

PHILCO AUTO RADIO

PACKARD MODEL P-1935 CUSTOM AUTO RADIO

MODEL P-1935 — ADJUSTMENTS

All padding adjustments are carefully made at the factory and ordinarily no readjustments are necessary. However, when readjustments are required, the procedure given below must be followed in detail.

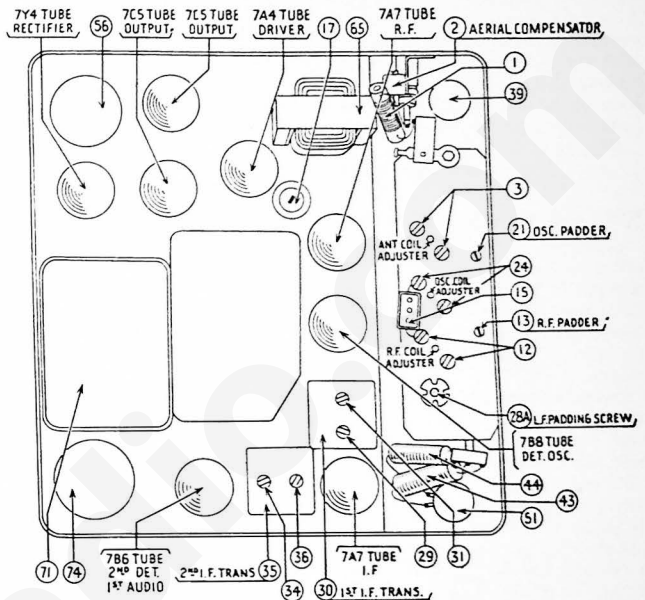
EQUIPMENT — Fully charged heavy duty storage battery or 6 volt power pack, 077 or 177 Philco Signal generator, 027 Philco Vacuum tube voltmeter and set tester or audio output meter, 45-2610 Padding screw driver.

GENERAL — VACUUM TUBE VOLTMETER. The model 027 Vacuum tube voltmeter is an extremely sensitive and accurate test instrument and is recommended for use when aligning and adjusting auto radios. Connect the negative (—) terminal of the Vacuum Tube Voltmeter to the high side (ungrounded side) of the volume control. Connect the positive (+) terminal to the radio housing. Connect the "AC" cord to a 110 volt AC socket. Press the VTVM button and the 10 volt button. Turn the "Set Zero Ohms — VTVM" control clockwise until a click is heard. Allow the tubes to heat up for a few minutes. Short the 150 meg. VTVM terminals and adjust the "Set Zero Ohms VTVM" control until the meter reads zero on the 0-10 range scale (green scale). The needle will deflect from right to left.

AUDIO OUTPUT METER. If an audio output meter is used, connect the leads across the voice coil of the speaker. Use the 0-30 volt scale.

With the Radio and signal generator set up for operation at the prescribed frequency, turn the Radio volume control on full and set the signal generator attenuator so that a half scale reading is obtained on the meter. The signal in the speaker should be audible but not loud.

The shielding on the generator output lead must be connected to the Radio housing.



OPERATION	SIGNAL GENERATOR		DUMMY CAPACITY	SPECIAL INSTRUCTIONS	ADJUST PADDER
	FREQUENCY	CONNECTION			
1	PUSH IN THE TUNING KNOB SO THAT STATIONS CAN BE TUNED IN BY MANUAL TUNING.				
2	270 K.C.	To Aerial Receptacle on Radio	See Note 1	Note 2	36 34 30 29 31
3	1600 K.C.	To Aerial Receptacle on Radio	See Note 1	Set Tuning Control at 1600 K.C.	21
4	1400 K.C.	To Aerial Receptacle on Radio	See Note 1	Set Tuning Control at 1400 K.C.	2 15
5	590 K.C.	To Aerial Receptacle on Radio	See Note 1	Set Tuning Control at 590 K.C.	Note 4
6	1600 K.C.	To Aerial Receptacle on Radio	See Note 1	Set Tuning Control at 1600 K.C.	21
7	1400 K.C.	To Aerial Receptacle on Radio	See Note 1	Set Tuning Control at 1400 K.C.	Note 4
8	1200 to 1400 K.C.	Note 5	Note 5	Note 5	2

Make all adjustments for maximum reading on the meter.

