MODEL P-1835 CUSTOM AUTO RADIO

MODEL P-1835 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.

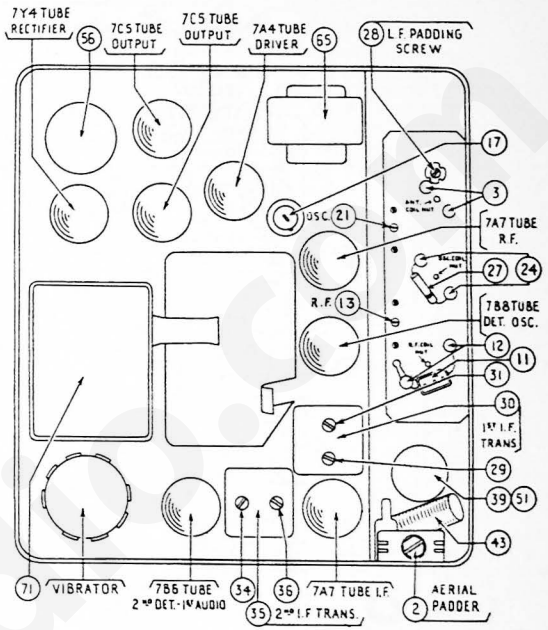

FIGURE 1

OPERATION	SIGNAL GENERATOR FREQUENCY	SIGNAL GENERATOR CONNECTION	DUMMY CAPACITY	SPECIAL INSTRUCTIONS	ADJUST PADDER
1	PUSH IN THE TUNING CONTROL KNOB UNTIL STATIONS CAN BE TUNED IN BY MANUAL TUNING				
2	270 K.C.	To Aerial Receptacle on Radio	See Note 1	Note 2	㉞ ㊱ ㉙ ㉛ ㉞ ㊱ ㉙ ㉛
3	1600 K.C.	To Aerial Receptacle on Radio	See Note 1	Set Tuning Control at 1600 K.C.	㉑
4	1360 K.C.	To Aerial Receptacle on Radio	See Note 1	Set Tuning Control at 1360 K.C.	② ⑬ Note 4
5	590 K.C.	To Aerial Receptacle on Radio	See Note 1	Set Tuning Control at 590 K.C.	㉘ Note 3
6	1600 K.C.	To Aerial Receptacle on Radio	See Note 1	Set Tuning Control at 1600 K.C.	㉑
7	1360 K.C.	To Aerial Receptacle on Radio	See Note 1	Set Tuning Control at 1360 K.C.	② ⑬ Note 4
8	1200 to 1400 K.C.	Note 5	Note 5	Note 5	② Note 5

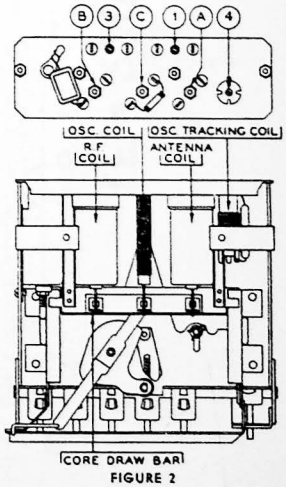

FIGURE 2

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 Mmfd. 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.

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 ⑧ (see Figure 1) for maximum signal.

