

# PARTS LIST AND SERVICE INFORMATION FOR PHILCO-TROPIC MODEL 3474

## REPLACEMENT PARTS LIST

Reference Symbol	Description	Part No.	Reference Symbol	Description	Part No.
C1	Condenser, tuning gang, 3-section	31-2741-2	R7	Resistor, a-v-c filter, 1.5 megohms	66-5158340*
C2	Condenser, trimmer, 5-section	31-6507	R8	Resistor, cathode bias, 22,000 ohms	66-3228340*
C2A	Condenser, aerial trimmer, 21 mc.	Part of C2	R9	Resistor, grid return, 47,000 ohms	66-3478340*
C2B	Condenser, aerial trimmer, 7.9 mc.	Part of C2	R10	Resistor, paritic suppressor, 58 ohms	66-0683450*
C2C	Condenser, aerial trimmer, 15.2 mc.	Part of C2	R11	Resistor, plate load, 22,000 ohms, 1 watt	66-3224340*
C2D	Condenser, aerial trimmer, 7.5 mc.	Part of C2	R12	Resistor, grid return, 47,000 ohms	66-4478340*
C2E	Condenser, aerial trimmer, SW2	Part of C2	R13	Resistor, filter, 330 ohms, 3 watts	33-1334-8
C3	Condenser, d-c blocking, 100 uuf.	62-110009001*	R14	Resistor, a-v-c delay, 2.7 megohms	66-5278340*
C4	Condenser, tracking, BS1, 485 uuf.	30-1220-23	R15	Resistor, filter, 220 ohms, 1 watt	66-1224540*
C5	Condenser, shunt, BS3, 62 uuf.	30-1220-62	R16	Resistor, a-v-c filter, 2.2 megohms	66-5228340*
C6	Condenser, shunt, BS2, 131 uuf.	30-1220-38	R17	Resistor, cathode bias, 1,000 ohms	66-2108340*
C7	Condenser, trimmer, 9-section	31-6507-4	r18	Resistor, bias divider, 2200 ohms	66-4228340*
C7A	Condenser, r-f trimmer, 21.5 mc.	Part of C7	R19	Resistor, a-v-c filter, 2.2 megohms	66-5228340*
C7B	Condenser, r-f trimmer, 17.8 mc.	Part of C7	R20	Resistor, a-v-c filter, 2.2 megohms	66-5228340*
C7C	Condenser, r-f trimmer, 15.2 mc.	Part of C7	R21	Resistor, i-f filter, 47,000 ohms (Part of Z2)	66-3478340*
C7D	Condenser, r-f trimmer, 7.5 mc.	Part of C7	R22	Resistor, phono preamplifier plate, 56,000 ohms	66-3565340*
C7E	Condenser, r-f trimmer, SW2	Part of C7	R23	Resistor, grid return, 470,000 ohms	66-4478340*
C7F	Condenser, oscillator trimmer, 11.7 mc.	Part of C7	R24	Resistor, inverse feedback, 150 ohms	66-1158350*
C7G	Condenser, oscillator trimmer, 9.7 mc.	Part of C7	R25	Resistor, volume control, 2 megohms	33-5535-35
C7H	Condenser, oscillator trimmer, SW2	Part of C7	R26	Resistor, bass compensation, 68,000 ohms	66-3688540*
C7I	Condenser, bias filter, .047 uuf.	45-3505-28	R27	Resistor, tone control, 5 megohms	33-5566-40
C8	Condenser, d-c blocking, 220 uuf.	62-122001001*	R28	Resistor, grid return, 10 megohms	66-6108340*
C9	Condenser, tracking, BS1, 485 uuf.	30-1220-23	R29	Resistor, cathode degeneration, 4.7 ohms	66-9478340*
C10	Condenser, shunt, BS3, 62 uuf.	30-1220-62	R30	Resistor, filter, 1200 ohms	66-1224540*
C11	Condenser, shunt, BS2, 131 uuf.	30-1220-38	R31	Resistor, filter, 33,000 ohms	66-3334540*
C12	Condenser, oscillator trimmer, BC	31-6308	R32	Resistor, plate load, 270,000 ohms	66-4278340*
C13	Condenser, trimmer, 3-section	31-6477-4	R33	Resistor, cathode load, 22,000 ohms	66-3228340*
C14	Condenser, oscillator padder, BC	Part of C14	R34	Resistor, bias voltage divider, 280 ohms, 3 watts	33-1334-11
C14A	Condenser, oscillator trimmer, SW1	Part of C14	R35	Resistor, phono-feedback filter, 220,000 ohms	66-4228340*
C14B	Condenser, oscillator trimmer, 7.5 mc.	Part of C14	R36	Resistor, plate load, 22,000 ohms	66-3228340*
C15	Condenser, d-c blocking, 100 uuf.	62-110009001*	R37	Resistor, cathode bias, 2200 ohms	66-2228340*
C16	Condenser, fixed tracker, SW1, 3600 uuf.	60-20365314	R38	Resistor, diode load, 330,000 ohms	66-4338340*
C17	Condenser, bias filter, .22 uuf.	45-3505-32	R39	Resistor, grid return, 470,000 ohms	66-4478340*
C18	Condenser, oscillator divider, BS1, 180 uuf.	30-1220-30*	R40	Resistor, bias, 220,000 ohms	66-4228340*
C19	Condenser, oscillator divider, BS2, 330 uuf.	60-10335417	R41	Resistor, bias, 1.5 megohm	66-5158340*
C20	Condenser, oscillator divider, BS3, 82 uuf.	60-00852379	R42	Resistor, target load, 1 megohm	66-5108340*
C21	Condenser, tracking, BS1, 540 uuf.	30-1220-61	S1	Switch, off-on	Part of R27
