PHILCO AUTO RADIO

MODEL F 1942 FORD AND MERCURY ADJUST-O-MATIC

MODEL F-1942 — 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.

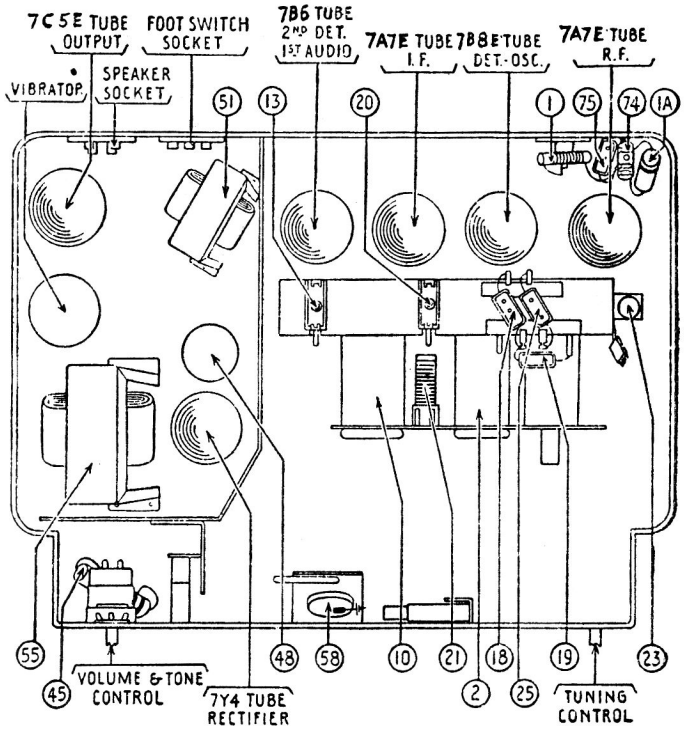
EQUIPMENT—Fully charged heavy duty storage battery or 6 volt power pack, 177 or 070 Philco Signal generator, 028 Philco Vacuum tube voltmeter and set tester or audio output meter, 45-2610 Padding screw driver.

GENERAL—VACUUM TUBE VOLTMETER. The model 028 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 0-10 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 FREQUENCY	SIGNAL GENERATOR CONNECTION	DUMMY CAPACITY	SPECIAL INSTRUCTIONS	ADJUST PADDER
1	PRESS THE TOUCH BAR AND RELEASE UNTIL THE WORD "DIAL" IN THE CENTER OF THE DIAL SCALE LIGHTS UP				
2	260 K.C.	To Aerial Receptacle on Radio	.1 Mfd.	Note 2	30A 30B 26A 26B 30A 30B 26A 26B
3	1600 K.C.	To Aerial Receptacle on Radio	See Note 1	Set Tuning Control at 1600 K.C.	20
4	1400 K.C.	To Aerial Receptacle on Radio	See Note 1	Set Tuning Control at 1400 K.C.	6 13 Note 4
5	590 K.C.	To Aerial Receptacle on Radio	See Note 1	Set Tuning Control at 590 K.C.	23 Note 3
6	1600 K.C.	To Aerial Receptacle on Radio	See Note 1	Set Tuning Control at 1600 K.C.	20
7	1400 K.C.	To Aerial Receptacle on Radio	See Note 1	Set Tuning Control at 1400 K.C.	6 Note 4
8	1200 to 1400 K.C.	Note 5	Note 5	Note 5	6 Note 5

Make all adjustments for maximum reading on the meter.

NOTE 1—Connect the aerial lead, Part No. 95-0236, to the aerial receptacle in the radio. Connect a 30 mmfd. Condenser in series between the signal generator and the aerial lead.

NOTE 2—Turn the tuning control counter-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.

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 dial. Adjust the aerial compensator (6) (see Figure 3) for maximum signal.

