebony	A4127
maroon	A4128
green	A4129
gray	A4130
Hinge, Spring	19A 72-1
Knob, Dial	
ebony	33C 105-1
maroon	33C 105-4
green	33C 105-7
gray	33C 105-10
Knob, Tuning	
ebony	33C 105-2
maroon	33C 105-5
green	33C 105-8
gray	33C 105-11
Knob, Volume	
ebony	33C 105-3
maroon	33C 105-6
green	33C 105-9
gray	33C 105-12
Ring, Compression, for knobs	19A 31-10
Screw,	
for mtg. chassis (#6-32 x 5/16 R.H.M.S.)	260-312-C2-24
for mtg. baffle (#4-24 x ¼ B.H.S.T.)	1A 27-1-24
Tubing, Plastic, for bead chain (5/16" dia. x 4½ long)	96B 19-2
Washer,	
"E", for mtg. handle (3/16" size)	4B 12-23
Flat, for mtg. handle (.196 x ⅜ x 1/32)	4B 1-68-24
Flat, for mtg. handle (.196 x ¾ x 1/32)	4B 2-74
Spring, for mtg. handle (3/16 x ⅜ x 5/64)	4A 5-19

†Part of couplate, part of number 63B 6-6. Numbers on schematic correspond to lead numbers on couplate.