C22	Condenser, d-c blocking, 270 uuf.	60-10275417	T2	Transformer, power	32-8570
C23	Condenser, a-v-c filter, .047 uuf.	45-3505-28	T3	Transformer, output	32-8300-1
C24	Condenser, trimmer, 2-section	31-6476-19	T4	Transformer, BC aerial	32-4366-1
C24A	Condenser, oscillator trimmer, 21 mc.	Part of C24	T5	Transformer, SW1 and BS1 aerial	32-4364
C24B	Condenser, oscillator trimmer, 19 mc.	Part of C24	T6	Transformer, SW2 aerial	32-4208
C25	Condenser, d-c blocking, 100 uuf.	60-10105417	T7	Transformer, BS2, BS3, BS4, BS5, and BS6 aerial	32-3670
C26	Condenser, shunt, SW1, 7.5 uuf.	30-1224-8	T8	Transformer, BC r-f	32-4369
C27	Condenser, primary trimmer, 1st i-f	Part of Z1	T9	Transformer, SW1 and BS1 r-f	32-4364-1
C28	Condenser, secondary trimmer, 1st i-f	Part of Z1	T10	Transformer, BS2, BS3, BS4, BS5, and BS6 r-f	32-3671
C29	Condenser, primary trimmer, 2nd i-f	Part of Z2	T11	Transformer, BC oscillator	32-4370
C30	Condenser, secondary trimmer, 2nd i-f	Part of Z2	T12	Transformer, SW1 and BS1 oscillator	32-4207-2
C31	Condenser, i-f filter, 100 uuf.	Part of Z2	T13	Transformer, SW2 oscillator	32-4208-2
C32	Condenser, i-f filter, 100 uuf.	Part of Z2	T14	Transformer, BS2, BS3, BS4, BS5, and BS6 oscillator	32-4212-2
C33	Condenser, line filter, .01 uuf.	45-3505-92*	TC1A	Terminal board, aerial connection	38-9725
C34	Condenser, a-v-c filter, .047 uuf.	45-3505-28*	TC1B	Tuning core, assembly, 3-section	75-5958
C35	Condenser, line filter, .01 uuf.	45-3505-92*	TC1C	Tuning core, band spread, aerial	Part of TC1
C36	Condenser, diode coupling, 100 uuf.	62-110009001*	TC2	Tuning core, band spread, r-f	Part of TC1
C37	Condenser, diode coupling, 100 uuf.	62-110009001*	TC3	Tuning core, SW2 aerial	Part of T5
C38	Condenser, d-c blocking, .0068 uuf.	45-3505-40*	TC4	Tuning core, SW2 r-f	Part of T5
C39	Condenser, d-c blocking, .0068 uuf.	45-3503-40*	W1	Tuning core, SW2 osc.	Part of T13
C40	Condenser, d-c blocking, phono-feedback, .047 uuf.	45-3505-45*	WS1	Line cord	42-1977
C41	Condenser, BC r-f trimmer	Part of C1	WS2	Water switch, band-change	42-1817
C42	Condenser, d-c blocking, .047 uuf.	45-3505-28*	WS3	Water switch, voltage changeover	42-1871-1
C43	Condenser, d-c blocking, .047 uuf.	45-3505-28*	Z1	Water switch, radio-phon	32-3976
C44	Condenser, bass compensation, .0068 uuf.	45-3505-40*	Z2	Transformer, 2nd i-f	32-4346-1
C45	Condenser, tone compensation, high cut, .01 uuf.	45-3505-92*			
C46	Condenser, d-c blocking, .047 uuf.	45-3505-54*			
C47	Condenser, plate by-pass, 220 uuf.	62-122001001			
C48	Condenser, electrolytic, 3-section	30-2570-15			
C48A	Condenser, filter, 20 uuf., 450v	Part of C48			
C48B	Condenser, filter, 10 uuf., 450v	Part of C48			
C48C	Condenser, filter, 10 uuf., 450v	Part of C48			
C49	Condenser, phono-feedback filter, .015 uuf.	56-3505-42*			
C50	Condenser, plate by-pass, .003 uuf.	45-3505-89*			
C51	Condenser, electrolytic, 3-section	30-2570-15			
C51A	Condenser, filter, 20 uuf., 450v.	Part of C51			
C51B	Condenser, filter, 10 uuf., 450v.	Part of C51			
C51C	Condenser, filter, 10 uuf., 450v	Part of C51			
C52	Condenser, BC aerial trimmer	Part of C1			
C53	Condenser, screen by-pass, .047 uuf.	45-3505-56			
C54	Condenser, grid return, .001 uuf.	30-4650-35			
C55	Condenser, coupling, .03 uuf.	30-4650-38			
C57	Condenser, cathode by-pass, .047 uuf.	45-3505-56			
C58	Condenser, tone compensating, 82 uuf.	62-082009001			
I1	Pilot lamp, 6.3v	34-2064			
I2	Jewel lamp, 6.3v	34-2064			
I3	Dial lamp, 6.3v	34-2064			
I4	Dial lamp, 6.3v	34-2064			
J1	Socket, phono input	27-6206			
J2	Socket, phono power	27-6200			
LS1	Seeker, p-m, 12-inch	36-1611-12			
R1	Resistor, grid return, 470,000 ohms	66-4478340*			
R2	Resistor, grid return, 470,000 ohms	66-4478340*			
R3	Resistor, phono-feedback, 6.8 megohms	66-5688540*			
R4	Resistor, loading, 4700 ohms	66-2478340*			
R5	Resistor, plate load, 18,000 ohms, 2 watts	66-3185340*			
R6	Resistor, a-v-c divider, 1.8 megohms	66-5188340*			