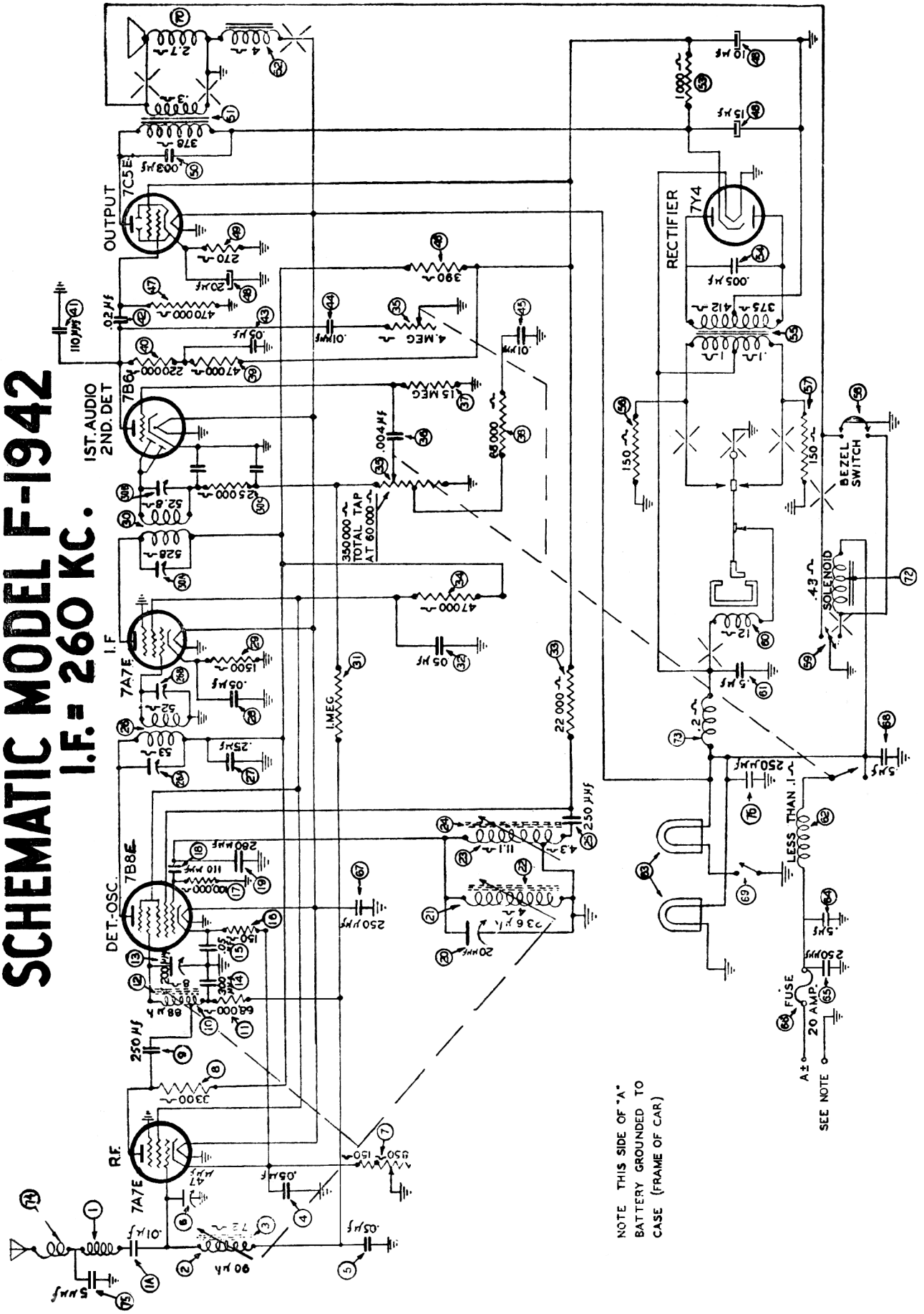

SCHEMATIC MODEL F-1942
I.F. = 260 KC.
OUTPUT
7C5E
IST. AUDIO
2ND. DET
7B6
I.F.
7A7E
DET.-OSC.
7B8E
R.F.
7A7E
RECTIFIER
7Y4
BEZEL SWITCH
SOLENOID
LESS THAN 1.
FUSE
20 AMP.
A±
SEE NOTE
NOTE THIS SIDE OF "A" BATTERY GROUNDED TO CASE (FRAME OF CAR)