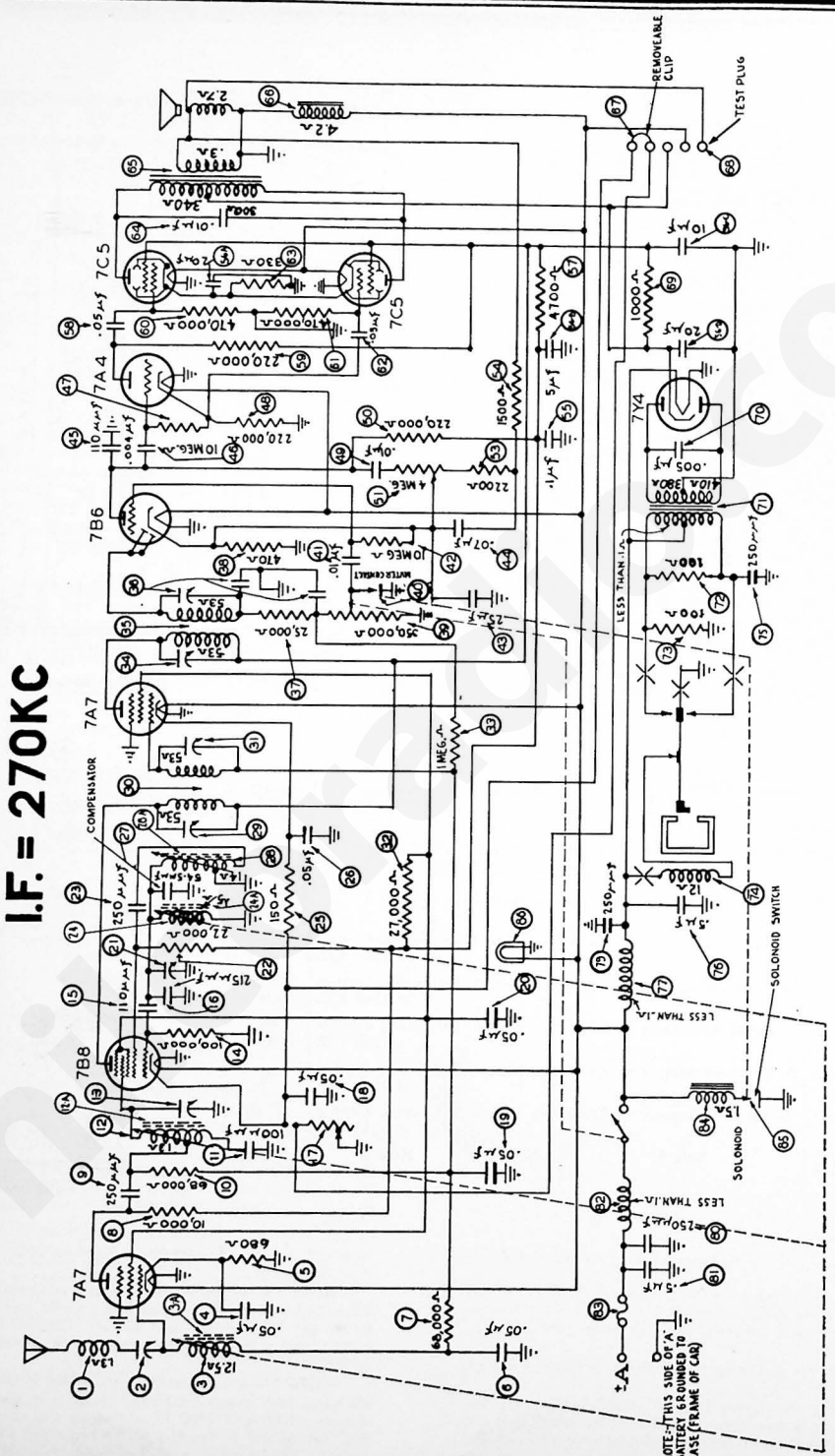
I.F. = 270KC
7A7
7B8
7A4
7B6
7C5
7Y4
COMPENSATOR
REMOVEABLE CLIP
TEST PLUG
SOLENOID SWITCH
SOLENOID
LESS THAN 1A
NOTE-THIS SIDE OF "A" BATTERY IS GROUNDED TO CASE (FRAME OF CAR)

FIGURE 3

MODEL P-1835 CUSTOM AUTO RADIO (CONTINUED)