### MISCELLANEOUS

Description	Part No.
Cabinet	10892
Cabinet Hardware	
Back, cabinet	54-8588
Baffle-and-cloth assembly	40-8746-1
Baffle-and-cloth assembly, speaker	40-8746
Catch, bullet (2)	45-6190
Dome (4)	45-6190
Door pull (2)	56-9483
Frame assembly, changer mtg.	75-8600
Grille, metal (2)	56-9482
Hinge, knife, L.H.	56-8479
Hinge, knife, R.H.	56-8479-1
Knob, radio-phon	54-4774-21
Knob, band-selector	54-4774-22
Knob, tone, on-off	54-4774-23
Knob, tuning	54-4774-24
Knob, volume	54-4774-25
Spring, record changer mtg., top (3 req.)	56-7059
Spring, record changer mtg., bottom (3 req.)	56-7059-1
Sleeve, record changer mtg.	54-7798
Strike plate (3)	45-6003
Conversion kit, phono, 60 to 50 cycles	40-8680
Cable, speaker	41-9714-4

Description	Part No.
Cable ass'y., tuning eye	41-4144
Dial-scale assembly	76-4437-1
Carriage-and-spring assembly	76-5616
Drive cord (25-foot spool)	45-8750*
Dial clamp (2 req.)	56-1795-1FA15
Dial-plate ass'y.	76-7546
Drum assembly, band indicator	76-1246-2FA33
Pointer	56-6495FCP
Shield, dial light	54-8666
Spring, band indicator (2 req.)	56-3066FA38

