

# MODEL S-1825 CUSTOM AUTO RADIO

## MODEL S-1825 — 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.

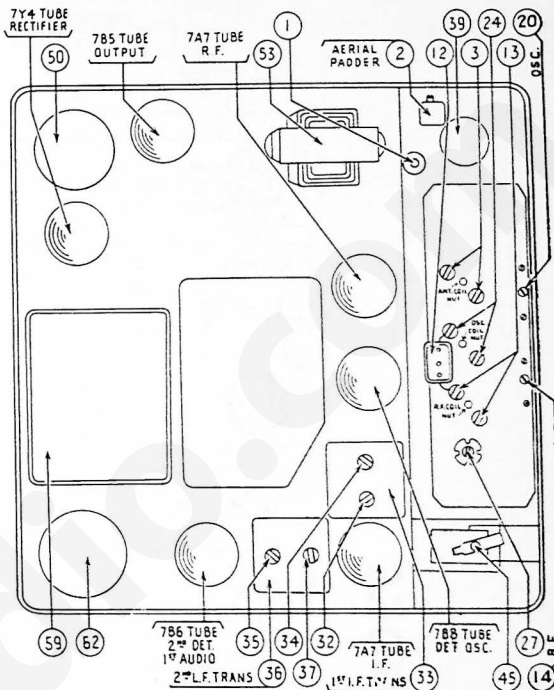


FIGURE 1

OPERATION	SIGNAL GENERATOR		DUMMY CAPACITY	SPECIAL INSTRUCTIONS	ADJUST
	FREQUENCY	CONNECTION			
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	Ⓜ Ⓝ Ⓟ Ⓠ Ⓡ Ⓢ Ⓣ Ⓤ Ⓥ Ⓦ Ⓧ Ⓨ Ⓩ
3	1600 K.C.	To Aerial Receptacle on Radio	See Note 1	Set Tuning Control at 1600 K.C.	Ⓣ
4	1360 K.C.	To Aerial Receptacle on Radio	See Note 1	Set Tuning Control at 1360 K.C.	Ⓣ Ⓤ Ⓥ Ⓦ Ⓧ Ⓨ Ⓩ
5	590 K.C.	To Aerial Receptacle on Radio	See Note 1	Set Tuning Control at 590 K.C.	Ⓣ Ⓤ Ⓥ Ⓦ Ⓧ Ⓨ Ⓩ
6	1600 K.C.	To Aerial Receptacle on Radio	See Note 1	Set Tuning Control at 1600 K.C.	Ⓣ
7	1360 K.C.	To Aerial Receptacle on Radio	See Note 1	Set Tuning Control at 1360 K.C.	Ⓣ Ⓤ Ⓥ Ⓦ Ⓧ Ⓨ Ⓩ
8	1200 to 1400 K.C.	Note 5	Note 5	Note 5	Ⓣ

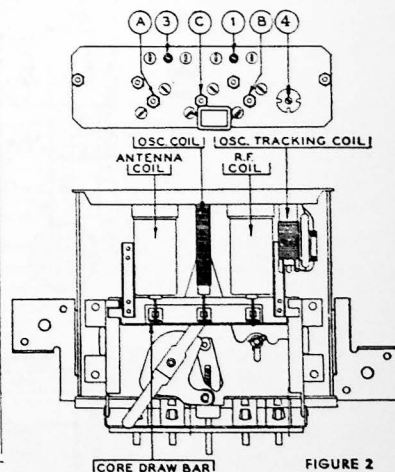


FIGURE 2

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 35 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 Ⓣ (see Figure 1) for maximum signal.