NOTE 1 — Connect the aerial lead, Part No. 95-0111, to the aerial receptacle in the radio. Connect a 40 Mmf. Condenser in series between the signal generator and the aerial lead.

NOTE 2 — Turn the tuning control clockwise as far as it will go.

NOTE 3 — Rock the tuning control while adjusting the low frequency screw. Tune the control to the signal and adjust the screw for maximum output. Rotate the tuning control back and forth slightly for maximum output. Then readjust the screw for maximum output. Repeat this procedure until no further improvement is noticed.

Turn on the radio and allow it to operate for twenty minutes or longer if possible.

Press in any Tun-O-Matic button so that it remains engaged. Then tune in the station desired by turning the small Tun-O-Matic wheel in the button. The station can be identified by the pointer, which indicates the frequency of the station in Kilocycles. The Tun-O-Matic buttons may be readjusted to any station within the range of the broadcast band. The Tun-O-Matic buttons may be readjusted to

NOTE 4 — When the aerial stage adjustment is made with the Radio installed in the car, the Radio aerial lead must be connected to the car aerial in the usual manner. Connect the signal generator output lead to a wire placed near the car aerial but not connected to it.

NOTE 5 — When installing the radio in the car, follow the installation instructions carefully. Tune in a weak broadcast signal between 1200 and 1400 Kilocycles on the control scale. Remove the plug button on the end of the radio and adjust the aerial compensator ② (see Figure 3) for maximum signal.