Description	Part No.
Pilot-lamp carrier rod	56-2133
Socket ass'y., jewel lamp	41-3737-2
Socket ass'y., dial lamp, right side	27-6233-86
Socket ass'y., dial lamp, left side	27-6233-85
Socket ass'y., pilot lamp	76-1236-3
Socket, Locktal (8 req.)	27-6207
Tuning-core assembly, iron, bandspread	76-5958
Tuning-condenser pulley	76-3145
Idler pulley	76-7640
Shield, tuning eye	54-8826

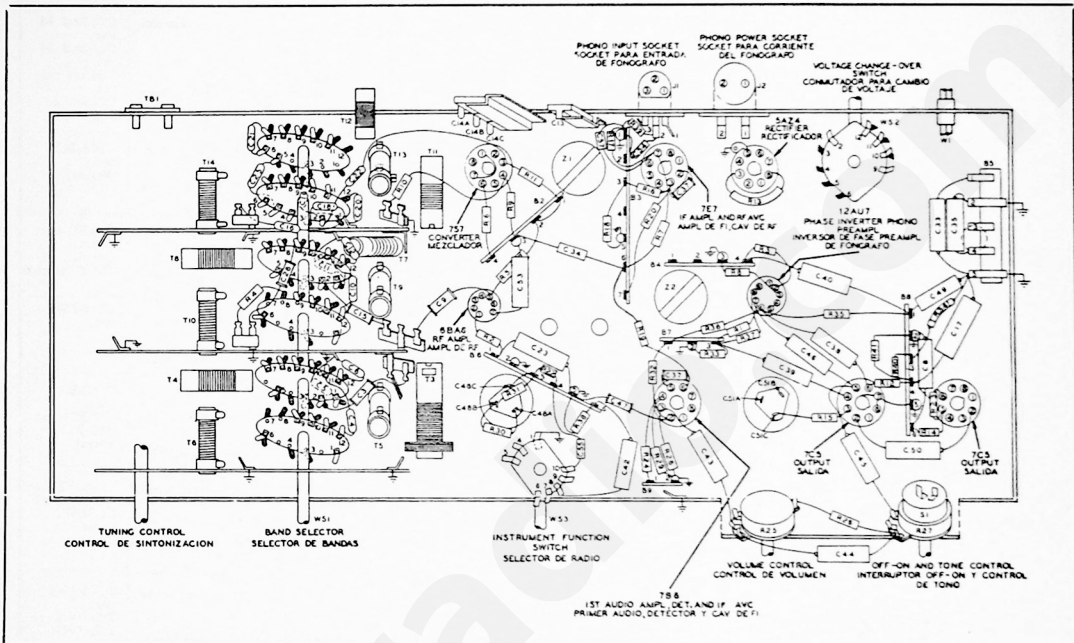


Figure 1. Symbolized Chassis, Showing Parts Placement  
 Figura 1. Vista del Chasis, Mostrando la Ubicacion de las Partes

TP2-1128

**ALIGNMENT PROCEDURE**

**CAUTION:** Before connecting the radio to the power source, make certain that the voltage change-over switch is correctly set for the line voltage.

**DIAL POINTER:** With the tuning-condenser plates fully meshed, adjust the dial pointer to coincide with the index mark (the second mark below "55") at the low-frequency end of the dial.

**BAND-SPREAD TUNING CORES:** With the tuning control at the extreme low-frequency setting, set oscillator core TC1C flush with the rear end of the oscillator-coil form. Aerial core TC1A and r-f core TC1B should now extend approximately 1/16 inch beyond their coil forms.

**SIGNAL GENERATOR:** Connect the ground lead to the chassis, and the output lead as indicated in the chart. Use modulated output.

**RADIO CONTROLS:** Set the volume control to maximum, and the tone control fully clockwise. Set the band switch, tuning control, and signal-generator frequency as indicated in the chart.

**OUTPUT METER:** Connect between the voice-coil lug on the speaker and the chassis.

**OUTPUT LEVEL:** During alignment, the signal-generator output must be attenuated to maintain an output-meter reading below 1.5 volts.