# MODEL S-1825 CUSTOM AUTO RADIO (CONTINUED)

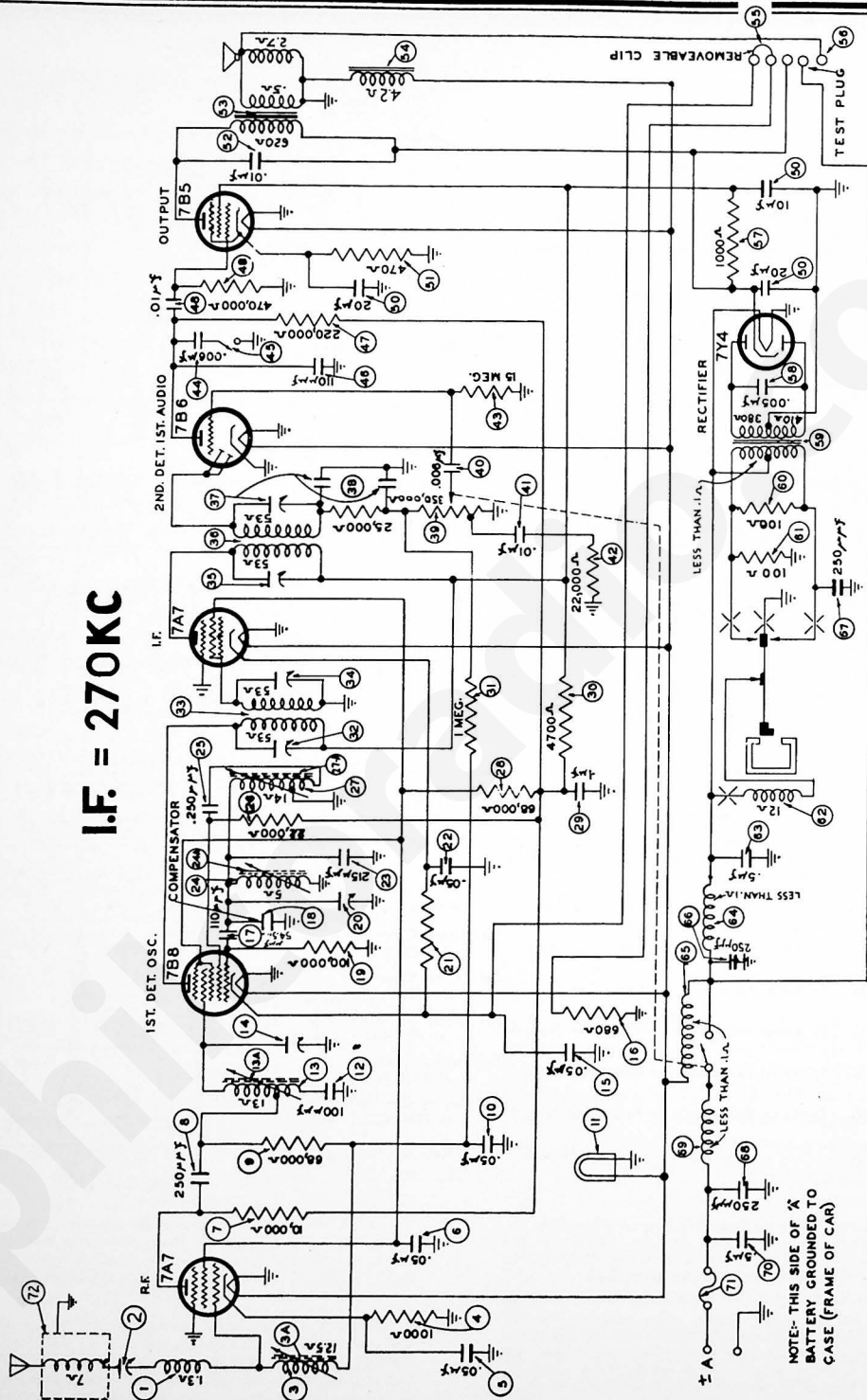
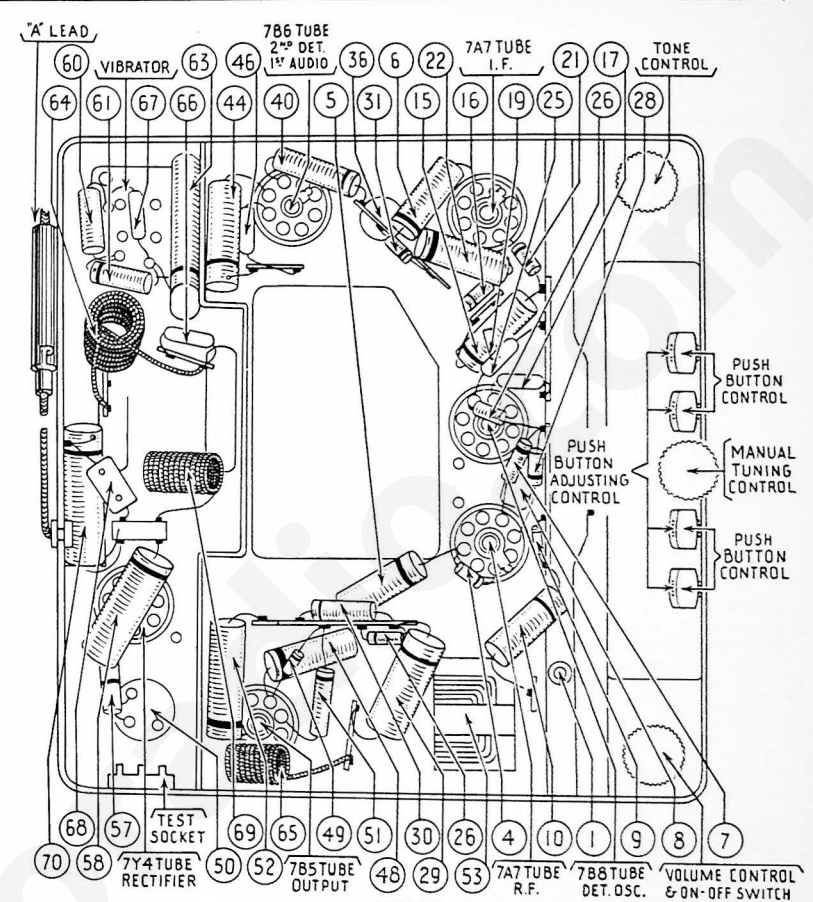