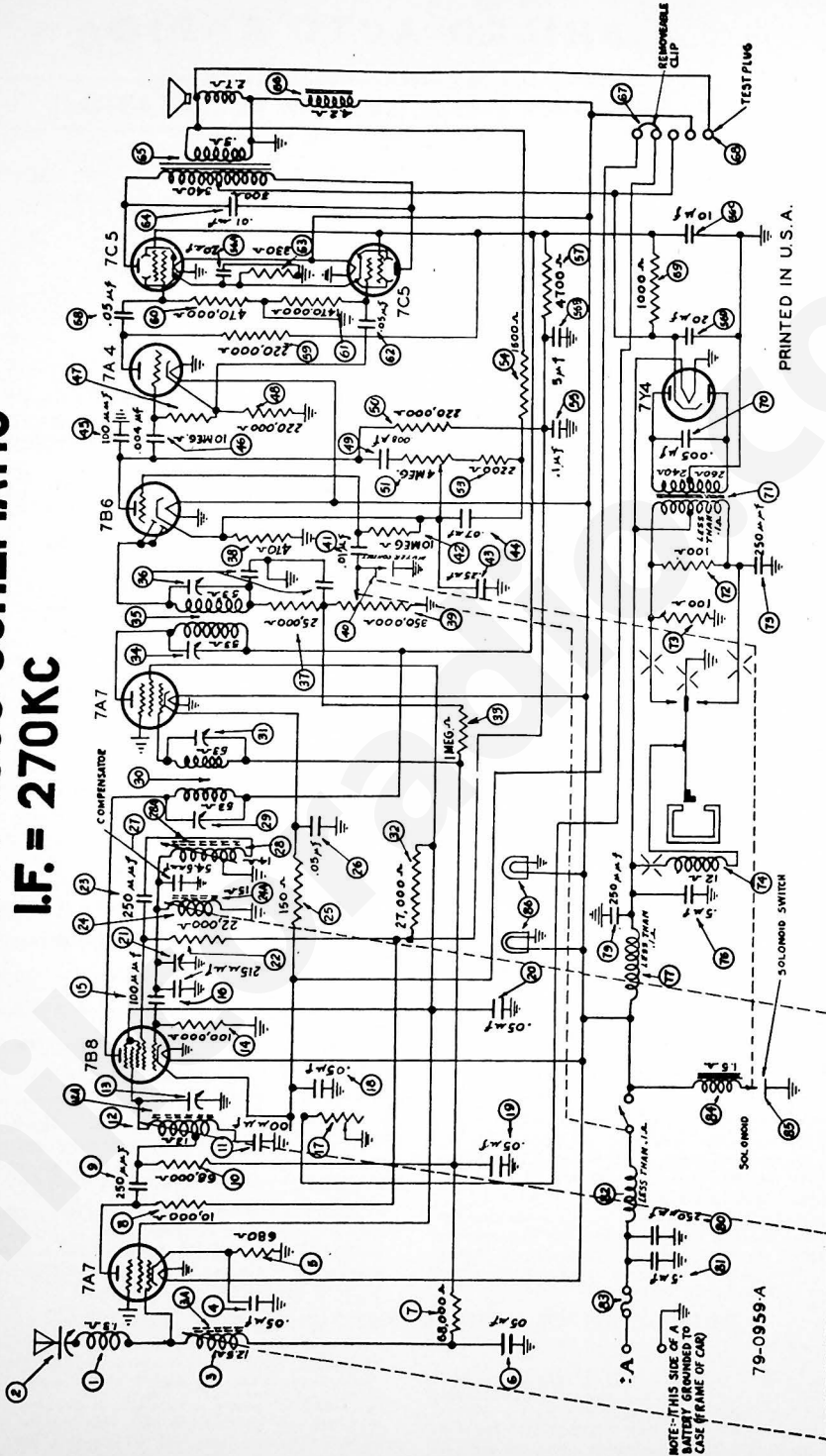
INSTRUCTIONS FOR SETTING UP THE "TUN-O-MATIC" BUTTONS

stations in any sequence desired. However, for convenience in remembering stations, it is recommended that the buttons be set up in the same order that the stations appear across the dial.

CAUTION — All adjustments must be carefully made so that reception can be received best when remote from the broadcasting station. Careless tuning off to one side, even though the signal is heard, will result in distorted reception.