FIG. 2

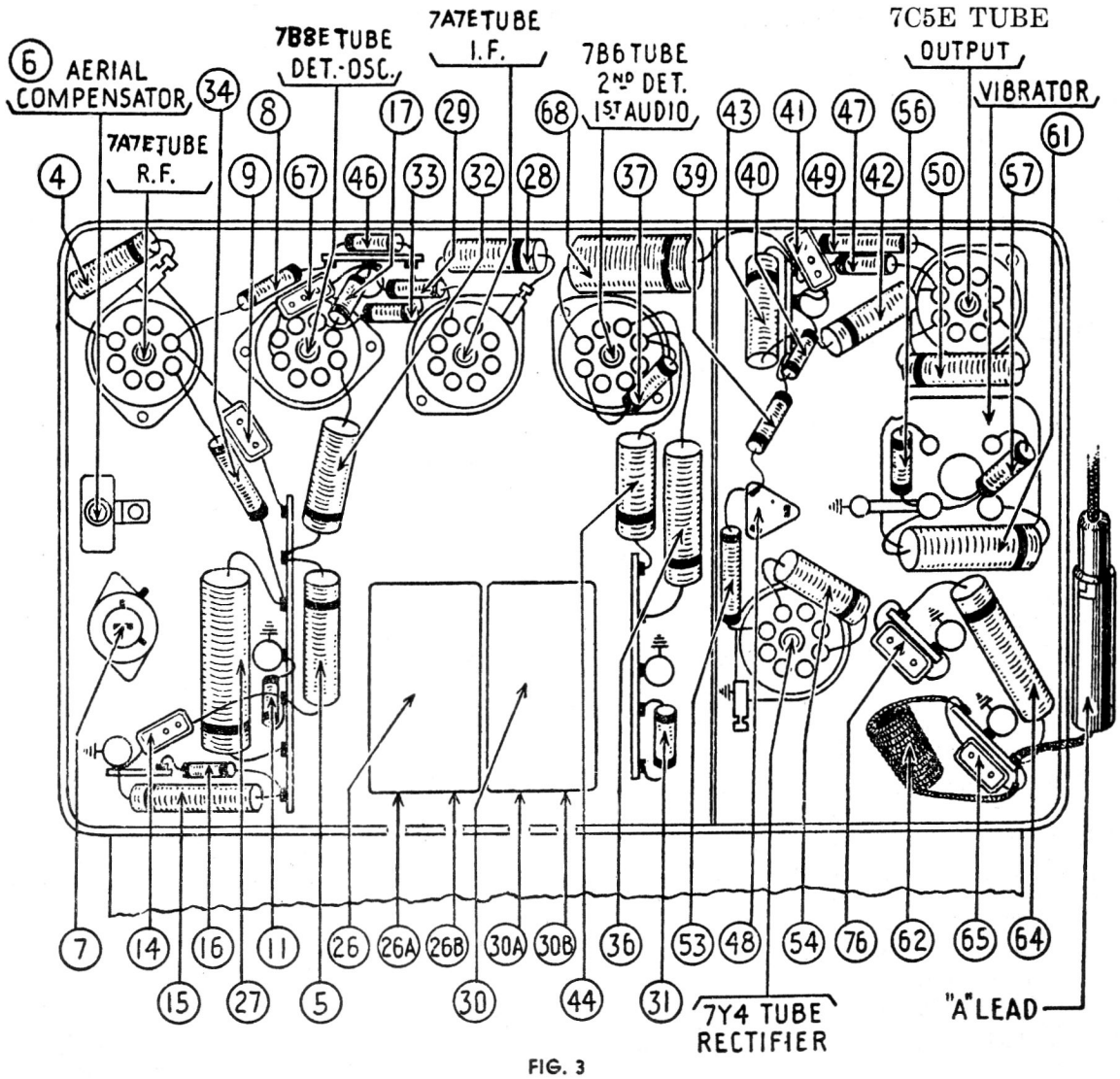


FIG. 3

PARTS LIST — F-1942

No.	Description	Part No.
1	Antenna Choke	65-0102
1a	Condenser (.01 mfd.)	61-0114
2	Antenna Transformer	65-0443
3	Antenna Transf. Core	57-2334
4	Condenser (.05 mfd.)	61-0111
5	Condenser (.05 mfd.)	61-0111
6	Antenna Padder	63-0079
7	Sensitivity Control	67-0025
8	Resistor (3300 ohms)	33-233334
9	Condenser (250 mmfd.)	60-125157
10	R.F. Transformer	65-0444
11	Res. (68,000 ohms)	33-368154
12	R.F. Transformer Core	57-2334
13	R.F. Padder	63-0080
14	Condenser (300 mmfd.)	60-130127
15	Cond. (.05 mfd.)	61-0111
16	Resistor (150 ohms)	33-115331
17	Resistor (100,000 ohms)	33-410154
18	Condenser (110 mmfd.)	60-110157
19	Condenser (280 mmfd.)	61-0043
20	Oscillator Padder	63-0082
21	Oscillator Transformer	65-0463
22	Oscillator Transf. Core	57-2633
23	Oscillator Tracking Transf.	65-0441
24	Oscill. Track. Transf. Core	57-2325
25	Condenser (250 mmfd.)	60-125157
26	First I.F. Transformer	65-0460
26a	Padder (Pri. 1st I.F. Trans.)	
26b	Padder (Sec. 1st I.F. Trans.)	
27	Condenser (.25 mfd.)	61-0125
28	Condenser (.05 mfd.)	61-0101
29	Resistor (1500 ohms)	33-215334
30	Second I.F. Transformer	65-0461
30a	Padder (Pri. 2nd I.F. Trans.)	
30b	Padder (Sec. 2nd I.F. Trans.)	
30c	Resistor (25,000 ohms)	33-325154
31	Resistor (1,000,000 ohms)	33-510154
32	Condenser (.05 mfd.)	61-0101
33	Resistor (22,000 ohms)	33-322334
34	Resistor (47,000 ohms)	33-347434
35	Volume Control (350,000 ohms) Tone Control (4,000,000 ohms) & On-Off Switch	67-0060
36	Condenser (4000 mmfd.)	61-0179
37	Resist. (15,000,000 ohms)	33-615154
38	Resistor (68,000 ohms)	33-368154
39	Resistor (47,000 ohms)	33-347334
40	Resistor (220,000 ohms)	33-422334
41	Cond. (110 mmfd.)	60-110157
42	Condenser (.02 mfd.)	61-0116
43	Condenser (.05 mfd.)	61-0122
44	Condensor (.01 mfd.)	61-0176
45	Condenser (.01 mfd.)	61-0114
46	Resistor (390 ohms)	33-139334
47	Resistor (470,000 ohms)	33-447154
48	Filter Cond. (10-15-20 mfd.)	61-0089
49	Resistor (270 ohms)	33-127431
50	Condenser (3000 mmfd.)	61-0115
51	Output Transformer	65-0454