No.	Description	Part No.
①	Antenna Choke	65-0378
②	Antenna Padder	63-0054
③	Antenna Transformer	65-0349
③a	Iron Core	57-1541
④	Condenser (.05 Mfd.)	61-0111
⑤	Resistor (680 ohms)	33-168336
⑥	Condenser (.05 Mfd.)	61-0111
⑦	Resistor (68,000 ohms)	33-368154
⑧	Resistor (10,000 ohms)	33-310334
⑨	Condenser (250 Mmfd.)	60-125157
⑩	Resistor (68,000 ohms)	33-368154
⑪	Condenser (100 Mmfd.)	60-110327
⑫	R. F. Transformer	65-0359
⑫a	Iron Core	57-1541
⑬	Padder	63-0055
⑪	Resistor (100,000 ohms)	33-410154
⑮	Condenser (110 Mmfd.)	60-110157
⑯	Condenser (215 Mmfd.)	61-0148
⑰	Sensitivity Control	67-0036
⑱	Condenser (.05 Mfd.)	61-0111
⑲	Condenser (.05 Mfd.)	61-0111
⑳	Condenser (.05 Mfd.)	61-0101
㉑	Padder	63-0052
㉒	Resistor (22,000 ohms)	33-322334
㉓	Condenser (250 Mmfd.)	60-125157
㉔	Oscillator Transformer	65-0367
㉔a	Iron Core	57-1542
㉕	Resistor (150 ohms)	33-115336
㉖	Condenser (.05 Mfd.)	61-0111
㉗	Condenser (54.5 Mmfd.)	61-0149
㉘	Oscillator Tracking Transformer	65-0351
㉘a	Oscillator Tracking Core	57-0996
㉙	Padder (Pri. 1st I. F. Trans.)	
㉚	First I. F. Transformer	65-0352
㉛	Padder (Sec. 1st I. F. Trans.)	
㉜	Resistor (27,000 ohms)	33-327434
㉝	Resistor (1,000,000 ohms)	33-510154
㉞	Padder (Pri. 2nd I. F. Trans.)	
㉟	Second I. F. Transformer	65-0353
㊱	Padder (Sec. 2nd I. F. Trans.)	
㊲	Resistor (25,000 ohms)	33-325154
㊳	Resistor (470 ohms)	33-14733E
㊴	Volume Control (350,000 ohms) & Tone Control & On-Off Switch	67-0035
㊵	Muter Switch	85-0125
㊶	Condenser (.01 Mfd.)	61-0120
㊷	Resistor (10,000,000 ohms)	33-610154
㊸	Condenser (.25 Mfd.)	61-0151
㊹	Condenser (.07 Mfd.)	61-0152
㊺	Condenser (110 Mmfd.)	60-110157
㊻	Condenser (4,000 Mmfd.)	61-0129
㊼	Resistor (10,000,000 ohms)	33-610154
㊽	Resistor (220,000 ohms)	33-422334
㊾	Condenser (.01 Mfd.)	61-0120
㊿	Resistor (220,000 ohms)	33-422334
(51)	Tone Control (4,000,000 ohms)	Part of ㊴
(52)	Resistor (2,200 ohms)	33-222154
(53)	Resistor (1,500 ohms)	33-215154
(54)	Condenser (.1 Mfd.)	61-0113
(55)	Filter Condenser (5-10-20-20 Mfd.)	61-0150
(56)	Resistor (4,700 ohms)	33-247434
(57)	Condenser (.05 Mfd.)	61-0122
(58)	Resistor (220,000 ohms)	33-422334
(59)	Resistor (470,000 ohms)	33-447154
(60)	Resistor (470,000 ohms)	33-447154
(61)	Condenser (.05 Mfd.)	61-0111
(62)	Resistor (330 ohms)	33-133436
(63)	Condenser (.01 Mfd.)	61-0120
(64)	Output Transformer	65-0354
(65)	Field Coil	Not Replaceable
(66)	Cone & Voice Coil (For 73-0050-2 Speaker)	91-0167
	(For 73-0050-4 Speaker)	91-0168
(67)	Jumper	57-1121
(68)	Test Socket	55-1078
(69)	Resistor (1,000 ohms)	33-210434