MODEL P-1935 SCHEMATIC

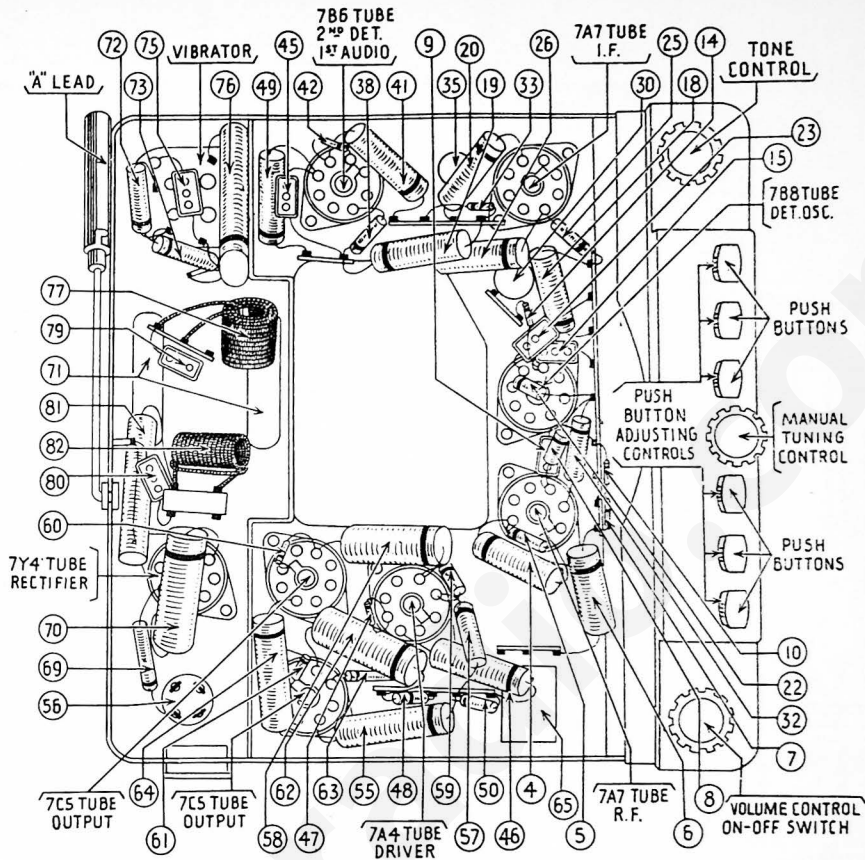
I.F. = 270KC



NOTES: THIS SIDE OF A SOLENOID IS TO BE USED TO THE CASE (FRAME OF CAB)

79-0959-A

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PARTS LIST — P-1935

No.	Description	Part No.	No.	Description	Part No.	No.	Description	Part No.
(1)	Antenna Choke	65-0378	(35)	Second I. F. Transformer	65-0410	(65)	Output Transformer	65-0409
(2)	Antenna Compensator	63-0053	(36)	Padder (Sec. 2nd I. F. Trans.)	63-222154	(66)	Field Coil	Not Replaceable
(3)	Antenna Transformer	65-0349	(37)	Resistor (25,000 ohms)	33-325154	(67)	Jumper Plug	57-1121
(3a)	Iron Core	57-1541	(4)	Condenser (.05 Mfd.)	61-0111	(68)	Test Socket	55-1078
(4)	Condenser (.05 Mfd.)	61-0111	(38)	Resistor (470 ohms)	33-147336	(69)	Resistor (1000 ohms)	33-210434
(5)	Resistor (680 ohms)	33-168336	(39)	Volume Control (350,000 ohms)	57-0052	(70)	Condenser (.005 Mfd.)	61-0153
(6)	Condenser (.05 Mfd.)	61-0101	(40)	Muter Switch	57-0052	(71)	Power Transformer	65-0358
(1)	Resistor (68,000 ohms)	33-368154	(41)	Condenser (.01 Mfd.)	61-0176	(72)	Resistor (100 ohms)	33-110434
(8)	Resistor (10,000 ohms)	33-310334	(42)	Resistor (10,000,000 ohms)	33-610154	(73)	Resistor (100 ohms)	33-110434
(9)	Condenser (250 Mmfd.)	60-125157	(43)	Condenser (.25 Mfd.)	61-0151	(74)	Vibrator	83-0026
(10)	Resistor (68,000 ohms)	33-368154	(44)	Condenser (.07 Mfd.)	61-0152	(75)	Condenser (.5 Mfd.)	60-125157
(11)	Condenser (100 Mmfd.)	60-110327	(45)	Condenser (100 Mmfd.)	60-110157	(76)	Vibrator Choke	65-0151
(12)	R. F. Transformer	65-0359	(46)	Condenser (4000 Mmfd.)	61-0129	(79)	Condenser (250 Mmfd.)	60-125157
(12a)	Iron Core	57-1541	(47)	Resistor (10,000,000 ohms)	33-610154	(80)	Condenser (.5 Mfd.)	60-125157
(13)	Padder	63-0052	(48)	Resistor (220,000 ohms)	33-422334	(81)	Condenser (.5 Mfd.)	61-0137
(14)	Resistor (100,000 ohms)	33-410154	(49)	Condenser (.008 Mfd.)	61-0174	(82)	"A" Choke	32-1644