52	Field Coil (Not Replaceable)	
53	Resistor (1000 ohms)	33-210434
54	Condenser (5000 mmfd.)	61-0153
55	Power Transformer	65-0455
56	Resistor (150 ohms)	33-115334
57	Resistor (150 ohms)	33-115334
58	Bezel Switch	85-0152
59	Foot Switch Kit	81-0395
60	Vibrator	83-0026
61	Condenser (.5 mfd.)	61-0134
62	"A" Choke	32-1644
63	Pilot Lamp	34-2064
64	Condenser (.5 mfd.)	61-0137
65	Condenser (250 mmfd.)	60-125157
66	Fuse	45-2659
67	Cond. (250 mmfd.)	60-125157
68	Cond. (.5 mfd.)	61-0106
69	Dial Light Contact (Part of Turret)	
70	Replacement Cone (For 73-0071-2)	91-0239
	(For 73-0071-4)	91-0240
72	Solenoid (Not Replaceable)	
73	Vibrator Choke	65-0465
74	Antenna Choke	65-0378
75	Condenser (5 mmfd.)	60-005137
76	Condenser (25 mmfd.) "A" Lead	77-1086
	Condenser (Volt Reg. & "A" Line)	61-0162
	Condenser (Oil Gauge)	61-0182
	Condenser (Coil)	61-0181
	Distributor Resistor	67-0062
	Ground Lead (Voltage Regulator)	77-0810
	Tube Socket	27-6151
	Vibrator Socket	27-6153
	Housing	77-1119
	Wiring Side Cover	57-2392FC71
	Tube Side Cover	77-1071FC71
	Screw (Bezel Mtg. Top)	97-0275FA1
	Screw (Bezel Mtg. Bottom)	97-0276FA1
	Bezel	57-2476FCP
	Dial	55-1465
	Dial Mtg. Clip	57-2464FE7
	Dial Mtg. Clip	57-2465FE7
	Dial Mtg. Screw	97-0257FA3
	Dial Mtg. Screw	97-0255FA3
	Rubber Bumper	55-1474
	Key Bar Assembly	77-1073
	Tuning & Volume Knob	77-1081
	Knob Backing Ring	57-2472FA8
	Tone Knob	57-2467FA8
	Spring (Tuning Shaft)	57-2727FA38
	Spring Retainer (Tuning Shaft)	57-2469FA3
	Nut (Vol. Control Mtg.)	W684FA3
	Aerial Lead	95-0236
	Support Bracket	57-2474FA3
	Hook Bolt (Receiver Mtg.)	57-2468FA3
	Bolt (Receiver Mtg.)	W763FA3
	Wing Nut (Receiver Mtg.)	97-0103FA3
	Speaker	73-0071
	Nut (Speaker Mtg.)	97-0252FA3
	*Aerial (Closed Car)	91-0236
	*Aerial (Open Car)	91-0237

***NOTE—1942 Ford Aerials are now available through Philco and may be ordered from Authorized Philco Warranty Service Stations or Philco distributors.**

SETTING UP "ADJUST-O-MATIC" TUNING

Turn the radio on and allow it to operate for at least 20 minutes, or longer if possible.