FIGURE 3

NOTE:- THIS SIDE OF 'X' BATTERY GROUNDED TO CASE (FRAME OF CAR)

# MODEL S-1825 CUSTOM AUTO RADIO (CONTINUED)

No.	Description	Part No.
7	Antenna Choke	65-0278
8	Antenna Padder	65-0053
9	Antenna Transformer	65-0349
10	Iron Core	57-1541
11	Resistor (1,000 ohms)	33-120334
12	Condenser (.05 Mfd.)	61-0101
13	Condenser (.05 Mfd.)	61-0111
14	Resistor (10,000 ohms)	33-310334
15	Condenser (.250 Mmfd.)	60-125157
16	Resistor (68,000 ohms)	33-368154
17	Condenser (.05 Mfd.)	61-0101
18	Pilot Lamp	33-2064
19	Condenser (.100 Mmfd.)	60-110227
20	R. F. Transformer	65-0359
21	Iron Core	57-1541
22	Padder	65-0053
23	Condenser (.05 Mfd.)	61-0111
24	Resistor (680 ohms)	33-168336
25	Condenser (.110 Mmfd.)	60-110157
26	Condenser (.54.5 Mmfd.)	61-0149
27	Resistor (100,000 ohms)	33-410154
28	Padder	65-0053
29	Resistor (680 ohms)	33-168336
30	Condenser (.05 Mfd.)	61-0111
31	Condenser (.215 Mmfd.)	61-0148
32	Oscillator Transformer	65-0359
33	Iron Core	57-1542
34	Condenser (.250 Mmfd.)	60-125157
35	Resistor (22,000 ohms)	33-222334
36	Series Tracking Transformer	65-0351
37	Series Tracking Core	57-1659
38	Resistor (68,000 ohms)	33-368334
39	Condenser (.1 Mfd.)	61-0113
40	Resistor (4,700 ohms)	33-247334
41	Resistor (1,000,000 ohms)	33-510154
42	Padder (Pri. 1st I. F. Trans.)	65-0352
43	First I. F. Transformer	65-0352
44	Padder (Sec. 1st I. F. Trans.)	65-0353
45	Second I. F. Transformer	65-0353
46	Padder (Sec. 2nd I. F. Trans.)	65-0353
47	Resistor (25,000 ohms)	33-325154
48	Volume Control (500,000 ohms) & On-Off Switch	67-0029
49	Condenser (6,000 Mmfd.)	61-0155
50	Condenser (.01 Mfd.)	61-0110
51	Resistor (22,000 ohms)	33-222154
52	Resistor (170,000 ohms)	33-447154
53	Filter Condenser (10-20-20 Mfd.)	61-0072
54	Resistor (470 ohms)	33-147436
55	Condenser (.01 Mfd.)	61-0124
56	Output Transformer	65-0334
57	Field Coil	Not Replaceable
58	Cone & Voice Coil	91-0166
59	Jumper	57-1121
60	Test Socket	57-1078
61	Resistor (1,000 ohms)	33-210434
62	Condenser (5,000 Mmfd.)	61-0157
63	Power Transformer	65-0347
64	Resistor (100 ohms)	33-110431
65	Resistor (100 ohms)	33-110431
66	Vibrator	83-0026
67	Condenser (.5 Mfd.)	61-0137
68	Vibrator Choke	65-0131
69	Filament Choke	60-125157
70	Condenser (.250 Mmfd.)	60-125157
71	Condenser (.250 Mmfd.)	60-125157
72	"A" Choke	62-1604
73	Condenser (.5 Mfd.)	61-0137
74	Fuse	45-2530
75	Manual Knob Sleeve	57-1623
76	Manual Knob Spacer	57-1680