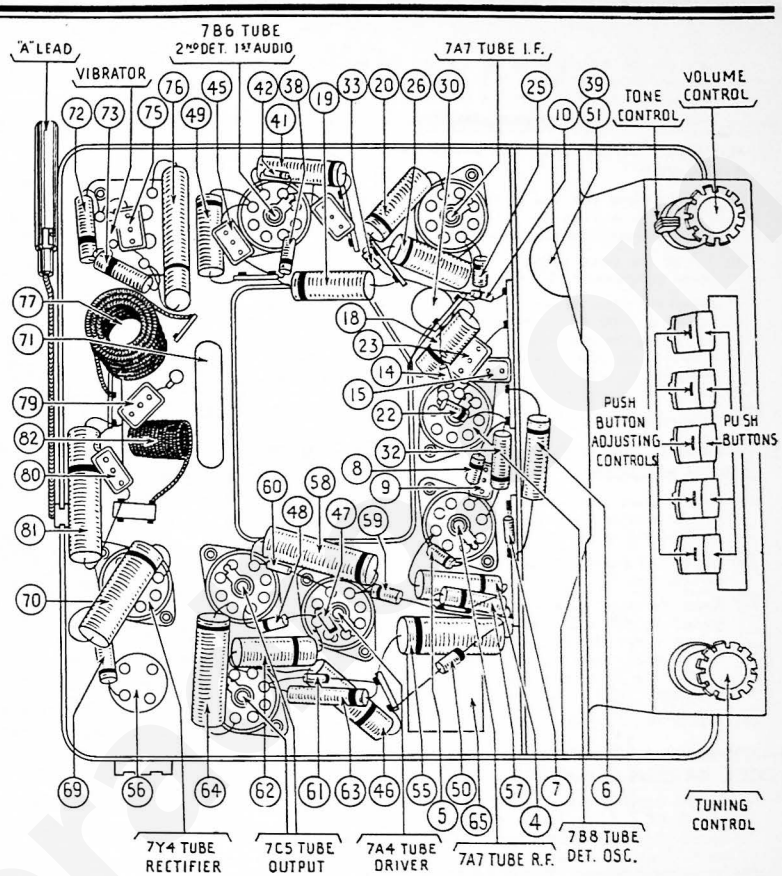

FIGURE 4

No.	Description	Part No.
⑦⑧	Condenser (5,000 Mmfd.)	61-0153
⑦⑧	Power Transformer	65-0347
⑦⑧	Resistor (100 ohms)	33-110434
⑦⑧	Resistor (100 ohms)	33-110434
⑦⑧	Vibrator	85-0026
⑦⑧	Condenser (250 Mmfd.)	60-125157
⑦⑧	Condenser (.5 Mfd.)	61-0137
⑦⑧	Vibrator Choke	65-0151
⑦⑧	Condenser (250 Mmfd.)	60-125157
⑦⑧	Condenser (250 Mmfd.)	60-125157
⑦⑧	Condenser (.5 Mfd.)	61-0137
⑦⑧	"A" Choke	32-1644
⑦⑧	Fuse	45-2559
⑦⑧	Solenoid	65-0360
⑦⑧	Solenoid Switch	Part of 85-0125
⑦⑧	Pilot Lamp	34-2064
	Front Bezel	57-1550FA8

No.	Description	Part No.
	Color Disc Assembly	77-0649
	Coupling & Key Assembly	77-0651
	Tuning Switch only	77-0601
	R. F. Transformer Spring	57-1538
	R. F. Transformer Mtg. Screw	97-0126
	Core Draw Bar Spring	57-1649
	Latch Bar Spring	57-1650
	Push Button Spring	57-1651
	Push Button Knob	77-0613
	Muter Spring	57-1652
	Pointer Spring	57-1653
	Pointer & Cam Assembly	77-0650
	Dial	55-1034
	Tuning & Volume Knob	77-0643
	Tone Lever	57-1559FA8
	Manual Return Spring	57-1620FA3

No.	Description	Part No.
	Speaker Gasket	55-1037
	Speaker Unit	73-0050
	Speaker Cable	95-0161
	Vibrator Socket	27-6153
	Tube Socket	27-6151
	Hook Bolt (Radio Mtg.)	57-1560FA3
	Wing Nut (Radio Mtg.)	W895FA3
	Ignition Switch Condenser	30-4007
	Generator Condenser	30-4475
	Distributor Resistor	33-1196
	Screw (Bezel Mtg.)	97-0111FA1
	Speaker Cover & Bracket	77-0663
	Tube Side Cover	57-1554FC51
	Speed Nut (Dial Mtg.)	97-0137FE7
	Housing & Bracket	77-0662FC51
	Screw (Cover Mtg.)	W-2212FA26

Procedure for Aligning Packard Tuning Unit, Part No. 77-0636

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.

I—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 (1) (Fig. 1) for maximum signal.

(c) Adjust padder (2) aerial compensator in radio and padder (3) (see Fig. 2) 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 coils 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. 2) 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 readjust 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 wre 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 on the other side.

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

(a) Set the piano wire end of the core 1¼" 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 1¼" 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. 2) 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. 2) 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 readjust 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 1¼" 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. 2) for maximum signal.

(c) Follow the same procedure as outlined under "1—Complete Alignment Procedure".