Press the touch bar and release; repeat this operation until the word "DIAL" in the center of the dial scale lights up, then press once more. This leaves the tuner in the first automatic position.

Press the right hand knob and tune the desired station by rotating the knob. The pointer moves as the knob is rotated, indicating the frequency to which the radio is tuned in the automatic position.

Press the touch bar again. This releases the knob and advances the tuner to the second automatic position.

Repeat the above procedure for the remaining four automatic positions.

Any of the automatic positions may be reset at any time and any position can be adjusted to receive any station in the broadcast band within the range of the set.

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

NOTE—These adjustments must be carefully made, exactly in tune with the stations. It will be found that precision in these adjustments is easy when at a distance from the station or in a shielded building, under a viaduct or in any location where the strength of the signal from the station is considerably reduced.

NOTES

1. It is very important to note that for manual tuning, the radio must be used only in the dial position, otherwise it is very hard to tune, and attempting to tune it will strip the small gear that drives the arm.

2. **OIL GAUGE INTERFERENCE ELIMINATION**—Interference from the oil gauge can be better eliminated if the oil gauge condenser noted under Fig. 7 of the instructions is mounted under one of the nuts that fasten the base of the oil filler pipe in place. This procedure should be followed rather than mounting the condenser on the firewall as called for in the instructions.

To enable this condenser to be mounted in the recommended new position, it will be necessary to enlarge the hole in the condenser mounting bracket to ⅜" diameter.

3. GENERAL (a) The Intermediate frequency is 260 K.C., and the holes by which the I.F. padders can be adjusted are on the front outside of the housing under the tuning knob.

(b) The Antenna Padder (to match the radio to the aerial) is located at the right bottom side of the chassis, underneath the tuning knob and near the back of the chassis.

(c) The sensitivity adjustment hole is covered by a small button—this is located nearer to the front of the chassis than is the antenna adjustment.

(d) The oscillator series padder (600 K.C.), oscillator shunt padder (1500 K.C.), and R.F. 1500 K.C. padder are all reached through holes in the top cover of the chassis. Looking at the front of the set, the 600 padder is at the right end, the oscillator 1500 padder is at the middle, and the R.F. 1500 padder at the left end.

(e) A 20 ampere fuse **must** be used.

(f) The muting switch (which is operated by the key bar) may not come back the full distance if the set is mounted improperly in the car. This will cause the set to be completely dead.

(g) Mechanical Tuning—Notes and Adjustments—

(1) If the small bracket with No. 2106 stamped on it, has its indexing protrusion slightly off line, and not located in the indexing hole, the tuning will feel as though the gears are being stripped.

(2) The tuning mechanism will lock and the p.b. operation will not work if the small hairspring which pushes the tuning shaft back is out of place.

(3) The drive will feel too stiff if the flexible tuning shaft is binding at the entrance to the flexible tuning shaft protective tunnel. Line this up perfectly by bending the protecting tunnel.

(4) Push button may not operate if the battery voltage is low due to a poor ground, etc. The current will be too low to operate the solenoid.

(5) If the dial pointer does not move freely to the correct frequency on the dial for the p.b. station that has been set up (Particularly at the L.F. end of the dial), the fault may be lack of tension of the hair spring attached to the pointer lever arm assembly. Correct this by tightening the spring one full turn. Lubricate sparingly with light machine oil.

(6) Inoperation of the tuning mechanism may be due to the latch spring being out of place in the latching mechanism under the solenoid plunger.

(7) Failure of the solenoid to return fully may be due to weakness in the return spring. Tighten just enough to ensure return, and lubricate the plunger lightly with fine oil.

(8) The mounting screw which holds bracket 2106 (described in 7 (a) above) is the adjustment for tension of the gear mesh of the small gear at the end of the flexible tuning shaft. Tighten this screw just sufficient to prevent the gear teeth from jumping out of mesh, but not so tight that the drive is stiff. Lubricate the gears with a small amount of lubriplate.

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