(15)	Condenser (100 Mmfd.)	60-110157	(50)	Resistor (220,000 ohms)	33-422334	(83)	Fuse	43-2559
(16)	Condenser (215 Mmfd.)	61-0148	(51)	Tone Control (4,000,000 ohms)	67-0051	(84)	Solenoid	65-0390
(17)	Sensitivity Control	67-0036	(52)	Resistor (220 ohms)	33-222154	(85)	Solenoid Switch	Part of 85-0125
(18)	Condenser (.05 Mfd.)	61-0111	(53)	Resistor (220 ohms)	33-222154	(86)	Pilot Lamp	34-2084
(19)	Condenser 4.05 Mfd.)	61-0111	(54)	Resistor (1500 ohms)	33-215154		Bezel	57-2188FA5
(20)	Condenser (.05 Mfd.)	61-0111	(55)	Condenser (.1 Mfd.)	61-0113		Pilot Lamp Shield	57-2208FA3
(21)	Padder	63-0055	(56)	Condenser (5-10-20-20 Mfd.)	61-0150		Color Disc	55-1353
(22)	Resistor (22,000 ohms)	33-222334	(56a)	Condenser (20 Mfd.)	Part of (56)		Color Disc Retainer	57-1639FA3
(23)	Condenser (250 Mmfd.)	60-125157	(56b)	Condenser (5 Mfd.)	Part of (56)		Color Disc Washer	37-1640FA3
(24)	Oscillator Transformer	65-0350	(56c)	Condenser (10 Mfd.)	Part of (56)		Tuning Switch	77-0899
(24a)	Iron Core	57-1542	(56d)	Condenser (20 Mfd.)	Part of (56)		Color Screen (Volume Side)	55-1354
(25)	Resistor (150 ohms)	33-153536	(57)	Resistor (4700 ohms)	33-247434		Color Screen (Tone Side)	55-1355
(26)	Condenser (.05 Mfd.)	61-0111	(58)	Condenser (.05 Mfd.)	67-0171		Dial (Radio Mtg.)	W895FA3
(27)	Condenser (54.5 Mmfd.)	61-0149	(59)	Resistor (2200 ohms)	33-422334		Screw (Bezel)	97-0111FA26
(28)	Oscillator Tracking Trans.	65-0351	(60)	Resistor (470,000 ohms)	33-447154		Screw (Speaker Mtg.)	W1582FC51
(28a)	Oscillator Tracking Core	57-1542	(61)	Resistor (470,000 ohms)	33-447154		Screw (Cover Mtg.)	W2212FA26
(29)	Padder (Pri. 1st I. F. Trans.)	65-0352	(62)	Condenser (.05 Mfd.)	61-0172		Latch Bar Spring	57-1850
(30)	First I. F. Transformer	65-0352	(63)	Resistor (330 ohms)	33-133436		Push Button Spring	57-1652
(31)	Padder (Sec. 1st I. F. Trans.)	33-327434	(64)	Condenser (.01 Mfd.)	61-0124			
(32)	Resistor (27,000 ohms)	33-327434						
(33)	Resistor (1,000,000 ohms)	33-510154						
(34)	Padder (Pri. 2nd I. F. Trans.)							