**ALINEAMIENTO**

**PRECAUCION:** Antes de conectar el radio a una fuente de energia, asegúrese de que el conmutador para cambio de voltaje está en la posición correcta para el voltaje de línea.

**INDICADOR DEL CUADRANTE:** Con el condensador de sintonización completamente cerrado, ajústese el indicador del cuadrante de modo que coincida con la marca índice (la segunda marca bajo el "55") en el extremo de baja frecuencia del cuadrante.

**NUSLEOS DE SINTONIZACION DE BANDA ENSANCHADA:** Con el control de sintonización en su posición para sintonización de la frecuencia más baja, fíjese el núcleo TC1C del oscilador a nivel con la parte posterior de la forma de la bobina del oscilador. El núcleo de antena TC1A y el núcleo de r-f TC1B deben sobresalir ahora 1/16" de sus formas.

**GENERADOR DE SEÑALES:** Conéctese el cable de tierra al chasis, y el cable de salida como se indica en la tabla. Usese salida modulada.

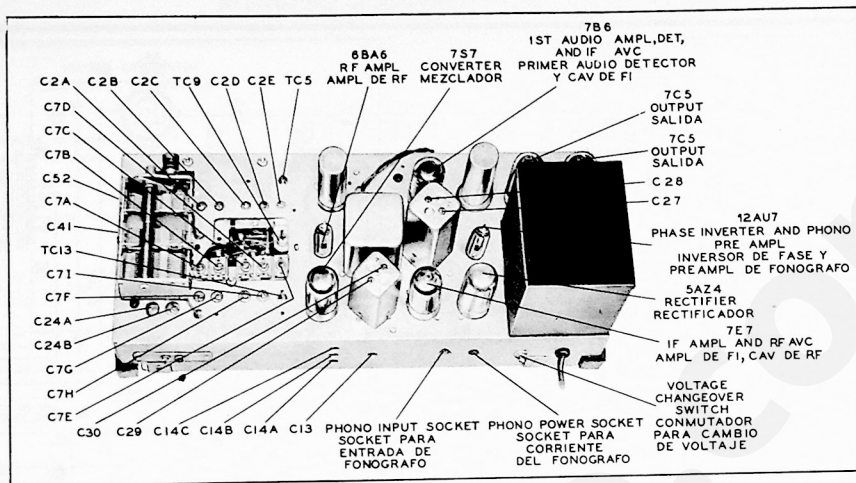
**CONTROLES DEL RADIO:** Fíjese el control de volumen al máximo, y el control de tono completamente hacia la derecha. Fíjense el conmutador de bandas, control de sintonización y frecuencia del generador de señales como se indica en la tabla.

**MEDIDOR DE SALIDA:** Conéctese entre el conector de la bobina de voz en el altoparlante y el chasis.

**INTENSIDAD DE LA SALIDA:** Durante el alineamiento, atenúese la salida del generador de señales de modo que la indicación en el medidor siempre sea menor de 1.5 voltios.