No.	Description	Part No.	No.	Description	Part No.	No.	Description	Part No.
77	Manual Knob Spring	57-1623FA3	77	Dial	57-1012	77	Pointer Spring	57-1653
78	Manual Knob Skirt	55-1061	78	Gland Nuts	28-0578FA3	78	Pointer & Lamp Assembly	77-0647
79	Manual Knob	55-1067	79	Housing	77-0660FA3	79	Gland Nut Wrench	28-3636FA3
80	Tone & Volume Knob	77-0633	80	Vibrator Socket	27-0153	80	Generator Condenser	30-1007
81	Speaker Cable	95-0161	81	Tube Socket	27-0151	81	Distributor Resistor	32-2250
82	Screw (Cover Mtg.)	AW-2212FA35	82	Push Button Knob	77-0612	82	Distributor Condenser	60-125157
83	Tube Side Cover	57-1517FA34	83	Tuning Switch	77-0640	83	Fuel Gauge Resistor	67-0041
84	Wiring Side Cover	57-1518FA34	84	Coil Form Spring	97-1538	84	Ground Strap	77-0036
85	Speaker Unit	73-0053	85	Coil Form Screw	97-0126	85	Wire Nut	
86	Speaker Gasket	55-1045	86	Core Draw Bar Spring	57-1649	86	(Radio Mtg.)	97-0048FA3
87	Bezel Front	57-2200FA3	87	Latch Bar Spring	57-1650	87	Hook Bolt	
88	Speed Nut	57-0136FE7	88	Push Bar Spring	57-1651	88	(Radio Mtg.)	97-0135FA3

## Procedure for Aligning Studebaker Tuning Unit, Part No. 77-0588

The following is the procedure for aligning the Studebaker 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

- Turn the tuning control knob so that stations can be tuned in by manual tuning.
- 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.
- Adjust padder (2) aerial compensator in radio and padder (1) (see Fig. 2) for maximum signal.
- 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).

- Repeat (c) and (d) until no further improvement is noticed.
- 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.
- In case a great adjustment was necessary in (f) the adjustments (c) and (d) should be repeated.
- 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

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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

- 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.
- Set up the signal generator to 1600 K.C., and adjust the aerial compensator (2) in the radio for maximum signal.
- 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.
- Repeat (b) and (c).

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

- 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.
- Set up the signal generator to 1600 K.C. and adjust padder (1) (see Fig. 2) for maximum signal.
- 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.
- Repeat (b) and (c).

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

- 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.
- 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

- 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.

- Set up the signal generator to 1600 K.C. and adjust padder (3) (see Fig. 2) for maximum signal.
- Follow the same procedure as outlined under "I—Complete Alignment Procedure".