The following is the procedure for aligning the Packard tuning unit after a coil or other part of the assembly has been replaced. The unit should be aligned after it is mounted in the radio.

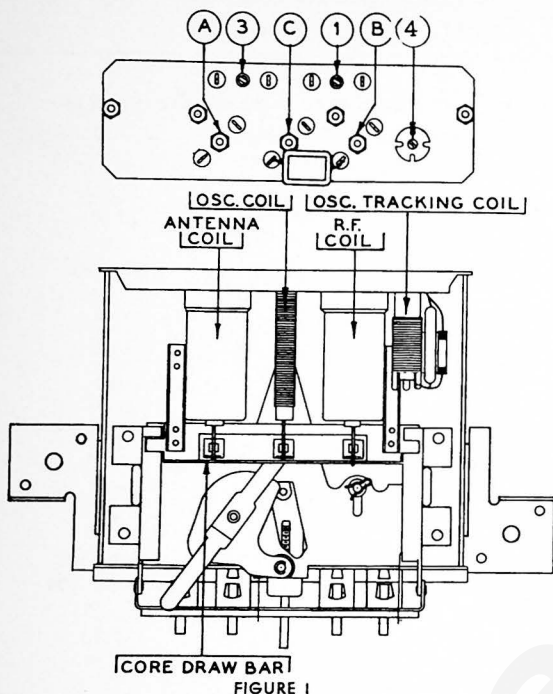


FIGURE 1

1—COMPLETE ALIGNMENT PROCEDURE

- (a) Push in the tuning control knob so that stations can be tuned in by manual tuning.
- (b) Turn the tuning control knob clockwise as far as it will go so that the cores will be in the extreme "out" position. Set the signal generator to 1600 K.C. and adjust padder (3) (Fig. 1) for maximum signal.
- (c) Adjust padder (2) aerial compensator in radio and padder (1) (see Fig. 1) for maximum signal.
- (d) Set the signal generator at 1400 K.C. and tune the manual control to 1400 K.C. Adjust the R.F. and antenna coil for maximum signal by turning the mounting nuts (A) and (B).
- (e) Repeat (c) and (d) until no further improvement is noticed.
- (f) Set the signal generator at 600 K.C. and the tuning control at 600 K.C. Adjust the screw (4) (see Fig. 1) for maximum signal. Rock the tuning control when making this adjustment. Tune the control to the signal and adjust the screw for maximum output. Rotate the tuning control back and forth slightly until maximum output is obtained. Then re-adjust the screw until no further improvement is noticed.
- (g) In case a great adjustment was necessary in (f) the adjustments (c) and (d) should be repeated.

- (h) In case the dial calibration is off frequency, it can be corrected by changing the starting position of the oscillator core. This is done by unsoldering the piano wire from the lug and moving the core slightly. A change of $1/64$ " in the position of the core is equivalent to approximately 20 K.C. on the dial. If the dial reads low, it can be corrected by starting the oscillator core further in the coil form. If it reads high, the core should be pulled out. If this position is changed, it will be necessary to realign the radio as described above.

2—ALIGNMENT WHEN ONLY THE ANTENNA COIL OR CORE IS REPLACED

- (a) Set the piano wire end of the core $1/4$ " from the end of the coil form when the core draw bar is in the extreme "out" position, and solder the wire to the lug.
- (b) Set up the signal generator to 1600 K.C., and adjust the aerial compensator (2) in the radio for maximum signal.
- (c) Adjust the signal generator to 1400 K.C. and set the tuning control at 1400 K.C. Adjust the coil for maximum signal by turning the mounting nut (A) until maximum signal is obtained. In case a peak cannot be obtained, it may be necessary to unsolder the piano wire and move the core slightly, either in or out.
- (d) Repeat (b) and (c).

3—ALIGNMENT WHEN ONLY THE R.F. TRANSFORMER OR CORE IS REPLACED

- (a) Set the piano wire end of core $1/4$ " from the end of the coil form when the core draw bar is in the extreme "out" position and solder the wire to the lug.
- (b) Set up the signal generator to 1600 K.C. and adjust padder (1) (see Fig. 1) for maximum signal.
- (c) Adjust the signal generator to 1400 K.C. and set the tuning control at 1400 K.C. Adjust the coil form by turning the mounting nut (B) until maximum signal is obtained. In case a peak cannot be obtained it may be necessary to unsolder the piano wire and move the core slightly, either in or out.
- (d) Repeat (b) and (c).

4—ALIGNMENT WHEN ONLY THE OSCILLATOR TRACKING COIL OR CORE IS REPLACED

- (a) Set the signal generator to 600 K.C. and the tuning control at 600 K.C. Adjust screw (4) (see Fig. 1) for maximum signal. Rock the tuning control while making this adjustment. Tune the control to the signal and adjust the screw for maximum output. Rotate the tuning control back and forth slightly until maximum output is obtained. Then re-adjust the screw until no further improvement is noticed.
- (b) Check and readjust the aerial compensator (2) in the radio, and padders (1), (2) and (4) as described in 1.

5—ALIGNMENT WHEN ONLY THE OSCILLATOR COIL OR CORE IS REPLACED

- (a) Set the piano wire end of the core $1/4$ " from the end of the coil form when the core draw bar is in the extreme "out" position, and solder the wire to the lug.
- (b) Set up the signal generator to 1600 K.C. and adjust padder (3) (see Fig. 1) for maximum signal.
- (c) Follow the same procedure as outlined under "1—Complete Alignment Procedure".