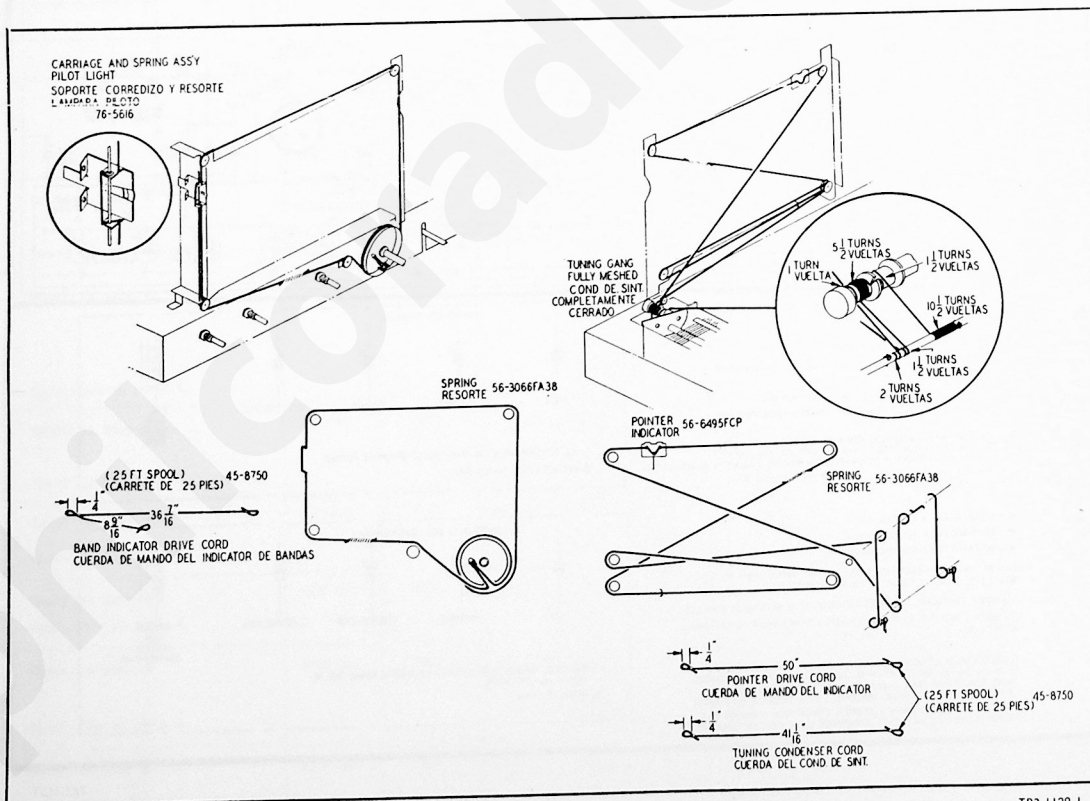
ALIGNMENT PROCEDURE

Step Paso	SIGNAL GENERATOR GENERADOR DE SEÑALES			RADIO		Adjust Adjustense
	Connection to Radio Conexión Al Radio	Dial Setting Frecuencia	Band Switch Commut. De Bandas	Dial Setting Frecuencia	Special Instructions Instrucciones Especiales	
1	Through a .1-uf. condenser to stator of r-f (center section of C1.  Al estator de la sección de r.f. (centro) de C1, a través de un cond. de .1 uf.	455 kc.	BC	Tuning gang fully open.  Cond. de sint. abierto	Adjust in order given, for maximum output; then repeat.  Ajustense, en el orden dado, para salida máxima; luego repítase.	C28-2nd i-f sec. C27-2nd i-f pri. C30-1st i-f sec. C29-1st i-f pri.
2	Through a 200-uuf. condenser to aerial terminal of TB1.  Al terminal de antena, a través de un cond. de 200 uuf.	580 kc.	BC	580 kc.	Adjust for maximum output while rocking tuning control.  Ajust. para sal. máx., mientras se mece el cond. de sint.	C14A-BC osc. (series)
3	Same as step 2.  Igual que el paso 2.	1500 kc.	BC	1500 kc.	Adjust in order given for maximum output.  Ajust. en el orden dado, para sal. máx.	C13-BC osc. (shunt) C41-BC r-f C52-BC aerial
4	Through a 400-ohm resistor to aerial terminal of TB1.  Al terminal de ant., a través de una resist. de 400 ohms.	5.0 mc.	SW1	5.0 mc.	Adjust for maximum output.  Ajust. en el orden dado, para sal. máx.	C14B-SW1 osc.
5	Same as step 4.  Igual que el paso 4.	7.5 mc.	BS1	7.5 mc.	Adjust in order given for maximum output.  Ajust. en el orden dado, para sal. máx.	C14C-BS1 osc. C7D-BS1 r-f C2D-BS1 aerial
6					Preset approximately 1/2 turn from tight position.  Pregíjese aprox. 1/2 vuelta de su posición apretada.	C71-SW2 osc. C7E-SW2 r-f C2E-SW2 aerial
7	Same as step 4.  Igual que el paso 4.	9.0 mc.	SW2	9.0 mc.	Adjust in order given for maximum output.  Ajust. en el orden dado, para sal. máx.	TC13-SW2 osc. TC9-SW2 r-f TC5-SW2 aerial
8	Same as step 4.  Igual que el paso 4.	21.0 mc.	SW2	21.0 mc.	Adjust in order given, for maximum output. Repeat steps 7 and 8 until maximum output is obtained.  Ajust. en el orden dado, para sal. máx. Repítanse los pasos 7 y 8 hasta que se obtenga salida máxima.	C71-SW2 osc. C7E-SW2 r-f C2E-SW2 aerial
9	Same as step 4.  Igual que el paso 4.	15.2 mc.	BS4	15.2 mc.	Adjust in order given for maximum output.  Ajust. en el orden dado, para sal. máx.	C7F-BS4 osc. C7C-BS4 r-f C2C-BS4 aerial
10	Same as step 4.  Igual que el paso 4.	9.7 mc.	BS2	9.7 mc.	Adjust for maximum output.  Ajust. para sal. máx.	C7H-BS2 osc.
11	Same as step 4.  Igual que el paso 4.	11.7 mc.	BS3	11.7 mc.	Adjust for maximum output.  Ajust. para sal. máx.	C7G-BS3 osc.
12	Same as step 4.  Igual que el paso 4.	17.8 mc.	BS5	17.8 mc.	Adjust in order given for maximum output.  Ajust. en el orden dado, para sal. máx.	C24B-BS5 osc. C7B-BS5 r-f C2B-BS5 aerial
13	Same as step 4.  Igual que el paso 4.	21.5 mc.	BS6	21.5 mc.	Adjust in order given for maximum output.  Ajust. en el orden dado, para sal. máx.	C24A-BS6 osc. C7A-BS6 r-f C2A-BS6 aerial