1941 MIDSHIP AERIAL

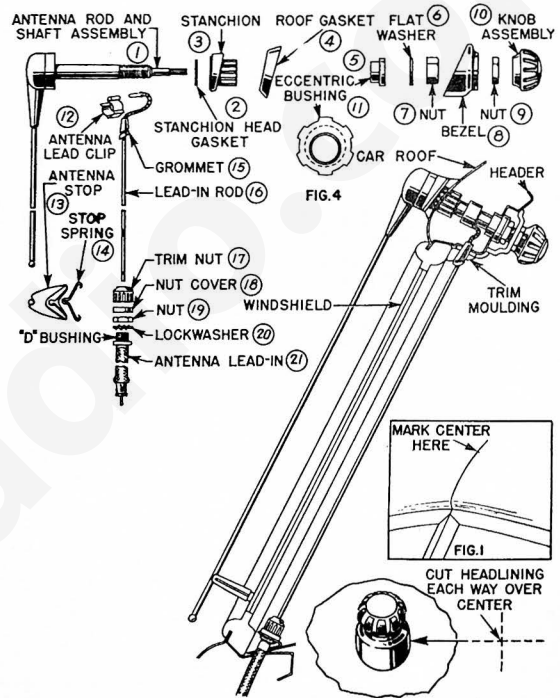


FIGURE 5

TYPE No. 1 (2 Section) Part No. 91-0162 (\$7.00)			
No.	Description	Part No.	List Price
①	Antenna Rod & Shaft Assy. (For Push On Knob) 91-0169		\$4.25
	(For Knob with Set Screw) 91-0206		4.50
②	Stanchion Head Gasket	55-1068	.02
③	Stanchion	55-1052	.10
④	Roof Gasket	55-1055	.10
⑤	Eccentric Bushing	55-1054	.10
⑥	Flat Washer (per 100)	W1806FA3	2.00
⑦	Nut	57-0177	.05
⑧	Bezel	55-1059	.15
⑨	Nut	97-0178FA3	.05
⑩	Knob	77-0017	.20
	(With Set Screw) 77-0846		.45
⑪	Same as ②		
⑫	Antenna Lead Clip	57-1611	.05
⑬	Antenna Stop	55-1060	.10
⑭	Antenna Stop Spring	57-1624	.05
⑮	Grommet	55-1057	.04
⑯	Lead-in Rod Assy.	77-0618	.60
⑰	Trim Nut	55-1058	.10
⑱	Nut Cover	28-5002FA8	.10
⑲	Nut	97-0131FA3	.04
⑳	Lockwasher (per 100)	97-0140FA3	1.75
㉑	Antenna Lead	95-0157	1.10
㉒	Template	57-1642	.05
㉓	Set Screw Wrench	28-4696	.10
	Spacer (Between Bezel & Nut)		
		55-1144	.02

	Round Grommet	55-1189	.03
	Head Cover	57-1599FA8	.50
	Head Cover Screw (per 100)		
		W267FA8	.20
	Reel Assy.	77-0027	.20
	Latch Reel Lock	57-1608	.05
	Latch Reel Spring (per 100)	57-1609	.75
	Antenna Rod & Tape Assy. (For Push On Knob) 77-0028		1.25
	(For Knob with Set Screw) 77-0834		1.00
	Stanchion Tube Assy. (Early Type) 77-0026		.85
	(Late Type) 77-0773		1.00
	"C" Washer (per 100)	4042FA3	2.00
	Knob Shaft (Early Type) 318-2235		.30
	(Late Type) 77-0776		1.00
TYPE No. 2 (3 Section) Part No. 91-0189 (\$8.50)			
No.	Description	Part No.	List Price
①	Antenna Rod & Shaft Assy.	91-0195	\$5.00
②	Stanchion Head Gasket	55-1068	.02
③	Stanchion	55-1206	.15
④	Roof Gasket	55-1055	.10
⑤	Eccentric Bushing	55-1054	.10
⑥	Flat Washer (per 100)	W1806FA3	2.00
⑦	Nut	97-0177	.05
⑧	Bezel	55-1059	.15
⑨	Nut	97-0178FA3	.05
⑩	Knob	77-0846	.45

⑪	Same as ②		
⑫	Antenna Lead Clip	57-1611	.05
⑬	Antenna Stop	55-1060	.10
⑭	Antenna Stop Spring	57-1624	.05
⑮	Grommet	55-1057	.04
⑯	Lead-in Rod Assy.	77-0618	1.10
⑰	Trim Nut	55-1058	.10
⑱	Nut Cover	28-5002FA8	.10
⑲	Nut	97-0131FA3	.04
⑳	Lockwasher (per 100)	97-0140FA3	1.75
㉑	Antenna Lead	95-0157	1.10
	Template	57-1642	.05
	Set Screw Wrench	28-4696	.10
	Spacer (Between Bezel & Nut)		
		55-1144	.02
	Round Grommet	55-1189	.03
	Head Cover	57-1599FA8	.50
	Head Cover Screw (per 100)		
		W267FA8	.20
	Reel Assy.	77-0027	.20
	Washer	97-0183	.02
	Reel Ring	57-1906	.10
	Type Backing Spring	57-1605FA3	.02
	Latch Reel Lock	57-1608	.05
	Latch Reel Spring (per 100)		.75
		57-1609	.75
	Antenna Rod & Tape Assy.	77-0774	1.50
	Stanchion Tube Assy.	77-0773	1.00
	"C" Washer (per 100)	4042FA3	2.00
	Knob Shaft	77-0776	1.00