1941 ROTARY AERIAL

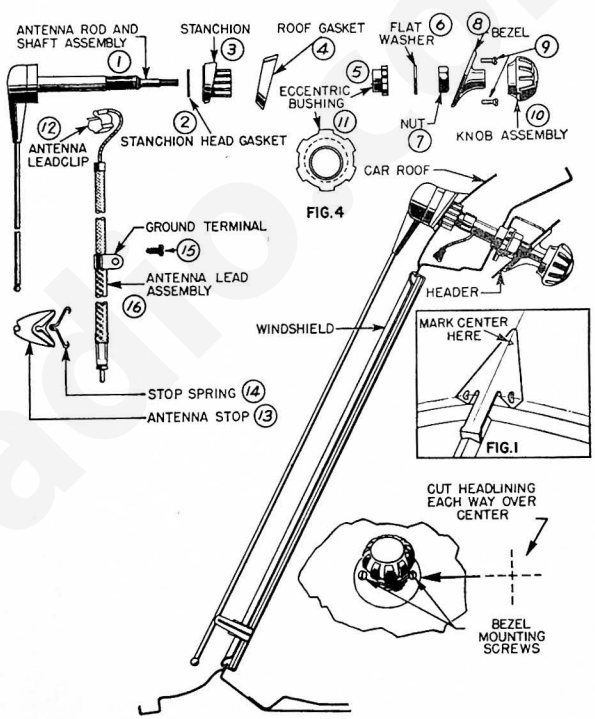

FIGURE 5

TYPE No. 1
(2 Section) Part No. 91-0163 ($7.00)

No.	Description	Part No.	List Price
①	Antenna Rod & Shaft Assembly (For Push On Knob)	91-0170	$4.25
	(For Knob with Set Screw)	91-0207	4.50
②	Gasket	55-1068	.02
③	Stanchion ....(Early Type)	55-1052	.05
	(Late Type)	55-1266	.15
④	Roof Gasket	55-1055	.10
⑤	Eccentric Bushing	55-1054	.10
⑥	Flat Washer (per 100)	W1866FA3	2.00
⑦	Nut	97-0177	.05
⑧	Bezel	28-7288FA8	.30
⑨	Screw (Bezel Mtg.) (per 100)	W1988FA3	1.50
⑩	Knob ....(Push On)	77-0631	.20
	(With Set Screw)	77-0847	.40
⑪	Same as ⑤		
⑫	Antenna Lead Clip	57-1611	.05
⑬	Antenna Stop	55-1060	.10
⑭	Stop Spring	57-1731	.05
⑮	Antenna Lead Ground Screw (per 100)	W745FA3	1.20
⑯	Antenna Lead	77-0645	1.80
	Template	57-1646	.05
	Set Screw Wrench (Late Production)	28-4696	.10
	Rezel Insulator	217-1298	.03
	Head Cover	57-1599FA8	.50
	Head Cover Screw (per 100)	W267FA8	.20
	Reel Assy.	77-0627	.20
	Latch Reel Lock	57-1608	.05
	Latch Reel Spring (per 100)	57-1609	.75
	Antenna Rod & Tape Assy. (For Push On Knob)	77-0628	1.25
	(Knob with Set Screw)	77-0834	1.00
	Stanchion Tube Assy. (Early Type)	77-0630	.85
	(Late Type)	77-0777	1.00
	"C" Washer	4042FA3	.02
	Knob Shaft (Early Type)	318-2282	.60
	(Late Type)	77-0779	1.00

TYPE No. 2
(3 Section) Part No. 91-0193 ($8.50)

No.	Description	Part No.	List Price
①	Antenna Rod & Shaft Assembly	91-0196	$5.00
②	Gasket	55-1068	.02
③	Stanchion	55-1266	.15
④	Roof Gasket	55-1055	.10
⑤	Eccentric Bushing	55-1054	.10
⑥	Flat Washer (per 100)	W1866FA3	2.00
⑦	Nut	97-0177	.05
⑧	Bezel	28-7288FA8	.30
⑨	Screw (Bezel Mtg.) (per 100)	W1988FA3	1.50
⑩	Knob	77-0847	.40
⑪	Same as ⑤		
⑫	Antenna Lead Clip	57-1611	.05
⑬	Antenna Stop	55-1060	.10
⑭	Stop Spring	57-1731	.05
⑮	Antenna Lead Ground Screw (per 100)	W745FA3	1.20
⑯	Antenna Lead	77-0645	1.80
	Template	57-1646	.05
	Set Screw Wrench	28-4696	.10
	Bezel Insulator	217-1298	.03
	Head Cover	57-1599FA8	.50
	Head Cover Screw (per 100)	W267FA8	.20
	Reel Assy.	77-0816	.20
	Washer	97-0183	.02
	Reel Ring	57-1906	.10
	Tape Backing Spring	57-1965FA2	.02
	Latch Reel Lock	57-1608	.05
	Latch Reel Spring (per 100)	57-1609	.75
	Antenna Rod & Tape Assy.	77-0774	1.50
	Stanchion Tube Assy.	77-0777	1.00
	"C" Washer	4042FA3	.02
	Knob Shaft	77-0779	1.00

Prices subject to change without notice.