TP-7731-2

Figure 2. Top View of Chassis, Showing Trimmer Locations  
 Figura 2. Vista Superior del Chasis, Mostrando la Posición de los Compensadores



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Figure 3. Drive-Cord Installation Details  
 Figura 3. Detalles Sobre la Instalación de la Cuerda de Comando

**REVISIONS AND ADDITIONS TO  
MODEL 3474 SERVICE MANUAL**

**REVISION TO BASE VIEW, FIGURE 1.**

The 2-lug terminal board, B-9, was removed and replaced with a 4-lug terminal board. The components connected to the new terminal board, including two additional resistors, R43 and R44, are arranged in the following manner:

R43 is connected between lugs 2 and 3.

R44 is connected between lugs 3 and 4.

R24 is connected to lug 1.

R29 is connected to lug 2.

R28 is connected to lug 3.

**REVISION TO SCHEMATIC DIAGRAM, FIGURE 4**

The addition of the two bias divider resistors, R43 and R44, necessitates the following changes in the schematic diagram:

R28 should be removed from ground and connected to one end of R44. The other end of R44 connects to the lead coming from the junction of R12 and R23. R43 connects between ground and the junction of R44 and R28.

**PARTS LIST ADDITIONS**

Reference Symbol	Description	Service Part No.
R43	Resistor, grid bias divider, 220,000 ohms.....	66-4228340
R44	Resistor, grid bias divider, 3.3 megohms.....	66-5338340

**CORRECCIONES Y ADICIONES AL  
MANUAL DE SERVICIO DEL  
MODELO 3474**

**CORRECCION A LA VISTA DE LA PARTE  
INFERIOR DEL CHASIS.**

**FIGURA 1**

Se removio el panel de conexiones de 2 terminales, B9, y se reemplazo con un panel de 4 terminales. Los componentes conectados al nuevo panel de conexiones, incluyendo dos resistencias adicionales, R43 y R44, estan dispuestos del modo siguiente:

R43 esta conectado entre los terminales 2 y 3.

R44 esta conectado entre los terminales 3 y 4.

R24 esta conectado al terminal 1.

R29 esta conectado al terminal 2.

R28 esta conectado al terminal 3.

**CAMBIOS EN EL DIAGRAMA ESQUEMATICO,  
FIGURA 4**

La adición de dos resistencias divisoras de bias, R43 y R44, requiere los siguientes cambios en el diagrama esquemático:

Debe removerse R28 de tierra y conectarse a un extremo de R44. El otro extremo de R44 conecta al alambre que viene de la union de R12 y R23. R43 conecta entre tierra y la union de R44 y R28.

**ADICION A LA LISTA DE PARTES**

Símbolo	Descripción	Parte Núm.
R43	Resistencia, divisora de bias, 220,000 ohmsics ...	66-4228340
R44	Resistencia, divisora de bias, 3.3 megohmsics ...	66-5338340





**RECORD CHANGER**  
**MODEL M24**